



NPT General Catalog





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Brescia

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Mantova

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Salerno



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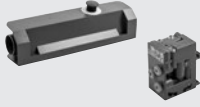
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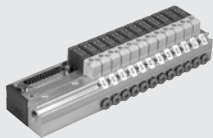
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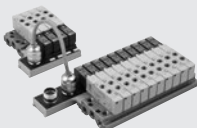
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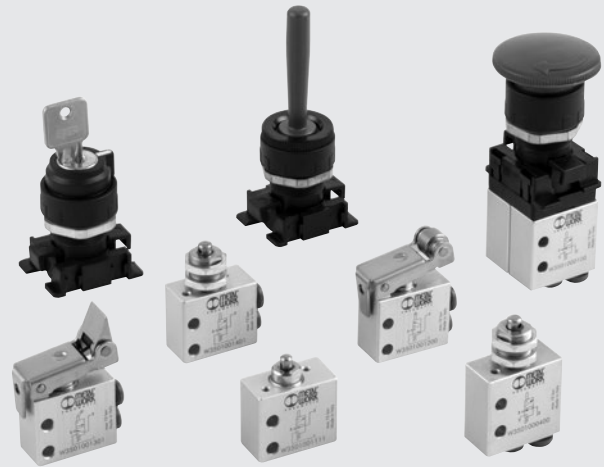


● **VALVE ISO 5599/1 SOLENOID/PNEUMATIC, SERIE ISV WITH M12 CONNECTOR**

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MINIVALVES, MECHANICALLY AND HAND OPERATED SERIES VME

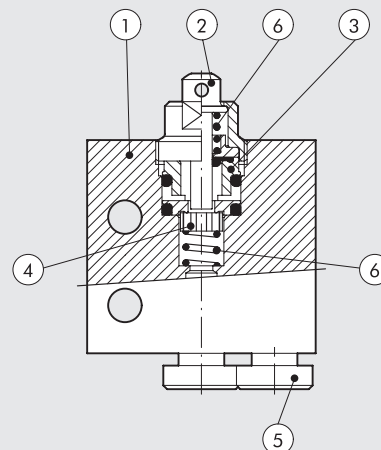
- Minivalves with 3/2 NO NC poppet,
- Installation in any position
- Push-in fittings for pipe \varnothing 4 mm (\varnothing 5/32) and M5 on the valve body
- Low actuation force
- Rapid, accurate signal
- Mechanical actuation
- The 2 places adapter allows manual actuation of 1 or 2 VME valves with manual \varnothing 22 mm panel actuators. Thus it is possible to obtain 3/2, 5/2, 5/3 open centre and 5/3 pressure centre pneumatic functions.
- On request, it is possible to place a NC-NO electric switch next to VME valve for mixed solenoid/pneumatic signals.



TECHNICAL DATA	
Valve fitting port	Push-in fitting for pipe \varnothing 4 (\varnothing 5/32) and M5 (axial or side)
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous
Type	With poppet
Versions	Mechanical and manual
Operators:	With Plunger – Plunger for wall-mounting – Roller lever – Unidirectional roller lever
• mechanical	Depending on the type of actuation panel selected
• manual	
Operating pressure	psi 7.25 to 145
Operating temperature range	$^{\circ}$ F 14 to +140
Nominal diameter	in 0.1
Conductance C	scfm/psi 16.5
Critical ratio b	psi/psi 0.03
Flow rate at 6 bar (0.6 MPa - 87 psi) Δ P 0.5 bar (0.05 MPa - 7.25 psi)	scfm 35
Flow rate at 6 bar (0.6 MPa - 87 psi) Δ P 1 bar (0.1 MPa - 14.5 psi)	scfm 60
Actuation force – Plunger at 6 bar (0.6 MPa - 87 psi)	N 8
Recommended lubricant	ISO and UNI FD22
Installation	In any position
Compatibility with oils	Please refer to page 5-2 of the technical documentation

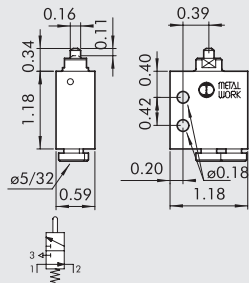
COMPONENTS

- ① VALVE BODY: Aluminium
- ② BUTTON: chemically nickel-plated brass
- ③ DISTANCE PLATES: Brass
- ④ GASKETS: NBR
- ⑤ PUSH-IN FITTING CARTRIDGES: stainless steel, brass and plastic
- ⑥ SPRINGS: stainless steel

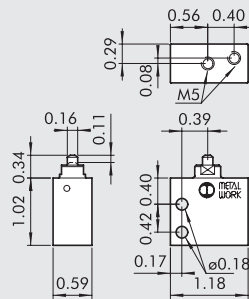


PLUNGER 3/2 NO - AXIAL FITTINGS

Ø 4



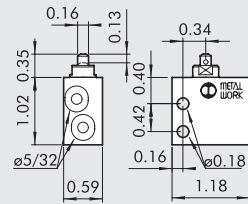
M5



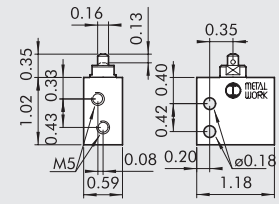
Code	Description	Weight [lb]
W3501000101	VME1-10 NO Ø 4 (Ø 5/32)	0.090
W3501000110	VME1-16 NO M5	0.080

PLUNGER 3/2 NO - SIDE FITTINGS

Ø 4



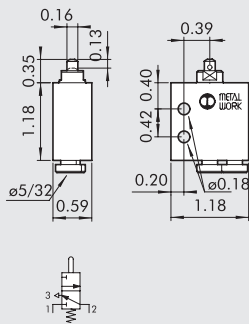
M5



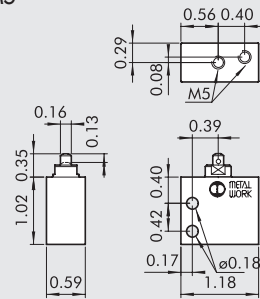
Code	Description	Weight [lb]
W3501001100	VME2-10 NO Ø 4 (Ø 5/32)	0.074
W3501001110	VME2-10 NO M5	0.074

PLUNGER 3/2 NC - AXIAL FITTINGS

Ø 4



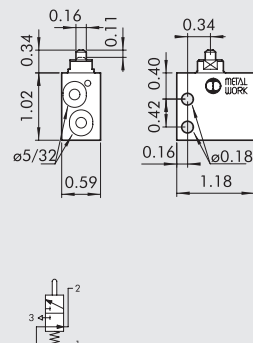
M5



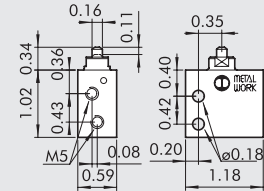
Code	Description	Weight [lb]
W3501000100	VME1-01 NC Ø 4 (Ø 5/32)	0.090
W3501000111	VME1-11 NC M5	0.080

PLUNGER 3/2 NC - SIDE FITTINGS

Ø 4



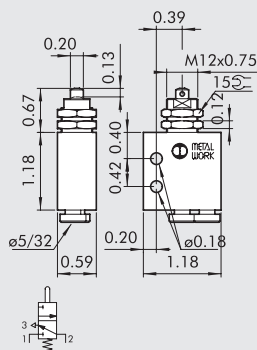
M5



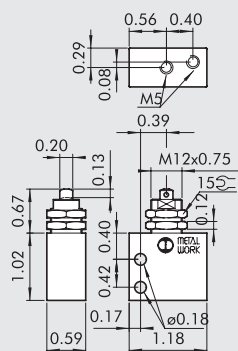
Code	Description	Weight [lb]
W3501001101	VME2-01 NC Ø 4 (Ø 5/32)	0.074
W3501001111	VME2-11 NC M5	0.074

PLUNGER FOR WALL MOUNTING, 3/2 NC - AXIAL FITTINGS

Ø 4



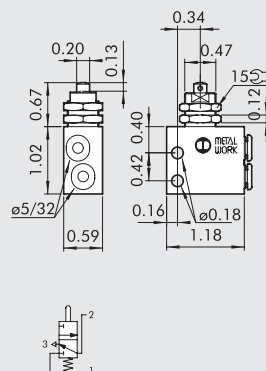
M5



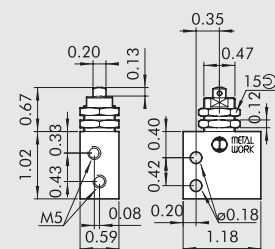
Code	Description	Weight [lb]
W3501000400	VME1-04 NC Ø 4 (Ø 5/32)	0.120
W3501000411	VME1-14 NC M5	0.105

PLUNGER FOR WALL MOUNTING, 3/2 NC - SIDE FITTINGS

Ø 4

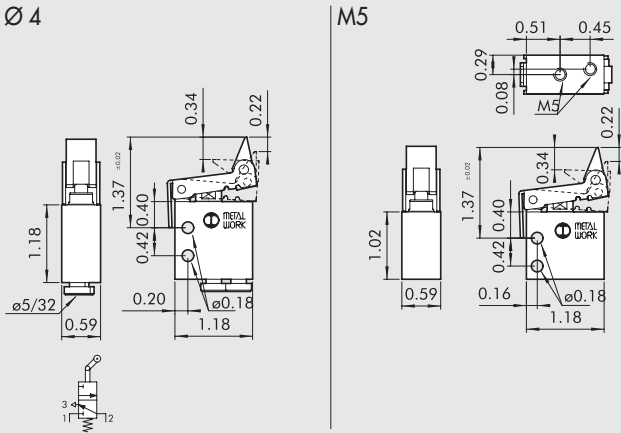


M5



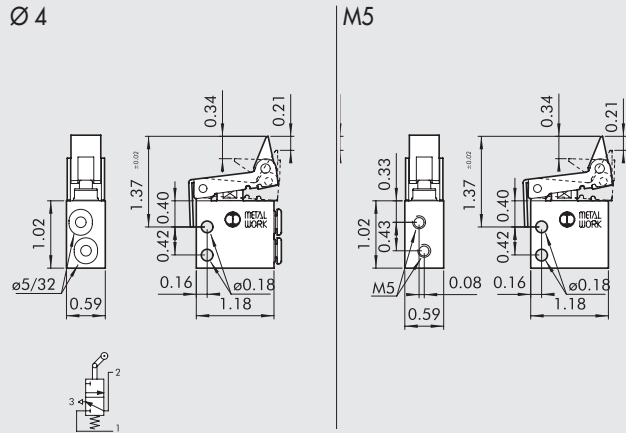
Code	Description	Weight [lb]
W3501001401	VME2-04 NC Ø 4 (Ø 5/32)	0.101
W3501001411	VME2-14 NC M5	0.101

UNIDIRECTIONAL ROLLER LEVER, 3/2 NC - AXIAL FITTINGS



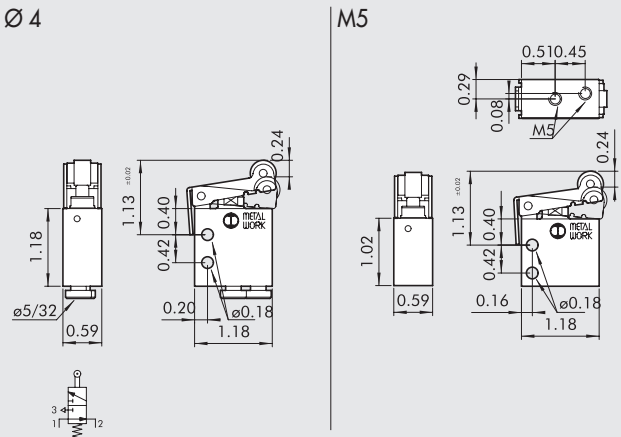
Code	Description	Weight [lb]
W3501000300	VME1-03 NC Ø 4 (Ø 5/32)	0.132
W3501000311	VME1-13 NC M5	0.119

UNIDIRECTIONAL ROLLER LEVER, 3/2 NC - SIDE FITTINGS



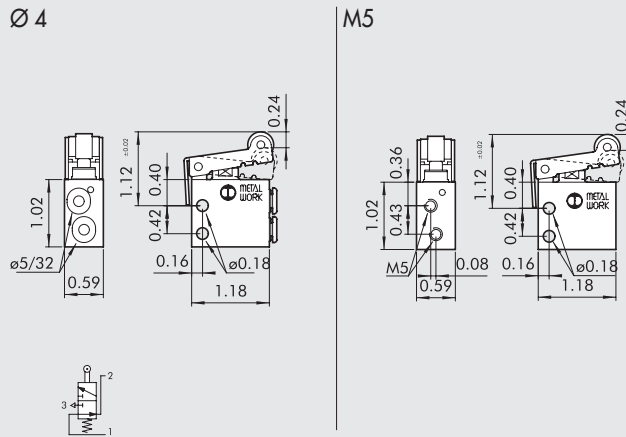
Code	Description	Weight [lb]
W3501001301	VME2-03 NC Ø 4 (Ø 5/32)	0.114
W3501001311	VME2-13 NC M5	0.114

ROLLER LEVER, 3/2 NO - AXIAL FITTINGS



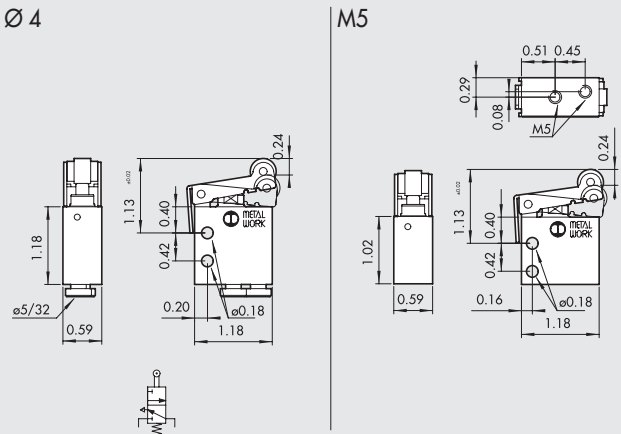
Code	Description	Weight [lb]
W3501000201	VME1-05 NO Ø 4 (Ø 5/32)	0.127
W3501000210	VME1-15 NO M5	0.114

ROLLER LEVER, 3/2 NO - SIDE FITTINGS



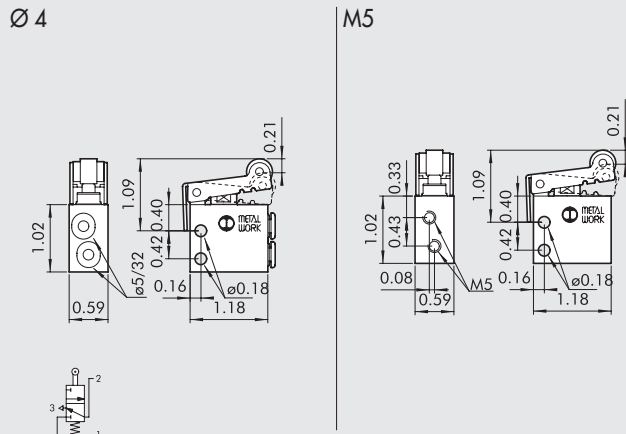
Code	Description	Weight [lb]
W3501001200	VME2-05 NO Ø 4 (Ø 5/32)	0.110
W3501001210	VME2-15 NO M5	0.110

ROLLER LEVER, 3/2 NC - AXIAL FITTINGS



Code	Description	Weight [lb]
W3501000200	VME1-02 NC Ø 4 (Ø 5/32)	0.123
W3501000211	VME1-12 NC M5	0.110

ROLLER LEVER, 3/2 NC - SIDE FITTINGS

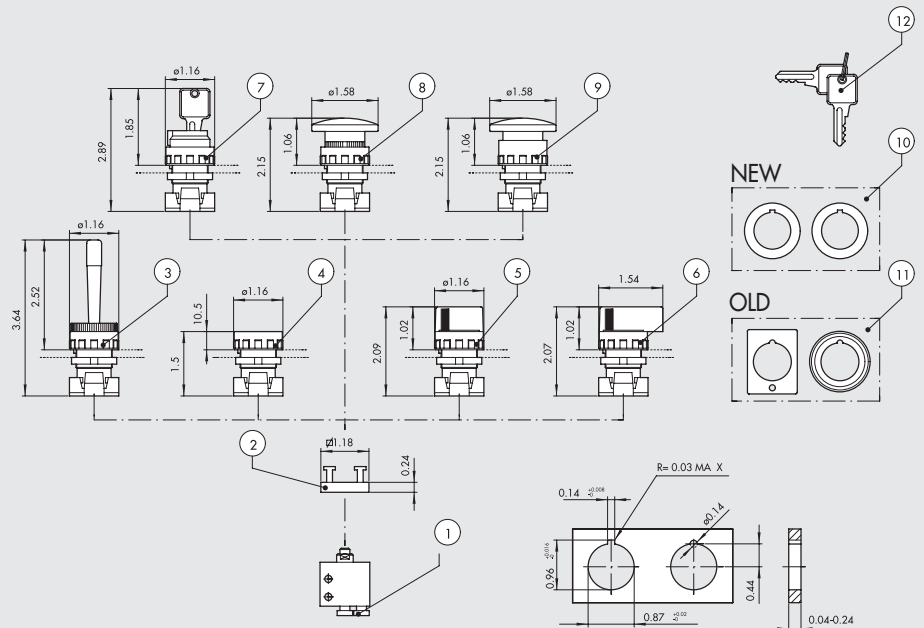


Code	Description	Weight [lb]
W3501001201	VME2-02 NC Ø 4 (Ø 5/32)	0.114
W3501001211	VME2-12 NC M5	0.110

MANUAL VME VALVES – ASSEMBLY DIAGRAM

NOTES:

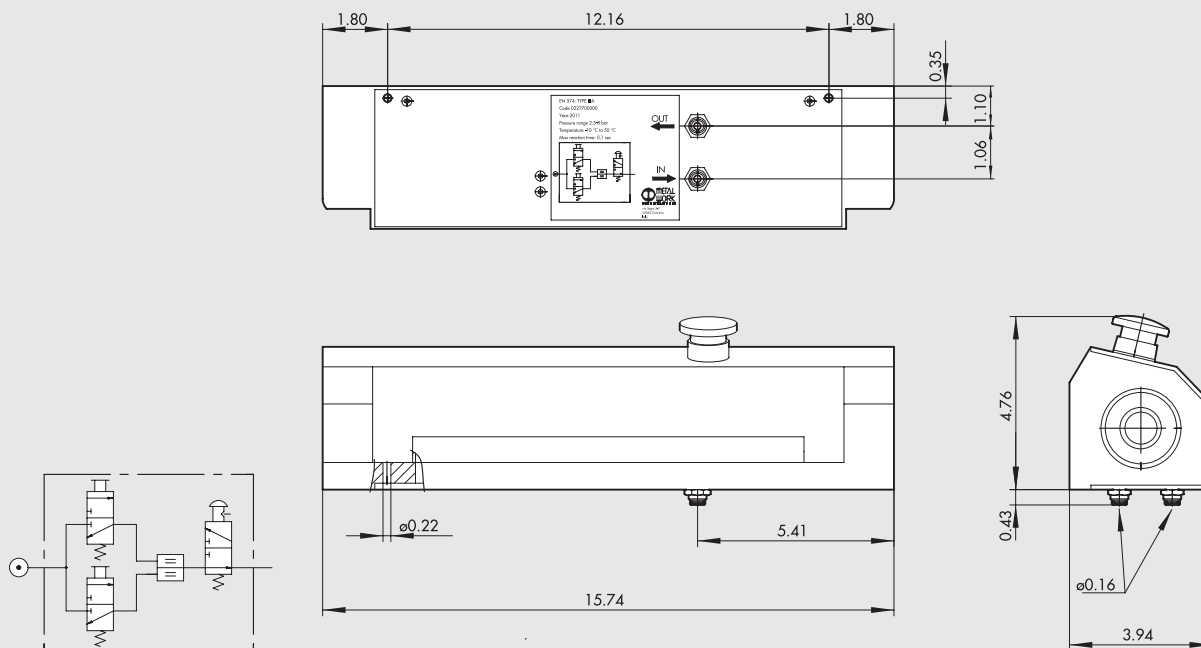
- For 5/2 pneumatic operation, assemble a 3/2 NC plunger valve and a 3/2 NO one on the adapter.
- For 5/3 pneumatic operation with open centres, assemble two 3/2 NC plunger valves on the adapter.
- For 5/3 pneumatic operation with pressure centres, assemble two 3/2 NO plunger valves on the adapter.



ORDERING CODES

Symbol	Reference	Code	Description	Weight [lb]
	①	W3501000100	3/2 NC Axial fittings Ø 4 (Ø 5/32)	0.080
		W3501000111	3/2 NC Axial fittings M5	0.080
		W3501000101	3/2 NC Side fittings Ø 4 (Ø 5/32)	0.074
		W3501000111	3/2 NC Side fittings M5	0.074
	①	W3501000101	3/2 NO Axial fittings Ø 4 (Ø 5/32)	0.074
		W3501000110	3/2 NO Axial fittings M5	0.074
		W3501000100	3/2 NO Side fittings Ø 4 (Ø 5/32)	0.074
		W3501000110	3/2 NO Side fittings M5	0.074
	②	0351000050	2 places adaptor thickness 6.8 mm	0.011
	③	W0351000015	Red handler with horizontally pivoted lever	0.055
	④	W0351000011	Fat push button + 2 red/black coloured disks	0.033
		◆ Bistable fat push button without disk		
	⑤	W0351000030	Black selector short lever at 2 positions with return	0.044
		W0351000031	Black selector short lever at 2 positions	0.044
	⑤	W0351000032	Black selector short lever at 3 positions with return	0.044
		W0351000033	Black selector short lever at 3 positions	0.044
	⑥	W0351000034	Black selector long lever at 2 positions with return	0.057
		W0351000035	Black selector long lever at 2 positions	0.057
	⑥	W0351000036	Black selector long lever at 3 positions with return	0.057
		W0351000037	Black selector long lever at 3 positions	0.057
	⑦	W0351000016	2 positions key selector with extractable key in 2 positions	0.110
		W0351000018	2 positions key selector with extractable key in 0	0.110
	⑧	W0351000013	Red mushroom-head push button Ø 40 mm	0.059
		W0351000017	Black mushroom-head push button Ø 40 mm	0.059
	⑨	W0351000014	Red mushroom-head push button with lock Ø 40 mm	0.063
◆ It can't be supplied. As working replaced by selector with bistable short lever at 2 positions ⑤.	⑩	W0351000049	✦ Reducer from 30 to 22.5 mm	
✦ Usable only with technopolymer body selectors.	⑪	W0351000050	▲ Adapter for bore Ø 30 mm G2326	
▲ Usable only with metal body selectors.	⑫	W0351000021	✦ Key for ESC selectors	
		W0351000056	Green disk for push button ④	

COMPLETE PUSHBUTTON PANEL



Code	Description
0227700000	Complete pushbutton panel

Materials

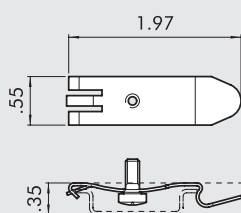
Pressure die-cast and painted aluminium alloy

MAIN COMPONENTS

Code	Description	Quantity
W3605000001	Dual manual safety valve	1
W0351000011	Monostable protected button - black disk	2
W0351000014	Emergency stop button	1
W3501000100	VME1-01 NC Ø 4 (Ø 5/32)	2
W3501001100	VME2-01 NO Ø 4 (Ø 5/32)	1
0351000050	Valve-button connecting base	3
2L11001	RL10 Ø 4 (Ø 5/32)	2

ACCESSORIES

CONNECTION BRACKETS ON THE BAR (DIN EN50022)



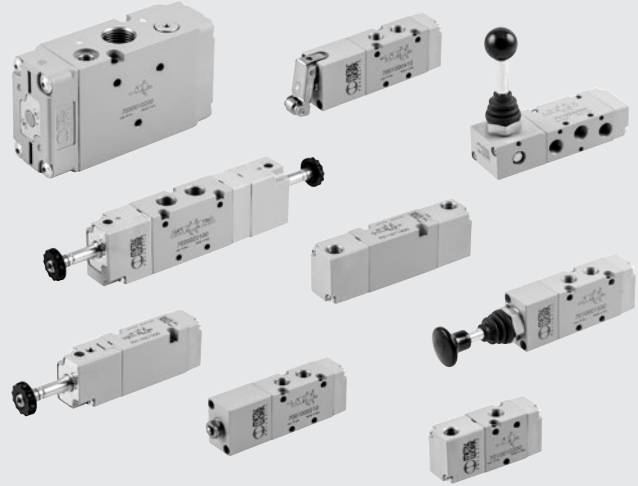
Code	Description
0227300600	Connection brackets on DIN bar

Individually packed

VALVES SERIES 70

This is Metal Work's full range. Available in three sizes: 1/8", 1/4", 3/8", 1/2". Three versions: 3/2; 5/2; 5/3, four different types of actuation (mechanical, manual, pneumatic and electric).

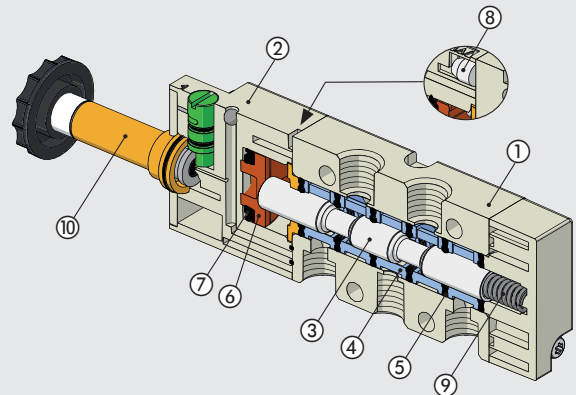
Series 70 valves can be used for a wide range of applications as they can be mounted in line, on the wall, on the cylinder using a special bracket, or in series on a multiple or manifold base.



TECHNICAL DATA	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Thread on the valve ports	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Operating pressure:				
monostable and bistable differential			36.3 to 145	
bistable			14.5 to 145	
asserved			vacuum to 145	
Minimum pilot pressure			36.3	
Operating temperature range			14 to +140	
Nominal diameter	0.20	0.30	0.52	0.59
Conductance C	0.30	0.65	1.23	2.37
Critical ratio b	0.32	0.27	0.32	0.43
Flow rate at 87 psi ΔP 7.25 psi	14	26.5	55.2	113
Flow rate at 87 psi ΔP 14.5 psi	19.5 Cv 0.55	39 Cv 1.1	75 Cv 2.1	163 Cv 4.6
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)			
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous			
Recommended lubricant	ISO and UNI FD 22			
Maximum coil nut torque	0.74			
Compatibility with oils	Please refer to page 5-4 of the technical documentation			

COMPONENTS

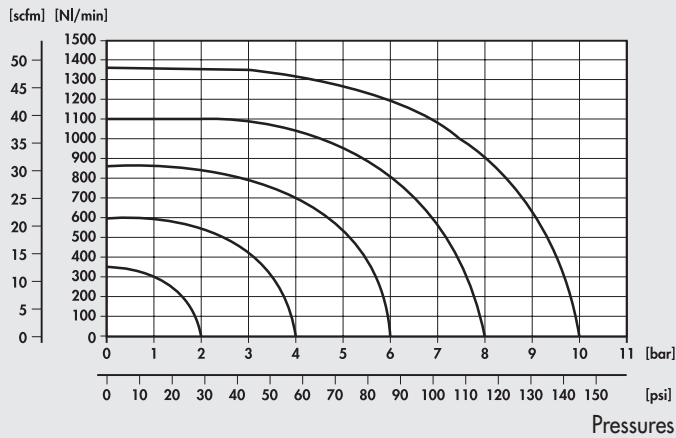
- ① VALVE BODY: Aluminium
- ② CONTROL/END CAP: plastic
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe - Stainless steel core



FLOW CHARTS

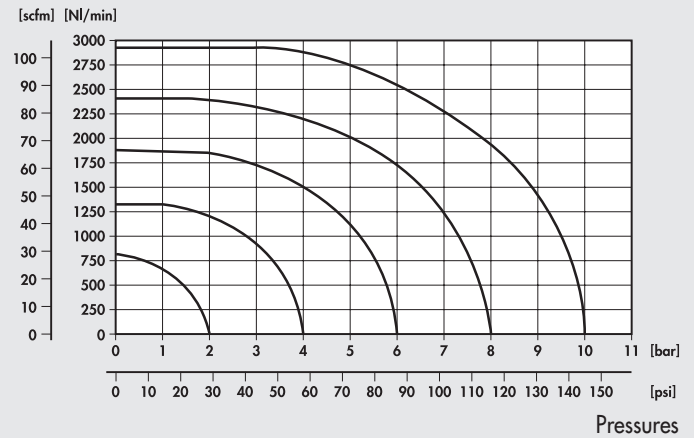
VALVES SERIES 70, 1/8"

Flow rates



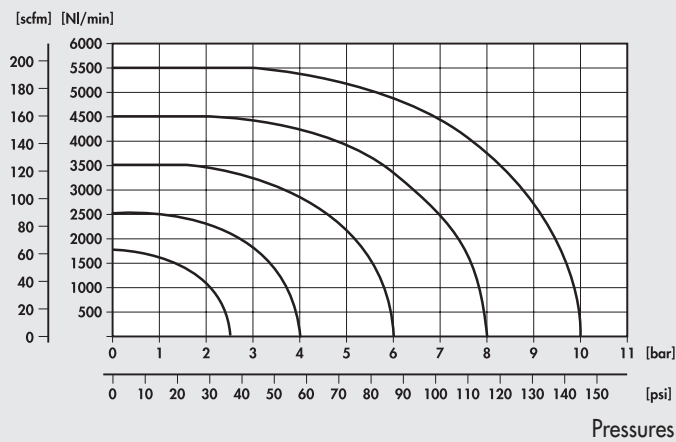
VALVES SERIES 70, 1/4"

Flow rates



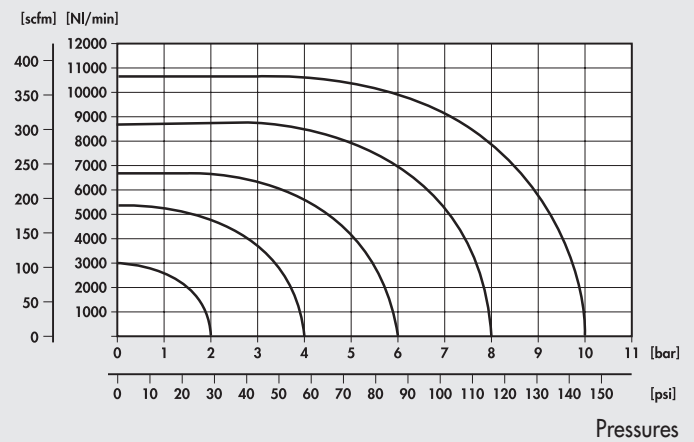
VALVES SERIES 70, 3/8"

Flow rates



VALVES SERIES 70, 1/2"

Flow rates

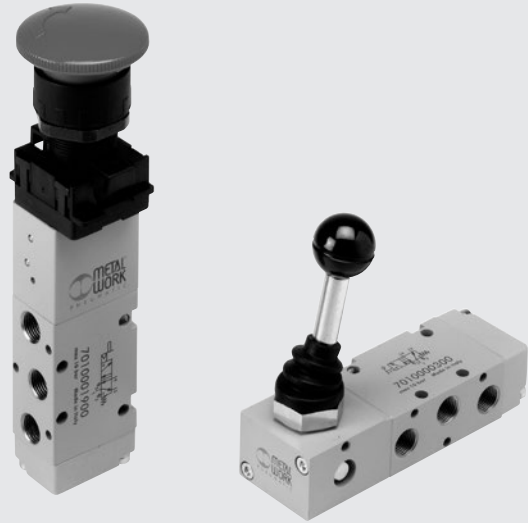


NOTES

Blank area for notes.

VALVES SERIES 70, HAND OPERATED

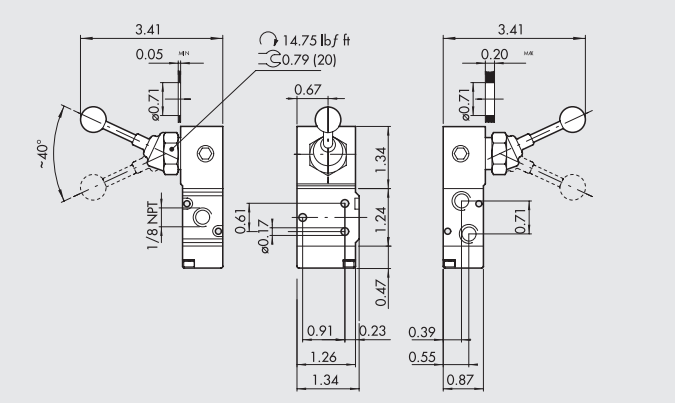
TECHNICAL DATA	1/8" NPT	1/4" NPT	1/2" NPT	
Operating pressure range:				
• version with direct control	psi	Vacuum to 145		
• pilot-assisted version	psi	36.3 to 145		
Operating temperature range	°F	14 to + 140		
Nominal diameter	in	0.20	0.30	0.59
Conductance C	scfm/psi	0.30	0.65	2.37
Critical ratio b	psi/psi	0.32	0.27	0.43
Flow rate at 87 psi ΔP 7.25 psi	scfm	14	26.5	113
Flow rate at 87 psi ΔP 14.5 psi	scfm	19.5	39	163
		Cv 0.55	Cv 1.1	Cv 4.6



KEY TO CODES						
M A V	2	3	P P	S	N C	U
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	THREAD
MAV manual valves	2 1/8" 3 1/4" 4 1/2"	3 3/2 5 5/2 6 5/3 8 2 x 3/2	PP drawer VL axial lever LE 90° lever BRE arranged for manual panel actuators	A pneumatic/mechanical springs* S mechanical springs B bistable D differential O stable for 5/3	NC normally closed NO normally open OO no indication CC closed centres OC open centres PC pressure centres	U NPT
				*on demand		

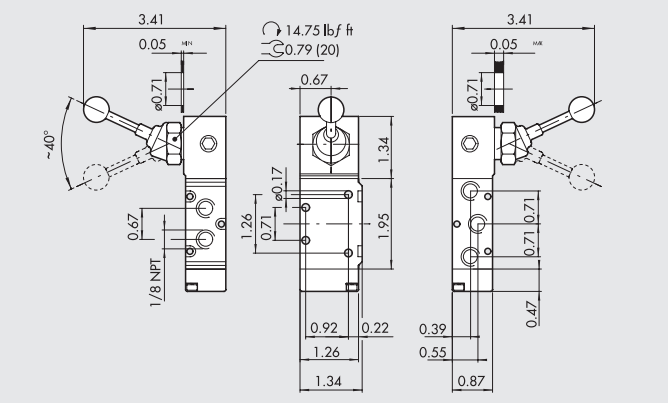
VALVES SERIES 70, HAND OPERATED, 1/8" NPT

90° LEVER 3/2 1/8" NPT



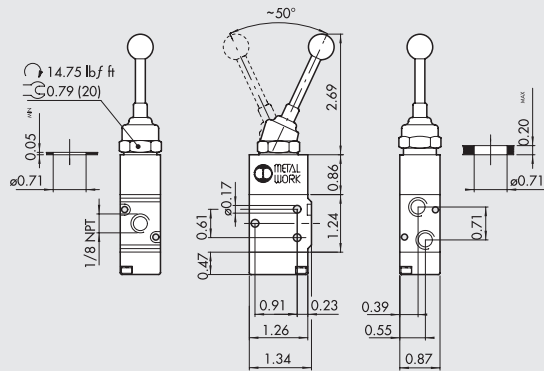
Symbol	Code	Abbrev.	Weight [lb]
	7010000100U	MAV 23 LES NC U	0.370
	7010000200U	MAV 23 LEB OO U	0.377

90° LEVER 3/2 1/8" NPT



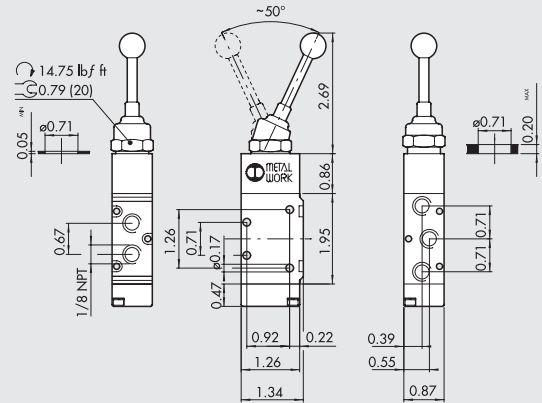
Symbol	Code	Abbrev.	Weight [lb]
	7010000300U	MAV 25 LES OO U	0.427
	7010000400U	MAV 25 LEB OO U	0.432

FRONT LEVER 3/2, 1/8" NPT



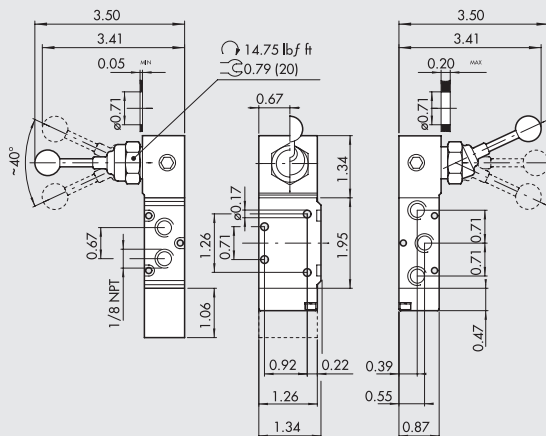
Symbol	Code	Abbrev.	Weight [lb]
	7010001400U	MAV 23 VLB OO U	0.287

FRONT LEVER 5/2, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010001700U	MAV 25 VLB OO U	0.344

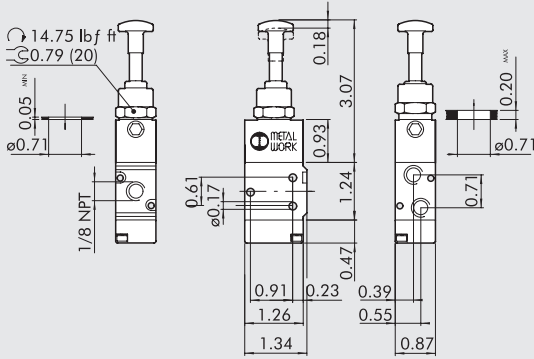
90° LEVER 5/3, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010001000U	MAV 26 LES CC U	0.534
	7010000900U	MAV 26 LES OC U	0.534
	7010001100U	MAV 26 LES PC U	0.534
	7010000500U	MAV 26 LEO CC U	0.428
	7010000600U	MAV 26 LEO OC U	0.428
	7010000700U	MAV 26 LEO PC U	0.428

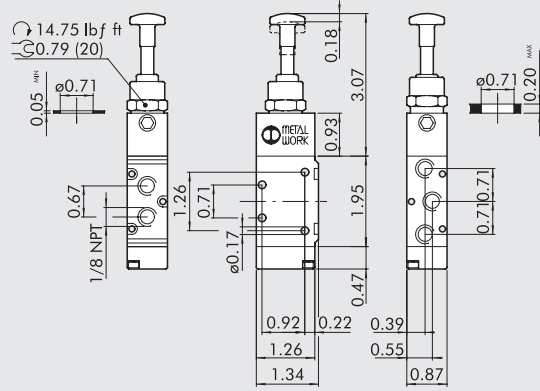
NOTES

DRAWER 3/2, 1/8" NPT



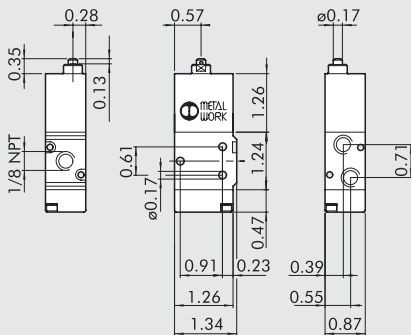
Symbol	Code	Abbrev.	Weight [lb]
	7010001300U	MAV 23 PPB OO U	0.296
	7010001200U	MAV 23 PPS NC U	0.296

DRAWER 5/2, 1/8" NPT



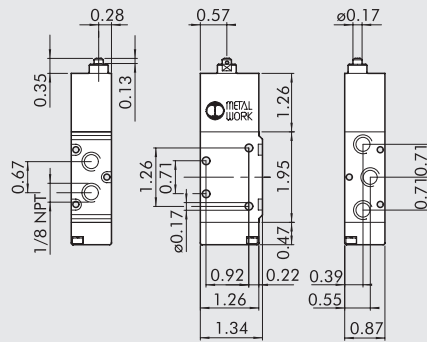
Symbol	Code	Abbrev.	Weight [lb]
	7010001600U	MAV 25 PPB OO U	0.353
	7010001500U	MAV 25 PPS OO U	0.353

PILOT-ASSISTED PLUNGER 3/2 1/8" NPT FOR PANEL ACTUATORS

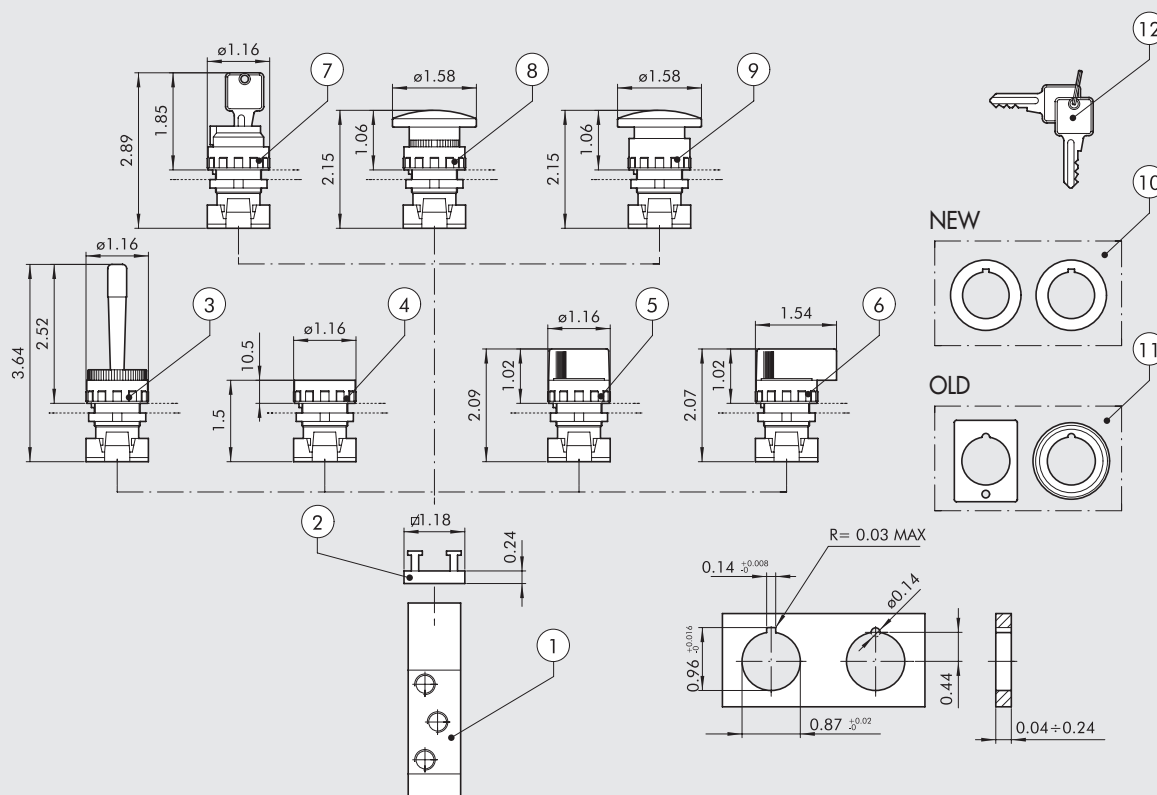


Symbol	Code	Abbrev.	Weight [lb]
	7010001800U	MAV 23 BRE NC U	0.273

PILOT-ASSISTED PLUNGER 5/2 1/8" NPT FOR PANEL ACTUATORS



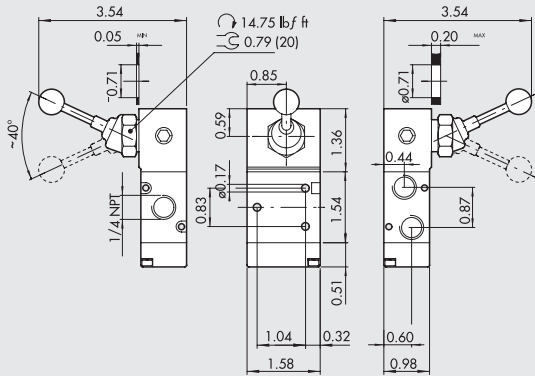
Symbol	Code	Abbrev.	Weight [lb]
	7010001900U	MAV 25 BRE OO U	0.331

ASSEMBLY DIAGRAM FOR PILOT-ASSISTED HAND-OPERATED VALVES SERIES 70 WITH PANEL ACTUATORS

ORDERING CODES

Symbol	Reference	Code	Abbrev.	Description	Weight [lb]
	①	7010001800U	MAV 23 BRE NC U	Pilot-assisted plunger 3/2, 1/8" NPT	0.273
	①	7010001900U	MAV 25 BRE OO U	Pilot-assisted plunger 5/2, 1/8" NPT	0.331
	②	0351000050		2 places adaptor thickness 6.8 mm	0.015
	③	W0351000015		Red handler with horizontally pivoted lever	0.055
	④	W0351000011		Fat push button + 2 red/black coloured disks ◆ Bistable fat push button without disk	0.033
	⑤	W0351000030		Black selector short lever at 2 positions with return	0.044
		W0351000031		Black selector short lever at 2 positions	0.044
	⑤	W0351000032		Black selector short lever at 3 positions with return	0.044
		W0351000033		Black selector short lever at 3 positions	0.044
	⑥	W0351000034		Black selector long lever at 2 positions with return	0.057
		W0351000035		Black selector long lever at 2 positions	0.057
	⑥	W0351000036		Black selector long lever at 3 positions with return	0.057
		W0351000037		Black selector long lever at 3 positions	0.057
	⑦	W0351000016		2 positions key selector with extractable key in 2 positions	0.110
		W0351000018		2 positions key selector with extractable key in 0	0.110
	⑧	W0351000013		Red mushroom-head push button Ø 40 mm	0.060
		W0351000017		Black mushroom-head push button Ø 40 mm	0.060
	⑨	W0351000014		Red mushroom-head push button with lock Ø 40 mm	0.064
◆ It can't be supplied. As working replaced by selector with bistable short lever at 2 positions ⑤.	⑩	W0351000049		✚ Reducer from 30 to 22.5 mm	
✚ Usable only with technopolymer body selectors.	⑪	W0351000050		▲ Adapter for bore Ø 30 mm G2326	
▲ Usable only with metal body selectors.	⑫	W0351000021		✚ Key for ESC selectors	
		W0351000056		Green disk for push button ④	

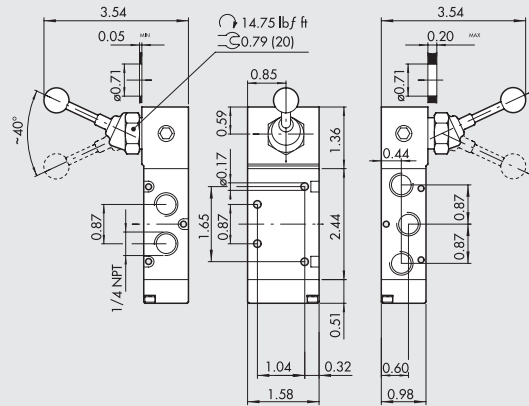
VALVES SERIES 70, HAND-OPERATED, 1/4" NPT

90° LEVER 3/2, 1/4" NPT



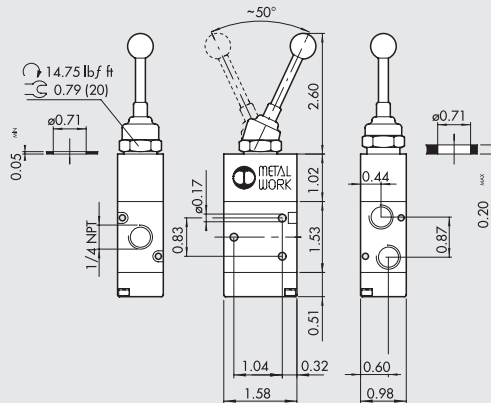
Symbol	Code	Abbrev.	Weight [lb]
	7020000100U	MAV 33 LES NC U	0.538
	7020000200U	MAV 33 LEB OO U	0.538

90° LEVER 5/2, 1/4" NPT



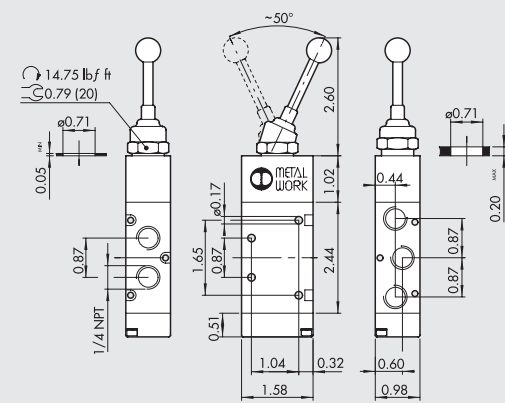
Symbol	Code	Abbrev.	Weight [lb]
	7020000300U	MAV 35 LES OO U	0.640
	7020000400U	MAV 35 LEB OO U	0.640

FRONT LEVER 3/2, 1/4" NPT



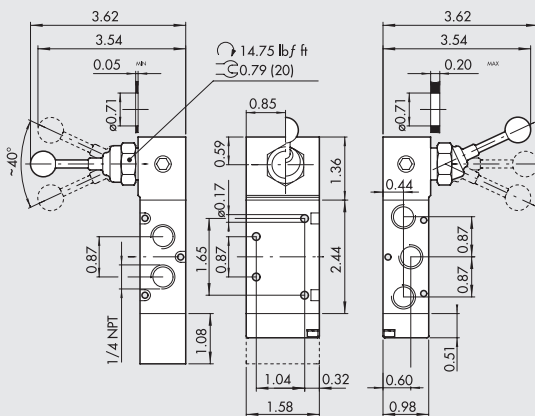
Symbol	Code	Abbrev.	Weight [lb]
	7020001400U	MAV 33 VLB OO U	0.428

FRONT LEVER 5/2, 1/4" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7020001700U	MAV 35 VLB OO U	0.538

90° LEVER 5/3, 1/4" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7020001000U	MAV 36 LES CC U	0.781
	7020000900U	MAV 36 LES OC U	0.781
	7020001100U	MAV 36 LES PC U	0.781
	7020000500U	MAV 36 LEO CC U	0.635
	7020000600U	MAV 36 LEO OC U	0.635
	7020000700U	MAV 36 LEO PC U	0.635

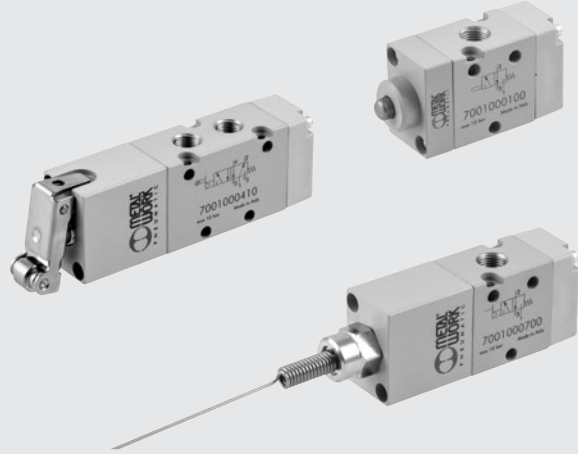
VALVES SERIES 70, MECHANICALLY OPERATED, 1/8" NPT

VALVES

VALVES SERIES 70, MECHANICALLY OPERATED

TECHNICAL DATA

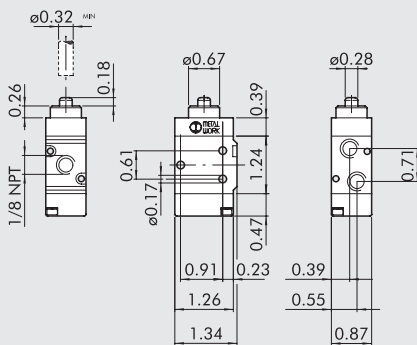
Thread at valve ports		1/8" NPT
Operation force at 87 psi:		
• version with direct control	lbf	11.2
• pilot-assisted version	lbf	1.35
Operating pressure:		
• version with direct control	psi	Vacuum to 145
• pilot-assisted version	psi	36.3 to 145
Operating temperature range	°F	14 to + 140
Nominal diameter	in	0.20
Conductance C	scfm/psi	0.30
Critical ratio b	psi/psi	0.32
Flow rate at 87 psi ΔP 7.25 psi	scfm	14
Flow rate at 87 psi ΔP 14.5 psi	scfm	19.5 Cv 5.5



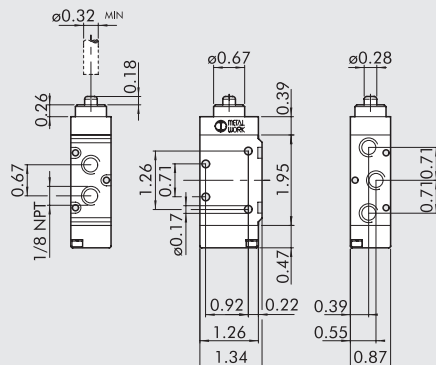
KEY TO CODES

MEV	2	3	T A	S	NC	U
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	THREAD
MEV mechanically-operated valves	2 1/8"	3 3/2 5 5/2	TA plunger BR bidirectional roller UR unidirectional roller TS sensitive plunger RS sensitive roller AS sensitive aerial LL frontal roller lever	S mechanical springs A pneumatic/mechanical spring* *on demand	NC normally closed OO no indication	U NPT

PLUNGER 3/2, 1/8" NPT



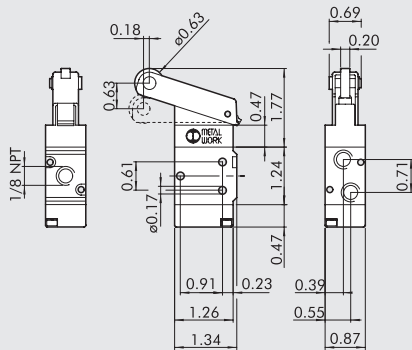
PLUNGER 5/2, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7001000100U	MEV 23 TAS NC U	0.194

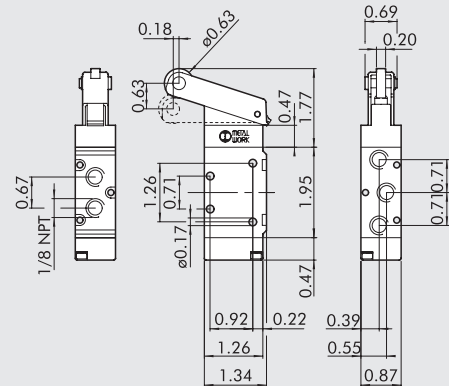
Symbol	Code	Abbrev.	Weight [lb]
	7001000110U	MEV 25 TAS OO U	0.251

ROLLER LEVER 3/2, 1/8" NPT



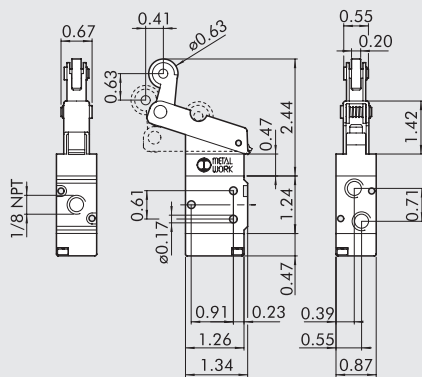
Symbol	Code	Abbrev.	Weight [lb]
	7001000500U	MEV 23 BRS NC U	0.287

ROLLER LEVER 5/2, 1/8" NPT



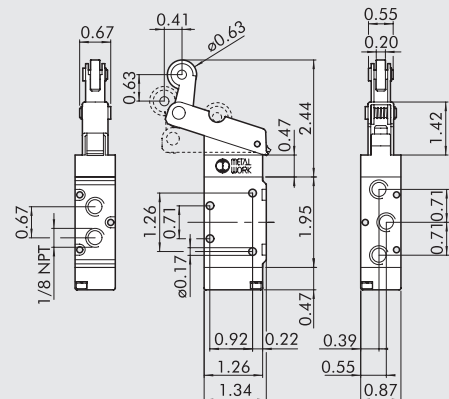
Symbol	Code	Abbrev.	Weight [lb]
	7001000510U	MEV 25 BRS OO U	0.344

UNIDIRECTIONAL ROLLER 3/2, 1/8" NPT LEVERS



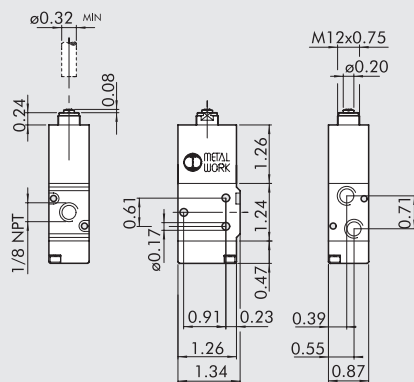
Symbol	Code	Abbrev.	Weight [lb]
	7001000600U	MEV 23 URS NC U	0.300

UNIDIRECTIONAL ROLLER 5/2, 1/8" NPT LEVERS



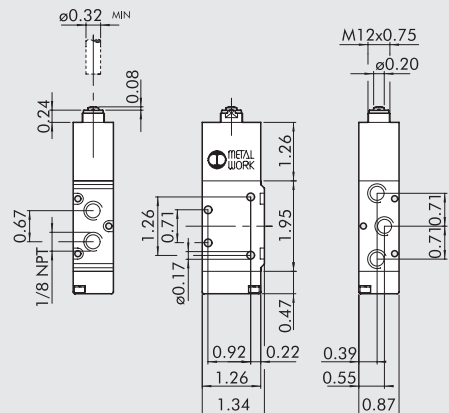
Symbol	Code	Abbrev.	Weight [lb]
	7001000610U	MEV 25 URS OO U	0.357

PILOT-ASSISTED PLUNGER 3/2 NC, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7001000200U	MEV 23 TSS NC U	0.278

PILOT-ASSISTED PLUNGER 5/2, 1/8" NPT



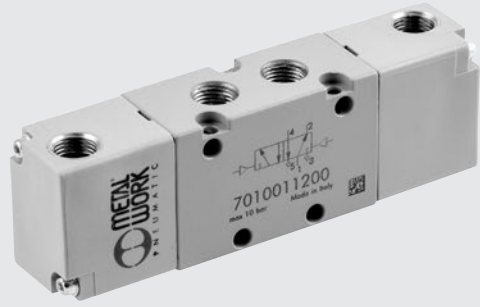
Symbol	Code	Abbrev.	Weight [lb]
	7001000210U	MEV 25 TSS OO U	0.335

VALVES SERIES 70, PNEUMATIC

VALVES

VALVES SERIES 70, PNEUMATIC

TECHNICAL DATA		1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Operating pressure	psi	Vacuum to 145			
Minimum pilot pressure					
• monostable	psi	36.3			
• bistable	psi	14.5			
Operating temperature range	°F	14 to + 140			
Nominal diameter	in	0.20	0.30	0.52	0.59
Conductance C	scfm/psi	0.30	0.65	1.23	2.37
Critical ratio b	psi/psi	0.32	0.27	0.32	0.43
Flow rate at 87 psi ΔP 7.25 psi	scfm	14	26.5	55.2	113
Flow rate at 87 psi ΔP 14.5 psi	scfm	19.5	39	75	163
		Cv 0.55	Cv 1.1	Cv 2.1	Cv 4.6
TRA / TRR monostable at 87 psi	ms	6/15	7/15	5/28	16/80
TRA / TRR bistable at 87 psi	ms	7/7	7/7	13/13	25/25



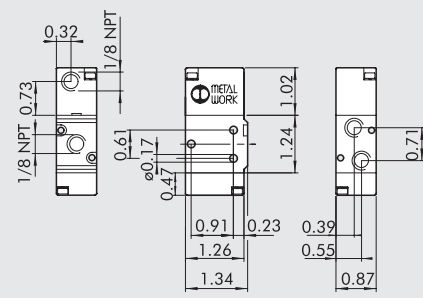
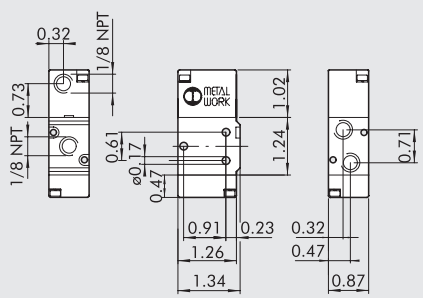
KEY TO CODES

P N V	2	3	P N	S	N C	U
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	THREAD
PNV pneumatic valves	2 1/8" 3 1/4" C 3/8" 4 1/2"	3 3/2 5 5/2 6 5/3	PN pneumatic	S mechanical springs B bistable D differential O stable for 5/3 A pneumatic/mechanical spring* *on demand	OO no indication NC normally closed NO normally open CC closed centres OC open centres PC pressure centres	U NPT

VALVES SERIES 70, PNEUMATIC, 1/8" NPT

MONOSTABLE 3/2 NO, 1/8" NPT

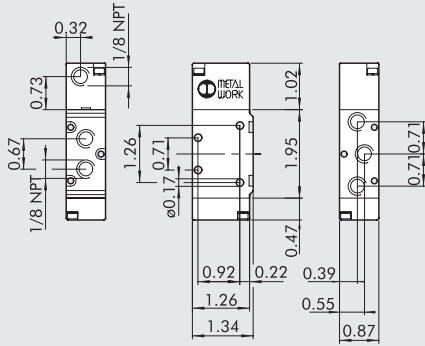
MONOSTABLE 3/2 NC, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010010400U	PNV 23 PNS NO U	0.181

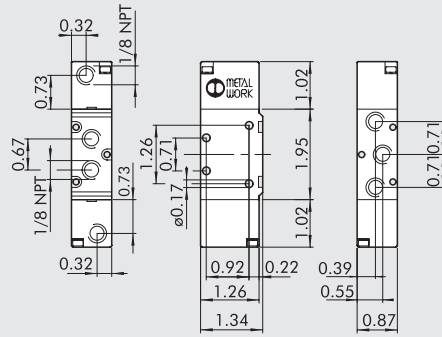
Symbol	Code	Abbrev.	Weight [lb]
	7010010200U	PNV 23 PNS NC U	0.181

MONOSTABLE 5/2, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010011100U	PNV 25 PNS OO U	0.238

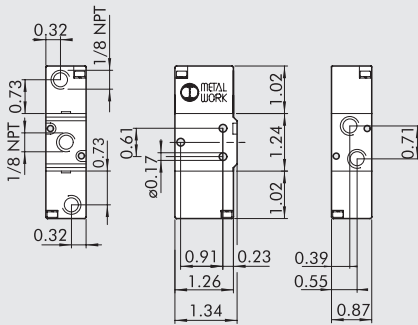
BISTABLE 5/2, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010011200U	PNV 25 PNB OO U	0.269

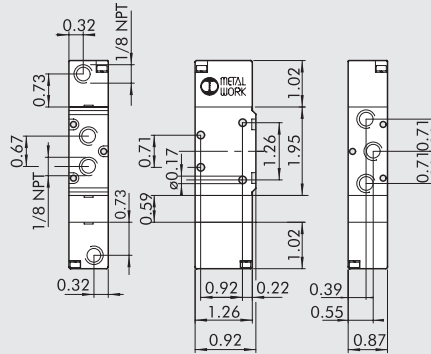
	7010011300U	PNV 25 PND OO U	0.282
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BISTABLE 3/2, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010010100U	PNV 23 PNB OO U	0.212

MONOSTABLE 5/3, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010012100U	PNV 26 PNS CC U	0.331

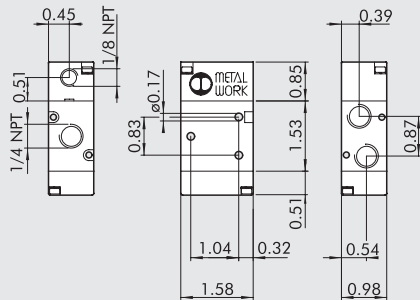
	7010012200U	PNV 26 PNS OC U	0.331
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	7010012300U	PNV 26 PNS PC U	0.331
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NOTES

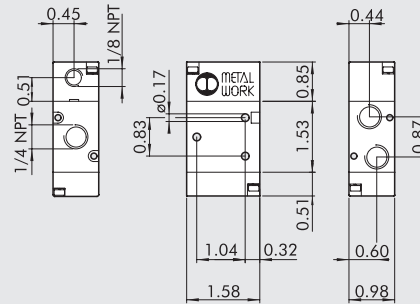
VALVES SERIES 70, PNEUMATIC, 1/4" NPT

MONOSTABLE 3/2 NO, 1/4" NPT



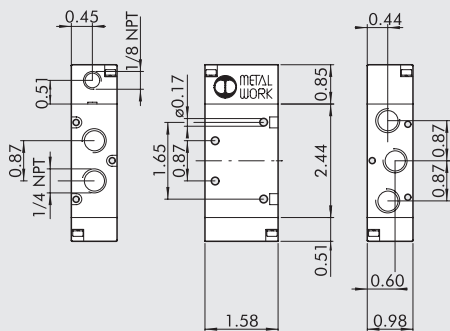
Symbol	Code	Abbrev.	Weight [lb]
	7020010400U	PNV 33 PNS NO U	0.273

MONOSTABLE 3/2 NC, 1/4" NPT



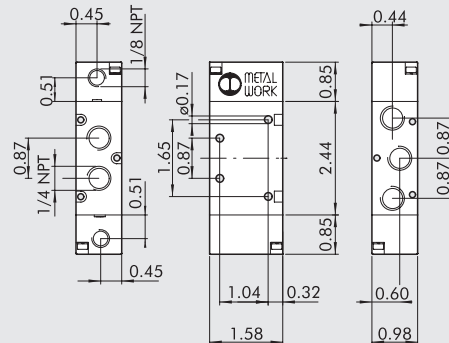
Symbol	Code	Abbrev.	Weight [lb]
	7020010200U	PNV 33 PNS NC U	0.269

MONOSTABLE 5/2, 1/4" NPT



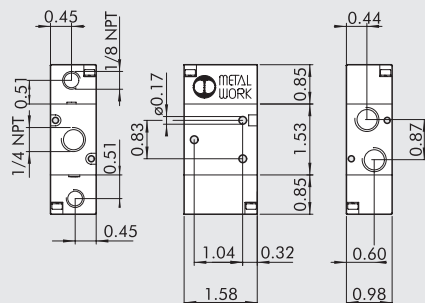
Symbol	Code	Abbrev.	Weight [lb]
	7020011100U	PNV 35 PNS OO U	0.384

BISTABLE 5/2, 1/4" NPT



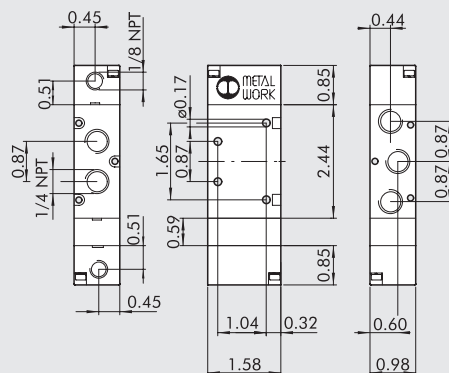
Symbol	Code	Abbrev.	Weight [lb]
	7020011200U	PNV 35 PNB OO U	0.384
	7020011300U	PNV 35 PND OO U	0.437

BISTABLE 3/2, 1/4" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7020010100U	PNV 33 PNB OO U	0.269

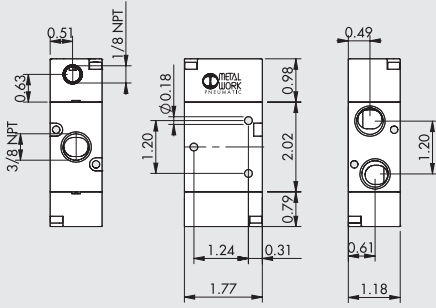
MONOSTABLE 5/3, 1/4" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7020012100U	PNV 36 PNS CC U	0.273
	7020012200U	PNV 36 PNS OC U	0.273
	7020012300U	PNV 36 PNS PC U	0.273

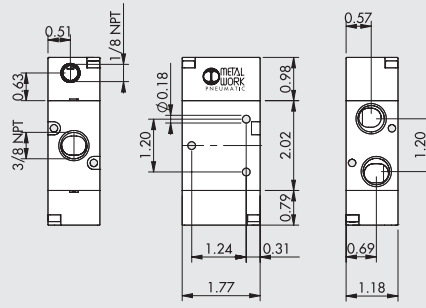
VALVES SERIES 70, PNEUMATIC, 3/8" NPT

MONOSTABLE 3/2 NO, 3/8" NPT



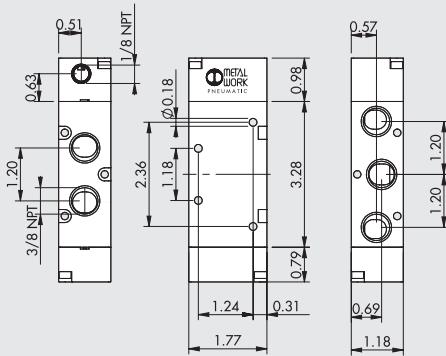
Symbol	Code	Abbrev.	Weight [lb]
	7040010400U	PNV C3 PNS NO U	0.491

MONOSTABLE 3/2 NC, 3/8" NPT



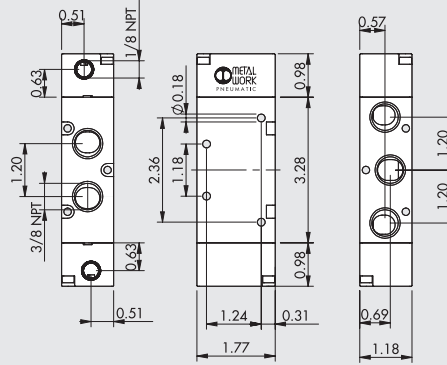
Symbol	Code	Abbrev.	Weight [lb]
	7040010200U	PNV C3 PNS NC U	0.491

MONOSTABLE 5/2, 3/8" NPT



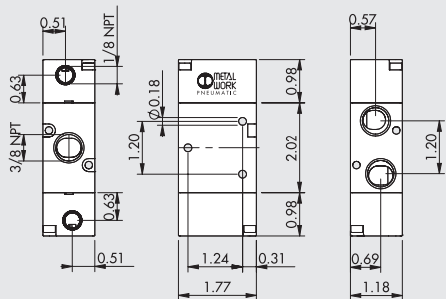
Symbol	Code	Abbrev.	Weight [lb]
	7040011100U	PNV C5 PNS OO U	0.725

BISTABLE 5/2, 3/8" NPT



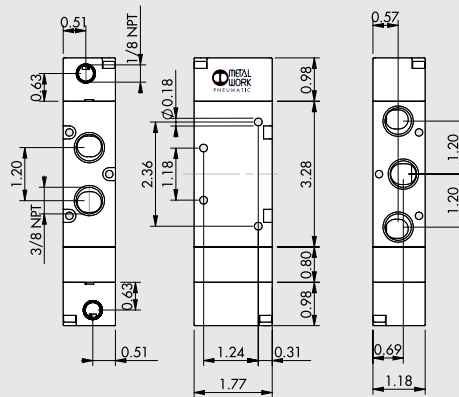
Symbol	Code	Abbrev.	Weight [lb]
	7040011200U	PNV C5 PNB OO U	0.714
	7040011300U	PNV C5 PND OO U	0.793

BISTABLE 3/2, 3/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7040010100U	PNV C3 PNB OO U	0.507

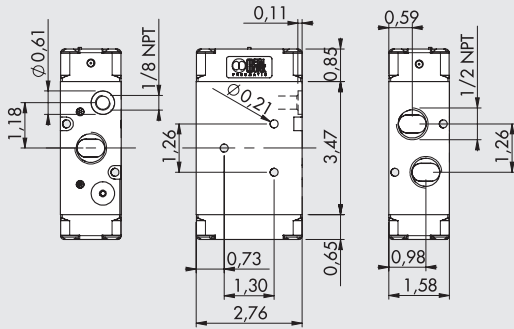
MONOSTABLE 5/3, 3/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7040012100U	PNV C6 PNS CC U	0.906
	7040012200U	PNV C6 PNS OC U	0.901
	7040012300U	PNV C6 PNS PC U	0.901

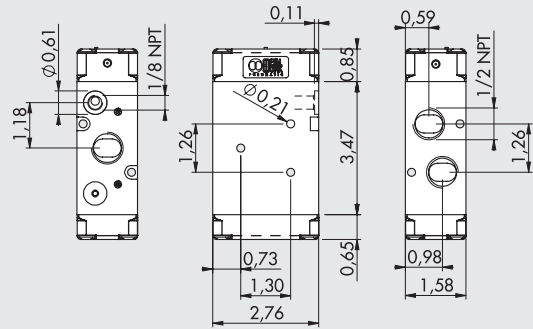
VALVES SERIES 70, PNEUMATIC, 1/2" NPT

MONOSTABLE 3/2 NO, 1/2" NPT



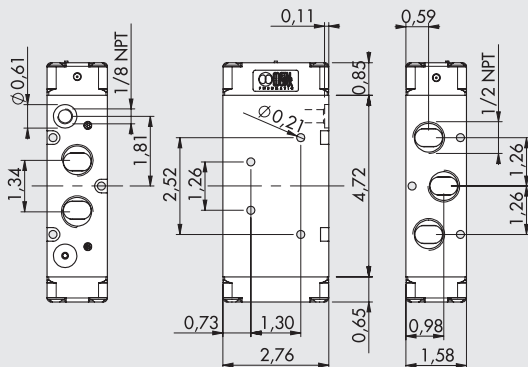
Symbol	Code	Abbrev.	Weight [lb]
	7030010400U	PNV 43 PNS NO U	1.411

MONOSTABLE 3/2 NC, 1/2" NPT



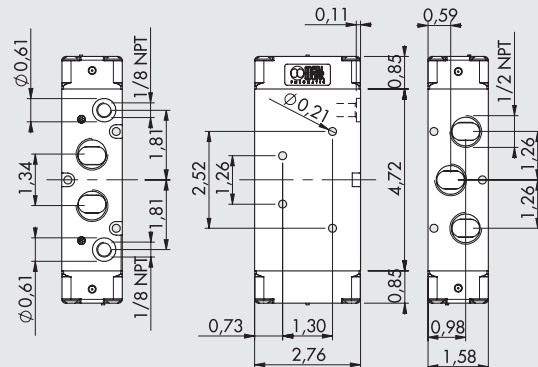
Symbol	Code	Abbrev.	Weight [lb]
	7030010200U	PNV 43 PNS NC U	1.411

MONOSTABLE 5/2, 1/2" NPT



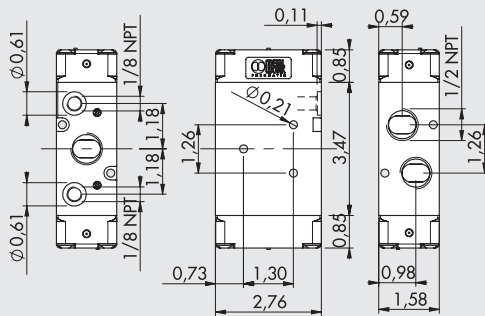
Symbol	Code	Abbrev.	Weight [lb]
	7030011100U	PNV 45 PNS OO U	1.790

BISTABLE 5/2, 1/2" NPT



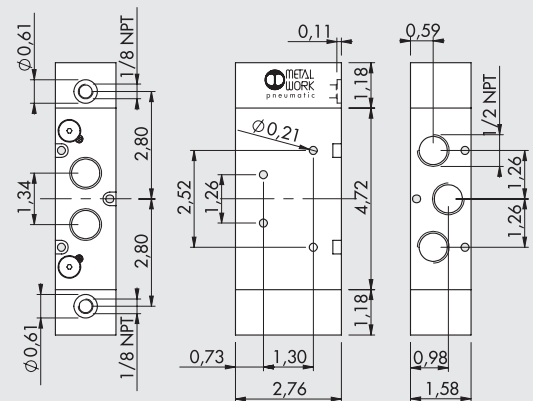
Symbol	Code	Abbrev.	Weight [lb]
	7030011200U	PNV 45 PNB OO U	1.800
	7030011300U	PNV 45 PND OO U	1.825

BISTABLE 3/2, 1/2" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7030010100U	PNV 43 PNB OO U	1.433

MONOSTABLE 5/3, 1/2" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7030012100U	PNV 46 PNS CC U	2.646
	7030012200U	PNV 46 PNS OC U	2.633
	7030012300U	PNV 46 PNS PC U	2.637

VALVES SERIES 70, SOLENOID/PNEUMATIC

VALVES

VALVES SERIES 70, SOLENOID/PNEUMATIC

TECHNICAL DATA	1/8" NPT	1/4" NPT	3/8" NPT	1/2" NPT
Operating pressure:				
• monostable	psi	36.3 to 145		
• bistable	psi	14.5 to 145		
• asserved	psi	Vacuum to 145		
Minimum pilot pressure	psi	36.3		
Operating temperature range	°F	14 to +140		
Nominal diameter	in	0.20	0.30	0.52
Conductance C	scfm/psi	0.30	0.65	1.23
Critical ratio b	psi/psi	0.32	0.27	0.32
Flow rate at 87 psi ΔP 7.5 psi	scfm	14	26.5	55.2
Flow rate at 87 psi ΔP 14.5 psi	scfm	19.5	39	75
		Cv 0.55	Cv 1.1	Cv 2.1
				Cv 4.6
TRA / TRR monostable at 87 psi	ms	15/35	19/45	21/72
TRA / TRR bistable at 87 psi	ms	20/20	21/21	18/18
Coil voltage values		12; 24 VDC - 24; 110; 220V AC 50/60Hz		
Power		2 W (DC) 3.5 VA (AC)		
Voltage tolerance	%	-10 to +15		
Insulation class		F 155		
Maximum coil nut torque	lbf ft	0.74		
Hand operator		Bistable		



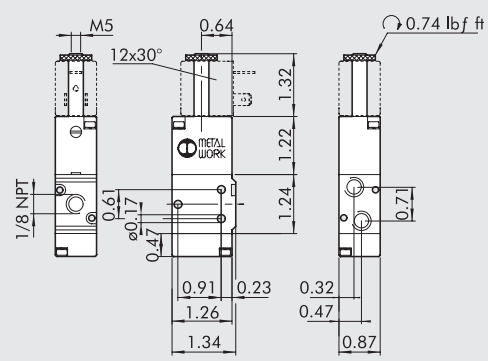
KEY TO CODES

SOV	2	3	SO	S	NC	U
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	THREAD
SOV solenoid/pneumatic	2 1/8" 3 1/4" C 3/8" 4 1/2"	3 3/2 5 5/2 6 5/3	SO solenoid SE solenoid assisted	S mechanical springs B bistable D differential P pneumatic A pneumatic/mechanical spring*	NC normally closed NO normally open CC closed centres OC open centres PC pressure centres OO no indication	U NPT

*on demand

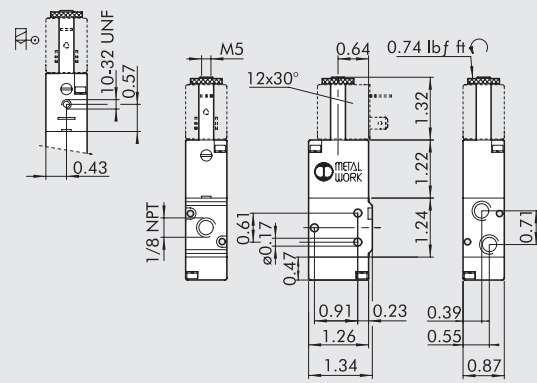
VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/8" NPT

MONOSTABLE 3/2 NO, 1/8" NPT



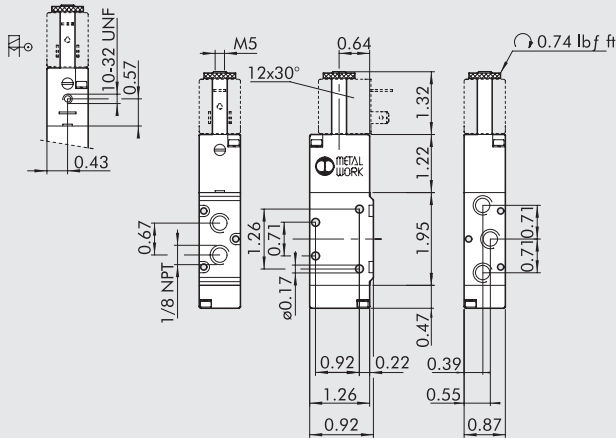
Symbol	Code	Abbrev.	Weight [lb]
	7010020400U	SOV 23 SOS NO U	0.221

MONOSTABLE 3/2 NC, 1/8" NPT



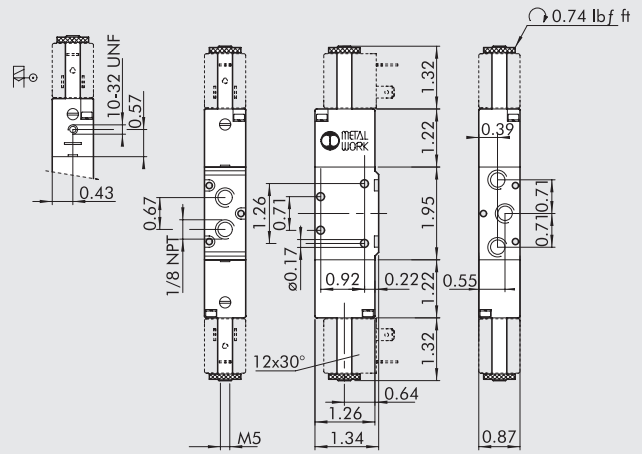
Symbol	Code	Abbrev.	Weight [lb]
	7010020200U	SOV 23 SOS NC U	0.221
	7010020500U	SOV 23 SES NC U	0.221

MONOSTABLE 5/2, 1/8" NPT



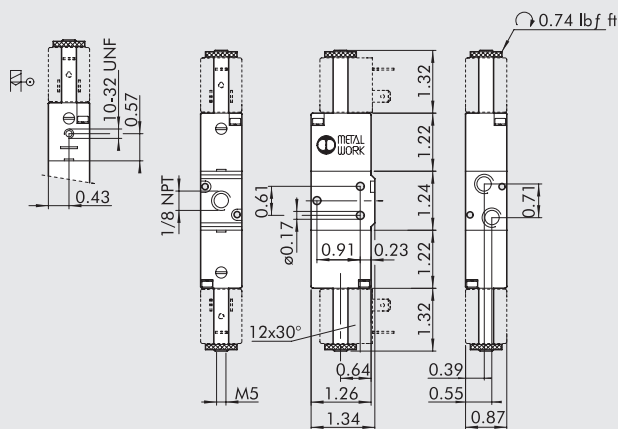
Symbol	Code	Abbrev.	Weight [lb]
	7010021100U	SOV 25 SOS OO U	0.282
	7010021500U	SOV 25 SES OO U	0.285

BISTABLE 5/2, 1/8" NPT



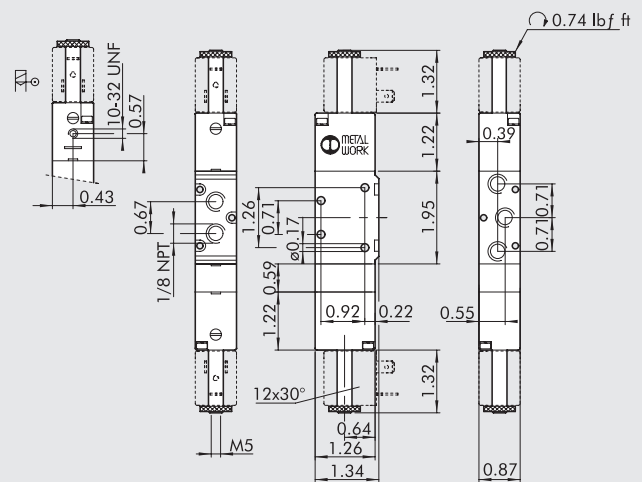
Symbol	Code	Abbrev.	Weight [lb]
	7010021200U	SOV 25 SOB OO U	0.353
	7010021300U	SOV 25 SOD OO U	0.366
	7010021600U	SOV 25 SEB OO U	0.353

BISTABLE 3/2, 1/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7010020100U	SOV 23 SOB OO U	0.298
	7010020300U	SOV 23 SEB OO U	0.300

MONOSTABLE 5/3, 1/8" NPT



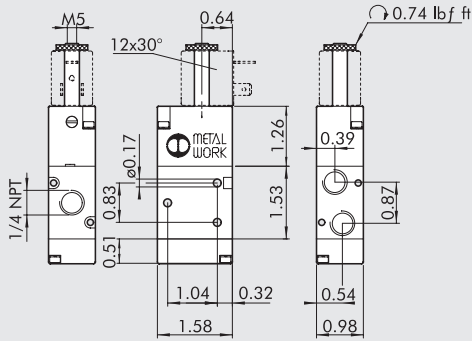
Symbol	Code	Abbrev.	Weight [lb]
	7010022100U	SOV 26 SOS CC U	0.419
	7010022200U	SOV 26 SOS OC U	0.419
	7010022300U	SOV 26 SOS PC U	0.419
	7010022400U	SOV 26 SES CC U	0.415
	7010022500U	SOV 26 SES OC U	0.415
	7010022600U	SOV 26 SES PC U	0.415

VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/ PNEUMATIC, 1/4" NPT

VALVES

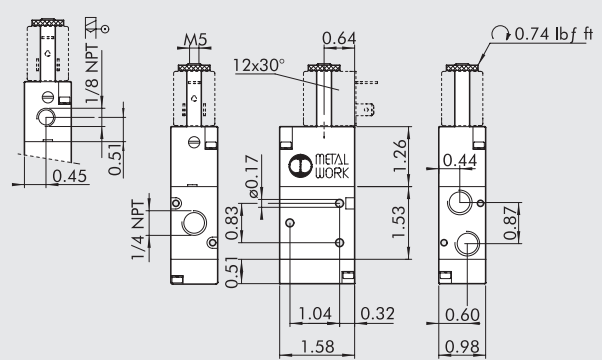
VALVES SERIES 70, SOLENOID/PNEUMATIC

MONOSTABLE 3/2 NO, 1/4" NPT



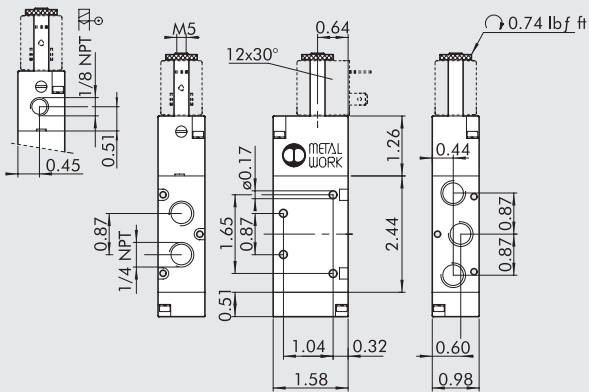
Symbol	Code	Abbrev.	Weight [lb]
	7020020400U	SOV 33 SOS NO U	0.335

MONOSTABLE 3/2 NC, 1/4" NPT



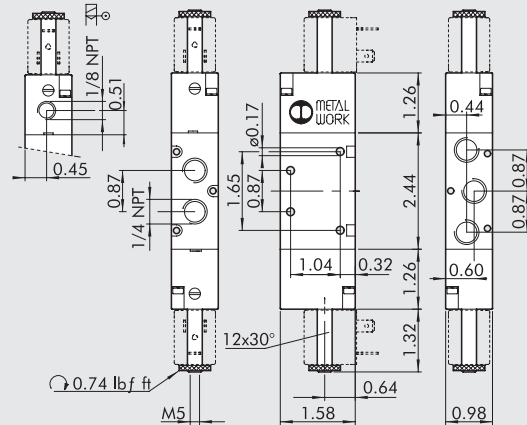
Symbol	Code	Abbrev.	Weight [lb]
	7020020200U	SOV 33 SOS NC U	0.335
	7020020500U	SOV 33 SES NC U	0.335

MONOSTABLE 5/2 1/4" NPT



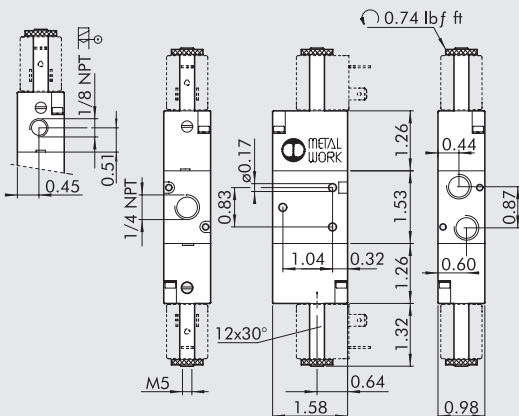
Symbol	Code	Abbrev.	Weight [lb]
	7020021100U	SOV 35 SOS OO U	0.441
	7020021500U	SOV 35 SES OO U	0.441

BISTABLE 5/2 1/4" NPT



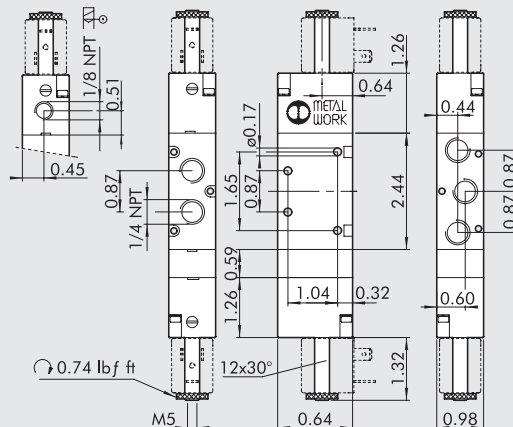
Symbol	Code	Abbrev.	Weight [lb]
	7020021200U	SOV 35 SOB OO U	0.520
	7020021300U	SOV 35 SOD OO U	0.517
	7020021600U	SOV 35 SEB OO U	0.534

BISTABLE 3/2, 1/4" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7020020100U	SOV 33 SOB OO U	0.419
	7020020300U	SOV 33 SEB OO U	0.419

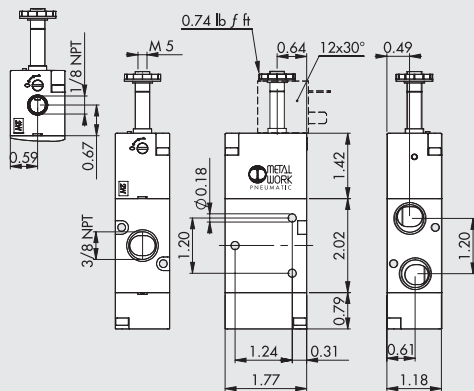
MONOSTABLE 5/3, 1/4" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7020022100U	SOV 36 SOS CC U	0.604
	7020022200U	SOV 36 SOS OC U	0.604
	7020022300U	SOV 36 SOS PC U	0.604
	7020022400U	SOV 36 SES CC U	0.611
	7020022500U	SOV 36 SES OC U	0.611
	7020022600U	SOV 36 SES PC U	0.611

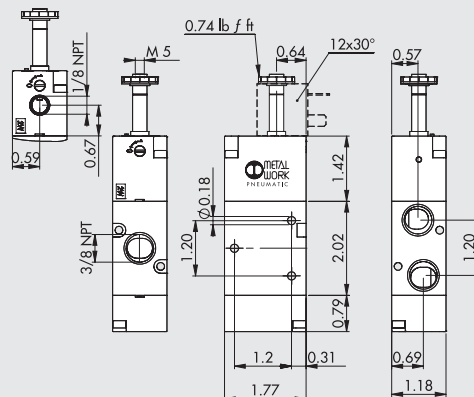
VALVES SERIES 70, SOLENOID/PNEUMATIC-PILOT, ASSISTED SOLENOID/PNEUMATIC, 3/8" NPT

MONOSTABLE 3/2 NO, 3/8" NPT



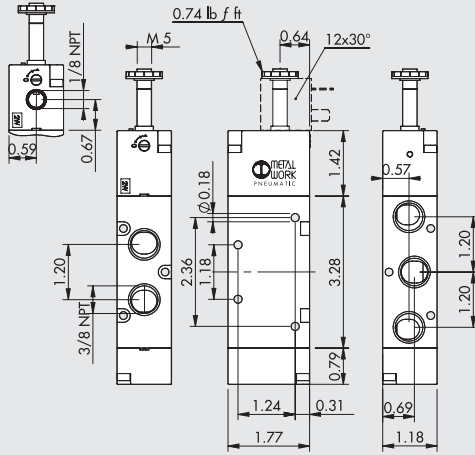
Symbol	Code	Abbrev.	Weight [lb]
	7040020400U	SOV C3 SOS NO U	0.564

MONOSTABLE 3/2 NC, 3/8" NPT



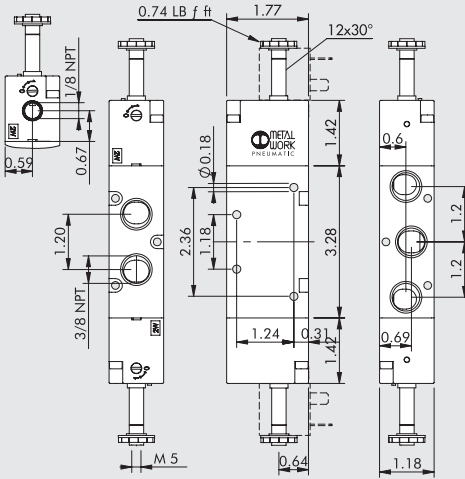
Symbol	Code	Abbrev.	Weight [lb]
	7040020200U	SOV C3 SOS NC U	0.564
	7040020500U	SOV C3 SES NC U	0.562

MONOSTABLE 5/2, 3/8" NPT



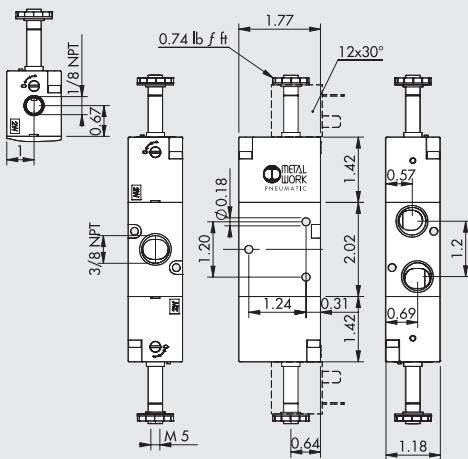
Symbol	Code	Abbrev.	Weight [lb]
	7040021100U	SOV C5 SOS OO U	0.796
	7040021500U	SOV C5 SES OO U	0.796

BISTABLE 5/2, 3/8" NPT



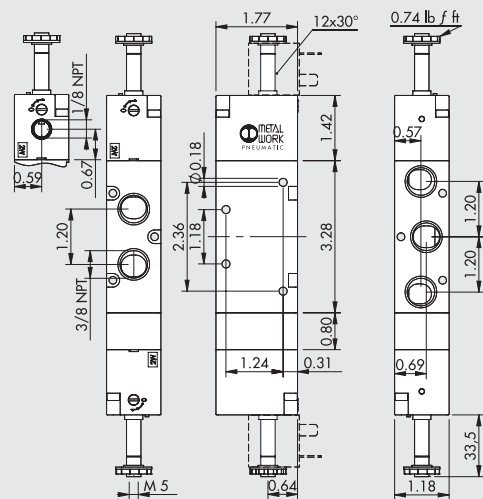
Symbol	Code	Abbrev.	Weight [lb]
	7040021200U	SOV C5 SOB OO U	0.882
	7040021300U	SOV C5 SOD OO U	0.937
	7040021600U	SOV C5 SEB OO U	0.882

BISTABLE 3/2, 3/8" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7040020100U	SOV C3 SOB OO U	0.676
	7040020300U	SOV C3 SEB OO U	0.676

MONOSTABLE 5/3, 3/8" NPT

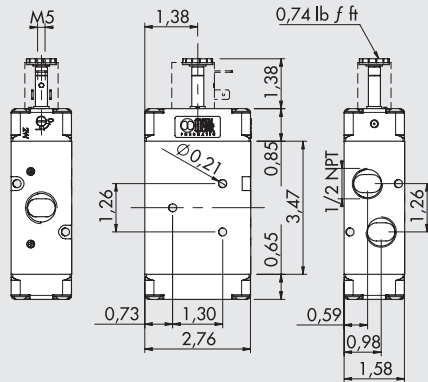


Symbol	Code	Abbrev.	Weight [lb]
	7040022100U	SOV C6 SOS CC U	1.049
	7040022200U	SOV C6 SOS OC U	1.045
	7040022300U	SOV C6 SOS PC U	1.045
	7040022400U	SOV C6 SES CC U	1.049
	7040022500U	SOV C6 SES OC U	1.045
	7040022600U	SOV C6 SES PC U	1.045

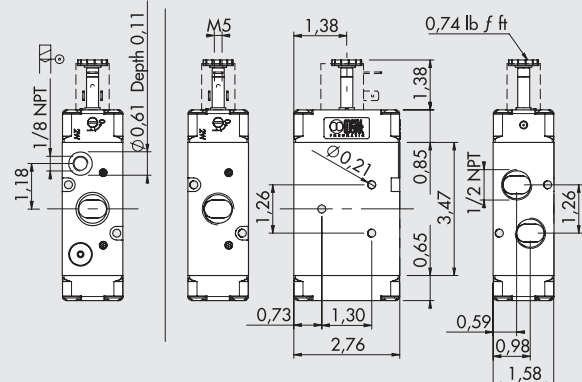
VALVES SERIES 70, SOLENOID/PNEUMATIC, PILOT-ASSISTED SOLENOID/PNEUMATIC, 1/2" NPT



MONOSTABLE 3/2 NO, 1/2" NPT



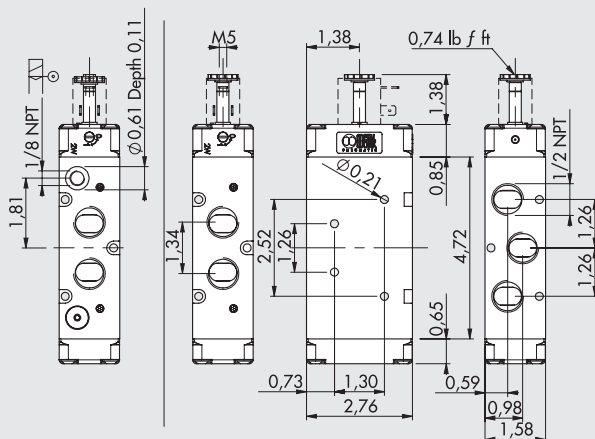
MONOSTABLE 3/2 NC, 1/2" NPT



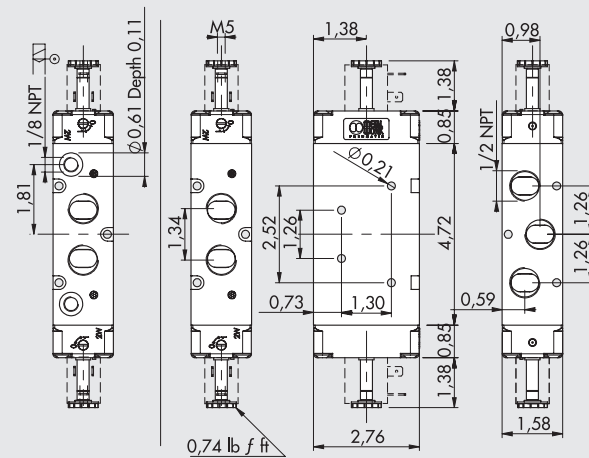
Symbol	Code	Abbrev.	Weight [lb]
	7030020400U	SOV 43 SOS NO U	1.455

Symbol	Code	Abbrev.	Weight [lb]
	7030020200U	SOV 43 SOS NC U	1.455
	7030020500U	SOV 43 SES NC U	1.442

MONOSTABLE 5/2, 1/2" NPT



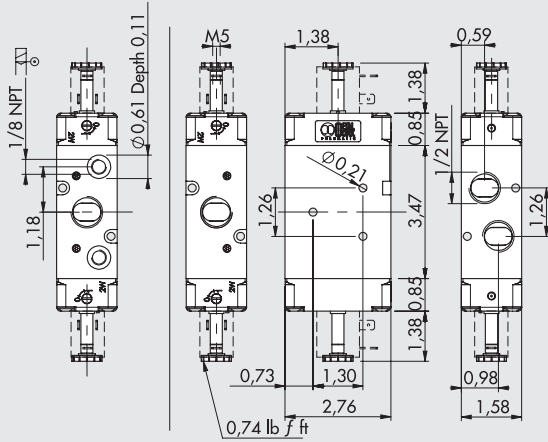
BISTABLE 5/2, 1/2" NPT



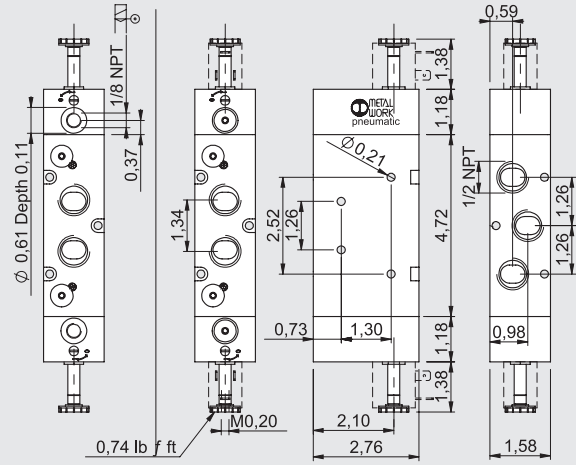
Symbol	Code	Abbrev.	Weight [lb]
	7030021100U	SOV 45 SOS OO U	1.826
	7030021500U	SOV 45 SES OO U	1.830

Symbol	Code	Abbrev.	Weight [lb]
	7030021200U	SOV 45 SOB OO U	1.896
	7030021300U	SOV 45 SOD OO U	1.914
	7030021600U	SOV 45 SEB OO U	1.883

BISTABLE 3/2, 1/2" NPT



MONOSTABLE 5/3, 1/2" NPT



Symbol	Code	Abbrev.	Weight [lb]
	7030020100U	SOV 43 SOB OO U	1.512
	7030020300U	SOV 43 SEB OO U	1.495

Symbol	Code	Abbrev.	Weight [lb]
	7030022100U	SOV 46 SOS CC U	2.789
	7030022200U	SOV 46 SOS OC U	2.789
	7030022300U	SOV 46 SOS PC U	2.789
	7030022400U	SOV 46 SES CC U	2.761
	7030022500U	SOV 46 SES OC U	2.761
	7030022600U	SOV 46 SES PC U	2.761

ACCESSORIES FOR SERIES 70 SOLENOID/PNEUMATIC VALVES

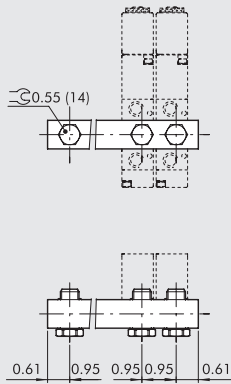
Refer to page 1-40 for coils and connectors



NOTES

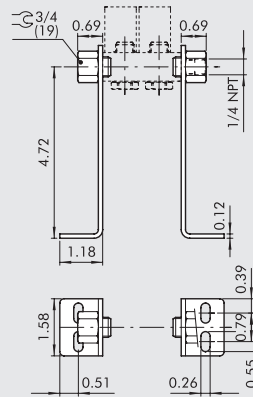
ACCESSORIES: 1/8" NPT MANIFOLDS FOR SERIES 70 PNV-SOV VALVES

MANIFOLD WITH 2 TO 7 POSITIONS + FITTINGS



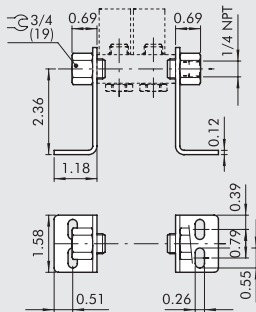
Code	Description	Weight [lb]
0221000200U	CSA-18-02 U	0.154
0221000300U	CSA-18-03 U	0.218
0221000400U	CSA-18-04 U	0.289
0221000500U	CSA-18-05 U	0.357
0221000600U	CSA-18-06 U	0.423
0221000700U	CSA-18-07 U	0.505

BRACKET SET H120



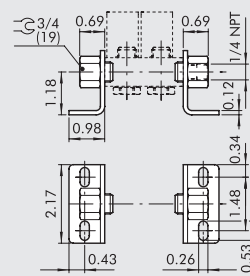
Code	Description	Weight [lb]
0221000190U	CSA-18-00 U	0.681

BRACKET SET H60



Code	Description	Weight [lb]
0221000191U	CSA-18-0C U	0.470

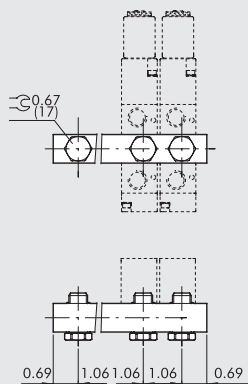
BRACKET SET H30



Code	Description	Weight [lb]
0221000192U	CSA-18-0E U	0.399

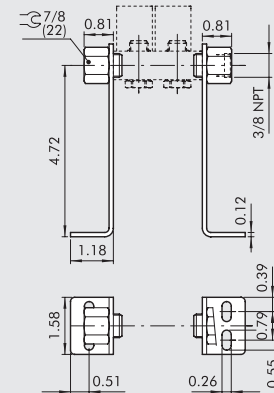
ACCESSORIES: 1/4" NPT MANIFOLDS FOR SERIES 70 PNV-SOV VALVES

MANIFOLD WITH 2 TO 7 POSITIONS + FITTINGS



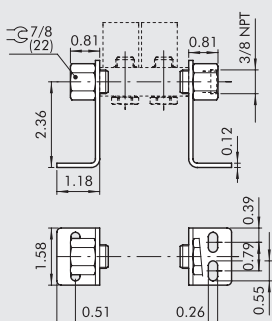
Code	Description	Weight [lb]
0222000200U	CSA-14-02 U	0.196
0222000300U	CSA-14-03 U	0.289
0222000400U	CSA-14-04 U	0.384
0222000500U	CSA-14-05 U	0.470
0222000600U	CSA-14-06 U	0.556
0222000700U	CSA-14-07 U	0.723

BRACKET SET H120



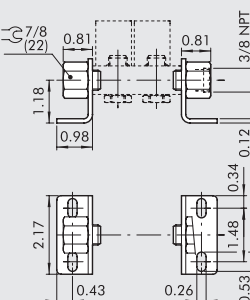
Code	Description	Weight [lb]
0222000190U	CSA-14-00 U	0.745

BRACKET SET H60



Code	Description	Weight [lb]
0222000191U	CSA-14-0C U	0.534

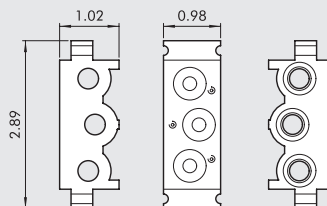
BRACKET SET H30



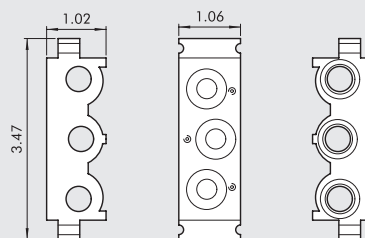
Code	Description	Weight [lb]
0222000192U	CSA-14-0E U	0.461

1 MODULAR BASE

1/8" NPT



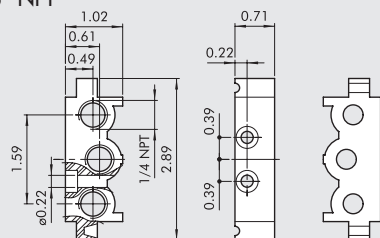
1/4" NPT



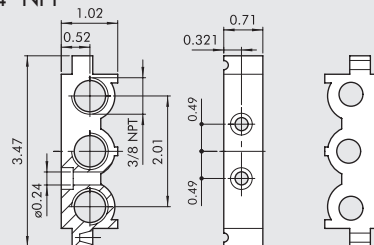
Code	Description	Weight [lb]
0226004150	Modular base MANIFOLD 1/8"	0.243
0226005150	Modular base MANIFOLD 1/4"	0.289

2 END PLATE WITHOUT OR

1/8" NPT



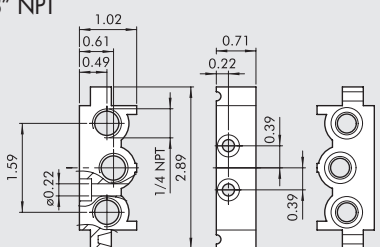
1/4" NPT



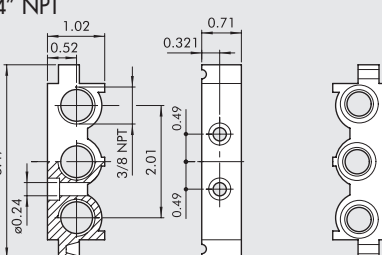
Code	Description	Weight [lb]
0226004201U	End plate without OR 1/8" U	0.115
0226005201U	End plate without OR 1/4" U	0.126

3 END PLATE WITH OR

1/8" NPT



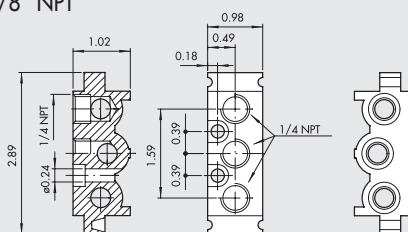
1/4" NPT



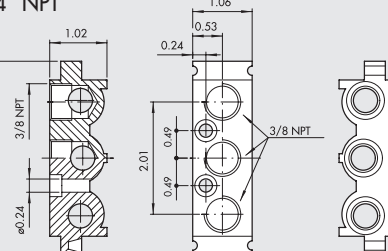
Code	Description	Weight [lb]
0226004200U	End plate with OR 1/8" U	0.163
0226005200U	End plate with OR 1/4" U	0.176

4 INTERMEDIATE PART FOR UPPER FEED

1/8" NPT



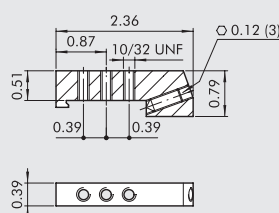
1/4" NPT



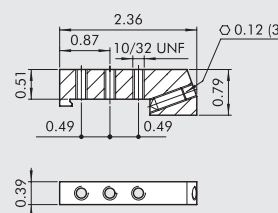
Code	Description	Weight [lb]
0226004300U	Intermediate part for upper feed 1/8"	0.205
0226005300U	Intermediate part for upper feed 1/4"	0.240

5 ADAPTER FOR OMEGA BAR BASES (DIN EN 50022)

1/8" NPT



1/4" NPT

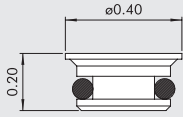


Code	Description	Weight [lb]
0226004600	Adapter 1/8"	0.101
0226005600	Adapter 1/4"	0.101

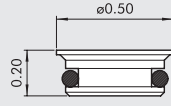
N.B.: Also for multiple bases

⑥ INTERMEDIATE DIAPHRAM

1/8" NPT



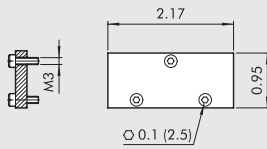
1/4" NPT



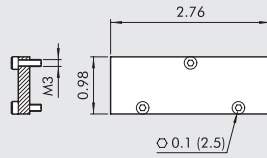
Code	Description	Weight [lb]
0226004000	Intermediate diaphragm 1/8"	0.004
0226005000	Intermediate diaphragm 1/4"	0.007

⑦ BLANKING PLATE FOR UNUSED POSITIONS

1/8" NPT



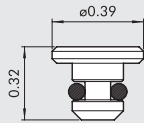
1/4" NPT



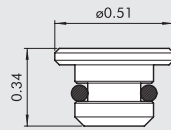
Code	Description	Weight [lb]
0226004500	Blanking plate pcs 1/8"	0.051
0226005500	Blanking plate pcs 1/4"	0.064

⑧ PLUG FOR 3/2

1/8" NPT

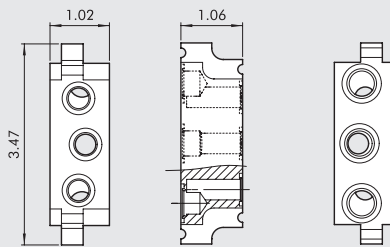


1/4" NPT



Code	Description	Weight [lb]
0226004001	Blanking plug 3/2 1/8"	0.004
0226005001	Blanking plug 3/2 1/4"	0.009

⑨ DIMENSIONAL ADAPTER 1/8" - 1/4"

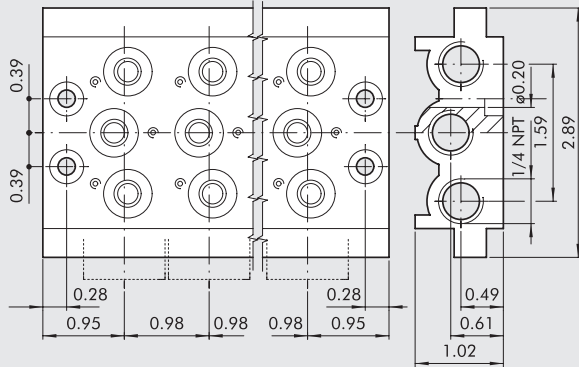


Code	Description	Weight [lb]
0226006600	Adapter 1/8", 1/4"	0.390

NOTES

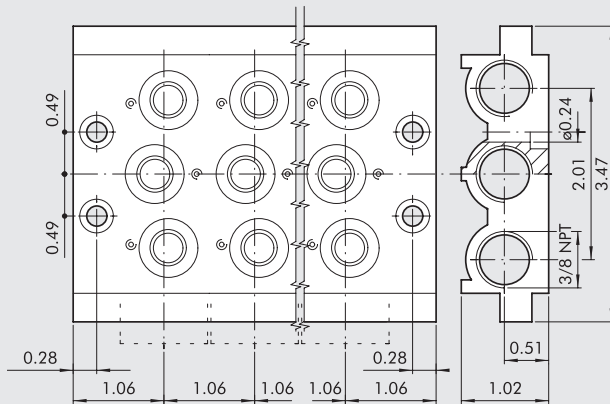
ACCESSORIES: MULTIPLE BASES FOR SERIES 70 PNV-SOV VALVES

MULTIPLE BASES 1/8" NPT



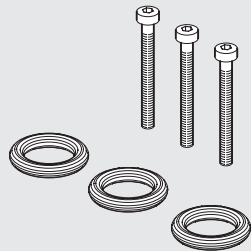
Code	Description	Abbrev.	Weight [lb]
0223000201U	2-position base U	CVM-18-02 U	0.520
0223000301U	3-position base U	CVM-18-03 U	0.708
0223000401U	4-position base U	CVM-18-04 U	0.897
0223000501U	5-position base U	CVM-18-05 U	1.089
0223000601U	6-position base U	CVM-18-06 U	1.294
0223000701U	7-position base U	CVM-18-07 U	1.568
0223000801U	8-position base U	CVM-18-08 U	1.676
0223000901U	9-position base U	CVM-18-09 U	1.857
0223001001U	10-position base U	CVM-18-10 U	2.035

MULTIPLE BASES 1/4" NPT



Code	Description	Abbrev.	Weight [lb]
0224000201U	2-position base U	CVM-14-02 U	0.653
0224000301U	3-position base U	CVM-14-03 U	0.895
0224000401U	4-position base U	CVM-14-04 U	1.136
0224000501U	5-position base U	CVM-14-05 U	1.376
0224000601U	6-position base U	CVM-14-06 U	1.616
0224000701U	7-position base U	CVM-14-07 U	1.863
0224000801U	8-position base U	CVM-14-08 U	2.108
0224000901U	9-position base U	CVM-14-09 U	2.326
0224001001U	10-position base U	CVM-14-10 U	2.395

GASKET KIT



Code	Description	Weight [lb]
0226004701	Gasket kit for 1/8" base	0.011
0226005701	Gasket kit for 1/4" base	0.011

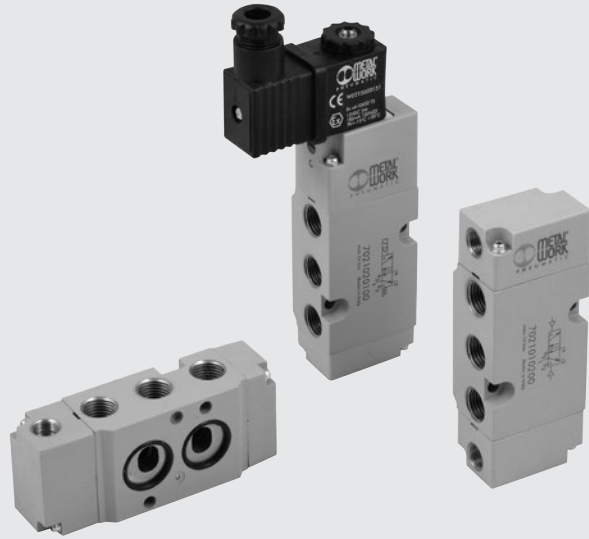
VALVES NAMUR

VALVES

VALVES NAMUR

TECHNICAL DATA

Operating pressure:			
• monostable, electric	psi	36.3 to 145	
• bistable, electric	psi	14.5 to 145	
• pilot-assisted, electric	psi	Vacuum to 145	
Minimum actuation pressure:			
• monostable, pneumatic	psi	36.3	
• bistable, pneumatic	psi	14.5	
Operating temperature range			
	°F	14 to +140	
Nominal diameter			
	in	0.3	
Conductance C			
	scfm/psi	0.65	
Critical ratio b			
	psi/psi	6.27	
Flow rate at 87 psi ΔP 7.25 psi			
	scfm	26.5	
Flow rate at 87 psi ΔP 14.5 psi			
	scfm	39	
Response time at 87 psi:			
• TRA/TRR monostable, pneumatic at 87 psi	ms	7 / 15	
• TRA/TRR bistable, pneumatic at 87 psi	ms	7 / 7	
• TRA/TRR monostable electric at 87 psi	ms	19 / 45	
• TRA/TRR bistable electric at 87 psi	ms	21 / 21	
Compatibility with oils			
		Please refer to page 5-2 of the technical documentation	

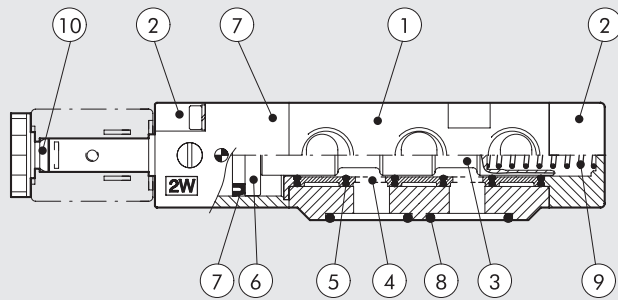


KEY TO CODES

P N V		A	5	P N		S	O O
FAMILY		DIMENSIONS	FUNCTION		OPERATORS 14	RESETTING (12)	FURTHER DETAILS
PNV	pneumatic	A NAMUR	5	5/2	PN	S	OO no indication
SOV	electro-pneumatic		4	4/2	SO	B	NC normally closed

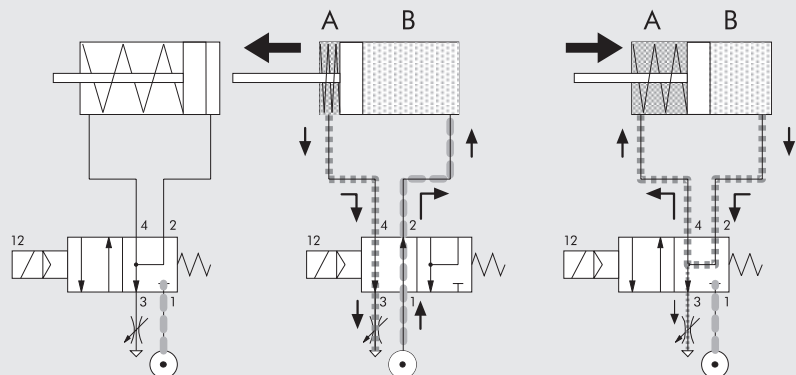
COMPONENTS

- ① VALVE BODY: Aluminium
- ② CONTROL/BASE: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR nitrile rubber
- ⑧ INTERFACE GASKETS: NBR
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core



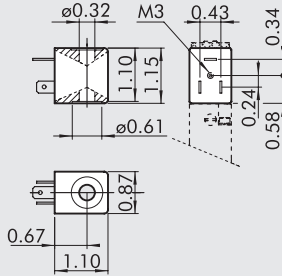
FUNCTIONING DIAGRAM 4/2 NAMUR VALVE

During the piston retraction stage, the air for chamber A is taken from the air leaving chamber B. This prevents the dirty air from getting in from the outside environment.



COILS AND CONNECTORS FOR SERIES 70 AND NAMUR VALVES

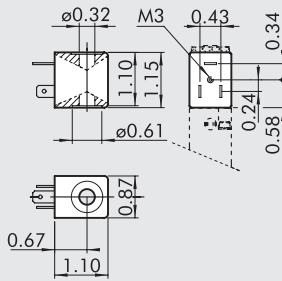
COILS SIDE 22 mm



- Voltage tolerance: -10% + 15%
- Insulation class: F155
- Degree of protection: IP65 DIN 40050 with connector
- Avoid prolonged exposure to atmospheric agents
- Coil temperature 100% ED: 55°C at 20°C ambient temperature
- According to Atex 2014/34/EU rule, group 2, category 3 GD
- Electrical connection DIN 43650 B-IND

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000151	Coil 22 Ø 8 BA 2W-12VDC	12Vcc	2W	2W
W0215000101	Coil 22 Ø 8 BA 2W-24VDC	24Vcc	2W	2W
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC	24V 50/60Hz	5.3VA	3.5VA
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC	110V 50/60Hz	5.3VA	3.5VA
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC	220V 50/60Hz	5.3VA	3.5VA

"UL" AND "CSA" COILS SIDE 22 mm

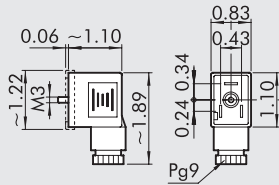


- Voltage tolerance: -10% + 15%
- Insulation class: F155
- Degree of protection: IP65 DIN 40050 with connector
- Avoid prolonged exposure to atmospheric agents
- Coil temperature 100% ED: from 131°F at 68°F – Ambient temperature
- Electrical connection DIN 43650 B-IND

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR	12Vcc	2W	2W
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR	24Vcc	2W	2W
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR	24V 50/60Hz	5.3VA	3.5VA
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR	110V 50/60Hz	5.3VA	3.5VA
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR	220V 50/60Hz	5.3VA	3.5VA

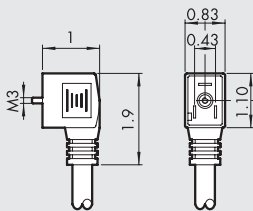


CONNECTOR FOR COILS SIDE 22 mm DIN 43650 B-IND

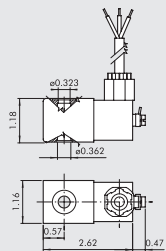


Code	Type	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 2 GD	Black	PG9

PRE WIRED DIN CONNECTORS 6 FEET CABLE



Code	Description
888776	DIN connector 110VAC led
888777	DIN connector standard black
888778	DIN connector 24VDC

KIT COIL EEXM


Code	Description
0227606913	Kit for coil 30 24 VDC EEXMT5 cable 118 in
0227606915	Kit for coil 30 24 VDC EEXMT5 cable 197 in
0227608013	Kit for coil 30 24 VAC EEXMT5 cable 118 in
0227608015	Kit for coil 30 24 VAC EEXMT5 cable 197 in
0227608023	Kit for coil 30 110 VAC EEXMT5 cable 118 in
0227608025	Kit for coil 30 110 VAC EEXMT5 cable 197 in
0227608033	Kit for coil 30 230 VAC EEXMT5 cable 118 in
0227608035	Kit for coil 30 230 VAC EEXMT5 cable 197 in

According to Atex 2014/34/EU rule,

- ⊕ II 2G Ex mb IIC T4/T5 Gb
- ⊕ II 2D Ex tb IIIC T130/T95 °C IP66 Db

N.B.: Supplied complete with adapter for Ø8 mm sleeve.

N.B.: It's not possible to mount valves having these coils on bases or on manifolds, because the width of 29.5 mm is higher than the distance between the valves. Special bases can be manufactured on request.

KIT COILS SIDE 22 IP65


Code	Description
0222100100	Kit for coils 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents.
Applicable to valves with a technopolymer control.

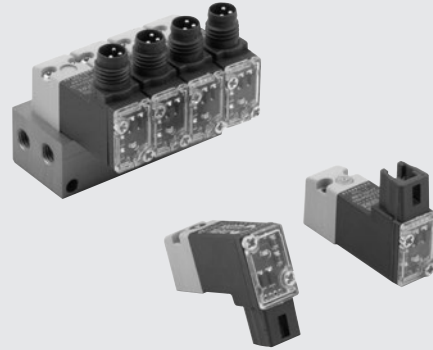
NOTES

10-mm SOLENOID VALVES SERIES PLT-10

PLT-10 solenoid valves are the latest development in modern pneumatic design, where the main trends focus on miniaturisation, enhanced performance, reduced power and reliability.

Numerous versions are available, all with an ISO 15218 pneumatic interface. The power required to operate the PLT-10 has been greatly reduced, ranging from 0.3 to 0.8 Watts.

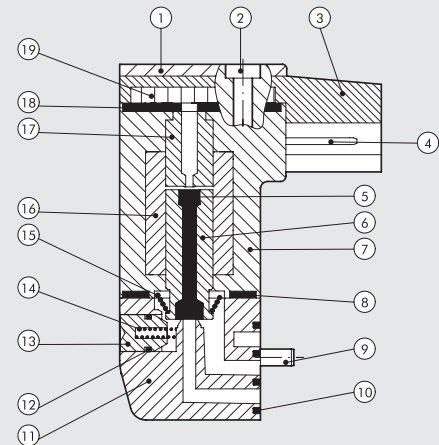
It is available with a LED indicating when it is active. Monostable manual control is also possible. None of the versions will get damaged if the polarity is accidentally inverted.



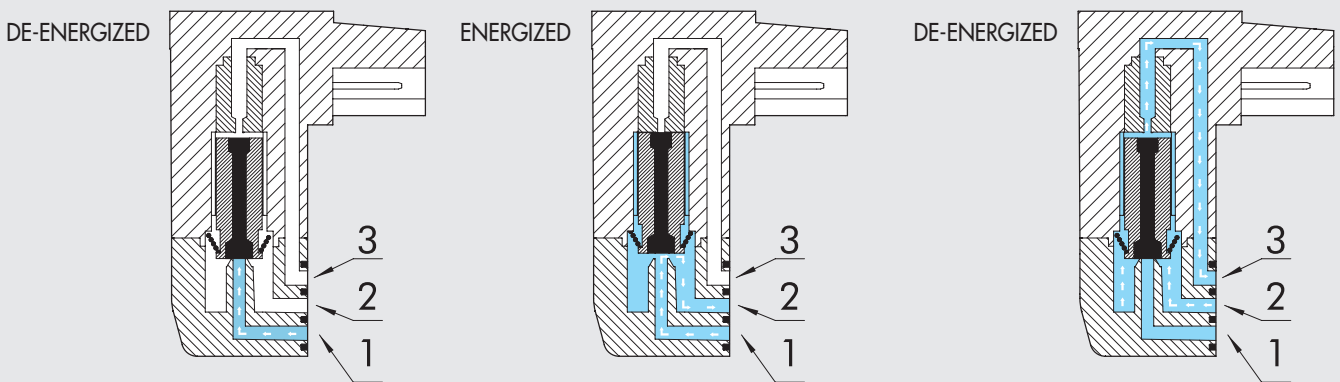
TECHNICAL DATA		
Type		3/2 NC
Operating temperature range (Te)	°C	5 to 50
Fluid temperature (Tg)	°C	5 to 50
Fluid		Filtered, lubricated or unlubricated air
Operating life		Over 50 million cycles
Weight	in	0.26
Voltage tolerance	ΔV	± 10 %
Max operating frequency	f	30 Hz
Switching factor	ED	100 %
Insulation class		F155
Index of protection		IP51
Power connection		IP51 for PLUG-IN version IP65 for M8 version

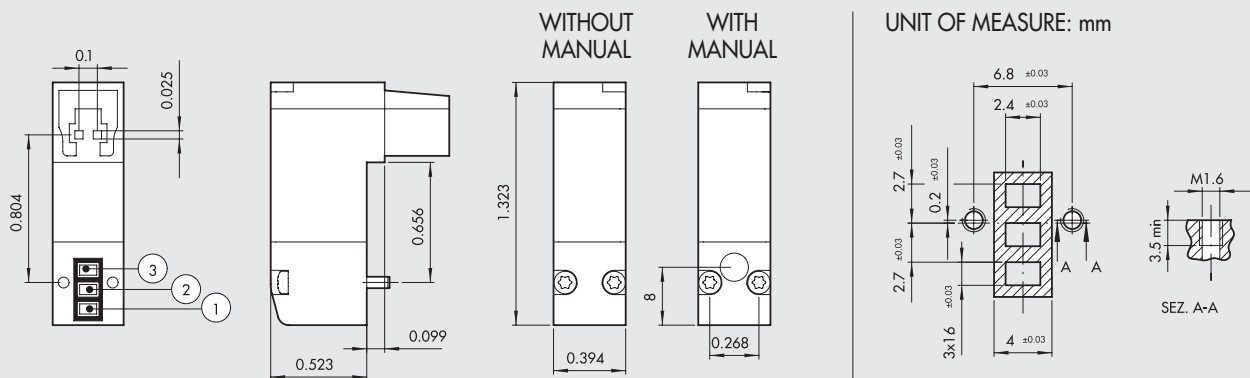
COMPONENTS

- ① TRANSPARENT COVER: PA612-transparent
- ② ASSEMBLY SCREWS: zinc-plated steel
- ③ COVER: PA66
- ④ PIN
- ⑤ MOBILE CORE OVER-STAMPING: FKM/FPM
- ⑥ MOBILE CORE: AISI 403F
- ⑦ COIL OVER-STAMPING: PA66
- ⑧ BODY-COIL GASKET: NBR70
- ⑨ ASSEMBLY SCREWS: zinc-plated steel
- ⑩ BODY GASKET: NBR
- ⑪ BODY: PA66
- ⑫ MANUAL GASKET: NBR (only for version with manual operated)
- ⑬ MANUAL CONTROL: OT58 nickel-plated brass (only for version with manual operated)
- ⑭ MANUAL SPRING: AISI 303 (only for version with manual operated)
- ⑮ SPRING: AISI 302
- ⑯ WINDING: PPS - Copper wire
- ⑰ FIXED CORE: AISI 430F
- ⑱ COIL-COVER GASKET: NBR
- ⑲ ELECTRONIC BOARD

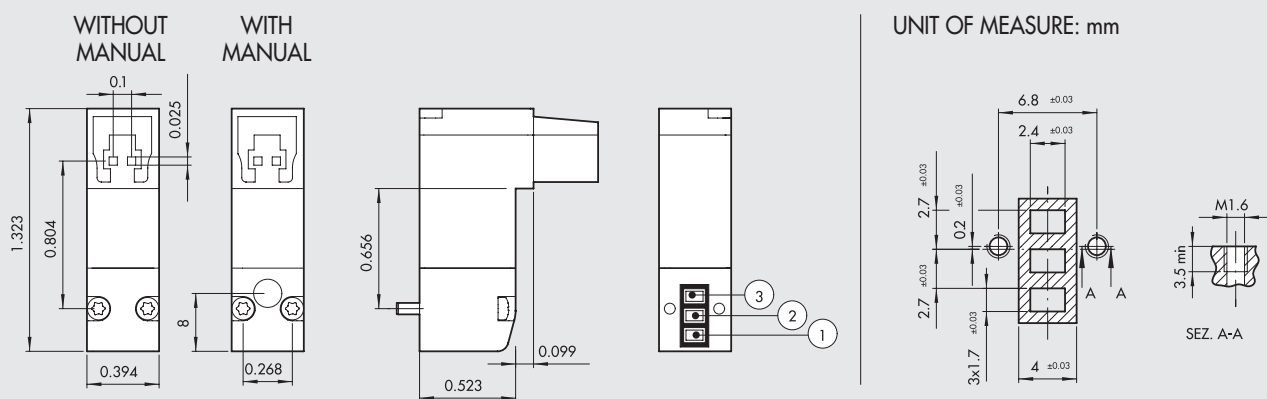


OPERATING CHART



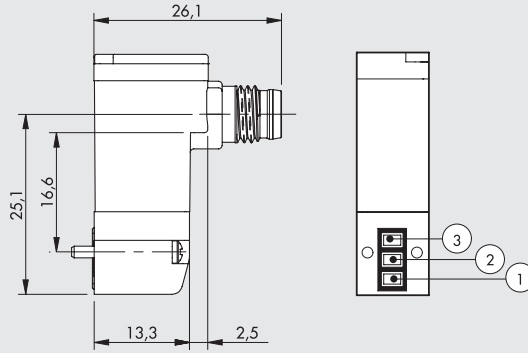
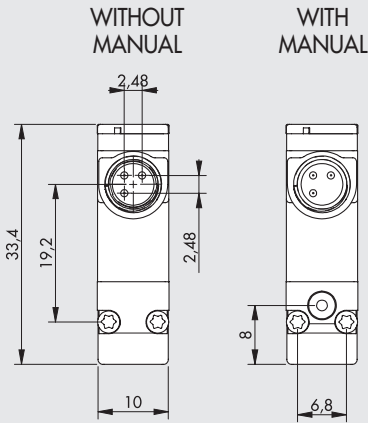
PLT-10 WITH BASE AND CONNECTION ON THE SAME SIDE


Version (3/2 NC)	Code	Manual	Voltage [Volt]	Power [Watt]	Through Ø [in]	Operating press. [psi]	Flow rate at 87 psi ΔP=14.5 psi [scfm]	Tmax coil a 24VDC Te 20°C at ED100% [°F]	Weight [lb]
Without LED	722113330000	without	12 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722113330100	with	12 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722113340000	without	24 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722113340100	with	24 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
With LED	722113531000	without	12 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722113531100	with	12 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722113541000	without	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722113541100	with	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
SPEED-UP e LED	722116841000	without	24 VDC	3/0.3	0.047	29 to 101.5	0.566	123.8	0.026
	722116841100	with	24 VDC	3/0.3	0.047	29 to 101.5	0.566	123.8	0.026
	722116941000	without	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026
	722116941100	with	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026

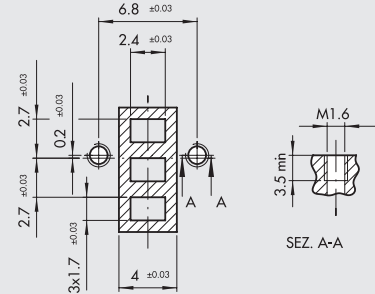
PLT-10 WITH BASE AND CONNECTION ON OPPOSITE SIDES


Version (3/2 NC)	Code	Manuale	Voltage [Volt]	Power [Watt]	Through Ø [in]	Operating press. [psi]	Flow rate at 87 psi ΔP=14.5 psi [scfm]	Tmax coil a 24VDC Te 20°C at ED100% [°F]	Weight [lb]
Without LED	722213330000	without	12 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722213330100	with	12 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722213340000	without	24 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722213340100	with	24 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
With LED	722213531000	without	12 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722213531100	with	12 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722213541000	without	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722213541100	with	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
SPEED-UP e LED	722216841000	without	24 VDC	3/0.3	0.047	29 to 101.5	0.566	123.8	0.026
	722216841100	with	24 VDC	3/0.3	0.047	29 to 101.5	0.566	123.8	0.026
	722216941000	without	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026
	722216941100	with	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026

PLT-10 WITH BASE AND M8 CONNECTION ON OPPOSITE SIDES

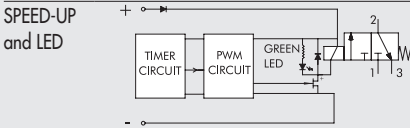
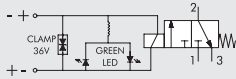


UNIT OF MEASURE: mm



- 1 Not used
- 3 0 V (Operation also with reverse polarity)
- 4 +24V

Version 3/2 NC	Code	Manual	Voltage [Volt]	Power [Watt]	Through Ø [in]	Operating press. [psi]	Flow rate at 87 psi ΔP=14.5 psi [scfm]	Tmax coil α 24VDC Te 20°C at ED100% [°F]	Weight [lb]
With LED	7222M3541000	without	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	7222M3541100	with	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
SPEED-UP and LED	7222M6941000	without	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026
	7222M6941100	with	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026

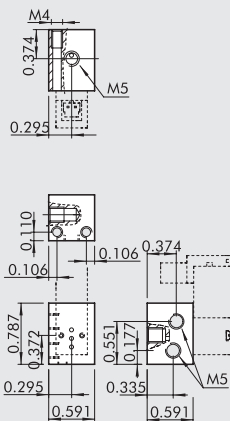


KEY TO CODES

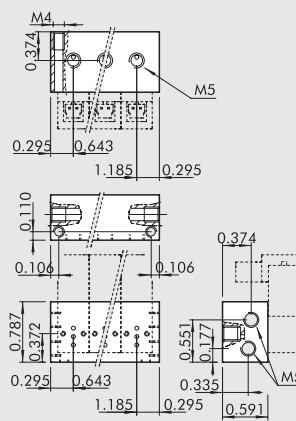
7 2 2	1	1	3	3	4	0	1	00
FAMILY	POSITIONING	POWER CONNECTION	Ø THROUGH	POWER	VOLTAGE	LED	MANUAL CONTROL	VERSION
Solenoid valves series "PLT-10"	1 Base and connection on same side	1 Plug-in	3 0.6 mm	3 0.7 W	3 12 VDC	0 -	0 -	00 Standard
	2 Base and connection opposite sides		6 1.2 mm	5 0.8 W				
	2 Base and connection opposite sides	M M8x1		8 3/0.3 W	4 24 VDC	1 LED	1 Manual monostable	
				9 4.2/0.7 W				
				5 0.8 W	4 24 VDC	1 LED		
				9 4.2/0.7 W				

DIMENSIONS OF BASES FOR PLT-10

1 POSN.



+ POSN.

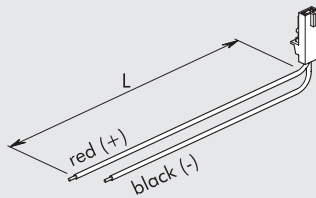


Code	Description
W0400100101	Base 1 position for PLT-10
W0400100102	Base 2 positions for PLT-10
W0400100103	Base 3 positions for PLT-10
W0400100104	Base 4 positions for PLT-10
W0400100105	Base 5 positions for PLT-10
W0400100106	Base 6 positions for PLT-10
W0400100107	Base 7 positions for PLT-10
W0400100108	Base 8 positions for PLT-10
W0400100109	Base 9 positions for PLT-10
W0400100110	Base 10 positions for PLT-10

N.B.: For multiple manifold bases with PLT-10 M8 connection, only use straight connectors code 02400A

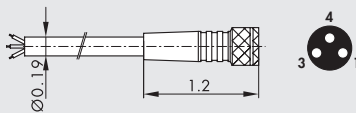
ACCESSORIES

PLUG-IN CONNECTOR



Code	Description
W0970512000	Plug-in connector Mach 11 L = 11.8 inch
W0970512007	Plug-in connector Mach 11 L = 39 inch
W0970512002	Plug-in connector Mach 11 L = 79 inch

M8 STRAIGHT CONNECTOR WITH CABLE

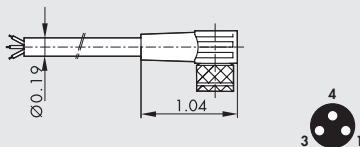


Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400A0100	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 39 inch
02400A0250	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 98 inch
02400A0500	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 197 inch
02400A1000	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 394 inch

Very flexible cable, class 6 according to IEC 60228

90° M8 CONNECTOR WITH CABLE



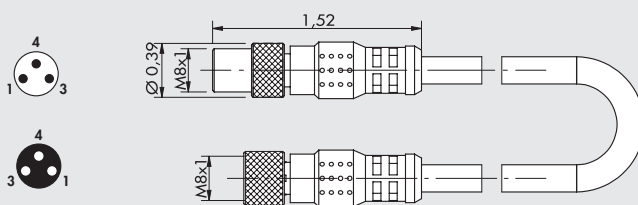
Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400B0100	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 39 inch
02400B0250	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 98 inch
02400B0500	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 197 inch
02400B1000	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 394 inch

Very flexible cable, class 6 according to IEC 60228

N.B.: cannot be used on multiple manifold bases W0400100__

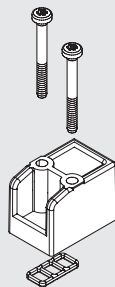
M8 M - M8 F CONNECTOR



Code	Description
0240009009	M8-M8 3-pin straight connector with cable L = 118 inch

Note: Can be used for direct connection to the modules with digital OUTPUT of the EB 80 valves

CAP FOR UNUSED POSITION

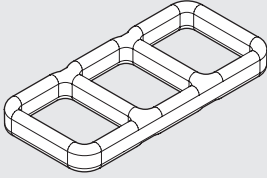


Code	Description	Weight [g]
W0400100200	Cap 10 mm	6

NOTES

SPARE PARTS

INTERFACE GASKET



Code	Description
0226009701	PLT-10 gasket

N.B.: 50 for pack

STANDARD SECURING SCREW (FOR ALUMINIUM)

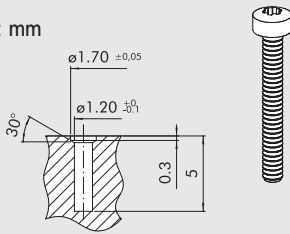


Code	Description
0226009702	PLT-10 screw for aluminium

N.B.: 100 for pack

SECURING SCREWS FOR TECHNOPOLYMER

UNIT OF MEASURE: mm



Code	Description
0226009703	Screw PLT-10 for technopolymer

N.B.: 100 for pack

When mounting on technopolymer bodies, use these screws instead of the ones supplied with the PLT-10.

ATTENTION: approximative dimensions for not added glass plastic materials It's always advisable to effect assembling tests.

NOTES

BASES FOR PLT-10 MULTIPLE CONNECTION

Series PLT-10 solenoid valves can be mounted on bases complete with electrical and pneumatic connections, from 4 to 24 positions. The electric contacts of each valve are linked to a single multiple connector via a printed circuit board.

The connector has 9 pins or 25 pins, depending on the model and the number of valves that can be mounted. **Versions with 25-pin connectors can interface with standard field buses by means of Profibus-DP modules for Multimach.**

The compressed-air supply is common to all the valves and can be provided on either side of the base by means of a 1/8" fitting. Connection to the utilities is via automatic integrated cartridges for Ø 4 pipe (Ø 5/32).

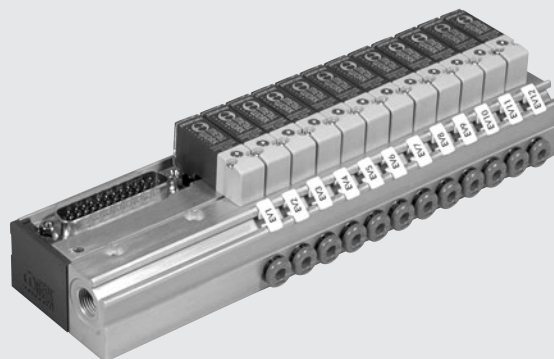
The solenoid valve outlet is free, in a slot in the base.

The bases can be secured from above using M3 screws, or on a DIN bar using a bracket (see accessories).

The bases can mount various types of PLT-10 solenoid valves:

3/2 NC, 3/2 NO, with or without a manual actuator.

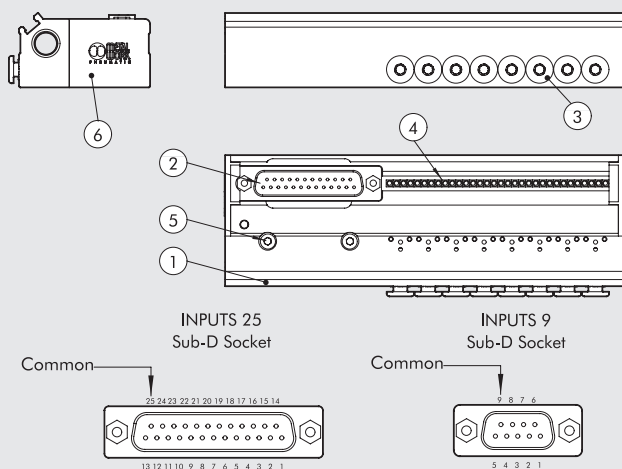
With this modular system, you can select the desired sequence of valves (NC, NO, blind) and change it at any time.



TECHNICAL DATA		
Supply voltage		12 VDC or 24 VDC
Max input	W	0.7 per position for PLT-10 STD without LED 0.8 per position for PLT-10 STD with LED 3/0.3 per position for PLT-10 NC with Speed-up 3/0.7 per position for PLT-10 NO with Speed-up 4.2/0.7 per position for PLT-10 NC with Speed-up high flow Led mounted on the PLT-10 (on versions of solenoid valve where envisaged)
Valve actuation indicator		5 to 50
Operating temperature range	°C	IP 40
Protection degree (with valves and connectors mounted)		24
Maximum number of mountable PLT-10s		9, of which 1 common, for versions with 4 and 8 positions 25, of which 1 common, for versions with 4, 8, 12, 16, 20, 24 positions
Number of contacts		

COMPONENTS CONNECTION DIAGRAM

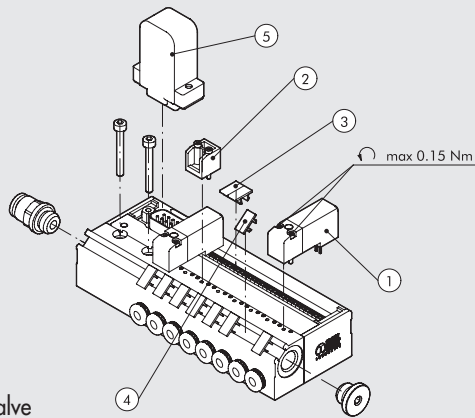
- ① Anodized aluminium base
- ② Multi-pin electrical connector
- ③ Automatic integrated cartridges for Ø 4 pipe (Ø 5/32)
- ④ Electrical connectors for PLT-10 solenoid valves mounted on printed circuit board
- ⑤ Securing screw
- ⑥ Technopolymer cover



25 PIN		9 PIN	
Position of electrical contact	Nr° PLT	Position of electrical contact	Nr° PLT
1	PLT1	1	PLT1
2	PLT2	2	PLT2
3	PLT3	3	PLT3
4	PLT4	4	PLT4
5	PLT5	5	PLT5
6	PLT6	6	PLT6
7	PLT7	7	PLT7
8	PLT8	8	PLT8
9	PLT9	9	COMMON (-)
10	PLT10		
11	PLT11		
12	PLT12		
13	PLT13		
14	PLT14		
15	PLT15		
16	PLT16		
17	PLT17		
18	PLT18		
19	PLT19		
20	PLT20		
21	PLT21		
22	PLT22		
23	PLT23		
24	PLT24		
25	COMMON (-)		

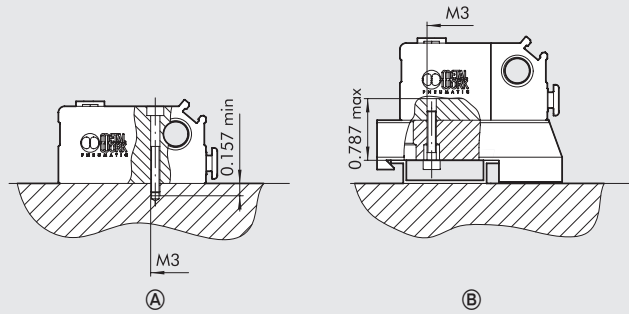
Pilot numbering from left to right, starting from the position closest to the connection.

ASSEMBLY OF SOLENOID VALVES AND ACCESSORIES



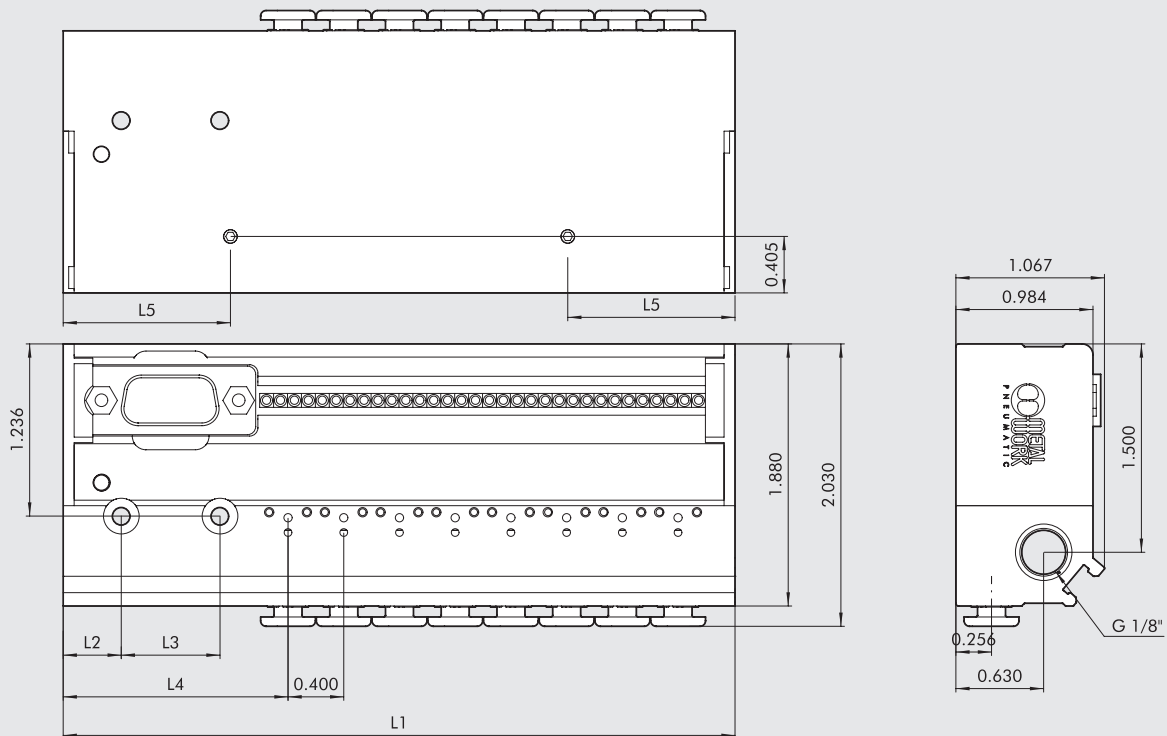
- ① Solenoid valve
- ② Pneumatic circuit cap for blind position
- ③ Electric circuit cap for blind position (use two identification labels)
- ④ Identification label
- ⑤ Electrical connector

HOW TO SECURE THE BASE



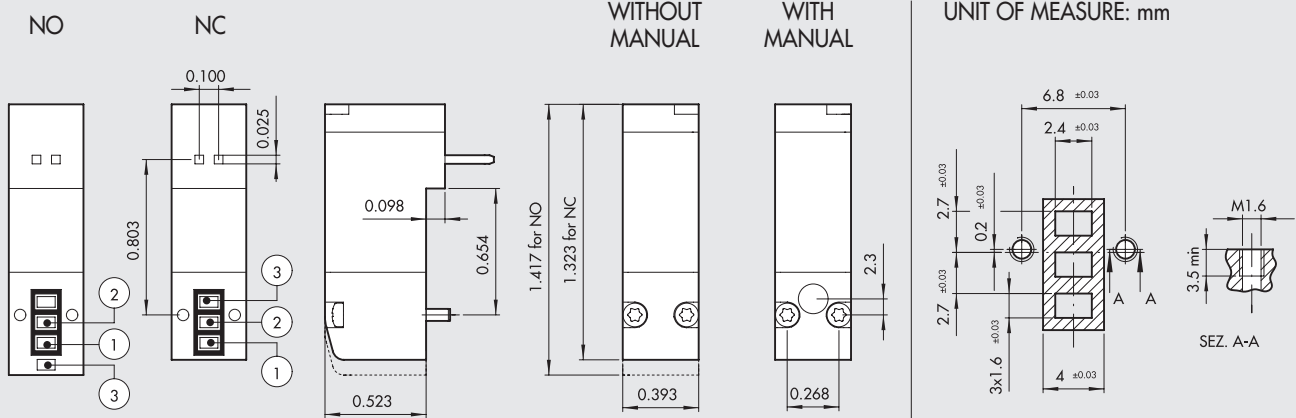
- Ⓐ From above using M3 screws
- Ⓑ On a DIN bar, using the bracket and screws provided
The bases come with the rear holes plugged by provided dowels.

CODES AND DIMENSIONS FOR BASES 9 AND 25 PINS



Code	Description	N° of PINS	N° of positions	L1	L2	L3	L4	L5	Weight [lb]
0210040004	4-posn. base PLT 10 9-PIN mult conn.	9	4	3.224	0.417	0.708	1.614	0.771	0.352
0210040008	8-posn. base PLT 10 9-PIN mult conn.	9	8	4.822	0.417	0.708	1.614	0.771	0.518
0210240004	4-posn. base PLT 10 25-PIN mult conn.	25	4	4.126	0.610	1.181	2.516	1.2	0.463
0210240008	8-posn. base PLT 10 25-PIN mult conn.	25	8	5.724	0.610	1.181	2.516	1.2	0.617
0210240012	12-posn. base PLT 10 25-PIN mult conn.	25	12	7.323	0.610	1.181	2.516	1.2	0.782
0210240016	16-posn. base PLT 10 25-PIN mult conn.	25	16	8.921	0.610	1.181	2.516	1.2	0.948
0210240020	20-posn. base PLT 10 25-PIN mult conn.	25	20	10.517	0.610	1.181	2.516	1.2	1.102
0210240024	24-posn. base PLT 10 25-PIN mult conn.	25	24	12.118	0.610	1.181	2.516	1.2	1.267

PLT-10 NC-NO FOR MULTIPLE ELECTRIC CONNECTION



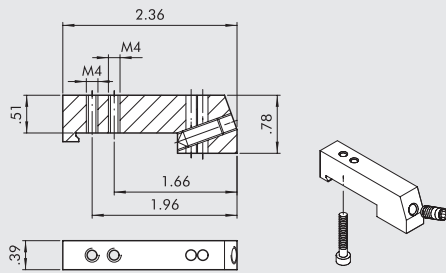
Version (3/2 NC)	Code	Manual	Voltage [Volt]	Power [Watt]	Through Ø [in]	Operating press. [psi]	Flow rate at 87 psi ΔP=14.5 psi [scfm]	Tmax coil a 24VDC Te 20°C at ED100% [°F]	Weight [lb]
Without LED	722123330000	without	12 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722123330100	with	12 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722123340000	without	24 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
	722123340100	with	24 VDC	0.7	0.024	43.5 to 101.5	0.318	199.4	0.026
With LED	722123531000	without	12 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722123531100	with	12 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722123541000	without	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
	722123541100	with	24 VDC	0.8	0.024	43.5 to 101.5	0.318	199.4	0.026
SPEED-UP and LED	722126841000	without	24 VDC	3/0.3	0.047	29 to 101.5	0.566	123.8	0.026
	722126841100	with	24 VDC	3/0.3	0.047	29 to 101.5	0.566	123.8	0.026
	722126841000	without	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026
	722126841100	with	24 VDC	4.2/0.7	0.047	29 to 101.5	1.061	123.8	0.026
Version (3/2 NO)									
SPEED-UP and LED	722126841010	without	24VDC	3/0.7	0.047	29 to 101.5	0.566	123.8	0.026
	722126841110	with	24VDC	3/0.7	0.047	29 to 101.5	0.566	123.8	0.026

KEY TO CODES

7 2 2	1	2	3	3	4	0	1	0	0
FAMILY	POSITIONING	POWER CONNECTION	Ø THROUGH	POWER	VOLTAGE	LED	MANUAL CONTROL	VERSION	
Solenoid valves series "PLT-10"	1 Base and connection on same side	2 for multiple base	3 0.024 in 6 0.047 in	3 0.7 W 5 0.8 W 8 3/0.3 W for NC 3/0.7 W for NO 9 4.2/0.7 W	3 12 VDC 4 24 VDC	0 - 1 LED	0 - 1 manual monostable	0 NC 1 NO	0 Standard

ACCESSORIES

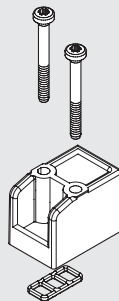
CONNECTION BRACKETS ON BAR OMEGA (DIN EN 50022)



Code	Description	Weight [lb]
0227301610	Connection brackets on din BAR HDM/CM	1.47

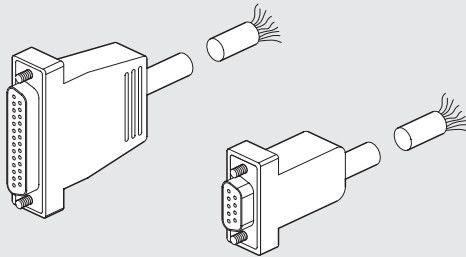
Supplied complete with one M3x20 screws and one M6 grub screw
Individually packed

CAP FOR UNUSED POSITION



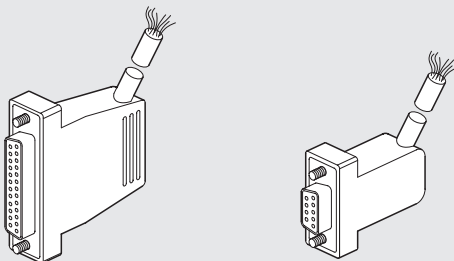
Code	Description	Weight [lb]
W0400100200	Cap 10 mm	0.013

STRAIGHT PRE-WIRED CONNECTOR KIT



Code	Description	Weight [lb]
0226900100	Straight D-Sub 9-PIN connector + cable L = 35 inch	0.17
0226900250	Straight D-Sub 9-PIN connector + cable L = 99 inch	0.37
0226900500	Straight D-Sub 9-PIN connector + cable L = 197 inch	0.70
0226900750	Straight D-Sub 9-PIN connector + cable L = 295 inch	1.03
0226901000	Straight D-Sub 9-PIN connector + cable L = 394 inch	1.36
0226901500	Straight D-Sub 9-PIN connector + cable L = 590 inch	2.02
0226902000	Straight D-Sub 9-PIN connector + cable L = 788 inch	2.70
0226905000	Straight D-Sub 9-PIN connector + cable L = 1968 inch	6.65
0226920100	Straight D-Sub 25-PIN connector + cable L = 35 inch	0.30
0226920250	Straight D-Sub 25-PIN connector + cable L = 99 inch	0.70
0226920500	Straight D-Sub 25-PIN connector + cable L = 197 inch	1.40

PRE-WIRED 90° CONNECTOR

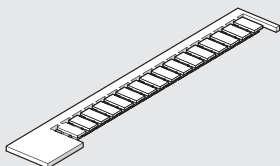


Code	Description	Weight [lb]
0226910100	90° D-Sub 9-PIN connector + cable L = 35 inch	0.17
0226910250	90° D-Sub 9-PIN connector + cable L = 99 inch	0.37
0226910500	90° D-Sub 9-PIN connector + cable L = 197 inch	0.70
0226910750	90° D-Sub 9-PIN connector + cable L = 295 inch	1.03
0226911000	90° D-Sub 9-PIN connector + cable L = 394 inch	1.36
0226911500	90° D-Sub 9-PIN connector + cable L = 590 inch	2.02
0226930100	90° D-Sub 25-PIN connector + cable L = 35 inch	0.30
0226930250	90° D-Sub 25-PIN connector + cable L = 99 inch	0.70
0226930500	90° D-Sub 25-PIN connector + cable L = 197 inch	1.40

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS

25 PIN				9 PIN			
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	10	brown/white	19	yellow/black	1	green/black
2	red/brown	11	red/orange	20	white	2	white
3	white/black	12	light blue	21	blue/white	3	blue/black
4	red/blue	13	yellow/white	22	brown	4	blue
5	black/orange	14	yellow	23	green/white	5	yellow/black
6	yellow/red	15	red/green	24	red	6	yellow
7	black/brown	16	orange	25	green/black	7	red/black
8	white/red	17	orange/white			8	green
9	red/black	18	green			9	white/black

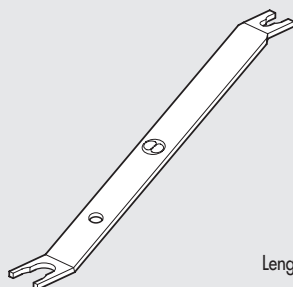
IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

R17 - PIPE RELEASE SPANNER



Lenght = 5.51 inch

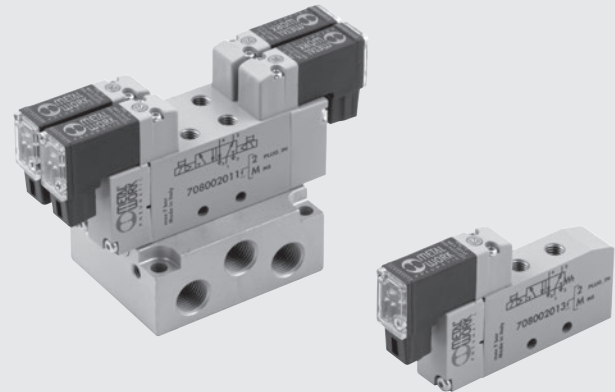
Code	Description	Ø Tube
2L17001	RL17	from Ø 1/8 to Ø 3/8

NOTES

Space-saving valve, ideal for in industrial automation applications. Made according to the well-proven design of the Mach series, the Minimach has a painted aluminium body to ensure extra sturdiness and reliable operation in even the harshest of environments. The internal seals are made of FKM/FPM and are compatible with all oils used in compressors. The pneumatic couplings are M5 threaded, allowing the user to choose the diameter, type and angle of the fitting. The valve can be mounted in line or on a panel or multiple-port base. The following versions are available:

- 3/2 normally open or normally closed
- 5/2 monostable or bistable
- 5/3 closed centres, open centres, pressure centres.

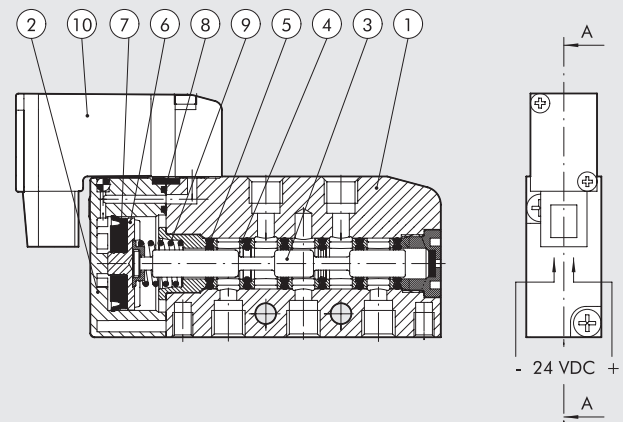
Electropneumatic actuation with a 24 VDC pilot.



TECHNICAL DATA		
Valve port thread		M5
Type of actuation		electric-pneumatic
Maximum external diameter of fittings	in	0.433
Operating temperature range	°C	-10 to +60
	°F	14 to +140
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous
Pressure range	MPa	0.3 to 0.7
	bar	3 to 7
	psi	44 to 102
Flow rate at 87 psi ΔP 14.5 psi 3/2	scfm	5
Flow rate at 87 psi ΔP 14.5 psi 5/2	scfm	6
Flow rate at 87 psi ΔP 14.5 psi 5/3	scfm	2.8
Voltage range		24 VDC ± 10%
Power	W	0.9
Solenoid rating		100% ED
Manual operator		Monostable
TRA/TRR 3/2 at 87 psi	ms	8/23
TRA/TRR 5/2 monostable at 87 psi	ms	8/30
TRA/TRR 5/2 bistable at 87 psi	ms	9/30
TRA/TRR 5/3 at 87 psi	ms	9/30
Insulation class		F155
Degree of protection		IP 51
Installation		In any position. As for the bistable ones, if subject to vibration, the vertical assembly is not advisable
Compatibility with oils		Please refer to page 5-2 of the technical documentation

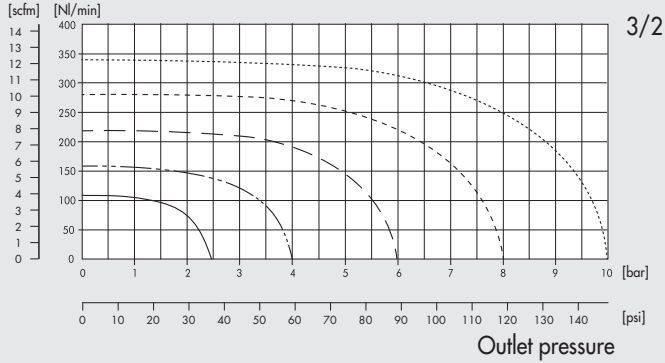
COMPONENTS

- ① VALVE BODY: chemically nickel-plated aluminium
- ② CONTROL/END CAP: Hostaform®
- ③ SPOOL: aluminium
- ④ DISTANCE PLATES: tecnopolymer
- ⑤ GASKETS: FKM-FPM
- ⑥ PISTONS: hostaform®
- ⑦ PISTON GASKET: Polyurethane
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ PILOT: with integrated coil

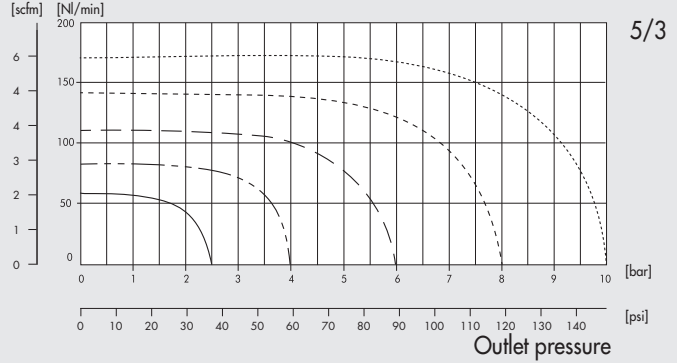


FLOW CHART

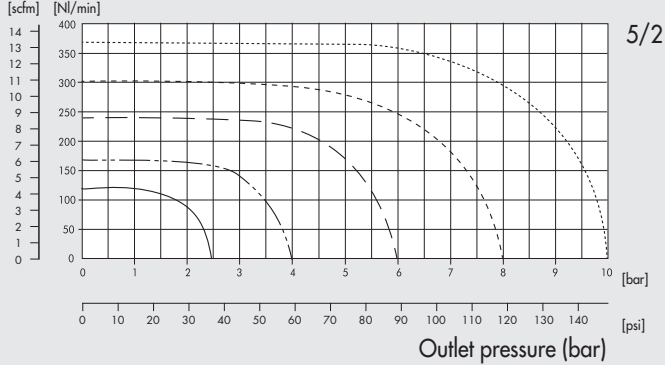
Flow rates



Flow rates



Flow rates



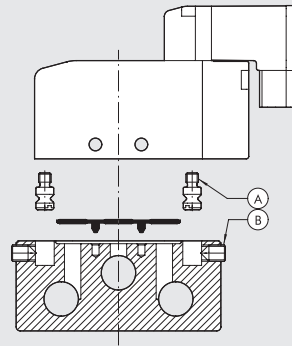
HOW TO FIX THE VALVE TO THE BASE

Proceed as follows:

1. screw the pins **A** onto the valve
2. secure them with the ready-mounted grub screws **B** on the base (0.37 lbf ft max)

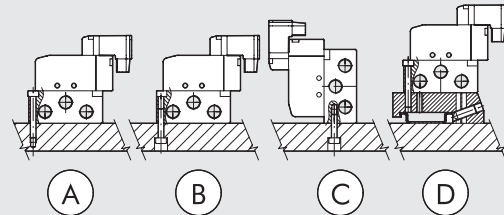
IMPORTANT

To secure properly, press the valve down onto the base while tightening the two grub screws.
Do not tighten one grub screw completely before starting to tighten the other.



HOW TO FIX THE BASE

- A** From the top using M4 screws
- B** From below using M5 screws
- C** From the side using M4 screws
- D** From the top on the DIN bar via the M4 screws and bracket code 0225004600 (using 1 screw per bracket)

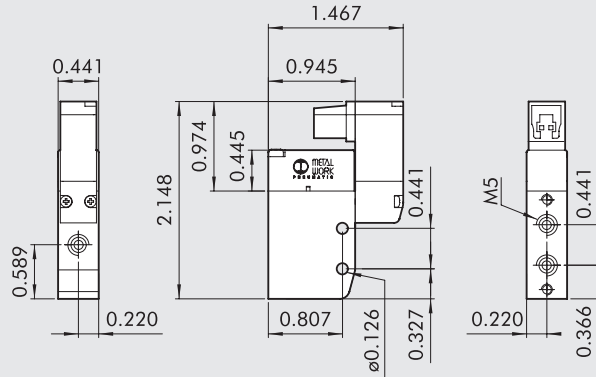


KEY TO CODES

M S V	0	5	S O	B	O O	2 4 V D C
FAMILY	DIMENSIONS	FUNCTION	OPERATORS 14	RESETTING (12)	FURTHER DETAILS	
MSV minivalves solenoid	0 M5	3 3/2 5 5/2 6 5/3	SO solenoid	B bistable S mechanical springs	NC normally closed NO normally open OO no indication CC closed centres OC open centres PC pressure centres	24VDC

MINIMACH VALVES SOLENOID-PNEUMATIC

MONOSTABLE 3/2

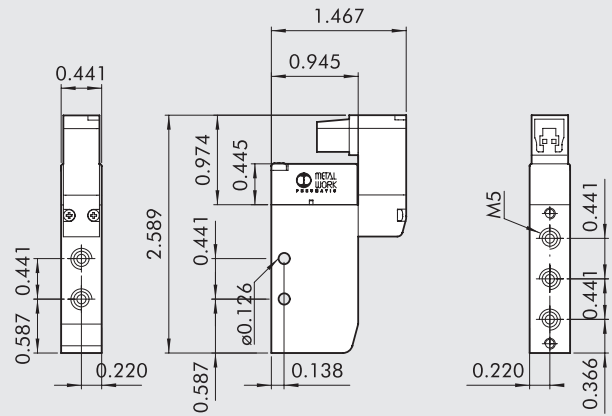


Symbol	Code	Abbrev.	Weight [lb]
--------	------	---------	-------------

	7080020532	MSV 03 SOS NC 24VDC	0.080
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	7080020632	MSV 03 SOS NO 24VDC	0.080
--	------------	---------------------	-------

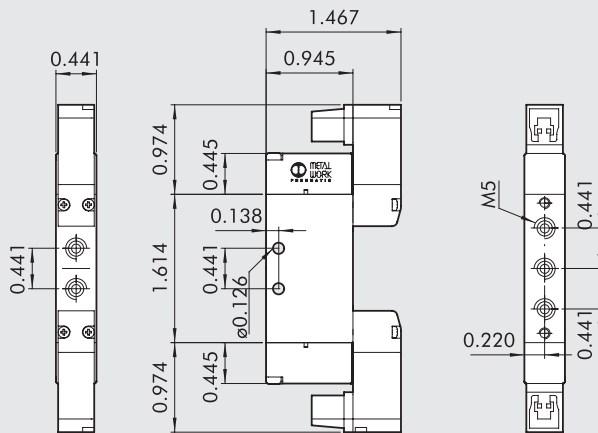
MONOSTABLE 5/2



Symbol	Code	Abbrev.	Weight [lb]
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	7080020132	MSV 05 SOS OO 24VDC	0.095
--	------------	---------------------	-------

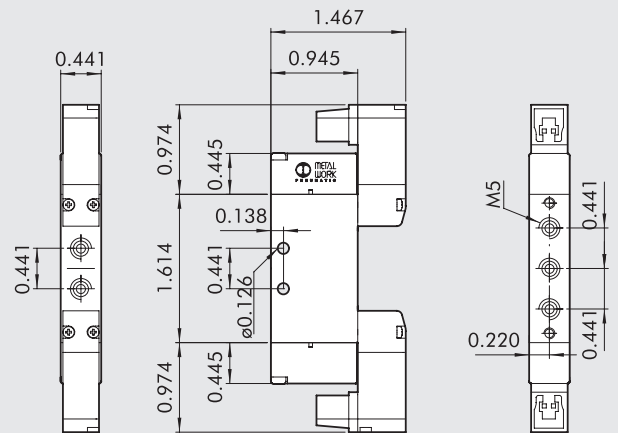
BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [lb]
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	7080020112	MSV 05 SOB OO 24VDC	0.125
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MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [lb]
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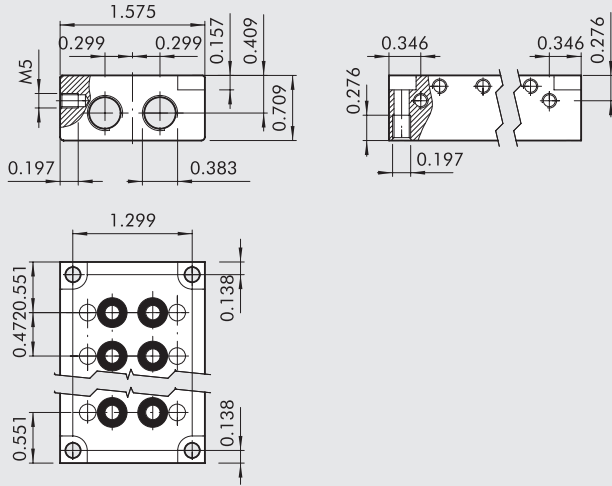
	7080020212	MSV 06 SOS CC 24VDC	0.125
--	------------	---------------------	-------

	7080020312	MSV 06 SOS OC 24VDC	0.125
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	7080020412	MSV 06 SOS PC 24VDC	0.125
--	------------	---------------------	-------

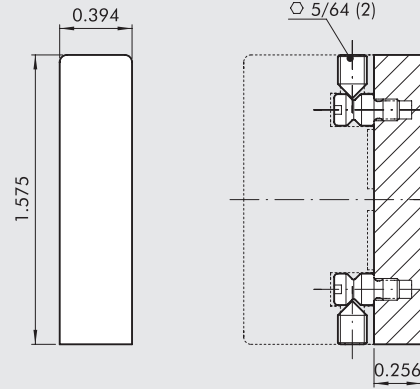
ACCESSORIES: MULTIPLE BASE

3/2 MULTIPLE BASE



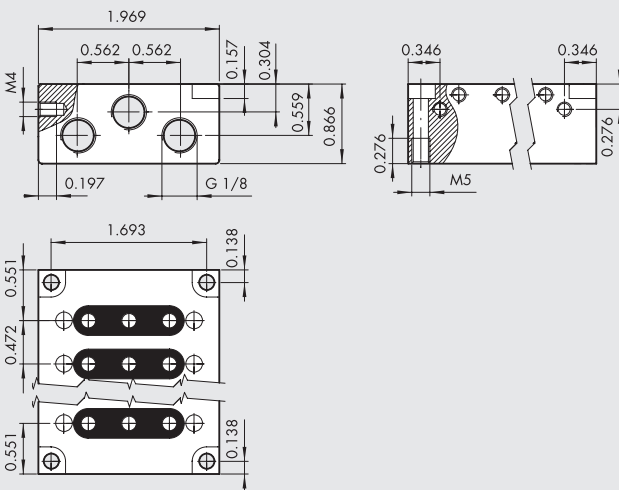
Code	Description	Position	Weight [lb]
0225010201	Base 2 posn. for 3/2 valves Minimach	2	0.132
0225010401	Base 4 posn. for 3/2 valves Minimach	4	0.218
0225010601	Base 6 posn. for 3/2 valves Minimach	6	0.297
0225010801	Base 8 posn. for 3/2 valves Minimach	8	0.392

BLANKING PLATE FOR 3/2 VALVES



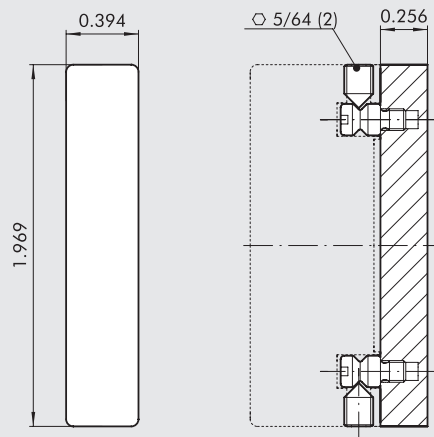
Code	Description	Weight [lb]
0226009500	Blanking plate for 3/2 bases Minimach	0.020

5/2 - 5/3 MULTIPLE BASE



Code	Description	Position	Weight [lb]
0225020201	Base 2 posn. for 5/2-5/3 valves Minimach	2	0.216
0225020401	Base 4 posn. for 5/2-5/3 valves Minimach	4	0.339
0225020601	Base 6 posn. for 5/2-5/3 valves Minimach	6	0.465
0225020801	Base 8 posn. for 5/2-5/3 valves Minimach	8	0.595

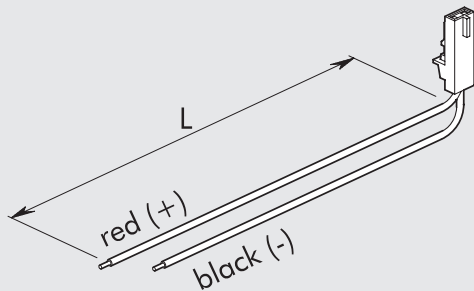
BLANKING PLATE FOR 5/2 - 5/3 VALVES



Code	Description	Weight [lb]
0226009501	Blanking plate for 5/2-5/3 bases Minimach	0.024

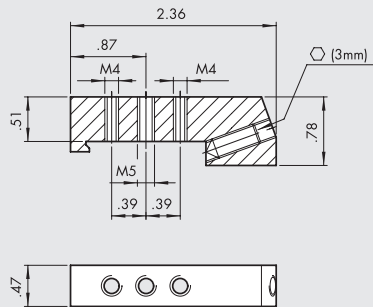
ACCESSORIES

PLUG-IN CONNECTOR



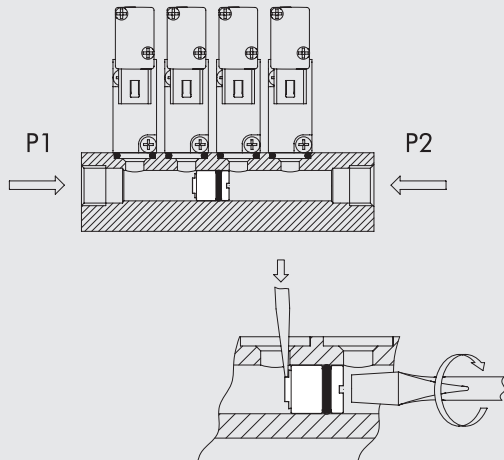
Code	Description
W0970512000	Plug-in connector for MACH 11 L = 11.8 inch

ADAPTER FOR BAR OMEGA (DIN EN 50022)



Code	Descrizione	Weight [lb]
0225004600	Adapter for bar omega	0.035

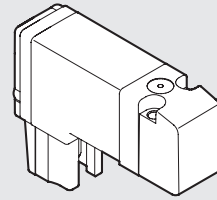
INTERMEDIATE DIAPHRAGM



Code	Description	Weight [lb]
0226009010	Multiple base diaphragm	0.007

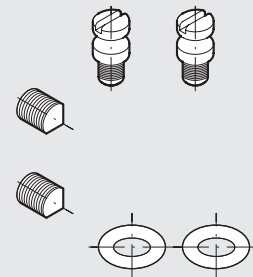
SPARE PARTS

PLUG-IN PILOT



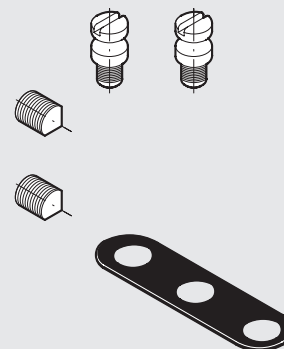
Code	Description
722113541100	PLT-10 722113541100

KIT OF SPARE GASKET BASES FOR 3/2 VALVES



Code	Description	Weight [lb]
0226009000	Kit of spare gasket bases for 3/2 valves	0.006

KIT OF SPARE GASKET BASES FOR 5/2 - 5/3 VALVES

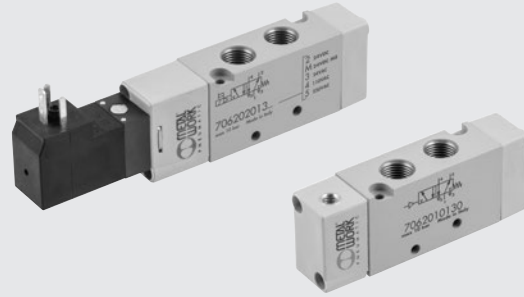


Code	Description	Weight [lb]
0226009001	Kit of spare gasket bases for 5/2-5/3 valves	0.006

VALVES MACH 16

Available in size 1/8" only, versions 5/2 and 5/3 and with pneumatic and solenoid actuation. The MACH 16 valves are typical small size valves, only 0.62 inch wide, with excellent performance, 26.5 scfm flow rate at 87 psi, ΔP 14.5 psi.

The valve can be used in line, on a panel, or on a base (multiple or manifold). This MACH design is the result of the miniaturisation concept with the same durability, sturdiness and reliability.

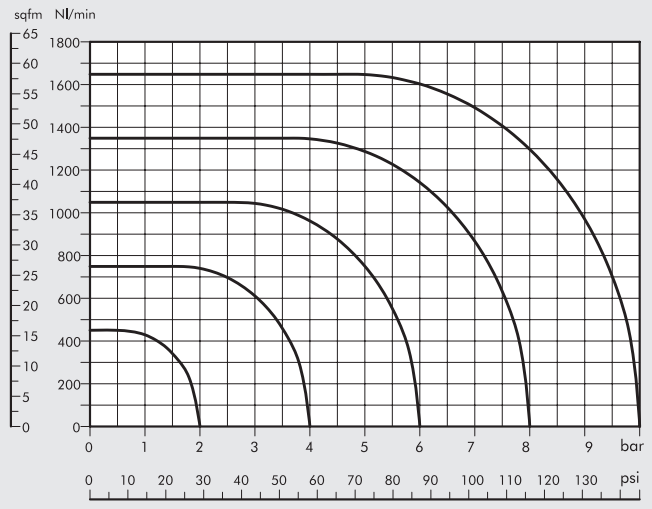
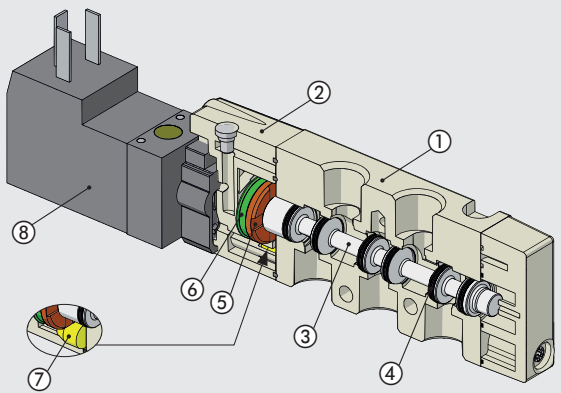


Flow Coefficient:
Cv .75 @ 87psi ΔP=15psi

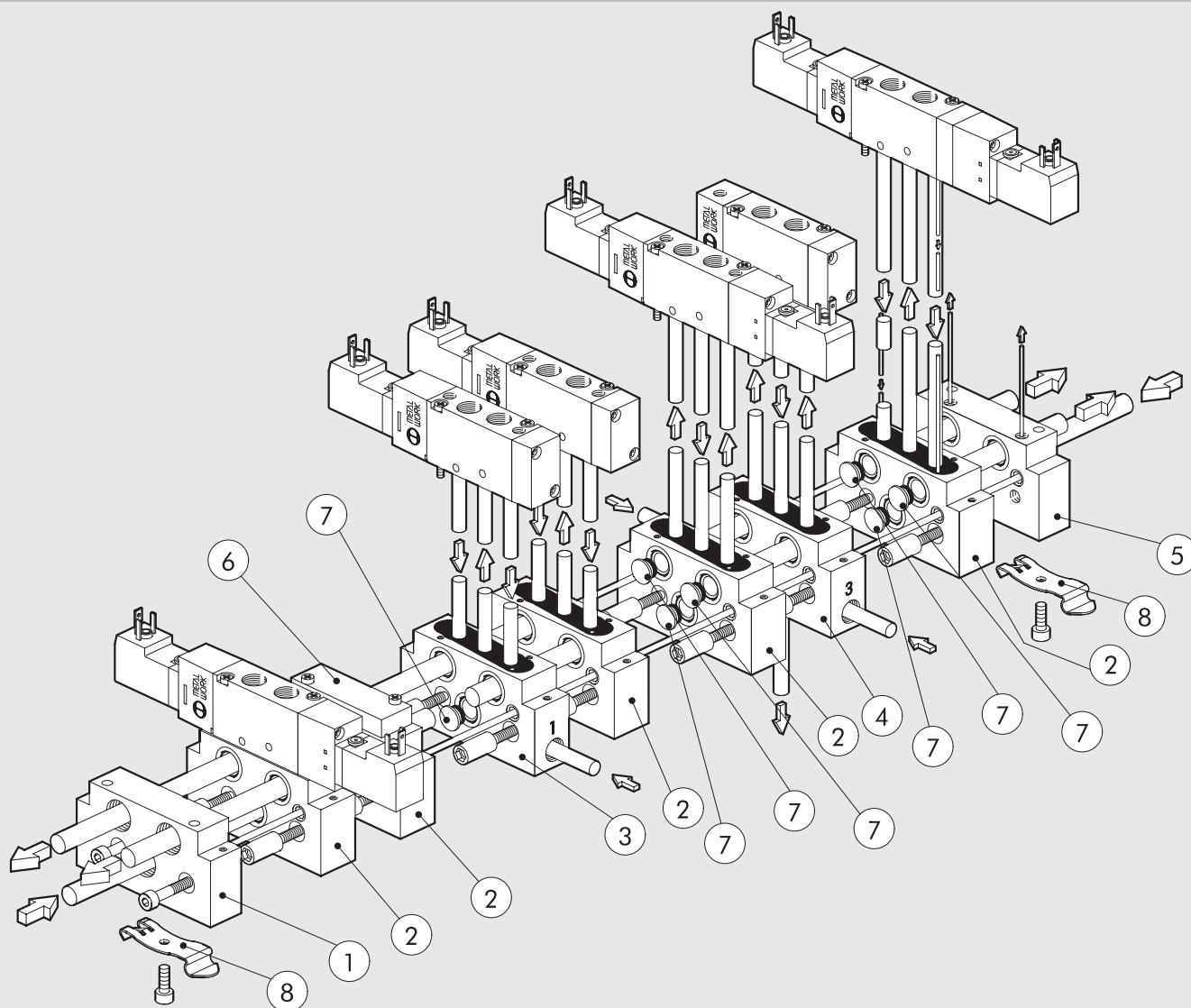
TECHNICAL DATA	
Valve port thread	1/8" NPT
Type of control	Pneumatic actuation 10-32 UNF solenoid/pneumatic operation with integrated coil
Maximum outer diameter of gaskets for ports 1 - 3 - 5	in 0.6
Maximum outer diameter for ports 2 - 4	in 0.6
Operating temperature range	°F 14° to 140°F
Operating pressure	psi
<ul style="list-style-type: none"> • monostable - monostable 5/3 • bistable • pilot-assisted 	Vacuum to 145 pneumatic/27.5 to 145 solenoid/pneumatic Vacuum to 145 pneumatic/14.5 to 145 solenoid/pneumatic Vacuum to 145
Fluid	Filtered lubricated or unlubricated air lubrication, if used, must be continuous
Recommended lubricant	ISO e UNI FD22
Solenoid pilot with integrated coil	DIN 43650 C-shape
Manual	Monostable on solenoid pilot (with bistable manual valve on request)
Number of ways in base	1-3-5 and pilot exhaust
Screws for wall-mounting single valve	2 screws M3
Screws for base-mounting valve	2 screws M2.5x30
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)
Flow rate at 87 psi ΔP 7.25 psi	scfm 19
Flow rate at 87 psi ΔP 14.5 psi	scfm 26.5 Cv 0.75
Conductance C	scfm/psi 0.36
Critical ratio b	psi/psi 0.52
Compatibility with oils	Please refer to page 5-2 of the technical documentation

COMPONENTS FLOW CHART

- ① VALVE BODY: Aluminium
- ② CONTROL/BASE: Hostaform®
- ③ SPOOL: Aluminium
- ④ GASKETS: Polyurethane
- ⑤ PISTONS: Hostaform®
- ⑥ PISTON GASKET: Polyurethane
- ⑦ INTERFACE GASKETS: sintered HDPE
- ⑧ PILOT: with integrated coil



MANIFOLD BASES



Reference	Code	Description
①	0227100201U	M16/VDMA Input end-plate kit
②	0227100150	M16 manifold base kit
③	0227100301U	M16 separate feed manifold base kit
④	0227100302U	M16 exhaust feed manifold base kit
⑤	0227100200U	M16/VDMA output end-plate kit
⑥	0225004500	M16 blanking plate
⑦	0227100000	Intermediate diaphragm
⑧	0227300600	Connection bracket on DIN-bar

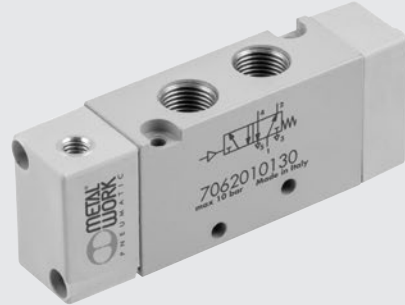
KEY TO CODES

M S V FAMILY	N PORT	5 FUNCTION	S O OPERATORS 14	B RESETTING 12	O O FURTHER DETAILS	2 4 V D C VOLTAGE
MSV solenoid/pneumatic	N 1/8" NPT	5 5/2	SO solenoid/ pneumatic	P pneumatic spring	OO no indication	24VDC
MPV pneumatic		6 5/3	SE solenoid pilot PN pneumatic	S mechanical springs B bistable	CC closed centres OC open centres PC pressure centres	24VAC 110VAC 220VAC

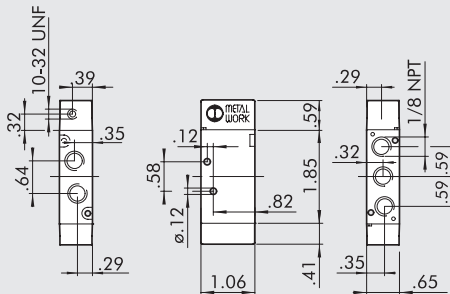
VALVES MACH 16 MPV, PNEUMATIC

TECHNICAL DATA

Operating pressure	psi	Vacuum to 145
Minimum operating pressure:	psi	
• monostable with pneumatic spring		see graph
• monostable with mechanical spring		23.2
• monostable 5/3		27.5
• bistable		14.5
Conductance C	scfm/psi	0.36
Critical ratio b	psi/psi	0.52
Flow rate at 87 psi ΔP 7.25 psi	scfm	19
Flow rate at 87 psi ΔP 14.5 psi	scfm	26.5
Repositioning response times at 87 psi:		
• monostable	ms	4
• bistable	ms	4
Repositioning response times at 87 psi:		
• monostable	ms	8.4
• bistable	ms	4

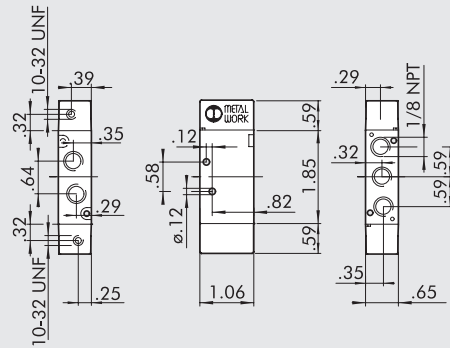


MONOSTABLE 5/2



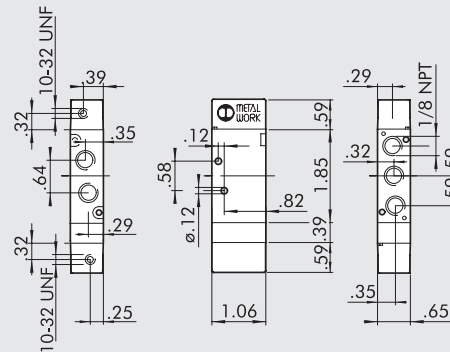
Symbol	Code	Abbrev.	Weight [lb]
	7062010100U	MPV N5 PNP OO	0.132
	7062010130U	MPV N5 PNS OO	0.135

BISTABLE 5/2



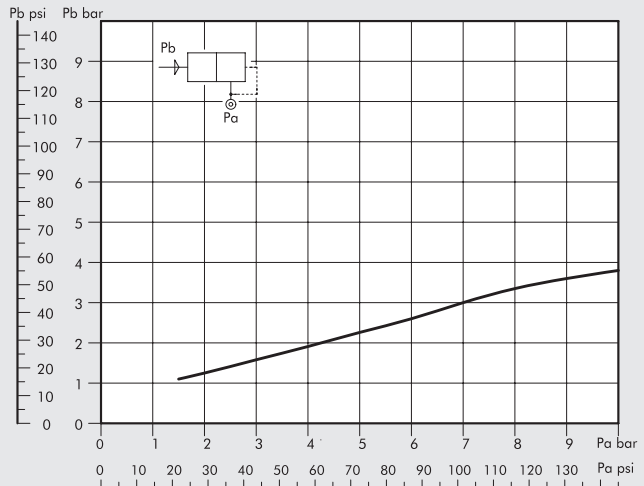
Symbol	Code	Abbrev.	Weight [lb]
	7062010110U	MPV N5 PNB OO	0.137

MONOSTABLE 5/3



Symbol	Code	Abbrev.	Weight [lb]
	7062010210U	MPV N6 PNS CC	0.161
	7062010310U	MPV N6 PNS OC	0.161
	7062010410U	MPV N6 PNS PC	0.161

OPERATING PRESSURE



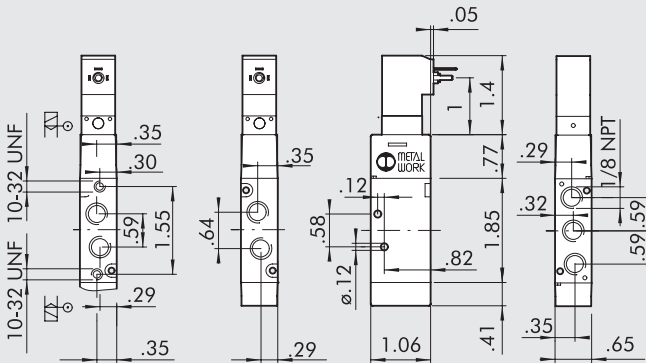
VALVES MACH 16 MSV, SOLENOID/PNEUMATIC

TECHNICAL DATA

Operating pressure:	psi	
• monostable, monostable 5/3		22 to 145
• bistable		14.5 to 145
• pilot-assisted		Vacuum to 145
Minimum pilot pressure	psi	29
Operating temperature range	°F	14 to + 140
Conductance C	scfm/psi	0,36
Critical ratio b	psi/psi	0,52
Flow rate at 87 psi ΔP 7.25 psi	scfm	19
Flow rate at 87 psi ΔP 14.5 psi	scfm	26.5
TRA / TRR monostable at 87 psi	ms	12 / 26
TRA / TRR bistable at 87 psi	ms	21 / 21
Hand operator		monostable on the solenoid pilot (also with bistable manual valve on request)
Pilot with integrated coil		24 VDC - 24 VAC - 110 VAC - 220 VAC
Power	W	1
Voltage tolerance		-10% to +15%
Insulation class		F 155
Degree of protection		IP 65 EN60529 with connector
Solenoid rating		100% ED
Electrical contacts		DIN 43650 C shape

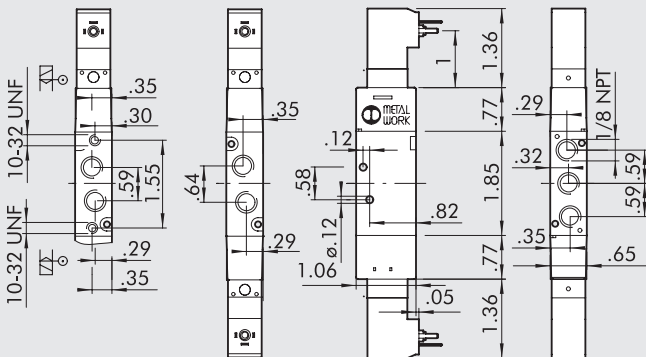


MONOSTABLE 5/2



Symbol	Code	Abbrev.	Weight [lb]
	7062020102U	MSV N5 SOP OO 24VDC	0.203
	7062020103U	MSV N5 SOP OO 24VAC	0.203
	7062020104U	MSV N5 SOP OO 110VAC	0.203
	7062020105U	MSV N5 SOP OO 220VAC	0.203
	7062020132U	MSV N5 SOS OO 24VDC	0.205
	7062020133U	MSV N5 SOS OO 24VAC	0.205
	7062020134U	MSV N5 SOS OO 110VAC	0.205
	7062020135U	MSV N5 SOS OO 220VAC	0.205
	7062030132U	MSV N5 SES OO 24VDC	0.205
	7062030133U	MSV N5 SES OO 24VAC	0.205
7062030134U	MSV N5 SES OO 110VAC	0.205	
7062030135U	MSV N5 SES OO 220VAC	0.205	

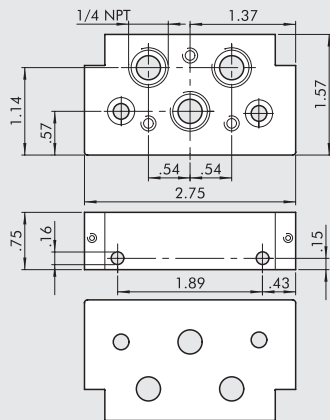
BISTABLE 5/2



Symbol	Code	Abbrev.	Weight [lb]
	7062020112U	MSV N5 SOB OO 24VDC	0.273
	7062020113U	MSV N5 SOB OO 24VAC	0.273
	7062020114U	MSV N5 SOB OO 110VAC	0.273
	7062020115U	MSV N5 SOB OO 220VAC	0.273
	7062030112U	MSV N5 SEB OO 24VDC	0.276
	7062030113U	MSV N5 SEB OO 24VAC	0.276
	7062030114U	MSV N5 SEB OO 110VAC	0.276
	7062030115U	MSV N5 SEB OO 220VAC	0.276

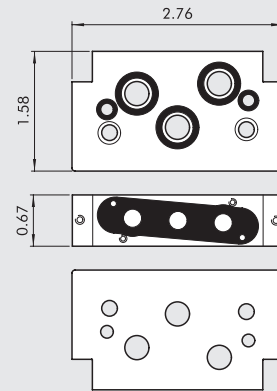
MANIFOLD BASES FOR VALVES MACH 16

1 MACH 16 INPUT END-PLATE



Code	Description	Weight [lb]
0227100201U	Input end-plate kit M16/VDMA	0.276

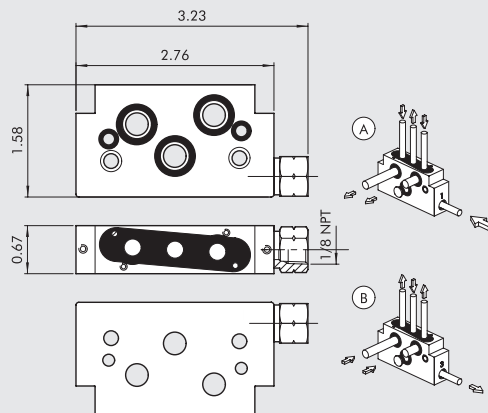
2 MACH 16 MANIFOLD BASE



Code	Description	Weight [lb]
0227100150	Manifold base kit M16	0.267

3 MACH 16 SEPARATE FEED MANIFOLD BASE

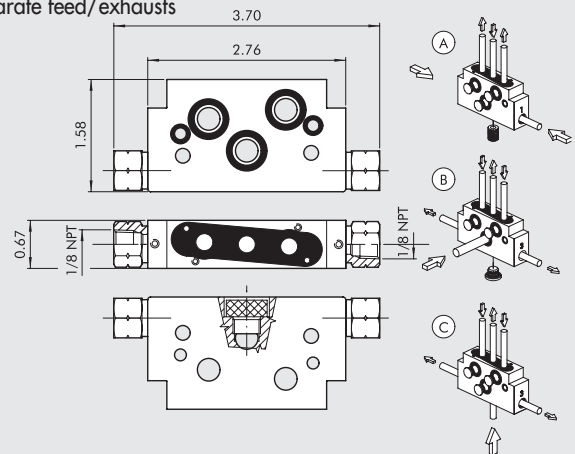
- A Separate feed
- B Separate exhaust



Code	Description	Weight [lb]
0227100301U	Manifold base kit-separate feed M16	0.262

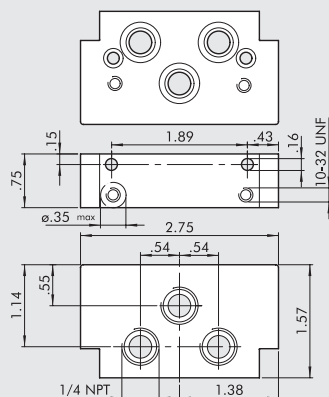
4 MACH 16 EXHAUST FEED MANIFOLD BASE

- A Exhaust feed
- B Separate exhausts
- C Separate feed/exhausts



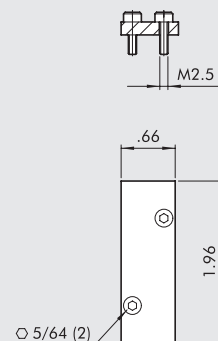
Code	Description	Weight [lb]
0227100302U	Manifold base kit-exhaust feed M16	0.249

5 MACH 16 OUTPUT END-PLATE



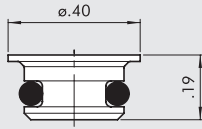
Code	Description	Weight [lb]
0227100200U	Output end-plate kit M16/VDMA	0.269

6 BLANKING PLATE - UNUSED POSITION



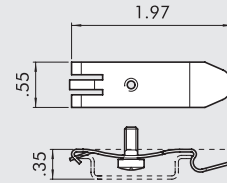
Code	Description	Weight [lb]
0225004500	Accessories - blanking plate for MACH 16	0.040

7 INTERMEDIATE DIAPHRAGM



Code	Description	Weight [lb]
0227100000	Intermediate diaphragm	0.002

8 CONNECTION BRACKET ON BAR OMEGA (DIN EN 50022)

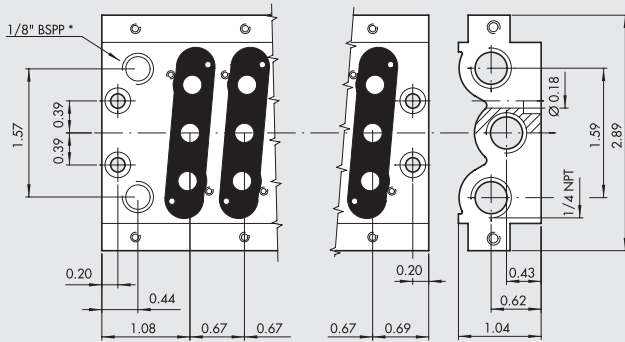


Code	Description	Weight [lb]
0227300600	Connection bracket on DIN bar	0.015

Direct attachment under MACH 16 input terminal and MACH 16 output terminal 1 piece each bag.

MULTIPLE BASES FOR VALVES MACH 16

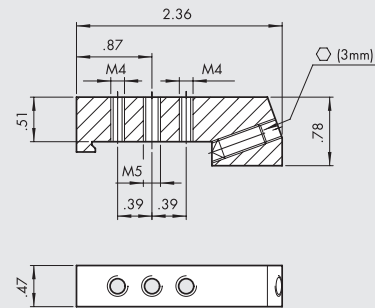
MULTIPLE BASE FOR MACH 16



* Exhaust solenoid pilots

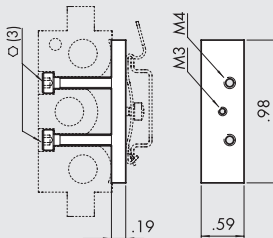
Code	Description	N° of positions	Weight [lb]
0225000201U	Base CVM.PN-08-02-0-000	2	0.397
0225000401U	Base CVM.PN-08-04-0-000	4	0.630
0225000601U	Base CVM.PN-08-06-0-000	6	0.860
0225000801U	Base CVM.PN-08-08-0-000	8	1.102
0225001001U	Base CVM.PN-08-10-0-000	10	1.351
0225001201U	Base CVM.PN-08-12-0-000	12	1.556

ADAPTER FOR BAR OMEGA (DIN EN 50022)



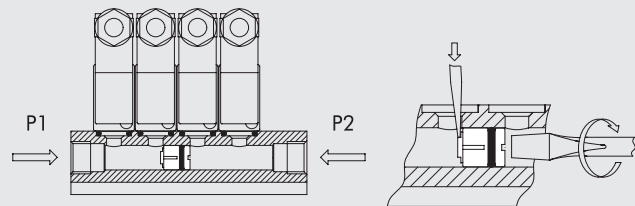
Code	Description	Weight [lb]
0225004600	Omega-adapter Mach 16	0.035

PLATE FOR BRACKET FOR CONNECTION ON BAR OMEGA (DIN EN 50022)



Code	Description
0225004503	Plate for bracket for connection on DIN bar

INTERMEDIATE DIAPHRAGM



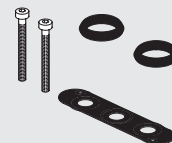
Code	Description	Weight [lb]
0227100001	Multiple base diaphragm	0.013

GASKET KIT (FOR OLD BASES)



Code	Description	Weight [lb]
0226007001	M16 multiple base gasket kit	0.011

KIT OF SPARE INTEGRATED GASKET



Code	Description	Weight [lb]
0226007003	M16 multiple base gasket kit	0.011

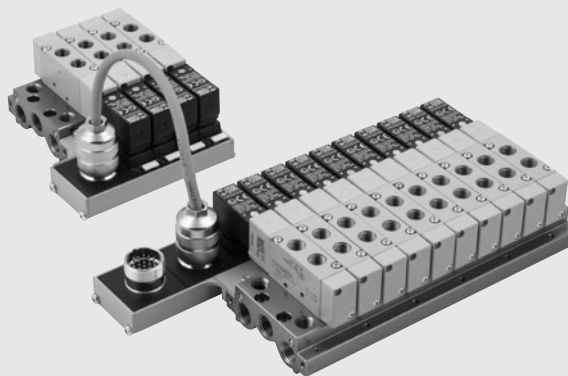
Mach 16 valves can be mounted on bases with pneumatic or electrical connection. The electric contacts of the individual valves are connected by means of a printed circuit board in a sealed conduit to a single connection point suitable for up to 16 controls. The number 16 was chosen because the number of outputs of most PLC output boards is 16 or a multiple of it.

The system has numerous alternatives and variants for a wide range of requirements:

- Base for monostable or bistable valves.
- Connection via a multiple connector or wired cable.
- Supply of individual parts or ready prepared bases or complete valve units
- The configuration can be modified at any time to convert bases for monostable valves into bases for bistable valves.
- The return cable can be used to connect two monostable valve units to a single multiple connector.

All versions are certified for electromagnetic compatibility and hence they bear the CE mark. The system is prearranged for mounting a slave for field buses, which can be added at any time. Valve units with multiple pneumatic/electrical connection are supplied complete with valves and are tested.

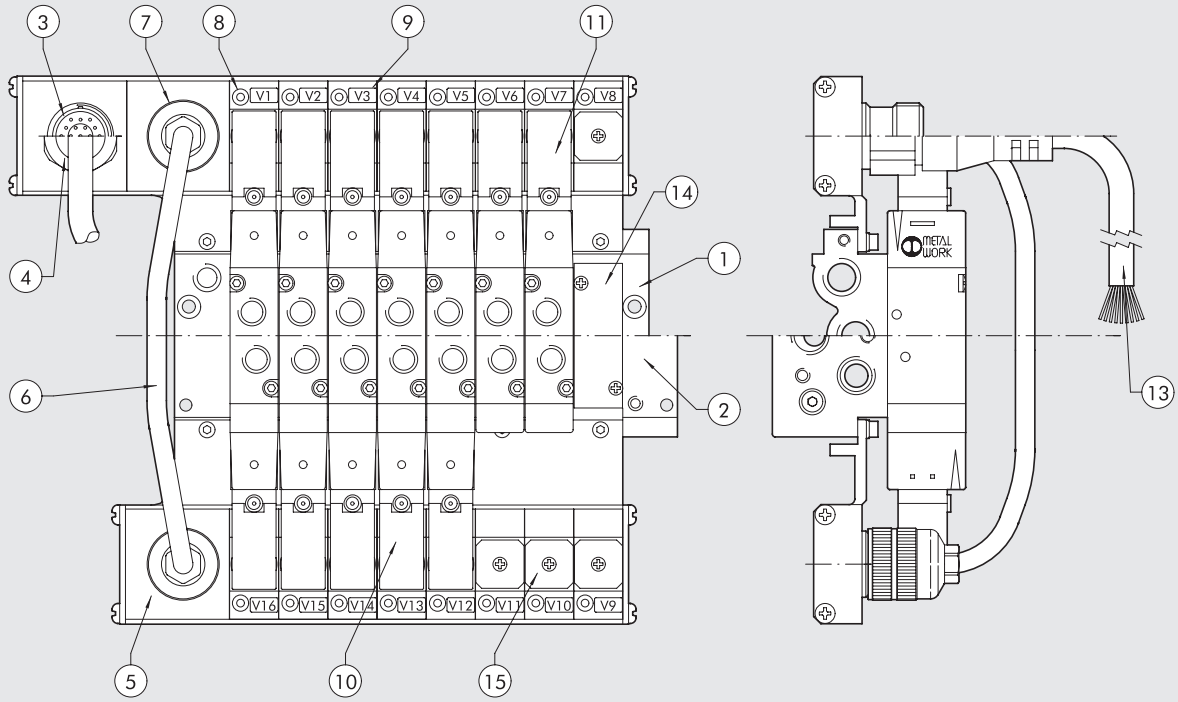
System modularity means that the valve sequence can be ordered to meet your own requirements (see key to codes).



TECHNICAL DATA	
Supply voltage	24VDC - 24VAC
Maximum absorption	50 mA for each position
Valve actuation indicator	Yellow LED
Protection	Fuse
Operating temperature range	14 to +140 °F
Degree of protection with valves mounted	IP65
Insulation class	In compliance with IEC 664-1 and VDE 0110 Group C
Electromagnetic compatibility	In compliance with EEC 366/89
Maximum number of solenoid valves which can be applied	16
n° of contacts	19, 16 of which for solenoid valves, 2 common and 1 earth
Pre-wired version	
Cable length	in 200
n° of wires	19, 16 of which for solenoid valves, 2 common and 1 earth
Wire section	in 0.00034
Shielding	Tin plated – covering 80 to 90%
Cable	Outer oil-proof and flame-proof PVC sheath
Cable outside diameter	in 0.33

WIRING DIAGRAM FOR VERSION WITH CONNECTOR		NOTES
	Position of electrical contact	Colour of the corresponding wire
	V1	Green /black
	V2	Yellow
	V3	White/black
	V4	Blue
	V5	Red
	V6	Yellow/black
	V7	White
	V8	Brown/red
	V9	Red/white
	V10	Red/black
	V11	Green/red
	V12	Blue/red
	V13	Brown
	V14	Orange/black
	V15	Orange
	V16	Blue/black
EARTH	Yellow/red	
- COM	Brown/black	
- COM	Green	

COMPONENTS



- ① Multiple base: extruded anodized aluminium
- ② Modular base: anodized aluminium
- ③ Main assembly, version with connector
- ④ Main assembly, pre-wired version
- ⑤ Secondary unit/additional secondary unit
- ⑥ 10-wire return cable
- ⑦ Socket for 10-wire return cable
- ⑧ LED (LED on = Solenoid valve energised)
- ⑨ Identification label (for writing on)
- ⑩ Bistable solenoid valve MACH 16
- ⑪ Monostable solenoid valve MACH 16
- ⑬ 19-wire cable for pre-wired version
- ⑭ Blanking plate - pneumatic position: anodized aluminium
- ⑮ Small blanking plate - electric connector: painted aluminium

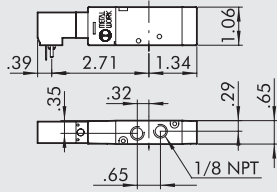
KEY TO CODES

A	0 8	B	W C 5	0 8 U	M M 6 V L	2 4 V D C
FAMILY	NO. OF POSITIONS			SIZE		VOLTAGE
A multiple base for solenoid/pneumatic connection Mach 16	04 4 posn. 06 6 posn. 08 8 posn.	M electrical connection only for monostable valves	MCN electrical connection	08U 1/8" NPT	M MSV 25 SMS OO	24VDC
B manifold base for Mach 16 solenoid/pneumatic connection	10 10 posn. 12 12 posn.	B electrical connection for bistable valves	WC5 pre-wired cable 5 m		V MSV 25 SCS OO	24VAC
			ACM additional connection for monostable battery		L MSV 25 SMP OO	
					J MSV 25 SMB OO	
					K MSV 25 SCB OO	
					G MSV 26 SMS CC	
					O MSV 26 SCS CC	
					E MSV 26 SMS OC	
					F MSV 26 SCS OC	
					B MSV 26 SMS PC	
					C MSV 26 SCS PC	
					A blanking plate	
					D intermediate diaphragm	

N.B.: The valve insertion order inside the descriptive key is the following, starting from the connector, from the left towards the right: the first left square corresponds to the first valve close to the connector on the base. There are 12 squares available for the description: if you order a base with less than 12 positions, complete by placing a 0 in the remaining boxes.

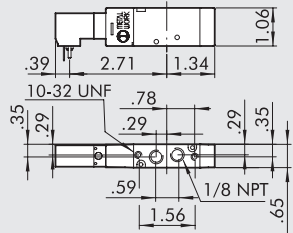
MACH 16 VALVES FOR MULTIPLE CONNECTOR

M MONOSTABLE 5/2, SOLENOID/PNEUMATIC - MECHANICAL SPRING



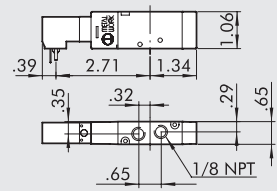
Symbol	Code	Description	Weight [lb]
	7062040132U	MSV N5 SMS OO 24VDC	0.203
	7062040133U	MSV N5 SMS OO 24VAC	0.203

V MONOSTABLE 5/2, SOLENOID/PNEUMATIC, PILOT-ASSISTED - MECHANICAL SPRING



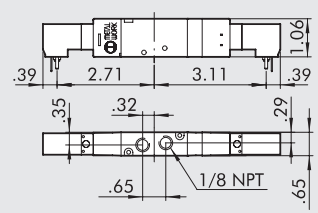
Symbol	Code	Description	Weight [lb]
	7062060132U	MSV N5 SCS OO 24VDC	0.205
	7062060133U	MSV N5 SCS OO 24VAC	0.205

L MONOSTABLE 5/2, SOLENOID/PNEUMATIC - PNEUMATIC SPRING



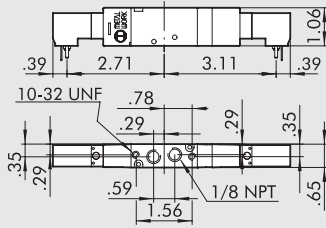
Symbol	Code	Description	Weight [lb]
	7062040102U	MSV N5 SMP OO 24VDC	0.205
	7062040103U	MSV N5 SMP OO 24VAC	0.205

J BISTABLE 5/2, SOLENOID/PNEUMATIC



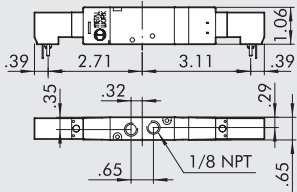
Symbol	Code	Description	Weight [lb]
	7062040112U	MSV N5 SMB OO 24VDC	0.306
	7062040113U	MSV N5 SMB OO 24VAC	0.306

(K) BISTABLE 5/2, SOLENOID/PNEUMATIC, PILOT-ASSISTED



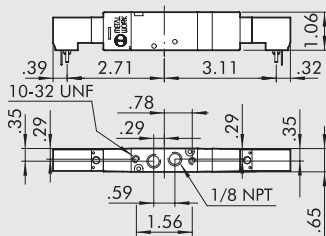
Symbol	Code	Description	Weight [lb]
	7062060112U	MSV N5 SCB OO 24VDC	0.308
	7062060113U	MSV N5 SCB OO 24VAC	0.308

(G) MONOSTABLE 5/3, SOLENOID/PNEUMATIC - CLOSED CENTRES



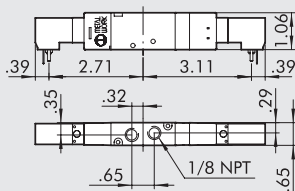
Symbol	Code	Description	Weight [lb]
	7062040212U	MSV N6 SMS CC 24VDC	0.313
	7062040213U	MSV N6 SMS CC 24VAC	0.313

(C) MONOSTABLE 5/3, SOLENOID/PNEUMATIC, PILOT-ASSISTED - CLOSED CENTRES

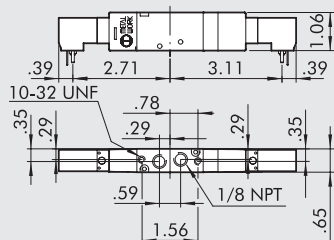


Symbol	Code	Description	Weight [lb]
	7062060212U	MSV N6 SCS CC 24VDC	0.315
	7062060213U	MSV N6 SCS CC 24VAC	0.315

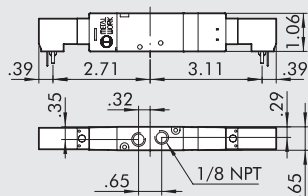
(E) MONOSTABLE 5/3 SOLENOID/PNEUMATIC - OPEN CENTRES



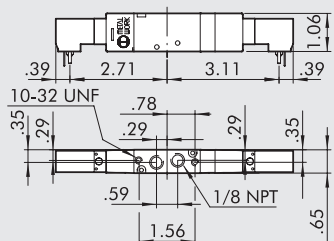
Symbol	Code	Description	Weight [lb]
	7062040312U	MSV N6 SMS OC 24VDC	0.313
	7062040313U	MSV N6 SMS OC 24VAC	0.313

F MONOSTABLE 5/3 SOLENOID/PNEUMATIC, PILOT-ASSISTED - OPEN CENTRES


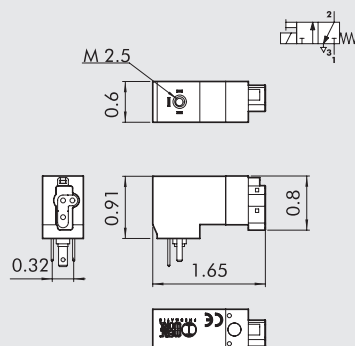
Symbol	Code	Description	Weight [lb]
	7062060312U	MSV N6 SCS OO 24VDC	0.315
	7062060313U	MSV N6 SCS OO 24VAC	0.315

B MONOSTABLE 5/3, SOLENOID/PNEUMATIC - PRESSURE CENTRES


Symbol	Code	Description	Weight [lb]
	7062040412U	MSV N6 SMS PC 24VDC	0.313
	7062040413U	MSV N6 SMS PC 24VAC	0.313

C MONOSTABLE 5/3, SOLENOID/PNEUMATIC, PILOT-ASSISTED - PRESSURE CENTRES


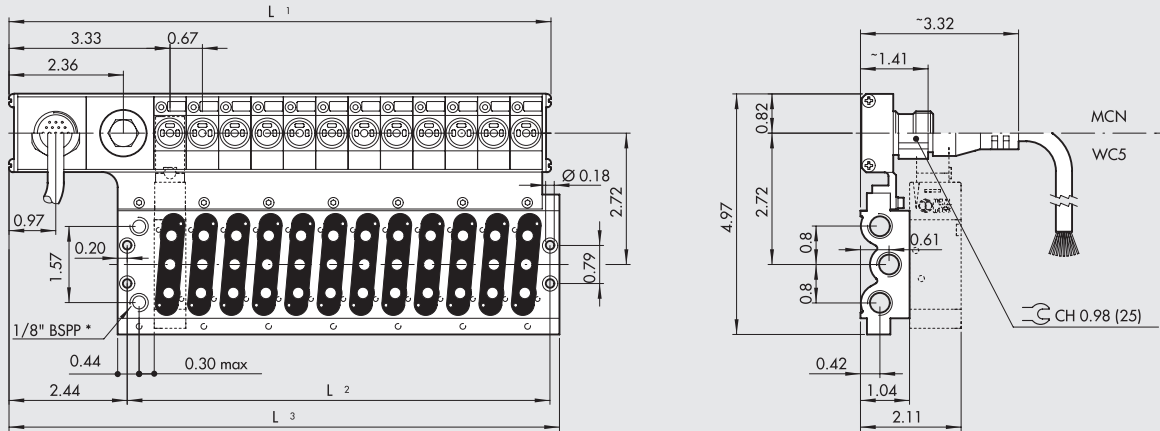
Symbol	Code	Description	Weight [lb]
	7062060412U	MSV N6 SCS PC 24VDC	0.315
	7062060413U	MSV N6 SCS PC 24VAC	0.315

SPARE PARTS
COIL MACH 16


Code	Description
W4015401000	In-line pilot 24VDC
W4015401010	In-line pilot 24VAC 50/60 Hz

BASES WITH MULTIPLE CONNECTION

MONOSTABLE SOLENOID/PNEUMATIC BASE WITH 4, 6, 8, 10, 12 POSITIONS

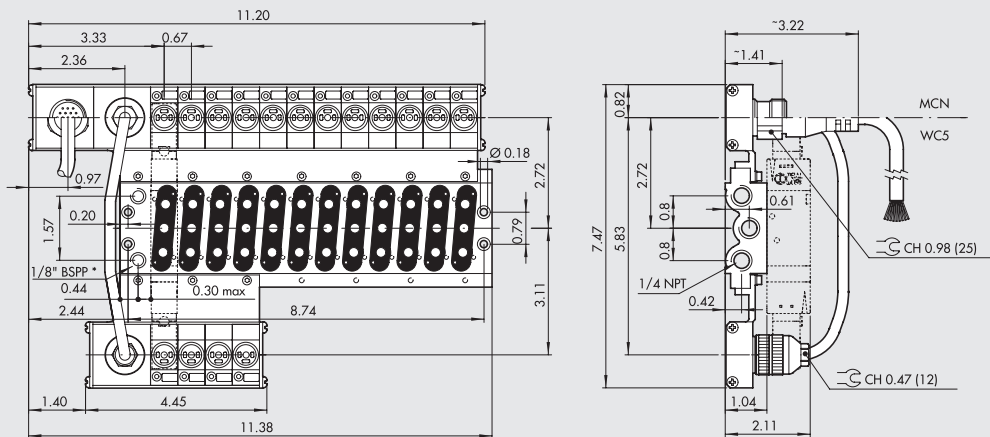


* Exhaust solenoid pilots

	Pos.-Nr.	L1	L2	L3	Description	Code 24VDC	Code 24VAC	Weight [lb]
With multiple connector	4	5.85	3.39	6.02	CVM EP 08U 04 M MCN	0225100401U	0225110401U	1.11
	6	7.19	4.75	7.37	CVM EP 08U 06 M MCN	0225100601U	0225110601U	1.42
	8	8.53	6.07	8.70	CVM EP 08U 08 M MCN	0225100801U	0225110801U	1.73
	10	9.87	7.40	10.03	CVM EP 08U 10 M MCN	0225101001U	0225111001U	2.04
	12	11.20	8.74	11.38	CVM EP 08U 12 M MCN	0225101201U	0225111201U	2.79
With pre-wired cable	4	5.85	3.39	6.02	CVM EP 08U 04 M WC5	0225400401U	0225410401U	8.03
	6	7.19	4.75	7.37	CVM EP 08U 06 M WC5	0225400601U	0225410601U	8.34
	8	8.53	6.07	8.70	CVM EP 08U 08 M WC5	0225400801U	0225410801U	8.65
	10	9.87	7.40	10.03	CVM EP 08U 10 M WC5	0225401001U	0225411001U	8.97
	12	11.20	8.74	11.38	CVM EP 08U 12 M WC5	0225401201U	0225411201U	9.25

- 24VDC = direct current
- 24VAC = alternating current

BISTABLE SOLENOID/PNEUMATIC BASE WITH 12 POSITIONS

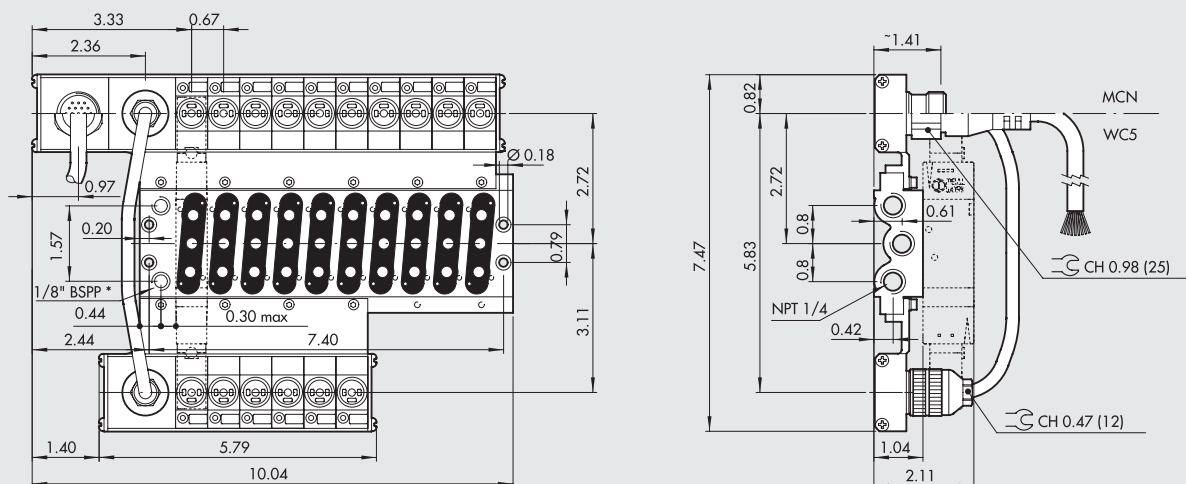


* Exhaust solenoid pilots

	Pos.-Nr.	Description	Code 24VDC	Code 24VAC	Weight [lb]
With multiple connector	12	CVM EP 08U 12 B MCN	0225201201U	0225211201U	2.90
With pre-wired cable	12	CVM EP 08U 12 B WC5	0225501201U	0225511201U	10.36

- 24VDC = direct current
- 24VAC = alternating current

BISTABLE SOLENOID/PNEUMATIC BASE WITH 10 POSITIONS

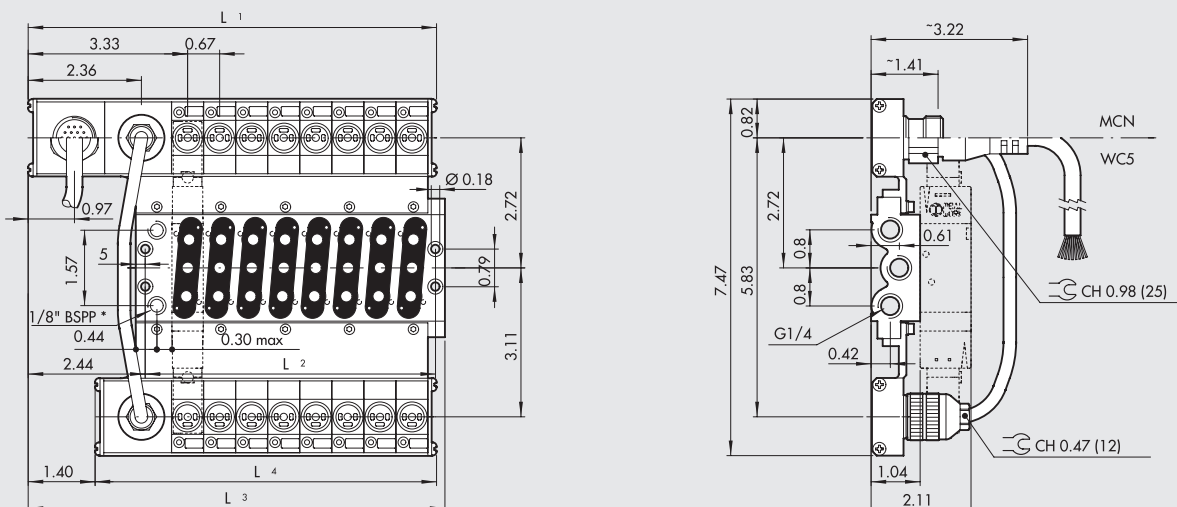


* Exhaust solenoid pilots

	Pos.-Nr.	Description	Code 24VDC	Code 24VAC	Weight [lb]
With multiple connector	10	CVM EP 08U 10 B MCN	0225201001U	0225211001U	2.75
With pre-wired cable	10	CVM EP 08U 10 B WC5	0225501001U	0225511001U	10.14

- : • 24VDC = direct current
- 24VAC = alternating current

BISTABLE SOLENOID/PNEUMATIC BASE WITH 4, 6, 8 POSITIONS

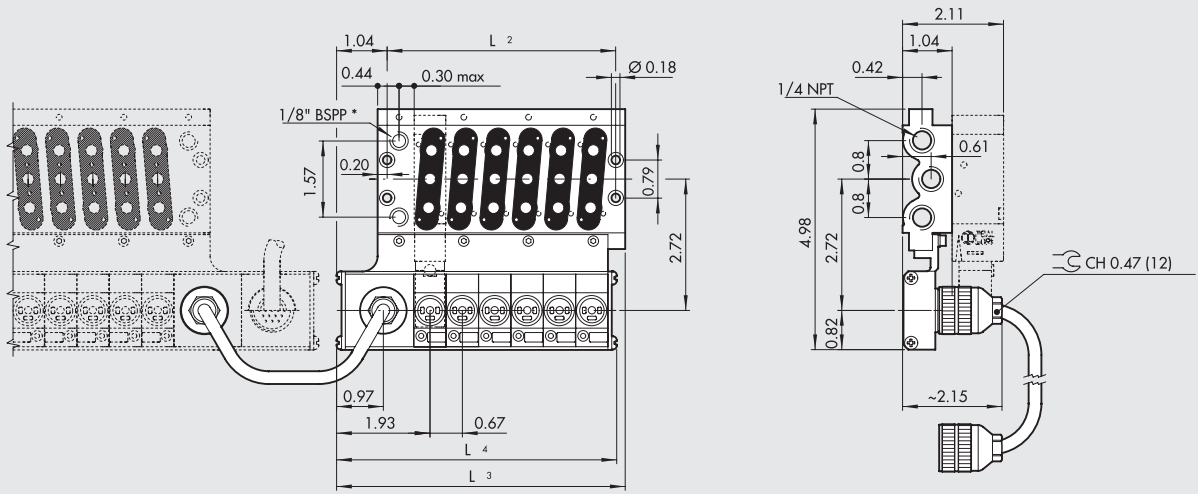


* Exhaust solenoid pilots

	Pos.-Nr.	L1	L2	L3	L4	Description	Code 24VDC	Code 24VAC	Weight [lb]
With multiple connector	4	5.85	3.39	6.02	4.45	CVM EP 08U 04 B MCN	0225200401U	0225210401U	1.70
	6	7.18	4.73	7.36	5.79	CVM EP 08U 06 B MCN	0225200601U	0225210601U	2.13
	8	8.52	6.06	8.70	7.12	CVM EP 08U 08 B MCN	0225200801U	0225210801U	2.65
With pre-wired cable	4	5.84	3.39	6.02	4.45	CVM EP 08U 04 B WC5	0225500401U	0225510401U	8.62
	6	7.18	4.72	7.36	5.79	CVM EP 08U 06 B WC5	0225500601U	0225510601U	9.01
	8	8.52	6.06	8.70	7.12	CVM EP 08U 08 B WC5	0225500801U	0225510801U	9.40

- : • 24VDC = direct current
- 24VAC = alternating current

ADDITIONAL MONOSTABLE SOLENOID/PNEUMATIC BASE WITH 4, 6, 8 POSITIONS



* Exhaust solenoid pilots

Pos.-Nr.	L2	L3	L4	Description	Code 24VDC	Code 24VAC	Weight [lb]
4	3.38	4.63	4.44	CVM EP 08U 04 M ACM	0225300401U	0225310401U	1.10
6	4.72	5.96	5.78	CVM EP 08U 06 M ACM	0225300601U	0225310601U	1.41
8	1.54	7.30	7.12	CVM EP 08U 08 M ACM	0225300801U	0225310801U	1.72

- 24VDC = direct current
- 24VAC = alternating current

NOTES

MODULAR MULTIPLE CONNECTOR KIT

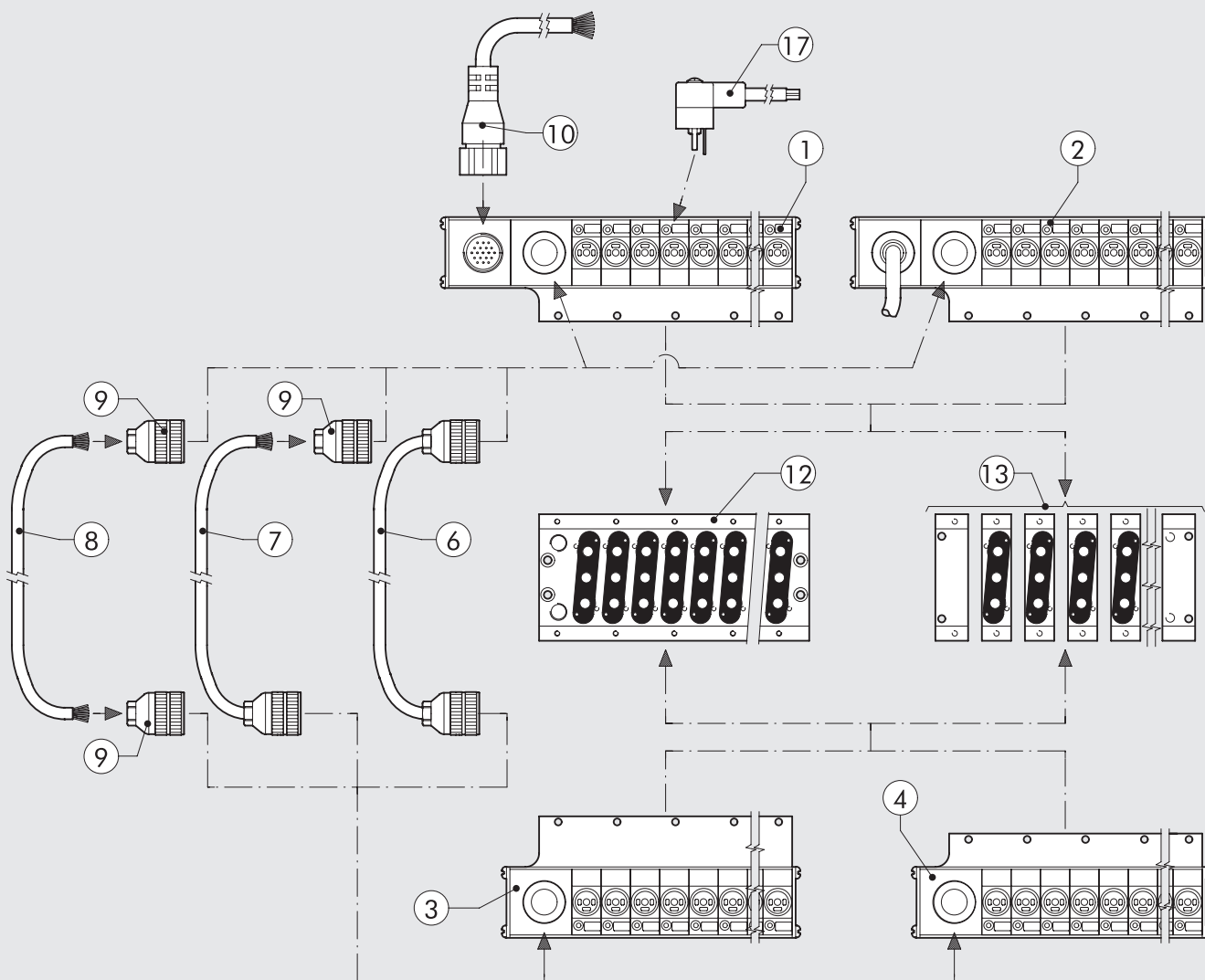
It is possible to buy the various assembly kits separately, to obtain a wide range of customised applications. The main units of the version with connector ① or the pre-wired version ② can easily be assembled with the multiple base ⑫ or the modular manifold base ⑬. The manifold base allows particular circuits on the individual valves (feed from exhaust outlets, pressure differentiation, etc.) Likewise, on the other side it is also simple to mount the secondary unit ③. This possibility is very interesting because it allows you to convert a base for monostable valves into a base for bistable valves. If you fit an additional secondary unit ④ on a base, you obtain an additional solenoid base that can be connected by means of return cables to a main base for monostable valves. The only thing to remember is that in all cases the total number of positions (connection to solenoid valve coil) must not exceed sixteen.

The 10 pin return cable ⑥ is used when a main unit and a secondary unit, or only one additional secondary unit, are mounted together on the multiple (or manifold) base. It has to be connected to the sockets shown in the diagram.

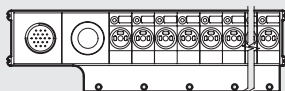
For different requirements, it is also possible to have return cables with a connector at one end only ⑦, or just the 10-wire cable ⑧. These types are available in different lengths. A 10-wire connector kit ⑨ is also available if you need to complete the wiring.

The 19-wire connector complete with cable ⑩ is available in various lengths.

The male connector ⑰ allows the free electrical connection of the multiple connector to be used, in order to control the valves placed in the system or to control the bistable valves by a monostable multiple electrical connection base.

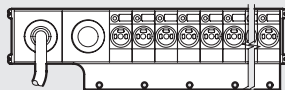


① MAIN KIT - VERSION WITH CONNECTOR



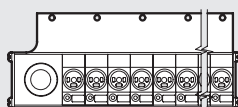
Code	Description	Weight [lb]
0226500401	Main multiple connection kit, 4 positions 24VDC	0.54
0226510401	Main multiple connection kit, 4 positions 24VAC	0.54
0226500601	Main multiple connection kit, 6 positions 24VDC	0.62
0226510601	Main multiple connection kit, 6 positions 24VAC	0.62
0226500801	Main multiple connection kit, 8 positions 24VDC	0.68
0226510801	Main multiple connection kit, 8 positions 24VAC	0.68
0226501001	Main multiple connection kit, 10 positions 24VDC	0.76
0226511001	Main multiple connection kit, 10 positions 24VAC	0.76
0226501201	Main multiple connection kit, 12 positions 24VDC	0.87
0226511201	Main multiple connection kit, 12 positions 24VAC	0.87

② MAIN MULTIPLE PRE-WIRED CONNECTION KIT



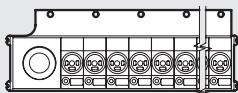
Code	Description	Weight [lb]
0226400401	Pre-wired multiple main connector kit, 4 positions 24VDC	7.39
0226410401	Pre-wired multiple main connector kit, 4 positions 24VAC	7.39
0226400601	Pre-wired multiple main connector kit, 6 positions 24VDC	7.50
0226410601	Pre-wired multiple main connector kit, 6 positions 24VAC	7.50
0226400801	Pre-wired multiple main connector kit, 8 positions 24VDC	7.55
0226410801	Pre-wired multiple main connector kit, 8 positions 24VAC	7.55
0226401001	Pre-wired multiple main connector kit, 10 positions 24VDC	7.63
0226411001	Pre-wired multiple main connector kit, 10 positions 24VAC	7.63
0226401201	Pre-wired multiple main connector kit, 12 positions 24VDC	7.69
0226411201	Pre-wired multiple main connector kit, 12 positions 24VAC	7.69

③ SECONDARY KIT



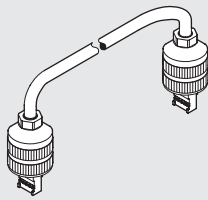
Code	Description	Weight [lb]
0226200401	Multiple secondary connector kit, 4 positions 24VDC	0.37
0226210401	Multiple secondary connector kit, 4 positions 24VAC	0.37
0226200601	Multiple secondary connector kit, 6 positions 24VDC	0.46
0226210601	Multiple secondary connector kit, 6 positions 24VAC	0.46
0226200801	Multiple secondary connector kit, 8 positions 24VDC	0.57
0226210801	Multiple secondary connector kit, 8 positions 24VAC	0.57

④ ADDITIONAL SECONDARY KIT



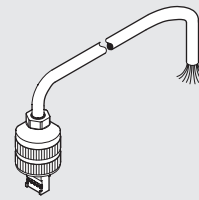
Code	Description	Weight [lb]
0226300401	Multiple secondary connector kit, 4 positions 24VDC	0.35
0226310401	Multiple secondary connector kit, 4 positions 24VAC	0.35
0226300601	Multiple secondary connector kit, 6 positions 24VDC	0.44
0226310601	Multiple secondary connector kit, 6 positions 24VAC	0.44
0226300801	Multiple secondary connector kit, 8 positions 24VDC	0.54
0226310801	Multiple secondary connector kit, 8 positions 24VAC	0.54

6 10-WIRE RETURN CABLE



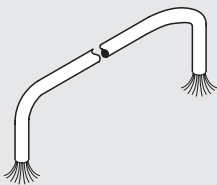
Code	Description
0226150022	10-wire return cable L = 0.87 in
022615....	10-wire return cable
....Length in inch	
Please contact our sales offices	

7 10-WIRE RETURN CABLE - ONE END WITH CONNECTOR



Code	Description
022613....	10-wire return cable - one end with connector
....Length in inch	
Please contact our sales offices	

8 CABLE WITH 10 CONNECTORS



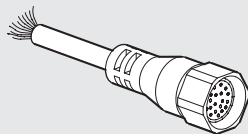
Code	Description
0226107201	10-wires cable
Please specify the desired length in inches	

9 10-WIRE CONNECTOR KIT



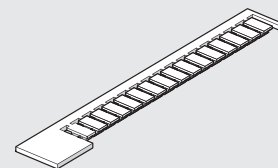
Code	Description
0226170002	10-wire connector kit

10 19-WIRE CABLE, ONE END WITH CONNECTOR



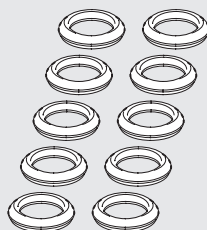
Code	Description
0226140250	19-wire cable, one end with connector L = 98.4 inch
0226140500	19-wire cable, one end with connector L = 196.8 inch
0226141000	19-wire cable, one end with connector L = 393.6 inch
0226141500	19-wire cable, one end with connector L = 590.5 inch
0226142000	19-wire cable, one end with connector L = 787.4 inch
0226143000	19-wire cable, one end with connector L = 1181.1 inch

12 IDENTIFICATION PLATE KIT



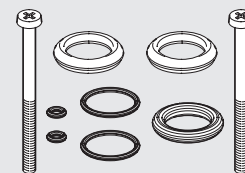
Code	Description
0226107000	Identification plate kit
Comes in 16-pc. packs	

13 ELECTRIC CONTACT GASKETS



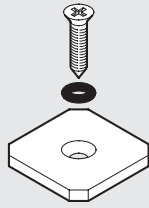
Code	Description
0226107001	Set of electric contact gaskets
Package: 10 pieces	

14 SET OF MULTIPLE BASE GASKETS



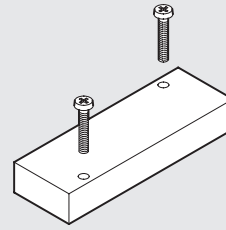
Code	Description
0226007001	Set of M16 multiple base gaskets

15 ELECTRIC CONNECTION BLANKING PLATE



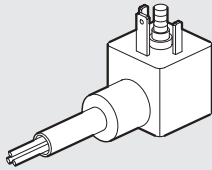
Code	Description
0225004502	Mach 16 electric connection blanking plate

16 BASE BLANKING PLATE



Code	Description
0225004500	Mach 16 base blanking plate

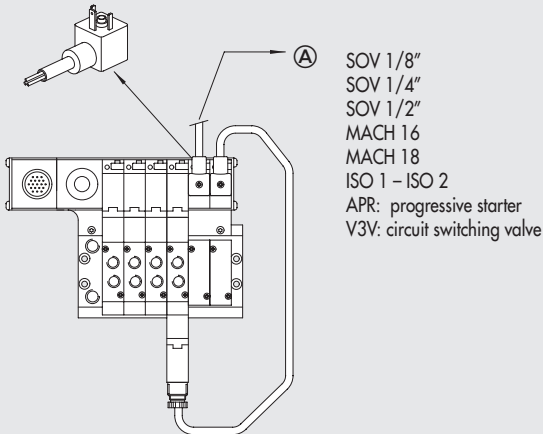
17 MALE CONNECTOR



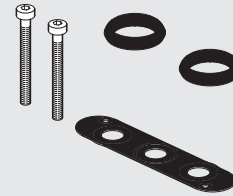
Code	Description
W0970504021	Male connector 2 m

Max power for each position = 5W
 Max total power of multiple connector = 36W

Example of a male connector



18 KIT OF MULTIPLE BASE GASKETS



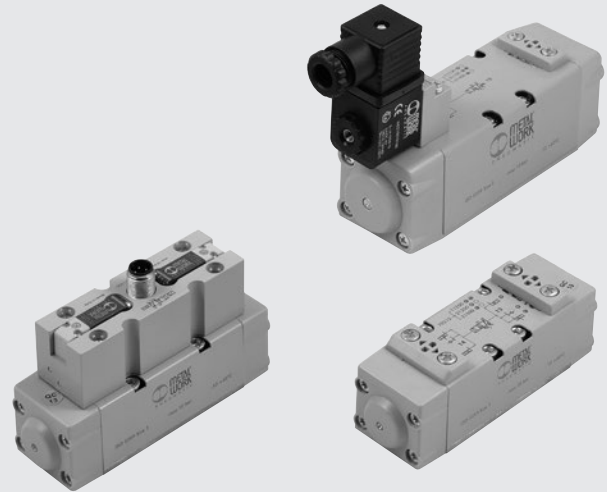
Code	Description
0226007003	Kit of M16 multiple base integrate gaskets

NOTES

VALVES ISO 5599/1, SERIES IPV-ISV



The assembly surface dimensions of ISO1, ISO2 and ISO 3 valves are to ISO5599-1. They are available in the 5-way versions with 2 and 3 positions and with pneumatic or solenoid actuation.



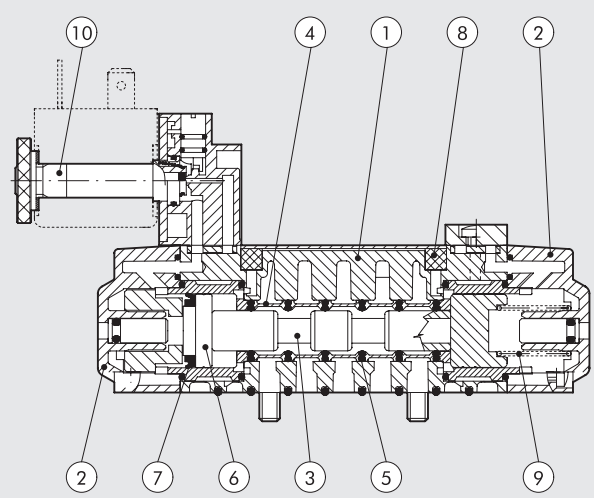
VALVES

VALVES ISO 5599/1, SERIES IPV-ISV

TECHNICAL DATA	ISO 1	ISO 2	ISO 3
Fluid	Filtered air without lubrication; lubrication, if used, must be continuous		
Operating pressure: psi	Vacuum to 145 pneumatic – 36.3 to 145 solenoid/pneumatic		
• monostable	Vacuum to 145 pneumatic – 14.5 to 145 solenoid/pneumatic		
• bistable	Vacuum to 145		
• pilot-assisted	36.3		
Minimum pilot pressure psi	14 to + 140		
Operating temperature range °F	0.30 0.47 0.59		
Nominal diameter in	0.30	0.47	0.59
Conductance C scfm · psi	0.61	1.60	2.37
Critical ratio b psi/psi	0.36	0.25	0.43
Flow rate at 87 psi ΔP 7.25 psi scfm	25	64	113
Flow rate at 87 psi ΔP 14.5 psi scfm	39 Cv 1.1	95.5 Cv 2.7	162.7
Installation	In any position (vertical assembly is not recommended for bistable valves subjected to vibration)		
Assembly	On single and manifold bases according to ISO 5599/1		
Recommended lubricant	ISO and UNI FD 22		
Solenoid pilot	to CNOMO/in-line pilot / M12		to CNOMO
Manual	Bistable on solenoid pilot Monostable on valve body		
Maximum coil nut torque lbf ft	0.74		
Compatibility with oils	Please refer to page 5-2 of the technical documentation		

COMPONENTS

- ① VALVE BODY: Aluminium
- ② END CAP: Hostaform®
- ③ SPOOL: chemically nickel-plated aluminium
- ④ DISTANCE PLATES: plastic
- ⑤ GASKETS: NBR
- ⑥ PISTONS: Hostaform®
- ⑦ PISTON GASKET: NBR
- ⑧ FILTER: sintered bronze
- ⑨ SPRINGS: special steel
- ⑩ OPERATOR: Brass pipe – Stainless steel core

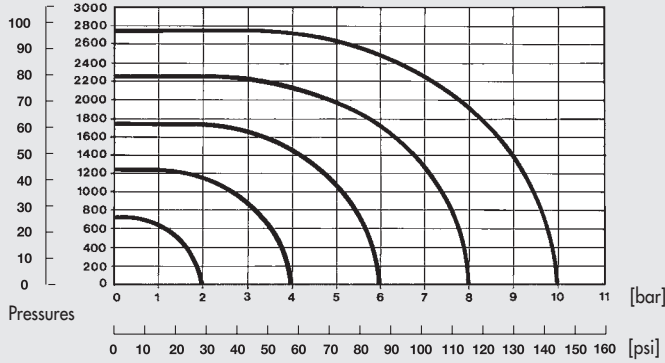


FLOW CHART

ISO 1

Flow rates

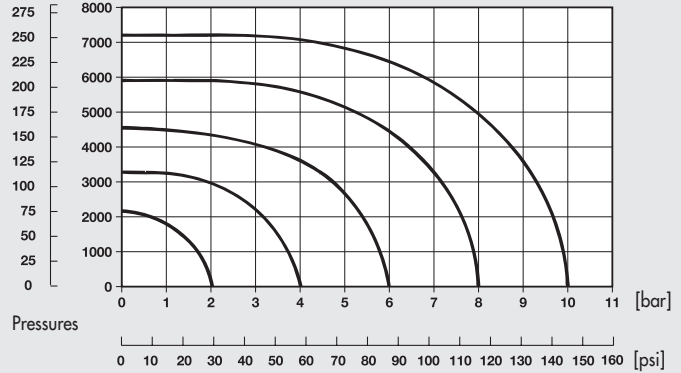
[scfm] [Nl/min]



ISO 2

Flow rates

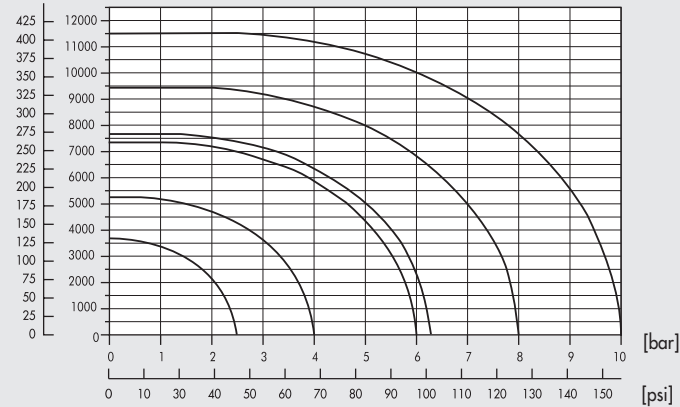
[scfm] [Nl/min]



ISO 3

Flow rates

[scfm] [Nl/min]



KEY TO CODES

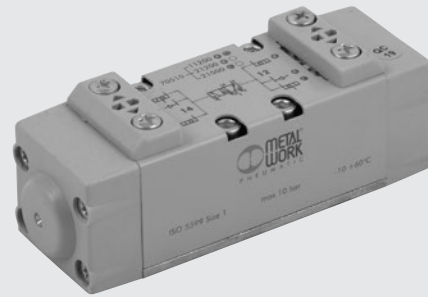
I P V FAMILY		5 DIMENSIONS	5 FUNCTION	P N OPERATORS 14	S RESETTING (12)	O O FURTHER DETAILS	U THREAD
IPV	ISO pneumatic	5 ISO 1	5 5/2	PN pneumatic	S mechanical springs	OO no indication	U NPT
ISV	ISO solenoid/pneumatic	6 ISO 2	6 5/3	SO solenoid/pneumatic	B bistable	CC closed centres	
		7 ISO 3		SE electric pilot-assisted	D differential	OC open centres	
				* DO solenoid/pneumatic in line		PC pressure centres	
				* DE solenoid assisted in line M12			
				● CO M12 solenoid/pneumatic			
				● CE M12 solenoid assisted			

* Only for ISO 1

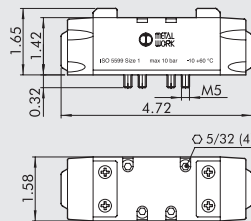
● Only for ISO 1 and ISO 2

VALVES ISO 5599/1, PNEUMATIC SERIES IPV

TECHNICAL DATA		ISO 1	ISO 2	ISO 3
Operating pressure	psi	Vacuum to 145		
Minimum operation pressure:				
• monostable	psi	36.3		
• bistable	psi	14.5		
Operating temperature range	°F	14 to +140		
Nominal diameter	in	0.30	0.47	0.59
Conductance C	scfm · psi	0.61	1.60	2.37
Critical ratio b	psi/psi	0.36	0.25	0.43
Flow rate at 87 psi ΔP 7.25 psi	scfm	25	64	113
Flow rate at 87 psi ΔP 14.5 psi	scfm	39 Cv 1.1	95.5 Cv 2.7	162.7
Response times at 87 psi:				
• monostable	ms	12	24	35
• bistable	ms	20	30	45
Repositioning response times at 87 psi:				
• monostable	ms	30	43	55
• bistable	ms	20	30	45
Hand operator		monostable on valve body		

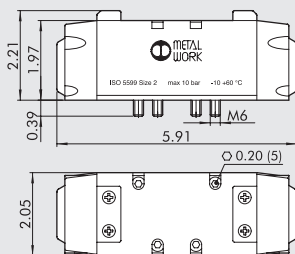


PNEUMATIC ACTUATION ISO 1



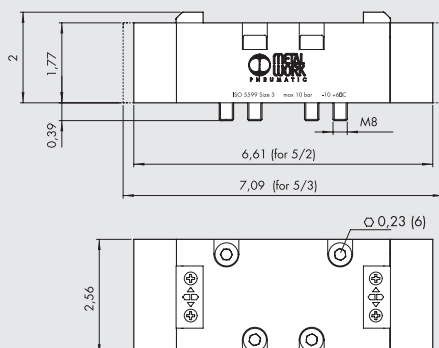
Symbol	Code	Abbrev.	Weight [lb]
	7051011100	IPV 55 PNS OO	0.684
	7051011200	IPV 55 PNB OO	0.684
	7051011300	IPV 55 PND OO	0.684
	7051012100	IPV 56 PNS CC	0.684
	7051012200	IPV 56 PNS OC	0.684
	7051012300	IPV 56 PNS PC	0.684

PNEUMATIC ACTUATION ISO 2



Symbol	Code	Abbrev.	Weight [lb]
	7052011100	IPV 65 PNS OO	1.555
	7052011200	IPV 65 PNB OO	1.555
	7052011300	IPV 65 PND OO	1.555
	7052012100	IPV 66 PNS CC	1.555
	7052012200	IPV 66 PNS OC	1.555
	7052012300	IPV 66 PNS PC	1.555

PNEUMATIC ACTUATION ISO 3



Symbol	Code	Abbrev.	Weight [lb]
	7056011100	IPV 75 PNS OO	2.600
	7056011200	IPV 75 PNB OO	2.600
	7056011300	IPV 75 PND OO	2.600
	7056012100	IPV 76 PNS CC	2.844
	7056012200	IPV 76 PNS OC	2.844
	7056012300	IPV 76 PNS PC	2.844

VALVES ISO 5599/1, SOLENOID/PNEUMATIC, SERIES ISV

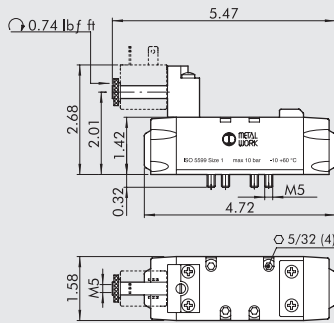
VALVES

VALVES ISO 5599/1, SERIES IPV-ISV

TECHNICAL DATA		ISO 1	ISO 2	ISO 3
Operating pressure:	psi			
• monostable			36.3 to 145	
• bistable			14.5 to 145	
• pilot-assisted			Vacuum to 145	
Minimum pilot pressure	psi		36.3	
Operating temperature range	°F		14 to +140	
Nominal diameter	in	0.30	0.47	0.59
Conductance C	scfm · psi	0.61	1.60	2.37
Critical ratio b	psi/psi	0.36	0.25	0.43
Flow rate at 87 psi ΔP 7.25 psi	scfm	25	64	113
Flow rate at 87 psi ΔP 14.5 psi	scfm	39 Cv 1.1	95.5 Cv 2.7	162.7
TRA / TRR monostable at 87 psi	ms	24 / 50	39 / 60	50 / 120
TRA / TRR bistable at 87 psi	ms	80 / 80	90 / 90	35 / 35
Solenoid pilot		Standards CNOMO		
Hand operator		Bistable on solenoid pilot Monostable on valve body		
Coils		1.18 in side DIN 43650 Form A – ISO 0.87 in side		
Maximum coil nut torque	lbf ft		0.74	

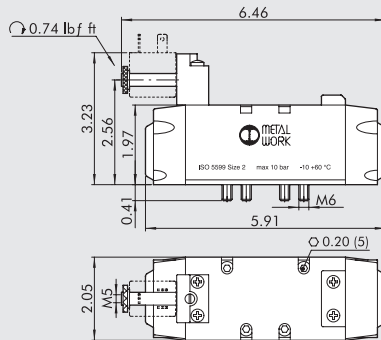


MONOSTABLE 5/2 ISO 1



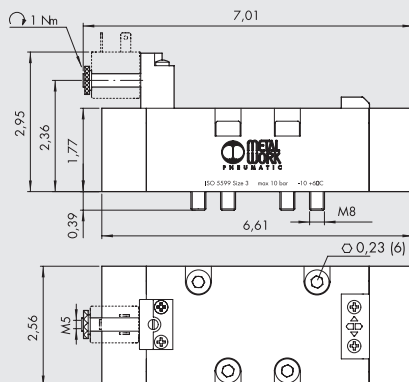
Symbol	Code	Abbrev.	Weight [lb]
	7051021100	ISV 55 SOS OO	0.759
	7051021400	ISV 55 SES OO	0.759

MONOSTABLE 5/2 ISO 2

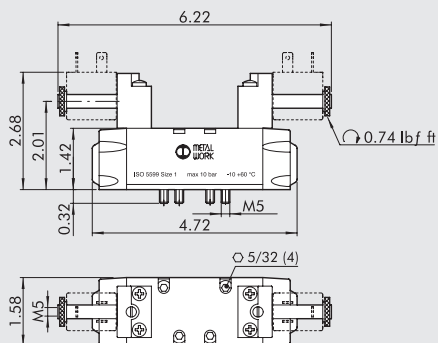


Symbol	Code	Abbrev.	Weight [lb]
	7052021100	ISV 65 SOS OO	1.577
	7052021400	ISV 65 SES OO	1.577

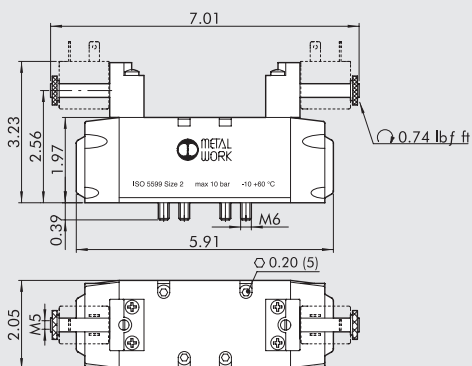
MONOSTABLE 5/2 ISO 3



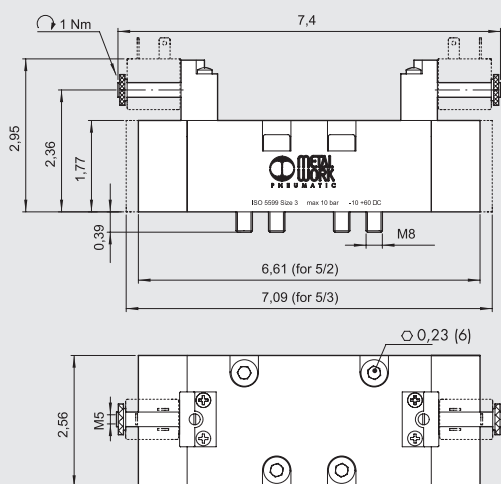
Symbol	Code	Abbrev.	Weight [lb]
	7056021100	ISV 75 SOS OO	2.661
	7056021400	ISV 75 SES OO	2.661

BISTABLE 5/2 ISO 1 - MONOSTABLE 5/3 ISO 1


Symbol	Code	Abbrev.	Weight [lb]
	7051021200	ISV 55 SOB OO	0.856
	7051021300	ISV 55 SOD OO	0.827
	7051022100	ISV 56 SOS CC	0.820
	7051022200	ISV 56 SOS OC	0.820
	7051022300	ISV 56 SOS PC	0.820
	7051021500	ISV 55 SEB OO	0.856
	7051021600	ISV 55 SED OO	0.827
	7051022400	ISV 56 SES CC	0.820
	7051022500	ISV 56 SES OC	0.820
	7051022600	ISV 56 SES PC	0.820

BISTABLE 5/2 ISO 2 - MONOSTABLE 5/3 ISO 2


Symbol	Code	Abbrev.	Weight [lb]
	7052021200	ISV 65 SOB OO	1.632
	7052021300	ISV 65 SOD OO	1.566
	7052022100	ISV 66 SOS CC	1.588
	7052022200	ISV 66 SOS OC	1.588
	7052022300	ISV 66 SOS PC	1.588
	7052021500	ISV 65 SEB OO	1.632
	7052021600	ISV 65 SED OO	1.566
	7052022400	ISV 66 SES CC	1.588
	7052022500	ISV 66 SES OC	1.588
	7052022600	ISV 66 SES PC	1.588

BISTABLE 5/2 ISO 3 - MONOSTABLE 5/3 ISO 3


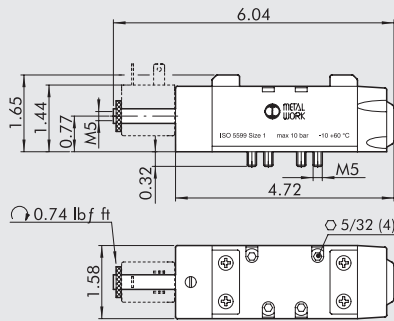
Symbol	Code	Abbrev.	Weight [lb]
	7056021200	ISV 75 SOB OO	2.712
	7056021300	ISV 75 SOD OO	2.712
	7056022100	ISV 76 SOS CC	2.987
	7056022200	ISV 76 SOS OC	2.987
	7056022300	ISV 76 SOS PC	2.987
	7056021500	ISV 75 SEB OO	2.712
	7056021600	ISV 75 SED OO	2.712
	7056022400	ISV 76 SES CC	2.987
	7056022500	ISV 76 SES OC	2.987
	7056022600	ISV 76 SES PC	2.987

VALVES ISO 5599/1, PNEUMATIC, SERIES ISV WITH IN-LINE SOLENOID PILOT

TECHNICAL DATA		ISO 1
Operating pressure:	psi	
• monostable		36.3 to 145
• bistable		14.5 to 145
• pilot-assisted		Vacuum to 145
Minimum pilot pressure	psi	36.3
Operating temperature range	°F	14 to +140
Nominal diameter	in	0.30
Conductance C	scfm · psi	0.61
Critical ratio b	psi/psi	0.36
Flow rate at 87 psi ΔP 7.25 psi	scfm	25
Flow rate at 87 psi ΔP 14.5 psi	scfm	39 Cv 1.1
TRA / TRR monostable at 87 psi	ms	24 / 50
TRA / TRR bistable at 87 psi	ms	20 / 20
Solenoid pilot		In line pilot
Hand operator		Bistable on solenoid pilot
Coils		1.18 in side DIN 43650
		Form A – ISO
		0.87 in side
Maximum coil nut torque	lbf ft	0.74

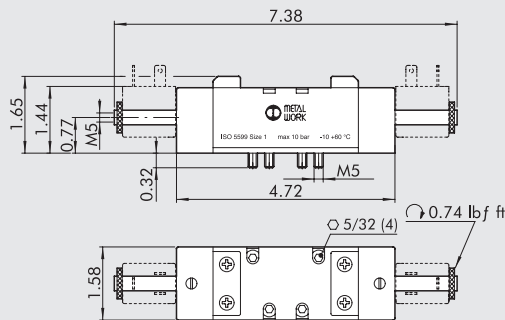


MONOSTABLE 5/2 ISO 1



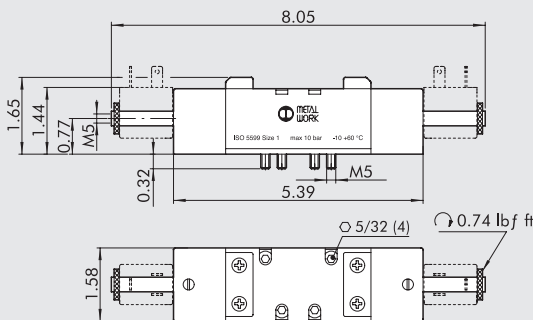
Symbol	Code	Abbrev.	Weight [lb]
	7053021100	ISV 55 DOS OO	0.873
	7053021400	ISV 55 DES OO	0.873

BISTABLE 5/2 ISO 1



Symbol	Code	Abbrev.	Weight [lb]
	7053021200	ISV 55 DOB OO	0.992
	7053021500	ISV 55 DEB OO	0.992

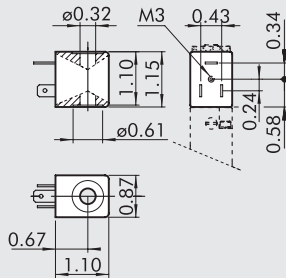
MONOSTABLE 5/3 ISO 1



Symbol	Code	Abbrev.	Weight [lb]
	7053022100	ISV 56 DOS CC	1.140
	7053022200	ISV 56 DOS OC	1.138
	7053022300	ISV 56 DOS PC	1.138
	7053022400	ISV 56 DES CC	1.140
	7053022500	ISV 56 DES OC	1.138
	7053022600	ISV 56 DES PC	1.136

COILS AND CONNECTORS FOR ISO 5599/1 SOLENOID VALVES SERIES ISV

COILS SIDE 22 mm

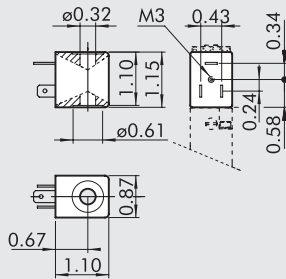


- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents

- Coil temperature 100% ED: 55°C at 20°C ambient temperature
- According to Atex 2014/34/EU rule, group 2, category 3 GD
- Electrical connection DIN 43650 B-IND

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000151	Coil 22 Ø 8 BA 2W-12VDC	12Vcc	2W	2W
W0215000101	Coil 22 Ø 8 BA 2W-24VDC	24Vcc	2W	2W
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC	24V 50/60Hz	5.3VA	3.5VA
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC	110V 50/60Hz	5.3VA	3.5VA
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC	220V 50/60Hz	5.3VA	3.5VA

"UL" AND "CSA" COILS 22 mm



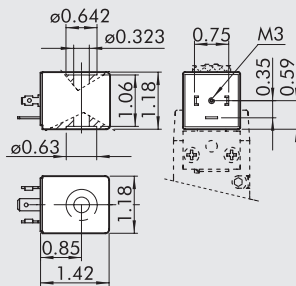
- Voltage tolerance: -10% to + 15%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector
- Avoid prolonged exposure to the atmospheric agents

- Coil temperature 100% ED: 131°F at 68°F – Ambient temperature
- Electrical connection DIN 43650 B-IND

Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR	12Vcc	2W	2W
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR	24Vcc	2W	2W
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR	24V 50/60Hz	5.3VA	3.5VA
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR	110V 50/60Hz	5.3VA	3.5VA
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR	220V 50/60Hz	5.3VA	3.5VA



COILS SIDE 30 mm

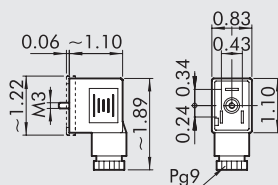


- Electric contact DIN43650 shape A – ISO 4400
- Voltage tolerance: -10% + 10%
- Insulation class: F155
- Degree of protection: IP65 EN60529 with connector

- Avoid prolonged exposure to the atmospheric agents
- According to Atex 2014/34/EU rule, group 2, category 3 GD
- Electrical connection DIN 43650 - A

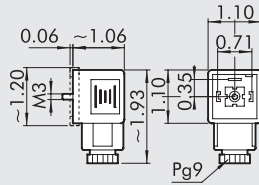
Code	Abbrev.	Nominal voltage	Absorption	
			Inrush	Holding
W0210010100	Coil 30 Ø 8 2W-24VDC	24Vcc	5W	2W
W0210011100	Coil 30 Ø 8 3.5VA-24VAC	24V 50/60Hz	10VA	3.5VA
W0210012100	Coil 30 Ø 8 3.5VA-110VAC	110V 50/60Hz	10VA	3.5VA
W0210013100	Coil 30 Ø 8 3.5VA-220VAC	220V 50/60Hz	10VA	3.5VA

CONNECTOR FOR COILS SIDE 22 mm DIN 43650 B-IND



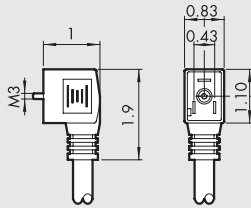
Code	Type	Colour	Ø Cable
W0970510011	Standard	Black	PG9
W0970510012	LED 24V	Transparent	PG9
W0970510013	LED 110V	Transparent	PG9
W0970510014	LED 220V	Transparent	PG9
W0970510015	LED + VDR 24V	Transparent	PG9
W0970510016	LED + VDR 110V	Transparent	PG9
W0970510017	LED + VDR 220V	Transparent	PG9
W0970510070	Atex II 2 GD	Black	PG9

CONNECTOR FOR COILS SIDE 30 mm DIN 43650-A



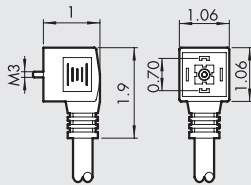
Code	Type	Colour	Ø Cable
W0970520033	Standard	Black	PG9
W0970520034	LED 24V	Transparent	PG9
W0970520035	LED 110V	Transparent	PG9
W0970520036	LED 220V	Transparent	PG9
W0970520037	LED + VDR 24V	Transparent	PG9
W0970520038	LED + VDR 110V	Transparent	PG9
W0970520039	LED + VDR 220V	Transparent	PG9

PRE WIRED DIN CONNECTORS 6 FEET CABLE 22 mm



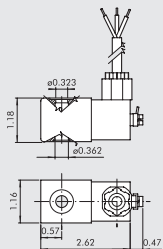
Code	Description
888776	DIN connector 110VAC led
888777	DIN connector standard black
888778	DIN connector 24VDC

PRE WIRED DIN CONNECTORS 6 FEET CABLE 30 mm



Code	Description
888779	DIN connector standard black
888780	DIN connector led 24VDC
888781	DIN connector led 110VAC

KIT COIL EEXM



Code	Description
0227606913	Kit for coil 30 24 VDC EEXMT5 cable 118 inch
0227606915	Kit for coil 30 24 VDC EEXMT5 cable 197 inch
0227608013	Kit for coil 30 24 VAC EEXMT5 cable 118 inch
0227608015	Kit for coil 30 24 VAC EEXMT5 cable 197 inch
0227608023	Kit for coil 30 110 VAC EEXMT5 cable 118 inch
0227608025	Kit for coil 30 110 VAC EEXMT5 cable 197 inch
0227608033	Kit for coil 30 230 VAC EEXMT5 cable 118 inch
0227608035	Kit for coil 30 230 VAC EEXMT5 cable 197 inch

According to Atex 2014/34/EU rule,

⊕ II 2G Ex mb IIC T4/T5 Gb

⊕ II 2D Ex tb IIIC T130/T95 °C IP66 Db

N.B.: Supplied complete with adapter for Ø8 mm sleeve.

KIT COILS SIDE 22 IP65



Code	Description
0222100100	Kit for coil 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents.
Applicable to valves with a technopolymer control.

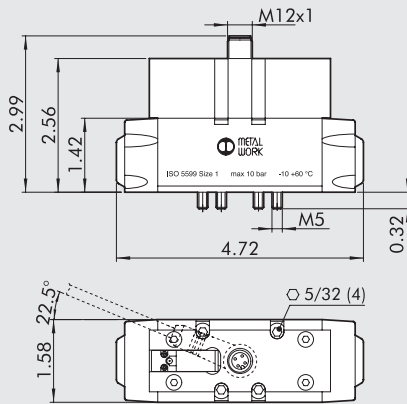
VALVES ISO 5599/1, SOLENOID/PNEUMATIC, SERIES ISV WITH M12 CONNECTOR



TECHNICAL DATA		ISO 1	ISO 2
Operating pressure:	psi		
• monostable		36.3 to 145	
• bistable		14.5 to 145	
• pilot-assisted		Vacuum to 145	
Minimum pilot pressure	psi	36.3	
Operating temperature range	°F	14 to +140	
Nominal diameter	in	0.30	0.47
Conductance C	scfm/psi	0.61	1.60
Critical ratio b	psi/psi	0.36	0.25
Flow rate at 87 psi ΔP 7.25 psi	scfm	25	64
Flow rate at 87 psi ΔP 14.5 psi	scfm	39 Cv 1.1	95.5 Cv 2.7
TRA / TRR monostable at 87 psi	ms	22 / 60	78 / 180
Solenoid pilot		With built-in coil	
Hand operator		Monostable on solenoid pilot Monostable on valve body	
Coil power	W	1.2	
Voltage		24 VDC ±10%	
Electrical connection		M12	
Degree of protection		IP65 EN60529	
Electrical protection		Transil	

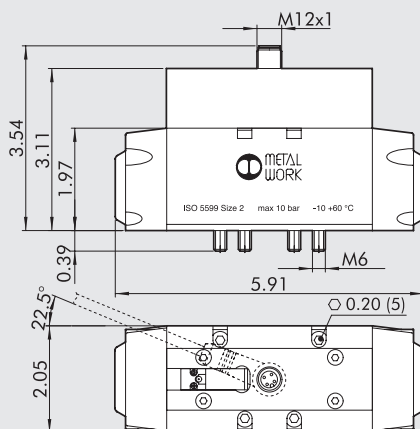


MONOSTABLE 5/2 ISO 1



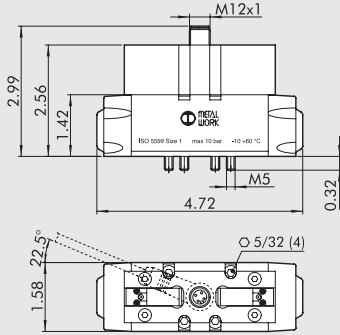
Symbol	Code	Abbrev.	Weight [lb]
	7054021100	ISV 55 COS OO	1.120
	7054021400	ISV 55 CES OO	1.120

MONOSTABLE 5/2 ISO 2



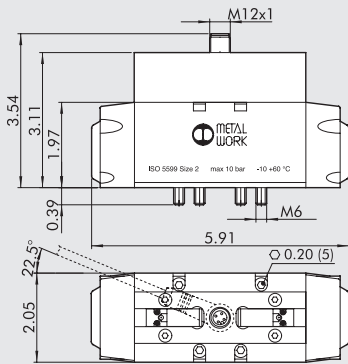
Symbol	Code	Abbrev.	Weight [lb]
	7055021100	ISV 65 COS OO	1.987
	7055021400	ISV 65 CES OO	1.987

BISTABLE 5/2 ISO 1 - MONOSTABLE 5/3 ISO 1



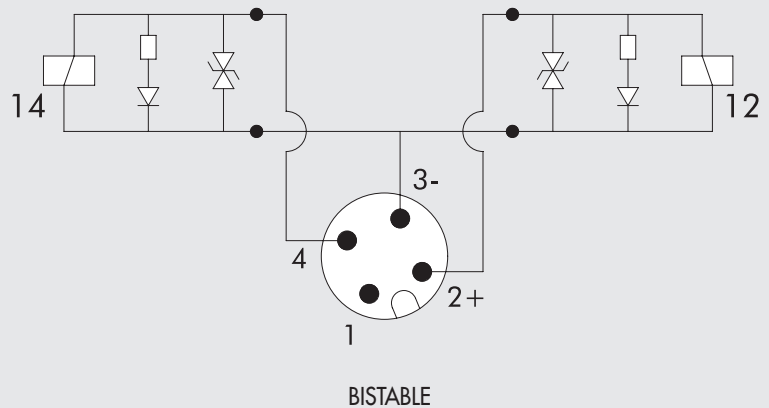
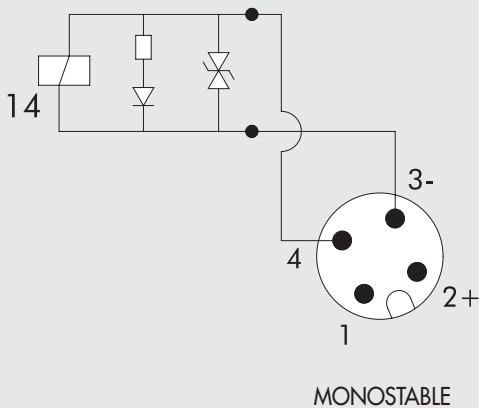
Symbol	Code	Abbrev.	Weight [lb]
	7054021200	ISV 55 COB OO	1.129
	7054021300	ISV 55 COD OO	1.081
	7054022100	ISV 56 COS CC	1.094
	7054022200	ISV 56 COS OC	1.094
	7054022300	ISV 56 COS PC	1.094
	7054021500	ISV 55 CEB OO	1.129
	7054021600	ISV 55 CED OO	1.081
	7054022400	ISV 56 CES CC	1.094
	7054022500	ISV 56 CES OC	1.094
	7054022600	ISV 56 CES PC	1.094

BISTABLE 5/2 ISO 2 - MONOSTABLE 5/3 ISO 2



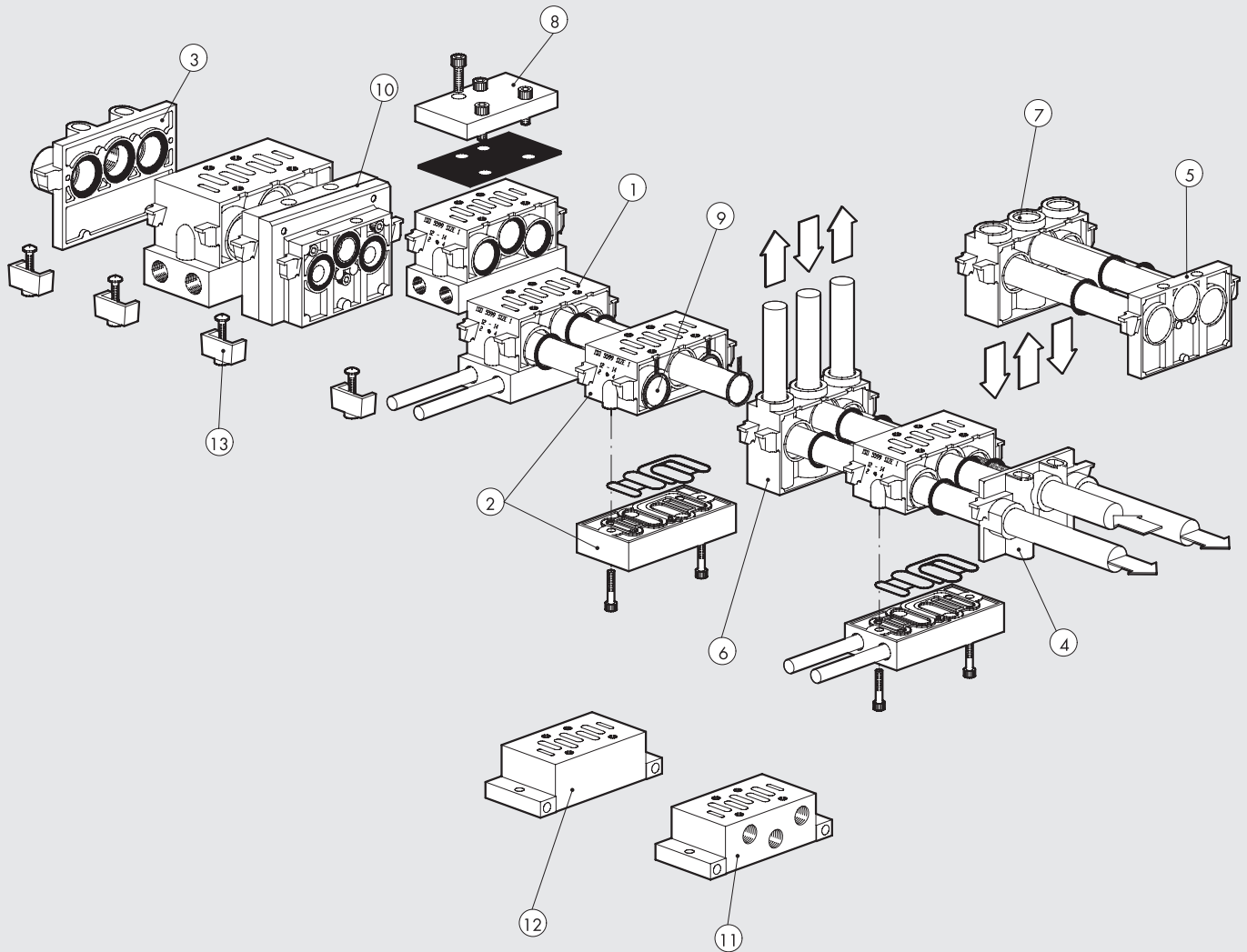
Symbol	Code	Abbrev.	Weight [lb]
	7055021200	ISV 65 COB OO	1.896
	7055021300	ISV 65 COD OO	1.896
	7055022100	ISV 66 COS CC	1.914
	7055022200	ISV 66 COS OC	1.914
	7055022300	ISV 66 COS PC	1.914
	7055021500	ISV 65 CEB OO	1.896
	7055021600	ISV 65 CED OO	1.896
	7055022400	ISV 66 CES CC	1.914
	7055022500	ISV 66 CES OC	1.914
	7055022600	ISV 66 CES PC	1.914

WIRING DIAGRAM



N.B.: Can be used the M12x1 connectors on page 2-188, without wiring the central PIN.

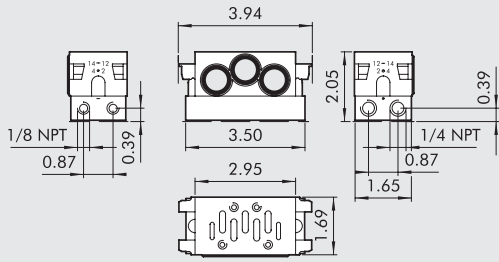
BASES ISO 5599/1 FOR VALVES SERIES IPV-ISV



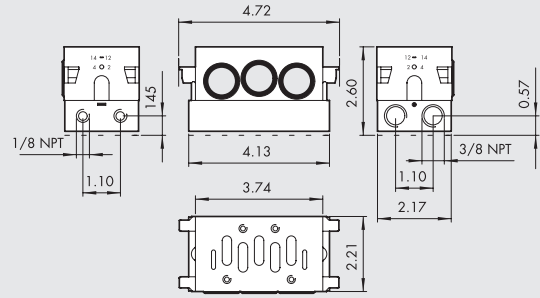
Reference	Code ISO 1	Code ISO 2	Description
①	0228000150U	0228001150U	Manifold base - side ports
②	0228000155U	0228001155U	Manifold base with bottom ports
③	0228000200U	0228001200U	Input end plate
④	0228000201U	0228001201U	Additional input end plate
⑤	0228000210	0228001210	Blind end plate
⑥	0228000300U	0228001300U	Intermediate - top ports
⑦	0228000301U	0228001301U	Intermediate - back ports
⑧	0228000500	0228001500	Blanking plate
⑨	0228000400	0228001400	Intermediate diaphragm
⑩	0228000600	-	ISO 1/ISO 2 port adapter
⑪	0228000100U	0228001100U	Individual base - side ports
⑫	0228000110U	0228001110U	Base - bottom ports
⑬	0228000700	0228001700	Assembly kit

① MANIFOLD BASE, SIDE PORTS

ISO 1



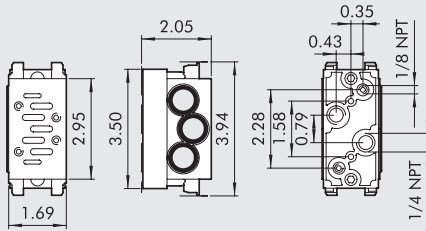
ISO 2



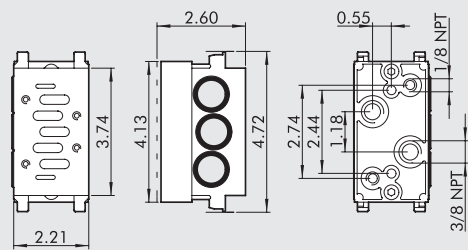
Code	Description	Weight [lb]
0228000150U	Manifold base, side ports, ISO 1	0.692
0228001150U	Manifold base, side ports, ISO 2	0.289

② MANIFOLD BASE, BOTTOM PORTS

ISO 1



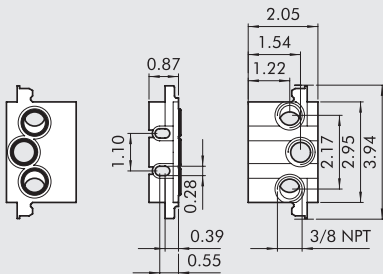
ISO 2



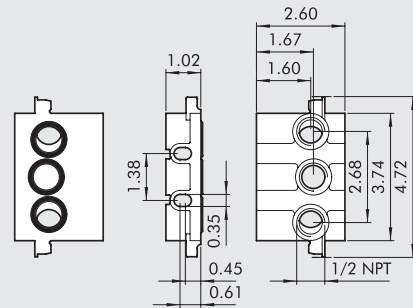
Code	Description	Weight [lb]
0228000155U	Manifold base, bottom ports, ISO 1	0.692
0228001155U	Manifold base, bottom ports, ISO 2	1.114

③ INPUT END PLATE

ISO 1



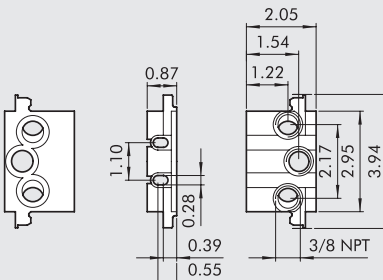
ISO 2



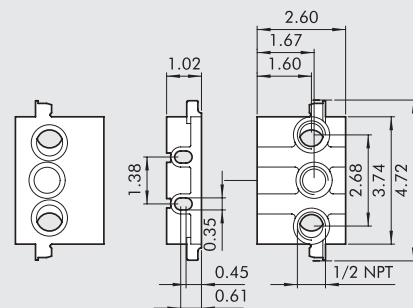
Code	Description	Weight [lb]
0228000200U	Input end plate ISO 1	0.284
0228001200U	Input end plate ISO 2	0.454

④ ADDITIONAL INPUT END PLATE

ISO 1

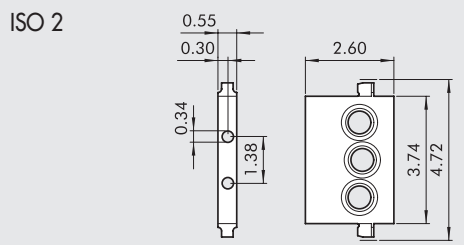
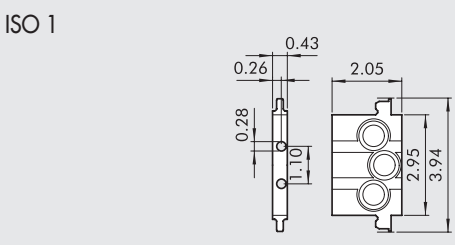


ISO 2



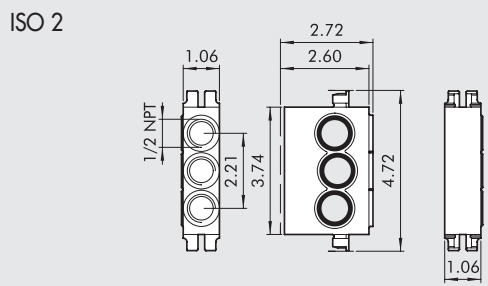
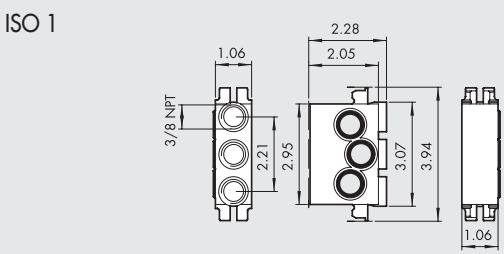
Code	Description	Weight [lb]
0228000201U	Additional input end plate, ISO 1	0.185
0228001201U	Additional input end plate, ISO 2	0.357

5 BLIND END PLATE



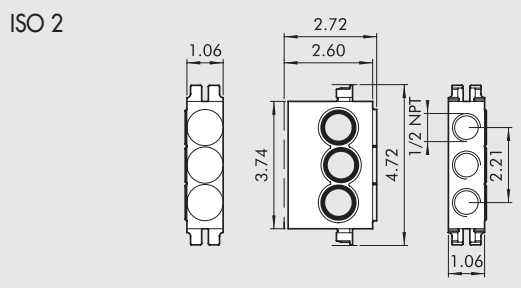
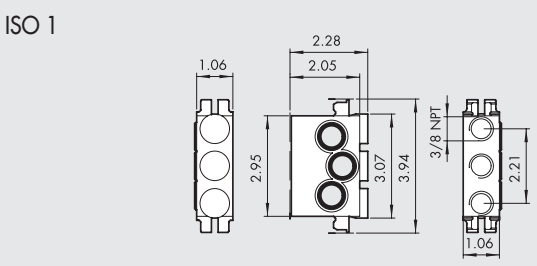
Code	Description	Weight [lb]
0228000210	Blind end plate, ISO 1	0.174
0228001210	Blind end plate, ISO 2	0.287

6 INTERMEDIATE TOP PORTS



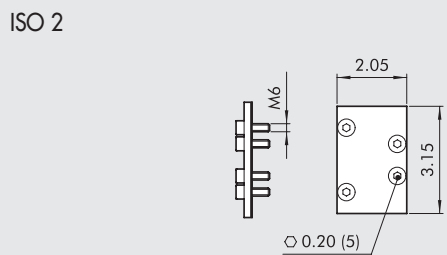
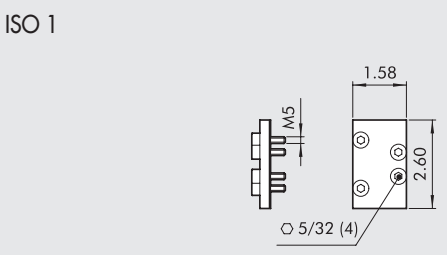
Code	Description	Weight [lb]
0228000300U	Intermediate top ports, ISO 1	0.518
0228001300U	Intermediate top ports, ISO 2	0.659

7 INTERMEDIATE REAR PORTS



Code	Description	Weight [lb]
0228000301U	Intermediate rear ports, ISO 1	0.523
0228001301U	Intermediate rear ports, ISO 2	0.659

8 BLANKING PLATE



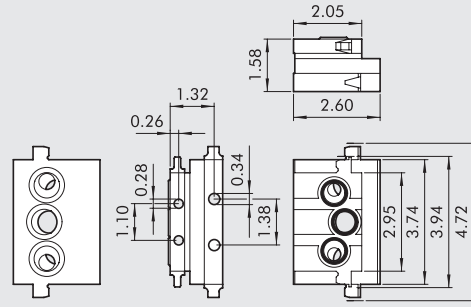
Code	Description	Weight [lb]
0228000500	Blanking plate, ISO 1	0.104
0228001500	Blanking plate, ISO 2	0.212

9 INTERMEDIATE DIAPHRAGM



Code	Description	Weight [lb]
0228000400	Intermediate diaphragm, ISO 1	0.009
0228001400	Intermediate diaphragm, ISO 2	0.015

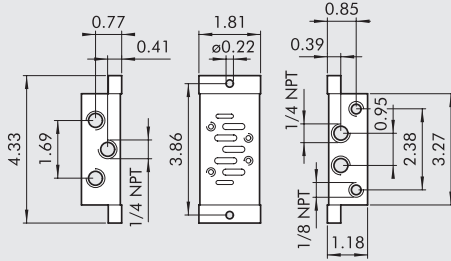
10 DIMENSION ADAPTER



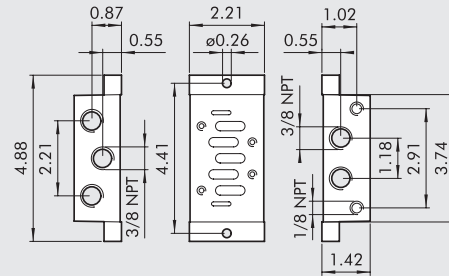
Code	Description	Weight [lb]
0228000600	Dimension adapter ISO 1-2	1.001

11 INDIVIDUAL BASE SIDE PORTS

ISO 1



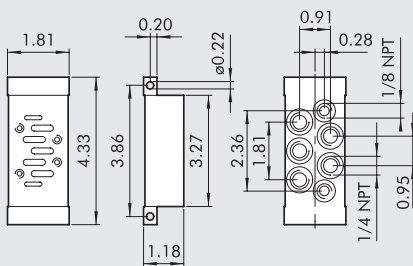
ISO 2



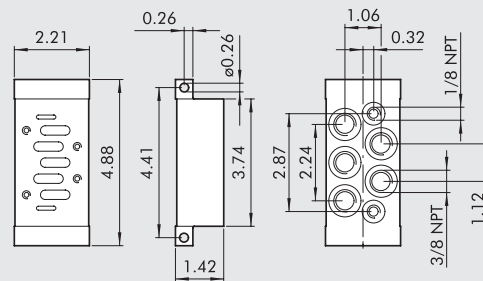
Code	Description	Weight [lb]
0228000100U	Individual base side ports, ISO 1	0.364
0228001100U	Individual base side ports, ISO 2	0.567

12 INDIVIDUAL BASE BOTTOM PORTS

ISO 1



ISO 2



Code	Description	Weight [lb]
0228000110U	Individual base bottom ports, ISO 1	0.434
0228001110U	Individual base bottom ports, ISO 2	0.670

13 ASSEMBLY KIT

ISO 1

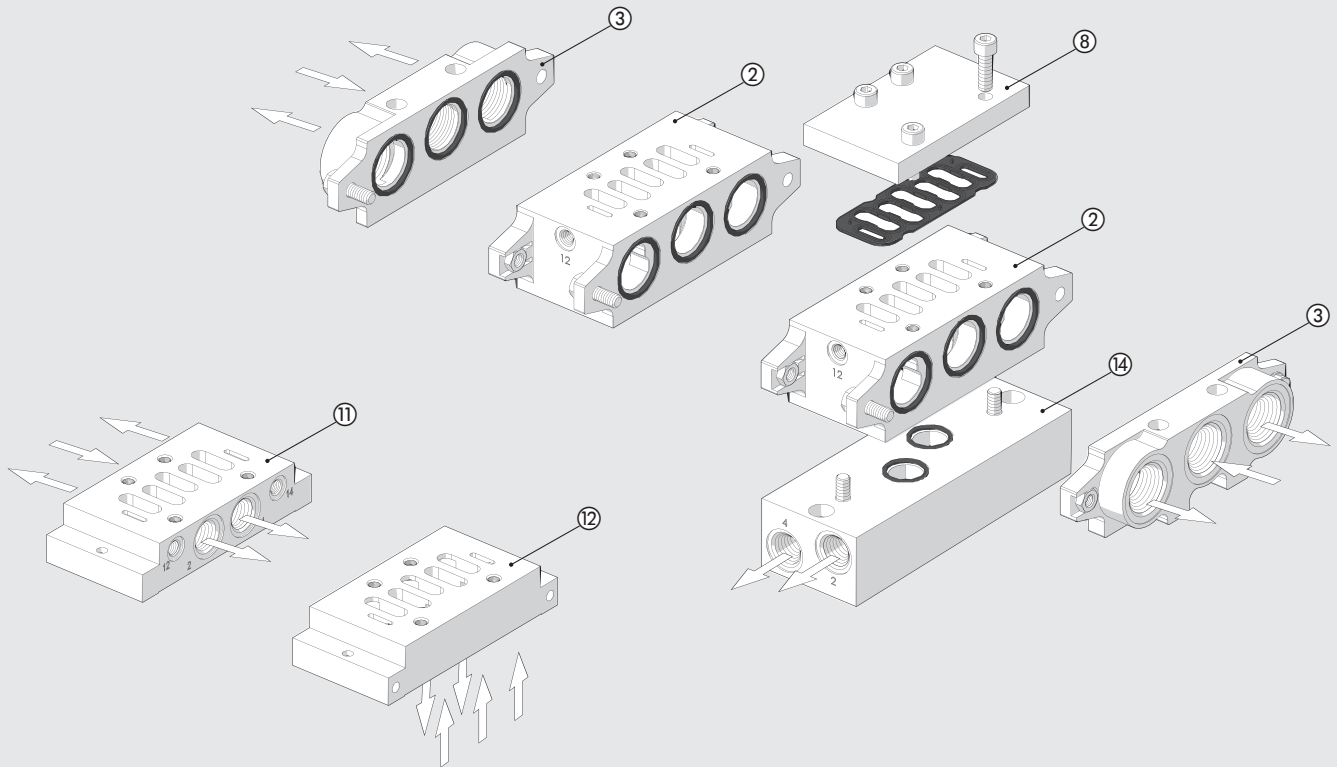


ISO 2



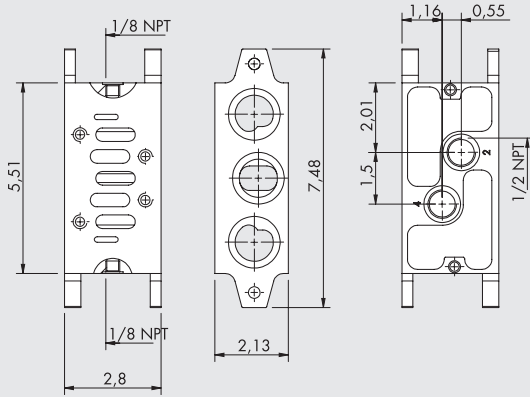
Code	Description	Weight [lb]
0228000700	Assembly kit, ISO 1	0.104
0228001700	Assembly kit, ISO 2	0.104

BASES ISO 5599/1 FOR VALVES SERIES IPV-ISV SIZE ISO 3



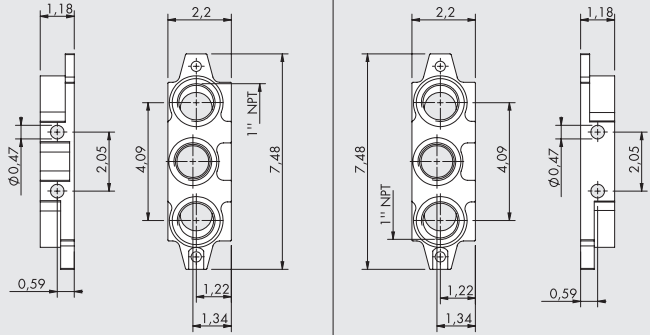
Reference	Code ISO 3	Description
②	0228002155U	Manifold base with bottom ports
③	0228002200U	Input end plate
⑧	0228002500	Blanking plate
⑪	0228002100U	Individual base - side ports
⑫	0228002110U	Base - bottom ports
⑭	0228002150U	Side interface

② MANIFOLD BASE, BOTTOM PORTS



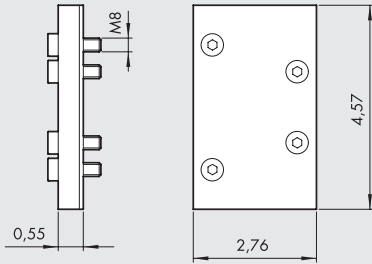
Code	Description	Weight [lb]
0228002155U	Manifold base, bottom ports, ISO 3	2.017

③ INPUT END PLATE



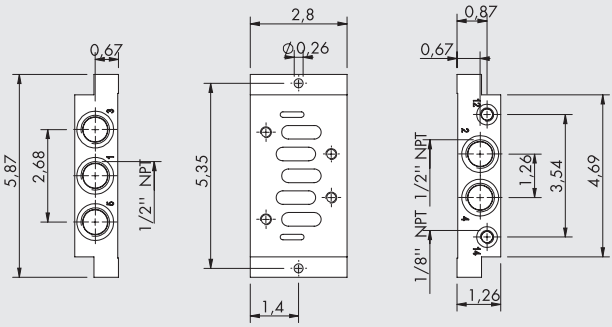
Code	Description	Weight [lb]
0228002200U	Input end plate, ISO 3	1.940

⑧ BLANKING PLATE



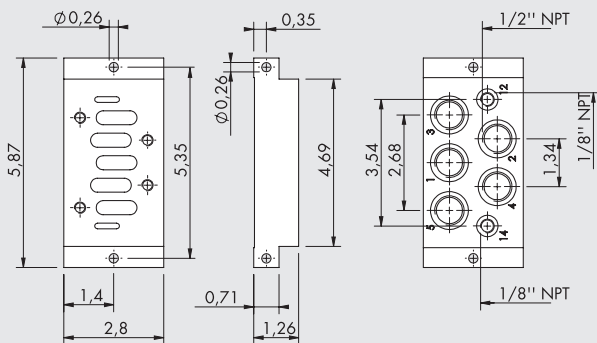
Code	Description	Weight [lb]
0228002500	Blanking plate, ISO 3	0.772

⑪ INDIVIDUAL BASE SIDE PORTS



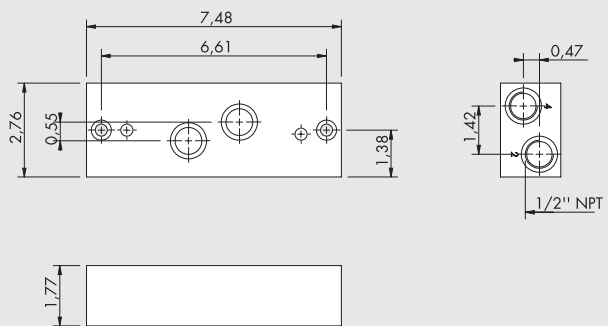
Code	Description	Weight [lb]
0228002100U	Individual base side ports, ISO 3	1.036

⑫ INDIVIDUAL BASE BOTTOM PORTS



Code	Description	Weight [lb]
0228002110U	Individual base bottom ports, ISO 3	1.446

⑭ SIDE INTERFACE



Code	Description	Weight [lb]
0228002150U	Side interface, ISO 3	3.241

NOTES

Lined area for notes.

SUMMARY OF VALVE ISLANDS



EB 80

EB 80 ELECTRO-PNEUMATIC SYSTEM

● EB 80 ELECTRO-PNEUMATIC SYSTEM PAGE 1-96



● EB 80 - SIGNAL MODULES - S PAGE 1-107

● EB 80 - ELECTRICAL CONNECTION - E PAGE 1-115



● EB 80 - MULTI-POLE ELECTRICAL CONNECTION - E PAGE 1-117



● EB 80 - ELECTRICAL CONNECTION WITH FIELDBUS - E PAGE 1-121



● EB 80 - ADDITIONAL ELECTRICAL CONNECTION - E PAGE 1-135



● EB 80 - COMPRESSED-AIR SUPPLY - P PAGE 1-138



● EB 80 - BASES FOR VALVES - B PAGE 1-141



● EB 80 - VALVES PAGE 1-144



● EB 80 - PROPORTIONAL PRESSURE REGULATOR - A PAGE 1-150



● EB 80 - INTERMEDIATE SUPPORT - M PAGE 1-156



● EB 80 - CLOSED END-PLATE - C PAGE 1-161

EB 80 BOXI



● EB 80 BOXI - 4-POSITION VALVE ISLAND PAGE 1-164

EB 80 ACCESSORIES



● EB 80 - MULTI-FUNCTION MODULE PAGE 1-176



● EB 80 - SPLASH AREA PAGE 1-193



HDM

- **HDM + MULTI-POLE CONNECTION** PAGE 1-196
- **HDM + B&R** PAGE 1-200
- **HDM - VALVES, INTERMEDIATES ELEMENTS AND ACCESSORIES** PAGE 1-203



MULTIMACH

- **MULTIMACH** PAGE 1-207
- **MULTIMACH + B&R** PAGE 1-215

EB 80 ELECTRO-PNEUMATIC SYSTEM

EB 80 is defined as an electro-pneumatic system as it would be simplistic to use the term "solenoid valve island". In effect, a single assembly can combine solenoid valves of all types, multi-position bases, pneumatic and electric supplies arranged as desired in a system, digital or analogue input or output signal control modules and much more besides.

The EB 80 system is protected by numerous patents and utility models, which enhance the most innovative design solutions.

The possible combinations are endless, but the most amazing thing is that they can be obtained using a small number of basic components.

In order to achieve this objective, a single size of small yet high-performance valves to cover the vast majority of applications was conceived.






A single electronic control unit is provided when supplying 12VDC or 24VDC valves with multi-pole cables or with a field bus for each protocol.

All EB 80 versions come with an efficient diagnostic system.

The EB 80 catalogue consists of a first overall introductory chapter followed by a chapter for each subsystem.

NSF H1-certified grease is used to lubricate the valve spool and seals.



TECHNICAL DATA							
Supply voltage range	VDC	12 -10%		24 +30%			
Minimum operating voltage	VDC			10.8 *			
Maximum operating voltage	VDC			31.2			
Maximum admissible voltage	VDC			32 ***			
Power for each controlled pilot	W	3 for 15 ms, then holding 0.3					
Drive (for multi-pole)		PNP or NPN					
Solenoid rating		100% ED					
Solenoid valve supply power		See chapter "Electrical connection - E"					
Signal module supply power		See chapter "Signal module - S"					
Protection		Overload and short-circuit protected solenoid pilot Output					
Diagnostics		See chapter "Electrical connection - E"					
Maximum number of solenoid pilots		21 or 38 multi-pole connection; field bus 128					
Ambient temperature	°C	-10 to + 50 (at 116 psi)					
	°F	14 to 122 (at 116 psi)					
Operating pressure		5/2 and 5/3		2/2 and 3/2			
Non-assisted valves	bar	3 to 8		3.5 to 8			
	MPa	0.3 to 0.8		0.35 to 0.8			
	psi	43 to 116		51 to 116			
Assisted valves	bar	Vacuum to 10					
	MPa	Vacuum to 1					
	psi	Vacuum to 145					
Servo pressure	bar	3 to 8		min. (see graph on page 1 -145) / max. 8			
	MPa	0.3 to 0.8		min. (see graph on page 1 -145) / max. 0.8			
	psi	43 to 116		min. (see graph on page 1 -145) / max. 116			
Valve flow rate, at 91 psi ΔP 14.5 psi		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"	Ø 10 mm **	Ø 3/8" **
valve 2/2	scfm	12.4	15.2	17.7	15.2	-	-
valve 3/2	scfm	12.4	21.2	24.8	21.2	44.2	44.2
valve 5/2	scfm	12.4	23.0	28.3	23.0	44.2 - 49.5	44.2 - 49.5
valve 5/3	scfm	12.4	16.3	17.7	16.3	35.3 - 44.2	35.3 - 44.2
valve V3V (R)	scfm	-	-	-	-	35.3	35.3
Actuation response time (TRA) / reset response time (TRR) at 6 bar							
TRA/TRR valve 2/2 and 3/2	ms			14 / 28			
TRA/TRR valves 5/2 monostable and shut-off valve	ms			12 / 45			
TRA/TRR valve 5/2 bistable	ms			12 / 14			
TRA/TRR valve 5/3	ms			15 / 45			
TRA/TRR valve 3/2 high flow	ms			13 / 36			
Fluid				Unlubricated air			
Air quality required				ISO 8573-1 class 4-7-3			
Degree of protection				IP65 (with connectors connected or plugged if not used)			
Category ATEX				Ⓢ II 3G Ex ec IIC T5 Gc X -10°C<Ta<50°C			
				Ⓢ II 3D Ex tc IIIC T100°C Dc X			
Certifications				 -  -  -  - 			

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power pack output using the calculations shown on page 1-116.

** Using high-flow valves or connected valves - see pages 1-146

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

N.B.: Refer to the chapter of each EB 80 sub-assembly for specific technical data.

CERTIFICATIONS

The **UL** certification for the part concerning only CSA (Canadian market) is bound to the following conditions of use:

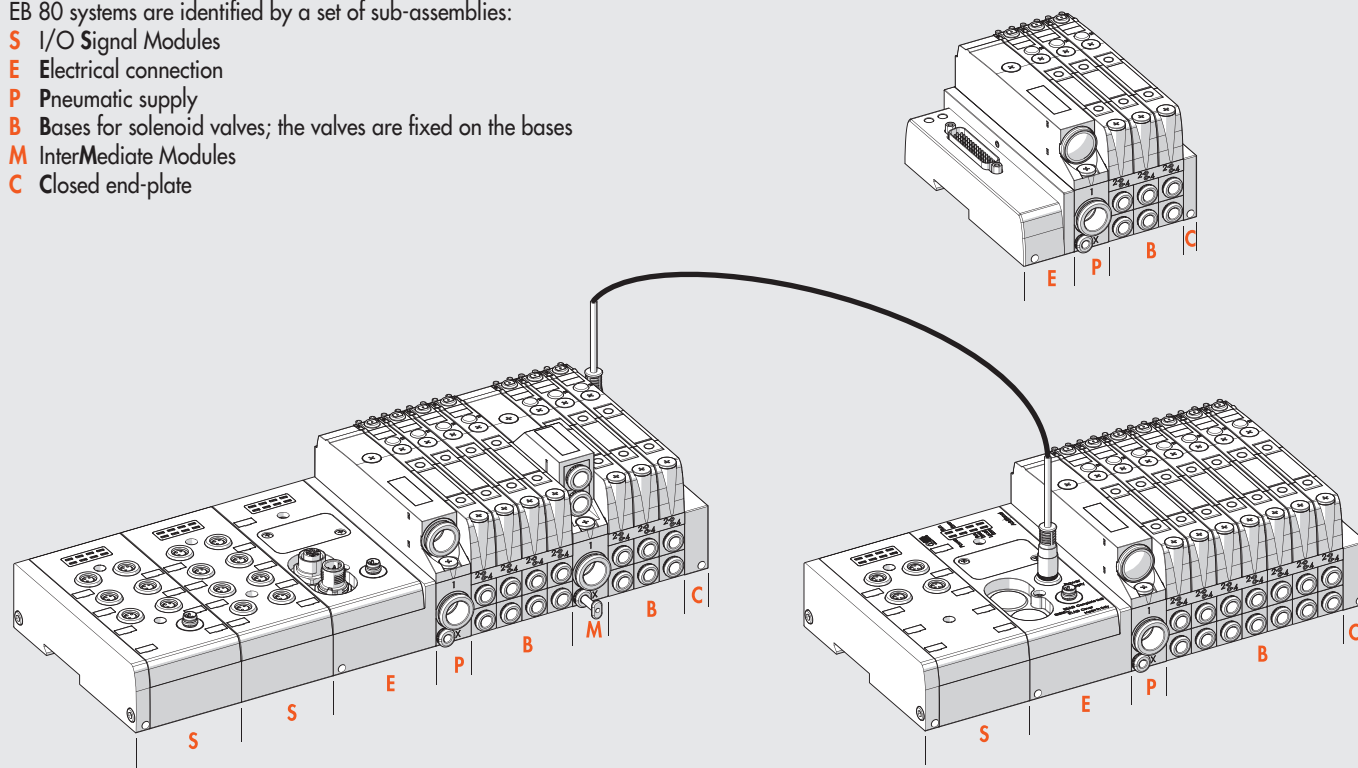
- environment temperature: max 45°C
- ED max 70%

If non-adjoining valves are used, ED max can reach 100% (environment temperature max 45°C)

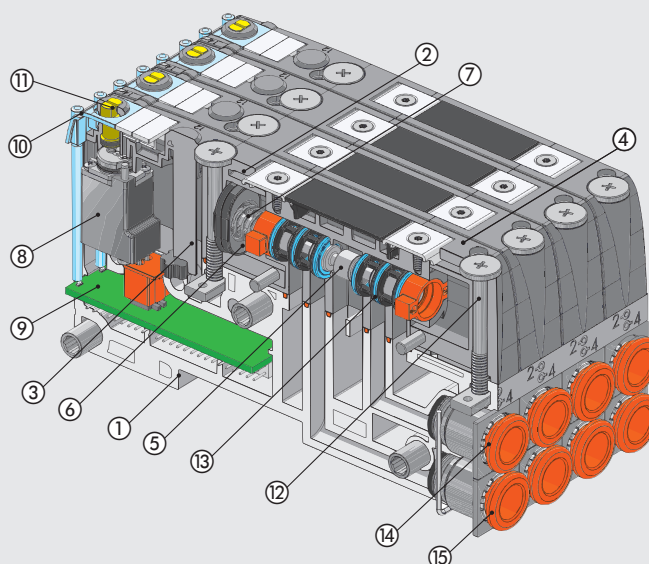
COMPONENTS

EB 80 systems are identified by a set of sub-assemblies:

- S** I/O Signal Modules
- E** Electrical connection
- P** Pneumatic supply
- B** Bases for solenoid valves; the valves are fixed on the bases
- M** InterMediate Modules
- C** Closed end-plate


COMPONENTS – SOLENOID VALVE AND BASE

- ① BASE: technopolymer
- ② VALVE BODY: technopolymer
- ③ CONTROL: technopolymer
- ④ BASE: technopolymer
- ⑤ SPOOL: chemically nickel-plated aluminium
- ⑥ CONTROL PISTON: Stainless steel and NBR
- ⑦ SPRING: Oteva® steel and Dacromet treatment
- ⑧ SOLENOID VALVE
- ⑨ ELECTRONIC BOARD
- ⑩ LED light display: technopolymer
- ⑪ MANUAL CONTROL: nickel-plated brass
- ⑫ SCREW SECURING VALVE TO THE BASE: zinc-plated steel
- ⑬ SPOOL GASKET: NBR
- ⑭ Push-in fitting CARTRIDGE for port 2
- ⑮ Push-in fitting CARTRIDGE for port 4



THE EB 80 WORLD

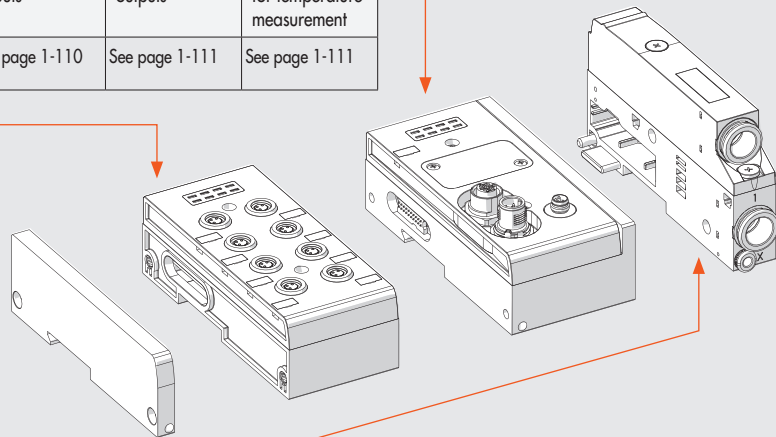
ELECTRICAL CONNECTION - E

E025	E044	E0EN	E0EC	E0PN	E0CN	E0PB	E0PL	E0IO	E0LK	E0CC	E0AD
EB 80 25-pin electrical connection	EB 80 44-pin electrical connection	EB 80 Electrical connection EtherNet/IP	EB 80 Electrical connection EtherCAT	EB 80 Electrical connection Profinet IO	EB 80 Electrical connection CANopen	EB 80 Electrical connection Profibus-DP	EB 80 Electrical connection Ethernet POWERLINK	EB 80 Electrical connection IO-Link 32 IN/32 OUT	EB 80 Electrical connection IO-Link 64 OUT	EB 80 Electrical connection CC-Link IE Field Basic	Additional electrical connection EB 80
See page 1-118	See page 1-118	See page 1-131	See page 1-131	See page 1-131	See page 1-131	See page 1-131	See page 1-131	See page 1-131	See page 1-131	See page 1-131	See page 1-136

SIGNAL MODULE - S

S01	S02	S03	S04	S05	S06	S07	S08
EB 80 module with 8 M8 digital inputs	EB 80 module with 8 M8 digital outputs	EB 80 module with 6 M8 digital outputs + electrical supply	EB 80 module with 4 M8 analogue inputs	EB 80 module with 4 M8 analogue outputs	EB 80 module with 16 digital terminal block inputs	EB 80 module with 16 digital terminal block outputs	EB 80 module with 4 M8 analogue inputs for temperature measurement
See page 1-108	See page 1-108	See page 1-109	See page 1-109	See page 1-110	See page 1-110	See page 1-111	See page 1-111

Part included in the ELECTRICAL CONNECTION - E with Fieldbus



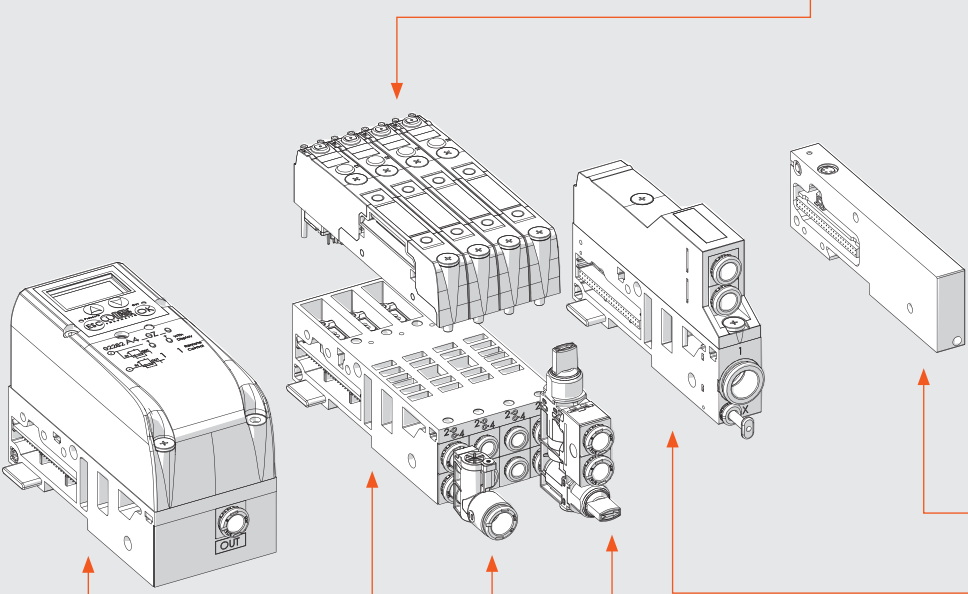
COMPRESSED-AIR SUPPLY - P

P_Z00	P_Z__	P_Z_0	P91Z90
Compressed air supply - Silenced relief	Compressed air supply - Conveyed relief	Compressed air supply - Separate reliefs	Module for electric version only
See page 1-139	See page 1-139	See page 1-139	See page 1-140

PROPORTIONAL PRESSURE REGULATOR - A

A40_Z_0	A41_Z_0
Base port 1 pass-through local outlet	Base port 1 sectioned in-series regulation
See page 1-153	See page 1-153

VALVES											
Z_ ▲	I_ ▲	W_ ▲	L_ ▲	V_	K_ ▲	O_ ▲	G_	J_	R_ +	NO	Y8
2 valves 2/2 NC	2 valves 3/2 NC (valid as 5/3 OC)	2 valves 3/2 NO (valid as 5/3 PC)	3/2 NC + 3/2 NO	monostable 5/2	bistable 5/2	5/3 CC	3/2 NC high flow	3/2 NO high flow	Shut-off valve	Dummy valve	Bypass
See page 1-145	See page 1-145	See page 1-145	See page 1-145	See page 1-145	See page 1-145	See page 1-145	See page 1-146	See page 1-146	See page 1-147	See page 1-148	See page 1-148



CLOSED END-PLATE - C		
C1	C2	C3
Closed end-plate for islands with multi-pole connector	Closed end-plate for islands with fieldbus	Closed end-plate for electrical connection of islands with fieldbus to additional islands
See page 1-162	See page 1-162	See page 1-162

INTERMEDIATE SUPPORT - M		
M_ Z0	M_ Z	M_ Z
Intermediate module - Silenced relief	Intermediate module - Conveyed relief	Intermediate module - Separate relief
See page 1-157	See page 1-158	See page 1-159

BASES FOR VALVES - B	
B3_ 0	B4_
3-position base for valves	4-position base for valves
See page 1-143	See page 1-143

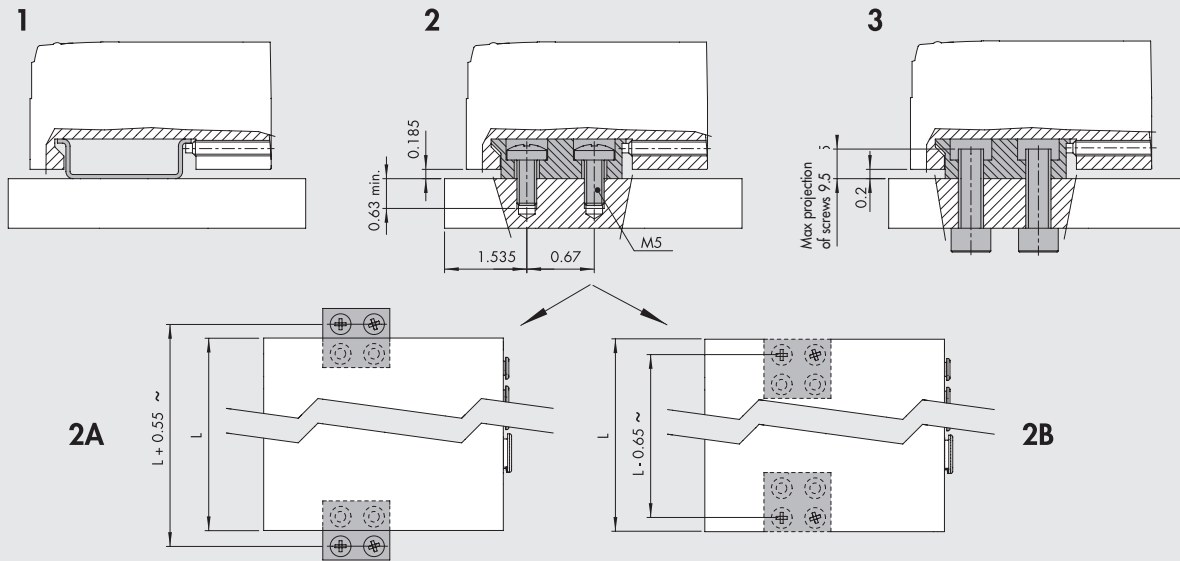
Y-FITTING
R2
Y-fitting
See page 1-149

MULTI-FUNCTION MODULE
Fittings with pneumatic functions
See page 1-176

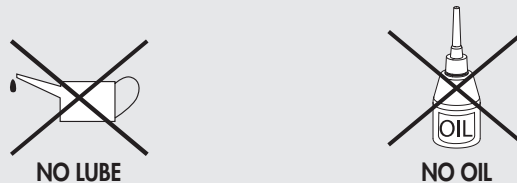
▲ Can only be used with 6 or 8 control bases.
 ✚ Requires inlet port X slave synchronisation.

FIXING OPTIONS

- 1 - Fixing on a DIN bar:** tighten the grub screws into modules E (electrical connection) and C (closed end plate).
For islands with more than 40 valves or 5 modules, also use the additional plate code 02282R4001.
 - 2 - Fixing on a flat surface:** use the pair of brackets code 02282R4000 and the M5x20 screws supplied.
You can choose where to position the brackets in relation to the island:
 - 2A - Protruding brackets:** can be used to install the island + brackets unit from above. First secure the brackets to the modules E and C using the grub screws, then secure everything with M5x20 screws.
 - 2B - Concealed brackets:** the overall dimensions of the island are reduced. First secure the brackets to the flat top with M5x20 screws, then place the island onto the brackets and lock the two grub screws provided in the modules E and C.
 - 3 - Fixing through a wall:** use the brackets code 02282R4000. The brackets come with M6 threaded holes and can be fixed with M6 screws (not included in the supply) passing through the wall. The brackets can be fixed either protruded or concealed.
- N.B.:** Planar surfaces are required to ensure correct fixing. Avoid twisting or bending the valve units.



LUBRICATION

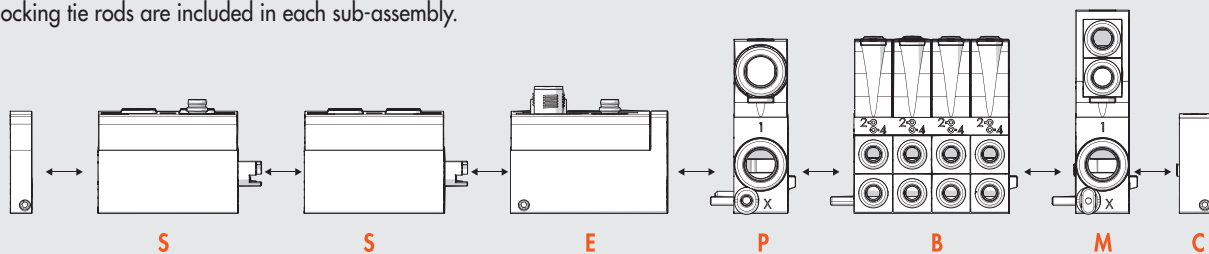


The EB 80 electro-pneumatic system is designed to run millions of cycles without the need for any lubrication. This is possible thanks to the optimisation of its components and the use of a special grease with excellent properties and NSF H1 certified. To avoid removing the grease, it is highly recommended not to lubricate the valve input and output ports and check the quality (to ISO 8573-1 class 4-7-3) of the compressed air used, which is often contaminated by particularly aggressive oils that are released by compressors and are not always compatible with the elastomers used in the valves.

SOME CHARACTERISTICS OF EB 80 SYSTEMS

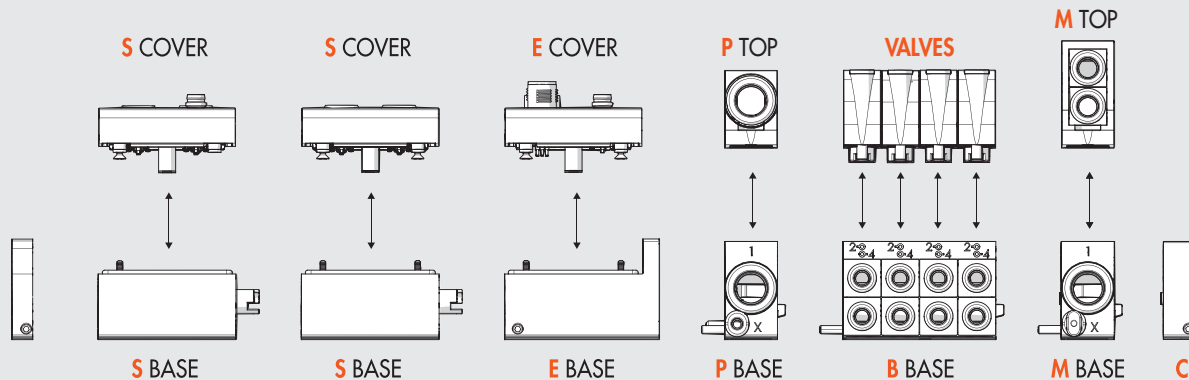
HORIZONTAL MODULARITY

- Easy replacement or addition of any sub-assembly.
The locking tie rods are included in each sub-assembly.

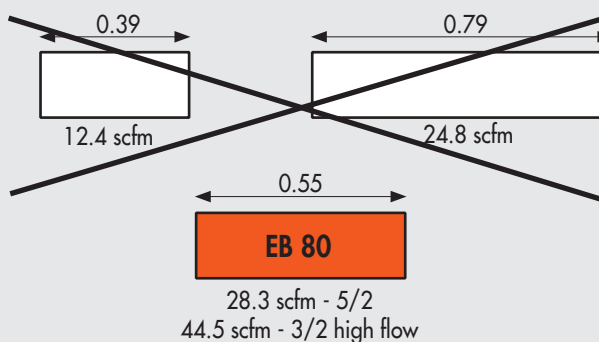


VERTICAL MODULARITY

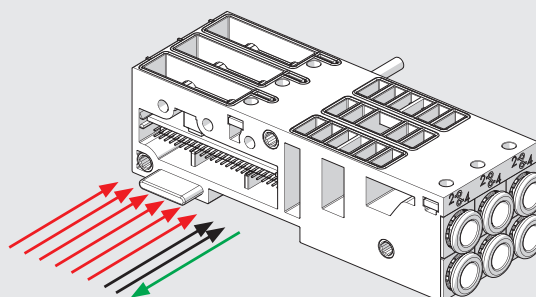
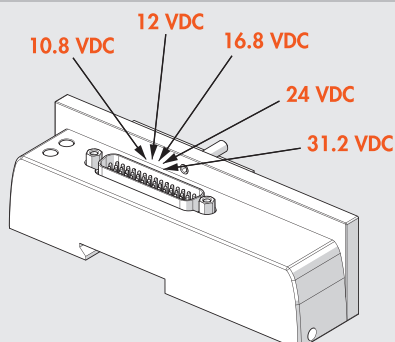
- Easy replacement – no need to disassemble the pack – of the valves on the Bases – B and also of the top part (cover) of subsystems **S**, **E**, **P**, **M** using a single Phillips-head screwdriver.
- N.B.:** All protocols can be mounted on the base for field buses and all input or output modules can be mounted on the same base for signals.


ONE SIZE FITS ALL

- Reduced dimensions
- High flow rate
- One warehouse and spares

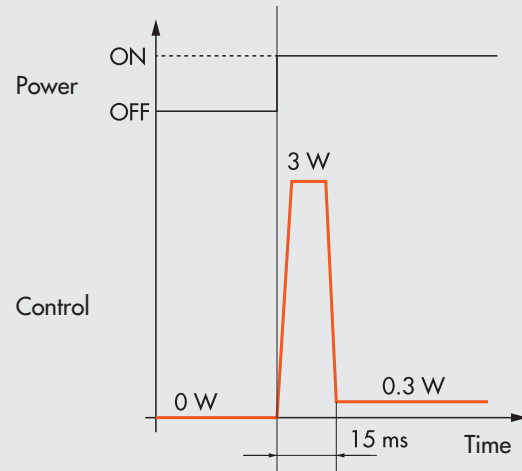

THE SAME BASE FITS BOTH MULTI-POLE CONNECTIONS AND FIELD BUSES

- Controls from multi-pole connection
- Controls from field buses
- Diagnostics


THE SAME ISLAND CAN BE SUPPLIED 10.8 - 31.2 VDC


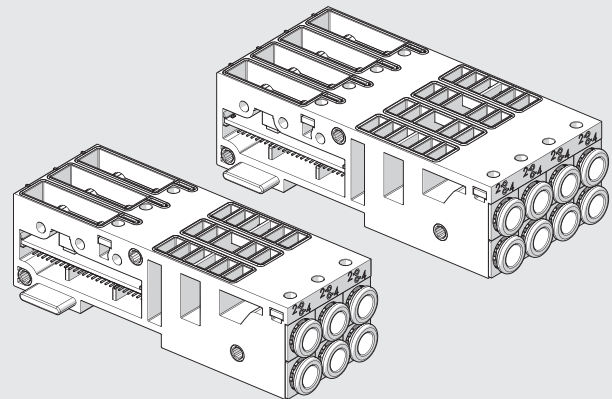
ONLY 0.3 W FOR EACH SOLENOID VALVE

- Speed-up solenoid valve control:
 - high power for a few milliseconds ensures high performance and rapid and safe switching;
 - reduced holding power resulting in reduced temperatures and energy saving.



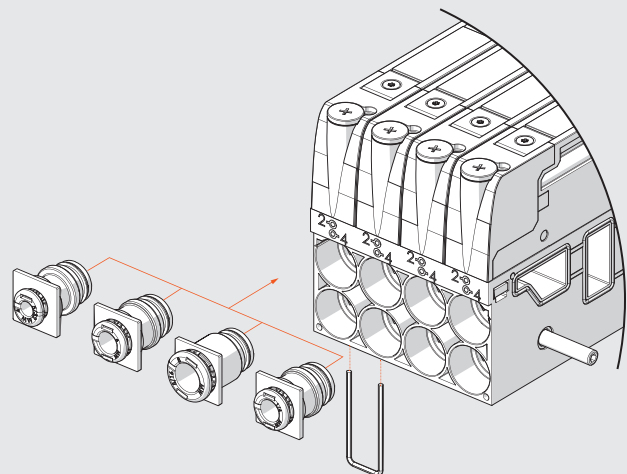
3- OR 4-POSITION BASES FOR VALVES

- Island layout options:
 - 3 1 base with 3 positions
 - 4 1 base with 4 positions
 - (5 2 bases with 3 positions and 1 dummy valve)
 - 6 2 bases with 3 positions
 - 7 1 base with 3 and 1 with 4 positions
 - 8 2 bases with 4 positions
 - ...
- Compared to single-base solutions, this configuration is advantageous because:
 - just a few bases are required for multiple positions;
 - the base is sturdy and rigid;
 - there is plenty of space to accommodate smart electronics



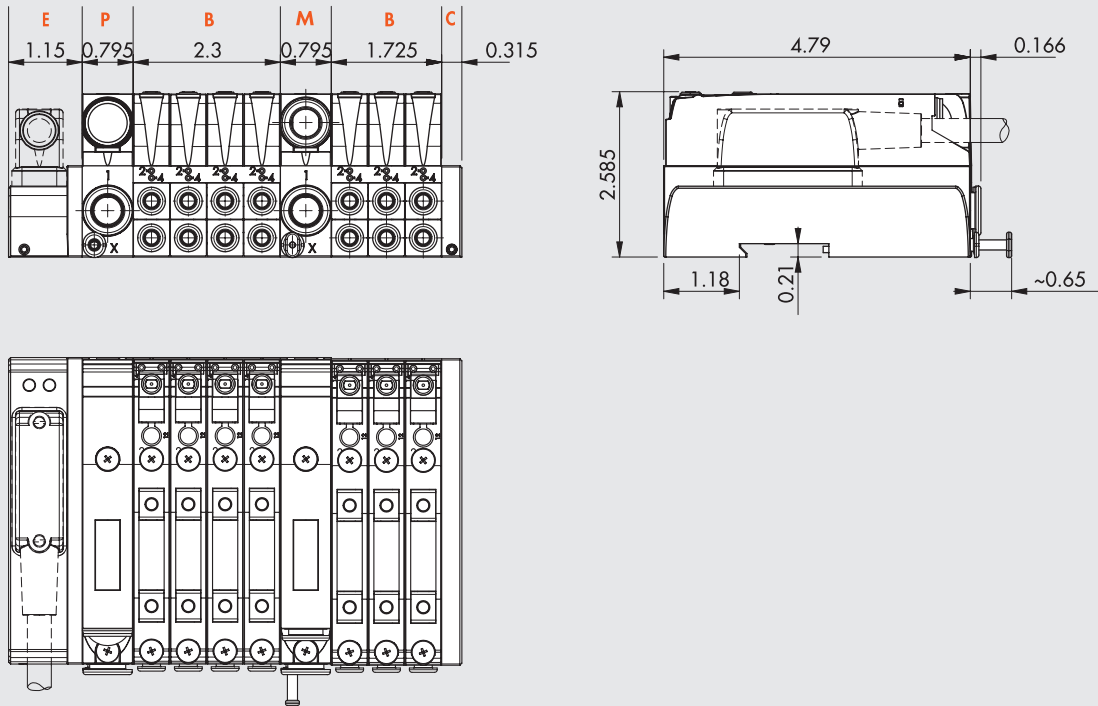
INTERCHANGEABLE CARTRIDGE FITTINGS

- For pipes \varnothing 4 mm (5/32"), 6 mm (5/16"), 1/4"

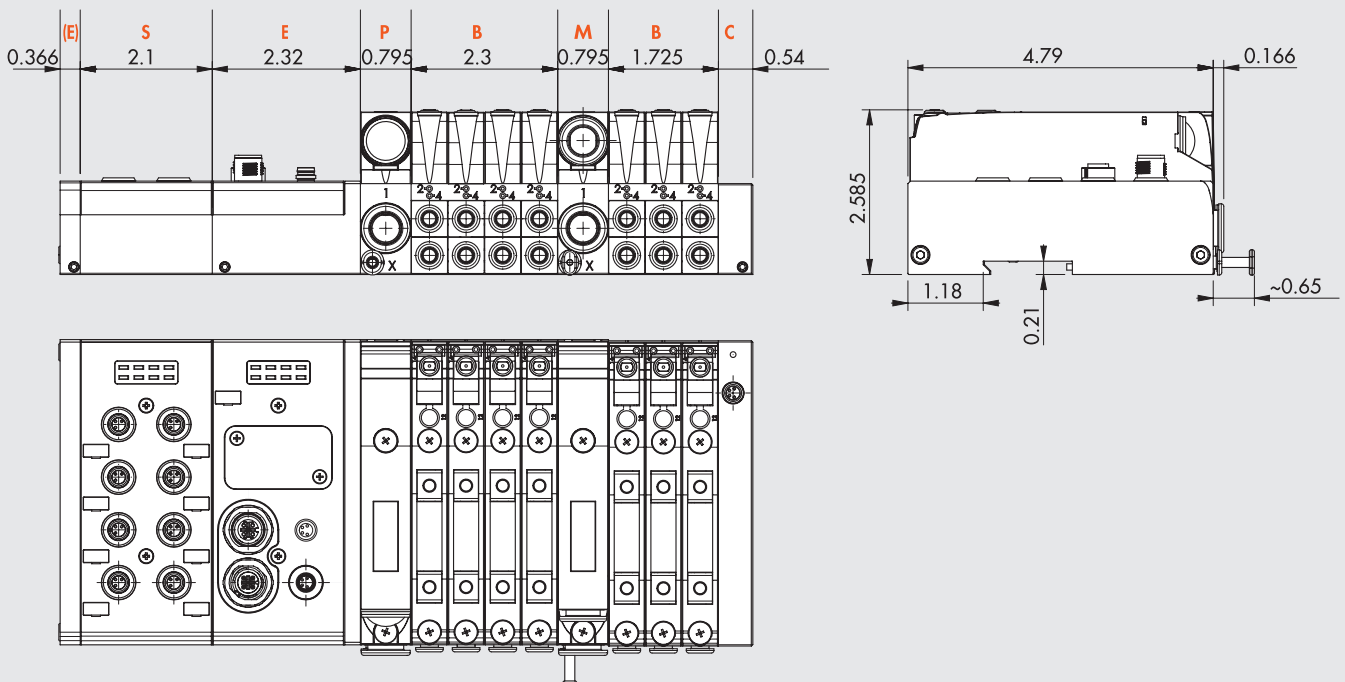


DIMENSIONS

DIMENSION OF VERSIONS WITH MULTI-POLE CONNECTION



DIMENSION OF VERSIONS WITH FIELD BUS OR ADDITIONAL CONNECTION



DESCRIPTION

A complete system has a compound **description** of all its subsystems listed in sequence from left to right, as shown below. The abbreviation of each subsystem is obtained by taking the code and omitting the first digits 02282. For example: the digital 8-input signal module is identified with code 02282S01; only write S01 in the description.

The abbreviation of each base for valves consists of:

Abbreviation of the Base	Manual valve control	Type of valves
Obtained from the code, after removing 02282	0 = monostable 1 = bistable	Valves Dummy valve Bypass
Example 4-position base, 8 solenoid pilots, Ø 6 pipe; code 02282B4086666	Monostable	2 monostable 5/2 valves - V 1 double 3/2 NO - W 1 dummy valve - F
Abbreviation B4086666	0	VVWF

The description is therefore a sequence of this type:

EB 80	- S _ _	- E _ _	- P _ _ _ _	- B _ _ _ _ _ _ _ _	- M _ _ _ _ _	- C _
EB 80 system	Signal module (if present)	Electrical connection	Compressed air supply	Base for valves (as many as there are) with normal or dummy	Intermediate (if present)	Closed end-plate
For the codes:	see page 1-112	see page 1-116	see page 1-140	see page 1-143 and 1-148	see page 1-160	see page 1-163

Example:

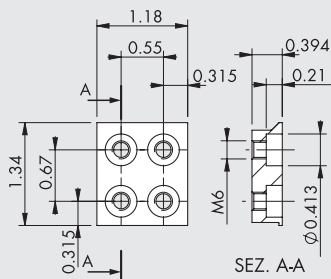
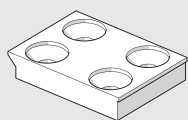
EB 80-S01-E0EN-P3XZ00-B4086660VWKN-M300Z30-B30388800VFN-C2

EB 80	- S01	- E0EN	- P3XZ00	- B4086660VWKN	- M300Z30	- B30388800VFN	- C2
EB 80 system	Signal module complete 8 M8 digital inputs	Electrical connection EtherNet/IP	Compressed air supply - fitting Ø 12 - pilot servo Ø 4 - silenced relief	Base for valves - 4 positions - 8 controls - fittings for pipe Ø 6 - manual monostable control - 5/2 monostable valve - 2 3/2 NO valves - bistable 5/2 valve - dummy valve	Intermediate - fittings for pipe Ø 12 - through ports - without supplementary power supply	Base - 3 positions - 3 controls - fittings for pipe Ø 8 - manual monostable control - 5/2 monostable valve - 5/2 monostable valve - dummy valve	Closed end-plate for valve Island with field bus

Endless number of EB 80 systems can be obtained and their description is variable in length, which can be very extended. The actual ordering CODE of an EB 80 system is created by Metal Work S.p.A. with a limited number of characters. The ordering code is not explicative. The description only is univocal, complete and explicative.

ACCESSORIES

FIXING BRACKET



Code	Description	Weight [lb]
02282R4000	EB 80 base fixing bracket	0.1

Note: 2 pieces per pack complete with 4 M5x20 screws

NOTES

Please refer to the subsystem chapter for other accessories (e.g. connectors) and spare parts.

EB 80 INDUSTRY 4.0

The new advanced EB 80 diagnostic functions, known as EB 80 I4.0, provide a powerful analysis tool for traditional maintenance operations, ensuring the safe, reliable and lasting operation of production units.

They are available for all electrical connections with fieldbuses and bases marked I4.0, with advanced diagnostics integrated in accordance with Industry 4.0 philosophy.

These functions use the original EB 80 diagnostics, integrating them with the ability of the station itself to control IOs.

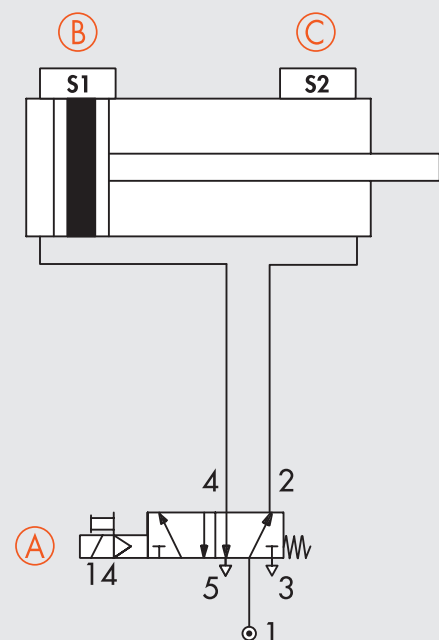
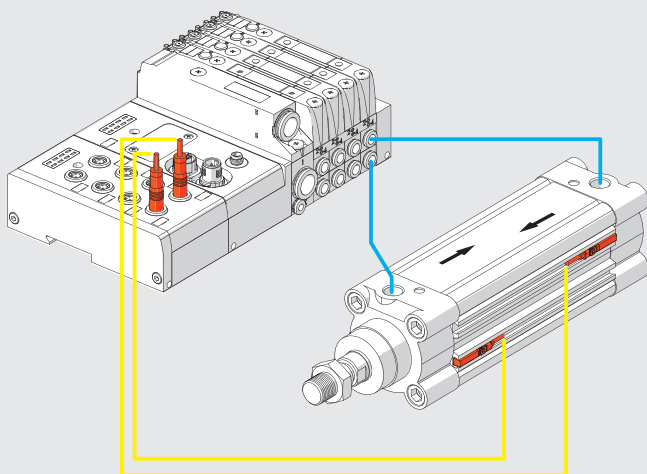
They re-organise and optimise maintenance management by developing predictive maintenance in order to:

- predict faults;
- intervene early to avoid system downtime;
- have all information on equipment operation available in real time;
- monitor component end-of-lifetime;
- optimise warehouse spare parts management.

This makes it possible to turn the data collected into concrete actions using standard EB 80 stations without needing additional modules.

Description of EB 80 I4.0 functions:

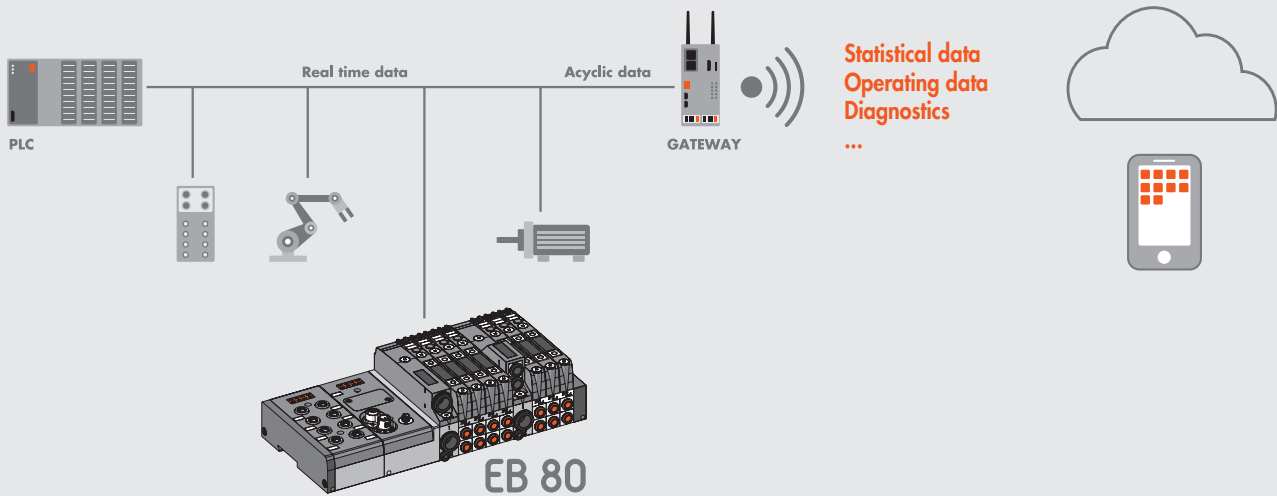
- System data:
 - EB 80 system startup counter;
 - supply alert counter.
- Valve data. Each valve base for each solenoid valve permanently stores the following information:
 - cycle counter;
 - counter for total solenoid valve excitation time;
 - activation of a flag to signal average lifetime exceeded;
 - short circuit alert counter;
 - open circuit alert counter.
- Electropneumatic system control functions (data updated with each cycle):
 - measurement of the delay between activating the solenoid valve "A" and actuator movement commencing via the signal of sensor "B", with delays that exceed the limit flagged;
 - measurement of actuator movement time using two linked sensors "B" and "C", with exceeded time limits flagged;
 - measurement of the delay between deactivating the solenoid valve "A" (or activating a second valve) and actuator return commencing via the signal of sensor "B", with exceeded time limits flagged;
 - measurement of actuator return time using two linked sensors "B" and "C", with exceeded time limits flagged;
 - counter for actuator range of motion.



Electrical connection modules can be used to complement the EB 80 with the main field buses available in the market. In this way, the control system (generally a PLC) can handle in real time the behaviour of the solenoid valve island, including signal modules.

With the introduction of the I4.0 version, the field bus connection modules also send to the network the historical and diagnostic data relating to the behaviour of the island (such as the number of cycles for each solenoid pilot, total activation time and alarms) and the controlled pneumatic circuit (such as the delay times in sensor switching and actuator activation times).

This data is also sent to the control system and can be handled differently depending on the situation: in some cases, it can be used in real time, like in the case of fault alarms; in other cases, it can be sent to a storage local unit or one remotely controlled on a cloud server, and is analysed in a subsequent stage; in other cases, the alarms can be sent to a teleservice station that can monitor the state of the system remotely.



EB 80 SIGNAL MODULES - S

The EB 80 systems come with numerous input or output signal modules, which can be mounted on systems with fieldbus electrical connection or additional systems.

The signal modules can be added at any time. You only need to unscrew the aluminium plate to the left side of the "Electrical connection - E" module and install the "Signal Modules - S" (ready fitted with fixing tie rods) and retighten the end plate to the left.

Each signal module consists of two parts: the lower part, which contains transmission electronics of the controls, is unique and valid for all modules; the upper part, which is specific for each type.

This design highlights the modular features of the EB 80 system: the upper part of the "Signal Module - S" can be replaced either with a similar one by simply unscrewing the screws in the event of failure or one of another type. All this without having to remove anything from the system.



TECHNICAL DATA		
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power and current		see individual "Signal Modules - S"
Protection		Overload and polarity inversion protection
Diagnostics		Local via LED light and software message
Maximum number of signal modules		Undervoltage, overvoltage, short-circuit and overload of individual connector and the entire module, 16 digital inputs modules 8 M8 + 16 digital outputs modules 8 M8 (or 8 modules with 16 Inputs + 8 modules with 16 Outputs) ** + 4 analogue inputs modules + 4 analogue outputs modules + 4 analogue input modules for temperature measurement
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		digital input, digital output, analogue input, analogue output
Degree of protection		IP65 (with connectors connected or plugged if not used) IP40 for 16-position I/O modules

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

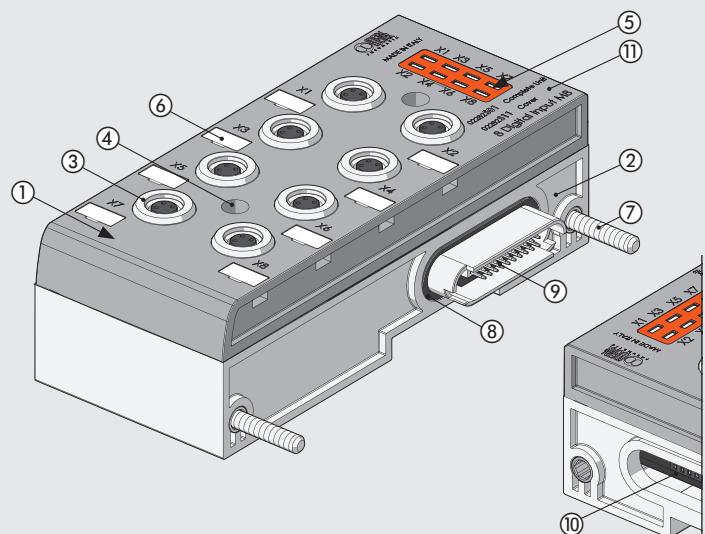
** For 16-IN/OUT modules, powered via the fieldbus. Check that the total current of simultaneously connected Inputs and Outputs is not greater than 3.5 A.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

N.B.: Refer to the following pages for specific technical data of each module.

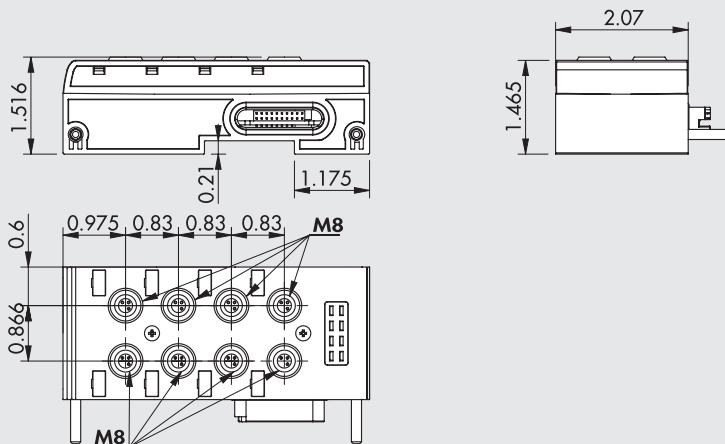
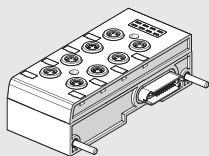
COMPONENTS

- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: technopolymer
- ③ M8 CONNECTOR: signal connection
- ④ SCREW securing the upper part to the lower part
- ⑤ LED light
- ⑥ NAMEPLATE: removable
- ⑦ TIE ROD to secure modules: nickel-plated brass + stainless
- ⑧ GASKET: NBR
- ⑨ MALE CONNECTOR for other modules - S or fieldbus connection - E
- ⑩ FEMALE CONNECTOR for other modules - S or fieldbus connection - E
- ⑪ IDENTIFICATION of wording with laser



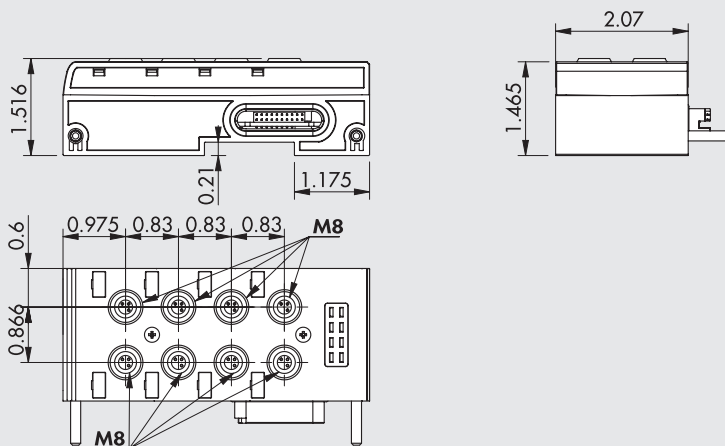
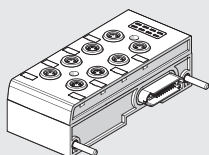
DIMENSIONS - ORDERING CODES

8 M8 DIGITAL INPUTS



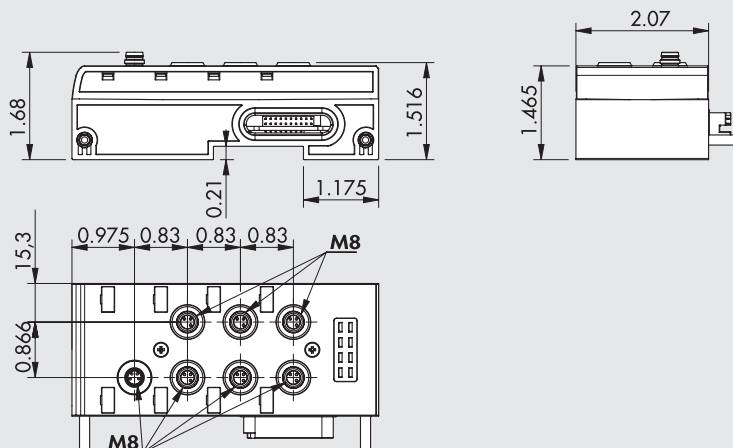
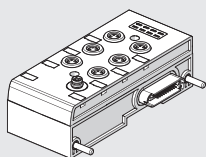
Code	Description	Weight [lb]	TECHNICAL DATA	
02282S01	EB 80 module with 8 M8 digital inputs	0.53	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	mA max 200
			Current for each module	mA max 500
			Input impedance	kΩ 3.9
			Type of input	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	8 M8 3-pole female connectors
			Input active signals	One LED for each input

8 M8 DIGITAL OUTPUTS



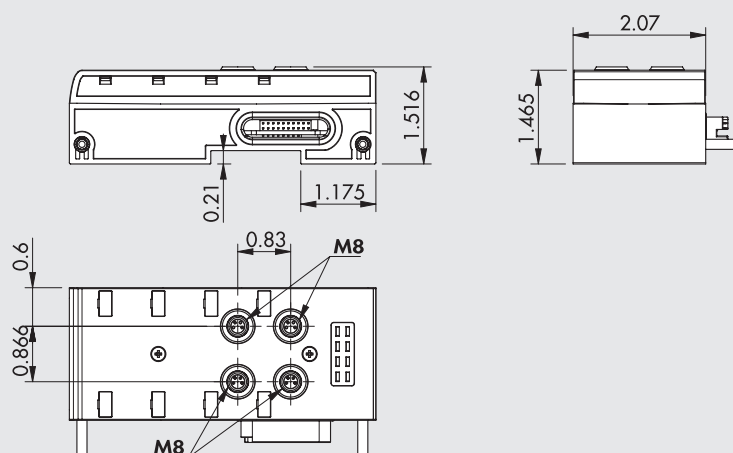
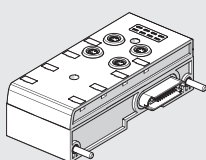
Code	Description	Weight [lb]	TECHNICAL DATA	
02282S02	EB 80 module with 8 M8 digital outputs	0.53	Output voltage	Corresponding to the supply voltage
			Current for each connector	mA max 500
			Current for each module	mA max 3000
			Type of output	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected outputs
			Connections	8 M8 3-pole female connectors
			Input active signals	One LED for each output

6 M8 DIGITAL OUTPUTS + ELECTRICAL POWER SUPPLY



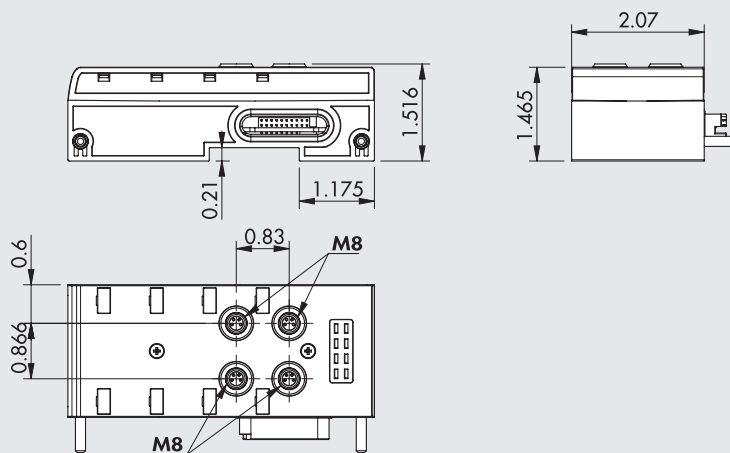
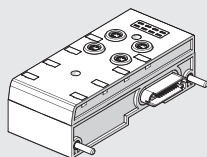
Code	Description	Weight [lb]	TECHNICAL DATA	
02282S03	EB 80 module with 6 M8 digital outputs + electrical supply	0.55	Bus supply voltage range	VDC 12 -10% 24 +30%
			Digital out supply voltage range	VDC 12 -10% 24 +30%
			Minimum operating voltage	VDC 10.8 *
			Maximum operating voltage	VDC 31.2
			Maximum admissible voltage	VDC 32 ***
			Output voltage	Corresponding to the supply voltage
			Current for each connector	mA max 1000
			Current for each module	mA max 4000
			Type of output	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected outputs
			Connections	6 M8 3-pole female connectors for Signals 1 M8 4-pole male connector for Supply
			Output active signals	One LED for each output
			* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116	
			*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.	

4 M8 ANALOGUE INPUTS



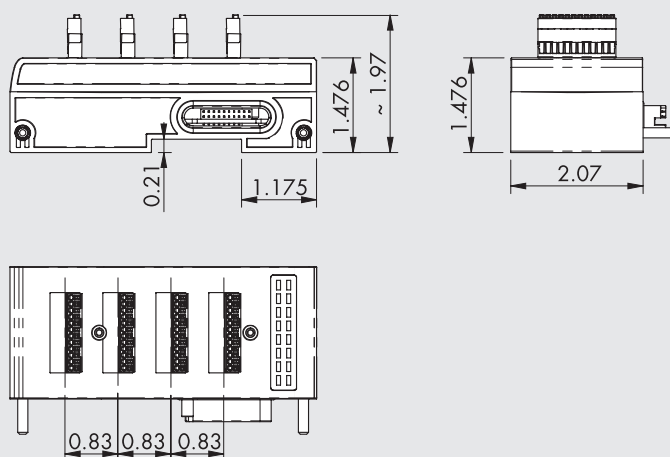
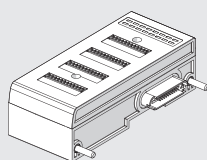
Code	Description	Weight [lb]	TECHNICAL DATA	
02282S04	EB 80 module with 4 M8 analogue inputs	0.50	Supply voltage	Corresponding to the supply voltage
			Current for each connector	mA max 200
			Current for each module	mA max 650
			Type of input, software configurable	0/10 VDC; 0/5 VDC; +/-10 VDC; +/-5 VDC; 4/20 mA; 0/20 mA
			Protection	Overload and short-circuit protected inputs
			Connections	4 M8 4-pin female connectors
			Local diagnostic signal via LED	Overload, short-circuit or type of input not complying with the configuration
			Digital convert resolution	15 bit + prefix

4 M8 ANALOGUE OUTPUTS



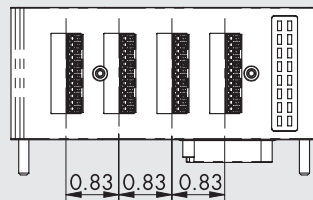
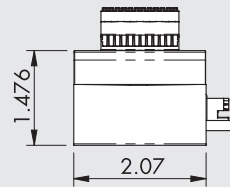
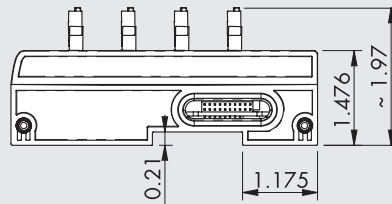
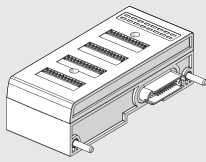
Code	Description	Weight [lb]	TECHNICAL DATA	
02282S05	EB 80 module with 4 M8 analogue outputs	0.50	Devices supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200 mA
			Current for each module	max 650 mA
			Type of output	0/10 VDC; 0/5 VDC; +/-10 VDC; +/-5 VDC; 4/20 mA; 0/20 mA
			Protection	Overload and short-circuit protected outputs
			Connections	4 M8 4-pole female connectors
			Local diagnostic signal via LED	Overload, short-circuit or type of connection not complying with the configuration
			Digital convert resolution	15 bit + prefix

16 DIGITAL TERMINAL BLOCK INPUTS



Code	Description	Weight [lb]	TECHNICAL DATA	
02282S06	EB 80 module with 16 digital terminal block inputs	0.53	Sensors supply voltage	Corresponding to the supply voltage
			Current for each connector	max 200 mA
			Current for each module	max 500 mA
			Input impedance	3.9 kΩ
			Type of input	Software-configurable PNP/NPN
			Protection	Overload and short-circuit protected inputs
			Connections	4 12-pin connectors with spring clamping
			Input active signals	One LED for each input
			Degree of protection	IP40

16 DIGITAL TERMINAL BLOCK OUTPUTS

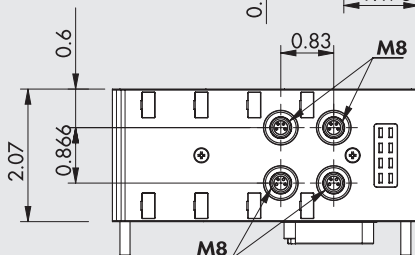
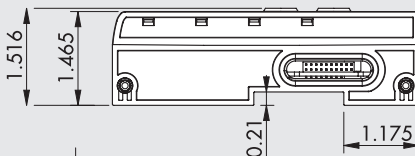
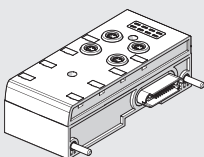


Code	Description	Weight [lb]
02282507	EB 80 module with 16 digital terminal block outputs	0.53

TECHNICAL DATA	
Output voltage	Corresponding to the supply voltage
Current for each connector	max 500 mA
Current for each module	max 3000 *
Type of output	Software-configurable PNP/NPN
Protection	Overload and short-circuit protected outputs
Connections	4 12-pin connectors with spring clamping
Outputs active signals	One LED for each Output
Degree of protection	IP40

* **IMPORTANT:** the module is powered via the fieldbus. Check that the total current of connected outputs is not greater than 3.5A.

4 M8 ANALOGUE INPUTS FOR TEMPERATURE MEASUREMENT



Code	Description	Weight [lb]
02282508	EB 80 module with 4 M8 analogue inputs for temperature measurement	0.50

TECHNICAL DATA	
Sensors supply voltage	Corresponding to the supply voltage
Maximum input voltage	VDC 30
Sensor type (RTD)	platinum (-200 to +850°C) nickel (-60 to +180°C)
Connections type (RTD)	2, 3 or 4-wire
Type of thermocouple (TC)	J, E, T, K, N, S, B, R
Cold junction compensation for thermocouples	internal external (recommended in case of sudden changes in the ambient temperature)
Temperature range	°C -200 to +800 °F -328 to +1472
Digital convert resolution	15 bit + prefix
Max error compared to ambient temperature	±0.5% (TC) ±0.06% (RTD)
Max. basic error (ambient T 25°C)	±0.4% (TC) °C ±0.6 (with 4-wire RTD with 0.1 resolution) °C ±0.2 (with 4-wire RTD with 0.01 resolution)
Repeatability (ambient T 25°C)	±0.03%
Address employment	2 bytes for each input - 8 bytes per module
Cycle time (module)	ms 240
Software linearization	for RTD for TC
Maximum length of shielded cable for the connection	m < 30
Diagnostics	One LED for each input and reporting to the Master

KEY TO CODES

FAMILY	SUBSYSTEM	SUPPLY	TYPE
02282 EB 80	S Signals	0 Complete	1 8 M8 digital inputs 2 8 M8 digital outputs 3 6 M8 digital outputs + electrical supply 4 4 M8 analogue inputs 5 4 M8 analogue outputs 6 16 digital terminal block inputs 7 16 digital terminal block outputs 8 4 M8 analogue inputs for temperature measurement

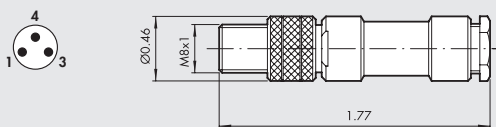
ACCESSORIES

M8 PLUG



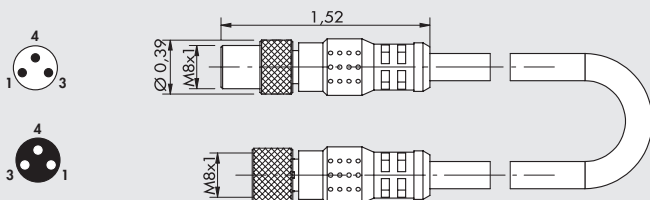
Code	Description
0240009039	Plug for M8 connector

M8 CONNECTOR FOR DIGITAL INPUTS / OUTPUTS



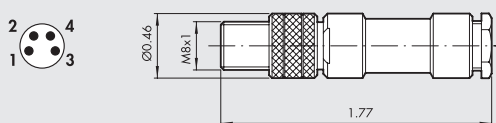
Code	Description
0240009010	M8 3-pin straight connector

M8 CONNECTOR WITH CABLE FOR DIGITAL INPUTS /OUTPUTS



Code	Description
0240009009	M8-M8 3-pin straight connector with cable L = 118 inch

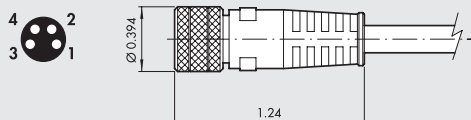
M8 MALE CONNECTOR FOR ANALOGUE INPUTS/OUTPUTS



Code	Description
0240010300	M8 4-pin male connector

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

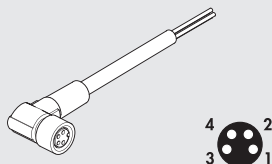


Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 118 inch
0240009037	M8 4-pin female connector for power supply, cable L = 197 inch
0240009058	M8 4-pin female connector for power supply, cable L = 394 inch
0240009059	M8 4-pin female connector for power supply, cable L = 590 inch
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 118 inch
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 197 inch
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 394 inch
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 590 inch

* Mobile laying cable, class 6 according to IEC 60228

90° M8 CONNECTORS WITH SHIELDED CABLE

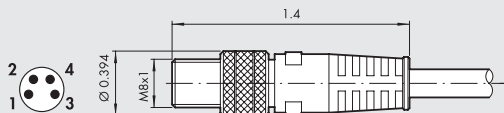
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



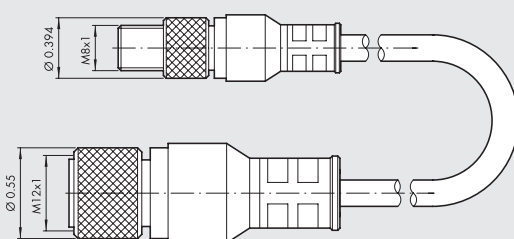
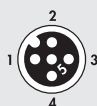
Code	Description
0240009102	M8 4-pin connector - female, 90° angle L = 79 inch
0240009103	M8 4-pin connector - female, 90° angle L = 197 inch

M8 4-POLE MALE CONNECTOR

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

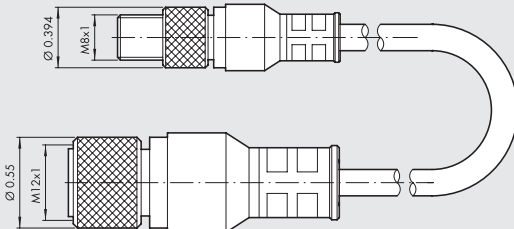


Code	Description
0240010105	M8 4-pin connector shielded cable L = 197 inch

M8 3-POLE MALE – M12 5-POLE FEMALE CONNECTOR WITH CABLE FOR DIGITAL INPUTS/OUTPUTS


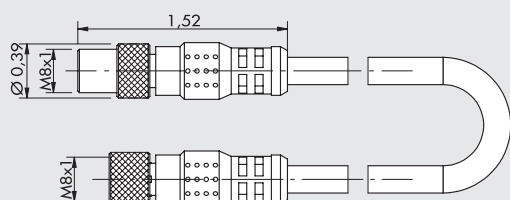
Code	Description
0240009045	M8 3-pole male straight - M12 5-pole female connector with cable L = 8 inch

M8	M12
pin 1	pin 1
pin 4	pin 4
pin 3	pin 3

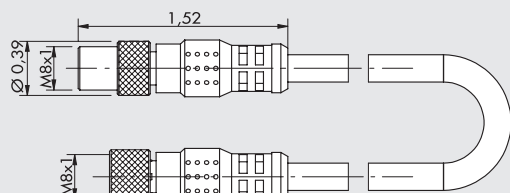
M8 4-POLE MALE – M12 8-POLE FEMALE CONNECTOR WITH CABLE FOR REGTRONIC CONNECTION


Code	Description
0240009046	M8 4-pole male straight - M12 8-pole female connector with cable L = 39 inch

M8	M12
pin 1	pin 8
pin 2	pin 3
pin 3	pin 7
pin 4	disconnect

M8 CONNECTOR WITH SHIELDED CABLE FOR ANALOGUE INPUTS/OUTPUTS


Code	Description
0240005005	M8-M, M8-F 4-pole straight connector with shielded cable L = 39 inch
0240005006	M8-M, M8-F 4-pole straight connector with shielded cable L = 79 inch
0240005003	M8-M, M8-F 4-pole straight connector with shielded cable L = 197 inch
0240005008	M8-M, M8-F 4-pole straight connector with shielded cable L = 394 inch

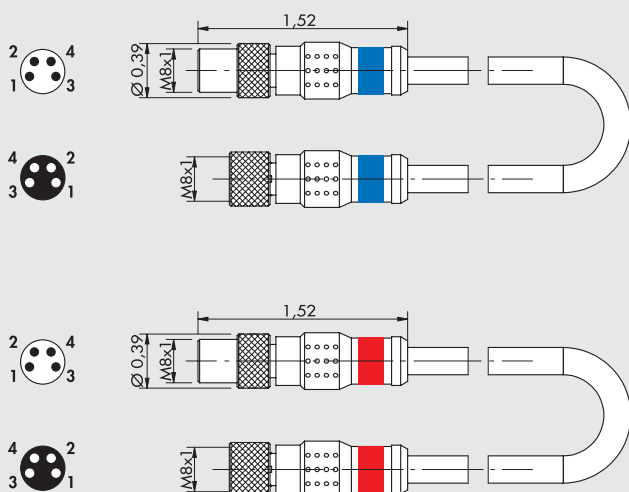
M8 ADAPTER CABLE FOR CONNECTING THE PRESSURE SWITCH TO THE DIGITAL INPUTS MODULE


Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 12 inch

Note: Can be used for connecting 1/8-1/4, Syntesi®, Skillair®, PRS L pressure switches to the module of digital INPUT S01 of the EB 80 valves. Contact type NO (Normally-Open)

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 2	Signal NO
pin 4	disconnect	

M8 SHIELDED ADAPTER CABLE FOR CONNECTING THE LTS-LTL POSITION TRANSDUCERS TO THE ANALOGUE INPUTS MODULE



Code Description

0240010601 M8-M, M8-F 4-pole adapter with shielded cable L = 012 inch (blue collar)

Note: Can be used for connecting the 4/20 mA analog output of the LTL-LTS position sensors to the module of analog INPUT S04 of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 2	pin 2	Signal 4/20 mA
pin 3	pin 3	Power supply -
pin 4	disconnect	

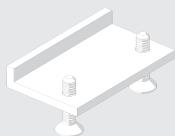
Code Description

0240010701 M8-M, M8-F 4-pole adapter with shielded cable L = 12 inch (red collar)

Note: Can be used for connecting the 0/10 VDC analog output of the LTL-LTS position sensors to the module of analog INPUT S04 of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 4	pin 2	Signal 0/10 V
pin 3	pin 3	Power supply -
pin 2	disconnect	

ADDITIONAL FIXING BRACKET TO OMEGA BAR



Code	Description	Weight [lb]
02282R4001	Additional fixing bar accessory to EB 80 Omega bar	0.01

Individually packed

N.B.: to be used to improve the fixing to Omega bars of islands with more than 10 modules. The bracket must be positioned every 5-6 modules.

SPARE PARTS

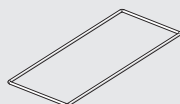
EB 80 BUS/SIGNAL INTERFACE OR SEAL



Code	Description
02282R1005	EB 80 BUS/Signal interface OR seal

Comes in 10-pc. packs

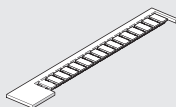
EB 80 GASKET BETWEEN BASE AND BUS/SIGNAL COVER



Code	Description
02282R1004	Kit of gaskets between base and BUS/Signal cover

Comes in 10-pc. packs

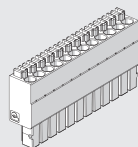
IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

CONNECTOR 12 POSITIONS



Code	Description
02282R5010	Connector 12 positions for modules S06 and S07

Comes in 4-pc. packs

The job of the "Electrical Connection - E" subsystem is to power the EB 80 systems, transmit control signals for the solenoid valves, send and receive signals for the input/output management modules and control diagnostics. Versions with a multi-pole connector or fieldbus are also available.

It is worth noting that the island of solenoid valves functions equally with both systems. This means that all the valves, bases and intermediate elements can work both with parallel and serial controls (patented).

Smart electronics of all electrical connection modules, including multi-pole ones, can be used to control unexpected functions, including very interesting diagnostics.

The system can be supplied with a very wide voltage range, so much so that the EB 80 island can be controlled either at 12VDC or 24VDC (patented).

Overvoltages up to 30% of the rated value, i.e. up to 31.2V, are admitted.

The minimum voltage for solenoid pilots can be 10.8V, i.e. 12V-10%.

The body of the multi-pole version is made of metal in one piece (as the IO-Link 64 OUT version); simplified versions that can only manage solenoid valves, but that keeps the whole modularity and diagnostics of the EB 80 family.

The body of the multi-pole version is made of metal in one piece.

Versions with a fieldbus instead consist of two parts: a lower part, with a single metal body separate from the bus protocol; an upper part with a technopolymer body dedicated to each specific bus protocol.



TECHNICAL DATA							
Supply voltage range	VDC	12 -10%		24 +30%			
Minimum operating voltage	VDC	10.8 *					
Maximum operating voltage	VDC	31.2					
Maximum admissible voltage	VDC	32 ***					
Drive (for multi-pole)		PNP or NPN					
Solenoid rating		100% ED					
Power supply without controlled valves:							
steady rate, with multi-pole connection	W	0.1 for "Electrical connection - E" + 0.25 for each "Base - B"					
steady rate, with fieldbus connection	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"					
Signal module supply power		See chapter "Signal module - S"					
Maximum operating power supply (data useful for the sizing of the power supply unit)	W	3.15 for each solenoid pilot operated simultaneously + input and output					
Maximum current admissible							
with multi-pole connection	A	6 continuous, 9 instantaneous					
with fieldbus connection	A	4 continuous, 6 instantaneous for valve supply 4 continuous, 6 instantaneous for bus and signal supply					
Protection		Overload and short-circuit protected solenoid pilot Output					
Diagnostics		LED signal on valve, LED light on electrical connection. With multi-pole: fault signal OUT activation. With field bus: software message.					
Faults signalled		Short-circuited solenoid pilot; Solenoid pilot broken or missing Power supply out of range (under-voltage or over-voltage) With fieldbus only, different configuration, on switching on, compared to that stored; communication control between modules					
Ambient temperature	°C	-10 to + 50					
	°F	14 to 122					
Versions		Plug connectors, fieldbus with various protocols, additional island					
Maximum number of controllable solenoid pilots		25-pin connector	44-pin connector	Fieldbus	IO-link 32 IN / 32 OUT	IO-link 64 OUT	additional island
		21	38	128	32	64	128
Maximum number of controllable solenoid valves		Ditto as above, depending on the number of solenoid pilots and type of base					
Degree of protection		IP65 (with connectors connected or plugged if not used)					
Weight	lb	0.4	0.4	0.77	0.77	0.4	0.7

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

SYSTEM VOLTAGE DROP

Voltage drop depends on the input maximum current drawn by the system and the length of the cable for connection to the system.

In a 24VDC-powered system, with cable lengths up to 20 m, voltage drops do not need to be taken into account.

In a 12VDC-powered system, there must be enough voltage to ensure correct operation. It is necessary to take into account any voltage drops due to the number of active solenoid valves, the number of valves controlled simultaneously and the cable length.

The actual voltage supplied to the solenoid pilots must be at least 10.8 VDC.

More details are given in the instruction manual (please refer to the Metal Work website).

A synthesis of the verification algorithm is shown here below.

$$\text{Maximum current: } I_{\max} [\text{A}] = \frac{\text{no. of solenoid pilots controlled simultaneously} \times 4 + \text{no. of active solenoid valves} \times 0.5}{\text{VDC}}$$

Voltage drop: with a 25-pole connector: $\Delta V = I_{\max} [\text{A}] \times R_s [0.067\Omega/\text{m}] \times 2L [\text{m}]$

Voltage drop: with a 44-pole connector: $\Delta V = I_{\max} [\text{A}] \times R_s [0.067\Omega/\text{m}] \times L [\text{m}]$

Where R_s is the cable resistance and L its length.

The voltage at the cable inlet, V_{in} must be at least $10.8 \text{ VDC} + \Delta V$

Example:

12V supply voltage, 5 m cable, 25-pin connector, 3 pilots activate while other 10 are already active:

$$I_{\max} = \frac{3 \times 4 + 10 \times 0.5}{12} = 1.41 \text{ A}$$

$$\Delta V = (1.41 \times 0.067 \times 2 \times 5) = 0.95 \text{ VDC}$$

This means that at the power supply voltage greater than or equal to $10.8 + 0.95 = 11.75 \text{ VDC}$ is required.

$V_{\text{in}} = 12 \text{ VDC} > 11.75 \rightarrow \text{OK}$

KEY TO CODES

02282	E	0	25
FAMILY	SUBSYSTEM	SUPPLY	TYPE
02282 EB 80	E Electrical connection	0 Complete	25 25-pin connector 44 44-pin connector EN EtherNet/IP EC EtherCAT PN Profinet IO CN CANopen PB Profibus-DP PL Ethernet POWERLINK IO IO-Link 32 IN / 32 OUT LK IO-Link 64 OUT CC CC-Link IE Field Basic AD Additional island

NOTE

EB 80 MULTI-POLE ELECTRICAL CONNECTION - E

The job of the multi-pole version of the electrical connection subsystem is to power the EB solenoid valve islands. The system accepts to be supplied with a very wide range of voltages, to such an extent that the EB 80 island alone can be controlled at either 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2V, are admitted. The minimum voltage for the solenoid pilots can be 10.8 V, i.e. 12 V - 10%. The body of the multi-pole version is made of metal in a single piece.



TECHNICAL DATA			
Supply voltage range	VDC	12 -10%	24 +30%
Minimum operating voltage	VDC	10.8 *	
Maximum operating voltage	VDC	31.2	
Maximum admissible voltage	VDC	32 ***	
Drive		Configurable PNP or NPN	
Power supply without controlled valves	W	0.1 for "Electrical connection - E" + 0.25 for each "Base - B"	
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec	
Solenoid pilot power after start-up (holding)	W	0.3	
Maximum admissible current	A	6 continuous, 9 instantaneous	
Protection		System protected against overload short-circuit protected solenoid pilot Output	
Diagnostics		FAULT signal red light and Out signal on "Electrical connection - E" LED light signal on valve	
Faults signalled		Short-circuited solenoid pilot; Solenoid pilot broken or missing Power supply out of range (under-voltage or over-voltage)	
Ambient temperature	°C	-10 to + 50	
	°F	14 to 122	
Electrical connection		Plug connectors	
		25-pin connector	44-pin connector
Maximum number of controllable solenoid pilots **		21	38
Maximum number of controllable solenoid valves		Ditto as above, depending on the number of solenoid pilots and type of base	
Maximum number of simultaneously controllable solenoid pilots:			
at 24VDC		21	38
at 12VDC		Depending on the voltage drop – see page 1-109	
Maximum current at 24VDC	A	3	5
Maximum current at 12VDC	A	6	9
Degree of protection		IP65 (with connectors connected or plugged if not used)	
Weight	lb	0.4	0.4

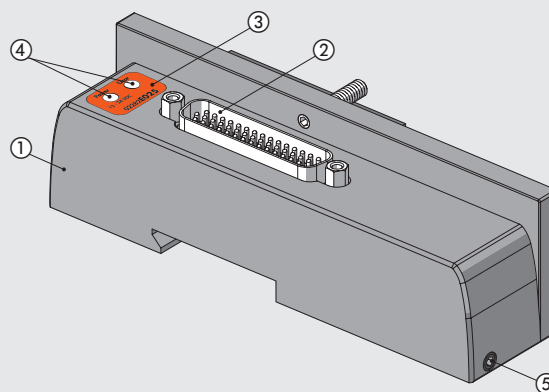
* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116.

** If the units are made up of bases exceeding the maximum number of controllable solenoid pilots (by mounting a dummy valve N or a bypass Y in the excess positions), operation is only possible on the islands with a positive signal (PNP), conversely (with an NPN signal), an error message is generated by the diagnostic system.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

COMPONENTS

- ① BODY: painted metal
- ② CONNECTOR: plug type
- ③ NAMEPLATE: with product code
- ④ LED: signal on and alarm
- ⑤ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel

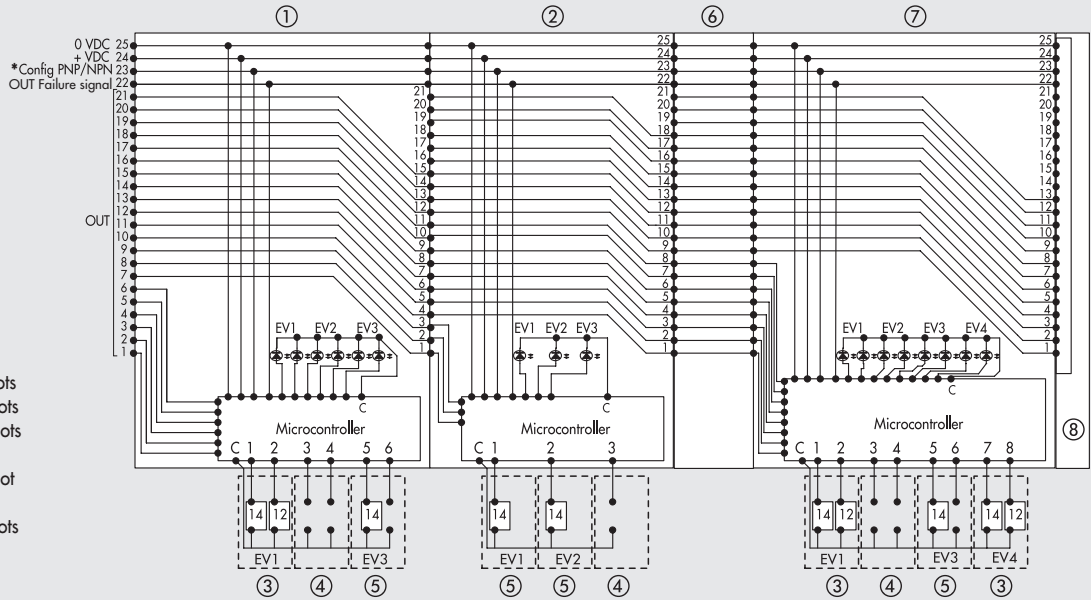


WIRING DIAGRAM

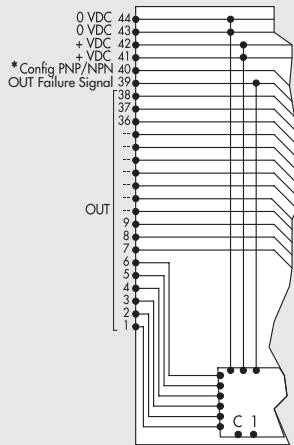
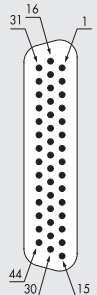
D-Sub 25-pin CONNECTOR



- ① 3-position base for 6 pilots
- ② 3-position base for 3 pilots
- ③ Valve with 2 solenoid pilots
- ④ Dummy valve or bypass
- ⑤ Valve with 1 solenoid pilot
- ⑥ Intermediate module
- ⑦ 4-position base for 8 pilots
- ⑧ Closed end-plate



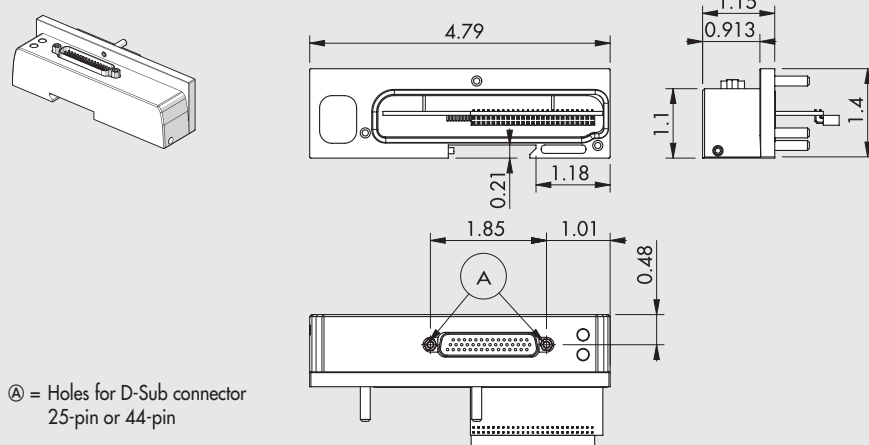
D-Sub 44-pin CONNECTOR



* Connect to +VDC if (OUT) valves with a POSITIVE signal are to be controlled
Connect to 0VDC if (OUT) valves with a NEGATIVE signal are to be controlled

DIMENSIONS - ORDERING CODES

DIMENSION OF A MULTI-POLE ELECTRICAL CONNECTION

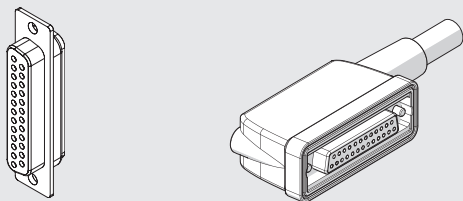


Ⓐ = Holes for D-Sub connector
25-pin or 44-pin

Code	Description	Weight [lb]
02282E025	EB 80 25-pin electrical connection	0.4
02282E044	EB 80 44-pin electrical connection	0.4

ACCESSORIES

25-PIN PRE-WIRED PLUG CONNECTOR



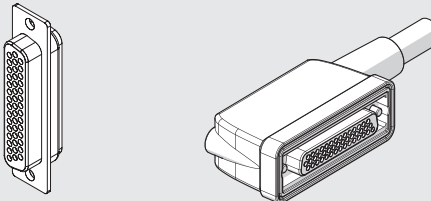
Code	Description	Weight [lb]
02269A0100	IP65 25-pin 90° connector, UL cable L = 40 inch	0.4
02269A0250	IP65 25-pin 90° connector, UL cable L = 98.5 inch	0.8
02269A0500	IP65 25-pin 90° connector, UL cable L = 197 inch	1.5
02269A1000	IP65 25-pin 90° connector, UL cable L = 394 inch	2.7
02269A2000	IP65 25-pin 90° connector, UL cable L = 788 inch	5.2
02269C0100 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 40 inch	0.4
02269C0250 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 98.5 inch	0.8
02269C0500 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 197 inch	1.5
02269C1000 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 394 inch	2.7

** Very flexible cable, class 6 according to IEC 60228

Position of electrical contact	Colour of the corresponding wire	Function
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Fault reporting
23	White + Red ring	Config. PNP/NPN *
24	Brown + Red ring	+VDC
25	White + Black ring	0VDC

* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

44-PIN PRE-WIRED PLUG CONNECTOR



Code	Description	Weight [lb]
02269B0100	IP65 44-pin 90° connector, UL cable L = 40 inch	0.6
02269B0250	IP65 44-pin 90° connector, UL cable L = 98.5 inch	1.4
02269B0500	IP65 44-pin 90° connector, UL cable L = 197 inch	2.6
02269B1000	IP65 44-pin 90° connector, UL cable L = 394 inch	4.9
02269B2000	IP65 44-pin 90° connector, UL cable L = 788 inch	9.5
02269D0100 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 40 inch	0.6
02269D0250 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 98.5 inch	1.4
02269D0500 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 197 inch	2.6
02269D1000 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 394 inch	4.9

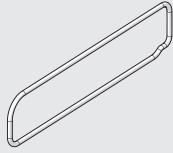
** Very flexible cable, class 6 according to IEC 60228

Position of electrical contact	Colour of the corresponding wire	Function
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Out 22
23	White + Red ring	Out 23
24	Brown + Red ring	Out 24
25	White + Black ring	Out 25
26	Brown + Black ring	Out 26
27	Grey + Green ring	Out 27
28	Yellow + Grey ring	Out 28
29	Pink + Green ring	Out 29
30	Yellow + Pink ring	Out 30
31	Green + Blue ring	Out 31
32	Yellow + Blue ring	Out 32
33	Green + Red ring	Out 33
34	Yellow + Red ring	Out 34
35	Green + Black ring	Out 35
36	Yellow + Black ring	Out 36
37	Grey + Blue ring	Out 37
38	Pink + Blue ring	Out 38
39	Grey + Red ring	Fault reporting
40	Pink + Red ring	Config. PNP/NPN *
41	Grey + Black ring	+VDC
42	Pink + Black ring	+VDC
43	Blue + Black ring	0VDC
44	Red + Black ring	0VDC

* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

SPARE PARTS

EB 80 ELECTRICAL CONNECTION INTERFACE OR SEAL



Code	Description
02282R1003	EB80 electrical connection interface OR seal

Comes in 10-pc. packs

NOTES

EB 80 ELECTRICAL CONNECTION WITH FIELDBUS - E

The job of the electrical connection with fieldbus is to power the EB 80 systems, transmit control signals for the solenoid valves, send or receive signals for input/output management modules and control diagnostics. The system can be supplied with a very wide voltage range, so much so that the EB 80 island can be controlled either at 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2V, are admitted. The minimum voltage for solenoid pilots can be 10.8V, i.e. 12V-10%. The modules come into parts: a lower part, with a single aluminium body separate from the bus protocol; an upper part with a technopolymer body dedicated to each specific bus protocol.



TECHNICAL DATA		
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power supply without controlled valves	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec
Solenoid pilot power after start-up (holding)	W	0.3
Maximum admissible current	A	4 continuous, 6 instantaneous for valve supply 4 continuous, 6 instantaneous for bus and signal supply
Protection		Overload and short-circuit protected solenoid pilot Output
Diagnostics		LED signal on valve, LED on electrical connection and software message regarding: short-circuited solenoid pilot; solenoid pilot with coil failure; voltage out of range (undervoltage and overvoltage); module communication control; on switching, configuration other than that stored
Maximum number of solenoid pilots		128 (32 for IO-Link 32 IN / 32 OUT; 64 for IO-Link 64 OUT)
Maximum number of simultaneously controllable solenoid pilots to actuate a greater number of solenoid pilots at the same time, add "Intermediate modules - M" with electrical connection		38
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs (32 for IO-Link 32 IN / 32 OUT)
Maximum number of nodes **		40 Bases for valves + 16 digital inputs + 16 digital outputs + 4 analogue inputs + 4 analogue outputs
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		EtherNet/IP, EtherCAT, CANopen, Profinet IO, Profibus-DP, Ethernet POWERLINK, IO-Link, CC-Link IE Field Basic
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	lb	0.77 (0.4 for IO-Link 64 OUT)

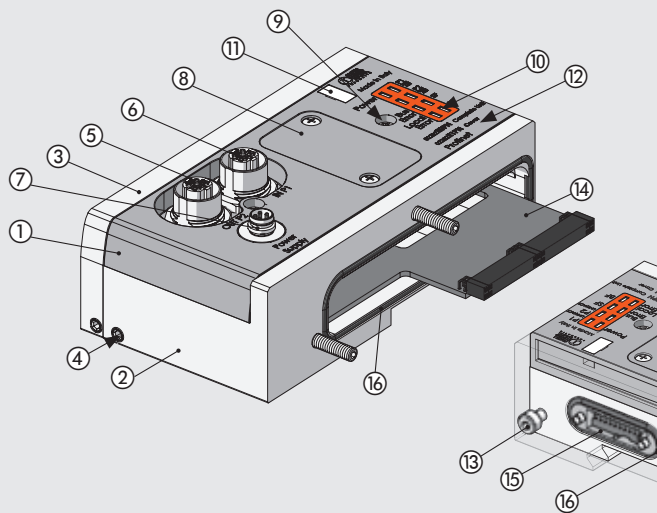
* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

** For topological limits (maximum lengths, etc.) see the instructions.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

COMPONENTS

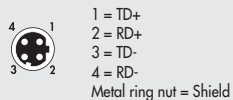
- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: painted aluminium
- ③ END PLATE: painted aluminium
- ④ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel
- ⑤ Fieldbus signal receive CONNECTOR
- ⑥ Fieldbus signal send CONNECTOR
- ⑦ M8 power supply CONNECTOR
- ⑧ COVER for access to bus address switches: technopolymer
- ⑨ SCREW securing the upper part to the lower part
- ⑩ LED light
- ⑪ NAMEPLATE: removable
- ⑫ IDENTIFICATION wording: laser etched
- ⑬ SCREW securing the end plate
- ⑭ CONNECTOR for solenoid valve base modules
- ⑮ CONNECTOR for input/output signal modules
- ⑯ GASKETS interfacing: NBR



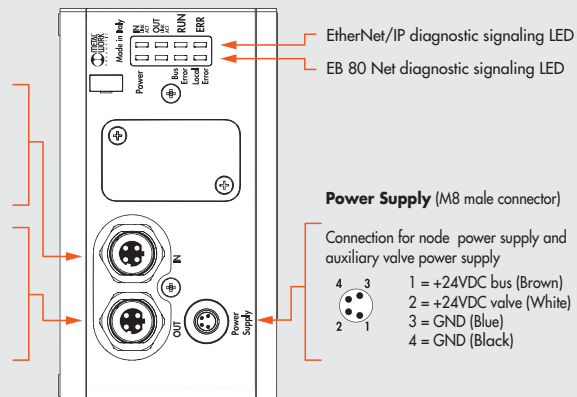
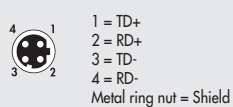
EtherNet/IP WIRING DIAGRAM

Connection to the EtherNet/IP network

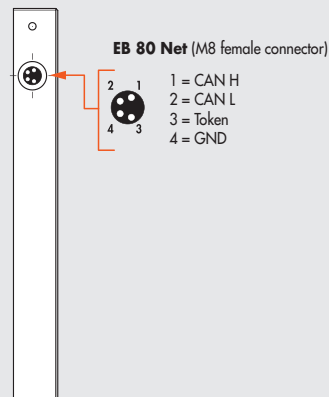
IN (M12 female connector, D encoding)



OUT (M12 female connector, D encoding)



End plate with intermediate control



TECHNICAL DATA	
Fieldbus	10 - 100 Mbit/S - Full-duplex - Half-duplex - Supports auto-negotiation and Quick Connect
Factory settings	IP address: 192.168.192.32
Addressing	Software - DHCP hardware
Supply voltage range	12 -10% 24 +30%
Minimum operating voltage	10.8 *
Maximum operating voltage	31.2
Maximum admissible voltage	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 F, D encoding, internal switch. Power supply: M8, 4-pin
Diagnostics **	EtherNet/IP: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal Icc 180 mA at 24 VDC
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

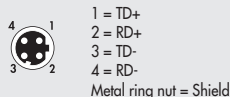
** Refer to the user manual for a detailed description.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

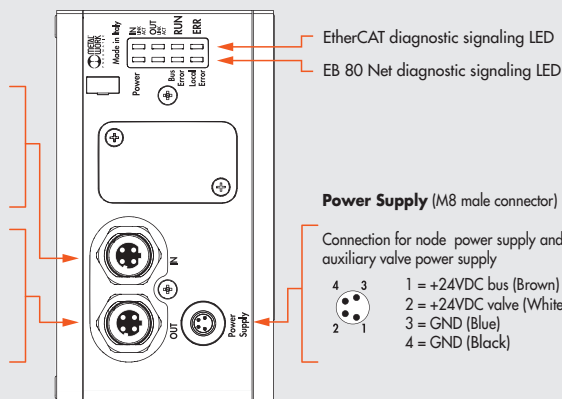
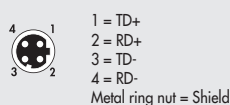
EtherCAT WIRING DIAGRAM

Connection to the EtherCAT network

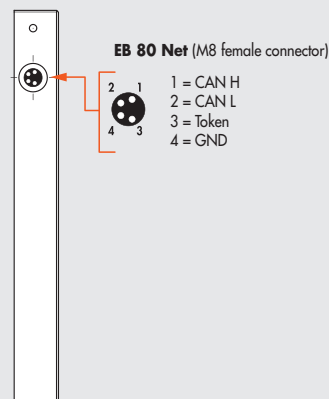
IN (M12 female connector, D encoding)



OUT (M12 female connector, D encoding)



End plate with intermediate control



TECHNICAL DATA

Fieldbus	100 Mbit/S - Full-duplex - Supports auto-negotiation
Factory settings	module denomination: EB80series
Addressing	Automatic from the master depending on its topological position. Fixes with the second slave address function
Supply voltage range	VDC 12 -10% 24 +30%
Minimum operating voltage	VDC 10.8 *
Maximum operating voltage	VDC 31.2
Maximum admissible voltage	VDC 32 ***
Protection	Module protected from overload and polarity inversion. outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 F D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **	EtherCAT: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal Icc 180 mA at 24 VDC
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1= active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

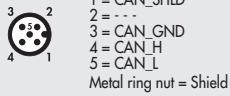
** Refer to the user manual for a detailed description.

*** **IMPORTANT!** Voltage greater than 32VDC will damage the system irreparably.

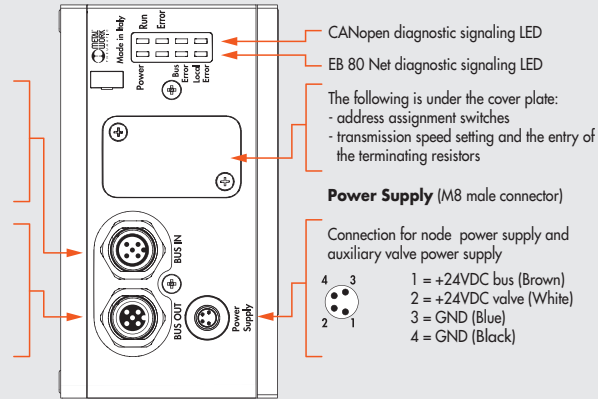
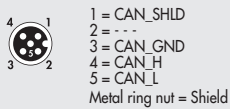
CANopen WIRING DIAGRAM

Connection to the CANopen network

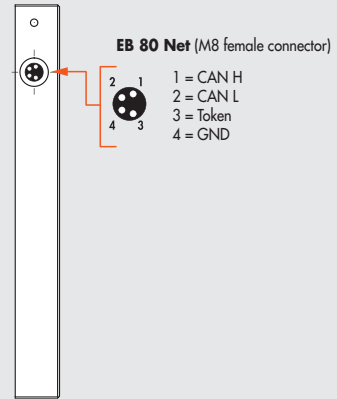
BUS IN (M12 male connector, A encoding)



BUS OUT (M12 female connector, A encoding)



End plate with intermediate control



TECHNICAL DATA

Fieldbus	Complying with CiA DS401 specification	
Factory settings	Module denomination: EB80series - Address 5	
Addressing	Hardware via DIP SWITCH	
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.	
Connections	Fieldbus: BUS IN M12 Male, 5 poles, A encoding - BUS OUT M12 Female, 5 poles, encoding A - Power supply: M8, 4-PIN	
Diagnostics**	CANopen: via local LED lights and software messages. Outputs: via local LED lights and state bytes	
Bus power supply current absorption	nominal I _{cc} 180 mA at 24 V	
Maximum number of pilots	128	
Maximum number of digital inputs	128	
Maximum number of digital outputs	128	
Maximum number of analogue inputs	16	
Maximum number of analogue outputs	16	
Maximum number of inputs for temperatures	16	
Data bit value	0 = non-active; 1 = active	
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state	

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

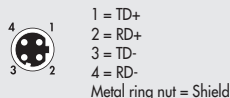
** Refer to the user manual for a detailed description.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

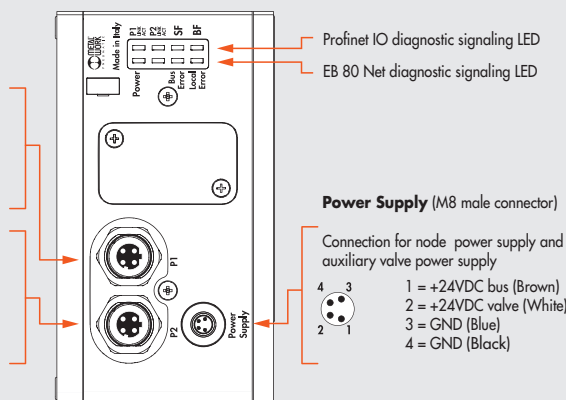
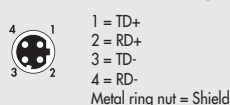
Profinet IO WIRING DIAGRAM

Connection to the Profinet IO network

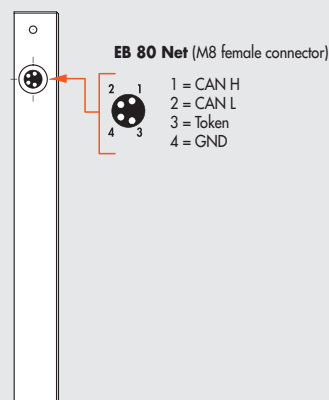
P1 (M12 female connector, D encoding)



P2 (M12 female connector, D encoding)



End plate with intermediate control



TECHNICAL DATA

Fieldbus	100 Mbit/s - Full-duplex – Supports Fast Start Up, RT communication, Shared Device, Identification & Maintenance 1-4	
Factory settings	Module denomination: EB80series – IP address: 0.0.0.0	
Addressing	DCP Software	
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.	
Connections	Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN	
Diagnostics **	Profinet IO: via local LED lights and software messages. Outputs: via local LED lights and state bytes	
Bus power supply current absorption	nominal lcc 180 mA at 24 VDC	
Maximum number of pilots	128	
Maximum number of digital inputs	128	
Maximum number of digital outputs	128	
Maximum number of analogue inputs	16	
Maximum number of analogue outputs	16	
Maximum number of inputs for temperatures	16	
Data bit value	0 = non-active; 1= active	
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state	

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116**

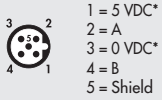
** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

Profibus-DP WIRING DIAGRAM

Connection to the Profibus-DP network

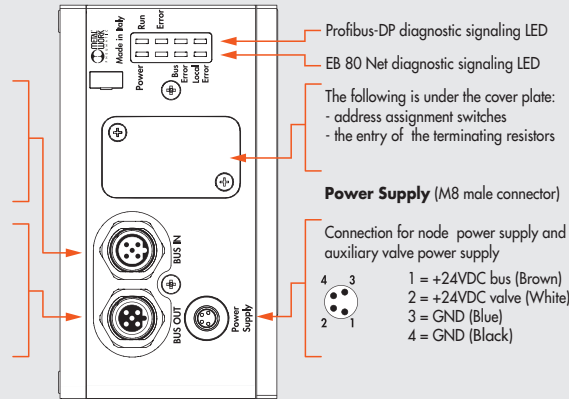
BUS IN (M12 Male Connector, B encoding)



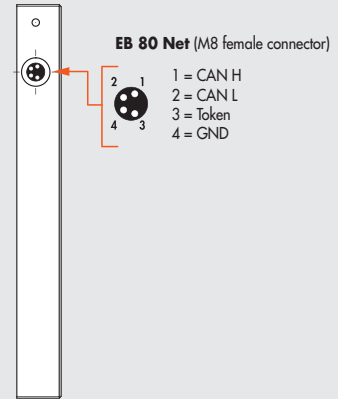
BUS OUT (M12 female connector, B encoding)



* DO NOT CONNECT PIN 1 and PIN 3:
Only the power supply of external
terminating resistors must be used.



End plate with intermediate control



TECHNICAL DATA

Fieldbus	Complying with Profibus-DP DIN E 1924 specification	
Factory settings	Module denomination: EB80series - Address 5	
Addressing	Hardware via ROTARY SWITCH	
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.	
Connections	Fieldbus: BUS IN M12 Male, 5 poles, B encoding - BUS OUT M12 Female, 5 poles, B encoding - Power supply: M8, 4-PIN	
Diagnostics **	Profibus-DP: via local LED lights and software messages. Outputs: via local LED lights and state bytes	
Bus power supply current absorption	nominal Icc 180 mA at 24 VDC	
Maximum number of pilots	128	
Maximum number of digital inputs	128	
Maximum number of digital outputs	128	
Maximum number of analogue inputs	16	
Maximum number of analogue outputs	16	
Maximum number of inputs for temperatures	16	
Data bit value	0 = non-active; 1 = active	
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state	

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

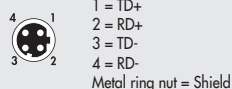
** Refer to the user manual for a detailed description.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

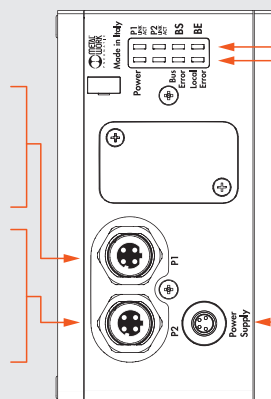
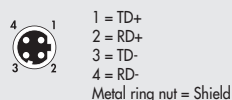
Ethernet POWERLINK WIRING DIAGRAM

Connection to the Ethernet POWERLINK network

P1 (M12 female connector, D encoding)



P2 (M12 female connector, D encoding)

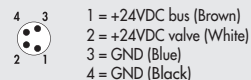


Ethernet POWERLINK diagnostic signaling LED

EB 80 Net diagnostic signaling LED

Power Supply (M8 male connector)

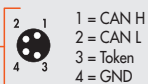
Connection for node power supply and auxiliary valve power supply



End plate with intermediate control



EB 80 Net (M8 female connector)



TECHNICAL DATA

Fieldbus	100 Mbit/S - Half-duplex - Supports auto-negotiation
Factory settings	module denomination: EB80series address number 2
Addressing	Hardware by rotary switch
Supply voltage range	12 -10% 24 +30%
Minimum operating voltage	10.8 *
Maximum operating voltage	31.2
Maximum admissible voltage	32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **	Ethernet POWERLINK: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal Icc 180 mA at 24 VDC
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1= active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116**

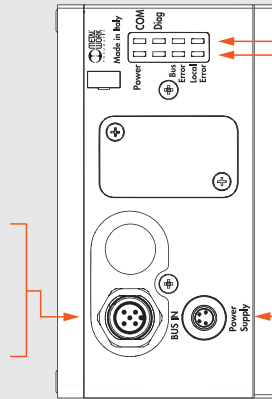
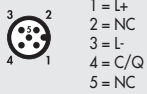
** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

IO-Link 32 IN / 32 OUT WIRING DIAGRAM

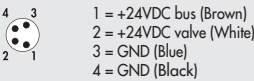
Connection to the IO-Link network

BUS IN (M12 male connector, A encoding)



Power Supply (M8 male connector)

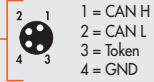
Connection for node power supply and auxiliary valve power supply



End plate with intermediate control



EB 80 Net (M8 female connector)



TECHNICAL DATA

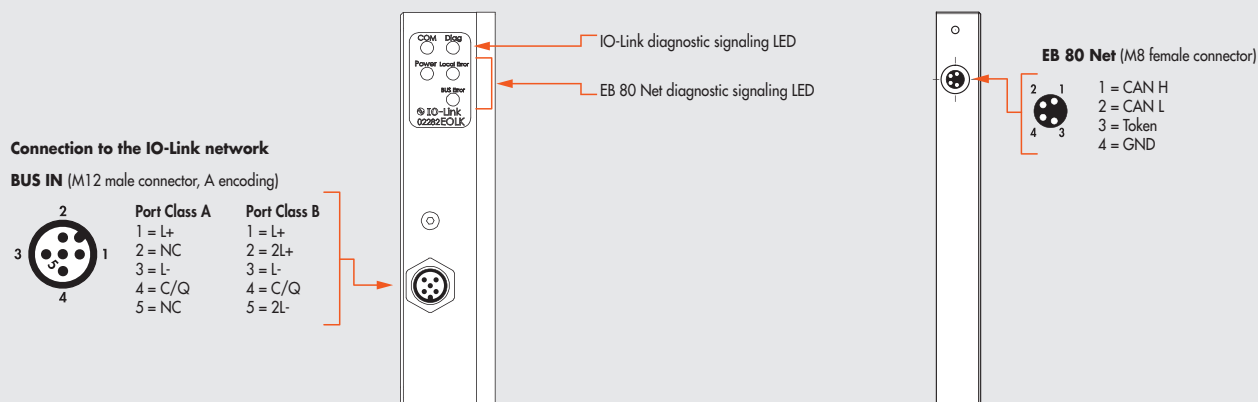
Fieldbus		IO-Link version 1.1
Communication speed	Kbps	230.4 (COM3)
Vendor ID / Device ID		1046 (hex 0x0416) / 32 (hex 0x000020)
Minimum cycle time	ms	2.8
Process data length		5 byte of Input / 4 byte of Output
Supply voltage range (M8 connector)	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC	min 20, max 30
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: M12 male, A-coded - port class A. Power supply: M8, 4-PIN
Diagnostics **		IO-Link: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Power supply current absorption		See IO-Link instruction manual
Maximum number of pilots		32
Maximum number of digital inputs		32
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

** Refer to the user manual for a detailed description.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

IO-Link 64 OUT WIRING DIAGRAM



TECHNICAL DATA	
Fieldbus	IO-Link version 1.1
Communication speed	230.4 (COM3)
Vendor ID / Device ID	1046 (hex 0x0416) / 64 (hex 0x000040)
Minimum cycle time	2.8
Process data length	1 byte of Input / 8 byte of Output
Valves supply voltage range	12 -10% 24 +30%
Minimum valves operating voltage	10.8 *
Maximum valves operating voltage	31.2
Maximum admissible voltage	32 ***
IO-Link power supply (L+L - Bus IN connector)	min 18, max 30
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: M12 male, A-coded - port class A - port class B
Diagnostics**	IO-Link: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Power supply current absorption	See IO-Link 64 OUT instruction manual
Maximum number of pilots	64
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

** Refer to the user manual for a detailed description.

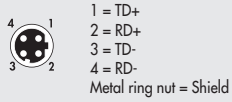
*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

N.B.: The EB 80 island with IO-Link 64 OUT can be connected with an EB 80 island with Additional electrical control, but the latter cannot manage IN or OUT modules.

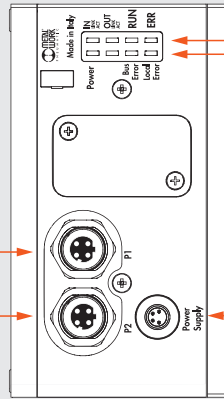
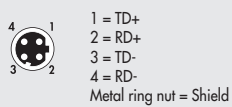
CC-Link IE Field Basic WIRING DIAGRAM

Connection to the CC-Link IE Field Basic network

P1 (M12 female connector, D encoding)



P2 (M12 female connector, D encoding)



CC-Link IE Field Basic diagnostic signaling LED
EB 80 Net diagnostic signaling LED

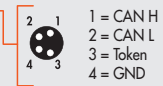
Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply
1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

End plate with intermediate control



EB 80 Net (M8 female connector)



TECHNICAL DATA	
Fieldbus	100 Mbit/s Number of occupied stations: from 1 to 4
Factory settings	IP address: 192.168.3.32 Subnet Mask: 255.255.255.0
Addressing	Software
Supply voltage range	VDC 12 -10% 24 +30%
Minimum operating voltage	VDC 10.8 *
Maximum operating voltage	VDC 31.2
Maximum admissible voltage	VDC 32 ***
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **	CC-Link IE Field Basic: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption	nominal Icc 180 mA at 24VDC
Maximum number of pilots	128
Maximum number of digital inputs	128
Maximum number of digital outputs	128
Maximum number of analogue inputs	16
Maximum number of analogue outputs	16
Maximum number of inputs for temperatures	16
Data bit value	0 = non-active; 1= active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

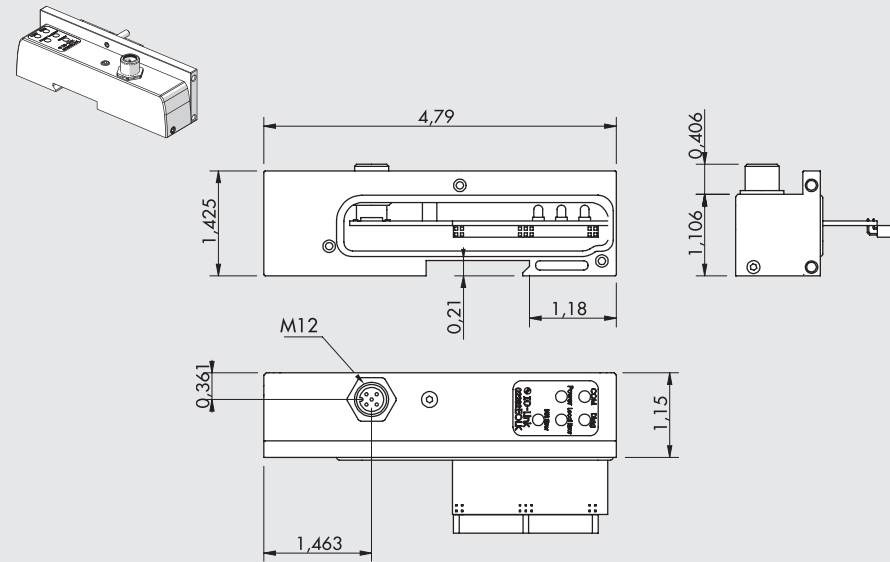
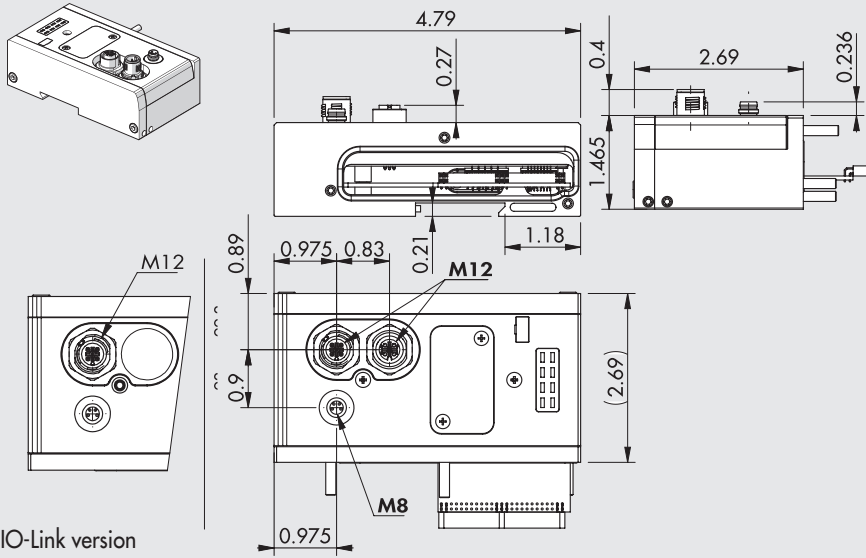
* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

** Refer to the user manual for a detailed description.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

DIMENSIONS - ORDERING CODES

ELECTRICAL CONNECTION FIELDBUS DIMENSION

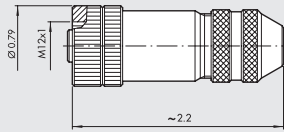


Code	Description	Weight [lb]
02282E0EN	EB 80 Electrical connection EtherNet/IP	0.77
02282E0EC	EB 80 Electrical connection EtherCAT	0.77
02282E0PN	EB 80 Electrical connection Profinet IO	0.77
02282E0CN	EB 80 Electrical connection CANopen	0.77
02282E0PB	EB 80 Electrical connection Profibus-DP	0.77
02282E0PL	EB 80 Electrical connection Ethernet POWERLINK	0.77
02282E0IO	EB 80 Electrical connection IO-Link 32 IN / 32 OUT	0.77
02282E0LK	EB 80 Electrical connection IO-Link 64 OUT	0.40
02282E0CC	EB 80 Electrical connection CC-Link IE Field Basic	0.77

NOTES

ACCESSORIES

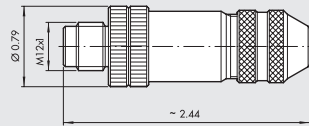
M12 FEMALE CONNECTOR FOR BUS-IN, A ENCODING



Code	Description
0240009055	M12 5-pin female connector, encoding A

Note: Can be used for Bus CANopen and IO-Link

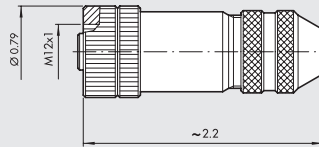
M12 MALE CONNECTOR FOR BUS-IN, A ENCODING



Code	Description
0240009038	M12 5-pin male connector, encoding A

Note: Can be used for Bus CANopen

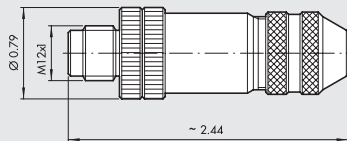
M12 FEMALE CONNECTOR FOR BUS-IN, B ENCODING



Code	Description
0240009036	M12 5-pin female connector, encoding B

Note: Can be used for Profibus-DP

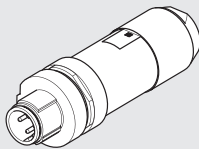
M12 MALE CONNECTOR FOR BUS-IN, B ENCODING



Code	Description
0240009035	M12 5-pin male connector, encoding B

Note: Can be used for Profibus-DP

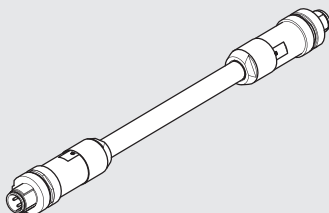
M12 BUS CONNECTOR, D ENCODING



Code	Description
0240005051	M12 4-pin BUS connector, D-coded

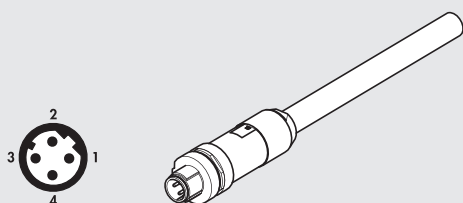
Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED



Code	Description
0240005103	Straight connector for M12-M12 4-pin BUS, D-coded, with 118 inch cable
0240005105	Straight connector for M12-M12 4-pin BUS, D-coded, with 197 inch cable
0240005110	Straight connector for M12-M12 4-pin BUS, D-coded, with 394 inch cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED


Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue

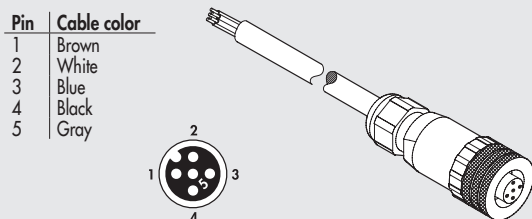
Code	Description
0240005093	Straight connector for M12 4-pin BUS, D-coded, with 118 inch cable
0240005095	Straight connector for M12 4-pin BUS, D-coded, with 197 inch cable
0240005100	Straight connector for M12 4-pin BUS, D-coded, with 394 inch cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

STRAIGHT CONNECTOR FOR M12, A-CODED


Code	Description
W0970513001	5-PIN M12x1 straight connector

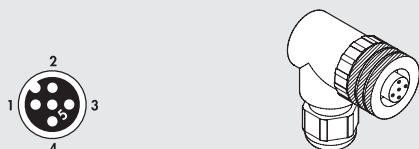
Note: Can be used for IO-Link

STRAIGHT CONNECTOR WITH WIRE FOR M12, A-CODED


Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray

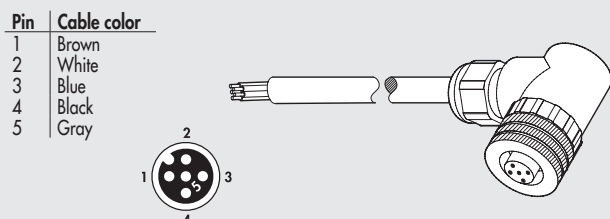
Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 197 inch

Note: Can be used for IO-Link

90° CONNECTOR FOR M12, A-CODED


Code	Description
W0970513003	M12x1 5-PIN 90° connector

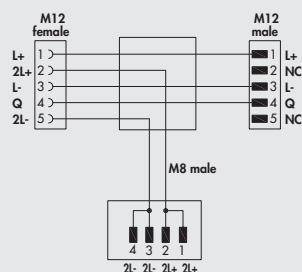
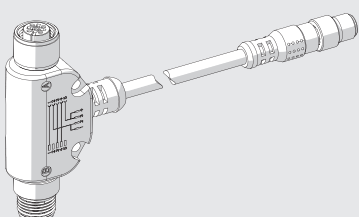
Note: Can be used for IO-Link

90° CONNECTOR WITH WIRE FOR M12, A-CODED


Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray

Code	Description
W0970513004	M12x1 5-PIN 90° connector with wire L = 197 inch

Note: Can be used for IO-Link

T-CONNECTOR M12 A-CODED / M8 MALE FOR AUXILIARY POWER


Code	Description
0240009070	T - connector for auxiliary power

Note: Can be used for IO-Link 64 OUT

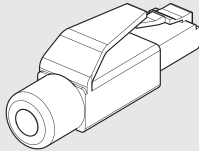
CABLE FOR BUS



Code	Description
0240005220*	Cable for BUS 788 inch
0240005250	Cable for BUS CANopen BUS 788 inch

* Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

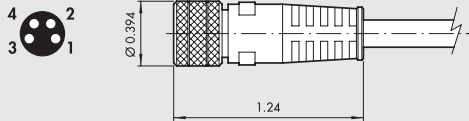
RJ45 CONNECTOR



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60603-7

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 118 inch
0240009037	M8 4-pin female connector for power supply, cable L = 197 inch
0240009058	M8 4-pin female connector for power supply, cable L = 394 inch
0240009059	M8 4-pin female connector for power supply, cable L = 590 inch
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 118 inch
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 197 inch
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 394 inch
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 590 inch

* Very flexible cable, class 6 according to IEC 60228

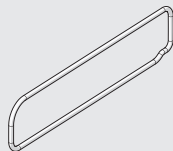
M8-M12 PLUG



Code	Description
0240009039	Plug for M8 connector
0240009040	Plug for M12 connector

SPARE PARTS

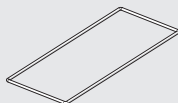
EB 80 ELECTRICAL CONNECTION INTERFACE OR-SEAL



Code	Description
02282R1003	EB 80 electrical connection interface or-seal

Comes in 10-pc. packs

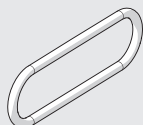
GASKET BETWEEN EB 80 BASE AND COVER BUS/SIGNALS



Code	Description
02282R1004	Kit of gaskets between EB 80 base and cover bus/signals

Comes in 10-pc. packs

EB 80 BUS/SIGNAL INTERFACE OR-SEAL



Code	Description
02282R1005	EB 80 BUS/Signal interface OR-seal

Comes in 10-pc. packs

EB 80 ADDITIONAL ELECTRICAL CONNECTION - E

The additional electrical connection can be used to connect different EB 80 systems to a single bus node. To do this, the main island is equipped with a C3-type closed end-plate, equipped with an M8 connector. An M8-M8 connected cable relays the signal to the additional system. The system can be supplied with a very wide range of voltages, so much so that the EB 80 island can be controlled at either 12VDC or 24VDC (patented). Overvoltages up to 30% of the nominal value are admitted, i.e. up to 31.2VDC. The minimum voltage for the solenoid pilots can be 10.8VDC, i.e. 12VDC-10%. The modules consist of two parts: a lower part with a single aluminium body similar to that used for fieldbuses; an upper part with a technopolymer body specific for the additional model.



TECHNICAL DATA		
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power supply without controlled valves	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec
Solenoid pilot power after start-up (holding)	W	0.3
Maximum admissible current	A	4 continuous, 6 instantaneous for valve supply 4 continuous, 6 instantaneous for bus and signal supply
Protection		Overload and short-circuit protected solenoid pilot Output
Diagnostics		LED signal on valve, LED on electrical connection and software message regarding: short-circuited solenoid pilot; solenoid pilot with coil failure; voltage out of range (undervoltage and overvoltage); module communication control; on switching, configuration other than that stored.
Maximum number of solenoid pilots		128 **
Maximum number of simultaneously controllable solenoid pilots (to actuate a greater number of pilots at the same time, add "Intermediate modules - M" with "Electrical connection - E")		38
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs
Maximum number of nodes **		40 Bases for valves + 16 Digital inputs + 16 Digital outputs + 4 Analogue inputs + 4 Analogue outputs
Maximum length of the connection cables ***	inch	1575
Ambient temperature	°C	-10 to +50
	°F	14 to 122
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	lb	0.7

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116

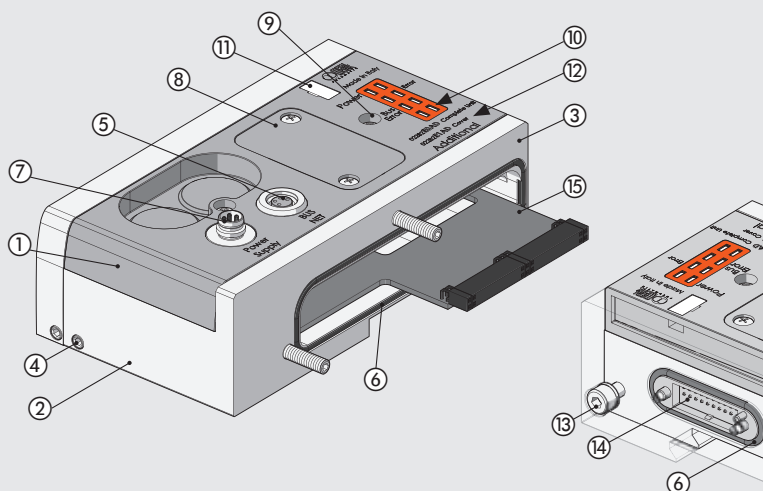
** Total numbers, by summing up those of the fieldbus connection and all additional connections.

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

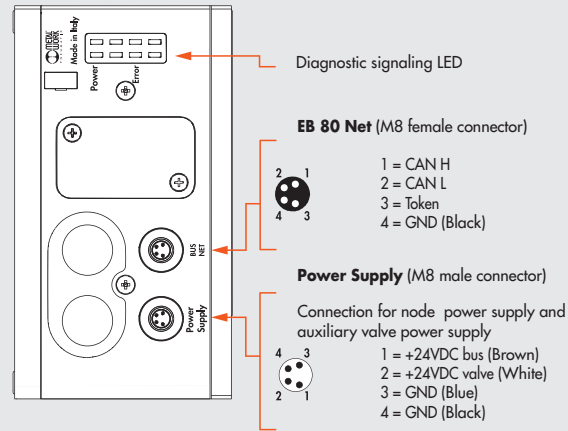
**** Sum of the lengths of the cables between the fieldbus electrical connection and any additional electrical connections.

COMPONENTS

- ① UPPER PART BODY: technopolymer
- ② LOWER PART BODY: painted aluminium
- ③ END PLATE: painted aluminium
- ④ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel
- ⑤ CONNECTOR for connection to the valve island (main one)
- ⑥ GASKETS interfacing: NBR
- ⑦ M8 power supply CONNECTOR
- ⑧ COVER for access to bus address switches: technopolymer
- ⑨ SCREW securing the upper part to the lower part
- ⑩ LED light
- ⑪ NAMEPLATE: removable
- ⑫ IDENTIFICATION wording: laser etched
- ⑬ SCREW securing the end plate
- ⑭ CONNECTOR for solenoid valve base modules
- ⑮ CONNECTOR for Input/Output signal modules

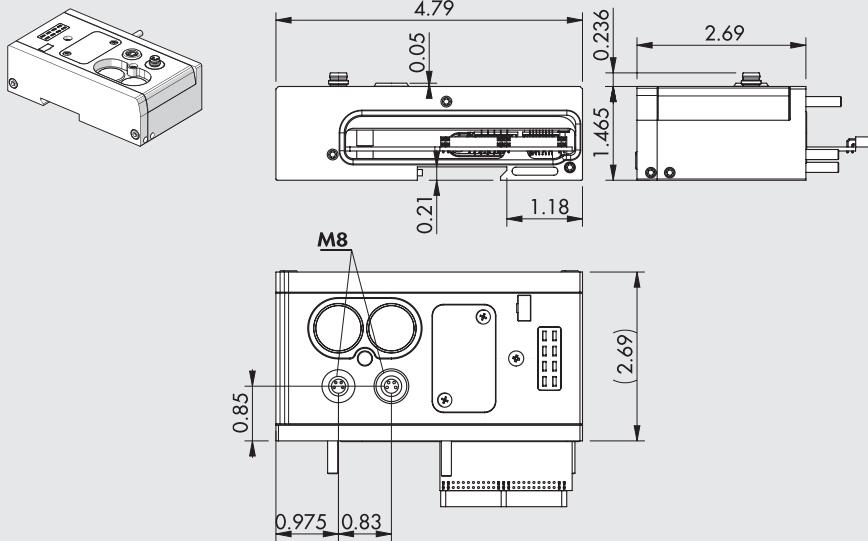


WIRING DIAGRAM



DIMENSIONS - ORDERING CODES

DIMENSION OF ADDITIONAL ELECTRICAL CONNECTION

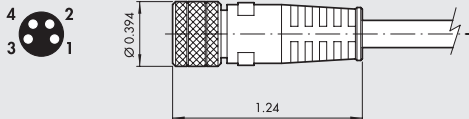


Code	Description	Weight [lb]
02282E0AD	Additional electrical connection EB 80	0.7

ACCESSORIES

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 118 inch
0240009037	M8 4-pin female connector for power supply, cable L = 197 inch
0240009058	M8 4-pin female connector for power supply, cable L = 394 inch
0240009059	M8 4-pin female connector for power supply, cable L = 590 inch
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 118 inch
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 197 inch
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 394 inch
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 590 inch

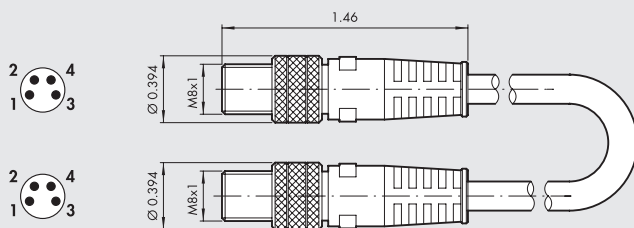
* Very flexible cable, class 6 according to IEC 60228

M8 PLUG



Code	Description
0240009039	Plug for M8 connector

M8 CONNECTOR WITH CABLE FOR CONNECTION BETWEEN EB 80 ISLANDS

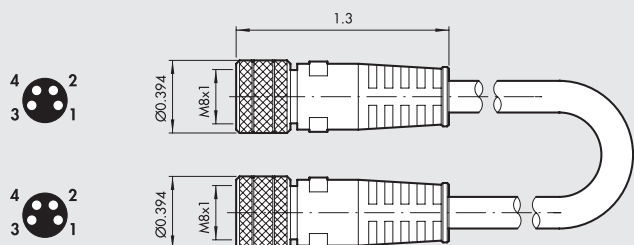


Code	Description	Weight [lb]
0240010201	M8-M8 4-pin male shielded cable L = 40 inch	0.09
0240010205	M8-M8 4-pin male shielded cable L = 197 inch	0.4
0240010210	M8-M8 4-pin male shielded cable L = 394 inch	0.73
0240010215	M8-M8 4-pin male shielded cable L = 590 inch	1
0240010220	M8-M8 4-pin male shielded cable L = 788 inch	1.36
0240010405 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 197 inch	0.4
0240010410 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 394 inch	0.73
0240010415 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 590 inch	1
0240010420 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 590 inch	1.36

* Very flexible cable, class 6 according to IEC 60228

N.B.: For correct operation of the entire EB 80 system, use M8-M8 pre-wired, twisted and shielded cables only.

M8 ADAPTER CABLE

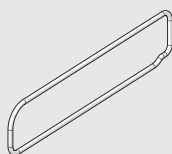


Code	Description	Weight [lb]
0240010350	M8-M8 4-pin female adapter cable with shielded cable L = 7.8 inch	0.03

N.B.: Cannot be used with cables for very flexible (H-FLEX CL6)

SPARE PARTS

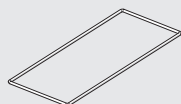
EB 80 ELECTRICAL CONNECTION INTERFACE OR-SEAL



Code	Description
02282R1003	EB 80 electrical connection interface OR-seal

Comes in 10-pc. packs

GASKET BETWEEN EB 80 BASE AND COVER BUS/SIGNALS



Code	Description
02282R1004	Kit of gaskets between EB 80 base and cover bus/signals

Comes in 10-pc. packs

EB 80 BUS/SIGNAL INTERFACE OR-SEAL



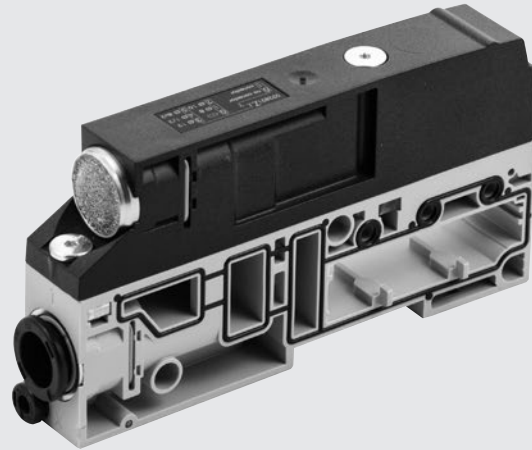
Code	Description
02282R1005	EB 80 BUS/Signal interface OR-seal

Comes in 10-pc. packs

EB 80 COMPRESSED-AIR SUPPLY - P

The Compressed air supply - P modules power the valve base and collect the air coming from the relief ports. Various versions are available, with pipe fittings of different diameter. The product code also identifies whether the module is set to supply the pilots without servo-assistance, in which case you only need to connect compressed air to the supply fitting; or with servo-assistance (recommended), in which case you only need to connect the compressed air to the Ø 4 mm (5/32") pilot fitting. Switching from servo to non-servo operation or vice versa is possible, however, by changing the position of the orange gasket situated between the lower and the upper part of the module; the configuration is identified by a tab protruding at the back. Relief ports 3 and 5 can be either connected using a silencer or conveyed via a fitting.

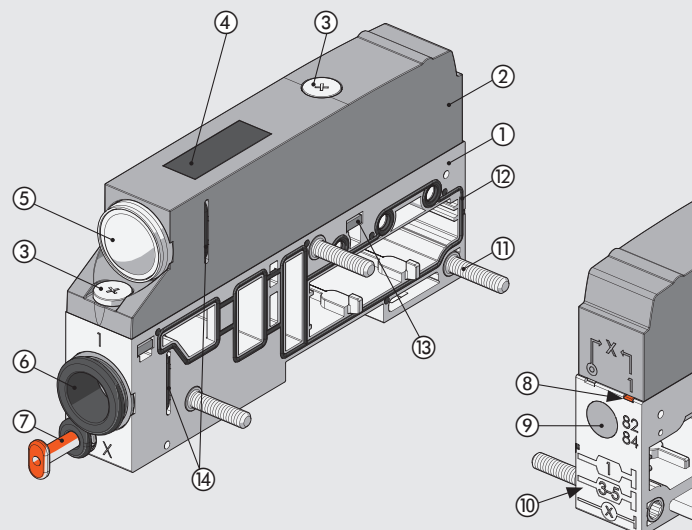
A version with separate ports 3 and 5 is also available. This feature is useful in versions with pilot servo-assistance to power the valves from ports 3 and 5, at different pressures from vacuum to 8 bar - 116 psi, including the version to configure a fieldbus island with signal modules only, without the pneumatic part.



TECHNICAL DATA						
Operating pressure						
Non-servo versions and solenoid pilot servo pressure		5/2 and 5/3		2/2 and 3/2		
	bar	3 to 8		min. (see graph on page 1-145) / max. 8		
	MPa	0.3 to 0.8		min. (see graph on page 1-145) / max. 0.8		
	psi	43 to 116		min. (see graph on page 1-145) / max. 116		
Assisted valves		Vacuum to 10				
	bar	Vacuum to 1				
	MPa	Vacuum to 145				
	psi	-10 to + 50				
Ambient temperature		14 to 122				
Flow rate at 91 psi ΔP 14.5 psi		Ø 8 mm (5/16")	Ø 10 mm	Ø 12 mm	Ø 1/2"	
Feeding (port 1)		scfm	63.69	99	123.8	123.8
Exhaust with fitting (ports 3 and 5)		scfm	70.8	113.2	155.7	155.7
Separate exhausts Ø 5/16" (8 mm) (N.B.: Pmax 116 psi)		scfm	63.69 x 2	-	-	-
Flow rate at 91 psi free exhaust						
Exhaust with fitting (ports 3 and 5)		scfm	95.5	138	215.8	215.8
Silenced exhaust		scfm	127.4			
Exhaust with fitting Ø12 and silencer W0970530086		scfm	122.3			
Separate exhausts Ø 5/16" (8 mm) (N.B.: Pmax 116 psi)		scfm	95.5 x 2	-	-	-
Fluid		Unlubricated air				
Versions		Silenced relief or conveyed relief, fittings for pipes Ø 8 mm (5/16"), Ø 10 mm, Ø 12 mm, 1/2"				
Degree of protection		IP65				
Weight		lb	0.31	0.28	0.27	0.27

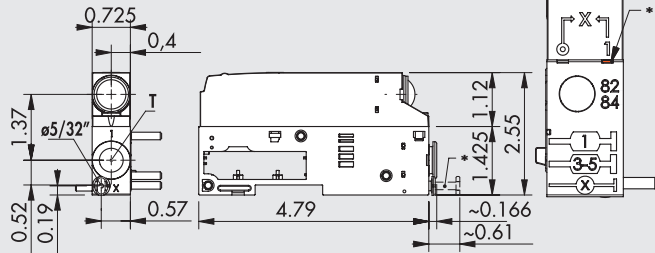
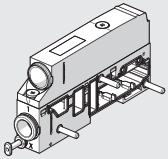
COMPONENTS

- ① LOWER PART BODY: technopolymer
- ② UPPER PART BODY: technopolymer
- ③ SCREWS securing the island bodies: zinc-plated steel (Tightening torque: 0.74 lbf ft)
- ④ TAG: with laser etched wording - technopolymer
- ⑤ RELIEF: silencer or pipe fitting
- ⑥ POWER SUPPLY: pipe fitting
- ⑦ PILOTING (X): Ø 4 mm (5/32") pipe fitting
- ⑧ INDICATOR: indicates whether pilot power supply is separate or not
- ⑨ PILOT RELIEF: HDPE silencer
- ⑩ PICTOGRAM: showing compressed air system layout
- ⑪ TIE ROD: zinc-plated steel
- ⑫ GASKET: NBR
- ⑬ THREADED PLATE: zinc-plated steel
- ⑭ CARTRIDGE FIXING CLIP: stainless steel



DIMENSIONS - ORDERING CODES

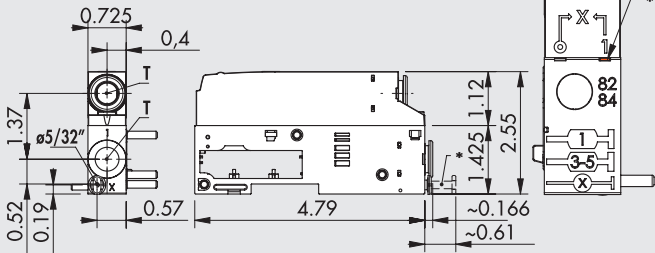
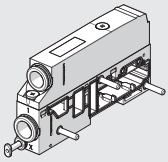
COMPRESSED AIR SUPPLY - SILENCED RELIEF



- * R9 plug for NON-SERVOASSISTED versions
- ** Orange tab in SERVO-ASSISTED (⊙) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [lb]
	Ø 8 mm (5/16")	02282P1XZ00	0.31
	Ø 10 mm	02282P2XZ00	0.28
	Ø 12 mm	02282P3XZ00	0.27
	Ø 1/2"	02282P5XZ00	0.27
	Ø 8 mm (5/16")	02282P11Z00	0.31
	Ø 10 mm	02282P21Z00	0.28
	Ø 12 mm	02282P31Z00	0.27
	Ø 1/2"	02282P51Z00	0.27

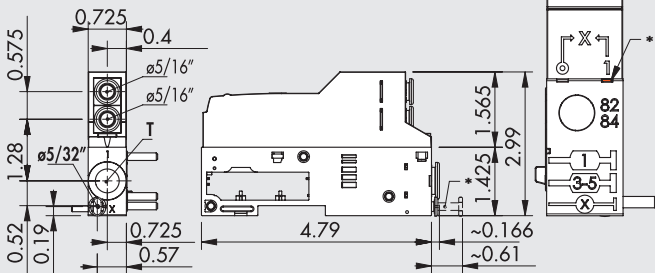
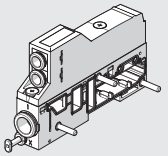
COMPRESSED AIR SUPPLY - CONVEYED RELIEF



- * R9 plug for NON-SERVOASSISTED versions
- ** Orange tab in SERVO-ASSISTED (⊙) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [lb]
	Ø 8 mm (5/16")	02282P1XZ10	0.31
	Ø 10 mm	02282P2XZ20	0.28
	Ø 12 mm	02282P3XZ30	0.27
	Ø 1/2"	02282P5XZ50	0.27
	Ø 8 mm (5/16")	02282P11Z10	0.31
	Ø 10 mm	02282P21Z20	0.28
	Ø 12 mm	02282P31Z30	0.27
	Ø 1/2"	02282P51Z50	0.27

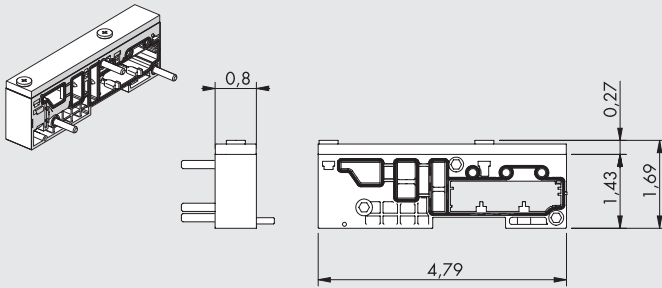
COMPRESSED AIR SUPPLY - SEPARATE RELIEFS



- * R9 plug for NON-SERVOASSISTED versions
- ** Orange tab in SERVO-ASSISTED (⊙) or NON-SERVO-ASSISTED (1) position

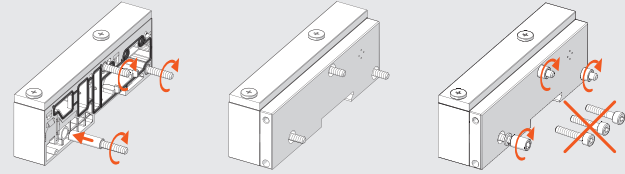
Symbol	T - Pipe fitting	Code	Weight [g]
	Ø 8 (5/16")	02282P1XZ_0	0.34
	Ø 10	02282P2XZ_0	0.32
	Ø 12	02282P3XZ_0	0.31
	Ø 1/2"	02282P5XZ_0	0.31
_ = To complete the code enter: 6: $\phi D = 8$ mm; 7: $\phi D = 6$ mm; 8: $\phi D = 4$ mm N.B.: Maximum pressure in the ports 3 and 5: 8 bar - 116 psi			
	Ø 8 (5/16")	02282P11Z_0	0.34
	Ø 10	02282P21Z_0	0.32
	Ø 12	02282P31Z_0	0.31
	Ø 1/2"	02282P51Z_0	0.31
_ = To complete the code enter: 6: $\phi D = 8$ mm; 7: $\phi D = 6$ mm; 8: $\phi D = 4$ mm N.B.: Maximum pressure in the ports 3 and 5: 8 bar - 116 psi			

MODULE FOR ELECTRIC VERSION ONLY



Code	Description	Weight [lb]
02282P91Z90	Module for electric version only	0.26

N.B.: Version used to make up an EB 80 island without pneumatic part, but only with "S" signal modules and fieldbus or additional electrical connection "E". Bases and valves cannot be added.



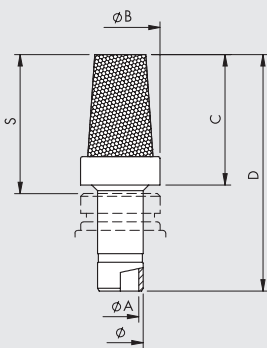
KEY TO CODES

02282 FAMILY	P SUBSYSTEM	3 PORT FITTING 1	1 PILOT SERVO-ASSISTED	Z UPPER PART	3 PORTS 3 AND 5 FITTING	0 SPECIALTY
02282 EB 80	P Compressed air supply	1 Pipe fitting Ø 8 (5/16") 2 Pipe fitting Ø 10 3 Pipe fitting Ø 12 5 Pipe fitting Ø 1/2"	1 Non-servo-assisted X Servo-assisted	Z The upper part is present	0 Silencer ▲ 1 Pipe fitting Ø 8 (5/16") ▲ 2 Pipe fitting Ø 10 ▲ 3 Pipe fitting Ø 12 ▲ 5 Pipe fitting Ø 1/2" 6 2 pipes fitting Ø 8 (5/16") (one for port 3, one for port 5) 7 2 pipes fitting Ø 6 (one for port 3, one for port 5) 8 2 pipes fitting Ø 4 (5/32") (one for port 3, one for port 5) 9 Without connection	0 Standard
		9 Module for electric version only	1 Non-servo-assisted			

▲ For ports 3 and 5 use the same pipe Ø of port 1.

ACCESSORIES

SILENCER FOR FITTING



Ø	Ø A	Ø B	C	D	S
5/16"	1/4	0.55	0.9	1.6	0.96
12 mm	0.394	0.74	1.14	2.02	1.24

Code	Description	Valve flow rate, at 91 psi [scfm]	Weight [g]
W0970530084	Silencer for fitting, Ø 8 mm (5/16")	85	15
W0970530086	Silencer for fitting, Ø 12 mm	212	24

SPARE PARTS

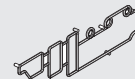
CARTRIDGE



Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 (5/16")
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

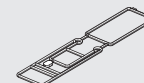
BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

LOWER /UPPER BODY GASKET



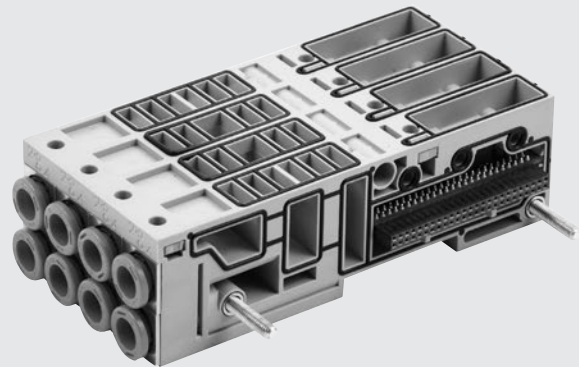
Code	Description
02282R1001	EB 80 lower/upper body gasket kit

Comes in 10-pc. packs

EB 80 BASES FOR VALVES - B

The EB 80 "Bases for valves - B" can be provided with 3 or 4 positions. A version is available with an electrical connection for a single control of each position, suitable for 5/2 monostable solenoid valves (physically impossible to install other valves). Another version comes with two electrical connections for each position and is suitable for all types of valves. The electronics in the base controls the signal coming from both the multi-pole connector and the fieldbus, so the base is the same, regardless of the control system of the island.

The air delivery ducts (ports 2 and 4) are made up of cartridge-type push-in fittings. The cartridge can be replaced, for example when the pipe diameter needs to be changed, by pulling out the clip placed under the base. The air flow ducts (ports 1, 3, 5, X) of the 4-position base are the full flow type. For the 3-position base, either full-flow or one or more sectioned ports can be mounted. With this solution, islands with zones with differentiated pressure can be created.



VALVES

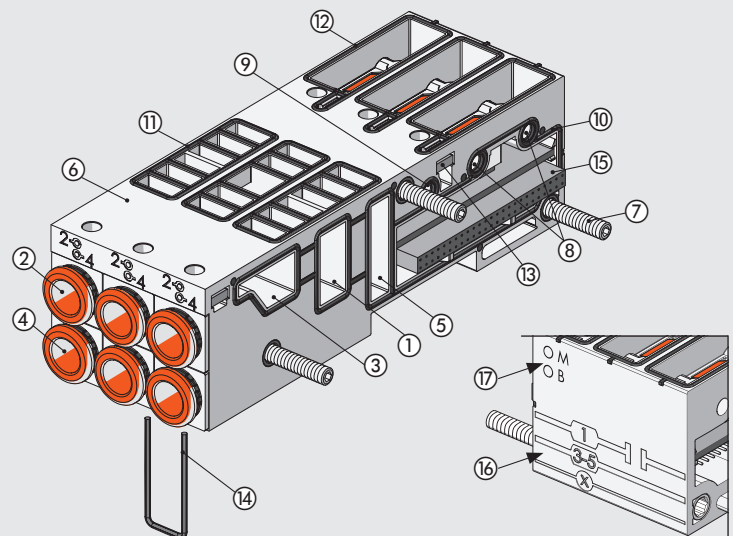
EB 80 - BASES FOR VALVES - B



TECHNICAL DATA	
Ambient temperature	°C -10 to + 50 °F 14 to 122
Fluid	Unlubricated air
Versions	3-position base for controlling 3 solenoid pilots; 3 positions for 6 solenoid pilots; 4 positions for 4 solenoid pilots; 4 positions for 8 solenoid pilots. Pipe fittings Ø 4 mm (5/32"), 6 mm, 8 (5/16"), 1/4" Ducts 1, 3, 5 and X full flow
Degree of protection	3-position base with 1 sectioned duct; 1, 3 a 5 sectioned; 3 and 5 sectioned (after the first position) IP65

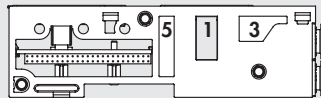
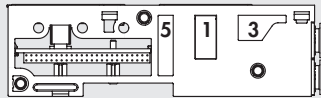
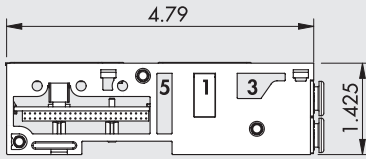
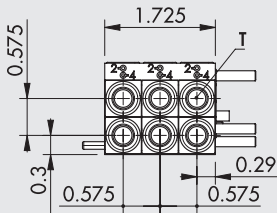
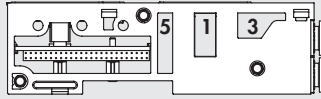
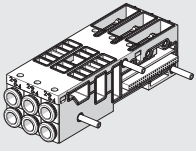
COMPONENTS

- ① PORT 1 DUCT
- ② PORT 2 CARTRIDGE: push-in fitting
- ③ PORT 3 DUCT
- ④ PORT 4 CARTRIDGE: push-in fitting
- ⑤ PORT 5 DUCT
- ⑥ BODY: technopolymer
- ⑦ TIE ROD: nickel-plated brass + stainless steel grub screw
- ⑧ 82/84 DUCT: pilot air relief
- ⑨ X DUCT: pilot control
- ⑩ GASKET BETWEEN BASES: NBR
- ⑪ GASKET FOR THE VALVE: NBR
- ⑫ GASKET FOR IP65: NBR
- ⑬ THREADED PLATE for securing the valves: zinc-plated steel
- ⑭ CLIP for securing the cartridge: stainless steel
- ⑮ ELECTRONICS
- ⑯ PICTOGRAM: indication of compressed air system layout
- ⑰ INDICATION of the type of electronic board:
M = to 3 or 4 controls - B = to 6 or 8 controls

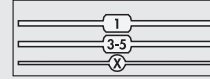


DIMENSIONS - ORDERING CODES

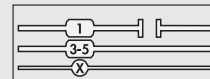
3-POSITION BASE FOR VALVES



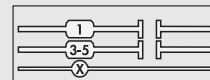
Symbol	T - Pipe fitting	Code		Weight [lb]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3031110	02282B3061110	0.326
	Ø 4 mm (5/32")	02282B3034440	02282B3064440	0.463
	Ø 6 mm	02282B3036660	02282B3066660	0.441
	Ø 8 mm (5/16")	02282B3038880	02282B3068880	0.403
	Ø 1/4"	02282B3032220	02282B3062220	0.441



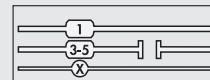
Symbol	T - Pipe fitting	Code		Weight [lb]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3131110	02282B3161110	0.326
	Ø 4 mm (5/32")	02282B3134440	02282B3164440	0.463
	Ø 6 mm	02282B3136660	02282B3166660	0.441
	Ø 8 mm (5/16")	02282B3138880	02282B3168880	0.403
	Ø 1/4"	02282B3132220	02282B3162220	0.441



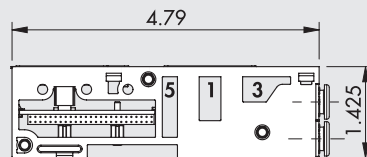
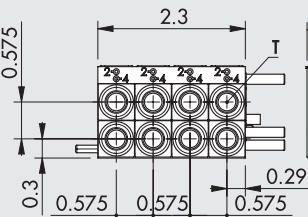
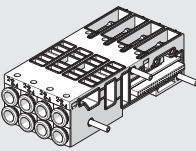
Symbol	T - Pipe fitting	Code		Weight [lb]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3231110	02282B3261110	0.326
	Ø 4 mm (5/32")	02282B3234440	02282B3264440	0.463
	Ø 6 mm	02282B3236660	02282B3266660	0.441
	Ø 8 mm (5/16")	02282B3238880	02282B3268880	0.403
	Ø 1/4"	02282B3232220	02282B3262220	0.441



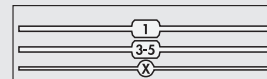
Symbol	T - Pipe fitting	Code		Weight [lb]
		3 CONTROLS	6 CONTROLS	
	without cartridges	02282B3331110	02282B3361110	0.326
	Ø 4 mm (5/32")	02282B3334440	02282B3364440	0.463
	Ø 6 mm	02282B3336660	02282B3366660	0.441
	Ø 8 mm (5/16")	02282B3338880	02282B3368880	0.403
	Ø 1/4"	02282B3332220	02282B3362220	0.441



4-POSITION BASE FOR VALVES



Symbol	T - Pipe fitting	Code		Weight [lb]
		4 CONTROLS	8 CONTROLS	
	without cartridges	02282B4041111	02282B4081111	0.432
	Ø 4 mm (5/32")	02282B4044444	02282B4084444	0.608
	Ø 6 mm	02282B4046666	02282B4086666	0.564
	Ø 8 mm (5/16")	02282B4048888	02282B4088888	0.538
	Ø 1/4"	02282B4042222	02282B4082222	0.564

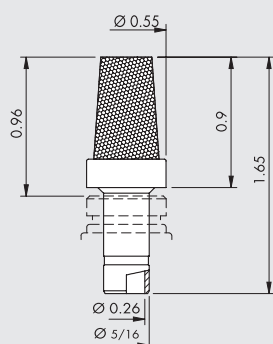


KEY TO CODES

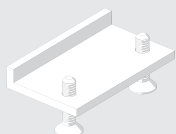
02282 FAMILY	B SUBSYSTEM	3 NUMBER OF POSITIONS	0 PORTS IN THE BASE	6 NUMBER OF SOLENOID PILOT CONTROLS	8 1 st position (from left)	8 2 nd position	8 3 rd position	0 FITTINGS 4 th position
02282 EB 80	B Base for valve	3 3 positions 4 4 positions	0 Full-flow ports ▲ 1 Port 1 sectioned ▲ 2 Ports 1, 3 and 5 sectioned ▲ 3 Ports 3 and 5 sectioned	▲ 3 3 controls ■ 4 4 controls ▲ 6 6 controls ■ 8 8 controls	1 Without cartridges 2 Pipe fitting Ø 1/4" 4 Pipe fitting Ø 4 mm (5/32") 6 Pipe fitting Ø 6 mm 8 Pipe fitting Ø 8 mm (5/16")			▲ 0 (for 3-position base) ■ 1 Without cartridges ■ 2 Pipe fitting Ø 1/4" ■ 4 Pipe fitting Ø 4 mm (5/32") ■ 6 Pipe fitting Ø 6 mm ■ 8 Pipe fitting Ø 8 mm (5/16")

▲ For 3-position base only.

■ For 4-position base only.

ACCESSORIES
SILENCER FOR FITTING, Ø 8


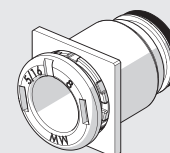
Code	Description	Valve flow rate, at 91 psi [scfm]	Weight [lb]
W0970530084	Silencer for fitting, Ø 8 (5/16)	85	0.033

ADDITIONAL FIXING BRACKET TO OMEGA BAR


Code	Description	Weight [lb]
02282R4001	Additional fixing bar accessory to EB 80 omega bar	0.01

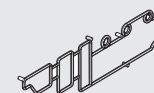
Individually packed

N.B.: to be used to improve the fixing to Omega bars of islands with more than 40 valves. The bracket must be positioned every 20-25 valves.

SPARE PARTS
CARTRIDGE


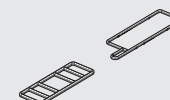
Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 mm (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6 mm
02282R2003	EB 80 Ø 8 base square cartridge kit	8 mm (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

BASE INTERFACE GASKET


Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

BASE-VALVE GASKET


Code	Description
02282R1002	EB 80 base-valve gasket kit

Comes in 10-pc. packs

EB 80 VALVES

The valves in the EB 80 series are designed to ensure high flow using only one small size valve (14 mm wide), without the need of installing a larger size one, to the benefit of component standardisation. Versions are available with all the main air supply diagrams - from 2/2 to 5/3. The valves are secured to the base with two sturdy M4 captive screws. They come with all the accessories that facilitate their use: manual control, monostable or bistable, LED light, plate with air supply diagram and technical data, white plates available to the customer. This family also includes a dummy valve that is used to plug unused positions of the base, and a bypass element to enhance relief and supply or to create special compressed air circuits. The range also includes:

- High-flow valves which have an innovative system that reaches flow rates that are uncommon for this size of valve.
- Bypass element that makes it possible to boost supply and reliefs or create special pneumatic circuits.
- Circuit shut-off valve (V3V) to connect/disconnect all station valves.
- Dummy valve to plug blank base positions.



TECHNICAL DATA								
Operating pressure Non-assisted valves	bar		5/2 and 5/3			2/2 and 3/2		
			3 to 8			3.5 to 8		
		MPa	0.3 to 0.8			0.35 to 0.8		
Assisted valves	bar		43 to 116			51 to 116		
		MPa	Vacuum to 10					
		psi	Vacuum to 1					
Servo pressure	bar		3 to 8			min. (see graph on page 1-145) / max. 8		
		MPa	0.3 to 0.8			min. (see graph on page 1-145) / max. 0.8		
		psi	43 to 116			min. (see graph on page 1-145) / max. 116		
Ambient temperature	°C	-10 to 50 (at 116 psi)						
	°F	14 to 122 (at 116 psi)						
Flow rate at 91 psi ΔP 14.5 psi			Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1 1/4"	Ø 10 **	Ø 3/8" **
	valve 2/2	Nl/min	12.4	15.2	17.7	15.2	-	-
	valve 3/2	Nl/min	12.4	21.2	24.8	21.2	44.2	44.2
	valve 5/2	Nl/min	12.4	23.0	28.3	23.0	44.2 - 49.5	44.2 - 49.5
	valve 5/3	Nl/min	12.4	16.3	17.7	16.3	35.3 - 44.2	35.3 - 44.2
	valve V3V (R)	Nl/min	-	-	-	-	35.3	35.3
Actuation response time (TRA) / reset response time (TRR) at 6 bar								
			TRA/TRR valves 2/2 and 3/2			14 / 28		
			TRA/TRR valves 5/2 monostable and shut-off valve			12 / 45		
			TRA/TRR valve 5/2 bistable			12 / 14		
			TRA/TRR valve 5/3			15 / 45		
			TRA/TRR valve 3/2 high flow			13 / 36		
Fluid			Unlubricated air					
Air quality required			ISO 8573-1 class 4-7-3					
Supply voltage range			12 -10% 24 +30%					
Minimum operating voltage			10.8 *					
Maximum operating voltage			31.2					
Maximum admissible voltage			32 ***					
Power for each valve			3 for a few milliseconds. Holding 0.3					
Drive			PNP or NPN					
Solenoid rating			100% ED					
Versions			Manual monostable or bistable control. Various compressed air diagrams					
Degree of protection			IP65					

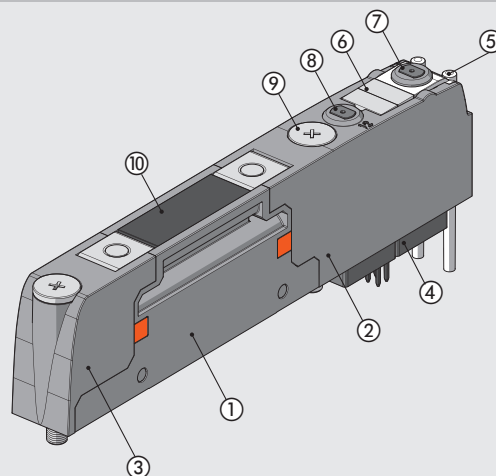
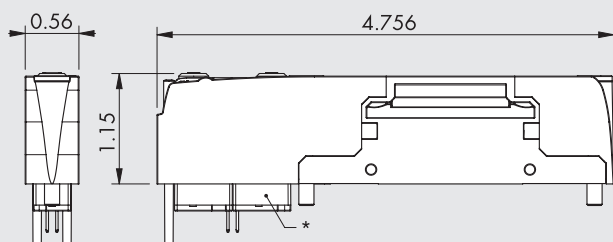
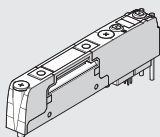
* Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power pack output using the calculations shown on page 1-116

** Using high-flow valves or connected valves - see pages 1-146

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

COMPONENTS

- ① BODY: technopolymer
- ② CONTROL: technopolymer
- ③ BASE: technopolymer
- ④ SOLENOID PILOT
- ⑤ DISPLAY: LED light and optical tester in technopolymer
- ⑥ TAG: removable
- ⑦ MANUAL CONTROL 14, FOR PORT 4: monostable or bistable, in brass
- ⑧ MANUAL CONTROL 12, FOR PORT 2: monostable or bistable, in brass
- ⑨ SCREW FOR FIXING TO THE BASE: M4 with PH 1 cross-head, zinc-plated steel (Tightening torque: 0.74 lbf ft).
- ⑩ TAG: technopolymer with laser-etched wording

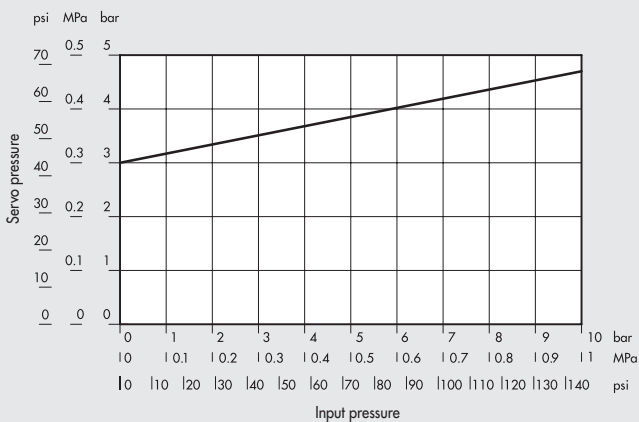

DIMENSIONS - ORDERING CODES
EB 80 VALVE


* The second solenoid pilot is not present in the valves V= 5/2 monostable.

N.B.: The valves Z, I, W, L, K, O can be mounted only on bases having 6 or 8 controls.

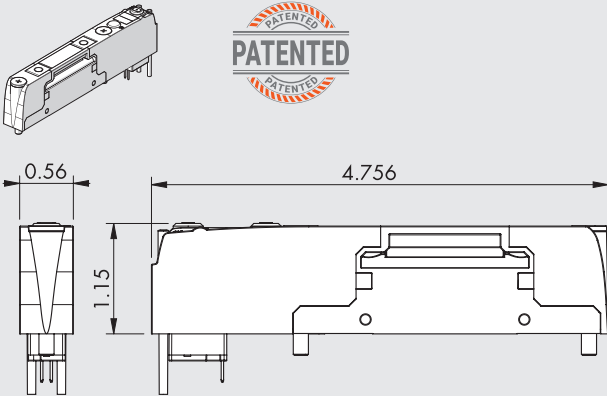
SERVO MINIMUM PRESSURE FOR VALVES 2/2 AND 3/2

If the island is configured without servo, minimum pressure 3.5 bar



Symbol	Type	Code	Manual control	Weight [lb]
	2 valves 2/2 NC	708203Z0	monostable	0.18
		708203Z1	bistable	0.18
	2 valves 3/2 NC	708203I0	monostable	0.18
		708203I1	bistable	0.18
	2 valves 3/2 NO	708203W0	monostable	0.18
		708203W1	bistable	0.18
	3/2 NC + 3/2 NO	708203L0	monostable	0.18
		708203L1	bistable	0.18
	monostable 5/2	708203V0	monostable	0.152
		708203V1	bistable	0.152
	bistable 5/2	708203K0	monostable	0.178
		708203K1	bistable	0.178
	5/3 CC	708203O0	monostable	0.18
		708203O1	bistable	0.18

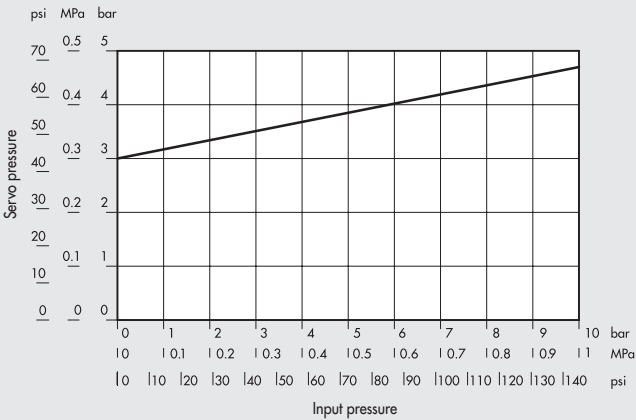
EB 80 HIGH-FLOW VALVE



Symbol	Type	Code	Manual control	Weight [lb]
G	3/2 NC high flow	708203G0	monostable	0.15
		708203G1	bistable	0.15
J	3/2 NO high flow	708203J0	monostable	0.15
		708203J1	bistable	0.15

SERVO MINIMUM PRESSURE

If the island is configured without servo, minimum pressure 3.5 bar



HOW TO GET HIGH-FLOW RATE FOR EACH PNEUMATIC FUNCTION

N.B. The two cartridges on the base (2 and 4) must fit the Ø 8 mm (5/16") pipe.

Outputs 2 and 4 must be connected one to the other. To do this, you can use the special Y-fitting.

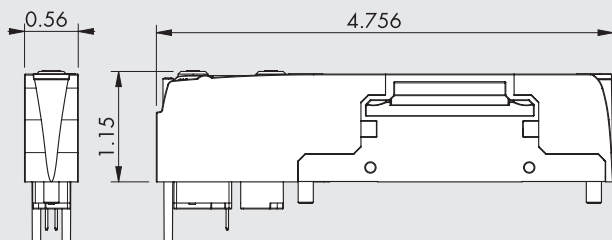
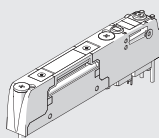
When connecting one or more valves using the Y-fitting, the pneumatic system functions must be configured according to the following diagram.

Pneumatic function	→	3/2 NC	3/2 NO	5/2 monostable	5/2* bistable	5/3 OC	5/3 PC	5/3 CC*
Valves to be used	→	G	J	G J	K K	G G	J J	O O
Y-fitting layout	→							
Flow rate at 91 psi ΔP 14.5 psi [Nl/min]	→	44.2	44.2	44.2	49.5	44.2	44.2	35.3

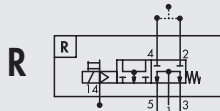
In order to get 5/2 monostable, 5/2 bistable and 5/3 DC high flow, use two parallel valves, by energizing the solenoids simultaneously.

* The Y-fittings of this valve must be installed longitudinally with one Y-fitting connecting the two outputs (2) and the other the two outputs (4). The solenoid pilots must be operated simultaneously.

EB 80 SHUT-OFF VALVE (V3V)

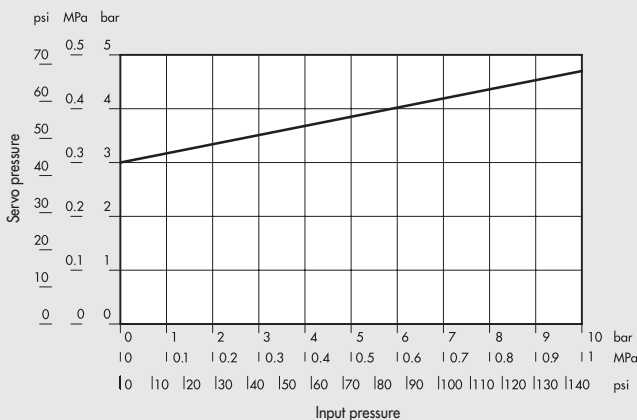


Symbol	Type	Code	Manual control	Weight [lb]
R	Shut-off valve	708203R0	monostable	0.15
		708203R1	bistable	0.15



SERVO MINIMUM PRESSURE

If the island is configured without servo, minimum pressure 3.5 bar



This valve enables the supply/relief of all station valves. The pneumatic supply is delivered via ports 2 and 4 on the base underneath the valve. It is discharged via ports 3 and 5 with general station discharge. Port 1 on pneumatic supply module P must be plugged for the system to operate and slave the island by supplying continuous pressure to port X.

The shut-off valve is designed for the following uses and benefits:

- the valve can be fitted in any position and not necessarily to the left of the others;
- if the station is split into areas with separate channels (1) via intermediate modules M or bases with port 1 selected, the shut-off valve only operates in the area where it is fitted.
- if the capacity of a shut-off valve is not sufficient for its use, two or more can be fitted and operated simultaneously.

TECHNICAL DATA

Flow rate at 91 psi ΔP 14.5 psi	scfm	35.3 [with 2 \varnothing 8 (5/16") fittings or a Y fitting, pipe \varnothing 10 mm or 3/8"]
Exhaust flow rate at 91 psi	scfm	23.3
Actuation response time (TRA) / reset response time (TRR) at 6 bar	ms	12/45
Servo pressure		See technical data 3/2 valves (page 1-144)

SHUT-OFF VALVE DIAGRAM

V3V Shut-off valve, can be fitted in any position

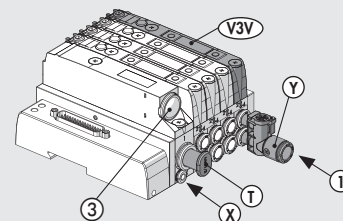
1 Pneumatic supply

3 Relief

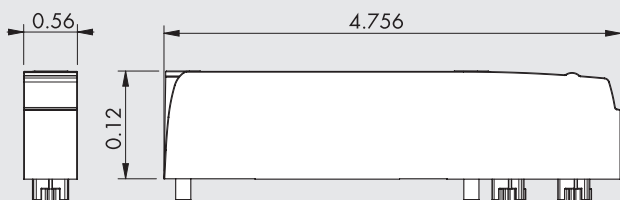
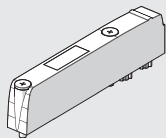
Y Y-fitting with black bush (page 1-149)

T Plug port 1 of pneumatic supply P module

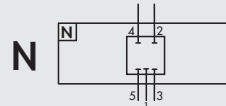
X Always use the pneumatic supply servo version



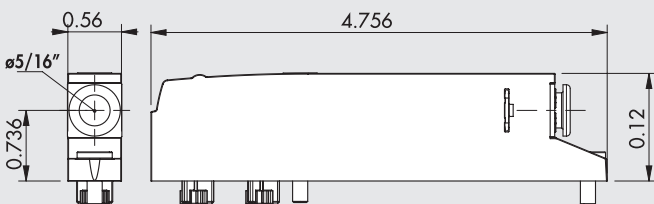
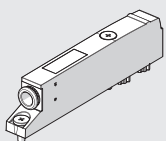
DUMMY VALVE (PLUG)



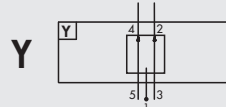
Symbol	Description	Code	Weight [lb]
N	Dummy valve	708203N0	0.1



BYPASS



Symbol	Description	Code	Weight [lb]
Y	Bypass Ø 8	708203Y8	0.11



N.B.: Maximum pressure in the ports 2 and 4:
8 bar - 116 psi

Connects port 3 of the base to port 2 and port 5 to port 4.
The fitting present is connected to port 1.

KEY TO CODES

7082	03	V	0
FAMILY	TYPE	SCHEMA	MANUAL CONTROL
7082 EB 80	03 Electric, servo-assisted	<ul style="list-style-type: none"> ▲ Z 2 valves 2/2NC ▲ I 2 valves 3/2 NC ▲ W 2 valves 3/2 NO ▲ L 3/2 NC + 3/2 NO V 5/2 monostable ▲ K 5/2 bistable ▲ O 5/3 CC G 3/2 NC high flow J 3/2 NO high flow + R Shut-off valve Y Bypass N Dummy valve (plug) 	<ul style="list-style-type: none"> 0 Monostable or for dummy valve 1 Bistable 8 For bypass only

▲ Can only be used with 6 or 8 control bases.
+ Requires inlet port X slave synchronisation.

EB 80 PROPORTIONAL PRESSURE REGULATOR - A

The EB 80 proportional pressure regulator is an extremely precise and reliable component part. It is designed to regulate the pressure of a system with varying values according to the electrical control setting.

It can be inserted in any position and on all EB 80 islands.

Highly flexible, it comes in various types: for the 25/44-pin multi-pole islands, it is possible to use the analogue regulator with external M12 electrical connection, it accepts commands in Volts, mA and via RS232 protocol; in all the versions with a fieldbus, the connections and electrical controls are directly incorporated in the internal hardware/software that can be easily managed by the user in a simple and intuitive way every island and can accommodate up to 16 pressure regulators that are connected to all the protocols available for the EB 80 (also in additional islands).

An island of electronic regulators arranged in a row can be created, without necessarily requiring solenoid valves.

The "closed loop" system has a precision sensor that detects the output pressure value; the control system compares the value read with the value set in real time and two mini-solenoid valves adjust the pressure until the target value is reached.

As for the Regtronic family, in this case too, you can opt for a regulator with a screen that displays the pressure and a whole series of information including diagnostics that facilitates the configuration or a version without display where the configuration is done remotely.

As to the pneumatic system, there are two possibilities: with Local Regulation or Series Regulation. In the former case, the air taken from port 1 of the island is regulated by a quick-fit coupling with the front side in the base; in this way, several regulators can be placed in succession. In the latter case, the pressure is regulated directly at port 1 of the island, so all the valves downstream are supplied with the pressure set by the regulator. The front outlet fitting, which has an RL9 cap in this version, is still present and operational.

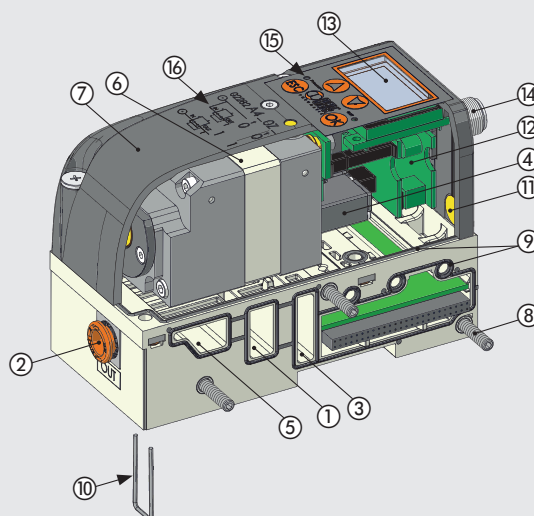
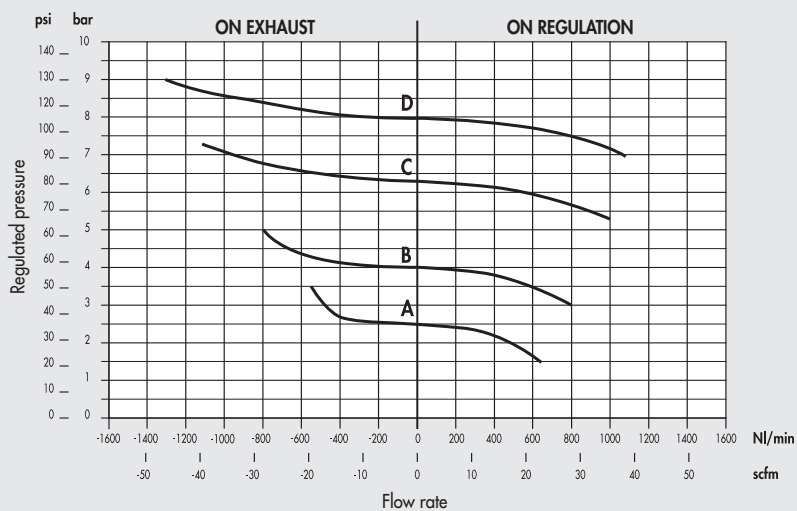


TECHNICAL DATA	LOCAL OUTPUT VERSION		SERIES CONTROL VERSION	
Fluid	Filtered, unlubricated air. The air must be filtered at least 10 µm			
MIN inlet pressure	psi		Regulation pressure + 7.25 to 14.5	
MAX inlet pressure	psi		152.25	
Temperature range	from 0 to 50 °C / from 32 to 122 °F			
Pressure regulation range	0.05 - 10 bar / 0.725 - 145 psi (settable full scale and minimum pressure)			
Flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min		850	
ΔP 0.5 bar (0.05 MPa; 7.25 psi)	scfm		30	
Flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min		1250	
ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm		44.2	
Exhaust flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min		16	
with 0.1 bar (0.01 MPa; 1.45 psi) overpressure	scfm			
Exhaust flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min		40	
with 0.5 bar (0.05 MPa; 7.25 psi) overpressure	scfm			
Response time	Volume [cc]			
from 6 to 7 bar (0.6 to 0.7 MPa; 87 to 101 psi)	100	1000	100	1000
from 7 to 6 bar (0.7 to 0.6 MPa; 101 to 97 psi)	0.1	0.15	0.1	0.15
Weight	pounds		0.6	
Class of protection	IP 65			
Hysteresis	≤ ± 0.2% (Full scale)			
Repeatability	≤ ± 0.2% (Full scale)			
Sensitivity/Dead-band	setting range 10 to 300 mbar			
Output pressure (display version)	Accuracy		≤ ± 0.3% (Full scale)	
	Unit of measurement		bar, MPa, psi	
	Minimum resolution		0.01 bar - 0.001 MPa - 0.01 psi	
Temperature characteristics	Max 2 mbar / °C			
Installation position	In any position			
Current input in the fieldbus version	Max 220 mA at 12VDC			
Supply voltage range analog version	VDC		12 -10% to 24 +30%	
Minimum operating voltage	VDC		10.8	
Maximum operating voltage	VDC		31.2	
Maximum admissible voltage	VDC		32 *	
Current absorption	Max 220 mA at 12VDC			
Input signal (input impedance)	Voltage		0 to 5 VDC, 0 to 10 VDC (approx. 6.3 KΩ)	
	Current		4 to 20 mA (approx. 100 Ω)	
	Serial ports		RS 232	
	Manual		Keypad	
Output signals in the analogue version	Analog in current		4 to 20 mA	
	Analog voltage		0 to 10 VDC (1 VDC = 1 bar) - 1 mA max	
	Digital		PNP open collector output: max 24VDC 60 mA	
			NPN open collector output: max 24VDC 60 mA	
	Analog output accuracy		≤ ± 0.4% (Full scale)	
Notes	The features shown refer to the static condition only. With air consumption the pressure may vary.			
	On all analog versions you can set the parameters using the software "MWRRegtronic" downloadable from the website www.metalwork.eu ; to connect the PC to Regtronic you can use the cable code W0970513019			
	For more details, please refer to the User Manual.			

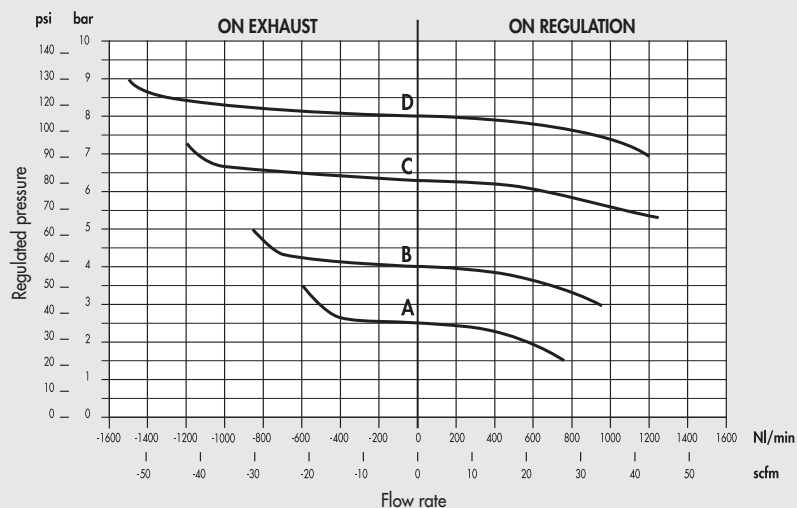
* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

COMPONENTS

- ① PORT 1 DUCT
- ② CARTRIDGE Ø8: push-in fitting
- ③ PORT 3 DUCT
- ④ SOLENOID VALVE: 10 mm series PLT-10
- ⑤ PORT 5 DUCT
- ⑥ BODIES: aluminium
- ⑦ COVER: technopolymer
- ⑧ TIE ROD: nickel-plated brass with stainless steel grub screws
- ⑨ GASKETS: NBR
- ⑩ CLIP for securing the cartridge: stainless steel
- ⑪ Compensation DIAPHRAGM: PTFE
- ⑫ ELECTRONIC BOARDS
- ⑬ DISPLAY and keypad or cover
- ⑭ CONNECTOR M12 (for analog version)
- ⑮ INDICATOR LED
- ⑯ IDENTIFICATION of wording with laser


FLOW CHARTS
LOCAL OUTLET (Ø5/16)


- A = 2.5 bar - 0.25 MPa - 36 psi
- B = 4 bar - 0.4 MPa - 58 psi
- C = 6.3 bar - 0.63 MPa - 91 psi
- D = 8 bar - 0.8 MPa - 116 psi
- Pm = 10 bar - 1 MPa - 145 psi

REGULATION IN SERIES


- A = 2.5 bar - 0.25 MPa - 36 psi
- B = 4 bar - 0.4 MPa - 58 psi
- C = 6.3 bar - 0.63 MPa - 91 psi
- D = 8 bar - 0.8 MPa - 116 psi
- Pm = 10 bar - 1 MPa - 145 psi

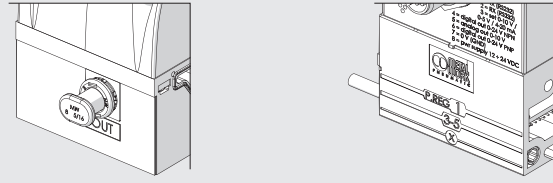
VERSIONS

PASS-THROUGH BASE – LOCAL OUTLET



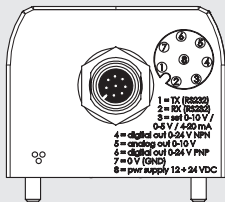
Air outlet regulated only by the front Ø8 fitting.

REGULATION IN SERIES



Air outlet adjusted to the next bases.
Front outlet closed, however usable by removing the cap from the fitting.

M12 EXTERNAL ANALOGUE CONTROL (MULTI-POLE ISLANDS)

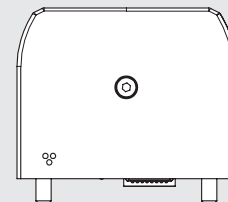


8 PIN M12x1



Pin	Signal	Description	Lead colour
1	TX	RS232	White
2	RX	RS232	Brown
3	Pressure set	0 to 10 VDC / 0 to 5 VDC 4 to 20 mA	Green
4	Digital out	NPN	Yellow
5	Analog out	Voltage version 0 to 10 VDC Current version 4 to 20 mA	Gray
6	Digital out	PNP	Pink
7	0 VDC	Power supply	Blue
8	+ VDC	Power supply	Red

FIELDBUS CONTROL



WITH REMOTE-CONTROL



The remote-control version of the Regtronic has two diagnostic LEDs.

WITH DISPLAY



The display version also has buttons for entering the various parameters.

PROGRAMMABLE AND FLEXIBLE

Setting options:

- LANGUAGE
- UNIT OF MEASUREMENT
- TYPE OF INPUT
- TYPE OF DIGITAL OUTPUT
- DEAD-BAND
- FULL SCALE
- MINIMUM PRESSURE

PRECISION

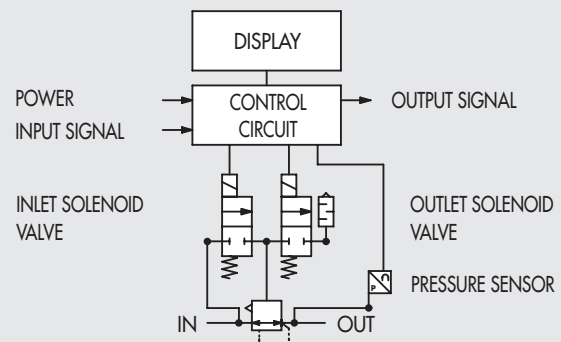
Linearity
± 0.5 % (full scale)

Hysteresis
± 0.2 % (full scale)

Repeatability
± 0.2 % (full scale)

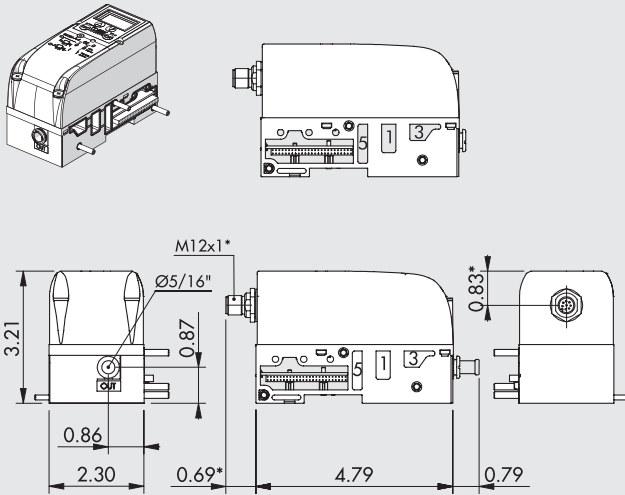
Sensitivity
range 10 to 300 mbar

FUNCTION DIAGRAM



DIMENSIONS - ORDERING CODES

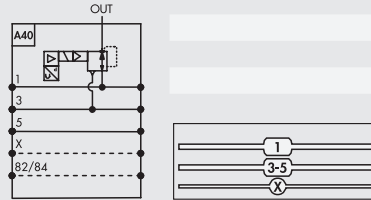
PROPORTIONAL PRESSURE REGULATOR



* For version with electrical analogue control only.

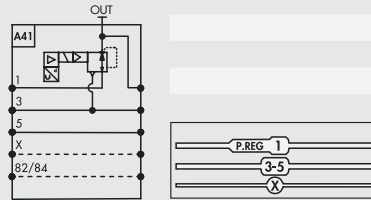
Electrical connection with M12 connector

Symbol	Display	Code		Weight [lb]
		0-10V analogue OUT	4-20 mA analogue OUT	
Port 1 pass-through	WITH	02282A400Z00	02282A402Z00	1.32
	WITHOUT	02282A400Z10	02282A402Z10	1.32



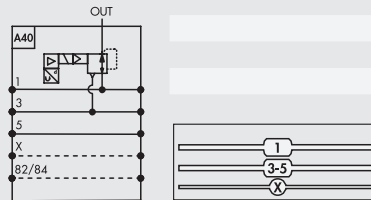
Port 1 sectioned

WITH	02282A410Z00	02282A412Z00	1.32
WITHOUT	02282A410Z10	02282A412Z10	1.32



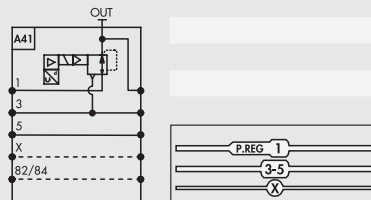
Electrical connection via fieldbus

Symbol	Display	Code	Weight [lb]
Port 1 pass-through	WITH	02282A401Z00	1.32
	WITHOUT	02282A401Z10	1.32



Port 1 sectioned

WITH	02282A411Z00	1.32
WITHOUT	02282A411Z10	1.32

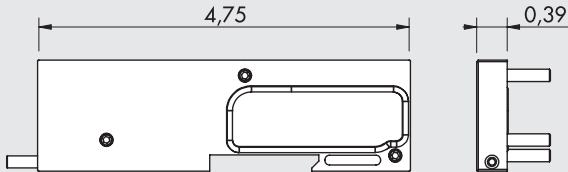
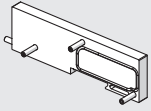


KEY TO CODES

02282	A4	0	1	Z	0	0
FAMILY	SUBSYSTEM	TYPE OF BASE	TYPE OF ELECTRICAL CONNECTION	SPECIALTY	DISPLAY	SPECIALTY
02282 EB 80	A4 Proportional pressure regulator	0 Base port 1 pass-through local outlet 1 Base port 1 sectioned in-series regulation	0 External electrical analogue control connector M12 0-10V analogue OUT 1 Electrical control via fieldbus 2 External electrical analogue control connector M12, 4-20 mA analogue OUT	Z Standard	0 With 1 Without	0 Standard

ACCESSORIES: ANALOG VERSION

CLOSING PLATE FOR EB 80 MANIFOLD PRESSURE REGULATOR

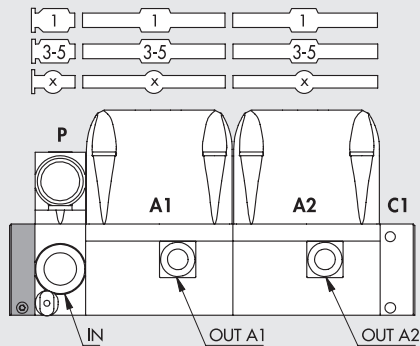


Code	Description	Weight [lb]
02282R8000	Closing plate for EB 80 manifold proportional pressure regulator with M12 connector	0.26

N.B.: Can only be used with regulators code 02282A400Z00 - 02282A400Z10 - 02282A410Z00 - 02282A410Z10 - 02282A402Z00 - 02282A402Z10 - 02282A412Z00 - 02282A412Z10

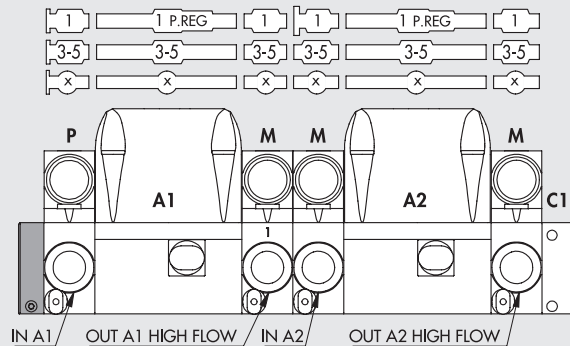
This terminal is used to fit multiple EB 80 pressure proportional regulators controlled by an M12 connector, without using EB 80 power supplies. Each regular can be controlled individually via its own M12 connector. Several configurable solutions can thus be obtained, as illustrated in examples below:

COMMON POWER SUPPLY



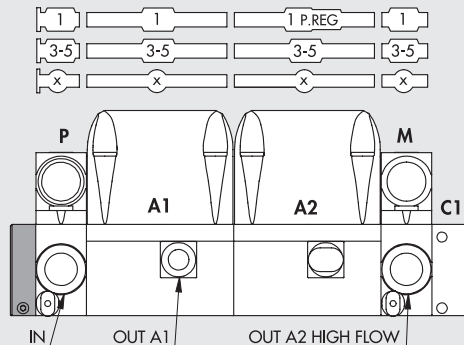
Island consisting of a single pneumatic supply (P) and front outlet from individual regulators.

INDEPENDENT POWER SUPPLY AND HIGH-FLOW RATE



Island consisting of independent regulator power supply, via P supplies and intermediate elements M (with port 1 closed) placed upstream of the regulator. High-flow outputs are obtained via intermediate elements M placed downstream of the individual regulators.

HYBRID



Hybrid island.
It consists of regulators with a local output (A1) and in-series high-flow rate regulators via intermediate element M downstream of regulator A2. Power supply P is in common.

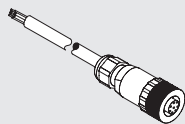
P = compressed-air supply, page 1-138

M = intermediate support, page 1-156

C1 = closed end-plate for islands with multi-pole connector, page 1-162

A = proportional pressure regulator

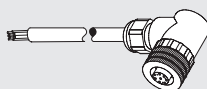
CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, STRAIGHT



Pin	Cable color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

Code	Description
W0970513010	Connector M12x1, 8-pin, A-coded, female, straight, with cable L = 197 inch

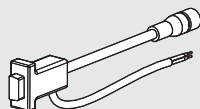
CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, 90°, WITH CABLE



Pin	Cable color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

Code	Description
W0970513011	Connector M12x1, 8-pin, A-coded, female, 90°, with cable L = 197 inch

CONFIGURATION CABLE



Code	Description
W0970513019	Configuration cable

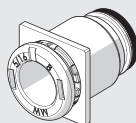
The cable consists of:

- M12 8-PIN female connector to be connected to regulator
- RS232 serial connector to be connected to PC
- 2 wires to supply 24VDC power

The package also includes a RS232-USB adapter

SPARE PARTS

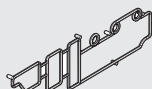
CARTRIDGE



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

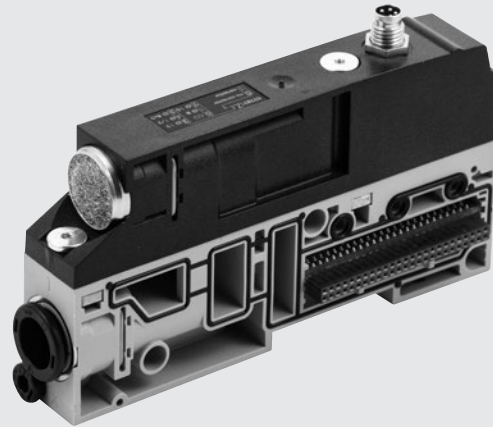
EB 80 INTERMEDIATE SUPPORT - M

The "Intermediate modules - M" perform a series of functions. They can help increase the flow rate available in an EB 80 island, when various valves are used at the same time. They can be used to divide an island in areas of different pressures.

They can also be used as additional electrical power supply, when there is a high number of solenoid pilots actuated simultaneously; or to electrically separate and cut out a part of the island, in the event of an emergency, for example. Intermediate modules can be placed in any position in the EB 80 island. Several versions are available, with fittings for pipes of different diameter. Relief ports 3 and 5 can be either connected using a silencer or conveyed via a fitting.

A version with separate ports 3 and 5 is also available. This feature is useful in versions with pilot servo-assistance to power the valves from ports 3 and 5, at different pressures, from vacuum to 8 bar - 116 psi.

The lower body of the intermediate plate comes with different air flow ducts: with full flow ports or one or more closed ports.



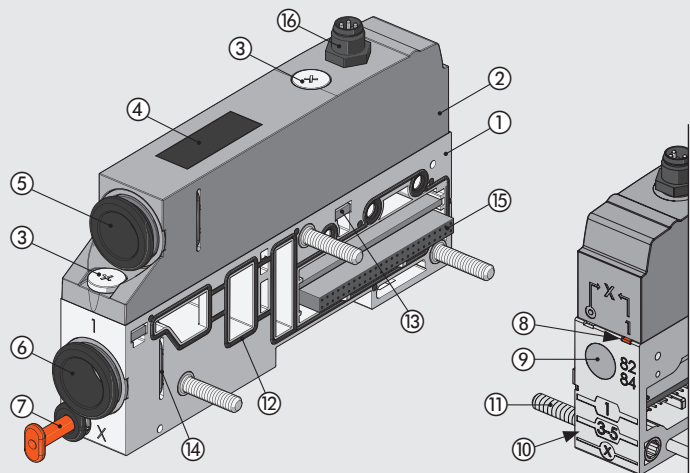
TECHNICAL DATA		Vacuum to 10 bar / Vacuum to 1 MPa / Vacuum to 145 psi			
Operating pressure		-10 to +50 °C / 14 to 122 °F			
Ambient temperature					
Flow rate at 91 psi ΔP 14.5 psi		Ø 8 mm (5/16")	Ø 10 mm	Ø 12 mm	Ø 1/2"
Feeding (port 1)	scfm	63.69	99	123.8	123.8
Exhaust with fitting (ports 3 and 5)	scfm	70.8	113.2	155.7	155.7
Separate exhausts Ø 8 mm (5/16")	scfm	63.69 x 2	-	-	-
Flow rate at 91 psi free exhaust					
Exhaust with fitting (ports 3 and 5)	scfm	95.5	138	215.8	215.8
Silenced exhaust	scfm			127.4	
Exhaust with fitting Ø 12 mm and silencer W0970530086	scfm			122.3	
Separate exhausts Ø 8 mm (5/16") (N.B.: Pmax 116 psi)	scfm	95.5 x 2	-	-	-
Fluid		Unlubricated air			
Additional electrical power supply		M8 4-pin connector *			
Voltage range	VDC	12 to 31.2			
Maximum number of solenoid pilots that can be actuated simultaneously from the additional electrical connection:					
at 24VDC		With 100% simultaneity: 48 / With 60% simultaneity: 80			
at 12VDC		With 100% simultaneity: 32 / With 60% simultaneity: 64			
Versions		Pipe fittings Ø 8 mm (5/16"), Ø 10 mm, Ø 12 mm, 1/2"; Silenced relief, conveyed relief, ports 3 and 5 separate			
		Full-flow ports in the base, 1 closed, 1, 3 and 5 closed, 3 and 5 closed, 1, 3, 5 and X closed			
		With or without additional electrical power supply			
Degree of protection		IP65 (with connectors connected or plugged if not used)			

IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

* If electric power is not supplied: the red power LED light comes on and the LEDs at the base keep flashing (voltage out of range); in the version with multi-pin electrical connection, the "OUT" fault signal is triggered; in the version with fieldbus, a software message is sent.

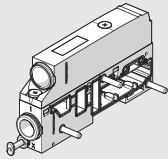
COMPONENTS

- ① LOWER PART BODY: technopolymer
- ② UPPER PART BODY: technopolymer
- ③ SCREWS for fixing between the bodies: zinc-plated steel (Tightening torque: 0.74 lbf ft)
- ④ TAG with laser-etched wording: technopolymer
- ⑤ AIR RELIEF: silencer or pipe fitting
- ⑥ POWER SUPPLY: pipe fitting
- ⑦ PILOTING (X): pipe fitting Ø 4 mm (5/32")
- ⑧ INDICATOR: indicating whether power supply to pilots is separate or not
- ⑨ PILOT RELIEF: silencer in HDPE
- ⑩ PICTOGRAM: indication of compressed air system layout
- ⑪ TIE RODS: zinc-plated steel
- ⑫ GASKET: NBR
- ⑬ THREADED PLATE: zinc-plated steel
- ⑭ CARTRIDGE FIXING CLIP: stainless steel
- ⑮ ELECTRONIC BOARD
- ⑯ M8 CONNECTOR: only for version with additional electrical power supply

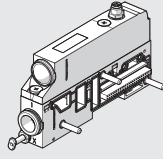


DIMENSIONS - ORDERING CODES

INTERMEDIATE MODULE - SILENCED RELIEF

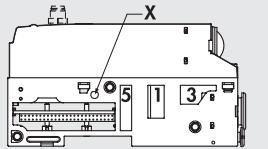
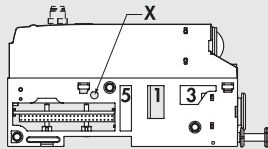
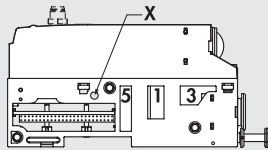
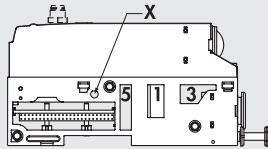
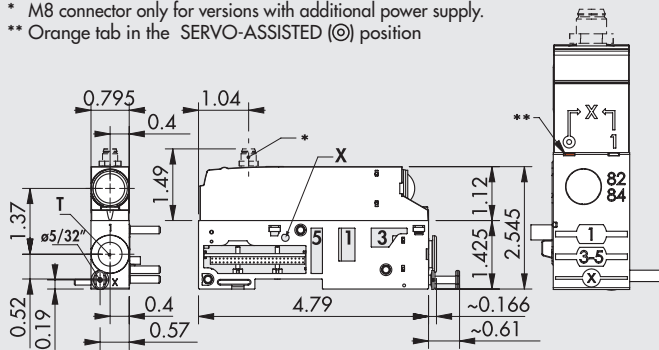


WITHOUT additional electrical power supply



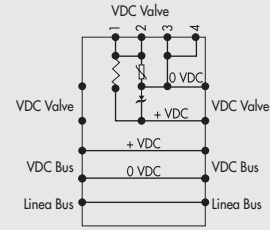
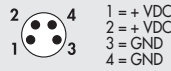
WITH additional electric power supply

* M8 connector only for versions with additional power supply.
 ** Orange tab in the SERVO-ASSISTED (⊙) position

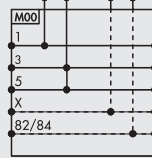


WIRING DIAGRAM INTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

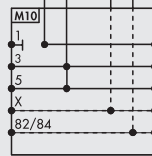
M8 male connector



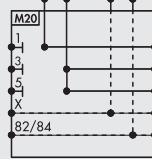
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Full-flow ports	Ø 8 mm (5/16")	02282M100Z00	02282M101Z01	0.37
	Ø 10 mm	02282M200Z00	02282M201Z01	0.36
	Ø 12 mm	02282M300Z00	02282M301Z01	0.35
	Ø 1/2"	02282M500Z00	02282M501Z01	0.35



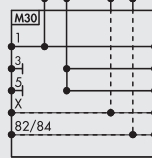
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Port 1 closed	Ø 8 mm (5/16")	02282M110Z00	02282M111Z01	0.37
	Ø 10 mm	02282M210Z00	02282M211Z01	0.36
	Ø 12 mm	02282M310Z00	02282M311Z01	0.35
	Ø 1/2"	02282M510Z00	02282M511Z01	0.35



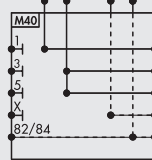
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Ports 1, 3 and 5 closed	Ø 8 mm (5/16")	02282M120Z00	02282M121Z01	0.37
	Ø 10 mm	02282M220Z00	02282M221Z01	0.36
	Ø 12 mm	02282M320Z00	02282M321Z01	0.35
	Ø 1/2"	02282M520Z00	02282M521Z01	0.35



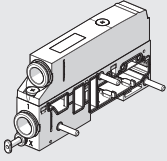
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Ports 3 and 5 closed	Ø 8 mm (5/16")	02282M130Z00	02282M131Z01	0.37
	Ø 10 mm	02282M230Z00	02282M231Z01	0.36
	Ø 12 mm	02282M330Z00	02282M331Z01	0.35
	Ø 1/2"	02282M530Z00	02282M531Z01	0.35



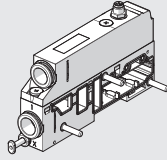
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Ports 1, 3, 5 and X closed	Ø 8 mm (5/16")	02282M140Z00	02282M141Z01	0.37
	Ø 10 mm	02282M240Z00	02282M241Z01	0.36
	Ø 12 mm	02282M340Z00	02282M341Z01	0.35
	Ø 1/2"	02282M540Z00	02282M541Z01	0.35



INTERMEDIATE MODULE - CONVEYED RELIEF

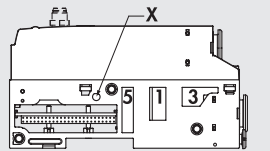
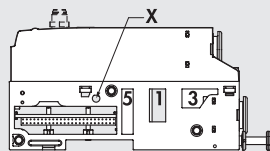
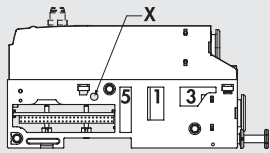
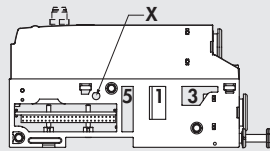
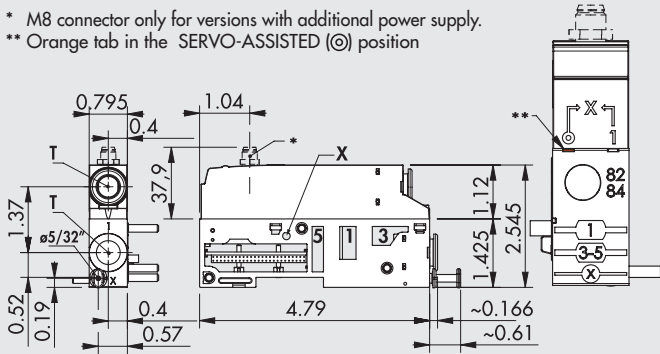


WITHOUT additional electrical power supply



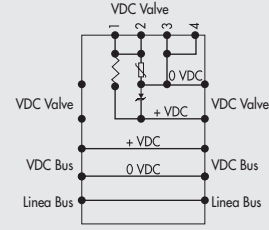
WITH additional electric power supply

- * M8 connector only for versions with additional power supply.
- ** Orange tab in the SERVO-ASSISTED (Ⓢ) position



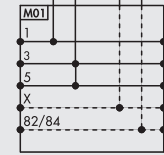
WIRING DIAGRAM INTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

M8 male connector

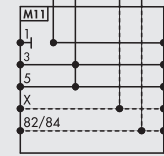


Symbol	T Pipe fitting	Code Additional electric power supply WITHOUT	Code WITH	Weigh [lb]
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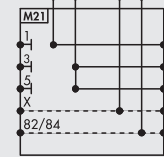
Full-flow ports	Ø 8 mm (5/16")	02282M100Z10	02282M101Z11	0.37
	Ø 10 mm	02282M200Z20	02282M201Z21	0.36
	Ø 12 mm	02282M300Z30	02282M301Z31	0.35
	Ø 1/2"	02282M500Z50	02282M501Z51	0.35



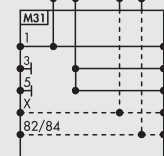
Port 1 closed	Ø 8 mm (5/16")	02282M110Z10	02282M111Z11	0.37
	Ø 10 mm	02282M210Z20	02282M211Z21	0.36
	Ø 12 mm	02282M310Z30	02282M311Z31	0.35
	Ø 1/2"	02282M510Z50	02282M511Z51	0.35



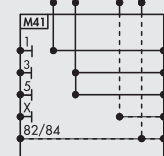
Ports 1, 3 and 5 closed	Ø 8 mm (5/16")	02282M120Z10	02282M121Z11	0.37
	Ø 10 mm	02282M220Z20	02282M221Z21	0.36
	Ø 12 mm	02282M320Z30	02282M321Z31	0.35
	Ø 1/2"	02282M520Z50	02282M521Z51	0.35



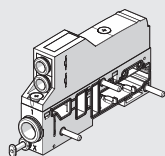
Ports 3 and 5 closed	Ø 8 mm (5/16")	02282M130Z10	02282M131Z11	0.37
	Ø 10 mm	02282M230Z20	02282M231Z21	0.36
	Ø 12 mm	02282M330Z30	02282M331Z31	0.35
	Ø 1/2"	02282M530Z50	02282M531Z51	0.35



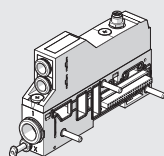
Ports 1, 3, 5 and X closed	Ø 8 mm (5/16")	02282M140Z10	02282M141Z11	0.37
	Ø 10 mm	02282M240Z20	02282M241Z21	0.36
	Ø 12 mm	02282M340Z30	02282M341Z31	0.35
	Ø 1/2"	02282M540Z50	02282M541Z51	0.35



INTERMEDIATE MODULE - SEPARATE RELIEF

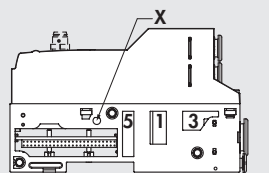
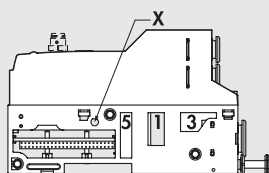
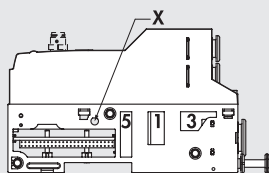
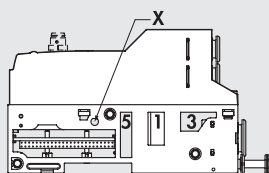
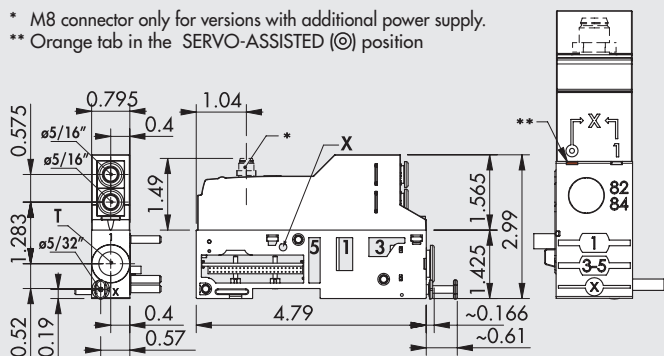


WITHOUT additional electrical power supply



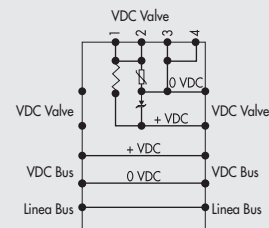
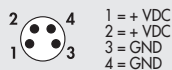
WITH additional electrical power supply

* M8 connector only for versions with additional power supply.
 ** Orange tab in the SERVO-ASSISTED (⊙) position



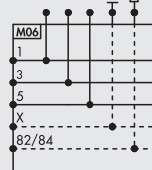
WIRING DIAGRAM INTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

M8 male connector

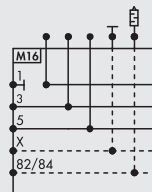


N.B.: Maximum pressure in the ports 3 and 5: 8 bar - 116 psi

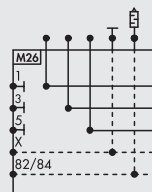
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Full-flow ports	Ø 8 (5/16")	02282M100Z_0	02282M101Z_1	0.39
	Ø 10	02282M200Z_0	02282M201Z_1	0.38
	Ø 12	02282M300Z_0	02282M301Z_1	0.37
	Ø 1/2"	02282M500Z_0	02282M501Z_1	0.37



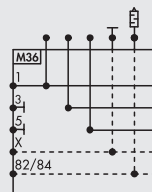
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Port 1 closed	Ø 8 (5/16")	02282M110Z_0	02282M111Z_1	0.39
	Ø 10	02282M210Z_0	02282M211Z_1	0.38
	Ø 12	02282M310Z_0	02282M311Z_1	0.37
	Ø 1/2"	02282M510Z_0	02282M511Z_1	0.37



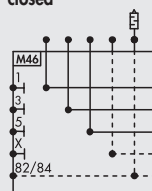
Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Ports 1, 3 and 5 closed	Ø 8 (5/16")	02282M120Z_0	02282M121Z_1	0.39
	Ø 10	02282M220Z_0	02282M221Z_1	0.38
	Ø 12	02282M320Z_0	02282M321Z_1	0.37
	Ø 1/2"	02282M520Z_0	02282M521Z_1	0.37



Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Ports 3 and 5 closed	Ø 8 (5/16")	02282M130Z_0	02282M131Z_1	0.39
	Ø 10	02282M230Z_0	02282M231Z_1	0.38
	Ø 12	02282M330Z_0	02282M331Z_1	0.37
	Ø 1/2"	02282M530Z_0	02282M531Z_1	0.37



Symbol	T Pipe fitting	Code		Weight [lb]
		Additional electric power supply WITHOUT	WITH	
Ports 1, 3, 5 and X closed	Ø 8 (5/16")	02282M140Z_0	02282M141Z_1	0.39
	Ø 10	02282M240Z_0	02282M241Z_1	0.38
	Ø 12	02282M340Z_0	02282M341Z_1	0.37
	Ø 1/2"	02282M540Z_0	02282M541Z_1	0.37



_ = To complete the code enter: 6: øD = 8 mm (5/16"); 7: øD = 6 mm; 8: øD = 4 mm

KEY TO CODES

02282 FAMILY	M SUBSYSTEM	3 PORT FITTING 1	0 PORTS IN THE BASE	0 ADDITIONAL ELECTRICAL POWER SUPPLY	Z UPPER PART	3 PORTS 3 AND 5 FITTING	0 ELECTRICAL CONNECTOR
02282 EB 80	M Intermediate	1 Pipe fitting Ø 8 (5/16") 2 Pipe fitting Ø 10 3 Pipe fitting Ø 12 5 Pipe fitting Ø 1/2"	0 Full-flow ports 1 Port 1 closed 2 Ports 1, 3 and 5 closed 3 Ports 3 and 5 closed 4 Ports 1, 3, 5 and X closed	■ 0 Without ● 1 With	Z The upper part is present	0 Silencer ▲ 1 Pipe fitting Ø 8 (5/16") ▲ 2 Pipe fitting Ø 10 ▲ 3 Pipe fitting Ø 12 ▲ 5 Pipe fitting Ø 1/2" 6 2 pipes fitting Ø 8 (5/16") (one for port 3, one for port 5) 7 2 pipes fitting Ø 6 (one for port 3, one for port 5) 8 2 pipes fitting Ø 4 (5/32") (one for port 3, one for port 5)	■ 0 Without ● 1 With

▲ For ports 3/5, use the same Ø pipe as port 1.

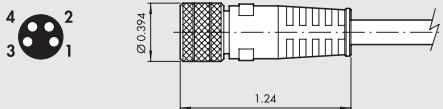
■ Same number for both positions.

● Same number for both positions.

ACCESSORIES

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 118 inch
0240009037	M8 4-pin female connector for power supply, cable L = 197 inch
0240009058	M8 4-pin female connector for power supply, cable L = 394 inch
0240009059	M8 4-pin female connector for power supply, cable L = 590 inch
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 118 inch
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 197 inch
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 394 inch
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 590 inch

* Very flexible cables, class 6 according to IEC 60228

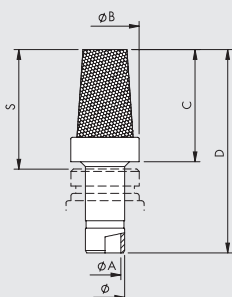
M8 90° CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009103	M8 4-pin connector - female, 90° angle L = 197 inch

SILENCER FOR FITTING

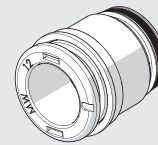


Ø	Ø A	Ø B	C	D	S
8	0.26	0.55	0.9	1.65	0.96
12	0.39	0.74	1.14	2.03	1.24

Code	Description	Valve flow rate, at 91 psi [scfm]	Weight [lb]
W0970530084	Silencer for fitting, Ø 8 mm (5/16")	85	0.03
W0970530086	Silencer for fitting, Ø 12 mm	212	0.05

SPARE PARTS

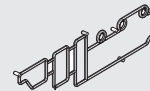
CARTRIDGE



Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 mm (5/16")
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10 mm
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12 mm
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

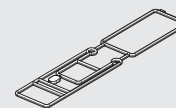
BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

LOWER /UPPER BODY GASKET

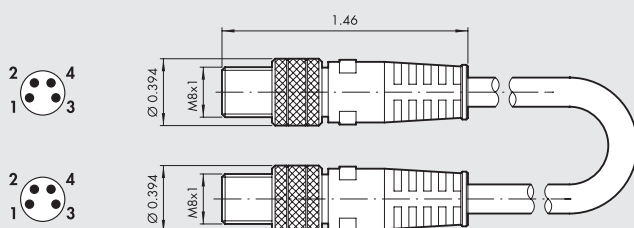


Code	Description
02282R1001	EB 80 lower/upper body gasket kit

Comes in 10-pc. packs

KEY TO CODES

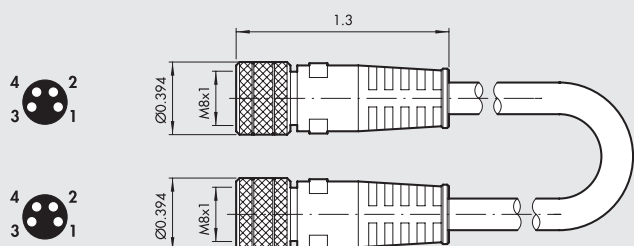
02282	C	1
FAMILY	SUBSYSTEM	TYPE
02282 EB 80	C Closed end-plate	1 For islands with multi-pole connection 2 For islands with fieldbus 3 For connection to additional islands

ACCESSORIES
M8 CONNECTOR WITH CABLE FOR CONNECTION BETWEEN EB 80 ISLANDS


Code	Description	Weight [lb]
0240010201	M8-M8 4-pin male shielded cable L = 40 inch	0.09
0240010205	M8-M8 4-pin male shielded cable L = 197 inch	0.4
0240010210	M8-M8 4-pin male shielded cable L = 394 inch	0.73
0240010215	M8-M8 4-pin male shielded cable L = 590 inch	1
0240010220	M8-M8 4-pin male shielded cable L = 788 inch	1.36
0240010405 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 197 inch	0.4
0240010410 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 394 inch	0.73
0240010415 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 590 inch	1
0240010420 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 590 inch	1.36

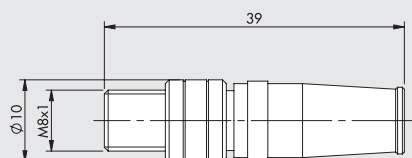
* Very flexible cable, class 6 according to IEC 60228

N.B.: For correct operation of the entire EB 80 system, use M8-M8 pre-wired, twisted and shielded cables only.

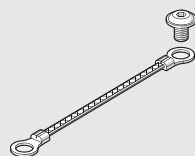
M8 ADAPTER CABLE


Code	Description	Weight [lb]
0240010350	M8-M8 4-pin female adapter cable with shielded cable L = 7.8 inch	0.03

N.B.: Cannot be used with cables for very flexible (H-FLEX CL6)

M8 END CONNECTOR FOR EB 80 VALVES


Code	Description
02282R5000	M8 end connector for EB 80 valves

BRAIDED GROUNDING CABLE


Code	Description
02282R6000	Braided grounding cable

EB 80 BOXI - 4-POSITION VALVE ISLAND

The EB 80 electro-pneumatic system features the utmost modularity and allows the construction of all types of valve island and size. This enormous potential is not exploited to the full, however, when only a few valves are needed and there is no need to manage input or output signals.

BOXI was designed to best meet this requirement for simplicity.

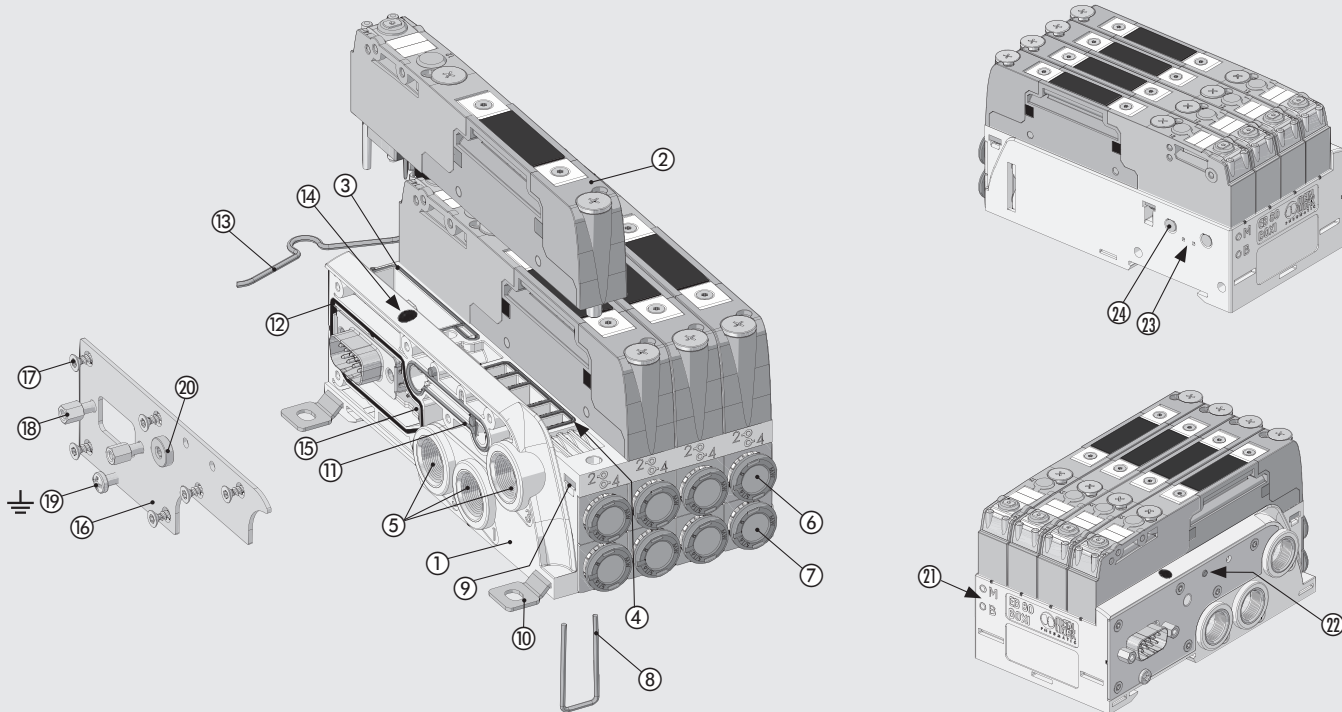
It consists of a solid base that accommodates pneumatic and electrical connections, the electronics and up to 4 valves.

A comparison with a modular EB 80 for 4 valve shows that BOXI weighs 35% less and saves 30% space, in addition of its competitive price, while maintaining many of the advantages that have made the EB 80 so popular, namely:

- All the EB 80 valves, from the twin 2/2 to the high-flow models, can be installed.
- Can be powered at 12VDC or 24VDC.
- Interchangeable cartridge fittings.
- Only 0.3W to control each valve.
- Diagnostics (open circuit, over-under, voltage short-circuit) with LED signal lights.
- Possibility of connecting multifunction modules to the outputs.



COMPONENTS



- | | |
|--|---|
| <p>① BASE: technopolymer</p> <p>② EB 80 VALVE (see page 1-97 and page 1-145)</p> <p>③ GASKET: NBR</p> <p>④ VALVE GASKET: NBR</p> <p>⑤ PORTS 1-3-5: brass threaded element</p> <p>⑥ PORT 2 CARTRIDGE: push-in fitting</p> <p>⑦ PORT 4 CARTRIDGE: push-in fitting</p> <p>⑧ CLIP for securing the cartridge: stainless steel</p> <p>⑨ THREADED PLATE for securing the valves: zinc-plated steel</p> <p>⑩ FIXING PIN: zinc-plated steel</p> <p>⑪ GASKET FOR SERVO-ASSISTING: NBR</p> <p>⑫ GASKET FOR IP65: NBR</p> <p>⑬ SPRING CLIP for omega bar: stainless steel</p> <p>⑭ Alarm LED light display: technopolymer</p> | <p>⑮ ELECTRONIC BOARD</p> <p>⑯ END PLATE: stainless steel</p> <p>⑰ SCREW FOR FIXING THE CLOSING PLATE TO THE BASE: zinc-plated steel</p> <p>⑱ ELECTRIC CONNECTOR FIXING COLUMNS: nickel-plated brass</p> <p>⑲ GROUNDING SCREW: zinc-plated steel</p> <p>⑳ A7/M5 PLUG (in the non-servo-assisted version only): nickel-plated brass</p> <p>㉑ PICTOGRAM indication of the type of electronic board:
M = to 4 controls - B = to 8 controls</p> <p>㉒ INDICATOR: indicates whether pilot power supply is separate or not</p> <p>㉓ RELIEF VALVE: safety in case of internal pressure increase due to temperature or losses</p> <p>㉔ PILOT RELIEF: HDPE silencer</p> |
|--|---|

TECHNICAL DATA							
Supply voltage range	VDC	12 -10% 24 +30%					
Minimum operating voltage	VDC	10.8 *					
Maximum operating voltage	VDC	31.2					
Maximum admissible voltage	VDC	32 ***					
Power for each controlled pilot	W	3 for 15 ms, then holding 0.3					
Drive		PNP					
Solenoid rating		100% ED					
Protection		Overload and short-circuit protected solenoid pilot Output					
Grounding		With a Ø3 mm screw on a metal closing plate					
Diagnostics		LED light signal on the base					
Faults signalled		Solenoid pilot broken or missing; short-circuited solenoid pilot; power supply out of range					
Maximum number of controls (solenoid pilots)		4-control version, 5/2 monostable valves; 8-control version, for each type of valve.					
Electrical connection		Multipole with D-Sub 9-pin connector; I/O Link with M12x1 connector.					
Ambient temperature	°C	-10 to + 50 (at 8 bar)					
	°F	14 to 122 (at 8 bar)					
Operating pressure		5/2 and 5/3		2/2 and 3/2			
Non-assisted valves	bar	3 to 8		3.5 to 8			
	MPa	0.3 to 0.8		0.35 to 0.8			
	psi	43 to 116		51 to 116			
Assisted valves	bar	Vacuum to 10					
	MPa	Vacuum to 1					
	psi	Vacuum to 145					
Servo pressure	bar	3 to 8		min (see graph on page 1-145) / max. 8			
	MPa	0.3 to 0.8		min (see graph on page 1-145) / max. 0.8			
	psi	43 to 116		min (see graph on page 1-145) / max. 116			
Pneumatic fittings		Supply (port 1) and exhaust (ports 3 and 5): 1/4" BSP or 1/4" NPT. Piloting (X): M5					
Pneumatic outputs		Pipe fittings Ø 4 (5/32"), 6, 8 (5/16"), 1/4"					
Flow rate at 91 psi ΔP 14.5 psi Feeding (port 1)	scfm	159.2					
91 psi flow rate with free exhaust from ports 3 and 5	scfm	194.6 + 194.6					
Valve flow rate, at 6.3 bar ΔP 1 bar		Ø 4 mm (5/32")	Ø mm 6	Ø 8 mm (5/16")	Ø 1/4"	Ø 10 mm **	Ø 3/8" **
valve 2/2	scfm	12.4	15.2	17.7	15.2	-	-
valve 3/2	scfm	12.4	21.2	24.8	21.2	44.2	44.2
valve 5/2	scfm	12.4	23.0	28.3	23.0	44.2 - 49.5	44.2 - 49.5
valve 5/3	scfm	12.4	16.3	17.7	16.3	35.3 - 44.2	35.3 - 44.2
valve V3V (R)	scfm	-	-	-	-	35.3	35.3
Actuation response time (TRA) / reset response time (TRR) at 6 bar							
TRA/TRR valve 2/2 and 3/2	ms	14 / 28					
TRA/TRR valves 5/2 monostable and shut-off valve	ms	12 / 45					
TRA/TRR valve 5/2 bistable	ms	12 / 14					
TRA/TRR valve 5/3	ms	15 / 45					
TRA/TRR valve 3/2 high flow	ms	13 / 36					
Fluid		Unlubricated air					
Air quality required		ISO 8573-1 class 4-7-3					
Degree of protection		IP65					
Weight (without valves)	g	330					

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116**

** Using high-flow valves or connected valves - see pages 1-146

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

VIDEO

This video shows the advantages of the EB 80 BOXI.

English



Italian

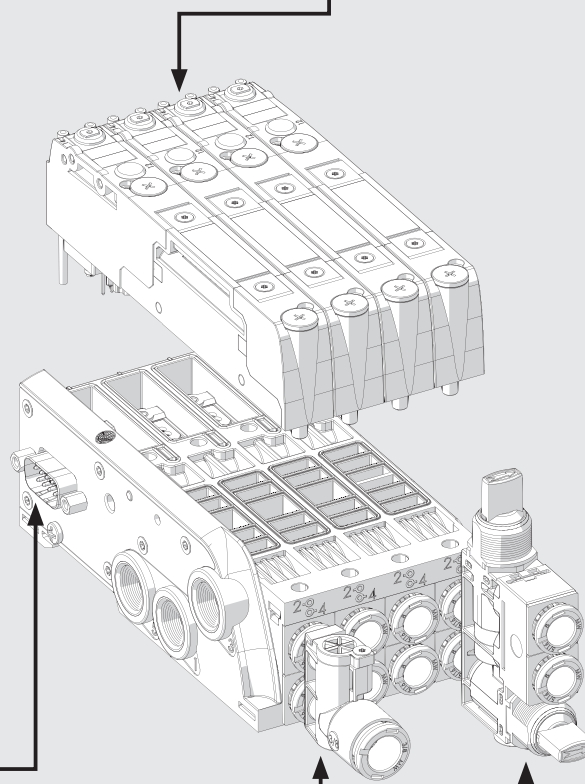


THE EB 80 BOXI WORLD

VALVES

Z_ ▲	I_ ▲	W_ ▲	L_ ▲	V_	K_ ▲	O_ ▲	G_	J_	R_ +	NO	Y8
2 valves 2/2 NC	2 valves 3/2 NC (valid as 5/3 OC)	2 valves 3/2 NO (valid as 5/3 PC)	3/2 NC + 3/2 NO	Monostable 5/2	Bistable 5/2	5/3 CC	3/2 NC high flow	3/2 NO high flow	Shut-off valve	Dummy valve	Bypass
See page 1.145	See page 1.145	See page 1.145	See page 1.145	See page 1.145	See page 1.145	See page 1.145	See page 1.146	See page 1.146	See page 1.147	See page 1.148	See page 1.148

▲ Can only be used with 8-control bases.
 + Requires inlet port X slave synchronisation.



ELECTRICAL CONNECTION

D-Sub 9-pin multipole	I/O link M12x1 5 pin coding A
See page 1-170	See page 1-170

Y-FITTING

R2

Y-fitting

See page 1-149

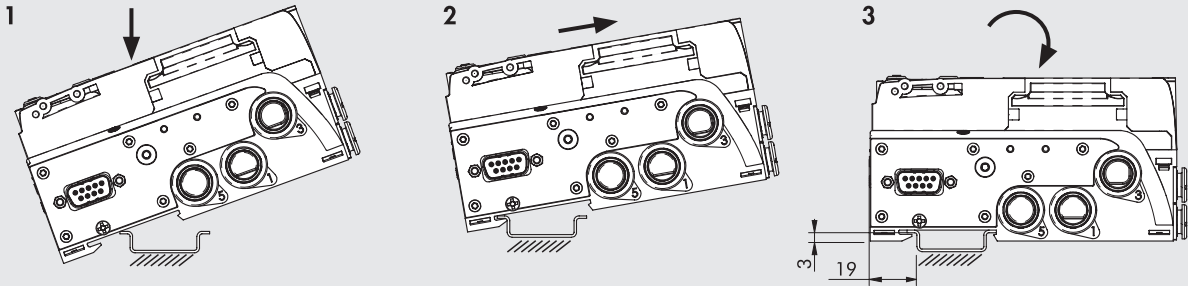
MULTI-FUNCTION MODULE

Fittings with pneumatic functions

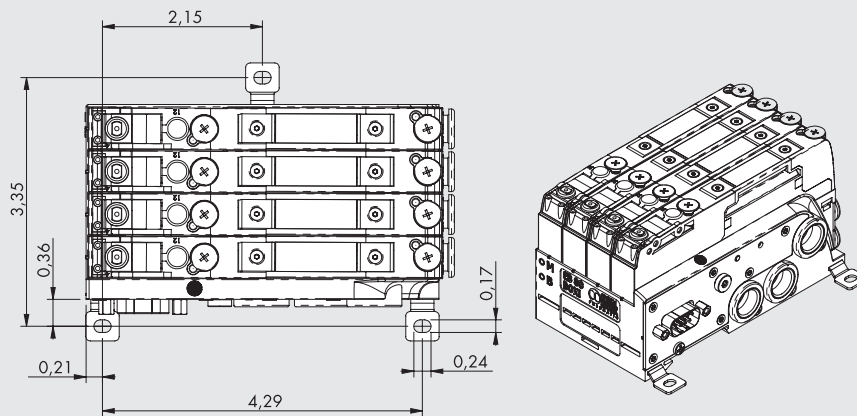
See page 1-176

FIXING OPTIONS

Fixing on a DIN bar: fixing on a DIN bar in the sequence indicated.



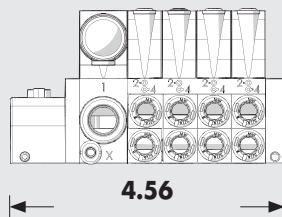
Fixing by means of brackets: the 3 brackets are already included in each EB 80 BOXI pack. Push them firmly into the appropriate seats on the base up to the "click".



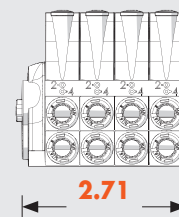
SOME CHARACTERISTICS OF EB 80 BOXI SYSTEMS

SMALLER IN SIZE THAN THE EB 80 MODULAR

EB 80 STANDARD

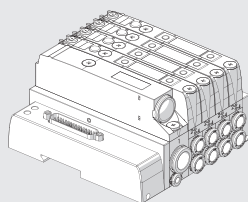


EB 80 BOXI



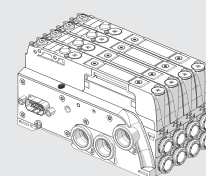
LIGHTER THAN THE EB 80 MODULAR

EB 80 STANDARD



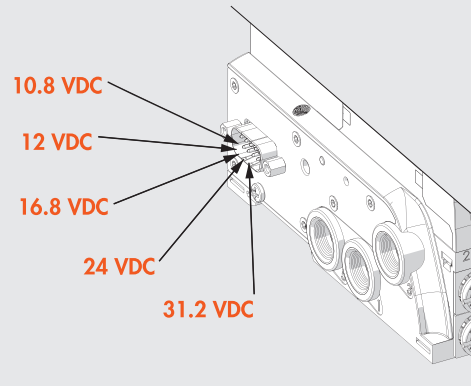
2.2 lb

EB 80 BOXI



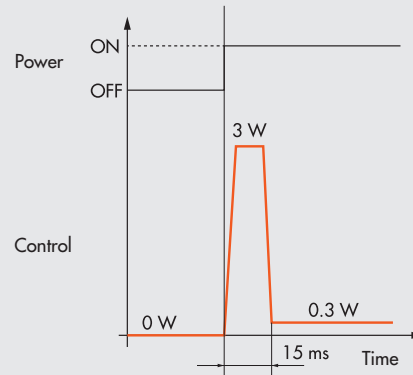
1.3 lb

THE SAME ISLAND CAN BE SUPPLIED 10.8 - 31.2 VDC



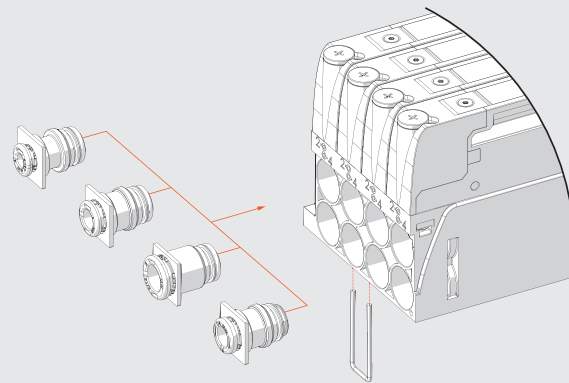
ONLY 0.3 W FOR EACH SOLENOID VALVE

- Speed-up solenoid valve control:
 - high power for a few milliseconds ensures high performance and rapid and safe switching;
 - reduced holding power resulting in reduced temperatures and energy saving.



INTERCHANGEABLE CARTRIDGE FITTINGS

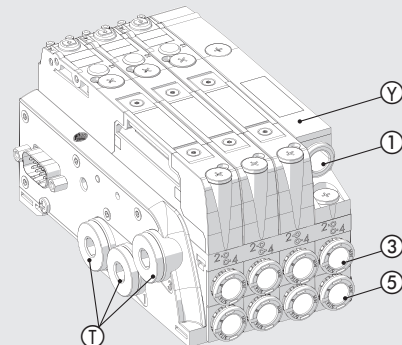
- For pipes \varnothing 4 (5/32"), 6, 8 (5/16"), 1/4"

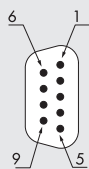


FRONT SUPPLY AND EXHAUSTS

This solution can only be applied when using 3 valves, which means that one of the four positions at the base is not used.

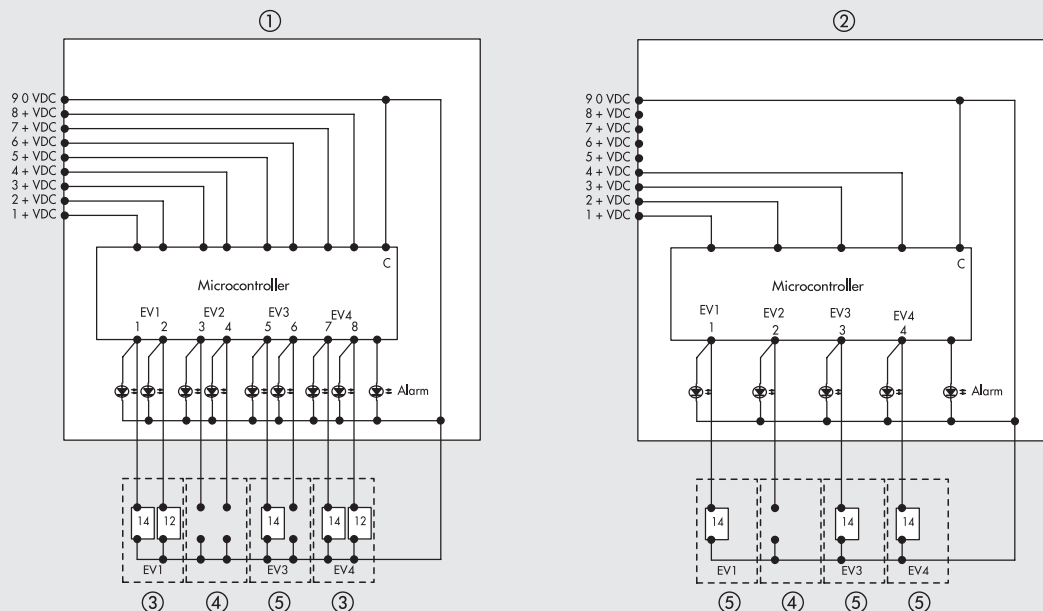
Install a bypass \textcircled{Y} in a position, we recommend the fourth position so as to maintain the matching of the numbering of the electrical connector with that of the valves. Plug the side inputs with A7 1/4 \textcircled{T} stoppers. The pneumatic supply $\textcircled{1}$ is in the bypass fitting, while exhausts $\textcircled{3}$ and $\textcircled{5}$ are on the base.



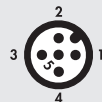
EB 80 BOXI WIRING DIAGRAM
D-Sub 9-PIN CONNECTOR


- ① 4-position base for 8 pilots
- ② 4-position base for 4 pilots

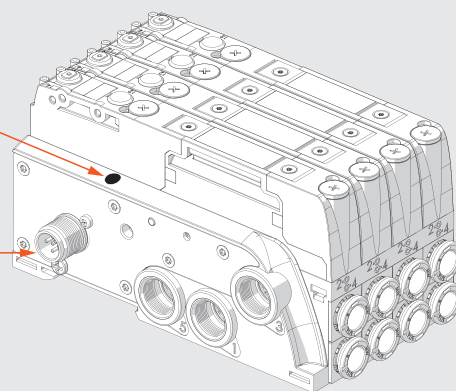
- Examples of types of valves:
- ③ Valve with 2 solenoid pilots
 - ④ Dummy valve or bypass
 - ⑤ Valve with 1 solenoid pilot


EB 80 BOXI IO-Link WIRING DIAGRAM

IO-Link diagnostic signaling LED

Connection to the EB 80 IO-Link network
BUS IN (M12 male connector, A encoding)


Port Class A	Port Class B
1 = L+	1 = L+
2 = NC	2 = 2L+
3 = L-	3 = L-
4 = Q	4 = Q
5 = NC	5 = 2L-

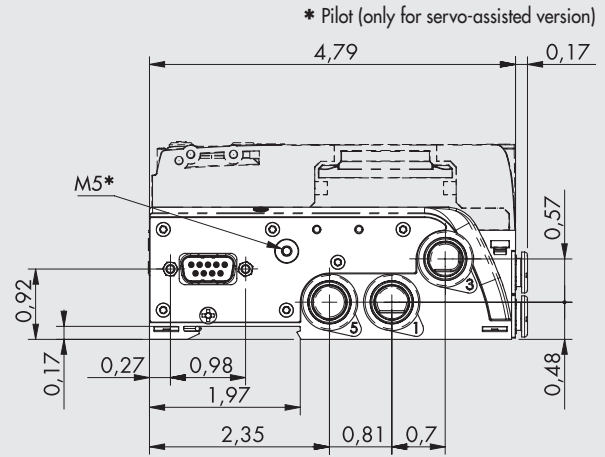
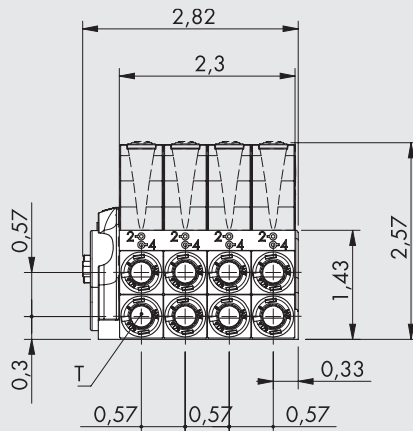
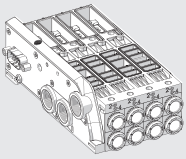


TECHNICAL DATA	
Fieldbus	IO-Link version 1.1
Communication speed	Kbps 230.4 (COM3)
Vendor ID / Device ID	1046 (hex 0x0416) / 8 (hex 0x000008)
Minimum cycle time	ms 2.8
Process data length	1 byte of Input / 1 byte of Output
Supply voltage range (M8 connector)	VDC 12 -10% 24 +30%
Minimum operating voltage	VDC 10.8 *
Maximum operating voltage	VDC 31.2
Maximum admissible voltage	VDC 32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC min 20, max 30
Protection	Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections	M12 male, A-coded - Port Class A - Port Class B.
Diagnostics**	IO-Link: via local LED lights and software messages. Outputs: via local LED
Power supply current absorption	See EB 80 Boxi IO-Link instruction manual
Maximum number of pilots	8
Data bit value	0 = non-active; 1 = active
State of outputs in the absence of communication	Configurable for each output: non-active, holding of the state, setting of a preset state

* Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page 1-116
 ** Refer to the user manual for a detailed description.
 *** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

DIMENSIONS - ORDERING CODES

EB 80 BOXI WITH D-Sub 9-PIN MULTIPOLE ELECTRICAL CONNECTION



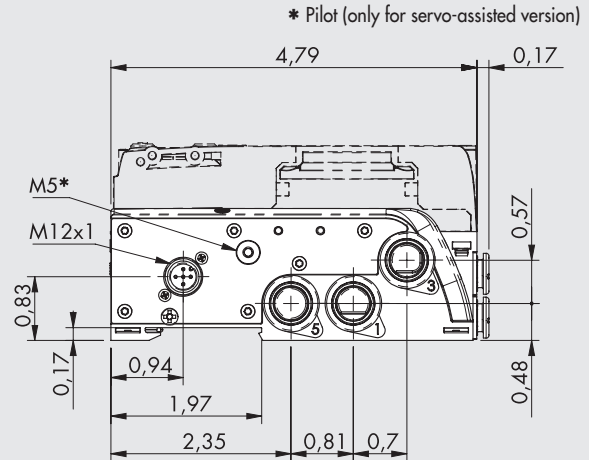
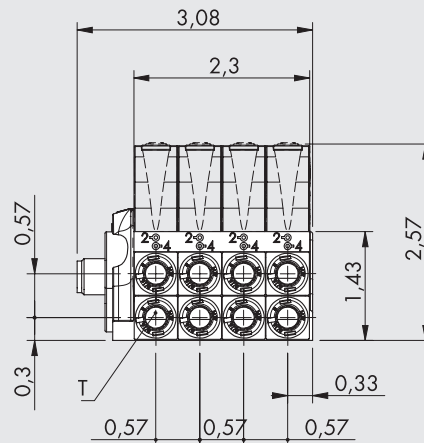
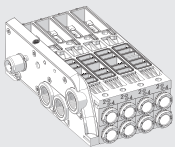
Port threads 1, 3, 5 in G (BSP)

	T - Pipe fitting	Code	
		4 CONTROLS	8 CONTROLS
Servo-assisted	without cartridges	0228BGX4M1111	0228BGX8M1111
	Ø 4 mm (5/32")	0228BGX4M4444	0228BGX8M4444
	Ø 6 mm	0228BGX4M6666	0228BGX8M6666
	Ø 8 mm (5/16")	0228BGX4M8888	0228BGX8M8888
	Ø 1/4"	0228BGX4M2222	0228BGX8M2222
Non-servo-assisted	without cartridges	0228BG14M1111	0228BG18M1111
	Ø 4 mm (5/32")	0228BG14M4444	0228BG18M4444
	Ø 6 mm	0228BG14M6666	0228BG18M6666
	Ø 8 mm (5/16")	0228BG14M8888	0228BG18M8888
	Ø 1/4"	0228BG14M2222	0228BG18M2222

Port threads 1, 3, 5 in NPT

	T - Pipe fitting	Code	
		4 CONTROLS	8 CONTROLS
Servo-assisted	without cartridges	0228BUX4M1111	0228BUX8M1111
	Ø 4 mm (5/32")	0228BUX4M4444	0228BUX8M4444
	Ø 6 mm	0228BUX4M6666	0228BUX8M6666
	Ø 8 mm (5/16")	0228BUX4M8888	0228BUX8M8888
	Ø 1/4"	0228BUX4M2222	0228BUX8M2222
Non-servo-assisted	without cartridges	0228BU14M1111	0228BU18M1111
	Ø 4 mm (5/32")	0228BU14M4444	0228BU18M4444
	Ø 6 mm	0228BU14M6666	0228BU18M6666
	Ø 8 mm (5/16")	0228BU14M8888	0228BU18M8888
	Ø 1/4"	0228BU14M2222	0228BU18M2222

EB 80 BOXI WITH ELECTRICAL CONNECTION I/O link (M12x1)



Port threads 1, 3, 5 in G (BSP)

	T - Pipe fitting	Code	
		8 CONTROLS	
Servo-assisted	without cartridges	0228BGX8L1111	
	Ø 4 mm (5/32")	0228BGX8L4444	
	Ø 6 mm	0228BGX8L6666	
	Ø 8 mm (5/16")	0228BGX8L8888	
	Ø 1/4"	0228BGX8L2222	
Non-servo-assisted	without cartridges	0228BG18L1111	
	Ø 4 mm (5/32")	0228BG18L4444	
	Ø 6 mm	0228BG18L6666	
	Ø 8 mm (5/16")	0228BG18L8888	
	Ø 1/4"	0228BG18L2222	

Port threads 1, 3, 5 in NPT

	T - Pipe fitting	Code	
		8 CONTROLS	
Servo-assisted	without cartridges	0228BUX8L1111	
	Ø 4 mm (5/32")	0228BUX8L4444	
	Ø 6 mm	0228BUX8L6666	
	Ø 8 mm (5/16")	0228BUX8L8888	
	Ø 1/4"	0228BUX8L2222	
Non-servo-assisted	without cartridges	0228BU18L1111	
	Ø 4 mm (5/32")	0228BU18L4444	
	Ø 6 mm	0228BU18L6666	
	Ø 8 mm (5/16")	0228BU18L8888	
	Ø 1/4"	0228BU18L2222	

KEY TO CODING OF THE EB 80 BOXI WITHOUT VALVES

0228B FAMILY	G PORT THREADS 1, 3, 5	1 PILOTING	8 NUMBER OF SOLENOID PILOT CONTROLS	M ELECTRICAL CONNECTION	4 1° position (from left)	4 2° position	4 3° position	4 4° position
0228B EB 80 BOXI	G 1/4" BSP U 1/4" NPT	1 Non-servo-assisted X Servo-assisted	4 4 controls 8 8 controls	M D-Sub 9-pin multipole connection ▲ L I/O link, M12x1	1 Without cartridges 2 Pipe fitting Ø 1/4" 4 Pipe fitting Ø 4 mm (5/32") 6 Pipe fitting Ø 6 mm 8 Pipe fitting Ø 8 mm (5/16")			

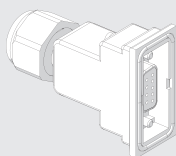
▲ Only for version with 8 controls.

KEY TO CODING OF THE EB 80 BOXI COMPLETE WITH VALVES

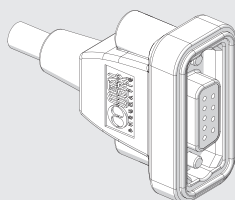
0228B FAMILY	G PORT THREADS 1, 3, 5	1 PILOTING	8 NUMBER OF SOLENOID PILOT CONTROLS	M ELECTRICAL CONNECTION	4 1° position (from left)	4 2° position	4 3° position	4 4° position	0 MANUAL CONTROL	V V K I VALVES
0228B EB 80 BOXI	G 1/4" (BSP) U 1/4" NPT	1 Non-servo-assisted X Servo-assisted	4 4 controls 8 8 controls	M D-Sub 9-pin multipole connection ▲ L I/O link, M12x1	1 Without cartridges 2 Pipe fitting Ø 1/4" 4 Pipe fitting Ø 4 mm (5/32") 6 Pipe fitting Ø 6 mm 8 Pipe fitting Ø 8 mm (5/16")				0 Monostable 1 Bistable	▲ Z 2 valves 2/2 NC ▲ I 2 valves 3/2 NC ▲ W 2 valves 3/2 NO ▲ L 3/2 NC + 3/2 NO V 5/2 monostable ▲ K 5/2 bistable ▲ O 5/3 CC G 3/2 NC high flow J 3/2 NO high flow + R Shut-off valve Y Bypass N Dummy valve (plug)

▲ Only for version with 8 controls..

+ Requires inlet port X slave synchronisation.

ACCESSORIES
STRAIGHT IP65 9-PIN PLUG CONNECTOR KIT


Code	Description	Weight [lb]
02269G0000	Straight D-Sub 9-PIN IP65 connector kit	0.04

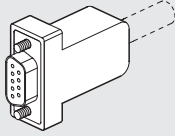
PRE-WIRED STRAIGHT IP65 9-PIN PLUG CONNECTOR KIT


Code	Description	Weight [lb]
02269G0100	Straight D-Sub 9-PIN IP65 connector + cable L = 35 inch	0.17
02269G0250	Straight D-Sub 9-PIN IP65 connector + cable L = 99 inch	0.37
02269G0500	Straight D-Sub 9-PIN IP65 connector + cable L = 197 inch	0.70
02269G1000	Straight D-Sub 9-PIN IP65 connector + cable L = 295 inch	1.37
02269H0100*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 35 inch	0.17
02269H0250*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 99 inch	0.37
02269H0500*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 197 inch	0.70
02269H1000*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 295 inch	1.37

* Very flexible cable, class 6 according to IEC 60228

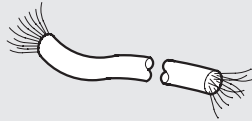
STRAIGHT IP40 9-PIN PLUG CONNECTOR KIT

Code	Description	Weight [lb]
0226180102	Straight D-Sub 9-PIN connector kit	0.04



CABLE

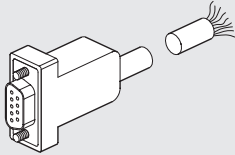
Code	Description	Weight [lb]
0226107201	10-PIN cable	0.13



Specify the number of metres desired.

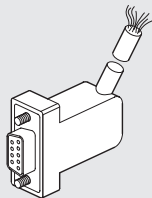
PRE-WIRED STRAIGHT IP40 9-PIN PLUG CONNECTOR KIT

Code	Description	Weight [lb]
0226900100	Straight D-Sub 9-PIN connector + cable L = 35 inch	0.17
0226900250	Straight D-Sub 9-PIN connector + cable L = 99 inch	0.37
0226900500	Straight D-Sub 9-PIN connector + cable L = 197 inch	0.70
0226900750	Straight D-Sub 9-PIN connector + cable L = 295 inch	1.03
0226901000	Straight D-Sub 9-PIN connector + cable L = 394 inch	1.36
0226901500	Straight D-Sub 9-PIN connector + cable L = 590 inch	2.02
0226902000	Straight D-Sub 9-PIN connector + cable L = 788 inch	2.70
0226905000	Straight D-Sub 9-PIN connector + cable L = 1.968 inch	6.65



PRE-WIRED 90° IP40 9-PIN PLUG CONNECTOR

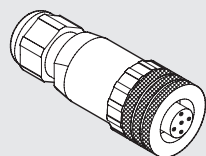
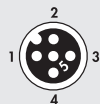
Code	Description	Weight [lb]
0226910100	90° D-Sub 9-PIN connector + cable L = 35 inch	0.17
0226910250	90° D-Sub 9-PIN connector + cable L = 99 inch	0.37
0226910500	90° D-Sub 9-PIN connector + cable L = 197 inch	0.70
0226910750	90° D-Sub 9-PIN connector + cable L = 295 inch	1.03
0226911000	90° D-Sub 9-PIN connector + cable L = 394 inch	1.36
0226911500	90° D-Sub 9-PIN connector + cable L = 590 inch	2.02



WIRING DIAGRAM FOR PRE-WIRED 9-PIN PLUG CONNECTORS



Position of electrical contact	Colour of the corresponding wire Metal Work cable IP40 connector	Colour of the corresponding wire (DIN 47100) IP65 connector	Function	4-position base	8-position base
1	green/black	white	Out 1 + VDC	solenoid pilot 14 valve 1	solenoid pilot 14 valve 1
2	white	brown	Out 2 + VDC	solenoid pilot 14 valve 2	solenoid pilot 12 valve 1
3	blue/black	green	Out 3 + VDC	solenoid pilot 14 valve 3	solenoid pilot 14 valve 2
4	blue	yellow	Out 4 + VDC	solenoid pilot 14 valve 4	solenoid pilot 12 valve 2
5	yellow/black	grey	Out 5 + VDC	/	solenoid pilot 14 valve 3
6	yellow	pink	Out 6 + VDC	/	solenoid pilot 12 valve 3
7	red/black	blue	Out 7 + VDC	/	solenoid pilot 14 valve 4
8	green	red	Out 8 + VDC	/	solenoid pilot 12 valve 4
9	white/black	black	COM 0VDC	common	common

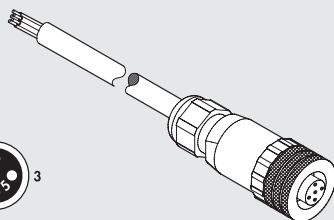
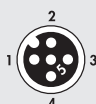
STRAIGHT CONNECTOR FOR M12, A-CODED


Code	Description
W0970513001	5-PIN M12x1 straight connector

Note: Can be used for IO-Link

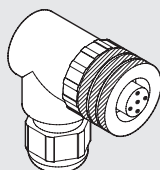
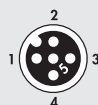
STRAIGHT CONNECTOR WITH WIRE FOR M12, A-CODED

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray



Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 197 inch

Note: Can be used for IO-Link

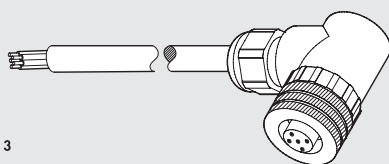
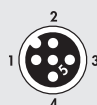
90° CONNECTOR FOR M12, A-CODED


Code	Description
W0970513003	M12x1 5-PIN 90° connector

Note: Can be used for IO-Link

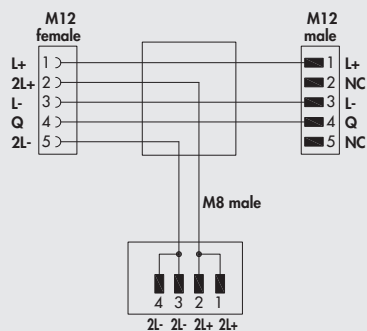
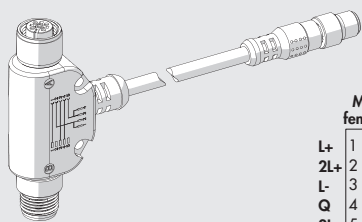
90° CONNECTOR WITH WIRE FOR M12, A-CODED

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray



Code	Description
W0970513004	M12x1 5-PIN 90° connector with wire L = 197 inch

Note: Can be used for IO-Link

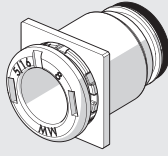
T CONNECTOR FOR AUXILIARY POWER


Code	Description
0240009070	T connector for auxiliary power

Note: Can be used for IO-Link

SPARE PARTS

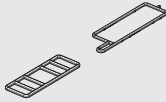
CARTRIDGE



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

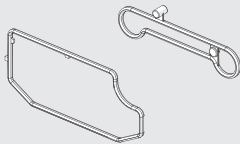
BASE-VALVE GASKET



Code	Description
02282R1002	EB 80 base-valve gasket kit

Comes in 10-pc. packs

GASKETS BETWEEN BASE AND COVER SHEET METAL



Code	Description
02282R1006	EB 80 BOXI kit of gaskets between base and cover sheet metal

Comes in 10-pc. packs

FOOT



Code	Description
02282R4002	EB 80 BOXI fixing foot

Comes in 3-pc. packs

NOTES

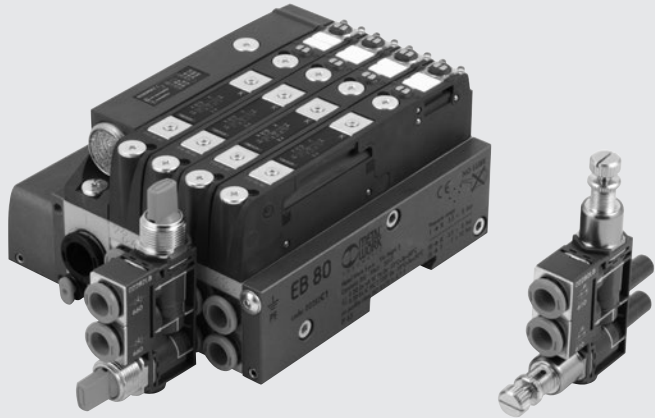
EB 80 MULTI-FUNCTION MODULE

The multi-function module is an important extension of the possibilities offered by the EB 80 systems to manage the performance of actuators controlled by individual solenoid valves. For each port, it can regulate the pressure and the flow rate, provide manual sectioning, display the presence of pressurized air and much more besides.

In line with the modular EB 80 configuration, the multi-function module is designed to ensure maximum flexibility: it can be installed at any time; the function connected to port 2 may differ from that connected to port 4 (e.g. regulating the pressure at output 2 and the air flow at port 4); the modules can be mounted in series one after the other; the cartridge fittings for the pipes can be replaced at any time and are the same as those used in the EB 80 valve bases.

Given that the air input pipes have a $\varnothing 8$ mm, the multi-function module must be inserted in the EB 80 bases with cartridges suitable for $\varnothing 8$ fittings; but if the base to which you want to connect has a cartridge of a different diameter, you only need to buy a multi-function fitting with $\varnothing 8$ cartridges and replace those of the base with those of the module.

The code and the pneumatic diagram are laser etched on the technopolymer body.

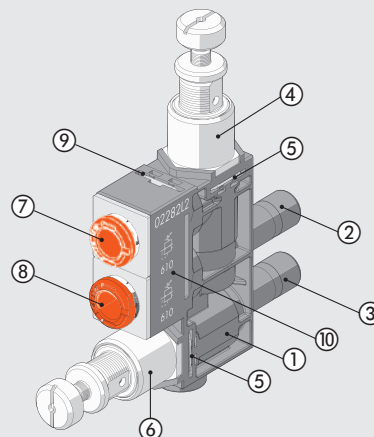


TECHNICAL DATA	
Operating pressure	bar 10 MPa 1
Temperature range	psi 145 °C -10 to + 50 °F 14 to 122
Fluid	Unlubricated air
Air quality required	ISO 8573-1 class 4-7-3
Functions	Unidirectional flow regulator, bidirectional flow regulator, pressure regulator, quick-relief valve, check valve, 2- or 3-way shut-off valve, pneumatic valve, pressure display, calibrated choke.
Air inlet	Tubes for $\varnothing 8$ mm fittings
Air delivery	Cartridge fittings for pipes $\varnothing 4$ (5/32"), $\varnothing 6$, $\varnothing 1/4"$, $\varnothing 8$ (5/16")
Recommended pipe	Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene

N.B.: For more specific technical data, please refer to the chapters for individual function-modules

COMPONENTS

- ① BODY: technopolymer
- ② TUBE to be inserted into port 2 of the EB 80 base
- ③ TUBE to be inserted into port 4 of the EB 80 base
- ④ PNEUMATIC FUNCTION relating to port 2
- ⑤ CLIP for the pneumatic function, steel
- ⑥ PNEUMATIC FUNCTION relating to port 4
- ⑦ Cartridge FITTING for port 2
- ⑧ Cartridge FITTING for port 4
- ⑨ CLIP for the cartridges
- ⑩ CODE AND DIAGRAM, laser etched

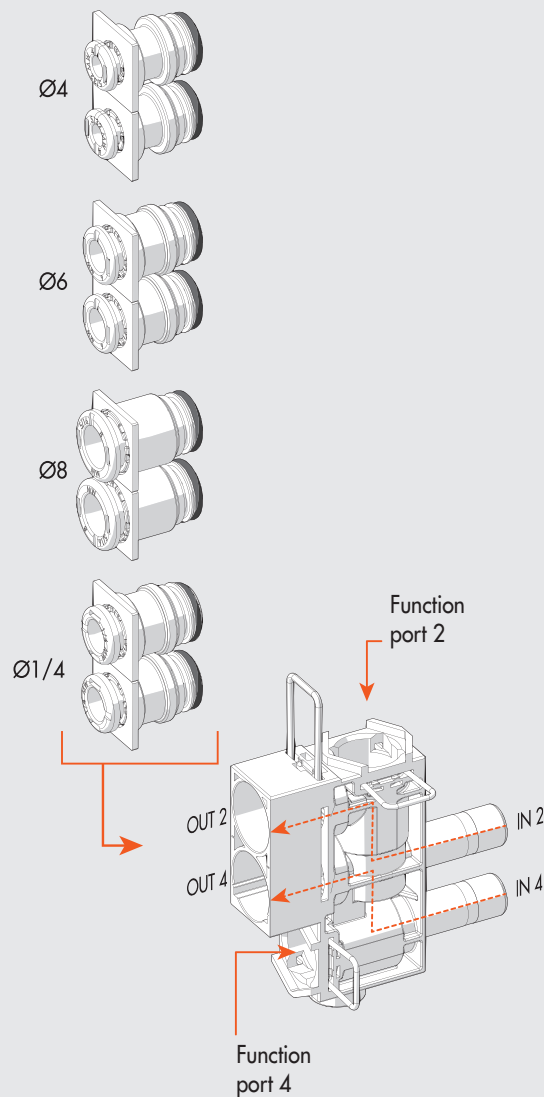


EXPLODED FUNCTION DIAGRAM

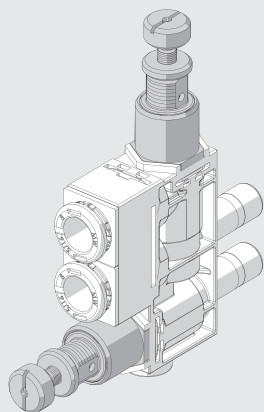
PNV	REG	LAM	V2V	V3V
3-way pneumatic valve	Pressure regulator	Pressure indicator	Shut-off valve 2-way	Shut-off valve 3-way
Code 670	Code 610	Code 680 / 682	Code 650	Code 660
See page 1-180	See page 1-181	See page 1-182	See page 1-183	See page 1-183

RFL		RFF	
Flow regulator unidirectional	Flow regulator bidirectional	Calibrated choke unidirectional type V	Calibrated choke bidirectional type B
Code 410	Code 411	Code 7__	Code 8__
See page 1-184		See page 1-186	

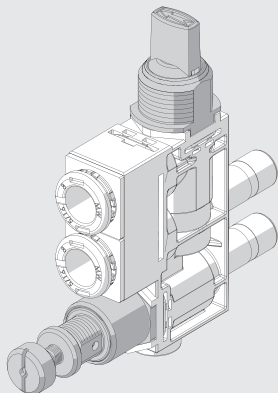
VSRC	VSRS	VSRR	P2V	VNR	NF
Quick-exhaust valve conveyed	Quick-exhaust valve silenced	Quick-exhaust valve regulated	Unidirectional 2-way pneumatic valve	Check valve	No function
Code 630	Code 631	Code 632	Code 671	Code 640	Code 000
See page 1-187	See page 1-187	See page 1-188	See page 1-190	See page 1-191	See page 1-192



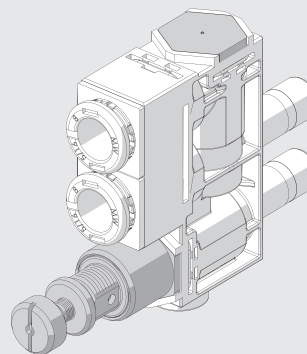
EXAMPLES OF MODULARITY



SAME FUNCTIONS ON PORTS 2 AND 4

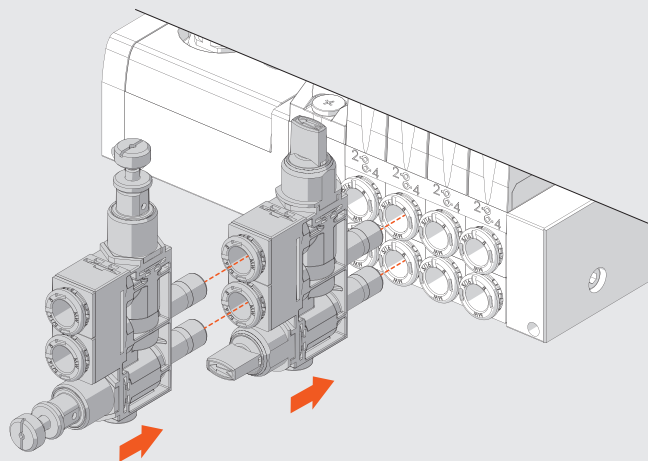


FUNCTION ON PORT 2 DIFFERENT FROM THAT ON PORT 4



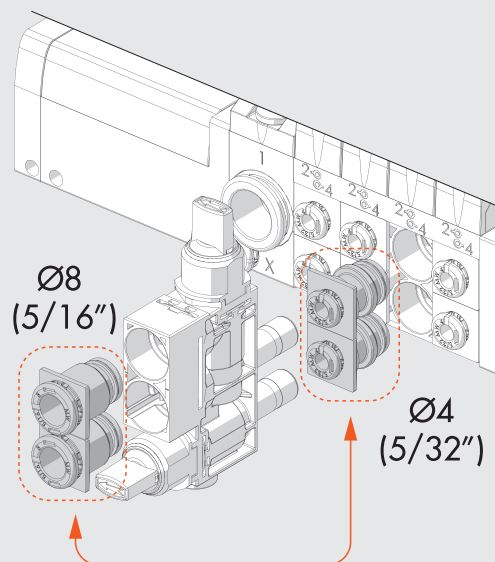
FUNCTION ON ONE PORT ONLY

SERIES ASSEMBLING



REPLACING THE CARTRIDGES

When fittings for pipes other than $\text{Ø} 8$ ($5/16''$) pipes are mounted on the base, choose a multi-function module with Ø ($5/16''$) 8 fittings and invert them with those of the base.

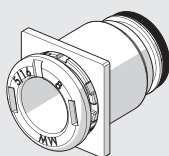


KEY TO CODES

02282	L	6	610	410
FAMILY	SUBSYSTEM	FITTINGS	FUNCTION PORT 2 (Top)	FUNCTION PORT 4 (Bottom)
02282 EB 80	L Multi-function module	2 Pipe fitting \varnothing 1/4" 4 Pipe fitting \varnothing 4 mm (5/32") 6 Pipe fitting \varnothing 6 mm 8 Pipe fitting \varnothing 8 mm (5/16")	000 NF - No function 410 RFL - Flow regulator unidirectional 411 RFL - Flow regulator bidirectional 610 REG - Pressure regulator 630 VSRC - Quick-exhaust valve, conveyed 631 VSRS - Quick-exhaust valve, silenced 632 VSRR - Quick-exhaust valve, regulated 640 VNR - Check valve 650 V2V - 2-way shut-off valve 660 V3V - 3-way shut-off valve 670 PNV - 3-way pneumatic valve 671 P2V - Unidirectional 2-way pneumatic valve 680 LAM - Orange pressure indicator 682 LAM - Green pressure indicator 7_* RFF - Calibrated choke unidirectional - type V 8_* RFF - Calibrated choke bidirectional - type B	000 NF - No function 410 RFL - Flow regulator unidirectional 411 RFL - Flow regulator bidirectional 610 REG - Pressure regulator 630 VSRC - Quick-exhaust valve, conveyed 631 VSRS - Quick-exhaust valve, silenced 632 VSRR - Quick-exhaust valve, regulated 640 VNR - Check valve 650 V2V - 2-way shut-off valve 660 V3V - 3-way shut-off valve 670 PNV - 3-way pneumatic valve 671 P2V - Unidirectional 2-way pneumatic valve 680 LAM - Orange pressure indicator 682 LAM - Green pressure indicator 7_* RFF - Calibrated choke unidirectional - type V 8_* RFF - Calibrated choke bidirectional - type B

* The last two digits indicate the narrowing \varnothing .

02 = \varnothing 0.2 mm	05 = \varnothing 0.5 mm	10 = \varnothing 1.0 mm
03 = \varnothing 0.3 mm	06 = \varnothing 0.6 mm	13 = \varnothing 1.3 mm
04 = \varnothing 0.4 mm	08 = \varnothing 0.8 mm	15 = \varnothing 1.5 mm

SPARE PARTS
CARTRIDGE


Code	Description	\varnothing
02282R2001	EB 80 \varnothing 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 \varnothing 6 base square cartridge kit	6
02282R2003	EB 80 \varnothing 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 \varnothing 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

NOTES

EB 80 3-WAY PNEUMATIC VALVE – PNV

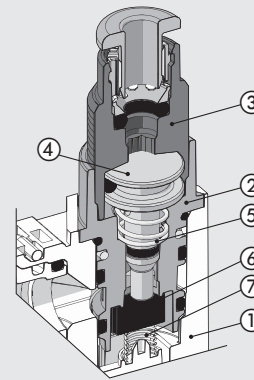
It is a normally closed 3/2 valve driven pneumatically via a $\varnothing 4$ pipe. It intercepts the air flow leaving the EB 80 valve. If the PNV is activated, the flow opens up, when it is de-activated the pressure is discharged downstream.



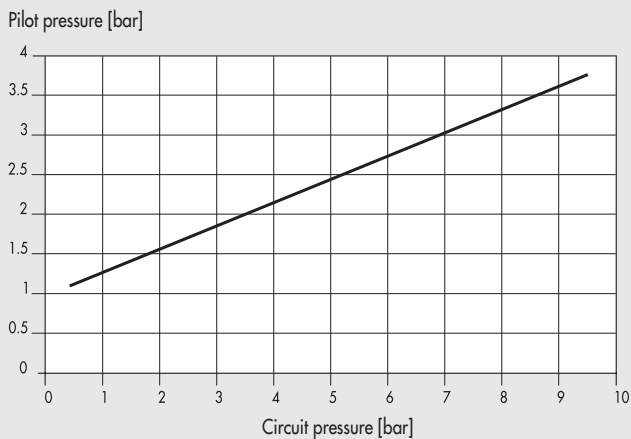
TECHNICAL DATA		$\varnothing 4$ mm (5/32")	$\varnothing 6$ mm	$\varnothing 8$ mm (5/16")	$\varnothing 1/4$ "
Ø of cartridge fitting	bar			10	
	MPa			1	
Max. operating pressure	psi			145	
	scfm	3.9	13.4	14.8	13.4
Flow rate at 91 psi ΔP 14.5 psi	scfm			2.83	
Flow rate at 91 psi free exhaust	scfm			See graph	
Minimum pilot pressure					

COMPONENTS

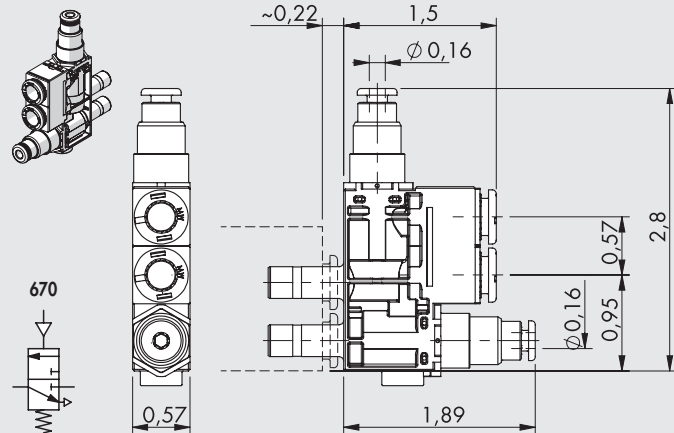
- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ PILOT INSERT: nickel-plated brass
- ④ PISTON ROD: brass
- ⑤ CLAMPING SPRING: stainless steel
- ⑥ SEAL: NBR
- ⑦ POPPET SPRING: stainless steel



MINIMUM PILOT PRESSURE



DIMENSIONS



EB 80 PRESSURE REGULATOR - REG

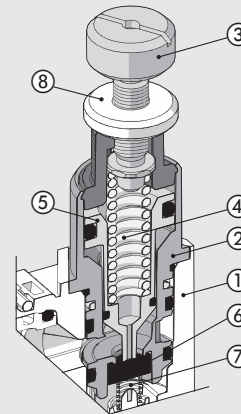
It regulates the pressure coming from the EB 80 base to individual branches. It comes with an overpressure relief device. It can be used as an economizer: if the thrust in a cylinder must be exerted in one direction, e.g. at the piston rod output, while a lower thrust is required in the other direction, a lot of energy can be saved by inserting the pressure regulator into the port connected to piston rod retraction.



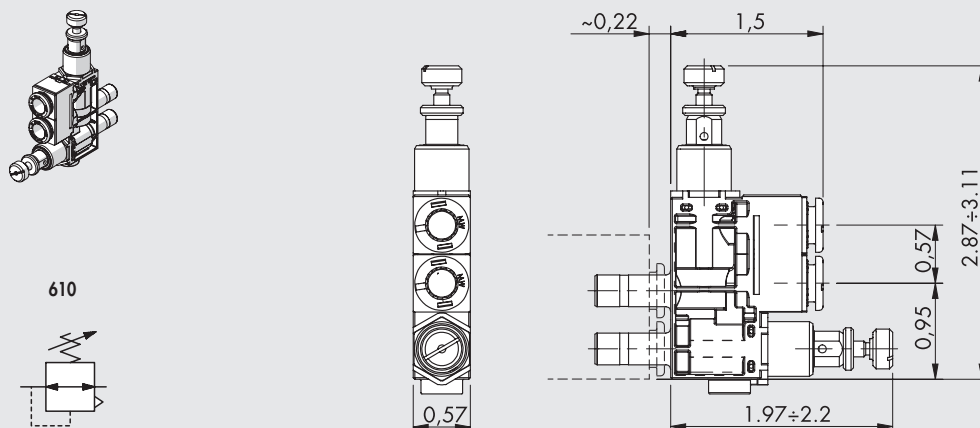
TECHNICAL DATA		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Setting range		1 to 8 bar - 0.1 to 0.8 MPa - 14.5 to 116 psi			
Input pressure	bar	2 to 10			
	MPa	0.2 to 1			
	psi	30 to 145			
Flow rate at 91 psi ΔP 14.5 psi	scfm	2.83	4.60	5.30	4.60
Flow rate on exhaust at 91 psi	scfm	10.61	13.4	14.15	13.4
Adjustment		Manual or using a screwdriver			
Notes on use		The pressure must always be set upwards			

COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ ADJUSTING SCREW: nickel-plated brass
- ④ ADJUSTING SPRING: steel
- ⑤ PISTON ROD: brass
- ⑥ SHUTTER: NBR
- ⑦ POPPET SPRING: stainless steel
- ⑧ ADJUSTING SCREW RING NUT: nickel-plated brass



DIMENSIONS



EB 80 PRESSURE INDICATOR - LAM

Also called pneumatic lamp, it optically indicate the presence of compressed air in the circuit.

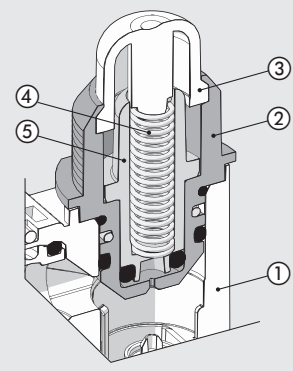
If there is no pressure, the transparent technopolymer bell is empty; if there is pressure an orange or a green sign is indicated.



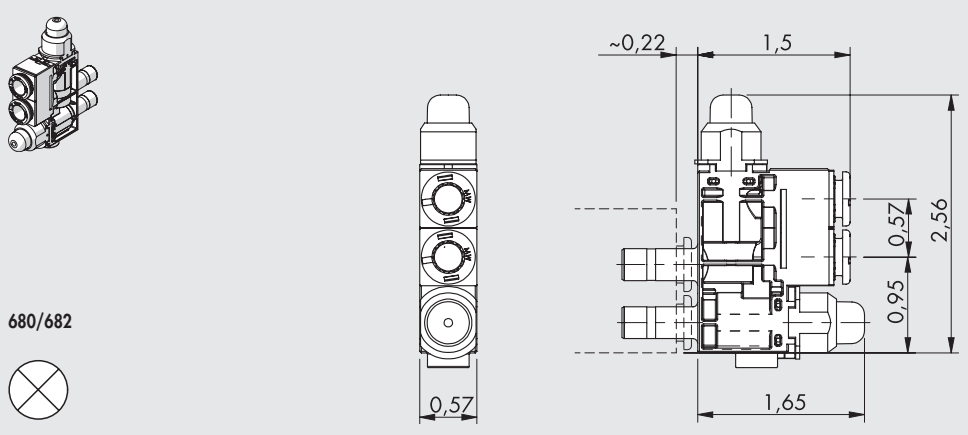
TECHNICAL DATA		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting					
Operating pressure	bar			2 to 10	
	MPa			0.2 to 1	
	psi			29 to 145	
Flow rate at 91 psi ΔP 14.5 psi	scfm	4.60	17.69	21.22	17.69
Colour with pressure		Orange - Green			

COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ COVER: clear technopolymer
- ④ RETURN SPRING: stainless steel
- ⑤ MOBILE INDICATOR: technopolymer



DIMENSIONS



680/682



EB 80 SHUT-OFF VALVE - V2V-V3V

It shuts off the flow of air coming from the EB 80 via a manual command. Two versions are available: the two-way unidirectional V2V valve and the V3V 3-way valve. The latter, when deactivated, intercepts the flow from the EB 80 valve and relieves downstream pressure.

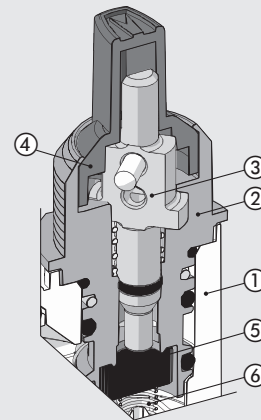


TECHNICAL DATA

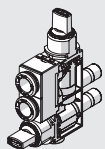
Ø of cartridge fitting		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Flow rate at 91 psi ΔP 14.5 psi	scfm	4.24	13.09	14.85	13.09
Flow rate of the V3V when relieving at 91 psi	scfm			3.90	

COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ ROD: brass
- ④ KNOB: technopolymer
- ⑤ VALVE: NBR
- ⑥ VALVE COMPRESSION SPRING: stainless steel

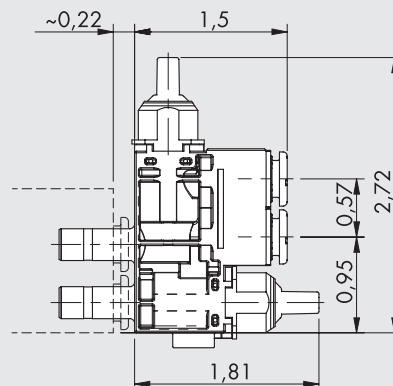


DIMENSIONS



650

660



EB 80 FLOW REGULATOR - RFL

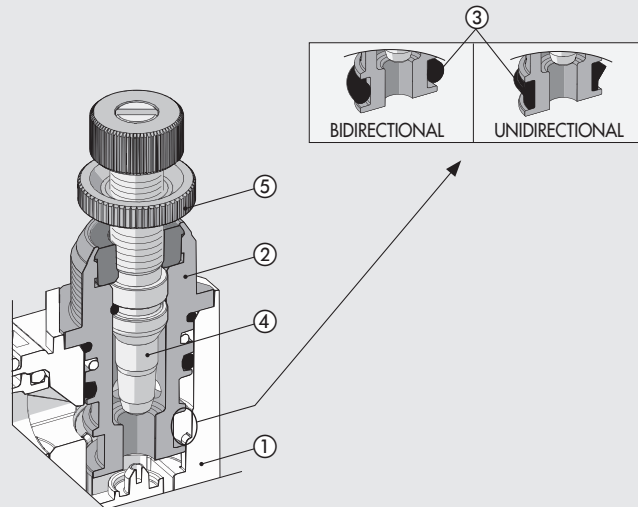
It regulates the air flow rate, and hence the speed, in pneumatic actuators. Two versions are available: the bidirectional one regulating the flow in both directions and the unidirectional one regulating the flow when the EB 80 valve is relieving.



TECHNICAL DATA		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting					
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Maximum flow rate during regulation at 91 psi	scfm	15.56	23	25.11	23
Exhaust flow rate (unidirectional version)	scfm	15.92	25.47	28.30	25.47
Adjustment		Manual or using a screwdriver			
Operating system		Tapered needle			

COMPONENTS

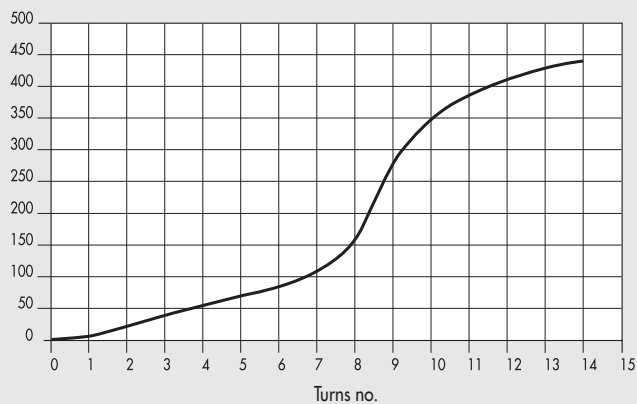
- ① BODY: technopolymer
- ② SEAL SUPPORT: nickel-plated brass
- ③ GASKET: NBR
- ④ ADJUSTING NEEDLE: brass
- ⑤ NEEDLE RING NUT: nickel-plated brass



FLOW RATE CHARTS AT 6.3 bar DEPENDING ON THE TURNS EFFECTED BY THE REGULATION OF THE NEDDLE

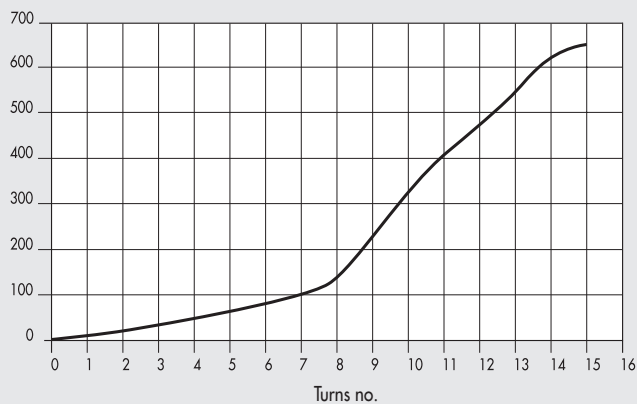
RFL Ø4

Flow rate [Nl/min]



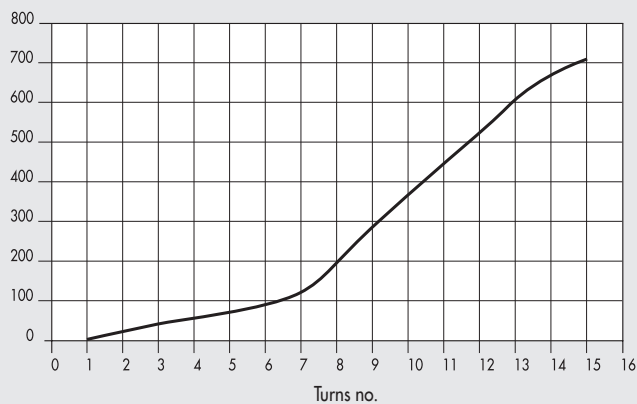
RFL Ø6 - Ø1/4

Flow rate [Nl/min]

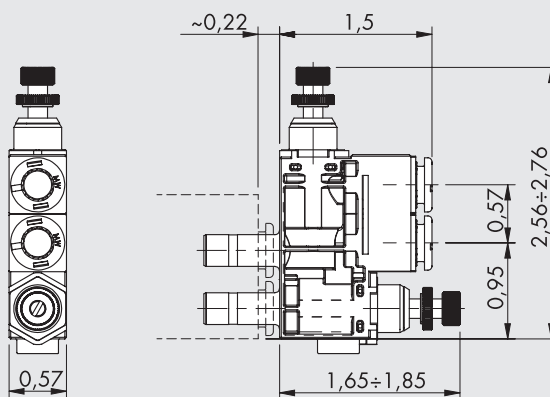
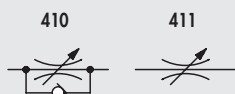
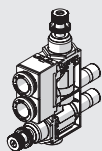


RFL Ø8

Flow rate [Nl/min]



DIMENSIONS



EB 80 CALIBRATED CHOKE - RFF

It regulates the air flow rate, and hence the speed, in pneumatic actuators. This is done by means of a choke of a calibrated diameter. In order to obtain the desired air flow rate, you can choose different choking diameters. Compared to adjustable versions, the main advantage is that it does not require any adjustments during the assembly of the machine and prevents from subsequent tampering.

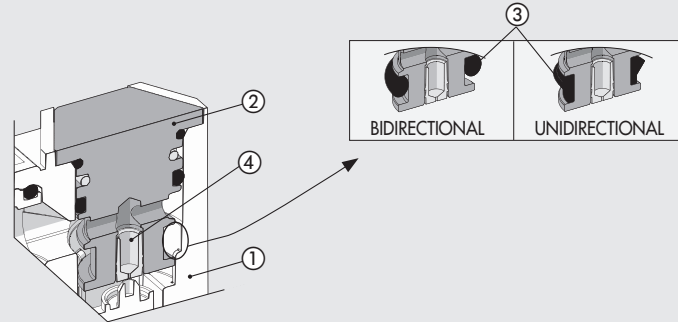
Two versions are available: the bidirectional one regulating the flow in both directions and the unidirectional one regulating the flow when the EB 80 valve is relieving.



TECHNICAL DATA		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting					
Max. operating pressure	bar			10	
	MPa			1	
	psi			145	
Flow rates				See tables	
Adjustment				Fixed	
Operating system				Calibrated hole	

COMPONENTS

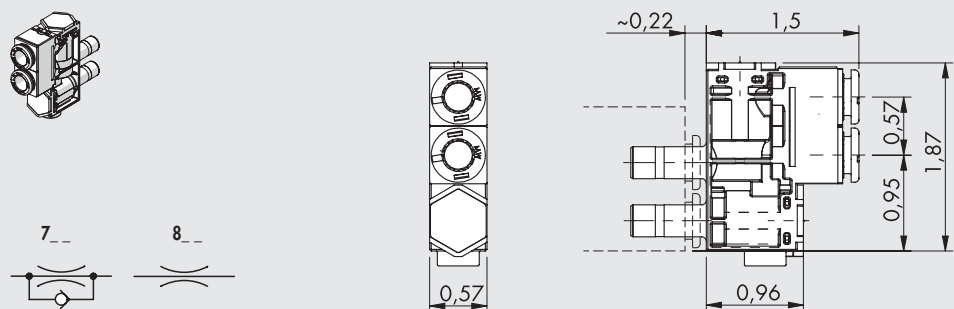
- ① BODY: technopolymer
- ② SEAL SUPPORT: nickel-plated brass
- ③ GASKET: NBR
- ④ THROTTLE CARTRIDGE: brass



Choke [mm]	Ø 4 mm	Ø 6 mm - Ø 1/4	Ø 8 mm
Ø 0.2	240	550	640
Ø 0.3	242	552	642
Ø 0.4	245	555	645
Ø 0.5	250	560	650
Ø 0.6	255	565	660
Ø 0.8	265	570	690
Ø 1.0	275	580	710
Ø 1.3	290	610	750
Ø 1.5	300	620	800

Choke [mm]	Flow rate [Nl/min]
Ø 0.2	2
Ø 0.3	4
Ø 0.4	7
Ø 0.5	13
Ø 0.6	15
Ø 0.8	32
Ø 1.0	50
Ø 1.3	85
Ø 1.5	110

DIMENSIONS



EB 80 QUICK-EXHAUST VALVE - VSR

It speeds up the relieving of air coming from the actuators to the EB 80 and releases it into the atmosphere.
 If the air coming from the actuators is polluted, it prevents it from entering into the EB 80 island, where it could risk to damage the valves.
 Air relieving can be either silenced with a stainless steel wire or conveyed via an automatic fitting.



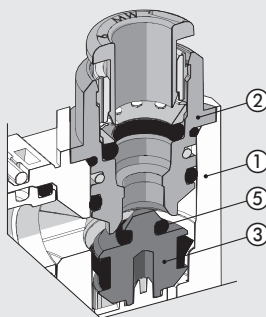
TECHNICAL DATA

		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Operating pressure	bar	1 to 10			
	MPa	0.1 to 1			
	psi	14.5 to 145			
Inlet flow rate at 91 psi ΔP 14.5 psi	scfm	3.18	7.42	9.55	7.42
Exhaust flow rate at 91 psi	scfm	11.67	24.76	26.53	24.76

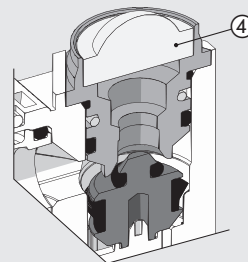
COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ VALVE: brass
- ④ SILENCER: stainless steel wire
- ⑤ GASKET: NBR

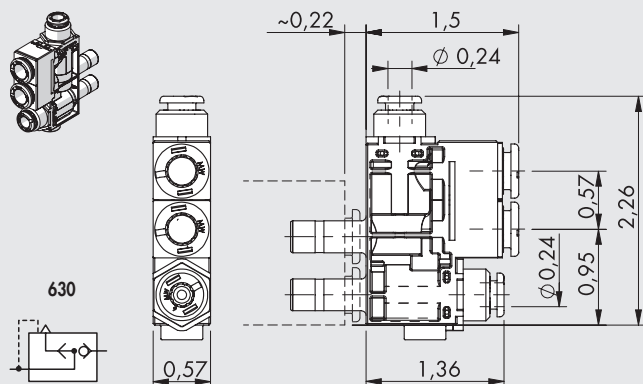
CONVEYED VERSION



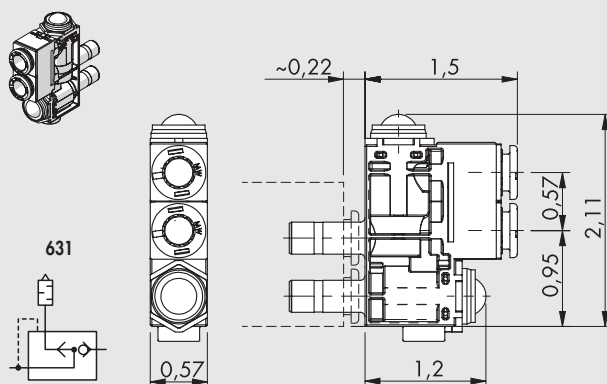
SILENCED VERSION



CONVEYED VERSION DIMENSIONS



SILENCED VERSION DIMENSIONS



EB 80 QUICK-EXHAUST VALVE WITH FLOW REGULATOR - VSRR

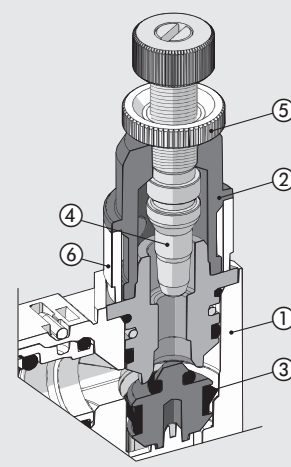
It speeds up the relieving of air coming from the actuators to the EB 80, releases it into the atmosphere and regulates the flow rate. It relieves the air coming from the utilities and regulates the quality of flow precisely by operating the knob provided.



TECHNICAL DATA		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting					
Operating pressure	bar	1 to 10			
	MPa	0.1 to 1			
	psi	14.5 to 145			
Inlet flow rate at 91 psi ΔP 14.5 psi	scfm	3.18	7.42	9.55	7.42
Max flow rate on exhaust at 91 psi	scfm	15.92	18.75	19.81	18.75
Adjustment		Manual or using a screwdriver			
Internal system		Tapered needle			

COMPONENTS

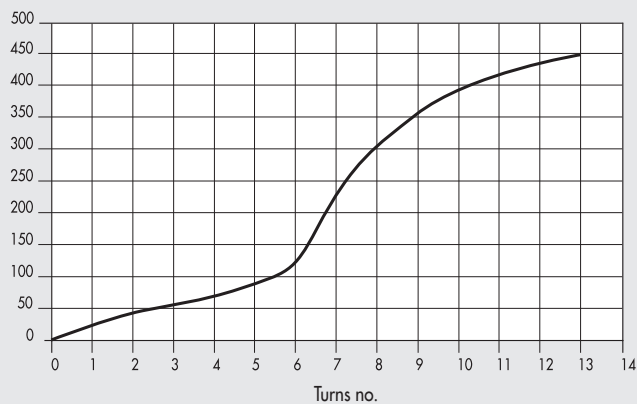
- ① BODY: technopolymer
- ② SEAL SUPPORT: nickel-plated brass
- ③ GASKET: NBR
- ④ ADJUSTING NEEDLE: brass
- ⑤ NEEDLE RING NUT: nickel-plated brass
- ⑥ SILENCER: sintered bronze



EXHAUST FLOW CHARTS AT 6.3 bar DEPENDING ON THE TURNS EFFECTED BY THE REGULATION OF THE NEDDLE

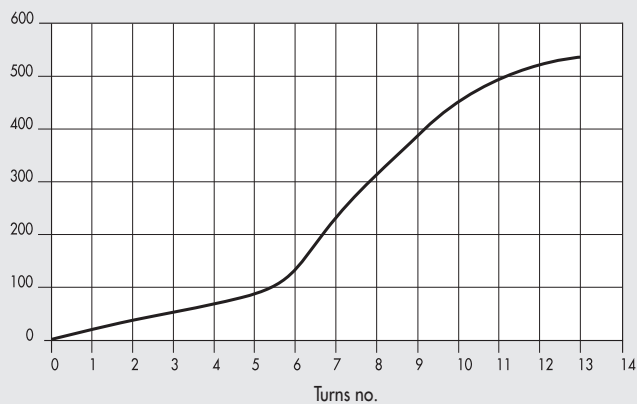
VSRR Ø4

Flow rate [Nl/min]



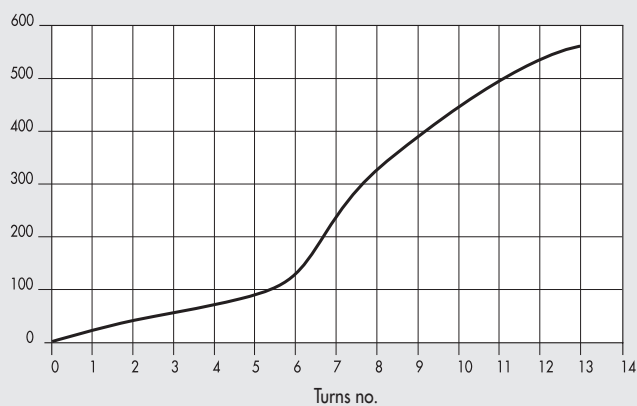
VSRR Ø6 - Ø1/4

Flow rate [Nl/min]

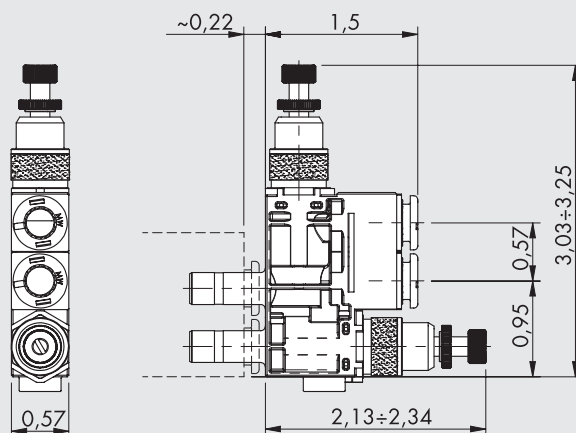
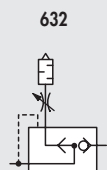
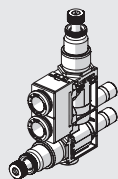


VSRR Ø8

Flow rate [Nl/min]



DIMENSIONS



EB 80 UNIDIRECTIONAL 2-WAY PNEUMATIC VALVE – P2V

Unidirectional normally closed 2/2 valve pneumatically driven via a $\varnothing 4$ pipe. Can intercept the flow of air coming from the EB 80 valve. When enabled, it opens the flow; when disabled it closes the pressurised circuit.

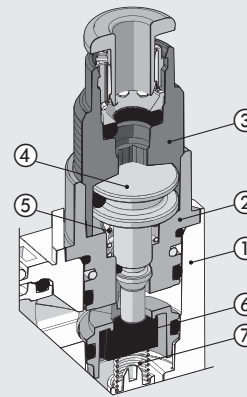
N.B.: Given the direction of the flow, it cannot be used to block the flow of air coming out of a cylinder.



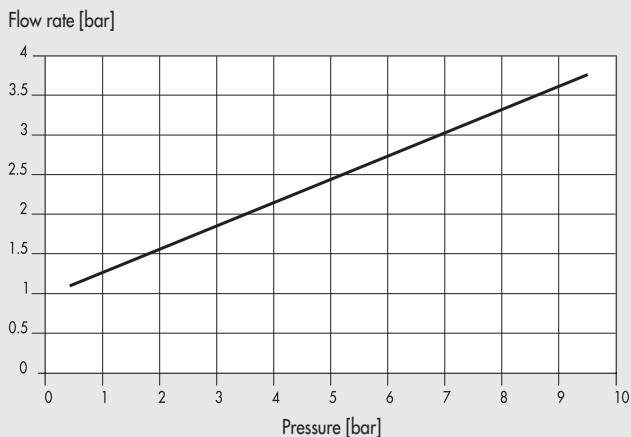
TECHNICAL DATA		$\varnothing 4$ mm (5/32")	$\varnothing 6$ mm	$\varnothing 8$ mm (5/16")	$\varnothing 1/4$ "
Max. operating pressure	bar			10	
	MPa			1	
Flow rate at 91 psi ΔP 14.5 psi	psi			145	
	scfm	3.9	13.09	14.8	13.09
Minimum pilot pressure			See graph		

COMPONENTS

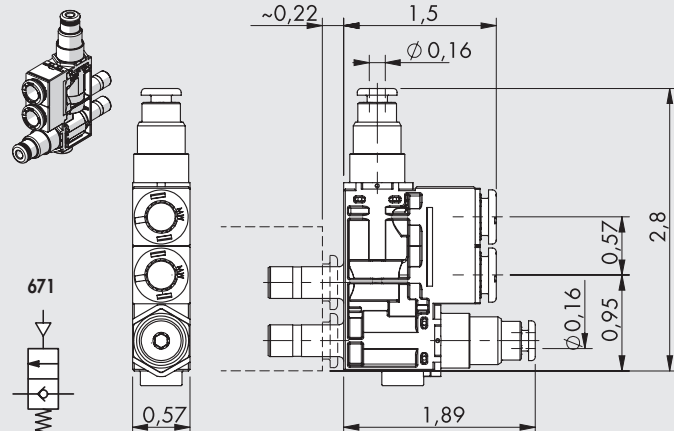
- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ PILOT INSERT: nickel-plated brass
- ④ PISTON ROD: brass
- ⑤ CLAMPING SPRING: stainless steel
- ⑥ SEAL: NBR
- ⑦ POPPET SPRING: stainless steel



MINIMUM PILOT PRESSURE



DIMENSIONS



EB 80 CHECK VALVE - VNR

Check valve. Full flow from the EB 80 valve to the utility. It prevents the air flow from reversing downstream the VNR.

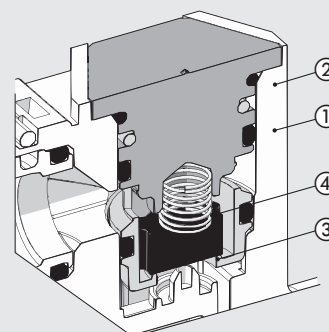


TECHNICAL DATA

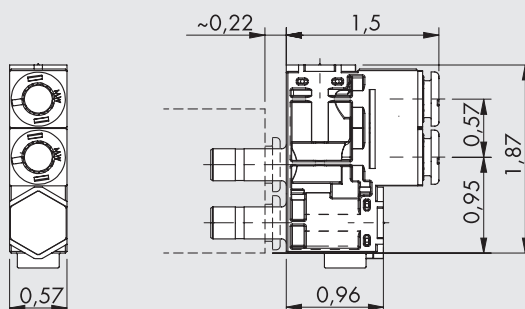
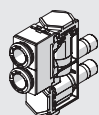
Ø of cartridge fitting		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Operating pressure	bar			0.5 to 10	
	MPa			0.05 to 1	
	psi			7.2 to 145	
Flow rate at 91 psi ΔP 14.5 psi	scfm	12.38	14.8	15.92	14.8

COMPONENTS

- ① BODY: technopolymer
- ② INSERT: nickel-plated brass
- ③ VALVE: NBR
- ④ VALVE COMPRESSION SPRING: stainless steel



DIMENSIONS



640



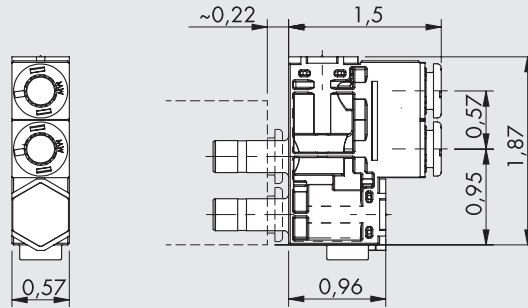
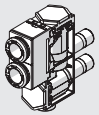
EB 80 NO FUNCTION - NF

To be used when, on one of the two-way network, no pneumatic function is required.
The flow conveys directly from the inlet to the output fitting without any variation.



TECHNICAL DATA		Ø 4 mm (5/32")	Ø 6 mm	Ø 8 mm (5/16")	Ø 1/4"
Ø of cartridge fitting	bar			10	
	MPa			1	
Max. operating pressure	psi			145	
	scfm	4.6	17.7	21.22	17.7
Flow rate at 91 psi ΔP 14.5 psi					

DIMENSIONS



NOTES

Blank area for notes.

EB 80 SPLASH AREA

The splash-area assembly kits have been designed and developed for the Food & Beverage industry and, in general, for use in all the situations in which it is advisable to separate the solenoid valves from areas where there are fluids.

The kit can be used to fix a standard EB 80 island to a sheet metal plate, perforated by the customer, with compressed air fittings and pipes installed downstream.

Two models are available, one designed to accommodate 3-8 valves and one 8-12 valves. Other configurations can be made on specific request.

The plate is available in two optional materials: anticorrosive 6082 anodized aluminium and AISI 304 stainless steel.

Threaded holes are provided in the splash-area side of the plate for air supply, relief, control and utilities.

The EB 80 islands of any type can be fixed to the kit, with either multi-pin or fieldbus connection and signal modules, provided that they have one pneumatic supply source to avoid changing the pitch between valves, and the ports 2 and 4 have $\varnothing 8$ fittings and the ports 1 and 3 have $\varnothing 12$ fittings. The valve island can be used with silenced relief provided that the threaded port of the plate is closed.

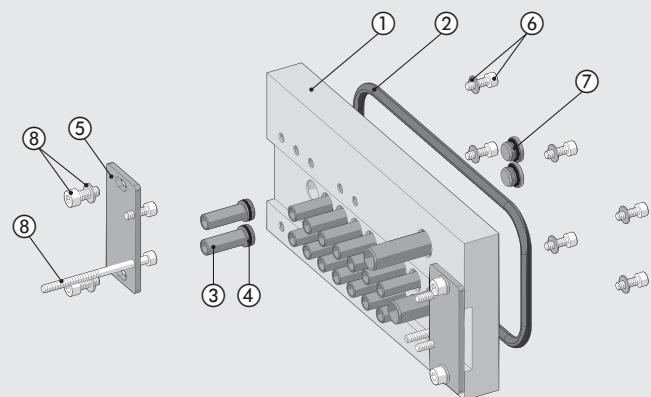


TECHNICAL DATA	
General technical data	See page 1-96
Protection rating at the splash-area side	IP67
Versions	3 to 8 positions; 8 to 12 positions
Bases configurable with this number of valves	For maximum 8-position version: 3, 4, 6, 7, 8 valves For the maximum 12-position version: 8, 9, 10, 11, 12 valves
Pneumatic fittings	1/4" supply and discharge M5 piloting 1/8" delivery

N.B.: The valve island to be used with the splash-area must be configured with $\varnothing 8$ mm fittings on ports 2 and 4 and $\varnothing 12$ mm fittings on ports 1, 3 and 5.

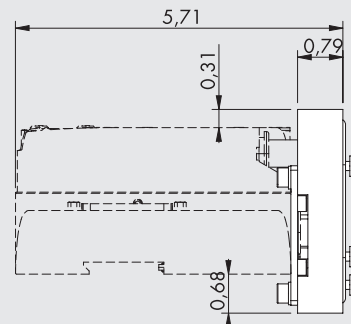
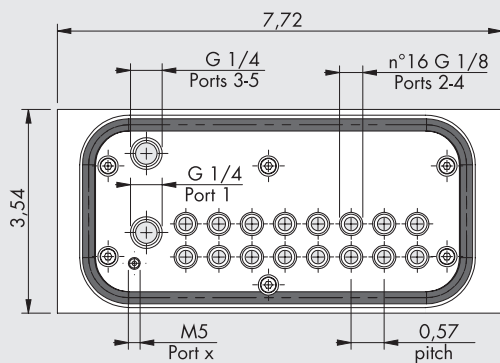
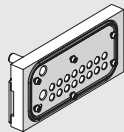
COMPONENTS

- ① SPLASH-AREA PLATE: 6082 anodized aluminium or AISI 304 stainless steel
- ② SPLASH-AREA GASKET: NBR
- ③ EXTENSIONS: nickel-plated brass
- ④ GASKETS: NBR
- ⑤ FIXING BRACKET: AISI 304 stainless steel
- ⑥ SCREWS AND WASHERS: stainless steel
- ⑦ 1/8" PLUGS: nickel-plated brass (to cover unused outputs)
- ⑧ SCREWS AND WASHERS: zinc-plated steel

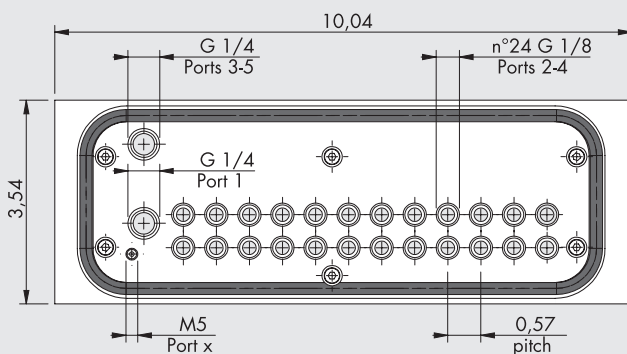
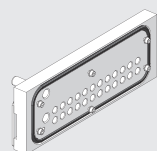


DIMENSIONS AND ORDERING CODES

3 to 8 POSITION



8 to 12 POSITION



Code	Description	Weight [lb]
02282R7080	EB 80 splash-area kit 3-8 positions aluminum	2.026
02282R7081	EB 80 splash-area kit 3-8 positions stainless steel	5.190
02282R7120	EB 80 splash-area kit 8-12 positions aluminum	2.621
02282R7121	EB 80 splash-area kit 8-12 positions stainless steel	6.716

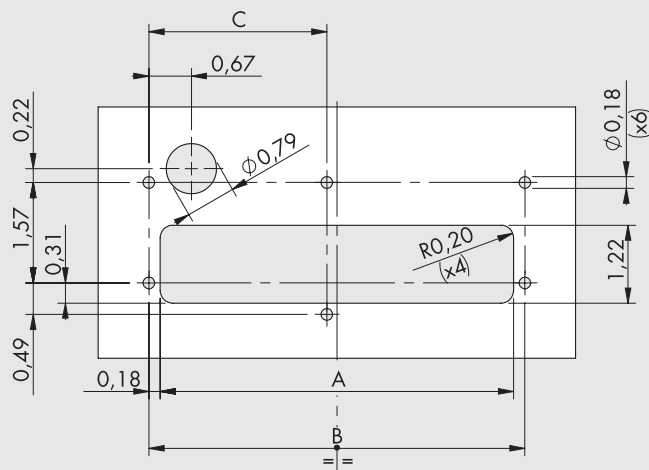
DIMENSIONS FOR THE DRILLING OF THE FIXING INTERFACE

3 to 8 POSITION

A	B	C
5.535	5.9	2.787

8 to 12 POSITION

A	B	C
7.834	8.189	3.937



KEY TO CODES

02282	R	7	08	0
FAMILY	CATEGORY	SUBSYSTEM	NUMBER OF POSITIONS	MATERIAL
02282 EB 80	R Spares and accessories	7 Splash-area	08 8 positions 12 12 positions	0 Anodized aluminum plate 6082 1 Plate AISI 304

NOTES

Lined area for notes.

HDM + MULTI-POLE CONNECTION

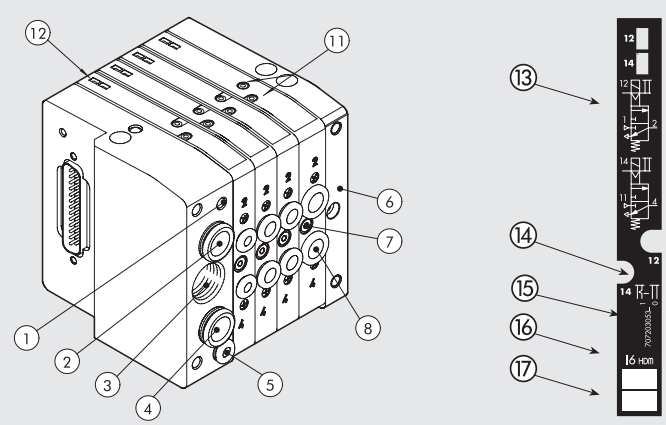
HDMs are the ideal solution for those requiring the unbeatable performance, flexibility and modularity of Multimach valves combined with sturdy mechanics and a high degree of protection against external agents. Each valve is enclosed in a reinforced technopolymer protective shell that acts as a shock-absorber and prevents the infiltration of dirt. The class of protection is IP65. The smooth, rounded design makes HDMs ideal for applications requiring frequent washing without the deposit of residues. All the pneumatic connections are on one side, with built-in push-in fittings. The user interface is on another side so that the fitter and the service engineer have everything at hand. Flexibility is total: there are 1-16 valves, input and output terminals for pipes of different sizes and intermediate modules for separate inputs and outputs. One very important new feature is that valves of different capacities can be mounted as required. Three different valve sizes can be combined at will. This means a valve can be replaced at any time by another one offering a different performance. It only takes a few seconds to replace or add a valve. To do this, merely loosen the two grub screws fixing the valve to the adjacent ones. Since the electrical signal is relayed from one valve to the next by means of gold-plated contacts connected to an electronic board, the electrical connections are entirely automatic. The ratio of the HDM's flow rate to its dimensions is unrivalled – miniaturisation and efficiency have reached a peak.



TECHNICAL DATA						
Valve port connections		Ø 5/32", 1/4", 5/16" mm automatic fitting for ports 2 and 4 / power supply port for Ø 3/8 or 1/2 automatic fitting / 3/8 thread for exhaust port, 10/32 UNF thread for exhaust pilot port				
Connection on the end-plate for the supply of pilots		Automatic fitting Ø 5/32				
Maximum number of pilots		16				
Maximum number of valves		16 (same as the max. no. of pilots)				
Operating temperature range	°F	14 to + 140				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Flow rate at 91 psi ΔP 14.5 psi	scfm	0.45 in Ø5/32-Cv15	0.45 in Ø1/4-Cv14	0.55 in Ø5/16-Cv8	0.9 in Ø5/16	0.9 in Ø3/8
		7	17.7	23	35.3	42.5
		7	10.6	10.6	17.7	17.7
Pressure range	psi	X (pilot supply)			1-11 (valve supply)	
	Terminal 1-11	43.5-100			vacuum at 145	
	Terminal 1	43.5 - 100				
Voltage range		24VDC ± 10%				
Power	W	0.9				
Control		PNP or NPN				
Insulation class		F155				
Degree of protection		IP65 (with conveyed exhaust)				
Solenoid rating		100% ED				
TRA/TRR 2x3/2 monostable at 87 psi	ms	8 / 45			8 / 60	
TRA/TRR 5/2 monostable at 87 psi	ms	8 / 33			9 / 60	
TRA/TRR 5/2 bistable at 87 psi	ms	20 / 20			8 / 8	
TRA/TRR 5/3 cc monostable at 87 psi	ms	20 / 20			15 / 15	
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air.				
Compatibility with oils		Please refer to page 5-2 of the technical documentation				

COMPONENTS

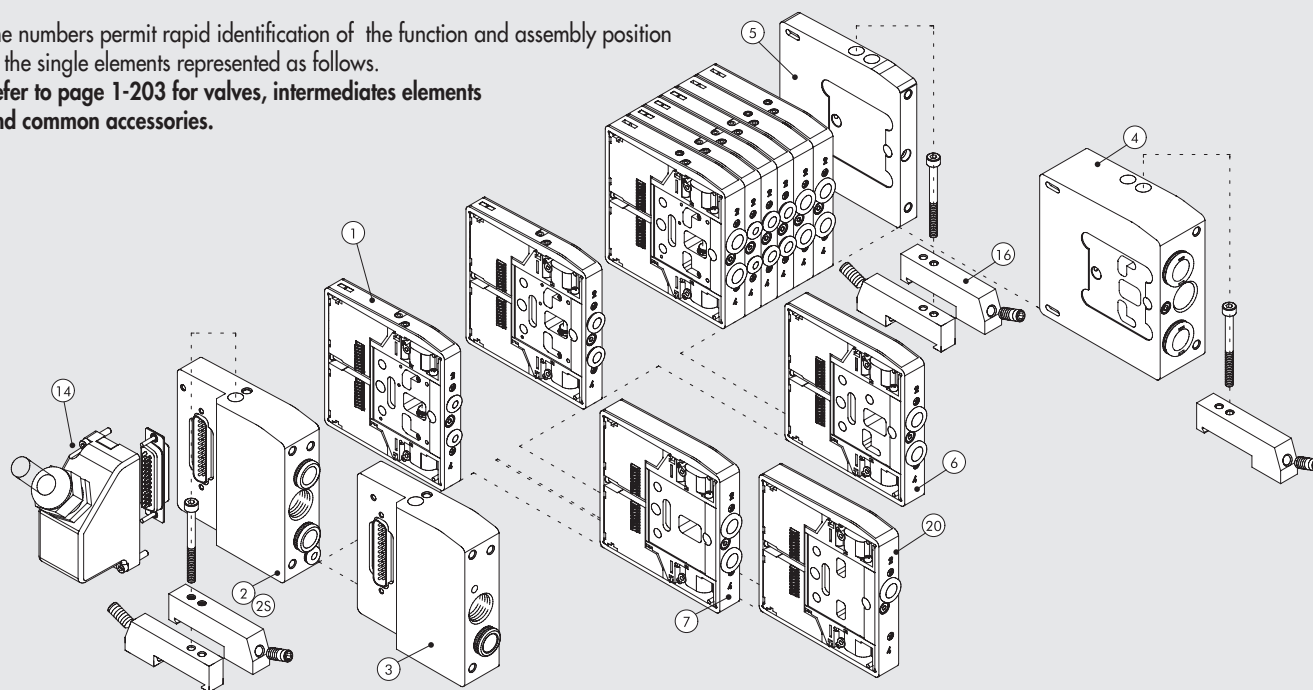
- ① Exhaust - Solenoid pilot 82/84
- ② Valve supply - port 1
- ③ Threaded connection of exhausts 3/5
- ④ Valve supply - port 11
- ⑤ Electrical control supply X
- ⑥ Blind end-plate or right end-plate 1-11
- ⑦ Screw for valve wall-mounting
- ⑧ Utility port for pipe Ø 5/32-1/4-5/16-3/8
- ⑪ Manual control
- ⑫ LED (LED on, solenoid valve energised)
- ⑬ Pneumatic symbol
- ⑭ Identification of the monostable or bistable manual control
- ⑮ Valve ordering code
- ⑯ Valve identification code
- ⑰ Blank space for valve number



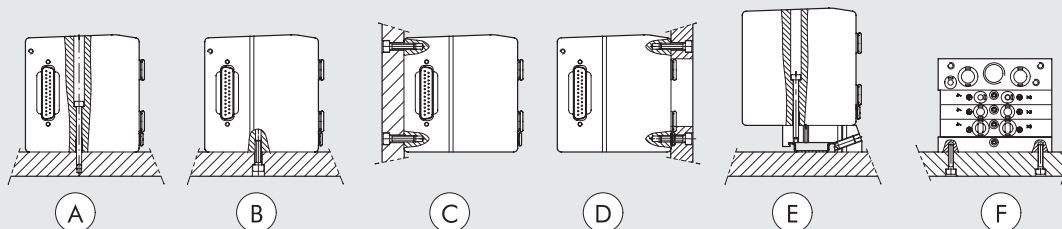
THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.

Refer to page 1-203 for valves, intermediates elements and common accessories.



FIXING THE BASE



- (A) Fixing from above using the 1 or 1-1 input terminal and the blind terminal.
- (B) Fixing from above using the 1 or 1-1 input terminal and the blind terminal, using the 10-32 UNF threads on the bottom and the rear of the terminals.
- (C) Fixing from above using the 1 or 1-1 input terminal and the blind terminal, using the 10-32 UNF threads on the front of the terminals. An opening for the pipes is made in the plate.
- (D) Fixing from above using the 1 or 1-1 input terminal and the blind terminal, using the 10-32 UNF threads on the front of the terminals.
- (E) Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
- (F) Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.

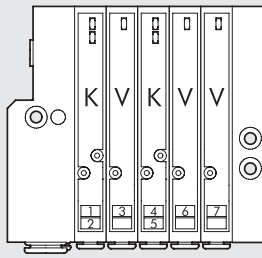
Note: The sole fixing admitted is the one showed.

KEY TO CODES

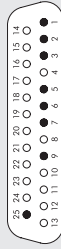
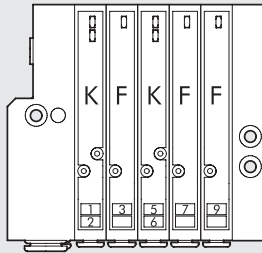
H D M VALVE	2 INPUT END-PLATE	8 ELECTRICAL BASE	M MANUAL TYPE	16U - W 8 - W 6U - O 4 - L 8 - 5 TYPE OF VALVE	1 4 - 1 6 FURTHER DETAILS
Heavy duty Multimach IP65	2U End-plate 1-11 pipe Ø 3/8 3U End-plate 1 pipe Ø 3/8 2SU End-plate 1-11 pipe Ø 1/2	8 D-Sub 25 wire	M Monostable manual control B Bistable manual control	I n° 2 3/2 NC W n° 2 3/2 NO L 3/2 NO + 3/2 NC V 5/2 monostable K 5/2 bistable O 5/3 monostable *F 5/2 monostable 4 Right end-plate pipe Ø 1/2 5 Blind end-plate 6 Passing-intermede 7 Blind intermediate 20 Exhaust section 4 Cartridge 5/32 6U Cartridge 1/4 8 Cartridge 5/16 - 0.55 in 8S Cartridge 5/16 - 0.9 in 10 Cartridge 3/8	14 IP65 25-wire shell 16 n° 2 brackets for DIN bar

* Uses a single PIN (like the V) and occupies 2 signals.

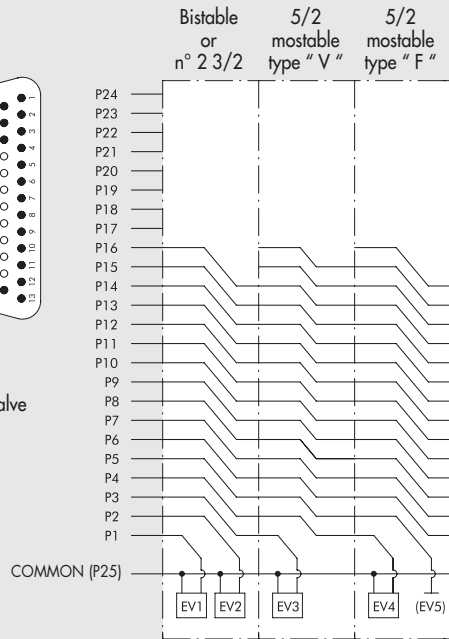
WIRING DIAGRAM



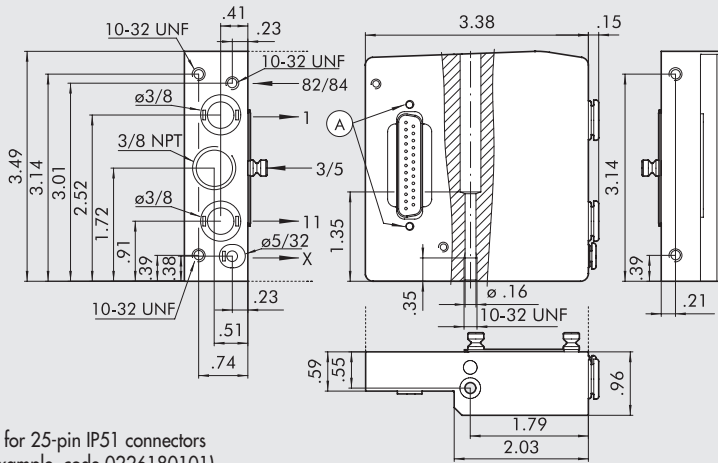
PNP - Com (-)
NPN - Com (+)



NOTE: The type F monostable valve uses one PIN only (like the V) but occupies 2 signals.



② END-PLATE 1-11-25D



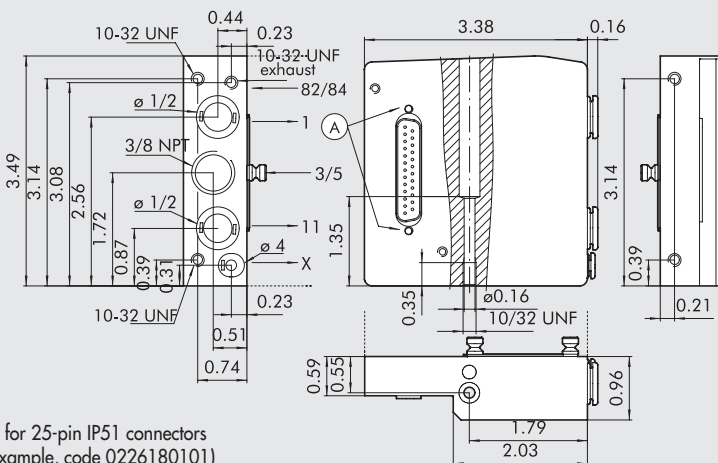
Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [lb]
0227301200U	End-plate HDM 1-11-25D Ø 3/8	0.815

This end-plate allows for supplies to be differentiated

- Port 2
- Port 4
- Pilot supply

②S END-PLATE 1-11-25D - PIPE Ø1/2

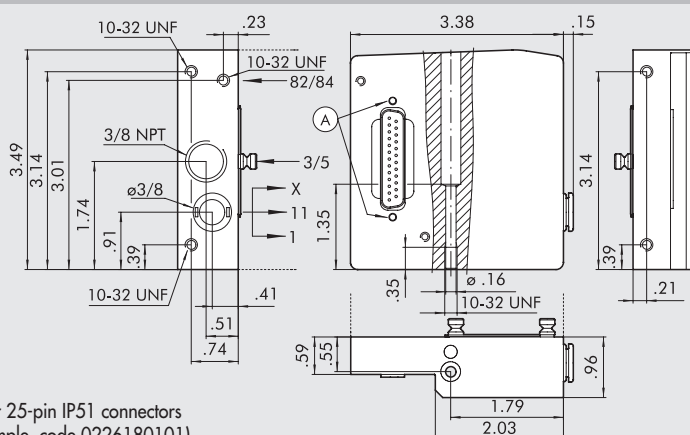


Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [lb]
0227301220U	End-plate HDM 1-11-25D Ø 1/2	0.815

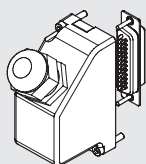
This end-plate allows for supplies to be differentiated

- Port 2
- Port 4
- Pilot supply

③ END-PLATE 1-25D


Ⓐ = Holes for 25-pin IP51 connectors
(for example, code 0226180101)

Code	Description	Weight [lb]
0227301201U	End-plate HDM 1-25D Ø 3/8	0.815

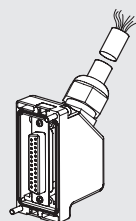
ACCESSORIES
⑭ 45° CONNECTOR KIT, 25 WIRES IP65


Code	Description	Weight [lb]
0226180107	45° connector kit, 25 wires IP 65	0.143

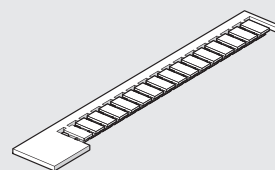
CABLES


Code	Description	Weight [lb]
0226107201	10-wire cable	0.130
0226107101	19-wire cable	0.269
0226107102	25-wire cable	0.287

Specify the number of inch desired.

PRE-WIRED 45° CONNECTOR KIT, 25 WIRES IP65


Code	Description	Weight [lb]
0226960100	Connector IP 65 + 25-wire 45° cable L = 35 inch	0.418
0226960250	Connector IP 65 + 25-wire 45° cable L = 99 inch	0.860
0226960500	Connector IP 65 + 25-wire 45° cable L = 197 inch	1.631

IDENTIFICATION PLATE KIT


Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTOR
25 PIN

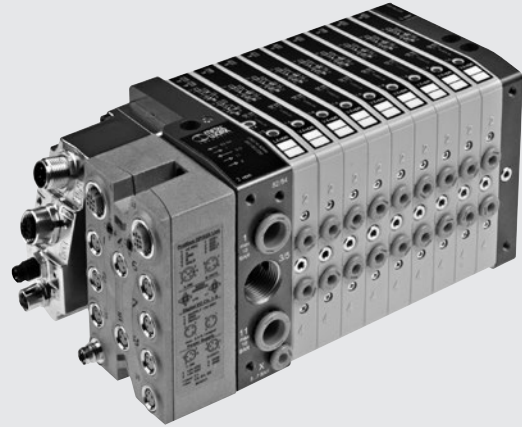
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	11	red/orange	21	blue/white
2	red/brown	12	light blue	22	brown
3	white/black	13	yellow/white	23	green/white
4	red/blue	14	yellow	24	red
5	black/orange	15	red/green	25	green/black
6	yellow/red	16	orange		
7	black/brown	17	orange/white		
8	white/red	18	green		
9	red/black	19	yellow/black		
10	brown/white	20	white		

HDM + B&R

An advanced field bus system interfacing with the Multimach world. B&R has developed a new standard for automation, called FORMULA X. For further details about features, functions and qualities of this system, reference must be made to the B&R documentation, also available on the web site www.br-automation.com

An overview is given below.

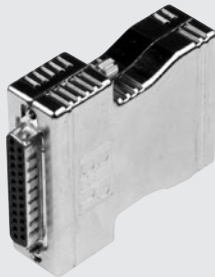
The X-system is a system handling analogue and digital inputs and outputs for local or remote use, which B&R defines as decentralised backplane. Different types of modules are available. We present those designed for connection with Multimach and HDM valve islands. We only indicate the B&R's code root, since each type of module comes in different variants, that differ by number of signals handled, that can be 8, 16 or 24, and by type of signal, that can be input, output or input/output indifferently. Common to all the modules is the presence of 4 connections: a signal input, a signal output for the following modules, a power input (24V DC), a power output for the following modules.



B&R CONNECTORS AND MODULES

IP20 7XV---50-11 SMART CONNECTOR

It is a plug connector with IP20 protection that contains the X system electronics. It can be connected with HDM islands, using the special input end-plate, type 1, code 0227301207U or the special input end-plate type 1-11, code 0227301206U.



IP67 7XV---50-51 SMART CONNECTOR

It is a plug connector with IP67 protection, that contains the X system electronics. It can be connected with HDM islands, using the special input end-plate type 1, code 0227301207U, or the special input end-plate, type 1-11 code 0227301206U.

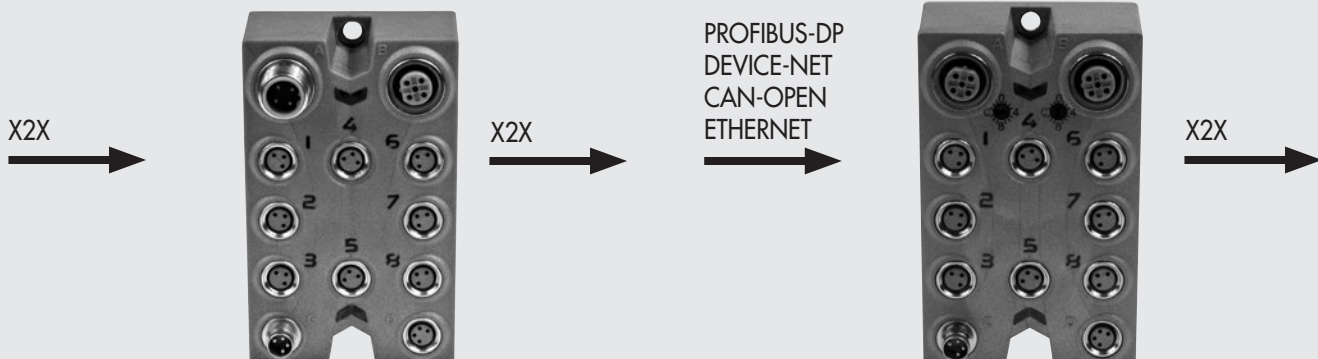


X67 I/O SYSTEM MODULES

These are modules with IP67 protection, connected to the X system, for handling inputs and outputs. It is interesting to note that their size is such that they can be fixed directly to the HDM input end-plate type 1-11, code 0227301206U
(N.B. NOT to be fixed to the HDM end-plate type 1, code 0227301207U).

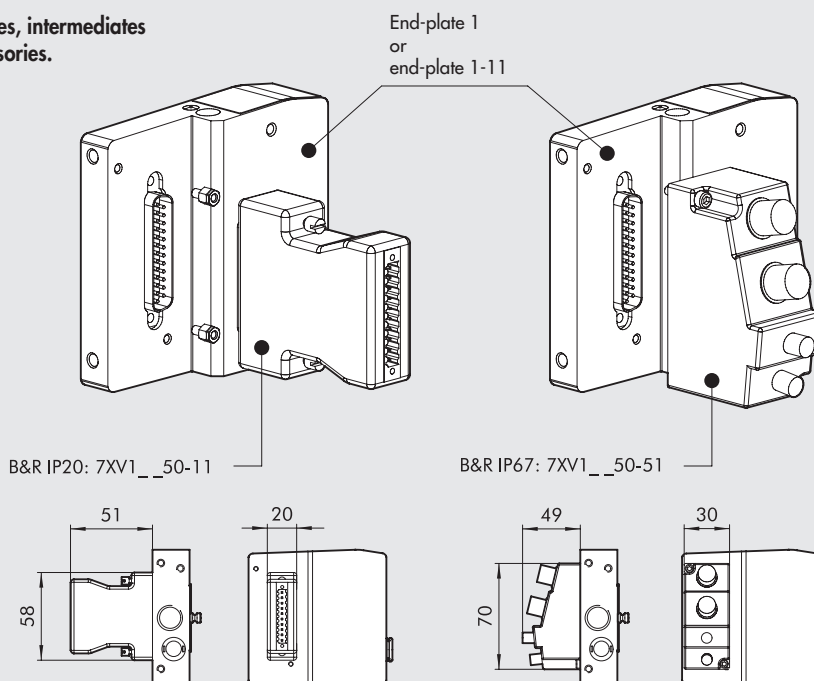
X67 BUS CONTROLLER MODULES

These are modules with protection IP67, receiving a signal according to one of the DP Profibus, CAN open, Device Net, Ethernet Powerlink protocols (the module code differs obviously according to the protocol being controlled). The output signal is according to the X-system. These are gateways converting the signals of a field bus into an X-system. These modules control the inputs and/or outputs via the M8 connectors provided. They can be fixed directly to the HDM input end-plate type 1-11, code 0227301206U
(N.B. NOT to be fixed to the HDM end-plate, type 1, code 0227301207U).

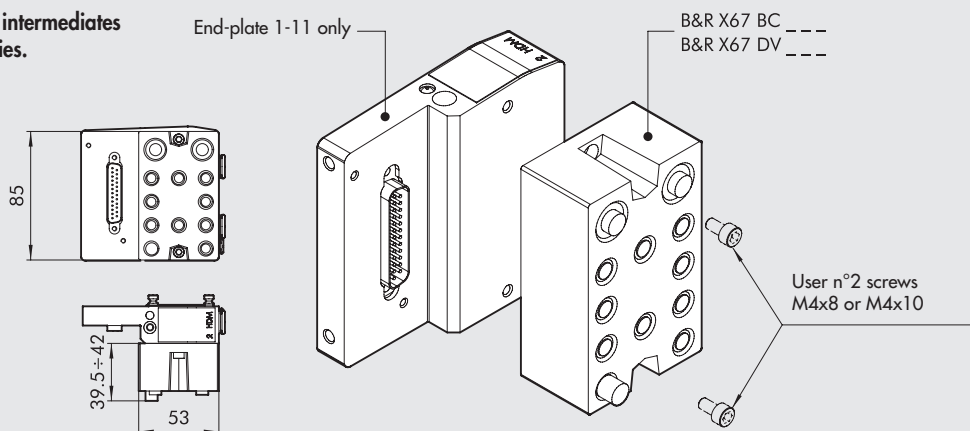


APPLICATIONS OF B&R MODULES TO HDM END-PLATES

Refer to page 1-203 for valves, intermediates elements and common accessories.



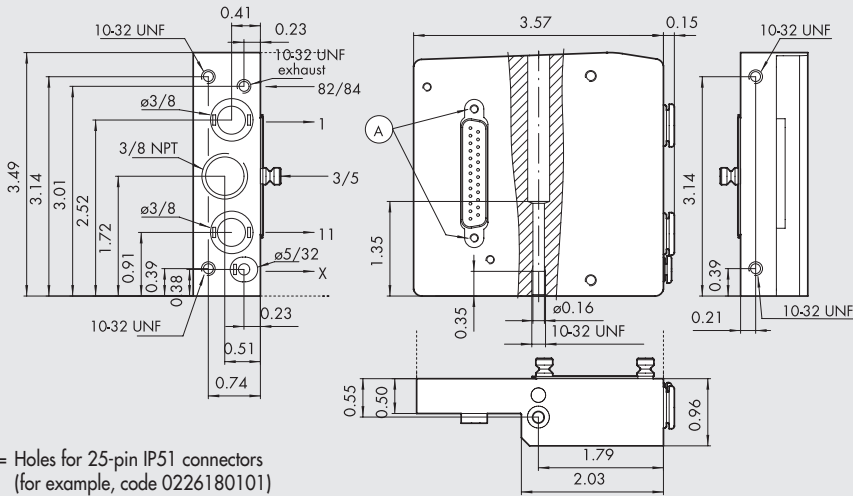
Refer to page 1-203 for valves, intermediates elements and common accessories.


KEY TO CODES

H D M VALVE	2 U INPUT END-PLATE	B & R ELECTRICAL BASE	M MANUAL TYPE	16 U - W 8 - W6 U - O 4 - L 8 - 5 TYPE OF VALVE	1 6 FURTHER DETAILS
Heavy duty Multimach IP65	2U End-plate 1-11 3U End-plate 1	B&R Fit for B&R	M Monostable manual control B Bistable manual control	I n° 2 3/2 NC W n° 2 3/2 NO L 3/2 NO + 3/2 NC V 5/2 monostable K 5/2 bistable O 5/3 monostable *F 5/2 monostable 4 Right-end-plate 1-11 pipe Ø1/2 5 Blind end-plate 6 Passing-intermediate 7 Blind intermediate 20 Exhaust section 4 Cartridge 5/32 6U Cartridge 1/4 8 Cartridge 5/16-0.55 in 85 Cartridge 5/16-0.9 in 10 Cartridge 3/8	16 n° 2 brackets for DIN bar

* Uses a single PIN (like the V) and occupies 2 signals.

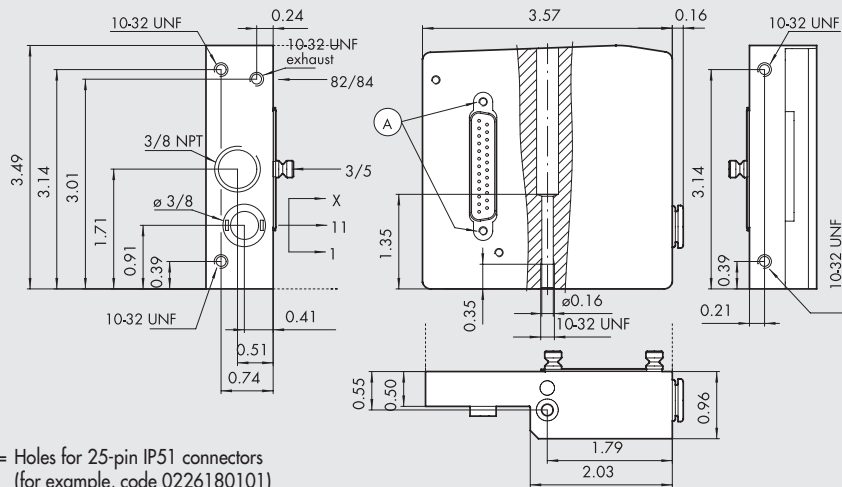
HDM 1-11 END-PLATE FOR B&R



Ⓐ = Holes for 25-pin IP51 connectors
(for example, code 0226180101)

Code	Description	Weight [lb]
0227301206U	HDM 1-11 end-plate kit for B&R	0.749

HDM 1 END-PLATE FOR B&R



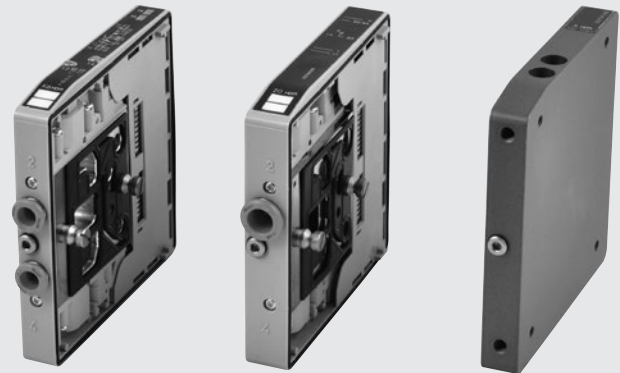
Ⓐ = Holes for 25-pin IP51 connectors
(for example, code 0226180101)

Code	Description	Weight [lb]
0227301207U	HDM 1 end-plate kit for B&R	0.837

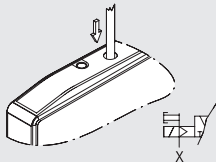
NOTES

HDM valve can be included in islands with any available input terminal.

Note: if you use valves 8S type or 10 exploiting their flow capacity, it is appropriate to choose the inlet end plate 1-11 type by feeding the pilots separately (to avoid the pressure to decrease too much on the pilots). If you use simultaneously more than one valve 8S or 10 it is necessary to potentiate the pneumatic feeding by inserting end plates having Ø 1/2 pipe and/or through intermediate modules



MANUAL CONTROLS

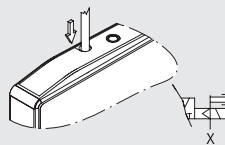
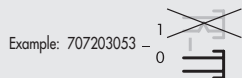


MONOSTABLE OVERRIDE PORT 2
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
 - The manual control returns to the home position.
 - Valves type I, W, L, V, F, and O reposition.
 - The type K valve remains switched

N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in 0 (2 for type F).

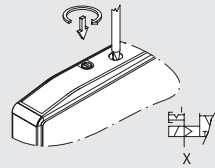


MONOSTABLE OVERRIDE PORT 4
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
 - The manual control returns to the home position.
 - Valves type I, W, L, V, F, and O reposition.
 - The type K valve remains switched

With type F and V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

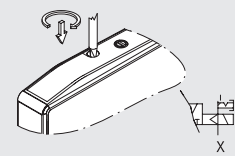
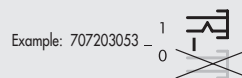


BISTABLE OVERRIDE PORT 2
servo-assisted

- Press the manual control right in then turn it clockwise 90 degrees and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
 - The manual control returns to the home position.
 - Valves type I, W, L, V, F, and O reposition.
 - The type K valve remains switched

N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in 1 (3 for type F).



BISTABLE OVERRIDE PORT 4
servo-assisted

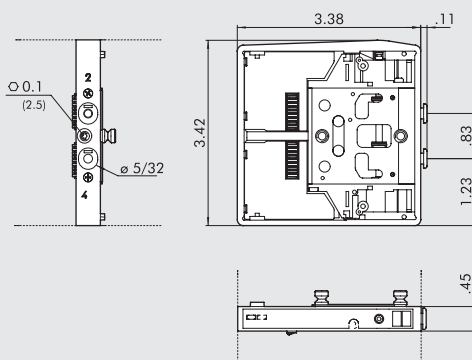
- Press the manual control right in then turn it 90 degrees clockwise and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
 - The manual control returns to the home position.
 - Valves type I, W, L and O reposition.
 - The type K valve remains switched

With type F and V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

① VALVE DIMENSIONS HDM Ø 4 (Ø 5/32)

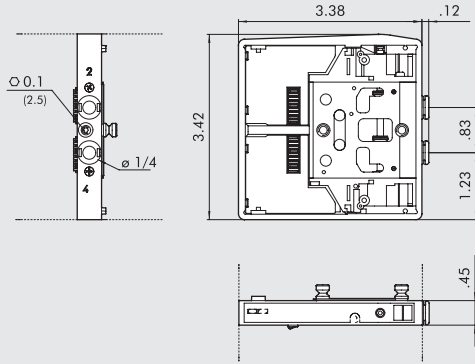
*uses a single PIN (like the V) and occupies 2 signals



Symbol	Code	Manual control	Weight [lb]
HDM I4	7071030530 7071030531	monostable bistable	0.286
HDM W4	7071030630 7071030631	monostable bistable	0.286
HDM L4	7071030730 7071030731	monostable bistable	0.286
HDM V4	7071030130 7071030131	monostable bistable	0.253
HDM *F4	7071030132 7071030133	monostable bistable	0.253
HDM K4	7071030110 7071030111	monostable bistable	0.286
HDM O4	7071030210 7071030211	monostable bistable	0.286

① VALVE DIMENSIONS HDM Ø 1/4

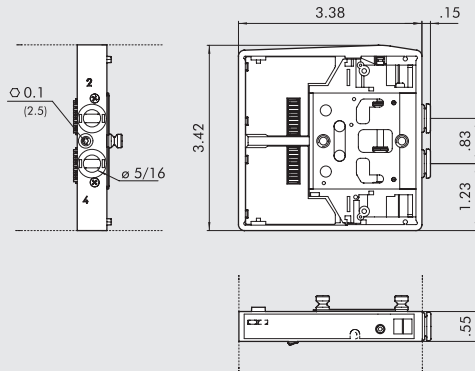
*uses a single PIN (like the V) and occupies 2 signals



Symbol	Code	Manual control	Weight [lb]
HDM I6	7072030530U	monostable	0.286
	7072030531U	bistable	
HDM W6	7072030630U	monostable	0.286
	7072030631U	bistable	
HDM L6	7072030730U	monostable	0.286
	7072030731U	bistable	
HDM V6	7072030130U	monostable	0.253
	7072030131U	bistable	
HDM *F6	7072030132U	monostable	0.253
	7072030133U	bistable	
HDM K6	7072030110U	monostable	0.286
	7072030111U	bistable	
HDM O6	7072030210U	monostable	0.286
	7072030211U	bistable	

① VALVE DIMENSIONS HDM Ø 8 (Ø 5/16)

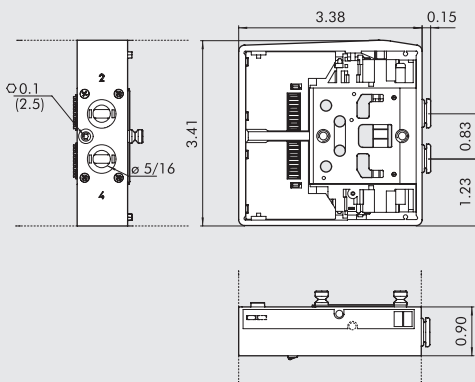
*uses a single PIN (like the V) and occupies 2 signals



Symbol	Code	Manual control	Weight [lb]
HDM I8	7073030530	monostable	0.308
	7073030531	bistable	
HDM W8	7073030630	monostable	0.308
	7073030631	bistable	
HDM L8	7073030730	monostable	0.308
	7073030731	bistable	
HDM V8	7073030130	monostable	0.286
	7073030131	bistable	
HDM *F8	7073030132	monostable	0.286
	7073030133	bistable	
HDM K8	7073030110	monostable	0.308
	7073030111	bistable	
HDM O8	7073030210	monostable	0.308
	7073030211	bistable	

① VALVE DIMENSIONS HDM Ø 8S (Ø 5/16)

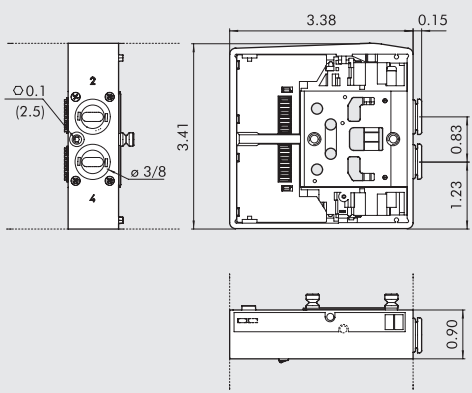
*uses a single PIN (like the V) and occupies 2 signals



Symbol	Code	Manual control	Weight [lb]
HDM I8S	7077030530	monostable	0.573
	7077030531	bistable	
HDM W8S	7077030630	monostable	0.573
	7077030631	bistable	
HDM L8S	7077030730	monostable	0.573
	7077030731	bistable	
HDM V8S	7077030130	monostable	0.531
	7077030131	bistable	
HDM *F8S	7077030132	monostable	0.531
	7077030133	bistable	
HDM K8S	7077030110	monostable	0.557
	7077030111	bistable	
HDM O8S	7077030210	monostable	0.577
	7077030211	bistable	

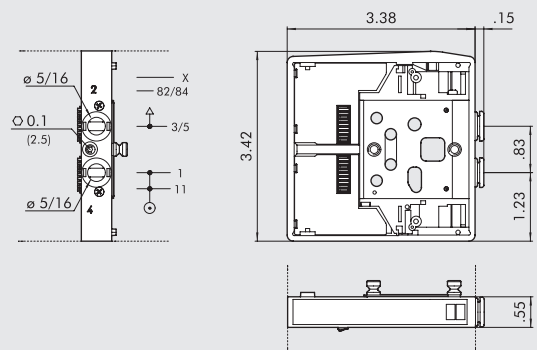
1 VALVE DIMENSIONS HDM Ø 3/8

*uses a single PIN (like the V) and occupies 2 signals



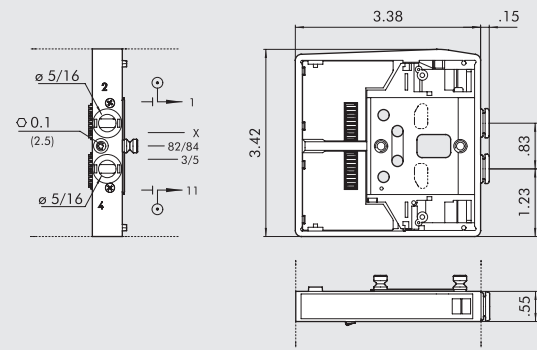
Symbol	Code	Manual control	Weight [lb]
HDM I10	7078030530U	monostable	0.551
	7078030531U	bistable	
HDM W10	7078030630U	monostable	0.551
	7078030631U	bistable	
HDM L10	7078030730U	monostable	0.551
	7078030731U	bistable	
HDM V10	7078030130U	monostable	0.510
	7078030131U	bistable	
HDM *F10	7078030132U	monostable	0.510
	7078030133U	bistable	
HDM K10	7078030110U	monostable	0.536
	7078030111U	bistable	
HDM O10	7078030210U	monostable	0.536
	7078030211U	bistable	

6 INTERMEDIATE THROUGH



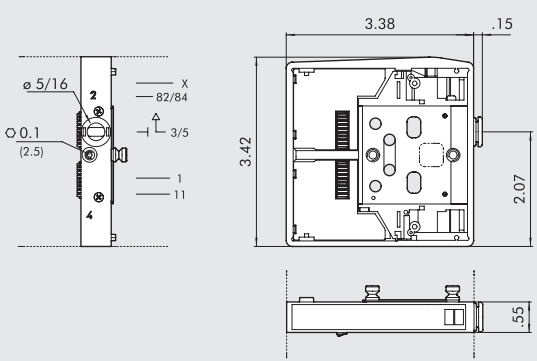
Code	Description	Weight [lb]
0227301301	Intermediate through HDM	0.264

7 INTERMEDIATE BLIND



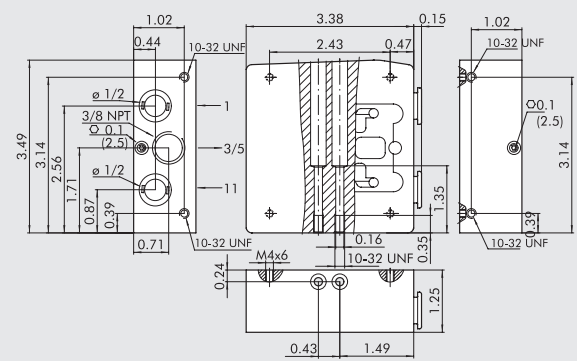
Code	Description	Weight [lb]
0227301302	Intermediate blind HDM	0.258

20 INTERMEDIATE EXHAUST SWITCH



Code	Description	Weight [lb]
0227301303	Intermediate exhaust switch HDM	0.275

4 RIGHT-END-PLATE 1-11 PIPE Ø 1/2

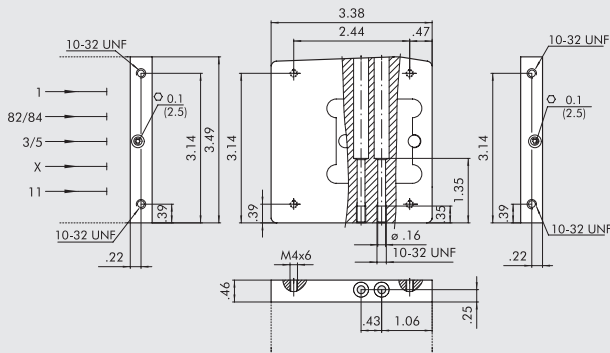


Code	Description	Weight [lb]
0227301221U	Right-end-plate HDM 1-11 Ø 1/2	1.38

This end-plate allows for supplies to be differentiated:

- Port 2
- Port 4

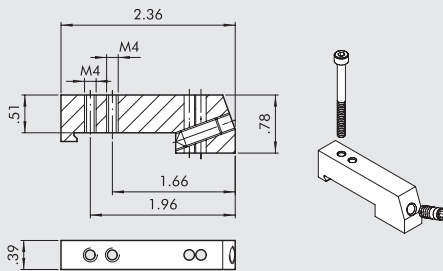
5 BLIND END-PLATE



Code	Description	Weight [lb]
0227301500U	Blind end-plate HDM	0.507

ACCESSORIES

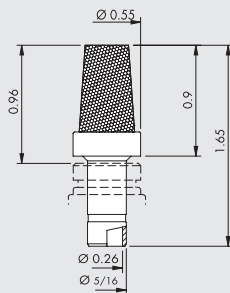
16 CONNECTION BRACKETS ON DIN BAR



Code	Description	Weight [lb]
0227301600	Connection brackets on din bar HDM/CM	0.066

Supplied complete with one M4x45 screws and one M6 grub screw
Individually packed

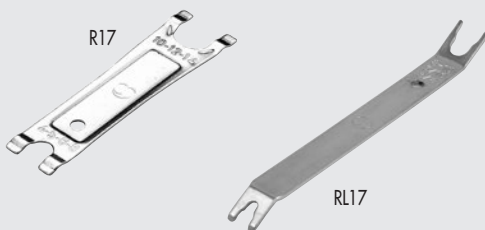
SILENCER FOR FITTING, Ø 5/16



Code	Description	Weight [lb]
W0970530084	Silencer for fitting, Ø 5/16	0.033

At the 3/5-exhaust port of the intermediate throughreference 6
and of the exhaust switch reference 20

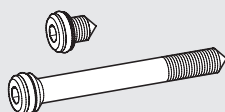
R17 - PIPE RELEASE SPANNER



Code	Rif.	Length [in]	Ø Tube
2L17001	RL17	5.51	from Ø 1/8 to Ø 3/8
2017001	R17	9.5	from Ø 5/32 to Ø 1/2

SPARES

GRUB SCREW KIT



Code	Description
0227301800	Grub screw for Multimach HDM/CM

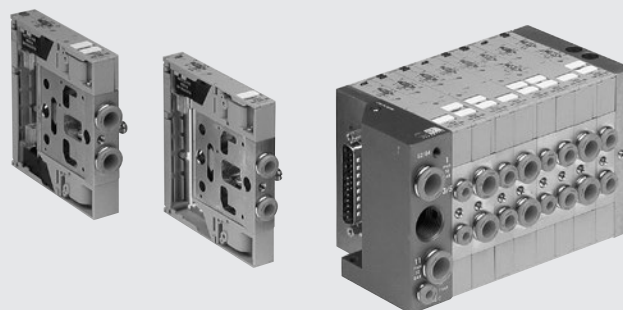
Comes in 1 + 1 pc. packs

Multimach is not a mere valve, it is an electropneumatic distribution "island" - a single block ready for connection to power and air delivery pipes and a multi-pin cable.

All the pneumatic connections are situated on one side with built-in push-in fittings. The user interface is on the other side so that the fitter or serviceman has everything within an easy reach: manual controls, active valve signalling lights, compressed air system diagram, valve identification plates.

The user can count on four different orientations for the electric connector. Multimach provides full flexibility in the application of valves: 1 to 24 valves, power plates and drain for pipes of various sizes, electric 9- or 25-pin plug connector. But the real novelty, is the possibility of mounting valves of different flow rates: three different valves can be mounted at a time and a valve can be replaced with another of a different flow rate. This revolutionary concept enables the user to optimise space and costs and adapt the unit to different performance requirements.

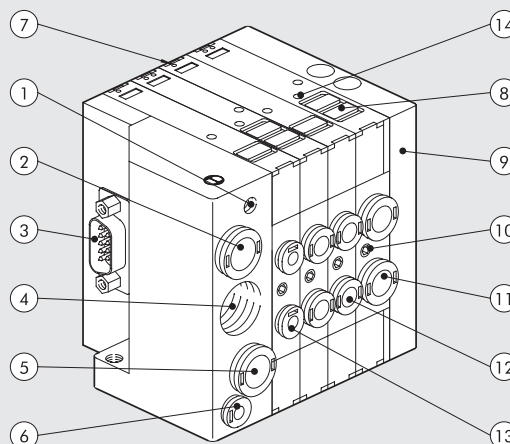
The ratio between the flow rate of the Multimach system and sizes is incomparable: the top in terms of miniaturisation and efficiency.



TECHNICAL DATA				
Valve port connections		Ø 5/32", 1/4", 5/16" automatic fitting for ports 2 and 4 / power supply port for Ø 5/16" or Ø 3/8" automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port		
Connection on the end-plate for the supply of pilots		Automatic fitting Ø 5/32"		
Operating temperature range	°F	14 to + 140		
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous		
Screw for valve - wall-mounting		According to the end-plate used: see page 1-208		
Flow rate at 87 psi ΔP 14.5 psi	scfm	Ø 5/32: 7, Cv .15	Ø 1/4: 17,6, Cv .4	Ø 5/16: 28, Cv .8
Voltage range		24 VDC ±10%		
Power	W	1.2		
Insulation class		F155		
Degree of protection		IP51		
Solenoid rating		100% ED		
Pressure range		X (pilot supply)		1-11 (valve supply)
	Terminal 1-11	psi		vacuum at 145 psi
	Terminal 1	psi	43.5 to 101.5	
	Terminal 1 reduced	psi	43.5 to 101.5	
TRA/TRR 2x3/2 monostable at 87 psi	ms		8 / 45	
TRA/TRR 5/2 monostable at 87 psi	ms		8 / 33	
TRA/TRR 5/2 bistable at 87 psi	ms		20 / 20	
TRA/TRR 5/3 cc monostable at 87 psi	ms		20 / 20	
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air. Please refer to page 5-2 of the technical documentation		
Compatibility with oils				

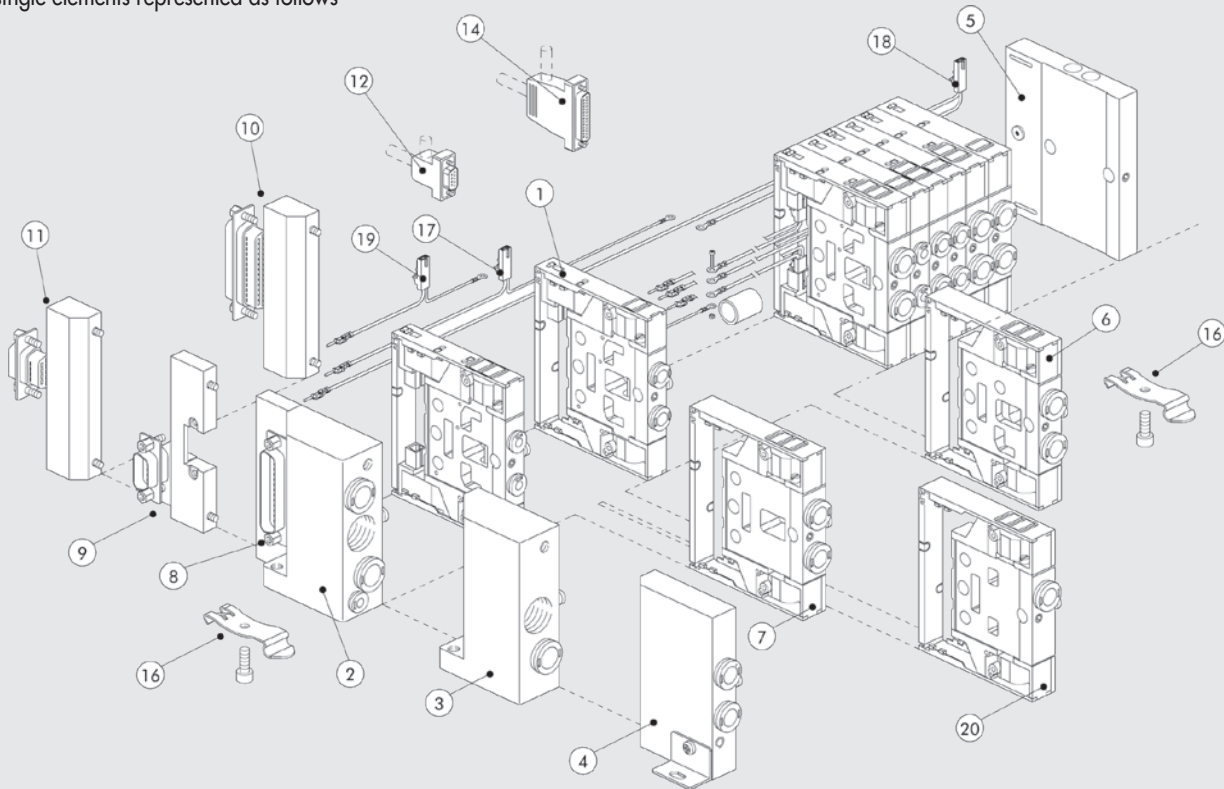
COMPONENTS

- ① Exhaust – Solenoid pilot
- ② Valve supply - port 1
- ③ Electrical multiple connection with 9 or 25 pins
- ④ Threaded connection of exhausts 3/5
- ⑤ Valve supply
- ⑥ Electrical control supply
- ⑦ LED (LED on, solenoid valve energised)
- ⑧ Removable identification labels
- ⑨ Blind end-plate
- ⑩ Screw for valve wall-mounting
- ⑪ Utility port for pipe Ø 5/16
- ⑫ Utility port for pipe Ø 1/4
- ⑬ Utility port for pipe Ø 5/32
- ⑭ Manual control

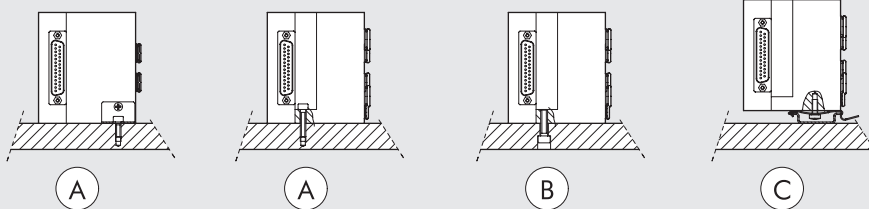


THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows



FIXING THE BASE

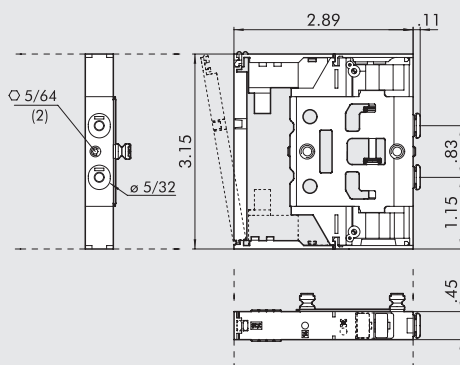


- Ⓐ Fixing with reduced end-plate 1, CODE 0227300300, supplied complete with bracket
 Ⓑ Fixing with end-plate 1-11 CODE 0227300200 or with end-plate CODE 0227300201
 Ⓒ Fixing with end-plate 1-11 CODE 0227300200 or with end-plate 1 CODE 0227300201 using the M4-thread found on the 10-32 UNF end-plate
 Ⓓ Fixing on the DIN bar with end-plate 1-11 CODE 0227300 using the reduced end-plate 1 CODE 0227300300 or end-plate CODE 0227300201 using the push-in bracket CODE 0227300600.

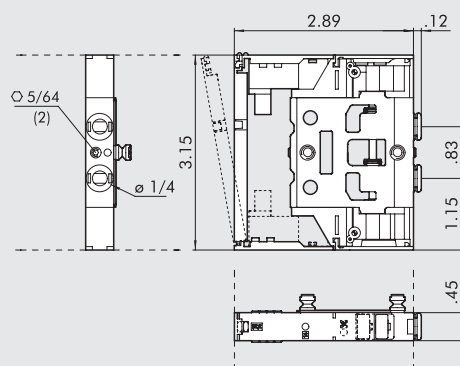
If you have to remove the base from the bar, this is rapid and can be performed without using any tools.

KEY TO CODES

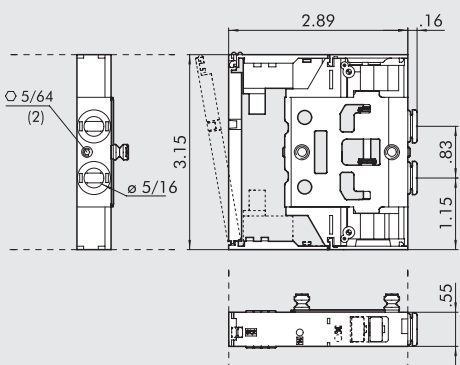
M 5 1 VALVE	2 INPUT END-PLATE	8 ELECTRICAL BASE	16U - W 8 - W 6U - O 4 - L 8 - 5U TYPE OF VALVE	1 2 - 1 4 FURTHER DETAILS
Multimach IP51	2U End-plate 1-11 3U End-plate 1 4U Reduced End-plate 1	8 Axial 25-wire connector base 9 Axial 9-wire connector base 10 25-wire rear connector base 11 9-wire rear connector base	I n° 2 3/2 NC W n° 2 3/2 NO L 3/2 NO + 3/2 NC V 5/2 monostable K 5/2 bistable O 5/3 monostable 5U Blind end-plate 6 Passing-intermediate 7 Blind intermediate 20 Exhaust section 4 Cartridge 5/32 6U Cartridge 1/4 8 Cartridge 5/16	12 9-wire connector 14 25-wire connector 16 Brackets for DIN bar

1 VALVE DIMENSIONS Ø 5/32


Symbol	Code	Manual control	Weight [lb]
I4	7068030532	monostable	0.260
W4	7068030632	monostable	0.260
L4	7068030732	monostable	0.260
V4	7068030132	monostable	0.220
K4	7068030112	monostable	0.251
O4	7068030212	monostable	0.253

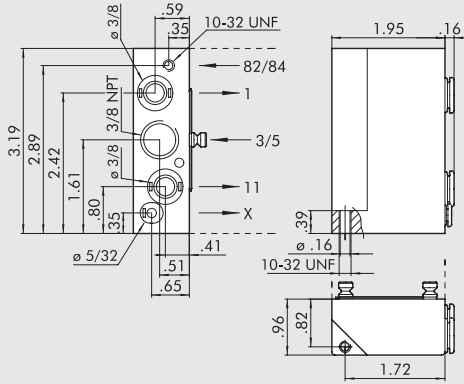
1 VALVE DIMENSIONS Ø 1/4


Symbol	Code	Manual control	Weight [lb]
I6U	7069030532U	monostable	0.243
W6U	7069030632U	monostable	0.243
L6U	7069030732U	monostable	0.243
V6U	7069030132U	monostable	0.200
K6U	7069030112U	monostable	0.236
O6U	7069030212U	monostable	0.238

1 VALVE DIMENSIONS Ø 5/16


Symbol	Code	Manual control	Weight [lb]
I8	7070030532	monostable	0.273
W8	7070030632	monostable	0.273
L8	7070030732	monostable	0.273
V8	7070030132	monostable	0.232
K8	7070030112	monostable	0.265
O8	7070030212	monostable	0.267

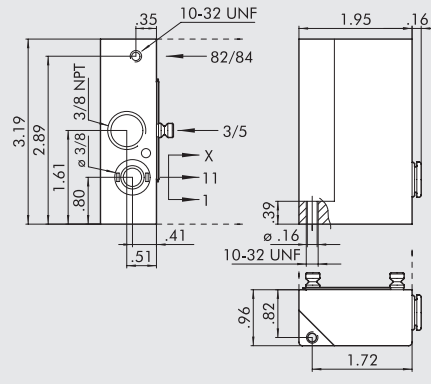
2U END-PLATE 1-11



Code	Description	Weight [lb]
0227300200U	End-plate kit 1-11	0.492

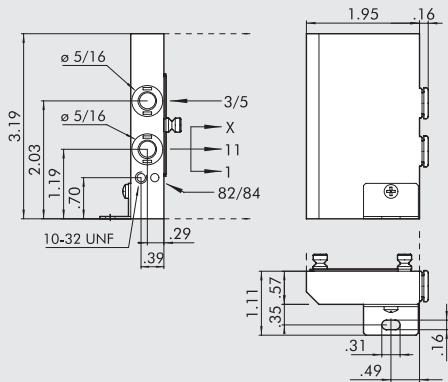
This end-plate allows for supplies to be differentiated: port 2, port 4 and pilot supply

3U END-PLATE 1



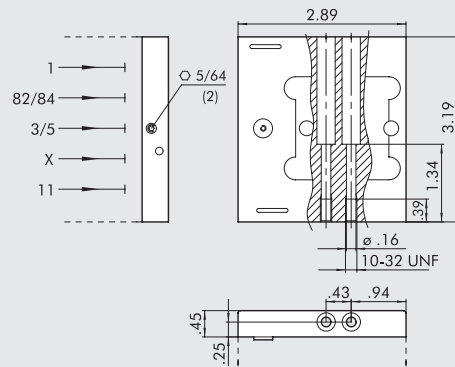
Code	Description	Weight [lb]
0227300201U	End-plate kit 1	0.494

4U REDUCED END-PLATE 1



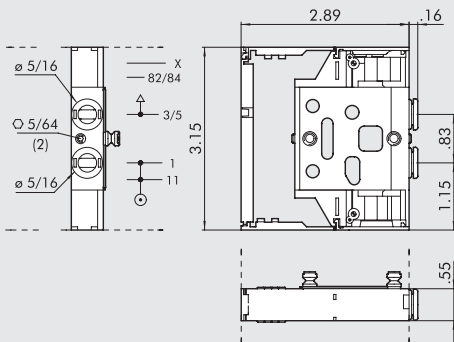
Code	Description	Weight [lb]
0227300300U	Reduced end-plate kit 1	0.326

5U BLIND END-PLATE



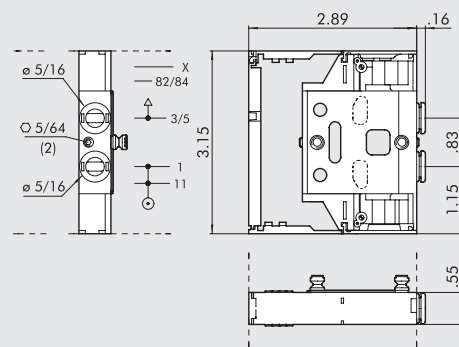
Code	Description	Weight [lb]
0227300500U	Blind end-plate	0.370

6 INTERMEDIATE THROUGH

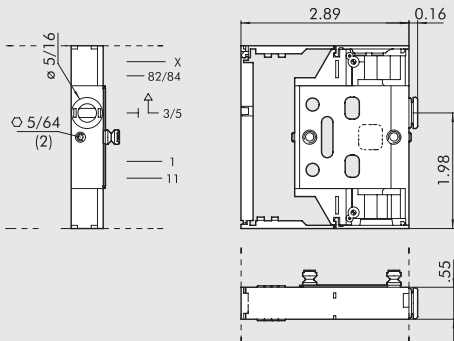


Code	Description	Weight [lb]
0227300301	Intermediate through	0.203

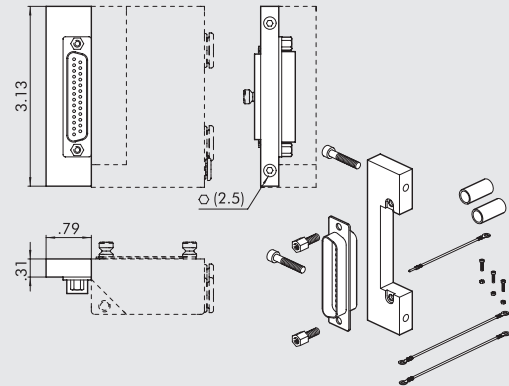
7 INTERMEDIATE BLIND



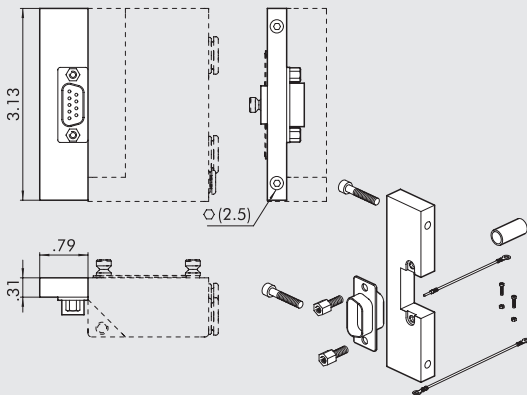
Code	Description	Weight [lb]
0227300302	Intermediate blind	0.196

20 INTERMEDIATE EXHAUST SWITCH


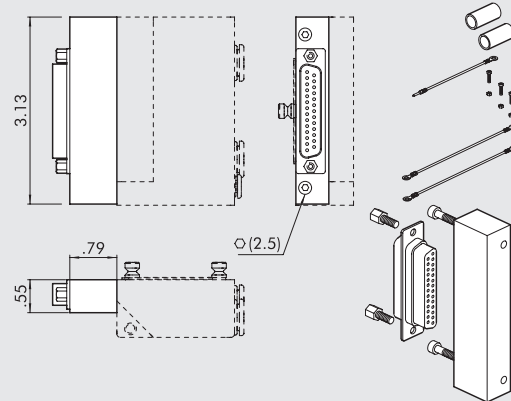
Code	Description	Weight [lb]
0227300303	Intermediate exhaust switch	0.209

8 AXIAL CONNECTOR BASE, 25 WIRES


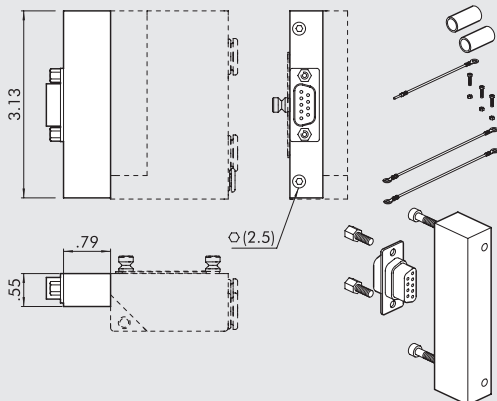
Code	Description	Weight [lb]
0226180001	Axial connector base kit, 25 wires	0.119

9 AXIAL CONNECTOR BASE, 9 WIRES


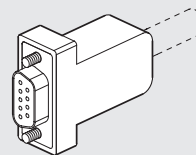
Code	Description	Weight [lb]
0226180002	Axial connector base kit, 9 wires	0.112

10 REAR CONNECTOR BASE, 25 WIRES


Code	Description	Weight [lb]
0226180003	Rear connector base kit, 25 wires	0.161

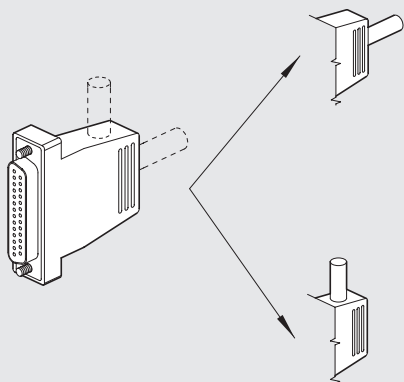
11 REAR CONNECTOR BASE, 9 WIRES


Code	Description	Weight [lb]
0226180004	Rear connector base kit, 9 wires	0.170

12 STRAIGHT CONNECTOR KIT, 9 WIRES


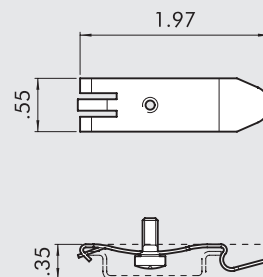
Code	Description	Weight [lb]
0226180102	Straight connector kit, 9 wires	0.044

14 STRAIGHT AND 90° CONNECTOR KIT, 25 WIRES



Code	Description	Weight [lb]
0226180101	Straight and 90° connector kit, 25 wires	0.106

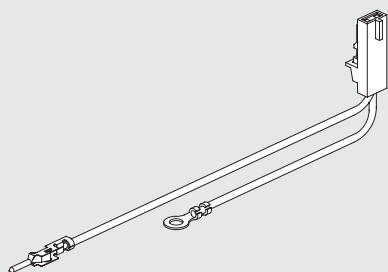
16 CONNECTION BRACKETS ON THE BAR OMEGA (DIN EN 50022)



Code	Description	Weight [lb]
0227300600	Connection brackets on din bar	0.017

Individually packed

17 18 19 CONNECTOR KIT + WIRE



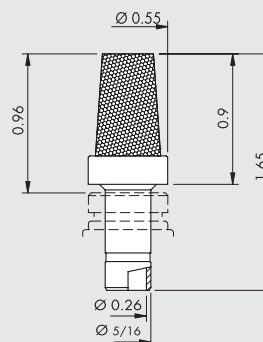
Code	Description	Weight [lb]
0226180399	Connector kit + wire 1-6*	0.007
0226180400	Connector kit + wire 7-12**	0.009
0226180401	Connector kit + wire 13-30***	0.011

* For valve connection from 1st to 6th position counting from the connector

** For valve connection from 7th to 12th position, counting from the connector

*** For valve connection from 13th to 30th position, counting from the connector

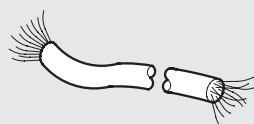
SILENCER FOR FITTING, Ø 5/16



Code	Description	Weight [lb]
W0970530084	Silencer for fitting, Ø 5/16	0.033

At the 3/5-exhaust part of the reduced end-plate 1 ref. 4
and of the intermediate through of the exhaust switch ref. 20

CABLES

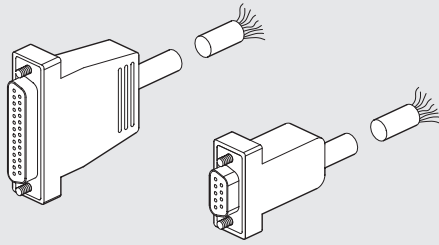


Cod.	Description	Weight [lb]
0226107201	10-wire cable	0.190
0226107101	19-wire cable	0.269
0226107102	25-wire cable	0.287

Specify the number of metres desired

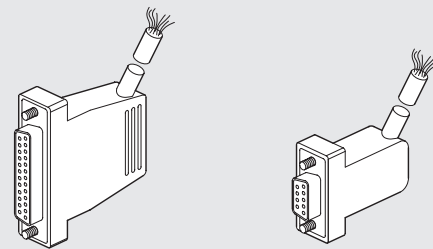
NOTES

STRAIGHT PRE-WIRED CONNECTOR KIT



Code	Description	Weight [lb]
0226900100	Straight D-Sub 9-PIN connector + cable L = 35 inch	0.17
0226900250	Straight D-Sub 9-PIN connector + cable L = 99 inch	0.37
0226900500	Straight D-Sub 9-PIN connector + cable L = 197 inch	0.70
0226900750	Straight D-Sub 9-PIN connector + cable L = 295 inch	1.03
0226901000	Straight D-Sub 9-PIN connector + cable L = 394 inch	1.36
0226901500	Straight D-Sub 9-PIN connector + cable L = 590 inch	2.02
0226902000	Straight D-Sub 9-PIN connector + cable L = 788 inch	2.70
0226905000	Straight D-Sub 9-PIN connector + cable L = 1968 inch	6.65
0226920100	Straight D-Sub 25-PIN connector + cable L = 35 inch	0.30
0226920250	Straight D-Sub 25-PIN connector + cable L = 99 inch	0.70
0226920500	Straight D-Sub 25-PIN connector + cable L = 197 inch	1.40

PRE-WIRED 90° CONNECTOR

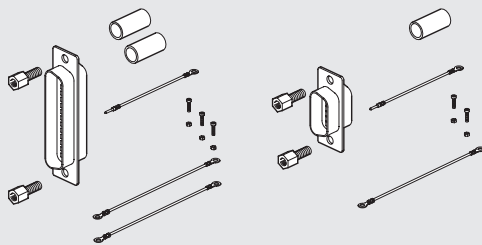


Code	Description	Weight [lb]
0226910100	90° D-Sub 9-PIN connector + cable L = 35 inch	0.17
0226910250	90° D-Sub 9-PIN connector + cable L = 99 inch	0.37
0226910500	90° D-Sub 9-PIN connector + cable L = 197 inch	0.70
0226910750	90° D-Sub 9-PIN connector + cable L = 295 inch	1.03
0226911000	90° D-Sub 9-PIN connector + cable L = 394 inch	1.36
0226911500	90° D-Sub 9-PIN connector + cable L = 590 inch	2.02
0226930100	90° D-Sub 25-PIN connector + cable L = 35 inch	0.30
0226930250	90° D-Sub 25-PIN connector + cable L = 99 inch	0.70
0226930500	90° D-Sub 25-PIN connector + cable L = 197 inch	1.40

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS

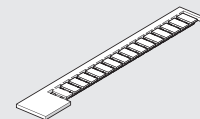
25 PIN				9 PIN			
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	10	brown/white	19	yellow/black	1	green/black
2	red/brown	11	red/orange	20	white	2	white
3	white/black	12	light blue	21	blue/white	3	blue/black
4	red/blue	13	yellow/white	22	brown	4	blue
5	black/orange	14	yellow	23	green/white	5	yellow/black
6	yellow/red	15	red/green	24	red	6	yellow
7	black/brown	16	orange	25	green/black	7	red/black
8	white/red	17	orange/white			8	green
9	red/black	18	green			9	white/black

MALE CONNECTOR KIT + CONTACTS + COMMON TERMINAL



Code	Description
0226180201	Male connector kit - 25 pins
0226180202	Male connector kit - 9 pins

IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit
Comes in 16-pc. packs	

GRUB SCREW

Code	Description
0227300800	Grub screw for Multimach
Comes in 10-pc. pack	

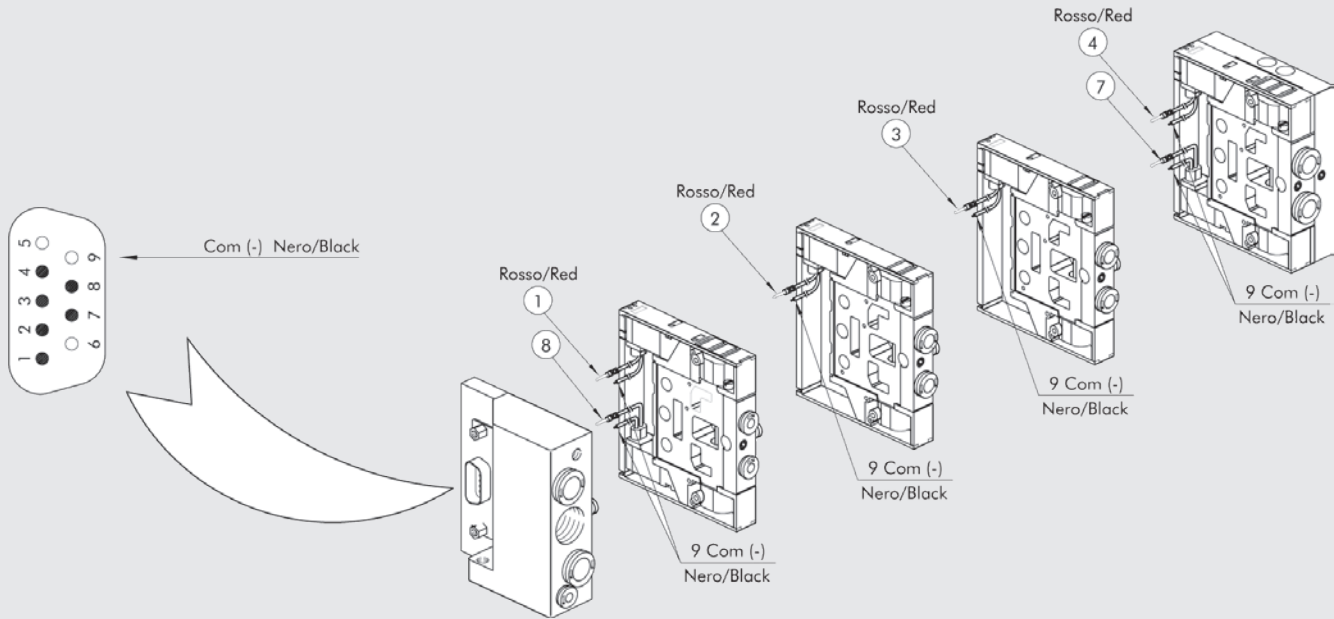
R17 - PIPE RELEASE SPANNER

Lenght = 5.51 in

Code	Description	Ø Tube
2L17001	RL17	from Ø 1/8 to Ø 3/8

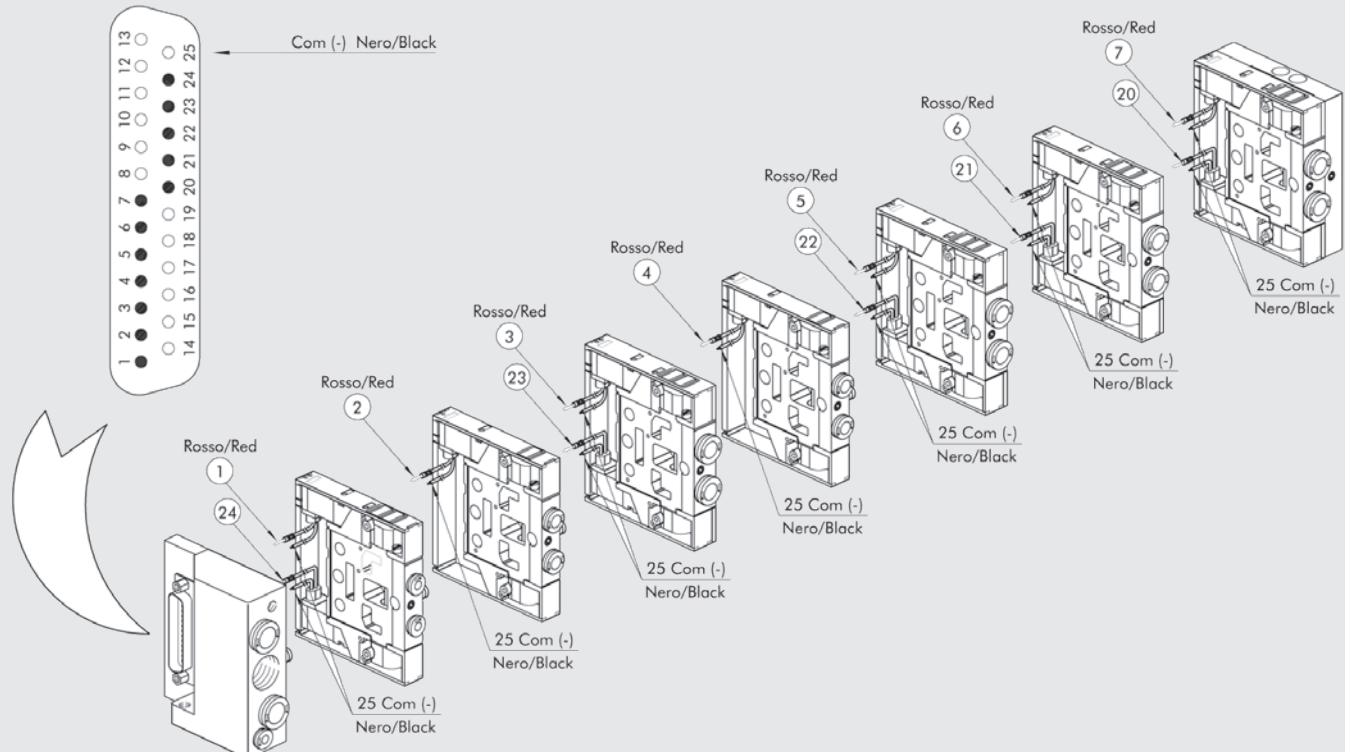
WIRING DIAGRAM OF THE 9-PIN CONNECTOR

Note: available with positive common wire on request.



WIRING DIAGRAM OF THE 25-PIN CONNECTOR

Note: available with positive common wire on request.



AIR PREP

● SYNTESI	PAGE	2-2
● BIT	PAGE	2-57
● SKILLAIR	PAGE	2-82
● NEW DEAL	PAGE	2-140
● ONE	PAGE	2-177
● PRECISION REGULATION AND PRESSURE CONTROL	PAGE	2-191

● INTRODUCTION

PAGE 2-4

● Syntesi® KEY TO CODES

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● Syntesi® FILTER

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● Syntesi® DEPURATOR

PAGE 2-12



● Syntesi® ACTIVE CARBON FILTER

PAGE 2-15



● Syntesi® REGULATOR

PAGE 2-18



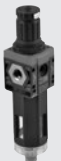
● Syntesi® IN-SERIES REGULATOR

PAGE 2-21



● Syntesi® FILTER-REGULATOR

PAGE 2-24



● Syntesi® LUBRICATOR

PAGE 2-29



● Syntesi® SHUT-OFF VALVE

PAGE 2-32





● Syntesi® PROGRESSIVE STARTER

PAGE 2-35



● Syntesi® PRESSURE SWITCHES

PAGE 2-37



● Syntesi® AIR TAKE-OFF

PAGE 2-39



● Syntesi® FR+LUB

PAGE 2-41



● Syntesi® V3V+FR+LUB

PAGE 2-44



● Syntesi® FIL+DEP

PAGE 2-47



● Syntesi® FIL+LUB

PAGE 2-49

● Syntesi® ACCESSORIES

PAGE 2-51

● Syntesi® SPARE PARTS


PAGE 2-54

AIR TREATMENT UNIT Syntesi®

Syntesi® is an important milestone achieved by Metal Work, the result of thirty years' experience producing air-treatment units. It has been studied in minute detail to obtain the best possible performance in a reduced space and with limited weight. The capacity is much higher than that of other units of the same size.

This modular unit features a very simple yet effective system that requires no brackets, stay bolts or yoke for assembling the elements. The basic version of Syntesi® incorporates numerous functions that are not provided or are only optional with traditional units. Examples are padlockable knobs, additional pneumatic ports on the front and back, flow options from left to right or vice versa, regulators with compensation system - which are accurate even when the upstream pressure changes, with rapid downstream pressure relief - full indelible marking, automatic condensate drain even in size 1, and 360° visual inspection of oil and condensate levels. The basic materials, technopolymer and nickel-plated brass have excellent corrosion resistance. An anti-corrosion version is available with stainless steel components (screws, plates) or Geomet®-treated ones (regulator springs).

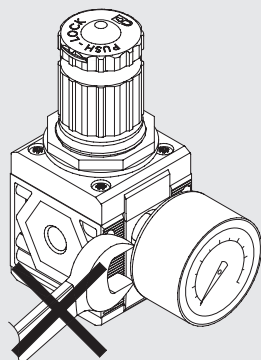


TECHNICAL DATA	SIZE 1			SIZE 2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Max. input pressure		15 bar				13 bar	
		1.5 MPa				1.3 MPa	
		217 psi				188 psi	
Flow rate	See catalogue of the various elements						
Min/max temperature at 10 bar; 1 MPa; 145 psi	from -10 to +50 °C			from -10 to +50 °C			
	from 14 to +122 °F			from 14 to +122 °F			
Padlockable knob	The knobs of the regulators, filter regulators and standard sectioning valves can all be padlocked						
Fluid	Compressed air or other inert gases						
Mounting position	See catalogue of the various elements						
Direction of flow	Flow options right to left or vice versa						
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear, on all modules			1/4" BSPP, front and rear, on all modules			
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			
Certification for potentially explosive atmosphere according to ATEX 2014/34/EU rule				 II 3G Ex h IIC T5 Gc -10°C < Ta < 50°C II 3D Ex h IIIC T100 °C Dc			

ANTI-CORROSION VERSION

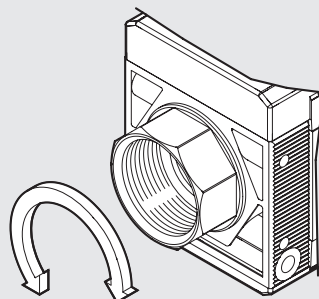
- Differences compared to the standard version:
- stainless steel screws
 - stainless steel plate for R, FR, V3V knobs
 - Geomet®-treated regulator spring and filter-regulator

FIXING TO FRONT PORTS



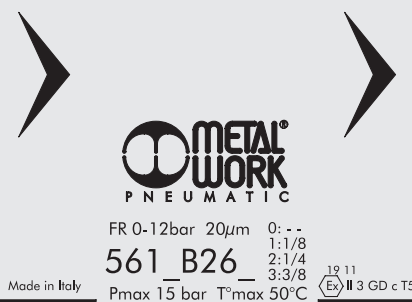
Do not use a spanner for fixing taper threaded elements to the front ports. Mount by hand and apply a liquid sealant (not teflon®).

ROTARY BUSHINGS



3/4" NPT and 1" NPT bushings in Size 2 rotate freely to facilitate assembly operations.

LASER MARKING

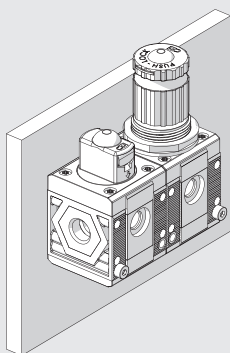


The following is marked indelibly on the body:

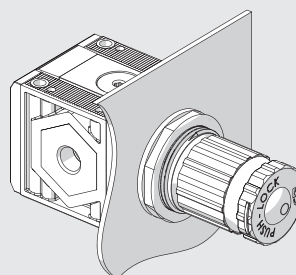
- Metal Work trademark
- Code
- Maximum pressure and temperature
- Degree of filtration or pressure range, where relevant
- Week and year of manufacture
- Atex category
- Made in Italy

MOUNTING OPTIONS

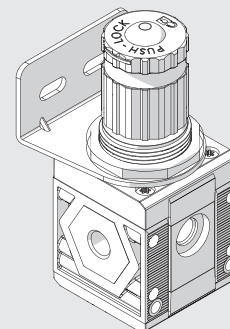
On the wall, using two screws



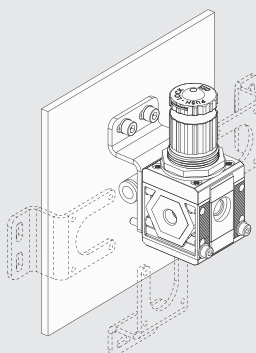
On a panel



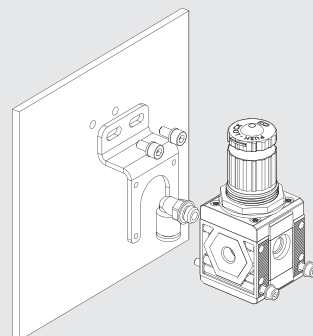
Using knob bracket



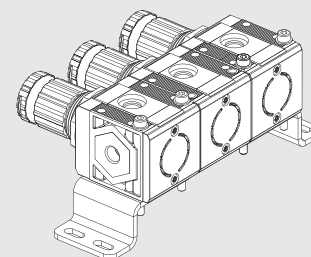
Using a bracket

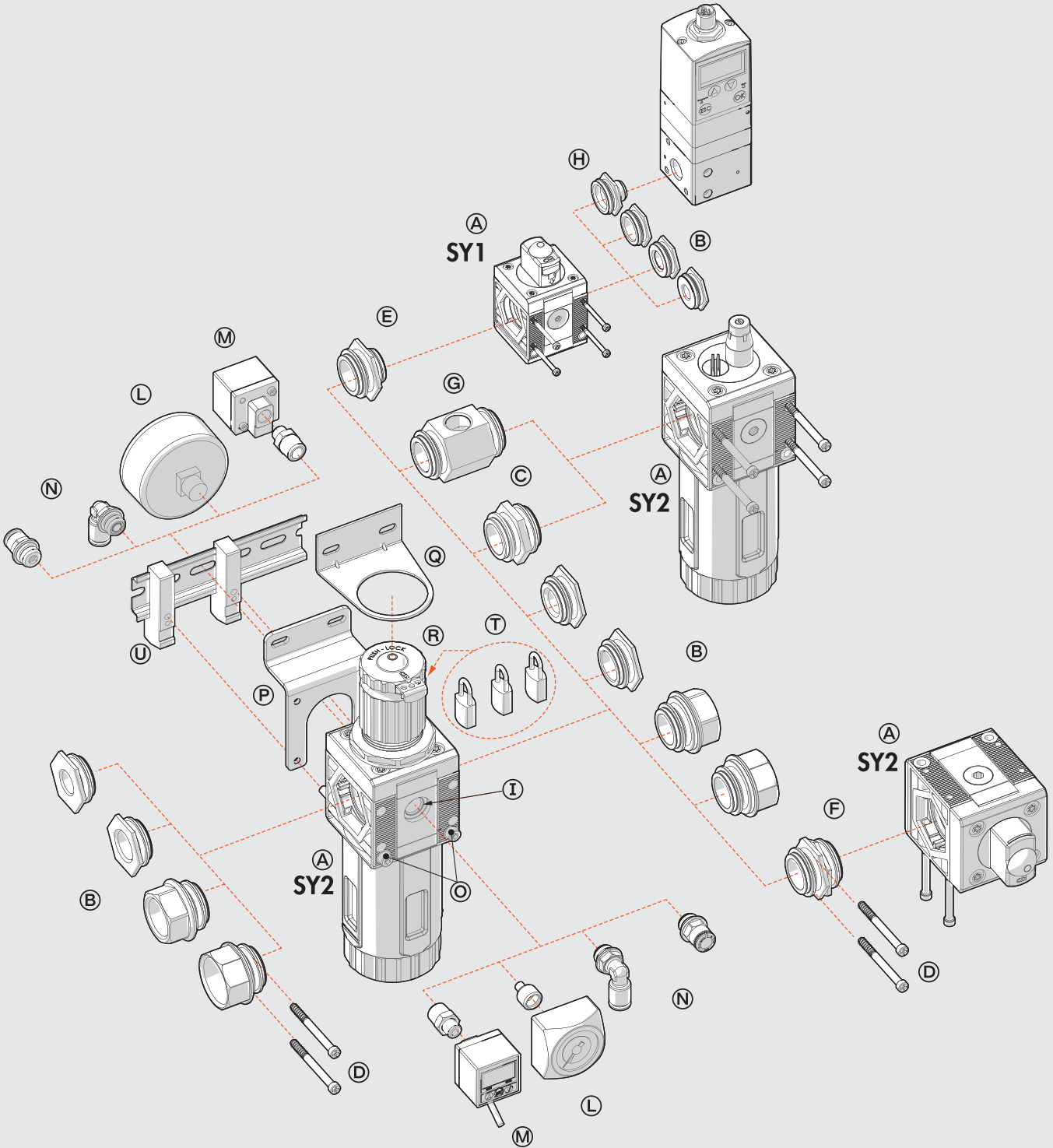


The bracket can be secured in any position



The fittings can be mounted on the pressure gauge air intake at the back of the unit.





The various elements of Syntesi® ④ can be connected to the air feed and delivery circuit using pneumatic nickel brass or passivated aluminium ports ⑤ and can be fixed together using nipples ⑥.

The nipples and ports are easy to remove by unscrewing the two front screws ⑦. This solution has numerous advantages:

- Reduced overall dimensions.
- Free composition of multiple elements, without the need for brackets, stay bolts or yoke.
- The threads for the fittings are metallic, allowing high tightening torques, also for tapered threads.
- Maximum flexibility: a unit can be transformed at any time by adding an element or replacing a port with another one, e.g. 1/4" NPT instead of 1/8" NPT.
- The air intake port can be the same or different from the outlet port, as desired.

Standard Syntesi® ports are: 1/8" NPT, 1/4" NPT, 3/8" NPT for size 1; 3/8" NPT, 1/2" NPT, 3/4" NPT, 1" NPT for size 2.

It may be necessary to use a vice to insert the bushes into size 2.

The nipples have different functions:

- Nipple ⑥ joins two elements of the same size together.
- Size adaptor ⑧ can be used to connect an element in the Syntesi® 2 series with one in the Syntesi® 1 series.
- The 90° adaptor ⑨ can be used to connect two 90° angled elements. For example, it can help directing the regulator knob or the control knob of a sectioning valve towards the user.
- The two-way air intake ⑩ is a simple and cost-effective system which, besides connecting two elements together, has 2 opposing threaded air intakes.
- The adaptor for Regtronic ⑪ can be used to fix the Regtronic 1/4" BSPP proportional valve to a Syntesi® size 1 element.

Additional ports ⑫. On the front and back of ALL Syntesi® elements there is a port (1/8" BSPP for size 1, 1/4" BSPP for size 2) that can be used for pressure gauges ⑬, pressure switches ⑭ or, given the high flow rate, as additional air take-off ⑮. These ports are downstream of the element, so, for example, a regulator port can supply air at a set pressure or a filter port can supply filtered air (not valid for activated carbon filter and depurator).

Wall fixing. Only two through screws ⑯ are needed. No bulky brackets or additional flanges are required. The bracket ⑰ can be used to separate the unit from the fixing wall, e.g. to mount a fitting to the rear port.

Fixing on a DIN EN50022 bar. Can be done using the bracket kit ⑱.

Regulator fixing bracket ⑲. Regulators and filter-regulators can also be fixed using a steel bracket ⑲ that embraces the bell.

Padlockable knob ⑲. The knobs of regulators, filter-regulator and sectioning valves can all be padlocked. The steel plate is included in the supply. You can insert up to two 3 mm diameter padlocks ⑲ on size 1 and three padlocks on size 2. As an alternative, the sectioning valve can have a steel plate suitable for a single 6 mm diameter padlock.

KEY TO CODES SINGLE ELEMENT

5U	1	1	F	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi 5Z Syntesi anti-corrosion NPT	1 Size 1 <hr/> 2 Size 2	0 Without bushing 1 1/8" port 2 1/4" port 3 3/8" port <hr/> 0 Without bushing 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter-regulator L Lubricator ● V Shut off valve ▲ A Progressive starter ▲ S Pressure switches P Air take-off	Varies from element to element	0 Without bushing 1 1/8" port 2 1/4" port 3 3/8" port <hr/> 0 Without bushing 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port

- The anti-corrosion version of this element is only available in manual or pneumatic type.
- ▲ Not available in the anti-corrosion version.

KEY TO CODES UNIT COMPOSED OF TWO OR THREE ELEMENTS

5U	1	1	V	10	B	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT 1	TYPE	ELEMENT 2	TYPE	ELEMENT 3	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi 5Z Syntesi anti-corrosion NPT	1 Size 1 <hr/> 2 Size 2	1 1/8" port 2 1/4" port 3 3/8" port <hr/> 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter-regulator L Lubricator ● V Shut off valve ▲ A Progressive starter ▲ S Pressure switches P Air Take-off	Varies from element to element	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter-regulator L Lubricator ● V Shut off valve ▲ A Progressive starter ▲ S Pressure switches P Air Take-off	Varies from element to element	F Filter D Depurator C Active carbon filter R Pressure regulator B Filter-regulator L Lubricator ● V Shut off valve ▲ A Progressive starter ▲ S Pressure switches P Air Take-off	Varies from element to element	1 1/8" port 2 1/4" port 3 3/8" port <hr/> 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port

- The anti-corrosion version of this element is only available with manual actuation.
- ▲ Not available in the anti-corrosion version.

The job of the filter is to retain liquid or solid impurities present in the compressed air. The incoming air is moved by the centrifuge unit, so that liquid particles, which are heavier, are projected against the walls of the container and force to adhere to it. As they accumulate, they create drops that deposit on the bottom by gravity. The remaining solid particles are held back by the porous filtering element. The condensate is maintained in a quiet state to prevent the deposited impurities from re-entering the circulation. The condensate drains out through the drain cock provided. The RMSA drain discharges when the pressure in the filter drops to zero. Alternatively the condensate can be drained by hand by pressing the button. The RA drain discharges condensate from the container automatically whenever necessary, regardless of the pressure level. The SAC tap drains the condensate only as the result of sudden changes in compressed air requests.

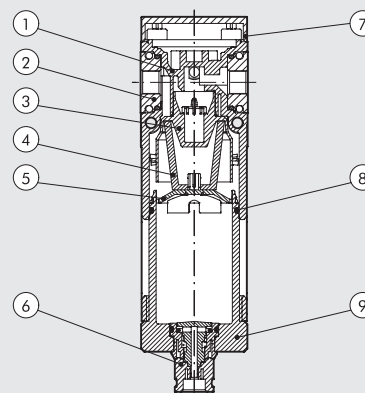


On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP for size 2) that can be used with pressure gauges, pressure switches or as an additional filtered air intake.

TECHNICAL DATA	FIL SY1			FIL SY2						
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT			
Threaded port										
Degree of filtration	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.4 white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.4 blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.4									
Max. input pressure	bar			13						
	MPa			1.3						
	psi			188						
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	900	1200	1300	3400	3800	3800			
	scfm	32	42	46	120	135	135			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1300	1650	1750	4500	5200	5200			
	scfm	46	58	62	159	184	184			
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C			From -10 to +50						
	°F			From 14 to +122						
Weight	Pounds			0.40	0.38	0.36	1.08	1.02	1.01	0.98
Condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs. Note: the maximum input pressure for the RA version must not exceed 145 psi Compressed air or other inert gases									
Fluid										
Condensate bowl capacity	fluid ounce oz			2.37						
Mounting position	Vertical			Vertical						
Port for additional air take-off	1/8" BSPP, front and rear			1/4" BSPP, front and rear						
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min			1500						
	scfm			53						
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2						

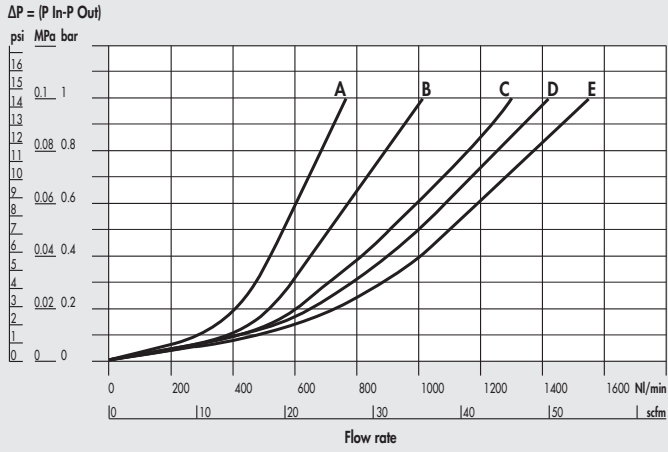
COMPONENTS

- ① Technopolymer filter body
- ② IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ③ Technopolymer centrifuge
- ④ Sintered HDPE filter cartridge
- ⑤ Technopolymer screen
- ⑥ Drain (RMSA)
- ⑦ Technopolymer plate
- ⑧ NBR o-ring gaskets
- ⑨ Clear technopolymer bowl

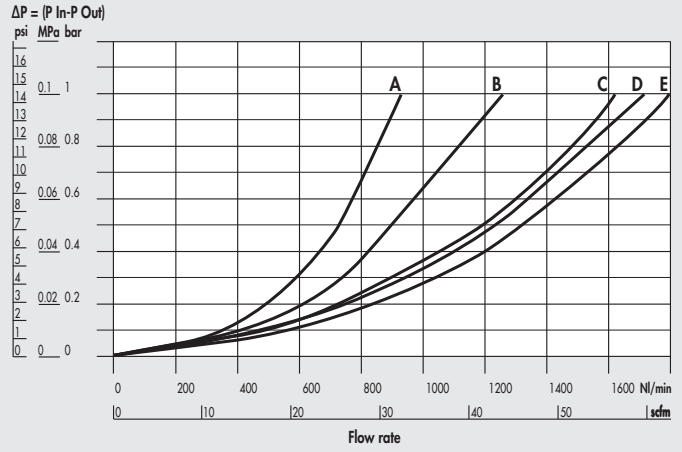


FLOW CHARTS

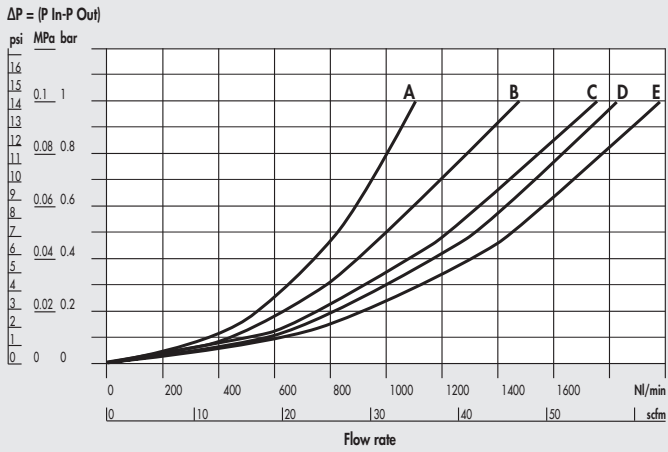
FIL Syntesi® SY1 1/8"



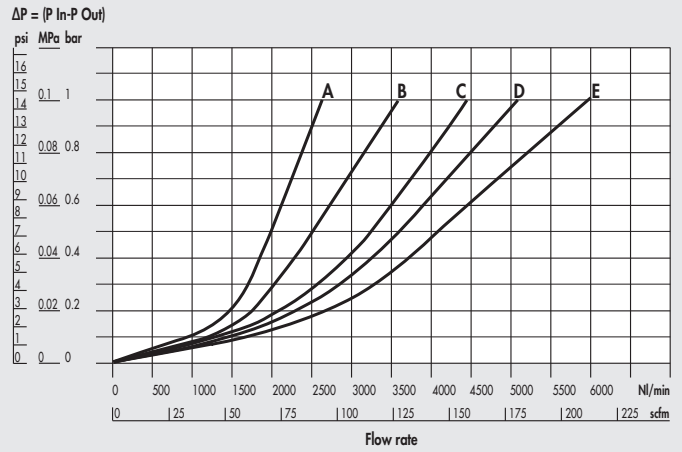
FIL Syntesi® SY1 1/4"



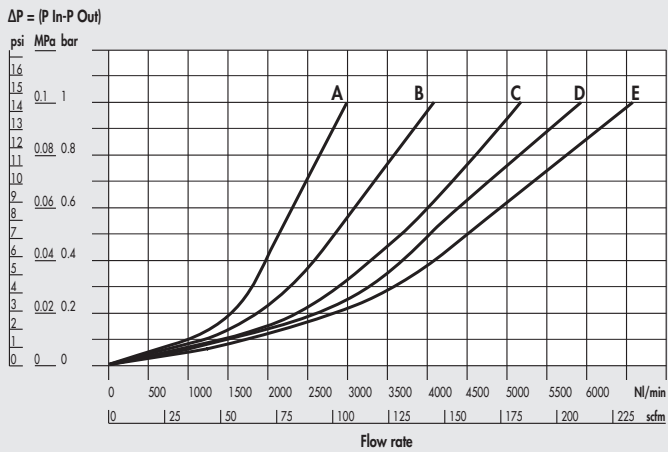
FIL Syntesi® SY1 3/8"



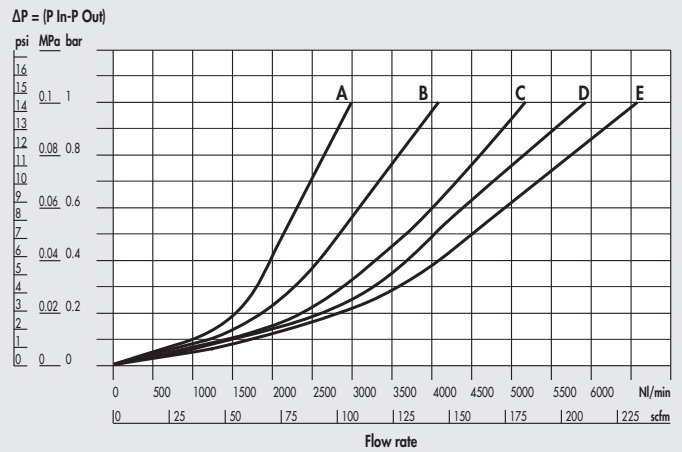
FIL Syntesi® SY2 3/8"



FIL Syntesi® SY2 1/2"



FIL Syntesi® SY2 3/4"-1"

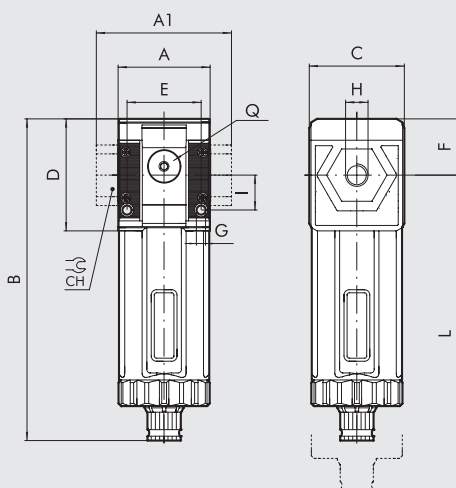


A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi

C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi

E = 10 bar - 1 MPa - 145 psi

DIMENSIONS



	H (threaded port) NPT	SIZE 1			SIZE 2		
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"
A			1.65			2.38	
A1		-	-	1.73	-	-	3.74 3.74
B	RMSA		5.83			7	
	RA/SAC		5.99			7.16	
C			1.73			2.4	
CH			-		-	1.26	1.41
D			2.03			2.77	
E			1.32			1.87	
F			1.02			1.5	
G			0.165			0.21	
I			0.63			0.89	
L	RMSA		7.95			9.65	
	RA/SAC		8.11			9.8	
Q (no. 2 additional air take-offs)			1/8" BSPP			1/4" BSPP	

KEY TO CODES

5U	1	1	F	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION AND TYPE OF CONDENSATE DRAIN	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	F Filter	10 5 µm (200 microinch) RMSA 20 20 µm (790 microinch) RMSA 30 50 µm (2000 microinch) RMSA 40 5 µm (200 microinch) RA 50 20 µm (790 microinch) RA 60 50 µm (2000 microinch) RA 11 5 µm (200 microinch) SAC 21 20 µm (790 microinch) SAC 31 50 µm (2000 microinch) SAC	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	Code	Description
Syntesi® SY1 FILTER		Syntesi® SY2 FILTER		Syntesi® SY2 FILTER	
5U10F100	FIL SY1 5 RMSA NPT without bushings	5U20F100	FIL SY2 5 RMSA NPT without bushings	5U26F106	FIL SY2 1 5 RMSA NPT
5U10F200	FIL SY1 20 RMSA NPT without bushings	5U20F200	FIL SY2 20 RMSA NPT without bushings	5U26F206	FIL SY2 1 20 RMSA NPT
5U10F400	FIL SY1 5 RA NPT without bushings	5U20F400	FIL SY2 5 RA NPT without bushings	5U26F406	FIL SY2 1 5 RA NPT
5U10F500	FIL SY1 20 RA NPT without bushings	5U20F500	FIL SY2 20 RA NPT without bushings	5U26F506	FIL SY2 1 20 RA NPT
5U11F101	FIL SY1 1/8 5 RMSA NPT	5U23F103	FIL SY2 3/8 5 RMSA NPT		
5U11F201	FIL SY1 1/8 20 RMSA NPT	5U23F203	FIL SY2 3/8 20 RMSA NPT		
5U11F401	FIL SY1 1/8 5 RA NPT	5U23F403	FIL SY2 3/8 5 RA NPT		
5U11F501	FIL SY1 1/8 20 RA NPT	5U23F503	FIL SY2 3/8 20 RA NPT		
5U12F102	FIL SY1 1/4 5 RMSA NPT	5U24F104	FIL SY2 1/2 5 RMSA NPT		
5U12F202	FIL SY1 1/4 20 RMSA NPT	5U24F204	FIL SY2 1/2 20 RMSA NPT		
5U12F402	FIL SY1 1/4 5 RA NPT	5U24F404	FIL SY2 1/2 5 RA NPT		
5U12F502	FIL SY1 1/4 20 RA NPT	5U24F504	FIL SY2 1/2 20 RA NPT		
5U13F103	FIL SY1 3/8 5 RMSA NPT	5U25F105	FIL SY2 3/4 5 RMSA NPT		
5U13F203	FIL SY1 3/8 20 RMSA NPT	5U25F205	FIL SY2 3/4 20 RMSA NPT		
5U13F403	FIL SY1 3/8 5 RA NPT	5U25F405	FIL SY2 3/4 5 RA NPT		
5U13F503	FIL SY1 3/8 20 RA NPT	5U25F505	FIL SY2 3/4 20 RA NPT		

NOTE
 Anti-corrosion version
5Z _____
Example
5Z11F101 FIL SY1 1/8 5 RMSA NPT anti-corrosion

SYNTESI® DEPURATOR

The job of the filter purifier is to separate liquid and solid particles dispersed in the compressed air with a high degree of efficiency. This separation is achieved by means of a special filtering element called a "coalescence cartridge".

It is particularly indicated for eliminating traces of oil present in the compressed air. The air flow rate must remain below the maximum values to achieve the desired degree of purification. Beyond this value, there may be a decline in the quality of air from the purifier.

On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP for size 2) that can be used with pressure gauges, pressure switches or as an additional air intake. **The air taken from here is not purified.**



AIR PREP

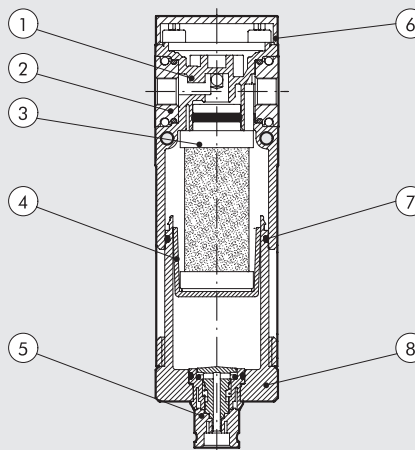
Syntesi® DEPURATOR

TECHNICAL DATA	DEP SY1				DEP SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	
Degree of filtration	0.01 (0.4 microinch) - output air purity class ISO8573-1: 1.7.2							
Max. input pressure	1 (40 microinch) - output air purity class ISO8573-1: 3.7.3							
	MPa			psi				
	15			13				
	1.5			1.3				
Suggested flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min			scfm				
	217			188				
	550			620				
Maximun suggested flow rate	9			37				
Min/max temperature at 10 bar; 1 MPa; 145 psi	See graph on the next page							
	N.B.: flow rates higher than the recommended value reduces purification efficiency							
	From -10 to +50			From -10 to +50				
Weight	pounds			From 14 to +122				
Condensate drain	0.43	0.42	0.40	1.06	1	0.99	0.97	
	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure							
	SAC: automatic drain with condensate discharge. Operates by pressure drop - requires variable air take-offs.							
Fluid	Compressed air or other inert gases							
Cup capacity	fluid ounce oz			fluid ounce oz				
Mounting position	0.51			1.35				
Port for additional air take-off (not purified air)	Vertical			Vertical				
Additional air take-off flow rate at 6.3 bar	1/8" BSPP, front and rear			1/4" BSPP, front and rear				
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	500			1500				
Wall fixing screws	18			53				
Notes on use	N. 8-32 unc x 2			N. 10-24 unc x 2				

It is advisable to mount a 5 μm (200 microinch) filter upstream of the purifier to retain solid particles

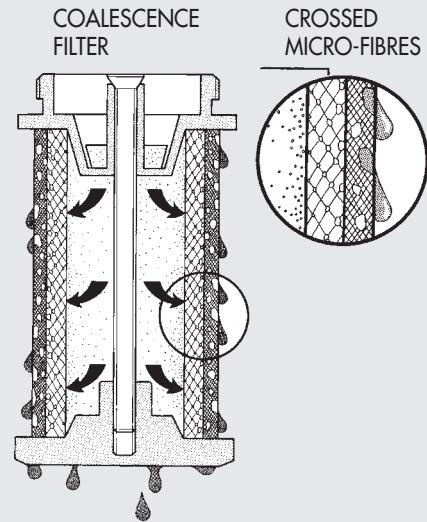
COMPONENTS

- ① Technopolymer depurator body
- ② IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ③ Coalescence cartridge
- ④ Technopolymer cartridge support
- ⑤ Drain (RMSA)
- ⑥ Technopolymer plate
- ⑦ NBR o-ring gaskets
- ⑧ Clear technopolymer bowl



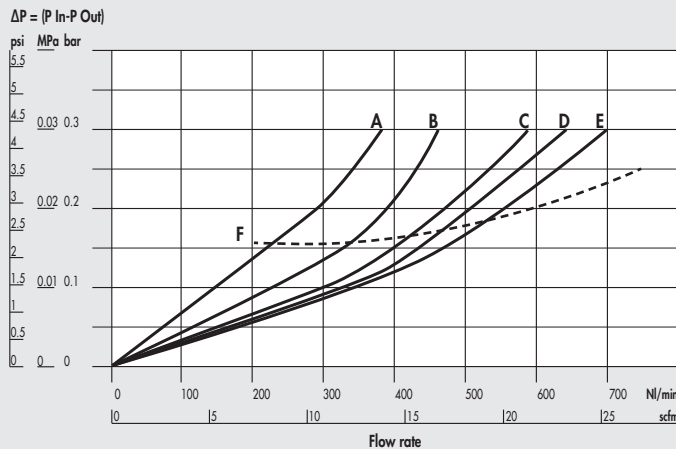
HOW THE COALESCENCE CARTRIDGE WORKS

Air from the mains – full of impurities – flows into the coalescence cartridge and then passes through the crossed micro-fibres that make up the cartridge. During this movement the liquid particles come into contact with the crossed micro-fibres and adhere to them. Due to the air pressure and gravity they join up with other micro-drops at each cross-over point and gradually increase in volume, leading to the physical phenomenon called coalescence. When they stop moving, the drops deposit on the outside of the cartridge, from which they detach and drop to the bottom. Since the volume of liquid leaving the cartridge is exactly the same as the drops arriving, the coalescence cartridge ought to work indefinitely. Solid particles are caught with the same efficiency but, unlike drops, they are not drained out and clog the cartridge. To get round this problem, it is necessary to mount a 5µm (200 microinch) prefilter before the fine oil filter to separate the solid particles first.

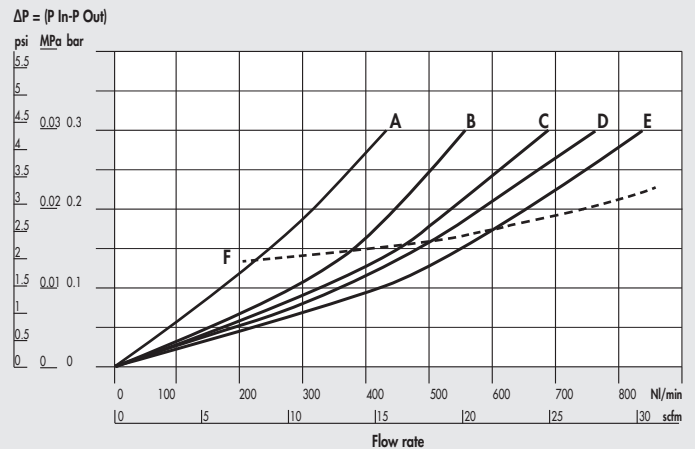


FLOW CHARTS

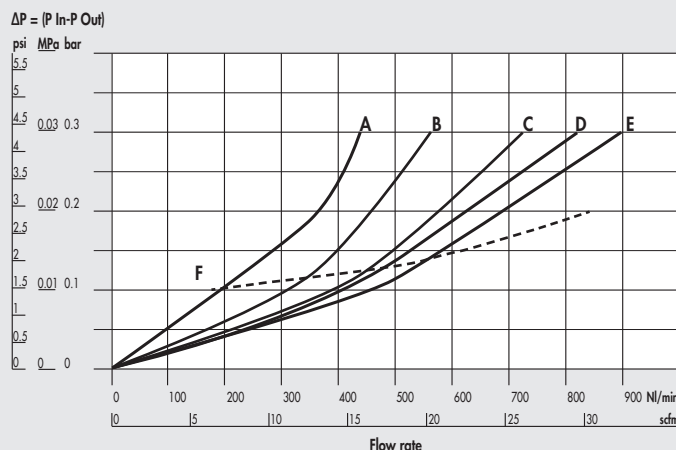
DEP Syntesi® SY1 1/8"



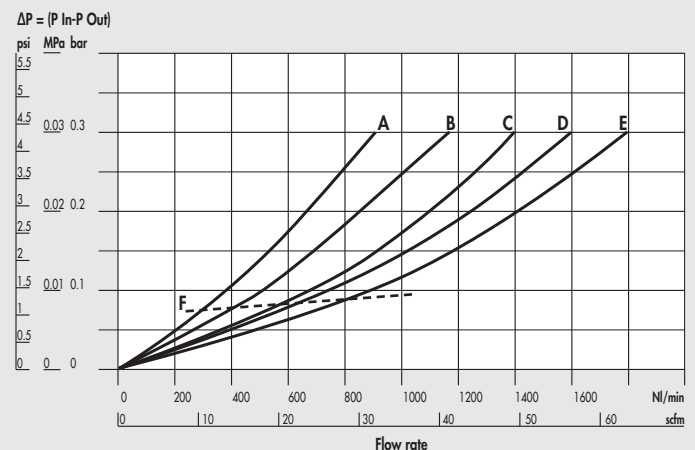
DEP Syntesi® SY1 1/4"



DEP Syntesi® SY1 3/8"

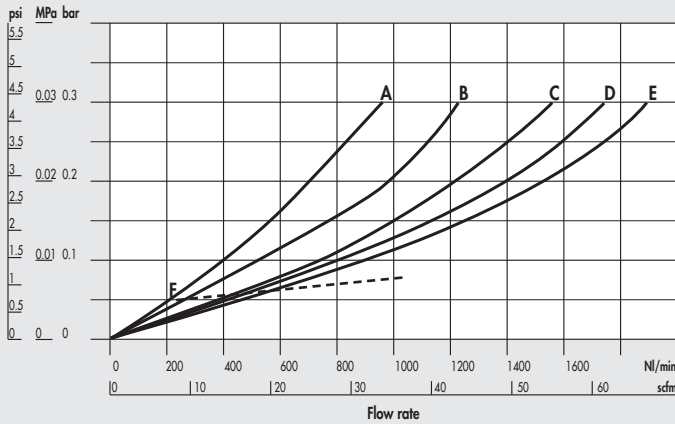


DEP Syntesi® SY2 3/8"



DEP Syntesi® SY2 1/2"

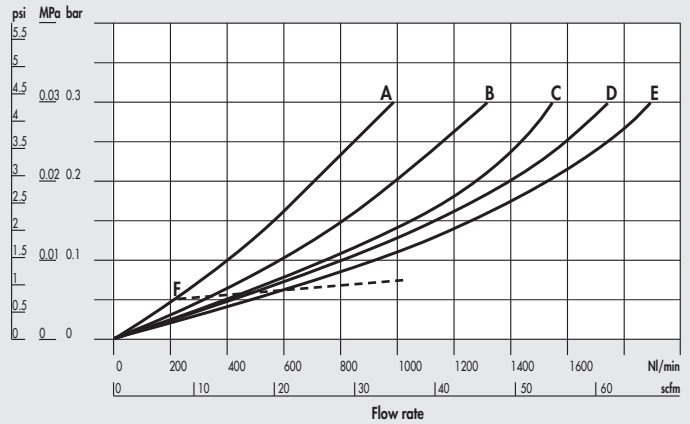
$\Delta P = (P \text{ In-P Out})$



A = 2.5 bar - 0.25 MPa - 36 psi
 B = 4 bar - 0.4 MPa - 58 psi

DEP Syntesi® SY2 3/4" - 1"

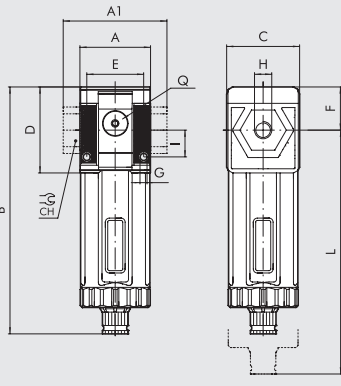
$\Delta P = (P \text{ In-P Out})$



C = 6.3 bar - 0.63 MPa - 91 psi
 D = 8 bar - 0.8 MPa - 116 psi

E = 10 bar - 1 MPa - 145 psi
 F = max suggested flow

DIMENSIONS



	SIZE 1			SIZE 2			
	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
H (threaded port)	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A	1.65			2.38			
A1	-	-	1.73	-	-	3.74	3.74
B	RMSA 5.83			7			
	SAC 5.99			7.16			
C	1.73			2.4			
CH	-	-	-	1.26	1.41		
D	2.03			2.77			
E	1.32			1.87			
F	1.02			1.5			
G	0.165			0.21			
I	0.63			0.89			
L	RMSA 7.95			9.65			
	SAC 8.11			9.8			
Q (no. 2 additional air takes-off)	1/8" BSPP			1/4" BSPP			

KEY TO CODES

5U	1	1	D	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port	D Depurator	10 0.01 µm (0.04 microinch) RMSA	0 Without bushing 1 1/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	2 1/4" NPT port 3 3/8" NPT port		11 0.01 µm (0.04 microinch) SAC	2 1/4" NPT port 3 3/8" NPT port
		0 Without bushing 3 3/8" NPT port		30 1 µm (40 microinch) RMSA	0 Without bushing 3 3/8" NPT port
		4 1/2" NPT port		31 1 µm (40 microinch) SAC	4 1/2" NPT port
		5 3/4" NPT port			5 3/4" NPT port
		6 1" NPT port			6 1" NPT port

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop - requires variable air take-offs.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description
Syntesi® SY1 DEPURATOR		Syntesi® SY2 DEPURATOR	
5U10D100	DEP SY1 RMSA NPT without bushings	5U20D100	DEP SY2 RMSA NPT without bushings
5U11D101	DEP SY1 1/8 RMSA NPT	5U23D103	DEP SY2 3/8 RMSA NPT
5U12D102	DEP SY1 1/4 RMSA NPT	5U24D104	DEP SY2 1/2 RMSA NPT
5U13D103	DEP SY1 3/8 RMSA NPT	5U25D105	DEP SY2 3/4 RMSA NPT
		5U26D106	DEP SY2 1 RMSA NPT

NOTE

Anti-corrosion version

5Z

Example

5Z11D101 DEP SY1 1/8 RMSA NPT anti-corrosion

Activated-carbon filtering systems achieve the highest standard of purification possible in industrial applications. They eliminate all traces of oils, solvents and hydrocarbons, and remove unpleasant odours. The operating principle uses activated carbon, which absorbs most of the polluting particles in the air thanks to minute holes in the granules of carbon.

There are two 1/8" BSPP ports, one on the front and one on the back, for use with pressure gauges or pressure switches or, considering the high flow rate, as additional air take-off. **The air taken from here is not filtered by the activated-carbon cartridge.**

Cartridge life and efficiency can be increased by using pre-filtered ($5\mu\text{m} = 200$ microinch) and purified ($0.01\mu\text{m} = 0.4$ microinch) air. The cartridge must be replaced at set intervals as there is no difference in load loss between an efficient cartridge and a saturated one.

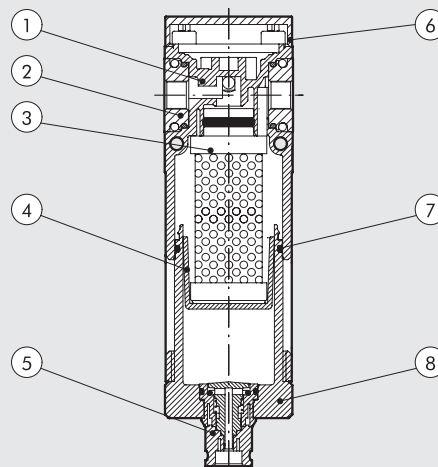
N.B.: to ensure the performance and duration stated on the data sheet, the load loss (ΔP) must not exceed 1 psi.



TECHNICAL DATA		FIL CA SY1			FIL CA SY2			
		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Residual oil at 20°C *	mg/m ³	0.003 - output air purity class ISO8573-1: 1.7.1						
Duration of cartridge *	hours	4000			4000			
Max. inlet pressure	bar	15			13			
	MPa	1.5			1.3			
Suggested flow rate at 6.3 bar (0.63 MPa; 91 psi)	psi	217			188			
	Nl/min	350			800			
	scfm	12			28			
		N.B.: flow rates higher than the recommended value reduces purification efficiency						
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50			From -10 to +50			
	°F	From 14 to +122			From 14 to +122			
Weight	pounds	0.43	0.42	0.40	1.06	1	0.99	0.97
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
Fluid		0.01 μm filtered and deperated air						
Mounting position		In any position			In any position			
Additional air take-off port (unfiltered air from cartridge CA)		1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	500			1500			
	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Notes on use		Upstream it's necessary to mount a coalescence filter deperator of 0.01 μm (0.4 microinch)						
* if the load loss of 1 psi is not exceeded								

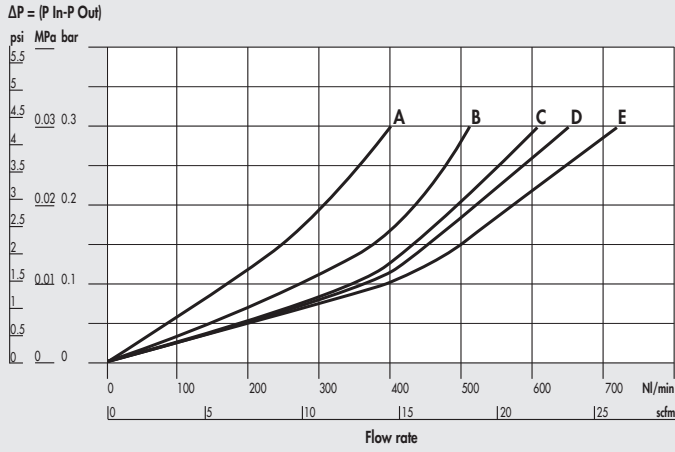
COMPONENTS

- ① Technopolymer deperator body
- ② IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ③ Active carbon cartridge
- ④ Technopolymer cartridge support
- ⑤ Drain (RMSA)
- ⑥ Technopolymer plate
- ⑦ NBR o-ring gasket
- ⑧ Clear technopolymer bowl

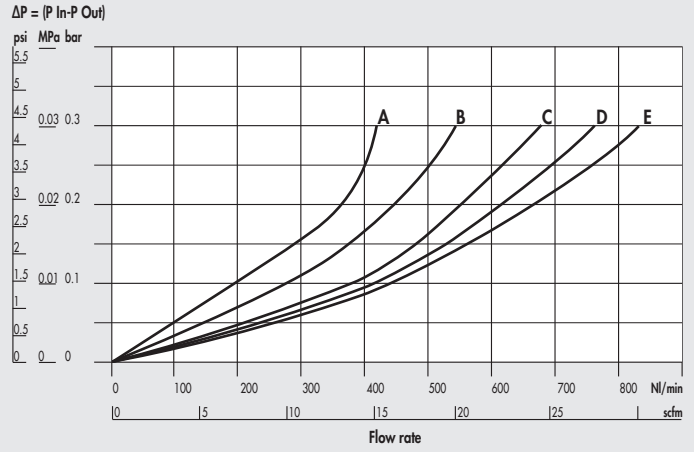


FLOW CHARTS

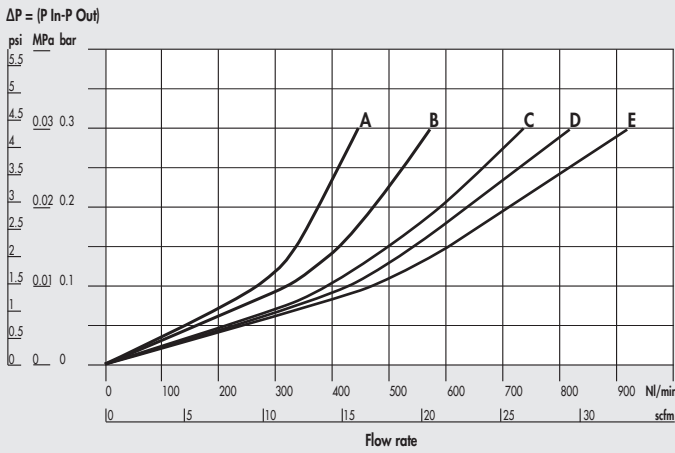
FIL CA Syntesi® SY1 1/8"



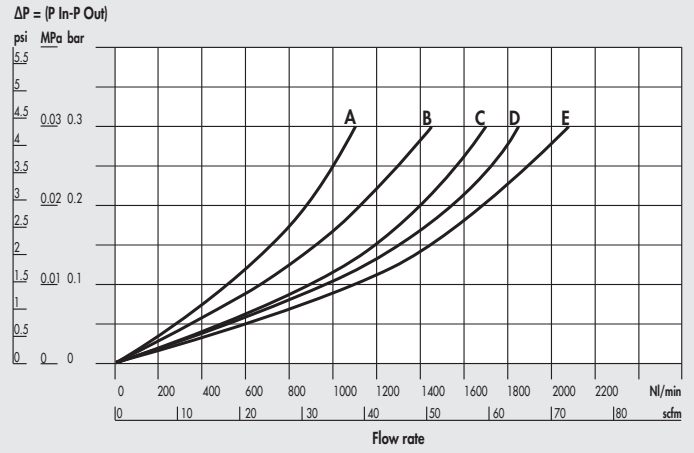
FIL CA Syntesi® SY1 1/4"



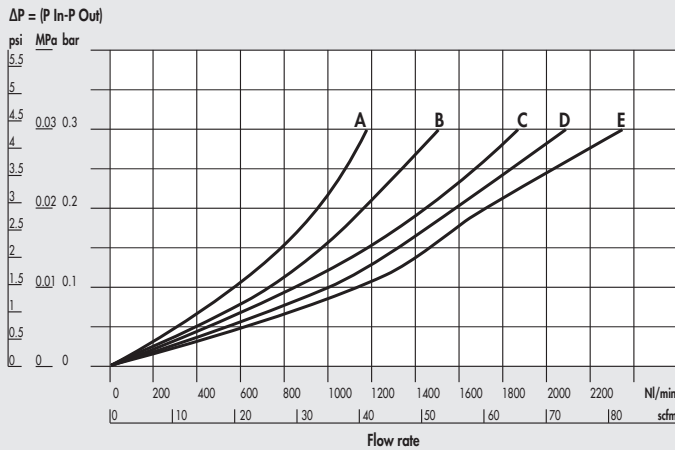
FIL CA Syntesi® SY1 3/8"



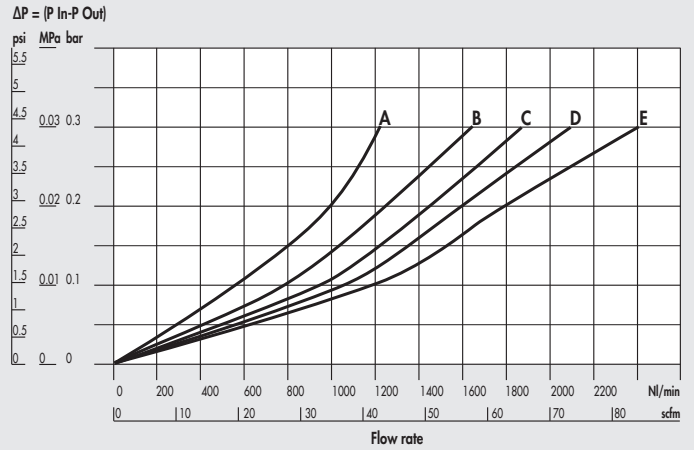
FIL CA Syntesi® SY2 3/8"



FIL CA Syntesi® SY2 1/2"



FIL CA Syntesi® SY2 3/4" - 1"

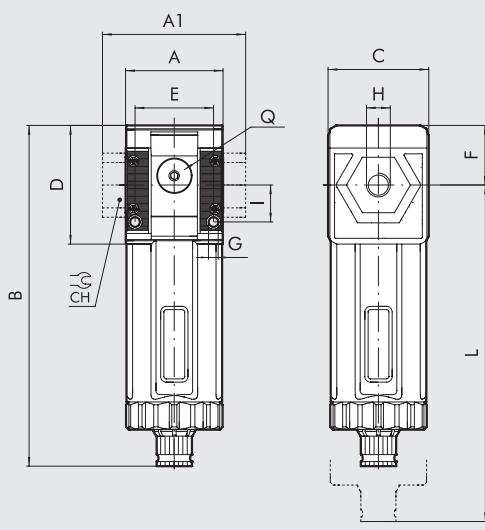


A = 2.5 bar - 0.25 MPa - 36 psi
 B = 4 bar - 0.4 MPa - 58 psi

C = 6.3 bar - 0.63 MPa - 91 psi
 D = 8 bar - 0.8 MPa - 116 psi

E = 10 bar - 1 MPa - 145 psi

DIMENSIONS



		SIZE 1			SIZE 2		
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"
H (threaded port)	NPT						
A			1.65			2.38	
A1		-	-	1.73	-	-	3.74 3.74
B	RMSA		5.83			7	
C			1.73			2.4	
CH			-		-	-	1.26 1.41
D			2.03			2.77	
E			1.32			1.87	
F			1.02			1.5	
G			0.165			0.21	
I			0.63			0.89	
L	RMSA		7.95			9.65	
Q (no. 2 additional air takes-off)			1/8" BSPP			1/4" BSPP	

KEY TO CODES

5U	1	1	C	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	C Active carbon filter	10 RMSA	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

RMSA: Drain with manual condensate discharge and automatic discharge at zero pressure.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description
Syntesi® SY1 ACTIVE CARBON FILTER		Syntesi® SY2 ACTIVE CARBON FILTER	
5U10C100	AC SY1 RMSA NPT without bushings	5U20C100	AC SY2 RMSA NPT without bushings
5U11C101	AC SY1 1/8 RMSA NPT	5U23C103	AC SY2 3/8 RMSA NPT
5U12C102	AC SY1 1/4 RMSA NPT	5U24C104	AC SY2 1/2 RMSA NPT
5U13C103	AC SY1 3/8 RMSA NPT	5U25C105	AC SY2 3/4 RMSA NPT
		5U26C106	AC SY2 1 RMSA NPT

NOTE
Anti-corrosion version
5Z _____
Example
5Z11C101 AC SY1 1/8 RMSA NPT anti-corrosion

SYNTESI® REGULATOR

Syntesi® pressure regulator is based on the rolling diaphragm principle, which offers numerous advantages compared to systems using a flat diaphragm:

- Increased stroke, allowing wider valve aperture and hence greater flow rate.
- Decreased dynamic and pick-up friction, and hence quicker response and enhanced sensitivity.
- Greater accuracy in maintaining the pressure setting, both with both variable flow rates and different supply pressures.

The regulator includes a compensation system that keeps the pressure setting virtually constant, even when the upstream pressure changes. This is achieved mainly by the design of the valve, which is pneumatically balanced.

If the downstream pressure rises above the threshold value, the air is discharged (relief valve) until it drops below the maximum value.

A special device relieves downstream pressure rapidly when the upstream pressure drops to zero. This means the regulator can be positioned between a valve and a cylinder because the air can flow in both directions, towards the cylinder with regulated pressure, or return towards the valve during relief.

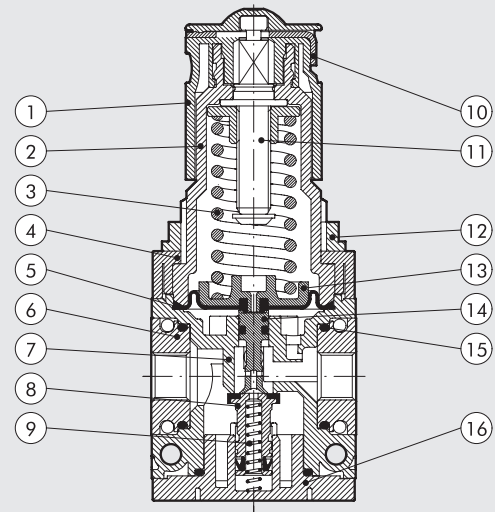
The knob is the push-lock type – once the pressure has been set, press it and it locks in position. In this position you can pull out the plate and attach two padlocks on size 1 or three padlocks on size 2 in order to avoid possible tampering. On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP size 2) that can be used with pressure gauges, pressure switches or as an additional regulated air intake.



TECHNICAL DATA	REG SY1			REG SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port							
Max. inlet pressure	bar			bar			
	MPa			MPa			
	psi			psi			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	570	1600	2900	3000	4300	4700
(inlet pressure 10 bar)	scfm	20	57	103	106	152	166
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1200	2800	3350	5300	7400	7600
(inlet pressure 10 bar)	scfm	42	99	119	188	261	267
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	70			100		
	scfm	2.5			3.5		
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50			From -10 to +50		
	°F	From 14 to +122			From 14 to +122		
Full outflow with zero inlet pressure	Included						
Padlockable knob	Included						
Upstream pressure compensation	Included, via balanced valve						
Weight	pounds	0.43	0.42	0.40	1.2	1.14	1.13 1.11
Fluid	Compressed air or other inert gases						
Mounting position	In any position						
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar	Nl/min	500			1400		
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			50		
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			
Notes on use	The pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. On request version without overpressure exhaust						

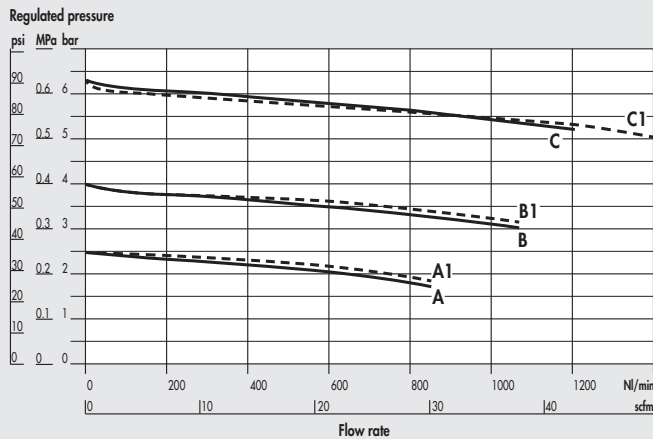
COMPONENTS

- ① Technopolymer adjusting knob
- ② Technopolymer bell
- ③ Steel adjusting spring
- ④ Technopolymer flange
- ⑤ Rolling diaphragm
- ⑥ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ⑦ Technopolymer regulator body
- ⑧ OT58 brass valve, with NBR vulcanized gasket
- ⑨ Stainless steel valve spring
- ⑩ Plate for knob locking (stainless steel for anti-corrosion version)
- ⑪ OT58 brass adjusting screw
- ⑫ Technopolymer ring nut
- ⑬ Technopolymer plate
- ⑭ Technopolymer rod
- ⑮ NBR o-ring gasket
- ⑯ Technopolymer plug

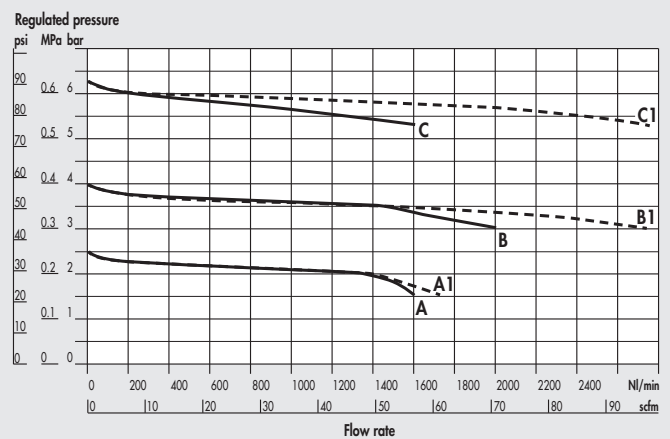


FLOW CHARTS

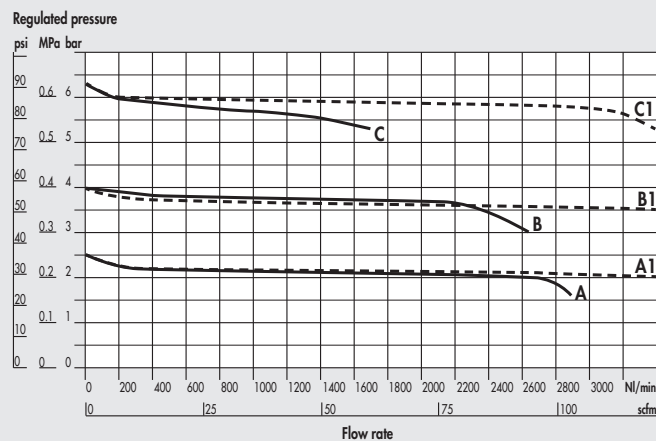
REG Syntesi® SY1 1/8"



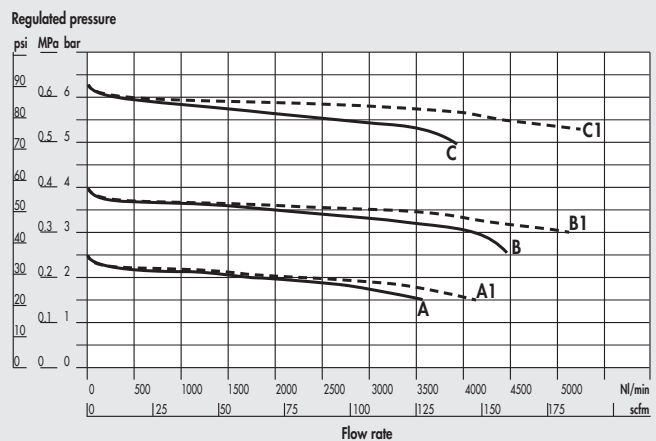
REG Syntesi® SY1 1/4"



REG Syntesi® SY1 3/8"



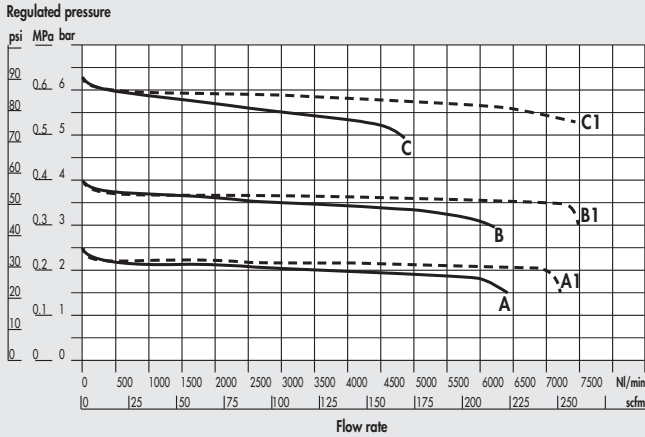
REG Syntesi® SY2 3/8"



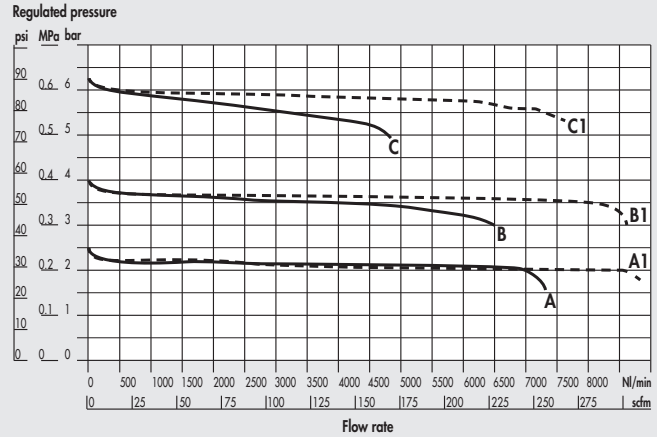
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
 B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
 C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

A1 = P In 10 bar (145 psi) - P Out 2.5 bar (36 psi)
 B1 = P In 10 bar (145 psi) - P Out 4 bar (58 psi)
 C1 = P In 10 bar (145 psi) - P Out 6.3 bar (91 psi)

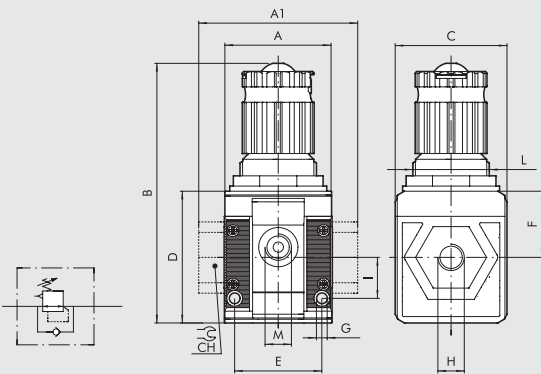
REG Syntesi® SY2 1/2"



REG Syntesi® SY2 3/4" - 1"



DIMENSIONS



H (threaded port) NPT	SIZE 1			SIZE 2			
	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		1.65				2.38	
A1	-	-	1.73	-	-	3.74	3.74
B		4.02				5.59	
C		1.73				2.4	
CH		-		-	-	1.26	1.41
D		2.03				2.77	
E		1.32				1.87	
F		1.02				1.5	
G		0.165				0.21	
I		0.63				0.89	
L		M30x1.5				M38x2	
M (pressure gauge port or air takes-off)		1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	R	14	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	SETTING RANGE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	R Pressure regulator	● 10 0 - 30 psi + 12 0 - 60 psi 14 0 - 120 psi 16 0 - 180 psi	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

● Not available in the anti-corrosion version. + Anti-corrosion version available only in size 1.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	Code	Description
Syntesi® SY1 REGULATOR		Syntesi® SY2 REGULATOR		Syntesi® SY2 REGULATOR	
5U10R140	REG SY1 0-120 NPT without bushings	5U20R140	REG SY2 0-120 NPT without bushings	5U26R146	REG SY2 1 0-120 NPT
5U10R160	REG SY1 0-180 NPT without bushings	5U20R160	REG SY2 0-180 NPT without bushings	5U26R166	REG SY2 1 0-180 NPT
5U11R141	REG SY1 1/8 0-120 NPT	5U23R143	REG SY2 3/8 0-120 NPT		
5U11R161	REG SY1 1/8 0-180 NPT	5U23R163	REG SY2 3/8 0-180 NPT		
5U12R142	REG SY1 1/4 0-120 NPT	5U24R144	REG SY2 1/2 0-120 NPT		
5U12R162	REG SY1 1/4 0-180 NPT	5U24R164	REG SY2 1/2 0-180 NPT		
5U13R143	REG SY1 3/8 0-120 NPT	5U25R145	REG SY2 3/4 0-120 NPT		
5U13R163	REG SY1 3/8 0-180 NPT	5U25R165	REG SY2 3/4 0-180 NPT		

NOTE

Anti-corrosion version

5Z _____

Example

5Z11R141 REG SY1 1/8 08 NPT anti-corrosion

The in-series regulator is used to take air at a set pressure from the ports on the front and back of the body, while the pneumatic inlet and outlet ports are connected directly.

It is possible for instance to assemble several regulators side by side, all supplied at the same pressure, and obtain different regulated pressures, regardless of the pressure of the previous module.

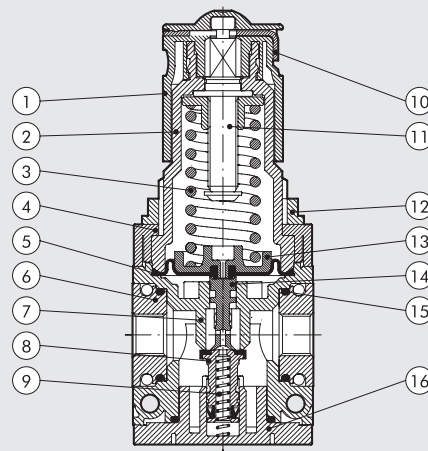
The in-series regulator uses the same construction principles as the standard regulator, so the advantages are the same, such as compensation for upstream pressure changes, relief valve, rapid relief of the downstream pressure and a padlockable push-lock knob.



TECHNICAL DATA	IN-SERIES REGULATOR SY1			IN-SERIES REGULATOR SY2				
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	
Threaded inlet port, through	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	
Utility threaded port		1/8" BSPP				1/4" BSPP		
Max. input pressure	bar	15				13		
	MPa	1.5				1.3		
	psi	217				188		
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	330				540		
	scfm	12				19		
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	500				1000		
	scfm	18				35		
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	70				100		
	scfm	2.5				3.5		
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50		From -10 to +50				
	°F	From 14 to +122		From 14 to +122				
Full outflow with zero inlet pressure				Included				
Padlockable knob				Included				
Upstream pressure compensation				Included, via balanced valve				
Weight	pounds	0.43	0.42	0.40	1.2	1.14	1.13	1.11
		Compressed air or other inert gases						
Fluid	In any position							
Mounting position								
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2				
Notes on use	The pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. On request version without overpressure exhaust							

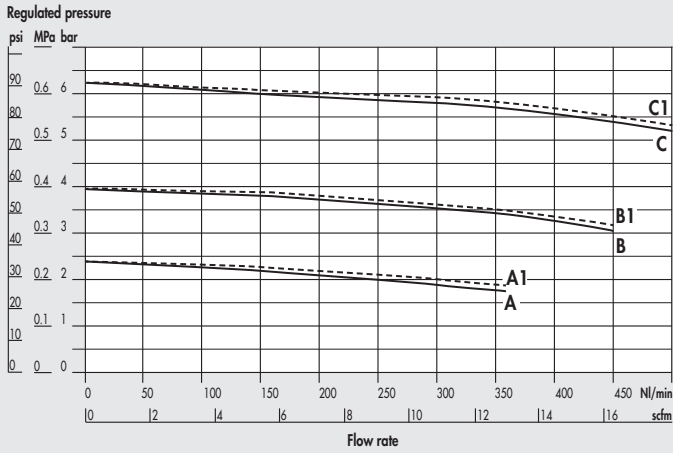
COMPONENTS

- ① Technopolymer adjusting knob
- ② Technopolymer bell
- ③ Steel adjusting spring (with Geomet® treatment for anti-corrosion version)
- ④ Technopolymer flange
- ⑤ Rolling diaphragm
- ⑥ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ⑦ Technopolymer body
- ⑧ OT58 brass valve, with NBR vulcanized gasket
- ⑨ Stainless steel valve spring
- ⑩ Plate for knob locking (stainless steel for anti-corrosion version)
- ⑪ OT58 brass adjusting screw
- ⑫ Technopolymer ring nut
- ⑬ Technopolymer plate
- ⑭ Technopolymer rod
- ⑮ NBR o-ring gaskets
- ⑯ Technopolymer plug



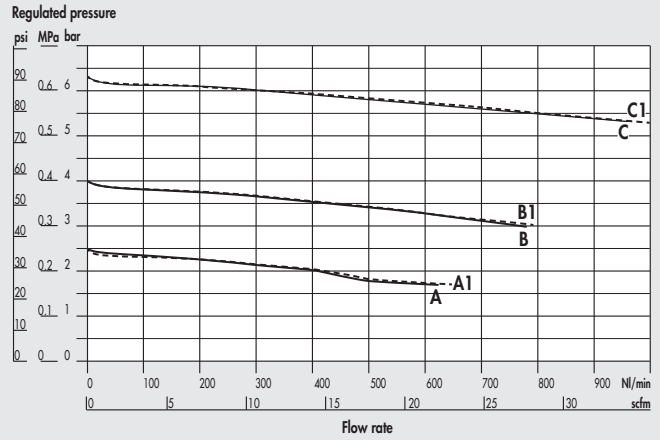
FLOW CHARTS

REG BATTERY Syntesi® SY1 1/4"-1/8"-3/8"



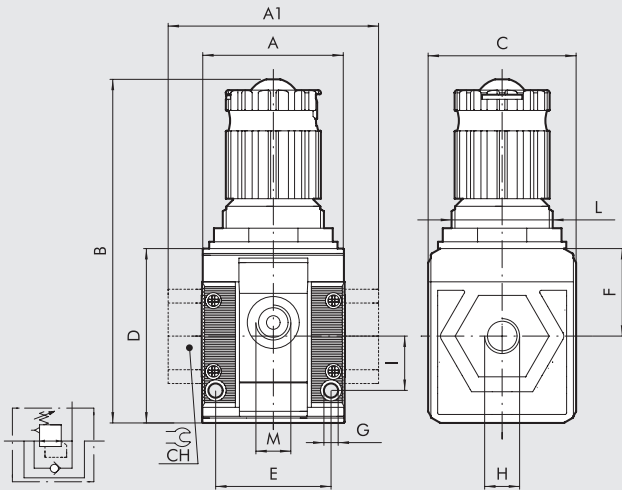
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
 B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
 C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

REG BATTERY Syntesi® SY2 3/8" - 1/2" - 3/4" - 1"



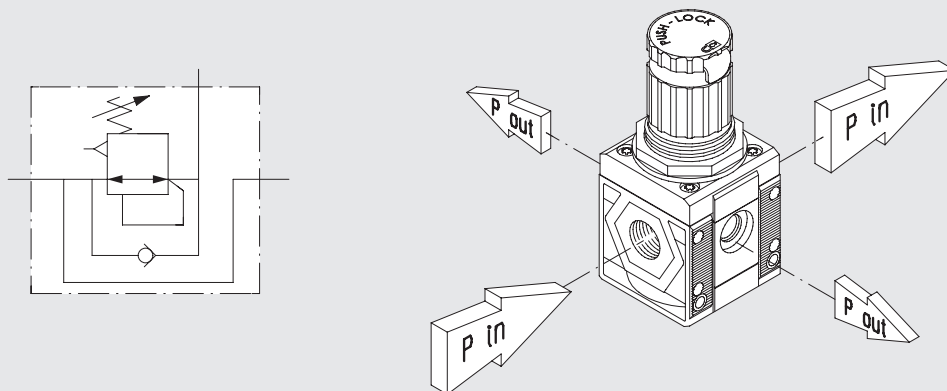
A1 = P In 10 bar (145 psi) - P Out 2.5 bar (36 psi)
 B1 = P In 10 bar (145 psi) - P Out 4 bar (58 psi)
 C1 = P In 10 bar (145 psi) - P Out 6.3 bar (91 psi)

DIMENSIONS



H (threaded port)	NPT	SIZE 1			SIZE 2			
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A			1.65				2.38	
A1		-	-	1.73	-	-	3.74	3.74
B			4.02				5.59	
C			1.73				2.4	
CH			-		-	-	1.26	1.41
D			2.03				2.77	
E			1.32				1.87	
F			1.02				1.5	
G			0.165				0.21	
I			0.63				0.89	
L			M30x1.5				M38x2	
M (use)			1/8" BSPP				1/4" BSPP	

FUNCTION DIAGRAM



SYNTESI® FILTER-REGULATOR

This device combines in a single unit the functions of filtration, condensate separation and pressure regulation.

It is made up of the same elements forming the filter and the regulator, so the performance and advantages are the same:

- Separation of condensate and larger liquid and solid particles by centrifugation.
- Two condensate drain options (RMSA, RA and SAC).
- 360° visually inspection of the condensate level, via transport spy-holes.
- Rolling diaphragm regulator, allowing maximum precision and flow rate, and minimal friction.
- Compensation for upstream pressure changes.
- Pressure relief valve.
- Quick downstream pressure relief.
- Padlockable push-lock knob.
- Front and rear ports for pressure gauges, pressure switches or, considering the high flow rate, for use as additional filtered and regulated air take-off.



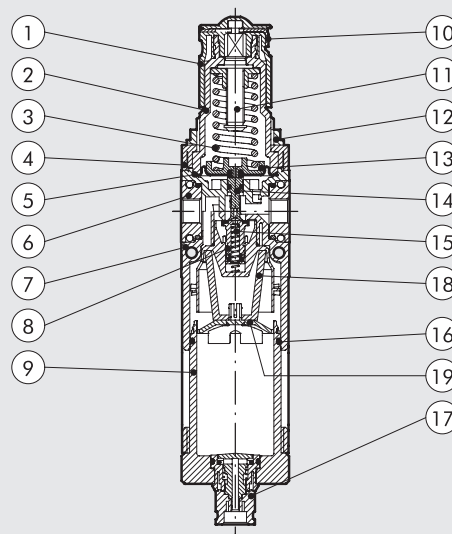
AIR PREP

Syntesi® FILTER-REGULATOR

TECHNICAL DATA	FR SY1			FR SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.4 white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.4 blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.4						
Max. inlet pressure	bar			bar			
	MPa			MPa			
	psi			psi			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	500	800	2200	3200	4300	5200
(inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	18	28	78	113	152	184
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1300	2000	3000	5800	7200	7400
(inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	46	71	106	205	255	262
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	70			100		
	scfm	2.5			3.5		
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50			From -10 to +50		
	°F	From 14 to +122			From 14 to +122		
Full outflow with zero inlet pressure	Included						
Padlockable knob	Included						
Upstream pressure compensation	Included, via balanced valve						
Weight	pounds	0.54	0.53	0.51	1.37	1.32	1.30
Fluid	Compressed air or other inert gases						
Mounting position	Vertical						
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar	Nl/min	500			1400		
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			50		
Cup capacity	fluid ounce oz	1.02			2.37		
Condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge.						
	Operates by pressure drop – requires variable air take-offs.						
	Note: the maximum input pressure for the RA version must not exceed 145 psi						
Wall fixing screws	N. 8-32 unc x 2			N. 2 10-24 unc x 2			
Notes on use	The pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. On request version without overpressure exaust.						

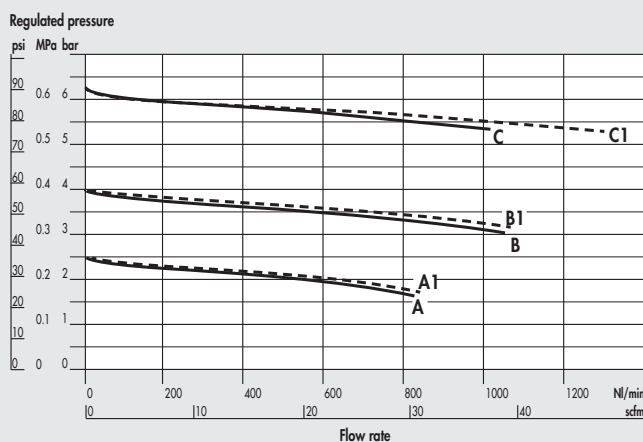
COMPONENTS

- ① Technopolymer adjusting knob
- ② Technopolymer bell
- ③ Steel adjusting spring (with Geomer® treatment for anti-corrosion version)
- ④ Technopolymer flange
- ⑤ Rolling diaphragm
- ⑥ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ⑦ Technopolymer body
- ⑧ OT58 brass valve, with NBR vulcanized gasket
- ⑨ Clear technopolymer bowl
- ⑩ Plate for knob locking (stainless steel for anti-corrosion version)
- ⑪ OT58 brass adjusting screw
- ⑫ Technopolymer ring nut
- ⑬ Technopolymer plate
- ⑭ Technopolymer rod
- ⑮ Stainless steel valve spring
- ⑯ O-ring NBR gaskets
- ⑰ Drain (RMSA)
- ⑱ Sintered HDPE filter cartridge
- ⑲ Technopolymer screen

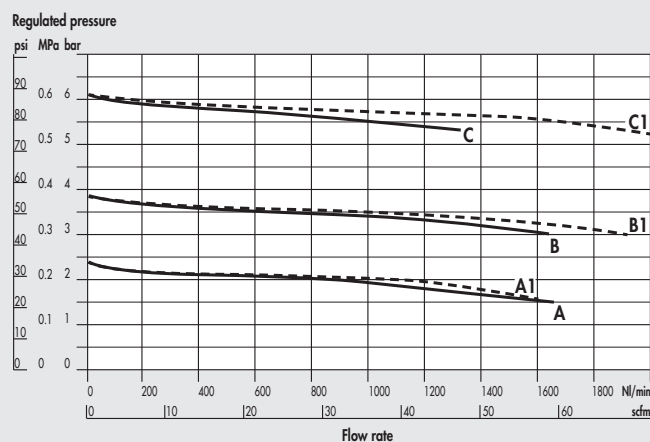


FLOW CHARTS

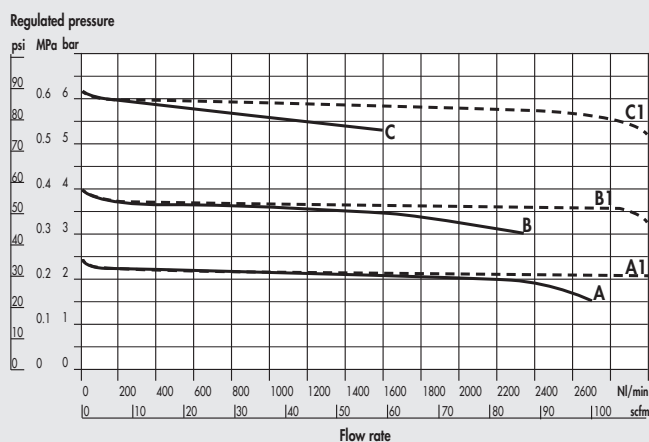
FR Syntesi® SY1 1/8"



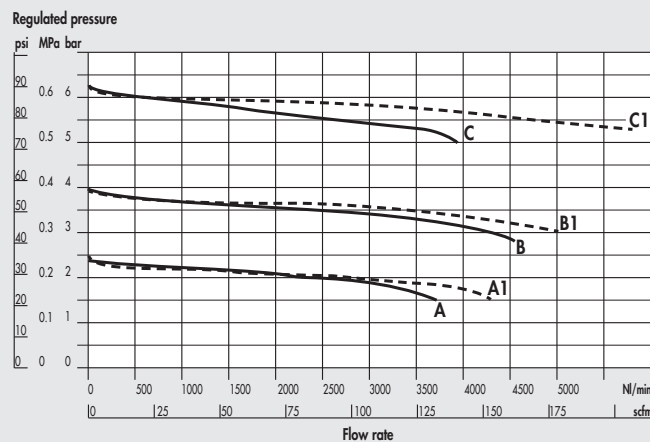
FR Syntesi® SY1 1/4"



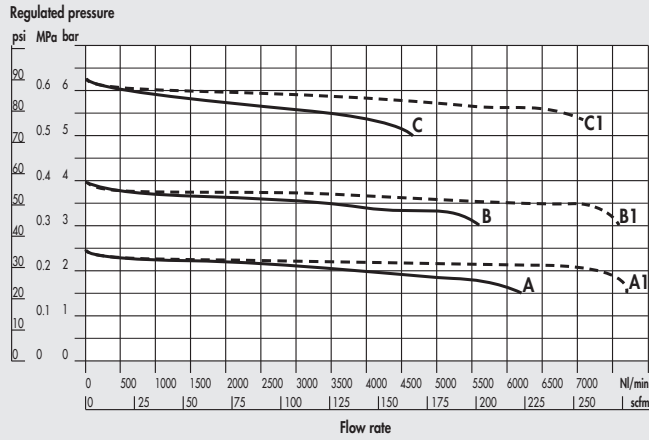
FR Syntesi® SY1 3/8"



FR Syntesi® SY2 3/8"

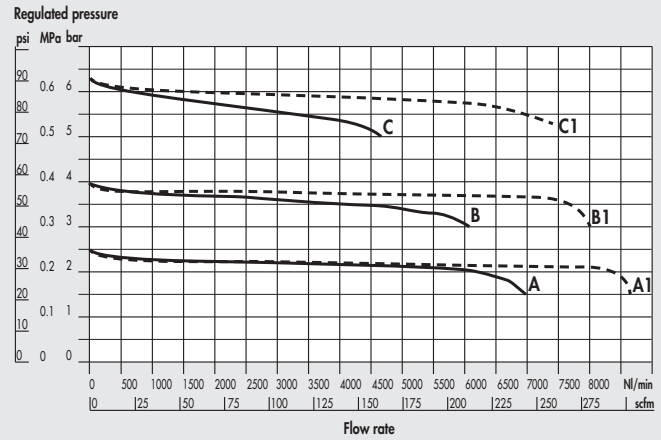


FR Syntesi® SY2 1/2"



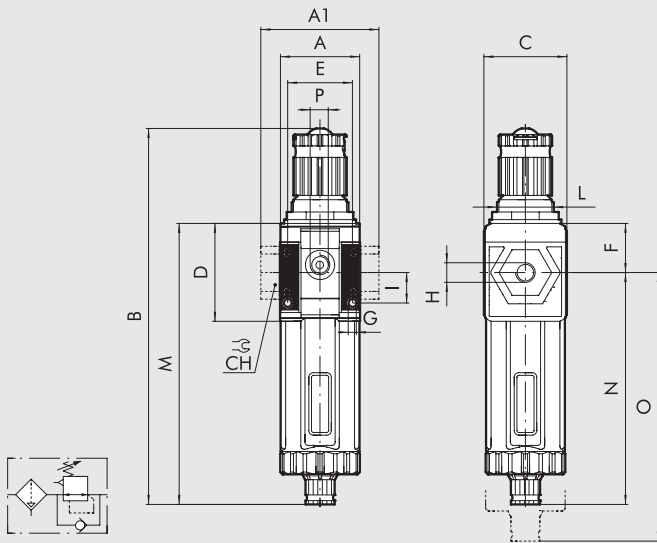
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
 B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
 C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

FR Syntesi® SY2 3/4" - 1"



A1 = P In 10 bar (145 psi) - P Out 2.5 bar (36 psi)
 B1 = P In 10 bar (145 psi) - P Out 4 bar (58 psi)
 C1 = P In 10 bar (145 psi) - P Out 6.3 bar (91 psi)

DIMENSIONS



		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		1.65			2.38			
A1		-	-	1.73	-	-	3.74	3.74
B	RMSA	7.60			9.68			
	RA/SAC	7.95			9.84			
C		1.73			2.4			
CH		-	-	-	1.26	1.41		
D		2.03			2.77			
E		1.32			1.87			
F		1.02			1.5			
G		0.165			0.21			
I		0.63			0.89			
L		M30x1.5			M38x2			
M	RMSA	5.83			7			
	RA/SAC	5.99			7.16			
N	RMSA	4.82			5.5			
	RA/SAC	4.97			5.66			
O	RMSA	7.95			9.65			
	RA/SAC	8.11			9.8			
P (pressure gauge port or additional air takes-off)		1/8" BSPP			1/4" BSPP			

NOTES

KEY TO CODES

5U	1	1	B	24	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing	B Filter-regulator	● 10 5 μm (200 microinch), RMSA, 0 - 30 psi	0 Without bushing
5Z Syntesi anti-corrosion NPT		1 1/8" NPT port		● 20 20 μm (790 microinch), RMSA, 0 - 30 psi	1 1/8" NPT port
	2 Size 2	2 1/4" NPT port		● 30 50 μm (2000 microinch), RMSA, 0 - 30 psi	2 1/4" NPT port
		3 3/8" NPT port	● 40 5 μm (200 microinch), RA, 0 - 30 psi	3 3/8" NPT port	
		0 Without bushing		● 50 20 μm (790 microinch), RA, 0 - 30 psi	0 Without bushing
		3 3/8" NPT port		● 60 50 μm (2000 microinch), RA, 0 - 30 psi	3 3/8" NPT port
		4 1/2" NPT port		● 11 5 μm (200 microinch), SAC, 0 - 30 psi	4 1/2" NPT port
		5 3/4" NPT port		● 21 20 μm (790 microinch), SAC, 0 - 30 psi	5 3/4" NPT port
		6 1" NPT port		● 31 50 μm (2000 microinch), SAC, 0 - 30 psi	6 1" NPT port
				+ 12 5 μm (200 microinch), RMSA, 0 - 60 psi	
				+ 22 20 μm (790 microinch), RMSA, 0 - 60 psi	
				+ 32 50 μm (2000 microinch), RMSA, 0 - 60 psi	
				+ 42 5 μm (200 microinch), RA, 0 - 60 psi	
				+ 52 20 μm (790 microinch), RA, 0 - 60 psi	
				+ 62 50 μm (2000 microinch), RA, 0 - 60 psi	
				+ 13 5 μm (200 microinch), SAC, 0 - 60 psi	
				+ 23 20 μm (790 microinch), SAC, 0 - 60 psi	
				+ 33 50 μm (2000 microinch), SAC, 0 - 60 psi	
				14 5 μm (200 microinch), RMSA, 0 - 120 psi	
				24 20 μm (790 microinch), RMSA, 0 - 120 psi	
				34 50 μm (2000 microinch), RMSA, 0 - 120 psi	
				44 5 μm (200 microinch), RA, 0 - 120 psi	
				54 20 μm (790 microinch), RA, 0 - 120 psi	
				64 50 μm (2000 microinch), RA, 0 - 120 psi	
				15 5 μm (200 microinch), SAC, 0 - 120 psi	
				25 20 μm (790 microinch), SAC, 0 - 120 psi	
				35 50 μm (2000 microinch), SAC, 0 - 120 psi	
				16 5 μm (200 microinch), RMSA, 0 - 180 psi	
				26 20 μm (790 microinch), RMSA, 0 - 180 psi	
				36 50 μm (2000 microinch), RMSA, 0 - 180 psi	
				46 5 μm (200 microinch), RA, 0 - 180 psi	
				56 20 μm (790 microinch), RA, 0 - 180 psi	
				66 50 μm (2000 microinch), RA, 0 - 180 psi	
				17 5 μm (200 microinch), SAC, 0 - 180 psi	
				27 20 μm (790 microinch), SAC, 0 - 180 psi	
				37 50 μm (2000 microinch), SAC, 0 - 180 psi	

● Not available in the anti-corrosion version.

+ Anti-corrosion version available only in size 1.

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge. **Operates by pressure drop – requires variable air take-offs.**

NOTES

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	NOTE
FILTER-REGULATOR Syntesi® SY1		FILTER-REGULATOR Syntesi® SY2		
5U10B140	FR SY1 5 0-120 RMSA NPT without bushings	5U20B140	FR SY2 5 0-120 RMSA NPT without bushings	Anti-corrosion version
5U10B240	FR SY1 20 0-120 RMSA NPT without bushings	5U20B240	FR SY2 20 0-120 RMSA NPT without bushings	5Z _____
5U10B440	FR SY1 5 0-120 RA NPT without bushings	5U20B440	FR SY2 5 0-120 RA NPT without bushings	Example
5U10B540	FR SY1 20 0-120 RA NPT without bushings	5U20B540	FR SY2 20 0-120 RA NPT without bushings	5Z11B141 FR SY1 1/8 5 08 RMSA NPT anti-corrosion
5U10B160	FR SY1 5 0-180 RMSA NPT without bushings	5U20B160	FR SY2 5 0-180 RMSA NPT without bushings	
5U10B260	FR SY1 20 0-180 RMSA NPT without bushings	5U20B260	FR SY2 20 0-180 RMSA NPT without bushings	
5U10B460	FR SY1 5 0-180 RA NPT without bushings	5U20B460	FR SY2 5 0-180 RA NPT without bushings	
5U10B560	FR SY1 20 0-180 RA NPT without bushings	5U20B560	FR SY2 20 0-180 RA NPT without bushings	
5U11B141	FR SY1 1/8 5 0-120 RMSA NPT	5U23B143	FR SY2 3/8 5 0-120 RMSA NPT	
5U11B241	FR SY1 1/8 20 0-120 RMSA NPT	5U23B243	FR SY2 3/8 20 0-120 RMSA NPT	
5U11B441	FR SY1 1/8 5 0-120 RA NPT	5U23B443	FR SY2 3/8 5 0-120 RA NPT	
5U11B541	FR SY1 1/8 20 0-120 RA NPT	5U23B543	FR SY2 3/8 20 0-120 RA NPT	
5U11B161	FR SY1 1/8 5 0-180 RMSA NPT	5U23B163	FR SY2 3/8 5 0-180 RMSA NPT	
5U11B261	FR SY1 1/8 20 0-180 RMSA NPT	5U23B263	FR SY2 3/8 20 0-180 RMSA NPT	
5U11B461	FR SY1 1/8 5 0-180 RA NPT	5U23B463	FR SY2 3/8 5 0-180 RA NPT	
5U11B561	FR SY1 1/8 20 0-180 RA NPT	5U23B563	FR SY2 3/8 20 0-180 RA NPT	
5U12B142	FR SY1 1/4 5 0-120 RMSA NPT	5U24B144	FR SY2 1/2 5 0-120 RMSA NPT	
5U12B242	FR SY1 1/4 20 0-120 RMSA NPT	5U24B244	FR SY2 1/2 20 0-120 RMSA NPT	
5U12B442	FR SY1 1/4 5 0-120 RA NPT	5U24B444	FR SY2 1/2 5 0-120 RA NPT	
5U12B542	FR SY1 1/4 20 0-120 RA NPT	5U24B544	FR SY2 1/2 20 0-120 RA NPT	
5U12B162	FR SY1 1/4 5 0-180 RMSA NPT	5U24B164	FR SY2 1/2 5 0-180 RMSA NPT	
5U12B262	FR SY1 1/4 20 0-180 RMSA NPT	5U24B264	FR SY2 1/2 20 0-180 RMSA NPT	
5U12B462	FR SY1 1/4 5 0-180 RA NPT	5U24B464	FR SY2 1/2 5 0-180 RA NPT	
5U12B562	FR SY1 1/4 20 0-180 RA NPT	5U24B564	FR SY2 1/2 20 0-180 RA NPT	
5U13B143	FR SY1 3/8 5 0-120 RMSA NPT	5U25B145	FR SY2 3/4 5 0-120 RMSA NPT	
5U13B243	FR SY1 3/8 20 0-120 RMSA NPT	5U25B245	FR SY2 3/4 20 0-120 RMSA NPT	
5U13B443	FR SY1 3/8 5 0-120 RA NPT	5U25B445	FR SY2 3/4 5 0-120 RA NPT	
5U13B543	FR SY1 3/8 20 0-120 RA NPT	5U25B545	FR SY2 3/4 20 0-120 RA NPT	
5U13B163	FR SY1 3/8 5 0-180 RMSA NPT	5U25B165	FR SY2 3/4 5 0-180 RMSA NPT	
5U13B263	FR SY1 3/8 20 0-180 RMSA NPT	5U25B265	FR SY2 3/4 20 0-180 RMSA NPT	
5U13B463	FR SY1 3/8 5 0-180 RA NPT	5U25B465	FR SY2 3/4 5 0-180 RA NPT	
5U13B563	FR SY1 3/8 20 0-180 RA NPT	5U25B565	FR SY2 3/4 20 0-180 RA NPT	
		5U26B146	FR SY2 1 5 0-120 RMSA NPT	
		5U26B246	FR SY2 1 20 0-120 RMSA NPT	
		5U26B446	FR SY2 1 5 0-120 RA NPT	
		5U26B546	FR SY2 1 20 0-120 RA NPT	
		5U26B166	FR SY2 1 5 0-180 RMSA NPT	
		5U26B266	FR SY2 1 20 0-180 RMSA NPT	
		5U26B466	FR SY2 1 5 0-180 RA NPT	
		5U26B566	FR SY2 1 20 0-180 RA NPT	

NOTES

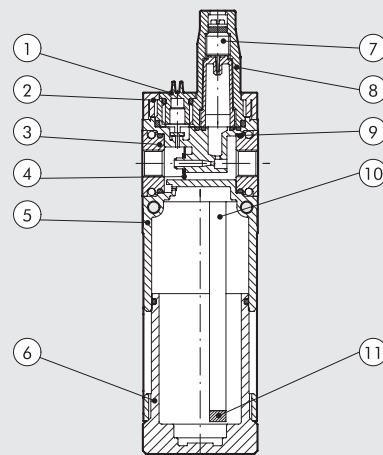
The pneumatic lubricator is the simplest way of efficiently lubricating the actuators linked to a circuit. As compressed air flows towards the lubricator, it encounters a flexible diaphragm which partially blocks the way, creating a small pressure difference between the inlet and outlet air. Being at the higher pressure, the oil in the cup is pumped through a tube with a filter towards the regulation pin. The quantity of oil can be metered accurately since the drops can be viewed through the transparent dome. Filling with oil must take place in the absence of pressure, unscrewing the plug next to the dome. On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP for size 2) that can be used with pressure gauges, pressure switches or as an additional air intake.



TECHNICAL DATA	LUB SY1			LUB SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	Oil mist						
Type of lubrication	Manual filling from the top						
Version							
Max. input pressure	bar			bar			
	MPa			MPa			
	psi			psi			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	1300	1700	2200	2300	3900	3900
	scfm	46	60	78	81	138	138
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1600	3000	3650	3650	6100	6100
	scfm	57	106	129	129	216	216
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C			°C			
	°F			°F			
Weight	pounds			pounds			
Fluid	Compressed air or other inert gases						
Quantity of filled oil	fluid ounce oz			fluid ounce oz			
Mounting position	Vertical			Vertical			
Port for additional air take-off	1/8" BSPP, front and rear, lubricated air			1/4" BSPP, front and rear, lubricated air			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min			Nl/min			
	scfm			scfm			
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			
Recommended oils	ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Notes on use	Install the lubricator as close as possible to the point of use. Fill the lubricator bowl with oil before pressurizing the system. Do not use cleaning oils, brake fluid oils or solvents in general. For the best lubrication results, set the drip rate to one drop for 11-22 scfm						

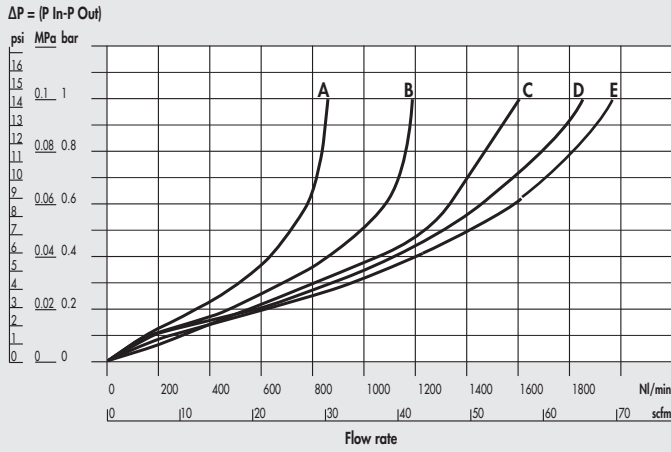
COMPONENTS

- ① Technopolymer oil filling plug
- ② Technopolymer flange
- ③ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ④ Venturi NBR diaphragm
- ⑤ Technopolymer body
- ⑥ Clear technopolymer bowl
- ⑦ OT 58 brass oil flow regulation needle
- ⑧ Clear technopolymer cover
- ⑨ NBR o-ring gasket
- ⑩ Rilsan[®] oil suction pipe
- ⑪ Oil filter

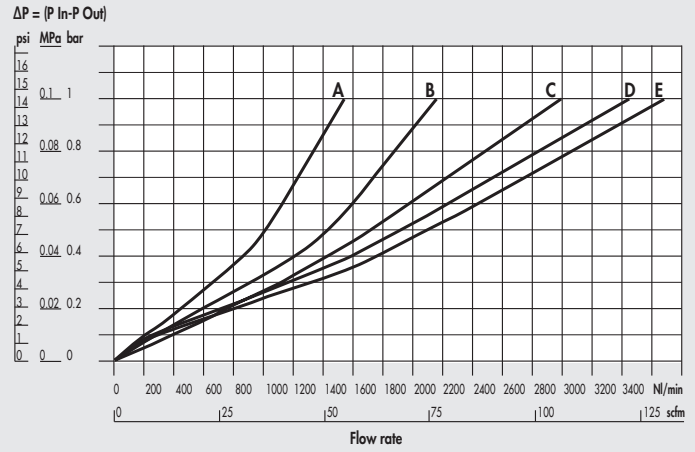


FLOW CHARTS

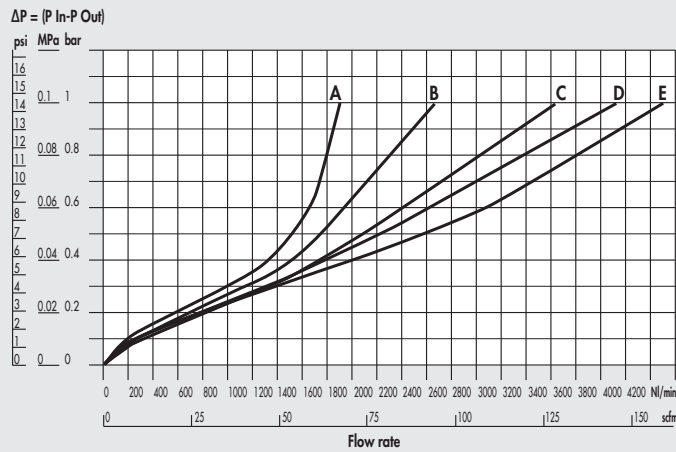
LUB Syntesi® SY1 1/8"



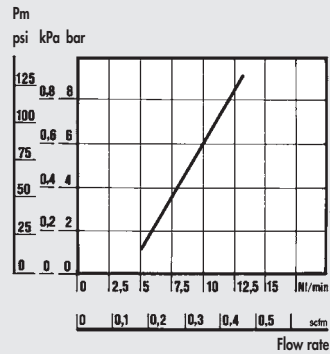
LUB Syntesi® SY1 1/4"



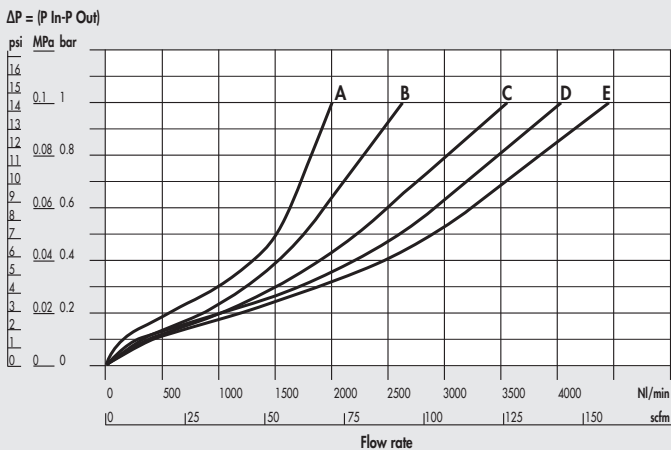
LUB Syntesi® SY1 3/8"



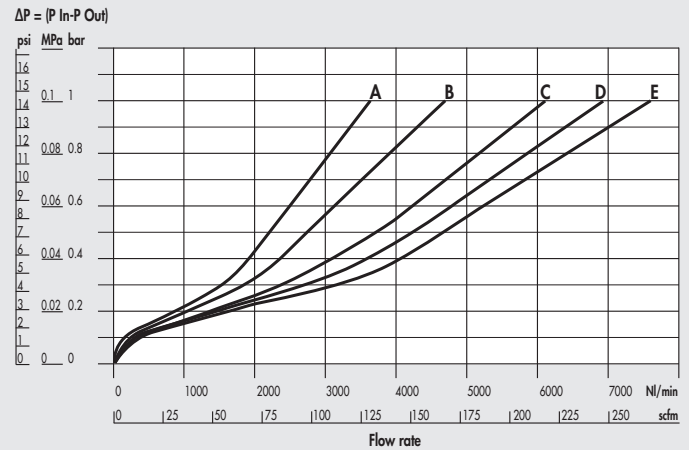
Minimum operating flow chart SY1



LUB Syntesi® SY2 3/8"



LUB Syntesi® SY2 1/2"



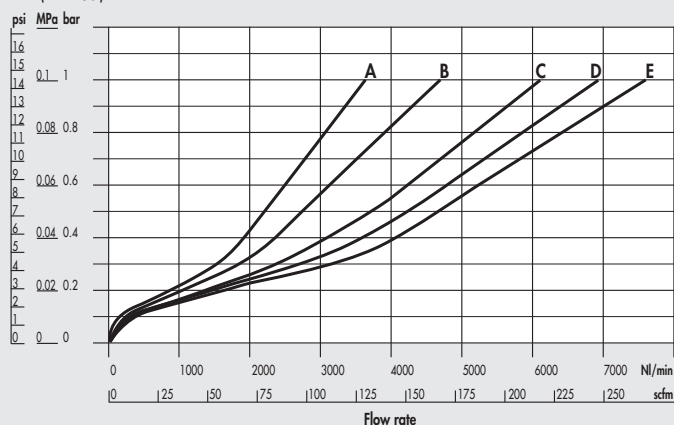
A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi

C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi

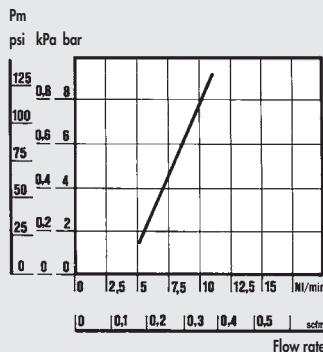
E = 10 bar - 1 MPa - 145 psi

LUB Syntesi® SY2 3/4" - 1"

ΔP = (P In-P Out)



Minimum operating flow chart SY2

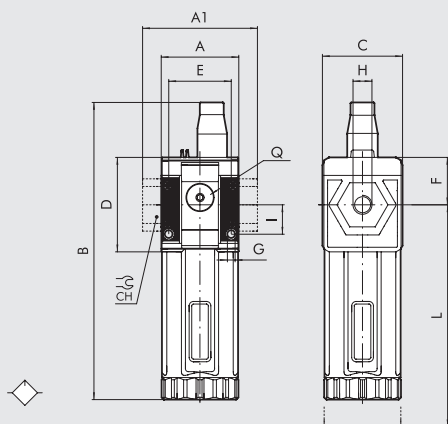


A = 2.5 bar - 0.25 MPa - 36 psi
 B = 4 bar - 0.4 MPa - 58 psi

C = 6.3 bar - 0.63 MPa - 91 psi
 D = 8 bar - 0.8 MPa - 116 psi

E = 10 bar - 1 MPa - 145 psi

DIMENSIONS



H (threaded port) NPT	SIZE 1			SIZE 2			
	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		1.65				2.38	
A1	-	-	1.73	-	-	3.74	3.74
B		6.38				7.89	
C		1.73				2.4	
CH		-		-	-	1.26	1.41
D		2.03				2.77	
E		1.32				1.87	
F		1.02				1.5	
G		0.165				0.21	
I		0.63				0.89	
L		6.23				7.6	
Q (no. 2 additional air takes-off)		1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	L Lubricator	10 Manual filling from the top	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	NOTE
Syntesi® SY1 LUBRICATOR		Syntesi® SY2 LUBRICATOR		
5U10L100	LUB SY1 NPT without bushings	5U20L100	LUB SY2 NPT without bushings	Anti-corrosion version
5U11L101	LUB SY1 1/8 NPT	5U23L103	LUB SY2 3/8 NPT	5Z-----
5U12L102	LUB SY1 1/4 NPT	5U24L104	LUB SY2 1/2 NPT	Example
5U13L103	LUB SY1 3/8 NPT	5U25L105	LUB SY2 3/4 NPT	5Z11L101 LUB SY1 1/8 NPT anti-corrosion
		5U26L106	LUB SY2 1 NPT	

SYNTESI® SHUT-OFF VALVE

This device separates the compressed air circuit from the main air supply. It is a three-way valve that relieves the downstream system in the closed position. This makes it useful for maintenance operations or when the air supply to a machine or piece of equipment needs to be shut off. Manual, pneumatic, electro-pneumatic and assisted electro-pneumatic control versions are available. The last version must be used if the inlet pressure is outside the electro-pneumatic valve operating range, so for particularly low or high pressures. The version with manual control can be locked and you can enter up to two padlocks on size 1 and up to three on size 2 when the valve is in the closed position. As an alternative, a version with a single Ø 7 mm hole is available for a single padlock. On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP size 2) that can be used with pressure gauges, pressure switches or as an additional air intake.



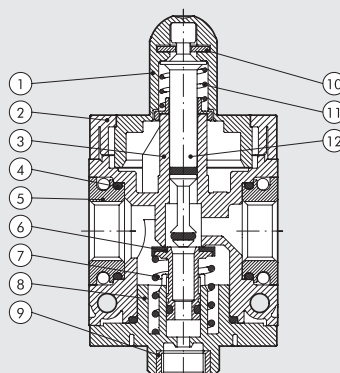
AIR PREP

Syntesi® SHUT-OFF VALVE

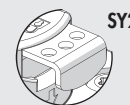
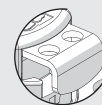
TECHNICAL DATA	V3V SY1			V3V SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded discharge port	1/8" NPT			1/4" NPT			
Type of control	Manual - pneumatic - solenoid - solenoid pilot - assisted			Manual - Pneumatic - Cnomo elpn - Cnomo elpn pilot-assisted			
Max inlet pressure for pneumatic and solenoid pilot-assisted versions	bar 15			bar 13			
	MPa 1.5			MPa 1.3			
	psi 217			psi 188			
Inlet pressure for solenoid version	bar 3 - 10			bar 3 - 10			
	MPa 0.3 - 1			MPa 0.3 - 1			
	psi 43 - 145			psi 43 - 145			
Pilot pressure for pneumatic and solenoid pilot-assisted versions	bar 3 - 10			bar 3 - 10			
	MPa 0.3 - 1			MPa 0.3 - 1			
	psi 43 - 145			psi 43 - 145			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min 800	Nl/min 1000	Nl/min 1100	Nl/min 2800	Nl/min 3000	Nl/min 3000	
	scfm 28	scfm 35	scfm 39	scfm 99	scfm 106	scfm 106	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min 1100	Nl/min 1500	Nl/min 1600	Nl/min 3600	Nl/min 4000	Nl/min 4000	
	scfm 39	scfm 53	scfm 57	scfm 127	scfm 141.5	scfm 141.5	
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min 500			Nl/min 2000			
	scfm 18			scfm 71			
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C From -10 to +50			°C From -10 to +50			
	°F From 14 to +122			°F From 14 to +122			
Padlockable knob	Included						
Weight	0.44	0.43	0.41	1.04	0.94	0.98	0.95
Fluid	Compressed air or other inert gases						
Mounting position	In any position						
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	Nl/min 500			Nl/min 1500			
	scfm 18			scfm 53			
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			
Coil capacity for electro-pneumatic version	12 VDC and 2VDC = 2W ; 24 VAC, 110 VAC and 220 VAC = 3.5 VA						
Hand operator of electro-pneumatic versions	Bistable: horizontal = OFF, vertical = ON						

COMPONENTS

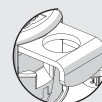
- ① Technopolymer knob
- ② Technopolymer hinge
- ③ Technopolymer body
- ④ NBR o-ring gasket
- ⑤ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ⑥ OT58 brass valve with NBR vulcanized gasket
- ⑦ Stainless steel valve spring
- ⑧ Technopolymer plug
- ⑨ OT58 brass threaded insert
- ⑩ Plate for knob locking (stainless steel for anti-corrosion version)
- ⑪ Stainless steel spring stem recovery
- ⑫ OT58 brass stem



V10 - Steel plate with Ø3.5 holes for locking with 2 padlocks (SY1) or 3 padlocks (SY2).

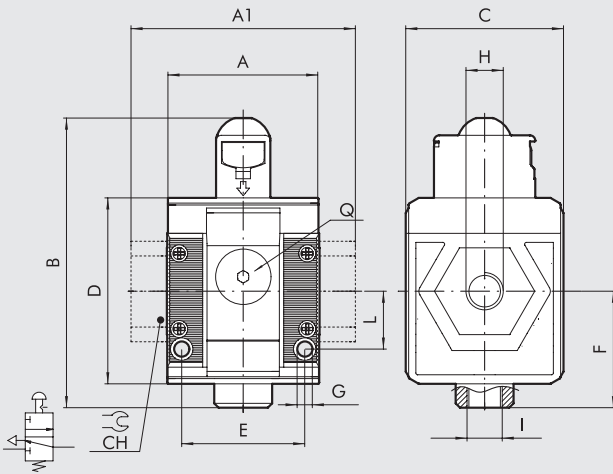


V11 - Steel plate with a single Ø7 hole for docking with a single padlock (compatible with most of the padlocks available from the trade with a Ø5mm arch).



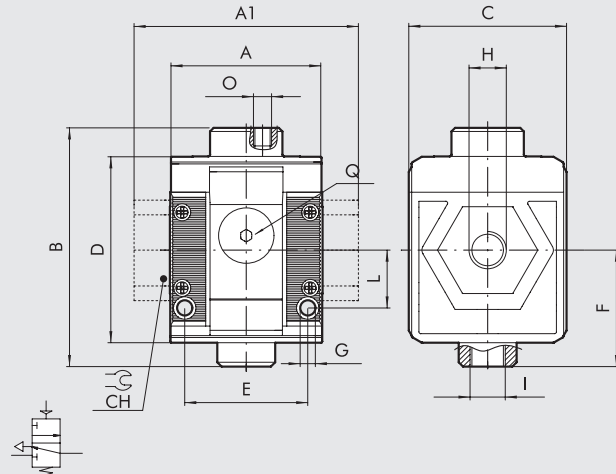
COMPONENTS

MANUAL

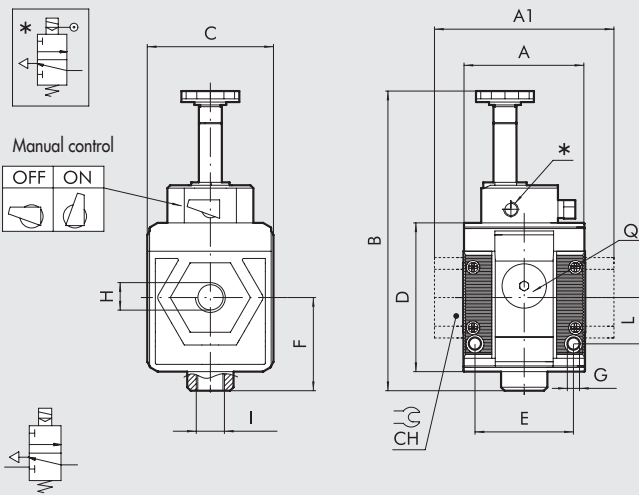


SY1-SY2

PNEUMATIC

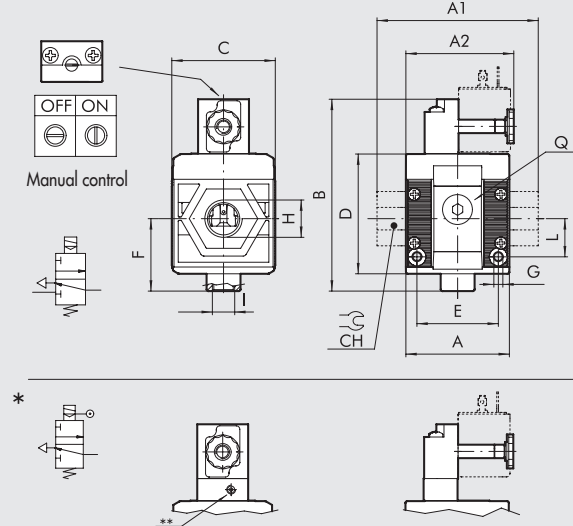


SOLENOID/SOLENOID PILOT-ASSISTED*



SY1

CNOMO SOLENOID / CNOMO SOLENOID PILOT-ASSISTED*



N.B.: Before assembling other Syntesi elements after the V3V, remember to mount the coil on the V3V itself.

	MANUAL				PNEUMATIC				SOLENOID/SOLENOID PILOT-ASSISTED			CNOMO SOLENOID/CNOMO SOLENOID PILOT-ASSISTED									
	SIZE 1		SIZE 2		SIZE 1		SIZE 2		SIZE 1			SIZE 2									
H (threaded port) NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A	1.65		2.38		1.65		2.38		1.65			2.38									
A1	-	-	1.73	-	-	3.74	3.74	-	-	1.73	-	-	1.73	-	-	-	-	-	3.74	3.74	
A2	-		-		-		-		-			2.56									
B	3.15		4.29		2.60		3.7		4.10			-									
Cnomo	-		-		-		-		-			4.45									
Cnomo pilot ass.	-		-		-		-		-			4.26									
C	1.73		2.4		1.73		2.4		1.73			2.4									
CH	-		-		-		-		-			-									
D	2.03		2.77		2.03		2.77		2.03			2.77									
E	1.32		1.87		1.32		1.87		1.32			1.87									
F	1.23		1.68		1.23		1.68		1.23			1.68									
G	0.165		0.21		0.165		0.21		0.165			0.21									
I (exhaust)	1/8" NPT		1/4" NPT		1/8" NPT		1/4" NPT		1/8" NPT			1/4" NPT									
L	0.63		0.89		0.63		0.89		0.63			0.89									
O (pilot)	-		-		M5**		1/8" NPT		-			-									
Q (no. 2 additional air takes-off)	1/8" BSPP		1/4" BSPP		1/8" BSPP		1/4" BSPP		1/8" BSPP			1/4" BSPP									
* Pilot	-		-		-		-		M5**			M5**									

** AU 5/G M5 - 10/32 UNF adapter supplied

KEY TO CODES

5U SYNTESI	1 SIZE	1 THREADED INPUT CONNECTION	V ELEMENT	10 TYPE	1 THREADED OUTPUT CONNECTION
5U Syntesi NPT 5Z Syntesi anti-corrosion NPT	1 Size 1 <hr/> 2 Size 2	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port <hr/> 0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port	V Shut-off valve	10 Manual with Ø3.5 hole for padlocks * 11 Manual with Ø7 hole for padlock Pneumatic ● 20 Solenoid pilot-assisted ● 30 Solenoid ● 70 Solenoid	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port <hr/> 0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

- * Compatible with most of the padlocks available from the trade with a Ø5mm arch.
- Not available in the anti-corrosion version.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

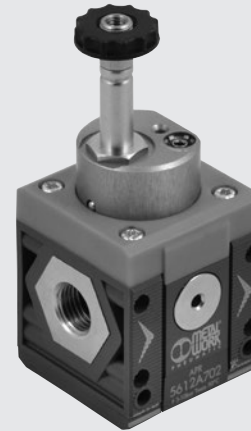
Code	Description	Code	Description	NOTE
Syntesi® SY1 SHUT-OFF VALVE		Syntesi® SY2 SHUT-OFF VALVE		NOTE
5U10V100	V3V SY1 manual NPT without bushings	5U20V100	V3V SY2 manual NPT without bushings	Anti-corrosion version
5U11V101	V3V SY1 1/8 manual NPT	5U23V103	V3V SY2 3/8 manual NPT	5Z_-----
5U12V102	V3V SY1 1/4 manual NPT	5U24V104	V3V SY2 1/2 manual NPT	Example
5U13V103	V3V SY1 3/8 manual NPT	5U25V105	V3V SY2 3/4 manual NPT	5Z11V101 V3V SY1 1/8 NPT anti-corrosion
5U10V200	V3V SY1 pneumatic NPT without bushings	5U26V106	V3V SY2 1 manual NPT	
5U11V201	V3V SY1 1/8 pneumatic NPT	5U20V200	V3V SY2 pneumatic NPT without bushings	
5U12V202	V3V SY1 1/4 pneumatic NPT	5U23V203	V3V SY2 3/8 pneumatic NPT	
5U13V203	V3V SY1 3/8 pneumatic NPT	5U24V204	V3V SY2 1/2 pneumatic NPT	
5U10V300	V3V SY1 solenoid pilot-assisted NPT without bushings	5U25V205	V3V SY2 3/4 pneumatic NPT	
5U11V301	V3V SY1 1/8 solenoid pilot-assisted NPT	5U26V206	V3V SY2 1 pneumatic NPT	
5U12V302	V3V SY1 1/4 solenoid pilot-assisted NPT	5U20V300	V3V SY2 solenoid pilot-assisted Cnomo NPT without bushings	
5U13V303	V3V SY1 3/8 solenoid pilot-assisted NPT	5U23V303	V3V SY2 3/8 solenoid pilot-assisted Cnomo NPT	
5U10V700	V3V SY1 solenoid NPT without bushings	5U24V304	V3V SY2 1/2 solenoid pilot-assisted Cnomo NPT	
5U11V701	V3V SY1 1/8 solenoid NPT	5U25V305	V3V SY2 3/4 solenoid pilot-assisted Cnomo NPT	
5U12V702	V3V SY1 1/4 solenoid NPT	5U26V306	V3V SY2 1 solenoid pilot-assisted Cnomo NPT	
5U13V703	V3V SY1 3/8 solenoid NPT	5U20V700	V3V SY2 solenoid NPT without bushings	
		5U23V703	V3V SY2 3/8 solenoid NPT	
		5U24V704	V3V SY2 1/2 solenoid NPT	
		5U25V705	V3V SY2 3/4 solenoid NPT	
		5U26V706	V3V SY2 1 solenoid NPT	

NOTES

The progressive starter is a pneumatic component that allows air enter the circuit gradually, thereby avoiding excessive pressure bursts.

A sophisticated system of internal valves allows two separate stages of operation. During the first stage, a quantity of air that can be regulated via a pin flows from the APR. The second stage starts when the downstream pressure reached 40÷60% of the upstream pressure, during which full-port flow is achieved. When the mechanism is deactivated, the air flow is cut off and the downstream circuit is relieved.

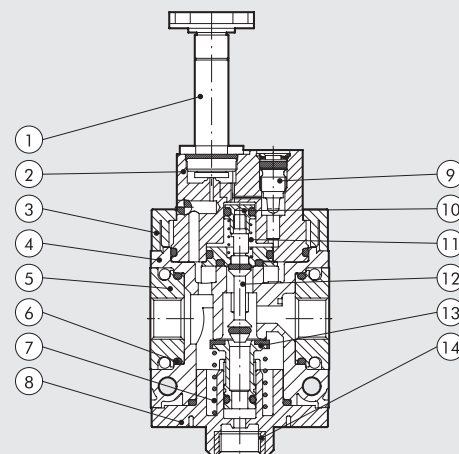
The progressive starter is particularly useful on machinery where it is important to prevent actuators from moving rapidly and out of control, or where, for safety reasons, the air in-feed needs to be gentle and gradual. It, however, there is a major leak in the downstream system, it may never be possible to achieve the pressure required to open the valve completely.



TECHNICAL DATA	APR SY1			APR SY2				
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	
Threaded port		1/8" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT	
Threaded discharge port		1/8" NPT				1/4" NPT		
Type of control		Solenoid		Solenoid - Cnomo solenoid				
Inlet pressure	bar	3 - 10				3 - 10		
	MPa	0.3 - 1				0.3 - 1		
	psi	43 - 145				43 - 145		
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	900	1000	1100	2800	3600	3600	
	scfm	32	39	39	99	127	127	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1250	1500	1600	4400	4800	4800	
	scfm	44	53	57	156	170	170	
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min		500			2700		
	scfm		18			96		
Maximum flow rate start-up, at 6.3 bar (0.63 MPa; 91 psi) with regulation pin completely unscrewed	Nl/min		170			700		
	scfm		6			25		
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C		From -10 to +50			From -10 to +50		
	°F		From 14 to +122			From 14 to +122		
Weight	pounds	0.45	0.44	0.42	1.1	1.09	1.04	1.01
Fluid		Compressed air or other inert gases						
Mounting position		In any position						
Additional air take-off, for pressure gauges or fittings		1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	500			1500			
	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Coil capacity		12 VDC and 24 VDC = 2W; 24 VAC, 110 VAC and 220 VAC = 3.5 VA						
Hand operator		Bistable: horizontal = OFF, vertical = ON						

COMPONENTS

- ① Sleeve ø8 mm
- ② Anodized aluminium upper block
- ③ Technopolymer flange
- ④ Technopolymer body
- ⑤ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ⑥ O-ring NBR gasket
- ⑦ Stainless steel valve spring
- ⑧ Technopolymer bottom plug
- ⑨ OT58 brass progressive start regulation pin
- ⑩ OT58 brass internal valve
- ⑪ Stainless steel spring stem recoveryng
- ⑫ OT58 brass stem
- ⑬ OT58 brass main valve with vulcanized gasket
- ⑭ OT58 brass threaded insert



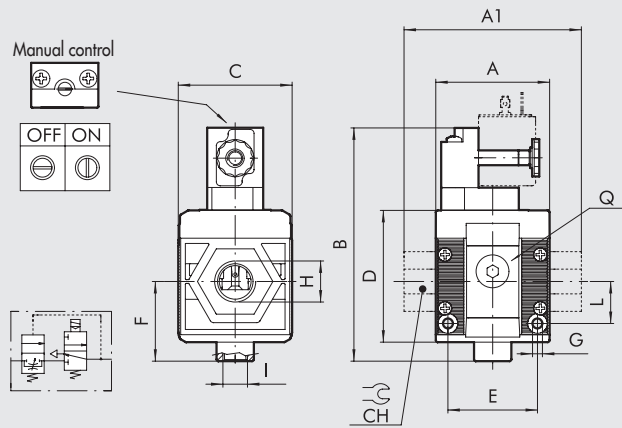
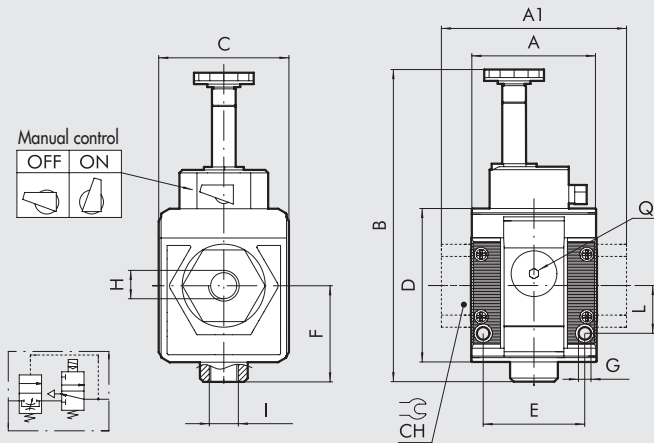
DIMENSIONS

SOLENOID

SY1-SY2

CNOMO SOLENOID

SY2



N.B.: Before assembling other Syntesi elements after the APR, remember to mount the coil on the APR itself.

		SOLENOID SIZE 1			SOLENOID / CNOMO SOLENOID SIZE 2			
H (threaded port)	NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A			1.65				2.38	
A1		-	-	1.73	-	-	3.74	3.74
B			4.14				5.16	
	Cnomo		-				4.92	
C			1.73				2.4	
CH			-		-	-	1.26	1.41
D			2.03				2.77	
E			1.32				1.87	
F			1.02				1.68	
G			0.165				0.21	
I (exhaust)			1/8" NPT				1/4" NPT	
L			0.63				0.89	
Q (no. 2 additional air takes-off)			1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	A	70	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	A Progressive starter APR	70 Solenoid * 71 Cnomo solenoid	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

* Only for size 2

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	Code	Description
Syntesi® SY1 PROGRESSIVE STARTER		Syntesi® SY2 PROGRESSIVE STARTER		Syntesi® SY2 PROGRESSIVE STARTER	
5U10A700	APR SY1 solenoid NPT without bushings	5U20A700	APR SY2 solenoid NPT without bushings	5U20A710	APR SY2 Cnomo solenoid NPT without bushings
5U11A701	APR SY1 1/8 solenoid NPT	5U23A703	APR SY2 3/8 solenoid NPT	5U23A713	APR SY2 3/8 Cnomo solenoid NPT
5U12A702	APR SY1 1/4 solenoid NPT	5U24A704	APR SY2 1/2 solenoid NPT	5U24A714	APR SY2 1/2 Cnomo solenoid NPT
5U13A703	APR SY1 3/8 solenoid NPT	5U25A705	APR SY2 3/4 solenoid NPT	5U25A715	APR SY2 3/4 Cnomo solenoid NPT
		5U26A706	APR SY2 1 solenoid NPT	5U26A716	APR SY2 1 Cnomo solenoid NPT

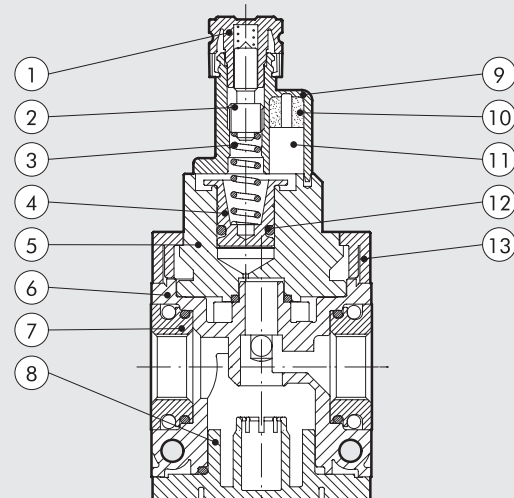
Syntesi® pressure switches feature a high degree of miniaturisation and a modern attractive design. As they are extremely modular, the Syntesi® series can be installed facing up or down. They come ready assembled with a 78.8 inch cable or an M8 connector with a 11.8 inch cable. The contact is the switching type, which means it can be normally open or normally closed. It can be regulated via a knurled push-lock handle. On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP size 2) that can be used with pressure gauges or as an additional air intake.



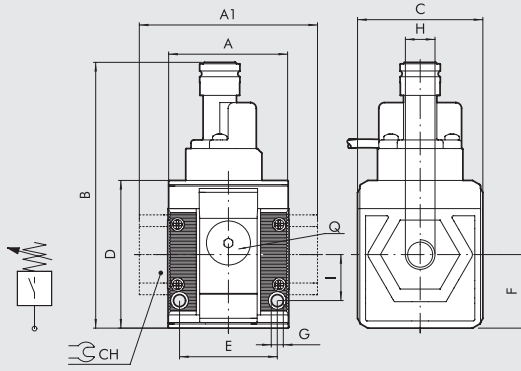
TECHNICAL DATA	SY1 PRESSURE SWITCHES			SY2 PRESSURE SWITCHES			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	From 7 to 145			From 7 to 145			
Adjustable pressure interval	psi			From 5.8 to 11.6 (See diagram)			
Hysteresis (not adjustable)	psi						
Maximum pressure	bar			13			
	MPa			1.3			
Min/max temperature at 10 bar; 1 MPa; 145 psi	psi			188			
	°C			From -10 to 50			
Maximum current	°F			From 14 to +122			
	A			2			
Maximum voltage	V			250			
Outside diameter of cable	in			0.19			
Number of wires and cross section	3 x 0.5 mm ²			3 x 0.5 mm ²			
Contacts	Normally-Open (NO) and Normally-Closed (NC)						
Protection	IP65			IP65			
Number of switchings	5 x 10 ⁶			5 x 10 ⁶			
Fluid	Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous						
Mounting position	In any position						
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	NL/min			1500			
	scfm			53			
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			
Weight	0.57	0.55	0.54	0.97	0.92	0.9	0.88

COMPONENTS

- ① Technopolymer adjusting "push lock" handle
- ② OT58 brass adjusting screw
- ③ Steel piston spring
- ④ OT58 brass piston
- ⑤ Aluminium top plug
- ⑥ Technopolymer body
- ⑦ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
- ⑧ Technopolymer bottom plug
- ⑨ Technopolymer pressure switch body
- ⑩ Resin finish for IP65
- ⑪ Electrical contact
- ⑫ O-ring NBR gasket
- ⑬ Technopolymer flange

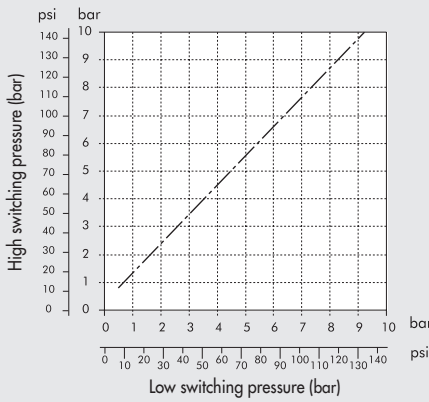


DIMENSIONS



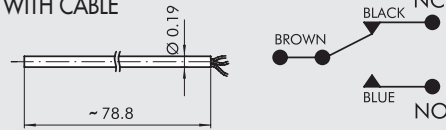
		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		1.65			2.38			
A1		-	-	1.73	-	-	3.74	3.74
B		3.67			3.98			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
D		2.03			2.77			
E		1.32			1.87			
F		1.02			1.28			
G		0.165			0.21			
I		0.63			0.89			
Q (no. 2 additional air takes-off)		1/8" BSPP			1/4" BSPP			

HYSTERESIS GRAPH

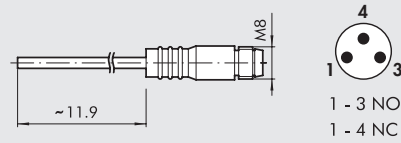


WIRING DIAGRAM

VERSION WITH CABLE



VERSION WITH M8 CONNECTOR



KEY TO CODES

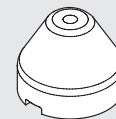
5U	1	1	5	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	S Pressure switches	10 78.8 inch cable 20 11.8 inch cable with M8 connector	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Descrizione	Code	Description
Syntesi® SY1 PRESSURE SWITCHES		Syntesi® SY2 PRESSURE SWITCHES	
5U10S100	Pressure switch 78.8 inch cable SY1 NPT without bushings	5U20S100	Pressure switch 78.8 inch cable SY2 NPT without bushings
5U11S101	Pressure switch 78.8 inch cable SY1 1/8 NPT	5U23S103	Pressure switch 78.8 inch cable SY2 3/8 NPT
5U12S102	Pressure switch 78.8 inch cable SY1 1/4 NPT	5U24S104	Pressure switch 78.8 inch cable SY2 1/2 NPT
5U13S103	Pressure switch 78.8 inch cable SY1 3/8 NPT	5U25S105	Pressure switch 78.8 inch cable SY2 3/4 NPT
		5U26S106	Pressure switch 78.8 inch cable SY2 1 NPT
5U10S200	Pressure switch M8 connector SY1 NPT without bushings	5U20S200	Pressure switch M8 connector SY2 NPT without bushings
5U11S201	Pressure switch M8 connector SY1 1/8 NPT	5U23S203	Pressure switch M8 connector SY2 3/8 NPT
5U12S202	Pressure switch M8 connector SY1 1/4 NPT	5U24S204	Pressure switch M8 connector SY2 1/2 NPT
5U13S203	Pressure switch M8 connector SY1 3/8 NPT	5U25S205	Pressure switch M8 connector SY2 3/4 NPT
		5U26S206	Pressure switch M8 connector SY2 1 NPT

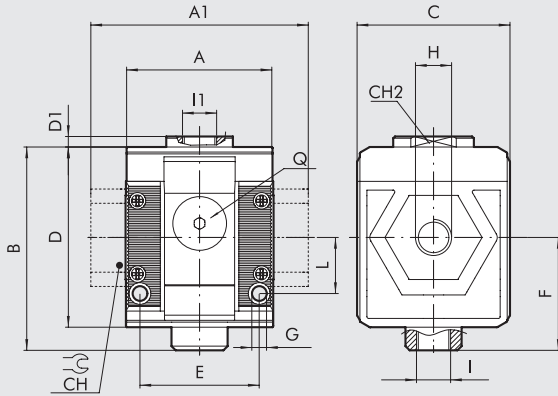
ACCESSOIRES: SECURITY KNOB



Code	Description
9200703	Security knob

NOTE: Pull outwards to remove the knob from the pressure switch on the unit. Insert the security knob and regulate the pressure switch. Then press the handle firmly to lock it in position. If the pressure switch needs to be reset, remove the security knob by forcing it laterally with a screwdriver.

DIMENSIONS 4 WAY-VERSION



H (threaded port)	NPT	SIZE 1			SIZE 2		
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"
A			1.65			2.38	
A1		-	-	1.73	-	-	3.74 3.74
B			2.28			3.19	
C			1.73			2.4	
CH			-		-	-	1.26 1.41
CH2			3/4			-	
D			2.03			2.77	
D1			0.19			-	
E			1.32			1.87	
F			1.02			1.68	
G			0.165			0.21	
I			1/8" NPT			1/4" NPT	
I1			1/4" NPT			3/8" NPT	
L			0.63			0.89	
Q (no. 2 add. air takes-off)			1/8" BSPP			1/4" BSPP	

KEY TO CODE FOR 4-WAY VERSION

5U	1	1	P	20	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	P Air take-off	20 4-way	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE CODES

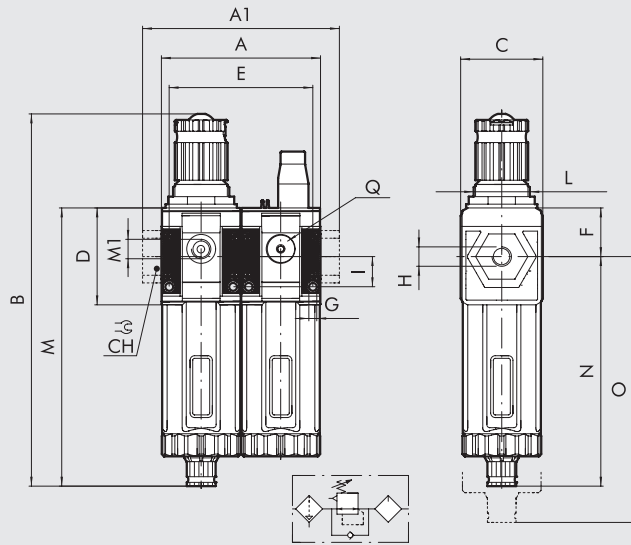
Code	Description	Code	Description	NOTE
AIR INTAKE, 2-way version		AIR INTAKE, 4-way version		<p>NOTE Anti-corrosion version 5Z_____</p> <p>Example 5Z11P201 PA 4-way SY1 1/8 NPT anti-corrosion</p>
5U10P100	PA SY1 NPT	5U10P200	PA 4-way SY1 NPT without bushing	
5U20P100	PA SY2 NPT	5U11P201	PA 4-way SY1 1/8 NPT	
		5U12P202	PA 4-way SY1 1/4 NPT	
		5U13P203	PA 4-way SY1 3/8 NPT	
		5U20P200	PA 4-way SY2 NPT without bushing	
		5U23P203	PA 4-way SY2 3/8 NPT	
		5U24P204	PA 4-way SY2 1/2 NPT	
		5U25P205	PA 4-way SY2 3/4 NPT	
		5U26P206	PA 4-way SY2 1 NPT	

For full details and list of components refer to the sections about filter-regulator and the lubricator.



TECHNICAL DATA	FR + LUB SY1			FR + LUB SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7- white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7- blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7-						
Max. inlet pressure	bar MPa psi			bar MPa psi			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	NL/min scfm			NL/min scfm			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	NL/min scfm			NL/min scfm			
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min scfm			NL/min scfm			
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C °F			°C °F			
Padlockable knob	Included						
Upstream pressure compensation	Included, via balanced valve						
Weight	0.92	0.91	0.89	2.37	2.31	2.30	2.27
Fluid	Compressed air or other inert gases						
Mounting position	Vertical			Vertical			
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar	500 (FR) - 450 (LUB)			1400 (FR) - 800 (LUB)			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	18 (FR) - 16 (LUB)			49.5 (FR) - 28 (LUB)			
Filter cup capacity (condensate)	fluid ounce oz			fluid ounce oz			
Quantity of filled oil	fluid ounce oz			fluid ounce oz			
Condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. The SAC tap drains the condensate only as the result of sudden changes in compressed air requests. Note: the maximum input pressure for the RA version must not exceed 145 psi ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Recommended oils	ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)			ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)			
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			

DIMENSIONS



		SIZE 1			SIZE 2			
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
H (threaded port)	NPT							
A			3.31				4.76	
A1		-	-	3.39	-	-	6.14	6.14
B	RMSA		7.60				9.68	
	RA/SAC		7.95				9.84	
C			1.73				2.4	
CH			-		-	-	1.26	1.41
D			2.03				2.77	
E			2.97				4.25	
F			1.08				1.5	
G			0.165				0.21	
I			0.63				0.89	
L			M30x1.5				M38x2	
M	RMSA		5.83				7	
	RA/SAC		5.99				7.16	
M1 (pressure gauge port)			1/8" BSPP				1/4" BSPP	
N	RMSA		4.82				5.5	
	RA/SAC		4.97				5.66	
O	RMSA		7.95				9.65	
	RA/SAC		8.11				9.8	
Q (no. 2 additional air takes-off)			1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	B	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	1 1/8" NPT port	B Filter-regulator	● 10 5 μm (200 microinch), RMSA, 0 - 30 psi	L Lubricator	10 Manual filling from the top	1 1/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	2 1/4" NPT port		● 20 20 μm (790 microinch), RMSA, 0 - 30 psi			
		3 3/8" NPT port		● 30 50 μm (2000 microinch), RMSA, 0 - 30 psi			2 1/4" NPT port
		4 1/2" NPT port		● 40 5 μm (200 microinch), RA, 0 - 30 psi			3 3/8" NPT port
		5 3/4" NPT port		● 50 20 μm (790 microinch), RA, 0 - 30 psi			4 1/2" NPT port
		6 1" NPT port		● 60 50 μm (2000 microinch), RA, 0 - 30 psi			5 3/4" NPT port
				● 11 5 μm (200 microinch), SAC, 0 - 30 psi			6 1" NPT port
				● 21 20 μm (790 microinch), SAC, 0 - 30 psi			
				● 31 50 μm (2000 microinch), SAC, 0 - 30 psi			
				+ 12 5 μm (200 microinch), RMSA, 0 - 60 psi			
				+ 22 20 μm (790 microinch), RMSA, 0 - 60 psi			
				+ 32 50 μm (2000 microinch), RMSA, 0 - 60 psi			
				+ 42 5 μm (200 microinch), RA, 0 - 60 psi			
				+ 52 20 μm (790 microinch), RA, 0 - 60 psi			
				+ 62 50 μm (2000 microinch), RA, 0 - 60 psi			
				+ 13 5 μm (200 microinch), SAC, 0 - 60 psi			
				+ 23 20 μm (790 microinch), SAC, 0 - 60 psi			
				+ 33 50 μm (2000 microinch), SAC, 0 - 60 psi			
				14 5 μm (200 microinch), RMSA, 0 - 120 psi			
				24 20 μm (790 microinch), RMSA, 0 - 120 psi			
				34 50 μm (2000 microinch), RMSA, 0 - 120 psi			
				44 5 μm (200 microinch), RA, 0 - 120 psi			
				54 20 μm (790 microinch), RA, 0 - 120 psi			
				64 50 μm (2000 microinch), RA, 0 - 120 psi			
				15 5 μm (200 microinch), SAC, 0 - 120 psi			
				25 20 μm (790 microinch), SAC, 0 - 120 psi			
				35 50 μm (2000 microinch), SAC, 0 - 120 psi			

- Not available in the anti-corrosion version.
- + Anti-corrosion version available only in size 1.

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

- 16 5 μm (200 microinch), RMSA, 0 - 180 psi
- 26 20 μm (790 microinch), RMSA, 0 - 180 psi
- 36 50 μm (2000 microinch), RMSA, 0 - 180 psi
- 46 5 μm (200 microinch), RA, 0 - 180 psi
- 56 20 μm (790 microinch), RA, 0 - 180 psi
- 66 50 μm (2000 microinch), RA, 0 - 180 psi
- 17 5 μm (200 microinch), SAC, 0 - 180 psi
- 27 20 μm (790 microinch), SAC, 0 - 180 psi
- 37 50 μm (2000 microinch), SAC, 0 - 180 psi

V3V + FR + LUB SYNTESI®

For full details and list of components refer to the sections about shut-off valve, filter-regulator and lubricator.

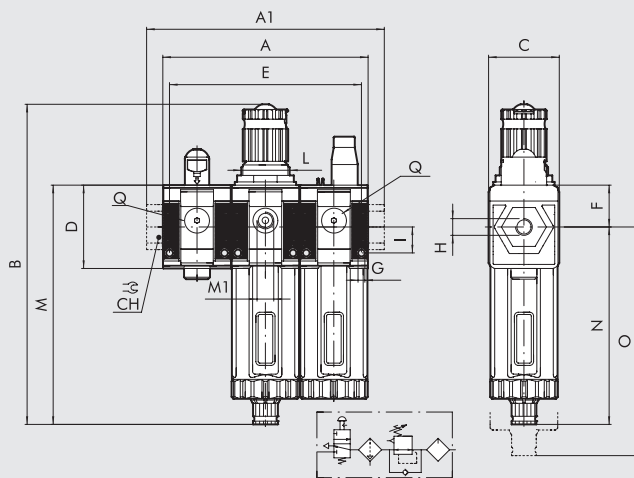


AIR PREP

V3V + FR + LUB Syntesi®

TECHNICAL DATA	V3V + FR + LUB SY1			V3V + FR + LUB SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port							
Degree of filtration	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7- white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7- blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7-						
Max. inlet pressure	15			13			
	1.5			1.3			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	217			188			
	250			1200			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	9			42.5			
	1050			4000			
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	37			141.5			
	70			100			
Min/max temperature at 10 bar; 1 MPa; 145 psi	2.5			3.5			
	From -10 to +50			From -10 to +50			
Full outflow with zero inlet pressure	From 14 to +122			From 14 to +122			
	Included			Included			
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	500			2000			
	18			71			
Padlockable knob	Included with both V3V and regulator						
Upstream pressure compensation	Included, via balanced valve						
Weight	1.32	1.32	1.29	3.26	3.2	3.19	3.17
Fluid	Compressed air or other inert gases						
Mounting position	Vertical			Vertical			
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	500 (V3V) - 500 (FR) - 450 (LUB)			1500 (V3V) - 1400 (FR) - 800 (LUB)			
	18 (V3V) - 18 (FR) - 16 (LUB)			53 (V3V) - 49.5 (FR) - 28 (LUB)			
Filter cup capacity	1.02			2.37			
Quantity of filled oil	2.03			4.40			
Condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. The SAC tap drains the condensate only as the result of sudden changes in compressed air requests. Note: the maximum input pressure for the RA version must not exceed 145 psi ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Recommended oils	N. 8-32 unc x 2			N. 10-24 unc x 2			
Wall fixing screws							

OVERALL DIMENSIONS



		SIZE 1			SIZE 2			
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
H (threaded port)	NPT							
A			4.97				7.14	
A1		-	-	5.04	-	-	8.54	8.54
B	RMSA		7.60				9.68	
	RA/SAC		7.95				9.84	
C			1.73				2.4	
CH			-		-	-	1.26	1.41
D			2.03				2.77	
E			4.61				6.63	
F			1.08				1.5	
G			0.165				0.21	
I			0.63				0.89	
L			M30x1.5				M38x2	
M	RMSA		5.83				7	
	RA/SAC		5.99				7.16	
M1 (pressure gauge port)			1/8" BSPP				1/4" BSPP	
N	RMSA		4.82				5.5	
	RA/SAC		4.97				5.66	
O	RMSA		7.95				9.65	
	RA/SAC		8.11				9.8	
Q (no. 2 additional air takes-off)			1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	V	10	B	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	ELEMENT	DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	1 1/8" NPT port	V V3V	10 Manual	B Filter-regulator	● 10 5 µm (200 microinch), RMSA, 0 - 30 psi	L Lubricator	10 Manual filling from the top	1 1/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	2 1/4" NPT port				● 20 20 µm (790 microinch), RMSA, 0 - 30 psi			2 1/4" NPT port
		3 3/8" NPT port				● 30 50 µm (2000 microinch), RMSA, 0 - 30 psi			3 3/8" NPT port
		4 1/2" NPT port				● 40 5 µm (200 microinch), RA, 0 - 30 psi			4 1/2" NPT port
		5 3/4" NPT port				● 50 20 µm (790 microinch), RA, 0 - 30 psi			5 3/4" NPT port
		6 1" NPT port				● 60 50 µm (2000 microinch), RA, 0 - 30 psi			6 1" NPT port
						● 11 5 µm (200 microinch), SAC, 0 - 30 psi			
						● 21 20 µm (790 microinch), SAC, 0 - 30 psi			
						● 31 50 µm (2000 microinch), SAC, 0 - 30 psi			
						+ 12 5 µm (200 microinch), RMSA, 0 - 60 psi			
						+ 22 20 µm (790 microinch), RMSA, 0 - 60 psi			
						+ 32 50 µm (2000 microinch), RMSA, 0 - 60 psi			
						+ 42 5 µm (200 microinch), RA, 0 - 60 psi			
						+ 52 20 µm (790 microinch), RA, 0 - 60 psi			
						+ 62 50 µm (2000 microinch), RA, 0 - 60 psi			
						+ 13 5 µm (200 microinch), SAC, 0 - 60 psi			
						+ 23 20 µm (790 microinch), SAC, 0 - 60 psi			
						+ 33 50 µm (2000 microinch), SAC, 0 - 60 psi			
						14 5 µm (200 microinch), RMSA, 0 - 120 psi			
						24 20 µm (790 microinch), RMSA, 0 - 120 psi			
						34 50 µm (2000 microinch), RMSA, 0 - 120 psi			
						44 5 µm (200 microinch), RA, 0 - 120 psi			
						54 20 µm (790 microinch), RA, 0 - 120 psi			
						64 50 µm (2000 microinch), RA, 0 - 120 psi			
						15 5 µm (200 microinch), SAC, 0 - 120 psi			
						25 20 µm (790 microinch), SAC, 0 - 120 psi			
						35 50 µm (2000 microinch), SAC, 0 - 120 psi			
						16 5 µm (200 microinch), RMSA, 0 - 180 psi			
						26 20 µm (790 microinch), RMSA, 0 - 180 psi			
						36 50 µm (2000 microinch), RMSA, 0 - 180 psi			
						46 5 µm (200 microinch), RA, 0 - 180 psi			
						56 20 µm (790 microinch), RA, 0 - 180 psi			
						66 50 µm (2000 microinch), RA, 0 - 180 psi			
						17 5 µm (200 microinch), SAC, 0 - 180 psi			
						27 20 µm (790 microinch), SAC, 0 - 180 psi			
						37 50 µm (2000 microinch), SAC, 0 - 180 psi			

● Not available in the anti-corrosion version.
 + Anti-corrosion version available only in size 1.
 RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs.

AIR PREP

V3V + FR + LUB Syntesi®

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	NOTE
V3V + FR + LUB Syntesi® SY1				Anti-corrosion version 5Z ----- Example 5Z11V10B54L101 V3V+FR+LUB SY1 1/8 20 08 RA NPT anti-corrosion
5U11V10B24L101	V3V+FR+LUB SY1 1/8 20 0-120 RMSA NPT	V3V + FR + LUB Syntesi® SY2		
5U11V10B54L101	V3V+FR+LUB SY1 1/8 20 0-120 RA NPT	5U23V10B24L103	V3V+FR+LUB SY2 3/8 20 0-120 RMSA NPT	
5U12V10B24L102	V3V+FR+LUB SY1 1/4 20 0-120 RMSA NPT	5U23V10B54L103	V3V+FR+LUB SY2 3/8 20 0-120 RA NPT	
5U12V10B54L102	V3V+FR+LUB SY1 1/4 20 0-120 RA NPT	5U24V10B24L104	V3V+FR+LUB SY2 1/2 20 0-120 RMSA NPT	
5U13V10B24L103	V3V+FR+LUB SY1 3/8 20 0-120 RMSA NPT	5U24V10B54L104	V3V+FR+LUB SY2 1/2 20 0-120 RA NPT	
5U13V10B54L103	V3V+FR+LUB SY1 3/8 20 0-120 RA NPT	5U25V10B24L105	V3V+FR+LUB SY2 3/4 20 0-120 RMSA NPT	
		5U25V10B54L105	V3V+FR+LUB SY2 3/4 20 0-120 RA NPT	
		5U26V10B24L106	V3V+FR+LUB SY2 1 20 0-120 RMSA NPT	
		5U26V10B54L106	V3V+FR+LUB SY2 1 20 0-120 RA NPT	

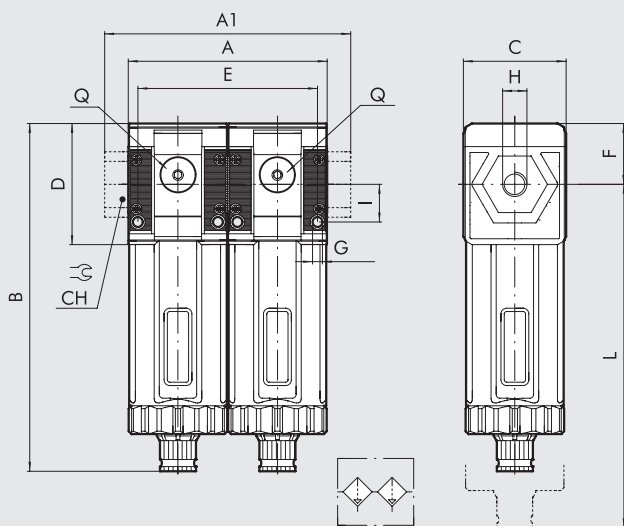
NOTES

For full details and list of components refer to the sections about filter and depurator.



TECHNICAL DATA	FIL + DEP SY1			FIL + DEP SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Purifier degree of filtration	0.01 - output air purity class ISO8573-1: 1.7.2 1 (40 microinch) - output air purity class ISO8573-1: 3.7.3 yellow: 5 (200 microinch)						
Filter degree of filtration	μm						
Max. inlet pressure	bar			bar			
	MPa			MPa			
	psi			psi			
Suggested flow rate at 6.3 bar (0.63 MPa; 91 psi)	NL/min			NL/min			
	scfm			scfm			
Maximum suggested flow rate	Look at the chart on the depurator page 2-12			Look at the chart on the depurator page 2-12 / 2-13			
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C			°C			
	°F			°F			
Weight	pounds			pounds			
Purifier condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
Filter condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. The SAC tap drains the condensate only as the result of sudden changes in compressed air requests. Note: the maximum input pressure for the RA version must not exceed 145 psi Compressed air or other inert gases						
Fluid	Compressed air or other inert gases						
Cup capacity filter/depurator	fluid ounce oz			fluid ounce oz			
Mounting position	Vertical			Vertical			
Port for additional air take-off	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate (not purified air)	NL/min			NL/min			
at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm			scfm			
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			

DIMENSIONS



H (threaded port) NPT	SIZE 1			SIZE 2			
	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		3.31				4.76	
A1	-	-	3.39	-	-	6.14	6.14
B		5.83				7	
		5.99				7.16	
C		1.73				2.4	
CH		-		-	-	1.26	1.41
D		2.03				2.77	
E		2.97				4.25	
F		1.08				1.5	
G		0.165				0.21	
I		0.63				0.89	
L		7.95				9.65	
		8.11				9.8	
Q (no. 2 additional air takes-off)		1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	F	10	D	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION AND TYPE OF CONDENSATE DRAIN	ELEMENT	TYPE	THREADED INPUT CONNECTION
5U Syntesi NPT	1 Size 1	1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	F Filter	10 5 µm (200 microinch), RMSA 40 5 µm (200 microinch), RA 11 5 µm (200 microinch), SAC	D Depurator	10 0.01 µm (0.04 microinch) RMSA 11 0.01 µm (0.04 microinch) SAC 30 1 µm (40 microinch) RMSA 31 1 µm (40 microinch) SAC	1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port					

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	NOTE
FIL + DEP Syntesi® SY1		FIL + DEP Syntesi® SY2		
5U11F10D101	FIL+DEP SY1 1/8 5 RMSA NPT	5U23F10D103	FIL+DEP SY2 3/8 5 RMSA NPT	NOTE Anti-corrosion version 5Z_____
5U11F40D101	FIL+DEP SY1 1/8 5 RA NPT	5U23F40D103	FIL+DEP SY2 3/8 5 RA NPT	Example 5Z11F40D101 FIL+DEP SY1 1/8 05 RA NPT anti-corrosion
5U12F10D102	FIL+DEP SY1 1/4 5 RMSA NPT	5U24F10D104	FIL+DEP SY2 1/2 5 RMSA NPT	
5U12F40D102	FIL+DEP SY1 1/4 5 RA NPT	5U24F40D104	FIL+DEP SY2 1/2 5 RA NPT	
5U13F10D103	FIL+DEP SY1 3/8 5 RMSA NPT	5U25F10D105	FIL+DEP SY2 3/4 5 RMSA NPT	
5U13F40D103	FIL+DEP SY1 3/8 5 RA NPT	5U25F40D105	FIL+DEP SY2 3/4 5 RA NPT	
		5U26F10D106	FIL+DEP SY2 1 5 RMSA NPT	
		5U26F40D106	FIL+DEP SY2 1 5 RA NPT	

For full details and list of components refer to the sections about filter and lubricator.

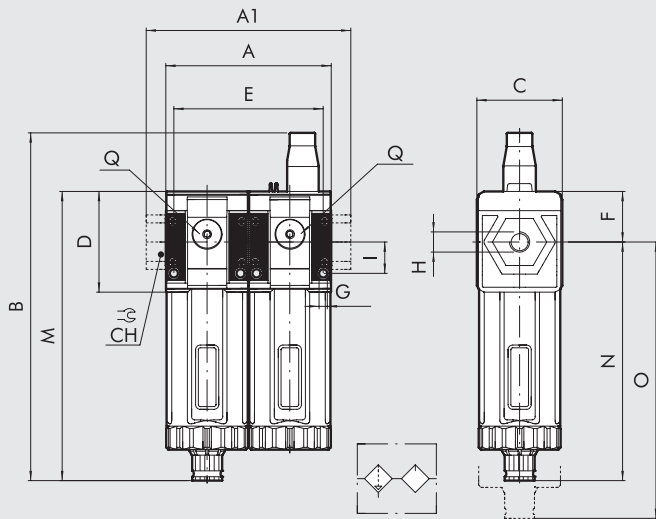


TECHNICAL DATA	FIL + LUB SY1			FIL + LUB SY2			
	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded port	1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7 - white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7 - blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7 -						
Max. inlet pressure	bar MPa psi			bar MPa psi			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	l/min scfm			l/min scfm			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	l/min scfm			l/min scfm			
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C °F			°C °F			
Weight	pounds			pounds			
Fluid	Compressed air or other inert gases						
Mounting position	Vertical			Vertical			
Additional air take-off, for pressure gauges or fittings	1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	l/min scfm			l/min scfm			
Filter cup capacity (condensate)	fluid ounce oz			fluid ounce oz			
Quantity of filled oil	fluid ounce oz			fluid ounce oz			
Condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. The SAC tap drains the condensate only as the result of sudden changes in compressed air requests. Note: the maximum input pressure for the RA version must not exceed 145 psi ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Recommended oils	ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Wall fixing screws	N. 8-32 unc x 2			N. 10-24 unc x 2			

AIR PREP

FIL + LUB Syntesi®

DIMENSIONS



		SIZE 1			SIZE 2			
		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
H (threaded port)	NPT							
A			3.31				4.76	
A1		-	-	3.39	-	-	6.14	6.14
B	RMSA		6.38				7.9	
	RA/SAC		4.78				8.35	
C			1.73				2.4	
CH			-		-	-	1.26	1.41
D			2.03				2.77	
E			2.97				4.25	
F			1.08				1.5	
G			0.165				0.21	
I			0.63				0.89	
M	RMSA		5.83				7	
	RA/SAC		5.99				7.16	
N	RMSA		4.82				5.5	
	RA/SAC		4.97				5.66	
O	RMSA		7.95				9.65	
	RA/SAC		8.11				9.8	
Q (no. 2 additional air takes-off)			1/8" BSPP				1/4" BSPP	

KEY TO CODES

5U	1	1	F	10	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION AND TYPE OF CONDENSATE DRAIN	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	1 1/8" NPT port	F Filter	10 5 µm (200 microinch), RMSA	L Lubricator	10 Manual filling from the top	1 1/8" NPT port
5Z Syntesi anti-corrosion NPT	2 Size 2	2 1/4" NPT port		20 20 µm (790 microinch), RMSA			2 1/4" NPT port
		3 3/8" NPT port		30 50 µm (2000 microinch), RMSA			3 3/8" NPT port
		3 3/8" NPT port		40 5 µm (200 microinch), RA			3 3/8" NPT port
		4 1/2" NPT port		50 20 µm (790 microinch), RA			4 1/2" NPT port
		5 3/4" NPT port		60 50 µm (2000 microinch), RA			5 3/4" NPT port
		6 1" NPT port		11 5 µm (200 microinch), SAC			6 1" NPT port
				21 20 µm (790 microinch), SAC			
				31 50 µm (2000 microinch), SAC			

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

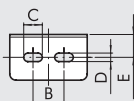
SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

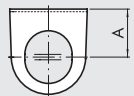
N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	NOTE
FIL + LUB Syntesi® SY1				Anti-corrosion version 5Z _ _ _ _ _ Example 5Z11F50L101 FIL+LUB SY1 1/8 20 RA NPT anti-corrosion
5U11F20L101	FIL+LUB SY1 1/8 20 RMSA NPT	5U23F20L103	FIL+LUB SY2 3/8 20 RMSA NPT	
5U11F50L101	FIL+LUB SY1 1/8 20 RA NPT	5U23F50L103	FIL+LUB SY2 3/8 20 RA NPT	
FIL + LUB Syntesi® SY2				
5U12F20L102	FIL+LUB SY1 1/4 20 RMSA NPT	5U24F20L104	FIL+LUB SY2 1/2 20 RMSA NPT	
5U12F50L102	FIL+LUB SY1 1/4 20 RA NPT	5U24F50L104	FIL+LUB SY2 1/2 20 RA NPT	
5U13F20L103	FIL+LUB SY1 3/8 20 RMSA NPT	5U25F20L105	FIL+LUB SY2 3/4 20 RMSA NPT	
5U13F50L103	FIL+LUB SY1 3/8 20 RA NPT	5U25F50L105	FIL+LUB SY2 3/4 20 RA NPT	
		5U26F20L106	FIL+LUB SY2 1 20 RMSA NPT	
		5U26F50L106	FIL+LUB SY2 1 20 RA NPT	

MOUNTING BRACKET FOR REG. AND FR



Code	Description
9200701	SF100- BIT-ND 1/4 - SY1
9400701	SF200-ND-3/8 1/2 - SY2

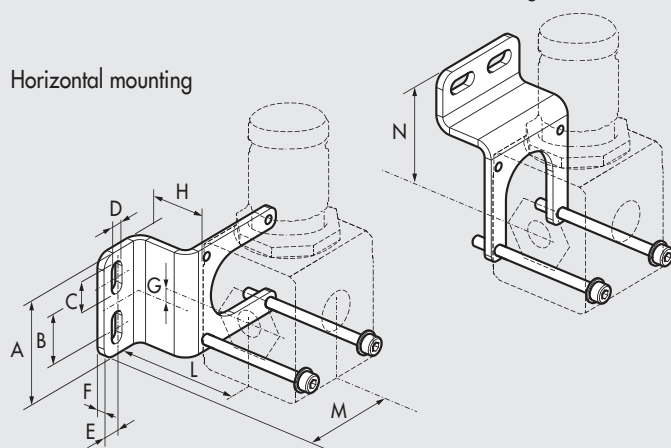


Code	A	B	C	D	E
9200701	1.26	0.79	0.48	0.22	0.56
9400701	1.66	1.59	0.47	0.22	0.59

MOUNTING BRACKET

Vertical mounting

Horizontal mounting

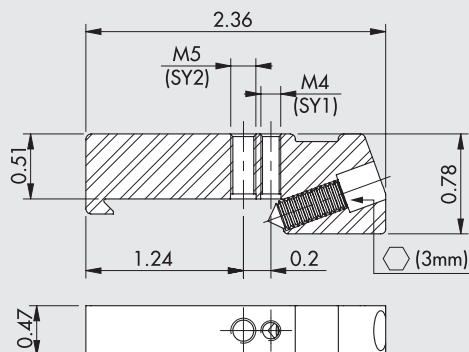


Code	Description
9200716X	Mounting bracket SY1
9200717X	Mounting bracket SY2

Note: Supplie complete with screws and washers.
Max torque 0.59 lbf ft for SY1 - Max torque 1.47 lbf ft for SY2
Codes to be used for units in the standard and the anti-corrosion version

Code	A	B	C	D	E	F	G	H	L	M	N
9200716X	1.63	0.79	0.5	0.22	0.276	0.12	0.03	0.98	1.72	1.83	1.85
9200717X	2.36	1.57	0.5	0.22	0.315	0.12	0.05	1.18	1.85	2.29	2.34

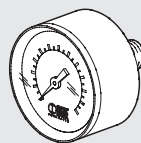
CONNECTION BRACKETS ON THE BAR (DIN EN50022)



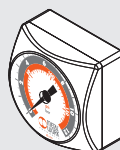
Code	Description
9200718X	Connection brackets on DIN bar, SY1 - SY2

Note: 2 pieces per pack complete with screws and washers.
Max torque 0.8 Nm for SY1 - Max torque 2.0 Nm for SY2
Codes to be used for units in the standard and the anti-corrosion version

PRESSURE GAUGES

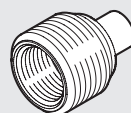


Code	Description
9700101	M 40 1/8 012 (0-180)
9700102	M 40 1/8 04 (0-60)
9800101	M 50 1/8 012 (0-180)
9800102	M 50 1/8 04 (0-60)
9900101	M 63 1/4 012 (0-180)



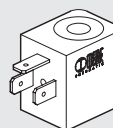
9700109	M 40x40 1/8 04 (0-60)
9700110	M 40x40 1/8 012 (0-180)

ADAPTERS FOR PRESSURE GAUGES (SY2)



Code	Description
9210005	1/4 adapter for 1/8 pressure gauge

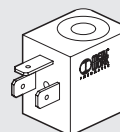
COIL 22 mm FOR APR AND V3V ELPN



Code	Description
W0215000151	Coil 22 Ø 8 BA 2W-12VDC
W0215000101	Coil 22 Ø 8 BA 2W-24VDC
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC

Electrical connection DIN 43650 B-IND

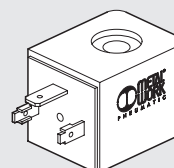
"UL" AND "CSA" COILS 22 mm



Code	Description
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR

Electrical connection DIN 43650 B-IND

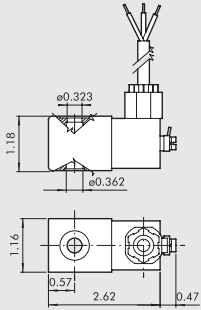
COIL 30 mm FOR APR AND V3V ELPN



Code	Description
W0210010100	Coil 30 Ø 8 2W-24VDC
W0210011100	Coil 30 Ø 8 3.5VA-24VAC 50/60 HZ
W0210012100	Coil 30 Ø 8 3.5VA-110VAC 50/60 HZ
W0210013100	Coil 30 Ø 8 3.5VA-220VAC 50/60 HZ

Electrical connection DIN 43650 - A

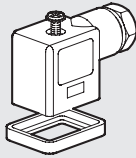
KIT FOR COIL EEXM



Code	Description
0227606913	Kit for coil 30 24 VDC EEXMT5 cable 118 inch
0227606915	Kit for coil 30 24 VDC EEXMT5 cable 197 inch
0227608013	Kit for coil 30 24 VAC EEXMT5 cable 118 inch
0227608015	Kit for coil 30 24 VAC EEXMT5 cable 197 inch
0227608023	Kit for coil 30 110 VAC EEXMT5 cable 118 inch
0227608025	Kit for coil 30 110 VAC EEXMT5 cable 197 inch
0227608033	Kit for coil 30 230 VAC EEXMT5 cable 118 inch
0227608035	Kit for coil 30 230 VAC EEXMT5 cable 197 inch

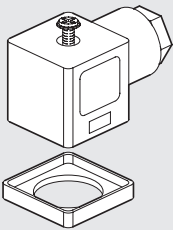
According to Atex 2014/34/EU rule,
 Ⓢ II 2G Ex mb IIC T4/T5 Gb
 Ⓢ II 2D Ex tb IIIC T130/T95 °C IP66 Db
N.B.: Supplied complete with adapter for Ø8 mm sleeve

ELECTRIC CONNECTOR 22 mm FOR COILS DIN 43650 B-IND



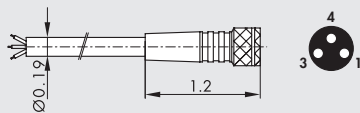
Code	Description
W0970510011	Connector standard
W0970510012	Connector 22 LED 24V
W0970510013	Connector 22 LED 110V
W0970510014	Connector 22 LED 220V
W0970510015	Connector 22 LED VDR 24V
W0970510016	Connector 22 LED VDR 110V
W0970510017	Connector 22 LED VDR 220V
W0970510070	Connector 22 II 2 GD ATEX

ELECTRIC CONNECTOR 30 mm FOR COILS DIN 43650-A



Code	Description
W0970520033	Connector 30 STD
W0970520034	Connector 30 LED 24V
W0970520035	Connector 30 LED 110V
W0970520036	Connector 30 LED 220V
W0970520037	Connector 30 LED VDR 24V
W0970520038	Connector 30 LED VDR 110V
W0970520039	Connector 30 LED VDR 220V

M8 STRAIGHT CONNECTOR WITH CABLE FOR PRESSURE SWITCHES

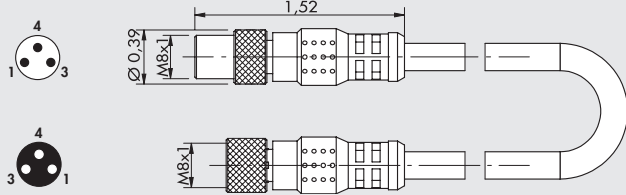


Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400A0100	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 39 inch
02400A0250	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 98 inch
02400A0500	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 197 inch
02400A1000	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 394 inch

Very flexible cables, class 6 according to IEC 60228

M8 ADAPTER CABLE FOR CONNECTING THE PRESSURE SWITCH TO THE EB 80 E CM DIGITAL INPUTS MODULE



Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 1.2 inch

Note: Can be used to connect the pressure switch to the module of digital INPUT 501 of the EB 80 valves. Contact type NO (Normally open).

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 2	Signal NO
pin 4	disconnect	

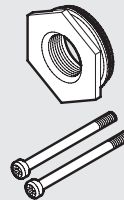
KIT COIL SIDE 22 IP65



Code	Description
0222100100	Kit for coils 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents.

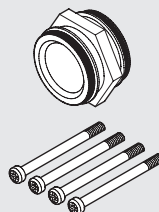
THREADED PORT



Code	Description
9210001U	Kit IN OUT 1/8 NPT SY1
9210002U	Kit IN OUT 1/4 NPT SY1
9210003U	Kit IN OUT 3/8 NPT SY1
9210011U	Kit IN OUT 3/8 NPT SY2
9210012U	Kit IN OUT 1/2 NPT SY2
9210013U	Kit IN OUT 3/4 NPT SY2
9210014U	Kit IN OUT 1 NPT SY2
9210001Z	Kit IN OUT 1/8 NPT SY1 anti-corrosion
9210002Z	Kit IN OUT 1/4 NPT SY1 anti-corrosion
9210003Z	Kit IN OUT 3/8 NPT SY1 anti-corrosion
9210011Z	Kit IN OUT 3/8 NPT SY2 anti-corrosion
9210012Z	Kit IN OUT 1/2 NPT SY2 anti-corrosion
9210013Z	Kit IN OUT 3/4 NPT SY2 anti-corrosion
9210014Z	Kit IN OUT 1 NPT SY2 anti-corrosion

Max torque 0.3 lbf ft for SY1
 Max torque 1.84 lbf ft for SY2

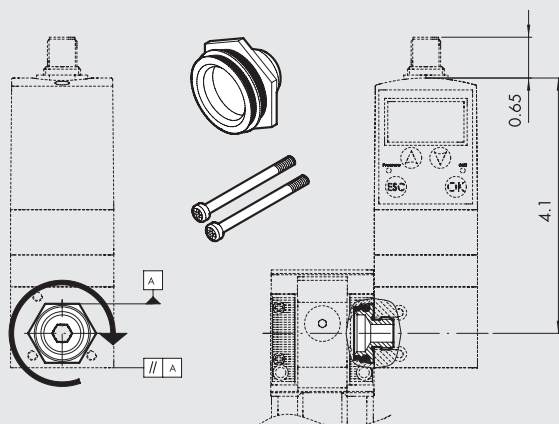
CONNECTING NIPPLE KIT



Code	Description
9210000	Connecting nipple kit SY1
9210010	Connecting nipple kit SY2
9210000X	Connecting nipple kit SY1 anti-corrosion
9210010X	Connecting nipple kit SY2 anti-corrosion

Max torque 0.3 lbf ft for SY1
 Max torque 1.84 lbf ft for SY2

KIT CONNECTING REGTRONIC 1/4 AND GS REGULATOR



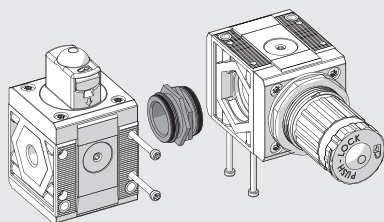
Code	Description
9210004	Adaptor for REGTRONIC 1/4 SY1

Max torque for screw, 0.3 lbf ft

Instructions:

- 1) Screw the connecting bushing onto the REGTRONIC 1/4 as far as it will go.
Use sealant on the G1/4 thread to provide a further seal.
- 2) Unscrew the bushing slightly until two surfaces of the hexagon are parallel to the body of REGTRONIC 1/4 (see diagram).
- 3) Insert the bushing into the Syntesi® unit.
- 4) Tighten the two self-tapping screws in the Syntesi® unit to a torque of 0.3 lbf ft max.

90° CONNECTING ELEMENT KIT

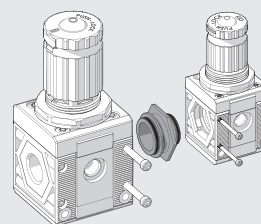


Code	Description
9210009	90° SY1 connection element kit
9210019	90° SY2 connection element kit
9210009X	90° anti-corrosion SY1 connection element kit
9210019X	90° anti-corrosion SY2 connection element kit

Max torque 0.3 lbf ft for SY1

Max torque 1.84 lbf ft for SY2

SY1 - SY2 SIZE ADAPTER

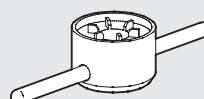


Code	Description
9210006	SY1 - SY2 size adapter
9210006X	SY1 - SY2 size adapter anti-corrosion

Max torque for screw, 0.3 lbf ft for SY1

Max torque for screw, 1.84 lbf ft for SY2

BOWL DISASSEMBLY SPANNER



Code	Description
9170601	CS TF - TL BIT/SY1
9210050	CS TF - TL SY2

WALL-FIXING SCREW



Code	Description
9210030	M4 x 55 fixing screw SY1
9210031	M5 x 75 fixing screw SY2

Max torque 0.59 lbf ft

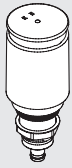
Max torque 1.47 lbf ft

PADLOCK



Code	Description
9062401	Padlock

AUTOMATIC DRAIN (RA)



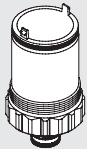
Code	Description
9000802	RA automatic drain spare part

AUTOMATIC DRAIN (SAC)



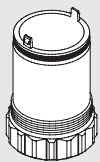
Code	Description
9000803	Spares SAC automatic drain

BOWL RMSA/RA/SAC



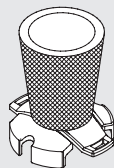
Code	Description
9210100	Bowl FIL FR DEP RMSA SY1
9210101	Bowl FIL FR RA SY1
9210102	Bowl FIL FR DEP SAC SY1
9210105	Bowl FIL FR DEP RMSA SY2
9210106	Bowl FIL FR RA SY2
9210107	Bowl FIL FR DEP SAC SY2

LUBRICATOR BOWL



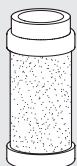
Code	Description
9210110	Bowl LUB SY1
9210115	Bowl LUB SY2

FILTERING ELEMENT



Code	Description
9210150	Filtering element 5 (yellow) μm SY1
9210151	Filtering element 20 (white) μm SY1
9210152	Filtering element 50 (blue) μm SY1
9210155	Filtering element 5 (yellow) μm SY2
9210156	Filtering element 20 (white) μm SY2
9210157	Filtering element 50 (blue) μm SY2

PURIFIER FILTERING ELEMENT



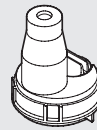
Code	Description
9210160	Cartridge 0.01 μm (0.04 microinch) DEP SY1
9210165	Cartridge 0.01 μm (0.04 microinch) DEP SY2
9210162	Cartridge 1 μm (40 microinch) DEP SY1
9210167	Cartridge 1 μm (40 microinch) DEP SY2

AC FILTERING ELEMENT



Code	Description
9210161	Cartridge AC SY1
9210166	Cartridge AC SY2

TRANSPARENT LUBRICATOR COVER



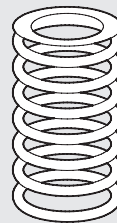
Code	Description
9210180	Transparent cover LUB SY1
9210185	Transparent cover LUB SY2

LUBRICATOR OIL-FILLING CAP



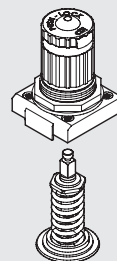
Code	Description
9210181	Oil-filling cap LUB SY1
9210186	Oil-filling cap LUB SY2

SPRINGS FOR REGULATORS AND FR



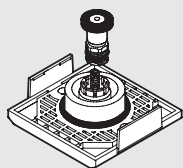
Code	Description
9210190	MO 02 (0-30 psi) SY1
9210191	MO 04 (0-60 psi) SY1 / SY1 anti-corrosion
9210192	MO 08 (0-120 psi) SY1
9210193	MO 012 (0-180 psi) SY1
9210195	MO 02 (0-30 psi) SY2
9210196	MO 04 (0-60 psi) SY2
9210197	MO 08 (0-120 psi) SY2
9210198	MO 012 (0-180 psi) SY2
9210192X	MO 08 (0-120 psi) SY1 anti-corrosion
9210193X	MO 012 (0-180 psi) SY1 anti-corrosion
9210197X	MO 08 (0-120 psi) SY2 anti-corrosion
9210198X	MO 012 (0-180 psi) SY2 anti-corrosion

BELL FOR REG AND FR



Code	Description
9210200	Bell 02 (0-30 psi) SY1
9210201	Bell 04 (0-60 psi) SY1
9210202	Bell 08 (0-120 psi) SY1
9210203	Bell 012 (0-180 psi) SY1
9210220	Bell 02 (0-30 psi) SY2
9210221	Bell 04 (0-60 psi) SY2
9210222	Bell 08 (0-120 psi) SY2
9210223	Bell 012 (0-180 psi) SY2
9210202X	Bell 08 (0-120 psi) SY1 anti-corrosion
9210203X	Bell 012 (0-180 psi) SY1 anti-corrosion
9210222X	Bell 08 (0-120 psi) SY2 anti-corrosion
9210223X	Bell 012 (0-180 psi) SY2 anti-corrosion

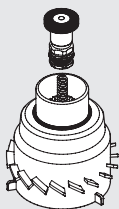
POPPET FOR REG



Code	Description
9210210	Poppet REG SY1
9210230	Poppet REG SY2
9210210X	Poppet REG SY1 anti-corrosion
9210230X	Poppet REG SY2 anti-corrosion

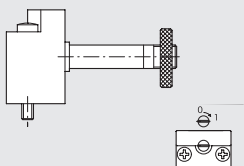
NOTES

POPPET FOR FR



Code	Description
9210211	Poppet FR 5 µm SY1
9210212	Poppet FR 20 µm SY1
9210213	Poppet FR 50 µm SY1
9210231	Poppet FR 5 µm SY2
9210232	Poppet FR 20 µm SY2
9210233	Poppet FR 50 µm SY2

CNOMO CONTROL FOR V3V AND APR SY2



Code	Description
9453922	Elpn Cnomo control kit, manual bistable

NOTES

NOTES

AIR PREP

● GENERAL TECHNICAL DATA bit

PAGE 2-58



● bit FILTER

PAGE 2-60



● bit DEPURATOR

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● bit MICRO-REGULATOR

PAGE 2-64



● bit FILTER REGULATOR

PAGE 2-66



● bit LUBRICATOR

PAGE 2-68



● bit TAKE-OFF

PAGE 2-71



● FIL+REG+LUB bit

PAGE 2-72



● FR+LUB bit

PAGE 2-74



● FIL+DEP bit

PAGE 2-76



● FIL+LUB bit

PAGE 2-77

● bit ACCESSORIES

PAGE 2-78

● bit SPARE PARTS

PAGE 2-79

GENERAL TECHNICAL DATA bit

The units in the BIT range feature:

- reduced dimensions
- negligible load loss
- long life
- excellent quality-to-price ratio

Thanks to its technical features the BIT air treatment range is particularly suitable for de-centralized use near the final actuators.



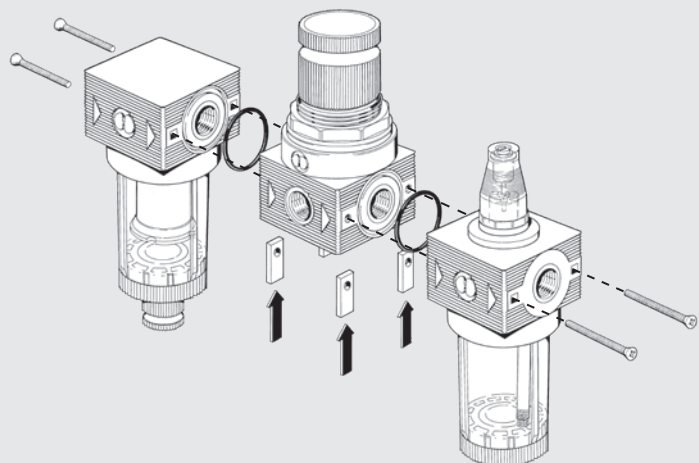
TECHNICAL DATA	BIT 1/8"		BIT 1/4"	
	1/8" NPT		1/4" NPT	
Threaded port	1/8" NPT		1/4" NPT	
Degree of filtration	μm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)		
Degree of purification		99.97% @ 0.01 μm		
Setting range	psi	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180		
Max. inlet pressure	MPa	1.3		
	bar	13		
	psi	188		
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	Nl/min	350		
	scfm	12		
Max temperature at 1 MPa; 10 bar; 145 psi	°C	- 10° to + 50°		
	°F	14° to 122°		
Elements		Filter - Regulator - Lubricator - Filter-regulator - Depurator		
		Units: FRL, FR+L, F+L, F+D		
Mounting		By means of the bracket provided		
Fluid		Compressed air		
Compatibility with oils		Please refer to page 5-2 of the technical documentation		

ASSEMBLY

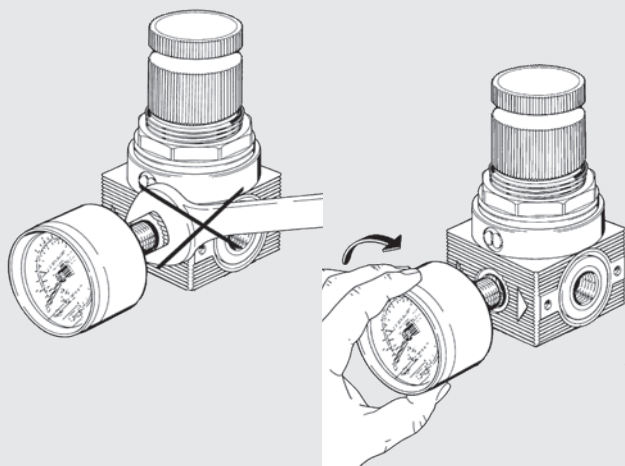
Use ASSEMBLY PLATES (code 9170201) to assemble the Bit elements correctly.

Assembly procedure:

- Fit the plates right into the slots under the body of the Bit element
- Check that there O-rings round the threaded outlet
- Assemble the elements, making sure that the flow run in the direction of the arrows marked on the body.

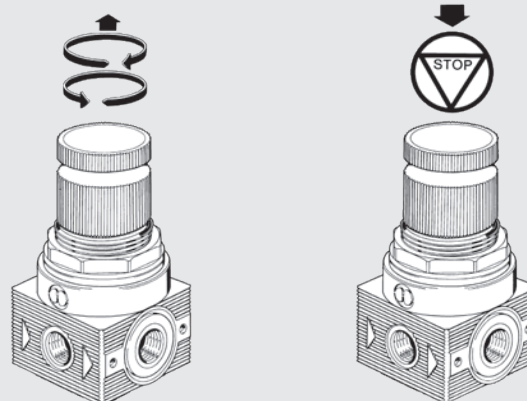


GENERAL RULES - USE AND MAINTENANCE



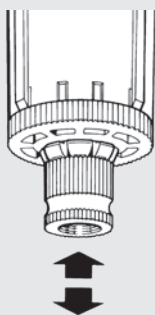
MOUNTING THE GAUGE

The gauge must be mounted by hand without using a spanner. Use fluid sealants to provide a good seal. N.B. Do not use Teflon.

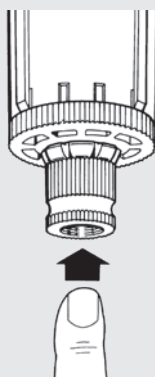


SETTING THE PRESSURE

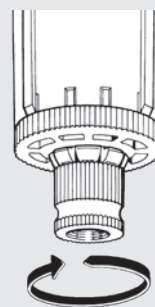
The air pressure must always be set upwards. The knob can be locked so that the set pressure cannot be altered.



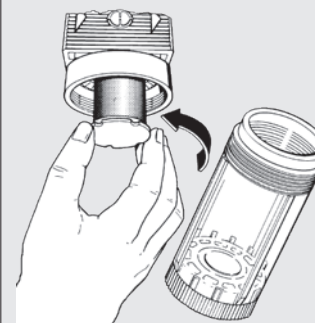
With the knob in the centre position, the drain is semi-automatic. The drain operates when the bowl is not pressurized and closes when it is.



Press the button to drain condensate when the bowl is pressurized.



Turn the knob anticlockwise to close the valve with bowl pressurized or not pressurized.



To clean or replace the filter element unscrew the screen of the centrifuge assembly. Use a no. 3 compass spanner to unscrew the bowl.

bit FILTER

The units in the BIT range feature:

- reduced dimensions
- negligible load loss
- long life
- excellent quality-to-price ratio

Thanks to its technical features the BIT air treatment range is particularly suitable for de-centralized use near the final actuators.



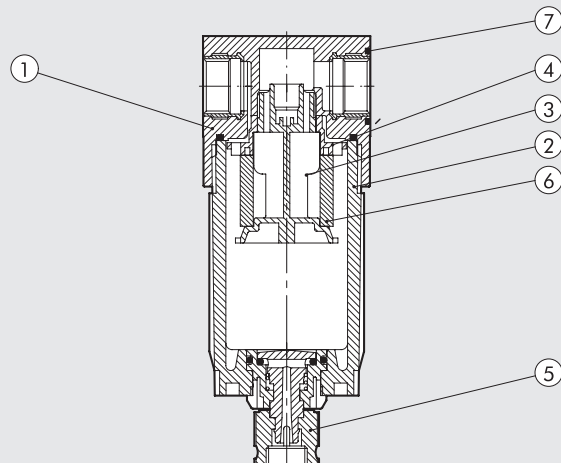
AIR PREP

bit FILTER

TECHNICAL DATA		BIT 1/8"	BIT 1/4"
Threaded port		1/8" NPT	1/4" NPT
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)	
Max. inlet pressure	MPa	1.3	
	bar	13	
	psi	188	
Flow rate at 6.3 bar (0.6 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	Nl/min	860	
	scfm	30.5	
Flow rate at 6.3 bar (0.6 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	Nl/min	1200	
	scfm	42.5	
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50	
	°F	122	
Weight	pounds	0.9	
Wall fixing screws		N. 8-32 unc, by means of the bracket provided	
Bowl capacity	fluid ounce oz	0.54	
Mounting position		Vertical	
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure SAC: automatic drain with condensate discharge.	
		Operates by pressure drop – requires variable air take-offs.	
		Compressed air	
Fluid			

COMPONENTS

- ① Technopolymer body with OT58 threaded element
- ② Clear technopolymer bowl
- ③ Technopolymer baffle plug
- ④ Technopolymer centrifuge
- ⑤ Condensate drain (RMSA)
- ⑥ HDPE sintered filter cartridge
- ⑦ NBR gaskets



FLOW CHARTS

FIL

$$\Delta P = (P_m - P_v)$$

psi kPa bar

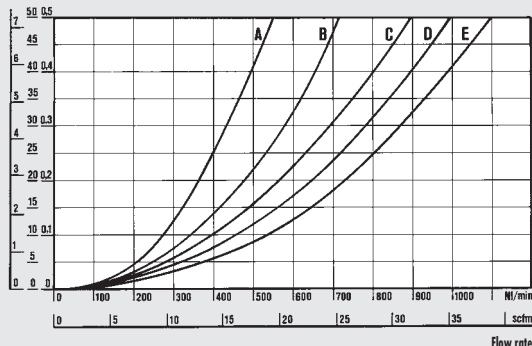
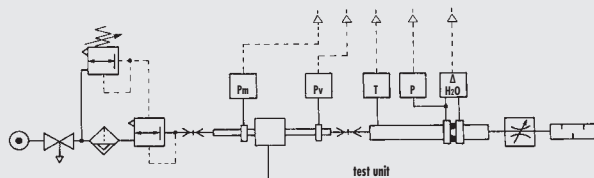


Chart referring to a filter with 1/4 ports



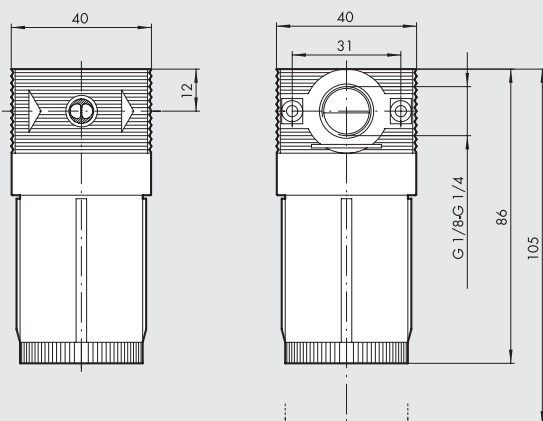
Department of Mechanics
Turin Polytechnic



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

DIMENSIONS



ORDERING CODES

Code	Description
5101001U	FIL BIT 1/8 5 RMSA NPT
5101004U	FIL BIT 1/8 5 SAC NPT
5101002U	FIL BIT 1/8 20 RMSA NPT
5101005U	FIL BIT 1/8 20 SAC NPT
5101003U	FIL BIT 1/8 50 RMSA NPT
5101006U	FIL BIT 1/8 50 SAC NPT
5201001U	FIL BIT 1/4 5 RMSA NPT
5201004U	FIL BIT 1/4 5 SAC NPT
5201002U	FIL BIT 1/4 20 RMSA NPT
5201005U	FIL BIT 1/4 20 SAC NPT
5201003U	FIL BIT 1/4 50 RMSA NPT
5201006U	FIL BIT 1/4 50 SAC NPT

KEY TO CODES

FIL ELEMENT	BIT SIZE	1/8 THREADED PORT 1/8 = 1/8 NPT 1/4 = 1/4 NPT	5 DEGREE OF FILTRATION 5 = 5 μm (200 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	RMSA CONDENSATE DRAIN RMSA SAC
FIL	BIT	1/8 = 1/8 NPT 1/4 = 1/4 NPT	5 = 5 μm (200 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	RMSA SAC

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.

bit DEPURATOR

Coalescing mini-depurator

- Space saving
- Minimum load loss as the flow rate varies
- All-round condensate level viewing



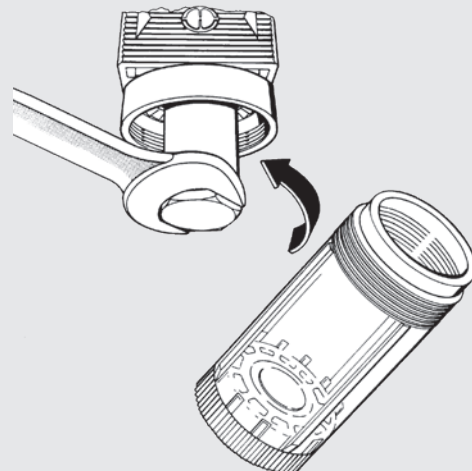
AIR PREP

bit DEPURATOR

TECHNICAL DATA		DEP BIT 1/8"	DEP BIT 1/4"
Threaded port		1/8" NPT	1/4" NPT
Degree of purification		99.97% 0.01 μm	
Max. inlet pressure	MPa	1.3	
	bar	13	
	psi	188	
Suggested flow at 87 psi	NI/min	200	
	scfm	7	
Maximum suggested flow rate		See next page	
Max temperature at 1 MPa; 10 bar; 145 psi	$^{\circ}\text{C}$	50	
	$^{\circ}\text{F}$	122	
Weight	pounds	1.43	
Wall fixing screws		N. 8-32 unc, by means of the bracket provided	
Bowl capacity	fluid ounce oz	0.54	
Mounting position		Vertical	
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.	
Fluid		Filtered 5 μm (2000 microinch) compressed air	
Notes		A It is advisable to mount a 5 μm (2000 microinch) filter upstream the depurator acting as a rough filter.	

USE AND MAINTENANCE

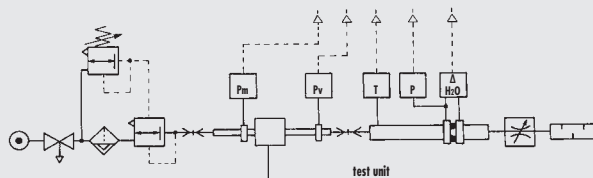
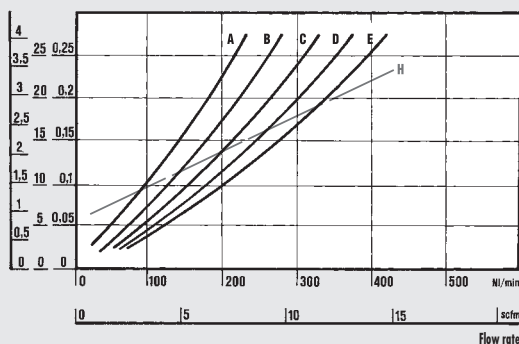
When replacing the coalescing cartridge, unscrew the bowl and then unscrew the screen of the cartridge assembly. Then replace the cartridge. Use a no. 3 compass spanner to unscrew the bowl.



FLOW CHARTS

DEP

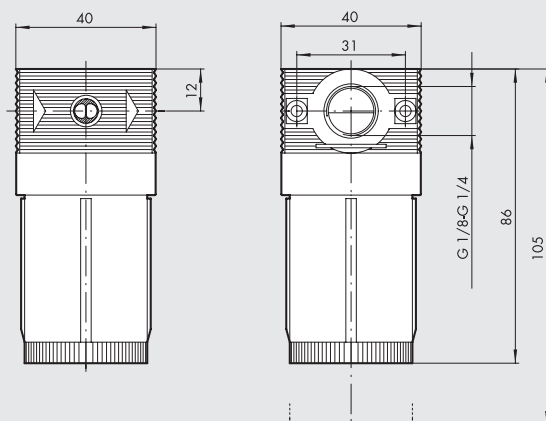
$\Delta P = (P_m - P_v)$
psi kPa bar



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi
- (H) = maximum flow rate recommended for optimal operation

DIMENSIONS



ORDERING CODES

Code	Description
5112001U	DEP BIT 1/8 RMSA NPT
5212001U	DEP BIT 1/4 RMSA NPT

KEY TO CODES

DEP ELEMENT	BIT SIZE	1/8 THREADED PORT	RMSA CONDENSATE DRAIN
DEP	BIT	1/8 = 1/8 NPT 1/4 = 1/4 NPT	RMSA

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

bit MICRO-REGULATOR

Micro-regulator with rolling diaphragm.

- Preset pressure stability as the upstream pressure varies.
- High flow rates with reduced pressure drops
- Quick overpressure exhaust

Versions available

Bit FC: controlled relief to allow greater accuracy in regulation by means of slight continuous air relief.

Bit for water: used to regulate the pressure in water circuits; without blowoff valve

Bit SR: for use when the downstream circuit needs to be relieved quickly as the upstream pressure drops. Mount the SR regulator between the power supply valve and the point of use.



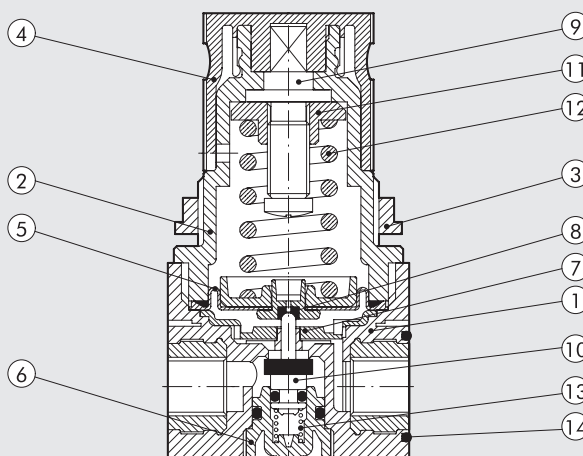
AIR PREP

bit MICRO-REGULATOR

TECHNICAL DATA	MR BIT 1/8"	MR BIT 1/4"
	Threaded port	1/8" NPT
Setting range	psi 0 to 30 - 0 to 60 - 0 to 120 - 0 to 180	
Max. inlet pressure	MPa 1.3	bar 13
	psi 188	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min 340	scfm 12
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min 600	scfm 21
Max temperature at 1 MPa; 10 bar; 145 psi	°C 50	°F 122
Weight	pounds 0.17	
Wall fixing screws	N. 8-32 unc, by means of the bracket provided	
Gauge port	BSPP 1/8"	
Mounting position	In any position	
Fluid	Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.	
Notes	The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value.	

COMPONENTS

- ① Technopolymer body with OT58 threaded element
- ② Technopolymer bell
- ③ Technopolymer fixing ring nut
- ④ Technopolymer knob
- ⑤ Rolling diaphragm
- ⑥ Technopolymer plug
- ⑦ Technopolymer anti-vibration screen
- ⑧ NBR relieving gasket
- ⑨ OT58 brass adjusting screws
- ⑩ OT58 valve with NBR vulcanized gasket
- ⑪ OT58 brass nut
- ⑫ Steel adjusting spring
- ⑬ Stainless steel valve compression spring
- ⑭ NBR gaskets



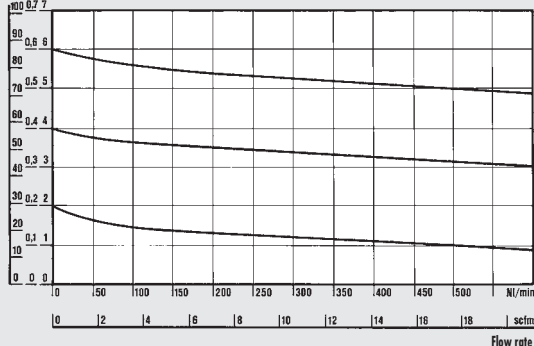
FLOW CHARTS

MR

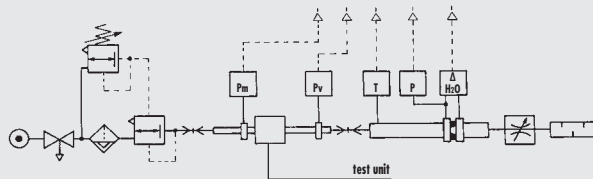
$P_m = 0,7 \text{ MPa}; 7 \text{ bar}; 102 \text{ psi}$

Inlet pressure

psi kPa bar

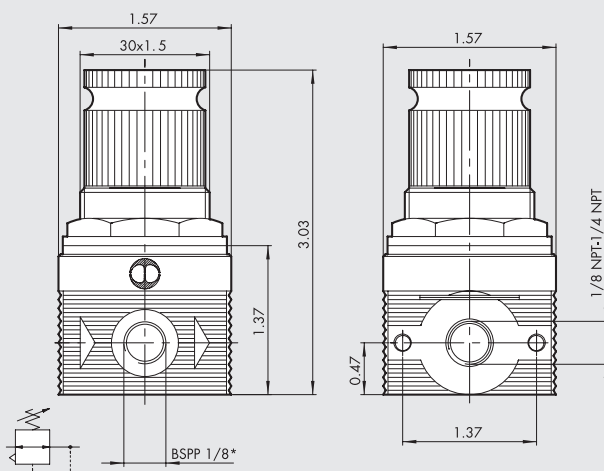


Department of Mechanics
Turin Polytechnic



- Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

DIMENSIONS



* Pressure gauge port

KEY TO CODES

MR	BIT	FC	1/8	0-30
ELEMENT	SIZE	VERSION	THREADED PORT	CONDENSATE DRAIN
MR	BIT	FC = Controlled relief SR = Quickly relieved	1/8 = 1/8 NPT 1/4 = 1/4 NPT	0-30 = 0 to 30 psi 0-60 = 0 to 60 psi 0-120 = 0 to 120 psi 0-180 = 0 to 180 psi
MRA		Without relief (for WATER)		

ORDERING CODES

Code	Description
MICROREGULATOR (MR)	
5107001U	MR BIT 1/8 0-30 NPT
5107002U	MR BIT 1/8 0-60 NPT
5107003U	MR BIT 1/8 0-120 NPT
5107004U	MR BIT 1/8 0-180 NPT
5207001U	MR BIT 1/4 0-30 NPT
5207002U	MR BIT 1/4 0-60 NPT
5207003U	MR BIT 1/4 0-120 NPT
5107003U	MR BIT 1/4 0-180 NPT
MICROREGULATOR WITH CONTROLLED RELIEF	
5111001U	MR BIT FC 1/8 0-30 NPT
5111002U	MR BIT FC 1/8 0-60 NPT
5211001U	MR BIT FC 1/4 0-30 NPT
5211002U	MR BIT FC 1/4 0-60 NPT
MICROREGULATOR WITH QUICK RELIEF	
5102001U	MR BIT SR 1/8 0-30 NPT
5102002U	MR BIT SR 1/8 0-60 NPT
5102003U	MR BIT SR 1/8 0-120 NPT
5102004U	MR BIT SR 1/8 0-180 NPT
5202001U	MR BIT SR 1/4 0-30 NPT
5202002U	MR BIT SR 1/4 0-60 NPT
5202003U	MR BIT SR 1/4 0-120 NPT
5202004U	MR BIT SR 1/4 0-180 NPT
WATER MICROREGULATOR	
5108001U	MRA BIT 1/8 0-30 NPT
5108002U	MRA BIT 1/8 0-60 NPT
5108003U	MRA BIT 1/8 0-120 NPT
5108004U	MRA BIT 1/8 0-180 NPT
5208001U	MRA BIT 1/4 0-30 NPT
5208002U	MRA BIT 1/4 0-60 NPT
5208003U	MRA BIT 1/4 0-120 NPT
5208004U	MRA BIT 1/4 0-180 NPT

bit FILTER REGULATOR

Filter regulator with rolling diaphragm.

- High flow rate with reduced pressure drop
- Excellent degree of condensate separation
- Semi-automatic or automatic drain
- All-round condensate level viewing

The degree of filtration is shown by the colour of the cartridge:

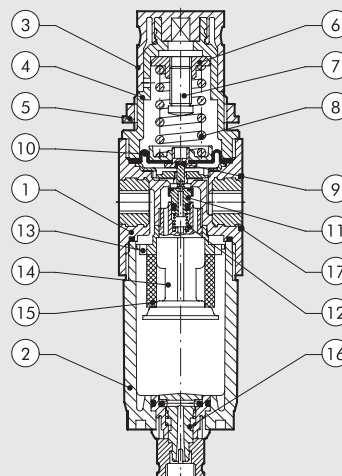
yellow = 5 μm , white = 20 μm , blue = 50 μm .



TECHNICAL DATA	FR BIT 1/8"	FR BIT 1/4"
	Threaded port	1/8" NPT
Setting range	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180	
Degree of filtration	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)	
Max. inlet pressure	1.3	
	13	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	188	
	290	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	10	
	600	
Max temperature at 1 MPa; 10 bar; 145 psi	21	
	50	
Weight	122	
	0.22	
Wall fixing screws	N. 8-32 unc, by means of the bracket provided	
Bowl capacity	0.54	
Mounting position	Vertical	
Gauge port	BSPP 1/8"	
Condensate drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure SAC: automatic drain with condensate discharge .	
Fluid	Operates by pressure drop – requires variable air take-offs.	
Notes	Compressed air	
	The regulator pressure must always be set upwards.	
	For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value.	

COMPONENTS

- ① Technopolymer body with OT58 threaded element
- ② Clear technopolymer bowl
- ③ Technopolymer knob
- ④ Technopolymer bell
- ⑤ Technopolymer fixing ring nut
- ⑥ OT58 brass nut
- ⑦ OT58 brass adjusting screw
- ⑧ Steel adjusting spring
- ⑨ NBR relieving gasket
- ⑩ Rolling diaphragm
- ⑪ OT58 valve with NBR vulcanized gasket
- ⑫ Stainless steel valve compression spring
- ⑬ Technopolymer centrifuge
- ⑭ Technopolymer baffle plug
- ⑮ HDPE sintered filter cartridge
- ⑯ Condensate drain (RMSA)
- ⑰ NBR gaskets



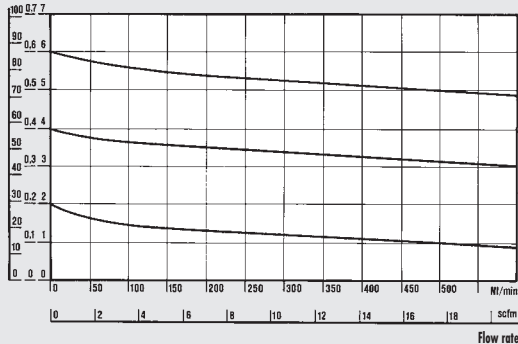
FLOW CHARTS

FR

$P_m = 0,7 \text{ MPa}; 7 \text{ bar}; 102 \text{ psi}$

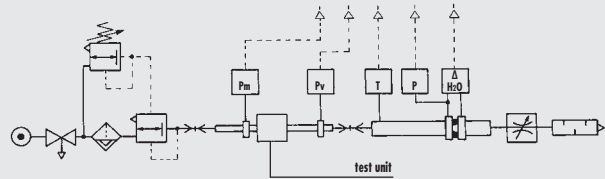
Inlet pressure

psi kPa bar



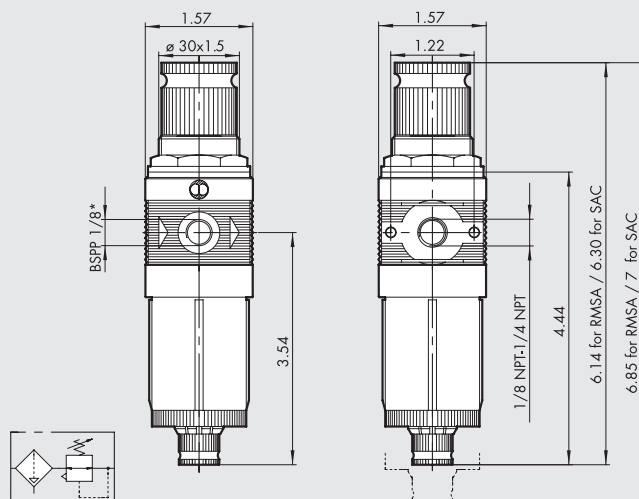
Department of Mechanics

Turin Polytechnic



- Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

DIMENSIONS



* Pressure gauge port

KEY TO CODES

FR	BIT	1/8	5	0-30	RMSA
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	SETTING RANGE	CONDENSATE DRAIN
FR	BIT	1/8 = 1/8 NPT 1/4 = 1/4 NPT	5 = 5 μm (200 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	0-30 = 0 to 30 psi 0-60 = 0 to 60 psi 0-120 = 0 to 120 psi 0-180 = 0 to 180 psi	RMSA SAC

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure

SAC: automatic drain with condensate discharge .

Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

Code	Description
5105001U	FR BIT 1/8 5 0-30 RMSA NPT
5105013U	FR BIT 1/8 5 0-30 SAC NPT
5105002U	FR BIT 1/8 20 0-30 RMSA NPT
5105014U	FR BIT 1/8 20 0-30 SAC NPT
5105003U	FR BIT 1/8 50 0-30 RMSA NPT
5105015U	FR BIT 1/8 50 0-30 SAC NPT
5105004U	FR BIT 1/8 5 0-60 RMSA NPT
5105016U	FR BIT 1/8 5 0-60 SAC NPT
5105005U	FR BIT 1/8 20 0-60 RMSA NPT
5105017U	FR BIT 1/8 20 0-60 SAC NPT
5105006U	FR BIT 1/8 50 0-60 RMSA NPT
5105018U	FR BIT 1/8 50 0-60 SAC NPT
5105007U	FR BIT 1/8 5 0-120 RMSA NPT
5105019U	FR BIT 1/8 5 0-120 SAC NPT
5105008U	FR BIT 1/8 20 0-120 RMSA NPT
5105020U	FR BIT 1/8 20 0-120 SAC NPT
5105009U	FR BIT 1/8 50 0-120 RMSA NPT
5105021U	FR BIT 1/8 50 0-120 SAC NPT
5105010U	FR BIT 1/8 5 0-180 RMSA NPT
5105022U	FR BIT 1/8 5 0-180 SAC NPT
5105011U	FR BIT 1/8 20 0-180 RMSA NPT
5105023U	FR BIT 1/8 20 0-180 SAC NPT
5105012U	FR BIT 1/8 50 0-180 RMSA NPT
5105024U	FR BIT 1/8 50 0-180 SAC NPT
5205001U	FR BIT 1/4 5 0-30 RMSA NPT
5205013U	FR BIT 1/4 5 0-30 SAC NPT
5205002U	FR BIT 1/4 20 0-30 RMSA NPT
5205014U	FR BIT 1/4 20 0-30 SAC NPT
5205003U	FR BIT 1/4 50 0-30 RMSA NPT
5205015U	FR BIT 1/4 50 0-30 SAC NPT
5205004U	FR BIT 1/4 5 0-60 RMSA NPT
5205016U	FR BIT 1/4 5 0-60 SAC NPT
5205005U	FR BIT 1/4 20 0-60 RMSA NPT
5205017U	FR BIT 1/4 20 0-60 SAC NPT
5205006U	FR BIT 1/4 50 0-60 RMSA NPT
5205018U	FR BIT 1/4 50 0-60 SAC NPT
5205007U	FR BIT 1/4 5 0-120 RMSA NPT
5205019U	FR BIT 1/4 5 0-120 SAC NPT
5205008U	FR BIT 1/4 20 0-120 RMSA NPT
5205020U	FR BIT 1/4 20 0-120 SAC NPT
5205009U	FR BIT 1/4 50 0-120 RMSA NPT
5205021U	FR BIT 1/4 50 0-120 SAC NPT
5205010U	FR BIT 1/4 5 0-180 RMSA NPT
5205022U	FR BIT 1/4 5 0-180 SAC NPT
5205011U	FR BIT 1/4 20 0-180 RMSA NPT
5205023U	FR BIT 1/4 20 0-180 SAC NPT
5205012U	FR BIT 1/4 50 0-180 RMSA NPT
5205024U	FR BIT 1/4 50 0-180 SAC NPT

bit LUBRICATOR

Mini-lubricator with high lubrication stability.

- Quantity of lubricant proportioned to air flow
- Activates at low flow rates
- Micrometric regulation of lubricant flow
- All-round oil level viewing



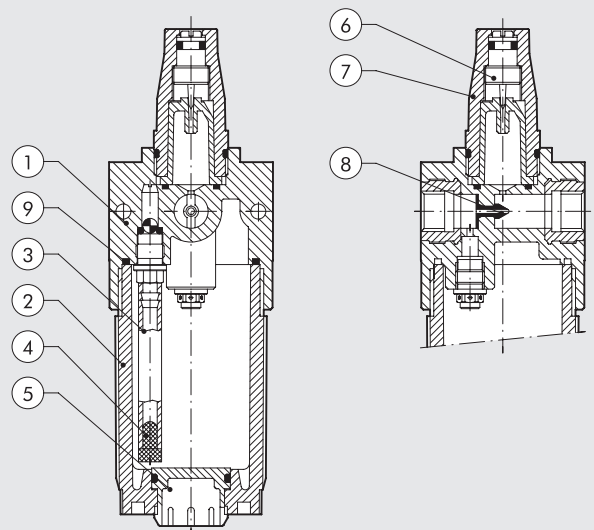
AIR PREP

bit LUBRICATOR

TECHNICAL DATA	LUB BIT 1/8"	LUB BIT 1/4"
	Threaded port	1/8" NPT
Type of lubrication	Oil mist	
Bowl capacity	0.90 fluid ounce oz	
Lubricator version	Manual filling with the bowl disassembled	
Max. inlet pressure	MPa	1.3
	bar	13
	psi	188
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min	400
	scfm	14
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	710
	scfm	25
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50
	°F	122
Weight	0.9 pounds	
Wall fixing screws	N. 8-32 unc, by means of the bracket provided	
Mounting position	Vertical	
Fluid	Filtered compressed air	

COMPONENTS

- ① Technopolymer body with OT58 threaded elements
- ② Clear technopolymer bowl
- ③ Rilsan oil suction pipe
- ④ Filter
- ⑤ Technopolymer plug
- ⑥ Oil flow adjustment regulation needle made of OT58 brass
- ⑦ Clear technopolymer cover
- ⑧ NBR Venturi diaphragm
- ⑨ NBR gaskets

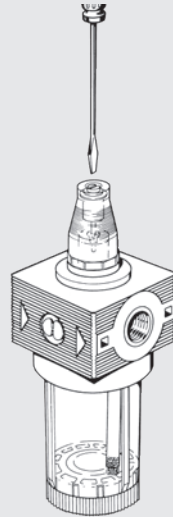


GENERAL RULES - USE AND MAINTENANCE

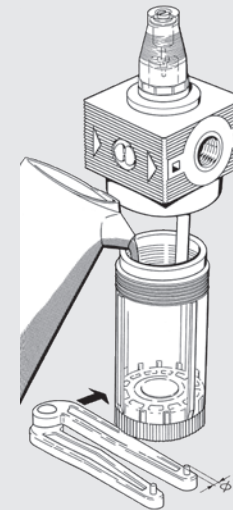
Use a no. 3 compass spanner to unscrew the bowl.

- Fit the lubricator as close as possible to the point of use
- Fill the bowl with oil before pressurizing the system
- Do not use cleaning oil, brake fluid or solvents in general
- For correct lubrication, set the drip rate to approximately 1 drop every 300-600 NI via the adjusting screw.
- Recommended lubricants:
ISO and UNI FD22
E.g. Energol HLP 22 (BP) – Spinesso 22 (Esso)
- Mobil DTE 22 (Mobil) – Tellus Oil 22 (Shell).

REGULATING LUBRICATION



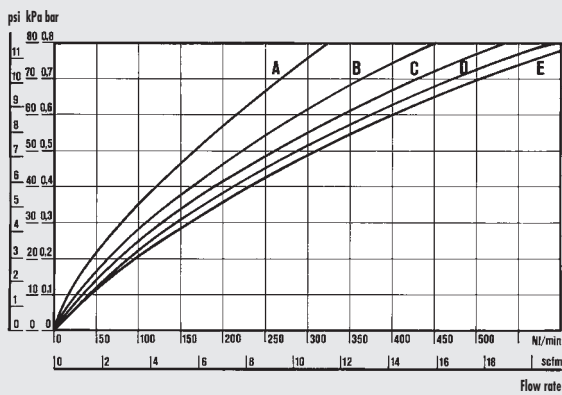
FILLING THE BOWL WITH OIL



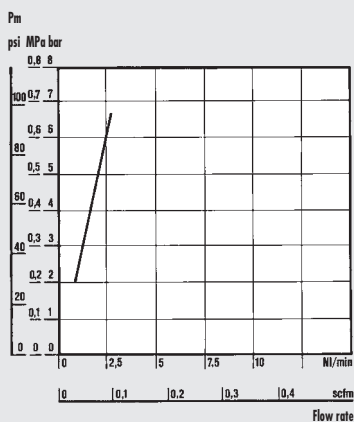
FLOW CHARTS

LUB

$$\Delta P = (P_m - P_v)$$



LUB 1/8-1/4

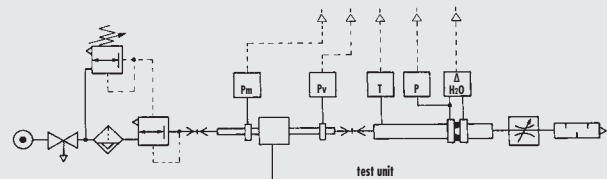


MINIMUM OPERATION FLOW CHARTS

Minimum flow tests were performed in compliance with ISO/DP 6301/2.



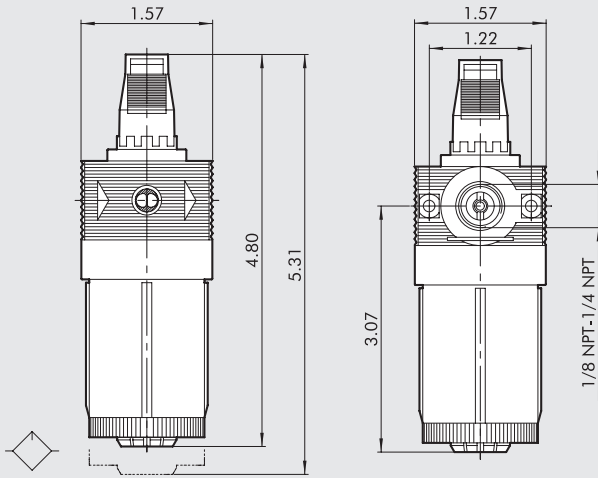
Department of Mechanics
Turin Polytechnic



- Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

DIMENSIONS



ORDERING CODES

Code	Description
5103001U	LUB BIT 1/8 NPT
5203001U	LUB BIT 1/4 NPT

NOTES

FIL+REG+LUB bit

Complete mini-FRL unit with rolling diaphragm.

- High flow rates with reduced pressure drop
- Excellent degree of condensate separation
- Quantity of lubricant proportioned to air flow
- Activates at low flow rates

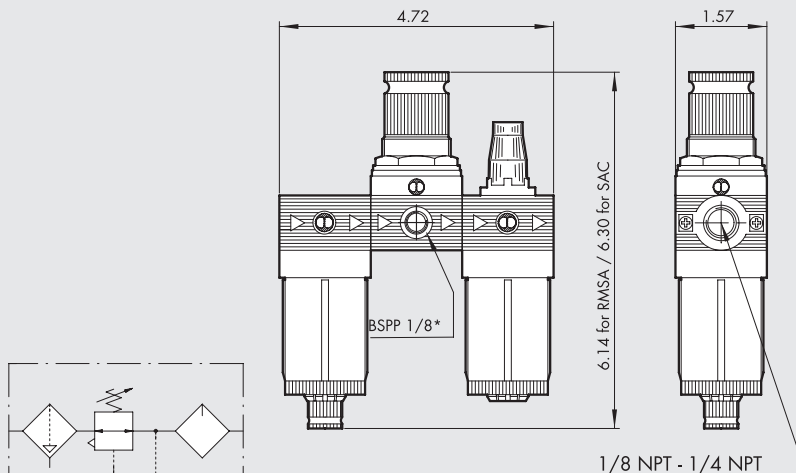


AIR PREP

FIL+REG+LUB bit

TECHNICAL DATA	F+R+L BIT 1/8"		F+R+L BIT 1/4"	
	1/8" NPT		1/4" NPT	
Threaded port	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180			
Setting range	psi	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180		
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)		
Type of lubrication		Oil mist		
Max. inlet pressure	MPa	1.3		
	bar	13		
	psi	188		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	NI/min	150		
	scfm	5.3		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	NI/min	280		
	scfm	10		
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		
	°F	122		
Weight	pounds	5.64		
Wall fixing screws		N. 8-32 unc, by means of the bracket provided		
Gauge port		BSPP 1/8"		
Mounting position		Vertical		
Fluid		Compressed air		
Notes		See chapters regarding individual elements		

DIMENSIONS



* Pressure gauge port

FR+LUB bit

Compact FR+L unit with rolling diaphragm.

- High flow rates with reduced pressure drop
- Excellent degree of condensate separation
- Quantity of lubricant proportioned to air flow
- Activates at low flow rates

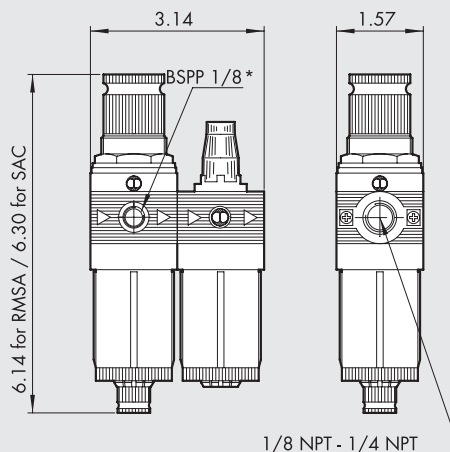


AIR PREP

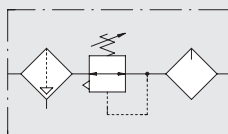
FR+LUB bit

TECHNICAL DATA	FR+L BIT 1/8"		FR+L BIT 1/4"	
	1/8" NPT		1/4" NPT	
Threaded port	1/8" NPT		1/4" NPT	
Setting range	psi 0 to 30 - 0 to 60 - 0 to 120 - 0 to 180			
Degree of filtration	μm yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)			
Type of lubrication	Oil mist			
Max. inlet pressure	MPa 1.3		bar 13	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	psi 188		140	
	NI/min 140		scfm 5	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	NI/min 260		scfm 9.2	
	scfm 9.2		°C 50	
Max temperature at 1 MPa; 10 bar; 145 psi	°C 50		°F 122	
Weight	pounds 6.00		N. 8-32 unc, by means of the bracket provided	
Wall fixing screws	BSP 1/8"			
Gauge port	Vertical			
Mounting position	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure			
Condensate drain	SAC: automatic drain with condensate discharge.			
Fluid	Operates by pressure drop – requires variable air take-offs.			
Notes	Compressed air See chapters regarding individual elements			

DIMENSIONS



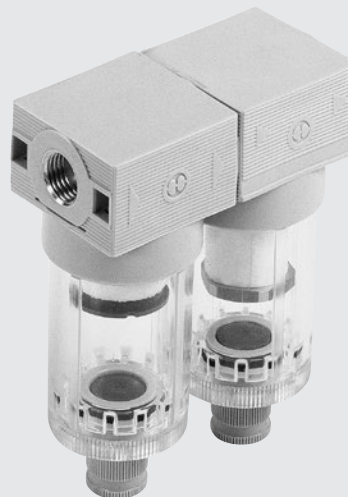
* Pressure gauge port



FIL+DEP bit

Compact filter + depurator unit for fine filtering followed by purification by coalescence.

- All-round condensate level viewing
- Condensate drainage - manual/semi-auto (RMSA) or automatic (SAC) on the filter
- 5 µm filter element.

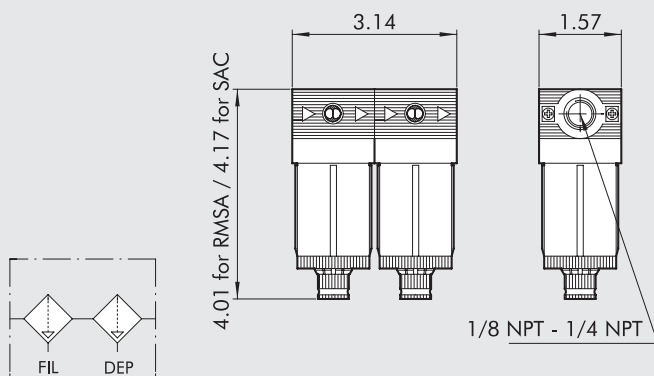


AIR PREP

FIL+DEP bit

TECHNICAL DATA		F+D BIT 1/8"	F+D BIT 1/4"
Threaded port		1/8" NPT	1/4" NPT
Degree of purification		5 µm filter – 99.97% depurator at 0.01 µm	
Max. inlet pressure	MPa		1.3
	bar		13
	psi		188
Maximum suggested flow rate		Please look at the flow rate curves at page 2-63	
Fluid		Compressed air	
Max temperature at 1 MPa; 10 bar; 145 psi	°C		50
	°F		122
Weight	pounds		3.88
Wall fixing screws		M 8-32 unc, by means of the bracket provided	
Mounting position		Vertical	
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure SAC: automatic drain with condensate discharge.	
		Operates by pressure drop – requires variable air take-offs. See chapters regarding individual elements	
Notes			

DIMENSIONS



KEY TO CODES

F+D ELEMENT	BIT SIZE	1/4 THREADED PORT	5 DEGREE OF FILTRATION	RMSA CONDENSATE DRAIN
F+D	BIT	1/8 = 1/8 NPT 1/4 = 1/4 NPT	5 µm	RMSA SAC

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure
SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

Code	Description
5114001U	F+D BIT 1/8 5 RMSA - RMSA NPT
5114002U	F+D BIT 1/8 5 SAC - RMSA NPT
5214001U	F+D BIT 1/4 5 RMSA - RMSA NPT
5214002U	F+D BIT 1/4 5 SAC - RMSA NPT

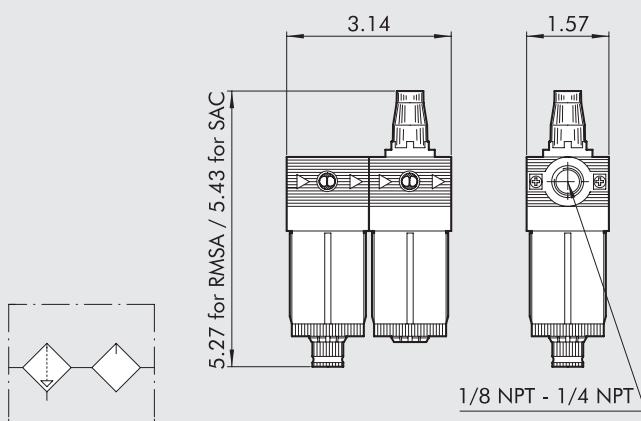
Compact filter + lubricator unit with different degrees of filtration and high lubrication stability.

- Excellent degree of condensate separation
- Semi-automatic and automatic condensate drainage
- Lubrication activates at low flow rates
- All-round oil and condensate level viewing



TECHNICAL DATA	F+L BIT 1/8"		F+L BIT 1/4"	
	Threaded port	1/8" NPT		1/4" NPT
Degree of filtration	µm yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)			
Max. inlet pressure	MPa		1.3	
	bar		13	
	psi		188	
Flow rate at 6 bar (0.6 MPa - 87 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min		300	
	scfm		10.6	
Flow rate at 6 bar (0.6 MPa - 87 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min		600	
	scfm		21.2	
Fluid	Compressed air			
Max temperature at 1 MPa; 10 bar; 145 psi	°C		50	
	°F		122	
Weight	pounds		3.18	
Wall fixing screws	M 8-32 unc, by means of the bracket provided			
Mounting position	Vertical			
Condensed drain	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure SAC: automatic drain with condensate discharge.			
	Operates by pressure drop – requires variable air take-offs. See chapters regarding individual elements			
Notes				

DIMENSIONS



KEY TO CODES

F+L ELEMENT	BIT SIZE	1/4 THREADED PORT	5 DEGREE OF FILTRATION	RMSA CONDENSATE DRAIN
F+L	BIT	1/8 = 1/8 NPT 1/4 = 1/4 NPT	5 = 5 µm (200 microinch) 20 = 20 µm (790 microinch) 50 = 50 µm (2000 microinch)	RMSA SAC

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

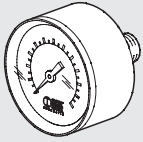
Code	Description
5113002U	F+L BIT 1/8 20 RMSA NPT
5213002U	F+L BIT 1/4 20 RMSA NPT

The following versions are available on request:

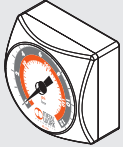
- with 5 µm or 50 µm degree of filtration
- with SAC condensate discharge

bit ACCESSORIES

PRESSURE GAUGE

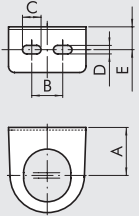


Code	Description
9700102	M 40 1/8 04 (0-60)
9700101	M 40 1/8 012 (0-180)



9700109	M 40x40 1/8 04 (0-60)
9700110	M 40x40 1/8 012 (0-180)

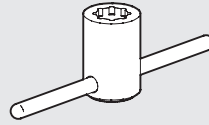
R/FR FIXING BRACKET



Code	Description
9200701	SF100 - BIT - ND 1/4 - SY1

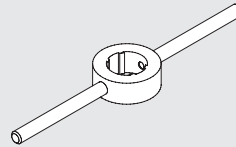
A	B	C	D	E
1.26	0.79	0.47	0.22	0.56

DOME DISASSEMBLY SPANNER



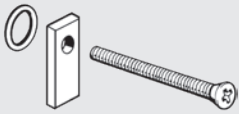
Code	Description
9220701	Cover LUB spanner

COVER DISASSEMBLY SPANNER



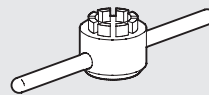
Code	Description
9170401	CS CS BIT

ASSEMBLY PLATE (PAIR)



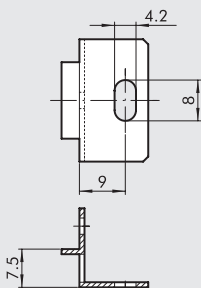
Code	Description
9170201	PAB 1/8 - 1/4 BIT

REDUCER PLUG DISASSEMBLY SPANNER



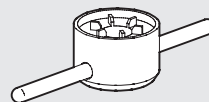
Code	Description
9170501	CS OTR BIT

WALL MOUNTING BRACKET (PAIR)



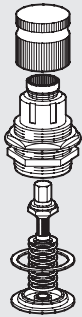
Code	Description
9170301	SFB 1/8 - 1/4 BIT

BOWL DISASSEMBLY SPANNER



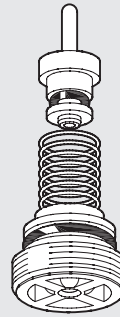
Code	Description
9170601	CS TF - TL BIT - SY1

UPPER COVER FOR MR



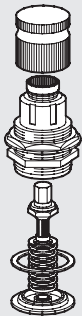
Code	Description
9250805U	Spares CS 1/8 1/4 BIT 0-30
9250806U	Spares CS 1/8 1/4 BIT 0-60
9250807U	Spares CS 1/8 1/4 BIT 0-120
9250808U	Spares CS 1/8 1/4 BIT 0-180

COMPLETE POPPET FOR MR AND MRA



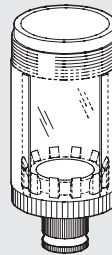
Code	Description
9250705	Spares poppet for MR
9250706	Spares poppet for MR-SR (rapid drain)
9250708	Spares poppet for MRA

UPPER COVER FOR MR FC



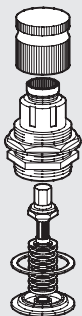
Code	Description
9250817U	Spares CS FC 1/8 1/4 BIT 0-30
9250818U	Spares CS FC 1/8 1/4 BIT 0-60

FILTER AND FILTER-REGULATOR BOWL



Code	Description
9255001	Spares TF 1/8 1/4 BIT RMSA
9255101	Spares TF 1/8 1/4 BIT SAC

UPPER COVER FOR MRA



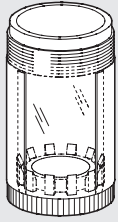
Code	Description
9250809U	CSA 1/8 - 1/4 BIT 0-30
9250814U	CSA 1/8 - 1/4 BIT 0-60
9250815U	CSA 1/8 - 1/4 BIT 0-120
9250816U	CSA 1/8 - 1/4 BIT 0-180

AUTOMATIC DRAIN (SAC)



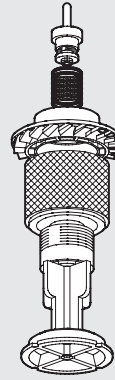
Code	Description
9000803U	Spares SAC automatic drain

LUBRICATOR BOWL



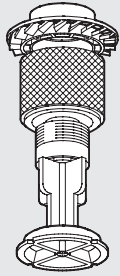
Code	Description
9251402	Spares TL 1/8 1/4 BIT

COMPLETE POPPET FOR FR



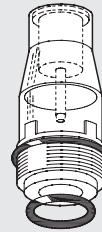
Code	Description
9250905	Spares OTFR 1/8 1/4 BIT 5
9250906	Spares OTFR 1/8 1/4 BIT 20
9250907	Spares OTFR 1/8 1/4 BIT 50

FILTER ELEMENT



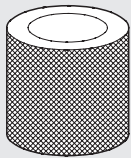
Code	Description
9251708	Spares FP 1/8-1/4 BIT 5 (yellow)
9251709	Spares FP 1/8-1/4 BIT 20 (white)
9251710	Spares FP 1/8-1/4 BIT 50 (blue)

TRANSPARENT LUBRICATOR COVER



Code	Description
9251302	Spares CVL 100-200-300-400 BIT

DEPURATOR FILTER ELEMENT



Code	Description
9251712	Spares FP DEP. 1/8 1/4 BIT

SPRING FOR MR AND FR



Code	Description
9250610	Spares MO 02 (0-30) BIT
9250611	Spares MO 04 (0-60) BIT
9250612	Spares MO 08 (0-120) BIT
9250613	Spares MO 012 (0-180) BIT

NOTES

A large area of horizontal lines for taking notes, consisting of alternating light and dark gray bands.

AIR PREP

SUMMARY Skillair®

● GENERAL TECHNICAL DATA Skillair®

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● Skillair® FILTER

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● Skillair® DEPURATOR

PAGE 2-91



● Skillair® REGULATORS

PAGE 2-94



● Skillair® 100 IN-SERIES REGULATOR

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● Skillair® PILOT REGULATOR

PAGE 2-99



● Skillair® 300 PILOT OPERATED REGULATOR

PAGE 2-101



● Skillair® FILTER REGULATOR

PAGE 2-102



● Skillair® LUBRICATOR

PAGE 2-105



● Skillair® SHUT-OFF VALVE

PAGE 2-109



● Skillair® PROGRESSIVE START VALVE

PAGE 2-114



● Skillair® PROGRESSIVE STARTER

PAGE 2-116



● Skillair® AIR TAKE-OFF

PAGE 2-120



● Skillair® PRESSURE SWITCHES

PAGE 2-121



● Skillair® SUB-BASE AND ADAPTER BASE

PAGE 2-123



● FIL+REG+LUB Skillair®

PAGE 2-125



● FR+LUB Skillair®

PAGE 2-127



● V3V+FR+LUB Skillair®

PAGE 2-129



● FIL+LUB Skillair®

PAGE 2-131



● FIL+DEP Skillair®

PAGE 2-133

● Skillair® ACCESSORIES

PAGE 2-135

● Skillair® SPARES PARTS

PAGE 2-136

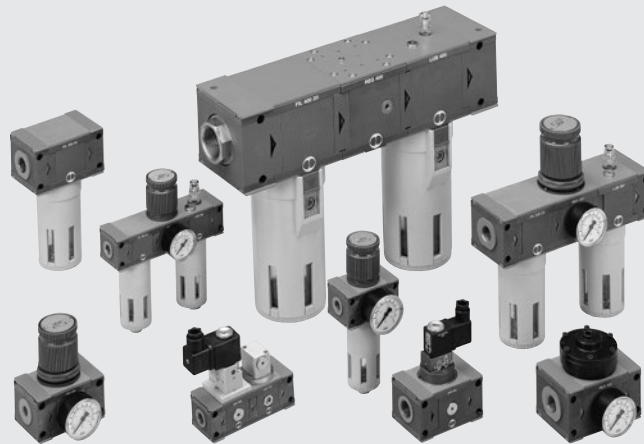
GENERAL TECHNICAL DATA Skillair®

The superior technology of Skillair® FRL units is the expression of Metal Work innovation. The FRL system is the brainchild of a joint study by Metal Work engineers and researchers from the Department of Mechanics in Turin. The integration of metal alloys and super-resistant techno-polymers is the result of co-operation between CESAP (European Centre for the Development of Plastic Applications) and leading international companies such as Du Pont, EMS Chemie and Hoechst. The installation of advanced processing and quality control systems guarantees the reliability of Skillair® FRLs.

Technical features

The Skillair® units incorporate very interesting technological features:

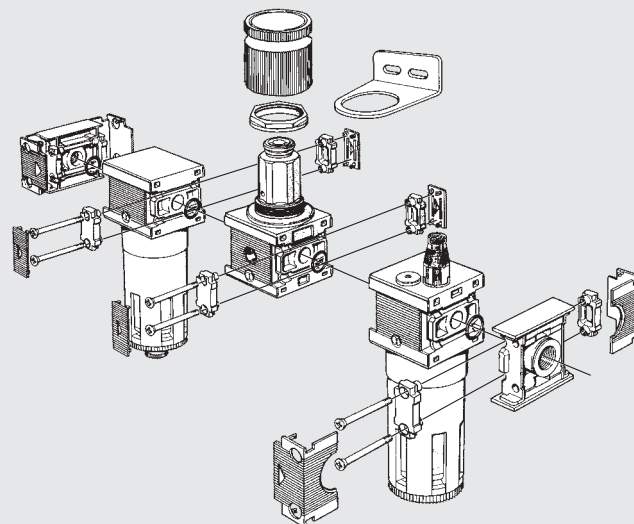
- **Compactness:** with the same flow capacity our unit is one of the smallest on the market.
- **Modularity:** various elements such as filters, reducers, lubricators, 3-way valves, progressive actuators and air take-offs can be combined at will. With the modular system the FRL units can be removed without disturbing the pipes.
- **Easy maintenance:** Any of the elements or the entire unit can be removed without disturbing the remaining part or pipes.



TECHNICAL DATA		SK 100		SK 200			SK 300			SK 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)											
Degree of purification	µm	99.97% at 0.4 microinch											
Setting range	bar	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180											
Max. input pressure	MPa	1.5		1.3				1.3					1.3
	bar	15		13				13					13
	psi	217		188				188					188
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	From 1100 to 20000											
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	From 39 to 700											
Fluid		Lubricated or unlubricated compressed air											
Temperature range at 1 MPa; 10 bar; 145 psi	°C	-10 to +50											
	°F	14 to 122											
Elements comprising the range		Filter, Depurator, Regulator, Pilot operated regulator, In-series Regulator, Filter-regulator, Lubricator with various lubricant filling systems, Circuit Shut-off Valve, Progressive Actuator.											
Compatibility with oils		Please refer to page 5-2 of the technical documentation											

Skillair® MODULARITY

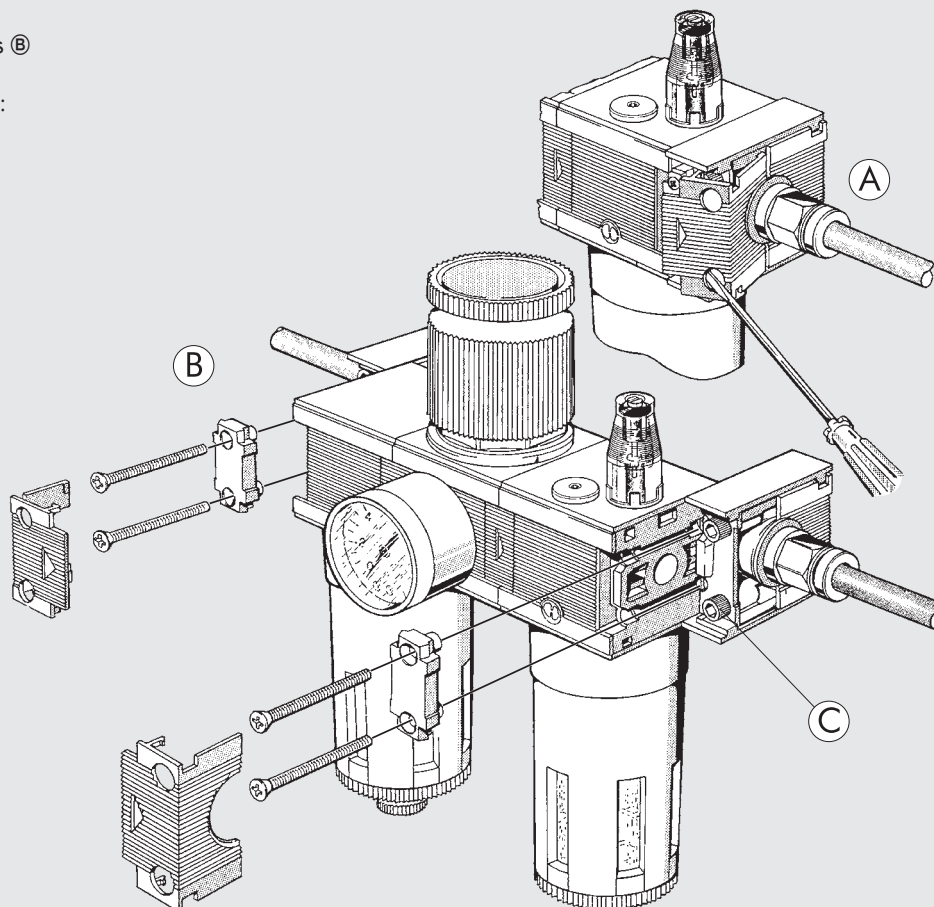
The FRL units can be removed from the system without disturbing the pipes. This can be done with a single element or with the entire system. Assemble the unit so that the air flows in the direction marked by the arrows.



DISASSEMBLING THE UNIT – WALL FIXING

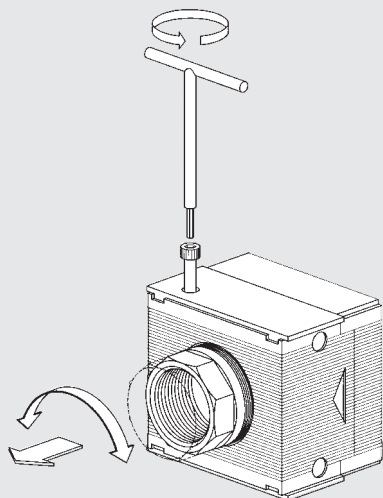
How to disassemble Skillair® end plates:

- Remove the plate (A).
- Unscrew the screws and remove the cams (B) to disassemble the unit.
- Screws to fix the end plates to the wall (C):
 Series 100: N. 8-32 unc x 2
 Series 200: N. 10-24 unc x 2.36
 Series 300: N. 10-24 unc x 2.75
 Series 400: N. 1/4-20 unc x 4.33



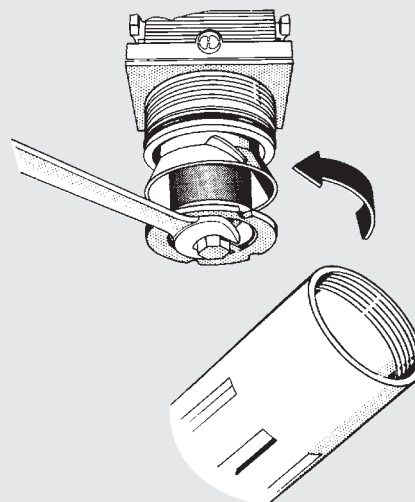
Skillair® 400 - ROTARY SLIDING JOINT

The series 400 comes with a patented system with a rotary sliding end joint to allow the unit to be adapted to the pipe cutting distance. For correct assembly and disassembly, loosen the screw in the end plate before screwing in or unscrewing the bush.



CLEANING AND/OR REPLACING THE FILTER ELEMENTS

Before unscrewing the bowl to replace the filter elements, check that the line is no longer pressurized.
 Replace as shown in the diagram.

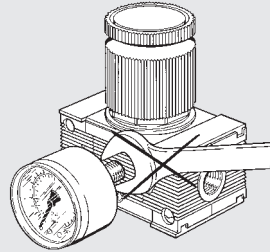


GENERAL RULES FOR USE AND MAINTENANCE

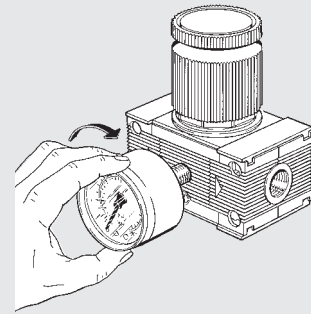
MOUNTING THE PRESSURE GAUGE

- ① Do not use a spanner.
- ② The gauge must be mounted by hand. Use liquid sealants only. Do not use Teflon.

①



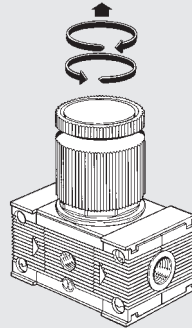
②



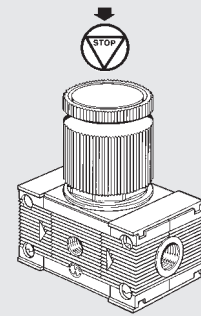
SETTING THE PRESSURE

- ③ **N.B.: the pressure in standard regulators must always be set upwards.** Before setting the pressure, check that the knob is raised.
- ④ When the required pressure has been reached, press the knob downwards.

③



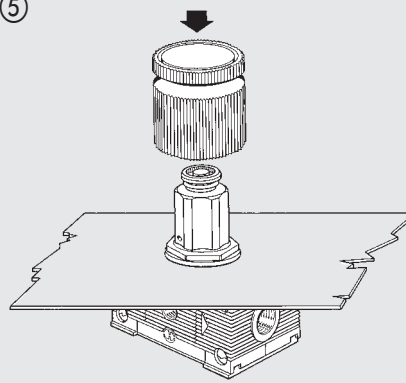
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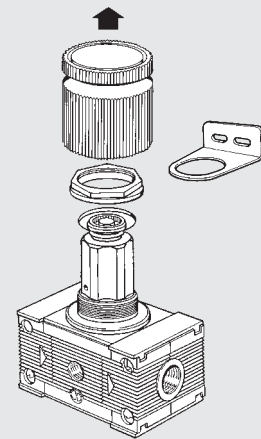
MOUNTING THE REGULATOR AND FILTER-REGULATOR

- ⑤ Panel mounting: remove the knob and lock the regulator with the ring nut.
- ⑥ Wall mounting: use a suitable bracket (see Skillair® accessories).

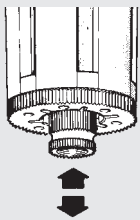
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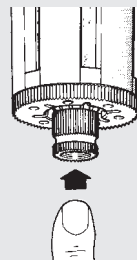
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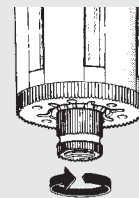
SEMI-AUTO CONDENSATE DRAIN FOR FILTER, FILTER-REGULATOR AND DEPURATOR



The semi-auto condensate drain is the normally open type. When there is pressure in the bowl, the drain closes. When there is no pressure in the bowl, it opens and the condensate drains out.



If necessary, it is possible to drain the condensate whilst the bowl is pressurised. The simple manual operation of "pushing up the valve" will allow the condensate to drain.



When rotating the button clockwise, the valve becomes in locked position, and can only work when the button is returned to the central position.

The Job of the filter is to remove any solid or liquid impurities from the air generated by the compressor.

Incoming air is rotated by the centrifuge unit. The heaviest liquid and solid particles are projected against the walls of the container and forced to adhere to it. As they accumulate they form drops that deposit on the bottom by gravity. The remaining solid particles are held back by the porous element depending on the filtering threshold.

The condensate accumulation area is kept still to prevent previously deposited impurities from being re-circulated.

The accumulated condensate is drained out through the drain - automatically when there is no pressure in the filter, or by hand pressing the button.

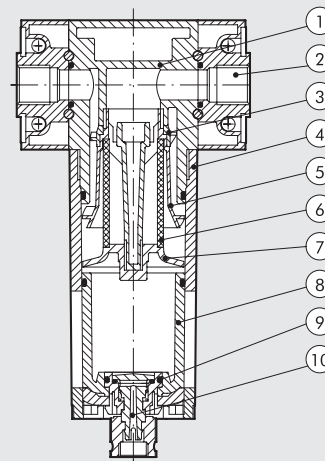
An automatic drain is available. It automatically eliminates condensate from the container whenever necessary, whatever the pressure.



TECHNICAL DATA		FIL 100		FIL 200			FIL 300			FIL 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)											
Max. input pressure	MPa	1.5		1.3			1.3			1.3			1.3
	bar	15		13			13			13			13
	psi	217		188			188			188			188
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1400		2400			3800			16500			20000
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	50		85			135			590			710
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	2000		3100			5300			-			-
ΔP 1 bar (0.1 MPa - 14.5 psi)	scfm	71		110			188			-			-
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		50			50			50			50
	°F	122		122			122			122			122
Weight	pounds	0.9		1.5			3			11.5			13.2
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4 - 20 unc x 4.33			
Bowl capacity	fluid ounce oz	0.74		1.52			2.54			9.13			9.13
Mounting position		Vertical		Vertical			Vertical			Vertical			
Drain		RMSA - SAC		RMSA - SAC - RA			RMSA - RA			RMSA - RA			
		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.											
		SAC: automatic drain with condensate discharge. Operates by pressure drop - requires variable air take-offs. Compressed air.											
Fluid		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.											
Notes on use													

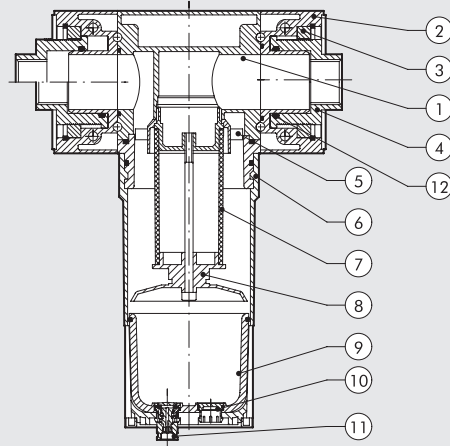
COMPONENTS FIL 100 - 200 - 300

- ① Technopolymer body
- ② Zamak end plate
- ③ Technopolymer centrifuge
- ④ Bowl: technopolymer for FIL 100 and FIL 200, metal for FIL 300
- ⑤ Technopolymer baffle
- ⑥ Sintered HDPE filter cartridge
- ⑦ Technopolymer screen
- ⑧ Clear technopolymer glass
- ⑨ NBR gaskets
- ⑩ Drain (RMSA)



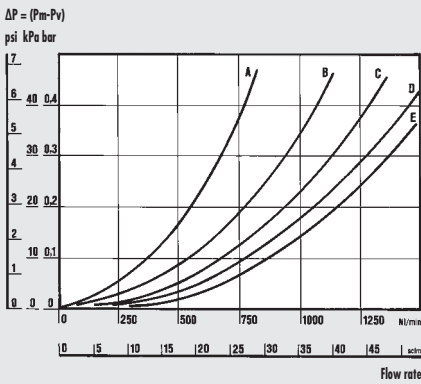
COMPONENTS FIL 400

- ① Aluminium body
- ② Aluminium end plate
- ③ OT58 brass retaining ring
- ④ Anodized aluminium threaded bush, axial adjustment
- ⑤ Technopolymer centrifuge
- ⑥ Aluminium bowl
- ⑦ Sintered bronze filter cartridge
- ⑧ Aluminium screen
- ⑨ Clear technopolymer glass
- ⑩ Technopolymer plug
- ⑪ Drain (RMSA)
- ⑫ NBR gaskets

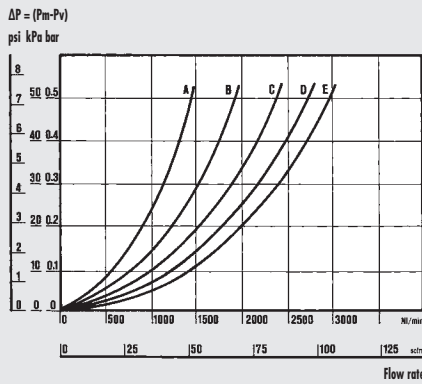


FLOW CHARTS

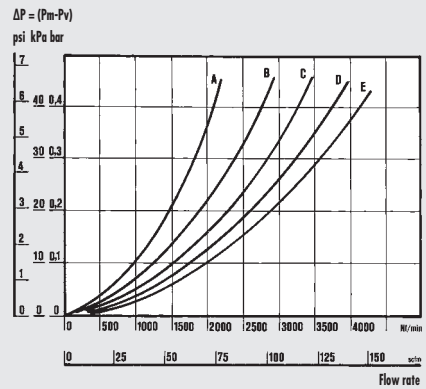
FIL 100 1/4 - 3/8



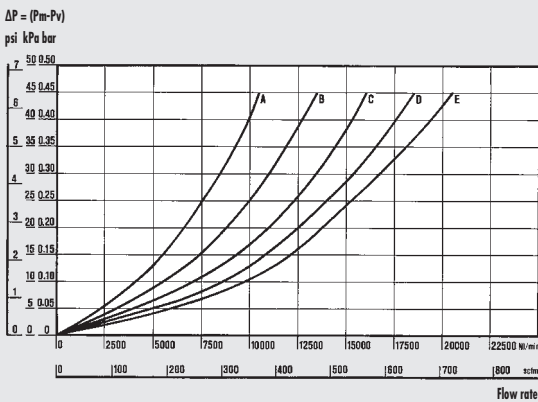
FIL 200 1/4 - 3/8 - 1/2



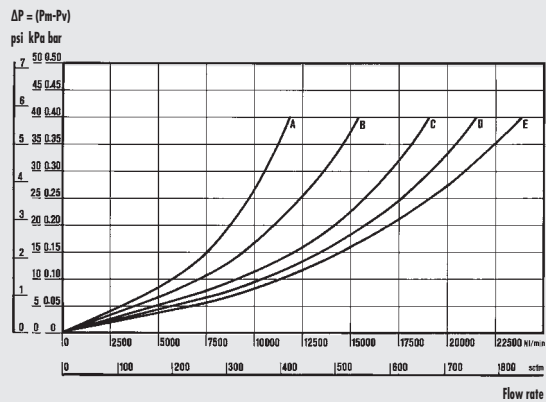
FIL 300 1/2 - 3/4 - 1



FIL 400 1"

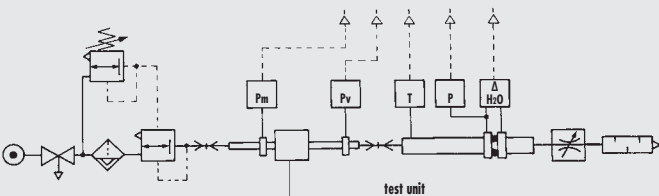


FIL 400 2"



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi



KEY TO CODES

FIL	100	1/4	20	RMSA
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	TYPE OF DRAIN
FIL.	100	1/4 = 1/4 NPT	5 = 5 µm (200 microinch)	RMSA
		3/8 = 3/8 NPT	20 = 20 µm (790 microinch)	SAC
	200	1/4 = 1/4 NPT	50 = 50 µm (2000 microinch)	RMSA
		3/8 = 3/8 NPT		SAC
		1/2 = 1/2 NPT		RA*
	300	1/2 = 1/2 NPT		RMSA
		3/4 = 3/4 NPT		RA
		1 = 1 NPT		
	400	1 = 1 NPT		
		1 1/4 = 1 1/4 NPT		
		1 1/2 = 1 1/2 NPT		
		2 = 2 NPT		

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure

RA: automatic drain with condensate discharge, independent of pressure and flow rate. (for size 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.
(for size 100 and 200)

* For Skillair® 200 with RA, please contact our sales assistance department.

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 FILTER		Skillair® 300 FILTER		Skillair® 400 FILTER	
3280001UA	FIL 100 5 RMSA NPT without end plates	4480001UA	FIL 300 5 RMSA NPT without end plates	6180001UA	FIL 400 5 RMSA NPT without end plates
3280007UA	FIL 100 5 SAC NPT without end plates	4480002UA	FIL 300 20 RMSA NPT without end plates	6180002UA	FIL 400 20 RMSA NPT without end plates
3280002UA	FIL 100 20 RMSA NPT without end plates	4480003UA	FIL 300 50 RMSA NPT without end plates	6180003UA	FIL 400 50 RMSA NPT without end plates
3280008UA	FIL 100 20 SAC NPT without end plates	4480004UA	FIL 300 5 RA NPT without end plates	6180004UA	FIL 400 5 RA NPT without end plates
3280003UA	FIL 100 50 RMSA NPT without end plates	4480005UA	FIL 300 20 RA NPT without end plates	6180005UA	FIL 400 20 RA NPT without end plates
3280009UA	FIL 100 50 SAC NPT without end plates	4480006UA	FIL 300 50 RA NPT without end plates	6180006UA	FIL 400 50 RA NPT without end plates
3280001U	FIL 100 1/4 5 RMSA NPT	4480001U	FIL 300 1/2 5 RMSA NPT	6180001U	FIL 400 1 5 RMSA NPT
3280007U	FIL 100 1/4 5 SAC NPT	4480002U	FIL 300 1/2 20 RMSA NPT	6180002U	FIL 400 1 20 RMSA NPT
3280002U	FIL 100 1/4 20 RMSA NPT	4480003U	FIL 300 1/2 50 RMSA NPT	6180003U	FIL 400 1 50 RMSA NPT
3280008U	FIL 100 1/4 20 SAC NPT	4480004U	FIL 300 1/2 5 RA NPT	6180004U	FIL 400 1 5 RA NPT
3280003U	FIL 100 1/4 50 RMSA NPT	4480005U	FIL 300 1/2 20 RA NPT	6180005U	FIL 400 1 20 RA NPT
3280009U	FIL 100 1/4 50 SAC NPT	4480006U	FIL 300 1/2 50 RA NPT	6180006U	FIL 400 1 50 RA NPT
3380001U	FIL 100 3/8 5 RMSA NPT	4580001U	FIL 300 3/4 5 RMSA NPT	6280001U	FIL 400 1 1/4 5 RMSA NPT
3380007U	FIL 100 3/8 5 SAC NPT	4580002U	FIL 300 3/4 20 RMSA NPT	6280002U	FIL 400 1 1/4 20 RMSA NPT
3380002U	FIL 100 3/8 20 RMSA NPT	4580003U	FIL 300 3/4 50 RMSA NPT	6280003U	FIL 400 1 1/4 50 RMSA NPT
3380008U	FIL 100 3/8 20 SAC NPT	4580004U	FIL 300 3/4 5 RA NPT	6280004U	FIL 400 1 1/4 5 RA NPT
3380003U	FIL 100 3/8 50 RMSA NPT	4580005U	FIL 300 3/4 20 RA NPT	6280005U	FIL 400 1 1/4 20 RA NPT
3380009U	FIL 100 3/8 50 SAC NPT	4580006U	FIL 300 3/4 50 RA NPT	6280006U	FIL 400 1 1/4 50 RA NPT
Skillair® 200 FILTER		4680001U	FIL 300 1 5 RMSA NPT	6380001U	FIL 400 1 1/2 5 RMSA NPT
3480001UA	FIL 200 5 RMSA NPT without end plates	4680002U	FIL 300 1 20 RMSA NPT	6380002U	FIL 400 1 1/2 20 RMSA NPT
3480007UA	FIL 200 5 SAC NPT without end plates	4680003U	FIL 300 1 50 RMSA NPT	6380003U	FIL 400 1 1/2 50 RMSA NPT
3480002UA	FIL 200 20 RMSA NPT without end plates	4680004U	FIL 300 1 5 RA NPT	6380004U	FIL 400 1 1/2 5 RA NPT
3480008UA	FIL 200 20 SAC NPT without end plates	4680005U	FIL 300 1 20 RA NPT	6380005U	FIL 400 1 1/2 20 RA NPT
3480003UA	FIL 200 50 RMSA NPT without end plates	4680006U	FIL 300 1 50 RA NPT	6380006U	FIL 400 1 1/2 50 RA NPT
3480009UA	FIL 200 50 SAC NPT without end plates			6480001U	FIL 400 2 5 RMSA NPT
3480001U	FIL 200 1/4 5 RMSA NPT			6480002U	FIL 400 2 20 RMSA NPT
3480007U	FIL 200 1/4 5 SAC NPT			6480003U	FIL 400 2 50 RMSA NPT
3480002U	FIL 200 1/4 20 RMSA NPT			6480004U	FIL 400 2 5 RA NPT
3480008U	FIL 200 1/4 20 SAC NPT			6480005U	FIL 400 2 20 RA NPT
3480003U	FIL 200 1/4 50 RMSA NPT			6480006U	FIL 400 2 50 RA NPT
3480009U	FIL 200 1/4 50 SAC NPT				
3580001U	FIL 200 3/8 5 RMSA NPT				
3580007U	FIL 200 3/8 5 SAC NPT				
3580002U	FIL 200 3/8 20 RMSA NPT				
3580008U	FIL 200 3/8 20 SAC NPT				
3580003U	FIL 200 3/8 50 RMSA NPT				
3580009U	FIL 200 3/8 50 SAC NPT				
3680001U	FIL 200 1/2 5 RMSA NPT				
3680007U	FIL 200 1/2 5 SAC NPT				
3680002U	FIL 200 1/2 20 RMSA NPT				
3680008U	FIL 200 1/2 20 SAC NPT				
3680003U	FIL 200 1/2 50 RMSA NPT				
3680009U	FIL 200 1/2 50 SAC NPT				

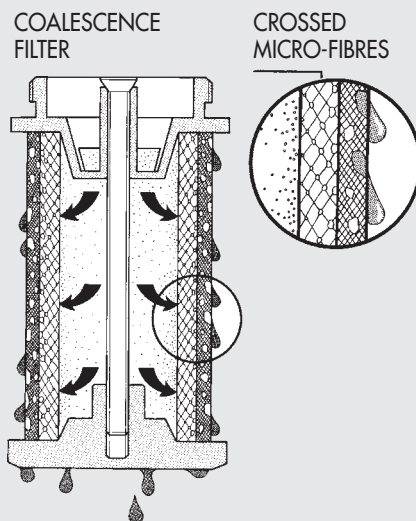
The role of the depurator is to separate the liquid and solid particles contained in the compressed air with a high degree of efficiency. This separation is carried out using a special filtering element called a "coalescence cartridge".



TECHNICAL DATA		DEP 100		DEP 200			DEP 300			DEP 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Degree of purification	µm	99.97% at 0.01		99.97% at 0.01			99.97% at 0.01			99.97% at 0.01			
Max. inlet pressure	MPa	1.5		1.3			1.3			1.3		1.3	
	bar	15		13			13			13		13	
Suggested flow at 87 psi	psi	217		188			188			188		188	
	scfm	8		13			18			81		80	
Maximum suggested flow rate		See next page											
Max temperature at: 1 MPa; 10 bar; 145 psi	°C	50		50			50			50		50	
	°F	122		122			122			122		122	
Weight	pounds	0.9		2			3			9.26		11	
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4 - 20 unc x 4.33			
Bowl capacity	fluid ounce oz	0.74		1.52			2.54			9.13		9.13	
Mounting position		Vertical		Vertical			Vertical			Vertical		Vertical	
Drain		RMSA		RMSA			RMSA - RA			RMSA - RA		RMSA - RA	
		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure											
		RA: automatic drain with condensate discharge, independent of pressure and flow rate.											
		Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.											
		5 µm filtered air											
		It is advisable to mount a 5 µm pre-filter in order to separate the solid particles first.											
		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.											
Fluid													
Notes on use													

HOW THE COALESCENCE CARTRIDGE WORKS

Air from the mains – full of impurities – flows into the coalescence cartridge and then passes through the crossed micro-fibres that make up the cartridge. During this movement the liquid particles come into contact with the crossed micro-fibres and adhere to them. Due to the air pressure and gravity they join up with other micro-drops at each cross-over point and gradually increase in volume, leading to the physical phenomenon called coalescence. When they stop moving, the drops deposit on the outside of the cartridge, from which they detach and drop to the bottom. Since the volume of liquid leaving the cartridge is exactly the same as the drops arriving, the coalescence cartridge ought to work indefinitely. Solid particles are caught with the same efficiency but, unlike drops, they are not drained out and clog the cartridge. To get round this problem, it is necessary to mount a 5 µm pre-filter before the fine oil filter to separate the solid particles first.

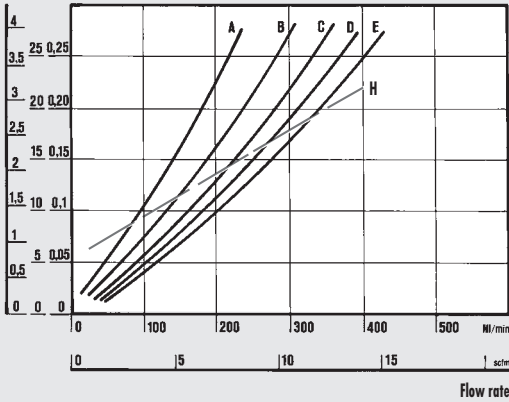


FLOW CHARTS

DEP 100 1/4 - 3/8

$\Delta P = (P_m - P_v)$

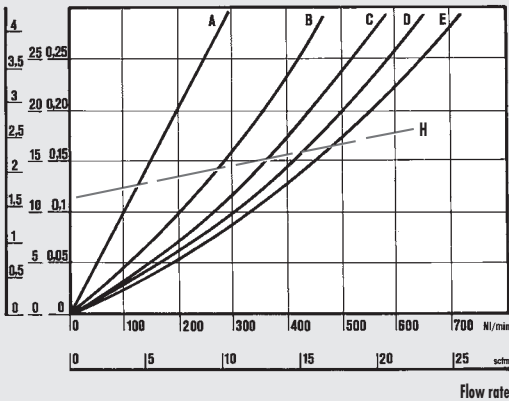
psi kPa bar



DEP 200 1/4 - 3/8 - 1/2

$\Delta P = (P_m - P_v)$

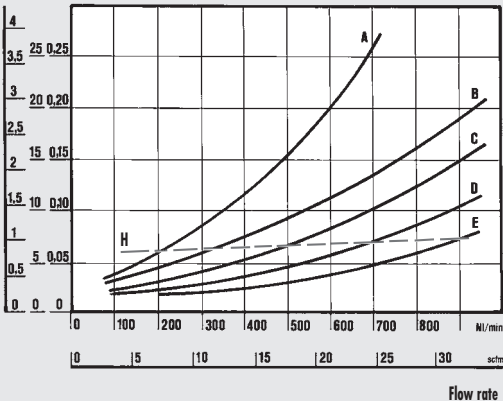
psi kPa bar



DEP 300 1/2 - 3/4 - 1

$\Delta P = (P_m - P_v)$

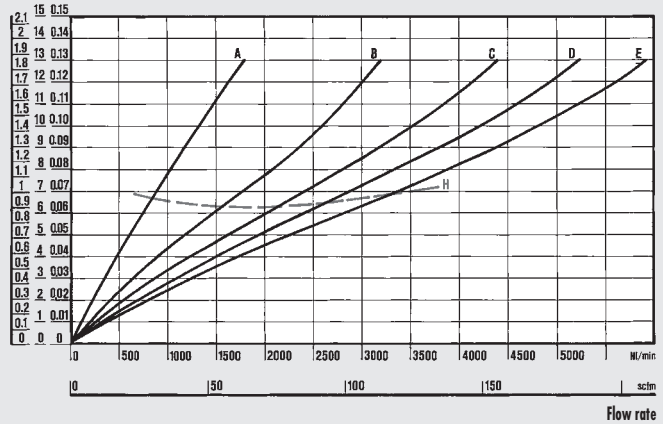
psi kPa bar



DEP 400 1"

$\Delta P = (P_m - P_v)$

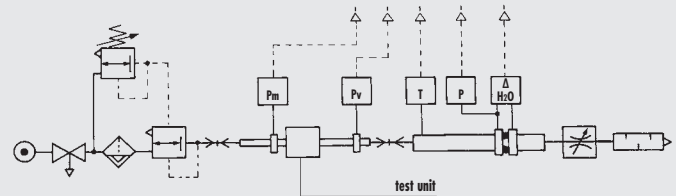
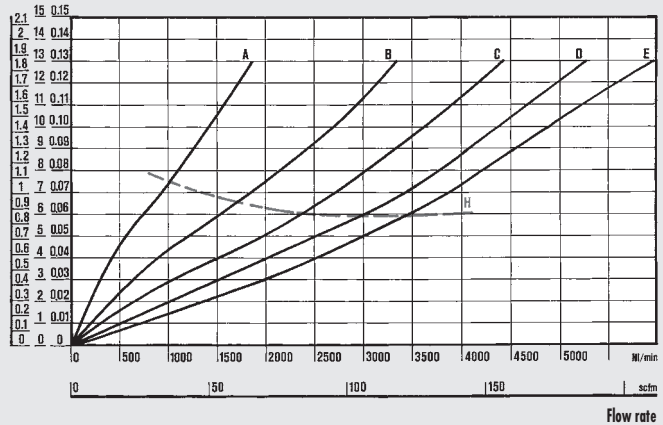
psi kPa bar



DEP 400 2"

$\Delta P = (P_m - P_v)$

psi kPa bar



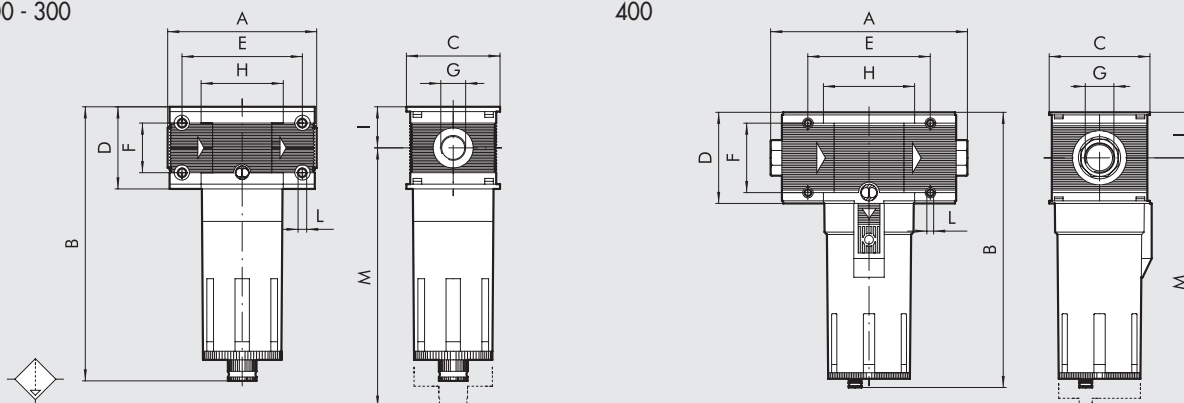
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi
- (H) = maximum flow rate recommended for optimal operation

DIMENSIONS

100 - 200 - 300

400



	DEP 100		DEP 200			DEP 300			DEP 400			
Threaded port G NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	3.07		3.68			4.33		4.40	8.85 to 10.03			
B	5.66		6.88			7.67			12.59			
	RMSA					7.83			12.75			
	RA		7									
C	1.96		2.48			2.83			4.64			
D	1.69		2.16			2.55			4.13			
E	2.48		3.09			3.62			5.56			
F	1.02		1.41			1.65			3.14			
H	1.69		2.18			2.55			4.14			
I	0.84		1.08			1.27			2.06			
L	0.17		0.21			0.21			0.29			
M	RMSA		7.71			8.46			14.88			
	RA		7.87			8.62			15			

KEY TO CODES

DEP	100	1/4	RMSA	
ELEMENT	SIZE	THREADED PORT	TYPE OF DRAIN	
DEP	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	RMSA	<p>RMSA: drain with manual condensate discharge and automatic discharge at zero pressure</p> <p>RA: automatic drain with condensate discharge, independent of pressure and flow rate (for size 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.</p>
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT		
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT	RMSA RA	
	400	1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT		

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 DEPURATOR		Skillair® 300 DEPURATOR		Skillair® 400 DEPURATOR	
3288001UA	D 100 RMSA NPT without end plates	4488001UA	D 300 RMSA NPT without end plates	6188001UA	D 400 RMSA NPT without end plates
3288001U	D 100 1/4 RMSA NPT	4488002UA	D 300 RA NPT without end plates	6188002UA	D 400 RA NPT without end plates
3388001U	D 100 3/8 RMSA NPT	4488001U	D 300 1/2 RMSA NPT	6188001U	D 400 1 RMSA NPT
		4488002U	D 300 1/2 RA NPT	6188002U	D 400 1 RA NPT
		4588001U	D 300 3/4 RMSA NPT	6288001U	D 400 1 1/4 RMSA NPT
		4588002U	D 300 3/4 RA NPT	6288002U	D 400 1 1/4 RA NPT
		4688001U	D 300 1 RMSA NPT	6388001U	D 400 1 1/2 RMSA NPT
		4688002U	D 300 1 RA NPT	6388002U	D 400 1 1/2 RA NPT
				6488001U	D 400 2 RMSA NPT
				6488002U	D 400 2 RA NPT

Skillair® REGULATORS

Each system served by the air supply mains (e.g. actuators and general appliances) requires its own constant operating pressure. It is necessary to use a regulator to regulate the pressure within a set range by means of regulating springs, with the pressure never exceeding the mains pressure.

The new Skillair® regulator uses a rolling diaphragm which gives a much better performance than the flat version.

Advantages of this system:

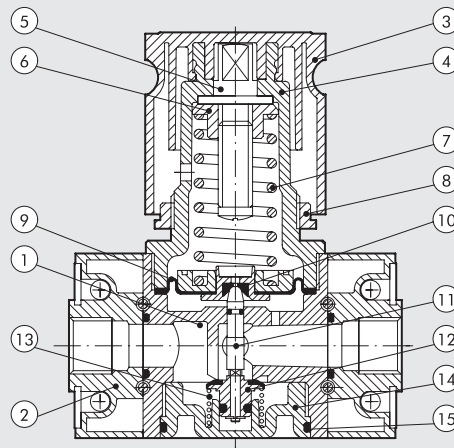
- Increased stroke, increased valve opening and hence higher flow rate.
- Decreased dynamic and inrush friction; prompt, more sensitive operation.
- Reduced working stress and hence longer life allowing the use of thinner diaphragms (0.017 inch versus 0.03÷0.05 inch for a flat one) which increases regulator sensitivity and prompt action.
- Increased accuracy in maintaining the set pressure with both variable flow rates and different feed pressures.
- Downstream overpressures relieved quickly.



TECHNICAL DATA		REG 100		REG 200			REG 300			REG 400 PILOT OPERATED*			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Setting range	psi	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180										Depending on the pilot operated regulator	
Max. input pressure	MPa	1.5		1.5			1.3			1.3			1.3
	bar	15		15			13			13			13
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	psi	217		217			188			188			188
	Nl/min	1100		2500			3500			18000			20000
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	39		88			124			363			707
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	scfm	57		124			247			-			-
	Nl/min	1600		3500			7000			-			-
ΔP 1 bar (0.1 MPa - 14.5 psi)	°C	50		50			50			50			50
Max temperature at 1 MPa; 10 bar; 145 psi	°F	122		122			122			122			122
Weight	pounds	0.9		1.5			3			10.5			12
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4-20 unc 4.33			
Pressure gauge port	BSPF	1/8"		1/8"			1/8"			1/4"			
Mounting position		In any position											
Fluid		Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.											
Notes on use		The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take air from pressure gauge ports. *Supplied without a pilot regulator.											

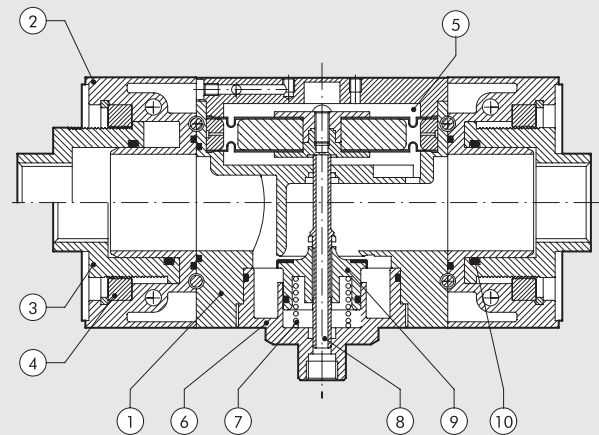
COMPONENTS REG 100 - 200 - 300

- ① Technopolymer body
- ② Zamak end plate
- ③ Technopolymer knob
- ④ Technopolymer bell
- ⑤ OT58 brass adjusting screw
- ⑥ OT58 brass scroll
- ⑦ Steel adjusting spring
- ⑧ Technopolymer ring nut
- ⑨ Rolling diaphragm
- ⑩ NBR relieving gaskets
- ⑪ OT58 brass stem
- ⑫ Valve with NBR vulcanized gasket
- ⑬ Stainless steel valve spring
- ⑭ Technopolymer plug
- ⑮ NBR gaskets



COMPONENTS REG 400 PILOT OPERATED

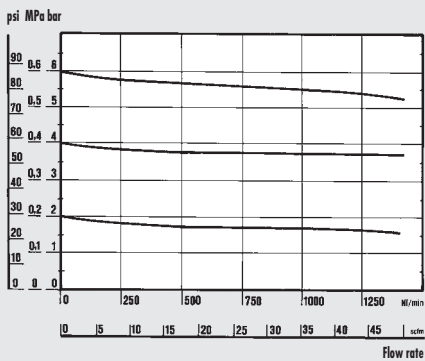
- ① Aluminium body
- ② Aluminium end plate
- ③ Anodized aluminium threaded bush, axial adjustment
- ④ OT58 brass retaining ring
- ⑤ Rolling diaphragm
- ⑥ Anodized aluminium plug
- ⑦ Stainless steel valve spring
- ⑧ OT58 brass stem with air relief hole
- ⑨ Valve with NBR vulcanized gasket
- ⑩ NBR gaskets



FLOW CHARTS

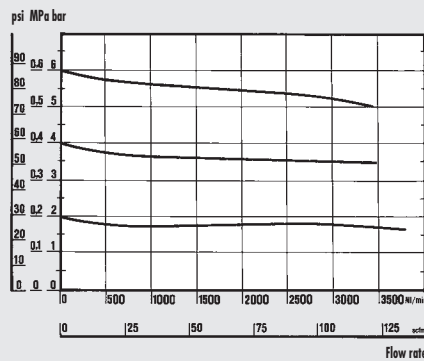
REG 100 1/4 - 3/8

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



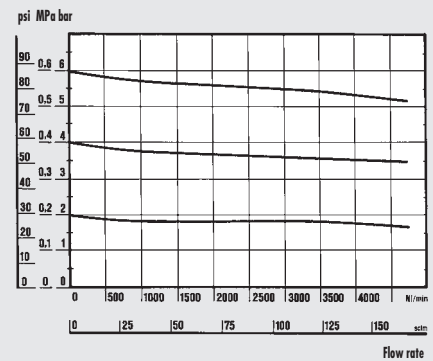
REG 200 1/4 - 3/8 - 1/2

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



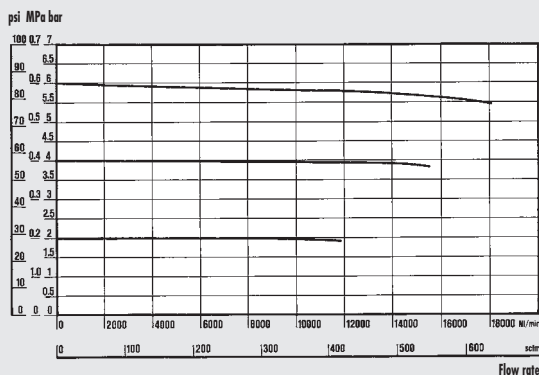
REG 300 1/2 - 3/4 - 1

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



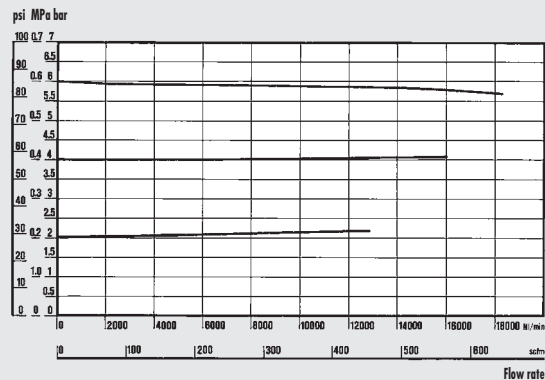
REG 400 1"

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi

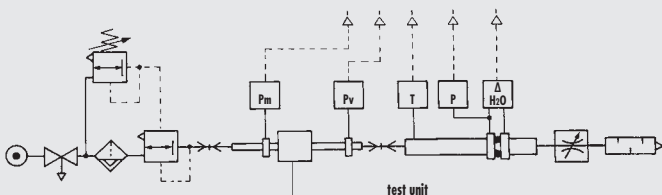


REG 400 2"

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



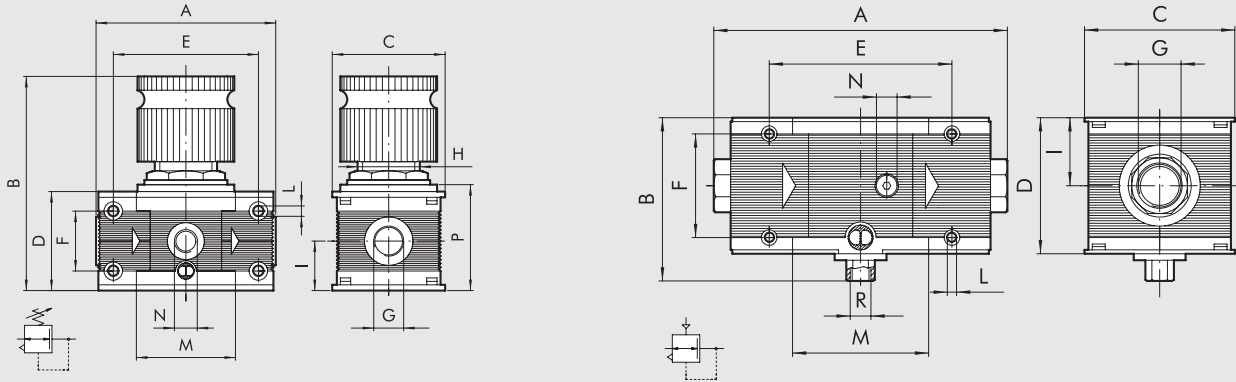
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.



DIMENSIONS

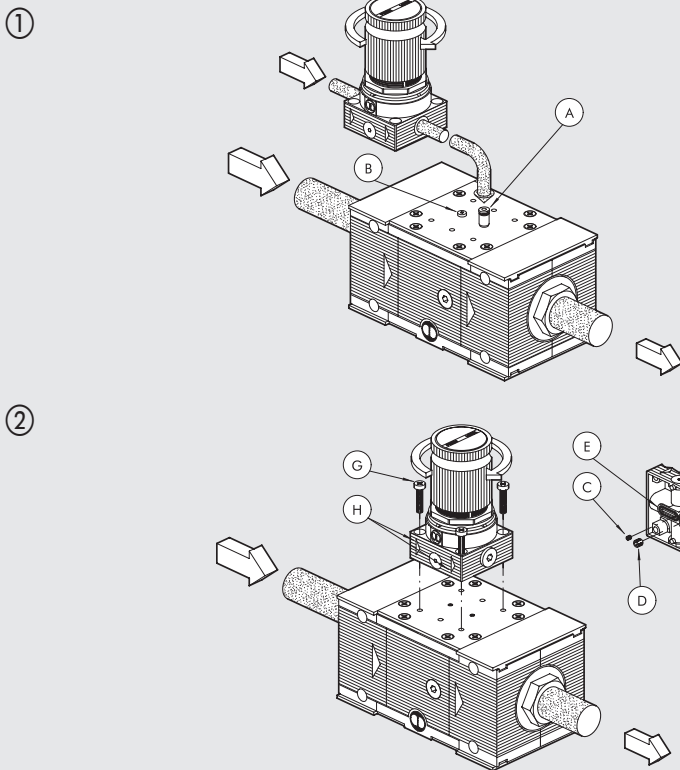
100 - 200 - 300

400



Threaded port G NPT	REG 100		REG 200			REG 300			REG 400				
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"	
A	3.07		3.68			4.33		4.40	8.85 to 10.03				11.14 to 12.32
B	3.85		4.92			5.82		4.99					
C	1.96		2.48			2.83		4.64					
D	1.69		2.16			2.55		4.13					
E	2.48		3.09			3.62		5.56					
F	1.02		1.41			1.65		3.14					
H	30 x 1.5		40 x 1.5			48 x 1.5		-					
I	0.84		1.08			1.27		2.06					
L	0.97		0.21			0.21		0.29					
M	1.69		2.18			2.55		4.14					
N (pressure gauge port)	BSPP 1/8"		BSPP 1/8"			BSPP 1/8"		1/4" NPT					
P	1.81		2.28			2.71		-					
R (relief)	-		-			-		1/4" NPT					

INSTRUCTIONS FOR USE REG 400



REMOTE PILOT

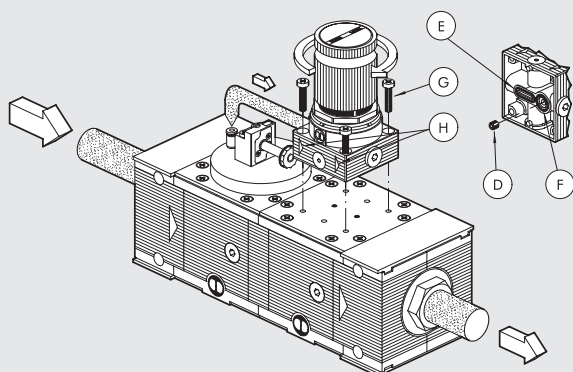
- Fit the A7 M5 plug into the threaded hole ② (close to the entrance).
- Fit the M5 fitting into the threaded hole ① as close to the entrance as possible.
- Connect the downstream circuit of the selected pilot operated regulator to the input ① (R1 fitting).
- Set the required pressure on the pilot operated regulator.

DIRECT PILOT WITH Skillair® PILOT OPERATED REGULATOR

- Remove the pins ③ and ④ under the pilot operated regulator.
- Check that the two gaskets ⑤ and ⑥ under the pilot are in place.
- Fix the pilot operated regulator to the base of the regulator using the self-threading screws ⑦. Make sure the arrows ⑧ point in the same direction as the arrows in relief under the base of the regulator.

INSTRUCTIONS FOR USE REG 400

③



PILOT REGULATOR FOLLOW-UP LINK

This is used when the regulator is mounted downstream of a V3V valve or an APR.

The air can be bled from the V3V or APR valves instead of from the regulator relieving system.

- Remove only the stud pin marked with a letter Ⓣ under the pilot regulator.
- Check the two gaskets under the pilot marked ⓔ and ⓕ.
- Secure the pilot regulator to the regulator base with the self-tapping screws marked with a letter Ⓜ. Making sure the arrows marked Ⓜ point in the same direction as the arrows in relief under the regulator base.
- Remove the A7 M5 plug from the V3V or APR plate and remount the fitting.
- Connect the pilot regulator supply to the fitting.

KEY TO CODES

REG ELEMENT	100 SIZE	1/4 THREADED PORT	0-30 SETTING RANGE
REG	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	0-30 = 0 to 30 psi 0-60 = 0 to 60 psi
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT	0-120 = 0 to 120 psi 0-180 = 0 to 180 psi
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT	Depending on the pilot used
	400	1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT	

The pilot operated regulator is necessary for size 400. See page 2-99

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 REGULATOR		Skillair® 200 REGULATOR		Skillair® 300 REGULATOR	
3202001UA	REG 100 0-30 NPT without end plates	3402001UA	REG 200 0-30 NPT without end plates	4402000UA	REG 300 0-30 NPT without end plates
3202002UA	REG 100 0-60 NPT without end plates	3402002UA	REG 200 0-60 NPT without end plates	4402001UA	REG 300 0-60 NPT without end plates
3202003UA	REG 100 0-120 NPT without end plates	3402003UA	REG 200 0-120 NPT without end plates	4402002UA	REG 300 0-120 NPT without end plates
3202004UA	REG 100 0-180 NPT without end plates	3402004UA	REG 200 0-180 NPT without end plates	4402003UA	REG 300 0-180 NPT without end plates
3202001U	REG 100 1/4 0-30 NPT	3402001U	REG 200 1/4 0-30 NPT	4402000U	REG 300 1/2 0-30 NPT
3202002U	REG 100 1/4 0-60 NPT	3402002U	REG 200 1/4 0-60 NPT	4402001U	REG 300 1/2 0-60 NPT
3202003U	REG 100 1/4 0-120 NPT	3402003U	REG 200 1/4 0-120 NPT	4402002U	REG 300 1/2 0-120 NPT
3202004U	REG 100 1/4 0-180 NPT	3402004U	REG 200 1/4 0-180 NPT	4402003U	REG 300 1/2 0-180 NPT
3302001U	REG 100 3/8 0-30 NPT	3502001U	REG 200 3/8 0-30 NPT	4502000U	REG 300 3/4 0-30 NPT
3302002U	REG 100 3/8 0-60 NPT	3502002U	REG 200 3/8 0-60 NPT	4502001U	REG 300 3/4 0-60 NPT
3302003U	REG 100 3/8 0-120 NPT	3502003U	REG 200 3/8 0-120 NPT	4502002U	REG 300 3/4 0-120 NPT
3302004U	REG 100 3/8 0-180 NPT	3502004U	REG 200 3/8 0-180 NPT	4502003U	REG 300 3/4 0-180 NPT
		3602001U	REG 200 1/2 0-30 NPT	4602000U	REG 300 1 0-30 NPT
		3602002U	REG 200 1/2 0-60 NPT	4602001U	REG 300 1 0-60 NPT
		3602003U	REG 200 1/2 0-120 NPT	4602002U	REG 300 1 0-120 NPT
		3602004U	REG 200 1/2 0-180 NPT	4602003U	REG 300 1 0-180 NPT
				Skillair® 400 REGULATOR	
				6102001UA	REG 400 NPT without end plates
				6102001U	REG 400 1 NPT
				6202001U	REG 400 1 1/4 NPT
				6302001U	REG 400 1 1/2 NPT
				6402001U	REG 400 2 NPT

Skillair® 100 IN-SERIES REGULATOR

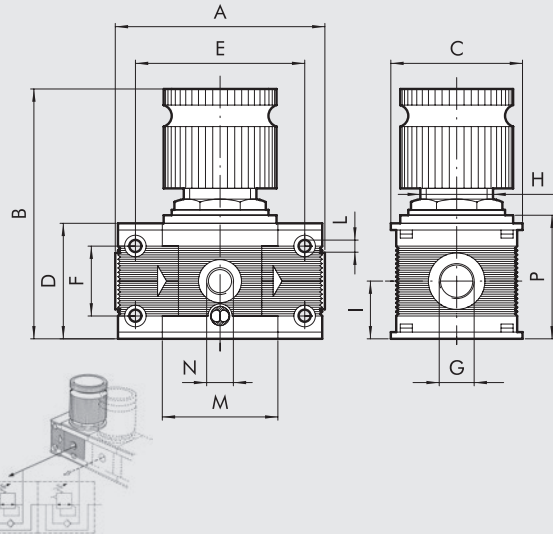
TECHNICAL DATA

Threaded inlet port	NPT	1/4"
Threaded user port	NPT	G 1/8"
Degree of purification	psi	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180
Max. input pressure		1.5 MPa - 15 bar - 217 psi
Flow rate at 6.3 bar (0.63 MPa - 91 psi)		500 NL/min
ΔP 0.5 bar (0.05 MPa - 7 psi)		18 scfm
Flow rate at 6.3 bar (0.63 MPa - 91 psi)		950 NL/min
ΔP 1 bar (0.1 MPa - 14 psi)		34 scfm
Fluid	Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous	
Max temperature	°C	50
at 1 MPa; 10 bar; 145 psi	°F	122
Weight	pounds	0.9
Wall fixing screws	N. 8-32 unc x 2	
Mounting position	In any position	
Pressure gauge port	BSPP 1/8"	
Notes on use	The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value.	



DIMENSIONS

		REG 100	REG 100
Threaded port G	NPT	1/4"	3/8"
A		3.07	
B		3.85	
C		1.96	
D		1.69	
E		2.48	
F		1.02	
H		30 x 1.5	
I		0.84	
L		0.17	
M		1.69	
N (use)		BSPP 1/8"	
P		1.81	

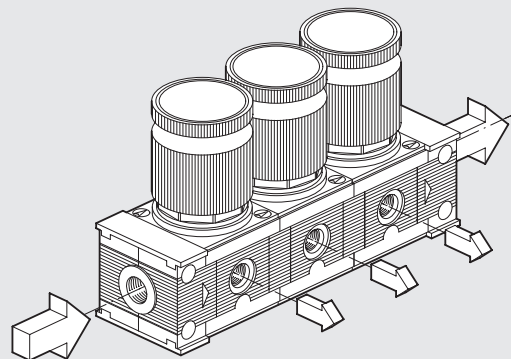


ORDERING CODES

Code	Description
100 IN-SERIES REGULATOR	
3202101UA	100 IN-SERIES REG. 0-30 without end plates
3202102UA	100 IN-SERIES REG. 0-60 without end plates
3202103UA	100 IN-SERIES REG. 0-120 without end plates
3202104UA	100 IN-SERIES REG. 0-180 without end plates
3202101U	100 IN-SERIES REG. 1/4 0-30
3202102U	100 IN-SERIES REG. 1/4 0-60
3202103U	100 IN-SERIES REG. 1/4 0-120
3202104U	100 IN-SERIES REG. 1/4 0-180
3302101U	100 IN-SERIES REG. 3/8 0-30
3302102U	100 IN-SERIES REG. 3/8 0-60
3302103U	100 IN-SERIES REG. 3/8 0-120
3302104U	100 IN-SERIES REG. 3/8 0-180

Several of these Skillair® regulators can be mounted in series, all fed by the same pressure. They can give different set pressures, each independent of the previous regulator.

Operating compressed air can be taken from the pressure gauge ports (G 1/8").



The pilot regulator is used when great accuracy is required in maintaining the set pressure under changing operating conditions.

It is ideal for use as:

- a precision regulator for flow rates < 3.5 scfm.
- a pilot in general - typically for large size regulators (see REG 400).

The system's high operating accuracy and low hysteresis are determined by the virtually total lack of friction.

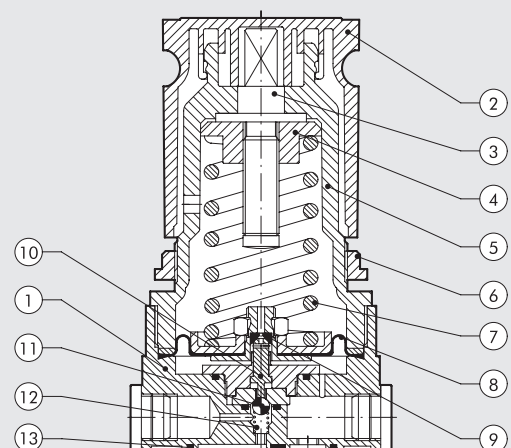
The presence of a slight air leak is necessary for the regulator to operate properly - it is not a malfunction. It is advisable to use filtered air.



TECHNICAL DATA		PILOT REGULATOR	
Threaded port	NPT		1/4"
Setting range	psi		0 to 30 - 0 to 60 - 0 to 120 - 0 to 180
Max. input pressure	MPa		1.3
	bar		13
	psi		188
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)			120 NI/min - 4.3 scfm
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)			140 NI/min - 5 scfm
Fluid			Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.
Max temperature at 1 MPa; 10 bar; 145 psi	°C		50
	°F		122
Weight	pounds		1.3
Mounting position			In any position
Pressure gauge port			BSP 1/8"
Notes on use			The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take air from the pressure gauge ports. Mount directly on REG 400.

COMPONENTS

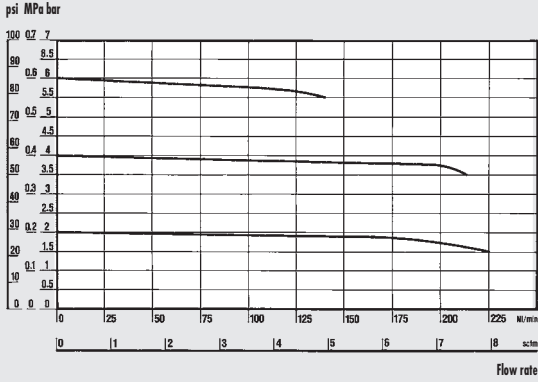
- ① Aluminium body
- ② Technopolymer knob
- ③ OT58 brass adjusting screw
- ④ OT58 brass scroll
- ⑤ Technopolymer bell
- ⑥ Technopolymer ring nut
- ⑦ Steel adjusting spring
- ⑧ Rolling diaphragm
- ⑨ NBR relieving gaskets
- ⑩ OT58 brass stem
- ⑪ Stainless steel ball valve
- ⑫ Stainless steel valve spring
- ⑬ NBR gaskets



FLOW CHARTS

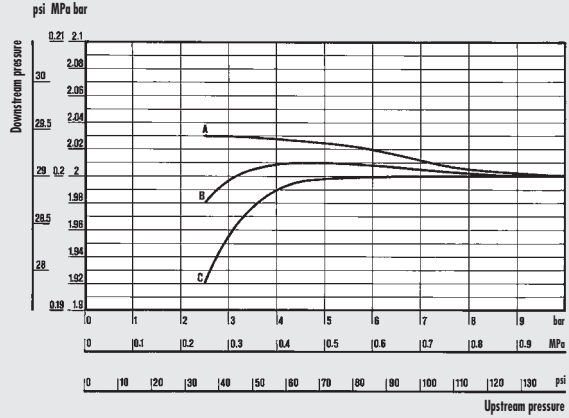
FLOW FEATURES REG. P 1/4"

Preset pressure
Pm = 7 bar - 0.7 MPa - 100 psi



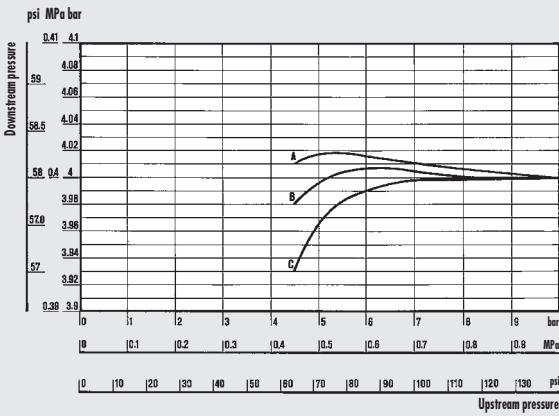
REGULATION FEATURES REG. P 1/4" *

Flow rate: A = 0 NI/min = 0 scfm -
B = 25 NI/min = 0.88 scfm - C = 50 NI/min = 1.76 scfm



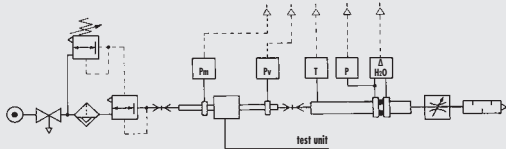
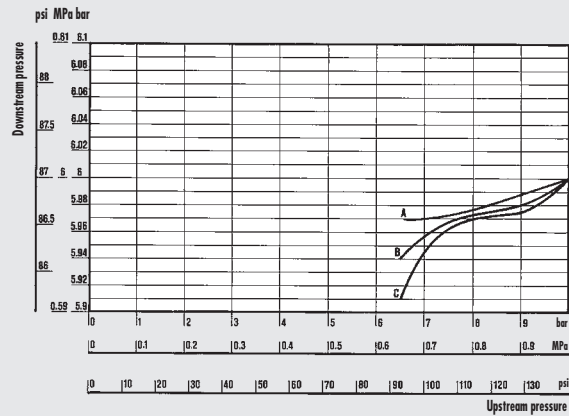
REGULATION FEATURES REG. P 1/4" *

Flow rate: A = 0 NI/min = 0 scfm
B = 25 NI/min = 0.88 scfm - C = 50 NI/min = 1.76 scfm



REGULATION FEATURES REG. P 1/4" *

Flow rate: A = 0 NI/min = 0 scfm
B = 25 NI/min = 0.88 scfm - C = 50 NI/min = 1.76 scfm

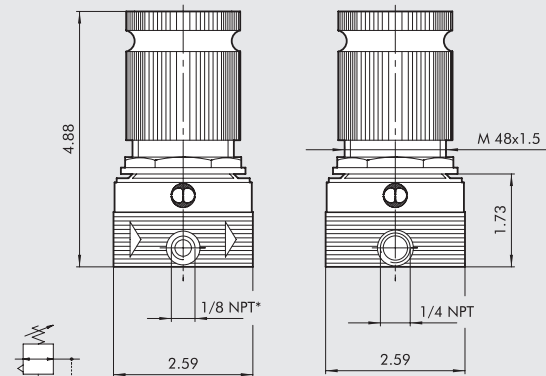


• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

* Pressure stability adjusted according to changes in upstream pressure.

DIMENSIONS

Code	Description
3206001U	REG. P 1/4" 0-30 NPT
3206002U	REG. P 1/4" 0-60 NPT
3206003U	REG. P 1/4" 0-120 NPT
3206004U	REG. P 1/4" 0-180 NPT



*Pressure gauge port

Skillair® 300 PILOT OPERATED REGULATOR



- Pilot-operated or servo-piloted regulator.
- Twin rolling diaphragm to ensure improved opening and hence greater flow rate.
- Low load losses
- Excellent precision in pressure setting.
- Excellent sensitivity during relieving.



AIR PREP

Skillair® 300 PILOT OPERATED REGULATOR

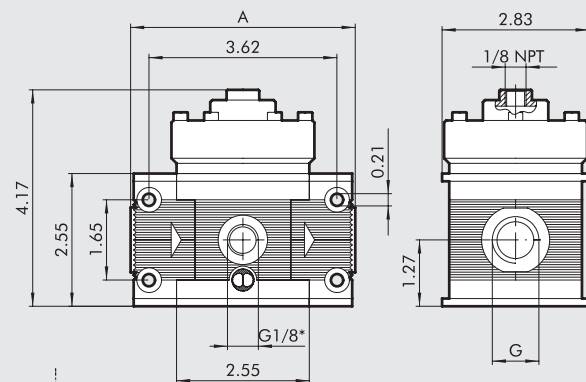
TECHNICAL DATA		300 PILOT OPERATED REG		
Threaded port	NPT	1/2"	3/4"	1"
Setting range		Depending on the pilot regulator		
Max. input pressure	MPa	1.3		
	bar	13		
	psi	188		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min	4500		
	scfm	160		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	7000		
	scfm	247		
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.		
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		
	°F	122		
Weight	pounds	2.8		
Wall fixing screws		N. 10-24 unc x 2.75		
Mounting position		In any position		
Pressure gauge port		BSP 1/8"		
Notes on use		The regulator pressure must always be set upwards. Do not take air from the pressure gauge ports.		

DIMENSIONS

		REG 300		
Threaded port G	NPT	1/2"	3/4"	1"
A		4.33	4.33	4.40

ORDERING CODES

Code	Description
4403003UA	300 PILOT OPERATED REG NPT without end plates
4403003U	300 1/2" PILOT OPERATED REG NPT
4503003U	300 3/4" PILOT OPERATED REG NPT
4603003U	300 1" PILOT OPERATED REG NPT



*Pressure gauge port

Skillair® FILTER REGULATOR

This device combines a filter and a pressure regulator in a single unit. It has the dual function of filtering and regulating air from the compressor. As the filter regulator is made up of the same elements as the regulator and the filter, the performance is the same.

- High flow rates with low load loss.
- Special rolling diaphragm - higher flow rate, greater stability, improved sensitivity.
- Rapid relief of downstream overpressures.
- Stability of the regulated pressure as the mains pressure fluctuates.
- Maximum degree of condensate separation.
- 360° condensate level display.
- Condensate drain with manual/semi-automatic or automatic function.



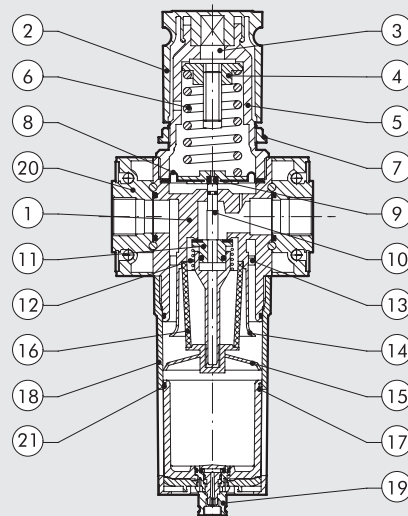
AIR PREP

Skillair® FILTER REGULATOR

TECHNICAL DATA		FR 100		FR 200			FR 300		
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Setting range	psi	0 to 30 - 0 to 60 - 0 to 120 - 0 to 180							
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)							
Max. input pressure		1.5 MPa - 15 bar - 217 psi		1.3 MPa - 13 bar - 188 psi			1.3 MPa - 13 bar - 188 psi		
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1100		1600			3500		
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	39		57			125		
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1600		3000			5600		
ΔP 1 bar (0.1 MPa - 14.5 psi)	scfm	57		71			200		
Max temperature	°C	50		50			50		
at: 1 MPa; 10 bar; 145 psi	°F	122		122			122		
Weight	pounds	1.1		2.2			4		
Wall fixing screws		N. 8-32 unc x 2"		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75		
Mounting position		Vertical		Vertical			Vertical		
Pressure gauge port	BSPP	1/8"		1/8"			1/8"		
Bowl capacity	fluid ounce oz	0.74		1.52			2.54		
Drain		RMSA - SAC		RMSA - SAC - RA			RMSA - RA		
RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs. Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous. The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take air from pressure gauge ports. The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.									
Fluid									
Notes on use									

COMPONENTS

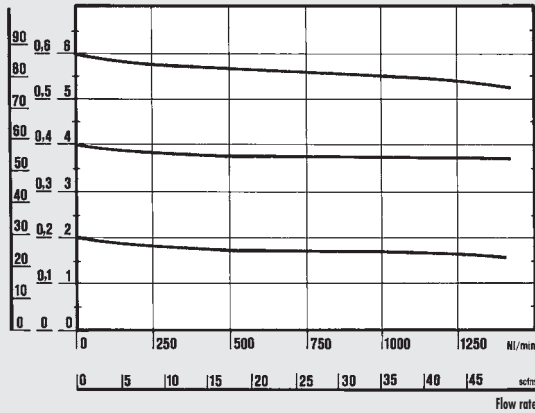
- ① Technopolymer body
- ② Technopolymer knob
- ③ OT58 brass adjusting screw
- ④ OT58 brass scroll
- ⑤ Technopolymer bell
- ⑥ Steel adjusting spring
- ⑦ Technopolymer ring nut
- ⑧ Rolling diaphragm
- ⑨ NBR relieving gaskets
- ⑩ OT58 brass stem
- ⑪ Valve with NBR vulcanized gasket
- ⑫ Stainless steel valve spring
- ⑬ Technopolymer centrifuge
- ⑭ Technopolymer baffle plug
- ⑮ Technopolymer screen
- ⑯ Sintered HDPE filter cartridge
- ⑰ Clear technopolymer glass
- ⑱ Bowl: technopolymer for FR100 and FR200, metal for FR 300
- ⑲ Drain (RMSA)
- ⑳ Zamak end plate
- ㉑ NBR gaskets



FLOW CHARTS

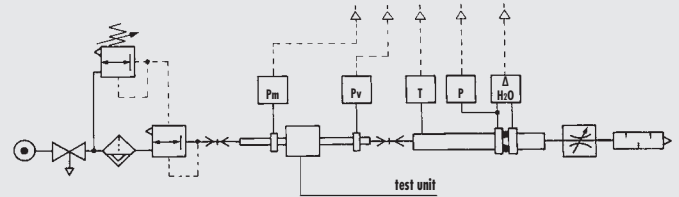
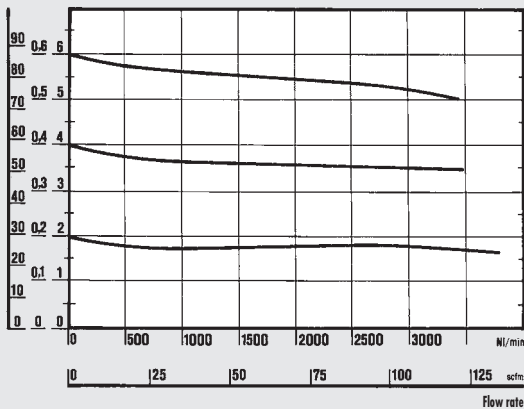
FR 100 1/4 - 3/8

Preset pressure
 $P_m = 7 \text{ bar} - 0.7 \text{ MPa} - 100 \text{ psi}$
 psi MPa bar



FR 200 1/4 - 3/8 - 1/2

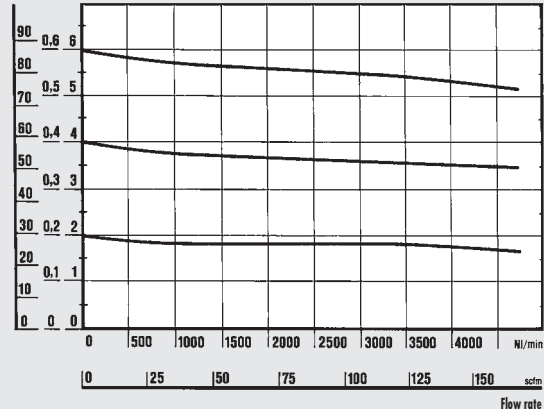
Preset pressure
 $P_m = 7 \text{ bar} - 0.7 \text{ MPa} - 100 \text{ psi}$
 psi MPa bar



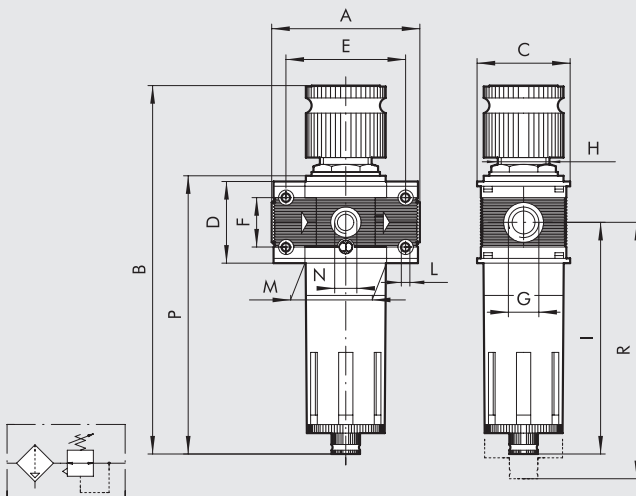
- Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

FR 300 1/2 - 3/4 - 1

Preset pressure
 $P_m = 7 \text{ bar} - 0.7 \text{ MPa} - 100 \text{ psi}$
 psi MPa bar



DIMENSIONS



		FR 100		FR 200			FR 300		
Threaded port G	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
A		3.07		3.68		4.33		4.40	
B		7.84		9.65		4.33			
C		1.97		2.48		4.41			
D		1.70		2.17		10.95			
E		2.48		3.09		2.84			
F		1.02		1.42		3.62			
H		M30x1.5		M40x1.5		M48x1.5			
I		4.82		5.80		6.40			
L		0.157		0.197		0.197			
M		1.69		2.19		2.56			
N (pressure gauge port)		BSPP 1/8"		BSPP 1/8"		BSPP 1/8"			
P	RMSA	5.78		7		7.87			
	SAC	-		7.16		8			
	SAC	6		7.16		8			
R	RMSA	5.39		7.71		8.46			
	RA	-		7.87		8.62			
	SAC	5.55		7.87		8.62			

KEY TO CODES

FR	100	1/4	5	0-30	RMSA
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	SETTING RANGE	TYPE OF DRAIN
FR	100	1/4	5 = 5 µm (200 microinch)	0-30 = 0 to 30 psi	RMSA
		3/8	20 = 20 µm (790 microinch)	0-60 = 0 to 60 psi	SAC
	200	1/4	50 = 50 µm (2000 microinch)	0-120 = 0 to 120 psi	RMSA
		3/8		0-180 = 0 to 180 psi	SAC
		1/2			RA*
	300	1/2			RMSA
		3/4			RA
		1			

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 RA: automatic drain with condensate discharge, independent of pressure and flow rate. (for size 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge. **Operates by pressure drop – requires variable air take-offs.** (for size 100 and 200)
 * For Skillair® 200 with RA, please contact our sales assistance department.

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 FILTER REGULATOR		Skillair® 200 FILTER REGULATOR		Skillair® 300 FILTER REGULATOR	
3283007UA	FR 100 5 0-120 RMSA NPT without end plates	3483007UA	FR 200 5 0-120 RMSA NPT without end plates	4483004UA	FR 300 5 0-120 RMSA NPT without end plates
3283008UA	FR 100 20 0-120 RMSA NPT without end plates	3483008UA	FR 200 20 0-120 RMSA NPT without end plates	4483005UA	FR 300 20 0-120 RMSA NPT without end plates
3283009UA	FR 100 50 0-120 RMSA NPT without end plates	3483009UA	FR 200 50 0-120 RMSA NPT without end plates	4483006UA	FR 300 50 0-120 RMSA NPT without end plates
3283010UA	FR 100 5 0-180 RMSA NPT without end plates	3483010UA	FR 200 5 0-180 RMSA NPT without end plates	4483007UA	FR 300 5 0-180 RMSA NPT without end plates
3283011UA	FR 100 20 0-180 RMSA NPT without end plates	3483011UA	FR 200 20 0-180 RMSA NPT without end plates	4483008UA	FR 300 20 0-180 RMSA NPT without end plates
3283012UA	FR 100 50 0-180 RMSA NPT without end plates	3483012UA	FR 200 50 0-180 RMSA NPT without end plates	4483009UA	FR 300 50 0-180 RMSA NPT without end plates
3283031UA	FR 100 5 0-120 SAC NPT without end plates	3483031UA	FR 200 5 0-120 SAC NPT without end plates	4483013UA	FR 300 5 0-120 RA NPT without end plates
3283032UA	FR 100 20 0-120 SAC NPT without end plates	3483032UA	FR 200 20 0-120 SAC NPT without end plates	4483014UA	FR 300 20 0-120 RA NPT without end plates
3283033UA	FR 100 50 0-120 SAC NPT without end plates	3483033UA	FR 200 50 0-120 SAC NPT without end plates	4483015UA	FR 300 50 0-120 RA NPT without end plates
3283034UA	FR 100 5 0-180 SAC NPT without end plates	3483034UA	FR 200 5 0-180 SAC NPT without end plates	4483016UA	FR 300 5 0-180 RA NPT without end plates
3283035UA	FR 100 20 0-180 SAC NPT without end plates	3483035UA	FR 200 20 0-180 SAC NPT without end plates	4483017UA	FR 300 20 0-180 RA NPT without end plates
3283036UA	FR 100 50 0-180 SAC NPT without end plates	3483036UA	FR 200 50 0-180 SAC NPT without end plates	4483018UA	FR 300 50 0-180 RA NPT without end plates
3283007U	FR 100 1/4 5 0-120 RMSA NPT	3483007U	FR 200 1/4 5 0-120 RMSA NPT	4483004U	FR 300 1/2 5 0-120 RMSA NPT
3283008U	FR 100 1/4 20 0-120 RMSA NPT	3483008U	FR 200 1/4 20 0-120 RMSA NPT	4483005U	FR 300 1/2 20 0-120 RMSA NPT
3283009U	FR 100 1/4 50 0-120 RMSA NPT	3483009U	FR 200 1/4 50 0-120 RMSA NPT	4483006U	FR 300 1/2 50 0-120 RMSA NPT
3283010U	FR 100 1/4 5 0-180 RMSA NPT	3483010U	FR 200 1/4 5 0-180 RMSA NPT	4483007U	FR 300 1/2 5 0-180 RMSA NPT
3283011U	FR 100 1/4 20 0-180 RMSA NPT	3483011U	FR 200 1/4 20 0-180 RMSA NPT	4483008U	FR 300 1/2 20 0-180 RMSA NPT
3283012U	FR 100 1/4 50 0-180 RMSA NPT	3483012U	FR 200 1/4 50 0-180 RMSA NPT	4483009U	FR 300 1/2 50 0-180 RMSA NPT
3283031U	FR 100 1/4 5 0-120 SAC NPT	3483031U	FR 200 1/4 5 0-120 SAC NPT	4483013U	FR 300 1/2 5 0-120 RA NPT
3283032U	FR 100 1/4 20 0-120 SAC NPT	3483032U	FR 200 1/4 20 0-120 SAC NPT	4483014U	FR 300 1/2 20 0-120 RA NPT
3283033U	FR 100 1/4 50 0-120 SAC NPT	3483033U	FR 200 1/4 50 0-120 SAC NPT	4483015U	FR 300 1/2 50 0-120 RA NPT
3283034U	FR 100 1/4 5 0-180 SAC NPT	3483034U	FR 200 1/4 5 0-180 SAC NPT	4483016U	FR 300 1/2 5 0-180 RA NPT
3283035U	FR 100 1/4 20 0-180 SAC NPT	3483035U	FR 200 1/4 20 0-180 SAC NPT	4483017U	FR 300 1/2 20 0-180 RA NPT
3283036U	FR 100 1/4 50 0-180 SAC NPT	3483036U	FR 200 1/4 50 0-180 SAC NPT	4483018U	FR 300 1/2 50 0-180 RA NPT
3383007U	FR 100 3/8 5 0-120 RMSA NPT	3583007U	FR 200 3/8 5 0-120 RMSA NPT	4583004U	FR 300 3/4 5 0-120 RMSA NPT
3383008U	FR 100 3/8 20 0-120 RMSA NPT	3583008U	FR 200 3/8 20 0-120 RMSA NPT	4583005U	FR 300 3/4 20 0-120 RMSA NPT
3383009U	FR 100 3/8 50 0-120 RMSA NPT	3583009U	FR 200 3/8 50 0-120 RMSA NPT	4583006U	FR 300 3/4 50 0-120 RMSA NPT
3383010U	FR 100 3/8 5 0-180 RMSA NPT	3583010U	FR 200 3/8 5 0-180 RMSA NPT	4583007U	FR 300 3/4 5 0-180 RMSA NPT
3383011U	FR 100 3/8 20 0-180 RMSA NPT	3583011U	FR 200 3/8 20 0-180 RMSA NPT	4583008U	FR 300 3/4 20 0-180 RMSA NPT
3383012U	FR 100 3/8 50 0-180 RMSA NPT	3583012U	FR 200 3/8 50 0-180 RMSA NPT	4583009U	FR 300 3/4 50 0-180 RMSA NPT
3383031U	FR 100 3/8 5 0-120 SAC NPT	3583031U	FR 200 3/8 5 0-120 SAC NPT	4583013U	FR 300 3/4 5 0-120 RA NPT
3383032U	FR 100 3/8 20 0-120 SAC NPT	3583032U	FR 200 3/8 20 0-120 SAC NPT	4583014U	FR 300 3/4 20 0-120 RA NPT
3383033U	FR 100 3/8 50 0-120 SAC NPT	3583033U	FR 200 3/8 50 0-120 SAC NPT	4583015U	FR 300 3/4 50 0-120 RA NPT
3383034U	FR 100 3/8 5 0-180 SAC NPT	3583034U	FR 200 3/8 5 0-180 SAC NPT	4583016U	FR 300 3/4 5 0-180 RA NPT
3383035U	FR 100 3/8 20 0-180 SAC NPT	3583035U	FR 200 3/8 20 0-180 SAC NPT	4583017U	FR 300 3/4 20 0-180 RA NPT
3383036U	FR 100 3/8 50 0-180 SAC NPT	3583036U	FR 200 3/8 50 0-180 SAC NPT	4583018U	FR 300 3/4 50 0-180 RA NPT
		3683007U	FR 200 1/2 5 0-120 RMSA NPT	4683004U	FR 300 1 5 0-120 RMSA NPT
		3683008U	FR 200 1/2 20 0-120 RMSA NPT	4683005U	FR 300 1 20 0-120 RMSA NPT
		3683009U	FR 200 1/2 50 0-120 RMSA NPT	4683006U	FR 300 1 50 0-120 RMSA NPT
		3683010U	FR 200 1/2 5 0-180 RMSA NPT	4683007U	FR 300 1 5 0-180 RMSA NPT
		3683011U	FR 200 1/2 20 0-180 RMSA NPT	4683008U	FR 300 1 20 0-180 RMSA NPT
		3683012U	FR 200 1/2 50 0-180 RMSA NPT	4683009U	FR 300 1 50 0-180 RMSA NPT
		3683031U	FR 200 1/2 5 0-120 SAC NPT	4683013U	FR 300 1 5 0-120 RA NPT
		3683032U	FR 200 1/2 20 0-120 SAC NPT	4683014U	FR 300 1 20 0-120 RA NPT
		3683033U	FR 200 1/2 50 0-120 SAC NPT	4683015U	FR 300 1 50 0-120 RA NPT
		3683034U	FR 200 1/2 5 0-180 SAC NPT	4683016U	FR 300 1 5 0-180 RA NPT
		3683035U	FR 200 1/2 20 0-180 SAC NPT	4683017U	FR 300 1 20 0-180 RA NPT
		3683036U	FR 200 1/2 50 0-180 SAC NPT	4683018U	FR 300 1 50 0-180 RA NPT

The pneumatic lubricator is the simplest way of properly lubricating actuators connected to a circuit.

As air flows from the mains through the lubricator, it encounters the diaphragm which obstructs the flow and the air is forced through the Venturi tube.

The inside of the Venturi tube is connected to the inspection dome, which connects with the bowl via a tube with a regulating needle in between.

The drop in pressure caused by the Venturi tube sucks up air through the dome, the tube and lastly into the bowl containing oil.

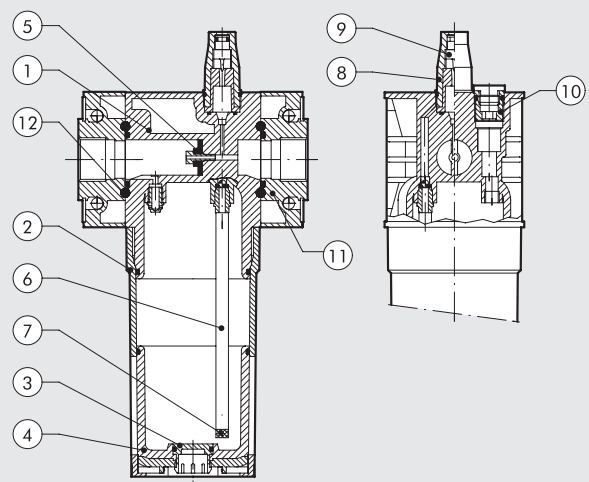
The quantity of oil controlled by the regulating needle then flows back from the bowl to the circuit.



TECHNICAL DATA		LUB 100		LUB 200			LUB 300			LUB 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Type of lubrication		Mist		Mist			Mist			Mist			
Bowl capacity	fluid ounce oz	1.69		3.21			5.41			27.00			
Versions		Standard - CD		Standard - CD			Standard - CD - ML CD			Standard - CD - ML CD			
Max. inlet pressure	MPa	1.5		1.3			1.3			1.3		1.3	
	bar	15		13			13			13		13	
	psi	217		188			188			188		188	
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1100		2200			3500			18000		21000	
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	39		71			125			640		750	
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1500		3700			5500			-		-	
ΔP 1 bar (0.1 MPa - 14.5 psi)	scfm	53		131			196			-		-	
Max temperature at: 1 MPa; 10 bar; 145 psi	°C	50		50			50			50		50	
	°F	122		122			122			122		122	
Weight	pounds	0.9		1.5			3			10.8		12.5	
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4 - 20 unc x 4.33			
Mounting position		Vertical											
Fluid		Filtered compressed air											
Recommended oils		ISO and UNI FD22 (Energol HPL to Spinesso to Mobil DTE to Tellus Oil).											
Notes on use		Install the lubricator as close as possible to the point of use. Fill the lubricator bowl with oil before pressurizing the system. Do not use cleaning oils, brake fluid oils or solvents in general. For the best lubrication results, set the drip rate to one drop per 10.6-21.2 scfm.											

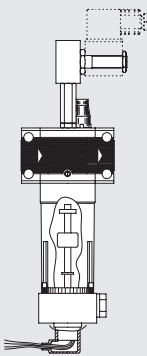
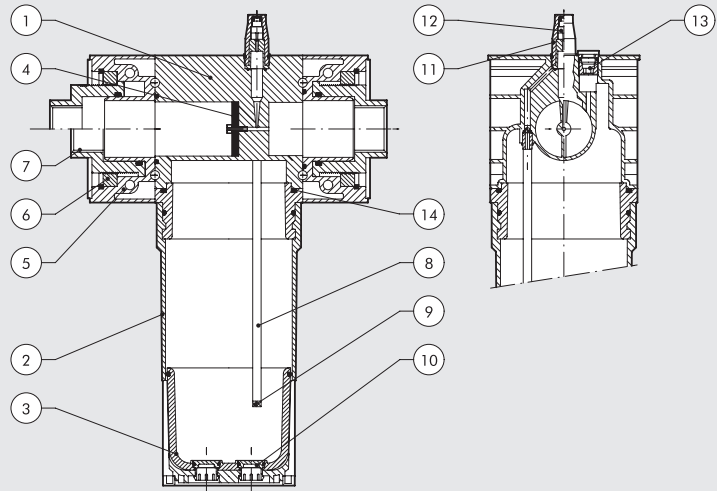
COMPONENTS LUB 100 - LUB 200 - LUB 300

- ① Technopolymer body
- ② Bowl: technopolymer for LUB 100 and 200, metal for LUB 300
- ③ Technopolymer plug
- ④ Clear technopolymer glass
- ⑤ NBR Venturi tube diaphragm
- ⑥ Rilsan® oil suction tube
- ⑦ Filter
- ⑧ Clear technopolymer inspection dome
- ⑨ OT58 brass oil flow regulating needle
- ⑩ OT58 brass oil filling plug
- ⑪ Zamak end plate
- ⑫ NBR gaskets



COMPONENTS LUB 400

- ① Aluminium body
- ② Aluminium bowl
- ③ Clear technopolymer glass
- ④ NBR Venturi tube diaphragm
- ⑤ Aluminium end plate
- ⑥ OT58 brass retaining ring
- ⑦ Anodized aluminium threaded bush, axial adjustment
- ⑧ Rilsan® oil suction pipe
- ⑨ Filter
- ⑩ Technopolymer plug
- ⑪ Clear technopolymer inspection dome
- ⑫ OT58 brass oil flow regulating needle
- ⑬ OT58 brass oil filling plug
- ⑭ NBR gaskets



Pressure drop FILLING WITH MINIMUM LEVEL (ML CD AUTOMATIC)

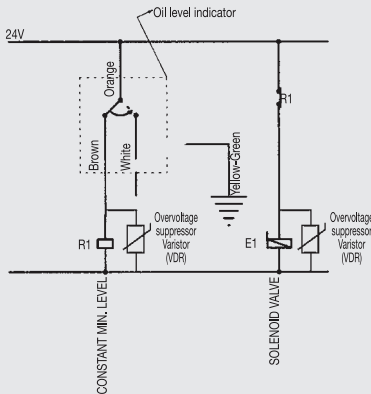
Available in sizes 300 and 400, this lubricator is controlled by a solenoid valve (2/2 NC minimum bore 3) situated on the lubricator body.

It reduces pressure inside the bowl allow it to be filled with oil taken from a tank at ambient pressure, which can be located in a lower position than the lubricator (max. difference in height 78.8 inch).

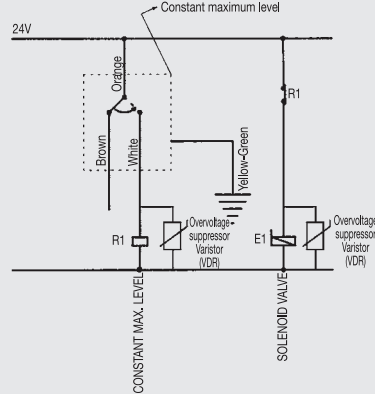
The electric indicator inside the bowl sends an electric signal used to activate the valve. When the oil reaches the maximum level, another signal disactivates the valve. In this case, the lubricator system operates with the oil level between minimum and maximum. If it is necessary to keep the oil level in the bowl constant, only one of the two signals can be used. Pressure range 43.5 to 145 psi. Connect the oil tank to the BSPP 1/4 fitting on the bowl.

N.B.: for coils and connectors see Skillair accessories.

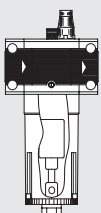
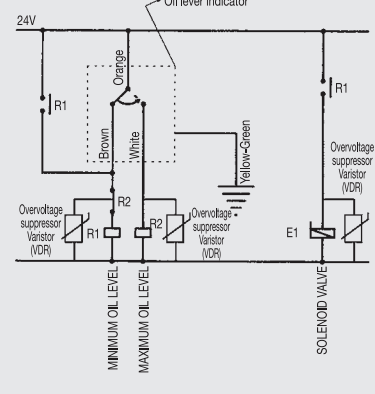
Constant minimum level



Constant maximum level



Oil level between maximum and minimum



FILLING BY Pressure drop (CD MANUAL)

Available in all sizes. It is operated by means of a button on the lubricator body. The pressure inside the bowl drops to allow it to be filled with oil taken from a tank at ambient pressure, which can be located in a lower position than the lubricator (max. difference in height 78.8 inch). Oil filling stops when the level of oil raises the float and shuts off a specific valve.

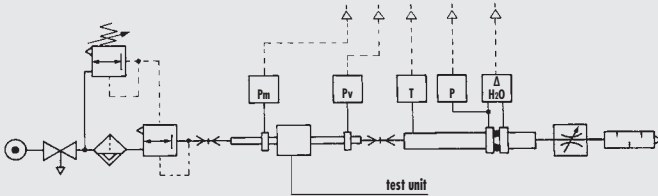
Important - The SK4 lubricator is filled with oil by hand. Filling must stop when the oil level is visible through the spy-hole in the bowl release lever. Pressure range 43.5 to 145 psi.. Lubrication is discontinued during filling.

Connect the oil tank to the BSPP 1/4 fitting below the bowl.

FLOW CHARTS



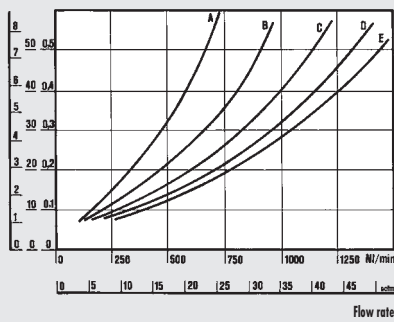
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.



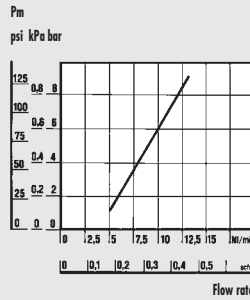
- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

LUB 100 1/4 - 3/8

$\Delta P = (P_m - P_v)$
psi kPa bar

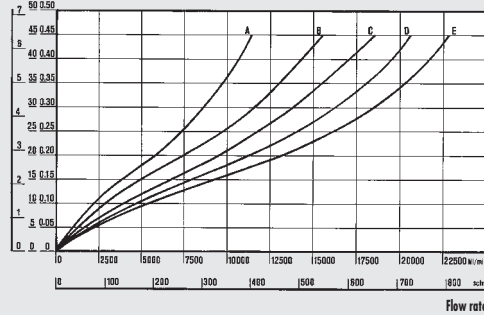


MINIMUM OPERATING FLOW CHART



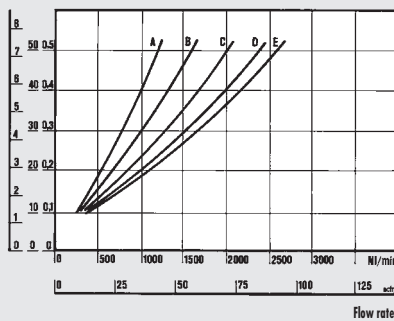
LUB 400 1"

$\Delta P = (P_m - P_v)$
psi kPa bar

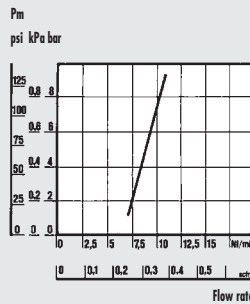


LUB 200 1/4 - 3/8 - 1/2

$\Delta P = (P_m - P_v)$
psi kPa bar

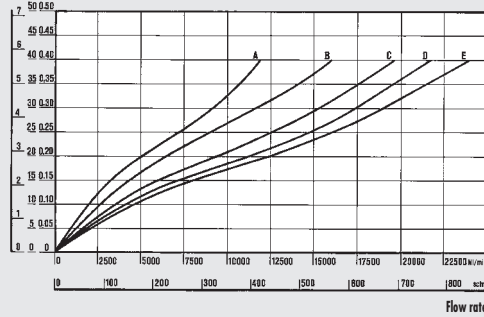


MINIMUM OPERATING FLOW CHART



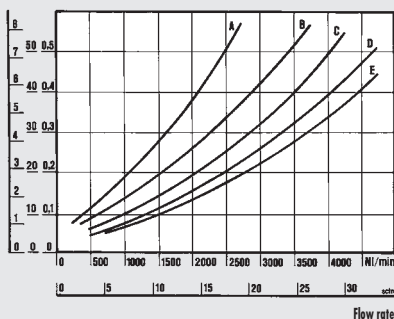
LUB 400 2"

$\Delta P = (P_m - P_v)$
psi kPa bar

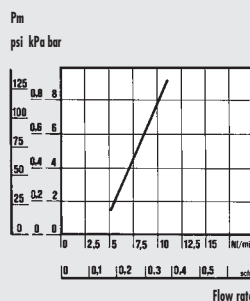


LUB 300 1/2 - 3/4 - 1

$\Delta P = (P_m - P_v)$
psi kPa bar



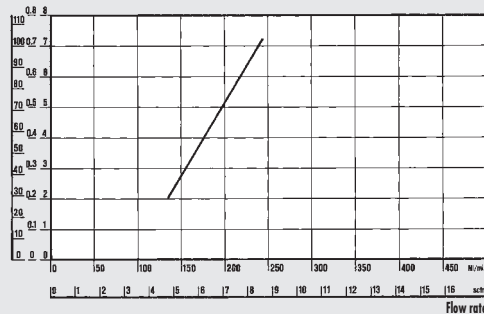
MINIMUM OPERATING FLOW CHART



MINIMUM OPERATING FLOW CHART LUB 400 1" AND 2"

PRESSURE

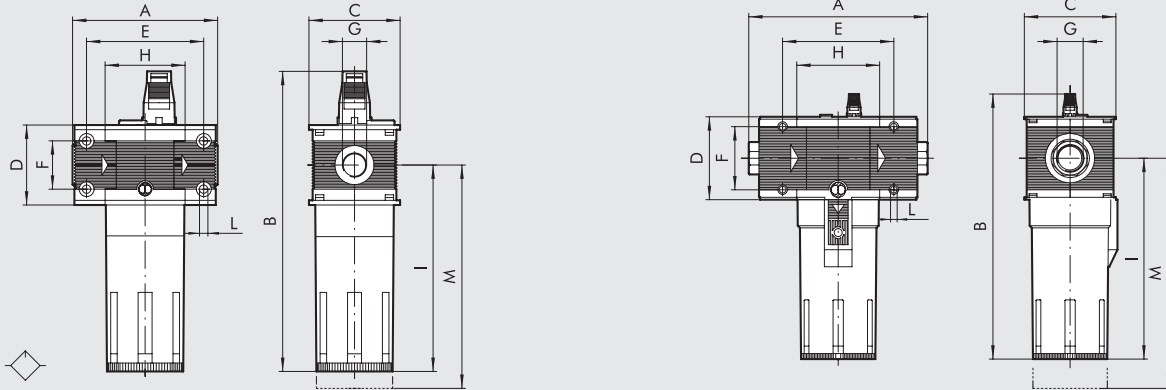
psi kPa bar



DIMENSIONS

100 - 200 - 300

400



	LUB 100		LUB 200			LUB 300			LUB 400					
	Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A			3.07	3.68				4.33	4.40		8.85 to 10.03		11.14 to 12.32	
B			6.37	7.59				8.42			13.30			
C			1.96	2.48				2.83			4.64			
D			1.69	2.16				2.55			4.13			
E			2.48	3.09				3.62			5.56			
F			1.02	1.41				4.65			3.15			
H			1.69	2.18				2.55			4.15			
I			4.40	5.41				6.02			10.08			
L			0.17	0.21				0.21			0.24			
M			5.11	5.9				6.3			11.22			

KEY TO CODES

LUB ELEMENT	100 SIZE	1/4 THREADED PORT	- TYPE OF OIL FILLING
LUB	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	- = STD ML-CD = AUTOMATIC
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT	CD = MANUAL
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT	
	400	1 = 1 NPT 1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT	

STD: Standard version filled with oil by removing the bowl or through the top cap. Requires circuit relieving.
ML CD: Pressure drop filling with minimum level and valve
CD MANUAL: Filling by pressure drop.

ORDERING CODES

Code	Description	Code	Description	Code	Description		
Skillair® 100 LUBRICATOR							
3281001UA	LUB 100 NPT without end plates	Skillair® 300 LUBRICATOR					
3281005UA	LUB 100 CD manual NPT without end plates	4481001UA	LUB 300 NPT without end plates	Skillair® 400 LUBRICATOR			
3281001U	LUB 100 1/4 NPT	4481005UA	LUB 300 CD manual NPT without end plates	6181001UA	LUB 400 NPT without end plates		
3281005U	LUB 100 1/4 CD manual NPT	4481006UA	LUB 300 ML-CD automatic NPT without end plates	6181004UA	LUB 400 CD manual NPT without end plates		
3381001U	LUB 100 3/8 NPT	4481001U	LUB 300 1/2 NPT	6181006UA	LUB 400 ML-CD automatic NPT without end plates		
3381005U	LUB 100 3/8 CD manual NPT	4481005U	LUB 300 1/2 CD manual NPT	6181001U	LUB 400 1 NPT		
Skillair® 200 LUBRICATOR							
3481001UA	LUB 200 NPT without end plates	4481006U	LUB 300 1/2 ML-CD automatic NPT	6181004U	LUB 400 1 CD manual NPT		
3481005UA	LUB 200 CD manual NPT without end plates	4581001U	LUB 300 3/4 NPT	6181006U	LUB 400 1 ML-CD automatic NPT		
3481001U	LUB 200 1/4 NPT	4581005U	LUB 300 3/4 CD manual NPT	6281001U	LUB 400 1 1/4 NPT		
3481005U	LUB 200 1/4 CD manual NPT	4581006U	LUB 300 3/4 ML-CD automatic NPT	6281004U	LUB 400 1 1/4 CD manual NPT		
3581001U	LUB 200 3/8 NPT	4681001U	LUB 300 1 NPT	6281006U	LUB 400 1 1/4 ML-CD automatic NPT		
3581005U	LUB 200 3/8 CD manual NPT	4681005U	LUB 300 1 CD manual NPT	6381001U	LUB 400 1 1/2 NPT		
3681001U	LUB 200 1/2 NPT	4681006U	LUB 300 1 ML-CD automatic NPT	6381004U	LUB 400 1 1/2 CD manual NPT		
3681005U	LUB 200 1/2 CD manual NPT			6381006U	LUB 400 1 1/2 ML-CD automatic NPT		
				6481001U	LUB 400 2 NPT		
				6481004U	LUB 400 2 CD manual NPT		
				6481006U	LUB 400 2 ML-CD automatic NPT		

The job of this valve is to make the circuit independent from the air supply. It is basically a three-way valve. In the closed position, it cuts off the air supply and discharges the downstream circuit at the same time, which means it is particularly useful during servicing operations. The hand-operated version can be padlocked to lock the knob in a closed position so that it can only be opened by someone with the right key. An interlocked version is available for low pressure operation.

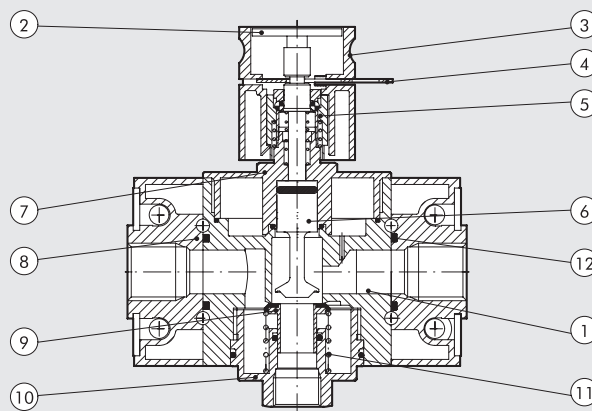
N.B.: With size 400, when the V3V is mounted upstream of the regulator, the pilot regulator must be piloted at a pressure taken upstream of the V3V, otherwise when the system is relieved, most of the air downstream will be relieved by the regulator and not the V3V relief port. For connecting instruction see page 2-97.



TECHNICAL DATA		V3V 100		V3V 200			V3V 300			V3V 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1"1/4"	1"1/2"	2"
Min. inlet pressure for solenoid version **	MPa	0.3		0.3			0.2			0.3			
	bar	3		3			2			3			
	psi	43.5		43.5			29			43.5			
Max. input pressure*	MPa	1.5		1.3			1.3			1.3			
	bar	15		13			13			13			
	psi	217		188			188			188			
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1300		2400			3200			13000			
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	46		85			113			460			
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1650		3000			4700			-			
ΔP 1 bar (0.1 MPa - 14.5 psi)	scfm	58		106			166			-			
Max temperature	°C	50		50			50			50			
	°F	122		122			122			122			
Weight	pounds	1.1		1.8			2.6			10.5			
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4 - 20 unc x 4.33			
Type of control		Manual - Pneumatic - Solenoid											
		Solenoid pilot-assisted											
Mounting position		In any position.											
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.											
Note		The end plates in the 400 series have a patented system with a rotary and sliding end joint to adapt the unit perfectly to the pipe cutting distance.											
		* 1 MPa - 10 bar - 145 psi for solenoid version											
		** 0.01 MPa - 0.1 bar - 1.45 psi for manual, pneumatic and pilot-assisted versions with controls min. 0.3 MPa 3 bar 43.5 psi.											

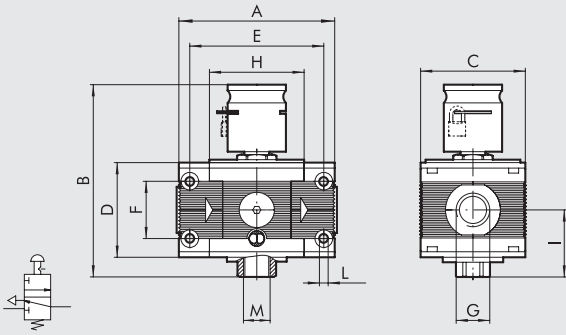
COMPONENTS

- ① Technopolymer body
- ② Operating button
- ③ Technopolymer knob
- ④ Stainless steel safety lamination
- ⑤ Locking unit
- ⑥ OT58 brass piston rod
- ⑦ Anodized aluminium top plug
- ⑧ Zamak end plate
- ⑨ Valve with vulcanized NBR gasket
- ⑩ Anodized aluminium bottom plug
- ⑪ Stainless steel valve spring
- ⑫ NBR gaskets

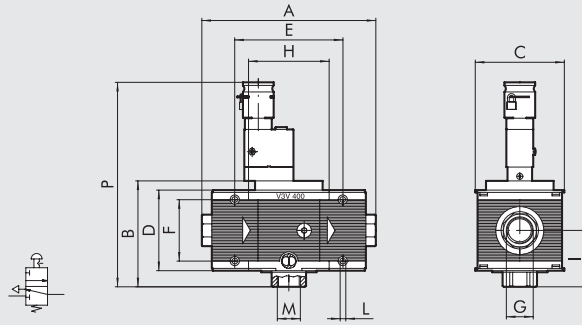


DIMENSIONS OF V3V MANUAL VERSION

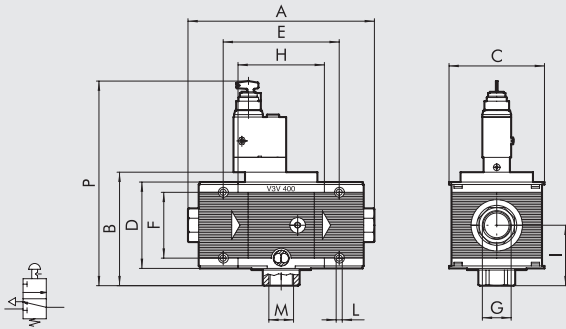
100 - 200 - 300 LOCKABLE



400 LOCKABLE



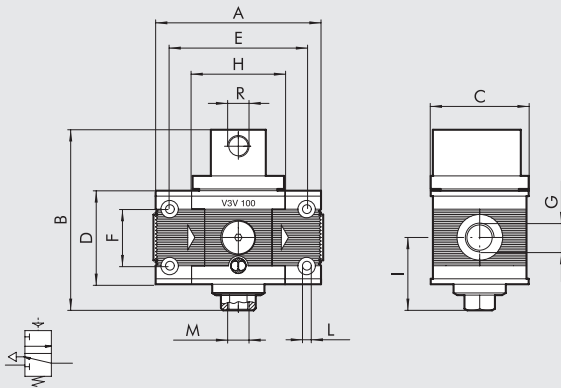
400 KEY-OPERATED



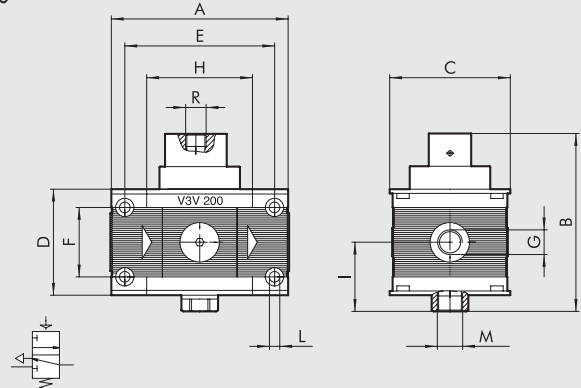
	V3V 100		V3V 200			V3V 300			V3V 400			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Threaded port G NPT												
A	3.07			3.68		4.33		4.40		8.85 to 10.03		11.14 to 12.32
B	4.17			4.68			5.20			5.39		
C	1.97			2.48			2.83			4.64		
D	1.69			2.16			2.55			4.13		
E	2.48			3.09			3.62			5.56		
F	1.02			1.41			1.65			3.15		
H	1.69			2.18			2.55			4.15		
I	1.31			1.57			1.83			2.85		
L	0.17			0.21			0.21			0.236		
M (relief)	1/8" NPT			1/4" NPT			3/8" NPT			1" NPT		
P manual	-			-			-			10.47		
key-operated	-			-			-			9.80		

DIMENSIONS OF V3V PNEUMATIC VERSION

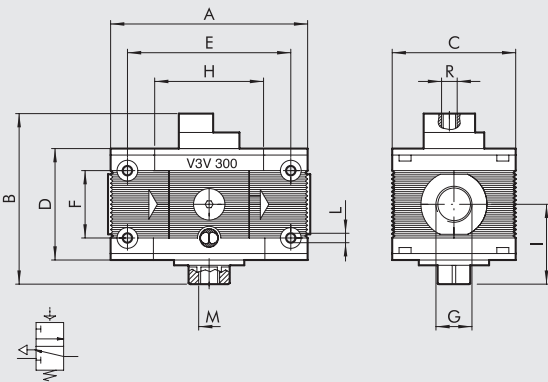
100



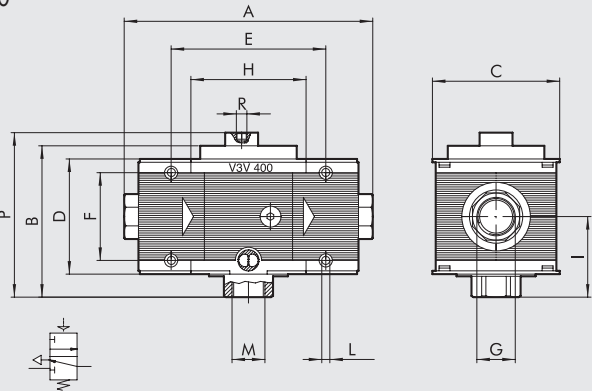
200



300



400

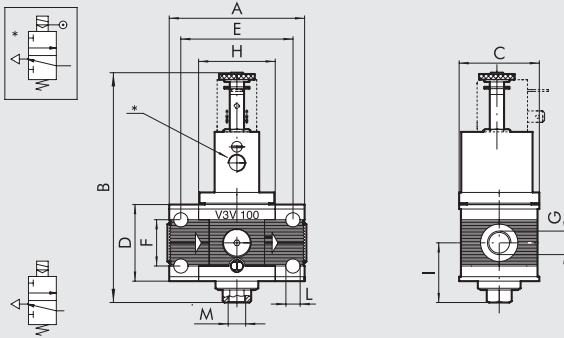


	V3V 100		V3V 200			V3V 300			V3V 400				
Threaded port G NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"	
A	3.07		3.68			4.33		4.40	8.85 to 10.03				11.14 to 12.32
B	3.26		3.78			4.17			5.39				
C	1.96		2.48			2.83			4.64				
D	1.69		2.16			2.56			4.13				
E	2.48		3.09			3.62			5.56				
F	1.02		1.41			1.65			3.15				
H	1.69		2.18			1.83			4.15				
I	1.31		1.57			2.91			2.85				
L	0.17		0.21			0.21			0.236				
M (relief)	1/8" NPT		1/4" NPT			3/8" NPT			1" NPT				
R (pilot)	1/8" NPT		1/8" NPT			1/8" NPT			1/8" NPT				
P	-		-			-			5.90				

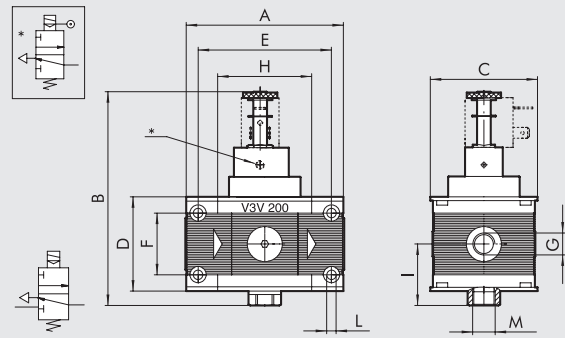
AIR PREP
Skillair® SHUT-OFF VALVE

DIMENSIONS OF V3V SOLENOID/SOLENOID PILOT-ASSISTED VALVE

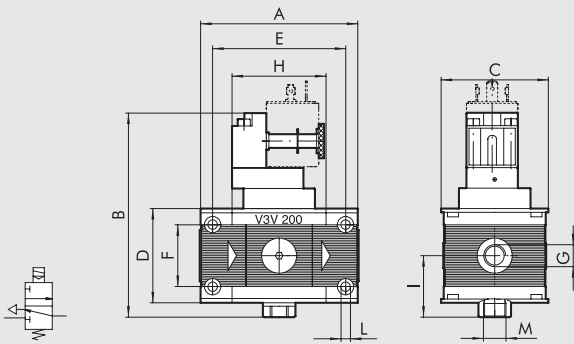
100 SOLENOID/SOLENOID PILOT-ASSISTED VALVE



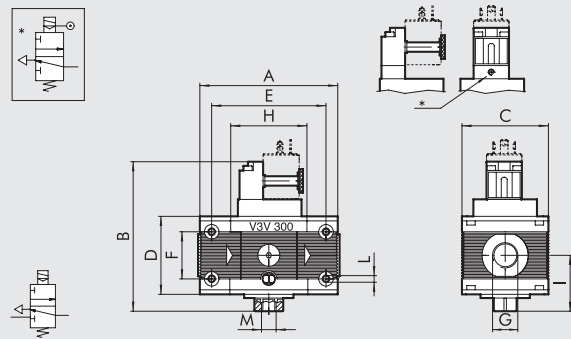
200 SOLENOID/SOLENOID PILOT-ASSISTED VALVE



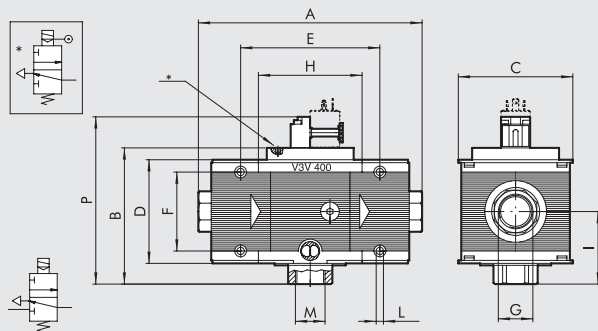
200 CNOMO



300 CNOMO SOLENOID/CNOMO SOLENOID PILOT-ASSISTED VALVE



400 CNOMO SOLENOID/CNOMO SOLENOID PILOT-ASSISTED VALVE



	V3V 100		V3V 200			V3V 300			V3V 400			
Threaded port G NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	3.07		3.68			4.33		4.40	8.85 to 10.03			
B Solenoid	5.03		5.07			5.98						
Solenoid pilot-ass.	5.07		5.07			-						
CNOMO control	-		4.84			4.92		5.39				
CNOMO pilot-ass.	-		-			5.43		5.39				
C	1.96		2.48			2.83		4.64				
D	1.69		2.16			2.55		4.13				
E	2.48		3.09			3.62		5.56				
F	1.02		1.41			1.65		3.15				
H	1.69		2.18			2.55		4.15				
I	1.31		1.57			1.83		2.85				
L	0.17		0.21			0.21		0.236				
M (relief)	1/8" NPT		1/4" NPT			3/8" NPT		1" NPT				
* (pilot)	1/8" NPT		10/32 UNF			10/32 UNF		10/32 UNF				
P	-		-			-		6.65				

KEY TO CODES

V3V ELEMENT	100 SIZE	1/4 THREADED PORT	MANUAL TYPE OF COMMAND
V3V	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	Manual (lockable)
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT	Pneumatic
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT	Solenoid pilot assisted
	400	1 = 1 NPT 1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT	Solenoid Key-operated (400)

ORDERING CODES

Code	Description	Code	Description	Code	Description
Skillair® 100 3-WAY VALVE		Skillair® 300 3-WAY VALVE		Skillair® 400 3-WAY VALVE	
3270001UA	V3V 100 lockable NPT without end plates	4470001UA	V3V 300 lockable NPT without end plates	6169010UA	V3V 400 key-operated NPT without end plates
3269000UA	V3V 100 pneumatic NPT without end plates	4469000UA	V3V 300 pneumatic NPT without end plates	6169000UA	V3V 400 pneumatic NPT without end plates
3269001UA	V3V 100 solenoid NPT without end plates	4469004UA	V3V 300 solenoid cno mo NPT without end plates	6169004UA	V3V 400 solenoid cno mo NPT without end plates
3269002UA	V3V 100 solenoid pilot assisted NPT without end plates	4469005UA	V3V 300 solenoid cno mo pilot-assisted NPT w/end plates	6169005UA	V3V 400 solenoid cno mo pilot-assisted NPT w/end plates
3270001U	V3V 100 1/4 lockable NPT	4470001U	V3V 300 1/2 lockable NPT	6170002UA	V3V 400 lockable NPT without end plates
3269000U	V3V 100 1/4 pneumatic NPT	4469000U	V3V 300 1/2 pneumatic NPT	6169010U	V3V 400 1 key-operated NPT
3269001U	V3V 100 1/4 solenoid NPT	4469004U	V3V 300 1/2 solenoid cno mo NPT	6169000U	V3V 400 1 pneumatic NPT
3269002U	V3V 100 1/4 solenoid pilot assisted NPT	4469005U	V3V 300 1/2 solenoid cno mo assisted NPT	6169004U	V3V 400 1 solenoid cno mo NPT
3370001U	V3V 100 3/8 lockable NPT	4570001U	V3V 300 3/4 lockable NPT	6169005U	V3V 400 1 solenoid cno mo assisted NPT
3369000U	V3V 100 3/8 pneumatic NPT	4569000U	V3V 300 3/4 pneumatic NPT	6269010U	V3V 400 1 1/4 key-operated NPT
3369001U	V3V 100 3/8 solenoid NPT	4569004U	V3V 300 3/4 solenoid cno mo NPT	6269000U	V3V 400 1 1/4 pneumatic NPT
3369002U	V3V 100 3/8 solenoid pilot assisted NPT	4569005U	V3V 300 3/4 solenoid cno mo assisted NPT	6269004U	V3V 400 1 1/4 solenoid cno mo NPT
Skillair® 200 3-WAY VALVE		4669000U	V3V 300 1 pneumatic NPT	6269005U	V3V 400 1 1/4 solenoid cno mo assisted NPT
3470001UA	V3V 200 lockable NPT without end plates	4669004U	V3V 300 1 solenoid cno mo NPT	6369010U	V3V 400 1 1/2 key-operated NPT
3469000UA	V3V 200 pneumatic NPT without end plates	4669005U	V3V 300 1 solenoid cno mo assisted NPT	6369000U	V3V 400 1 1/2 pneumatic NPT
3469001UA	V3V 200 solenoid NPT without end plates	4670001U	V3V 300 1 lockable NPT	6369004U	V3V 400 1 1/2 solenoid cno mo NPT
3469002UA	V3V 200 solenoid pilot assisted NPT without end plates			6369005U	V3V 400 1 1/2 solenoid cno mo assisted NPT
3469004UA	V3V 200 solenoid cno mo comm. NPT w/end plate			6469010U	V3V 400 2 key-operated NPT
3469005UA	V3V 200 solenoid cno mo ass. comm. NPT w/end plate			6469000U	V3V 400 2 pneumatic NPT
3470001U	V3V 200 1/4 lockable NPT			6469004U	V3V 400 2 solenoid cno mo NPT
3469000U	V3V 200 1/4 pneumatic NPT			6469005U	V3V 400 2 solenoid cno mo assisted NPT
3469001U	V3V 200 1/4 solenoid NPT			6170002U	V3V 400 1 lockable NPT
3469002U	V3V 200 1/4 solenoid pilot assisted NPT			6270002U	V3V 400 1 1/4 lockable NPT
3469004U	V3V 200 1/4 solenoid cno mo comm. NPT			6370002U	V3V 400 1 1/2 lockable NPT
3469005U	V3V 200 1/4 solenoid cno mo pilot-assisted NPT			6470002U	V3V 400 2 lockable NPT
3570001U	V3V 200 3/8 lockable NPT				
3569000U	V3V 200 3/8 pneumatic NPT				
3569001U	V3V 200 3/8 solenoid NPT				
3569002U	V3V 200 3/8 solenoid pilot assisted NPT				
3569004U	V3V 200 3/8 solenoid cno mo comm. NPT				
3569005U	V3V 200 3/8 solenoid cno mo pilot-assisted NPT				
3670001U	V3V 200 1/2 lockable NPT				
3669000U	V3V 200 1/2 pneumatic NPT				
3669001U	V3V 200 1/2 solenoid NPT				
3669002U	V3V 200 1/2 solenoid pilot assisted NPT				
3669004U	V3V 200 1/2 solenoid cno mo comm. NPT				
3669005U	V3V 200 1/2 solenoid cno mo pilot-assisted NPT				

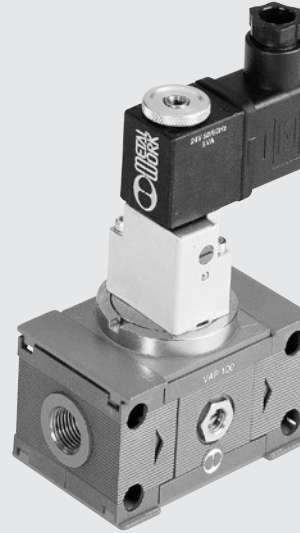
Skillair® PROGRESSIVE START VALVE

The 2/2 progressive valve comes in two versions, with solenoid or pneumatic actuation.

STD progressive start valve: a differential balanced valve automatically opens the air port fully when the downstream pressure is about 50% of the upstream pressure.

Progressive start valve with pneumatic or solenoid actuation: without a pilot, the upstream air flows downstream through the regulation needle.

When an external or pneumatic solenoid signal is generated, the valve opens the main port to create full flow. It does not relieve the downstream circuit.

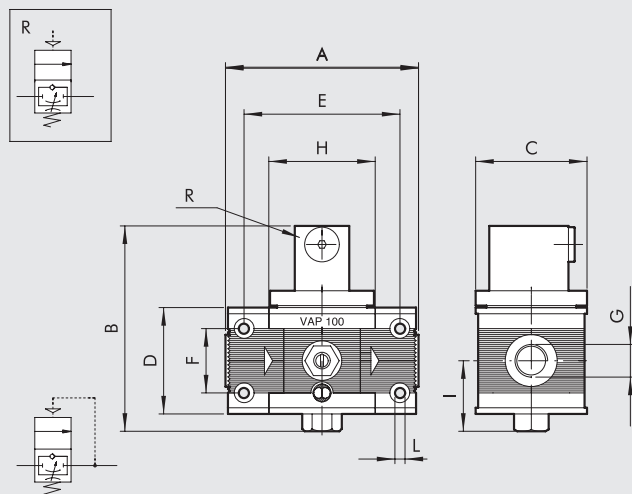


AIR PREP

Skillair® PROGRESSIVE START VALVE

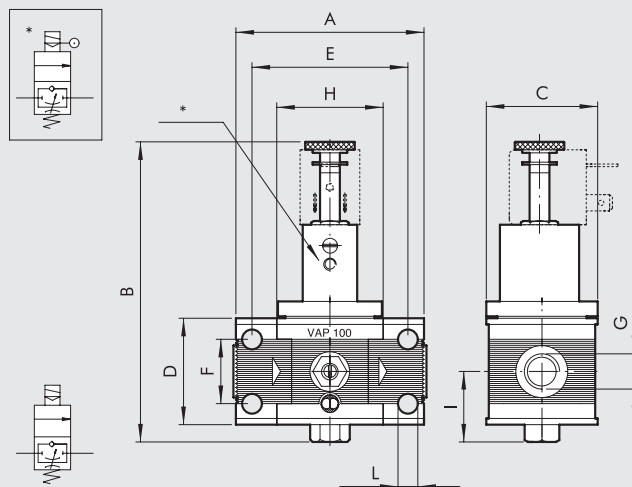
TECHNICAL DATA		VAP 100	
Threaded port	NPT	1/4"	3/8"
Min. inlet pressure **	MPa	0.3	
	bar	3	
	psi	43.5	
Max. inlet pressure*	MPa	1.5	
	bar	15	
	psi	217	
Flow rate at 6 bar (0.6 MPa - 87 psi) ΔP 0.5 bar (0.05 MPa - 7.5 psi)	Nl/min	1300	
	scfm	46	
Flow rate at 6 bar (0.6 MPa - 87 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	2000	
	scfm	71	
Max temperature	°C	50	
	°F	122	
Weight	pounds	1.1	
Wall fixing screws		N. 8-32 unc x 2	
Mounting position		In any position	
Type of control		Automatic - Pneumatic - Solenoid - Solenoid pilot-assisted	
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous	
** 0.01 MPa - 0.1 bar - 1.45 psi for pneumatic and pilot-assisted versions with controls at min. 0.3 MPa 3 bar 43.5 psi.			
* 1 MPa - 10 bar - 1.45 psi			

DIMENSIONS OF VAP 100 STD/PNEUMATIC VALVE



Threaded port G	NPT	VAP 100	
		1/4"	3/8"
A			3.07
B			3.50
C			1.96
D			1.69
E			2.48
F			1.02
H			1.69
I			1.35
L			0.17
R (pilot - pneumatic version)			1/8" NPT

DIMENSIONS OF VAP 100 SOLENOID/SOLENOID PILOT-ASSISTED VALVE



Threaded port G	NPT	VAP 100	
		1/4"	3/8"
A			3.07
B			5.03
C			1.96
D			1.69
E			2.48
F			1.02
H			1.69
I			1.35
L			0.17
O			3.50
* (pilot assisted)			10/32 UNF

ORDERING CODES

Code	Description
3271000UA	VAP 100 NPT without end plates
3271500UA	VAP 100 pneumatic NPT without end plates
3271600UA	VAP 100 solenoid NPT without end plates
3271700UA	VAP 100 solenoid pilot-assisted NPT without end plates
3271000U	VAP 100 1/4 NPT
3271500U	VAP 100 1/4 pneumatic NPT
3271600U	VAP 100 1/4 solenoid NPT
3271700U	VAP 100 1/4 solenoid pilot-assisted NPT
3371000U	VAP 100 3/8 NPT
3371500U	VAP 100 3/8 pneumatic NPT
3371600U	VAP 100 3/8 solenoid NPT
3371700U	VAP 100 3/8 solenoid pilot-assisted NPT

NOTES

Skillair® PROGRESSIVE STARTER

The job of the progressive starter is to feed air into the circuit gradually with controlled flow. It comes in two versions with solenoid or pneumatic actuation. Both control signals cause the valve to open, which allows the air controlled by the flow regulator to flow slowly towards the downstream circuit. In the APR, when the pressure in the downstream circuit reaches 50%-60% of the upstream pressure, the valve opens the main inlet duct connecting. The time elapsing between starting and opening the valve can be adjusted via the built-in flow regulator. If it is necessary to relieve the downstream circuit quickly, merely operate the control valve which cuts off air flow in the pipe. This closes the valve and starts relieving the downstream circuit. The progressive starter acts both as an actuator positioner, which eliminates the risk of sudden kickback, and as a valve.

N.B. With size 400, when the APR is mounted upstream of the regulator, the pilot regulator must be piloted at a pressure taken upstream of the APR, otherwise when the system is relieved, most of the air downstream will be relieved by the regulator and not the APR relief port. For connecting instruction see page 2-97.



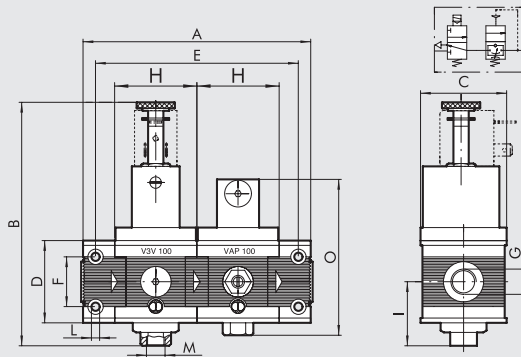
AIR PREP

Skillair® PROGRESSIVE STARTER

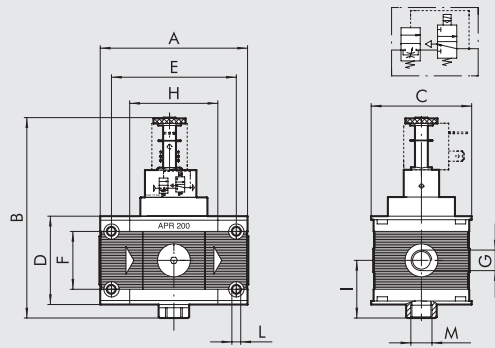
TECHNICAL DATA		APR 100		APR 200			APR 300			APR 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Min. inlet pressure	MPa	0.3		0.3			0.4			0.3			0.3
	bar	3		3			4			3			3
	psi	43.5		43.5			58			43.5			43.5
Max. inlet pressure*	MPa	1.5		1.3			1.3			1.3			1.3
	bar	15		13			13			13			13
	psi	217		188.5			188.5			188.5			188.5
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	1300		2000			2400			13000			14000
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	46		71			85			460			494
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	2000		3200			3600			-			-
ΔP 1 bar (0.1 MPa - 14.5 psi)	scfm	71		113			127			-			-
Max temperature	°C	50		50			50			50			50
	°F	122		122			122			122			122
Weight	pounds	1.8		1.9			3.3			5.6			6.4
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			M6 x 110			M6 x 110
Type of control	Pneumatic												
	Solenoid			CNOMO Solenoid			CNOMO Solenoid			Solenoid			
Mounting position		In any position											
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.											
Notes on use		For the pneumatic version 200 the pilot pressure must range between the inlet P and the inlet P + 2 bar (29 psi).											
		For pneumatic version 300, the pilot pressure must be greater or equal to the input pressure. * 1 MPa - 10 bar - 145 psi for solenoid version											

DIMENSIONS APR SOLENOID

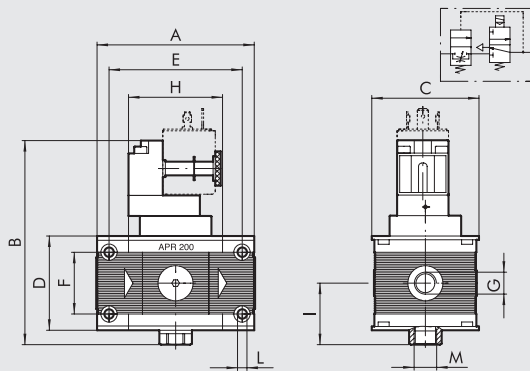
APR 100 SOLENOID



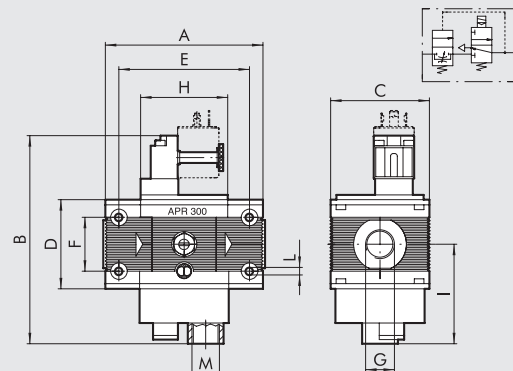
APR 200 SOLENOID



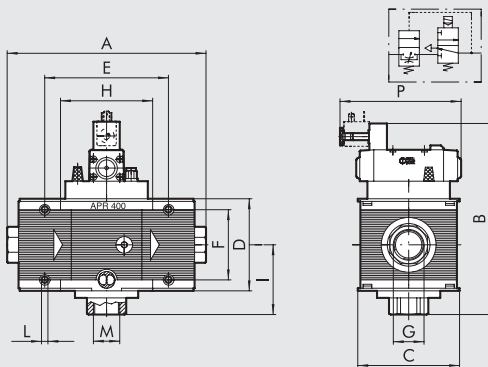
APR 200 CNOMO SOLENOID



APR 300 CNOMO SOLENOID



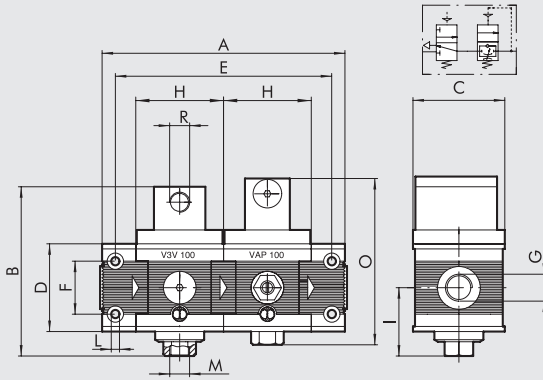
APR 400 SOLENOID



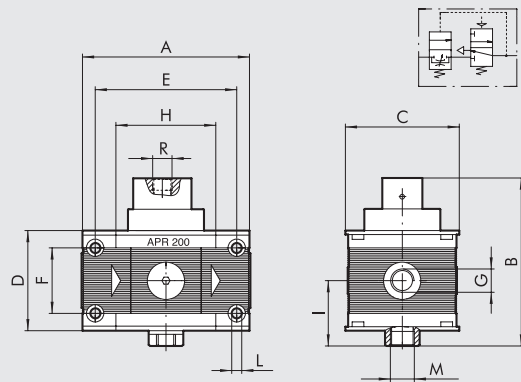
Threaded port G NPT	APR 100 ELPN		APR 200 ELPN			APR 200 ELPN CNOMO			APR 300 ELPN CNOMO			APR 400 ELPN			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	4.76		3.68			3.68			4.33	4.40		8.85 to 10.03			11.14 to 12.32
B	5.03		4.92			4.72			5.98			8.58			
C	1.96		2.48			2.48			2.83			4.64			
D	1.69		2.16			2.16			2.55			4.13			
E	4.17		3.09			3.09			3.62			5.56			
F	1.02		1.41			1.41			1.65			3.14			
H	1.69		2.18			2.18			2.55			4.14			
I	1.35		1.41			1.41			2.91			3.14			
L	0.17		0.21			0.21			0.21			0.29			
M (relief)	1/8" NPT		1/4" NPT			1/4" NPT			1/2" NPT			1" NPT			
O	3.50		-			-			-			-			
P	-		-			-			-			5.43			

DIMENSIONS APR PNEUMATIC

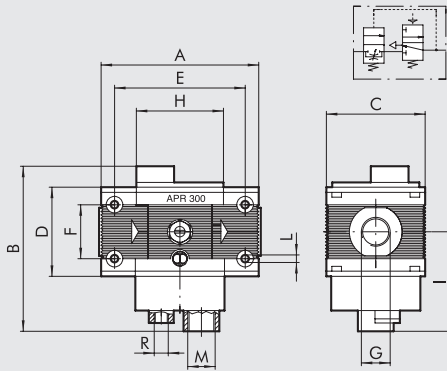
APR 100 PNEUMATIC



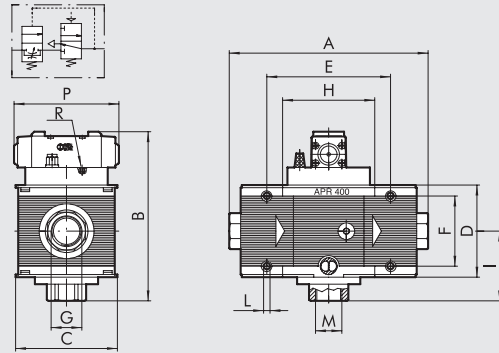
APR 200 PNEUMATIC



APR 300 PNEUMATIC



APR 400 PNEUMATIC



Threaded port G	APR 100 PN		APR 200 PN			APR 300 PN			APR 400 PN			
	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A	4.76			3.68			4.33		4.40	8.85 to 10.03		11.14 to 12.32
B	3.26			3.62			4.80			7.59		
C	1.96			2.48			2.83			4.64		
D	1.69			2.16			2.55			4.13		
E	4.17			3.09			3.62			5.56		
F	1.02			1.41			1.65			3.14		
H	1.69			2.18			2.55			4.14		
I	1.35			1.41			2.91			3.14		
L	0.17			0.21			0.21			0.29		
M (relief)	1/8" NPT			1/4" NPT			1/2" NPT			1" NPT		
O	3.5			-			-			-		
R (pilot)	1/8" NPT			1/8" NPT			1/4" NPT			10/32 UNF		
P	-			-			-			4.68		

KEY TO CODES

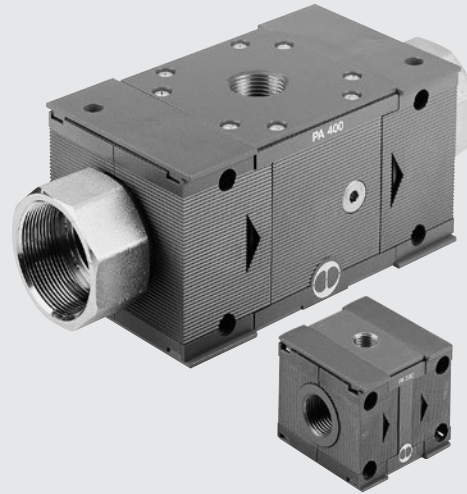
APR ELEMENT	100 SIZE	1/4 THREADED PORT	PNEUMATIC TYPE OF CONTROL
APR	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	Pneumatic Solenoid
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT	
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT	
	400	1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT	

ORDERING CODES

Code	Description	Code	Description
Skillair® 100 PROGRESSIVE STARTER		Skillair® 300 PROGRESSIVE STARTER	
3267001UA	APR 100 pneumatic NPT without end plates	4471900UA	APR 300 pneumatic NPT without end plates
3267051UA	APR 100 solenoid NPT without end plates	4471901UA	APR 300 solenoid Cnomo NPT without end plates
3267001U	APR 100 1/4 pneumatic NPT	4471900U	APR 300 1/2 pneumatic NPT
3267051U	APR 100 1/4 solenoid NPT	4471901U	APR 300 1/2 solenoid Cnomo control NPT
3367001U	APR 100 3/8 pneumatic NPT	4571900U	APR 300 3/4 pneumatic NPT
3367051U	APR 100 3/8 solenoid NPT	4571901U	APR 300 3/4 solenoid Cnomo control NPT
Skillair® 200 PROGRESSIVE STARTER		4671900U	APR 300 1 pneumatic NPT
3471000UA	APR 200 pneumatic NPT without end plates	4671901U	APR 300 1 solenoid Cnomo control NPT
3471001UA	APR 200 solenoid NPT without end plates	Skillair® 400 PROGRESSIVE STARTER	
3471004UA	APR 200 solenoid Cnomo NPT without end plates	6171002UA	APR 400 pneumatic NPT without end plates
3471000U	APR 200 1/4 pneumatic NPT	6171003UA	APR 400 solenoid NPT without end plates
3471001U	APR 200 1/4 solenoid NPT	6171002U	APR 400 1 pneumatic NPT
3471004U	APR 200 1/4 solenoid Cnomo control NPT	6171003U	APR 400 1 solenoid NPT
3571000U	APR 200 3/8 pneumatic NPT	6271002U	APR 400 1 1/4 pneumatic NPT
3571001U	APR 200 3/8 solenoid NPT	6271003U	APR 400 1 1/4 solenoid NPT
3571004U	APR 200 3/8 solenoid Cnomo control NPT	6371002U	APR 400 1 1/2 pneumatic NPT
3671000U	APR 200 1/2 pneumatic NPT	6371003U	APR 400 1 1/2 solenoid NPT
3671001U	APR 200 1/2 solenoid NPT	6471002U	APR 400 2 pneumatic NPT
3671004U	APR 200 1/2 solenoid Cnomo control NPT	6471003U	APR 400 2 solenoid NPT

Skillair® AIR TAKE-OFF

The air take-off takes air from the Skillair® FRL unit irrespective of the assembly position. It is necessary when air needs to be taken from the FRL unit at any stage of the treatment (normal, filtered and regulated, lubricated, etc.). If used separately from the FRL unit, which is infinitely modular, it acts as a distributor allowing air take-off through the threaded ports.

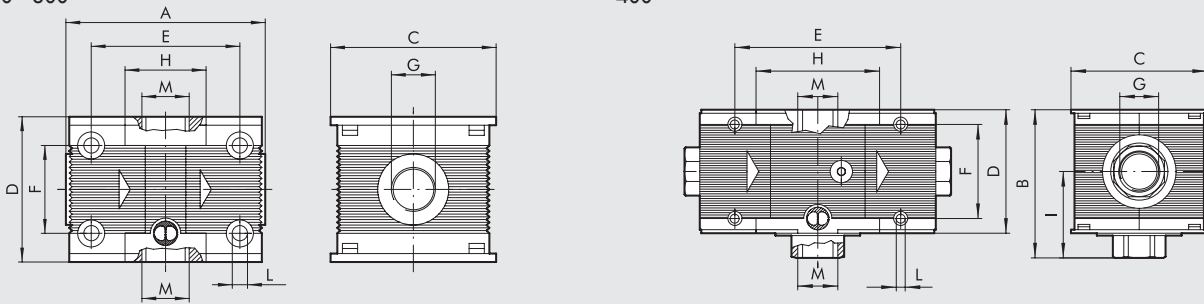


TECHNICAL DATA		PA 100		PA 200			PA 300			PA 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Max. working temperature	°C	50		50			50			50			
at: 1 MPa; 10 bar; 145 psi	°F	122		122			122			122			
Max. operating pressure	MPa	1.5		1.3			1.3			1.3			
	bar	15		13			13			13			
	psi	217		188			188			188			
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4-20 unc x 4.33			
Threaded port	NPT	1/4"		1/4"			3/8"			1"			
Weight	pounds	0.66		1.1			1.7			9.48		11.24	

DIMENSIONS AND ORDERING CODES

100 - 200 - 300

400

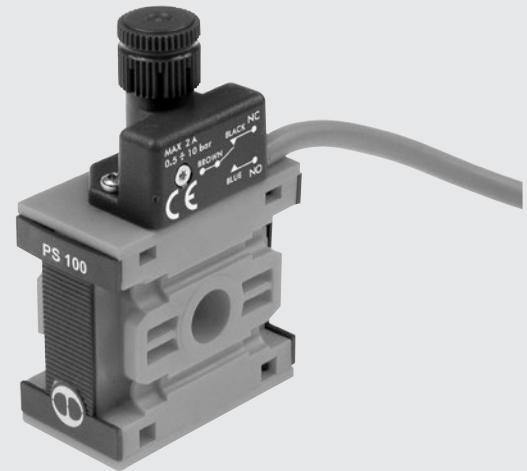


	PA 100		PA 200			PA 300			PA 400				Code	Description	
Threaded port G	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"	9200402UA	PA 100 NPT without end plates
A		2.32		2.48		6.96	7.04		8.85 to 10.03		11.14 to 12.32			9200402U	PA 100 1/4 NPT
B		-		-		-			-		4.72			9300401U	PA 100 3/8 NPT
C		1.96		2.48		2.83			4.64		4.64			9300402UA	PA 200 NPT without end plates
D		1.69		2.16		2.55			4.13		4.13			9300404U	PA 200 1/2 NPT
E		1.73		1.88		2.32			5.56		5.56			9300402U	PA 200 1/4 NPT
F		1.02		1.41		1.65			3.14		3.14			9300403U	PA 200 3/8 NPT
H		0.98		0.98		1.25			4.14		4.14			9400402UA	PA 300 NPT without end plates
I		-		-		-			2.65		2.65			9500402U	PA 300 1 NPT
L		0.17		0.21		0.21			0.29		0.29			9400402U	PA 300 1/2 NPT
M		1/4" NPT		1/4" NPT		3/8" NPT			1" NPT		1" NPT			9500401U	PA 300 3/4 NPT
														9700401UA	PA 400 NPT without end plates
														9700401U	PA 400 1 NPT
														9700403U	PA 400 1 1/2 NPT
														9700402U	PA 400 1 1/4 NPT
														9700404U	PA 400 2 NPT

Skillair® pressure switches feature a high degree of miniaturisation and a modern attractive design. As they are extremely modular, the Skillair® series can be installed facing up or down.

They come ready assembled with a 78.8 inch cable or an M8 connector with a 11.8 inch cable.

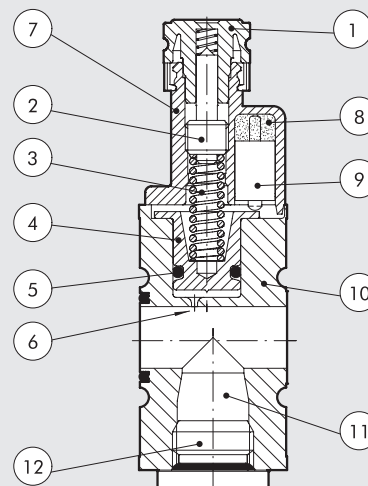
The contact is the switching type, which means it can be normally open or normally closed. It can be regulated via a knurled push-lock handle. On the side opposite the regulation handle is a threaded air inlet port that can be used by removing the threaded plug.



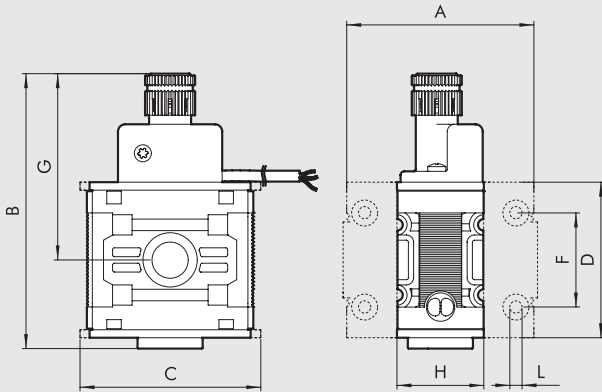
TECHNICAL DATA		PS 100	PS 200	PS 300
Adjustable pressure interval	psi		7.25 to 145	
Hysteresis (not adjustable)	psi		5.8 to 11.6 (See diagram)	
Maximum pressure	bar	15	13	13
	MPa	1.5	1.3	1.3
Operating temperature range at: 1 MPa; 10 bar; 145 psi	psi	217	188	188
	°C		50	
	°F		122	
Lower threaded port	NPT	1/4"	1/4"	3/8"
Maximum current	A		2	
Maximum voltage	V		250	
Outside diameter of cable	in		0.19	
Number of wires and cross section			3 x 0.5 mm ²	
Contacts			Normally-Open (NO) and Normally-Closed (NC)	
Protection			IP65	
Number of switchings			5 x 10 ⁶	
Fluid		Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.		
Mounting position		In any position.		
Weight	pounds	0.35	0.40	0.55

COMPONENTS

- ① Technopolymer adjusting push-lock handle
- ② Brass adjusting screw
- ③ Steel piston spring
- ④ Brass piston
- ⑤ NBR gasket
- ⑥ Choke to reduce peaks in pressure
- ⑦ Technopolymer pressure switch body
- ⑧ Resin finish for IP65
- ⑨ Electrical contact
- ⑩ Technopolymer body
- ⑪ Supplementary air inlet port
- ⑫ A7 plug



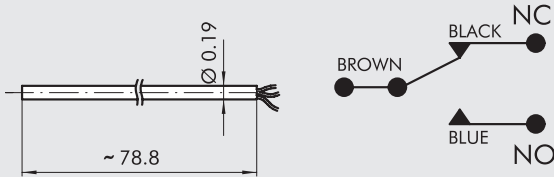
DIMENSIONS



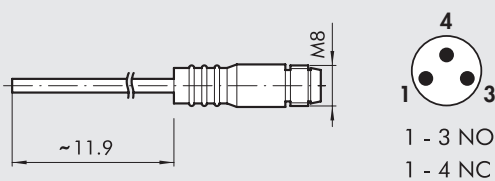
	PS 100	PS 200	PS 300
A	2.32	2.48	6.96 - 7.04
B	2.99	3.34	3.9
C	1.96	2.48	2.83
D	1.69	2.16	2.55
F	1.02	1.41	1.65
G	2	2.28	2.48
H	0.98	0.98	1.25
L	0.17	0.21	0.21

WIRING DIAGRAM

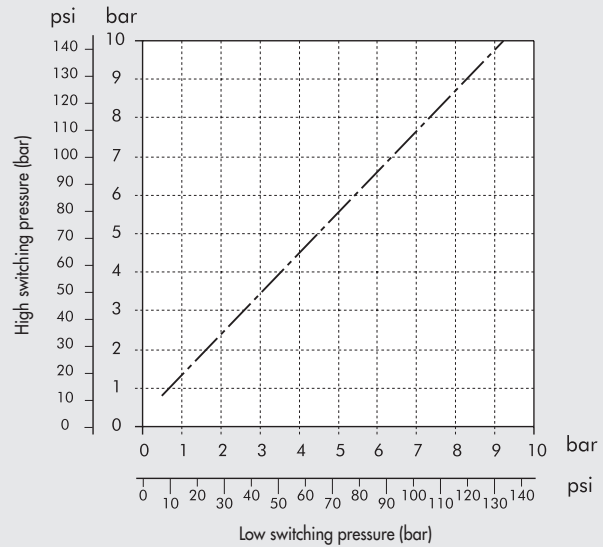
VERSION WITH CABLE



VERSION WITH M8 CONNECTOR



HYSTERESIS GRAPH



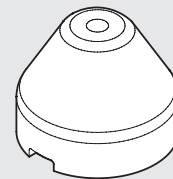
ORDERING CODES

Code	Description
Skillair® 100 PRESSURE SWITCHES	
3240000UA	PS 100 2A NO/NC 78.8 inch cable without end plates
3240001UA	PS 100 2A NO/NC M8 connector without end plates

Skillair® 200 PRESSURE SWITCHES	
3440000UA	PS 200 2A NO/NC 78.8 inch cable without end plates
3440001UA	PS 200 2A NO/NC M8 connector without end plates

Skillair® 300 PRESSURE SWITCHES	
4440000UA	PS 300 2A NO/NC 78.8 inch cable without end plates
4440001UA	PS 300 2A NO/NC M8 connector without end plates

SECURITY KNOB



Code	Description
9200703	Acc. security knob

NOTE: Pull outwards to remove the knob from the pressure switch on the unit. Insert the security knob and regulate the pressure switch. Then press the handle firmly to lock it in position. If the pressure switch needs to be reset, remove the security knob by forcing it laterally with a screwdriver.

Skillair® SUB-BASE AND ADAPTER BASE

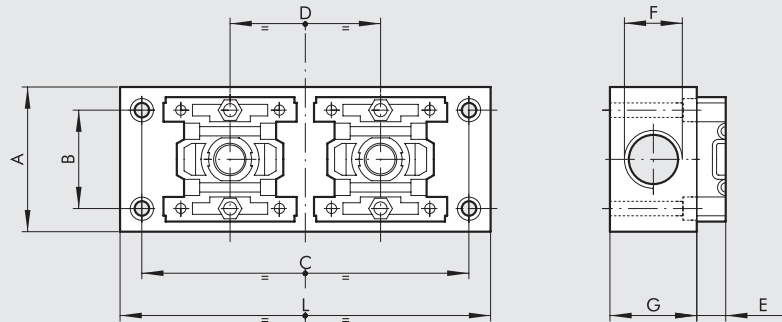


The adapter base is used to adapt the Skillair® FRL system to various assemblies without affecting modularity or servicing.
If you use the universal adapter base plus the intermediate plate, you can assemble several elements of different sizes.

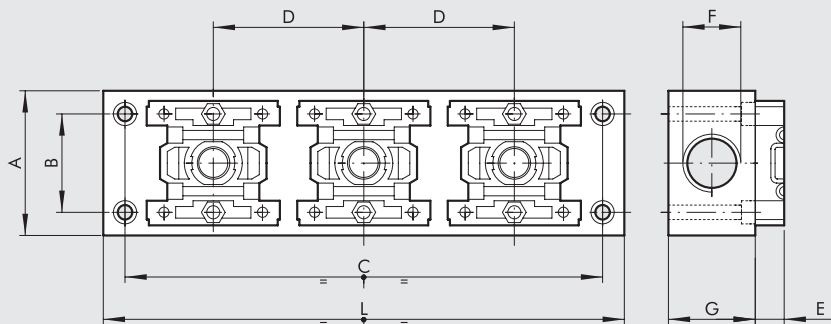


DIMENSIONS

2-POSITION SUB-BASE

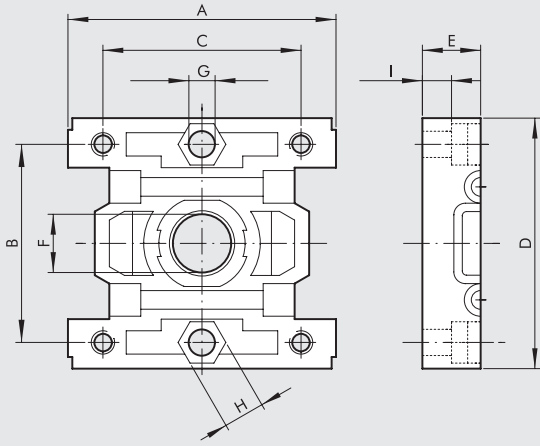


3-POSITION SUB-BASE



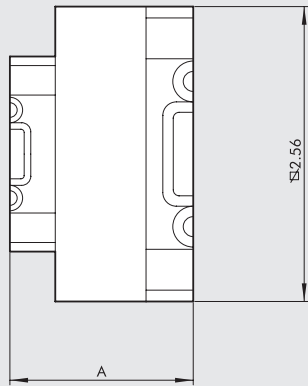
	100 - 2 POS.	100 - 3 POS.	200 - 2 POS.	200 - 3 POS.	300 - 2 POS.	300 - 3 POS.
A	1.96	1.96	2.16	2.16	2.36	2.36
B	1.33	1.33	1.73	1.73	1.92	1.92
C	4.44	6.49	5.31	7.87	5.90	8.66
D	2.04	2.04	2.55	2.55	2.75	2.75
E	0.39	0.39	0.33	0.33	0.41	0.41
F	1/2" NPT	1/2" NPT	3/4" NPT	3/4" NPT	3/4" NPT	3/4" NPT
G	1.18	1.18	1.57	1.57	1.57	1.57
L	5.03	7.08	8.46	8.46	6.49	9.25

DIMENSIONS OF ADAPTER BASE



	BA 100	BA 200	BA 300
A	1.81	2.32	2.71
B	1.33	1.73	1.92
C	1.33	1.73	1.92
D	1.69	2.16	2.55
E	0.39	0.33	0.41
F	0.39	0.59	0.70
G	0.17	0.17	0.21
H	Es. 0.27	Es. 0.27	Es. 0.31
I	0.19	0.07	0.19

DIMENSIONS OF SIZE ADAPTERS



	BA 100 - 200	BA 100 - 300	BA 200 - 300
A	1.51	1.59	1.53

ORDERING CODES

Code	Description
MULTIPLE SUB-BASES FOR REGULATORS	
9200202U	SB 2 100 NPT
9300202U	SB 2 200 NPT
9400202U	SB 2 300 NPT
9200302U	SB 3 100 NPT
9300302U	SB 3 200 NPT
9400302U	SB 3 300 NPT
ADAPTER BASE	
9201801U	BA 100 NPT
9321801U	BA 200 NPT
9401801U	BA 300 NPT
SIZE ADAPTER	
9301801U	BA 100 - 200 NPT
9301802U	BA 100 - 300 NPT
9301803U	BA 200 - 300 NPT

NOTES

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA		FRL 100		FRL 200			FRL 300			FRL 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Setting range	psi	0 to 120 - 0 to 180		0 to 120 - 0 to 180			0 to 120 - 0 to 180			Depending on pilot regulator			
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)											
Max. inlet pressure	MPa	1.5		1.3			1.3			1.3			
	bar	15		13			13			13			
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	psi	217		188			188			188			
	Nl/min	300		1300			2500			9000			
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	11		46			89			320			
	Nl/min	800		3000			4500			-			
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	scfm	28		106			160			-			
	Nl/min	50		50			50			50			
Max temperature at 10 bar (1 MPa - 145 psi)	°C	122		122			122			122			
	°F	1.65		3.3			6.4			22			
Weight	pounds	N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4-20 unc x 4.33			
Wall fixing screws		Compressed air											
Fluid		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.											
Notes on use		Do not take air from pressure gauge ports.											

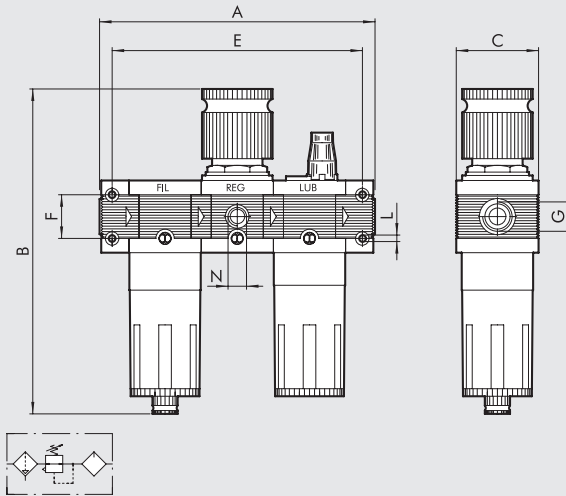
KEY TO CODES

FRL	100	1/4	20	0-120	RMSA
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	SETTING RANGE	TYPE OF CONDENSATION DRAIN
FRL	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	5 = 5 µm (200 microinch) 20 = 20 µm (790 microinch) 50 = 50 µm (2000 microinch)	0-120 = 0 to 120 psi	RMSA SAC
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT		0-180 = 0 to 180 psi	RMSA SAC RA
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT			RMSA RA
	400	1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT			

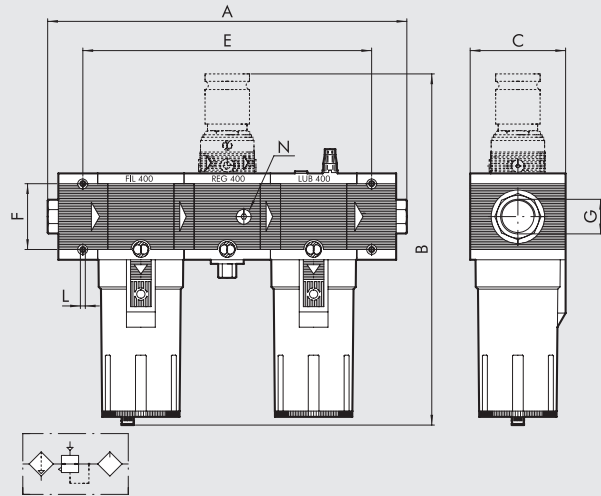
RMSA: drain with manual condensate discharge and automatic discharge at zero pressure
 RA: automatic drain with condensate discharge, independent of pressure and flow rate (for size 200, 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop - requires variable air take-offs.
 (for size 100 and 200)

DIMENSIONS FIL+REG+LUB

100 - 200 - 300



400



		FIL+REG+LUB 100		FIL+REG+LUB 200			FIL+REG+LUB 300			FIL+REG+LUB 400			
Threaded port G	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A		6.45		8.05			9.44	9.44	9.52	17.1 to 18.34			
B	RMSA	7.83		9.64			10.94			17.5			
	RA	-		9.81			11.11			17.65			
	SAC	8		9.81			11.11			17.65			
C		1.96		2.48			2.83			4.64			
E		5.86		7.46			8.74			13.85			
F		1.02		4.41			1.65			3.14			
L		0.17		0.21			0.21			0.29			
N (pressure gauge port)		BSPP 1/8"		BSPP 1/8"			BSPP 1/8"			BSPP 1/4"			

ORDERING CODES

Code	Description			
FIL+REG+LUB Skillair® 100				
3282008U	FRL 100 1/4 20 0-120 RMSA NPT			
3282011U	FRL 100 1/4 20 0-180 RMSA NPT			
3382008U	FRL 100 3/8 20 0-120 RMSA NPT			
3382011U	FRL 100 3/8 20 0-180 RMSA NPT			
FIL+REG+LUB Skillair® 200				
3482008U	FRL 200 1/4 20 0-120 RMSA NPT			
3482011U	FRL 200 1/4 20 0-180 RMSA NPT			
3582008U	FRL 200 3/8 20 0-120 RMSA NPT			
3582011U	FRL 200 3/8 20 0-180 RMSA NPT			
3682008U	FRL 200 1/2 20 0-120 RMSA NPT			
3682011U	FRL 200 1/2 20 0-180 RMSA NPT			
FIL+REG+LUB Skillair® 300				
4482005U	FRL 300 1/2 20 0-120 RMSA NPT			
4482008U	FRL 300 1/2 20 0-180 RMSA NPT			
4582005U	FRL 300 3/4 20 0-120 RMSA NPT			
4582008U	FRL 300 3/4 20 0-180 RMSA NPT			
4682005U	FRL 300 1 20 0-120 RMSA NPT			
4682008U	FRL 300 1 20 0-180 RMSA NPT			
FIL+REG+LUB Skillair® 400				
6182002U	FRL 400 1 20 RMSA NPT			
6182005U	FRL 400 1 20 RA NPT			
6282002U	FRL 400 1 1/4 20 RMSA NPT			
6382002U	FRL 400 1 1/2 20 RMSA NPT			
6482002U	FRL 400 2 20 RMSA NPT			

The following versions are available on request:

- with 5 µm or 50 µm degree of filtration
- with SAC or RA condensate discharge

Refer to the sections on the single modules for a further description, components and other technical data.



AIR PREP

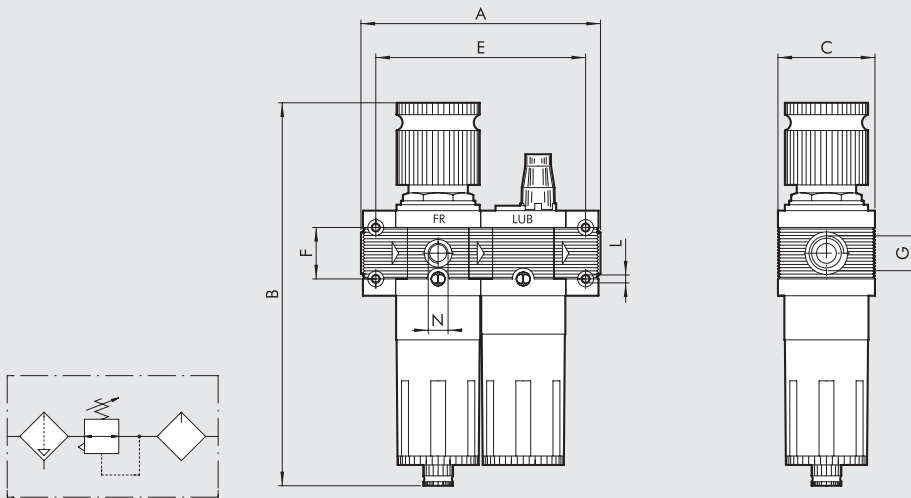
FR+LUB Skillair®

TECHNICAL DATA		FR+LUB 100		FR+LUB 200			FR+LUB 300		
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Setting range	psi	0 to 120 - 0 to 180		0 to 120 - 0 to 180			0 to 120 - 0 to 180		
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)							
Max. inlet pressure	MPa	1.5		1.3			1.3		
	bar	15		13			13		
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	psi	217		188			188		
	NI/min	300		1200			2300		
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	11		43			82		
	NI/min	800		2400			4000		
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	psi	28		85			142		
	scfm	50		50			50		
Max temperature at 10 bar (1 MPa - 145 psi)	°C	122		122			122		
	°F	1.5		3			5.9		
Weight	pounds	N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75		
Wall fixing screws									
Fluid		Compressed air							
Notes on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi. Do not take air from pressure gauge ports.							

KEY TO CODES

FR+L	100	1/4	20	0-120	RMSA	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate (for size 200, 300). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. Operates by pressure drop - requires variable air take-offs. (for size 100 and 200)
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	SETTING RANGE	TYPE OF CONDENSATION RANGE	
FR+L	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	5 = 5 µm (200 microinch) 20 = 20 µm (790 microinch) 50 = 50 µm (2000 microinch)	0-120 = 0 to 120 psi 0-180 = 0 to 180 psi	RMSA SAC RMSA SAC RA RMSA RA	
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT				
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT				

DIMENSIONS FR+L



Threaded port G	NPT	FR+LUB 100		FR+LUB 200			FR+LUB 300		
		1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
A		4.76		5.86			6.88		
B	RMSA	7.83		9.64			10.94		
	RA	-		9.81			11.11		
	SAC	8		9.81			11.11		
C		1.96		2.48			2.83		
E		4.17		5.27			6.18		
F		1.02		1.41			1.65		
L		0.17		0.21			0.21		
N (pressure gauge port)		BSPP 1/8"		BSPP 1/8"			BSPP 1/8"		

ORDERING CODES

Codie	Description
FR+L Skillair® 100	
3284008U	FR+L 100 1/4 20 0-120 RMSA NPT
3284011U	FR+L 100 1/4 20 0-180 RMSA NPT
3384008U	FR+L 100 3/8 20 0-120 RMSA NPT
3384011U	FR+L 100 3/8 20 0-180 RMSA NPT
FR+L Skillair® 200	
3484008U	FR+L 200 1/4 20 0-120 RMSA NPT
3484011U	FR+L 200 1/4 20 0-180 RMSA NPT
3584008U	FR+L 200 3/8 20 0-120 RMSA NPT
3584011U	FR+L 200 3/8 20 0-180 RMSA NPT
3684008U	FR+L 200 1/2 20 0-120 RMSA NPT
3684011U	FR+L 200 1/2 20 0-180 RMSA NPT
FR+L Skillair® 300	
4484005U	FR+L 300 1/2 20 0-120 RMSA NPT
4484008U	FR+L 300 1/2 20 0-180 RMSA NPT
4584005U	FR+L 300 3/4 20 0-120 RMSA NPT
4584008U	FR+L 300 3/4 20 0-180 RMSA NPT
4684005U	FR+L 300 1 20 0-120 RMSA NPT
4684008U	FR+L 300 1 20 0-180 RMSA NPT

The following versions are available on request:

- with 5 µm or 50 µm degree of filtration
- with SAC or RA condensate discharge

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA		V+FR+L 100		V+FR+L 200			V+FR+L 300		
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
Setting range	psi	0 to 120 - 0 to 180		0 to 120 - 0 to 180			0 to 120 - 0 to 180		
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)							
Max. inlet pressure	MPa	1.5		1.3			1.3		
	bar	15		13			13		
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	psi	217		188			188		
	NI/min	300		1200			2300		
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	11		43			82		
	NI/min	800		2400			4000		
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	scfm	28		85			142		
	NI/min	800		2400			4000		
ΔP 1 bar (0.1 MPa - 14.5 psi)	°C	50		50			50		
	°F	122		122			122		
Weight	pounds	2.2		4			7		
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75		
Fluid		Compressed air.							
Notes on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi. Do not take air from pressure gauge ports.							

KEY TO CODES

VFR+L ELEMENT	100 SIZE	1/4 THREADED PORT	20 DEGREE OF FILTRATION	0-120 SETTING RANGE	RMSA TYPE OF CONDENSATE DRAIN
VFRL+L	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	5 = 5 µm (200 microinch) 20 = 20 µm (790 microinch) 50 = 50 µm (2000 microinch)	0-120 = 0 to 120 bar	RMSA SAC
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT		0-180 = 0 to 180 bar	RMSA SAC RA
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT			RMSA RA

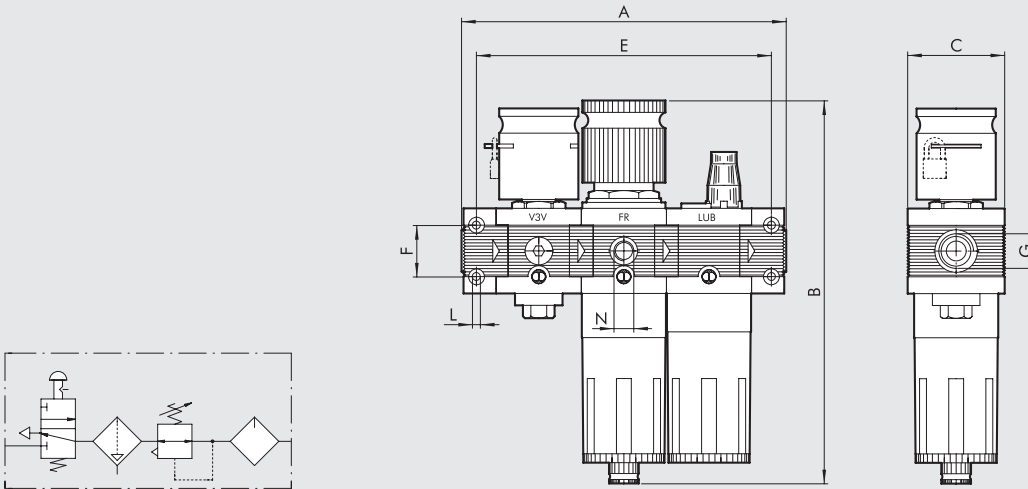
RMSA: drain with manual condensate discharge and automatic discharge at zero pressure

RA: automatic drain with condensate discharge, independent of pressure and flow rate (for size 200, 300). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.
(for size 100 and 200)

DIMENSIONS V3V+FR+L



		V3V+FR+LUB 100		V3V+FR+LUB 200			V3V+FR+LUB 300		
Threaded port G	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"
A		6.45		8.05			9.44		
B	RMSA	7.83		9.64			10.94		
	RA	-		9.81			11.11		
	SAC	8		9.81			11.11		
C		1.96		2.48			2.83		
E		5.86		7.46			8.74		
F		1.02		1.41			1.65		
L		0.17		0.21			0.21		
N (pressure gauge port)		BSPP 1/8"		BSPP 1/8"			BSPP 1/8"		

ORDERING CODES

Code	Description			
VFR+L Skillair® 100				
3272008U	VFR+L 100 1/4 20 0-120 RMSA NPT			
3272011U	VFR+L 100 1/4 20 0-180 RMSA NPT			
3372008U	VFR+L 100 3/8 20 0-120 RMSA NPT			
3372011U	VFR+L 100 3/8 20 0-180 RMSA NPT			
VFR+L Skillair® 200				
3472008U	VFR+L 200 1/4 20 0-120 RMSA NPT			
3472011U	VFR+L 200 1/4 20 0-180 RMSA NPT			
3572008U	VFR+L 200 3/8 20 0-120 RMSA NPT			
3572011U	VFR+L 200 3/8 20 0-180 RMSA NPT			
3672008U	VFR+L 200 1/2 20 0-120 RMSA NPT			
3672011U	VFR+L 200 1/2 20 0-180 RMSA NPT			
VFR+L Skillair® 300				
4472005U	VFR+L 300 1/2 20 0-120 RMSA NPT			
4472008U	VFR+L 300 1/2 20 0-180 RMSA NPT			
4572005U	VFR+L 300 3/4 20 0-120 RMSA NPT			
4572008U	VFR+L 300 3/4 20 0-180 RMSA NPT			
4672005U	VFR+L 300 1 20 0-120 RMSA NPT			
4672008U	VFR+L 300 1 20 0-180 RMSA NPT			

The following versions are available on request:
 - with 5 µm or 50 µm degree of filtration
 - with SAC or RA condensate discharge

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA		F+L 100		F+L 200			F+L 300			F+L 400			
Threaded port	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Degree of filtration	µm	yellow: 5 (200 microinch); white: 20 (790 microinch); blue: 50 (2000 microinch)											
Max. inlet pressure	MPa	1.5		1.3			1.3			1.3			
	bar	15		13			13			13			
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	psi	217		188			188			188			
	Nl/min	600		1800			3200			9000		14000	
ΔP 0.5 bar (0.05 MPa - 7.25 psi)	scfm	21		64			113			320		500	
	Nl/min	1200		3200			4500			-		-	
Flow rate at 6.3 bar (0.63 MPa - 91 psi)	scfm	42		113			160			-		-	
	Nl/min	1200		3200			4500			-		-	
ΔP 1 bar (0.1 MPa - 14.5 psi)	°C	50		50			50			50			
	°F	122		122			122			122			
Weight	pounds	1.1		2.4			4.8			17.6			
Wall fixing screws		N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4-20 unc x 4.33			
Fluid		Compressed air.											
Notes on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.											

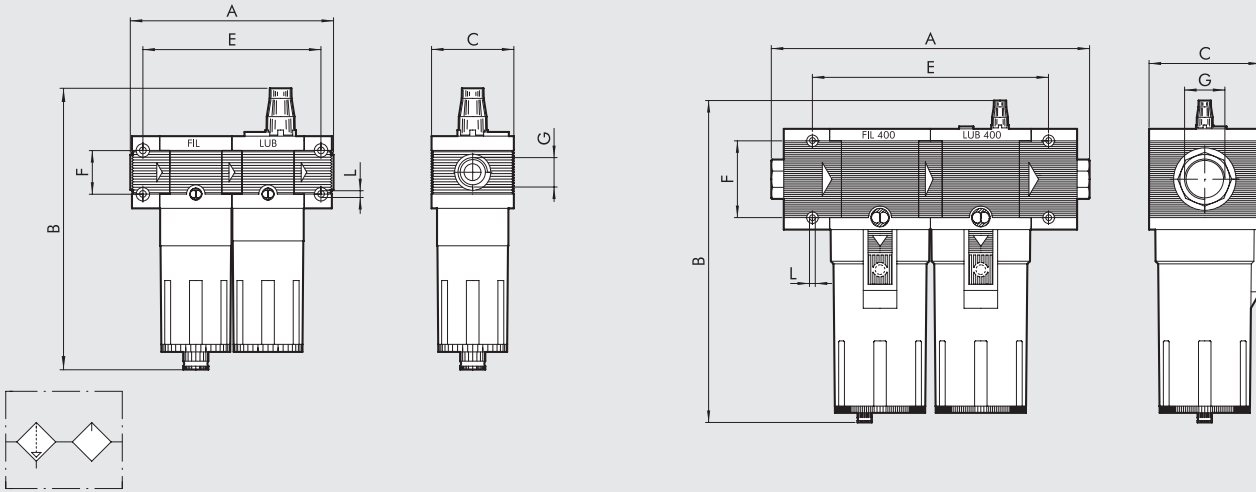
KEY TO CODES

F+L	100	1/4	20	RMSA	
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	TYPE OF CONDENSATE DRAIN	
F+L	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	5 = 5 µm (200 microinch) 20 = 20 µm (790 microinch) 50 = 50 µm (2000 microinch)	RMSA SAC RMSA RA	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate (for size 200, 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower part. SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs. (for size 100 and 200)
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT			
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT			
	400	1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT			

DIMENSIONS FIL+LUB

100 - 200 - 300

400



		FIL+LUB 100		FIL+LUB 200			FIL+LUB 300			FIL+LUB 400			
Threaded port G	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
A		4.76		5.86			6.88		6.96	12.99 to 14.17		15.27 to 16.45	
B	RMSA	6.79		8				8.80		13.75			
	RA	-		8.17				8.96		13.92			
	SAC	6.95		8.17				8.96		13.92			
C		1.96		2.48				2.83		4.64			
E		4.17		5.27				6.18		9.72			
F		1.02		1.41				1.65		3.94			
L		0.17		0.21				0.21		0.29			

ORDERING CODES

Code	Description
F+L Skillair® 100	
3285002U	F+L 100 1/4 20 RMSA NPT
3385002U	F+L 100 3/8 20 RMSA NPT
F+L Skillair® 200	
3485002U	F+L 200 1/4 20 RMSA NPT
3585002U	F+L 200 3/8 20 RMSA NPT
3685002U	F+L 200 1/2 20 RMSA NPT
F+L Skillair® 300	
4485002U	F+L 300 1/2 20 RMSA NPT
4585002U	F+L 300 3/4 20 RMSA NPT
4585005U	F+L 300 3/4 20 RA NPT
4685002U	F+L 300 1 20 RMSA NPT
F+L Skillair® 400	
6185002U	F+L 400 1 20 RMSA NPT
6185005U	F+L 400 1 20 RA NPT
6285002U	F+L 400 1 1/4 20 RMSA NPT
6385002U	F+L 400 1 1/2 20 RMSA NPT
6485002U	F+L 400 2 20 RMSA NPT

The following versions are available on request:
 - with 5 µm or 50 µm degree of filtration
 - with SAC or RA condensate discharge

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA			F+D 100		F+D 200			F+D 300			F+D 400			
Threaded port	NPT		1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1 1/4"	1 1/2"	2"
Degree of filtration	Filter	µm	yellow: 5 (200 microinch)											
	Depurator	µm	0.01		0.01			0.01				0.01		
Max. inlet pressure		MPa	1.5		1.3			1.3				1.3		
		bar	15		13			13				13		
Max temperature at 10 bar (1 MPa - 145 psi)		psi	217		188			188				188		
		°C	50		50			50				50		
		°F	122		122			122				122		
Weight		pounds	1.32		2.86			4.8				15.4		
Wall fixing screws			N. 8-32 unc x 2		N. 10-24 unc x 2.36			N. 10-24 unc x 2.75			1/4-20 unc x 4.33			
Maximum suggested flow rate			Please look at the flow rate curves at page 2-92											
Fluid			Compressed air.											
Notes on use			The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.											

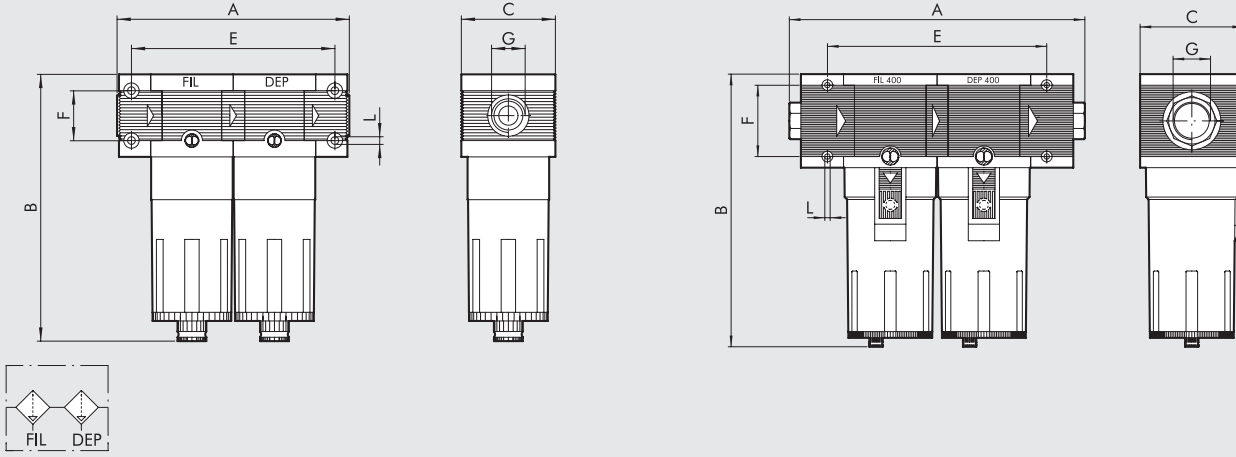
KEY TO CODES

F+D	100	1/4	5	RMSA	
ELEMENT	SIZE	THREADED PORT	DEGREE OF FILTRATION	TYPE OF CONDENSATE DRAIN	
F+D	100	1/4 = 1/4 NPT 3/8 = 3/8 NPT	5 = 5 µm (200 microinch)	RMSA SAC RMSA RA	RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate (for size 300 and 400). Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port. SAC: automatic drain with condensate discharge. Operates by pressure drop - requires variable air take-offs. (for size 100 and 200)
	200	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT			
	300	1/2 = 1/2 NPT 3/4 = 3/4 NPT			
	400	1 = 1 NPT 1 = 1 NPT 1 1/4 = 1 1/4 NPT 1 1/2 = 1 1/2 NPT 2 = 2 NPT			

DIMENSIONS FIL+DEP

100 - 200 - 300

400

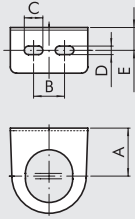


		FIL+DEP 100		FIL+DEP 200			FIL+DEP 300			FIL+DEP 400			
Threaded port G	NPT	1/4"	3/8"	1/4"	3/8"	1/2"	1/2"	3/4"	1"	1"	1" 1/4"	1" 1/2"	2"
A		4.26		5.86			6.88		6.96	12.99 to 14.17			
B	RMSA	5.66		6.88			7.67		12.59				
	RA	-		7			7.83		12.75				
	SAC	5.82		7			-		-				
C		1.96		2.48			2.83		4.64				
E		4.17		5.27			6.18		9.72				
F		1.02		1.41			1.65		3.14				
L		0.17		0.21			0.21		0.29				

ORDERING CODES

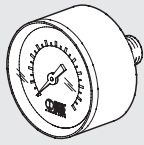
Code	Description	Code	Description
F+D Skillair® 100			
3289001U	F+D 100 1/4 5 RMSA-RMSA NPT		
3289005U	F+D 100 1/4 5 SAC-RMSA NPT		
3289006U	F+D 100 1/4 5 SAC-SAC NPT		
3389001U	F+D 100 3/8 5 RMSA-RMSA NPT		
3389005U	F+D 100 3/8 5 SAC-RMSA NPT		
3389006U	F+D 100 3/8 5 SAC-SAC NPT		
F+D Skillair® 200			
3489001U	F+D 200 1/4 5 RMSA-RMSA NPT		
3489005U	F+D 200 1/4 5 SAC-RMSA NPT		
3489006U	F+D 200 1/4 5 SAC-SAC NPT		
3589001U	F+D 200 3/8 5 RMSA-RMSA NPT		
3589005U	F+D 200 3/8 5 SAC-RMSA NPT		
3589006U	F+D 200 3/8 5 SAC-SAC NPT		
3689001U	F+D 200 1/2 5 RMSA-RMSA NPT		
3689005U	F+D 200 1/2 5 SAC-RMSA NPT		
3689006U	F+D 200 1/2 5 SAC-SAC NPT		
F+D Skillair® 300			
4489001U	F+D 300 1/2 5 RMSA-RMSA NPT		
4489002U	F+D 300 1/2 5 RA-RA NPT		
4589001U	F+D 300 3/4 5 RMSA-RMSA NPT		
4589002U	F+D 300 3/4 5 RA-RA NPT		
4689001U	F+D 300 1 5 RMSA-RMSA NPT		
4689002U	F+D 300 1 5 RA-RA NPT		
F+D Skillair® 400			
6189001U	F+D 400 1 5 RMSA-RMSA NPT		
6189002U	F+D 400 1 5 RA-RA NPT		
6289001U	F+D 400 1 1/4 5 RMSA-RMSA NPT		
6289002U	F+D 400 1 1/4 5 RA-RA NPT		
6389001U	F+D 400 1 1/2 5 RMSA-RMSA NPT		
6389002U	F+D 400 1 1/2 5 RA-RA NPT		
6489001U	F+D 400 2 5 RMSA-RMSA NPT		
6489002U	F+D 400 2 5 RA-RA NPT		

MOUNTING BRACKET FOR REG.



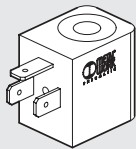
Code	Description				
9200701	SF100- BIT-ND1/4				
9400701	SF200-ND-3/8 1/2				
9400702	SF300				
Code	A	B	C	D	E
9200701	1.26	0.79	0.47	0.22	0.56
9400701	1.66	1.59	0.47	0.22	0.59
9400702	1.89	1.93	0.47	0.22	0.67

PRESSURE GAUGES



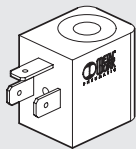
Code	Description
9700101	M 40 1/8 012 (0-180)
9700102	M 40 1/8 04 (0-60)
9800101	M 50 1/8 012 (0-180)
9800102	M 50 1/8 04 (0-60)
9900101	M 63 1/4 012 (0-180)
9700109	M 40x40 1/8 04 (0-60)
9700110	M 40x40 1/8 012 (0-180)

COIL 22 mm FOR APR AND V3V ELPN



Code	Description
W0215000101	Coil 22 Ø 8 BA 2W-24VDC
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC
Electrical connection DIN 43650 B-IND	

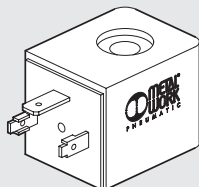
"UL" AND "CSA" COIL 22 mm FOR APR AND V3V ELPN



Code	Description
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR
Electrical connection DIN 43650 B-IND	

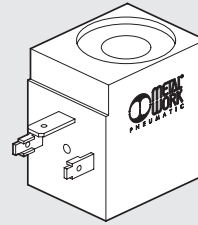


COIL 30 mm FOR APR AND V3V ELPN



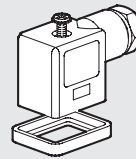
Code	Description
W0210010100	Coil 30 D8 2W-24VDC
W0210011100	Coil 30 D8 3.5VA-24VAC 50/60 HZ
W0210012100	Coil 30 D8 3.5VA-110VAC 50/60 HZ
W0210013100	Coil 30 D8 3.5VA-220VAC 50/60 HZ
Electrical connection DIN 43650 - A	

COIL FOR CDV CDML LUBRICATOR



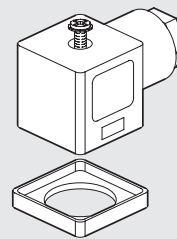
Code	Description
W0216001001	Coil 30 Ø13 10W-24VDC
W0216001011	Coil 30 Ø13 13VA-24VAC 50/60HZ
W0216001021	Coil 30 Ø13 13VA-110VAC 50/60HZ
W0216001031	Coil 30 Ø13 13VA-220VAC 50/60HZ
Electrical connection DIN 43650 - A	

ELECTRIC CONNECTOR 22 mm FOR COILS DIN 43650 B-IND



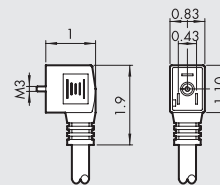
Code	Description
W0970510011	Connector standard
W0970510012	Connector 22 LED 24V
W0970510013	Connector 22 LED 110V
W0970510014	Connector 22 LED 220V
W0970510015	Connector 22 LED VDR 24V
W0970510016	Connector 22 LED VDR 110V
W0970510017	Connector 22 LED VDR 220V
W0970510070	Connector 22 ATEX II 2 GD

ELECTRIC CONNECTOR 30 mm FOR COILS DIN 43650-A



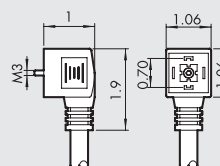
Code	Description
W0970520033	Connector 30 STD
W0970520034	Connector 30 LED 24V
W0970520035	Connector 30 LED 110V
W0970520036	Connector 30 LED 220V
W0970520037	Connector 30 LED VDR 24V
W0970520038	Connector 30 LED VDR 110V
W0970520039	Connector 30 LED VDR 220V

PRE WIRED DIN CONNECTORS 6 FEET CABLE 22 mm



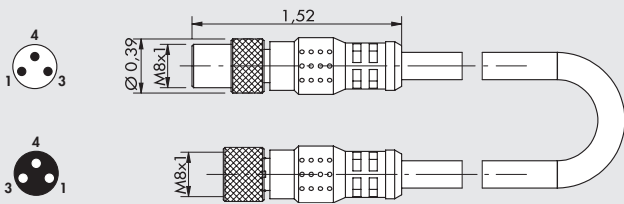
Code	Description
888776	DIN connector 110VAC led
888777	DIN connector standard black
888778	DIN connector 24VDC

PRE WIRED DIN CONNECTORS 6 FEET CABLE 30 mm



Code	Description
888779	DIN connector standard black
888780	DIN connector led 24VDC
888781	DIN connector led 110VAC

M8 ADAPTER CABLE FOR CONNECTING THE PRESSURE SWITCH TO THE EB 80 E CM DIGITAL INPUTS MODULE

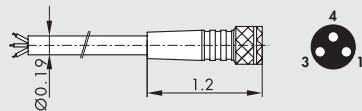


Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 1.2 inch

Note: Can be used to connect the pressure switch to the module of digital INPUT S01 of the EB 80 valves. Contact type NO (Normally open).

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 2	Signal NO
pin 4	disconnect	

M8 STRAIGHT CONNECTOR WITH CABLE FOR PRESSURE SWITCHES



Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400A0100	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 39 inch
02400A0250	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 98 inch
02400A0500	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 197 inch
02400A1000	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 394 inch

Very flexible cables, class 6 according to IEC 60228

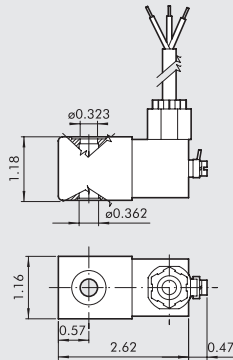
CONNECTOR KIT FOR SKILLAIR CODE A

Code	Description
9230301	Connector kit 100
9330301	Connector kit 200
9430301	Connector kit 300
9630301	Connector kit 400

INPUT/OUTPUT END PLATE KIT

Code	Description
9230401U	IN/OUT end plate kit 100 1/4
9330501U	IN/OUT end plate kit 100 3/8
9330601U	IN/OUT end plate kit 200 1/4
9330701U	IN/OUT end plate kit 200 3/8
9330801U	IN/OUT end plate kit 200 1/2
9430701U	IN/OUT end plate kit 300 1/2
9530901U	IN/OUT end plate kit 300 3/4
9531001U	IN/OUT end plate kit 300 1
9631001U	IN/OUT end plate kit 400 1
9631101U	IN/OUT end plate kit 400 1 1/4
9631201U	IN/OUT end plate kit 400 1 1/2
9631301U	IN/OUT end plate kit 400 2

KIT FOR COIL EEXM (FOR V3V-APR-LUB)



Code	Description
0227606913	Kit for coil 30 24 VDC EEXMT5 cable 118 inch
0227606915	Kit for coil 30 24 VDC EEXMT5 cable 197 inch
0227608013	Kit for coil 30 24 VAC EEXMT5 cable 118 inch
0227608015	Kit for coil 30 24 VAC EEXMT5 cable 197 inch
0227608023	Kit for coil 30 110 VAC EEXMT5 cable 118 inch
0227608025	Kit for coil 30 110 VAC EEXMT5 cable 197 inch
0227608033	Kit for coil 30 230 VAC EEXMT5 cable 118 inch
0227608035	Kit for coil 30 230 VAC EEXMT5 cable 197 inch

According to Atex 2014/34/EU rule,
 Ex II 2G Ex mb IIC T4/T5 Gb
 Ex II 2D Ex tb IIC T130/T95 °C IP66 Db
N.B.: Supplied complete with adapter for Ø8 mm sleeve.

KIT COIL SIDE 22 IP65 (FOR V3V-APR-LUB)

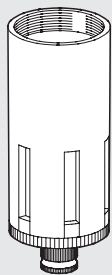


Code	Description
0222100100	Kit for coils 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents. Applicable to valves with a technopolymer control.

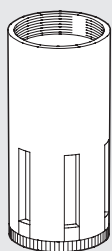
NOTES

FILTER BOWL



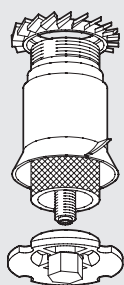
Code	Description
9253301	Spares TF 100 RMSA
9255301	Spares TF 100 SAC
9353301	Spares TF 200 RMSA
9355301	Spares TF 200 SAC
9453401	Spares TF 300 RMSA
9453301	Spares TF 300 RA
9653401	Spares TF 400 RMSA
9653301	Spares TF 400 RA

LUBRICATOR BOWL



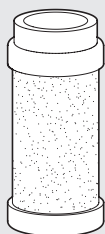
Code	Description
9253501	Spares TL 100
9202503	Spares TL 100 CA
9202502	Spares TL 100 CD
9202501	Spares TL 100 ML
9353501	Spares TL 200
9302501	Spares TL 200 CA
9302503	Spares TL 200 CD
9302502	Spares TL 200 ML
9453501	Spares TL 300
9202403	Spares TL 300 CA
9202401	Spares TL 300 CD
9202402	Spares TL 300 ML
9653501	Spares TL 400
9653502	Spares TL 400 CA
9653504	Spares TL 400 CD
9653503	Spares TL 400 ML

FILTERING ELEMENTS



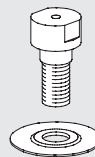
Code	Description
9251705	Spares FP 100 5
9251706	Spares FP 100 20
9251707	Spares FP 100 50
9351705	Spares FP 200 5
9351706	Spares FP 200 20
9351707	Spares FP 200 50
9451705	Spares FP 300 5
9451706	Spares FP 300 20
9451707	Spares FP 300 50
9651705	Spares FP 400 5
9651706	Spares FP 400 20
9651707	Spares FP 400 50

FILTERING/PURIFICATION ELEMENTS



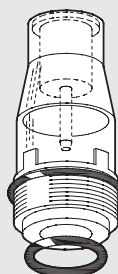
Code	Description
9251711	Spares FP DEP. 100
9351711	Spares FP DEP. 200
9451711	Spares FP DEP. 300
9651711	Spares FP DEP. 400

VENTURI LUBRICATOR DIAPHRAGM



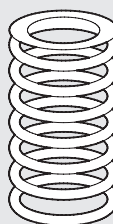
Code	Description
9252001	Spares MB 100 ND 1/4
9352001	Spares MB 200 ND 3/8-1/2
9452001	Spares MB 300 ND 1/2-3/4
9652601	Spares MB 400

TRANSPARENT LUBRICATOR COVER



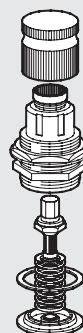
Code	Description
9251302	Spares CVL 100-200-300-400 BIT

SPRINGS FOR REDUCERS AND FRs



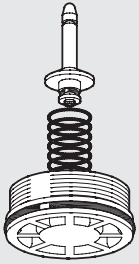
Code	Description
9250605	Spares MO 100 02 (0-30)
9250606	Spares MO 100 04 (0-60)
9250607	Spares MO 100 08 (0-120)
9250608	Spares MO 100 012 (0-180)
9350605	Spares MO 200 02 (0-30)
9350606	Spares MO 200 04 (0-60)
9350607	Spares MO 200 08 (0-120)
9350608	Spares MO 200 012 (0-180)
9450605	Spares MO 300 04 (0-60)
9450606	Spares MO 300 08 (0-120)
9450607	Spares MO 300 012 (0-180)
9450608	Spares MO 300 02 (0-30)

UPPER COVER FOR REGULATOR AND FR



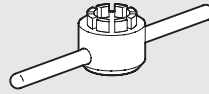
Code	Description
9250800U	Spares CS 100 02 (0-30)
9250810U	Spares CS 100 04 (0-60)
9250811U	Spares CS 100 08 (0-120)
9250812U	Spares CS 100 012 (0-180)
9350800U	Spares CS 200 02 (0-30)
9350810U	Spares CS 200 04 (0-60)
9350811U	Spares CS 200 08 (0-120)
9350812U	Spares CS 200 012 (0-180)
9450805U	Spares CS 300 04 (0-60)
9450806U	Spares CS 300 08 (0-120)
9450807U	Spares CS 300 012 (0-180)
9450808U	Spares CS 300 02 (0-30)

COMPLETE POPPET FOR REGULATORS



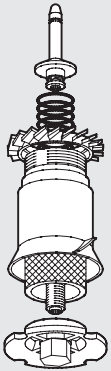
Code	Description
9250704	Spares OTR 100
9350704	Spares OTR 200
9450704	Spares OTR 300
9650704	Spares OTR 400

POPET DISASSEMBLY SPANNER (FOR REG.)



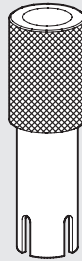
Code	Description
9220501	Spares R cap disass. WR. 100
9323501	Spares R cap disass. WR. 200
9420501	Spares R cap disass. WR. 300

COMPLETE POPPET FOR FR



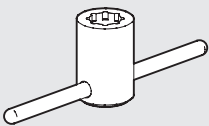
Code	Description
9250902	Spares OTFR 100 5
9250903	Spares OTFR 100 20
9250904	Spares OTFR 100 50
9350902	Spares OTFR 200 5
9350903	Spares OTFR 200 20
9350904	Spares OTFR 200 50
9450902	Spares OTFR 300 5
9450903	Spares OTFR 300 20
9450904	Spares OTFR 300 50

POPET DISASSEMBLY SPANNER (FOR FR)



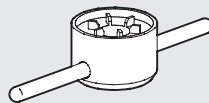
Code	Description
9220801	Spares FR cap disass. WR. 100
9320801	Spares FR cap disass. WR. 200
9420801	Spares FR cap disass. WR. 300

UPPER COVER DISASSEMBLY SPANNER



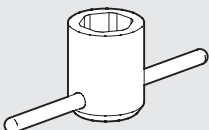
Code	Description
9220701	Spares cover spanner

CAP DISASSEMBLY SPANNER



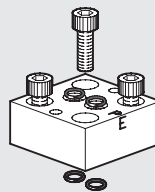
Code	Description
9220601	Spares cap disass. 100
9323601	Spares cap disass. 200
9420601	Spares cap disass. 300

REG AND FR VISUAL DOME DISASSEMBLY SPANNER



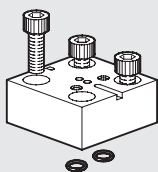
Code	Description
9220401	Spares dome dis. spanner 100
9323401	Spares dome dis. spanner 200
9420401	Spares dome dis. spanner 300

PROVISION FOR SOLENOID CONTROL TO CNOMO FOR APR-300



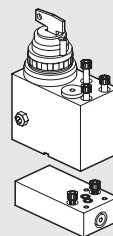
Code	Description
9454001	Spares PCE to CNOMO

PROVISION FOR MICRO SOLENOID CONTROL FOR APR-300



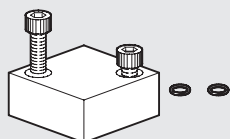
Code	Description
9453601	Spares PCE MICRO

KEY-OPERATED V3V 400



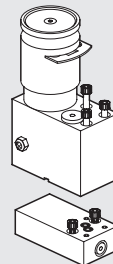
Code	Description
9455401	Spares kit C.C. 400

PROVISION FOR PNEUMATIC CONTROL FOR APR-300



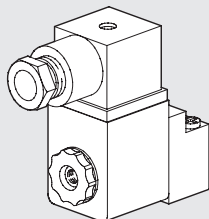
Code	Description
9453701	Spares PCP pneumatic

MANUAL LOCKABLE V3V 400



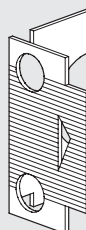
Code	Description
9455601	Spares kit lockable 400

CNOMO SOLENOID CONTROL FOR APR and V3V 300-400



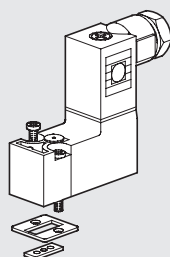
Code	Description
9453901	Spares CEC CNOMO 24CC
9453902	Spares CEC CNOMO 24V
9453903	Spares CEC CNOMO 110V
9453904	Spares CEC CNOMO 220V

INPUT/OUTPUT COVER PLATE



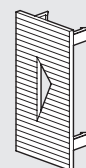
Code	Description
9152103	Spares OUTPUT cover plate 100
9152105	Spares INPUT cover plate 100
9152115	Spares OUTPUT cover plate 200
9152116	Spares INPUT cover plate 200
9152104	Spares OUTPUT cover plate 300
9152106	Spares INPUT cover plate 300
9152118	Spares OUTPUT cover plate 400
9152119	Spares INPUT cover plate 400

MICRO SOLENOID CONTROL FOR APR-300 and V3V 300 (NO MORE IN THE CATALOGUE)



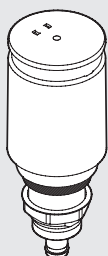
Code	Description
9453801	Spares CEM MICRO 24CC
9453802	Spares CEM MICRO 24V
9453803	Spares CEM MICRO 110V
9453804	Spares CEM MICRO 220V

INTERMEDIATE COVER PLATE



Code	Description
9152107	Spares intermediate cover plate 100
9152114	Spares intermediate cover plate 200
9152108	Spares intermediate cover plate 300
9152117	Spares intermediate cover plate 400

AUTOMATIC DRAIN (RA)



Code	Description
9000802	Spares automatic drain (RA)

AUTOMATIC DRAIN (SAC)



Code	Description
9000803U	Spares automatic drain (SAC)

SUMMARY Newdeal

● GENERAL TECHNICAL DATA New deal

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● New deal FILTER

PAGE 2-144



● New deal DEPURATOR

PAGE 2-147



● New deal REGULATOR

PAGE 2-149



● New deal PILOT-OPERATED REGULATOR

PAGE 2-152



● New deal FILTER REGULATOR

PAGE 2-153



● New deal LUBRICATOR

PAGE 2-156



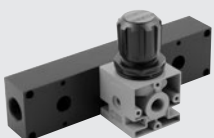
● New deal SHUT-OFF VALVE

PAGE 2-159



● New deal AIR TAKE-OFF

PAGE 2-161



● New deal SUB-BASE

PAGE 2-162



● **New deal AUTOMATIC CONDENSATE DRAIN**

PAGE 2-163



● **FIL+REG+LUB New deal**

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● **FR+LUB New deal**

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● **V3V+FR+LUB New deal**

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● **FIL+DEP New deal**

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● **FIL+LUB New deal**

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● **New deal ACCESSORIES**

PAGE 2-174

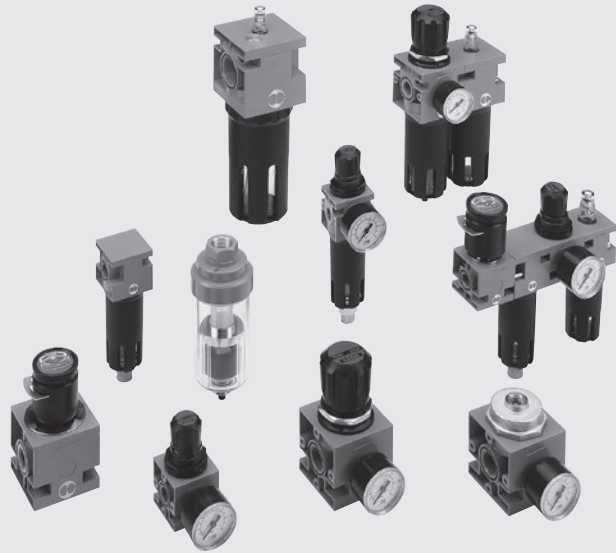
● **New deal SPARE PARTS**

PAGE 2-175

GENERAL TECHNICAL DATA **Newdeal**

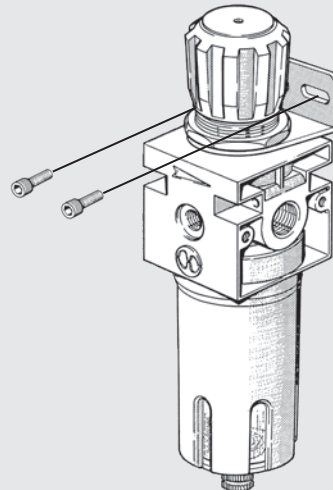
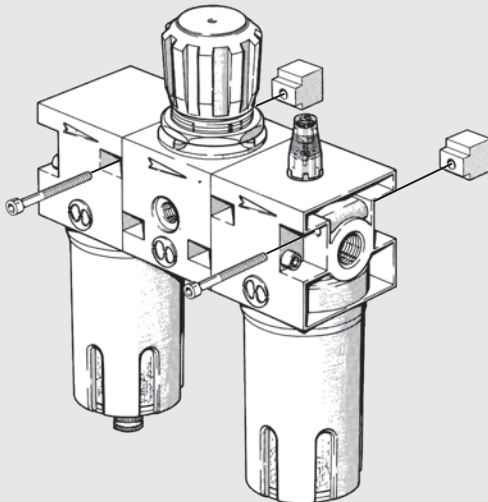
Newdeal is the forerunner of all air treatment units by Metal Work. The entire range is top quality, heavy-duty and reliable. These units are designed for use at high pressures* and in applications where the temperature and quality of the ambient area are critical.

*For further details, refer to the Specification for the item in question.

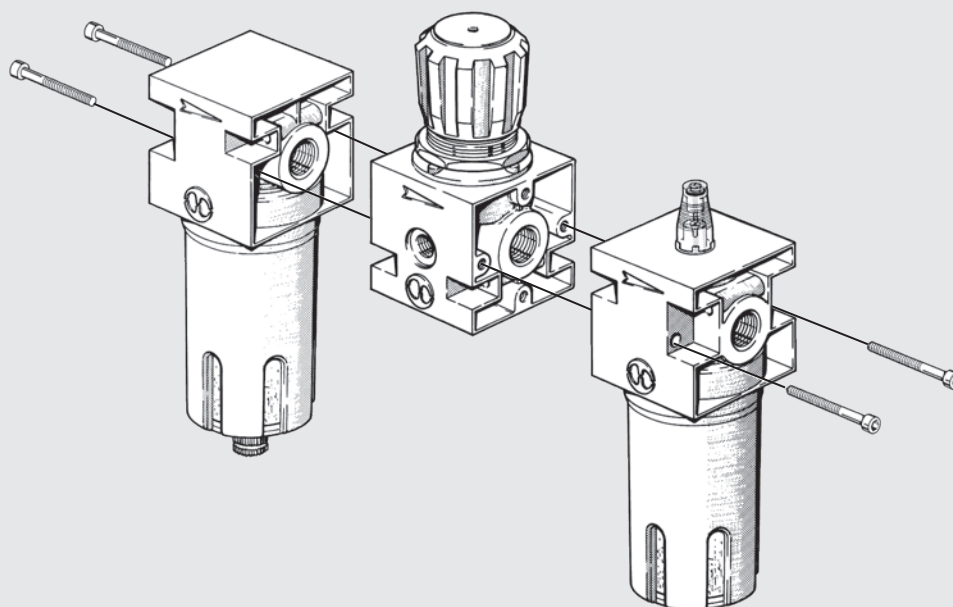


TECHNICAL DATA		ND 1/4"	ND 3/8"	ND 1/2"	ND 3/4"	ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
Degree of filtration	µm	4 - 20 - 50				
Degree of purification	µm	99.97% at 0.01				
Setting range	bar	0 to 2 - 0 to 4 - 0 to 8 - 0 to 12				
Max. input pressure	MPa	1.8				
	bar	18				
	psi	261				
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	Nl/min scfm	from 200 to 12000 from 7 to 423				
Fluid		Lubricated or unlubricated compressed air				
Temperature range at 1 MPa; 10 bar; 145 psi	°C °F	-10 to +50 14 to 122				
Elements comprising the range		Filter, Depurator, Regulator, Pilot operated Regulator, In-series Regulator, Filter-regulator, Lubricator, Circuit Shut-off Valve				
Compatibility with oils		Please refer to page 5-2 of the technical documentation				

WALL MOUNTING



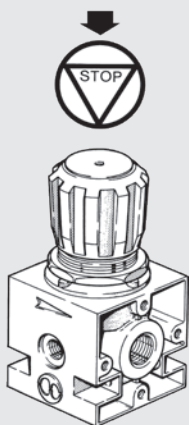
ASSEMBLY DIAGRAM



ASSEMBLY TIE RODS

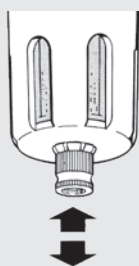
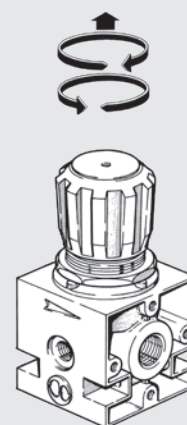
	Elements that can be assembled	NPT 1/4			NPT 3/8 - 1/2			NPT 3/4 - 1		
		Type	Code	Ref.	Type	Code	Ref.	Type	Code	Ref.
A		A	9250001	CVA 1/4 M4x40	A	9450001	CVA 1/2 M5x55	A	9650001	CVA 1 M6x70
B		A	9250001	CVA 1/4 M4x40	A	9450002	CVA 1/2 M5x60	-	-	-
C		A	9250002	CVA 1/4 M4x82	A	9450003	CVA 1/2 M5x120	C	9604402	V3V + F + RT 3/4-1
		B	9200901	F+LT 1/4	B	9400901	F+LT 3/8-1/2	B	9600901	F+LT 3/4-1

GENERAL RULES - USE AND MAINTENANCE

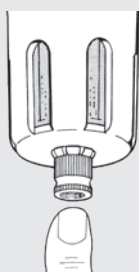


The knob can be locked so that the set pressure cannot be altered.

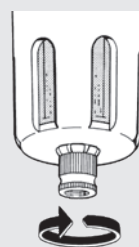
The air pressure must always be set upwards.



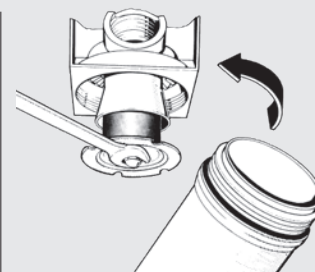
With the knob in the centre position, the drain is semi-automatic. The drain operates when the bowl is not pressurized and closes when it is.



Press the button to drain condensate when the bowl is pressurized.



Turn the knob anticlockwise to close the valve with bowl pressurized or not pressurized.



To clean or replace the filter element unscrew the screen of the centrifuge assembly. Use a no. 3 compass spanner to unscrew the bowl.

Newdeal FILTER

Filter with different impurity filtration degrees.

- Metal bowl with external viewing
- Semi-automatic and condensate drainage



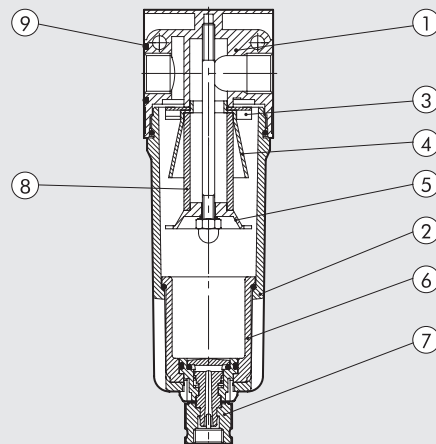
AIR PREP

New deal FILTER

TECHNICAL DATA		FIL ND 1/4"	FIL ND 3/8"	FIL ND 1/2"	FIL ND 3/4"	FIL ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
Degree of filtration	µm	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50
Max. inlet pressure	MPa	1.8	1.8	1.8	1.8	1.8
	bar	18	18	18	18	18
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	psi	261	261	261	261	261
	NI/min	1300	3100	9100	9100	9100
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	scfm	46	110	324	324	324
	NI/min	1720	4100	11000	11000	11000
Max temperature at 1 MPa; 10 bar; 145 psi	scfm	61	146	391	391	391
	°C	50	50	50	50	50
Weight	°F	122	122	122	122	122
	pounds	0.9	2	4.2	4.2	4.2
Wall fixing screws		N. 8-32 unc x 1.57	N. 8-32 unc x 2.16	1/4-20 unc x 2.95	1/4-20 unc x 2.95	1/4-20 unc x 2.95
Bowl capacity	fluid ounce oz	0.34	1.52	5.75	5.75	5.75
Mounting position		Vertical	Vertical	Vertical	Vertical	Vertical
Drain		RMSA - SAC	RMSA - SAC - RA	RMSA - RA	RMSA - RA	RMSA - RA
		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.				
		RA: automatic drain with condensate discharge, independent of pressure and flow rate.				
		Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.				
		SAC: automatic drain with condensate discharge.				
		Operates by pressure drop – requires variable air take-offs.				
		Compressed air				
Fluid		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.				
Note on use						

COMPONENTS

- ① Zamak body
- ② Aluminium bowl
- ③ Technopolymer centrifuge
- ④ Technopolymer baffle plug
- ⑤ Technopolymer screen
- ⑥ Clear technopolymer bowl
- ⑦ Drain (RMSA)
- ⑧ HDPE bronze filter cartridge (1/4 - 3/8 - 1/2), sintered bronze (1")
- ⑨ NBR gaskets

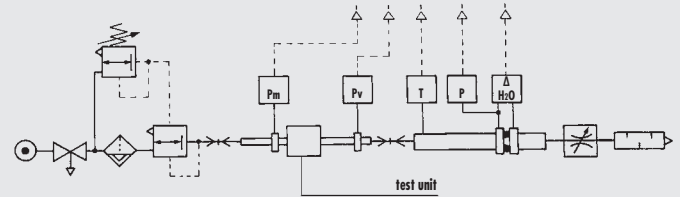
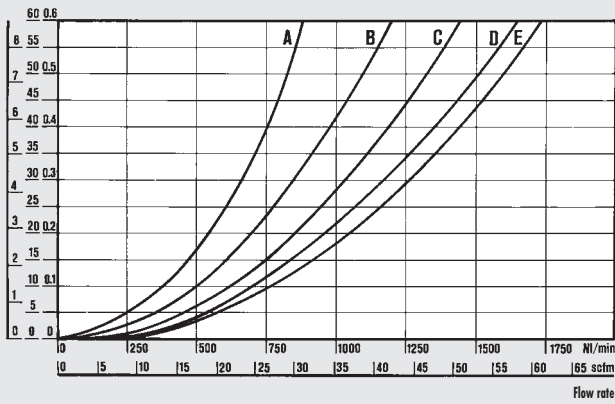


FLOW CHARTS

FIL 1/4

$\Delta P = (P_m - P_v)$

psi kPa bar



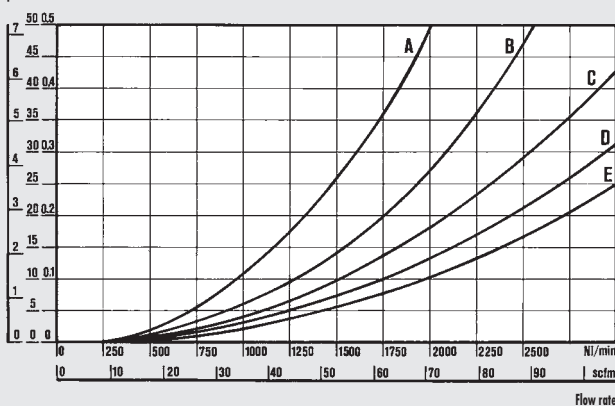
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

(A) = 2 bar - 0.2 MPa - 29 psi (D) = 8 bar - 0.8 MPa - 116 psi
 (B) = 4 bar - 0.4 MPa - 58 psi (E) = 10 bar - 1 MPa - 145 psi
 (C) = 6 bar - 0.6 MPa - 87 psi

FIL 3/8 - 1/2

$\Delta P = (P_m - P_v)$

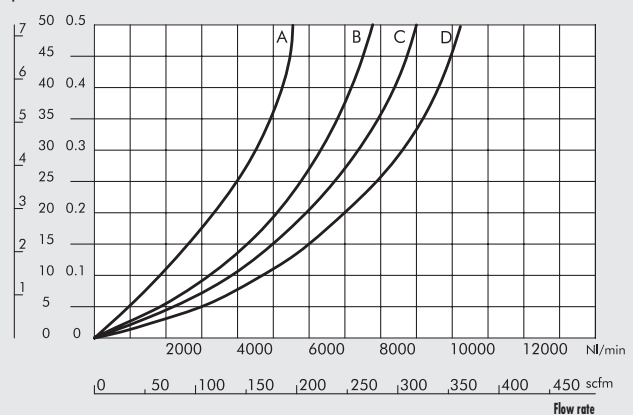
psi kPa bar



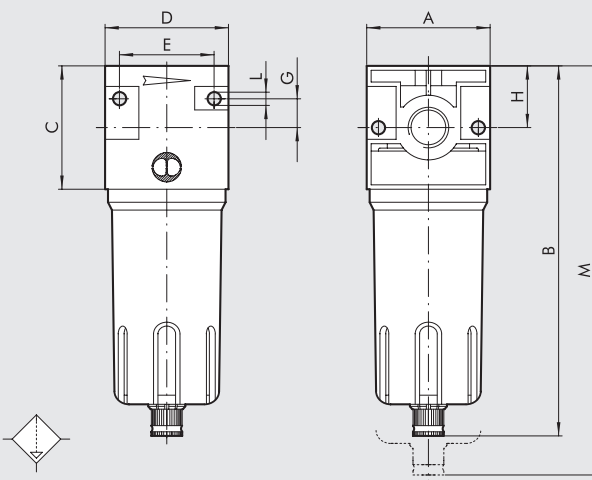
FIL 3/4 - 1"

$\Delta P = (P_m - P_v)$

psi kPa bar



DIMENSIONS



		FIL ND 1/4"	FIL ND 3/8"	FIL ND 1/2"	FIL ND 3/4"	FIL ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
A		1.65	2.36		3.14	
B	RMSA	5.59	7.08		9.25	
	RA	-	7.25		9.40	
	SAC	5.75	7.25		9.40	
C		1.65	2.36		3.14	
D		1.65	2.36		3.14	
E		1.25	1.81		2.59	
G		0.39	0.55		0.86	
H		0.82	1.18		1.57	
L		0.17	0.17		0.29	
M	RMSA	7.28	9.05		12.79	
	RA	-	9.22		12.96	
	SAC	7.45	9.22		12.96	

Newdeal DEPURATOR

- Oil-proof depurator with coalescing cartridge
- Metal bowl with external viewing
- Manual/semi-auto or automatic condensate drain



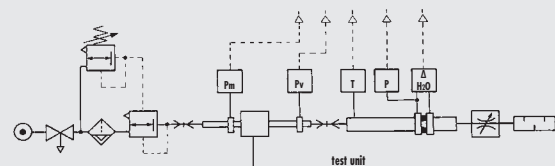
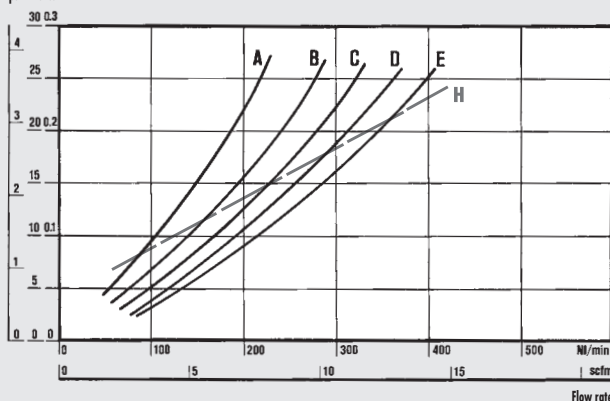
TECHNICAL DATA		DEP ND 3/8"	DEP ND 1/2"
Threaded port	NPT	3/8"	1/2"
Degree of depuration	μm	99.97% at 0.01	
Max. inlet pressure	MPa	1.8	
	bar	18	
	psi	261	
Maximum suggested flow rate		please look at the flow rate curves	
Suggested flow rate at 87 psi	Nl/min	230	
	scfm	8	
Fluid		Filtered air 4 μm	
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50	
	°F	122	
Weight	pounds	2	
Wall fixing screws		N. 8-32 unc x 2.16	
Bowl capacity	fluid ounce oz	1.52	
Mounting position		Vertical	
Drain		RMSA - SAC - RA	
		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure. RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.	
		SAC: automatic drain with condensate discharge.	
		Operates by pressure drop – requires variable air take-offs.	
		It is advisable to mount a 4 μm filter upstream the depurator acting as a rough filter.	
		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.	
Note on use			

FLOW CHARTS

D 3/8 - 1/2

$$\Delta P = (P_m - P_v)$$

psi KPa bar



• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi
- (H) = maximum flow rate recommended for optimal operation

Newdeal REGULATOR

Highly reliable, heavy-duty piston-operated regulator.

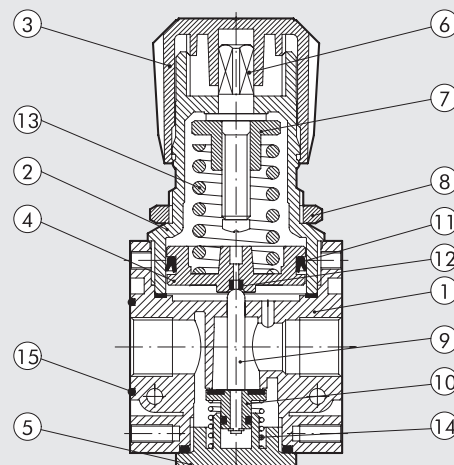
- Stability of the set pressure as the upstream pressure varies
- Standard overpressure blowoff valve
- Can be fixed to the wall using the holes in the sides of the body.



TECHNICAL DATA		REG ND 1/4"	REG ND 3/8"	REG ND 1/2"	REG ND 3/4"	REG ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
Setting range	bar	0 to 60 - 0 to 120 - 0 to 180	0 to 60 - 0 to 120 - 0 to 180	0 to 60 - 0 to 120 - 0 to 180	0 to 60 - 0 to 120 - 0 to 180	0 to 60 - 0 to 120 - 0 to 180
Max. inlet pressure	MPa	1.8	1.8	1.8	1.8	1.8
	bar	18	18	18	18	18
	psi	261	261	261	261	261
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	Nl/min	200	1100	2500	4500	
	scfm	7	39	89	160	
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	Nl/min	650	2500	4500		
	scfm	23	89	160		
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50	50	50	50	50
	°F	122	122	122	122	122
Weight	pounds	0.7	1.8	4.8		
Wall fixing screws		N. 8-32 unc x 1.57	N. 8-32 unc x 2.16	1/4-20 unc 2.95		
Gauge port		1/8" NPT	1/8" NPT	1/4" NPT		
Mounting position		In any position				
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.				
Note on use		The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take off air from gauge ports.				

COMPONENTS

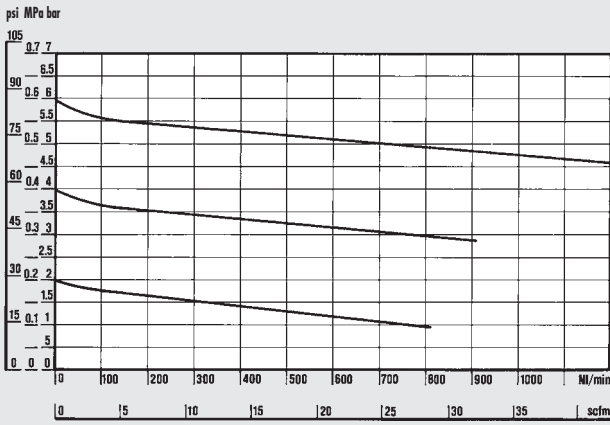
- ① Zamak body
- ② Technopolymer bell
- ③ Technopolymer knob
- ④ Technopolymer piston rod
- ⑤ Technopolymer plug
- ⑥ OT58 brass adjusting screw
- ⑦ OT58 brass nut
- ⑧ Ring nut : technopolymer (ND 1/4-3/8-1/2) brass (ND 3/4-1)
- ⑨ OT brass rod
- ⑩ Valve with NBR vulcanized gasket
- ⑪ NBR lip seal
- ⑫ NBR relieving seal
- ⑬ Steel adjusting spring
- ⑭ Steel valve compression spring
- ⑮ NBR gaskets



FLOW CHARTS

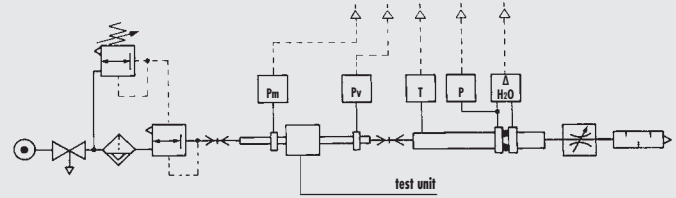
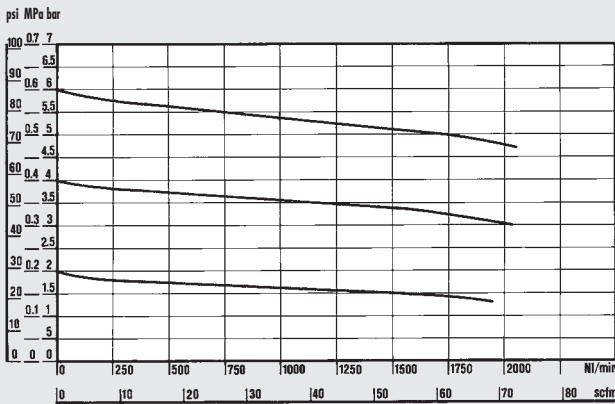
REG 1/4

$P_m = 0.7 \text{ MPa} - 7 \text{ bar} - 100 \text{ psi}$
Inlet pressure



REG 3/8 - 1/2

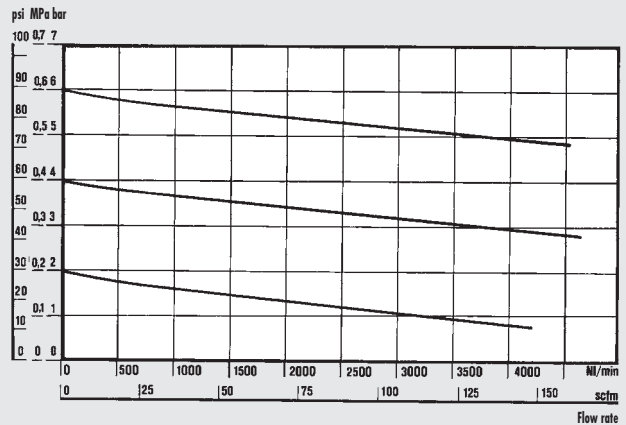
$P_m = 0.7 \text{ MPa} - 7 \text{ bar} - 100 \text{ psi}$
Inlet pressure



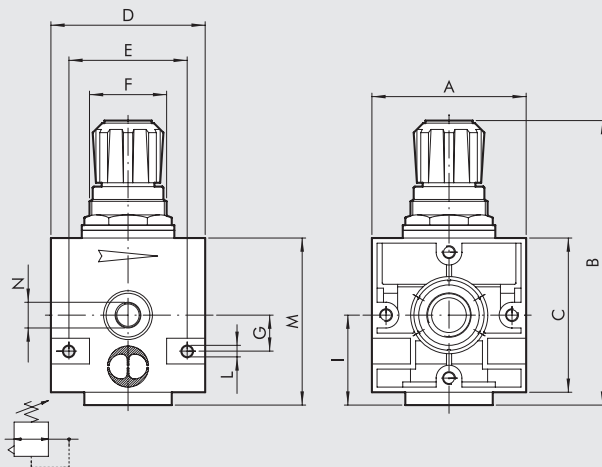
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

REG 3/4 - 1"

$P_m = 0.7 \text{ MPa} - 7 \text{ bar} - 100 \text{ psi}$
Inlet pressure



DIMENSIONS

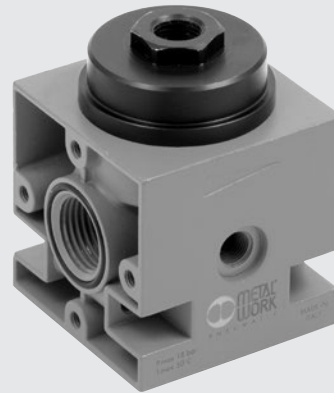


	REG ND 1/4"	REG ND 3/8"	REG ND 1/2"	REG ND 3/4"	REG ND 1"
Threaded port NPT	1/4"	3/8"	1/2"	3/4"	1"
A	1.65	2.36		3.14	
B	3.70	5.11		7.24	
C	1.65	2.36		3.14	
D	1.65	2.36		3.14	
E	1.25	1.81		2.59	
F	M30 x 1.5	M38 x 2		M55 x 2	
G	0.39	0.55		0.86	
I	0.98	1.37		1.85	
L	0.17	0.17		0.29	
M	1.92	2.75		3.70	
N (pressure gauge port)	1/8" NPT	1/8" NPT		1/4" NPT	

New deal PILOT-OPERATED REGULATOR

Remote pilot-assisted piston regulator for heavy-duty use.

- Stability of the set pressure as the upstream pressure varies;
- Can be fixed to the wall using the holes in the sides of the body.

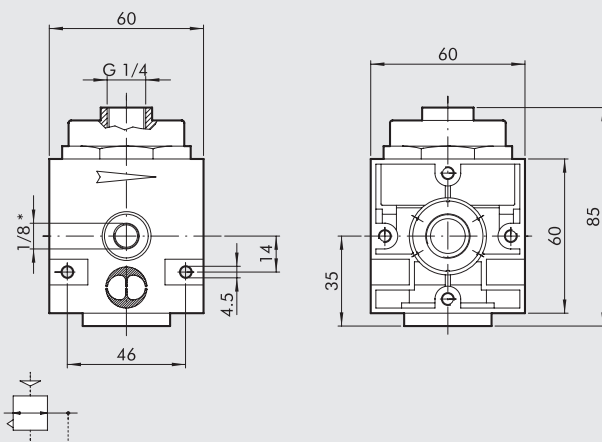


AIR PREP

New deal PILOT-OPERATED REGULATOR

TECHNICAL DATA		REG PIL 3/8"	REG PIL 1/2"
Threaded port	NPT	3/8"	1/2"
Setting range	bar	Depending on pilot	
Max. inlet pressure	MPa	1.8	
	bar	18	
	psi	261	
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	NI/min	3500	
	scfm	124	
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	NI/min	4500	
	scfm	160	
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50	
	°F	122	
Weight	pounds	1.76	
Wall fixing screws		N. 8-32 unc x 2.16	
Gauge port		1/8" NPT	
Mounting position		In any position	
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.	
Note on use		The regulator pressure must always be set upwards. Overpressure relieving from the pilot. Do not take off air from gauge ports.	

DIMENSIONS



*Pressure gauge port

ORDERING CODES

Code	Description
1302004U	RP 3/8 pilot-operated regulator NPT
1402004U	RP 1/2 pilot-operated regulator NPT

Newdeal FILTER REGULATOR

Highly reliable piston-operated filter regulator.

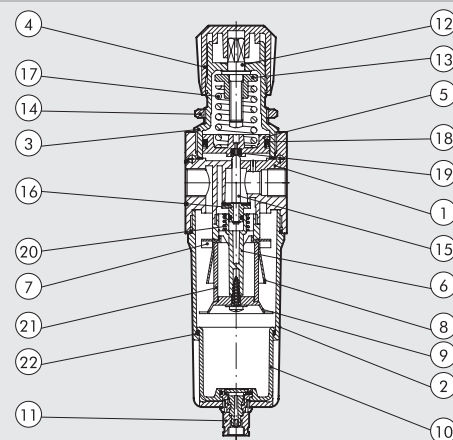
- Stability of the set pressure as the upstream pressure varies
- Standard overpressure blow-off valve
- Can be fixed to the wall using the holes in the sides of the body
- Metal bowl with external viewing
- Manual/semi-auto or automatic condensate drainage



TECHNICAL DATA		FR ND 1/4"	FR ND 3/8"	FR ND 1/2"
Threaded port	NPT	1/4"	3/8"	1/2"
Setting range	bar	0 to 120 - 0 to 180	0 to 120 - 0 to 180	0 to 120 - 0 to 180
Degree of filtration	µm	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50
Max. inlet pressure	MPa	1.8	1.8	1.8
	bar	18	18	18
	psi	261	261	261
	Nl/min	260	1000	1000
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	scfm	9.2	35.5	35.5
	Nl/min	700	2500	2500
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	scfm	25	88.5	88.5
	°C	50	50	50
Max temperature at 1 MPa; 10 bar; 145 psi	°F	122	122	122
	pounds	1.1	2.20	2.20
Weight				
Wall fixing screws		N. 8-32 unc x 1.57	N. 8-32 unc x 2.16	N. 8-32 unc x 2.16
Gauge port		1/8" NPT	1/8" NPT	1/8" NPT
Bowl capacity	fluid ounce oz	0.34	1.52	1.52
Mounting position		Vertical	Vertical	Vertical
Drain		RMSA - SAC	RMSA - SAC - RA	RMSA - SAC - RA
		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure RA: automatic drain with condensate discharge, independent of pressure and flow rate. Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.		
		SAC: automatic drain with condensate discharge.		
		Operates by pressure drop – requires variable air take-offs. Compressed air		
		The regulator pressure must always be set upwards.		
		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.		
		Do not take off air from gauge ports.		

COMPONENTS

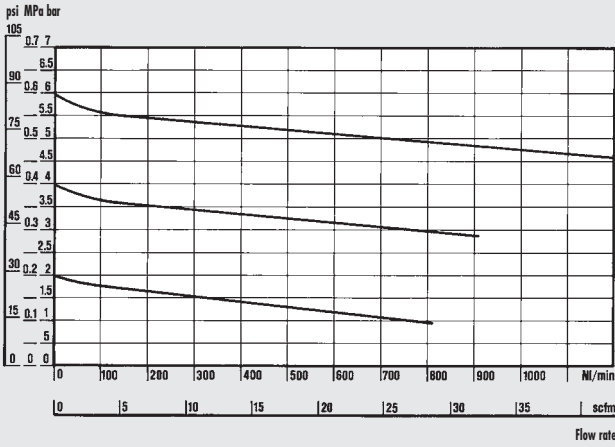
- | | |
|------------------------------|------------------------------------|
| ① Zamak body | ⑯ Valve with NBR vulcanized gasket |
| ② Aluminium bowl | ⑰ Steel adjusting spring |
| ③ Technopolymer bell | ⑱ NBR lip seal |
| ④ Technopolymer knob | ⑲ NBR relieving seal |
| ⑤ Technopolymer piston rod | ⑳ Steel valve compression spring |
| ⑥ Technopolymer plug | ㉑ Sintered HDPE filter cartridge |
| ⑦ Technopolymer centrifuge | ㉒ NBR gaskets |
| ⑧ Technopolymer baffle plug | |
| ⑨ Technopolymer screen | |
| ⑩ Technopolymer bowl | |
| ⑪ Drain (RMSA) | |
| ⑫ OT58 brass adjusting screw | |
| ⑬ OT58 brass nut | |
| ⑭ Technopolymer ring nut | |
| ⑮ OT58 brass rod | |



FLOW CHARTS

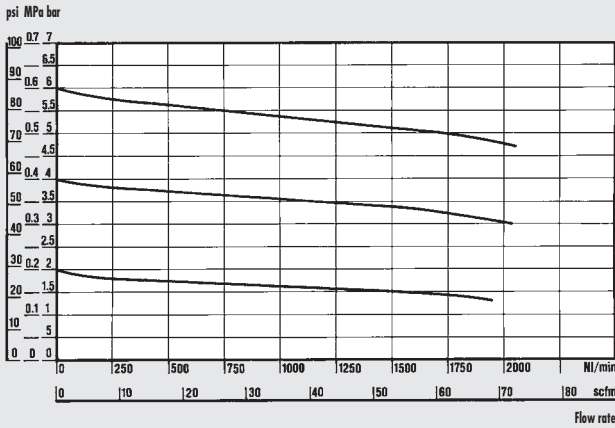
FR 1/4

$P_{in} = 0.7 \text{ MPa} - 7 \text{ bar} - 100 \text{ psi}$
Inlet pressure

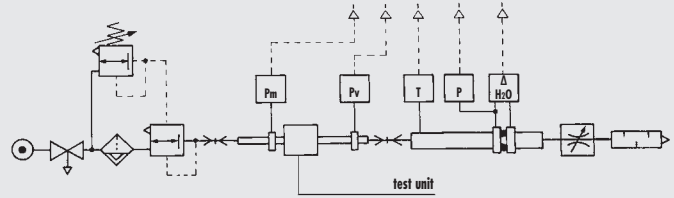


FR 3/8 - 1/2

$P_{in} = 0.7 \text{ MPa} - 7 \text{ bar} - 100 \text{ psi}$
Inlet pressure

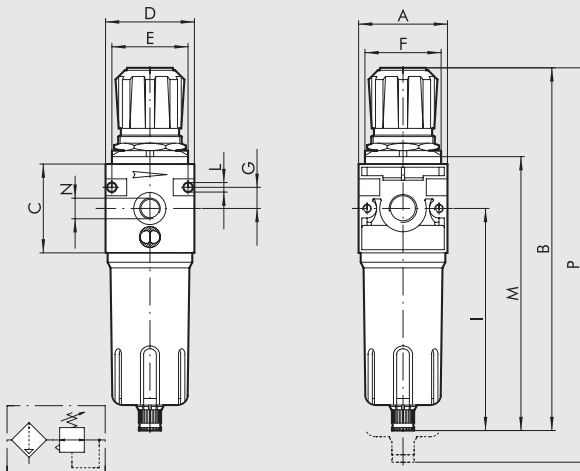


Department of Mechanics
Turin Polytechnic



- Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.

DIMENSIONS



		FR ND 1/4"	FR ND 3/8"	FR ND 1/2"
Threaded port	NPT	1/4"	3/8"	1/2"
A		1.65		2.36
B	RMSA	7.48		9.64
	RA	-		9.8
	SAC	7.64		9.8
C		1.65		2.36
D		1.65		2.39
E		1.41		2.04
F		M30 x 1.5		M38 x 2
G		0.39		0.55
I		4.76		5.90
L		0.17		0.17
M	RMSA	5.70		7.28
	RA	-		7.45
	SAC	5.87		7.45
N (Pressure gauge port)	1/8" NPT			1/8" NPT
P	RMSA	9.17		11.6
	RA	-		11.78
	SAC	9.34		11.78

KEY TO CODES

FR	1/4	4	0-120	RMSA
ELEMENT	THREADED PORT	DEGREE OF FILTRATION	SETTING RANGE	CONDENSATE DRAIN
FR	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT	4 = 4 μm (200 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	0-120 = 0 to 120 psi 0-180 = 0 to 180 psi	RMSA SAC RA*

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate.

Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.

* For ND 3/8 and 1/2 with RA, please contact our sales assistance department

ORDERING CODES

Code	Description
NEW DEAL FILTER REGULATOR 1/4"	
1225029U	FR 1/4 4 0-120 RMSA NPT
1225053U	FR 1/4 4 0-180 RMSA NPT
1225509U	FR 1/4 4 0-120 SAC NPT
1225513U	FR 1/4 4 0-180 SAC NPT
1225030U	FR 1/4 20 0-120 RMSA NPT
1225510U	FR 1/4 20 0-120 SAC NPT
1225054U	FR 1/4 20 0-180 RMSA NPT
1225514U	FR 1/4 20 0-180 SAC NPT
1225032U	FR 1/4 50 0-120 RMSA NPT
1225511U	FR 1/4 50 0-120 SAC NPT
1225056U	FR 1/4 50 0-180 RMSA NPT
1225516U	FR 1/4 50 0-180 SAC NPT
NEW DEAL FILTER REGULATOR 3/8"	
1325029U	FR 3/8 4 0-120 RMSA NPT
1325509U	FR 3/8 4 0-120 SAC NPT
1325053U	FR 3/8 4 0-180 RMSA NPT
1325513U	FR 3/8 4 0-180 SAC NPT
1325030U	FR 3/8 20 0-120 RMSA NPT
1325510U	FR 3/8 20 0-120 SAC NPT
1325054U	FR 3/8 20 0-180 RMSA NPT
1325514U	FR 3/8 20 0-180 SAC NPT
1325032U	FR 3/8 50 0-120 RMSA NPT
1325512U	FR 3/8 50 0-120 SAC NPT
1325056U	FR 3/8 50 0-180 RMSA NPT
1325516U	FR 3/8 50 0-180 SAC NPT
NEW DEAL FILTER REGULATOR 1/2"	
1425029U	FR 1/2 4 0-120 RMSA NPT
1425509U	FR 1/2 4 0-120 SAC NPT
1425053U	FR 1/2 4 0-180 RMSA NPT
1425513U	FR 1/2 4 0-180 SAC NPT
1425030U	FR 1/2 20 0-120 RMSA NPT
1425510U	FR 1/2 20 0-120 SAC NPT
1425054U	FR 1/2 20 0-180 RMSA NPT
1425514U	FR 1/2 20 0-180 SAC NPT
1425032U	FR 1/2 50 0-120 RMSA NPT
1425512U	FR 1/2 50 0-120 SAC NPT
1425056U	FR 1/2 50 0-180 RMSA NPT
1425516U	FR 1/2 50 0-180 SAC NPT

NOTES

New deal LUBRICATOR

Lubricator with high lubrication stability.

- Quantity of lubricant proportioned to air flow
- Micrometric regulation of lubricant flow
- Activates at low flow rates
- All-round oil level viewing



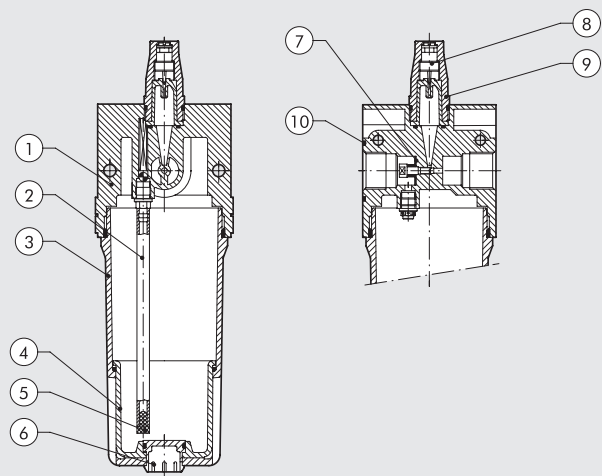
AIR PREP

New deal LUBRICATOR

TECHNICAL DATA		LUB ND 1/4"	LUB ND 3/8"	LUB ND 1/2"	LUB ND 3/4"	LUB ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
Type of lubrication		Mist		Mist		Mist
Bowl capacity	fluid ounce oz	3.05		9.15		23.18
Max. inlet pressure	MPa	1.8		1.8		1.8
	bar	18		18		18
	psi	261		261		261
Flow rate at 6 bar (0.6 MPa to 87 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	Nl/min	700		3000		12800
	scfm	25		107		452
Flow rate at 6 bar (0.6 MPa to 87 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	Nl/min	1100		4300		16000
	scfm	39		153		565
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		50		50
	°F	122		122		122
Weight	pounds	0.8		2.2		2.2
Wall fixing screws		N. 8-32 unc x 1.57		N. 8-32 unc x 2.16		1/4-20 unc x 2.95
Mounting position		Vertical				
Fluid		Filtered compressed air				
Note on use		<ul style="list-style-type: none"> • Use the screw provided to set the drip rate to drop every 300-600 Nl. <ul style="list-style-type: none"> • Fit the lubricator as close as possible to the point of use • Fill the bowl with oil before pressurizing the system • Do not use cleaning oil, brake fluid or solvents in general • Recommended lubricants: ISO and UNI FD22 - E.g. Energol HLP 22 (BP) - Spinesso 22 (Esso) - Mobil DTE 22 (Mobil) - Tellus Oil 22 (Shell) 				

COMPONENTS

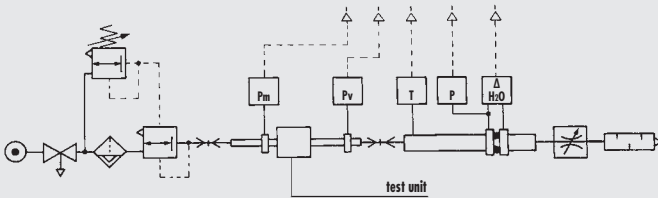
- ① Zamak body
- ② Rilsan® oil suction pipe
- ③ Aluminium bowl
- ④ Clear technopolymer bowl
- ⑤ Filter
- ⑥ Technopolymer plug
- ⑦ Venturi NBR diaphragm
- ⑧ OT 58 brass oil flow regulation needle
- ⑨ Clear technopolymer cover
- ⑩ NBR gaskets



FLOW CHARTS



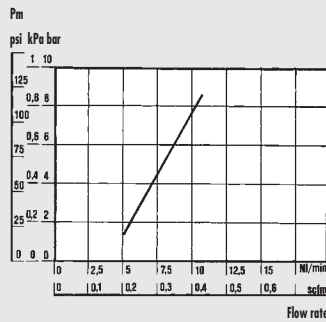
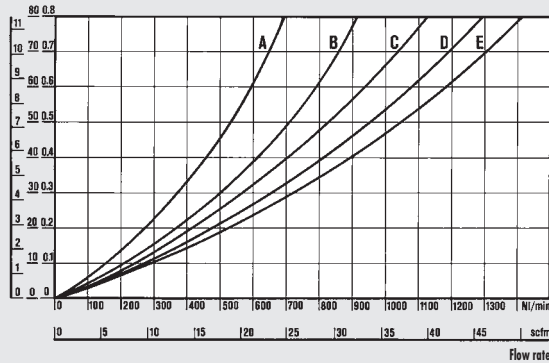
• Flow tests carried out at the Department of Mechanics, Turin Polytechnic, using the computerized test bench following CETOP RP50R recommendations (ISO DIS 6358-2-approved) with ISO 5167 diaphragm gauge.



- (A) = 2 bar - 0.2 MPa - 29 psi
- (B) = 4 bar - 0.4 MPa - 58 psi
- (C) = 6 bar - 0.6 MPa - 87 psi
- (D) = 8 bar - 0.8 MPa - 116 psi
- (E) = 10 bar - 1 MPa - 145 psi

LUB 1/4

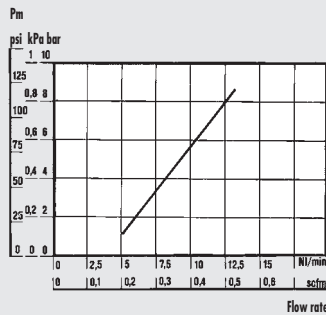
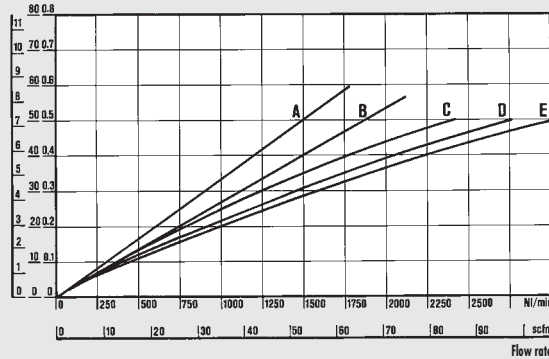
$\Delta P = (P_m - P_v)$
psi kPa bar



MINIMUM ACTIVATION FLOW CHARTS
The minimum activation flow charts were carried out in compliance with ISO/DP 6301/2

LUB 3/8 - 1/2

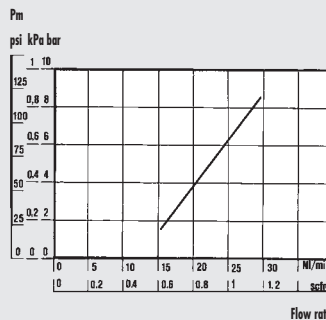
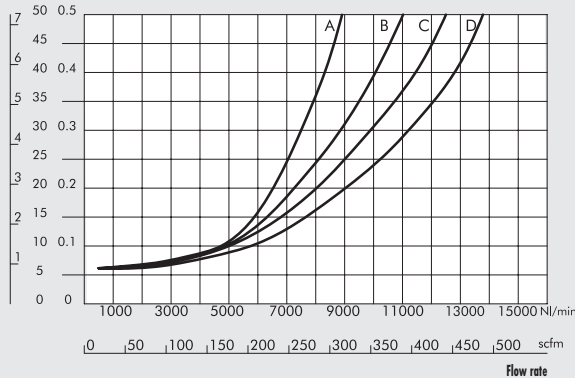
$\Delta P = (P_m - P_v)$
psi kPa bar



MINIMUM ACTIVATION FLOW CHARTS
The minimum activation flow charts were carried out in compliance with ISO/DP 6301/2

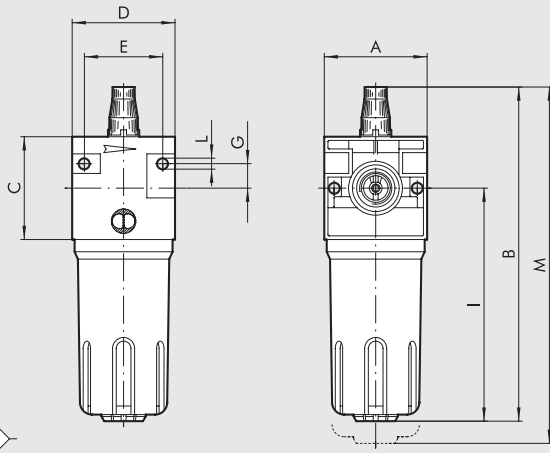
LUB 3/4 - 1"

$\Delta P = (P_m - P_v)$
psi kPa bar



MINIMUM ACTIVATION FLOW CHARTS
The minimum activation flow charts were carried out in compliance with ISO/DP 6301/2

DIMENSIONS



	LUB ND 1/4"	LUB ND 3/8"	LUB ND 1/2"	LUB ND 3/4"	LUB ND 1"
Threaded port NPT	1/4"	3/8"	1/2"	3/4"	1"
A	1.65	2.36		3.14	
B	6.14	7.67		10.23	
C	1.65	2.36		3.14	
D	1.65	2.36		3.14	
E	1.25	1.81		2.59	
G	0.39	0.55		0.86	
I	4.21	5.35		7.16	
L	0.17	0.17		0.29	
M	6.92	8.66		11.41	

ORDERING CODES

Code	Description
1223001U	LUB 1/4 NPT
1323001U	LUB 3/8 NPT
1423001U	LUB 1/2 NPT
1523001U	LUB 3/4 NPT
1623001U	LUB 1 NPT

NOTES

Newdeal SHUT-OFF VALVE

Manually-operated circuit shut-off valve.

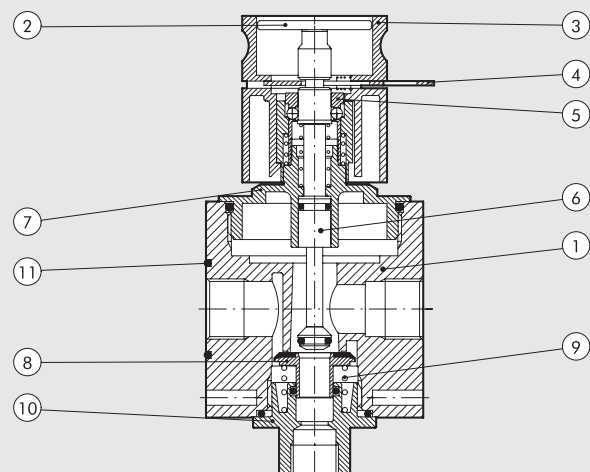
- Poppet seat system to ensure high flow rate
- Quick-actuation knob
- Possible triple locking
- The valve is actuated by pressing the actuation disk until it clicks. Press the knob downwards to relieve pressure. In this position you can extract the shim and fit a lock to avoid accidental operation.



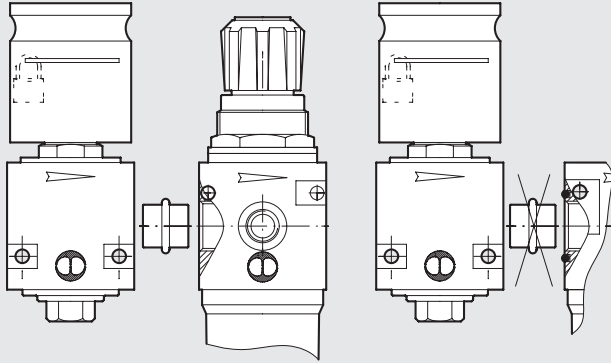
TECHNICAL DATA		V3V ND 1/4"	V3V ND 3/8"	V3V ND 1/2"
Threaded port	NPT	1/4"	3/8"	1/2"
Max. inlet pressure	MPa	1.8		1.8
	bar	18		18
	psi	261		261
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 0.5 bar (0.05 MPa to 7.25 psi)	Nl/min	1100		2200
	scfm	38.8		78
Flow rate at 6.3 bar (0.63 MPa to 91 psi) ΔP 1 bar (0.1 MPa to 14.5 psi)	Nl/min	1500		2900
	scfm	53		103
Flow rate on relieving at 6 bar (0.6 MPa to 87 psi) with direct relieving into the atmosphere	Nl/min	1600		2900
	scfm	56.5		103
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		50
	°F	122		122
Weight	pounds	0.77		1.76
Wall fixing screws		N. 8-32 unc x 1.57		N. 8-32 unc x 2.16
Mounting position		In any position		
Fluid		Filtered, lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.		
Type of control		Manual		

COMPONENTS

- ① Zamak body
- ② Actuation disk
- ③ Technopolymer knob
- ④ Stainless steel safety shim
- ⑤ Clutching unit
- ⑥ OT 58 brass rod
- ⑦ Upper anodized aluminium plug
- ⑧ V3V valve with NBR vulcanized gasket
- ⑨ Stainless steel valve compression spring
- ⑩ Lower anodized aluminium plug
- ⑪ NBR gaskets



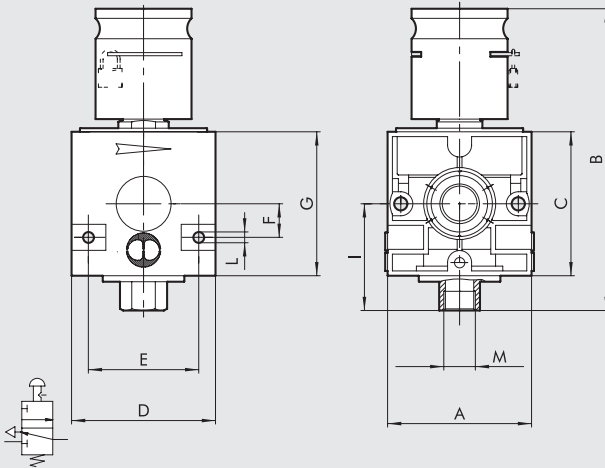
ASSEMBLY DIAGRAM



To assemble the V3V to the regulator filter 1/4", or deurator 3/8-1/2, use the adaptor provided (see the assembly diagram at the left).

- Adaptor V3V + FR 1/4" - code 9201001
- Adaptor V3V + D 3/8" - code 9401001
- Adaptor V3V + D 1/2" - code 9401002

DIMENSIONS



	V3V ND 1/4"	V3V ND 3/8"	V3V ND 1/2"
Threaded port NPT	1/4"	3/8"	1/2"
A	1.65		2.36
B	4.13		4.96
C	1.65		2.36
D	1.65		2.36
E	1.25		1.81
F	0.39		0.55
G	1.65		2.36
I	1.25		1.69
L	0.17		0.17
M	1/8" NPT		1/4" NPT

ORDERING CODES

Code	Description
1270001U	V3V ND 1/4 NPT
1370001U	V3V ND 3/8 NPT
1470001U	V3V ND 1/2 NPT

NOTES

Newdeal AIR TAKE-OFF

The air take-off has the job to take off the air from the Newdeal FRL unit irrespective of the position where it is assembled. It is required whenever you need to take off air from the FRL unit at different stages of the treatment (normal, filtered, filtered regulated, lubricated, etc.)

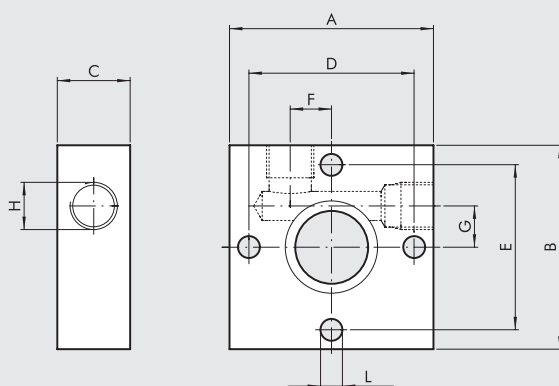


TECHNICAL DATA		PA ND 1/4"	PA ND 3/8"	PA ND 1/2"	PA ND 3/4"	PA ND 1"
Threaded port	NPT	1/8"		1/4"		1/2"
Maximum working temperature at: 1 MPa; 10 bar; 145 psi	°C	50		50		50
	°F	122		122		122
Maximum admissible pressure	MPa	1.8		1.8		1.8
	bar	18		18		18
	psi	261		261		261
Weight	pounds	0.13		0.39		0.90

AIR PREP

New deal AIR TAKE-OFF

DIMENSIONS



	PA ND 1/4"	PA ND 3/8"	PA ND 1/2"	PA ND 3/4"	PA ND 1"
A	1.65		2.36		3.14
B	1.65		2.36		3.14
C	0.59		0.78		1.18
D	1.33		1.92		2.51
E	1.33		1.92		2.51
F	0.33		0.55		0.62
G	0.33		0.55		0.62
H (n° 2 pos.)	1/8" NPT		1/4" NPT		1/2" NPT
L	0.17		0.21		0.29

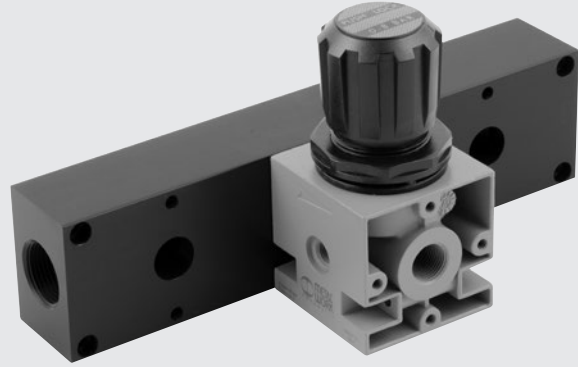
ORDERING CODES

Code	Description
9200401U	PA 1/4 take-off NPT
9400401U	PA 1/2 take-off NPT
9600401U	PA 3/4 take-off NPT

Comes with 2 screws for F/L and R/FR fixing.

Newdeal SUB-BASE

With the New deal sub-base, more than one regulators can be mounted in parallel using a single pressure supply source.

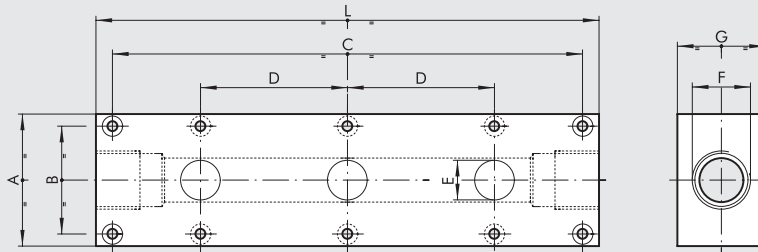


AIR PREP

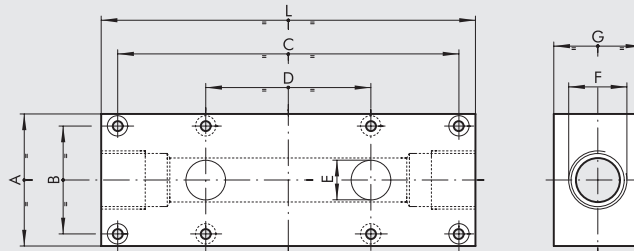
Newdeal SUB-BASE

DIMENSIONS

3 POSITION



2 POSITION



	ND 1/4"		ND 3/8" - 1/2"		ND 3/4" - 1"	
	2 positions	3 positions	2 positions	3 positions	2 positions	3 positions
A	1.96	1.96	2.36	2.36	3.14	3.14
B	1.33	1.33	1.92	1.92	2.51	2.51
C	4.44	6.49	6.10	9.05	7.48	11.02
D	2.04	2.04	2.95	2.95	3.54	3.54
E	1/4" NPT	1/4" NPT	0.70	0.70	1.22	1.22
F	NPT	1/2"	3/4"	3/4"	1 1/4"	1 1/4"
G	1.18	1.18	1.57	1.57	1.96	1.96
L	5.03	7.08	9.64	9.64	8.26	11.81
Weight [pounds]	0.99	1.36	2.07	3.01	3.30	3.74

ORDERING CODES

Code	Description
9200201U	SB 1/4 sub-base 2 pos. NPT
9400201U	SB 1/2 sub-base 2 pos. NPT
9600201U	SB 3/4 sub-base 2 pos. NPT
9200301U	SB 1/4 sub-base 3 pos. NPT
9400301U	SB 1/2 sub-base 3 pos. NPT
9600301U	SB 3/4 sub-base 3 pos. NPT

Newdeal AUTOMATIC CONDENSATE DRAIN



System supply condensate drain:

- All-round condensate level viewing
- Automatic drain from inside the bowl
- Axial coupling



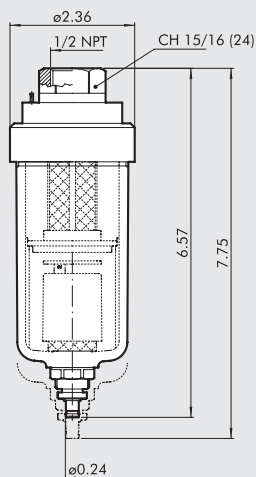
TECHNICAL DATA

Threaded port	NPT
Maximum working temperature at: 1 MPa; 10 bar; 145 psi	°C
	°F
Maximum admissible pressure	MPa
	bar
	psi
Weight	pounds

SCAL ND 1/2"

1/2"
50
122
1
10
145
1.1

DIMENSIONS



ORDERING CODES

Code	Description
4589003U	Autom. cond. drain 1/2 in line NPT

FIL+REG+LUB New deal

Highly reliable heavy-duty piston-operated FRL unit.

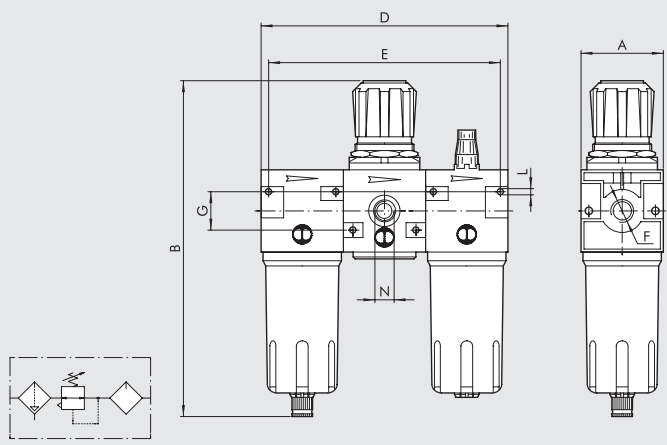
- Stability of the set pressure as the upstream pressure varies
- Metal bowl with external sight glass
- Semi-automatic and automatic condensate drain
- Lubrication proportional to flow rate
- Micrometric lubrication regulation
- Activation guaranteed with low flow rates

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA		FRL ND 1/4"	FRL ND 3/8"	FRL ND 1/2"	FRL ND 3/4"	FRL ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
Setting range	psi	0 to 120 - 0 to 180		0 to 120 - 0 to 180		
Degree of filtration	µm	4 - 20 - 50		4 - 20 - 50		
Max. inlet pressure	MPa	1.8		1.8		
	bar	18		18		
	psi	261		261		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min	140	1300	1900	2000	
	scfm	5	46	68	71	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	400	2000	3600	3700	
	scfm	14.2	71	128	132	
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		50		
	°F	122		122		
Weight	pounds	2.2	5.5	12.76		
Wall fixing screws		N. 8-32 unc x 1.57		N. 8-32 unc x 2.16		
Fluid		Compressed air				
Note on use		<p>The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.</p> <p>Do not take air from pressure gauge ports.</p>				

DIMENSIONS		FRL ND 1/4"	FRL ND 3/8"	FRL ND 1/2"	FRL ND 3/4"	FRL ND 1"
Threaded port F	NPT	1/4"	3/8"	1/2"	3/4"	1"
A		1.65	2.36	3.14		
B	RMSA	7.48	9.64	13.1		
	RA	-	9.8	13.23		
	SAC	7.64	9.8	13.23		
D		4.96	7.08	9.44		
E		4.56	6.53	8.89		
G		0.78	1.10	1.73		
L		0.17	0.17	0.29		
N (pressure gauge port)		1/8" NPT	1/8" NPT	1/4" NPT		



KEY TO CODES

FRL ELEMENT	1/4 THREADED PORT	4 μm DEGREE OF FILTRATION	0-120 SETTING RANGE	RMSA CONDENSATE DRAIN
FRL	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT 3/4 = 3/4 NPT 1 = 1 NPT	4 = 4 μm (160 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	0-120 = 0 to 120 psi 0-180 = 0 to 180 psi	RMSA SAC RMSA SAC RA RMSA RA

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 RA: automatic drain with condensate discharge, independent of pressure and flow rate.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

Code	Description	Code	Description	Code	Description
FRL 1/4"					
1224029U	FRL 1/4 4 0-120 RMSA NPT	1324029U	FRL 3/8 4 0-120 RMSA NPT	1524017U	FRL 3/4 4 0-120 RMSA NPT
1224409U	FRL 1/4 4 0-120 SAC NPT	1324033U	FRL 3/8 4 0-120 RA NPT	1524021U	FRL 3/4 4 0-120 RA NPT
1224030U	FRL 1/4 20 0-120 RMSA NPT	1324409U	FRL 3/8 4 0-120 SAC NPT	1524018U	FRL 3/4 20 0-120 RMSA NPT
1224410U	FRL 1/4 20 0-120 SAC NPT	1324030U	FRL 3/8 20 0-120 RMSA NPT	1524022U	FRL 3/4 20 0-120 RA NPT
1224032U	FRL 1/4 50 0-120 RMSA NPT	1324034U	FRL 3/8 20 0-120 RA NPT	1524020U	FRL 3/4 50 0-120 RMSA NPT
1224412U	FRL 1/4 50 0-120 SAC NPT	1324410U	FRL 3/8 20 0-120 SAC NPT	1524024U	FRL 3/4 50 0-120 RA NPT
1224053U	FRL 1/4 4 0-180 RMSA NPT	1324032U	FRL 3/8 50 0-120 RMSA NPT	1524029U	FRL 3/4 4 0-180 RMSA NPT
1224413U	FRL 1/4 4 0-180 SAC NPT	1324036U	FRL 3/8 50 0-120 RA NPT	1524033U	FRL 3/4 4 0-180 RA NPT
1224054U	FRL 1/4 20 0-180 RMSA NPT	1324412U	FRL 3/8 50 0-120 SAC NPT	1524030U	FRL 3/4 20 0-180 RMSA NPT
1224414U	FRL 1/4 20 0-180 SAC NPT	1324053U	FRL 3/8 4 0-180 RMSA NPT	1524034U	FRL 3/4 20 0-180 RA NPT
1224056U	FRL 1/4 50 0-180 RMSA NPT	1324057U	FRL 3/8 4 0-180 RA NPT	1524032U	FRL 3/4 50 0-180 RMSA NPT
1224416U	FRL 1/4 50 0-180 SAC NPT	1324413U	FRL 3/8 4 0-180 SAC NPT	1524036U	FRL 3/4 50 0-180 RA NPT
FRL 3/8"					
		1324054U	FRL 3/8 20 0-180 RMSA NPT	FRL 1"	
		1324058U	FRL 3/8 20 0-180 RA NPT	1624017U	FRL 1 4 0-120 RMSA NPT
		1324414U	FRL 3/8 20 0-180 SAC NPT	1624021U	FRL 1 4 0-120 RA NPT
		1324056U	FRL 3/8 50 0-180 RMSA NPT	1624018U	FRL 1 20 0-120 RMSA NPT
		1324060U	FRL 3/8 50 0-180 RA NPT	1624022U	FRL 1 20 0-120 RA NPT
		1324416U	FRL 3/8 50 0-180 SAC NPT	1624020U	FRL 1 50 0-120 RMSA NPT
		FRL 1/2"		1624024U	FRL 1 50 0-120 RA NPT
		1424029U	FRL 1/2 4 0-120 RMSA NPT	1624029U	FRL 1 4 0-180 RMSA NPT
		1424033U	FRL 1/2 4 0-120 RA NPT	1624033U	FRL 1 4 0-180 RA NPT
		1424409U	FRL 1/2 4 0-120 SAC NPT	1624030U	FRL 1 20 0-180 RMSA NPT
		1424030U	FRL 1/2 20 0-120 RMSA NPT	1624034U	FRL 1 20 0-180 RA NPT
		1424034U	FRL 1/2 20 0-120 RA NPT	1624032U	FRL 1 50 0-180 RMSA NPT
		1424410U	FRL 1/2 20 0-120 SAC NPT	1624036U	FRL 1 50 0-180 RA NPT
		1424032U	FRL 1/2 50 0-120 RMSA NPT		
		1424036U	FRL 1/2 50 0-120 RA NPT		
		1424412U	FRL 1/2 50 0-120 SAC NPT		
		1424053U	FRL 1/2 4 0-180 RMSA NPT		
		1424057U	FRL 1/2 4 0-180 RA NPT		
		1424413U	FRL 1/2 4 0-180 SAC NPT		
		1424054U	FRL 1/2 20 0-180 RMSA NPT		
		1424058U	FRL 1/2 20 0-180 RA NPT		
		1424414U	FRL 1/2 20 0-180 SAC NPT		
		1424056U	FRL 1/2 50 0-180 RMSA NPT		
		1424060U	FRL 1/2 50 0-180 RA NPT		
		1424416U	FRL 1/2 50 0-180 SAC NPT		

FR+LUB Newdeal

Heavy duty and reliable piston-operated FR+L unit.

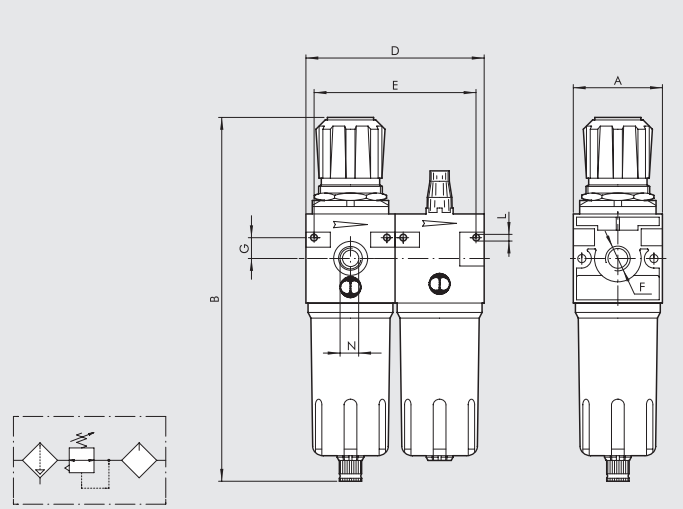
- Stability of the set pressure as the upstream pressure varies
- Metal bowl with external sight glass
- Semi-automatic and automatic condensate drain
- Quantity of lubricant proportioned to air flow
- Micrometric lubrication regulation
- Activation guaranteed with low flow rates

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA		FR+L ND 1/4"	FR+L ND 3/8"	FR+L ND 1/2"
Threaded port	NPT	1/4"	3/8"	1/2"
Setting range	bar	0 to 120 - 0 to 180		
Degree of filtration	µm	4 - 20 - 50		
Max. inlet pressure	MPa	1.8		
	bar	18		
	psi	261		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	NI/min	150	1300	
	scfm	5.3	46	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	NI/min	500	2200	
	scfm	18	78	
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		
	°F	122		
Weight	pounds	2	4.4	
Wall fixing screws		N. 8-32 unc x 1.57		N. 8-32 unc x 2.16
Fluid		Compressed air		
Note on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi. Do not take air from pressure gauge ports.		

DIMENSIONS



		FR+L ND 1/4"	FR+L ND 3/8"	FR+L ND 1/2"
Threaded port F	NPT	1/4"	3/8"	1/2"
A		1.65		2.36
B	RMSA	7.48		9.64
	RA	-		9.8
	SAC	7.64		9.8
D		3.30		4.72
E		2.99		4.29
G		0.39		0.55
L		0.17		0.17
N (pressure gauge port)		1/8" NPT		1/8" NPT

KEY TO CODES

FR+L ELEMENT	1/4 THREADED PORT	4 DEGREE OF FILTERING	0-120 SETTING RANGE	RMSA CONDENSATE DRAIN
FR+L	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT	4 = 4 μm (160 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	0-120 = 0 to 120 psi 0-180 = 0 to 180 psi	RMSA SAC RMSA SAC RA*

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate.

Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.

* For ND 3/8 and 1/2 with RA, please contact our sales assistance department.

ORDERING CODES

Code	Description	Code	Description
FR+L 1/4"		FR+L 3/8"	
1226029U	FR+L 1/4 4 0-120 RMSA NPT	1326029U	FR+L 3/8 4 0-120 RMSA NPT
1226409U	FR+L 1/4 4 0-120 SAC NPT	1326409U	FR+L 3/8 4 0-120 SAC NPT
1226053U	FR+L 1/4 4 0-180 RMSA NPT	1326053U	FR+L 3/8 4 0-180 RMSA NPT
1226413U	FR+L 1/4 4 0-180 SAC NPT	1326413U	FR+L 3/8 4 0-180 SAC NPT
1226030U	FR+L 1/4 20 0-120 RMSA NPT	1326030U	FR+L 3/8 20 0-120 RMSA NPT
1226410U	FR+L 1/4 20 0-120 SAC NPT	1326034U	FR+L 3/8 20 0-120 RA NPT
1226054U	FR+L 1/4 20 0-180 RMSA NPT	1326410U	FR+L 3/8 20 0-120 SAC NPT
1226414U	FR+L 1/4 20 0-180 SAC NPT	1326054U	FR+L 3/8 20 0-180 RMSA NPT
1226032U	FR+L 1/4 50 0-120 RMSA NPT	1326058U	FR+L 3/8 20 0-180 RA NPT
1226412U	FR+L 1/4 50 0-120 SAC NPT	1326414U	FR+L 3/8 20 0-180 SAC NPT
1226056U	FR+L 1/4 50 0-180 RMSA NPT	1326032U	FR+L 3/8 50 0-120 RMSA NPT
1226416U	FR+L 1/4 50 0-180 SAC NPT	1326412U	FR+L 3/8 50 0-120 SAC NPT
		1326056U	FR+L 3/8 50 0-180 RMSA NPT
		1326416U	FR+L 3/8 50 0-180 SAC NPT
		FR+L 1/2"	
		1426029U	FR+L 1/2 4 0-120 RMSA NPT
		1426409U	FR+L 1/2 4 0-120 SAC NPT
		1426053U	FR+L 1/2 4 0-180 RMSA NPT
		1426413U	FR+L 1/2 4 0-180 SAC NPT
		1426030U	FR+L 1/2 20 0-120 RMSA NPT
		1426034U	FR+L 1/2 20 0-120 RA NPT
		1426410U	FR+L 1/2 20 0-120 SAC NPT
		1426054U	FR+L 1/2 20 0-180 RMSA NPT
		1426058U	FR+L 1/2 20 0-180 RA NPT
		1426414U	FR+L 1/2 20 0-180 SAC NPT
		1426032U	FR+L 1/2 50 0-120 RMSA NPT
		1426412U	FR+L 1/2 50 0-120 SAC NPT
		1426056U	FR+L 1/2 50 0-180 RMSA NPT
		1426416U	FR+L 1/2 50 0-180 SAC NPT

V3V+FR+LUB New deal

Highly reliable heavy-duty piston-operated FRFL unit.

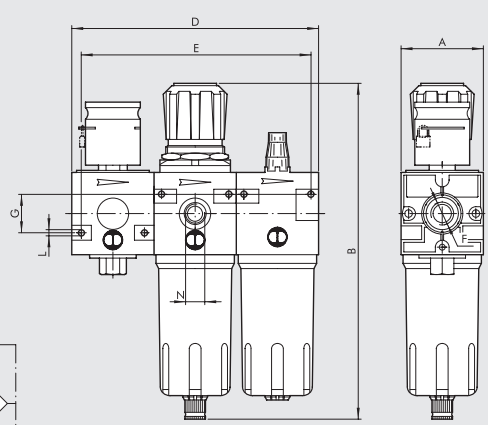
- Stability of the set pressure as the upstream pressure varies
- Metal bowl with external sight glass
- Semi-automatic and automatic condensate drain
- Quantity of lubricant proportionate to the air flow
- Micrometric lubrication regulation
- Activation guaranteed at low air flows
- Quick filling and drainage of the downstream circuit with the V3V element

Refer to the sections on the single modules for a further description, components and other technical data.



TECHNICAL DATA		VFR+L ND 1/4"	VFR+L ND 3/8"	VFR+L ND 1/2"
Threaded port	NPT	1/4"	3/8"	1/2"
Setting range	bar	0 to 120 - 0 to 180		
Degree of filtration	µm	4 - 20 - 50		
Max. inlet pressure	MPa	1.8		
	bar	18		
	psi	261		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	NI/min	140		
	scfm	5		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	NI/min	480		
	scfm	17		
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50		
	°F	122		
Weight	pounds	2.42		
Wall fixing screws		N. 8-32 unc x 1.57		N. 8-32 unc x 2.16
Fluid		Compressed air		
Note on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi. Do not take air from pressure gauge ports.		

DIMENSIONS		VFR+L ND 1/4"	VFR+L ND 3/8"	VFR+L ND 1/2"
Threaded port F	NPT	1/4"	3/8"	1/2"
A		1.65		2.36
B	RMSA	7.48		9.64
	RA	-		9.8
	SAC	7.64		9.8
D		4.96		7.08
E		4.56		6.53
G		0.78		1.10
L		0.17		0.17
N (pressure gauge port)	1/8" NPT			1/8" NPT



KEY TO CODES

VFR+L ELEMENT	1/4 THREADED PORT	20 DEGREE OF FILTERING	0-120 SETTING RANGE	RMSA CONDENSATE DRAIN
VFR+L	1/4 = 1/4 NPT 3/8 = 3/8 NPT 1/2 = 1/2 NPT	4 = 4 μm (160 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	0-120 = 0 to 120 psi 0-180 = 0 to 180 psi	RMSA SAC RMSA SAC RA

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 RA: automatic drain with condensate discharge, independent of pressure and flow rate.
 Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

Code	Description
1272030U	VFR+L 1/4 20 RMSA 0-120 NPT
1272054U	VFR+L 1/4 20 RMSA 0-180 NPT
1372030U	VFR+L 3/8 20 RMSA 0-120 NPT
1372054U	VFR+L 3/8 20 RMSA 0-180 NPT
1472030U	VFR+L 1/2 20 RMSA 0-120 NPT
1472054U	VFR+L 1/2 20 RMSA 0-180 NPT
1472032U	VFR+L 1/2 50 RMSA 0-120 NPT
1472056U	VFR+L 1/2 50 RMSA 0-180 NPT

The following versions are available on request:
 - with 4 μm or 50 μm degree of filtration
 - with SAC or RA condensate discharge

FIL+DEP Newdeal

Filter + depurator unit for fine filtering followed by purification by coalescence

- Metal bowl with external sight glass
- Semi-automatic condensate drain

Refer to the sections on the single modules for a further description, components and other technical data.

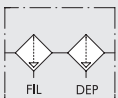
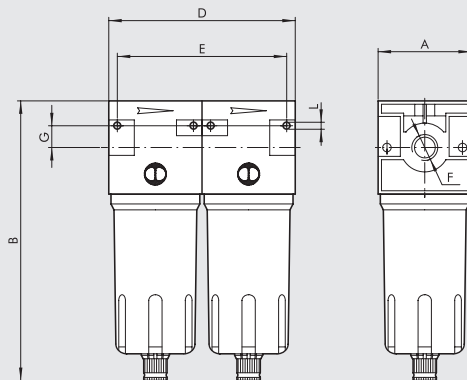


AIR PREP

FIL+DEP New deal

TECHNICAL DATA		F+D ND 3/8"	F+D ND -1/2"
Threaded port	NPT	3/8"	1/2"
Degree of filtration	μm	4	
Degree of depuration	μm	99.97% 0.01	
Max. inlet pressure	MPa	1.8	
	bar	18	
	psi	261	
Maximum suggested flow rate		Please look at the flow rate curves at page 2-147	
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50	
	°F	122	
Weight	pounds	3.96	
Wall fixing screws		N. 8-32 unc x 2.16	
Fluid		Compressed air	
Note on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.	

DIMENSIONS		F+D ND 3/8"	F+D ND -1/2"
Threaded port F	NPT	3/8"	1/2"
A			2.36
B	RMSA		7.08
	RA		7.25
D			4.72
E			4.17
G			0.55
L			0.17



KEY TO CODES

F+D ELEMENT	3/8 THREADED PORT	4 DEGREE OF FILTERING	RMSA CONDENSATE DRAIN	RMSA CONDENSATE DRAIN
F+D	3/8 = 3/8 NPT 1/2 = 1/2 NPT	4 = 4 μm (160 microinch)	RMSA SAC RA	RMSA RA

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate.

Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge.

Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

Code	Description
1327004U	F+D 3/8 4 RMSA-RMSA NPT
1327007U	F+D 3/8 4 RA-RA NPT
1327104U	F+D 3/8 4 SAC-RMSA NPT
1427004U	F+D 1/2 4 RMSA-RMSA NPT
1427007U	F+D 1/2 4 RA-RA NPT
1427104U	F+D 1/2 4 SAC-RMSA NPT

FIL+LUB Newdeal

Filter + lubricator unit offering various degrees of filtration and high lubrication stability.

- Metal bowl with external sight glass
- Semi-automatic and automatic condensate drain
- Micrometric lubrication regulation
- Activation guaranteed at low air flows

Refer to the sections on the single modules for a further description, components and other technical data.

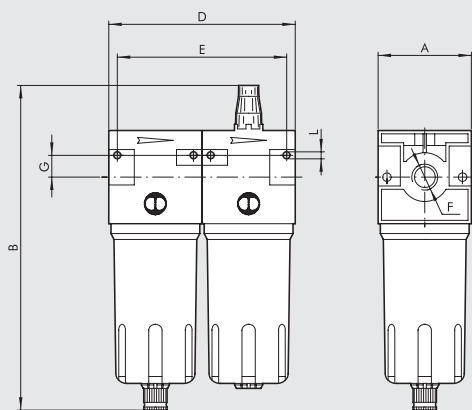


AIR PREP

FIL+LUB New deal

TECHNICAL DATA		F+L ND 1/4"	F+L ND 3/8"	F+L ND 1/2"	F+L ND 3/4"	F+L ND 1"
Threaded port	NPT	1/4"	3/8"	1/2"	3/4"	1"
Lubrication		mist	mist	mist	mist	mist
Degree of filtration	µm	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50	4 - 20 - 50
Max. inlet pressure	MPa	1.8	1.8	1.8	1.8	1.8
	bar	18	18	18	18	18
	psi	261	261	261	261	261
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min	600	2500	8000		
	scfm	21	89	282		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	1000	3500	9500		
	scfm	35.5	124	335		
Max temperature at 1 MPa; 10 bar; 145 psi	°C	50	50	50	50	50
	°F	122	122	122	122	122
Weight	pounds	1.76	3.96	8.14		
Wall fixing screws		N. 8-32 unc x 1.57	N. 8-32 unc x 2.16	1/4-20 unc x 2.95		
Fluid		Compressed air				
Note on use		The maximum inlet pressure for the version with RA automatic condensate drainage must not exceed 145 psi.				

DIMENSIONS



		F+L ND 1/4"	F+L ND 3/8"	F+L ND 1/2"	F+L ND 3/4"	F+L ND 1"
Threaded port	F NPT	1/4"	3/8"	1/2"	3/4"	1"
A		1.65	2.36	3.14		
B	RMSA	6.69	8.22	10.7		
	RA	-	8.39	11		
	SAC	6.85	8.39	11		
D		3.30	4.72	6.29		
E		2.91	4.17	5.74		
G		0.39	0.55	0.86		
L		0.17	0.17	0.29		

KEY TO CODES

F+L ELEMENT	1/4 THREADED PORT	4 DEGREE OF FILTERING	RMSA CONDENSATE DRAIN
F+L	1/4 = 1/4 NPT	4 = 4 μm (160 microinch) 20 = 20 μm (790 microinch) 50 = 50 μm (2000 microinch)	RMSA SAC RMSA SAC RA RMSA RA
	3/8 = 3/8 NPT 1/2 = 1/2 NPT		
	3/4 = 3/4 NPT 1 = 1 NPT		

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate.
Version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

ORDERING CODES

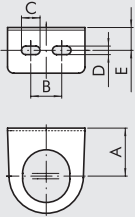
Code	Description
1233006U	F+L 1/4 20 RMSA NPT
1333006U	F+L 3/8 20 RMSA NPT
1433006U	F+L 1/2 20 RMSA NPT
1533006U	F+L 3/4 20 RMSA NPT
1633006U	F+L 1 20 RMSA NPT

The following versions are available on request:

- with 4 μm or 50 μm degree of filtration
- with SAC or RA condensate discharge

New deal ACCESSORIES

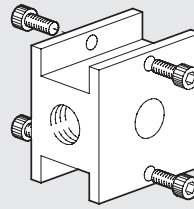
MOUNTING BRACKET FOR REG.



Code	Description
9200701	SF 1/4
9400701	SF 1/2

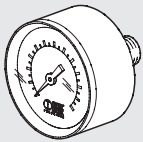
Code	A	B	C	D	E
9200701	1.26	0.79	0.47	0.22	0.56
9400701	1.66	1.59	0.47	0.22	0.59

REGULATOR CONNECTION BLOCK

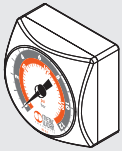


Code	Description	Weight [g]
9200501U	BC 1/4 block	90
9400501U	BC 1/2 block	244
9600501U	BC 3/4 block	428

PRESSURE GAUGE

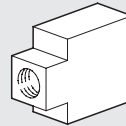


Code	Description
9700102	M 40 1/8 04 (0-60)
9700101	M 40 1/8 012 (0-180)
9800102	M 50 1/8 04 (0-60)
9800101	M 50 1/8 012 (0-180)
9900101	M 63 1/4 012 (0-180)



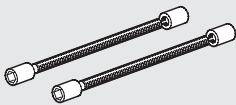
9700109	M 40x40 1/8 04 (0-60)
9700110	M 40x40 1/8 012 (0-180)

SPACERS FOR FRL WALL MOUNTING



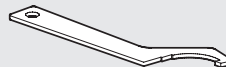
Code	Description
9200601	DF 1/4 spacer
9400601	DF 1/2 spacer
9600601	DF 3/4 spacer

TIE RODS



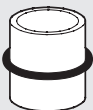
Code	Description
9200901	T 1/4 F+L tie rods
9400901	T 1/2 F+L tie rods
9600901	T 3/4 F+L tie rods

DISASSEMBLY TOOL FOR BOWL



Code	Description
9601501	Disassembly key

ADAPTER FOR V3V



Code	Description
9201001	Adapt. X V3V+FR/D 1/4
9401001	Adapt. X V3V+D 3/8
9401002	Adapt. X V3V+D 1/2
9601001	Adapt. X V3V+F 1

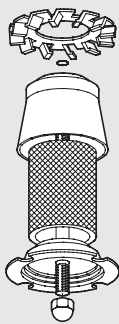
ASSEMBLY SCREWS (2 PIECES)



Code	Description
9250001	CVA 1/4 screw M4x40
9250002	CVA 1/4 screw M4x82 V3V+F+R
9450001	CVA 1/2 screw M5x55
9450002	CVA 3/8 1/2 screw M5x60 V3V+R
9450003	CVA 3/8 1/2 screw M5x120 V3V+F+R
9650001	CVA 3/4 screw M6x70

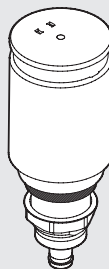
New deal SPARE PARTS

FILTER AND FILTER REGULATOR FILTERING ELEMENT



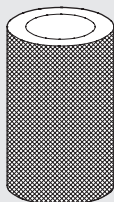
Code	Description
9450102	Spares FP 1/2 20
9450103	Spares FP 1/2 4
9450101	Spares FP 1/2 50
9250102	Spares FP 1/4 20
9250103	Spares FP 1/4 4
9250101	Spares FP 1/4 50
9650103	Spares FP 3/4 4
9650102	Spares FP 3/4 20
9650101	Spares FP 3/4 50

AUTOMATIC DRAIN (RA)



Code	Description
9000802	Spares automatic drain (RA)

FILTERING ELEMENT FOR DEPURATOR



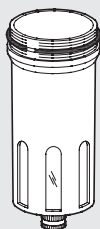
Code	Description
9450105	Spares kit FP DEP. 3/8 1/2

AUTOMATIC DRAIN (SAC)



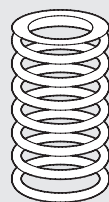
Code	Description
9000803	Spares automatic drain (SAC)

METAL FILTER BOWL



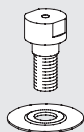
Code	Description
9450301	Spares TMVF 1/2 RMSA
9455201	Spares TMVF 1/2 SAC
9250301	Spares TMVF 1/4 RMSA
9255201	Spares TMVF 1/4 SAC
9650301	Spares TMVF 3/4 1 RMSA

SPRINGS FOR REGULATORS AND FILTER REGULATOR



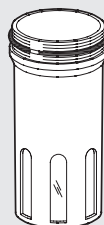
Code	Description
9250601	Spares MO 02 1/4 (0-30)
9250602	Spares MO 04 1/4 (0-60)
9250603	Spares MO 08 1/4 (0-120)
9250604	Spares MO 012 1/4 (0-180)
9450601	Spares MO 04 1/2 (0-60)
9450602	Spares MO 08 1/2 (0-120)
9450603	Spares MO 012 1/2 (0-180)
9650601	Spares MO 04 3/4 (0-60)
9650602	Spares MO 08 3/4 (0-120)
9650603	Spares MO 012 3/4 (0-180)

VENTURI LUBRICATOR DIAPHRAGM



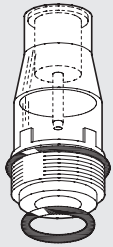
Code	Description
9252001	Spares MB 100 1/4
9352001	Spares MB 200 1/4 3/8 1/2
9652002	Spares MB 3/4-1

METAL LUBRICATOR BOWL



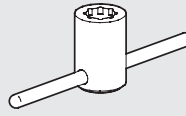
Code	Description
9251201	Spares TMVL 1/4
9451201	Spares TMVL 1/2
9651201	Spares TMVL 3/4

TRANSPARENT LUBRICATOR COVER



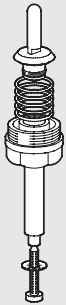
Code	Description
9251302	Spares CVL 100-200-300-400 BIT

DOME DISASSEMBLY SPANNER



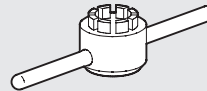
Code	Description
9220701	Cover LUB spanner

COMPLETE POPPET FOR FILTER REGULATOR



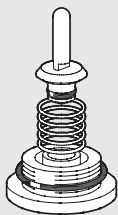
Code	Description
9250901	Spares OTR 1/4
9450901	Spares OTR 1/2

POPPET DISASSEMBLY SPANNER (FOR REG)



Code	Description
9220501	R cap disass. wr. 100

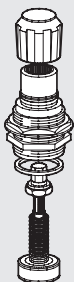
COMPLETE POPPER FOR REGULATOR



Code	Description
9250701	Spares OTR 1/4
9450701	Spares OTR 1/2
9650701	Spares OTR 3/4

NOTES

UPPER COVER FOR REGULATOR AND FILTER REGULATOR



Code	Description
9250801U	Spares CS 1/4 02 (0-30)
9250802U	Spares CS 1/4 04 (0-60)
9250803U	Spares CS 1/4 08 (0-120)
9250804U	Spares CS 1/4 012 (0-180)
9450801U	Spares CS 1/2 04 (0-60)
9450802U	Spares CS 1/2 08 (0-120)
9450803U	Spares CS 1/2 012 (0-180)
9650801U	Spares CS 3/4 04 (0-60)
9650802U	Spares CS 3/4 08 (0-120)
9650803U	Spares CS 3/4 012 (0-180)

● **LEARNING ABOUT ONE**

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● **SPECIFICATIONS**

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● **HOW TO ORDER ONE**

PAGE 2-186

● **ACCESSORIES**

PAGE 2-188

● **SPARE PARTS**

PAGE 2-189

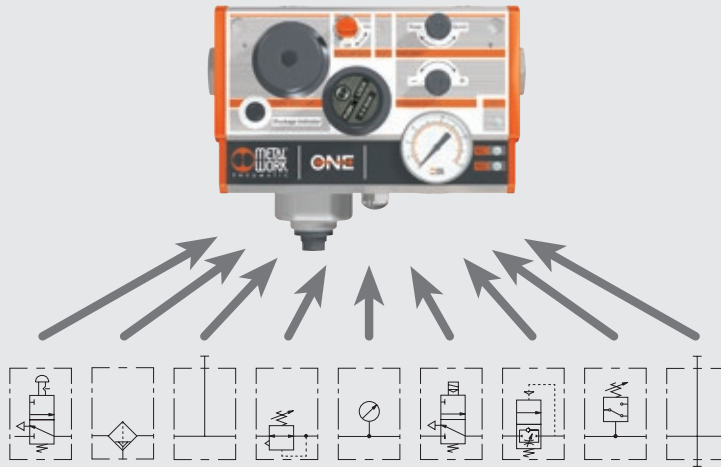
LEARNING ABOUT

In the world of pneumatics, which is considered mature, it is rare to encounter completely new and different products. ONE is a compressed air treatment unit with a high degree of integration, that encompasses numerous pneumatic functions. In fact, it contains so many innovations that a single patent is not enough to safeguard it against imitation – three separate patent applications have been registered with a total of 39 claims. This unit is so innovative that it won the international novelty award at Fluidtrans Compomac. ONE has a single high-performance valve on the main flow that handles all the functions from regulation to relief. It is controlled by a high-precision pilot regulator with controlled relief, in series with the manual on-off valve, the electric valve and the progressive actuator. Unification of the valve has led to a significant reduction in overall dimensions, enhanced capacity, precision and response speed.



INTEGRATION

One single unit houses the threaded ports, filter, condensate drain, pressure regulator, shut-off valve, soft start valve, pressure switch and three supplementary air intakes.



MINIATURISATION



Extremely reduced dimensions, considering the extra-high performance and flow rate reachable.



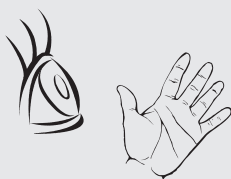
No clearance is required above and below it to make adjustments or change the filter or other components. The actual space occupied is thus further reduced.



It weighs slightly more than one kilo instead of the 8.8 to 17.6 pounds of conventional units.

EASY ADJUSTMENTS AND LITTLE MAINTENANCE

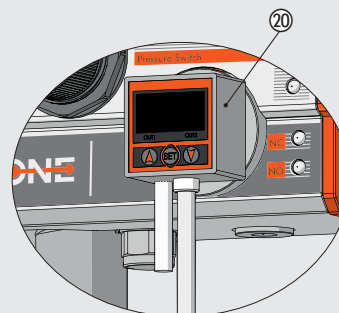
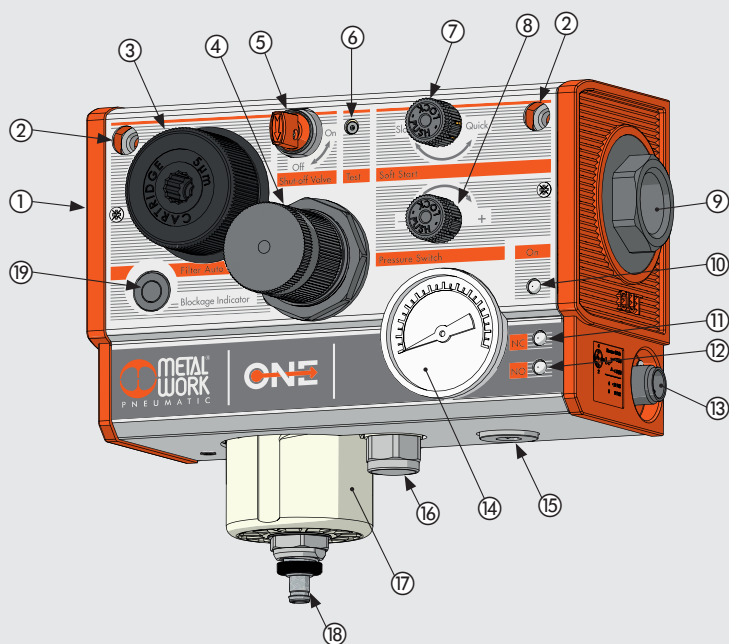
The entire user interface is at the front, which means that everything is visible and easy to reach. All the adjustments are made using the push-lock knobs (no need for wrenches or screwdrivers), thus preventing accidental operations or manoeuvres.



CONFIGURABILITY

Considering that ONE is reduced in size but highly performing, and it can integrate tenths of functions, a single unit can cover the entire range of applications, with cut-clear advantages in terms of standardisation and reduction of the number of codes handled and goods in stock. With a single size there are thousands of different configurations. For example, there is choice between 1/4", 3/8", 1/2", 3/4" or 1" threaded ports, manual and/or electric on-off or progressive valves, etc. The customer decides the configuration he wants and creates the code, using the key-to-coding table shown below in this catalogue. He will receive the unit he wants marked with its code and the correct pneumatic diagram.

WHAT YOU CAN SEE FROM THE OUTSIDE

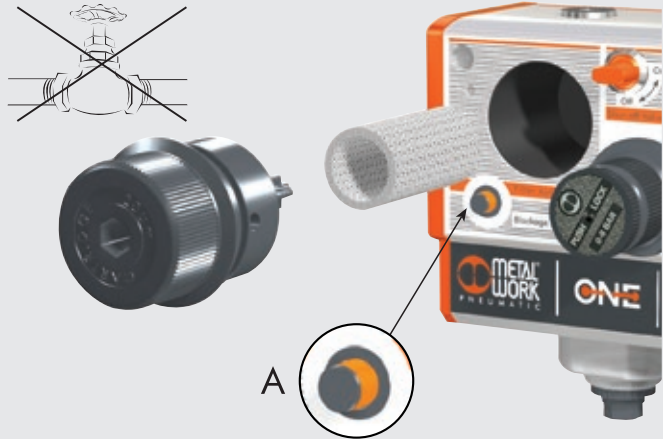


- | | |
|---|--|
| <ul style="list-style-type: none"> ① Air intake, with swivel threaded port ② Fixing hole ③ Access to filter cartridge ④ Pressure regulation ⑤ Shut-off valve (manual) ⑥ Manual override (shut-off valve electrical) ⑦ Soft start valve regulation ⑧ Switching pressure regulation of the analog pressure switch ⑨ Air outlet, with swivel threaded port ⑩ LED signalling unit ON ⑪ LED signalling pressure below the value set on analog pressure switch | <ul style="list-style-type: none"> ⑫ LED signalling pressure over the value set on analog pressure switch ⑬ 5-pin M12x1 electrical connector ⑭ Pressure gauge ⑮ 1/4" air intake. Another regulated air intake and a filtered non-regulated air intake are situated on the top ⑯ Air exhaust with a 1/4" silencer ⑰ Condensate tank ⑱ Condensate drain ⑲ Clogged filter signal ⑳ Digital pressure switch |
|---|--|

THREADED PORTS

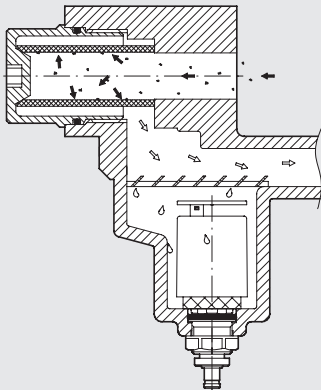


- The threaded ports at the air intake and outlet are the swivel type to facilitate coupling with the supply and delivery pipes. In this way, the unit can be mounted or removed without dismantling the pipes.
- A range of 5 different threads, 1/4", 3/8", 1/2", 3/4" and 1" is also available.
- The thread for the supply pipe may differ from that of the delivery one.



- If the filter gets so clogged up that it causes an excessive drop in pressure as the air passes through, the optical filter blockage indicator will project (see detail A) to indicate that the filter cartridge must be replaced.
- The cartridge can be replaced by unscrewing a plug at the front. This system is functional and, unlike conventional filters, does not require manoeuvring space below the unit.
- An automatic stop on-off valve is incorporated in the unit: when the filter plug is unscrewed, the valve closes automatically. This means there is not need to a tap upstream and there is no risk of the plug being ejected violently.

CONDENSATE DRAIN



- The condensate drain is located downstream of the filter and thus uses cleaner air. This prevents the known problem of air leaks due to the deposit of dirt on the condensate discharge valve.
- You can request ONE with two types of condensate drain:
 - semi-automatic, type RMSA
 - automatic, of the floating type RA

SINGLE AIR EXHAUST



The air in the circuit is relieved via one outlet situated below the unit and fitted with silencer. If you want to convey air relief to prevent the emission of polluted air into the atmosphere, you can replace the silencer and install a fitting. (a pipe with a diameter of at least 6 mm is recommended)
 Next to the air outlet there is the condensate drain, which in the RA version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SUPPLEMENTARY PORTS



In addition to the main outlet, there are three supplementary air ports with a BSPP 1/4" thread.

- one for filtered non-regulated air (A) for use, for example, with a compressed air gun.
- two for filtered regulated air (B).

The unit comes complete with supplementary plugged ports for use with A7 fittings.

PANEL MOUNTING



ONE can be mounted inside the guard of the machine leaving only the front visible. This is a considerable advantage in terms of functionality and aesthetics as the user interface is entirely at the front. Among the accessories to be ordered separately, there is the kit of brackets for panel mounting.

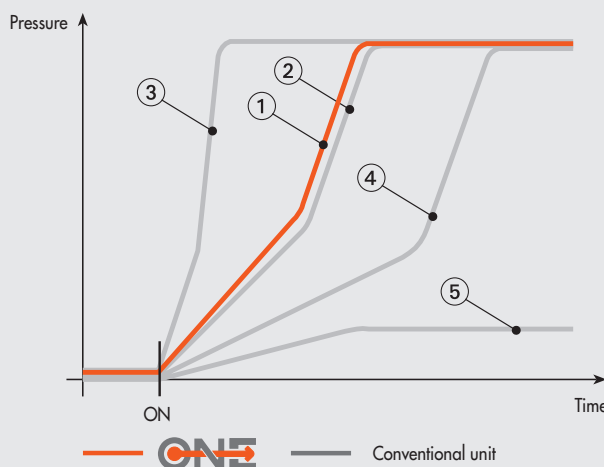
ELECTRICAL CONNECTION



A standard five-pin M12x1 connector, with IP65 protection is used for the opening solenoid valve and the pressure switch.

One cable only is required, thus improving reliability and reducing wiring times.

SOFT START VALVE



- ① Regulation for: **ONE** does not change with flow rate!
- ② Initial regulation of conventional unit
- ③ Low flow rate: activation too abrupt
- ④ High flow rate: activation too slow
- ⑤ Even higher flow rate: never cuts in!

The soft start valve is an absolutely innovative feature among the functions provided by ONE.

Soft start valve available from the trade are generally based on the principle of leaving the passage of a small amount of air until the downstream pressure reaches a set value, and then opening the passage fully. In this way, the rate at which the pressure increases depends on the flow rate of the utilities, which often feature a continuous flow rate, for example a blow, and thus the starter can hardly activate. The solution offered by One is such that the pressure increases gradually and it is independent of the flow rate of the utilities. Pressure increase can be regulated precisely via the knob at the front.

Another piece of news, among the several possible configurations you can have the soft start valve operated by the manual V3V

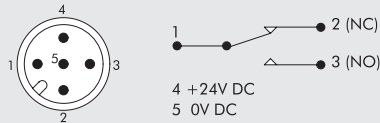
SPECIFICATIONS

TECHNICAL DATA		1/4"	3/8"	1/2"	3/4"	1"
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7 psi)	Nl/min	2200	2900		3600	
	scfm	78	102		127	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	Nl/min	2400	3300		4000	
	scfm	85	116		141	
Flow rate on discharge at 6 bar (0.6 MPa; 87 psi)	Nl/min			1600		
	scfm			56		
1/4" port flow rate of non-regulated filtered air at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar	Nl/min			1800		
	scfm			64		
Flow rate of each supplementary 1/4" filtered and regulated air port at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar *	Nl/min			2400		
	scfm			85		
Fluid		Compressed air				
Setting range	bar	0.5 to 2; 0.5 to 4; 0.5 to 8				
Degree of filtration	μm	5 (yellow) or 20 (white)				
Operating pressure range	bar	10				
	MPa	1				
	psi	145				
Operating temperature range	$^{\circ}C$	-10 to 50				
	$^{\circ}F$	-14 to 122				
Class of protection		IP 65 with connector				
Weight	kg	From 1.15 to 1.25 according to configurations				
Wall fixing (max. panel thickness 10 mm)		Front, with M5x75 screws or back, with M6x70 screws The screws are included in the supply				
Mounting position		Vertical				
Direction of flow		From left to right				
Compatibility with oils		Please refer to page 5-4 of the technical documentation				
Solenoid valve						
Insulation class		F155				
Switching time		100% ED				
Electrical connector		M12x1, 5-PIN 90°, according to CEI IEC 60947-5-2				
Power	W	3/0.3				
Voltage	V	24 VDC \pm 10%				
Analog pressure switch						
Pressure interval settable on the pressure switch	bar	0.5 to 10				
Pressure switch hysteresis (not adjustable)	bar	bar 0.4 to 0.8 (see diagram)				
Maximum pressure switch current	A	0.5				
Maximum pressure switch voltage	V	3 to 30 AC/DC				
Pressure switch contacts		Normally open (NO) and normally closed (NC)				
Number of switching		5x10 ⁶				
Digital pressure switch series 600						
		See page 2-203				

* Total flow rate from two supplementary outlets and the main one cannot exceed 4000 Nl/min at 6.3 bar with $\Delta P=1$

WIRING DIAGRAM M12 CONNECTOR

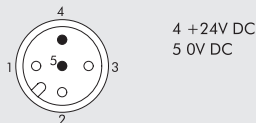
Version with solenoid valve and analog pressure switch



Version with analog pressure switch

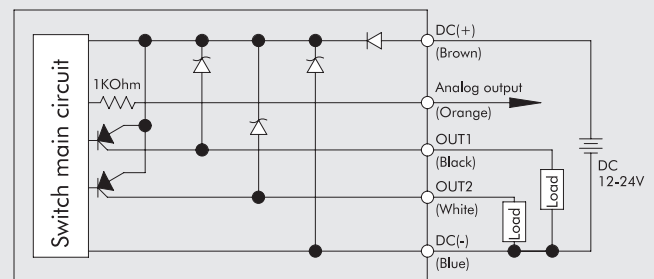


Version with solenoid valve

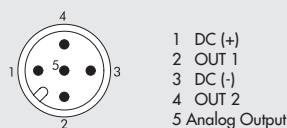


DIGITAL PRESSURE SWITCH WIRING DIAGRAM

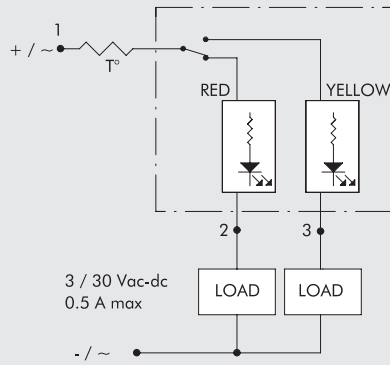
PNP output with cable 2 m



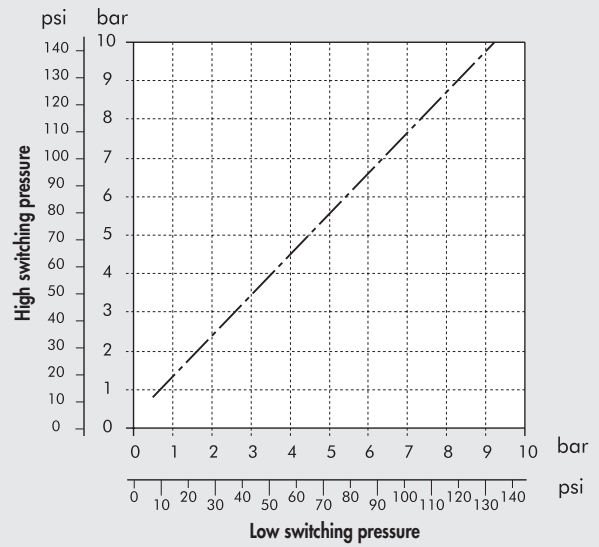
PNP output with M12 connector



ANALOG PRESSURE SWITCH WIRING DIAGRAM



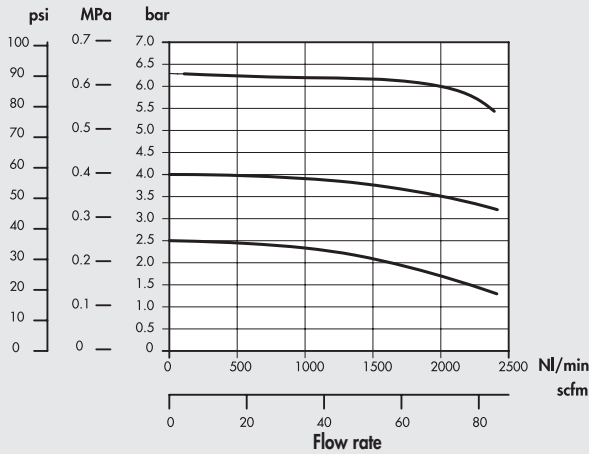
ANALOG PRESSURE SWITCH HYSTERESIS GRAPH



FLOW CHARTS

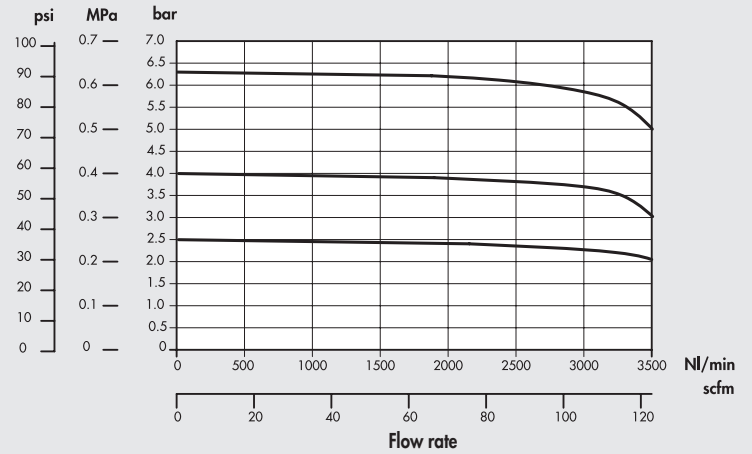
1/4"

Pm = 8 bar - 0.8 MPa - 116 psi
Preset pressure



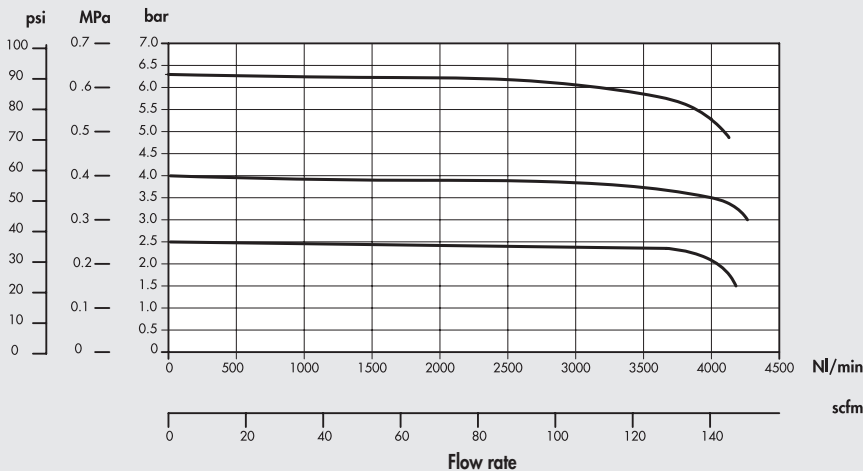
3/8"

Pm = 8 bar - 0.8 MPa - 116 psi
Preset pressure



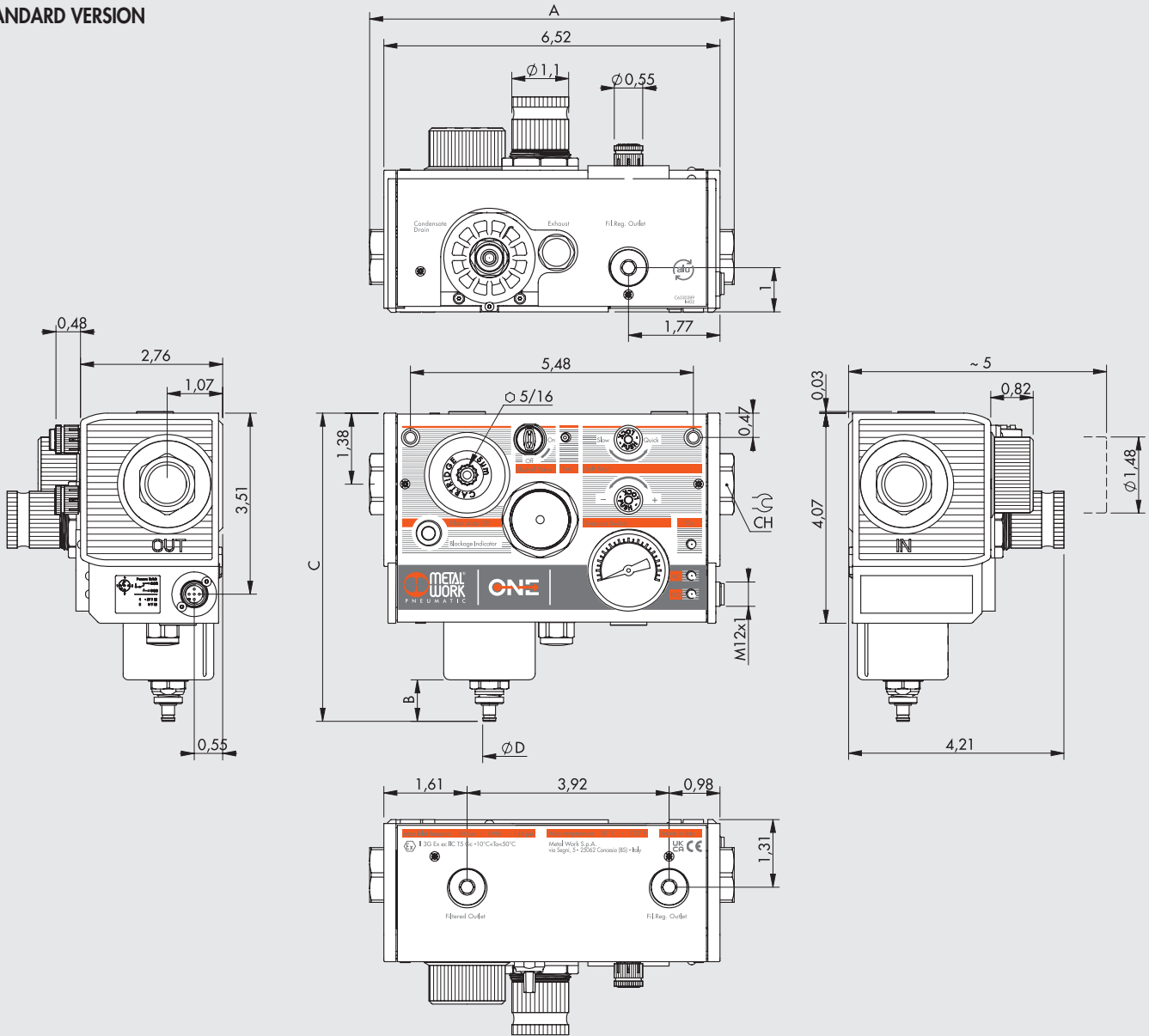
1/2" - 3/4" - 1"

Pm = 8 bar - 0.8 MPa - 116 psi
Preset pressure

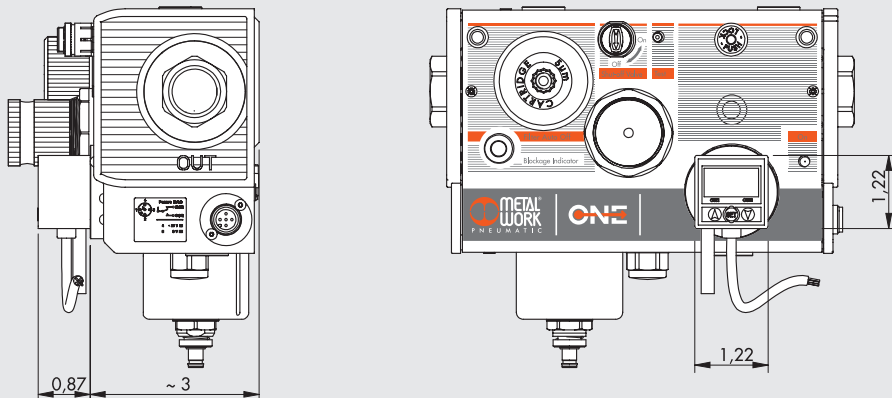


DIMENSIONS

STANDARD VERSION



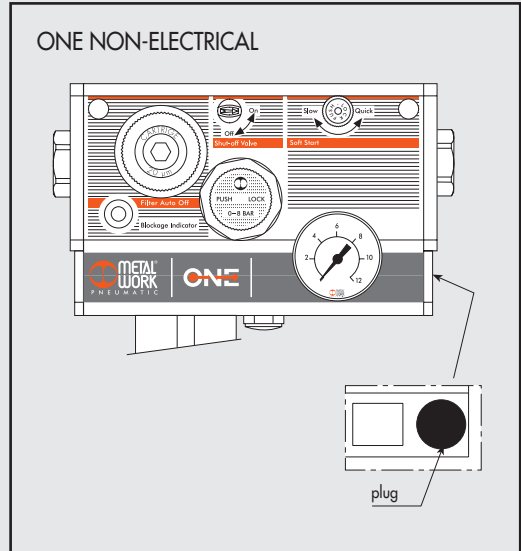
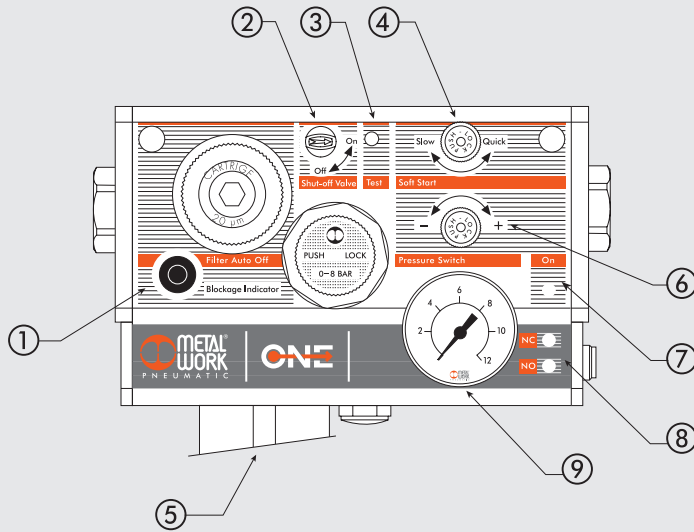
WITH DIGITAL PRESSURE SWITCH VERSION



	1/4"	3/8"	1/2"	3/4"	1"		RA	RMSA	
A		180			195	B	0.8	0.64	
CH	3/4 (19 mm)	7/8 (22 mm)	1" 1/16 (27 mm)	32 mm	36 mm	C	5.67	5.83	
						Ø D	For pipe internal diameter 6 mm		0.6

EXTERNAL DESIGN

You can get thousands of different configurations. The external design differs according on the versions chosen.



<p>CLOGGED FILTER SIGNAL ①</p> <p>PRESENT</p> <p>NOT PRESENT</p>	<p>V3V MANUAL ②</p> <p>STANDARD</p> <p>LOCKABLE</p> <p>NOT PRESENT</p>	<p>V3V ELECTRICAL</p> <p>PRESENT</p> <p>NOT PRESENT</p> <p>in some versions holes are present</p> <p>in other configurations the cover has no holes</p>	<p>SOFT START VALVE ④</p> <p>PRESENT</p> <p>NOT PRESENT</p>
<p>CONDENSATE DRAIN ⑤</p> <p>AUTOMATIC (RA)</p> <p>RMSA</p>	<p>ANALOG PRESSURE SWITCH</p> <p>PRESENT</p> <p>NOT PRESENT</p> <p>in some versions holes are present</p> <p>in other configurations the cover has no holes</p>	<p>READING OF PRESSURE GAUGE ⑨</p> <p>DIGITAL PRESSURE SWITCH</p>	

AIR PREP

ONE: SPECIFICATIONS

HOW TO ORDER

ORDERING CODES

You can choose among numerous variants and options. The product code so personalised is made up by compiling the diagram below. The code so compiled must be specified on the order. A label showing the code and its pneumatic diagram is affixed onto the product.

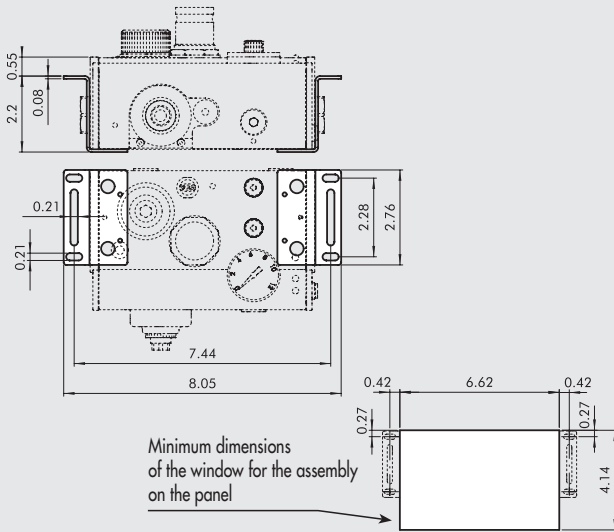
	A	B	C	D	E	F	G	H	I	L
	ONE electric or ONE non-electric	Air intake	Degree of filtration	Clogged filter signal	Condensate drain	Pressure regulation	Valves	Pressure switch	Air outlet	Miscellaneous, special version
EXAMPLE	54	A	2	1	1	2	7	1	A	0 0
53	ONE non-electric	A 1/4" NPT	2 20 µm (790 micro inch)	0 NO	0 RMSA	2 0.5 - 2 bar (7-30 psi)	0 None	0 NO	A 1/4 NPT	00 Standard
54	ONE electric *	B 3/8" NPT	5 5 µm (2000 micro inch)	1 YES	1 Automatic (RA)	4 0.5 - 4 bar (7-60 psi)	1 V3V manual	1 YES Analog	B 3/8" NPT	
		C 1/2" NPT				8 0.5 - 8 bar (7-120 psi)	2 V3V manual with padlock	2 YES Digital with cable 79 inch	C 1/2" NPT	
		D 3/4" NPT					3 V3V manual and soft start valve	3 YES With M12 connector	D 3/4" NPT	
		E 1" NPT					4 V3V manual with padlock and soft start valve		E 1" NPT	
							5 V3V manual and V3V electric			
							6 V3V manual with padlock and V3V electric			
							7 V3V manual and APR electric			
							8 V3V manual with padlock and APR electric			
							9 only V3V electric			
							A only APR electric			

* a pressure switch version and/or electric V3V and/or electric progressive actuator.

● **NB: versions valid only for the electric ONE (code 54...)**

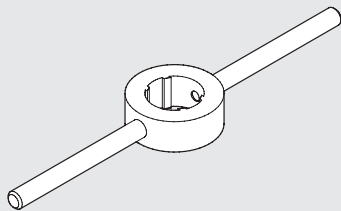
- A ONE electric or non-electric**
ONE non-electric: there is no component actuated electrically: select code 53. In this case, the unit comes without any M12x1 connector, LED, pressure switch, or electric V3V.
ONE electric: there is at least one component actuated electrically, and thus the pressure switch and/or electric V3V (and/or the electrical soft start valve) select code 54. In this case, the unit comes with the M12x1 connector and 3 LEDs. Only the LEDs associated with the functions installed will be active.
- B Air intake**
 There are 5 different gas cylindrical threads: 1/4", 3/8", 1/2", 3/4" and 1".
- C Degree of filtration**
 A cartridge with a degree of filtering of 5 µm (790 microinch) yellow or 20 µm (2000 microinch) white is available. This value is marked on the plug.
- D Clogged filter signal**
 If the filter gets so clogged up that it causes an excessive drop in pressure as the air passes through, the orange indicator will project from the body by a few millimetres.
- E Condensate drain**
RMSA: the condensate is drained out automatically only by relieving the air pull the knurled knob for having the same result.
Automatic (RA): a floating system that automatically drains the condensate out whenever the level of water in the bowl reaches the set value.
- F Pressure regulation**
 There are three possible regulation fields.
 The value is marked on the regulation knob.
- G Valves**
 There are 11 different combinations. The electric valves are clearly selectable only if the initial code is 54, i.e. ONE electric.
- **0 - No valves present**
 - **1 - V3V manual:** is a 3/2 valve that in a set position allows the air to flow and in the other it closes the passage and discharges the pressure downstream.
 - **2 - V3V manual with padlock:** like the previous one, with the possibility of inserting a padlock (included in the supply with 2 keys) in the valve closed position.
 - **3 - V3V manual and soft start valve:** when the manual V3V valve is operated, the pressure starts to increase slowly, with a fine adjustable ramp, and when it reaches about 30-40% of the set value, the valve opens completely and the pressure rises to the set value.
 - **4 - V3V manual with padlock and soft start valve:** like the previous, with the padlock device on the manual V3V in "OFF" position.
 - **5 - V3V manual and V3V electric:** two V3V in series are present, one is manual the other electrical. By operating both the valve the air flow is allowed. If one or two are switched OFF, the air downstream is relieved. The electrical one can also be operated manually by reefing pushed the "TEST" button
 - **6 - V3V manual with padlock and V3V electric:** like the previous, with the padlock device in "OFF" position.
 - **7 - V3V manual and APR electric:** One manual V3V and one soft start valve are present. When both are operated, the pressure starts to increase slowly, with a fine adjustable ramp, and when it reaches about 30-40% of the set value, the valve opens completely and the pressure rises to the set value.
 - **8 - V3V manual with padlock and APR electric:** like the previous, with the padlock device on the manual V3V in "OFF" position.
 - **9 - V3V electric:** It's present only the electrical V3V. The valve will open if it is powered on. When the power supply is switched off, the valve closes and air downstream is relieved. The valve can also be operated manually by keeping pushed the test button.
 - **A - APR electric:** It's present only the electric soft start valve. When it is powered ON, the pressure starts to increase slowly, with a fine adjustable ramp, and when it reaches about 30-40% of the set value, the valve opens completely and the pressure rises to the set value.
- H Analog pressure switch**
 The pressure switch has a switching contact, which means you can have a normally-open signal or a normally-close signal. It is also connected to the NC and NO LEDs which come on if the actual pressure is less or greater than the set pressure, respectively. The LEDs only come on if an electric charge is connected to them.
Digital pressure switch
 The digital pressure switch allows both the transmission of electrical pressure signals and the instant display of pressure. Two digital outputs, which can be set according to the two pressure values reached, are available. An analogue output of a voltage proportional to the pressure reading is also available. The values are clearly displayed on a LED video and different parameters can be entered from the keypad. Hysteresis can be adjusted and the unit of measurement for pressure can be modified.
- I Air outlet**
 Five different gas cylindrical threads are available: 1/4", 3/8", 1/2", 3/4" and 1". It is possible to choose a thread other than the one on the inlet port.
- L Free positions for special executions.**

PANEL MOUNTING BRACKETS



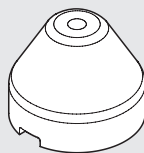
Code	Description
9200702	Kit - panel mounting brackets NB: fixing screws included

COVER DISASSEMBLY WRENCH



Code	Description
9170401	Cover disassembly wrench

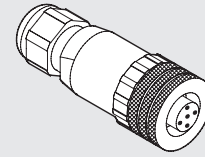
SECURITY KNOB



Code	Description
9200703	Security knob apr/pressure switch

NOTE: Pull outwards to remove the knob from the APR/pressure switch on the unit. Insert the security knob and regulate the APR/ pressure switch. Then press the handle firmly to lock it in position. If the APR/pressure switch needs to be reset, remove the security knob by forcing it laterally with a screwdriver.

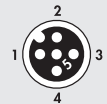
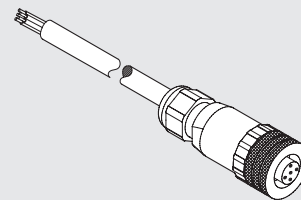
STRAIGHT CONNECTOR



Code	Description
W0970513001	5-PIN M12X1 straight connector

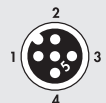
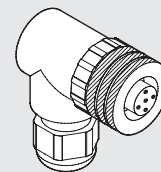
STRAIGHT CONNECTOR WITH WIRE

- 1 - brown
- 2 - white
- 3 - blue
- 4 - black
- 5 - gray



Code	Description
W0970513002	5-PIN M12X1 straight connector with wire L = 197 inch

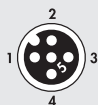
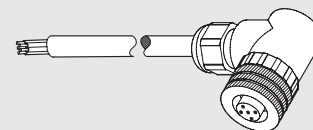
90° CONNECTOR



Code	Description
W0970513003	M12X1 5-PIN 90° connector

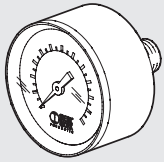
90° CONNECTOR WITH WIRE

- 1 - brown
- 2 - white
- 3 - blue
- 4 - black
- 5 - gray



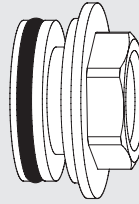
Code	Description
W0970513004	M12X1 5-PIN 90° connector with wire L = 197 inch

PRESSURE GAUGE



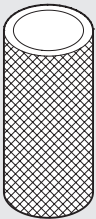
Code	Description
9700106	M 39 1/8 0-4 (0 to 60 psi)
9700107	M 39 1/8 0-12 (0 to 180 psi)

THREADED PORT



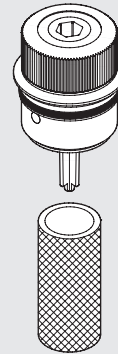
Code	Description
9232001U	1/4" spare thr. port for ONE
9232002U	3/8" spare thr. port for ONE
9232003U	1/2" spare thr. port for ONE
9232004U	3/4" spare thr. port for ONE
9232005U	1" spare thr. port for ONE

FILTER ELEMENT



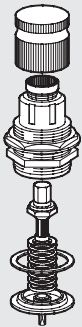
Code	Description
9251720	Spare filter element 5 µm for ONE
9251721	Spare filter element 20 µm for ONE

FILTER PLUG WITH FILTER ELEMENT



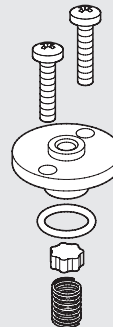
Code	Description
9251723	Spare plug + filter element 5 µm (790 microinch) for ONE
9251724	Spare plug + filter element 20 µm (2000 microinch) for ONE

PILOT REGULATOR



Code	Description
9250820U	Spare pilot reg. 7 to 30 psi for ONE
9250821U	Spare pilot reg. 7 to 60 psi for ONE
9250822U	Spare pilot reg. 7 to 120 psi for ONE

POPPET



Code	Description
9250707	Spare poppet for ONE

SOLENOID VALVE

NEW



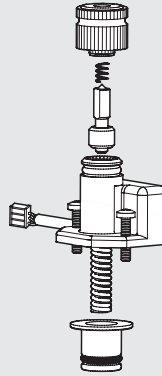
Code	Description
722123840101	PLT-10 722123840101

OLD



Note: Spare part no longer available. If the solenoid valve to be replaced is the same as the one shown here on the left, please contact our sales department.

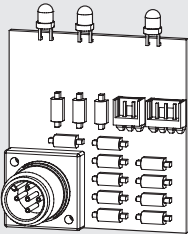
PRESSURE SWITCH



Code	Description
9000500	Spare press. switch for ONE

Note: with this kit we suggest you should order also the gauge, as it could get damaged during the disassembly.

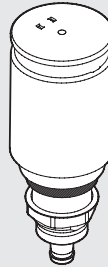
ELECTRIC BOARD



Code	Description
9232010	Spare electric board for ONE

Note: with this kit we suggest you should order also the gauge, as it could get damaged during the disassembly.

AUTOMATIC DRAIN (RA)



Code	Description
9000802	Spare automatic drain (RA)

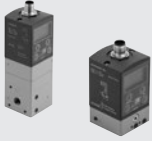
NOTES

SUMMARY PRECISION REGULATION AND PRESSURE CONTROL



- **PRECISION PRESSURE REGULATOR WITH HIGH EXHAUST FLOW, SERIE GS**

PAGE 2-192



- **PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES**

PAGE 2-196



- **DIGITAL PRESSURE SWITCH**

PAGE 2-203

PRECISION PRESSURE REGULATOR WITH HIGH EXHAUST FLOW, SERIE GS

GS is a series of precision regulators, designed for rapid relief of overpressure and a high flow rate. They feature identical and opposing regulation valves on the inlet and outlet sides. This enables the regulator to behave symmetrically – precise regulation with a high rate of flow both in and out. The pressure setting is virtually insensitive to changes in the upstream pressure (see diagram below), which guarantees accuracy even when the mains pressure fluctuates considerably. A slight escape of air is required for correct operation of the regulator – it must not be considered a defect. The regulator can be fixed using the through holes in the body or a bracket accessory. The body has a 1/8" BSPP pressure gauge fitting. GS regulators are suitable for applications requiring good accuracy in maintaining the pressure and a certain sensitivity in relieving pressure peaks, e.g. to supply low-friction cylinders, reel tensioners and coil winders. Two sizes of compressed air fitting are available: 1/8" BSPP and 1/4" BSPP. Three different setting ranges are available: 0 to 2 bar (0-30 psi), 0 to 4 bar (0-60 psi) and 0 to 8 bar (0-120 psi).



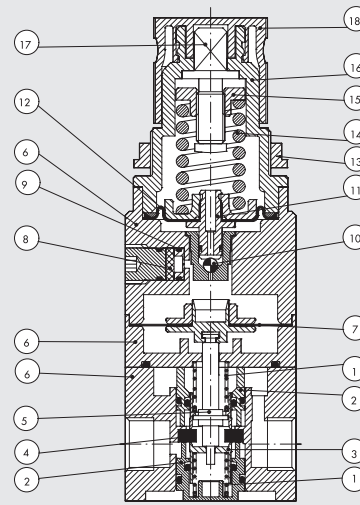
AIR PREP

PRECISION PRESSURE REGULATOR WITH HIGH EXHAUST FLOW, SERIE GS

TECHNICAL DATA	1/8" BSPP		1/4" BSPP	
	1/8" BSPP		1/4" BSPP	
Threaded port	1/8" BSPP		1/4" BSPP	
Setting range	0 to 2 - 0 to 4 - 0 to 8 psi 0 to 30 - 0 to 60 - 0 to 120			
Max. input pressure	10 bar - 1 MPa - 145 psi			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	900 scfm		1170 41.5	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	1200 scfm		1380 49	
Fluid	Unlubricated filtered air. The air must be at least 10 μm pre-filtered.			
Temperature range	From -10 to +50 °C From 14 to +122 °F			
Mounting position	In any position			
Pressure gauge port	1/8" BSPP			
Weight	600 g			
Exhaust flow rate at 4 bar (0.4 MPa; 60 psi) (regulated pressure)				
ΔP 1 bar (0.1 MPa; 14.5 psi)	450 scfm		810 28.5	
ΔP 0.5 bar (0.05 MPa; 7.25 psi)	900 scfm		1190 42	
Variation in regulated pressure (2 bar; 0.2 MPa; 30 psi)		± 20		
with changes in upstream pressure (4-10 bar; 0.4-1 MPa; 60-145 psi)		± 0.3		
Relieving sensitivity		30		
		0.44		
Air consumption – continuous escape		< 0.1		
		0.0035		
Notes	The regulator pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. Do not take air from pressure gauge ports.			

COMPONENTS

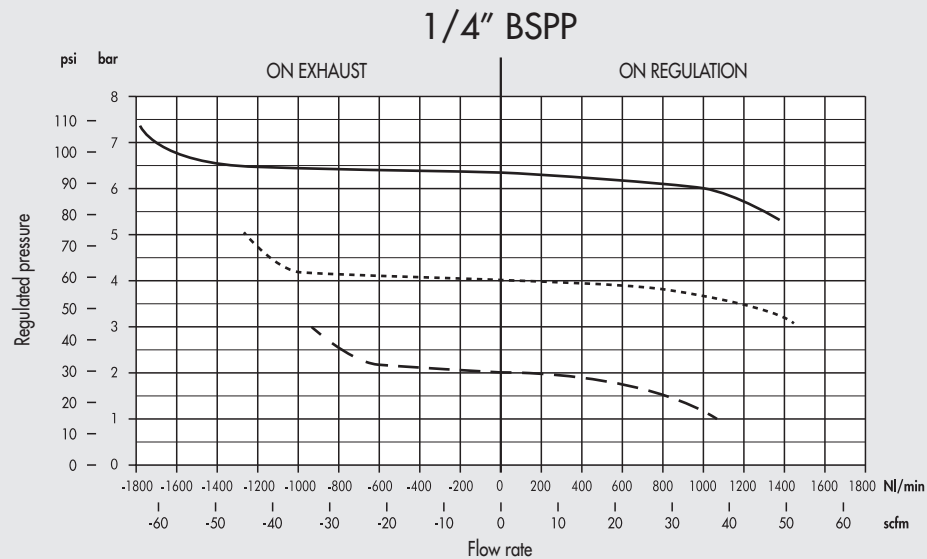
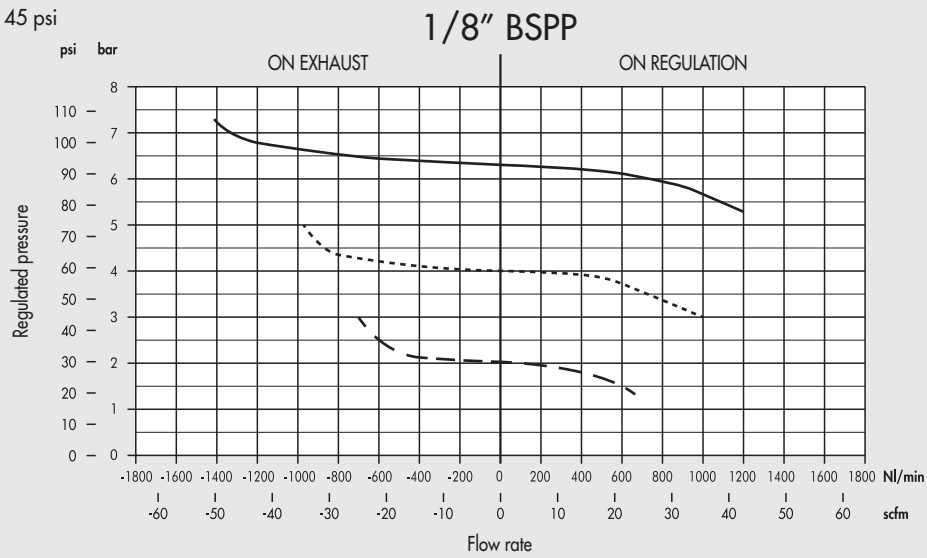
- ① Spring: stainless steel
- ② Cartridges: nickel-plated brass
- ③ Poppet: nickel-plated brass
- ④ Ring: vulcanized NBR
- ⑤ Control lever: brass
- ⑥ Bodies: painted aluminium
- ⑦ Control diaphragm: oil-proof rubber
- ⑧ Filter: sintered bronze
- ⑨ Throttle cartridge: brass
- ⑩ Ball: stainless steel
- ⑪ Ball valve: brass
- ⑫ Regulation diaphragm: NBR
- ⑬ Ring nut: technopolymer
- ⑭ Adjusting spring: steel
- ⑮ Scroll: brass
- ⑯ Bell: technopolymer
- ⑰ Adjusting screw: brass
- ⑱ Knob: technopolymer



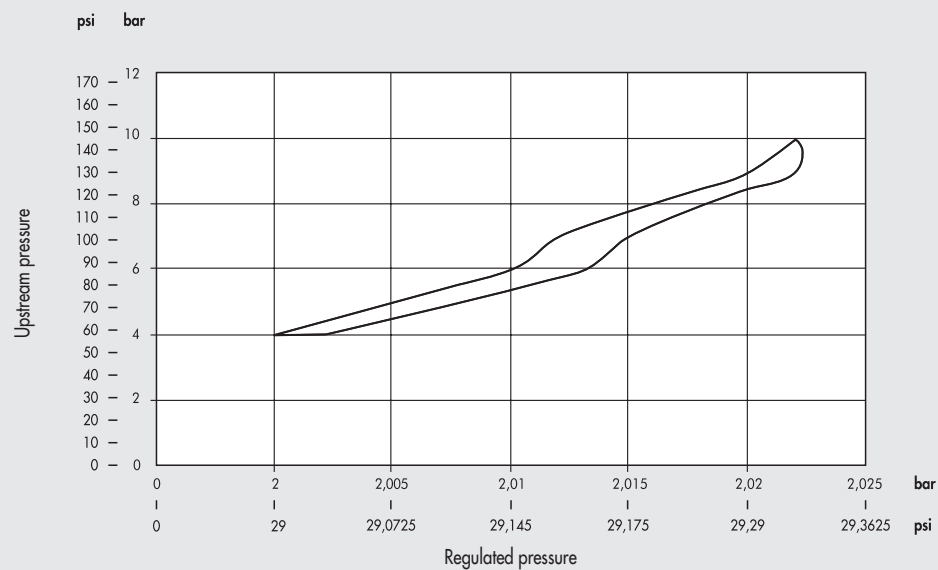
FLOW RATE

Upstream pressure = 10 bar - 145 psi

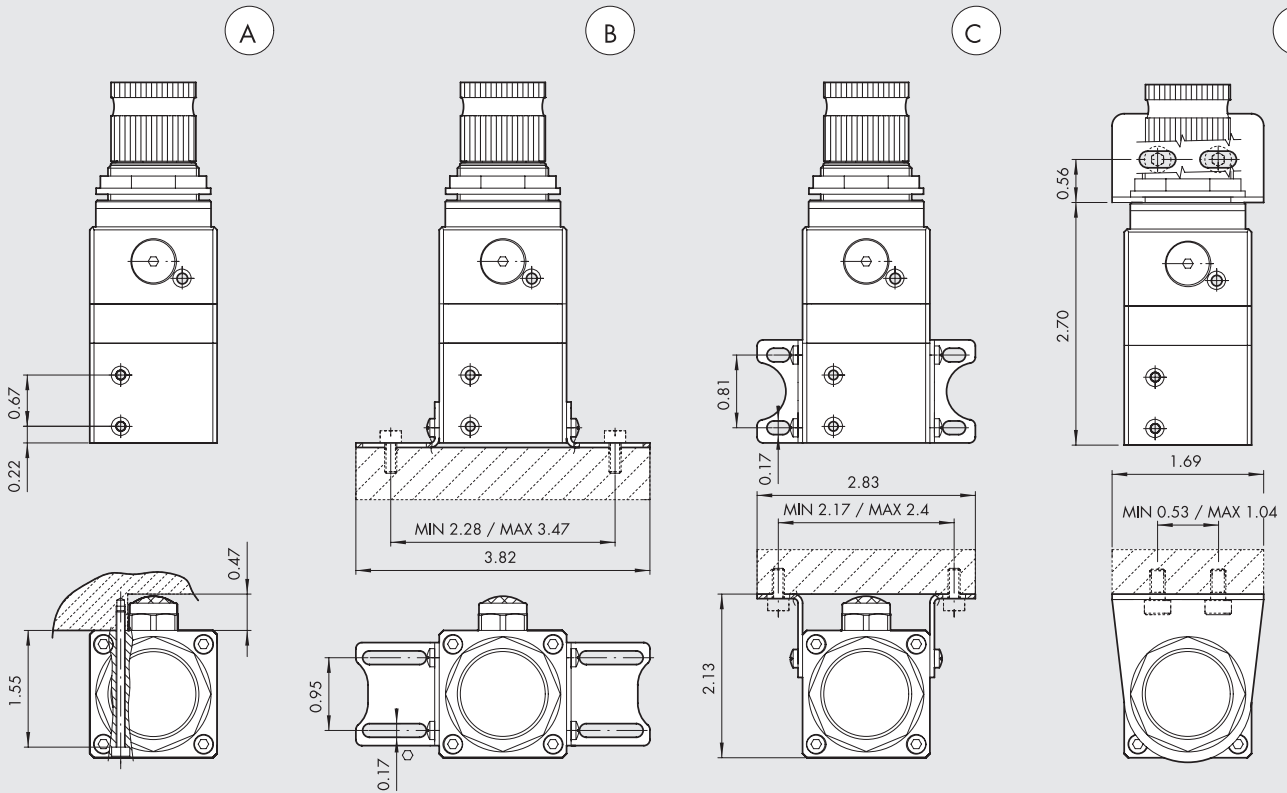
- P reg = 2 bar - 30 psi
- P reg = 4 bar - 60 psi
- P reg = 6.3 bar - 91 psi



UPSTREAM PRESSURE SENSITIVITY

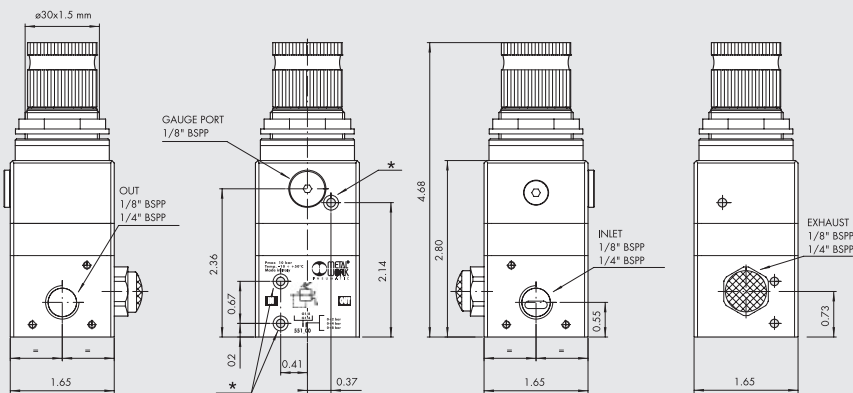


INSTALLATION



- Ⓐ On the wall with 2 M3 hex screws
- Ⓑ On the base with legs code 9200710
- Ⓒ On the wall with legs code 9200710
- Ⓓ On the wall with bracket code 9200701

DIMENSIONS



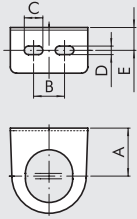
* M3 hole

Code	Description
5511200	REG. GS 1/8 02 (0-30 psi)
5511300	REG. GS 1/8 04 (0-60 psi)
5511400	REG. GS 1/8 08 (0-120 psi)
5512200	REG. GS 1/4 02 (0-30 psi)
5512300	REG. GS 1/4 04 (0-60 psi)
5512400	REG. GS 1/4 08 (0-120 psi)

ACCESSORIES

SPARES PARTS

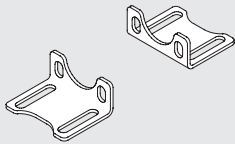
FIXING BRACKET



Code	Description
9200701	SF100 - BIT - ND 1/4 - SY1

A	B	C	D	E
1.26	0.79	0.47	0.22	0.56

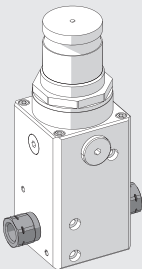
FIXING BRACKET KIT



Code	Description
9200710	Fixing bracket kit

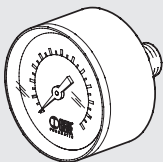
N.B. supplied complete with four M4X6 mm screws

AU5/G - NPT FEMALE BSP MALE ADAPTORS

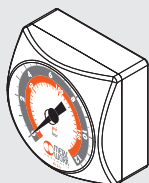


Code	Description	For
2105101U	AU5/G BSSP 1/8-1/8 NPT	REG GS 1/8
2105103U	AU5/G BSSP 1/4-1/4 NPT	REG GS 1/4

PRESSURE GAUGE

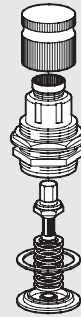


Code	Description
9700102	M 40 1/8 04 (0-60)
9700101	M 40 1/8 012 (0-180)



9700109	M 40x40 1/8 04 (0-60)
9700110	M 40x40 1/8 012 (0-180)

UPPER COVER FOR REG GS



Code	Description
9250835	SPARES CS REG GS 02 (0-30 psi)
9250836	SPARES CS REG GS 04 (0-60 psi)
9250837	SPARES CS REG GS 08 (0-120 psi)

NOTES

PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES

Proportional pressure regulators series REGTRONIC have the job of precisely regulating the pressure in a system, the variables depending on the input command. Remote control regulators are controlled by means of an M12x1 cable and connector and can have Volt, mA, RS232 control or via IO-Link. Regulators with a display can be controlled via a cable or directly using the keys below the display. The pressure value and a series of information and diagnostics are visible at all times on the graphic display.

The user-display interface, LEDs and buttons are all on one side.

The programming and reading software is comprehensive, simple and intuitive. Pressure control takes place in a "closed-loop" with an electronic precision pressure sensor that measures the downstream pressure, a control system that compares it with the desired pressure, and two mini solenoid valves that adjust the pressure to reach the target value.



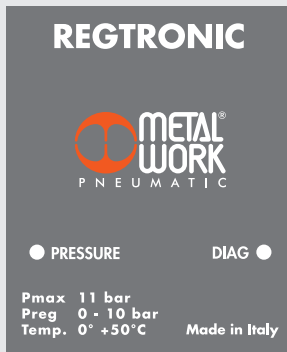
AIR PREP

PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES

TECHNICAL DATA		REGTRONIC				
Threaded port		M5	1/8" BSPP		1/4" BSPP	
Fluid		Filtered, unlubricated air.				
		The air must be filtered at least 10 µm and without condensation.				
MIN inlet pressure	psi	Regulation pressure + 14.5 psi				
MAX inlet pressure	psi	160				
Temperature range		from 0 to 50 °C / from 32 to 122 °F				
Pressure regulation range		0.05 - 10 bar / 0.725 - 145 psi (settable full scale and minimum pressure)				
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	10	1300		1500	
	scfm	0.35	46		53	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	10	1450		1700	
	scfm	0.35	51.3		60	
Exhaust flow rate at 6.3 bar (0.63 MPa; 91 psi) with 0.1 bar (0.01 MPa; 1.45 psi) overpressure	Nl/min	2	600		1300	
	scfm	0.07	21.2		46	
Exhaust flow rate at 6.3 bar (0.63 MPa; 91 psi) with 0.5 bar (0.05 MPa; 7.25 psi) overpressure	Nl/min	9	1000		1500	
	scfm	0.32	35.3		53	
Response time with ΔP 1 bar (0.1 MPa; 14.5 psi)	Volume [cc]	100	100	1000	100	1000
from 6 to 7 bar (0.6 to 0.7 MPa; 87 to 101 psi)	s	0.5	0.1	0.15	0.1	0.15
from 7 to 6 bar (0.7 to 0.6 MPa; 101 to 97 psi)	s	0.55	0.1	0.15	0.1	0.15
Weight	pounds	0.44	0.84		0.84	
Class of protection		IP 65				
Supply voltage range IO-Link version	VDC	from 18 to 30				
Current absorption		Max 150 mA at 18VDC				
Supply voltage range analog version	VDC	12 -10% 24 +30%				
Minimum operating voltage	VDC	10.8				
Maximum operating voltage	VDC	31.2				
Maximum admissible voltage	VDC	32 *				
Current absorption		max 220 mA at 12VDC				
Input signal (input impedance)	Voltage	0 to 5 VDC, 0 to 10 VDC (approx. 6.3 KΩ)				
	Current	4 to 20 mA (approx. 100 Ω)				
	Serial ports	RS 232				
	Manual	Keypad				
Output signal	Analog version voltage	0 to 10 VDC (1 VDC = 1 bar) - 1 mA max				
	Analog version current	4 to 20 mA (4 mA = 0 bar, 20 mA = 10 bar)				
	Digital	PNP open collector output: max 24VDC 60 mA NPN open collector output: max 24VDC 60 mA				
Hysteresis		± 0.2% (Full scale)				
Repeatability		± 0.2% (Full scale)				
Sensitivity/Dead-band		setting range 10 to 300 mbar				
Output pressure (display version)	Accuracy	± 0.3% (Full scale)				
	Unit of measurement	bar, MPa, psi				
	Minimum resolution	0.01 bar - 0.001 MPa - 0.01 psi				
Analog output accuracy		± 0.1% of the reading				
Temperature characteristics		max 2 mbar / °C				
Installation position		In any position				
Notes		The features shown refer to the static condition only. With air consumption on the output side, the pressure may vary.				
		On all analog versions you can set the parameters using the software "MWRregtronic" downloadable from the website www.metalwork.eu ;				
		to connect the PC to Regtronic you can use the cable code W0970513019.				

* IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

REMOTE-CONTROL VERSION



DISPLAY VERSION



PROGRAMMABLE AND FLEXIBLE

Setting options:

- LANGUAGE
- UNIT OF MEASUREMENT
- TYPE OF INPUT
- TYPE OF DIGITAL OUTPUT
- DEAD-BAND
- FULL SCALE
- MINIMUM PRESSURE

The remote-control version of the Regtronic has two diagnostic LEDs.

The display version also has buttons for entering the various parameters.

PRECISION

Linearity

± 0.5 % (full scale)

Hysteresis

± 0.2 % (full scale)

Repeatability

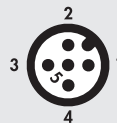
± 0.2 % (full scale)

Sensitivity

range 10 to 300 mbar

IO-Link CONNECTOR 5-PIN M12x1

IO-Link



Pin	Signal	Description of Class A Port	Lead colour
1	L+	+24 VDC power supply	Brown
2	NC	/	White
3	L-	0 VDC power supply	Blue
4	C/Q	IO-Link communication	Black
5	NC	/	Gray

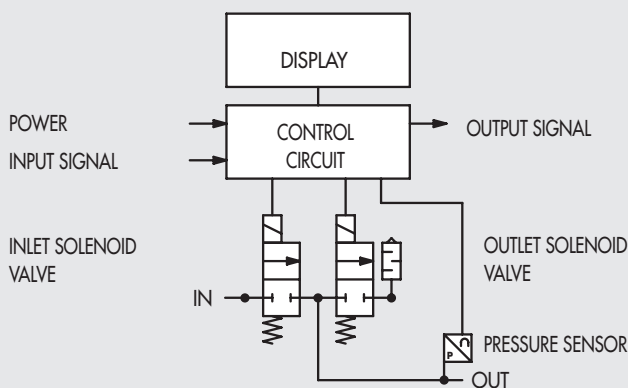
ANALOG CONNECTOR 8-PIN M12x1



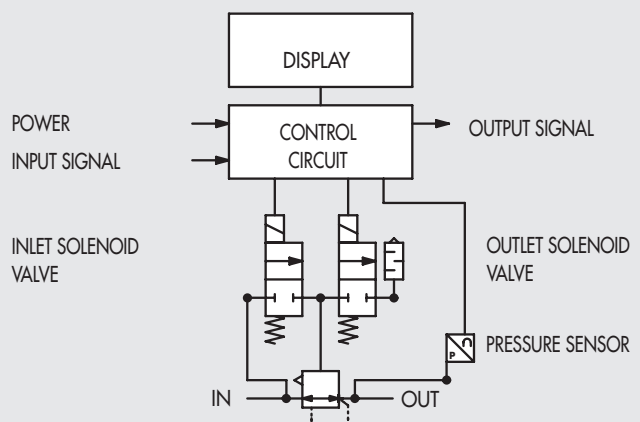
Pin	Signal	Description	Lead colour
1	TX	RS232	White
2	RX	RS232	Brown
3	Pressure set	0 to 10 VDC / 0 to 5 VDC / 4 to 20 mA	Green
4	Digital out	NPN	Yellow
5	Analog out	Voltage version 0 to 10 VDC Current version 4 to 20 mA	Gray
6	Digital out	PNP	Pink
7	0 VDC	Power supply	Blue
8	+ VDC	Power supply	Red

FUNCTION DIAGRAM

REGTRONIC M5



REGTRONIC 1/8" BSPP - 1/4" BSPP

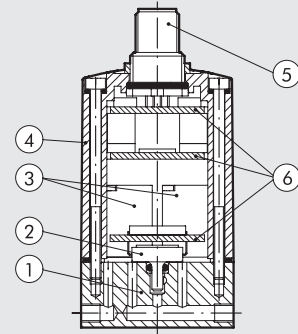


REGTRONIC M5

COMPONENTS



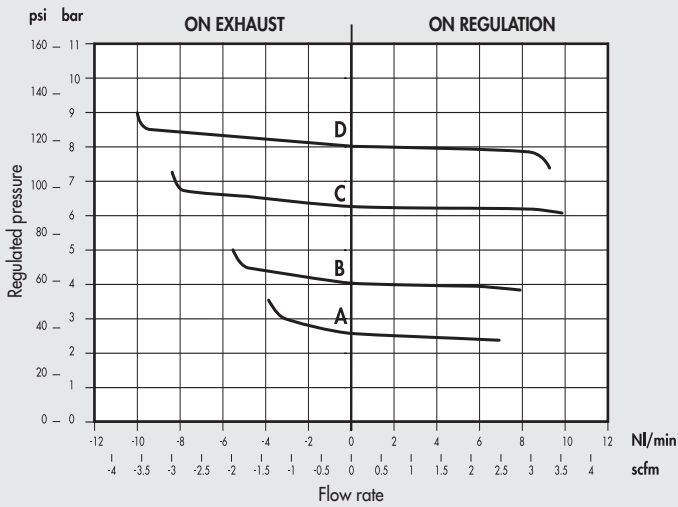
- ① BODY: painted aluminium
- ② PRESSURE SENSOR
- ③ SOLENOID VALVE: 10 mm series PLT-10
- ④ SHELL: technopolymer
- ⑤ CONNECTOR M12
- ⑥ ELECTRONIC BOARDS



AIR PREP

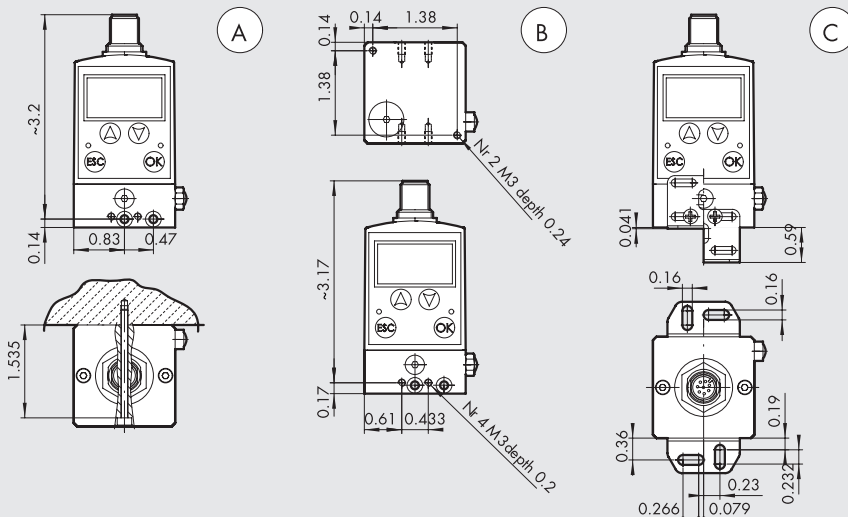
REGTRONIC M5

FLOW CHARTS



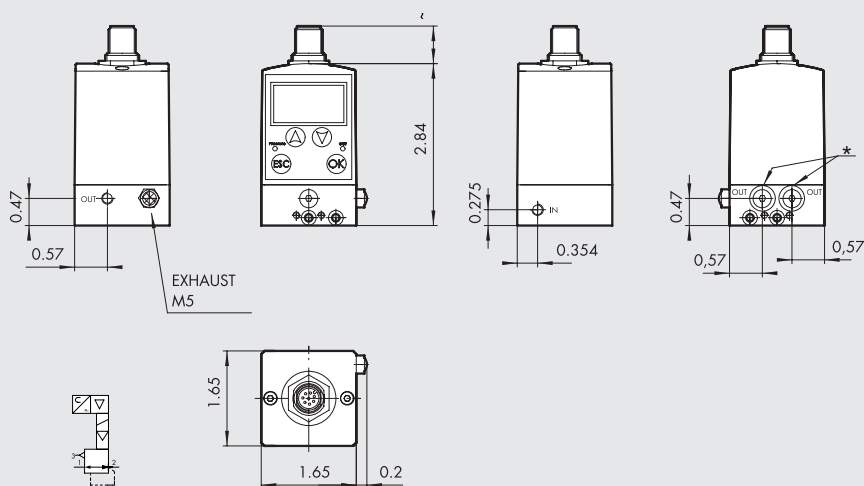
- A = 2.5 bar - 0.25 MPa - 36 psi
- B = 4 bar - 0.4 MPa - 58 psi
- C = 6.3 bar - 0.63 MPa - 91 psi
- D = 8 bar - 0.8 MPa - 116 psi
- Pm = 10 bar - 1 MPa - 145 psi

FIXING OPTIONS



- Ⓐ On the wall with 2 M3 screws, with through holes
- Ⓑ On the wall using the M3 threaded holes on the front, rear and underside
- Ⓒ On the wall with legs code 9200711

DIMENSIONS AND ORDERING CODES



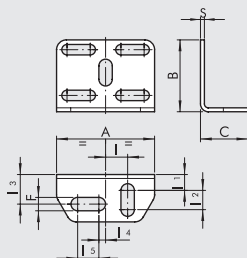
Code	Description
5520500	REGTRONIC M5 with display OUT 0-10 V
5520502	REGTRONIC M5 remote control OUT 0-10 V
5540500	REGTRONIC M5 with display OUT 4-20 mA
5540502	REGTRONIC M5 remote control OUT 4-20 mA

5530500	REGTRONIC IO-Link M5 with display
5530502	REGTRONIC IO-Link M5 remote control

* alternative outputs, removing the M5 cap

ACCESSORIES

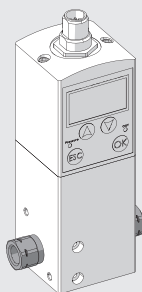
FIXING BRACKET KIT



Code	Description									
9200711	Regtronic M5 Fixing bracket kit									
A	B	C	F	I	I1	I2	I3	I4	I5	S
1.18	0.87	0.57	0.16	0.27	0.19	0.23	0.36	0.08	0.25	0.05

Note: supplied complete with four M3x6 screws

AU5/G - NPT FEMALE BSP MALE ADAPTORS



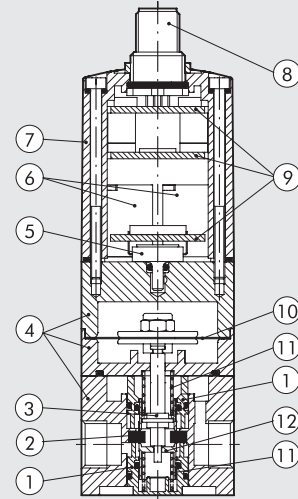
Code	Description	For
2105100U	AU5/G M5-10/32 UNF	REG M5

REGTRONIC 1/8" BSPP; 1/4" BSPP

COMPONENTS

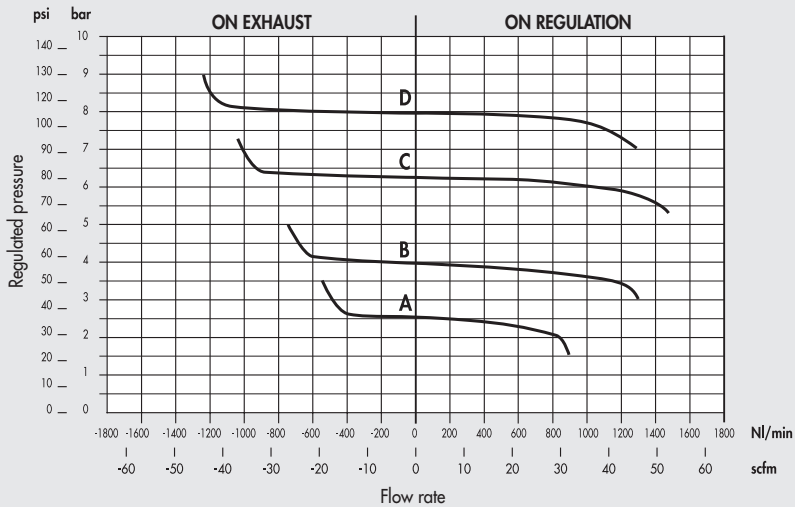


- ① CARTRIDGES: nickel-plated brass
- ② RING: vulcanized NBR
- ③ ROD: steel
- ④ BODIES: painted aluminium
- ⑤ PRESSURE SENSOR
- ⑥ SOLENOID VALVE: 10 mm series PLT-10
- ⑦ SHELL: technopolymer
- ⑧ CONNECTOR M12
- ⑨ ELECTRONIC BOARDS
- ⑩ CONTROL DIAPHRAGM: anti-oil rubber
- ⑪ SPRING: stainless steel
- ⑫ POPPET: nickel-plated brass



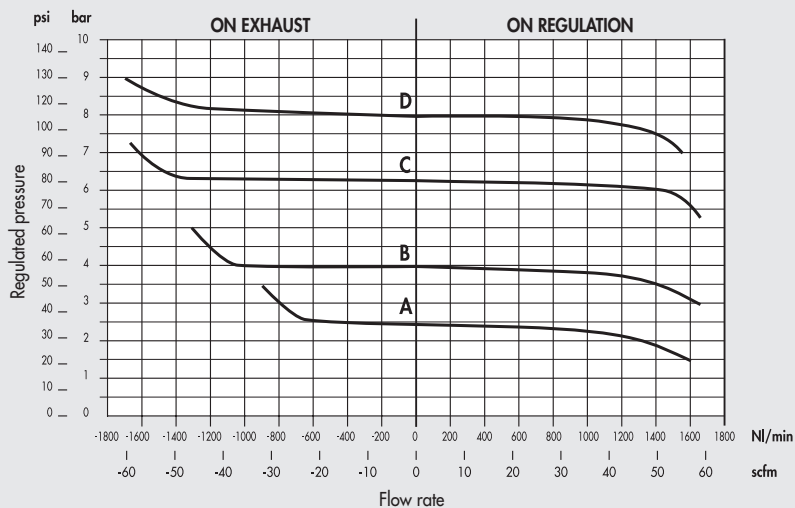
FLOW CHARTS

REGTRONIC 1/8" BSPP



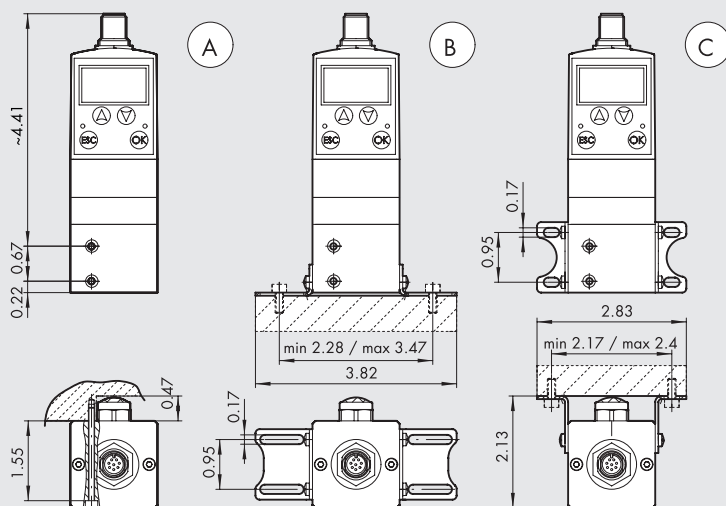
- A = 2.5 bar - 0.25 MPa - 36 psi
- B = 4 bar - 0.4 MPa - 58 psi
- C = 6.3 bar - 0.63 MPa - 91 psi
- D = 8 bar - 0.8 MPa - 116 psi
- Pm = 10 bar - 1 MPa - 145 psi

REGTRONIC 1/4" BSPP



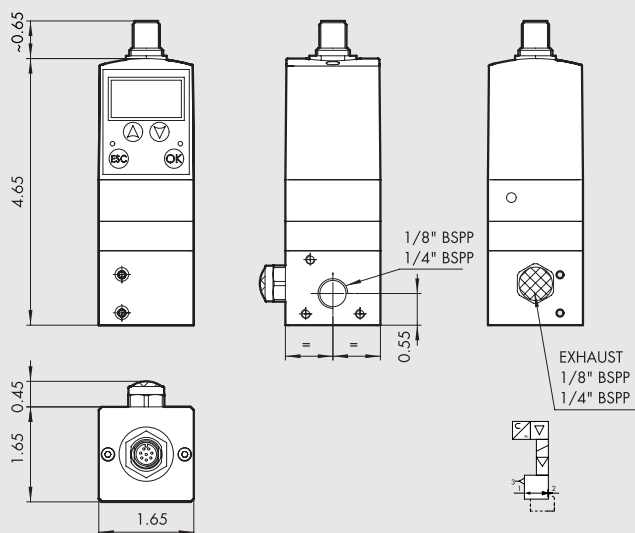
- A = 2.5 bar - 0.25 MPa - 36 psi
- B = 4 bar - 0.4 MPa - 58 psi
- C = 6.3 bar - 0.63 MPa - 91 psi
- D = 8 bar - 0.8 MPa - 116 psi
- Pm = 10 bar - 1 MPa - 145 psi

FIXING OPTIONS



- Ⓐ On the wall with 2 M3 screws
- Ⓑ On the base with legs code 9200710
- Ⓒ On the wall with legs code 9200710

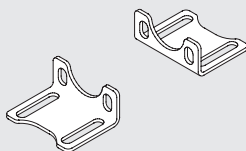
DIMENSIONS AND ORDERING CODES



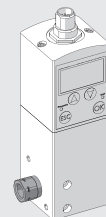
Code	Description
5521500	REGTRONIC 1/8 with display OUT 0-10 V
5521502	REGTRONIC 1/8 remote control OUT 0-10 V
5522500	REGTRONIC 1/4 with display OUT 0-10 V
5522502	REGTRONIC 1/4 remote control OUT 0-10 V
5541500	REGTRONIC 1/8 with display OUT 4-20 mA
5541502	REGTRONIC 1/8 remote control OUT 4-20 mA
5542500	REGTRONIC 1/4 with display OUT 4-20 mA
5542502	REGTRONIC 1/4 remote control OUT 4-20 mA
5531500	REGTRONIC IO-Link 1/8 with display
5531502	REGTRONIC IO-Link 1/8 remote control
5532500	REGTRONIC IO-Link 1/4 with display
5532502	REGTRONIC IO-Link 1/4 remote control

ACCESSORIES

FIXING BRACKET KIT



AU5/G - NPT FEMALE BSP MALE ADAPTORS



Code	Description	Code	Description
9200710	Fixing bracket kit	2105101U	AU5/G BSSP 1/8-1/8 NPT
		2105103U	AU5/G BSSP 1/4-1/4 NPT

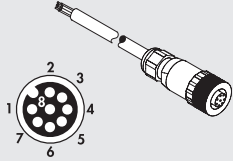
Note: supplied complete with four M4x6 screws

ACCESSORIES REGTRONIC

ANALOG VERSION

IO-Link VERSION

CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, STRAIGHT

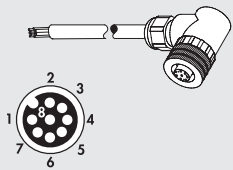


Code	Description
W0970513010	M12X1 pre-wired 8-PIN straight connector, cable L = 197 inch

Note: can only be used for analog version

Pin	Cable color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, 90°, WITH CABLE

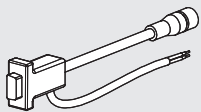


Code	Description
W0970513011	M12X1 pre-wired 8-PIN 90° connector, cable L = 197 inch

Note: can only be used for analog version

Pin	Cable color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

CONFIGURATION CABLE



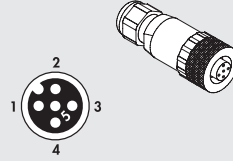
Code	Description
W0970513019	Configuration cable Regtronic

The cable consists of:
 - M12 8-PIN female connector to be connected to Regtronic
 - RS232 serial connector to be connected to PC
 - 2 wires to supply 24VDC power
 The package also includes a RS232-USB adapter

Note: can only be used for analog version

NOTES

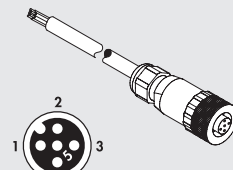
CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, STRAIGHT



Code	Description
W0970513001	Connector M12x1, 5-pin, A-coded, female, straight

Note: can only be used for version IO-Link

CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, STRAIGHT

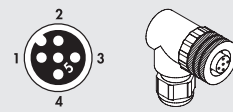


Code	Description
W0970513002	Connector M12x1, 5-pin, A-coded, female, straight, with cable L = 197 inch

Note: can only be used for version IO-Link

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray

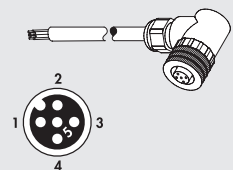
CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, 90°



Code	Description
W0970513003	Connector M12x1, 5-pin, A-coded, female, 90°

Note: can only be used for version IO-Link

CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, 90°, WITH CABLE



Code	Description
W0970513004	Connector M12x1, 5-pin, A-coded, female, 90°, with cable L = 197 inch

Note: can only be used for version IO-Link

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray

DIGITAL PRESSURE SWITCH

The digital pressure switch allows both the transmission of electrical pressure signals and the instant display of pressure. Two digital outputs, which can be set according to the two pressure values reached, are available. An analogue output of a voltage proportional to the pressure reading is also available. The values are clearly displayed on a LED video and different parameters can be entered from the keypad. Hysteresis can be adjusted and the unit of measurement for pressure can be modified. Two models are available:

Series **600** (historical version), characterised by 1/8" BSPP female pneumatic ports, one at the bottom and one at the back (pressure switch supplied with bottom port covered with a removable plug); one-colour LED; pre-wired cable.

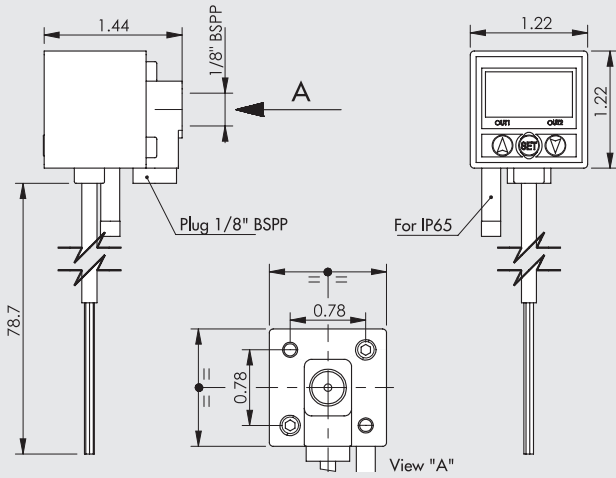
Series **640** (the latest version), characterised by R1/8" BSPP male pneumatic ports (taper thread) and M5 female thread inside on the rear side; two-colour LED displays that can be programmed depending on the pressure signal; cable with connector. It is available in analog and IO-Link versions. A kit of accessories is provided for fixing to the top or wall, or to a panel.



TECHNICAL DATA	SERIES 600	SERIES 640	SERIES 640 IO-Link
Fieldbus			IO-Link version 1.1
Working pressure range		-1 to 10 bar / -0.1 to 1 MPa	
Maximum admissible pressure		15 bar / 1.5 MPa	
Readable resolution		0.01 bar / 0.001 MPa / 0.01 kg/cm ² / 0.1 psi	
Power supply	VDC	12 to 24 ± 10%, max ripple 10%	
Current consumption	mA	≤ 55	≤ 40
Outputs			24, Ripple (P-P) ≤ 10% ≤ 35 (no load)
			OUT 1: IO-Link (C/Q Line) or PNP or NPN configurable
			OUT 2: Analogue or PNP or NPN configurable
Digital outputs	PNP: Number of outputs: 2 Max current: 80 mA Max voltage: 24 VDC Residual voltage: ≤ 1V (at 80 mA)	PNP: Number of outputs: 2 Max current: 125 mA Max voltage: 24 VDC Residual voltage: ≤ 1.5V (at 125 mA)	PNP: Open collector output Max current: 150 mA Max voltage: 24 VDC Residual voltage: ≤ 1V NPN: Open collector output Max current: 150 mA Max voltage: 30 VDC Residual voltage: ≤ 1V
Analogue output	1/5V ± 2.5% (0 bar - 1V; 10 bar - 5V; it doesn't read the vacuum) Linearity ≤ 1% full scale Output impedance: about 1 kΩ		1/5V, 0/10V, 4/20 mA configurable Linearity ± 1.5% full scale 1/5V - 0/10V (impedance 1 kΩ), 4/20 mA (impedance 500 Ω)
Digital output repeatability	≤ ± 0.2% full scale ± 1 digits		
Hysteresis	Adjustable or fixed at 3 digits for operation within a pressure range		
Actuation response time	ms	≤ 2.5	
Interference suppression selectable at	ms	24, 192, 768	25, 100, 250, 500, 1000, 1500
Short-circuit protection at the outputs		Yes	
LED 7 segment display		3 ½ digit display	
Display colours	red	red/green	
Display accuracy	±2% full scale ±1 digit, ambient temperature 25° ±3°C		
Indicators	green LED (output 1), red LED (output 2)	orange LED (output 1 and output 2)	Green or Red LED configurable
Thermal characteristic	≤ ±2% full scale of the calibration pressure (at 25°C), in the temperature range 0 - 50°C		
Compressed air ports	2 G1/8" female thread	1 R1/8" male taper thread (M5 female inside)	
Power cable	pre-wired cable, not removable	2 m, with five 0.15 mm ² wires, oil-resistant removable connector	
Communication speed	Kbps	-	38.4 (COM2)
Vendor ID / Device ID		-	1046 (hex 0x0416) / 72 (hex 0x000048)
Minimum cycle time	ms	-	3
Process data length		-	2 byte di Input (2 bit BCD; 14 bit PDV)
Weight	pounds	0.23, including 79 inch cable	0.23, including 79 inch cable
AMBIENT CONDITIONS			
Fluid	Filtered and unlubricated air, inert non-corrosive and non-explosive gas		
Degree of protection	IP 40 - IP65 (with accessory protection assembled)		IP 40
Temperature range	0 to 50		
Storage temperature	-20 to +60, but without condensate or ice		
Ambient humidity	35 to 85% relative humidity; no condensate		
Insulation voltage	1000 VAC for one minute between casing and cable		
Resistance of Insulation	Min. 50 MΩ minimo (at 500 VDC between casing and cable)		
Vibration admitted	1.5 mm amplitude or 10G with scanning every minute from 10 to 55 Hz at 10 Hz, for 2 hours in each direction x, y and z		
Impact	980 m/s ² (100 g), 3 times in each direction x, y and z		100 m/s ² (10 g), 3 times in each direction x, y and z

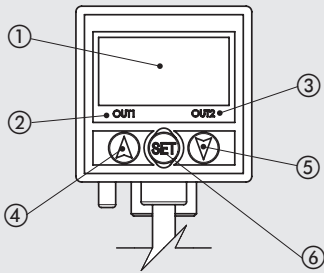
SERIES 600

DIMENSIONS AND ORDERING CODES



Code	Description
9000600	Digital pressure switch series 600

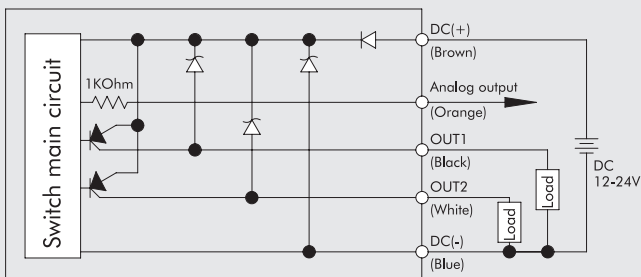
USER INTERFACE



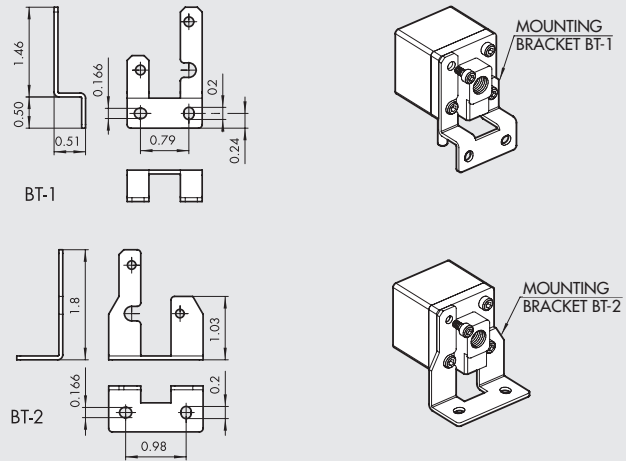
- ① 3 1/2 digit display, red: showing the pressure reading, all setting information, and the error code
- ② Digital output 1: green LED
- ③ Digital output 2: red LED
- ④ Button: modifies the value of the selected parameter
- ⑤ Button: modifies the value of the selected parameter
- ⑥ Setting button: selects the parameter to modify

WIRING DIAGRAM

PNP output

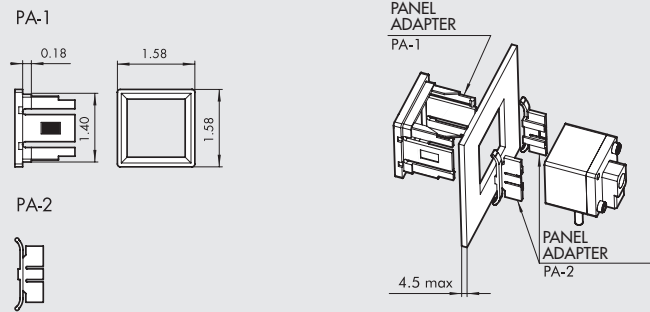


FIXING BRACKET KIT



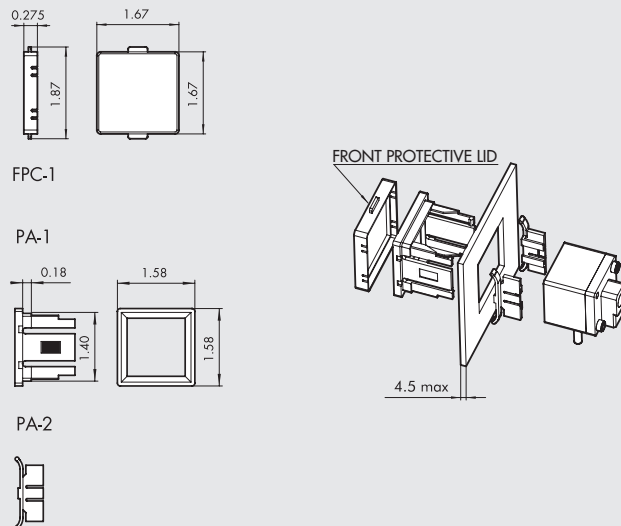
Code	Description
9000601	Kit of fixing brackets for digital pressure switches series 600
N.B.: Each kit contains a bracket for fixing on the back and one for fixing at the bottom.	

PANEL FIXING KIT



Code	Description
9000602	Kit for panel fixing for the digital pressure switch series 600

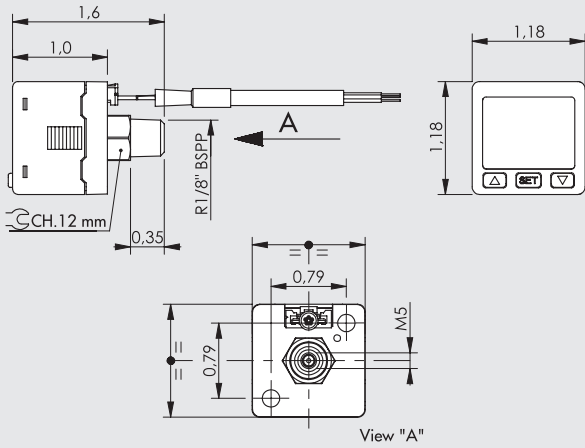
PANEL FIXING KIT WITH PROTECTION



Code	Description
9000603	Kit for panel fixing with protection for the digital pressure switch series 600

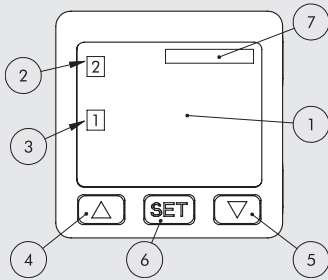
SERIES 640 IO-Link

DIMENSIONS AND ORDERING CODES



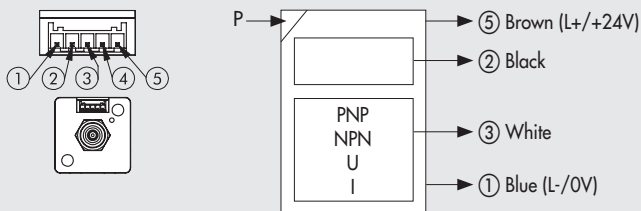
Code	Description
9000640L	Digital pressure switch series 640 IO-Link

USER INTERFACE

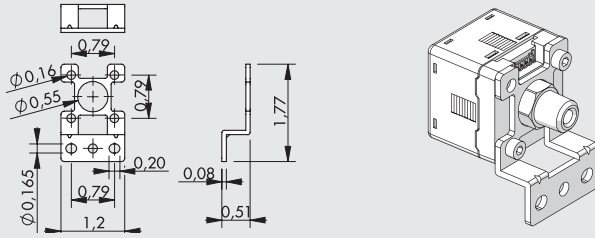


- ① 3 1/2 digit display, green and red: it displays the unit of measurement, the pressure value read, all setting information, the error code.
- ② Digital output 1: orange LED
- ③ Digital output 2: orange LED
- ④ Button: modifies the value of the selected parameter
- ⑤ Button: modifies the value of the selected parameter
- ⑥ Setting button: selects the parameter to modify
- ⑦ Unit of measurement selected

WIRING DIAGRAM

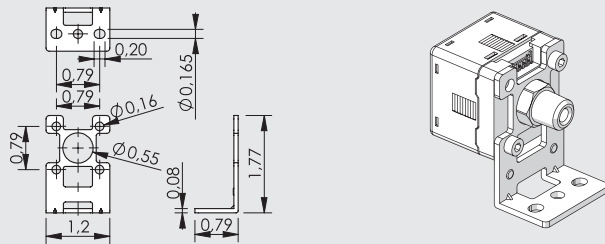


PARALLEL FIXING BRACKET KIT



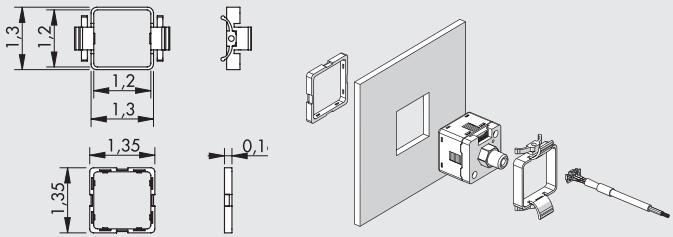
Code	Description
9000641L	Parallel fixing bracket kit for digital pressure switch series 640 IO-Link

90° FIXING BRACKET KIT



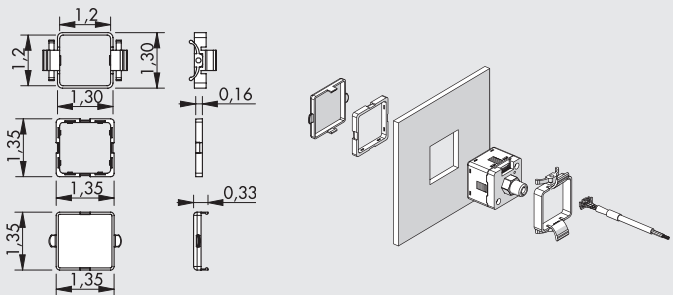
Code	Description
9000644L	90° fixing bracket kit for digital pressure switch series 640 IO-Link

PANEL FIXING KIT



Code	Description
9000642L	Kit for panel fixing for the digital pressure switch series 640 IO-Link

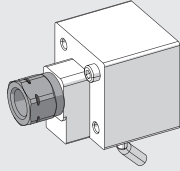
PANEL FIXING KIT WITH PROTECTION



Code	Description
9000643L	Kit for panel fixing with protection for the digital pressure switch series 640 IO-Link

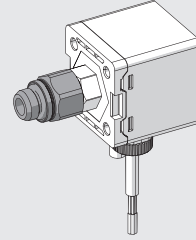
ACCESSORIES

AU5/G - NPT FEMALE BSP MALE ADAPTORS FOR SERIES 600



Code	Description
2105101U	AU5/G BSPP 1/8 - 1/8 NPT

AU5/N - NPT MALE BSP FEMALE ADAPTORS FOR SERIES 640



Code	Description
2105201U	AU5/N 1/8 NPT - BSPP 1/8

NOTES

Large empty area for notes, consisting of horizontal lines for writing.

NOTES

AIR PREP

FITTINGS

● PUSH-IN FITTINGS	PAGE	3-3
● FITTINGS SERIES A	PAGE	3-14



● **PUSH-IN FITTINGS**

PAGE 3-4



● **FITTINGS SERIES A**

PAGE 3-14

PUSH-IN FITTINGS

Metal Work fittings are the best elements for connecting pipes and actuators. Quick and easy to use, the Metal Work push-in fittings can be re-used thousands of times without affecting the pneumatic and mechanical seal in any way. It comes in various configurations and guarantees a virtually unlimited, highly flexible use. The clamping spring with its special shape grips the pipe without scratching or deforming it, which facilitates release. In the fittings, the release bushing has patented screwdriver slots to facilitate release in applications not accessible by hand. The seal of the thread is guaranteed due to a special, captivated, O-ring integral to the fitting.

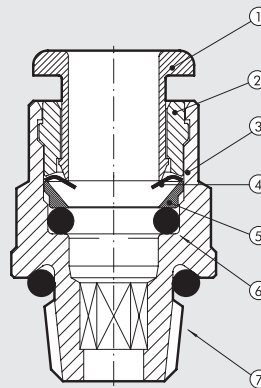


TECHNICAL DATA

Threaded coupling		10/32 UNF - 1/8 NPT - 1/4 NPT - 3/8 NPT - 1/2 NPT
Diameter		1/8 - 5/32 - 1/4 - 5/16 - 3/8 - 1/2
Temperature range	°C	-20 to 80
	°F	-4 to 176
Pressure range	psi	-14... to ...232
	bar	-0.99... to ...16
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene
Fluid		Vacuum - Compressed air

COMPONENTS

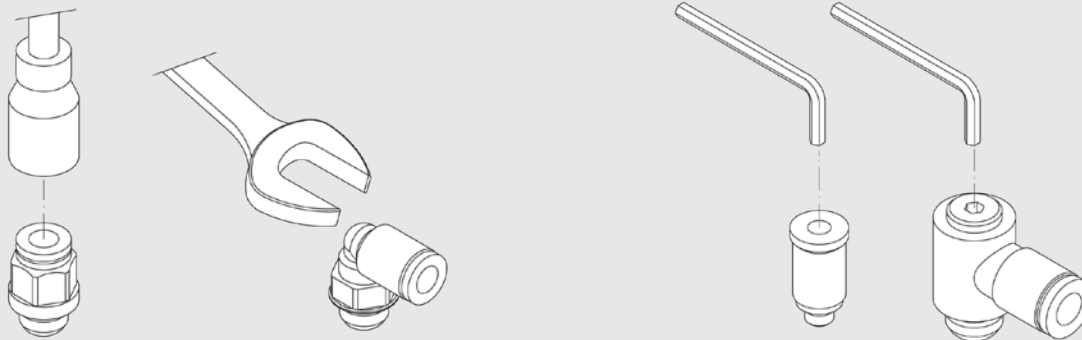
- ① Release button: technopolymer
- ② Stop button: technopolymer (brass for Ø 1/4 and 3/8)
- ③ Body: nickel-plated brass
- ④ Spring: stainless steel (for pipes Ø 1/8: brass gripper)
- ⑤ Spring ring: technopolymer
- ⑥ O-ring Seals: Buna-N
- ⑦ NPT thread



O-RING BELOW R FITTINGS

Thread	Initials	Dimensions of O-ring [mm]
10/32 UNF	3.5 x 1.2
1/8 NPT	2031	7.66 x 1.78
1/4 NPT	2043	10.82 x 1.78
3/8 NPT	2056	14 x 1.78
1/2 NPT	3068	17.13 x 2.62

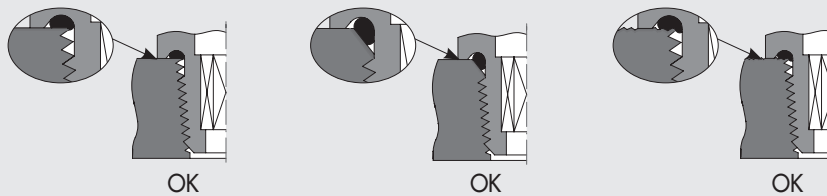
SCREWING METHOD



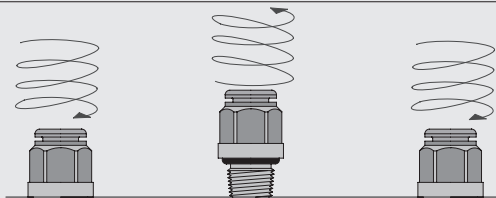
Thread	Max. Torque [lb f ft]	CH		
		Inc	mm	Max. Torque [lb f ft]
10/32	1.33	5/64	2	0.50
1/8" NPT	4.43	0.118	3	1.84
1/4" NPT	5.90	0.157	4	3.68
3/8" NPT	7.38	0.197	5	5.90
1/2" NPT	11.06	Over 0.197	Over 5	See the values concerning threads

NB: When using a socket spanner, the torque must not exceed that of the thread (e.g. fitting RU1 5/32 1/8 NPT, with a 0.118 inc socket, has a maximum torque of 4.43 lb f ft highest value of the thread)

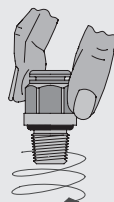
THE METAL WORK SOLUTION WITH CAPTIVATED O-RING



- Perfect seal even on flat, conical and raw surfaces.



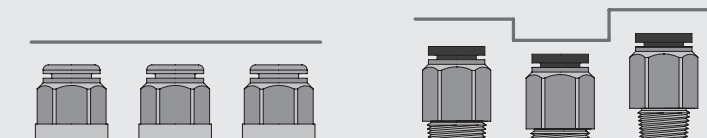
- Can be re-used thousands of times.



- The pneumatic seal is obtained by simply screwing the fitting in by hand. Tighten firmly without forcing to prevent unscrewing.

METAL WORK

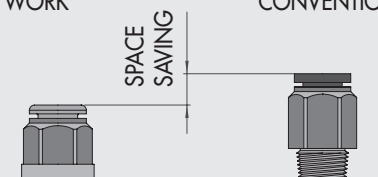
CONVENTIONAL FITTINGS



- Constant height of the mounted fitting regardless of the tolerance of the thread, or to the torque.

METAL WORK

CONVENTIONAL FITTINGS

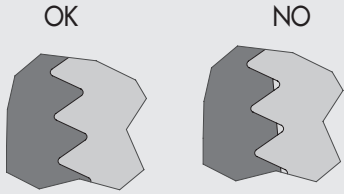


- Reduced fitting height.

THE NEW SOLUTION OFFERS NUMEROUS ADVANTAGES OVER CONVENTIONAL SOLUTIONS:

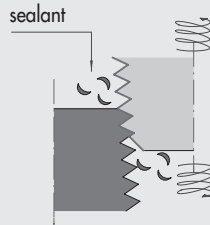
Solution with NPTF Dry seal thread

- It operates correctly if the male and female thread are made exactly to standard, otherwise there will be air leaks.



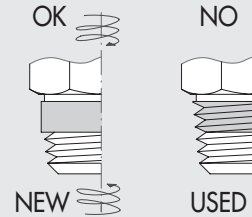
Solution with thread coated with teflon or other sealant

- A limited number of assemblies is possible after which there will be no seal.
- Particles of sealant detach from the fitting or enter the compressed air system, which affects cleanliness of the compressed air.



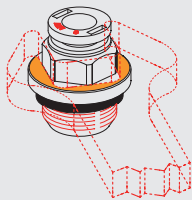
Solution with teflon or rubber ring on the thread

- Guaranteed seal with just a few turns.

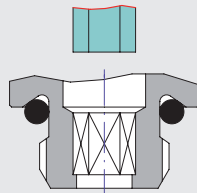


OTHER ADVANTAGES OF METAL WORK FITTINGS

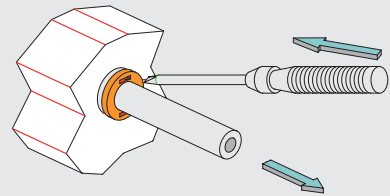
Tighten by open end or box wrench



Tighten by allen wrench, available in straight configuration

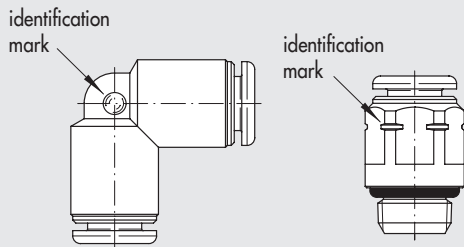


Slot to facilitate release with a screw driver

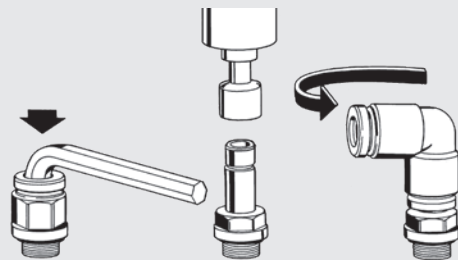


GENERAL FEATURES

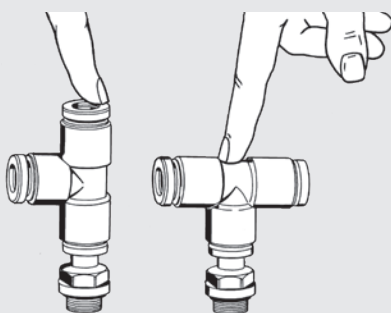
Identification mark for fractional pipe fittings in inches or with NPT thread. NB: threadless fittings for 1/8, 5/32 and 5/16 pipes do not bear an identification mark as they are used in Europe.



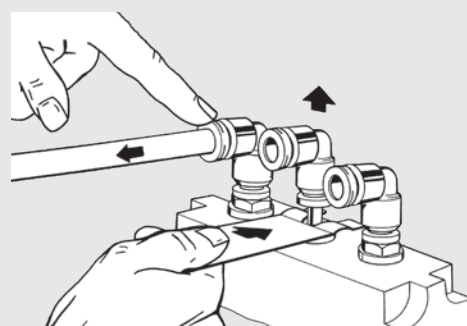
Mounting fittings with an Allen wrench or pneumatic tool. All the elbows and tees are rotary. Drastic reduction in assembly times.



A single tee can give central tees and lateral tees.

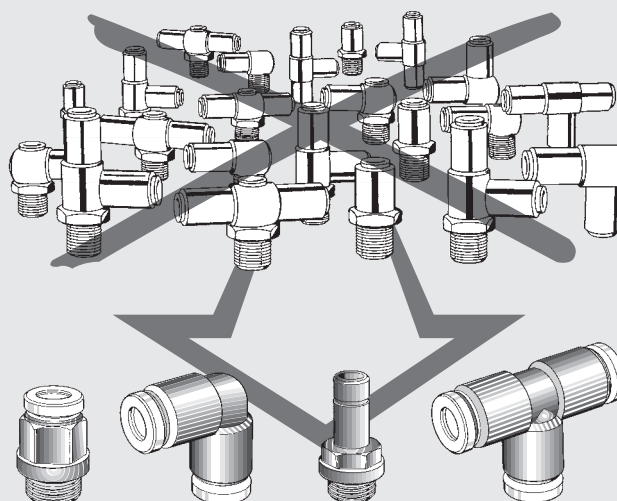


The pipe is easy to assemble by pressing lightly on the pusher ring. To remove the fitting, merely push radially on the key.



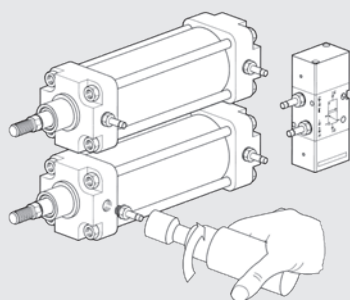
FROM AN IDEA, A SYSTEM

- Four basic fittings can be used to make all possible connections in a pneumatic circuit.
- Sharp drop in the number of fittings to be stocked and hence reduced operating costs.

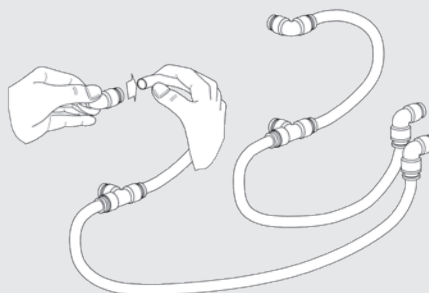


ASSEMBLY DIAGRAM

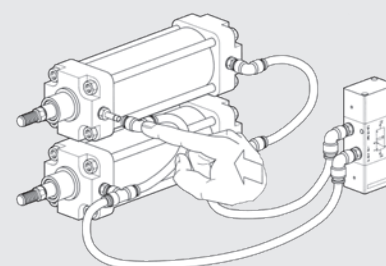
Pre-assembling fittings on the workbench with a pneumatic tool even with very close center distances.



Pre-assembling fittings and pipe sections on the workbench. Pre-assembled configurations can be stocked for assembly in series.

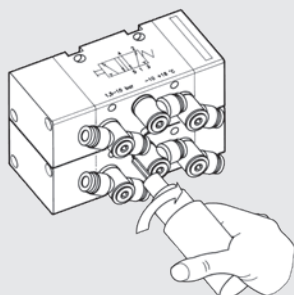


Quick connection and completion of the pneumatic circuit.

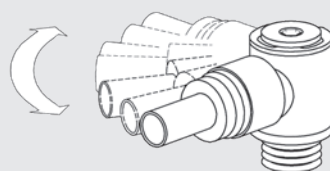


FROM A SYSTEM, INNOVATION

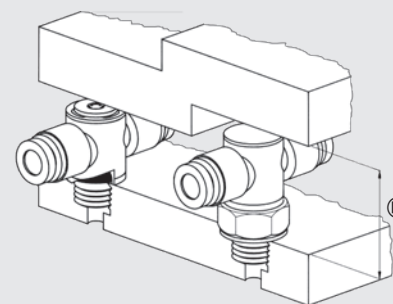
An Allen wrench is used to assemble rotary fittings even with very close center distances.



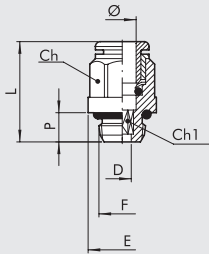
The special configuration with two O-rings allows maximum orientation so as to follow pipe movement in the specific application.



Fittings with a built-in gasket and reduced height (H) with the same threaded coupling and pipe diameter.

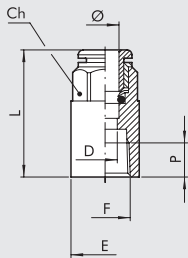


RU1 - MALE CONNECTORS



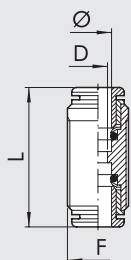
Code	Ref	Ø	F	Ch		P	L	D	E		
				Inc	mm						
2U01A02	RU1	1/8	10/32 UNF	—	—	5/64	2	0.140	0.51	0.08	0.23
2U01A03	RU1	1/8	1/8 NPT	5/16	8	5/64	2	0.24	0.54	0.08	0.51
2U01001	RU1	5/32	10/32 UNF	—	—	5/64	2	0.16	0.80	0.08	0.35
2U01002	RU1	5/32	1/8 NPT	0.394	10	0.118	3	0.24	0.71	0.12	0.51
2U01003	RU1	5/32	1/4 NPT	0.394	10	0.118	3	0.31	0.78	0.12	0.65
2U01000	RU1	1/4	10/32 UNF	—	—	5/64	2	0.16	0.87	0.08	0.43
2U01007	RU1	1/4	1/8 NPT	0.472	12	0.157	4	0.24	0.86	0.16	0.51
2U01008	RU1	1/4	1/4 NPT	0.472	12	0.157	4	0.31	0.81	0.16	0.65
2U01020	RU1	1/4	3/8 NPT	0.472	12	0.157	4	0.35	0.85	0.16	0.79
2U01009	RU1	5/16	1/8 NPT	0.512	13	0.197	5	0.24	1	0.20	0.55
2U01010	RU1	5/16	1/4 NPT	0.551	14	0.236	6	0.31	0.96	0.24	0.65
2U01011	RU1	5/16	3/8 NPT	0.551	14	0.236	6	0.35	0.90	0.24	0.79
2U01012	RU1	3/8	1/4 NPT	5/8	16	0.276	7	0.31	1.15	0.28	0.69
2U01013	RU1	3/8	3/8 NPT	5/8	16	5/16	8	0.35	1.05	0.32	0.79
2U01021	RU1	3/8	1/2 NPT	5/8	16	5/16	8	0.43	1.18	0.32	0.96
2U01014	RU1	1/2	3/8 NPT	0.866	22	0.394	10	0.35	1.28	0.4	0.79
2U01015	RU1	1/2	1/2 NPT	0.866	22	0.394	10	0.43	1.18	0.4	0.96

RU2 - FEMALE CONNECTORS



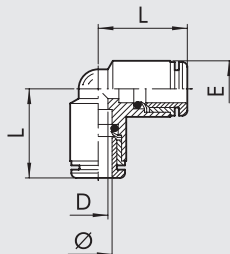
Code	Ref	Ø	F	Ch		P	L	D	E
				Inc	mm				
2U02A03	RU2	1/8	1/8 NPT	5/16	8	0.28	0.82	0.09	0.55
2U02001	RU2	5/32	1/8 NPT	0.394	10	0.28	1.05	0.12	0.55
2U02002	RU2	5/32	1/4 NPT	0.394	10	0.28	1.14	0.12	0.67
2U02005	RU2	1/4	1/8 NPT	0.472	12	0.28	1.08	0.20	0.55
2U02006	RU2	1/4	1/4 NPT	0.472	12	0.28	1.16	0.20	0.67
2U02007	RU2	5/16	1/8 NPT	0.512	13	0.28	1.11	0.28	0.55
2U02008	RU2	5/16	1/4 NPT	0.551	14	0.28	1.18	0.28	0.67

RU3 - STRAIGHT UNION



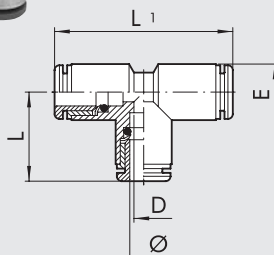
Code	Ref.	Ø	F	L	D
2003A01	R3	1/8	M8X0.75	0.72	0.08
2L03001	RL3	5/32	M11X1	1.13	0.10
2U03003	RU3	1/4	M13X1	1.32	0.18
2L03004	RL3	5/16	M15X1	1.33	0.26
2U03005	RU3	3/8	M17X1	1.58	0.31
2U03006	RU3	1/2	M22X1	1.7	0.39

RU4 - UNION ELBOWS



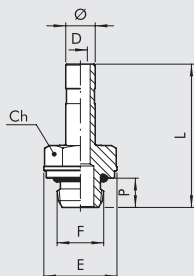
Code	Ref.	Ø	L	D	E
2004A01	R4	1/8	0.41	0.08	0.25
2L04001	RL4	5/32	0.63	0.10	0.37
2U04003	RU4	1/4	0.76	0.18	0.45
2L04004	RL4	5/16	0.81	0.26	0.53
2U04005	RU4	3/8	0.94	0.31	0.63
2U04006	RU4	1/2	1.07	0.43	0.81

RU5 - UNION TEES



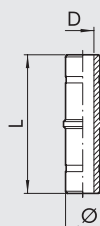
Code	Ref.	Ø	L	L1	D	E
2005A01	R5	1/8	0.41	0.82	0.08	0.25
2L05001	RL5	5/32	0.63	1.26	0.10	0.37
2U05003	RU5	1/4	0.76	1.52	0.18	0.45
2L05004	RL5	5/16	0.81	1.62	0.26	0.53
2U05005	RU5	3/8	0.94	1.88	0.31	0.63
2U05006	RU5	1/2	1.07	2.14	0.43	0.81

RU6 - STEM ADAPTORS



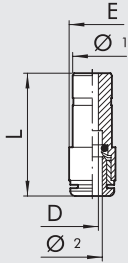
Code	Ref.	Ø	F	Ch		P	L	D	E
				Inc	mm				
2U06A01	RU6	1/8	10/32 UNF	0.197	5	0.14	0.73	0.08	0.23
2U06A02	RU6	1/8	1/8 NPT	0.472	12	0.24	0.89	0.08	0.51
2U06001	RU6	5/32	10/32 UNF	5/16	8	0.16	0.99	0.08	0.35
2U06002	RU6	5/32	1/8 NPT	0.472	12	0.24	1.09	0.10	0.51
2U06003	RU6	5/32	1/4 NPT	0.551	14	0.31	1.19	0.10	0.65
2U06000	RU6	1/4	10/32 UNF	5/16	8	0.16	1.01	0.08	0.35
2U06007	RU6	1/4	1/8 NPT	0.472	12	0.24	1.11	0.16	0.51
2U06008	RU6	1/4	1/4 NPT	0.551	14	0.31	1.20	0.16	0.65
2U06020	RU6	1/4	3/8 NPT	0.669	17	0.35	1.31	0.16	0.79
2U06009	RU6	5/16	1/8 NPT	0.472	12	0.24	1.15	0.22	0.51
2U06010	RU6	5/16	1/4 NPT	0.551	14	0.31	1.24	0.24	0.65
2U06011	RU6	5/16	3/8 NPT	0.669	17	0.35	1.35	0.24	0.79
2U06012	RU6	3/8	1/4 NPT	0.551	14	0.31	1.37	0.29	0.65
2U06013	RU6	3/8	3/8 NPT	0.669	17	0.35	1.48	0.29	0.79
2U06022	RU6	3/8	1/2 NPT	0.748	19	0.43	1.62	0.29	0.96
2U06014	RU6	1/2	3/8 NPT	0.669	17	0.35	1.55	0.41	0.79
2U06015	RU6	1/2	1/2 NPT	0.748	19	0.43	1.72	0.41	0.96

RU7 - STRAIGHT CONNECTORS



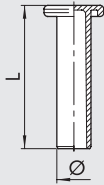
Code	Ref.	Ø	L	D
2007001	R7	5/32	1.34	0.08
2U07003	RU7	1/4	1.40	0.16
2L07004	RL7	5/16	1.48	0.24
2U07005	RU7	3/8	1.73	0.29
2U07006	RU7	1/2	2	0.41

RU8 - PLUG IN REDUCERS



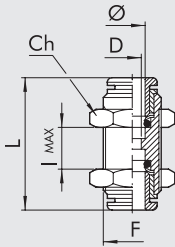
Code	Ref.	Ø 1	Ø 2	L	D	E
2008A02	R8	5/32	1/8	1.02	0.08	0.25
2U08002	RU8	1/4	5/32	1.18	0.10	0.39
2L08004	RL8	5/16	5/32	1.10	0.10	0.37
2U08006	RU8	5/16	1/4	1.27	0.18	0.46
2U08007	RU8	3/8	1/4	1.40	0.20	0.46
2U08010	RU8	1/2	1/4	1.54	0.20	0.51
2U08011	RU8	1/2	5/16	1.41	0.28	0.57
2U08015	RU8	1/2	3/8	1.63	0.31	0.63

RU9 BLANKING PLUGS IN PLASTIC



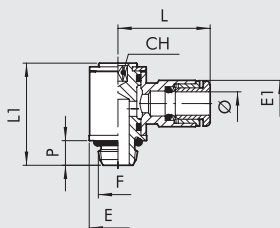
Code	Rif.	Ø	L
2L10A01	RL9T	1/8	0.77
2L10001	RL9T	5/32	1.06
2U10003	RU9	1/4	1.17
2L10004	RL9T	5/16	1.32
2U10005	RU9	3/8	1.45
2U10006	RU9	1/2	1.54

RU10 - BULKHEAD UNIONS



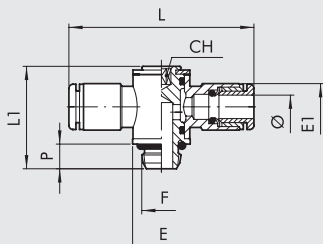
Code	Ref	Ø	F	Ch		L	D	I max
				Inc	mm			
2011A01	R10	1/8	M8X0.75	0.394	10	0.72	0.08	0.20
2L11001	RL10	5/32	M11X1	0.512	13	1.13	0.10	0.43
2U11003	RU10	1/4	M13X1	5/8	16	1.32	0.18	0.47
2L11004	RL10	5/16	M15X1	0.669	17	1.33	0.26	0.53
2U11005	RU10	3/8	M17X1	0.787	20	1.58	0.31	0.67
2U11006	RU10	1/2	M22X1	0.984	25	1.7	0.39	0.74

RU15 - ROTARY FITTINGS SINGLE



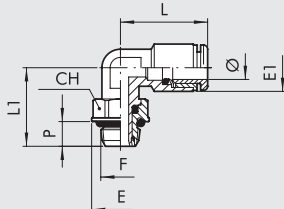
Code	Ref	Ø	F	Ch		P	L	L1	E	E1
				Inc	mm					
2U14104	RU15	1/8	10/32 UNF	5/64	2	0.16	0.50	0.55	0.23	0.28
2U14001	RU15	5/32	10/32 UNF	5/64	2	0.16	0.76	0.74	0.31	0.37
2U14002	RU15	5/32	1/8 NPT	0.118	3	0.24	0.80	1.01	0.51	0.37
2U14106	RU15	1/4	10/32 UNF	5/64	2	0.16	0.94	0.74	0.31	0.46
2U14005	RU15	1/4	1/8 NPT	0.118	3	0.24	0.92	1.01	0.51	0.46
2U14007	RU15	1/4	1/4 NPT	5/32	4	0.31	0.98	1.17	0.65	0.46
2U14006	RU15	5/16	1/8 NPT	0.118	3	0.24	0.97	1.01	0.51	0.54
2U14008	RU15	5/16	1/4 NPT	5/32	4	0.31	1.03	1.17	0.65	0.54
2U14013	RU15	5/16	3/8 NPT	0.197	5	0.35	1.11	1.40	0.79	0.54
2U14009	RU15	3/8	1/4 NPT	5/32	4	0.31	1.25	1.17	0.65	0.65
2U14014	RU15	3/8	3/8 NPT	0.197	5	0.35	1.31	1.40	0.79	0.63
2U14011	RU15	1/2	3/8 NPT	0.197	5	0.35	1.44	1.4	0.79	0.79
2U14012	RU15	1/2	1/2 NPT	0.315	8	0.43	1.5	1.6	0.96	0.8

RU16 - ROTARY FITTINGS DOUBLE



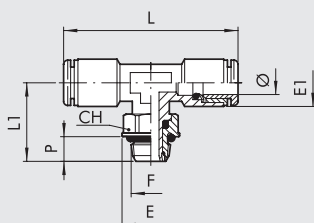
Code	Ref	Ø	F	Ch		P	L	LI	E	EI
				Inc	mm					
2U15001	RU16	5/32	10/32 UNF	5/64	2	0.16	1.52	0.74	0.31	0.37
2U15002	RU16	5/32	1/8 NPT	5/64	2	0.24	1.60	1.01	0.51	0.37
2U15106	RU16	1/4	10/32 UNF	0.118	3	0.16	1.87	0.74	0.31	0.46
2U15005	RU16	1/4	1/8 NPT	5/64	2	0.24	1.83	1.01	0.51	0.46
2U15007	RU16	1/4	1/4 NPT	0.118	3	0.31	1.95	1.17	0.65	0.46
2U15006	RU16	5/16	1/8 NPT	5/32	4	0.24	1.94	1.01	0.51	0.54
2U15008	RU16	5/16	1/4 NPT	0.118	3	0.31	2.06	1.17	0.65	0.54
2U15013	RU16	5/16	3/8 NPT	5/32	4	0.35	2.22	1.40	0.79	0.54
2U15009	RU16	3/8	1/4 NPT	0.197	5	0.31	2.51	1.17	0.65	0.65
2U15014	RU16	3/8	3/8 NPT	5/32	4	0.35	2.62	1.40	0.79	0.63
2U15011	RU16	1/2	3/8 NPT	0.197	5	0.35	2.88	1.4	0.79	0.79
2U15012	RU16	1/2	1/2 NPT	0.315	8	0.43	3	1.6	0.96	0.8

RU31 - MALE ELBOWS



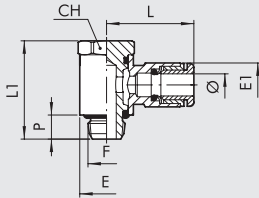
Code	Ref	Ø	F	Ch		P	L	LI	E	EI
				Inc	mm					
2U31001	RU31	5/32	10/32 UNF	0.354	9	0.16	0.70	0.60	0.39	0.37
2U31002	RU31	5/32	1/8 NPT	0.472	12	0.24	0.70	0.75	0.51	0.37
2U31003	RU31	5/32	1/4 NPT	0.551	14	0.31	0.70	0.83	0.65	0.37
2U31007	RU31	1/4	10/32 UNF	0.354	9	0.16	0.87	0.60	0.39	0.46
2U31008	RU31	1/4	1/8 NPT	0.472	12	0.24	0.87	0.75	0.51	0.46
2U31009	RU31	1/4	1/4 NPT	0.551	14	0.31	0.87	0.83	0.65	0.46
2U31010	RU31	5/16	1/8 NPT	0.472	12	0.24	0.96	0.75	0.51	0.54
2U31011	RU31	5/16	1/4 NPT	0.551	14	0.31	0.96	0.83	0.65	0.54
2U31012	RU31	5/16	3/8 NPT	0.669	17	0.35	0.93	1.07	0.79	0.54
2U31013	RU31	3/8	1/4 NPT	0.551	14	0.31	1.09	0.86	0.65	0.63
2U31014	RU31	3/8	3/8 NPT	0.669	17	0.35	1.09	1.07	0.79	0.63
2U31015	RU31	3/8	1/2 NPT	0.866	22	0.43	1.09	1.18	0.96	0.63
2U31017	RU31	1/2	3/8 NPT	0.67	17	0.35	1.19	1.11	0.79	0.79
2U31018	RU31	1/2	1/2 NPT	0.866	22	0.43	1.19	1.2	0.96	0.79

RU32 - BRANCH TEES



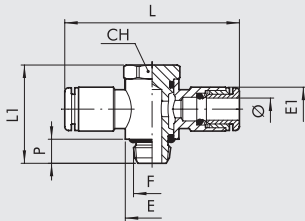
Code	Ref	Ø	F	Ch		P	L	LI	E	EI
				Inc	mm					
2U32002	RU32	5/32	1/8 NPT	0.472	12	0.24	1.4	0.75	0.51	0.37
2U32003	RU32	5/32	1/4 NPT	0.551	14	0.31	1.4	0.83	0.65	0.37
2U32007	RU32	1/4	10/32 UNF	0.354	9	0.16	1.80	0.60	0.39	0.46
2U32008	RU32	1/4	1/8 NPT	0.472	12	0.24	1.74	0.75	0.51	0.46
2U32009	RU32	1/4	1/4 NPT	0.551	14	0.31	1.74	0.83	0.65	0.46
2U32010	RU32	5/16	1/8 NPT	0.472	12	0.24	1.92	0.75	0.51	0.54
2U32011	RU32	5/16	1/4 NPT	0.551	14	0.31	1.92	0.83	0.65	0.54
2U32012	RU32	5/16	3/8 NPT	0.669	17	0.35	1.86	1.07	0.79	0.54
2U32013	RU32	3/8	1/4 NPT	0.551	14	0.31	2.18	0.86	0.65	0.63
2U32014	RU32	3/8	3/8 NPT	0.669	17	0.35	2.18	1.07	0.79	0.63
2U32015	RU32	3/8	1/2 NPT	0.866	22	0.43	2.18	1.18	0.96	0.63
2U32017	RU32	1/2	3/8 NPT	0.67	17	0.35	2.38	1.11	0.79	0.79
2U32018	RU32	1/2	1/2 NPT	0.866	22	0.43	2.38	1.2	0.96	0.79

RU54 - SINGLE BANJO



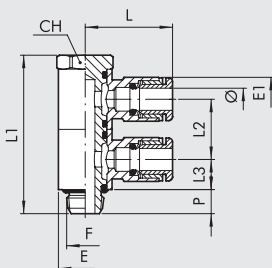
Code	Ref	Ø	F	Ch		P	L	L1	E	E1
				Inc	mm					
2U54001	RU54	5/32	10/32 UNF	0.354	9	0.18	0.76	0.74	0.37	0.37
2U54002	RU54	5/32	1/8 NPT	0.512	13	0.24	0.80	0.99	0.55	0.37
2U54007	RU54	1/4	10/32 UNF	0.354	9	0.18	0.94	0.74	0.37	0.46
2U54008	RU54	1/4	1/8 NPT	0.512	13	0.24	0.92	0.99	0.55	0.46
2U54009	RU54	1/4	1/4 NPT	5/8	16	0.32	0.98	1.15	0.71	0.46
2U54010	RU54	5/16	1/8 NPT	0.512	13	0.24	0.97	0.99	0.55	0.54
2U54011	RU54	5/16	1/4 NPT	5/8	16	0.32	1.03	1.15	0.71	0.54
2U54012	RU54	5/16	3/8 NPT	0.787	20	0.35	1.11	1.39	0.83	0.54
2U54013	RU54	3/8	1/4 NPT	5/8	16	0.32	1.25	1.15	0.71	0.63
2U54014	RU54	3/8	3/8 NPT	0.787	20	0.35	1.31	1.39	0.83	0.63
2U54016	RU54	1/2	3/8 NPT	0.787	20	0.39	1.44	1.39	0.83	0.8
2U54017	RU54	1/2	1/2 NPT	0.984	25	0.49	1.5	1.57	1.02	0.8

RU55 - DOUBLE BANJO



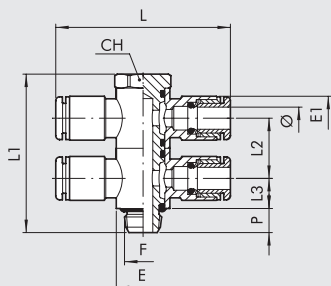
Code	Ref	Ø	F	Ch		P	L	L1	E	E1
				Inc	mm					
2U55001	RU55	5/32	10/32 UNF	0.354	9	0.18	1.52	0.74	0.37	0.37
2U55002	RU55	5/32	1/8 NPT	0.512	13	0.24	1.60	0.99	0.55	0.37
2U55007	RU55	1/4	10/32 UNF	0.354	9	0.18	1.87	0.74	0.37	0.46
2U55008	RU55	1/4	1/8 NPT	0.512	13	0.24	1.83	0.99	0.55	0.46
2U55009	RU55	1/4	1/4 NPT	5/64	16	0.32	1.95	1.15	0.71	0.46
2U55010	RU55	5/16	1/8 NPT	0.512	13	0.24	1.94	0.99	0.55	0.54
2U55011	RU55	5/16	1/4 NPT	5/64	16	0.32	2.06	1.15	0.71	0.54
2U55012	RU55	5/16	3/8 NPT	0.787	20	0.35	2.22	1.39	0.83	0.54
2U55013	RU55	3/8	1/4 NPT	5/64	16	0.32	2.51	1.15	0.71	0.63
2U55014	RU55	3/8	3/8 NPT	0.787	20	0.35	2.62	1.39	0.83	0.63
2U55016	RU55	1/2	3/8 NPT	0.787	20	0.39	2.88	1.39	0.83	0.8
2U55017	RU55	1/2	1/2 NPT	0.984	25	0.49	3	1.57	1.02	0.8

RU56 - DOUBLE STACKING BANJO, 2 PIPE CONNECTIONS



Code	Ref	Ø	F	Ch			P	L	L1	L2	L3	E	E1
				Inc	mm								
2U56001	RU56	5/32	10/32 UNF	0.354	9		0.18	0.76	1.19	0.45	0.23	0.37	0.37
2U56002	RU56	5/32	1/8 NPT	0.512	13		0.24	0.80	1.60	0.61	0.31	0.55	0.37
2U56007	RU56	1/4	10/32 UNF	0.354	9		0.18	0.94	1.19	0.45	0.23	0.37	0.46
2U56008	RU56	1/4	1/8 NPT	0.512	13		0.24	0.92	1.60	0.61	0.31	0.55	0.46
2U56009	RU56	1/4	1/4 NPT	5/8	16		0.32	0.98	1.83	0.68	0.34	0.71	0.46
2U56010	RU56	5/16	1/8 NPT	0.512	13		0.24	0.97	1.60	0.61	0.31	0.55	0.54
2U56011	RU56	5/16	1/4 NPT	5/8	16		0.32	1.03	1.83	0.68	0.34	0.71	0.54
2U56012	RU56	5/16	3/8 NPT	0.787	20		0.35	1.11	2.24	0.84	0.42	0.83	0.54
2U56013	RU56	3/8	1/4 NPT	5/8	16		0.32	1.25	1.83	0.68	0.34	0.71	0.63
2U56014	RU56	3/8	3/8 NPT	0.787	20		0.35	1.31	2.24	0.84	0.42	0.83	0.63
2U56016	RU56	1/2	3/8 NPT	0.787	20		0.39	1.44	2.24	0.84	0.42	0.83	0.8
2U56017	RU56	1/2	1/2 NPT	0.984	25		0.49	1.5	2.52	0.94	0.47	1.02	0.8

RU57 - DOUBLE STACKING BANJO, 4 PIPE CONNECTIONS



Code	Ref	Ø	F	Ch		P	L	L1	L2	L3	E	E1
				Inc	mm							
2U57001	RU57	5/32	10/32 UNF	0.354	9	0.18	1.52	1.19	0.45	0.23	0.37	0.37
2U57002	RU57	5/32	1/8 NPT	0.512	13	0.24	1.60	1.60	0.61	0.31	0.55	0.37
2U57007	RU57	1/4	10/32 UNF	0.354	9	0.18	1.87	1.19	0.45	0.23	0.37	0.46
2U57008	RU57	1/4	1/8 NPT	0.512	13	0.24	1.83	1.60	0.61	0.31	0.55	0.46
2U57009	RU57	1/4	1/4 NPT	5/8	16	0.32	1.95	1.83	0.68	0.34	0.71	0.46
2U57010	RU57	5/16	1/8 NPT	0.512	13	0.24	1.94	1.60	0.61	0.31	0.55	0.54
2U57011	RU57	5/16	1/4 NPT	5/8	16	0.32	2.06	1.83	0.68	0.34	0.71	0.54
2U57012	RU57	5/16	3/8 NPT	0.787	20	0.35	2.22	2.24	0.84	0.42	0.83	0.54
2U57013	RU57	3/8	1/4 NPT	5/8	16	0.32	2.51	1.83	0.68	0.34	0.71	0.63
2U57014	RU57	3/8	3/8 NPT	0.787	20	0.35	2.62	2.24	0.84	0.42	0.83	0.63
2U57016	RU57	1/2	3/8 NPT	0.787	20	0.39	2.89	2.24	0.84	0.42	0.83	0.8
2U57017	RU57	1/2	1/2 NPT	0.984	25	0.49	3	2.52	0.94	0.47	1.02	0.8

ACCESSORIES

R17 - DISASSEMBLY KEY

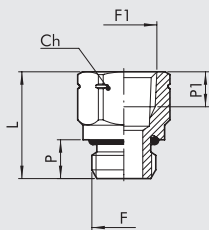


Code	Ref.	Length	Ø Tube
2L17001	RL17	5.51	from Ø 1/8 to Ø 3/8

NOTES

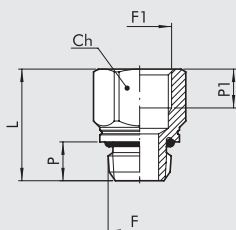
FITTINGS SERIES A

AU5/G - NPT FEMALE BSP MALE ADAPTORS



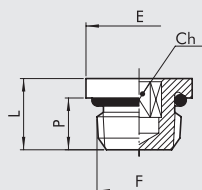
Code	Ref	F	F1	Ch		P	P1	L
				Inc	mm			
2105100U	AU5/G	M5	10/32 UNF	5/16	8	0.16	0.18	0.46
2105101U	AU5/G	BSP 1/8	1/8 NPT	0.551	14	0.24	0.28	0.73
2105103U	AU5/G	BSP 1/4	1/4 NPT	0.669	17	0.31	0.28	0.87
2105105U	AU5/G	BSP 3/8	3/8 NPT	0.866	22	0.35	0.37	1.03
2105107U	AU5/G	BSP 1/2	1/2 NPT	0.984	25	0.43	0.37	1.16

AU5/N - NPT MALE BSP FEMALE ADAPTORS



Code	Ref	F	F1	Ch		P	P1	L
				Inc	mm			
2105200U	AU5/N	10/32 UNF	M5	5/16	8	0.16	0.18	0.46
2105201U	AU5/N	1/8 NPT	BSP 1/8	0.551	14	0.24	0.26	0.73
2105203U	AU5/N	1/4 NPT	BSP 1/4	0.669	17	0.31	0.31	0.91
2105205U	AU5/N	3/8 NPT	BSP 3/8	0.866	22	0.35	0.39	1.05
2105207U	AU5/N	1/2 NPT	BSP 1/2	0.984	25	0.43	0.43	1.23

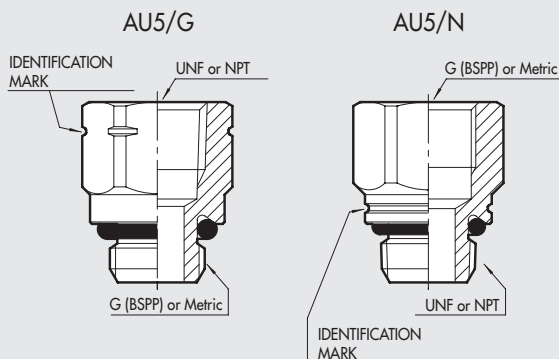
AU7 - BLANKING PLUGS



Code	Ref	F	Inc	Ch		L	E
				mm	P		
2107000U	AU7	10/32 UNF	0.079	2	0.16	0.26	0.31
2107001U	AU7	1/8 NPT	0.118	3	0.24	0.33	0.51
2107002U	AU7	1/4 NPT	0.236	6	0.31	0.43	0.65
2107003U	AU7	3/8 NPT	5/16	8	0.35	0.49	0.79
2107004U	AU7	1/2 NPT	0.394	10	0.43	0.57	0.96

IDENTIFICATION MARK FOR AU5

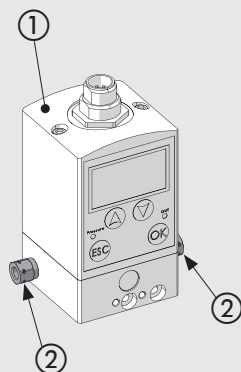
An identification mark near the NPT thread is used to distinguish it from the G (BSPP) thread.



EXAMPLE

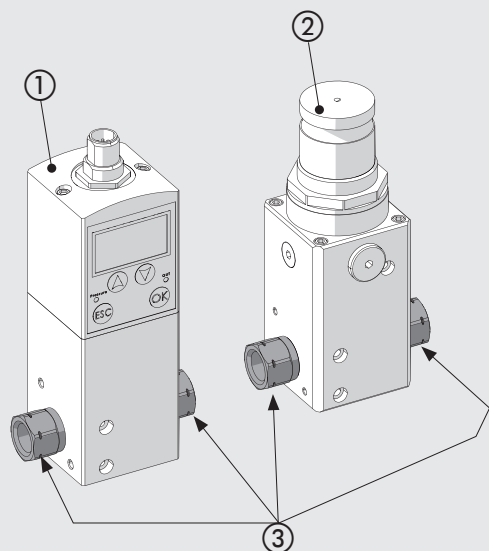
TRANSFORMATION FROM M5 TO 10/32 UNF

- ① REGTRONIC M5 with display code **5520500**
REGTRONIC M5 remote control code **5520502**
- ② AU5/G M5 10/32 UNF code **2105100U**



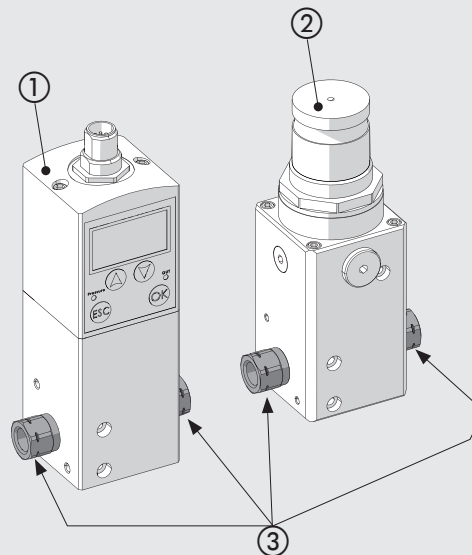
TRANSFORMATION FROM 1/4 BSPP TO 1/4 NPT

- ① REGTRONIC 1/4 BSPP with display code **5522500**
REGTRONIC 1/4 BSPP remote control code **5522502**
- ② REG. GS 1/4 BSPP 02 code **5512200**
REG. GS 1/4 BSPP 04 code **5512300**
REG. GS 1/4 BSPP 08 code **5512400**
- ③ AU5/G 1/4 BSPP - 1/4 NPT code **2105103U**

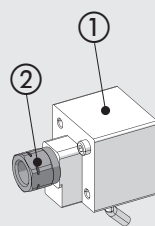


TRANSFORMATION FROM 1/8 BSPP TO 1/8 NPT

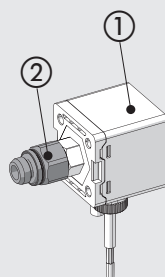
- ① REGTRONIC 1/8 BSPP with display code **5521500**
REGTRONIC 1/8 BSPP remote control code **5521502**
- ② REG. GS 1/8 BSPP 02 code **5511200**
REG. GS 1/8 BSPP 04 code **5511300**
REG. GS 1/8 BSPP 08 code **5511400**
- ③ AU5/G 1/8 BSPP - 1/8 NPT code **2105101U**



- ① Digital pressure switch series 600 code **9000600**
- ② AU5/G 1/8 BSPP - 1/8 NPT code **2105101U**

















- ① Digital pressure switch series 640 code **9000640**
- ② AU5/N 1/8 NPT - BSPP 1/8 code **2105201U**



NOTES

ACCESSORIES

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● PNEUMATIC LOGIC	PAGE	4-47
● SILENCER	PAGE	4-53

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	● IN-LINE SOLENOID VALVE SERIES SOV L	PAGE 4-9
	● MINIATURE REDUCER/ECONOMIZER SERIES RML	PAGE 4-12
	● IN-LINE PRESSURE GAUGE SERIES MAN L	PAGE 4-14
	● IN LINE PRESSURE SWITCH SERIES PRS L	PAGE 4-15
	● IN-LINE PRESSURE INDICATOR SERIES LAM L	PAGE 4-17
	● IN-LINE SHUTOFF VALVE SERIES V2V L AND V3V L	PAGE 4-18
	● IN-LINE FLOW MICRO-REGULATOR SERIES RFL L	PAGE 4-20
	● IN-LINE FIXED-REGULATION FLOW REGULATOR SERIE RFF L	PAGE 4-24
	● IN-LINE QUICK-EXHAUST VALVES SERIES VSR L	PAGE 4-26
	● IN-LINE QUICK-EXHAUST VALVE WITH REGULATED EXHAUST SERIES VSRR L	PAGE 4-28
	● IN-LINE STOP VALVE SERIES STP L	PAGE 4-30
	● IN-LINE CHECK VALVE SERIES VNR L	PAGE 4-32
	● IN-LINE FILTER SERIES FIL L	PAGE 4-34
	● LINE ON LINE [®] ACCESSORIES	PAGE 4-36

Line on Line is an exclusive range of products for mounting on pneumatic circuits. With these small, highly efficient components it is possible to perform all pneumatic functions at any point of the circuit.

Line on Line is ultra-modular - the components can be connected in parallel, in series or combined parallel/series.

All Line on Line products are available for pipe-pipe connection with two push in fittings. Adding an RU6 fitting, it is possible to have a pipe-NPT thread connection.

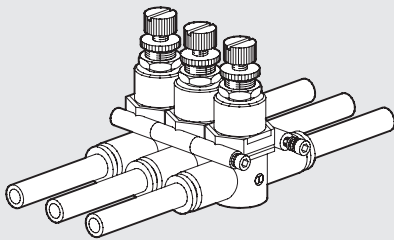
The body is made of technopolymer, giving a product that is extremely lightweight and compact.

One side of the body is marked with an indelible pneumatic symbol to facilitate identification and indicate the direction of flow.

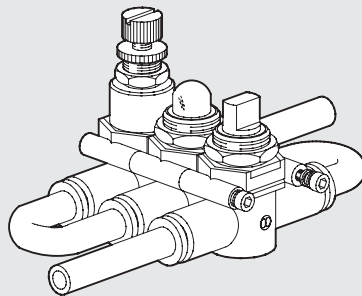


CONNECTION FREE

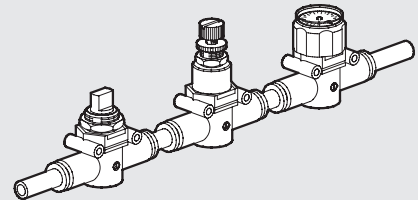
PARALLEL LINES



SERIAL LINE PARALLEL FITTING



SERIAL LINE IN-LINE FITTING



FIXING FREE

WALL FIXING

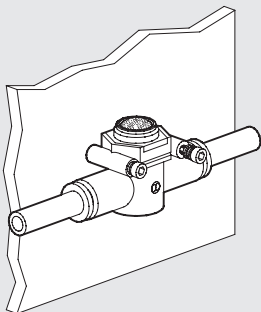
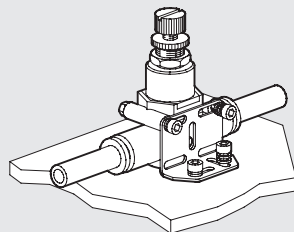
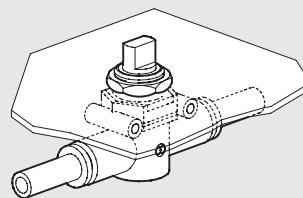


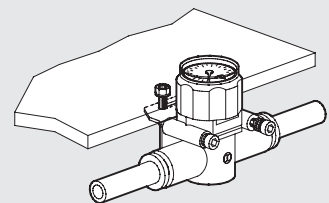
PLATE FIXING



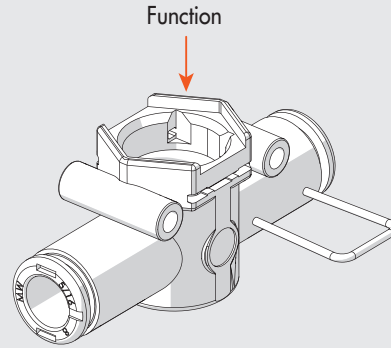
PANEL FIXING



UNDER WALL FIXING



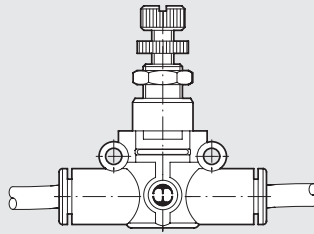
ALL THE PNEUMATIC FUNCTIONS WITH THE SAME EXTERNAL DIMENSIONS



PNV	SOV		RML	MAN	PRS	LAM	V2V [▲]	V3V
3-way pneumatic valve	Solenoid valve 3-way with silenced exhaust	Solenoid valve 3-way with conveyed exhaust	Pressure regulator	Pressure gauge	Pressure switch	Pressure indicator	Shut-off valve 2-way	Shut-off valve 3-way
See page 4-7	See page 4-9		See page 4-12	See page 4-14	See page 4-15	See page E1.24	See page 4-18	See page 4-18

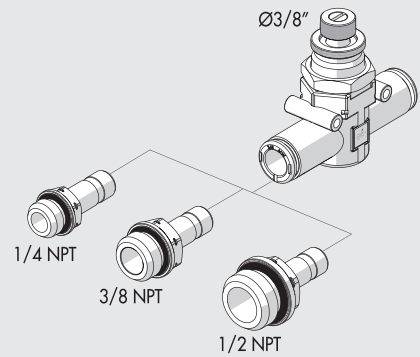
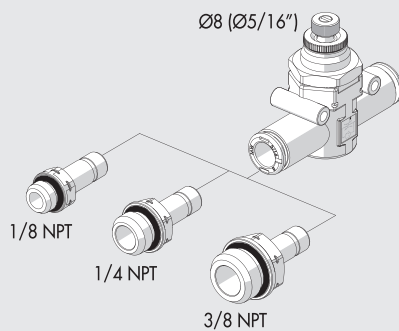
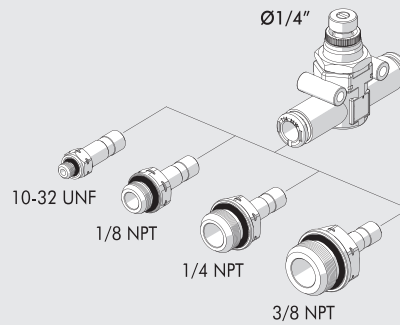
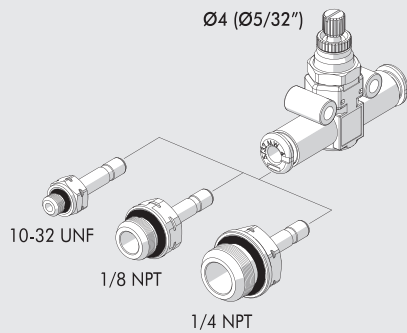
RFL		RFF		VSR		VSRR	STP	VNR	FIL
Flow regulator unidirectional	Flow regulator bidirectional	Calibrated choke unidirectional	Calibrated choke bidirectional	Quick-exhaust valve conveyed	Quick-exhaust valve silenced	Quick-exhaust valve regulated	Stop valve	Check valve	Filter
See page 4-20		See page 4-24		See page 4-26		See page 4-28	See page 4-30	See page 4-32	See page 4-34

PIPE - PIPE

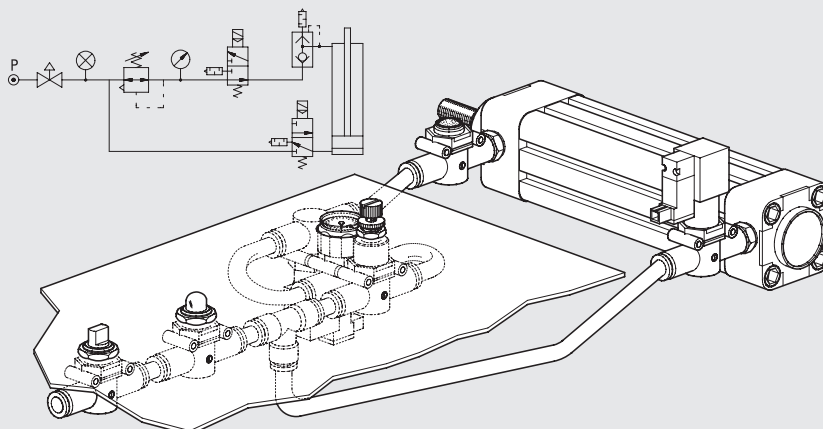


THREAD - PIPE

Thank to the RU6 fitting, with his male NPT thread, it is possible to fit all line on line products directly on female threads, i.e. on cylinders or valves.

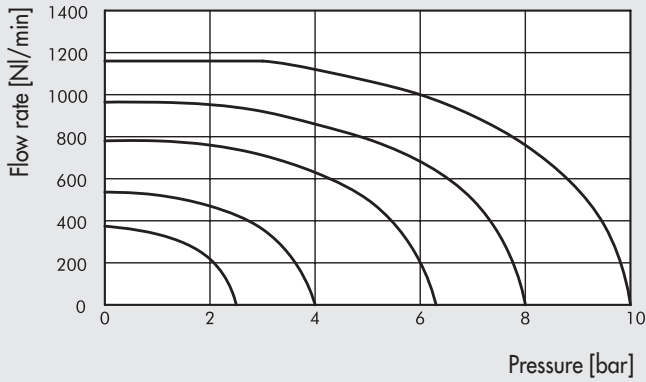


APPLICATION EXAMPLE



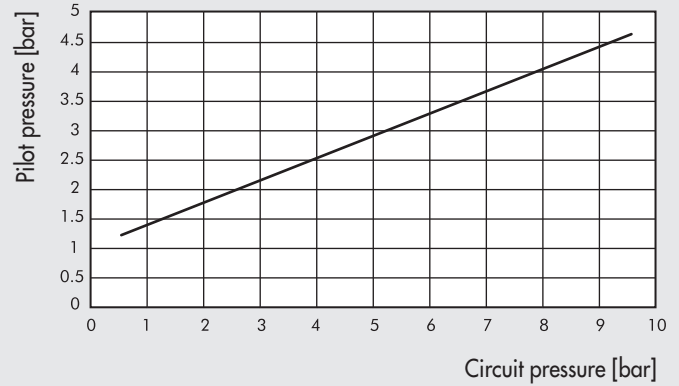
FLOW CHARTS

PNV L 5/16

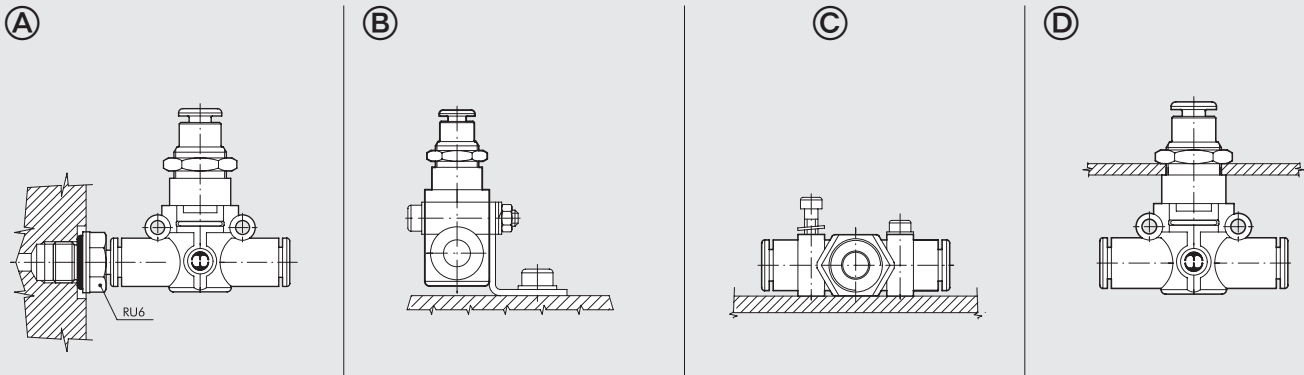


MINIMUM PILOT PRESSURE

PNV L Ø 8 (Ø5/16")



ASSEMBLY OPTIONS

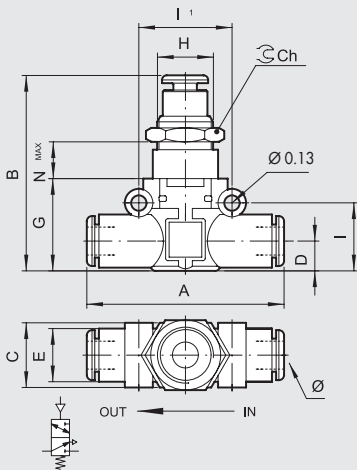


How to mount the PNV L:

- Fig. (A) Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the PNV L straight on to the actuator or the control valve.
- Fig. (B) Fixing to the plate with the special SQU L bracket.
- Fig. (C) There are two robust rings on the plastic body for fixing the PNV L straight onto the wall.
- Fig. (D) The ring nut is screwed onto the threaded metal part of the PNV L body for panel mounting.

PNV L 3/2 NC PIPE - PIPE

Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9067624	PNV L3/2 NC 5/16-5/16	5/16 ▲	2.26	1.96	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.67	0.46



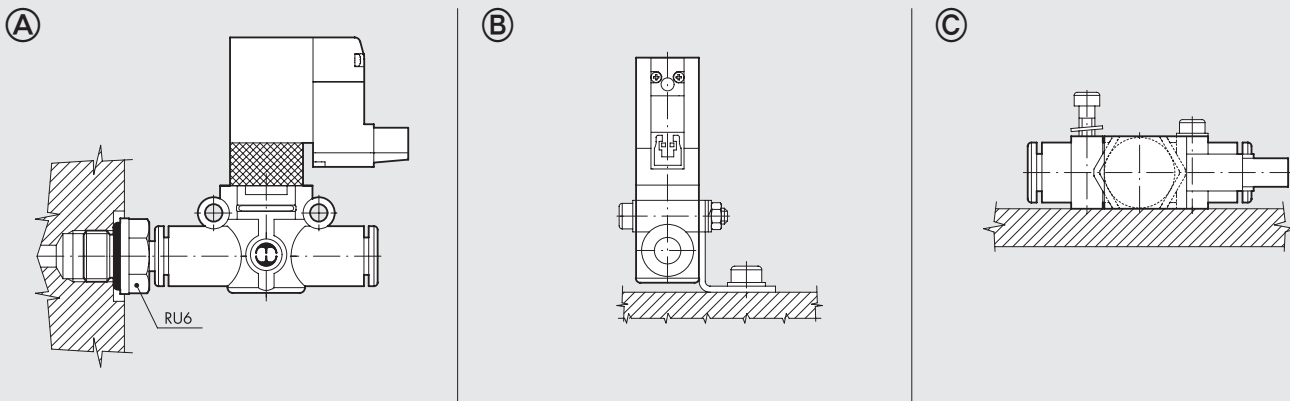
IN-LINE SOLENOID VALVE SERIES SOV L

SOV L solenoid valves belong to the LINE ON LINE® family, which means they can be connected to all the other components in series or in parallel. Available in the version for pipe-pipe connection with two push-in fittings. Though small in size, SOV L valves are solenoid-piloted and feature very high performance. The spool distributor is fitted with special polyurethane gaskets to ensure a very long working life. Each valve comes complete with a monostable manual control and LED. Exhaust can be damped with an annular silencer.



TECHNICAL DATA		Ø 1/4	Ø 5/16
Operating pressure	MPa	0.25 - 0.7	
	bar	2.5 - 7	
	psi	36 - 101	
Temperature range	°C	-10 to +60	
	°F	+14 to +140	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.1 Mpa - 7.25 psi)	NI/min	270	500
	scfm	9.5	17.7
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 Mpa - 14.5 psi)	NI/min	380	700
	scfm	13.4	24.7
Conductance C	NI/min-bar	95.8	178.1
Coefficient b	bar/bar	0.145	0.129
Voltage	VDC	24	
Power	W	0.9	
Recommended pipe		Rilsan PA11 - Nylon 6 - Polyamide 12 - Polypropylene	
Fluid		Lubricated or unlubricated filtered compressed air	
Compatibility with oils		Please refer to page 5-2 of the technical documentation	

ASSEMBLY OPTIONS

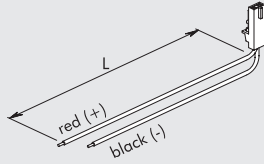


How to mount the SOV L:

- Fig. A Adding a RU6 fitting, with his male NPT thread, it is possible to mount the SOV L straight on to the actuator or the control valve.
- Fig. B Fixing to the plate with the special SQU L bracket.
- Fig. C There are two robust rings on the plastic body for fixing the SOV L straight onto the wall.

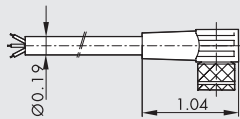
ACCESSORIES

PLUG-IN CONNECTOR



Code	Description
W0970512000	Plug-in connector Mach 11 L = 11.8 inch
W0970512007	Plug-in connector Mach 11 L = 39 inch
W0970512002	Plug-in connector Mach 11 L = 79 inch

90° M8 CONNECTOR WITH CABLE



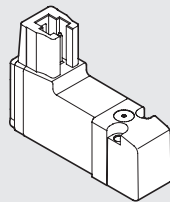
Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400B0100	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 39 inch
02400B0250	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 98 inch
02400B0500	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 197 inch
02400B1000	M8 female 3 PIN 90° HIGH FLEX CL6 connector with cable L = 394 inch

Very flexible cable, class 6 according to IEC 60228

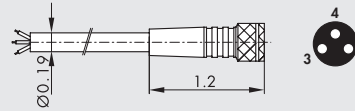
SPARE PARTS

PLUG-IN PILOT



Code	Description
722213541100	PLT-10 722213541100

M8 STRAIGHT CONNECTOR WITH CABLE

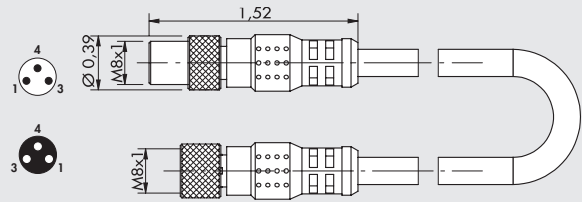


Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400A0100	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 39 inch
02400A0250	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 98 inch
02400A0500	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 197 inch
02400A1000	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 394 inch

Very flexible cable, class 6 according to IEC 60228

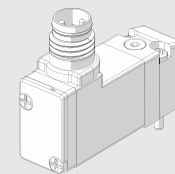
M8 M - M8 F CONNECTOR



Code	Description
0240009009	M8-M8 3-pin straight connector with cable L = 118 inch

Note: Can be used for direct connection to the modules with digital OUTPUT of the EB 80 valves

M8 PILOT



Code	Description
7222M3541100	PLT-10 3/2 NC 0.8W 24VDC LED M8 with manual

MINIATURE REDUCER/ECONOMIZER, SERIES RML

The RML R miniature pressure regulator belongs to the LINE ON LINE® family and can be connected in series or in parallel with all the other products. The miniature pressure regulator is available in five different types:

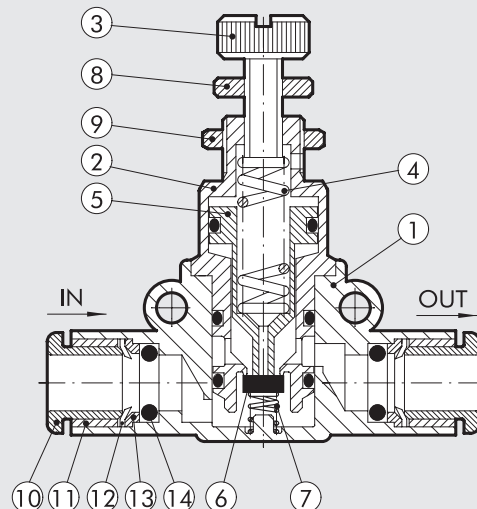
- In-line with push-in input and output fitting
- In-line with threaded input port and push-in output fitting
- In-line with push-in input fitting and threaded output port
- At an angle with threaded input port and push-in output fitting
- Cartridge type for direct assembly in suitably worked slot. The miniature pressure regulator is fitted with a relief valve for over-pressure exhaust.
- Particularly suitable for use between the valve and actuator and as a pressure regulator in secondary branches of the pneumatic system.



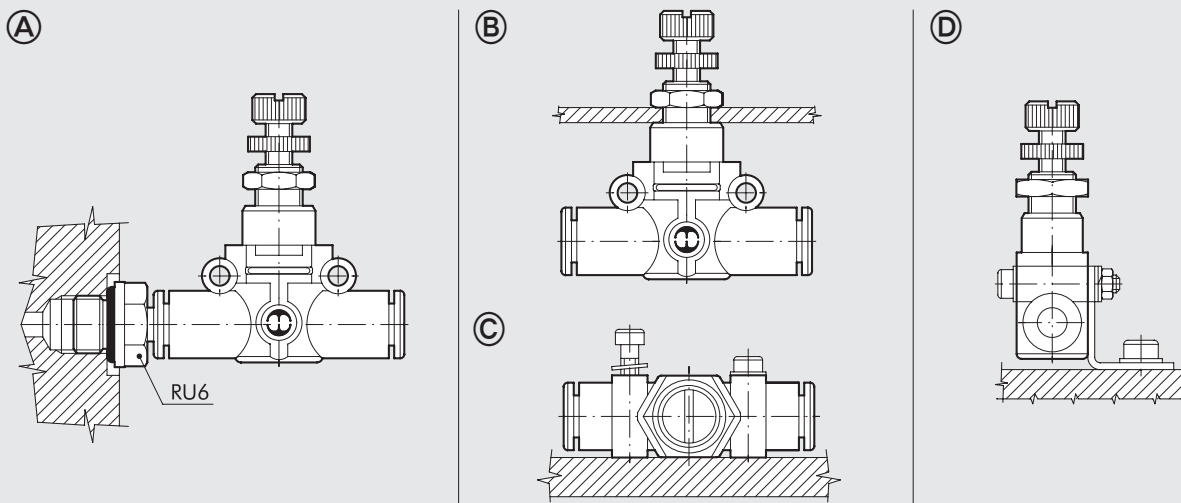
TECHNICAL DATA		Ø 1/4	Ø 5/16	Ø 3/8
Regulation range		1 to 8 bar - 0.1 to 0.8 MPa - 14.5 to 116 psi		
Inlet pressure	MPa	0.2 - 1		
	bar	2 - 10		
	psi	29 - 145		
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar	Nl/min	150	260	300
	scfm	5.3	9.2	10.6
Flow rate on exhaust at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	400	600	1000
	scfm	14	21.2	35.3
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous		
Max. temperature at 1 MPa; 10 bar; 145 psi	°C	- 20 to + 60		
	°F	- 4 to + 140		
Assembly position		Available		
Notes		In the miniature regulator the pressure must always be set upwards		
Compatibility with oils		Please refer to page 5-2 of the technical documentation		

COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass insert
- ③ Nickel-plated brass adjusting screw
- ④ Steel adjusting spring
- ⑤ Brass piston rod
- ⑥ NBR shutter
- ⑦ Stainless steel shutter spring
- ⑧ Adjusting screw ring nut
- ⑨ Nickel-plated brass wall ring nut
- ⑩ Technopolymer release bushing
- ⑪ Technopolymer stop bushing
- ⑫ Stainless steel crimping spring
- ⑬ Technopolymer spring ring
- ⑭ NBR gasket



ASSEMBLY OPTIONS

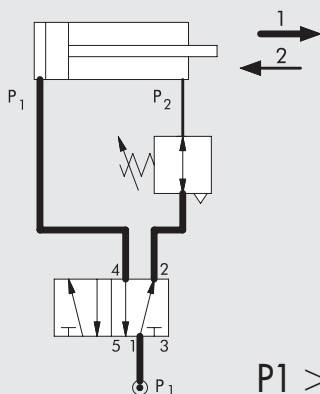


How to assembly RML:

- Fig. (A) Adding a RU6 fitting, with his male NPT thread, it is possible to mount the RML straight on to the actuator or the control valve.
- Fig. (B) By using the ring nut screwed on the threaded body it's possible the assembling on panels.
- Fig. (C) On the plastic body there are two strong ring for the direct wall assembly.
- Fig. (D) Fixing on plate trough the proper small square SQU L, except for Ø3/8.

POSSIBLE APPLICATIONS

ECONOMIZER



$P_1 > P_2$

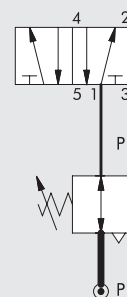
If in a cylinder you require a thrust in one direction only, e.g. piston rod extension, and a lower thrust and pressure is sufficient in the other direction, you can save a lot of energy by mounting an economizer valve.

Example

Cylinder Ø 80 mm, stroke 200 mm, 6 bar,
12 cycles/min, 16 hours a day, 230 days a year.
Consumption: 144 Nl/min => 3460 kWh/year =>
880 litres of oil => 2428 kg of CO₂ =>
€ 346/year.

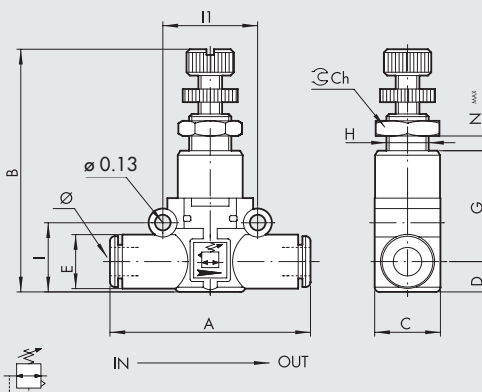
If you install an economizer that reduces the pressure from 6 to 2 bar, you SAVE: € 115/year.

REMOTE REDUCER



$P_1 > P_2$

LINE-MOUNTED MINIATURE REDUCER, SERIES RML



Code	Ref.	Ø	A	B	C	D	E	G	H	I	I1	Ch	Nmax
9061316U	RML 1/4-1/4	1/4	1.85	1.81-2.05	0.58	0.25	0.45	0.98	M9x0.75	0.57	0.79	0.43	0.18
9061324	RML 5/16-5/16	5/16	2.18	2.05-2.28	0.74	0.36	0.54	1.08	M11x1	0.74	0.94	0.51	0.15
9061332U	RML 3/8-3/8	3/8	2.56	2.32-2.60	0.83	0.43	0.63	1.18	M13x1	0.84	1.02	0.63	0.18

IN-LINE PRESSURE GAUGE SERIES MAN L

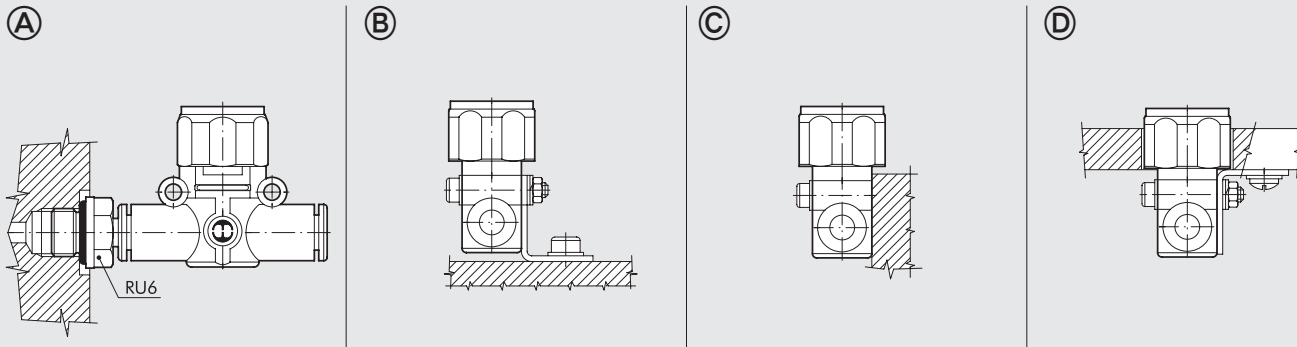
The MAN L pressure gauge belongs to the LINE ON LINE® family, which means it can be connected to all the other components in series or in parallel.

Available in the version for pipe-pipe connection with two push-in fittings. Though small in size, this pressure gauge, which is supplied in a metal casing, ensures accurate reading. It can be angled in any direction simply by rotating manually.



TECHNICAL DATA		Ø5/32	Ø 1/4	Ø5/16	Ø 3/8
Operating pressure	MPa			1.2	
	bar			12	
	psi			174	
Temperature range	°C			- 20 to + 60	
	°F			- 4 to + 140	
Precision				± 4% full scale	
Recommended pipe		Rilsan PA11 - Nylon 6 - Polyamide 12 - Polypropylene			
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous			
Compatibility with oils		Please refer to page 5-2 of the technical documentation			

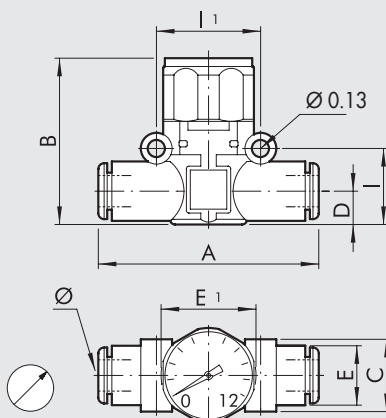
ASSEMBLY OPTIONS



How to mount the MAN L:

- Fig. A Adding a RU6 fitting, with his male NPT thread, it is possible to mount the MAL L straight on to the actuator or the control valve.
- Fig. B Fixing to the plate with the special SQU L bracket, except for Ø3/8.
- Fig. C There are two robust rings on the plastic body for fixing the MAN L straight onto the wall.
- Fig. D Fixing on plate trough the proper small square SQU L, except for Ø3/8.

MAN L PIPE-PIPE



Code	Ref.	Ø	A	B	C	D	E	E1	I	I1
9067001	MAN L 5/32-5/32	5/32	1.65	1.42	0.42	0.22	0.39	0.9	0.5	0.63
9067016U	MAN L 1/4-1/4	1/4	1.95	1.38	0.58	0.25	0.45	0.9	0.57	0.79
9067024	MAN L 5/16-5/16	5/16	2.26	1.61	0.74	0.36	0.54	0.9	0.74	0.94
9067032U	MAN L 3/8-3/8	3/8	2.57	1.77	0.81	0.43	0.63	0.91	0.84	1.02

IN LINE PRESSURE SWITCH SERIES PRS L

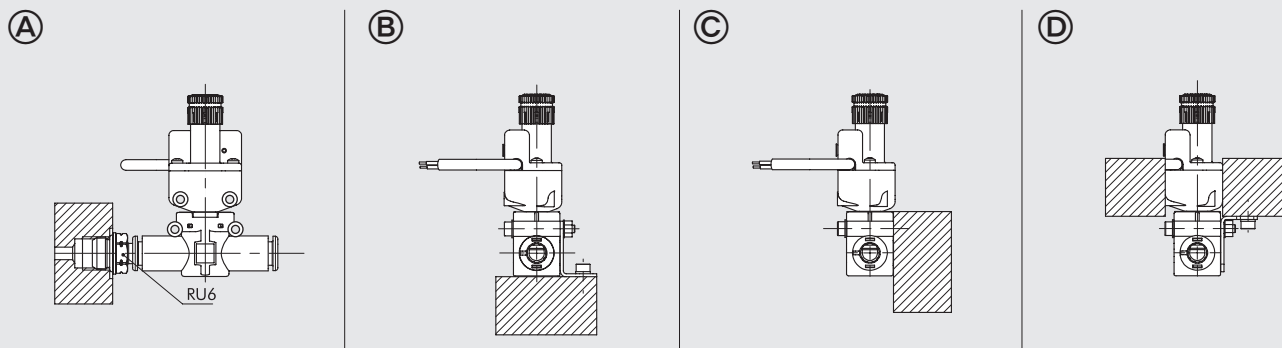
The PRS L pressure switch belongs to the LINE ON LINE® range and can therefore be connected in series or in parallel to all other products. It is available in a version for tube-to-tube connection, which includes two automatic fittings.

The pressure switch can be installed in any position and orientation. It is supplied pre-assembled and complete with an electrical cable to save wiring time. You can choose between a 78.8 inch cable or an M8 connector with a 11.8 inch cable. It is a switchover contact, which means that both normally open and normally closed signals are provided. Adjustment is by means of a knurled knob with a push-lock system.



TECHNICAL DATA		Ø 1/4"	Ø 5/16"	Ø 3/8"
Maximum pressure	MPa		1	
	bar		10	
	psi		145	
Operating temperature range at: 1 MPa; 10 bar; 145 psi	°C		50	
	°F		122	
Adjustable pressure interval	bar		0.5 to 10	
Hysteresis (not adjustable)	bar	From 0.4 to 0.8 (see diagram following pages)		
Maximum current	A		2	
Maximum voltage	V		250	
Outside diameter of cable	mm		4.9	
Number of wires and cross section			3 x 0.5 mm ²	
Contacts		Normally-Open (NO) and Normally-Closed (NC)		
Protection		IP65		
Number of switchings		5 x 10 ⁶		
Recommended pipe		Rilsan PA11 - Nylon 6 - Polyamide 12 - Polypropylene		
Fluid		Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous.		
Mounting position		In any position		

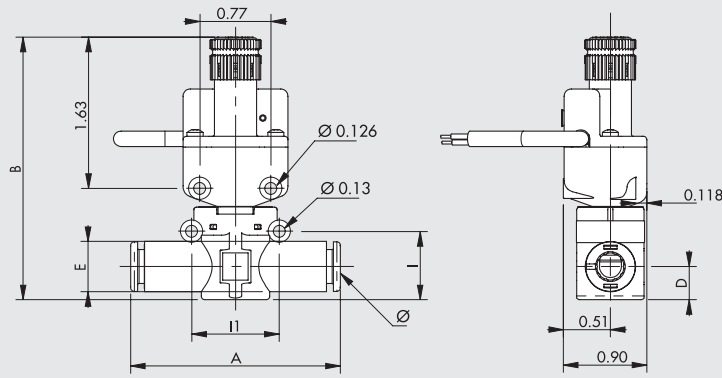
ASSEMBLY OPTIONS



How to mount the PRS L:

- Fig. A Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the PRS L straight on to the actuator or the control valve.
- Fig. B Fixing to the plate with the special SQU L bracket, except for Ø3/8.
- Fig. C There are two robust rings on the plastic body for fixing the PRS L straight onto the wall.
- Fig. D Use the SQU L bracket for panel mounting the PRS L.

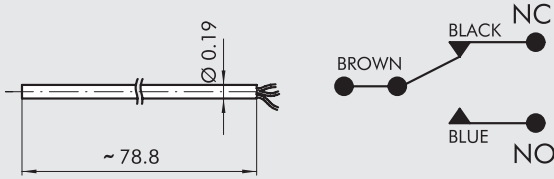
PRS L PIPE - PIPE



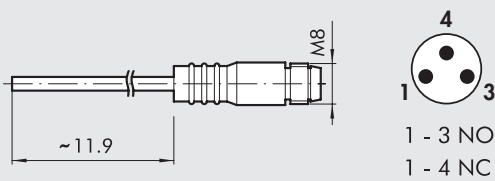
Code	Ref.	Ø	A	B	D	E	I	II
9070016U	PRS L 1/4-1/4 78 inch cable	1/4	1.94	~ 2.83	0.25	0.44	0.57	0.78
9070116U	PRS L 1/4-1/4 M8 connector	1/4	1.94	~ 2.83	0.25	0.44	0.57	0.78
9070024	PRS L 5/16-5/16 78 inch cable	5/16	2.25	~ 2.87	0.35	0.54	0.73	0.94
9070124	PRS L 5/16-5/16 M8 connector	5/16	2.25	~ 2.87	0.35	0.54	0.73	0.94
9070032U	PRS L 3/8-3/8 78 inch cable	3/8	2.57	~ 3	0.43	0.63	0.84	1.02
9070132U	PRS L 3/8-3/8 M8 connector	3/8	2.57	~ 3	0.43	0.63	0.84	1.02

WIRING DIAGRAM

VERSION WITH CABLE



VERSION WITH M8 CONNECTOR

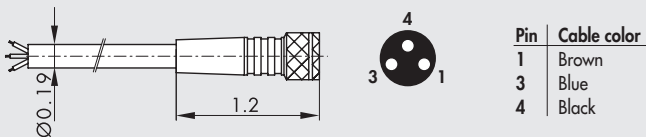


HYSTERESIS GRAPH



ACCESSORIES

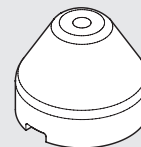
M8 STRAIGHT CONNECTOR WITH CABLE



Code	Description
02400A0100	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 1 m
02400A0250	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 2.5 m
02400A0500	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 5 m
02400A1000	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 10 m

Very flexible cable, class 6 according to IEC 60228

SECURITY KNOB



Code	Description
9200703	Security knob APR / pressure switch

NOTE: Pull outwards to remove the knob from the pressure switch on the unit. Insert the security knob and regulate the pressure switch. Then press the handle firmly to lock it in position. If the pressure switch needs to be reset, remove the security knob by forcing it laterally with a screwdriver.

IN-LINE PRESSURE INDICATOR SERIES LAM L

The LAM L pneumatic light indicator belongs to the LINE ON LINE® family, which means it can be connected to all the other components in series or in parallel.

Available in the version for pipe-pipe connection with two push-in fittings.

When there is no pressure, the clear technopolymer bell looks empty.

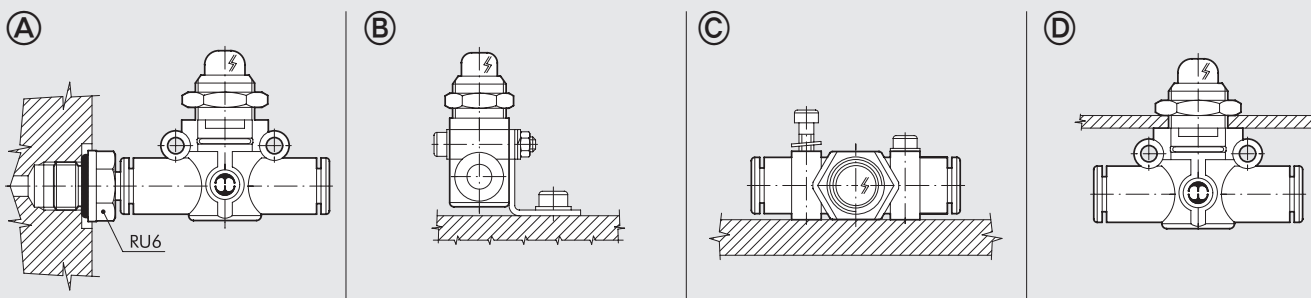
When there is pressure, a red signal appears.

The clear bell can be cleaned using normal detergents or ethyl alcohol, as the technopolymer used is fully compatible.



TECHNICAL DATA		Ø 1/4	Ø 5/16
Operating pressure	MPa		0.2 - 1
	bar		2 - 10
	psi		29 - 145
Temperature range	°C		- 20 to + 60
	°F		- 4 to + 140
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 Mpa - 14.5 psi)	Nl/min	420	800
	scfm	14.8	28.3
Colour with pressure		Orange - Green	
Recommended pipe		Rilsan PA11 - Nylon 6 - Polyamide 12 - Polypropylene	
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous	
Compatibility with oils		Please refer to page 5-2 of the technical documentation	

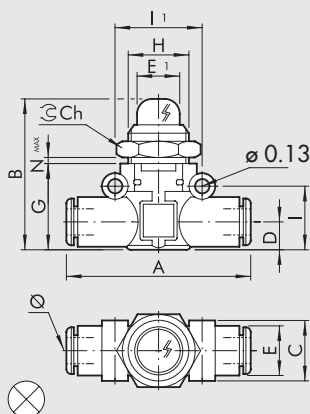
ASSEMBLY OPTIONS



How to mount the LAM L:

- Fig. (A) Adding a RU6 fitting, with his male NPT thread, it is possible to mount the LAM L straight on to the actuator or the control valve.
- Fig. (B) Fixing to the plate with the special SQU L bracket.
- Fig. (C) There are two robust rings on the plastic body for fixing the LAM L straight onto the wall.
- Fig. (D) The ring nut is screwed onto the threaded metal part of the LAM L body for panel mounting.

LAM L PIPE-PIPE



Code	Ref.	Ø	A	B	C	D	E	E1	G	H	I	II	Ch	Nmax
9068016U	LAM L1/4-1/4-A	1/4	1.95	1.46	0.58	0.25	0.45	0.42	0.83	M15x1	0.57	0.79	0.67	0.18
9068216U	LAM L1/4-1/4-V													
9068024	LAM L5/16-5/16-A	5/16	2.26	1.61	0.74	0.36	0.54	0.42	1.02	M15x1	0.74	0.94	0.67	0.18
9068224	LAM L5/16-5/16-V													

A = Orange
V = Green

IN-LINE SHUTOFF VALVE SERIES V2V L AND V3V L

V2V L and V3V L shutoff valves belong to the LINE ON LINE® family which means they can be connected to all the other components in series or in parallel.

Available in the version for pipe-pipe connection with two push-in fittings.

V2V is a two-way unidirectional valve, while V3V is a three-way valve with free discharge in the area around the control knob.

The locked version is probably the smallest available on the market.

A lock is provided to ensure the valve is kept in the closed position during machine maintenance. The valve is supplied complete with a lock and two keys.

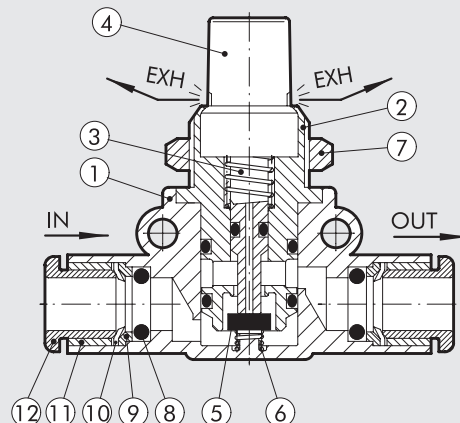


TECHNICAL DATA

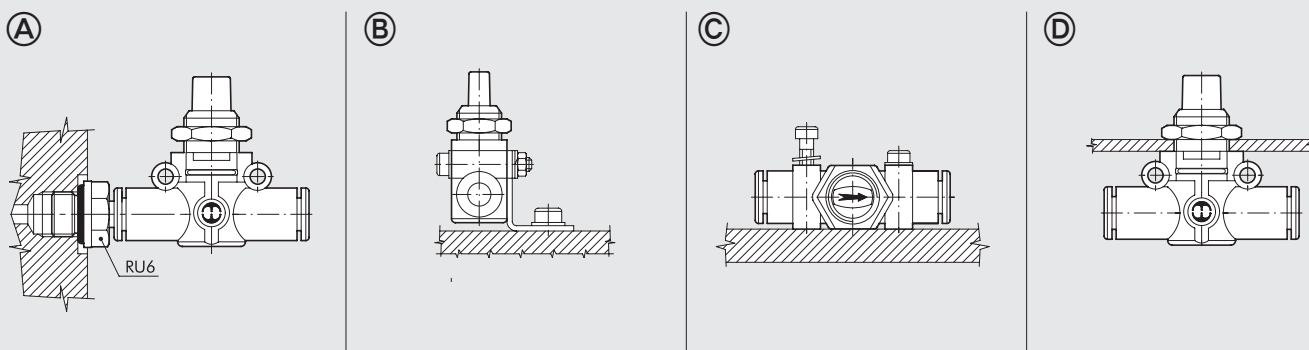
		Ø 1/4"	Ø 5/16"	Ø 3/8"
Operating pressure	MPa		1	
	bar		10	
	psi		145	
Temperature range	°C		- 20 to + 60	
	°F		- 4 to + 140	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	470	600	600
	scfm	10	21.2	21.2
Flow rate on exhaust at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	110	110	110
	scfm	3.8	3.8	3.8
Recommended pipe		Rilsan PA11 - Nylon 6 - Polyamide 12 - Polypropylene		
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous		
Compatibility with oils		Please refer to page 5-2 of the technical documentation		

COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass insert
- ③ Brass rod
- ④ Technopolymer knob
- ⑤ NBR valve
- ⑥ Stainless steel valve compression spring
- ⑦ Nickel-plated brass wall-mount ring nut
- ⑧ NBR gasket
- ⑨ Technopolymer spring ring
- ⑩ Stainless steel folding spring
- ⑪ Technopolymer locking bushing
- ⑫ Technopolymer release bushing



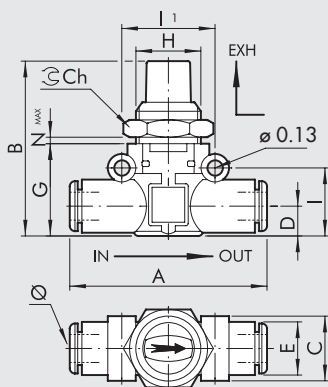
ASSEMBLY OPTIONS



How to mount the V2V/V3V L:

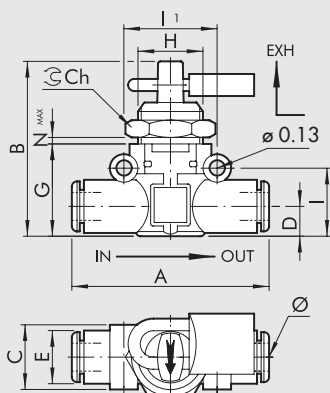
- Fig. (A) Adding a RU6 fitting, with his male NPT thread, it is possible to mount the V2V/V3V L straight on to the actuator or the control valve.
- Fig. (B) Fixing to the plate with the special SQU L bracket, except for Ø3/8.
- Fig. (C) There are two robust rings on the plastic body for fixing the V2V/V3V L straight onto the wall.
- Fig. (D) The rig nut is screwed onto the threaded metal part of the V2V/V3V L body for panel mounting.

V2V/V3V L PIPE-PIPE



Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9065016U	V2V L1/4-1/4	1/4	1.95	1.61	0.58	0.25	0.45	0.83	M15x1	0.57	0.79	0.67	0.22
9066016U	V3V L1/4-1/4												
9065024	V2V L5/16-5/16	5/16	2.26	1.81	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.67	0.22
9066024	V3V L5/16-5/16												
9065032U	V2V L3/8-3/8	3/8	2.56	2.05	0.83	0.43	0.63	1.18	M18x1.5	0.84	1.02	0.87	0.2
9066032U	V3V L3/8-3/8												

V2V/V3V L PIPE-PIPE PADLOCKED



Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9065116U	V2V L1/4-1/4 KEY	1/4	1.95	1.61	0.58	0.25	0.45	0.83	M15x1	0.57	0.79	0.67	0.22
9066116U	V3V L1/4-1/4 KEY												
9065124	V2V L5/16-5/16 KEY	5/16	2.26	1.81	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.67	0.22
9066124	V3V L5/16-5/16 KEY												
9065132U	V2V L3/8-3/8 KEY	3/8	2.56	2.05	0.83	0.43	0.63	1.18	M18x1.5	0.84	1.02	0.87	0.2
9066132U	V3V L3/8-3/8 KEY												

IN-LINE FLOW MICRO-REGULATOR SERIE RFL L

The RFL L flow micro-regulator belongs to the LINE ON LINE® family and can be connected in series or in parallel with all the other products. The RFL L regulates the air input and thus the speed in pneumatic actuators. Two versions are available:

- **Type U (unidirectional)** regulates the flow only in one of the two directions of air flow. The following types of fitting can be mounted:
 - Push-in input and output fitting
- **Type B (bidirectional)** regulates the flow in both directions of air flow. The following types of fitting can be mounted:
 - Push-in input and output fitting
 - Threaded port and push-in fitting

There are four possible types of assembly (see example on the following page).

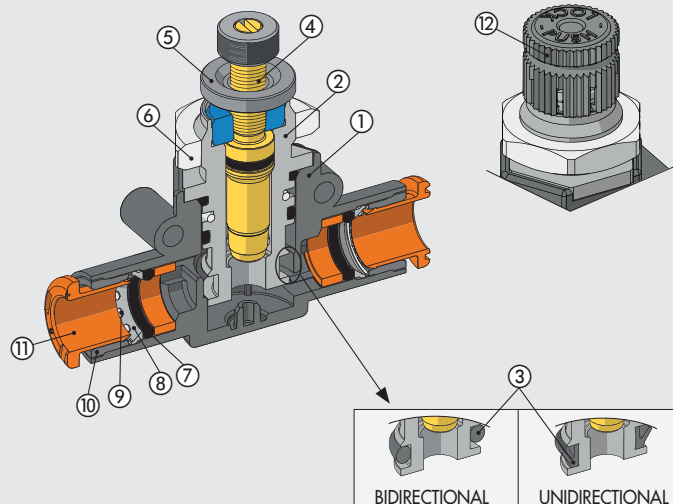


TECHNICAL DATA		Ø5/32	Ø 1/4	Ø 5/16	Ø 3/8 *
Max. operating pressure	MPa	1			
	bar	10			
	psi	145			
Temperature range	°C	- 20 to + 60			
	°F	- 4 to + 140			
Max flow rate on regulation at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	155	450	850	1400
	ΔP 1 bar (0.1 MPa - 14.5 psi)	scfm	5.5	16	30
Flow rate on exhaust at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	160	550	950	1500
	scfm	5.6	19.5	33.6	53
Adjustment		Manual or using a screwdriver			
Internal system		Tapered needle			
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene			
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous			
Compatibility with oils		Please refer to page 5-2 of the technical documentation			

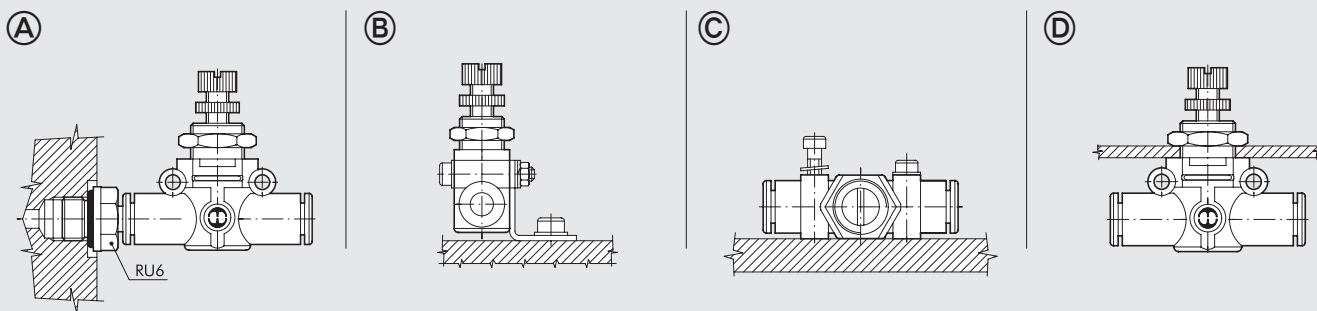
* To completely close the air flow in the PUSH-LOCK version, it is recommended to remove the plastic knob and tighten the pin with a screwdriver.

COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass seal support
- ③ NBR gasket
- ④ Brass adjusting needle
- ⑤ Nickel-plated brass needle ring nut
- ⑥ Wall fixing ring nut
- ⑦ NBR seal
- ⑧ Technopolymer spring ring
- ⑨ Stainless steel clip-on spring
- ⑩ Technopolymer stop bushing
- ⑪ Technopolymer release bushing
- ⑫ Technopolymer knob



ASSEMBLY OPTIONS



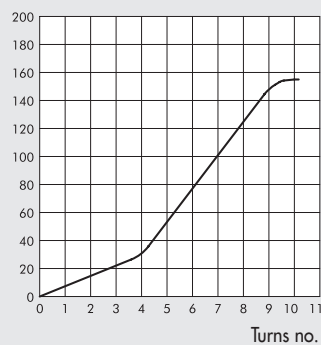
How to mount the RFL L:

- Fig. (A) Adding a RU6 fitting, with his male NPT thread, it is possible to mount the RFL L straight on to the actuator or the control valve.
- Fig. (B) Fixing to the plate with the special SQU L bracket, except for $\text{Ø}3/8$.
- Fig. (C) There are two robust rings on the plastic body for fixing the RFL L straight onto the wall.
- Fig. (D) The ring nut is screwed onto the threaded metal part of the RFL L body for panel mounting.

FLOW RATE CHARTS AT 6.3 bar (0.63 MPa - 91 psi) DEPENDING ON THE TURNS EFFECTED BY THE REGULATION SCREW

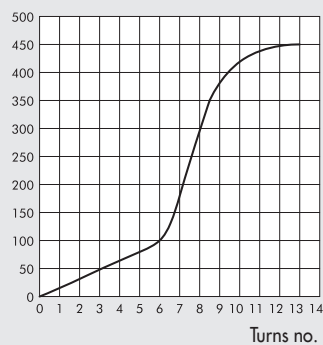
RFL L $\text{Ø}5/32$

Flow rates [Nl/min]



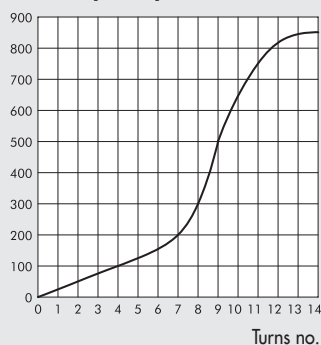
RFL L $\text{Ø}1/4$

Flow rates [Nl/min]



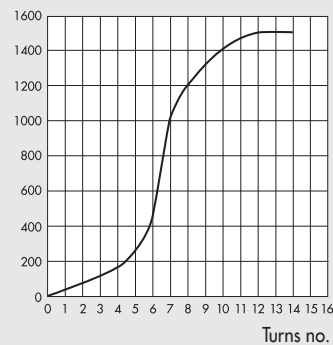
RFL L $\text{Ø}5/16$

Flow rates [Nl/min]

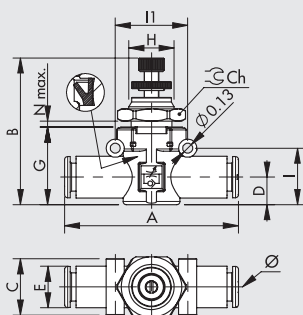


RFL L $\text{Ø}3/8$

Flow rates [Nl/min]

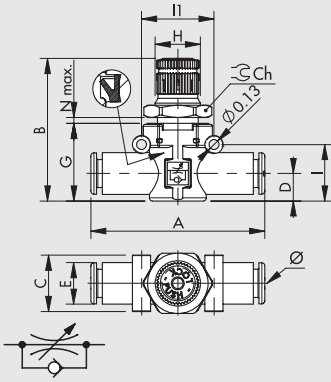


RFL L PIPE - PIPE UNIDIRECTIONAL



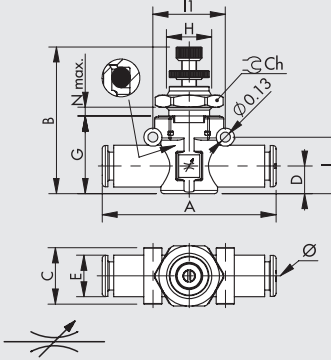
Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9041301	RFL LU 5/32-5/32	5/32	1.65	1.40-1.51	0.42	0.22	0.39	0.69	M9x0.75	0.5	0.63	0.43	0.16
9041316U	RFL LU 1/4-1/4	1/4	1.95	1.42-1.61	0.58	0.25	0.45	0.79	M12x0.75	0.57	0.79	0.59	0.16
9041324	RFL LU 5/16-5/16	5/16	2.26	1.73-1.93	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.79	0.18
9041332U	RFL LU 3/8-3/8	3/8	2.56	2.02-2.36	0.83	0.43	0.63	1.18	M18x1.5	0.84	1.02	0.87	0.22

RFL L PIPE - PIPE UNIDIRECTIONAL PUSH-LOCK



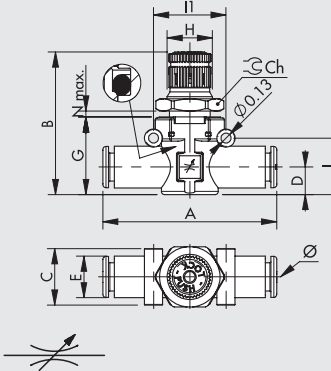
Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9041366U	RFL LU 1/4-1/4 PL	1/4	1.94	1.66±1.75	0.57	0.25	0.44	0.78	M12x0.75	0.57	0.78	0.59	0.15
9041374	RFL LU 5/16-5/16 PL	5/16	2.25	1.85±1.94	0.73	0.35	0.54	1.02	M15x1	0.73	0.94	0.78	0.17
9041382U	RFL LU 3/8-3/8 PL	3/8	2.55	2.10±2.19	0.82	0.42	0.62	1.18	M18x1.5	0.84	1.02	0.86	0.21

RFL L PIPE - PIPE BIDIRECTIONAL



Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9041601	RFL LB 5/32-5/32	5/32	1.65	1.40-1.51	0.42	0.22	0.39	0.69	M9x0.75	0.5	0.63	0.43	0.16
9041616U	RFL LB 1/4-1/4	1/4	1.95	1.42-1.61	0.58	0.25	0.45	0.79	M12x0.75	0.57	0.79	0.59	0.16
9041624	RFL LB 5/16-5/16	5/16	2.26	1.73-1.93	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.79	0.18
9041632U	RFL LB 3/8-3/8	3/8	2.56	2.02±2.36	0.83	0.43	0.63	1.18	M18x1.5	0.84	1.02	0.87	0.22

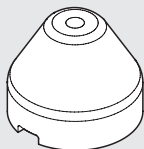
RFL L PIPE - PIPE BIDIRECTIONAL PUSH-LOCK



Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9041666U	RFL LB 1/4-1/4 PL	1/4	1.94	1.66±1.75	0.57	0.25	0.44	0.78	M12x0.75	0.57	0.78	0.59	0.15
9041674	RFL LB 5/16-5/16 PL	5/16	2.25	1.85±1.94	0.73	0.35	0.54	1.02	M15x1	0.73	0.94	0.78	0.17
9041682U	RFL LB 3/8-3/8 PL	3/8	2.55	2.10±2.19	0.82	0.42	0.62	1.18	M18x1.5	0.84	1.02	0.86	0.21

ACCESSORIES RFL PUSH-LOCK

ANTI-TAMPERING KNOB



Code	Description
9200703	Anti-tampering knob

NOTE: Remove the knob on the Push-Lock RFL by pulling outwards.
 Fit on the anti-tamper ring knob and make the necessary settings.
 When the RFL has been set, press the knob firmly until it locks in position.
 If the RFL needs to be recalibrated, remove the anti-tampering knob and push laterally using a screwdriver.

NOTES

Lined area for notes.

IN-LINE FIXED-REGULATION FLOW REGULATOR SERIES RFF L

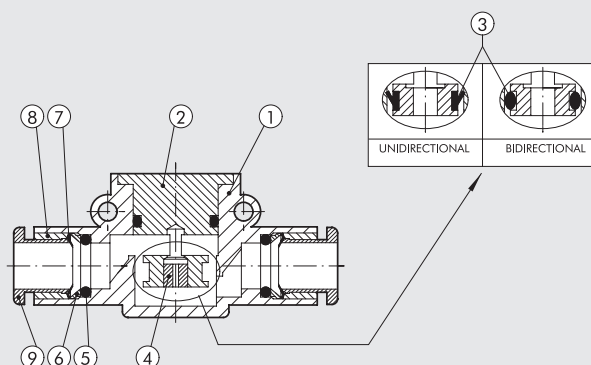
The in-line fixed regulation flow regulator belongs to the LINE ON LINE® family and can be connected in series or in parallel with the other products in the same family. The RFF L regulates the flow of air, and hence the rate of operation of pneumatic actuators. Air flow is regulated by means of a choke with a calibrated diameter. A full range of diameters is available. The advantage of the RFF L over other adjustable versions is that there is no need for regulation during machine installation. Subsequent adjustments are not required either. Two versions are available. Version U (unidirectional) regulates the flow in one direction only. Version B (bidirectional) regulates the air flow in both directions.



TECHNICAL DATA		Ø5/32	Ø5/16
Max. operating pressure	MPa	1	
	bar	10	
	psi	145	
Temperature range	°C	- 20 to + 60	
	°F	- 4 to + 140	
Choke flow rate	Nl/min	See table below	
Recommended pipe Fluid		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene	
Compatibility with oils		Lubricated or unlubricated filtered compressed air; if used, must be continuous Please refer to page 5-2 of the technical documentation	

COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass gasket holding insert
- ③ NBR gasket
- ④ Brass choke cartridge
- ⑤ NBR seal
- ⑥ Technopolymer spring ring
- ⑦ Stainless steel clip-on spring
- ⑧ Technopolymer stop bushing
- ⑨ Technopolymer release bushing



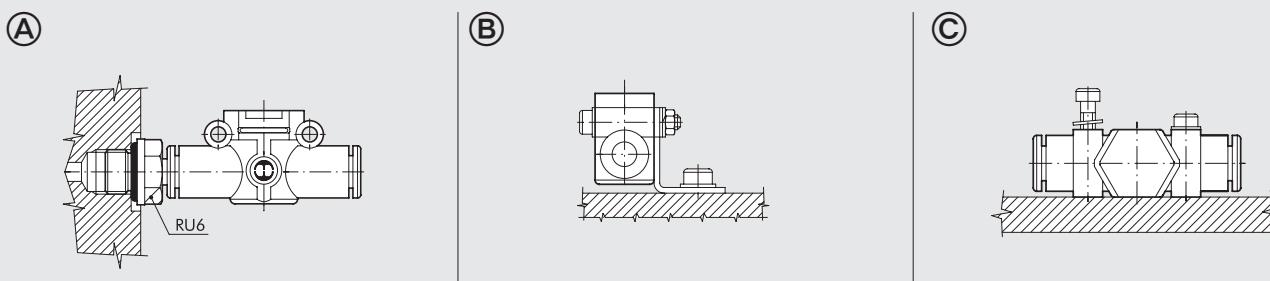
EXHAUST FLOW RATE AT 6.3 bar FOR VERSIONS U [Nl/min]

Choke [mm]	Ø5/32	Ø5/16
Ø 0.2	142	912
Ø 0.3	144	914
Ø 0.4	147	917
Ø 0.5	153	923
Ø 0.6	155	925
Ø 0.8	172	942
Ø 1.0	190	960
Ø 1.3	225	995
Ø 1.5	250	1020

CHOKE FLOW-RATE AT 6 bar WITH RELIEF VALVE OPEN

Choke [mm]	Flow rate [Nl/min]
Ø 0.2	2
Ø 0.3	4
Ø 0.4	7
Ø 0.5	13
Ø 0.6	15
Ø 0.8	32
Ø 1.0	50
Ø 1.3	85
Ø 1.5	110

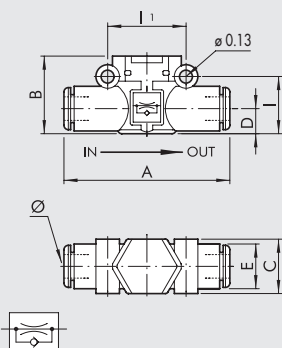
ASSEMBLY OPTIONS



How to mount the RFF L:

- Fig. (A) Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the RFF L straight on to the actuator or the control valve.
- Fig. (B) Fixing to the plate with the special SQU L bracket.
- Fig. (C) There are two robust rings on the plastic body for fixing the RFF L straight onto the wall.

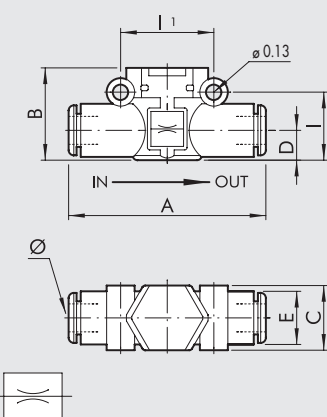
RFF L PIPE - PIPE UNIDIRECTIONAL



Code	Ref.	Ø	A	B	C	D	E	I	II
9070U11_*	RFF-U L 5/32-5/32	5/32	1.65	0.69	0.42	0.22	0.39	0.50	0.63
9070U33_*	RFF-U L 5/16-5/16	5/16	2.26	1.00	0.74	0.36	0.54	0.74	0.94

* The last two digits indicate the narrowing Ø. To complete the code please look at the key to codes.

RFF L PIPE - PIPE BIDIRECTIONAL



Code	Ref.	Ø	A	B	C	D	E	I	II
9070B11_*	RFF-B L 5/32-5/32	5/32	1.65	0.69	0.42	0.22	0.39	0.50	0.63
9070B33_*	RFF-B L 5/16-5/16	5/16	2.26	1.00	0.74	0.36	0.54	0.74	0.94

* The last two digits indicate the narrowing Ø. To complete the code please look at the key to codes.

KEY TO CODES

9 0 7 0 TYPE	B FUNCTION	11 Ø IN - Ø OUT	02 Ø CHOKE [mm]
9070 RFF L	B Bidirectional U Unidirectional	11 = Ø 5/32 - Ø 5/32 33 = Ø 5/16 - Ø 5/16	02 = Ø 0.2 03 = Ø 0.3 04 = Ø 0.4 05 = Ø 0.5 06 = Ø 0.6 08 = Ø 0.8 10 = Ø 1.0 13 = Ø 1.3 15 = Ø 1.5

IN-LINE QUICK-EXHAUST VALVES SERIES VSR L

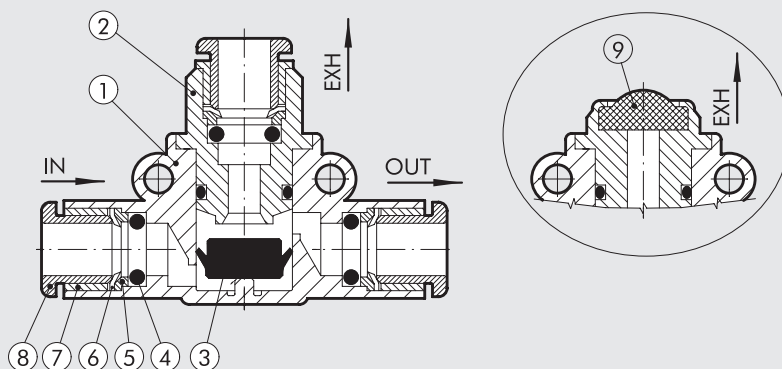
The VSR L quick-exhaust valve belongs to the LINE ON LINE® family, which means it can be connected to all the other components in series or in parallel. Available in the version for pipe-pipe connection with two push-in fittings. Exhaust can be silenced using a STAINLESS steel wire silencer, or conveyed using a push-in fitting.



TECHNICAL DATA		Ø5/32	Ø 1/4	Ø 5/16	Ø 3/8
Inlet pressure	MPa			0.1 to 1	
	bar			1 to 10	
	psi			14.5 to 145	
Temperature range	°C			- 20 to + 60	
	°F			- 4 to + 140	
Inlet flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	50	270	400	530
	scfm	1.8	9.5	14	18.7
Exhaust flow rate at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	100	700	1000	1400
	scfm	3.5	24.7	35.3	49.5
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene			
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous			
Compatibility with oils		Please refer to page 5-2 of the technical documentation			

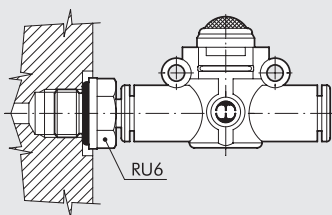
COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass insert
- ③ NBR valve
- ④ NBR gasket
- ⑤ Technopolymer spring ring
- ⑥ Stainless steel folding spring
- ⑦ Brass or technopolymer locking bushing
- ⑧ Technopolymer release bushing
- ⑨ Stainless steel wire silencer

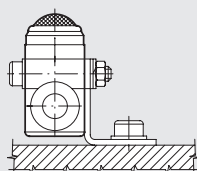


ASSEMBLY OPTIONS

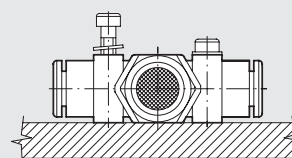
Ⓐ



Ⓑ



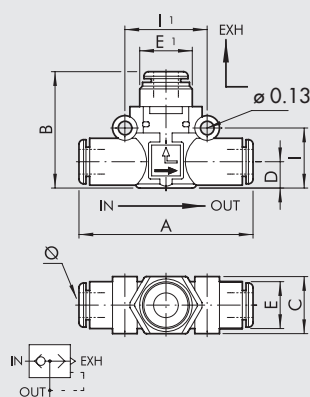
Ⓒ



How to mount the VSR L:

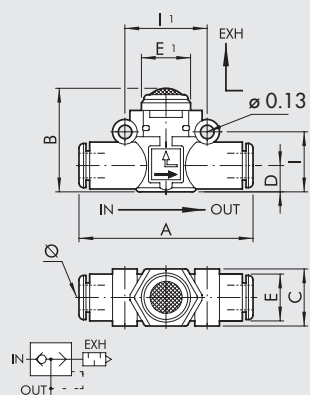
- Fig. Ⓐ Adding a RU6 fitting, with his male NPT thread, it is possible to mount the VSR L straight on to the actuator or the control valve.
- Fig. Ⓑ Fixing to the plate with the special SQU L bracket, except for Ø3/8.
- Fig. Ⓒ There are two robust rings on the plastic body for fixing the VSR L straight onto the wall.

VSR L PIPE-PIPE, CONVEYED EXHAUST



Code	Ref.	Ø	A	B	C	D	E	E1	I	I1
9063001	VSR L 5/32-5/32-5/32	5/32	1.65	1.02	0.42	0.22	0.39	0.38	0.5	0.63
9063016U	VSR L 1/4-1/4-1/4	1/4	1.95	1.18	0.58	0.25	0.45	0.51	0.57	0.79
9063024	VSR L 5/16-5/16-5/16	5/16	2.26	1.41	0.74	0.36	0.54	0.59	0.74	0.94
9063032U	VSR L 3/8-3/8-3/8	3/8	2.56	1.63	0.83	0.43	0.63	0.67	0.84	1.02

VSR L PIPE-PIPE, SILENCED EXHAUST



Code	Ref.	Ø	A	B	C	D	E	E1	I	I1
9063101	VSR L 5/32-5/32-SIL	5/32	1.65	0.78	0.42	0.22	0.39	0.39	0.5	0.63
9063116U	VSR L 1/4-1/4-SIL	1/4	1.95	1	0.58	0.25	0.45	0.51	0.57	0.79
9063124	VSR L 5/16-5/16-SIL	5/16	2.26	1.24	0.74	0.36	0.54	0.71	0.74	0.94
9063132U	VSR L 3/8-3/8-SIL	3/8	2.56	1.46	0.83	0.43	0.63	0.67	0.84	1.02

IN-LINE QUICK-EXHAUST VALVE WITH REGULATED EXHAUST SERIES VSRR L

The VSRR L quick-exhaust valve with regulated exhaust belongs to the LINE ON LINE® family of products and can be linked in series or in parallel to all the other products.

It comes in a version for pipe-pipe connection, which includes two push-in fittings.

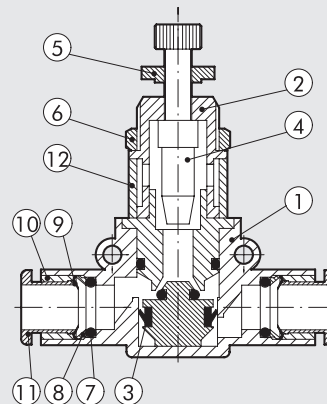
The main feature of these valves is that the discharge flow can be adjusted via a pin regulator. This allows you to control the speed of the actuator connected to the valve, giving a higher speed than with an MRF regulator.



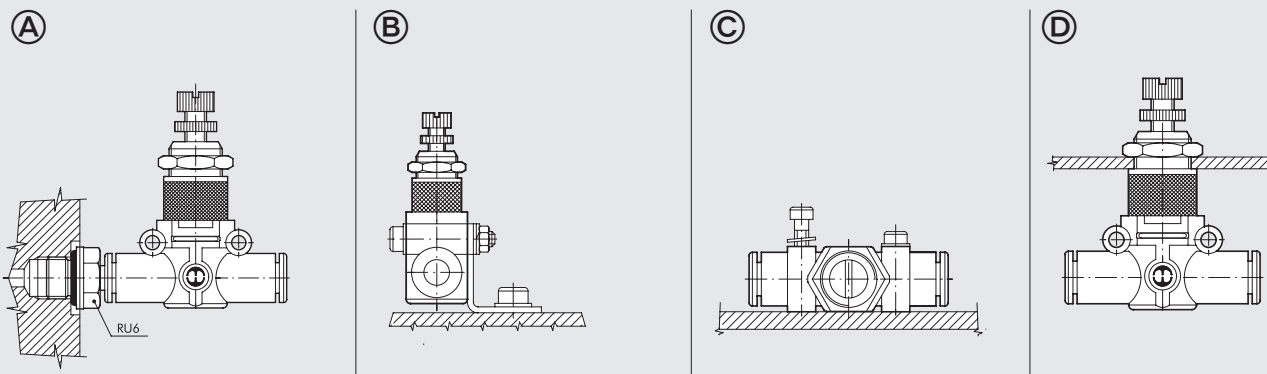
TECHNICAL DATA		Ø5/32	Ø 5/16
ressure	MPa	1	
	bar	10	
	psi	145	
Temperature range	°C	-20 to +60	
	°F	-4 to +140	
Max flow rate on regulation at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	50	400
	ΔP 1 bar (0.1 Mpa - 14.5 psi)	scfm	1.7
Flow rate on exhaust at 6.3 bar (0.63 MPa - 91 psi)	Nl/min	170	960
	scfm	6	34
Adjustment		Manual or using a screwdriver	
Internal system		Tapered needle	
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene	
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous	
Compatibility with oils		Please refer to page 5-2 of the technical documentation	

COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass seal support
- ③ NBR gasket
- ④ Brass adjusting needle
- ⑤ Nickel-plated brass needle ring nut
- ⑥ Nickel-plated brass wall fixing ring nut
- ⑦ NBR seal
- ⑧ Technopolymer spring ring
- ⑨ Stainless steel clip-on spring
- ⑩ Technopolymer stop bushing
- ⑪ Technopolymer release bushing
- ⑫ Sintered bronze silencer



ASSEMBLY OPTIONS

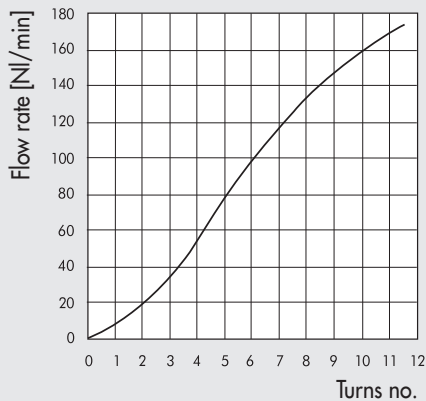


How to mount the VSRR L:

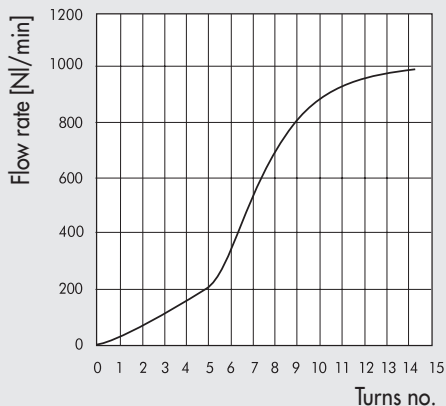
- Fig. (A) Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the VSRR L straight on to the actuator or the control valve.
- Fig. (B) Fixing to the plate with the special SQU L bracket.
- Fig. (C) There are two robust rings on the plastic body for fixing the VSRR L straight onto the wall.
- Fig. (D) The ring nut is screwed onto the threaded metal part of the VSRR L body for panel mounting.

EXHAUST FLOW CHARTS VSRR L

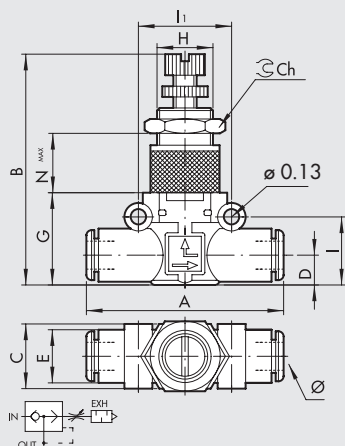
VSRR L Ø5/32



VSRR L Ø5/16



VSRR L PIPE - PIPE



Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9063501	VSRR L 5/32-5/32	5/32	1.65	1.56-1.71	0.42	0.22	0.39	0.69	M9x0.75	0.50	0.63	0.43	0.45
9063524	VSRR L 5/16-5/16	5/16	2.26	2.20-2.41	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.67	0.73

IN-LINE STOP VALVE SERIES STP L

The STP L stop valve belongs to the LINE ON LINE® family and can be connected in series or in parallel with the other products in the same family. It is available in a version for pipe-pipe connection, which includes two push-in fittings. The stop valve is normally mounted on the inlet port of cylinders and allows the flow of air only in the presence of a pneumatic pilot.

Cylinder movement ceases if there is a drop in pneumatic pilot pressure. The compressed air port is a push-in fitting for Ø 4 (Ø5/32") pipe.

This stop valve is available in a unidirectional version, so the flow can be interrupted in one direction, but remains free in the other direction. This valve can also be used as a unidirectional normally-closed 2/2 pneumatic control valve.

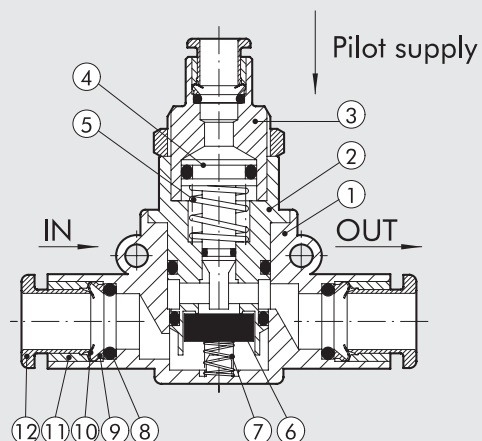


TECHNICAL DATA

		Ø5/16
Max. operating pressure	MPa	1
	bar	10
	psi	145
Temperature range	°C	-20 to +60
	°F	-4 to +140
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous
Compatibility with oils		Please refer to page 5-2 of the technical documentation

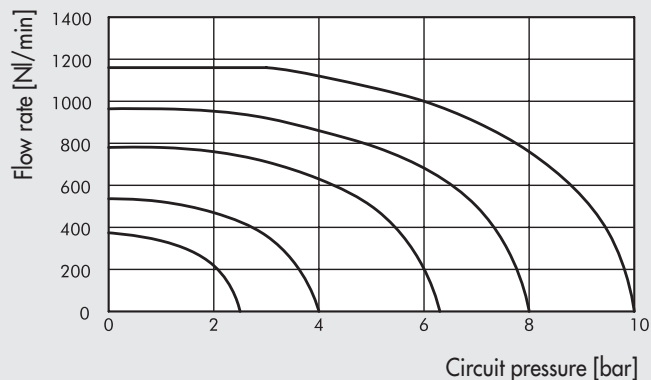
COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass insert
- ③ Nickel-plated brass pilot insert
- ④ Brass piston rod
- ⑤ Stainless steel clamping spring
- ⑥ NBR seal
- ⑦ Stainless steel poppet spring
- ⑧ NBR seal
- ⑨ Technopolymer spring ring
- ⑩ Stainless steel clip-on spring
- ⑪ Technopolymer stop bushing
- ⑫ Technopolymer release bushing



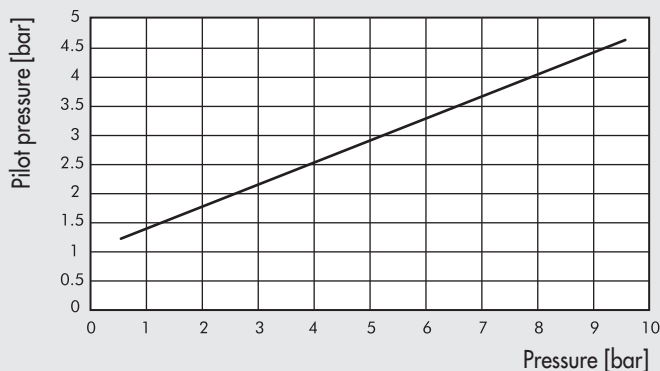
FLOW CHARTS

STP L Ø5/16

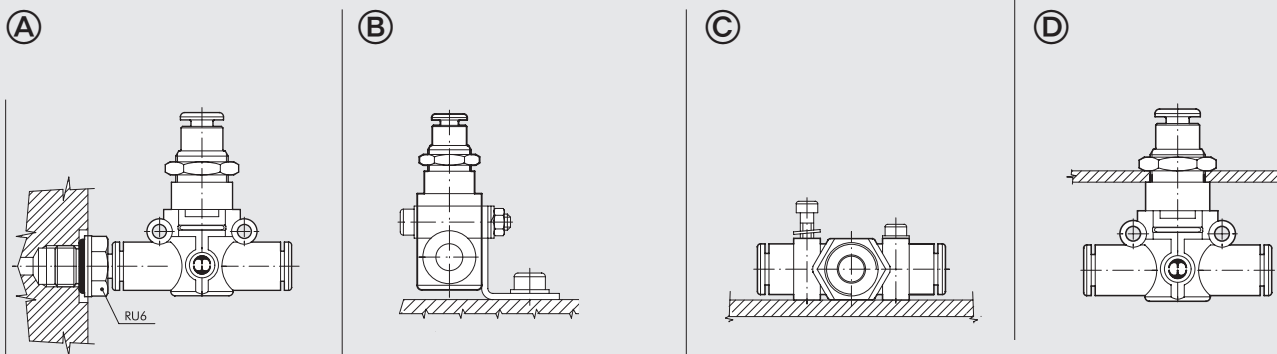


MINIMUM PILOT PRESSURE

STP L Ø5/16



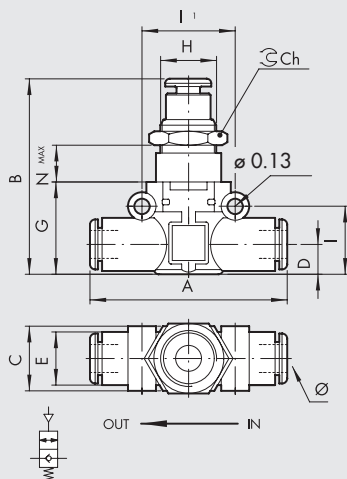
ASSEMBLY OPTIONS



How to mount the STP L:

- Fig. **A** Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the STP L straight on to the actuator or the control valve.
- Fig. **B** Fixing to the plate with the special SQU L bracket.
- Fig. **C** There are two robust rings on the plastic body for fixing the STP L straight onto the wall.
- Fig. **D** The ring nut is screwed onto the threaded metal part of the STP L body for panel mounting.

STP L 2/2 PIPE - PIPE



Code	Ref.	Ø	A	B	C	D	E	G	H	I	II	Ch	Nmax
9065624	STP L 2/2 5/16-5/16	5/16	2.26	1.96	0.74	0.36	0.54	1.02	M15x1	0.74	0.94	0.67	0.46

IN-LINE CHECK VALVE SERIES VNR L

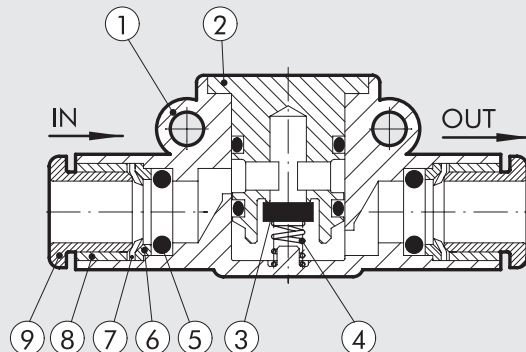
The VNR L check valve belongs to the LINE ON LINE® family, which means it can be connected to all the other components in series or in parallel. Available in the version for pipe-pipe connection with two push-in fittings. It is still the only check valve with holes for wall mounting.



TECHNICAL DATA		Ø 5/32	Ø 1/4	Ø 5/16	Ø 3/8
Operating pressure	MPa			0.05 to 1.2	
	bar			0.5 to 12	
	psi			7.2 to 174	
Temperature range	°C			-20 to +60	
	°F			-4 to +140	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 Mpa - 14.5 psi)	NI/min	80	320	480	750
	scfm	2.8	11.3	17	26.5
Recommended pipe		Rilsan PA11 - Nylon 6 - Polyamide 12 - Polypropylene			
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous			

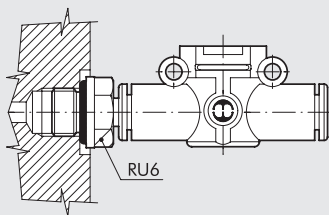
COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass insert
- ③ NBR valve
- ④ Stainless steel valve compression spring
- ⑤ NBR gasket
- ⑥ Technopolymer spring ring
- ⑦ Stainless steel folding spring
- ⑧ Technopolymer locking bushing
- ⑨ Technopolymer release bushing

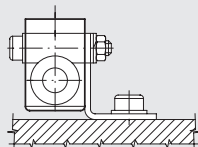


ASSEMBLY OPTIONS

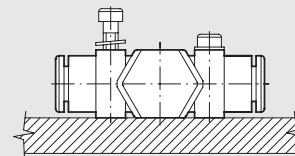
Ⓐ



Ⓑ



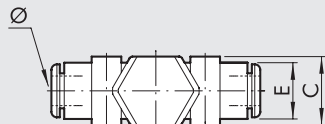
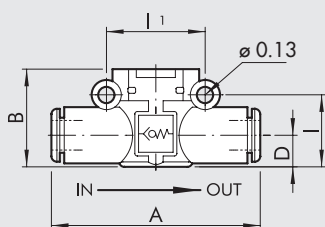
Ⓒ



How to mount the VNR L:

- Fig. Ⓐ Adding a RU6 fitting, with his male NPT thread, it is possible to mount the VNR L straight on to the actuator or the control valve.
- Fig. Ⓑ Fixing to the plate with the special SQU L bracket, except for Ø3/8.
- Fig. Ⓒ There are two robust rings on the plastic body for fixing the VNR L straight onto the wall.

VNR L PIPE-PIPE



Code	Ref.	Ø	A	B	C	D	E	I	I1
9064001	VNR L 5/32-5/32	5/32	1.65	0.69	0.42	5.6	0.39	0.5	0.63
9064016U	VNR L 1/4-1/4	1/4	1.95	0.79	0.58	0.25	0.45	0.57	0.79
9064024	VNR L 5/16-5/16	5/16	2.26	1	0.74	0.36	0.54	0.73	0.94
9064032U	VNR L 3/8-3/8	3/8	2.56	1.18	0.83	0.43	0.63	0.84	1.02

NOTES

IN-LINE FILTER SERIES FIL L

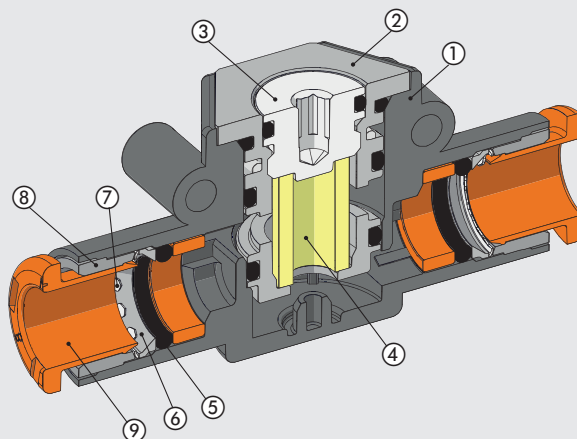
The FIL L filter is part of the LINE ON LINE® family, which means it can be connected in series or in parallel with all other products of the same line. Available in the version for pipe-pipe connection with two push-in fittings. The sintered filter cartridge, which can be easily inspected and replaced by simply opening a removable cap, is available in 3 filtering grades of a different colour for easy identification: 5 µm (yellow), 20 µm (white) and 50 µm (blue).



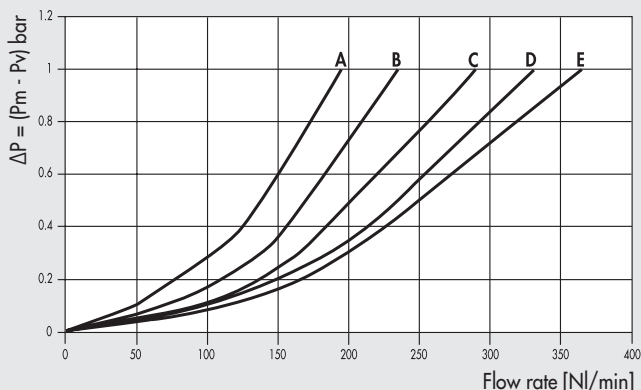
TECHNICAL DATA		Ø 5/16	Ø 3/8
Inlet pressure	MPa	0.05 to 1.2	
	bar	0.5 to 12	
	psi	7.2 to 174	
Temperature range	°C	-20 to +60	
	°F	-4 to +140	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.1 Mpa - 7.25 psi)	NI/min	200	
	scfm	7	
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 Mpa - 14.5 psi)	NI/min	280	
	scfm	9.9	
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene	
Fluid		Lubricated or unlubricated filtered compressed air; if used, must be continuous	
Compatibility with oils		Please refer to page 5-2 of the technical documentation	

COMPONENTS

- ① Technopolymer body
- ② Nickel-plated brass filter insert
- ③ Nickel-plated brass filter cap
- ④ Sintered HDPE filter cartridge
- ⑤ NBR gasket
- ⑥ Technopolymer spring ring
- ⑦ Stainless steel clip-on spring
- ⑧ Technopolymer locking bushing
- ⑨ Technopolymer release bushing



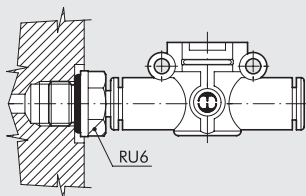
FLOW CHART FIL L 20 µm (790 microinch)



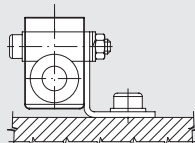
- A = 2.5 bar - 0.25 MPa - 36 psi
- B = 4 bar - 0.4 MPa - 58 psi
- C = 6.3 bar - 0.63 MPa - 91 psi
- D = 8 bar - 0.8 MPa - 116 psi
- E = 10 bar - 1 MPa - 145 psi

ASSEMBLY OPTIONS

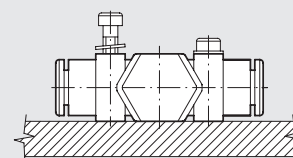
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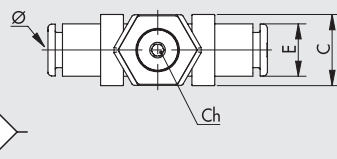
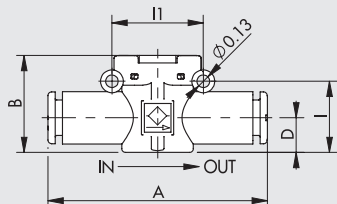
Ⓒ



How to mount the FIL L:

- Fig. Ⓐ Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the FIL L straight on to the actuator or the control valve.
- Fig. Ⓑ Fixing to the plate with the special SQU L bracket (only for $\varnothing 5/16$).
- Fig. Ⓒ There are two robust rings on the plastic body for fixing the FIL L straight onto the wall.

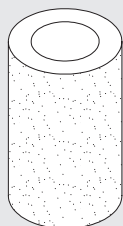
FIL L PIPE - PIPE



Code	Ref.	\varnothing	A	B	C	D	E	I	II	Ch
9070424	FIL L 5/16-5/16 5 μm	5/16	2.26	1	0.74	0.36	0.54	0.74	0.94	0.12
9070444	FIL L 5/16-5/16 20 μm	5/16	2.26	1	0.74	0.36	0.54	0.74	0.94	0.12
9070464	FIL L 5/16-5/16 50 μm	5/16	2.26	1	0.74	0.36	0.54	0.74	0.94	0.12
9070432U	FIL L 3/8-3/8 5 μm	3/8	2.57	1.17	0.81	0.43	0.63	0.84	1.02	0.12
9070452U	FIL L 3/8-3/8 20 μm	3/8	2.57	1.17	0.81	0.43	0.63	0.84	1.02	0.12
9070472U	FIL L 3/8-3/8 50 μm	3/8	2.57	1.17	0.81	0.43	0.63	0.84	1.02	0.12

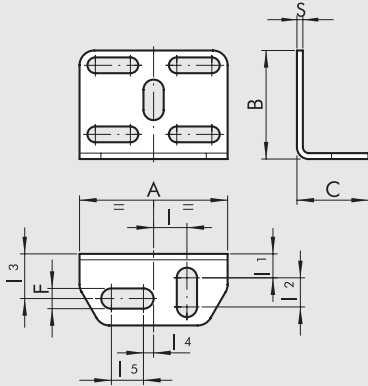
SPARE PARTS

FILTERING ELEMENT



Code	Descrizione
9062500	Filtering element 5 μm (yellow) LOL - (200 microinch)
9062501	Filtering element 20 μm (white) LOL - (790 microinch)
9062502	Filtering element 50 μm (blue) LOL - (2000 microinch)

FIXING SQUARE KIT

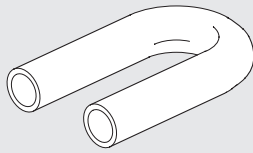


Code	Description	A	B	C	F	I	I1	I2	I3	I4	I5	S
9062110	SQU L	1.18	0.87	0.57	0.16	0.27	0.19	0.23	0.36	0.08	0.25	0.05

NOTE: comes with two M3x16 screws (for L.O.L. Ø 5/32"), two M3x25 screws (for L.O.L.Ø1/4-Ø 5/16"), two M3 hexagonal nuts, 2 groovers, 4 washers.

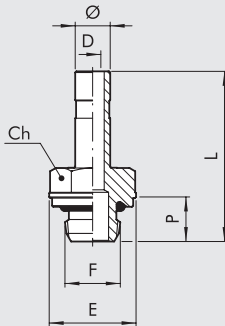
NOT COMPATIBLE WITH Ø3/8

U-BOLT



Code	Description
9062216U	TUB L 1/4-1/4
9062224	TUB L 5/16-5/16

RU6 - STEM ADAPTORS



Code	Ref	Ø	F	Ch		P	L	D	E
				Inc	mm				
2U06001	RU6	5/32	10/32 UNF	5/16	8	0.16	0.99	0.08	0.35
2U06002	RU6	5/32	1/8 NPT	0.472	12	0.24	1.09	0.10	0.51
2U06003	RU6	5/32	1/4 NPT	0.551	14	0.31	1.19	0.10	0.65
2U06000	RU6	1/4	10/32 UNF	5/16	8	0.16	1.01	0.08	0.35
2U06007	RU6	1/4	1/8 NPT	0.472	12	0.24	1.11	0.16	0.51
2U06008	RU6	1/4	1/4 NPT	0.551	14	0.31	1.20	0.16	0.65
2U06020	RU6	1/4	3/8 NPT	0.669	17	0.35	1.31	0.16	0.79
2U06009	RU6	5/16	1/8 NPT	0.472	12	0.24	1.15	0.22	0.51
2U06010	RU6	5/16	1/4 NPT	0.551	14	0.31	1.24	0.24	0.65
2U06011	RU6	5/16	3/8 NPT	0.669	17	0.35	1.35	0.24	0.79
2U06012	RU6	3/8	1/4 NPT	0.551	14	0.31	1.37	0.29	0.65
2U06013	RU6	3/8	3/8 NPT	0.669	17	0.35	1.48	0.29	0.79
2U06022	RU6	3/8	1/2 NPT	0.748	19	0.43	1.62	0.29	0.96

FLOW MICRO-REGULATOR

The job of flow microregulators is to regulate speed in the pneumatic cylinders. The configuration of both type C (to be mounted on the cylinder inlet) and type V (to be mounted on the valve port) is such as to ensure full flow on feed and regulated flow on discharge. Type B (bidirectional) can be used to regulate the flow both on feed and discharge. Flow microregulators have reduced dimensions and fine adjustment in the first turns; they can be adjusted using the knob and/or screwdriver; adjustment can be prevented by tightening the ring nut.

Main features:

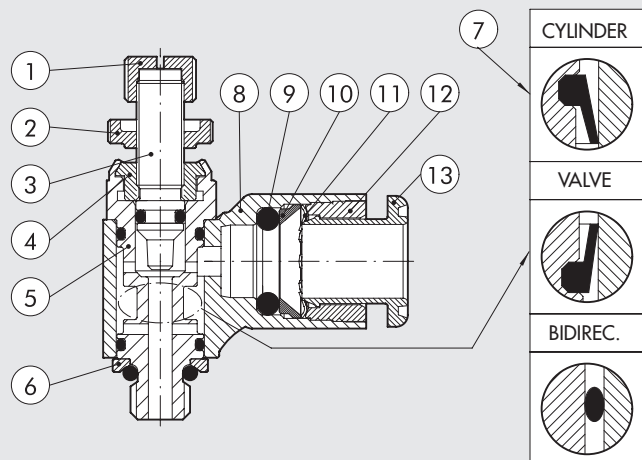
- reduced dimensions
- excellent regulation
- regulation with either a screwdriver and/or a knob, can be fixed with a ring nut (COMPACT N)
- available in all sizes (from 10-32 UNF to 1/2" NPT) with a brass ring
- can be mounted with an automatic screwdriver
- comes with a ring that can rotate even with the MRF mounted in position.



TECHNICAL DATA	10-32 UNF			1/8" NPT			1/4" NPT			3/8" NPT		1/2" NPT		
	Ø 5/32	Ø 1/4	Ø 5/32	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	Ø 3/8	Ø 1/2	Ø 1/2	
Pipe														
Max input pressure	MPa	1												
	bar	10												
	psi	145												
Temperature range: Brass ring	°C	- 10 to + 70												
	°F	+ 14 to + 158												
Max flow rate in regulation at 90 psi	Nl/min	150	155	350	380	400	400	750	850	950	1000	1300	1400	2000
Max flow rate full port at 90 psi with closed needle	Nl/min	140	150	300	350	390	390	450	500	500	550	1050	1250	1750
Max flow rate full port at 90 psi with open needle	Nl/min	240	245	450	600	650	650	850	1050	1150	1250	1700	2100	2700
Regulation		Manual or using a screwdriver												
Internal system		Tapered needle												
Fluid		Filtered, lubricated or unlubricated compressed air												

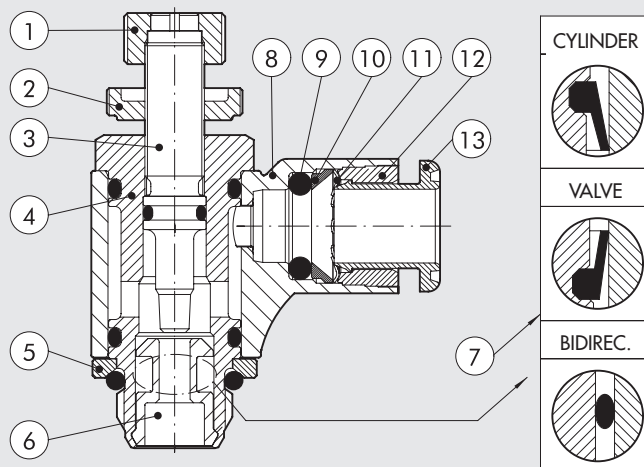
TYPE N COMPONENTS - 10-32 UNF THREAD

- ① Nickel-plated brass knob
- ② Nickel-plated brass securing ring nut
- ③ Brass needle
- ④ Nickel-plated brass bush
- ⑤ Nickel-plated brass body
- ⑥ Nickel-plated brass retaining ring
- ⑦ NBR gasket
- ⑧ Nickel-plated brass revolving ring
- ⑨ NBR gasket
- ⑩ Technopolymer spring supporting ring
- ⑪ Stainless steel grabbing spring
- ⑫ Technopolymer retaining bush
- ⑬ Technopolymer release bush

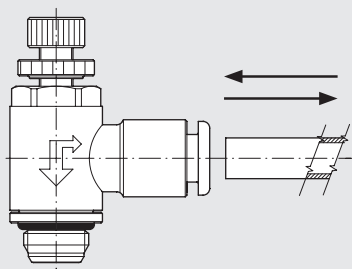


TYPE N COMPONENTS - THREAD 1/8" TO 1/2"

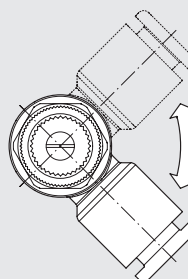
- ① Nickel-plated brass knob
- ② Nickel-plated brass securing ring nut
- ③ Brass needle
- ④ Nickel-plated brass body
- ⑤ Nickel-plated brass retaining ring
- ⑥ Brass gasket holding insert
- ⑦ NBR gasket
- ⑧ Nickel-plated brass revolving ring
- ⑨ NBR gasket
- ⑩ Technopolymer spring supporting ring
- ⑪ Stainless steel grabbing spring
- ⑫ Technopolymer retaining bush
- ⑬ Technopolymer release bush



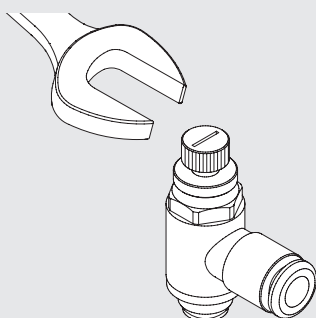
All the MRF with a pipe engage-release system of the latest generation that facilitates detachment of the pipe even under difficult operating conditions.



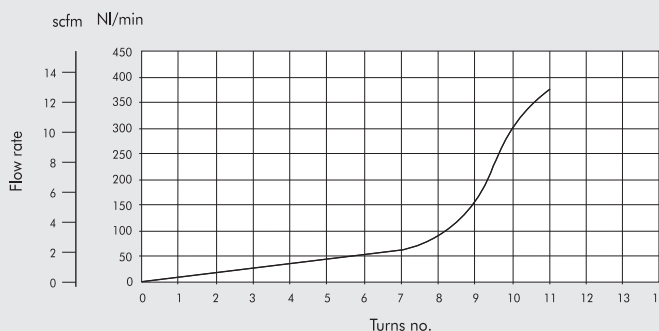
The rings can be rotated even with the MRF installed, which means that they can be mounted with the pipe facing towards any direction.



All the new MRF can be fixed from the top using a universal wrench, a pipe wrench or an automatic screwdriver.



FLOW CHARTS



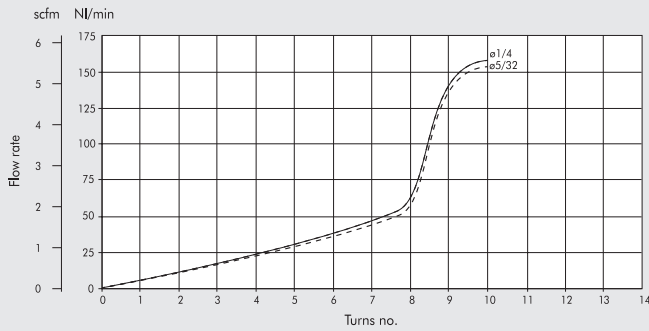
The regulation curve in the MRF COMPACT N, takes place in two sections: in the first half of the flash pin stroke for very fine regulation and relatively low flow rates; in the second half, the flash pin quickly opens the passage so as to reach the maximum flow rate quickly.

Thread	MAX. TORQUE (lb f ft)*
10/32	1.33
1/8" NPT	4.33
1/4" NPT	5.90
3/8" NPT	7.38
1/2" NPT	11.06

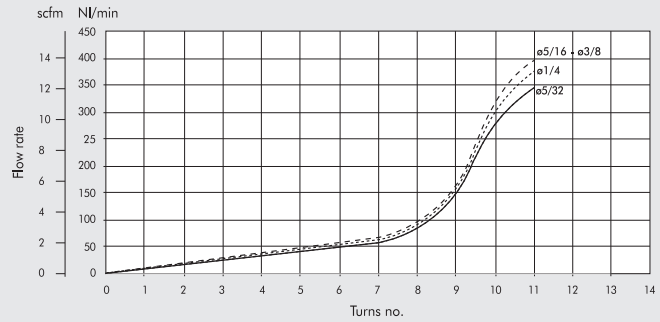
* measured on a metal female thread

FLOW CHARTS

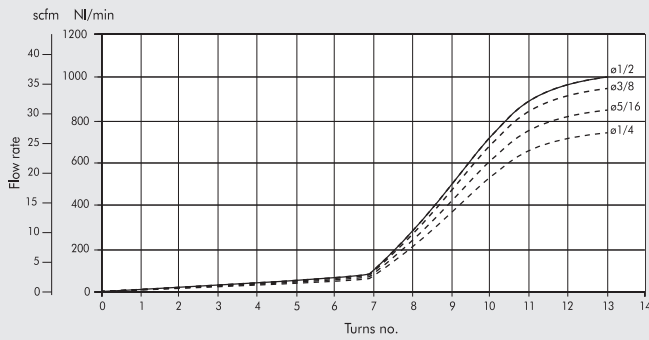
MRF 10-32 UNF - PIPE Ø5-32 - Ø1/4



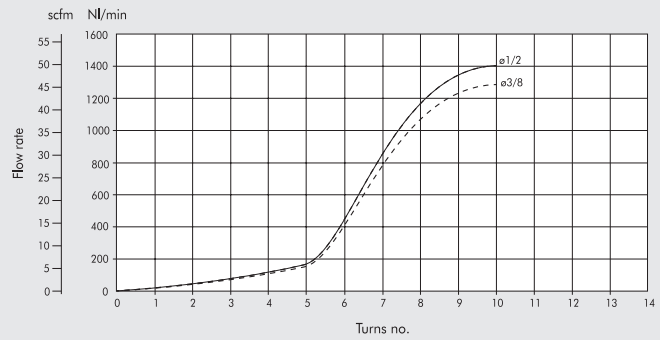
MRF 1/8" NPT - PIPE Ø5/32 - Ø1/4 - Ø5/16 - Ø3/8



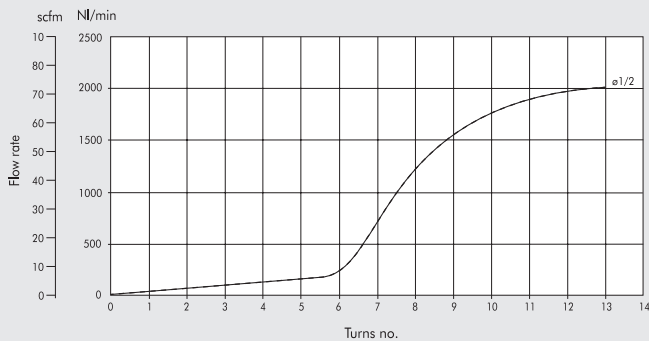
MRF 1/4" NPT - PIPE Ø1/4 - Ø5/16 - Ø3/8 - Ø1/2



MRF 3/8" NPT - PIPE Ø3/8 - Ø1/2



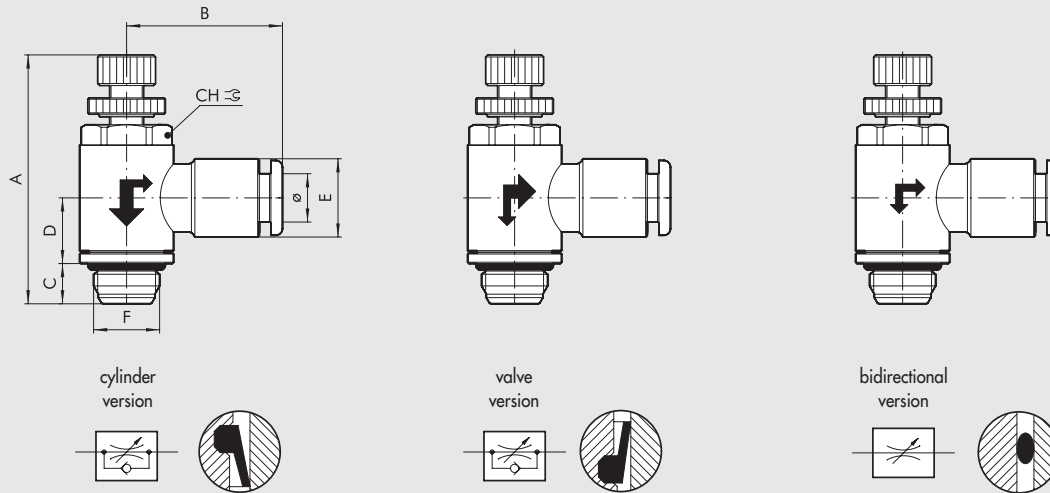
MRF 1/2" NPT - PIPE Ø1/2



KEY TO CODES

M R F FAMILY	N TYPE	M RING	C FUNCTION	1/4 Ø PIPE	1/8 NPT THREAD
Flow micro-regulator	N With knob and ring nut	M Nickel-plated brass with push-in fitting	C For cylinder V For valve B Bidirectional	5/32 Ø 5/32 1/4 Ø 1/4 5/16 Ø 5/16 3/8 Ø 3/8 1/2 Ø 1/2	10-32 UNF 10-32 UNF 1/8 NPT 1/8" NPT 1/4 NPT 1/4" NPT 3/8 NPT 3/8" NPT 1/2 NPT 1/2" NPT

MRF COMPACT "N" BRASS RING



Code	Description	F	Ø	Ch		A min	A max	B	C	D	E
				Inc	mm						
9U31001C	MRF N M C 5/32 10/32 UNF	10/32" UNF	5/32"	0.354	9	1.091	1.220	0.795	0.157	0.362	0.374
9U31101V	MRF N M V 5/32 10/32 UNF	10/32" UNF	5/32"	0.354	9	1.091	1.220	0.795	0.157	0.362	0.374
9U31201B	MRF N M B 5/32 10/32 UNF	10/32" UNF	5/32"	0.354	9	1.091	1.220	0.795	0.157	0.362	0.374
9U31005C	MRF N M C 1/4 10/32 UNF	10/32" UNF	1/4"	0.354	9	1.091	1.220	0.839	0.157	0.362	0.465
9U31105V	MRF N M V 1/4 10/32 UNF	10/32" UNF	1/4"	0.354	9	1.091	1.220	0.839	0.157	0.362	0.465
9U31205B	MRF N M B 1/4 10/32 UNF	10/32" UNF	1/4"	0.354	9	1.091	1.220	0.839	0.157	0.362	0.465
9U31002C	MRF N M C 5/32 1/8 NPT	1/8" NPT	5/32"	0.472	12	1.319	1.480	0.839	0.236	0.386	0.374
9U31102V	MRF N M V 5/32 1/8 NPT	1/8" NPT	5/32"	0.472	12	1.319	1.480	0.839	0.236	0.386	0.374
9U31202B	MRF N M B 5/32 1/8 NPT	1/8" NPT	5/32"	0.472	12	1.319	1.480	0.839	0.236	0.386	0.374
9U31006C	MRF N M C 1/4 1/8 NPT	1/8" NPT	1/4"	0.472	12	1.319	1.480	0.839	0.236	0.386	0.465
9U31106V	MRF N M V 1/4 1/8 NPT	1/8" NPT	1/4"	0.472	12	1.319	1.480	0.839	0.236	0.386	0.465
9U31206B	MRF N M B 1/4 1/8 NPT	1/8" NPT	1/4"	0.472	12	1.319	1.480	0.839	0.236	0.386	0.465
9U31008C	MRF N M C 5/16 1/8 NPT	1/8" NPT	5/16"	0.472	12	1.319	1.480	0.976	0.236	0.386	0.543
9U31108V	MRF N M V 5/16 1/8 NPT	1/8" NPT	5/16"	0.472	12	1.319	1.480	0.976	0.236	0.386	0.543
9U31208B	MRF N M B 5/16 1/8 NPT	1/8" NPT	5/16"	0.472	12	1.319	1.480	0.976	0.236	0.386	0.543
9U31010C	MRF N M C 3/8 1/8 NPT	1/8" NPT	3/8"	0.472	12	1.319	1.480	1.094	0.236	0.386	0.650
9U31110V	MRF N M V 3/8 1/8 NPT	1/8" NPT	3/8"	0.472	12	1.319	1.480	1.094	0.236	0.386	0.650
9U31210B	MRF N M B 3/8 1/8 NPT	1/8" NPT	3/8"	0.472	12	1.319	1.480	1.094	0.236	0.386	0.650
9U31007C	MRF N M C 1/4 1/4 NPT	1/4" NPT	1/4"	0.591	15	1.528	1.720	0.906	0.315	0.437	0.465
9U31107V	MRF N M V 1/4 1/4 NPT	1/4" NPT	1/4"	0.591	15	1.528	1.720	0.906	0.315	0.437	0.465
9U31207B	MRF N M B 1/4 1/4 NPT	1/4" NPT	1/4"	0.591	15	1.528	1.720	0.906	0.315	0.437	0.465
9U31009C	MRF N M C 5/16 1/4 NPT	1/4" NPT	5/16"	0.591	15	1.528	1.720	1.043	0.315	0.437	0.543
9U31109V	MRF N M V 5/16 1/4 NPT	1/4" NPT	5/16"	0.591	15	1.528	1.720	1.043	0.315	0.437	0.543
9U31209B	MRF N M B 5/16 1/4 NPT	1/4" NPT	5/16"	0.591	15	1.528	1.720	1.043	0.315	0.437	0.543
9U31011C	MRF N M C 3/8 1/4 NPT	1/4" NPT	3/8"	0.591	15	1.528	1.720	1.173	0.315	0.437	0.650
9U31111V	MRF N M V 3/8 1/4 NPT	1/4" NPT	3/8"	0.591	15	1.528	1.720	1.173	0.315	0.437	0.650
9U31211B	MRF N M B 3/8 1/4 NPT	1/4" NPT	3/8"	0.591	15	1.528	1.720	1.173	0.315	0.437	0.650
9U31014C	MRF N M C 1/2 1/4 NPT	1/4" NPT	1/2"	0.591	15	1.528	1.720	1.350	0.315	0.437	0.827
9U31114V	MRF N M V 1/2 1/4 NPT	1/4" NPT	1/2"	0.591	15	1.528	1.720	1.350	0.315	0.437	0.827
9U31214B	MRF N M B 1/2 1/4 NPT	1/4" NPT	1/2"	0.591	15	1.528	1.720	1.350	0.315	0.437	0.827
9U31012C	MRF N M C 3/8 3/8 NPT	3/8" NPT	3/8"	3/4	19	1.858	2.047	1.205	0.354	0.528	0.630
9U31112V	MRF N M V 3/8 3/8 NPT	3/8" NPT	3/8"	3/4	19	1.858	2.047	1.205	0.354	0.528	0.630
9U31212B	MRF N M B 3/8 3/8 NPT	3/8" NPT	3/8"	3/4	19	1.858	2.047	1.205	0.354	0.528	0.630
9U31015C	MRF N M C 1/2 3/8 NPT	3/8" NPT	1/2"	3/4	19	1.858	2.047	1.437	0.354	0.528	0.795
9U31115V	MRF N M V 1/2 3/8 NPT	3/8" NPT	1/2"	3/4	19	1.858	2.047	1.437	0.354	0.528	0.795
9U31215B	MRF N M B 1/2 3/8 NPT	3/8" NPT	1/2"	3/4	19	1.858	2.047	1.437	0.354	0.528	0.795
9U31016C	MRF N M C 1/2 1/2 NPT	1/2" NPT	1/2"	7/8	22	2.087	2.354	1.496	0.433	0.626	0.795
9U31116V	MRF N M V 1/2 1/2 NPT	1/2" NPT	1/2"	7/8	22	2.087	2.354	1.496	0.433	0.626	0.795
9U31216B	MRF N M B 1/2 1/2 NPT	1/2" NPT	1/2"	7/8	22	2.087	2.354	1.496	0.433	0.626	0.795

NOTES

Lined area for notes.



● QUICK EXHAUST VALVES SERIES VSR

PAGE 4-44



● SLIDE VALVES SERIES VCS

PAGE 4-45

QUICK EXHAUST VALVES SERIES VSR

New, more compact and lighter version.
Used to evacuate air in the cylinder quickly, which increases cylinder speed.

- Temperature 0-80°C (32°-176°F)
- Max. pressure 12 bar (1200 kPa - 203 psi)
- Min. pressure 0.5 bar (50 kPa - 7.25 psi)

Nominal flow rate (P → A) ΔP = 1 bar (14.5 psi) [scfm]:

Pm [psi]	1/8	1/4	1/2
36	19.5	28.3	85
58	24.7	42.4	99
91	31.8	49.5	127

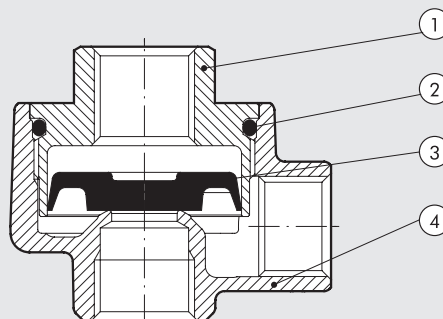
Empty flow rate (A → R) [scfm]:

Pm [psi]	1/8	1/4	1/2
36	28.3	53	155.6
58	42.4	86.6	222.9
91	63.6	123.8	283

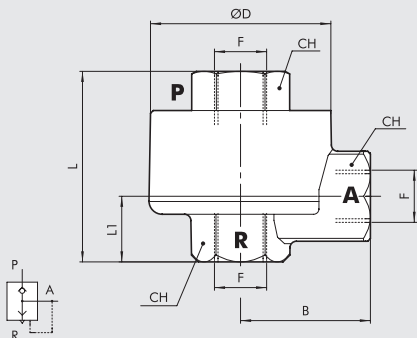


COMPONENTS

- ① Cap: nickel-plated brass for 1/8-1/4
anodized aluminium for 1/2
- ② O-ring: NBR
- ③ Lip-seal: Polyurethane
- ④ Body: nickel-plated brass

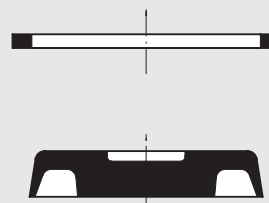


OVERALL DIMENSIONS AND ORDERING CODES



Code	Ref.	F	B	D	CH	L1	Weight [lb]
9101201U	VSR 1/8	1/8	0.73	1.16	0.55 (14 mm)	0.52	0.17
9201201U	VSR 1/4	1/4	0.92	1.34	0.67 (17 mm)	0.66	0.25
9401201U	VSR 1/2	1/2	1.34	1.85	1.06 (27 mm)	0.63	0.50

SPARE GASKETS



Code	Ref.
9151501	Spare gaskets VSR 1/8
9251501	Spare gaskets VSR 1/4
9451501	Spare gaskets VSR 1/2

SLIDE VALVES SERIES VCS

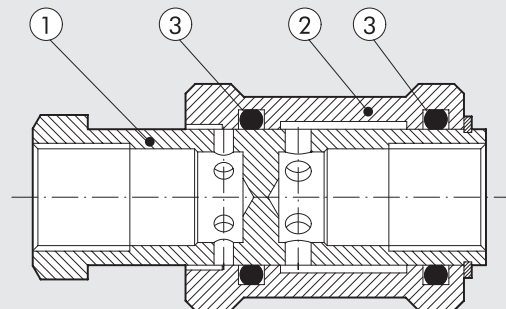
The 3/2 slide valve is normally used as a circuit on-off valve. When the ring nut is moved back, the system downstream is relieved; when the ring nut is moved forward, the system is supplied with compressed air.



TECHNICAL DATA		1/8"	1/4"	3/8"	1/2"
Operating pressure		0 to 10 bar (0 to 1 MPa - 0 to 145 psi)			
Operating temperature range	°F	14 to + 176			
Fluid		Lubricated or unlubricated filtered air			
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 0.5 bar (0.05 MPa - 7.25 psi)	Nl/min	430	680	1400	2200
	scfm	15.2	24	49.5	77.8
Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar (0.1 MPa - 14.5 psi)	Nl/min	630	1040	2070	3330
	scfm	22.3	36.8	73.2	117.8
Conductance C	scfm/psi	170	247	537	833
Critical ratio b	psi/psi	0.2	0.3	0.1	0.2

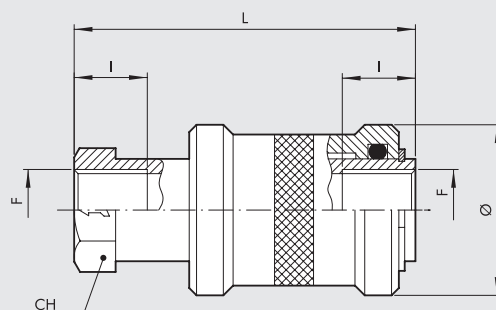
COMPONENTS

- ① Body: chromium-plated brass
- ② Ring nut: anodized aluminium
- ③ Seals: NBR



DIMENSIONS AND ORDERING CODES

Code	Description	F	Ø	I	L	CH
W0970050001U	Slide valves 3/2	1/8" NPT	0.98	0.39	1.89	0.43 (11 mm)
W0970050002U	Slide valves 3/2	1/4" NPT	1.18	0.47	1.89	0.75 (19 mm)
W0970050003U	Slide valves 3/2	3/8" NPT	1.38	0.47	2.67	0.85 (22 mm)
W0970050004U	Slide valves 3/2	1/2" NPT	1.57	0.59	3.15	1.06 (27 mm)



NOTES

Lined area for notes.



● PNEUMATIC LOGIC

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● TIMER

PAGE 4-50

PNEUMATIC LOGIC

Metal Work logic elements are available with 5 different functions: OR, AND, NOT, YES, MEMORY.

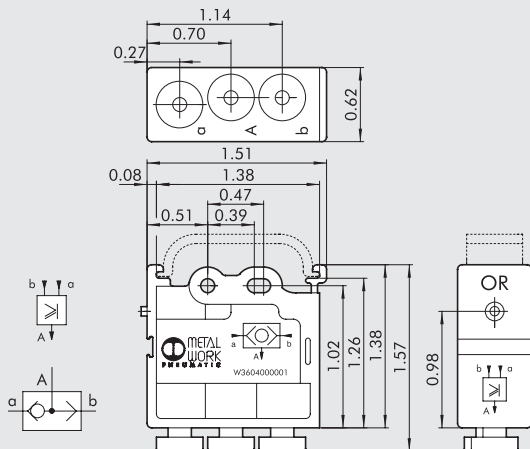
Main features common to all elements:

- Adaptor for Ω bar (DIN EN 50022) integral with the body.
- Built-in pressure indicator.
- Pipe locking system using $\varnothing 4$ ($\varnothing 5/32$) built-in fittings.



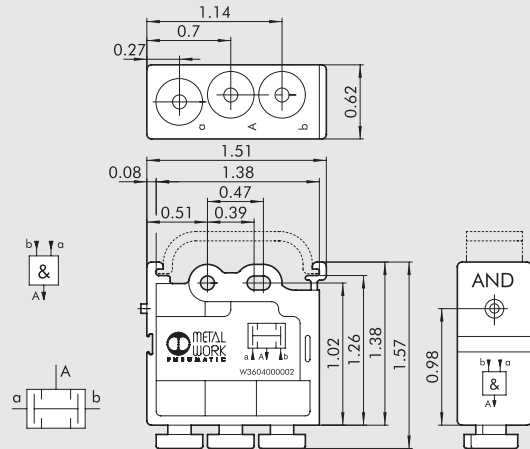
TECHNICAL DATA	
Operating temperature	°F
Valve fitting	14 to + 140
Pressure range	psi
	Push-in fitting for $\varnothing 4$ pipe ($\varnothing 5/32$)
	OR - AND: from 218 to 116
	YES-NOT - MEMORY: from 0 to 116, pilot pressure from 21.8 to 116
	NOT: 87 switching threshold = 5.8
Nominal diameter	in
Flow rate at 6 bar (0.6 MPa-87 psi) ΔP 1 bar (0.1 MPa-14.5 psi)	Nl/min
	100
	scfm
	3.53
Fluid	Lubricated or unlubricated filtered compressed air; must be uninterrupted when lubricated
Recommended lubricant	ISO e UNI FD22
Actionament	Via compressed air
Reset	AND-OR: via compressed air
	YES-NOT via mechanical spring
	MEMORY: via compressed air
Installation	In any position
Mounted	On Omega bar (DIN EN 50022) size 35 x 7 or 35 x 15 mm
	Wall-mounted with $\varnothing 0.165$ holes
MATERIALS	
Body	Technopolymer
Spool	Aluminium

LOGIC ELEMENT: OR



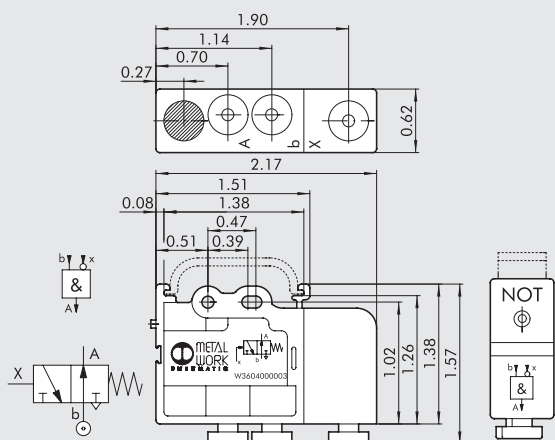
Code	Description
W3604000001	OR - logic sum

LOGIC ELEMENT: AND



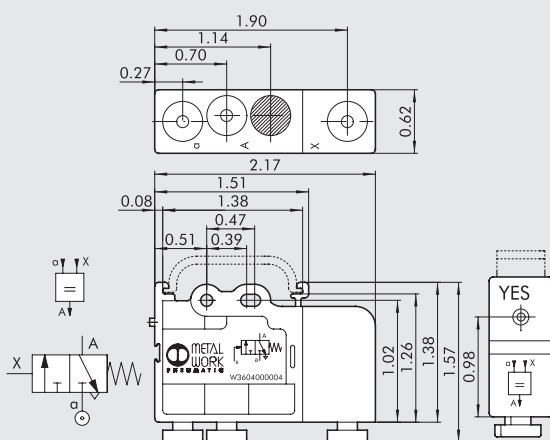
Code	Description
W3604000002	AND - logic product

LOGIC ELEMENT: NOT



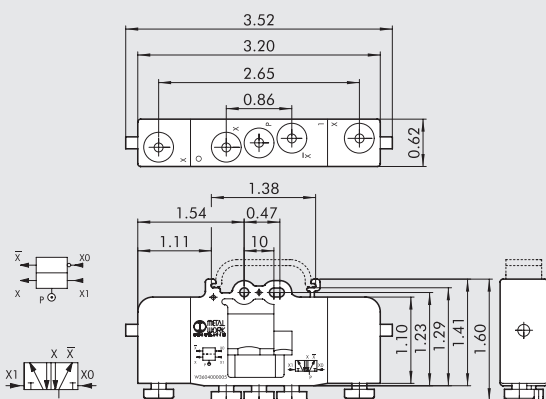
Code	Description
W3604000003	NOT - Negation

LOGIC ELEMENT: YES



Code	Description
W3604000004	YES - Affirmation

LOGIC ELEMENT: MEMORY



Code	Description
W3604000005	Memory

NOTES

TIMER

The Timer is part of Metal Work range of logic elements, which also includes OR, AND, NOT, YES, MEMORY.

The value of the signal output delay is set by rotating a knob. It can work both as 3/2 NC and 3/2 NO, depending on whether feeding is through port "a" or port "b".

The maximum delay time can be increased by unscrewing a plug and connecting the port to an external auxiliary tank.

- Adaptor for Ω bar (DIN EN 50022) integrated in the body.
- Pressure indicator via an orange pin
- Pipe clamping system using $\varnothing 4$ ($\varnothing 5/32$) built-in push-on fittings.

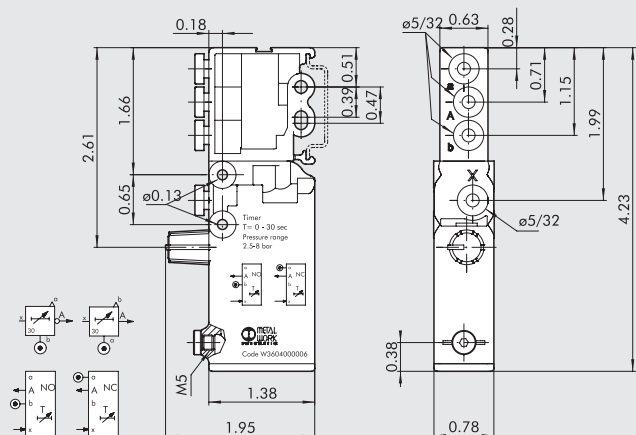


TECHNICAL DATA

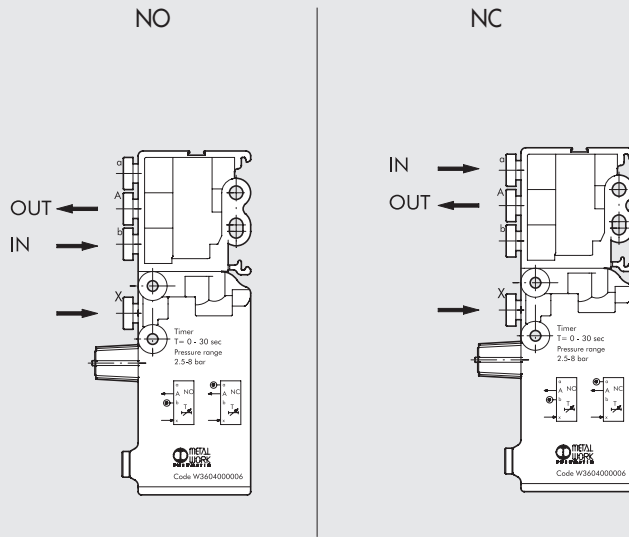
Temperature range	°F	14 to + 140
Valve coupling	mm	Push-in fitting for $\varnothing 4$ pipe ($\varnothing 5/32$)
Pressure range	psi	36.3 to 116
Nominal diameter	in	0.106
Flow rate at 6 bar (0.6 MPa, 87 psi) ΔP 1 bar (0.1 MPa, 14.5 psi)	NI/min	100
	scfm	3.53
Delay setting range	s	From 0 to 30, at 87 psi
Signal shutoff time	s	< 0.1
Repeatability	s	± 0.4
Fluid		Filtered, lubricated or unlubricated compressed air. If used, must be continuous
Operating		By compressed air
Repositioning		By mechanical spring
Installation		In any direction
Assembly		On Ω bar (DIN EN 50022) size 35 x 7 or 35 x 15 mm - Wall mounting using $\varnothing 0.165$ holes
MATERIALS		
Body		Anodized aluminium / Technopolymer
Internal parts		Brass / Technopolymer
Gaskets		NBR
Spring		Spring steel

DIMENSIONS AND ORDERING CODES

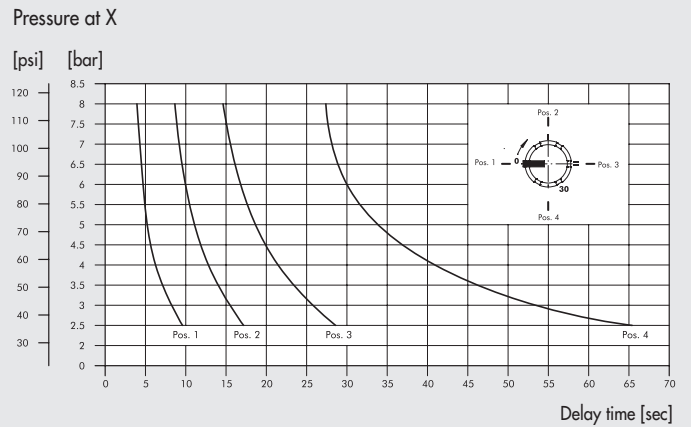
Code	Description
W3604000006	Timer



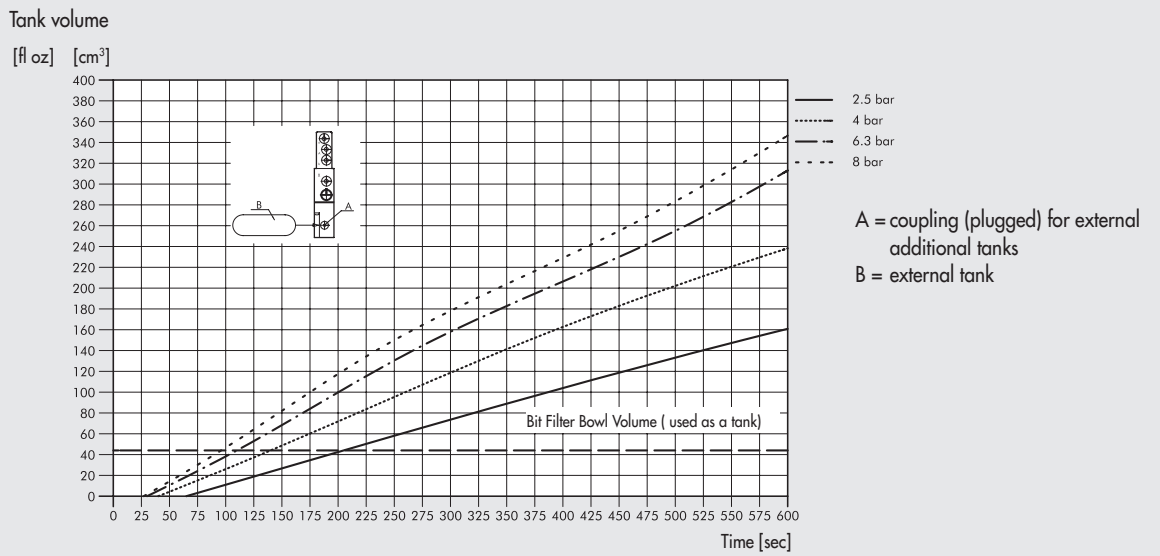
NORMALLY OPEN AND NORMALLY CLOSED OPERATION



CHANGE IN THE DELAY WITH CHANGE IN PRESSURE



HOW TO INCREASE THE DELAY



NOTES

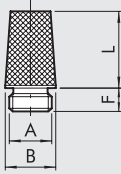
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NOTES

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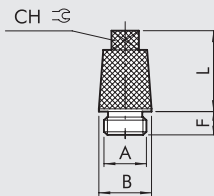
SILENCERS

SILENCER MW SC



	Code	A	B	F	L
Materials:	W0970530001	M5	0.23	0.18	0.39
Nickel-plated brass	W0970530002	BSPP 1/8	0.47	0.23	0.59
Sintered nickel-plated bronze	W0970530003	BSPP 1/4	0.60	0.26	0.75
	W0970530004	BSPP 3/8	0.75	0.33	1.12
	W0970530005	BSPP 1/2	0.90	0.34	1.30
Features:	W0970530006	BSPP 3/4	1.14	0.43	1.60
Pmax: 174 psi	W0970530007	BSPP 1	1.42	0.45	1.99
Temp.: from 14° to 176 °F					

SILENCER MW SCQ



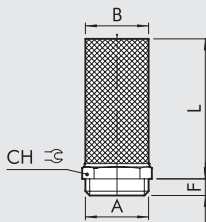
	Code	A	B	F	L	CH
Materials:	W0970530012	BSPP 1/8	0.47	0.23	0.59	0.28 (7 mm)
Nickel-plated brass	W0970530013	BSPP 1/4	0.60	0.29	0.75	0.31 (8 mm)
Sintered nickel-plated bronze	W0970530014	BSPP 3/8	0.75	0.33	1.15	0.39 (10 mm)
	W0970530015	BSPP 1/2	0.90	0.35	1.24	0.55 (14 mm)
	W0970530016	BSPP 3/4	1.14	0.39	1.63	0.67 (17 mm)
Features:	W0970530017	BSPP 1	1.42	0.47	2.01	0.90 (23 mm)
Pmax: 174 psi						
Temp.: from 14° to 176 °F						

SILENCER MW SE



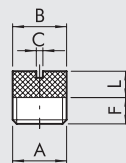
	Code	A
	W0970530021U	M5
	W0970530020U	M7
	W0970530022U	1/8 NPT
	W0970530023U	1/4 NPT
	W0970530024U	3/8 NPT
	W0970530025U	1/2 NPT
	W0970530026U	3/4 NPT
	W0970530027U	1 NPT

HIGH-CAPACITY SILENCER MW SL



	Code	A	B	F	L	CH
Materials:	W0970530036	BSPP 3/4	1.45	0.47	8.46	1.97 (50 mm)
Nickel-plated brass	W0970530037	BSPP 1	1.45	0.47	8.46	1.97 (50 mm)
Sintered nickel-plated bronze	W0970530038	BSPP 1 1/4	1.45	0.60	8.46	1.97 (50 mm)
	W0970530039	BSPP 1 1/2	1.45	0.60	8.46	1.97 (50 mm)
	W0970530040	BSPP 2	1.45	0.67	8.66	2.56 (60 mm)
Features:						
Pmax: 174 psi						
Temp.: from 14° to 176 °F						

SILENCER MW STT



	Code	A	B	F	L	C
Materials:	W0970530042	BSPP 1/8	0.37	0.25	0.23	0.08
Nickel-plated brass	W0970530043	BSPP 1/4	0.49	0.23	0.27	0.06
Sintered nickel-plated bronze	W0970530044	BSPP 3/8	0.63	0.29	0.33	0.06
	W0970530045	BSPP 1/2	0.80	0.39	0.38	0.10
	W0970530046	BSPP 3/4	1.02	0.43	0.47	0.06
Features:	W0970530047	BSPP 1	1.30	0.51	0.43	-
Pmax: 174 psi						
Temp.: from 14° to 176 °F						

SILENCER MW SFE



	Code	A
	W0970530051U	M5
	W0970530052U	1/8 NPT
	W0970530053U	1/4 NPT
	W0970530054U	3/8 NPT
	W0970530055U	1/2 NPT
	W0970530056U	3/4 NPT
	W0970530057U	1 NPT

DYNAMIC SILENCER MW SPL



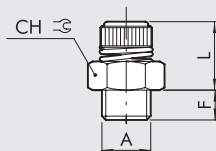
Code	A
W0970530062U	1/8 NPT
W0970530063U	1/4 NPT
W0970530064U	3/8 NPT
W0970530065U	1/2 NPT
W0970530066U	3/4 NPT
W0970530067U	1 NPT

SILENCER MW SPL-F



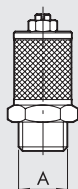
Code	A
W0970530072U	1/8 NPT
W0970530073U	1/4 NPT
W0970530074U	3/8 NPT
W0970530075U	1/2 NPT

SILENCED EXHAUST REGULATOR MW SVE



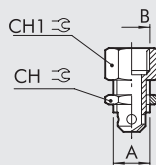
	Code	A	F	L	CH
Materials:	W0970520001	BSPP 1/8	0.26	0.75 - 0.90	0.81 (13 mm)
Nickel-plated brass	W0970520002	BSPP 1/4	0.30	0.82 - 0.96	0.59 (15 mm)
Sintered nickel-plated bronze	W0970520003	BSPP 3/8	0.38	0.92 - 1.16	7/8 (22 mm)
Stainless steel spring	W0970520004	BSPP 1/2	0.41	0.90 - 1.10	7/8 (22 mm)
	W0970520005	BSPP 3/4	0.47	1.14 - 1.38	1.18 (30 mm)
Features:	W0970520006	BSPP 1	0.54	1.06 - 1.34	1.41 (36 mm)
Pmax:	174 psi				
Temp.:	from 14° to 176 °F				

SILENCED EXHAUST REGULATOR MW SVL



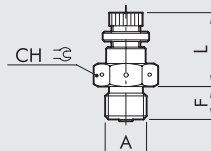
Code	A
W0970520010U	M5
W0970520011U	1/8 NPT
W0970520012U	1/4 NPT
W0970520013U	3/8 NPT
W0970520014U	1/2 NPT
W0970520015U	3/4 NPT
W0970520016U	1 NPT

EXHAUST REGULATOR MW DSN



	Code	A	B	CH	CH1
Materials:	W0970520021	BSPP 1/8	BSPP 1/8	0.47 (12 mm)	0.47 (12 mm)
Nickel-plated brass	W0970520022	BSPP 1/4	BSPP 1/8	0.55 (14 mm)	5/8 (16 mm)
	W0970520023	BSPP 3/8	BSPP 1/4	3/4 (19 mm)	0.67 (17 mm)
	W0970520024	BSPP 1/2	BSPP 1/4	0.94 (24 mm)	7/8 (22 mm)
Features:					
Pmax:	174 psi				
Temp.:	from 14° to 176 °F				

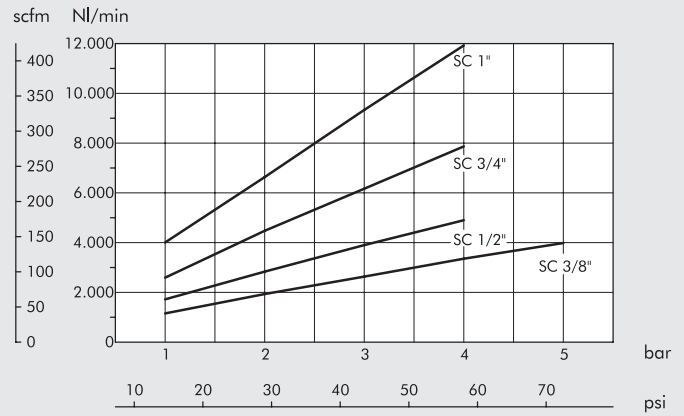
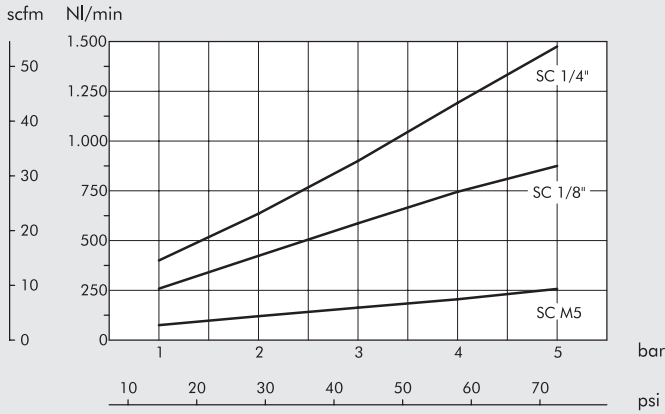
EXHAUST REGULATOR MW DSE



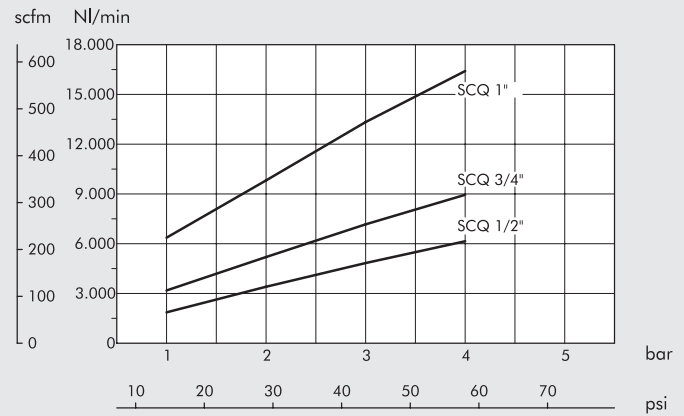
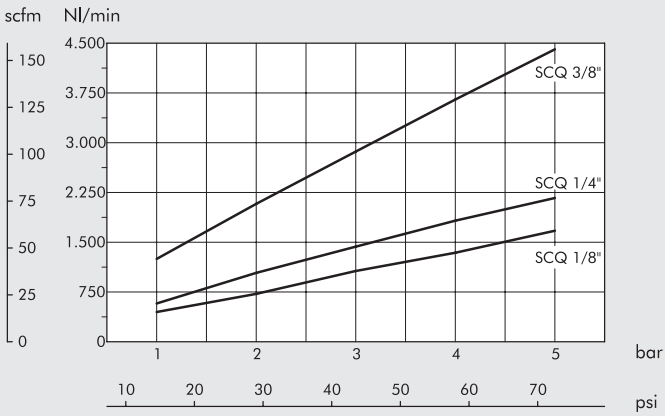
	Code	A	F	L	CH
Materials:	W0970520031	BSPP 1/8	0.29	0.66 - 0.79	0.55 (14 mm)
Nickel-plated brass	W0970520032	BSPP 1/4	0.39	0.85 - 1.14	3/4 (17 mm)
Features:					
Pmax:	174 psi				
Temp.:	from 14° to 176 °F				

FLOW CHARTS

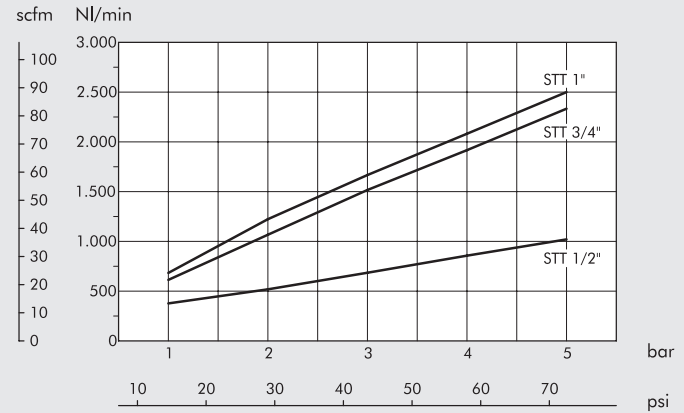
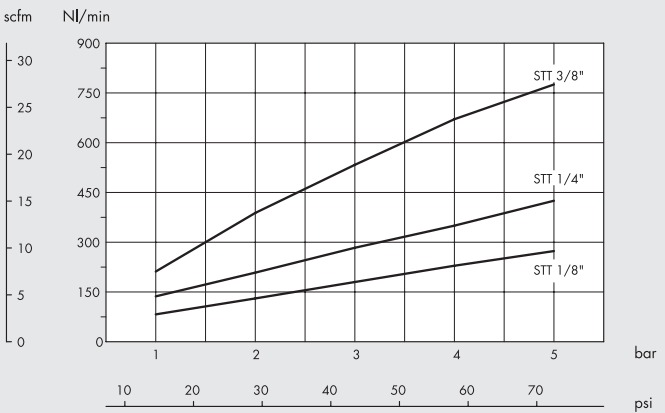
SILENCER MW SC



SILENCER MW SCQ

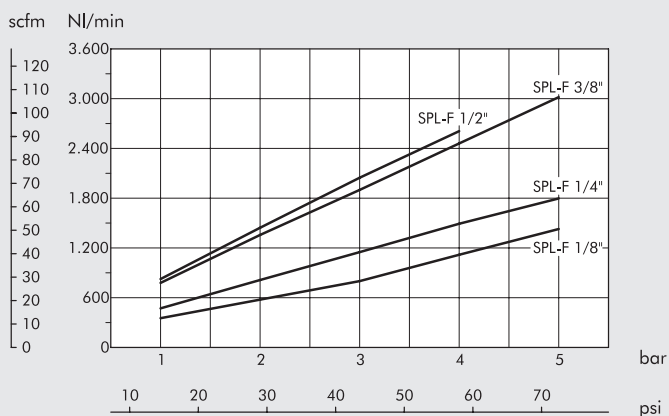


SILENCER MW STT

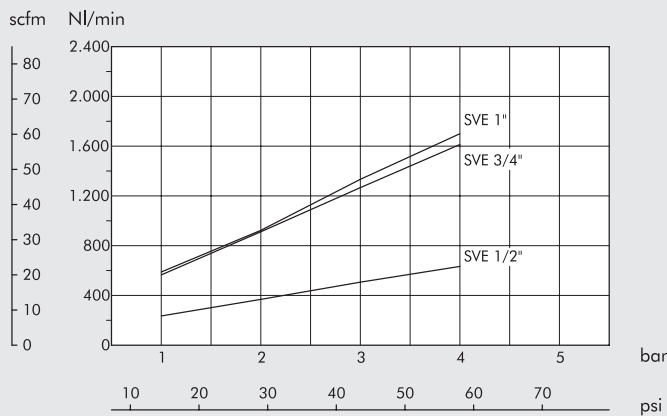
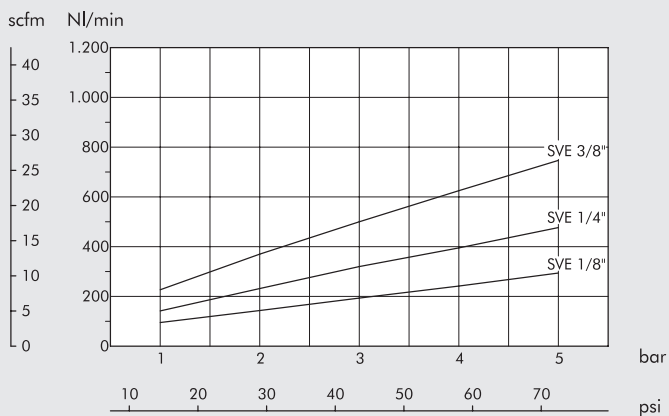


FLOW CHARTS

SILENCER MW SPL-F



SILENCER MW SVE



NOISE ABATEMENT

Reduction of the noise that you obtain mounting a silencer on a compressed air exhaust, measured by feeding at 72.5 psi, at a distance of 39.4 inch with 45° angle to the axis of the silencer (for SFE model at 90° in order to avoid the direct jet).

Middle values in the sizes.

- MW SC - 35 Db
- MW SCQ - 35 Db
- MW SE - 28 Db
- MW STT - 32 Db
- MW SFE - 30 Db
- MW SPL - 30 Db
- MW SPL-F - 35 Db
- MW SVE - 25 Db
- MW SVL - 25 Db

NOTES

Lined area for notes.

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● UL AND CSA STANDARDS	PAGE	5-2

NOTES

Lined area for notes.

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