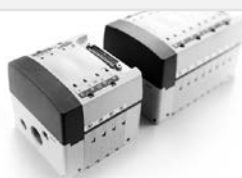

















2 > Control













2 / 1 Directly and indirectly operated 2/2, 3/2 solenoid valves

		Section
Series K8	 Directly operated solenoid valves - 8 mm 2/2-way - Normally Closed (NC) and Normally Open (NO) 3/2-way - Normally Closed (NC) and Normally Open (NO)	2/1.03
Series K8B	 Pilot operated solenoid valves 2/2-way - Normally Closed (NC) and Normally Open (NO) 3/2-way - Normally Closed (NC) and Normally Open (NO)	2/1.04
Series K	 Directly operated solenoid valves - 10 mm 3/2-way - Normally Closed (NC) and Normally Open (NO)	2/1.05
Series KN	 Directly operated solenoid valves - 10 mm 3/2-way - Normally Closed (NC)	2/1.06
Series KN HIGH FLOW	 Directly operated solenoid valves - 10 mm 3/2-way - Normally Closed (NC)	2/1.07
Series W	 Directly operated solenoid valves - 15 mm 3/2-way - Normally Closed (NC), Normally Open (NO)	2/1.10






2 / 1 Directly and indirectly operated 2/2, 3/2 solenoid valves

		Section
Series P	 Directly operated solenoid valves - 15 mm 3/2-way - Normally Closed (NC) and Normally Open (NO)	2/1.15
Series PL	 Directly operated solenoid valves - 15 mm 3/2-way - Normally Closed (NC)	2/1.16
Series PN	 Directly operated solenoid valves - 15 mm 3/2-way - Normally Closed (NC)	2/1.17
Series PD	 Directly operated solenoid valves - 15 mm 2/2-way - Normally Closed (NC)	2/1.18
Series PDV	 Directly operated solenoid valves with separating diaphragm 2/2-way - Normally Closed (NC)	2/1.19
Series A	 Directly operated solenoid valves - 22 mm 2/2-way - Normally Closed (NC) and Normally Open (NO) 3/2-way - Normally Closed (NC) and Normally Open (NO)	2/1.20
Series 6	 Directly operated solenoid valves - 30 mm 2/2-way - Normally Closed (NC) 3/2-way - Normally Closed (NC), Normally Open (NO)	2/1.25
Series CFB	 Solenoid valves 2/2-way - Normally Closed (NC) and Normally Open (NO) 3/2-way - Normally Closed (NC) and Normally Open (NO)	2/1.30
Series CFB Stainless steel	 Solenoid valves 2/2-way - Normally Closed (NC) 3/2-way - Normally Closed (NC)	2/1.31

2/2 Solenoid valves / pneumatic valves

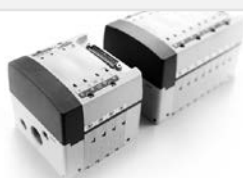
		Section
Series 8	 Pneumatic operated cartridge valves 2/2-way - Normally Closed (NC)	2/2.03
Series 8	 Pneumatically and electro pneumatically operated valves 2/2-way - Normally Closed (NC), Normally Open (NO) 3/2-way - Normally Closed (NC), Normally Open (NO)	2/2.04
Series E	 Valves and solenoid valves 5/2-way monostable/bistable 5/3-way CC, CO, CP With outlets on the body For individual or manifold assembly Size: 10,5 mm	2/2.05
Series EN	 Valves and solenoid valves 5/2-way - 5/3-way CC, CO, CP With outlets on the body For individual or manifold assembly Size: 16, 19 mm	2/2.07
Series 3	 Valves and solenoid valves 2x3/2, 3/2, 5/2 and 5/3-way CC, CO, CP Ports: G1/8, G1/4	2/2.10
Series 4	 Valves and solenoid valves 3/2, 5/2 and 5/3-way CC, CO Ports: G1/8, G1/4, G1/2	2/2.15
Series 9	 Valves and solenoid valves ISO 5599/1 5/2 and 5/3-way CC, CO Sizes: 1 - 2 - 3	2/2.20
Series 7	 Valves and solenoid valves VDMA 24563 (ISO 15407-1) 5/2-way - 5/3-way CC, CO, CP	2/2.25
Series NA	 Valves and solenoid valves 3/2 - 5/2 - 5/3-way CC, CO, CP With holes configured according NAMUR standards	2/2.30
Series GP, B, G, U7, A8, H8	 Solenoids Version A, B Connections according to industrial standard and to DIN EN 175 301-803 standards	2/2.35

2/3 Valve islands






		Section
Series 3	 Plug-In valve islands, Multipole and Fieldbus Plug-In system for Series 3 solenoid valves, G1/8 port Valve functions: 2x3/2, 5/2 and 5/3-way CO CC CP Multipole with a 25-pin Sub-D connector It can interface with all major serial communication protocols	2/3.30
Series F	 Valve islands, Multipole and Fieldbus Multipole integrated electrical connection (PNP) Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC It can interface with all major serial communication protocols	2/3.35
Series HN	 Valve islands, Multipole and Fieldbus Multipole connection with 25 or 37 pins Serial connection with the most common communication protocols Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC	2/3.40
Series Y	 Valve islands, Individual, Multipole and Fieldbus Valve Island with Pneumatics and Electronics integrated Available versions: Individual, Multipole, Fieldbus (Profibus-DP, DeviceNet, CANopen) Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC	2/3.45
Series CX	 Multi-serial module Interface with: PROFIBUS, CANopen, DeviceNet, EtherNet/IP, PROFINET, EtherCAT Compatible with all Camozzi valve islands	2/3.50




2 > Control





2/4 Mechanical / manual valves

		Section
Series 2	 <p>Mechanically operated minivalves 3/2-way Ports M5, cartridge ø 4</p>	2/4.05
Series 1, 3	 <p>Mechanically operated valves Series 1: 3/2-way and 5/2-way, ports G1/8 and G1/4 Series 3: 3/2-way and 5/2-way, ports G1/8</p>	2/4.10
Series 3, 4	 <p>Mechanically operated sensor valves 3/2-way and 5/2-way Ports G1/8, G1/4</p>	2/4.15
Series 2, 3	 <p>Foot operated pedal Electrical and pneumatic Series 3: G1/4, 5/2-way - NC / NO contacts Series 2: M5; 4/2 tube; 3/2-way NC</p>	2/4.20
Series 2	 <p>Manually operated console minivalves 3/2-way and 5/3-way CC, CO, CP Ports M5, Cartridge ø 4</p>	2/4.25
Series 1, 3, 4 VMS	 <p>Manually operated valves Series 1, 3 and 4: 3/2-, 5/2- and 5/3-way CC, CO; ports G1/8, G1/4 Series VMS: 3/2-way; ports M5, G1/8, G1/4, G3/8, G1/2 and G3/4</p>	2/4.30
Series 2	 <p>Mini-handle valves Handle with incorporated micro valve 3/2 NC and NO Handle with incorporated micro switch Manual</p>	2/4.35







2/5 Logic valves

		Section
Series 2L	 <p>Basic logic valves Cartridge ø 4 mm or - and - yes - not - memory</p>	2/5.05




2/6 Automatic valves

		Section
Mod. SCS	 <p>Circuit selector Ports: G1/8</p>	2/6.01
Series VNR	 <p>Unidirectional valves Ports: M5, G1/8, G1/4, G3/8, G1/2, G3/4, G1</p>	2/6.02
Series VSO, VSC	 <p>Quick exhaust valves Series VSO ports: M5, G1/8, cartridge ø4 Series VSC ports: G1/8, G1/4, G1/2</p>	2/6.03
Mod. VMR 1/8-B10	 <p>Adjustable overpressure exhaust valve Ports: G1/8</p>	2/6.04
Series VBO, VBU	 <p>Blocking valves Unidirectional valves (VBU) and bidirectional valves (VBO) Ports: G1/8, G1/4, G3/8, G1/2</p>	2/6.10


2/7 Flow control valves

		Section
Series SCU, MCU, SVU, MVU, SCO, MCO	 <p>Flow control valves Unidirectional and bidirectional banjo flow control regulators Ports: M5, G1/8, G1/4, G3/8, G1/2</p>	2/7.05
Series PSCU, PMCU, PSVU, PMVU, PSCO, PMCO	 <p>Flow control valves Unidirectional and bidirectional flow regulators with banjo in brass (M5) or in technopolymer (G1/8, G1/4, G3/8) Ports: M5, G1/8, G1/4, G3/8</p>	2/7.07
Series TMCU, TMVU, TMCO	 <p>Flow control valves Unidirectional and bidirectional banjo flow controllers with nominal diameter 2 - 3,8 - 5,8 - 8 mm Ports: G1/8, G1/4, G3/8, G1/2</p>	2/7.10
Series GSCU, GMCU, GSVU, GSCO, GMCO	 <p>Flow control valves Unidirectional and bidirectional banjo flow controllers with nominal diameter 1,5 - 3,5 - 5 mm Ports: M5, G1/8, G1/4</p>	2/7.15 GMVU,
Series RFU, RFO	 <p>Flow control valves Unidirectional and bidirectional Ports: M5, G1/8, G1/4, G3/8, G1/2 Nominal diameters: 1,5 mm (M5), 2 and 3 mm (G1/8), 4 and 6 mm (G1/4), 7 mm (G3/8 and G1/2)</p>	2/7.20
Series 28	 <p>Flow control valves Bidirectional Ports: G1/8, G1/4, G3/8, G1/2</p>	2/7.25









2 / 8 Pressure switches and vacuum switches

		Section
Series PM, TRP, 2950	Pressure switches, Transducers, Pressure indicators	2/8.05
	Series PM: adjustable-diaphragm pressure switches, with setting visual scale, with exchange contacts Series TRP: electro-pneumatic transducers Series 2950: pressure indicators, ports M5	
Series SWDN	Electronic vacuum/pressure switches	2/8.22
	With digital display High precision, easy to use	
Series SWCN	Electronic vacuum/pressure switches	2/8.27
	With digital display High precision, easy to use	

2 / 9 Silencers

		Section
Series 29...	Silencers	2/9.05
	Series: 2901 - 2903 - 2921 - 2931 - 2938 - 2939 - 2905 - RSW Ports: M5, G1/8, G1/4, G3/8, G1/2, G3/4, G1	

2 / 15 Proportional technology

		Section
Series AP	Directly operated proportional valves	2/15.01
	2/2-way proportional valves, NC Size: 16 - 22 mm	
Series CP	Directly operated proportional solenoid valves	2/15.02
	2/2-way, NC proportional valves Sizes: 16 and 20 mm	
Series 130	Electronic control device for proportional valves	2/15.03
	PWM control device, with current control system for directly operated proportional valves	
Series LRWD2, LRPD2, LRXD2	Digital proportional servo valves	2/15.32
	3/3-way directly operated servo valves for the flow (LRWD2), pressure (LRPD2) and position (LRXD2) control	
Series K8P	Electronic proportional micro regulator	2/15.37
	Proportional regulator for the pressure control	
Series MX-PRO	Electronic proportional regulator	2/15.45
	Ports: G1/2. Manifold ports: G1/2 Modular - Available with built-in pressure gauges or ports for gauges	
Series ER100	Digital electro-pneumatic regulators	2/15.50
	Ports: G1/4	
Series ER200	Digital electro-pneumatic regulators	2/15.51
	Ports: G1/4 and G3/8	

Series K8 directly operated solenoid valves

2/2-way - Normally Closed (NC) and Normally Open (NO)
3/2-way - Normally Closed (NC) and Normally Open (NO)

2

CONTROL



- » Compact design
- » High performances
- » Manifold mounting
- » Long life

Thanks to their particular design these valves can be used in applications where very compact solutions are required as well as high performances. Series K8 is used to control actuators or very small devices and it is suitable for portable equipments thanks to low power consumption, reduced weight and dimensions.

Series K8 directly operated solenoid valves are available as 2/2 or 3/2-way either NC or NO versions.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC - 3/2 NC - 2/2 NO - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	manifold cartridge
Nominal diameter	0.5 - 0.7 mm
Nominal flow	see kv
Flow efficient kv (l/min)	0.08 - 0.15
Operating pressure	-1 ÷ 3 ... 7 bar
Operating temperature	0°C + 50°C
Media	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Response time (ISO 12238)	ON <10 msec – OFF <10 msec
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	brass - stainless steel - PBT technopolymer
Seals	FKM
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	24 V DC - 12 V DC - 6 V DC - other voltages on demand
Voltage tolerance	±10%
Power consumption	0.6 W
Duty cycle	ED 100%
Electrical connection	2 Pin 0.5 x 0.5 spacing 4 mm
Protection class	IP00

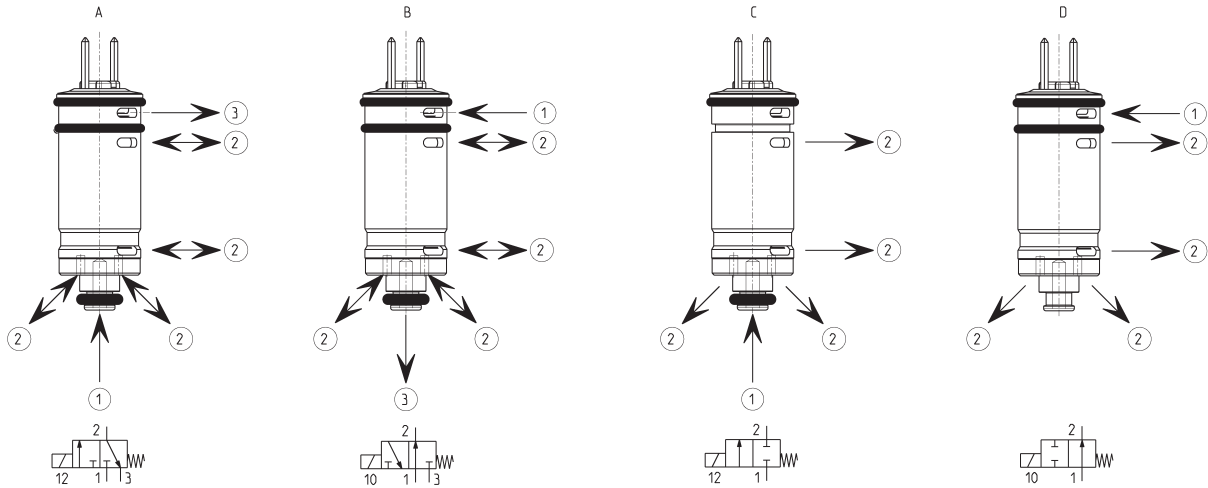
Special versions available on demand

CODING EXAMPLE

K8 | **0** | **00** | **-** | **3** | **0** | **3** | **-** | **K** | **2** | **3**

K8	SERIES
0	BODY DESIGN: 0 = single valve
00	NUMBER OF POSITIONS: 00 = valve without seat
3	NUMBER OF WAYS - FUNCTIONS: 0 = single base 3 = 3-way NC 4 = 3-way NO 5 = 2-way NC 6 = 2-way NO
0	MATERIALS AND SEALS: 0 = poppet, FKM seals
3	NOMINAL DIAMETER: 3 = Ø 0.5 mm (working pressure 1 ÷ 7 bar) 6 = Ø 0.5 mm (working pressure -1 ÷ 4 bar) 5 = Ø 0.7 mm (working pressure -1 ÷ 3 bar)
K	MATERIALS: K = stainless steel body, brass cage
2	ELECTRICAL CONNECTION: 2 = pin interface size 4 mm
3	VOLTAGE: 1 = 6V DC (0.6 W) 2 = 12V DC (0.6 W) 3 = 24V DC (0.6 W)

AVAILABLE FUNCTIONS



A = 3/2-way valve NC

B = 3/2-way valve NO

C = 2/2-way valve NC

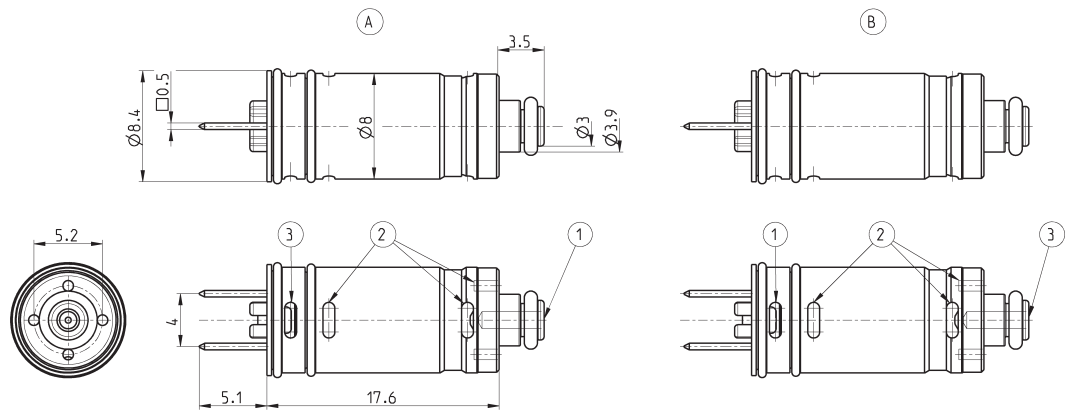
D = 2/2-way valve NO

- 1 = supply
- 2 = inlet
- 3 = exhaust

8 mm solenoid valve, 2/2 and 3/2-way NC (A) and NO (B)

* = put in NUMBER OF WAYS - FUNCTIONS (see CODING EXAMPLE)

** = put in VOLTAGE (see CODING EXAMPLE)

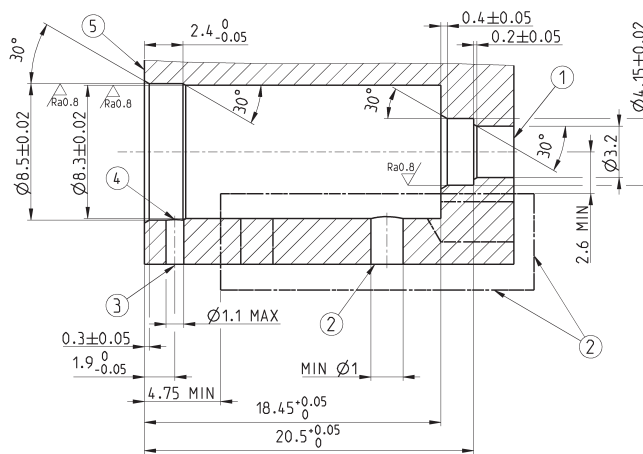


LEGEND:
 1 = supply
 2 = inlet
 3 = exhaust

Mod.	Orifice Ø (mm)	kv (l/min)	Min/max pressure (bar)
K8000-03-K2**	0.5	0.08	1 + 7
K8000-06-K2**	0.5	0.08	-1 + 4
K8000-05-K2**	0.7	0.15	-1 + 3

8 mm solenoid valve seat, 2/2 and 3/2-way NC and NO

Note: better performances can be achieved if the valve seat holes are in line with the respective valve holes.

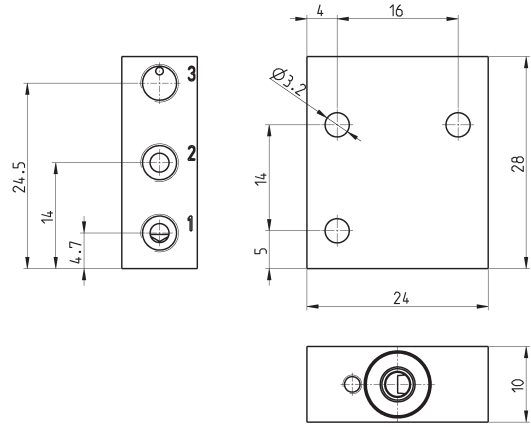


LEGEND:
 1 = Port 1
 2 = Port 2
 3 = Port 3
 4 = Free from burrs
 5 = Surface to be aligned with the upper surface of the valve reinforcement

FUNCTION	3/2 NC	2/2 NC	3/2 NO	2/2 NO
PORT 1	Supply	Supply	Exhaust	-
PORT 2	Outlet	Outlet	Outlet	Outlet
PORT 3	Exhaust	-	Supply	Supply

Single body for Series K8 solenoid valve

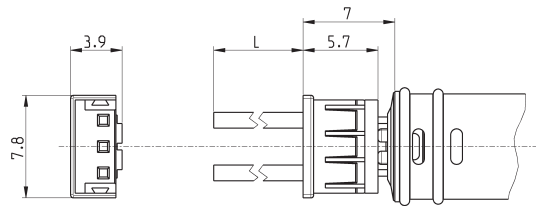
Material: anodized aluminium
Pneumatic connections: M5 threads



Mod.
K8303/14C

Connector Mod. 120-..

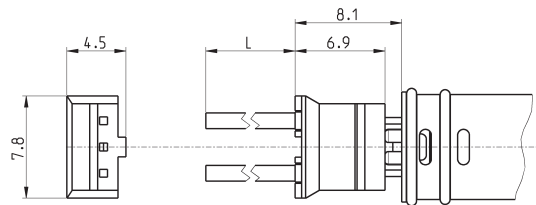
Cable section: 0.25 mm²
Cable external diameter: 1.2 mm
Material for the cable insulation: PVC



Mod.	description	colour	L = cable length (mm)	cable holding
120-803	crimped cable	white	300	crimping
120-806	crimped cable	white	600	crimping

Connector with flying leads Mod. 120-J...

Flying leads section: 0.25 mm²
Flying lead external diameter: 1.2 mm
Material for the flying leads insulation: PVC



Mod.	description	colour	L = cable length (mm)	cable holding
120-J803	crimped cable connector J	white	300	crimping
120-J806	crimped cable connector J	white	600	crimping

Series K8B pilot operated solenoid valves

2/2-way - Normally Closed (NC) and Normally Open (NO)
3/2-way - Normally Closed (NC) and Normally Open (NO)

2

CONTROL



- » Compact design
- » High flow
- » Manifold mounting
- » Long life

Thanks to their low power consumption and light weight Series K8B solenoid valves are particularly suitable for use with portable equipment too.

Series K8B pilot operated solenoid valves represent the evolution of Series K8 which has been equipped with a flow amplifier. Their particular design makes these valves ideal for use in applications requiring very compact solutions and high flow.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC - 3/2 NC - 2/2 NO - 3/2 NO
Operation	pilot operated poppet type
Pneumatic connections	manifold cartridge - M7 threads - on subbase with M3 screws
Nominal diameter	3.6 mm
Nominal flow	180 NI/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	2.8
Operating pressure	1 ÷ 7 bar
Operating temperature	0°C + 50°C
Media	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Response time (ISO 12238)	ON <15 msec – OFF <15 msec
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

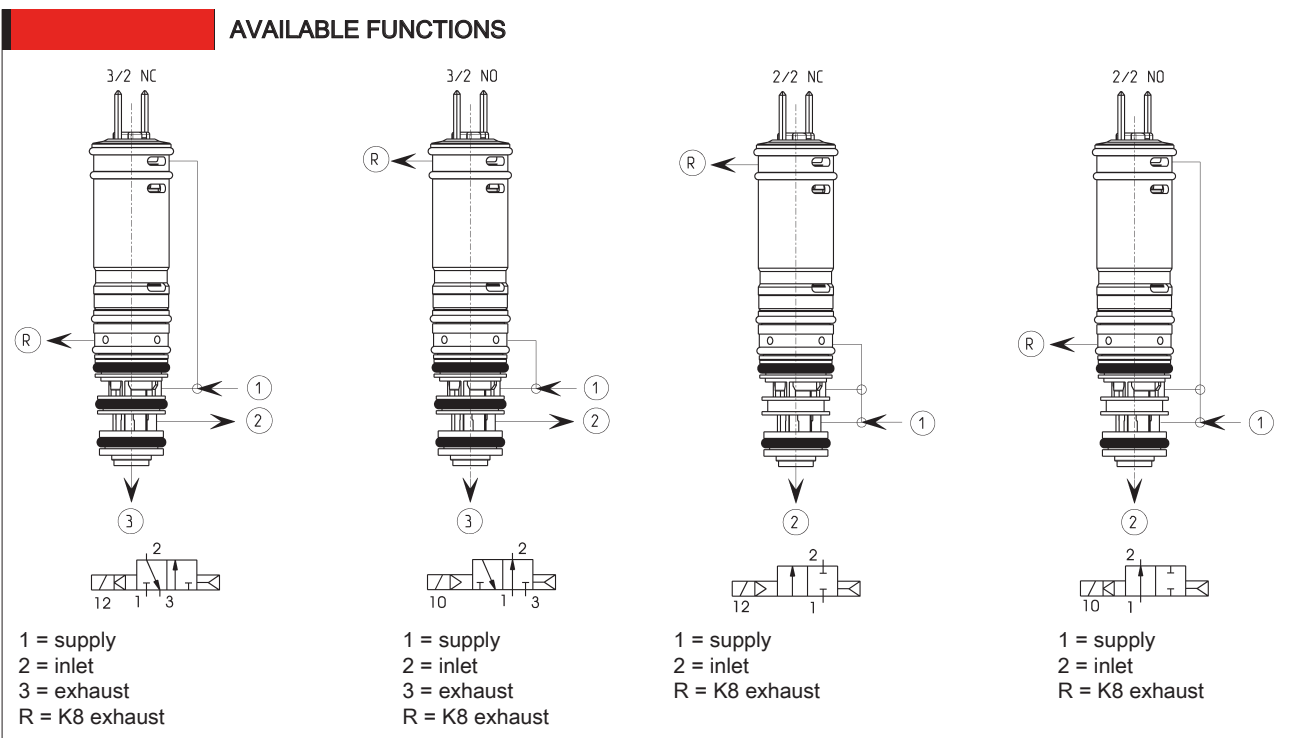
Body	brass - stainless steel - PBT technopolymer - aluminium
Seals	FKM
Internal parts	stainless steel

ELECTRICAL FEATURES

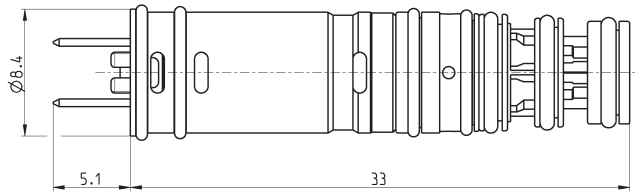
Voltage	24 V DC - 12 V DC - 6 V DC - other voltages on demand
Voltage tolerance	±10%
Power consumption	0.6 W
Duty cycle	ED 100%
Electrical connection	2 Pin 0.5 x 0.5 pitch 4mm - JST connector with flying leads L = 300mm
Protection class	IP00

Special versions available on demand

CODING EXAMPLE													
K8B	C5	4	00	-	D4	3	2	N	-	N	00	1A	C003
K8B	SERIES												
C5	BODY DESIGN: C0 = body with interface for subbase C3 = threaded body C5 = cartridge												
4	NUMBER OF WAYS - FUNCTIONS: 1 = 2/2-way NC 2 = 2/2-way NO 4 = 3/2-way NC 5 = 3/2-way NO												
00	PNEUMATIC CONNECTIONS: 00 = cartridge 03 = M7 18 = K8B-type interface, 2-way 19 = K8B-type interface, 3-way												
D4	NOMINAL DIAMETER: D4 = Ø 3.6mm												
3	SEALS MATERIALS: 3 = FKM												
2	BODY MATERIALS: 1 = aluminium 2 = brass												
N	MANUAL OVERRIDE: N = not foreseen												
N	FIXING ACCESSORIES: N = not foreseen P = screws for plastics M = screws for metal												
00	OPTION: 00 = no option												
1A	ELECTRICAL CONNECTION: 1A = only pins, pitch 4mm 1B = JST connector, pitch 4mm												
C003	VOLTAGE - POWER CONSUMPTION: C001 = 6V DC (0.6 W) C002 = 12V DC (0.6 W) C003 = 24V DC (0.6 W)												



8 mm solenoid valve, 2/2 and 3/2-way NC and NO



2

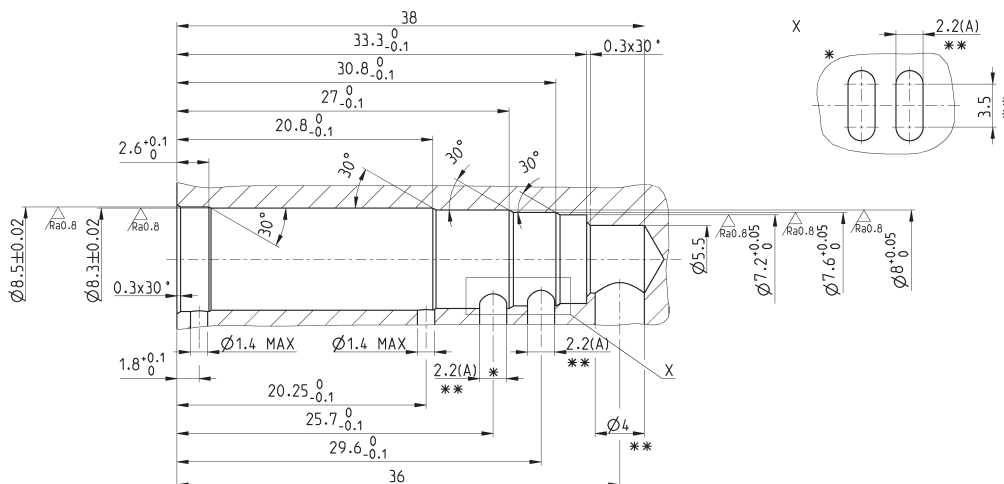
CONTROL

Mod.	Function	NOTE
K8BC5100-D432N-N001A*	2/2 NC	* enter the required voltage (see the coding example)
K8BC5200-D432N-N001A*	2/2 NO	* enter the required voltage (see the coding example)
K8BC5400-D432N-N001A*	3/2 NC	* enter the required voltage (see the coding example)
K8BC5500-D432N-N001A*	3/2 NO	* enter the required voltage (see the coding example)

8 mm solenoid valve seat, 2/2 and 3/2-way NC and NO

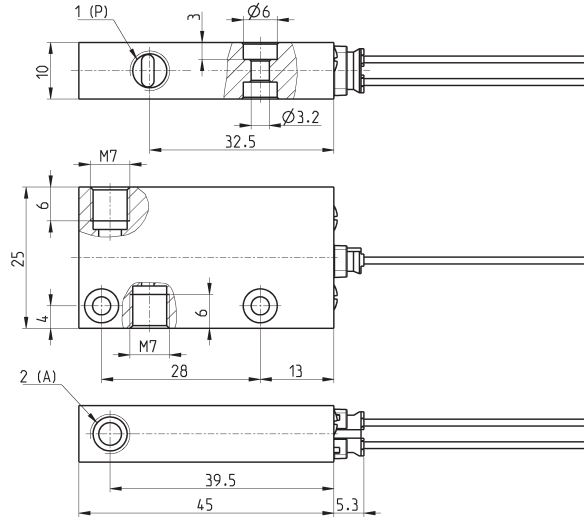
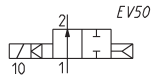
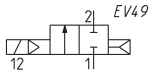
* = FOR THE 2/2 VERSION THIS OPERATION HAS NOT TO BE PERFORMED

** = TO ACHIEVE DECLARED PERFORMANCE IT IS NECESSARY TO HAVE A PASSAGE SECTION FOR THE SUPPLY AND EXHAUST PORTS OF 12.5 mm², WHICH IS EQUAL TO A Ø4 mm



Body with threaded ports, 2/2-way NC and NO

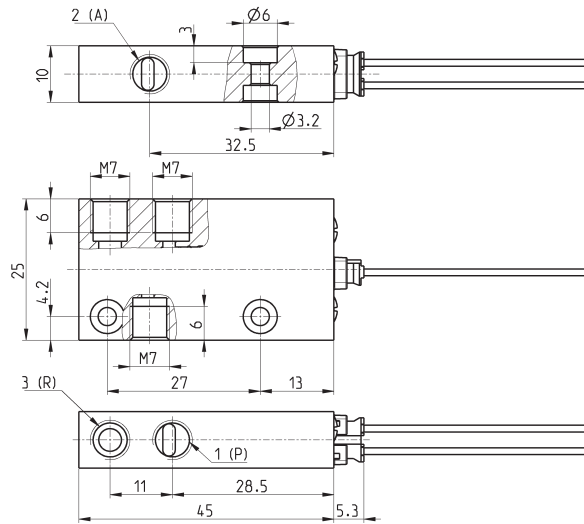
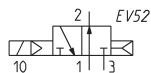
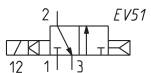
Supplied with:
1x connector with flying leads
Mod. 120-J803 (300mm)



Mod.	Function	Symbol	NOTE
K8BC3103-D431N-N001B*	2/2 NC	EV49	* enter the required voltage (see the coding example)
K8BC3203-D431N-N001B*	2/2 NO	EV50	* enter the required voltage (see the coding example)

Body with threaded ports, 3/2-way NC and NO

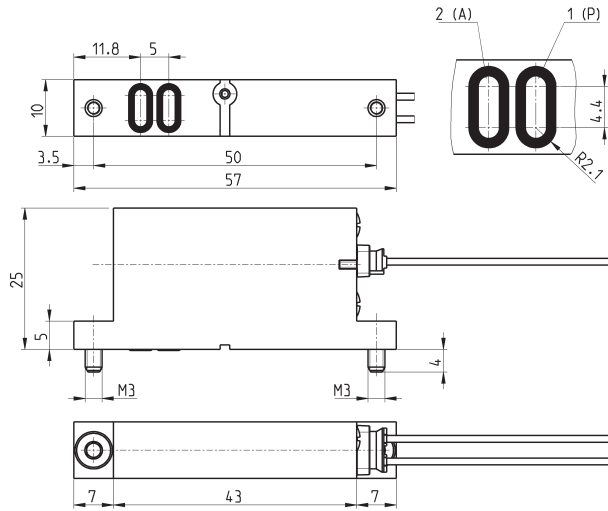
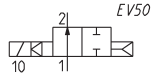
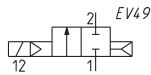
Supplied with:
1x connector with flying leads
Mod. 120-J803 (300mm)



Mod.	Function	Symbol	NOTE
K8BC3403-D431N-N001B*	3/2 NC	EV51	* enter the required voltage (see the coding example)
K8BC3503-D431N-N001B*	3/2 NO	EV52	* enter the required voltage (see the coding example)

Body for subbase, 2/2-way NC and NO

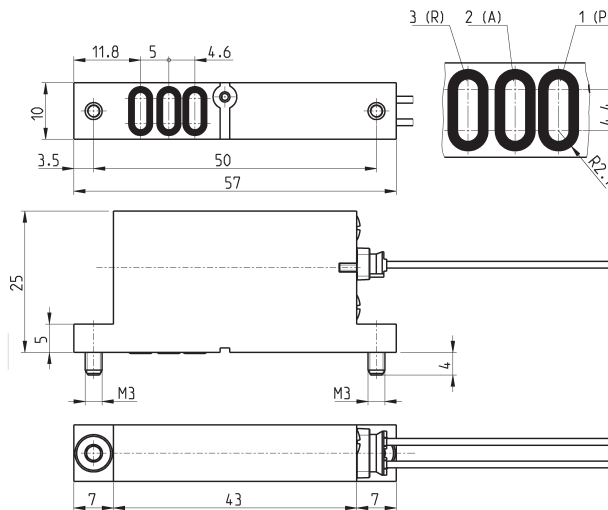
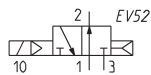
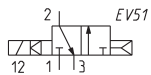

Supplied with:
 1x connector with flying leads
 Mod. 120-J803 (300mm)
 2x interface seals
 2x screws M3x6 UNI 5931
 (for M version)
 or
 2x screws M3x6 UNI 10227
 (for P version)



Mod.	Function	Symbol	NOTE
K8BC0118-D431N-*001B**	2/2 NC	EV49	* enter the type of screws - ** enter the required voltage (see the coding example)
K8BC0218-D431N-*001B**	2/2 NO	EV50	* enter the type of screws - ** enter the required voltage (see the coding example)

Body for subbase, 3/2-way NC and NO

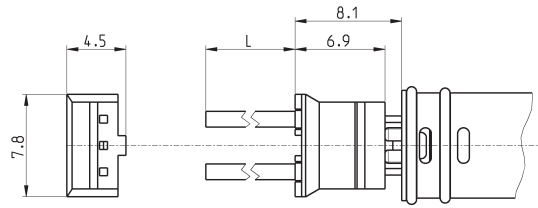

Supplied with:
 1x connector with flying leads
 Mod. 120-J803 (300mm)
 3x interface seals
 2x screws M3x6 UNI 5931
 (for M version)
 or
 2x screws M3x6 UNI 10227
 (for P version)



Mod.	Function	Symbol	NOTE
K8BC0419-D431N-*001B**	3/2 NC	EV51	* enter the type of screws - ** enter the required voltage (see the coding example)
K8BC0519-D431N-*001B**	3/2 NO	EV52	* enter the type of screws - ** enter the required voltage (see the coding example)

Connector with flying leads Mod. 120-J...

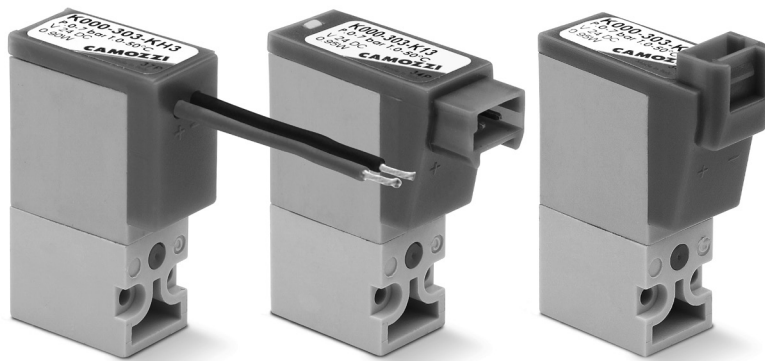
Flying leads section: 0.25 mm²
 Flying lead external diameter: 1.2 mm
 Material for the flying leads insulation: PVC



Mod.	description	colour	L = cable length (mm)	cable holding
120-J803	crimped cable connector J	white	300	crimping
120-J806	crimped cable connector J	white	600	crimping

Series K directly operated solenoid valves

3/2-way - Normally Closed (NC) and Normally Open (NO)



» Can be mounted on a single base (M5 connections) or on manifold (M5 connections).

Series K directly operated solenoid valves are available as 3/2-way either NC or NO versions. Both versions can be mounted on single sub-bases or manifolds and they are equipped with a manual override which makes the plants setting easier.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	on subbase by means of screws
Nominal diameter	0.65 mm
Nominal flow	10 NI/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	0.15
Operating pressure	0 + 5 (NO) ... 7 bar (NC)
Operating temperature	0°C + 50°C
Media	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Response time	ON <10 msec – OFF <10 msec
Manual override	monostable button
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	NBR (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

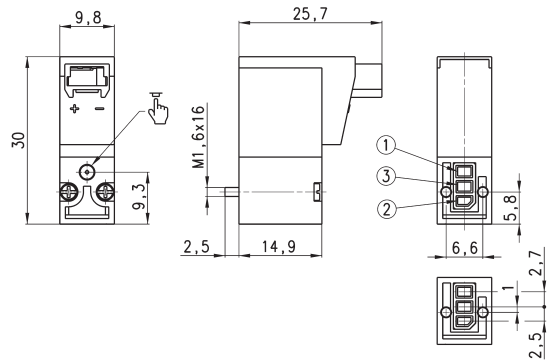
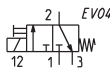
Voltage	24 V DC - 12 V DC - 6 V DC - other voltages on demand
Voltage tolerance	$\pm 10\%$
Power consumption	0.9 W, 0.95 W with LED
Duty cycle	ED 100%
Electrical connection	connector - thin cables L = 300 mm
Protection class	IP50

Special versions available on demand

CODING EXAMPLE											
K	0	00	-	3	0	3	-	K	2	3	
K	SERIES										
0	BODY DESIGN: 0 = single sub-base (only M5) or interface 1 = manifold										
00	NUMBER OF POSITIONS: 00 = interface 01 = single base (only M5) 02 + 99 = manifold number of positions										
3	NUMBER OF WAYS - FUNCTIONS: 0 = manifold or single base 3 = 3-way NC 4 = 3-way NO 5 = 3-way NC electric part revolved by 180° 6 = 3-way NO electric part revolved by 180°										
0	PORTS: 0 = interface 2 = M5 side outlets										
3	NOMINAL DIAMETER: 3 = \varnothing 0,65										
K	MATERIALS: K = PBT body, HNBR poppet F = PBT body, FKM poppet										
2	ELECTRICAL CONNECTION: 1 = 90° connection with protection and led 2 = 90° connection with protection 3 = 90° connection B = in-line connection with protection and led C = in-line connection with protection D = in-line connection F = cable (300mm) with protection and led G = cable (300mm) with protection H = cable only (300mm)										
3	SOLENOID VOLTAGE: 1 = 6V DC 2 = 12V DC 3 = 24V DC										
	FIXING: = standard version for mounting on plastic interface M = with screws for mounting on metal interfaces (on demand).										

3/2-way NC solenoid valve - 90° electrical connection

Supplied with:
 1x interface seal
 2x screws



Mod.

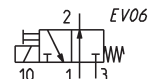
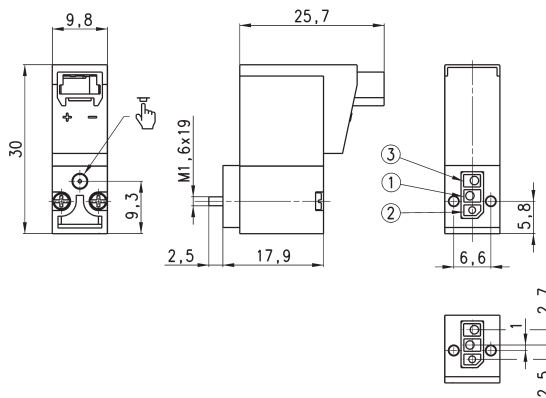
K000-303-K13

K000-303-K23

K000-303-K33

3/2-way NO solenoid valve - 90° electrical connection


Supplied with:
 1x interface for NO version
 (connections 1 and 3 are inverted)
 2x interface seals for NO version
 2x screws



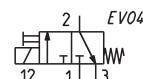
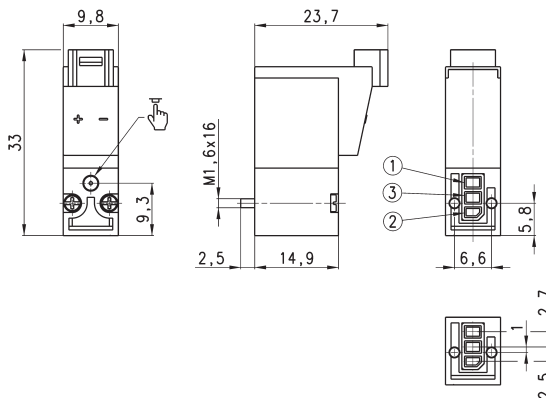
The interface for NO version is required if the valve is mounted on a manifold. In case of a single or

customised base, on the contrary, it is necessary to use screws M1,6x16 (mod. K303/61).

Mod.
K000-403-K13
K000-403-K23
K000-403-K33

3/2-way NC solenoid valve - in-line electrical connection

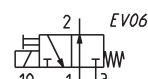
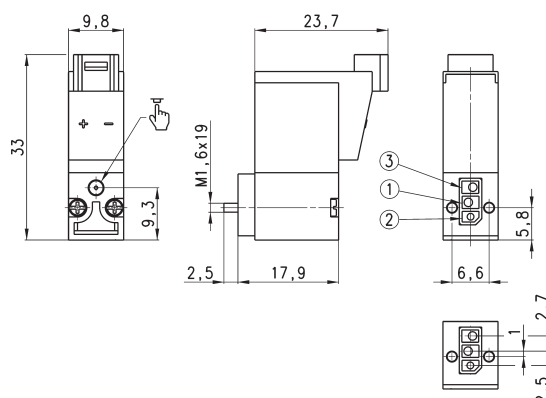

Supplied with:
 1x interface seal
 2x screws



Mod.
K000-303-KB3
K000-303-KC3
K000-303-KD3

3/2-way NO solenoid valve - in-line electrical connection


Supplied with:
 1x interface for NO version
 (connections 1 and 3 are inverted)
 2x interface seals for NO version
 2x screws



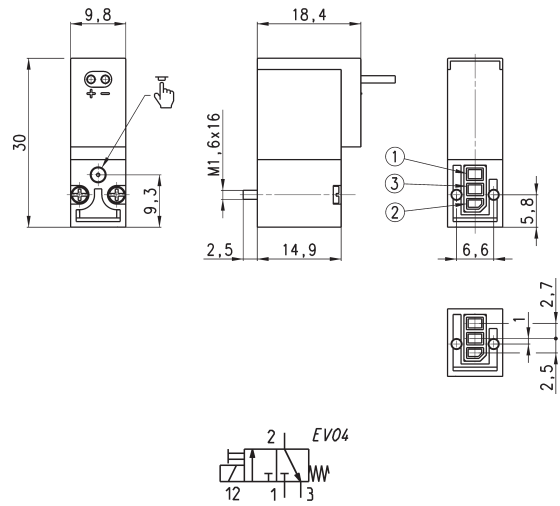
The interface for NO version is required if the valve is mounted on a manifold. In case of a single or

customised base, on the contrary, it is necessary to use screws M1,6x16 (mod. K303/61).

Mod.
K000-403-KB3
K000-403-KC3
K000-403-KD3

3/2-way NC solenoid valve with cable 300 mm

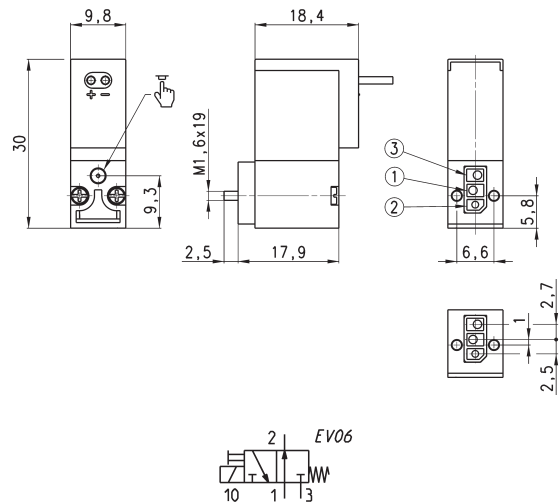
Supplied with:
1x interface seal
2x screws



Mod.
K000-303-KF3
K000-303-KG3
K000-303-KH3

3/2-way NO solenoid valve (with cable 300 mm)

Supplied with:
1x interface for NO version
(connections 1 and 3 are inverted)
2x interface seals for NO version
2x screws

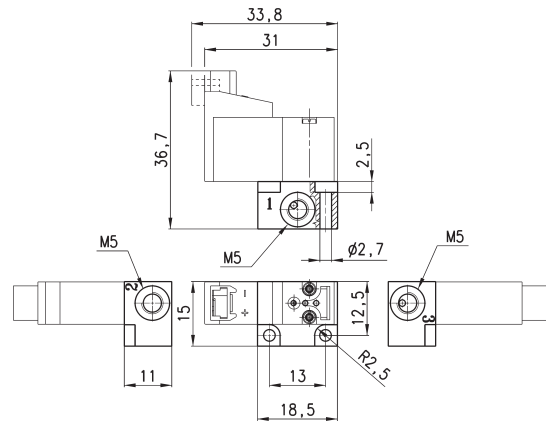
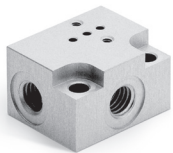


Mod.
K000-403-KF3
K000-403-KG3
K000-403-KH3

The interface for NO version is required if the valve is mounted on a manifold. In case of a single or customised base, on the contrary, it is necessary to use screws M1,6x16 (mod. K303/61).

Single sub-base

Note: use solenoid valves with mounting screws on metal interfaces (see codification).

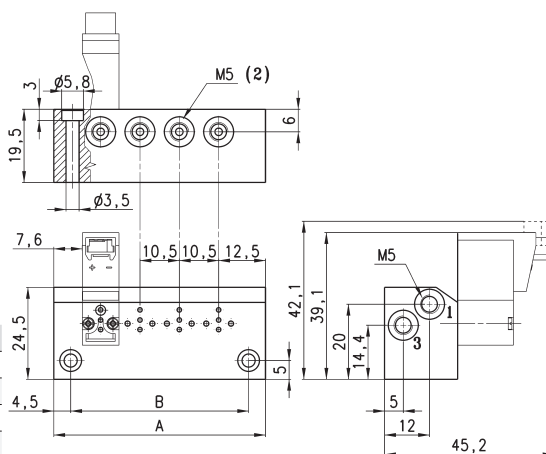


Mod.
K001-02

Manifold Mod. K1-02**

** Number of positions
With side outlets and conveyed inlet and exhaust.

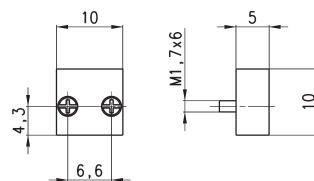
Note: use solenoid valves with mounting screws on metal interfaces (see codification).



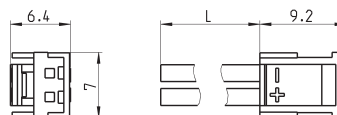
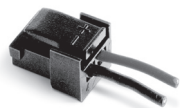
Mod.	A	B	Number of ports
K102-02	35.5	26.5	2
K103-02	46	37	3
K104-02	56.5	47.5	4
K105-02	67	58	5
K106-02	77.5	68.5	6
K107-02	88	79	7
K108-02	98.5	89.5	8
K109-02	109	100	9
K110-02	119.5	110.5	10

Excluder tap

Supplied with:
1x excluder tap
1x interface seal
2x screws



Mod.
K000-TP

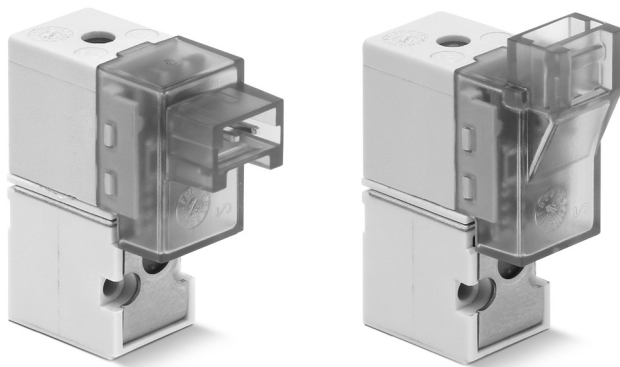
Connector Mod. 121-8..


Mod.	description	colour	L = cable length (mm)	cable holding
121-803	crimped cable	black	300	crimping
121-806	crimped cable	black	600	crimping
121-810	crimped cable	black	1000	crimping
121-830	crimped cable	black	3000	crimping

Series KN

directly operated solenoid valves

3/2-way - Normally Closed (NC)



- » Low energy consumption
- » Compact design
- » ISO 15218 Interface

Thanks to its low energy consumption and to its compact design, the miniaturized KN solenoid valve can be used in industrial and scientific applications.

Series KN directly operated solenoid valves are available as 3/2-way NC version.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC
Operation	direct acting poppet type
Pneumatic connections	on subbase with ISO 15218 interface by means of screws
Nominal diameter	0.65 mm
Nominal flow	10 NI/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	0.15
Operating pressure	0 ÷ 7 bar
Operating temperature	0°C + 50°C
Media	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Response time	ON <10 msec - OFF <10 msec
Manual override	monostable button
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	HNBR, NBR (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	24 V DC - 12 V DC - other voltages on demand
Voltage tolerance	±10%
Power consumption	1.3 W (inrush), 0.25 W (holding)
Duty cycle	ED 100%
Electrical connection	connector
Protection class	IP50

Special versions available on demand

CODING EXAMPLE

KN	0	00	-	3	0	3	-	K	1	3
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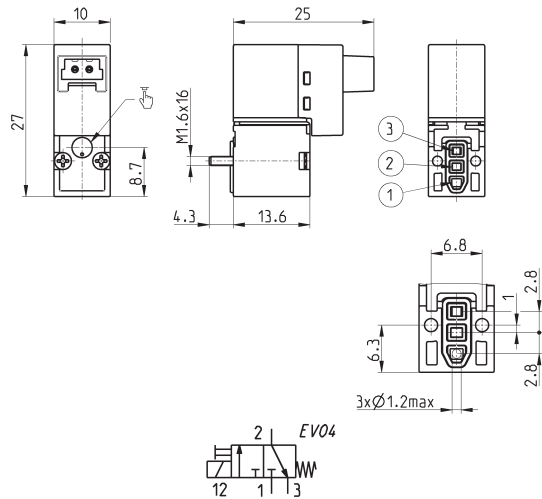
KN	SERIES
0	BODY DESIGN: 0 = single valve
00	NUMBER OF POSITIONS: 00 = interface
3	NUMBER OF WAYS - FUNCTIONS: 3 = 3/2-way NC
0	PORTS: 0 = single valve
3	NOMINAL DIAMETER: 3 = \varnothing 0.65
K	MATERIALS: K = PBT body, HNBR poppet seal, NBR other seals F = PBT body, FKM poppet seal, NBR other seals (FKM upon request)
1	ELECTRICAL CONNECTION: 1 = 90° connection with protection and led B = in-line connection with protection and led
3	SOLENOID VOLTAGE: 2 = 12V DC 3 = 24V DC - 1.3W (inrush), 0.25W (holding) other voltages are available upon request
	FIXING: = with screws for plastics (standard) M = with screws for metal

2

CONTROL

3/2 way NC solenoid valve - right-angle electrical connection


Supplied with:
 1x interface seal
 2x screws M1.6x16 UNI 10227
 (fixing for plastics, standard)
 or
 2x screws M1.6x16 UNI 7687
 (fixing for metal, M option)



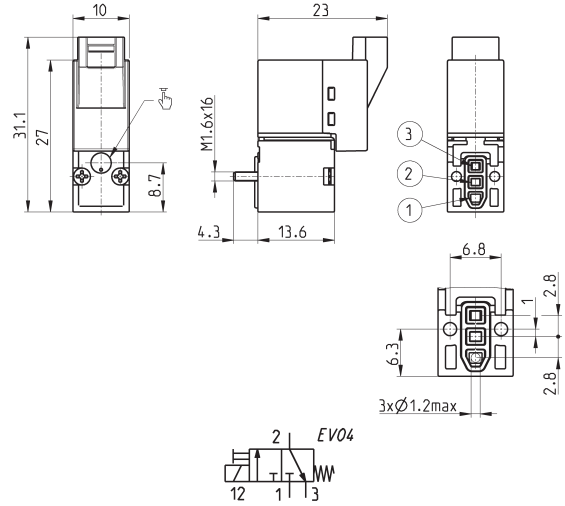
Mod.

KN000-303-K13

3/2 way NC solenoid valve - in-line electrical connection



Supplied with:
 1x interface seal
 2x screws M1.6x16 UNI 10227
 (fixing for plastics, standard)
 or
 2x screws M1.6x16 UNI 7687
 (fixing for metal, M option)

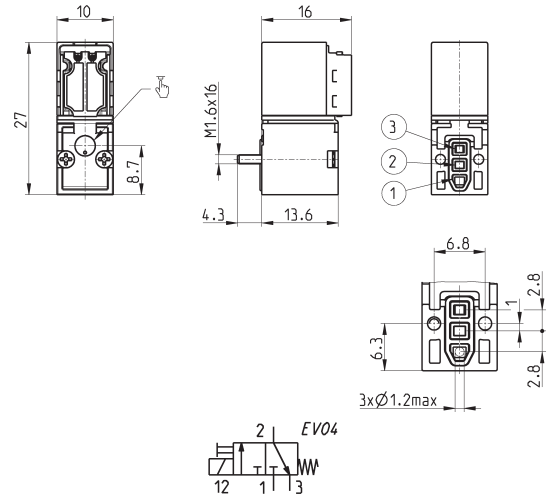


Mod.
KN000-303-KB3

Solenoid valve Mod. KN000-303-KY3N - spare part for Series Y



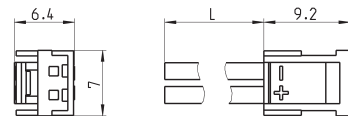
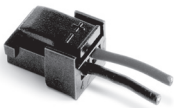
Supplied with:
 1x interface seal
 2x screws M1.6x16 UNI 10227



Mod.
KN000-303-KY3N

Connector Mod. 121-8..

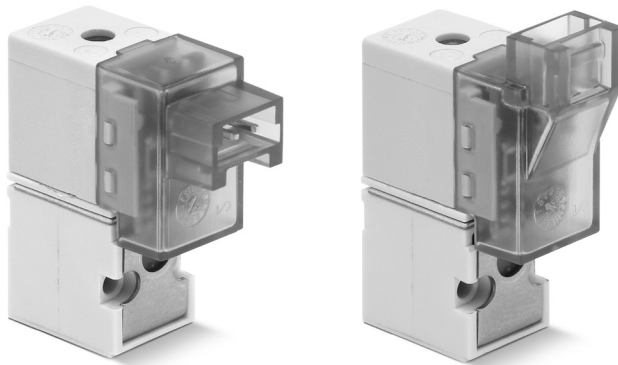
This connector can't be used with the solenoid valve Mod. KN000-303-KY3N.



Mod.	description	colour	L = cable length (mm)	cable holding
121-803	crimped cable	black	300	crimping
121-806	crimped cable	black	600	crimping
121-810	crimped cable	black	1000	crimping
121-830	crimped cable	black	3000	crimping

Series KN High Flow directly operated solenoid valves

3/2-way - Normally Closed (NC)



- » Low energy consumption
- » Compact design
- » High Flow
- » ISO 15218 Interface

Thanks to its low energy consumption and to its compact design, Series KN High Flow solenoid valve can be used in industrial and scientific applications.

Series KN High Flow directly operated solenoid valves are available as 3/2-way NC version.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC
Operation	direct acting poppet type
Pneumatic connections	on subbase with ISO 15218 interface by means of screws
Nominal diameter	1.1 mm
Nominal flow	25 NI/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	0.39
Operating pressure	0 ÷ 3 ... 7 bar
Operating temperature	0°C + 50°C
Media	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Response time	ON <10 msec - OFF <10 msec
Manual override	monostable button
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	FKM, NBR (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	24 V DC - 12 V DC - other voltages on demand
Voltage tolerance	4 W (inrush), 1 W (holding)
Power consumption	ED 100%
Duty cycle	connector
Electrical connection	IP50
Protection class	

Special versions available on demand

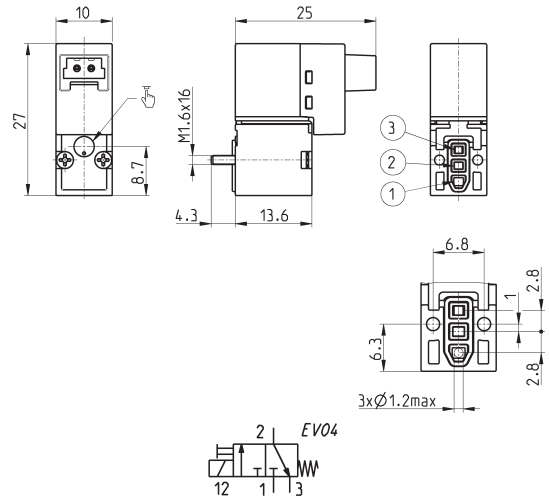
CODING EXAMPLE

KN	0	00	-	3	0	5	-	F	1	8	
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KN	SERIES
0	BODY DESIGN: 0 = single valve
00	NUMBER OF POSITIONS: 00 = interface
3	NUMBER OF WAYS - FUNCTIONS: 3 = 3/2-way NC
0	PORTS: 0 = single valve
5	NOMINAL DIAMETER / MAX PRESSURE: 5 = \varnothing 1.1 7 bar 6 = \varnothing 1.1 3 bar
F	MATERIALS: F = PBT body, FKM poppet seal, NBR other seals (FKM upon request)
1	ELECTRICAL CONNECTION: 1 = 90° connection with protection and led B = in-line connection with protection and led
8	SOLENOID VOLTAGE: 2 = 12V DC 8 = 24V DC (4W) inrush (1W holding)
	FIXING: = with screws for plastics(standard) M = with screws for metal

3/2-way NC solenoid valve - 90° electrical connection

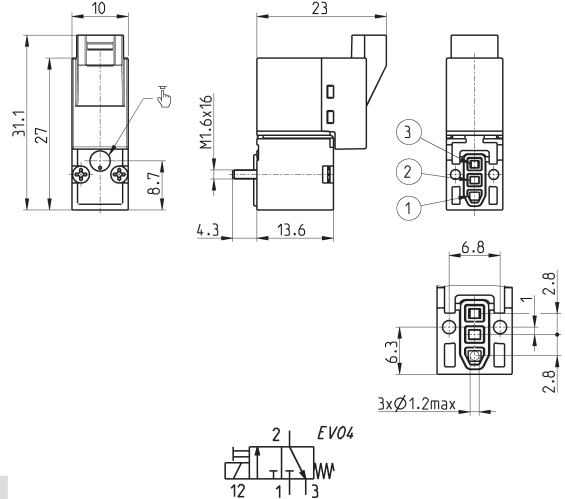

Supplied with:
 1x interface seal
 2x screws M1.6x16 UNI 10227
 (fixing for plastics, standard)
 or
 2x screws M1.6x16 UNI 7687
 (fixing for metal, M option)



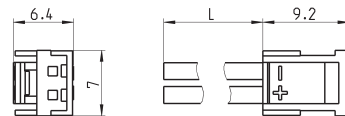
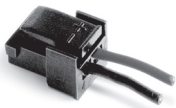
Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
KN000-305-F18	1.1	0.39	25	3 + 7
KN000-306-F18	1.1	0.39	-	0 + 3

3/2-way NC solenoid valve - in-line electrical connection


Supplied with:
 1x interface seal
 2x screws M1.6x16 UNI 10227
 (fixing for plastics, standard)
 or
 2x screws M1.6x16 UNI 7687
 (fixing for metal, M option)



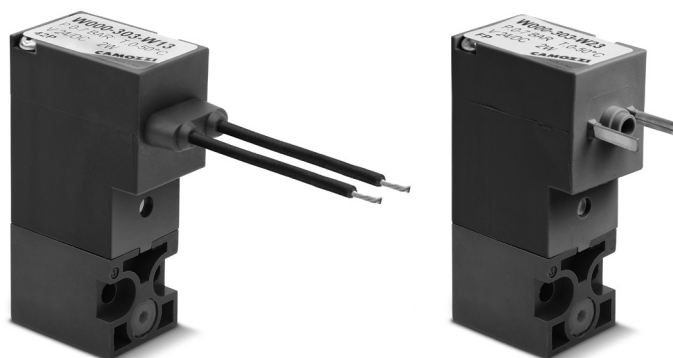
Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
KN000-305-FB8	1.1	0.39	25	3 + 7
KN000-306-FB8	1.1	0.39	-	0 + 3

Connector Mod. 121-8..


Mod.	description	colour	L = cable length (mm)	cable holding
121-803	crimped cable	black	300	crimping
121-806	crimped cable	black	600	crimping
121-810	crimped cable	black	1000	crimping
121-830	crimped cable	black	3000	crimping

Series W directly operated solenoid valves

3/2-way - Normally Closed (NC), Normally Open (NO)



- » Can be mounted on a single base (M5 connections) or on manifold (M5 connections or cartridge \varnothing 3 and 4).
- » Electrical connection with cables or in compliance to DIN EN 175 301-803-C standard

Series W directly operated solenoid valves are available as 3/2-way either NC or NO. Both versions can be mounted on single sub-bases or manifolds and they are equipped with a manual override which make the plants setting easier.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	on subbase with ISO 15218 interface by means of screws
Nominal diameter	0.8 ... 1.5 mm
Nominal flow	14 ... 35 NI/min (air @ 6 bar Δ P 1 bar)
Flow coefficient kv (l/min)	0.23 ... 0.54
Operating pressure	0 + 5 ... 10 bar
Operating temperature	0°C + 50°C
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time (ISO 12238)	ON <10 msec - OFF <15 msec
Manual override	monostable button
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	PU, NBR, (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	12 V DC - 24 V DC - 48 V DC
Voltage tolerance	\pm 10%
Power consumption	2 W - 1 W (24 V DC only)
Duty cycle	ED 100%
Electrical connection	with connector DIN EN 175 301-803-C (8 mm) - cables L = 300 mm
Protection class	IP65 with connector

Special versions available on demand

CODING EXAMPLE

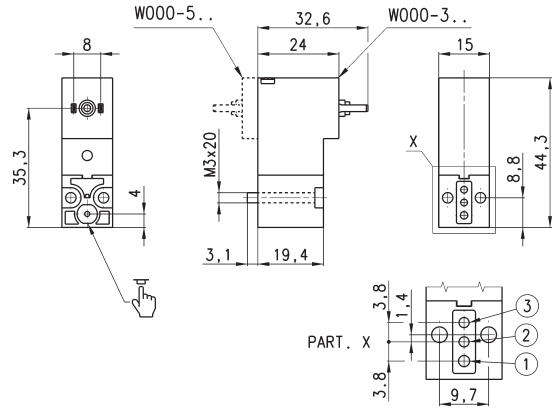
W	0	00	-	3	0	3	-	W	2	3	
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W	SERIES
0	BODY DESIGN: 0 = single sub-base (only M5) or interface 1 = single manifold 2 = double manifold
00	NUMBER OF POSITIONS: 00 = interface 01 = single base (M5 only) 02 + 99 = manifold number of positions
3	NUMBER OF WAYS - FUNCTIONS: 0 = manifold or single sub-base 3 = 3-way NC 4 = 3-way NO 5 = 3-way NC electric part revolved by 180° 6 = 3-way NO electric part revolved by 180°
0	VALVE PORTS: 0 = interface MANIFOLD PORTS (for Series W, P and PN): 2 = M5 side 3 = tube ø 3 side 4 = tube ø 4 side 6 = M5 rear ports 7 = ø 3 tube rear ports 8 = ø 4 tube rear ports
3	NOMINAL DIAMETER - MAX PRESSURE 1 = ø 0,8 (1W) 10 bar (NC) 24V only 3 = ø 1,5 (2W) 7 bar (NC) 5 bar (NO) 5 = ø 1,1 NC (2W) 10 bar (NC) ø 0,9 NO (2W) 10 bar (NO)
W	MATERIALS: W = technopolymer PBT body, FKM poppet seal, other seals in NBR (FKM on demand)
2	ELECTRICAL CONNECTION: 1 = cables (L = 300 mm) 2 = DIN EN 175 301-803-C (8 mm)
3	SOLENOID VOLTAGE: 2 = 12V DC 3 = 24V DC 4 = 48V DC
	FIXING: = with screws for metal (standard) P = with screws for plastics

3/2-way NC solenoid valve, DIN EN 175 301-803-C (8 mm)



Supplied with:
 1x interface seal
 2x screws M3x20 UNI 8112 (fixing for metal, standard)
 or
 2x screws M3x23 UNI 10227 (fixing for plastics, P option)

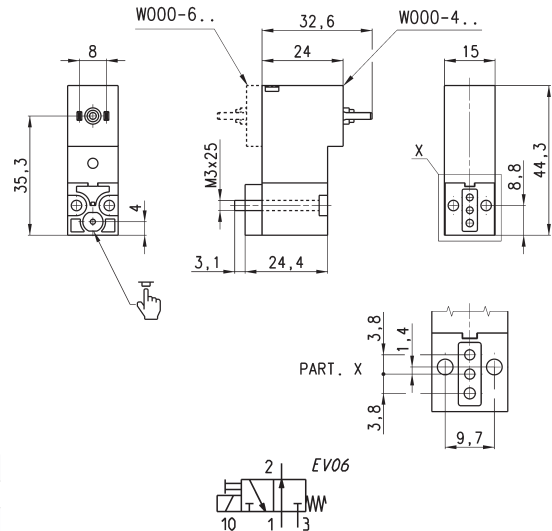


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
W000-305-W23	1.1	0.39	25	0 + 10
W000-303-W23	1.5	0.54	35	0 + 7
W000-305-W24	1.1	0.39	25	0 + 10
W000-303-W24	1.5	0.54	35	0 + 7

3/2-way NO solenoid valve, DIN EN 175 301-803-C (8 mm)

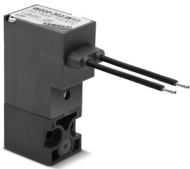


Supplied with:
 1x interface for NO version (connections 1 and 3 are inverted)
 2x interface seals
 2x screws M3x25 UNI 8112 (for standard version)

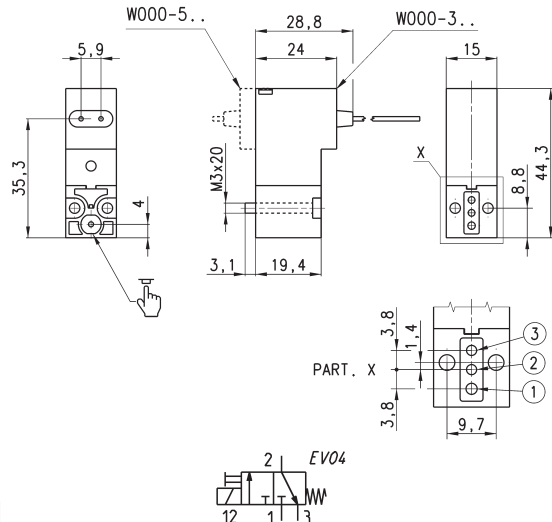


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
W000-405-W23	0.9	0.23	15	0 + 10
W000-403-W23	1.5	0.39	-	0 + 5
W000-405-W24	0.9	0.23	15	0 + 10
W000-403-W24	1.5	0.39	-	0 + 5

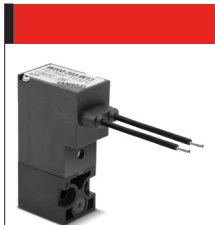
3/2-way NC solenoid valve with cables of 300mm



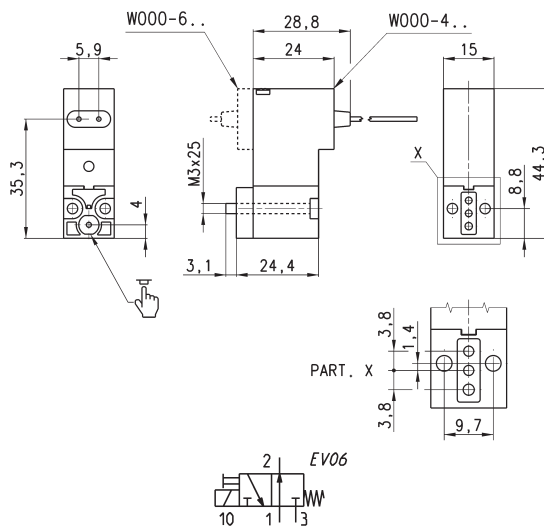
Supplied with:
 1x interface seal
 2x screws M3x20 UNI 8112 (fixing for metal, standard)
 or
 2x screws M3x23 UNI 10227 (fixing for plastics, P option)



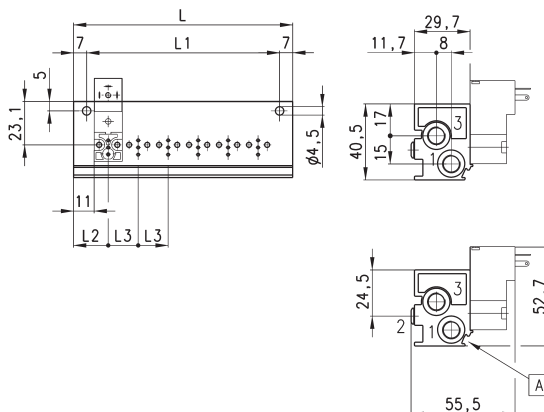
Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
W000-305-W13	1.1	0.39	25	0 + 10
W000-303-W13	1.5	0.54	35	0 + 7


3/2-way NO solenoid valve with cables of 300mm

Supplied with:
 1x interface for NO version
 (connections 1 and 3 are inverted)
 2x interface seals
 2x screws M3x25 UNI 8112 (for standard version)



Mod.	Orifice Ø (mm)	kv (l/min)	Qn (Nl/min)	Pressure min-max (bar)
W000-405-W13	0.9	0.23	15	0 ÷ 10
W000-403-W13	1.5	0.39	25	0 ÷ 5


Single manifold with rear outlets


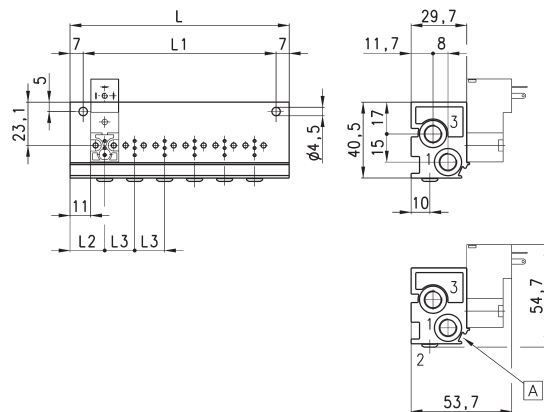
DIMENSIONS							
Mod.	N° Valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification


Single manifold with front outlets

This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.

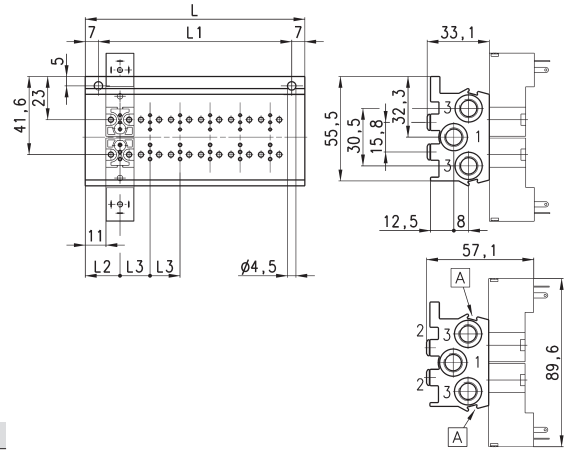


DIMENSIONS							
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with rear outlets



DIMENSIONS							
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

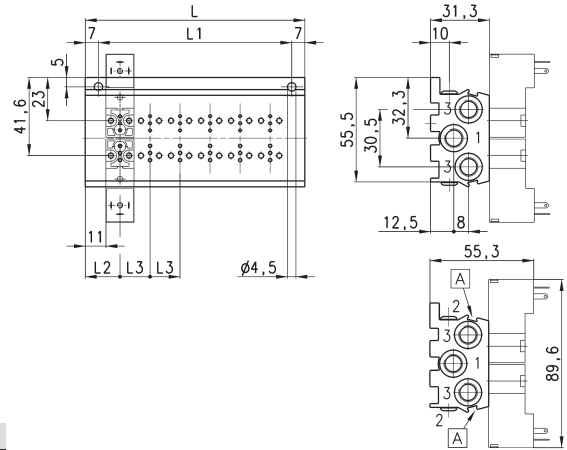
* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with front outlets



This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.



DIMENSIONS							
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

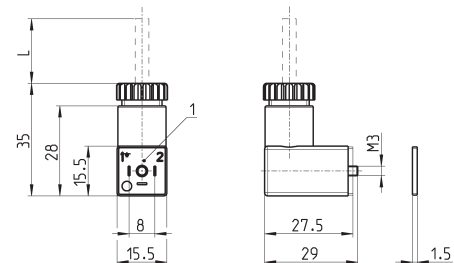
* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Connector Mod. 126-... DIN EN 175 301-803-C (8 mm)



To be used in all DC valves with voltages from 6 to 110 V.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
126-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
126-800	connector, without electronics	black	-	-	PG7	0.3 Nm
126-701	connector, varistor + Led	transparent	24 V AC/ DC	-	PG7	0.3 Nm

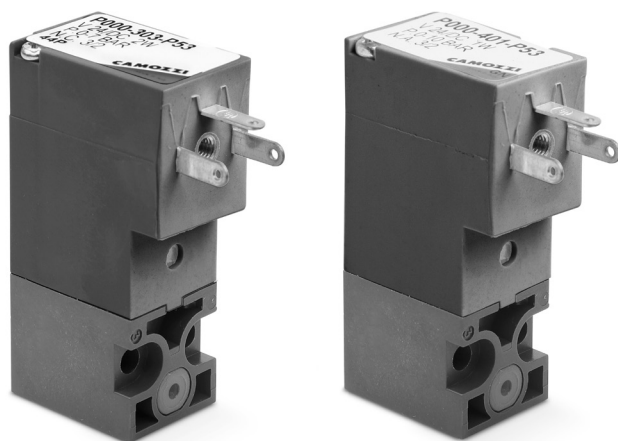
1 = 90° adjustable connector

Series P directly operated solenoid valves

3/2-way - Normally Closed (NC) and Normally Open (NO)

2

CONTROL



» Can be mounted on a single base (M5 connections) or on manifold (M5 connections or cartridge \varnothing 3 and 4).

Please note that all Series P solenoid valves are supplied with direct current (DC). To operate in alternating current (AC), it is necessary to use the connector with bridge rectifier Mod. 125-900.

Series P directly operated mini-solenoid valves are available as 3/2-way, either NC or NO. Both versions can be mounted on single bases or on manifolds and they are equipped with a manual override which makes the plants setting easier.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	on subbase with ISO 15218 interface by means of screws
Nominal diameter	0.8 ... 1.5 mm
Nominal flow	14 ... 35 NI/min (air @ 6 bar Δ P 1 bar)
Flow coefficient kv (l/min)	0.21 ... 0.54
Operating pressure	0 + 3 ... 10 bar
Operating temperature	0°C + 50°C
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time (ISO 12238)	ON <10 msec - OFF <15 msec
Manual override	monostable button
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	FKM, NBR (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	12 ... 110 V DC - 24 ... 110 V AC 50/60 Hz
Voltage tolerance	\pm 10%
Power consumption	2 W - 1 W (24 V DC only)
Duty cycle	ED 100%
Electrical connection	with industrial standard connector (9.4 mm)
Protection class	IP65 with connector

Special versions available on demand

CODING EXAMPLE											
P	0	00	-	3	0	3	-	P	5	3	
P	SERIES										
0	BODY DESIGN: 0 = single sub-base (M5 only) or interface 1 = single manifold 2 = double sided manifold										
00	NUMBER OF POSITIONS: 00 = interface 01 = single base (M5 only) 02 + 99 = manifold number of positions										
3	NUMBER OF WAYS - FUNCTIONS: 0 = manifold or single base 3 = 3-way NC 4 = 3-way NO 5 = 3-way NC electric part revolved by 180° 6 = 3-way NO electric part revolved by 180°										
0	VALVE PORTS: 0 = interface (for single valve only) MANIFOLD PORTS (for Series W, P and PN): 2 = M5 side port 3 = ø 3 tube side port 4 = ø 4 tube side port 6 = M5 rear ports 7 = ø 3 tube rear ports 8 = ø 4 tube rear ports										
3	NOMINAL DIAMETER - MAX PRESSURE 1 = ø 0,8 (1W) 10 bar (NC) 24V only 3 = ø 1,5 (2W) 7 bar (NC) 5 bar (NO) 5 = ø 1,1 NC (2W) 10 bar (NC) ø 0,9 NO (2W) 10 bar (NO) 6 = ø 1,5 NC (2W) 3 bar (NC) *										
P	MATERIALS: P = technopolymer PBT body, FKM poppet seal, other seals in NBR (FKM on demand)										
5	ELECTRICAL CONNECTION: 5 = industrial standard connection (9.4 mm)										
3	SOLENOID VOLTAGE: B = 24V 50/60 Hz 2 = 12V DC 6 = 110V DC C = 48V 50/60 Hz 3 = 24V DC D = 110V 50/60 Hz 4 = 48V DC										
	FIXING: = with screws for metal (standard) P = with screws for plastics										
* Voltage tolerance from +10% to -25%											

3/2-way NC solenoid valve



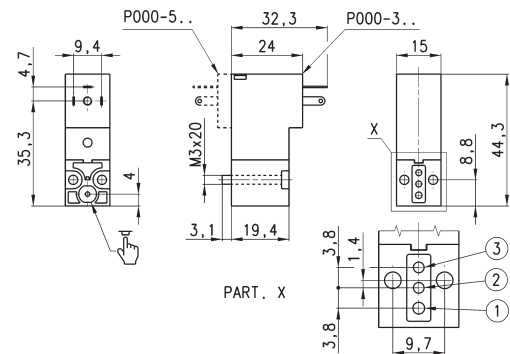
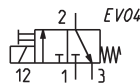
Supplied with:

1x interface seal

2x screws M3x20 UNI 8112
(fixing for metal, standard)

or

2x screws M3x23 UNI 10227
(fixing for plastics, P option)

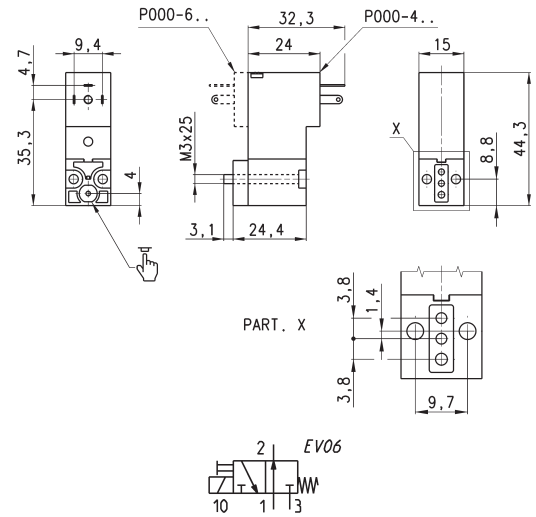


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
P000-301-P53	0,8	0.21	14	0 ÷ 10
P000-303-P53	1,5	0.54	35	0 ÷ 7
P000-305-P53	1,1	0.39	25	0 ÷ 10
P000-306-P53	1,5	0.54	-	0 ÷ 3



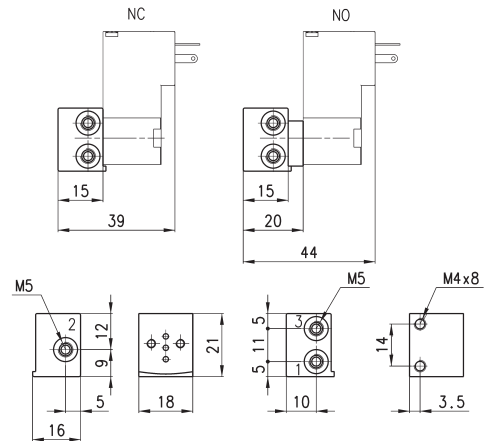
3/2-way NO solenoid valve

Supplied with:
 1x interface for NO version
 (connections 1 and 3 are inverted)
 2x interface seals
 2x screws M3x25 UNI 8112 (for standard version)



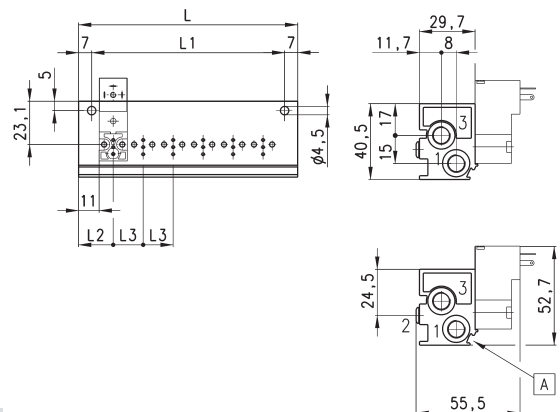
Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
P000-405-P53	0.9	0.23	15	0 ÷ 10
P000-403-P53	1.5	0.54	-	0 ÷ 5

Single sub-base



Mod.
P001-02

Single manifold with rear outlets



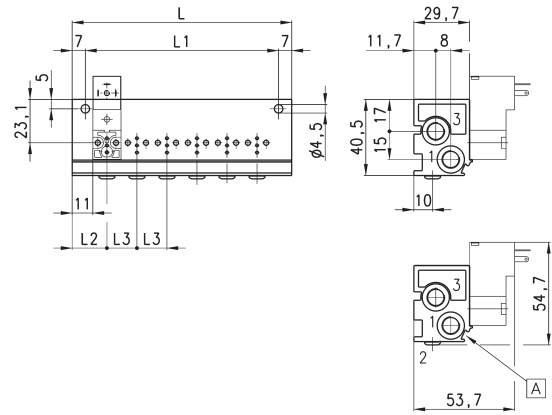
DIMENSIONS							
Mod.	N° Valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Single manifold with front outlets

This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.

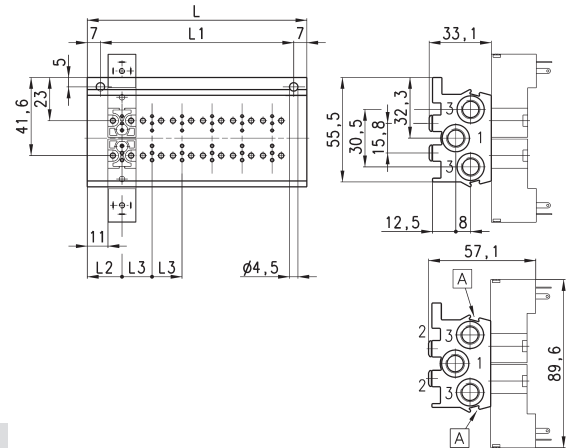


DIMENSIONS							
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with rear outlets



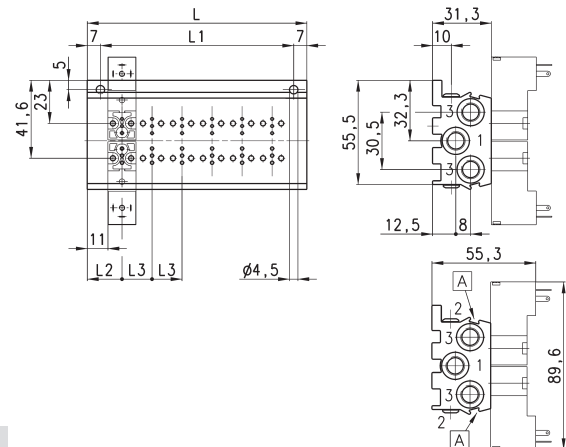
DIMENSIONS							
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with front outlets

This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.



DIMENSIONS							
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

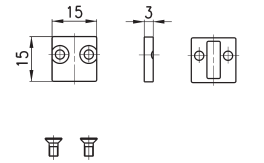
* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Excluder tap

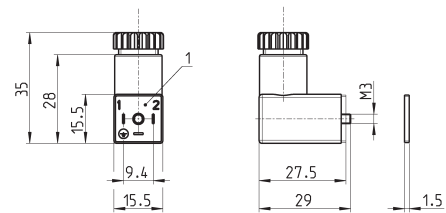


Supplied with:
 1x excluder tap
 1x interface seal
 2x screws



Mod.
P000-TP

Industrial standard (9.4 mm) connector Mod. 125-...



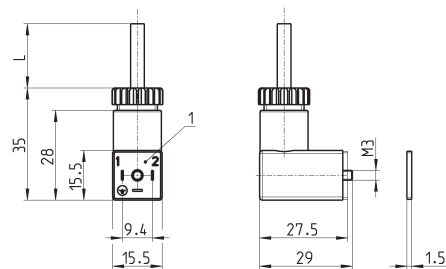
Mod.	description	colour	working voltage	cable holding	tightening torque
125-601	connector, diode + Led	transparent	10/50 V DC	PG7	0.3 Nm
125-701	connector, varistor + Led	transparent	24 V AC/DC	PG7	0.3 Nm
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Industrial standard (9.4 mm) connector Mod. 125-... with cable



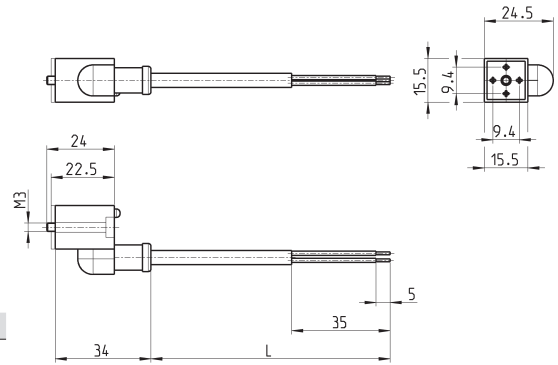
The internal rectifier circuit of the connector
 Mod. 125-900 allows to use solenoid valves with
 different AC voltage, even if the voltage indicated on
 the solenoid valve is DC.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-501-2	moulded cable with diode + Led	black	10/50 V DC	2000 mm	-	0.3 Nm
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
125-601-2	pre-wired cable, diode + Led	transparent	10/50 V DC	2000 mm	PG7	0.3 Nm
125-571-3	moulded cable, varistor + Led	black	24 V AC/DC	3000 mm	-	0.3 Nm
125-900	pre-wired cable with voltage rectifier	black	6 V - 110 V AC/DC	2000 mm	PG7	0.3 Nm

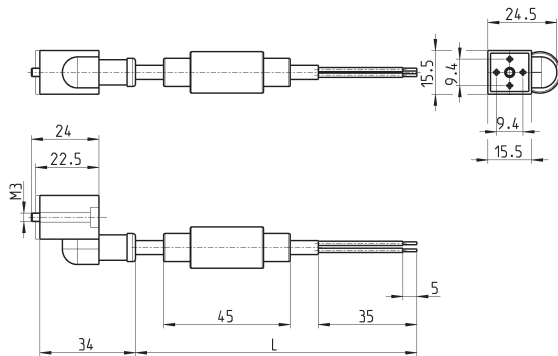
1 = 90° adjustable connector

Industrial standard (9.4 mm) in-line connectors with cable



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-503-2	in-line moulded cable, with diode + Led	black	24 V DC	2000 mm	-	0.3 Nm
125-503-5	in-line moulded cable, with diode + Led	black	24 V DC	5000 mm	-	0.3 Nm
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

Industrial standard (9.4 mm) in-line connectors with bridge rectifier



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-903-2	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	2000 mm	-	0.3 Nm
125-903-5	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	5000 mm	-	0.3 Nm

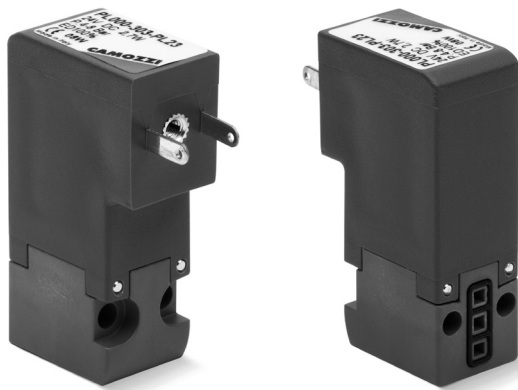
Series PL directly operated solenoid valves

New versions

3/2-way - Normally Closed (NC)

2

CONTROL



» Can be mounted on a single base (M5 connections) or on manifold (M5 connections or cartridge \varnothing 3 and 4)

Please note that all Series PL solenoid valves are supplied with direct current (DC). To operate in alternating current (AC), it is necessary to use the connector with bridge rectifier Mod. 125-900.

Series PL directly operated mini-solenoid valves are available in the NC version and can be mounted on single bases or on manifolds.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC
Operation	direct acting poppet type
Pneumatic connections	on subbase with ISO 15218 interface by means of screws
Nominal diameter	1.5 mm
Nominal flow	35 Nl/min (air @ 6 bar Δ P 1 bar)
Flow coefficient kv (l/min)	0.54
Operating pressure	0 ÷ 3.5 or 4 ÷ 8 bar
Operating temperature	0°C + 50°C
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time	ON <10 msec - OFF <15 msec
Manual override	not foreseen
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	FKM, NBR
Internal parts	stainless steel, NBR

ELECTRICAL FEATURES

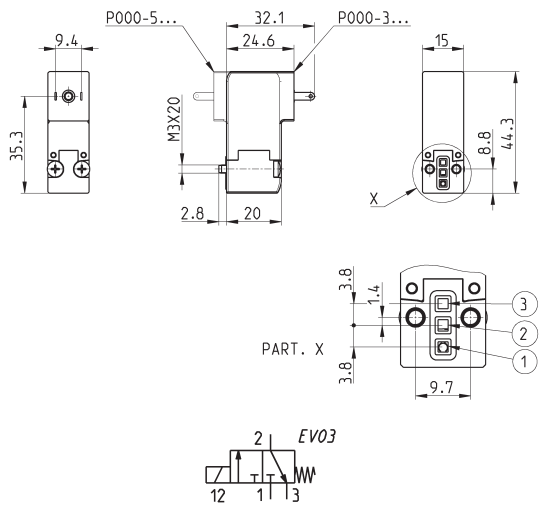
Voltage	24 V DC - 12 V DC - other voltages on demand
Voltage tolerance	\pm 10%
Power consumption	2.7 W
Duty cycle	ED 100%
Electrical connection	with industrial standard connector (9.4 mm)
Protection class	IP65 with connector

Special versions available on demand

PL	0	00	-	3	0	3	-	PL	2	3
PL	SERIES									
0	BODY DESIGN: 0 = single sub-base (M5 only) or interface 1 = single manifold 2 = double sided manifold									
00	NUMBER OF POSITIONS: 00 = interface 01 = single base (M5 only) 02 + 99 = manifold number of positions									
3	NUMBER OF WAYS - FUNCTIONS: 0 = manifold or single base 3 = 3-way NC 5 = 3-way NC electric part revolved by 180°									
0	VALVE PORTS: 0 = interface (for single valve only)									
	MANIFOLD PORTS: 2 = M5 side port 3 = ∅ 3 tube side port 4 = ∅ 4 tube side port 6 = M5 rear ports 7 = ∅ 3 tube rear ports 8 = ∅ 4 tube rear ports									
3	NOMINAL DIAMETER: 3 = ∅ 1.5 mm (Pressure 4 + 8 bar) 6 = ∅ 1.5 mm (Pressure 0 + 3.5 bar)									
PL	MATERIALS: PL = technopolymer PBT body, FKM poppet seal, other seals in NBR									
2	ELECTRICAL CONNECTION: 2 = industrial standard connection (9.4 mm)									
3	VOLTAGE - POWER CONSUMPTION: 2 = 12 V DC 2.7W 3 = 24 V DC 2.7W									
	FIXING: = with screws for metal (standard) P = with screws for plastics									

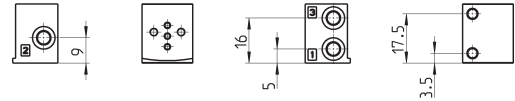
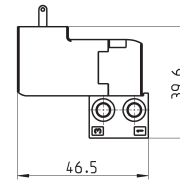
3/2-way NC solenoid valve

Supplied with:
 1x interface seal
 2x screws M3x20 UNI 8112 (fixing for metal, standard)
 or
 2x screws M3x23 UNI 10227 (fixing for plastics. P option)

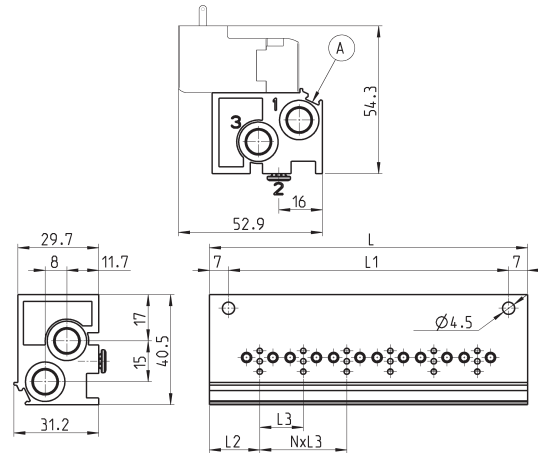


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
PL000-303-PL23	1.5	0.54	35	4 + 8
PL000-503-PL23	1.5	0.54	35	4 + 8
PL000-306-PL23	1.5	0.54	-	0 + 3.5
PL000-506-PL23	1.5	0.54	-	0 + 3.5

Single sub-base


 Mod.
P001-02

Single manifold with rear outlets



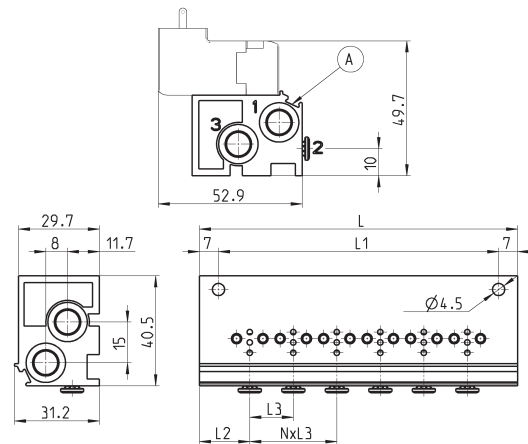
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Single manifold with front outlets

This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.

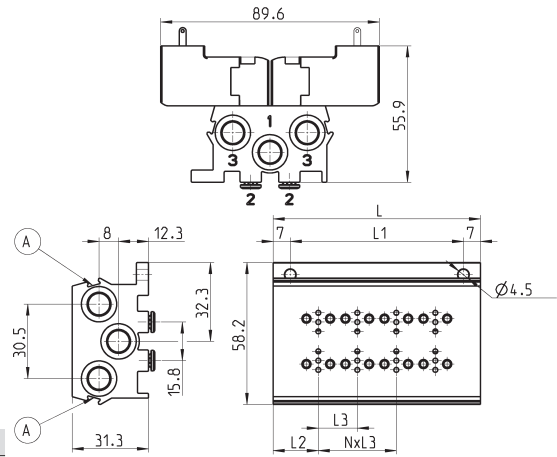


Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with rear outlets



Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

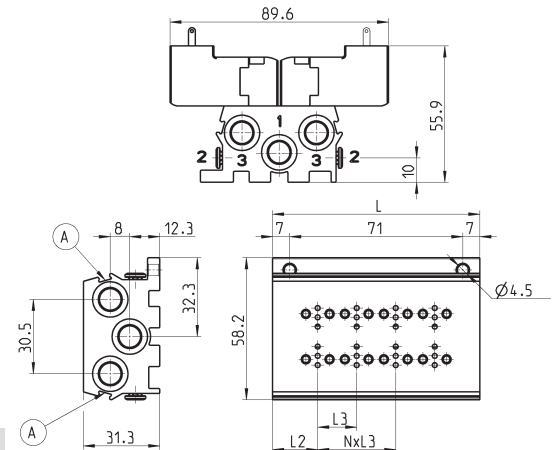
* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with front outlets



This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.



Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

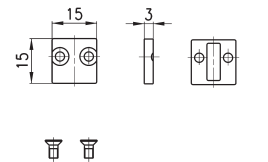
* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Excluder tap

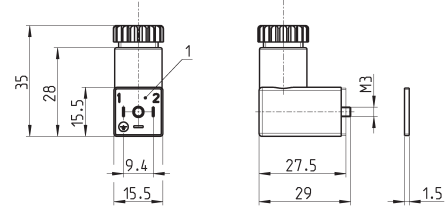


Supplied with:
 1x excluder tap
 1x interface seal
 2x screws



Mod.
P000-TP

Industrial standard (9.4 mm) connector Mod. 125-...

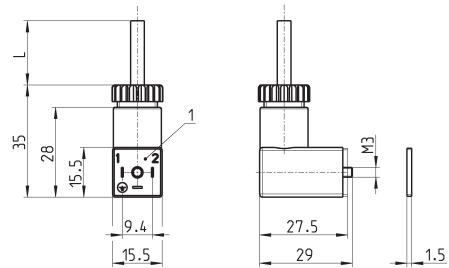


Mod.	description	colour	working voltage	cable holding	tightening torque
125-601	connector, diode + Led	transparent	10/50 V DC	PG7	0.3 Nm
125-701	connector, varistor + Led	transparent	24 V AC/DC	PG7	0.3 Nm
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Industrial standard (9.4 mm) connector Mod. 125-... with cable

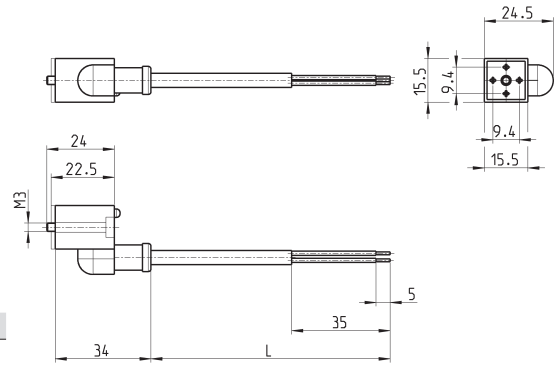
The internal rectifier circuit of the connector Mod. 125-900 allows to use solenoid valves with different AC voltage, even if the voltage indicated on the solenoid valve is DC.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-501-2	moulded cable with diode + Led	black	10/50 V DC	2000 mm	-	0.3 Nm
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
125-601-2	pre-wired cable, diode + Led	transparent	10/50 V DC	2000 mm	PG7	0.3 Nm
125-571-3	moulded cable, varistor + Led	black	24 V AC/DC	3000 mm	-	0.3 Nm
125-900	pre-wired cable with voltage rectifier	black	6 V - 110 V AC/DC	2000 mm	PG7	0.3 Nm

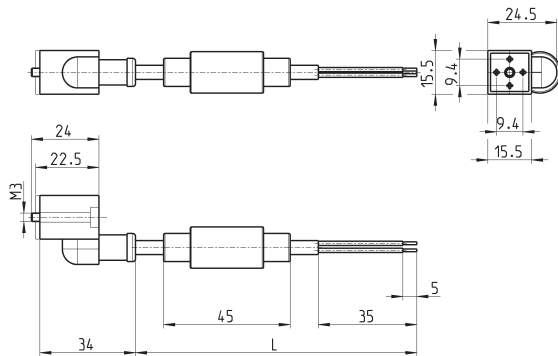
1 = 90° adjustable connector

Industrial standard (9.4 mm) in-line connectors with cable



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-503-2	in-line moulded cable, with diode + Led	black	24 V DC	2000 mm	-	0.3 Nm
125-503-5	in-line moulded cable, with diode + Led	black	24 V DC	5000 mm	-	0.3 Nm
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

Industrial standard (9.4 mm) in-line connectors with bridge rectifier



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-903-2	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	2000 mm	-	0.3 Nm
125-903-5	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	5000 mm	-	0.3 Nm

Series PN directly operated solenoid valves

3/2-way - Normally Closed (NC)

2

CONTROL



- » Can be mounted on a single base (M5 connections) or on manifold (M5 connections or cartridge \varnothing 3 and 4)
- » Compact design suitable for use in reduced mounting space

Please note that all Series PN solenoid valves are supplied with direct current (DC). To operate in alternating current (AC), it is necessary to use the connector with bridge rectifier Mod. 125-900.

Series PN directly operated solenoid valves are available as 3/2-way NC. They are equipped with a manual override which makes the plants setting easier and they can be mounted on single bases or on manifolds.

GENERAL DATA

TECHNICAL FEATURES

Function	3/2 NC
Operation	direct acting poppet type
Pneumatic connections	on subbase with ISO 12238 interface by means of screws
Nominal diameter	0.8 mm
Nominal flow	12 NI/min (air @ 6 bar Δ P 1 bar)
Flow coefficient kv (l/min)	0.19
Operating pressure	0 ÷ 10 bar
Operating temperature	0°C + 50°C
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time (ISO 12238)	ON <10 msec - OFF <15 msec
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PBT technopolymer
Seals	PU, NBR, (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	24 ... 205 V DC
Voltage tolerance	\pm 10%
Power consumption	2 W - 1 W (24 V DC only)
Duty cycle	ED 100%
Electrical connection	with industrial standard connector (9.4 mm)
Protection class	IP65 with connector

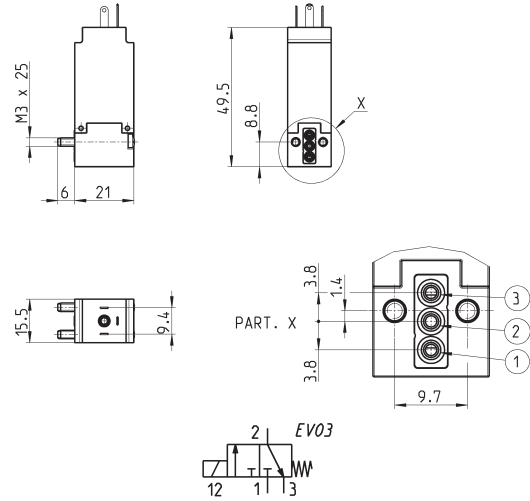
Special versions available on demand

CODING EXAMPLE

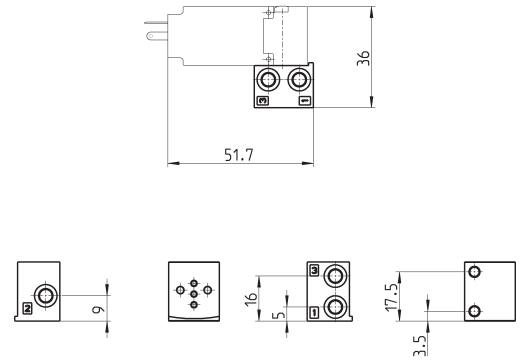
PN	0	00	-	3	0	1	-	P	5	3	
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PN	SERIES
0	<p>BODY DESIGN: 0 = single sub-base 1 = single manifold 2 = double sided manifold</p>
00	<p>NUMBER OF POSITIONS: 00 = interface 01 = single base (M5 only) 02 + 99 = manifold number of positions</p>
3	<p>NUMBER OF WAYS - FUNCTIONS: 0 = manifold or single base 3 = 3-way NC</p>
0	<p>VALVE PORTS: 0 = interface (for single valve only)</p> <p>MANIFOLD PORTS (for Series W, P and PN): 2 = M5 side port 3 = \varnothing 3 tube side port 4 = \varnothing 4 tube side port 6 = M5 rear ports 7 = \varnothing 3 tube rear ports 8 = \varnothing 4 tube rear ports</p>
1	<p>NOMINAL DIAMETER - MAX PRESSURE 1 = \varnothing 0.8 (1W) 10 bar (NC) 24V only</p>
P	<p>MATERIALS: P = PBT body, PU poppet seal</p>
5	<p>ELECTRICAL CONNECTION: 5 = industrial standard connection (9.4 mm)</p>
3	<p>SOLENOID VOLTAGE: 3 = 24V DC 4 = 48V DC 6 = 110V DC 7 = 205V DC</p>
	<p>FIXING: = standard for the mounting on plastic interfaces M = with screws for the mounting on metal interface (on demand)</p>

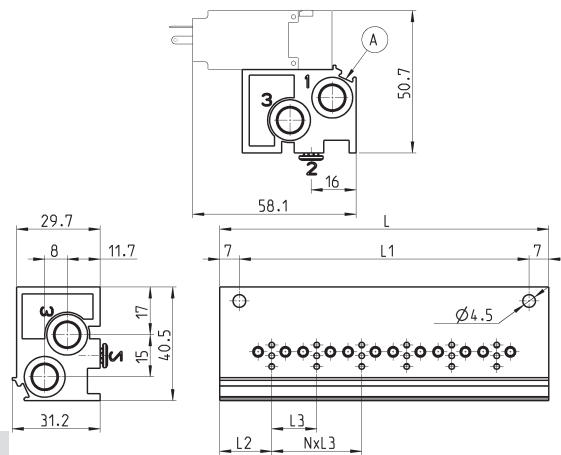

3/2-way NC solenoid valve

 Supplied with:
 1x interface seal
 2x screws


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
PN000-301-P53	0.8	0.18	12	0 + 10

Single sub-base


Mod.	P001-02
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Single manifold with rear outlets


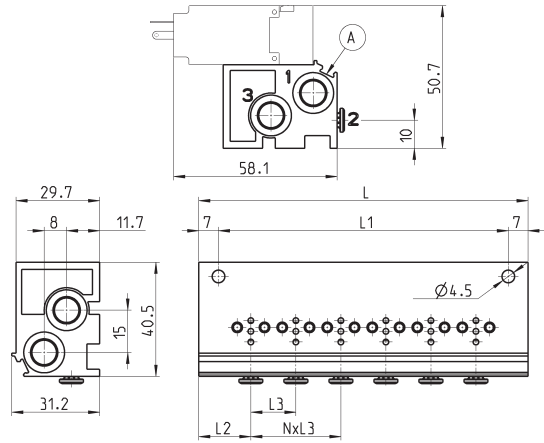
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Single manifold with front outlets

This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.

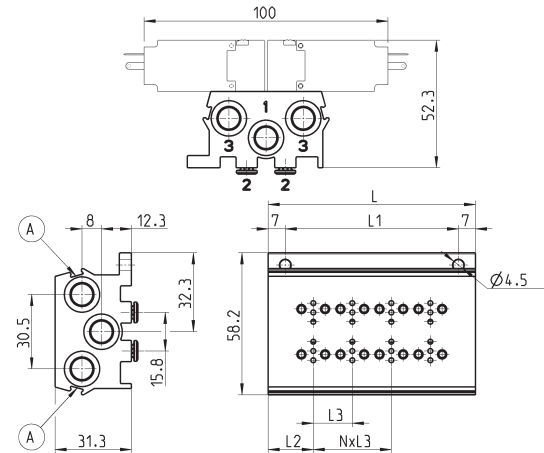


Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P102-0*	2	53	39	18,5	16	G1/8	G1/8
P103-0*	3	69	55	18,5	16	G1/8	G1/8
P104-0*	4	85	71	18,5	16	G1/8	G1/8
P105-0*	5	101	87	18,5	16	G1/8	G1/8
P106-0*	6	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with rear outlets



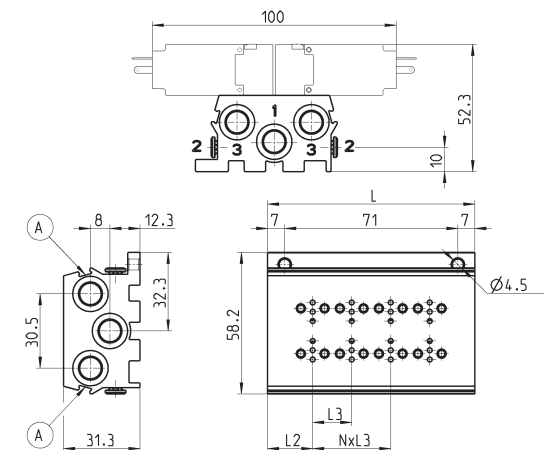
Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Double sided manifold with front outlets

This manifold is arranged to be fixed through DIN 46277/3 guide together with the accessory PCF-E520.



Mod.	Nr valves	L	L1	L2	L3	1 (P)	3 (R)
P204-0*	4	53	39	18,5	16	G1/8	G1/8
P206-0*	6	69	55	18,5	16	G1/8	G1/8
P208-0*	8	85	71	18,5	16	G1/8	G1/8
P210-0*	10	101	87	18,5	16	G1/8	G1/8
P212-0*	12	117	103	18,5	16	G1/8	G1/8

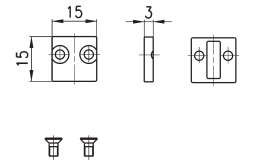
* = see the type of PORTS in the CODING EXAMPLE TABLE.

A = groove for electric connection identification

Excluder tap

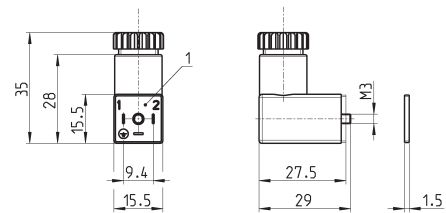


Supplied with:
 1x excluder tap
 1x interface seal
 2x screws



Mod.
P000-TP

Industrial standard (9.4 mm) connector Mod. 125-...



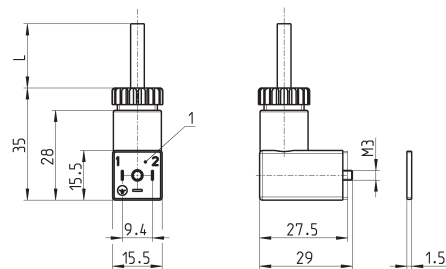
Mod.	description	colour	working voltage	cable holding	tightening torque
125-601	connector, diode + Led	transparent	10/50 V DC	PG7	0.3 Nm
125-701	connector, varistor + Led	transparent	24 V AC/DC	PG7	0.3 Nm
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Industrial standard (9.4 mm) connector Mod. 125-... with cable



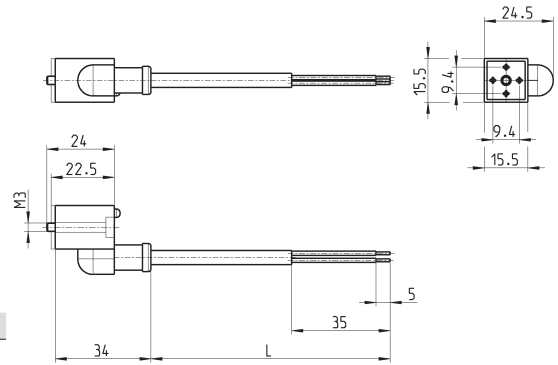
The internal rectifier circuit of the connector
 Mod. 125-900 allows to use solenoid valves with
 different AC voltage, even if the voltage indicated on
 the solenoid valve is DC.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-501-2	moulded cable with diode + Led	black	10/50 V DC	2000 mm	-	0.3 Nm
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
125-601-2	pre-wired cable, diode + Led	transparent	10/50 V DC	2000 mm	PG7	0.3 Nm
125-571-3	moulded cable, varistor + Led	black	24 V AC/DC	3000 mm	-	0.3 Nm
125-900	pre-wired cable with voltage rectifier	black	6 V - 110 V AC/DC	2000 mm	PG7	0.3 Nm

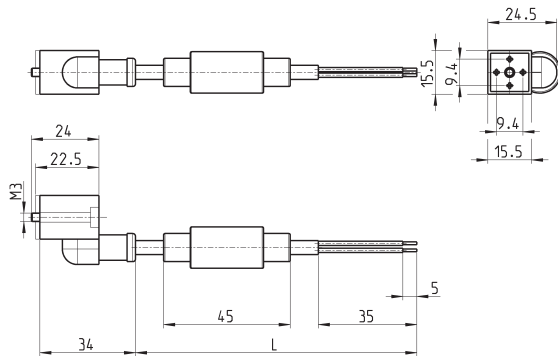
1 = 90° adjustable connector

Industrial standard (9.4 mm) in-line connectors with cable



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-503-2	in-line moulded cable, with diode + Led	black	24 V DC	2000 mm	-	0.3 Nm
125-503-5	in-line moulded cable, with diode + Led	black	24 V DC	5000 mm	-	0.3 Nm
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

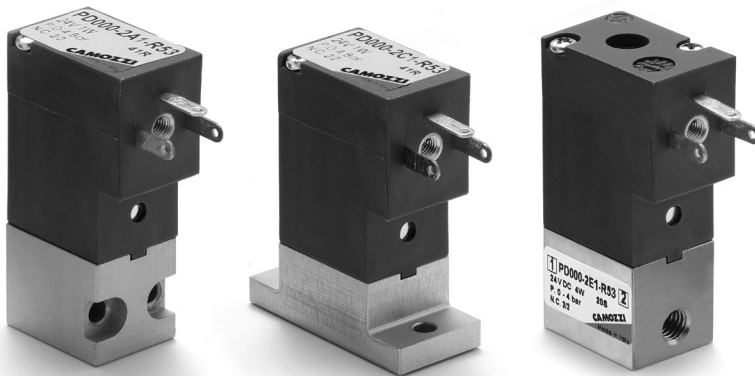
Industrial standard (9.4 mm) in-line connectors with bridge rectifier



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-903-2	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	2000 mm	-	0.3 Nm
125-903-5	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	5000 mm	-	0.3 Nm

Series PD directly operated solenoid valves

2/2-way - Normally Closed (NC)



Please note that all Series PD solenoid valves are supplied with direct current (DC). To operate in alternating current (AC), it is necessary to use the connector with bridge rectifier Mod. 125-900.

This directly operated solenoid valve is available as 2/2-way, NC, in several sizes and in three different versions.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC
Operation	direct acting poppet type
Pneumatic connections	on subbase by means of M3 screws - M5 threads
Nominal diameter	0.8 ... 2.5 mm
Nominal flow	25 ... 125 NI/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	0.39 ... 1.93
Operating pressure	-0.9 + 4 ... 12 bar
Operating temperature	0°C + 50°C
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time	<15 ms
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	brass, anodized aluminium
Seals	NBR, (FKM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	24 V DC - 12 V DC - other voltages on demand
Voltage tolerance	1 and 2 W ±10% - 4 W ±5%
Power consumption	1 ... 4 W
Duty cycle	ED 100% (1 and 2 W) - ED 50% (4W) see the ED definition diagram
Electrical connection	with industrial standard connector (9.4 mm)
Protection class	IP65 with connector

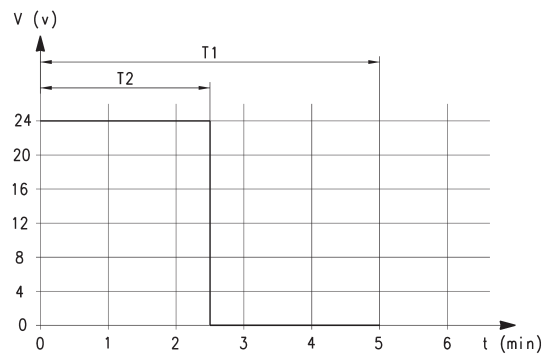
Special versions available on demand

CODING EXAMPLE											
PD	0	00	-	2	A	1	-	R	5	3	
PD	SERIES										
0	BODY DESIGN: 0 = single body										
00	NUMBER OF POSITIONS: 00 = interface										
2	NUMBER OF WAYS - FUNCTIONS: 2 = 2-way NC										
A	BODY MATERIALS AND VALVE PORTS: A = aluminium body, rear pneumatic interface C = aluminium body, low pneumatic interface E = brass body, M5 ports (for ø up to 1.6mm)										
1	NOMINAL DIAMETER: 1 = ø 0.8 2 = ø 1.2 3 = ø 1.6 4 = ø 2 5 = ø 2.5										
R	POPPET SEAL MATERIALS: R = NBR F = FKM (on request)										
5	ELECTRICAL CONNECTION: 5 = industrial standard connection (9.4 mm)										
3	SOLENOID VOLTAGE: 1 = 12V DC 1W 2 = 12V DC 2W 3 = 24V DC 1W 5 = 24V DC 2W 8 = 24V DC 4W										
	FIXING: = with screws for metal (standard) P = with screws for plastics										

ED definition diagram

Operating factor lower than 50%

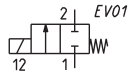
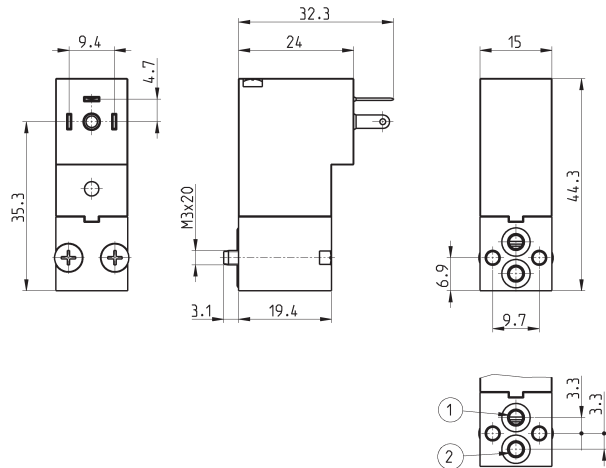
- T1 = cycle time (5 minutes max)
- T2 = energizing time
- t = time (minutes)
- V = working voltage (volt)
- ED = T2/T1 x 100




2/2-way NC solenoid valve, rear pneumatic interface

Supplied with:
 2x OR seals
 2x screws M3x20 UNI 8112
 (fixing for metal, standard)
 or
 2x screws M3x23 UNI 10227
 (fixing for plastics, P option)

For use with vacuum invert channel
 1 and channel 2.

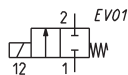
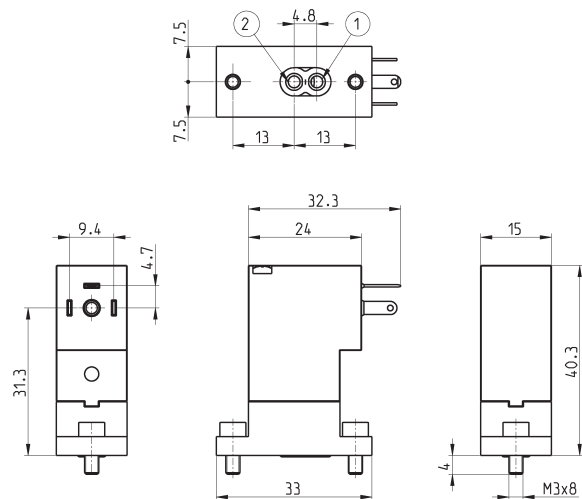


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)	Power consumption (W)	ED (%)
PD000-2A1-R51	0.8	0.39	25	0 + 12	1	100
PD000-2A1-R53	0.8	0.39	25	0 + 12	1	100
PD000-2A2-R52	1.2	0.54	35	0 + 12	2	100
PD000-2A2-R55	1.2	0.54	35	0 + 12	2	100
PD000-2A3-R52	1.6	0.70	45	0 + 7	2	100
PD000-2A3-R55	1.6	0.70	45	0 + 7	2	100
PD000-2A4-R58	2	1.31	85	0 + 6	4	50
PD000-2A5-R58	2.5	1.93	-	0 + 4	4	50


2/2-way NC solenoid valve, low pneumatic interface

Supplied with:
 1x seal
 2x screws M3x8 UNI 5931

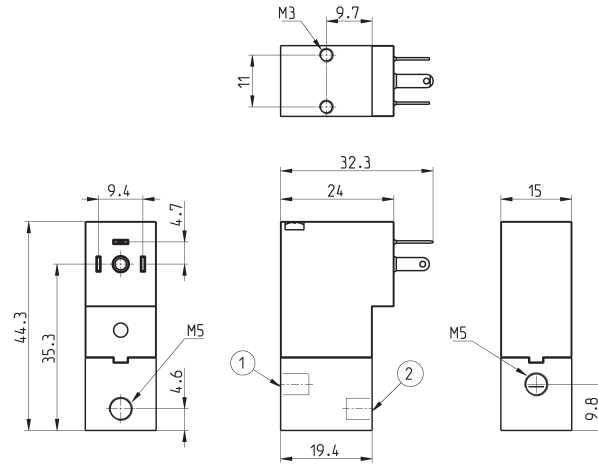
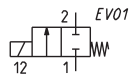
For use with vacuum invert channel
 1 and channel 2.



Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)	Power consumption (W)	ED (%)
PD000-2C1-R51	0.8	0.39	25	0 + 12	1	100
PD000-2C1-R53	0.8	0.39	25	0 + 12	1	100
PD000-2C2-R52	1.2	0.54	35	0 + 12	2	100
PD000-2C2-R55	1.2	0.54	35	0 + 12	2	100
PD000-2C3-R52	1.6	0.70	45	0 + 7	2	100
PD000-2C3-R55	1.6	0.70	45	0 + 7	2	100
PD000-2C4-R58	2	1.31	85	0 + 6	4	50
PD000-2C5-R58	2.5	1.93	-	0 + 4	4	50

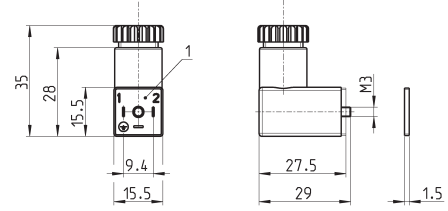
2/2-way NC solenoid valve, M5 ports

For use with vacuum invert channel 1 and channel 2.



Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)	Power consumption (W)	ED (%)
PD000-2E1-R51	0.8	0.39	25	0 ÷ 12	1	100
PD000-2E1-R53	0.8	0.39	25	0 ÷ 12	1	100
PD000-2E2-R52	1.2	0.54	35	0 ÷ 12	2	100
PD000-2E2-R55	1.2	0.54	35	0 ÷ 12	2	100
PD000-2E3-R52	1.6	0.70	45	0 ÷ 7	2	100
PD000-2E3-R55	1.6	0.70	45	0 ÷ 7	2	100

Industrial standard (9.4 mm) connector Mod. 125-...

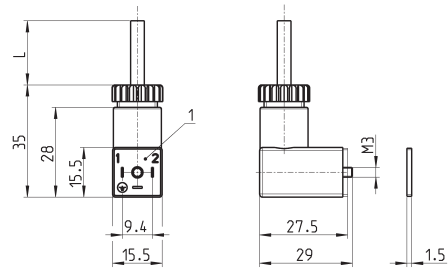


Mod.	description	colour	working voltage	cable holding	tightening torque
125-601	connector, diode + Led	transparent	10/50 V DC	PG7	0.3 Nm
125-701	connector, varistor + Led	transparent	24 V AC/DC	PG7	0.3 Nm
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Industrial standard (9.4 mm) connector Mod. 125-... with cable

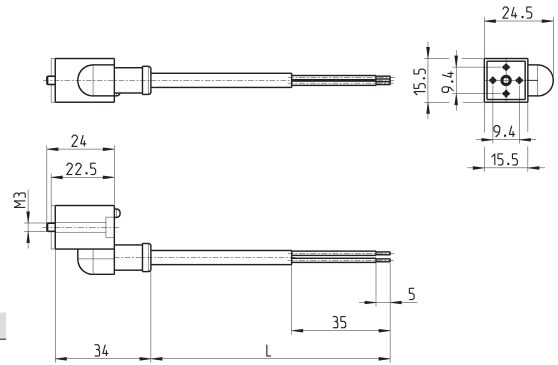
The internal rectifier circuit of the connector Mod. 125-900 allows to use solenoid valves with different AC voltage, even if the voltage indicated on the solenoid valve is DC.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-501-2	moulded cable with diode + Led	black	10/50 V DC	2000 mm	-	0.3 Nm
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
125-601-2	pre-wired cable, diode + Led	transparent	10/50 V DC	2000 mm	PG7	0.3 Nm
125-571-3	moulded cable, varistor + Led	black	24 V AC/DC	3000 mm	-	0.3 Nm
125-900	pre-wired cable with voltage rectifier	black	6 V - 110 V AC/DC	2000 mm	PG7	0.3 Nm

1 = 90° adjustable connector

Industrial standard (9.4 mm) in-line connectors with cable

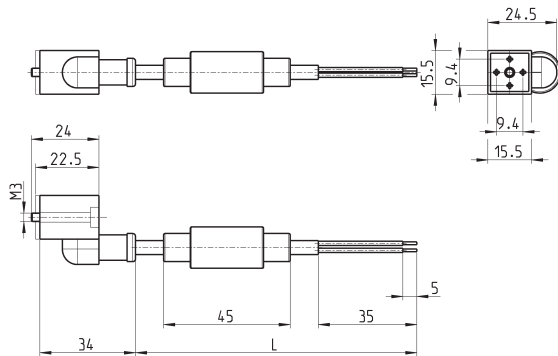


Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-503-2	in-line moulded cable, with diode + Led	black	24 V DC	2000 mm	-	0.3 Nm
125-503-5	in-line moulded cable, with diode + Led	black	24 V DC	5000 mm	-	0.3 Nm
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

2

CONTROL

Industrial standard (9.4 mm) in-line connectors with bridge rectifier



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-903-2	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	2000 mm	-	0.3 Nm
125-903-5	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	5000 mm	-	0.3 Nm

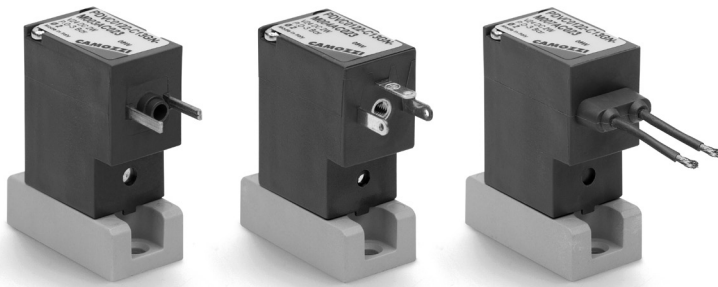
Series PDV directly operated solenoid valves with separating diaphragm

New versions

2/2-way - Normally Closed (NC)

2

CONTROL



- » Suitable to be used with neutral or aggressive fluids
- » Suitable for specific applications on medical and analytical equipment or instruments
- » Compact design

To choose the most suitable model for a specific application, check the chemical compatibility of the medium to control with the available materials of body and seals.

Series PDV directly operated solenoid valve is available with several nominal diameters and in three different versions according to the electrical connection. Moreover, the separating diaphragm protects the medium from extreme changes of temperature due to heating of the solenoid.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC
Operation	directly operated with separating diaphragm on subbase by means of M3 screws
Pneumatic connections	
Nominal diameter	0.8 ... 2 mm
Nominal flow	see kv
Flow coefficient kv (l/min)	0.25 ... 0.8
Operating pressure	0 ... 7 bar
Operating temperature	10°C ÷ 50°C
Media	gas and liquids: air, water, reagents, solvents, etc...
Response time (ISO 12238)	≤ 15 ms
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	PEEK
Seals	FKM - EPDM

ELECTRICAL FEATURES

Voltage	24 V DC - 12 V DC - other voltages on request
Voltage tolerance	±10%
Power consumption	2 W
Duty cycle	ED 100%
Electrical connection	industrial standard (9.4 mm), DIN EN 175 301-803-C (8 mm), cable L = 300 mm
Protection class	IP65 with connector

Special versions available on request

CODING EXAMPLE													
PDV	C0	1	22	-	B7	3	G	N	-	M	00	4A	C023
PDV	SERIES												
C0	BODY DESIGN: C0 = body with interface for subbase												
1	NUMBER OF WAYS - FUNCTIONS: 1 = 2/2-way NC												
22	PNEUMATIC CONNECTIONS: 22 = PDV-type interface, 2-way												
B7	NOMINAL DIAMETER: A7 = \varnothing 0.8 mm B3 = \varnothing 1.2 mm B7 = \varnothing 1.6 mm C1 = \varnothing 2.0 mm												
3	SEAL MATERIAL: 3 = FKM 4 = EPDM												
G	BODY MATERIAL: G = PEEK												
N	MANUAL OVERRIDE: N = not foreseen												
M	FIXING ACCESSORIES: M = screws for metal												
00	OPTIONS: 00 = none												
4A	ELECTRICAL CONNECTION: 3A = DIN EN 175 301-803-C (8 mm) 4A = industrial standard (9.4 mm) 7A = cables (L = 300 mm) 3C = DIN EN 175 301-803-C (8 mm) with coil rotated 180° 4C = industrial standard (9.4 mm) with coil rotated 180° 7C = cables (L = 300 mm) with coil rotated 180°												
C023	VOLTAGE - POWER CONSUMPTION: C017 = 6V DC 2W C020 = 12V DC 2W C023 = 24V DC 2W												

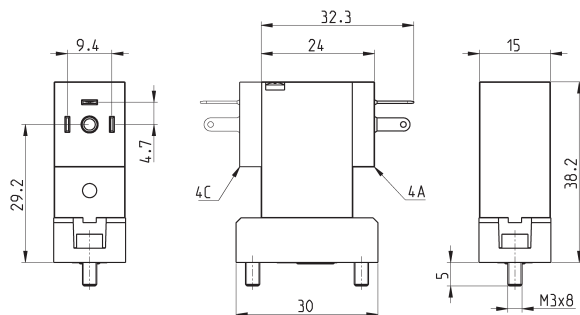
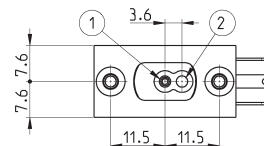
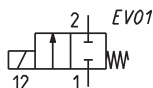
2/2 NC solenoid valve, industrial standard (9.4 mm)



Supplied with:
1x seal
2x M3x8 UNI 5931 screws

NOTE IN THE TABLE BELOW:
* to complete the code, add ELECTRICAL CONNECTION (4A or 4C options) and VOLTAGE (see CODING EXAMPLE)

NOTE IN THE DRAWING:
1 = INLET PORT
2 = OUTLET PORT



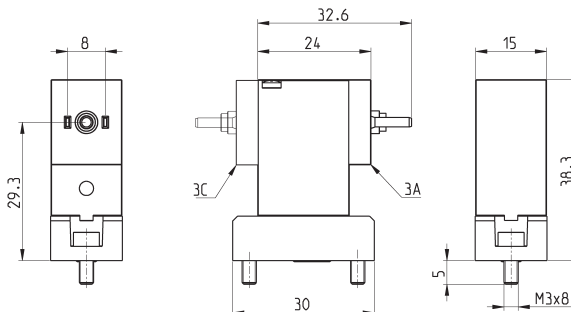
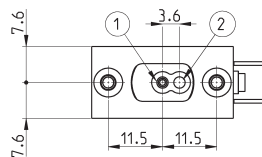
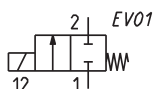
Mod.	Orifice \varnothing (mm)	kv (l/min)	Min/max pressure (bar)	Max back pressure (bar)	Body material	Seal material
PDVC0122-A73GN-M00*	0.8	0.25	0 + 7.0	1.2	PEEK	FKM
PDVC0122-A74GN-M00*	0.8	0.25	0 + 7.0	1.2	PEEK	EPDM
PDVC0122-B33GN-M00*	1.2	0.55	0 + 4.5	1.2	PEEK	FKM
PDVC0122-B34GN-M00*	1.2	0.55	0 + 4.5	1.2	PEEK	EPDM
PDVC0122-B73GN-M00*	1.6	0.65	0 + 4.0	1.2	PEEK	FKM
PDVC0122-B74GN-M00*	1.6	0.65	0 + 4.0	1.2	PEEK	EPDM
PDVC0122-C13GN-M00*	2.0	0.80	0 + 3.0	1.2	PEEK	FKM
PDVC0122-C14GN-M00*	2.0	0.80	0 + 3.0	1.2	PEEK	EPDM

2/2 NC solenoid valve, DIN EN 175 301-803-C (8 mm)

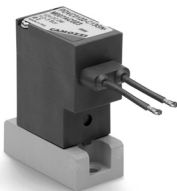

Supplied with:
1x seal
2x M3x8 UNI 5931 screws

NOTE IN THE TABLE BELOW:
* to complete the code, add
ELECTRICAL CONNECTION
(3A or 3C options)
and VOLTAGE
(see CODING EXAMPLE)

NOTE IN THE DRAWING:
1 = INLET PORT
2 = OUTLET PORT



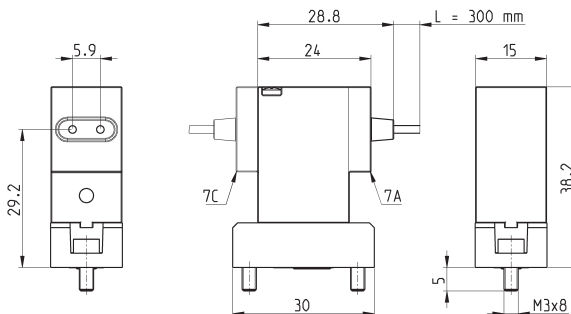
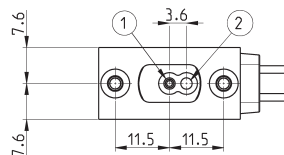
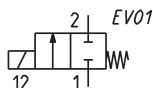
Mod.	Orifice Ø (mm)	kv (l/min)	Min/max pressure (bar)	Max back pressure (bar)	Body material	Seal material
PDVC0122-A73GN-M00*	0.8	0.25	0 + 7.0	1.2	PEEK	FKM
PDVC0122-A74GN-M00*	0.8	0.25	0 + 7.0	1.2	PEEK	EPDM
PDVC0122-B33GN-M00*	1.2	0.55	0 + 4.5	1.2	PEEK	FKM
PDVC0122-B34GN-M00*	1.2	0.55	0 + 4.5	1.2	PEEK	EPDM
PDVC0122-B73GN-M00*	1.6	0.65	0 + 4.0	1.2	PEEK	FKM
PDVC0122-B74GN-M00*	1.6	0.65	0 + 4.0	1.2	PEEK	EPDM
PDVC0122-C13GN-M00*	2.0	0.80	0 + 3.0	1.2	PEEK	FKM
PDVC0122-C14GN-M00*	2.0	0.80	0 + 3.0	1.2	PEEK	EPDM

2/2 NC solenoid valve, electrical connection with 300mm cable


Supplied with:
1x seal
2x M3x8 UNI 5931 screws

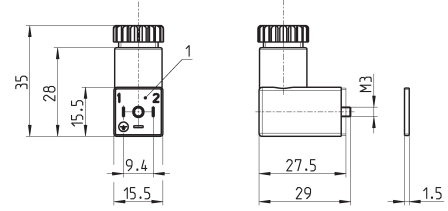
NOTE IN THE TABLE BELOW:
* to complete the code, add
ELECTRICAL CONNECTION
(7A or 7C options)
and VOLTAGE
(see CODING EXAMPLE)

NOTE IN THE DRAWING:
1 = INLET PORT
2 = OUTLET PORT



Mod.	Orifice Ø (mm)	kv (l/min)	Min/max pressure (bar)	Max back pressure (bar)	Body material	Seal material
PDVC0122-A73GN-M00*	0.8	0.25	0 + 7.0	1.2	PEEK	FKM
PDVC0122-A74GN-M00*	0.8	0.25	0 + 7.0	1.2	PEEK	EPDM
PDVC0122-B33GN-M00*	1.2	0.55	0 + 4.5	1.2	PEEK	FKM
PDVC0122-B34GN-M00*	1.2	0.55	0 + 4.5	1.2	PEEK	EPDM
PDVC0122-B73GN-M00*	1.6	0.65	0 + 4.0	1.2	PEEK	FKM
PDVC0122-B74GN-M00*	1.6	0.65	0 + 4.0	1.2	PEEK	EPDM
PDVC0122-C13GN-M00*	2.0	0.80	0 + 3.0	1.2	PEEK	FKM
PDVC0122-C14GN-M00*	2.0	0.80	0 + 3.0	1.2	PEEK	EPDM

Industrial standard (9.4 mm) connector Mod. 125-...

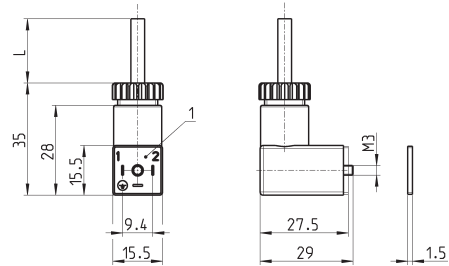


Mod.	description	colour	working voltage	cable holding	tightening torque
125-601	connector, diode + Led	transparent	10/50 V DC	PG7	0.3 Nm
125-701	connector, varistor + Led	transparent	24 V AC/DC	PG7	0.3 Nm
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Industrial standard (9.4 mm) connector Mod. 125-... with cable

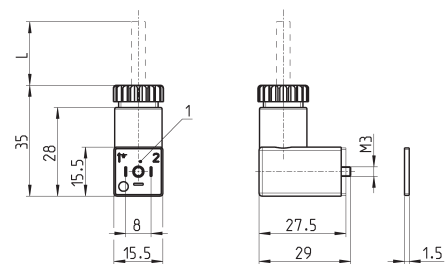
The internal rectifier circuit of the connector Mod. 125-900 allows to use solenoid valves with different AC voltage, even if the voltage indicated on the solenoid valve is DC.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-501-2	moulded cable with diode + Led	black	10/50 V DC	2000 mm	-	0.3 Nm
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
125-601-2	pre-wired cable, diode + Led	transparent	10/50 V DC	2000 mm	PG7	0.3 Nm
125-571-3	moulded cable, varistor + Led	black	24 V AC/DC	3000 mm	-	0.3 Nm
125-900	pre-wired cable with voltage rectifier	black	6 V - 110 V AC/DC	2000 mm	PG7	0.3 Nm

1 = 90° adjustable connector

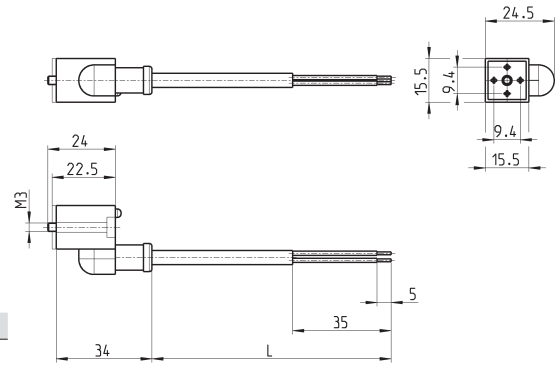
Connector Mod. 126-... DIN EN 175 301-803-C (8 mm)



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
126-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
126-800	connector, without electronics	black	-	-	PG7	0.3 Nm
126-701	connector, varistor + Led	transparent	24 V AC/DC	-	PG7	0.3 Nm

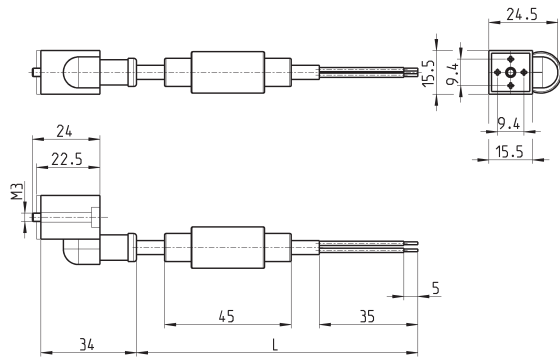
1 = 90° adjustable connector

Industrial standard (9.4 mm) in-line connectors with cable



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-503-2	in-line moulded cable, with diode + Led	black	24 V DC	2000 mm	-	0.3 Nm
125-503-5	in-line moulded cable, with diode + Led	black	24 V DC	5000 mm	-	0.3 Nm
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

Industrial standard (9.4 mm) in-line connectors with bridge rectifier



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-903-2	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	2000 mm	-	0.3 Nm
125-903-5	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	5000 mm	-	0.3 Nm

Series A directly operated solenoid valves

2/2-way - Normally Closed (NC) and Normally Open (NO)
3/2-way - Normally Closed (NC) and Normally Open (NO)



- » Ports: M5, G1/8, R1/8, cartridge $\varnothing 4$
- » Bistable version also available (with magnetic memory)

The solenoid can be easily and quickly replaced without interfering with the pressurised part of the valve. On the same mechanical part different types of solenoids can be interchanged. The choice of solenoids determines the performance of the solenoid valve in terms of consumption and pressure.

Series A solenoid valves are of the directly operated type and can be used with dry or lubricated air. They are available in the 2/2 and 3/2-way versions with normally closed (NC) or normally open (NO) operation. As shown in the following tables, they are supplied in different versions according to the type of body, threaded ports and orifice. They can thus satisfy various operating and installation requirements.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC - 3/2 NC - 2/2 NO - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	M5, G1/8, R1/8 threads - $\varnothing 4$ fitting - CNOMO interface
Nominal diameter	1.5 ... 2.5 mm
Nominal flow	40 ... 130 NI/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	0.62 ... 2.0
Operating pressure	-0.9 ... 15 bar
Operating temperature	0°C + 60°C (with dry air -20°C)
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time	ON <15 msec - OFF <25 msec
Manual override	see tables
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	nickel-plated brass - PBT technopolymer
Seals	HNBR, FKM
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	12 ... 110 V DC - 24 ... 380 V AC 50/60 Hz
Voltage tolerance	$\pm 10\%$ (DC) / $-15\% + 10\%$ (AC)
Power consumption	3 ... 5 W (DC) / 3.5 ... 7 VA (AC)
Duty cycle	ED 100%
Electrical connection	F (155°C)
Protection class	DIN 43650 connector, (A, B Shape) IP65 with connector

Special versions available on demand

CODING EXAMPLE

A	3	3	1	-	0	C	2	-	U7	7
----------	----------	----------	----------	----------	----------	----------	----------	----------	-----------	----------

A	SERIES																																									
3	BODY DESIGN: 1 = base (24x24 mm) interface rotatable through 360° 2 = base (24x24 mm) fixed interface 3 = threaded body 4 = rapid exhaust body 5 = base with ISO standard interface, fixed body in technopolymer 6 = (16x16 mm) interface rotatable through 360° A = single manifold B = 2-part manifold C = 3-part manifold D = 4-part manifold E = 5-part manifold F = 6-part manifold G = 7-part manifold H = 8-part manifold K = 9-part manifold L = 10-part manifold M = 11-part manifold N = 12-part manifold P = 13-part manifold R = 14-part manifold S = 15-part manifold																																									
3	NUMBER OF PORTS: 2 = 2 way 3 = 3 way																																									
1	FUNCTION: 1 = NC 2 = NO 3 = NO in line																																									
0	PORTS: <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 30%;">1</th> <th style="width: 30%;">2</th> <th style="width: 30%;">3</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>M5</td> <td>M5</td> <td>M5</td> </tr> <tr> <td>1</td> <td>G1/8</td> <td>G1/8</td> <td>M5</td> </tr> <tr> <td>3</td> <td>M5</td> <td>R1/8</td> <td>M5</td> </tr> <tr> <td>4</td> <td>M5</td> <td>R1/8</td> <td>M5 with manual override</td> </tr> <tr> <td>A</td> <td colspan="2">swivel O-ring interface</td> <td>M5</td> </tr> <tr> <td>B</td> <td colspan="2">fixed O-ring interface</td> <td>M5</td> </tr> <tr> <td>C</td> <td colspan="3">cartridge Ø 4</td> </tr> </tbody> </table>											1	2	3	0	M5	M5	M5	1	G1/8	G1/8	M5	3	M5	R1/8	M5	4	M5	R1/8	M5 with manual override	A	swivel O-ring interface		M5	B	fixed O-ring interface		M5	C	cartridge Ø 4		
	1	2	3																																							
0	M5	M5	M5																																							
1	G1/8	G1/8	M5																																							
3	M5	R1/8	M5																																							
4	M5	R1/8	M5 with manual override																																							
A	swivel O-ring interface		M5																																							
B	fixed O-ring interface		M5																																							
C	cartridge Ø 4																																									
C	NOMINAL DIAMETER: C = Ø 1,5 D = Ø 2 E = Ø 2,5																																									
2	BODY MATERIAL: 2 = nickel-plated brass 3 = technopolymer																																									
U7	ENCAPSULATING MATERIAL / SOLENOID DIMENSIONS: A8 = PPS / 30 x 30 G7 = PA / 22 x 22 G8 = PA / 30 x 30 (24 V DC only) G9 = PA / 22 x 58 H8 = PA 6 V0 / 30 x 30 U7 = PET / 22 x 22																																									
7	SOLENOID VOLTAGE: See the solenoids section 2/2.35																																									

TABLE FOR THE COUPLING BETWEEN SOLENOIDS AND VALVES

Valve function 2/2: for vacuum application connect the vacuum in "2"

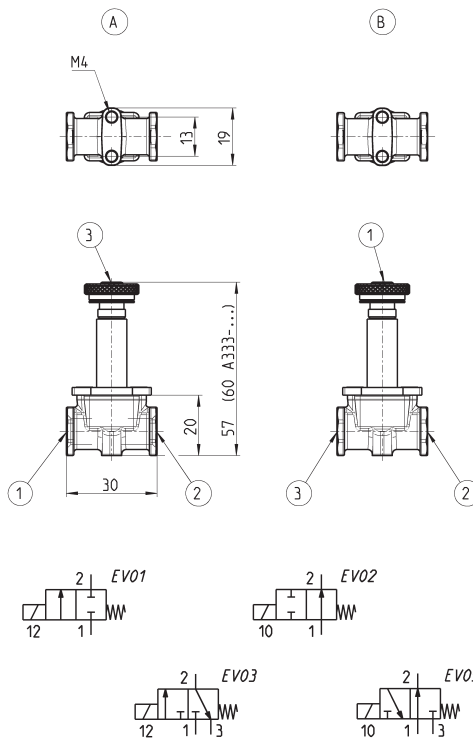
Valve function 3/2: for vacuum application connect the vacuum in "1"

Note: for solenoid Mod. G90 (2/2 NO) contact our technical department

Mod.	Solenoids 3W working pressure (bar)	Solenoids 4-5 W working pressure (bar)	Solenoids 3,5 VA working pressure (bar)
	allowed pressure with solenoids DC - 3 W	allowed pressure with solenoids DC - 4-5 W	allowed pressure with solenoids AC - 3,5 VA
Valve function 2/2 NC			
A321-0C2	- 0,9 ÷ 8	- 0,9 ÷ 15	- 0,9 ÷ 15
A321-1C2	- 0,9 ÷ 8	- 0,9 ÷ 15	- 0,9 ÷ 15
A321-1D2	- 0,9 ÷ 4	- 0,9 ÷ 9	- 0,9 ÷ 9
A321-1E2	- 0,9 ÷ 1	- 0,9 ÷ 6	- 0,9 ÷ 6
Valve function 2/2 NO			
A322-0C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
A322-1C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
Valve function 3/2 NC			
A331-0C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
A331-1C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
A331-3C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
A331-4C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
A431-1C2	2 ÷ 10	2 ÷ 10	2 ÷ 10
A531-BC2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
A631-AC2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
AA31-0C2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
AA31-0C3	2 ÷ 8	- 0,9 ÷ 8	- 0,9 ÷ 8
AA31-CC2	2 ÷ 10	- 0,9 ÷ 10	- 0,9 ÷ 10
AA31-CC3	2 ÷ 8	- 0,9 ÷ 8	- 0,9 ÷ 8
Valve function 3/2 NO			
A332-0C2	- 0,9 ÷ 7	- 0,9 ÷ 7	- 0,9 ÷ 7
A332-1C2	- 0,9 ÷ 7	- 0,9 ÷ 7	- 0,9 ÷ 7
A333-0C2	- 0,9 ÷ 7	-	- 0,9 ÷ 10
A333-1C2	- 0,9 ÷ 7	-	- 0,9 ÷ 10
AA33-0C2	- 0,9 ÷ 7	-	- 0,9 ÷ 10
AA33-0C3	- 0,9 ÷ 7	-	- 0,9 ÷ 8
AA33-CC3	- 0,9 ÷ 7	-	- 0,9 ÷ 8

2/2 and 3/2-way solenoid valves Mod. A32 and Mod. A33


Available in the 2/2-way version, NC or NO, as well as in the 3/2-way version, NC, NO or NO in line. In the 3/2 NC version connection 1 is on the body (fi. A), whereas in the 3/2 NO version is on the M5 thread of the tube (fig. B).



Mod.	Conn. 1	Conn. 2	Conn. 3	Function	Orifice Ø mm	Qn (NI/min)	Symbol
A321-0C2-*	M5	M5	-	2/2 NC	1,5	50	EV01
A321-1C2-*	G1/8	G1/8	-	2/2 NC	1,5	55	EV01
A321-1D2-*	G1/8	G1/8	-	2/2 NC	2	100	EV01
A321-1E2-*	G1/8	G1/8	-	2/2 NC	2,5	130	EV01
A322-0C2-*	M5	M5	-	2/2 NO	1,8	70	EV02
A322-1C2-*	G1/8	M5	-	2/2 NO	1,8	80	EV02
A331-0C2-*	M5	M5	M5	3/2 NC	1,5	50	EV03
A331-1C2-*	G1/8	G1/8	M5	3/2 NC	1,5	60	EV03
A332-0C2-*	M5	M5	M5	3/2 NO	1,5	55	EV05
A332-1C2-*	M5	G1/8	G1/8	3/2 NO	1,5	50	EV05
A333-0C2-*	M5	M5	M5	3/2NO in line	1,5	60	EV05
A333-1C2-*	G1/8	G1/8	M5	3/2NO in line	1,5	60	EV05

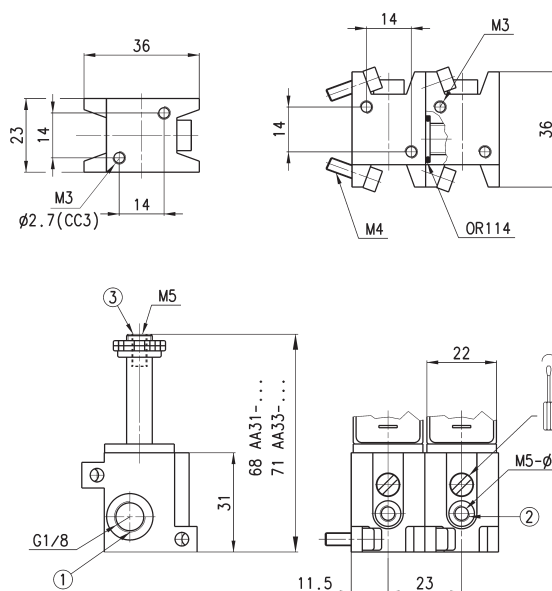
Note. For the use of NO valves in line, use the coil model U771 or U7K1 or G771 or G7K1.

solenoid.

* choose the most suitable

3/2-way solenoid valve Mod. AA31... - AA33...


The 3/2-way solenoid valves for manifold assembly are available in the NC and NO in line version, with G1/8 ports at the manifold inlet. The inlets can be with M5 threading or with a Ø 4 cartridge. The solenoid valve is supplied complete with O-ring and screws.



Mod.	Inlet / outlet	Function	Orifice Ø mm	Manual override bistable	Qn (NI/min)	Symbol
AA31-0C2-*	G1/8 M5	3/2 NC	1,5	Yes	55	EV08
AA31-CC2-*	G1/8 04	3/2 NC	1,5	Yes	55	EV08
AA31-0C3-*	G1/8 M5	3/2 NC	1,5	Yes	55	EV08
AA33-0C2-*	G1/8 M5	3/2 NO in line	1,5	No	55	EV05
AA33-CC2-*	G1/8 04	3/2 NO in line	1,5	No	55	EV05
AA33-0C3-*	G1/8 M5	3/2 NO in line	1,5	No	65	EV05
AA31-CC3-*	G1/8 04	3/2 NC	1,5	Yes	55	EV08
AA33-CC3-*	G1/8 04	3/2 NO in line	1,5	No	65	EV05

Note. For the use of NO valves in line, use the coil model U771 or U7K1 or G771 or G7K1.

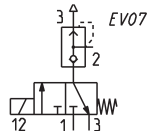
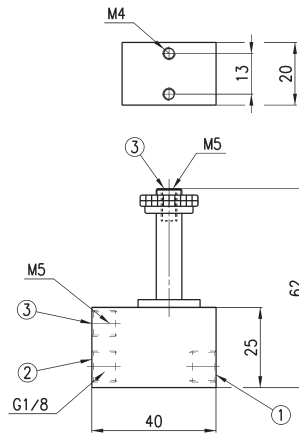
* choose the most suitable solenoid.

3/2-way solenoid valve Mod. A43

The 3/2-way NC solenoid valve, with G1/8 ports, incorporates a rapid exhaust valve. It is particularly suitable for operating small single-acting cylinders.



* choose the most suitable solenoid.



Mod.	Ports	Function	Orifice Ø mm	Qn (NI/min)
A431-1C2*	G1/8 / M5	3/2 NC	1.5	50

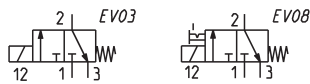
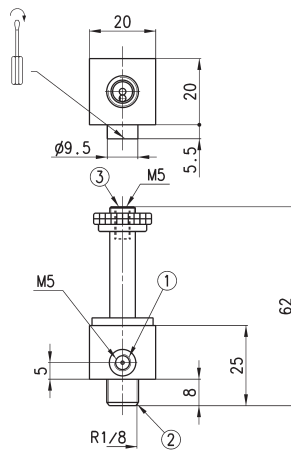
3/2-way solenoid valve Mod. A33

They are particularly suitable for the actuation of small single-acting cylinders and the operation of pneumatic valves with very low operating pressures.



The body has an outlet with a R1/8 male thread which can be screwed directly onto the component to be operated. The inlet port is M5 threaded.

* choose the most suitable solenoid.



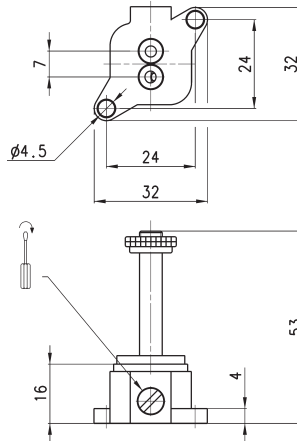
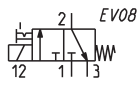
Mod.	Inlet / outlet	Function	Orifice Ø (mm)	Man. override bistable	Qn (NI/min)	Symbol
A331-3C2*	M5 / R1/8	3/2 NC	1,5	no	55	EV03
A331-4C2*	M5 / R1/8	3/2 NC	1,5	yes	55	EV08

3/2-way solenoid valve Mod. A231 with fixed interface

Equipped with a manual override with the possibility of a bistable actuation.



* choose the most suitable solenoid.



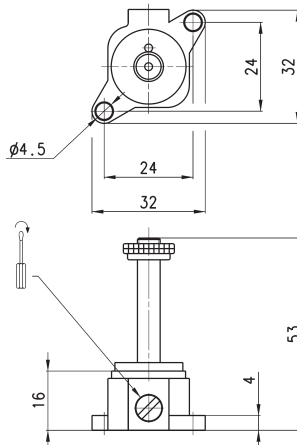
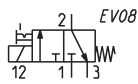
Mod.	Interface	Function	Orifice Ø (mm)	Qn (NI/min)
A231-BC2*	OR	3/2 NC	1,5	70

3/2-way solenoid valve Mod. A131 with swivel interface

Equipped with a manual override with the possibility of a bistable actuation.



* choose the most suitable solenoid.

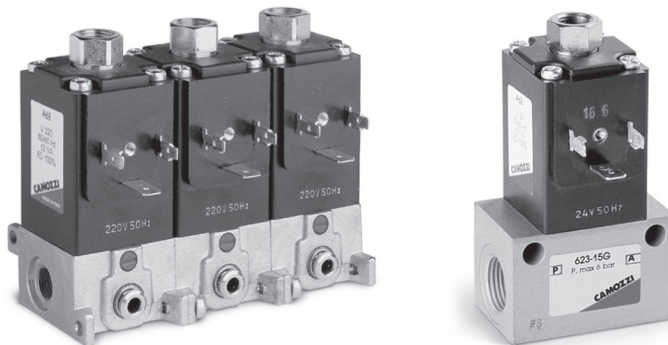


Mod.	Interface	Function	Orifice Ø (mm)	Qn (NI/min)
A131-AC2*	OR	3/2 NC	1,5	70

Series 6 directly operated solenoid valves

2/2-way - Normally Closed (NC)

3/2-way - Normally Closed (NC), Normally Open (NO)



» Ports: G1/8, G3/8, cartridge Ø4

» Available also in version for the low temperatures up to -50°C

The bodies of these valves can be used either individually or in manifolds. The latter are provided with G1/8 threaded ports or an inbuilt diameter 4 cartridge (G3/8 for 2-way only).

Series 6 solenoid valves are available as 2/2 and 3/2-way, either NC or NO.

These directly operated solenoid valves can be used either with or without lubrication.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC - 3/2 NC - 3/2 NO
Operation	direct acting poppet type
Pneumatic connections	G1/8, G3/8 threads - ø4 fitting - CNOMO interface
Nominal diameter	2 ... 4 mm
Nominal flow	80 ... 350 Nl/min (air @ 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	1.2 ... 5.4
Operating pressure	0 + 4 ... 15 bar
Operating temperature	0°C + 60°C (seals in FKM) / -50°C + +50°C (seals in NBR)
Media	filtered air, class 5.4.4 (5.1.4 for versions -50°C) according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time	ON <15 msec - OFF <15 msec
Manual override	see tables
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	nickel-plated brass - anodized aluminium
Seals	FKM (NBR for versions -50°C)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	12 ... 110 V DC - 24 ... 230 V AC 50/60 Hz
Voltage tolerance	±10% (DC) - +10% + -15% (AC)
Power consumption	10 W (DC) - 19 VA (inrush AC), 12 VA (holding AC)
Duty cycle	ED 100%
Electrical connection	H (180°C)
Protection class	with connector DIN EN 175 301-803-A IP65 with connector

Special versions available on demand

CODING EXAMPLE

6	3	8	M	-	105	-	A	6	B
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6	SERIES:
3	NUMBER OF PORTS AND FUNCTIONS: 0 = interface 2 = 2-way NC 3 = 3-way NC 4 = 3-way NO
8	CONNECTION: 0 = interface 3 = G3/8 8 = G1/8 C = cartridge Ø 4
M	M = manifold
105	TYPE OF BODY: 150 = threaded body G1/8 - orifice Ø 2 mm 15E = threaded body G3/8 - orifice Ø 2.5 mm 15F = threaded body G3/8 - orifice Ø 3 mm 15G = threaded body G3/8 - orifice Ø 4 mm 450 = base with rotatable interface 457 = base with fixed interface 101 = single manifold 102 = manifold - 2 pieces 103 = manifold - 3 pieces 104 = manifold - 4 pieces 105 = manifold - 5 pieces 106 = manifold - 6 pieces 107 = manifold - 7 pieces 108 = manifold - 8 pieces 109 = manifold - 9 pieces 110 = manifold - 10 pieces 111 = manifold - 11 pieces 112 = manifold - 12 pieces 113 = manifold - 13 pieces 114 = manifold - 14 pieces 115 = manifold - 15 pieces
A	COIL MATERIAL: A = PPS
6	SOLENOID DIMENSIONS: 6 = 32x32
B	SOLENOID VOLTAGE: B = 24V 50/60Hz C = 48V 50/60 Hz D = 110V 50/60 Hz E = 230V 50/60 Hz 2 = 12V DC 3 = 24V DC 4 = 48V DC 6 = 110V DC
	VERSIONS: = standard LT = for low temperatures

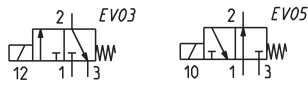
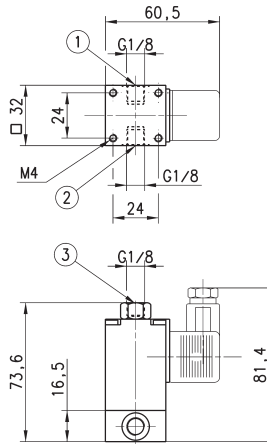
3/2-way NC and NO solenoid valve, G1/8 - Mod. 638 and Mod. 648

These valves are particularly suitable for operating single-acting cylinders or for use as signal valves.



In the mod. 648-150-A6* (NO) connections 1 and 3 are inverted, while the max operating pressure is 6 bar in case a solenoid A6B, A6C, A6D, A6E is chosen.

* = choose the solenoid voltage according to the CODING EXAMPLE



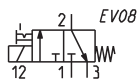
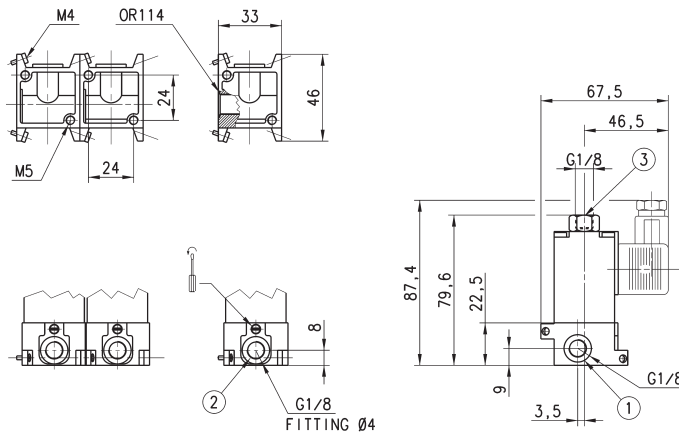
Mod.	Ports	Function	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)	Symbol
638-150-A6*	G1/8	NC	2	2.0	130	0 + 10 [DC]	EV03
648-150-A6*	G1/8	NO	2	1.2	80	0 + 8 [DC] - 0 + 6 [AC]	EV05

3/2-way NC solenoid valve - Mod. 638M and Mod. 63CM

These solenoid valves are equipped with a manual override and are available with G1/8 inlet ports and with G1/8 outlets or with a diameter 4 cartridge. The body is supplied complete with screws and O-ring.



* = choose the solenoid voltage according to the CODING EXAMPLE

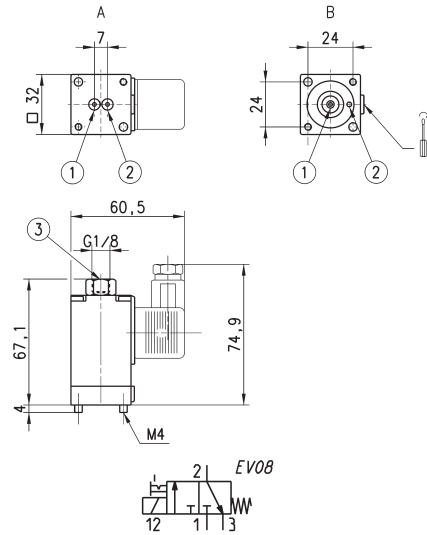


Mod.	Inlet	Outlet	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
638M-101-A6*	G1/8	G1/8	2	1.8	120	0 + 10
63CM-101-A6*	G1/8	cartridge Ø 4	2	1.6	108	0 + 10

3/2-way NC solenoid valve - Mod. 600



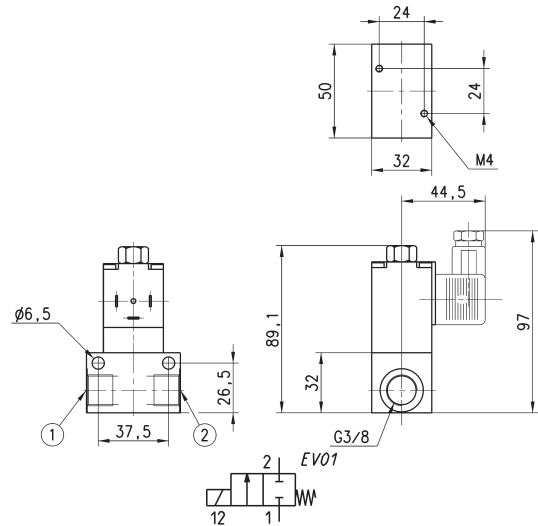
These solenoid valves are equipped with an override and are available with two types of interface:
 A = fixed interface
 B = swivel interface



Mod.	Interface	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Pressure min-max (bar)
600-450-A6*	Swivel	2	1.6	106	0 + 10
600-457-A6*	Fixed	2	1.6	106	0 + 10

* = choose the solenoid voltage according to the CODING EXAMPLE

2/2-way solenoid valves NC, G3/8 - Mod. 623

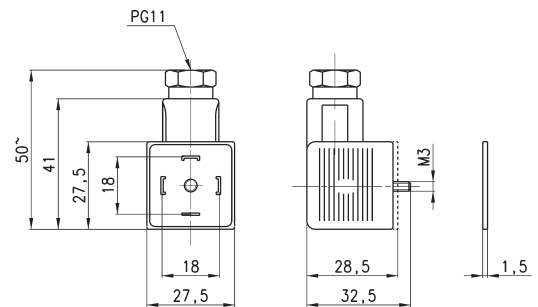


Mod.	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Min-max pressure (bar)
623-15E-A6*	2.5	3.4	220	0 + 12 [AC 50Hz] - 0 + 15 [DC]
623-15F-A6*	3	4.5	290	0 + 10 [AC 50Hz] - 0 + 14 [DC]
623-15G-A6*	4	5.4	350	0 + 4 [AC 50Hz] - 0 + 7 [DC]

* = choose the solenoid voltage according to the CODING EXAMPLE

Connector Mod. 124-... DIN EN 175 301-803-A

Protection class IP65



Mod.	description	colour	working voltage	cable holding	tightening torque
124-800	connector, without electronics	black	-	PG9/PG11	0.5 Nm
124-702	connector, varistor + Led	black	110 V AC/DC	PG9/PG11	0.5 Nm
124-701	connector, varistor + Led	black	24 V AC/DC	PG9/PG11	0.5 Nm
124-703	connector, varistor + Led	black	230 V AC/DC	PG9/PG11	0.5 Nm

Series CFB solenoid valves

2/2-way - Normally Closed (NC) and Normally Open (NO)
 3/2-way - Normally Closed (NC) and Normally Open (NO)



- » Solenoid valves for air and water
- » Great reliability over time, even in heavy working conditions

The valve function is determined by a poppet or by a diaphragm with operation direct or indirect. Different versions are available according to the nominal diameter and to the threaded ports, as shown in the following tables. They can thus satisfy various requirements in terms of flow rates and working pressures.

Series CFB solenoid valves for general purpose are available in the NC and NO version, 2/2 and 3/2-way.
 Special versions are available on demand for the protection against the water hammer or with specific treatments for the interception of aggressive fluids.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC - 3/2 NC - 2/2 NO
Operation	direct acting poppet type - servo-assisted with diaphragm
Pneumatic connections	G1/8 ... G2 threads
Nominal diameter	1.4 ... 50 mm
Nominal flow	See Kv
Flow coefficient Kv (m³/h)	0.14 ... 36.0
Operating pressure	0 ÷ 0.8 ... 22 bar
Operating temperature	-10°C + +90°C ... 140°C
Media	air, water, liquid and gaseous fluids with max viscosity 37 cSt (5° E)
Response time	ON <15 msec - OFF <25 msec
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	brass (alimentary or anti-limestone nickel-platings on demand)
Seals	NBR (CFB-A) - FKM (CFB-B, CFB-D) - EPDM (on demand)
Internal parts	stainless steel - stainless steel and brass (CFB-D1)

ELECTRICAL FEATURES

Voltage	12 V DC, 24 V DC - 24 V 50 Hz, 110 V 50/60 Hz, 220/230 V 50/60 Hz
Voltage tolerance	±5% (DC) - ±10% (AC)
Power consumption	10 ... 30 W (DC) - 9 ... 29 VA (AC)
Duty cycle	ED 100%
Electrical connection	H (180°C)
Protection class	DIN 43650 connector, (A shape) IP65 with connector

Special versions available on demand

It is recommended to use connections with internal diameters bigger than valve orifices, otherwise there may be a performance change.

CODING EXAMPLE

CFB	-	A	1	3	L	-	R	1	-	B7	E
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CFB	SERIES
A	OPERATION: A = indirect B = direct with linked diaphragm D = direct
1	NUMBER OF WAYS - POSITIONS: 1 = 2/2-way NO 2 = 2/2-way NC 3 = 3/2-way NC
3	CONNECTIONS: 1 = G1/8 2 = G1/4 3 = G3/8 4 = G1/2 5 = G3/4 6 = G1 7 = G1 1/4 8 = G1 1/2 9 = G2
L	NOMINAL DIAMETER: A = 1,4 mm B = 2 mm C = 2,5 mm D = 2,8 mm F = 4 mm G = 6 mm J = 8 mm L = 11,5 mm M = 13 mm N = 13,5 mm P = 18 mm R = 26 mm T = 32 mm X = 45 mm Z = 50 mm
R	DIAPHRAGM MATERIAL: R = NBR W = FKM E = EPDM (on demand)
1	BODY MATERIAL: 1 = brass 2 = alimentary anti-limestone nickel-plated brass for high temperatures (on demand) 3 = alimentary nickel-plated brass (on demand)
B7	SOLENOID DIMENSION: B7 = 22 mm B8 = 30 mm B9 = 36 mm
E	SOLENOID VOLTAGE: B = 24V AC 50 Hz D = 110V AC 50/60 Hz E = 230V AC 50/60 Hz 2 = 12V DC 3 = 24V DC
NOTE: for some directly operated 2/2 NO solenoid valves, the solenoid to be used is the B8*K type (see also the TABLE FOR THE COUPLING BETWEEN SOLENOIDS AND VALVES on page 2/1.30.03).	

TABLE FOR THE COUPLING BETWEEN SOLENOIDS AND VALVES

For solenoids and their connectors see the section 2/2.35.

Mod. B8/B9 = mod. 124-800

Mod. B7 = mod. 122-800

Mod.	24V AC 50 Hz	110V AC 50/60 Hz	220/230V AC 50/60 Hz	12V DC	24V DC
Directly operated solenoid valve, 2/2 and 3/2 NC, 2/2 NO					
CFB-D21C-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D21F-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D22C-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D22F-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D22G-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D23J-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA) **	not available	B93 (30W)
CFB-D24J-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA) **	not available	B93 (30W)
CFB-D24M-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA) **	not available	not available
CFB-D31A-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D31D-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D32A-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D32D-W1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D11A-W1-	B8BK (15VA)	B8DK (15VA) **	B8EK (15VA) **	B82K (19W)	B83K (19W)
CFB-D12D-W1-	B8BK (15VA)	B8DK (15VA) **	B8EK (15VA) **	B82K (19W)	B83K (19W)
CFB-D13J-W1-	B9B (29VA)	B9D (29VA) **	B9E (29VA) **	not available	not available
Directly operated solenoid valve with constrained diaphragm, 2/2 NC					
CFB-B23L-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA)	not available	B93 (30W)
CFB-B24N-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA)	not available	B93 (30W)
CFB-B25P-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA)	not available	B93 (30W)
CFB-B26R-W1-	B9B (29VA)	B9D (29VA)	B9E (29VA)	not available	B93 (30W)
Indirectly operated solenoid valve, 2/2 NC					
CFB-A23L-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A24N-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A25P-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A26R-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A27T-R1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-A28X-R1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-A29Z-R1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
Indirectly operated solenoid valve, 2/2 NO					
CFB-A13L-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A14N-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A15P-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A16R-R1-	B7B (9VA) *	B7D (9VA)	B7E (9VA)	B72 (10W)	B73 (10W)
CFB-A17T-R1-	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-A18X-R1-	B9B (29VA)	B9D (29VA)	B9E (29VA)	not available	B93 (30W)
CFB-A19Z-R1-	B9B (29VA)	B9D (29VA)	B9E (29VA)	not available	B93 (30W)
	* B7B solenoid with nominal bifrequency of 50/60 Hz		** only to be used with nominal frequency of 50 Hz		

Directly operated 2/2 NC - NO and 3/2 NC solenoid valve

The direct control of these solenoid valves enables them to work with operating pressures which are equal to zero. Ports: G1/8 and G1/2.



DRAWING LEGEND:

X = NC valve
Y = NO valve

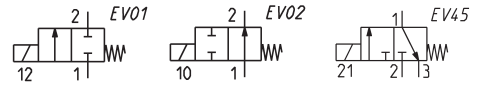
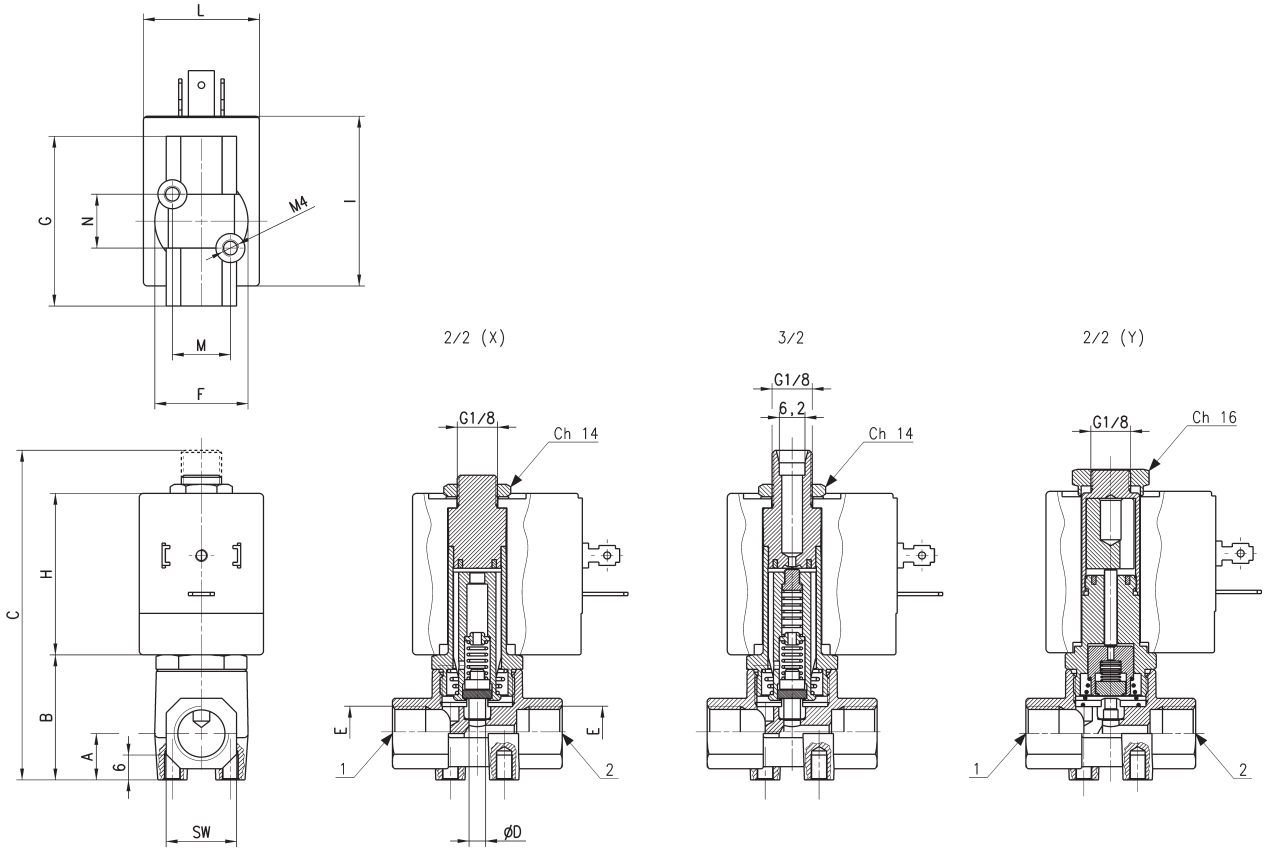


TABLE NOTES:

* = choose the suitable solenoid (see the table on page 2/1.30.03).
** = the performances shown in the table refer to the use with inlet from "2" and outlet from "1".
*** = 0 + 4 with B9... solenoid



Mod.	Function	Orifice ØD (mm)	Kv (m³/h)	Pressure min-max (bar)	A	B	C	E	F	G	SW	H	I	L	N	M	Symbol
CFB-D21C-W1-*	2/2 NC	2.5	0.14	0 + 15 [AC / DC]	11	30	73.8	G1/8	23	41	17	39	41	30	13	14	EV01
CFB-D21F-W1-*	2/2 NC	4	0.25	0 + 6 [AC / DC]	11	30	73.8	G1/8	23	41	17	39	41	30	13	14	EV01
CFB-D22C-W1-*	2/2 NC	2.5	0.14	0 + 15 [AC / DC]	11	30	73.8	G1/4	23	41	17	39	41	30	13	14	EV01
CFB-D22F-W1-*	2/2 NC	4	0.25	0 + 6 [AC / DC]	12	31.5	75	G1/4	26	41	17	39	41	30	13	14	EV01
CFB-D22G-W1-*	2/2 NC	6	0.6	0 + 2.5 [AC / DC]***	12	31.5	75	G1/4	26	41	17	39	41	30	13	14	EV01
CFB-D23J-R1-*	2/2 NC	8	1	0 + 2 [AC] - 0 + 0.8 [DC]	15	45	89	G3/8	37	55	27	39	47	36	22	22	EV01
CFB-D24J-R1-*	2/2 NC	8	1	0 + 2 [AC] - 0 + 0.8 [DC]	15	45	89	G1/2	37	55	27	39	47	36	22	22	EV01
CFB-D24M-R1-*	2/2 NC	13	2.4	0 + 1 [AC] - /	15	45	89	G1/2	37	55	27	39	47	36	22	22	EV01
CFB-D31A-W1-*	3/2 NC **	1.4	0.06	0 + 14 [AC / DC]	11	30	79.6	G1/8	23	41	17	39	41	30	13	14	EV45
CFB-D31D-W1-*	3/2 NC **	2.8	0.14	0 + 5 [AC / DC]	11	30	79.6	G1/8	23	41	17	39	41	30	13	14	EV45
CFB-D32A-W1-*	3/2 NC **	1.4	0.06	0 + 14 [AC / DC]	11	30	79.6	G1/4	23	41	17	39	41	30	13	14	EV45
CFB-D32D-W1-*	3/2 NC **	2.8	0.14	0 + 5 [AC / DC]	11	30	79.6	G1/4	23	41	17	39	41	30	13	14	EV45
CFB-D11A-W1-*	2/2 NO	1.4	0.07	0 + 22 [AC 50Hz / DC]	11	30	75	G1/8	23	41	17	39	41	30	13	14	EV02
CFB-D12D-W1-*	2/2 NO	2.8	0.20	0 + 7.5 [AC 50Hz / DC]	11	30	75	G1/4	23	41	17	39	41	30	13	14	EV02
CFB-D13J-W1-*	2/2 NO	8	1	0 + 1.5 [AC 50Hz]	15	45	89	G3/8	37	55	27	39	47	36	22	22	EV02

Directly oper. 2/2 NC solenoid valve with linked diaphragm

The diaphragm which is linked to the mobile plunger is a good arrangement between high fluid flow rates and working pressures (zero pressures as well).
Ports: from G3/8 to G1.

The standard diaphragm is supplied in FKM.

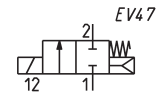
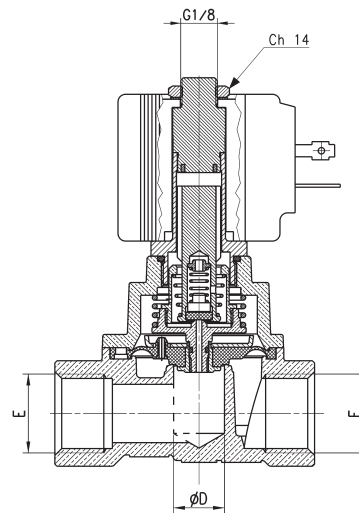
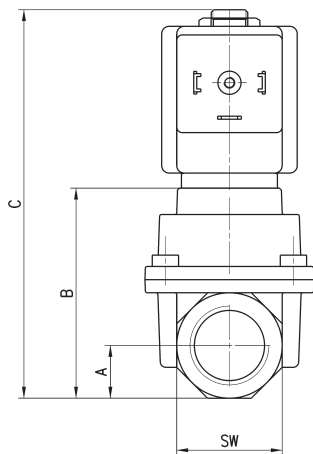
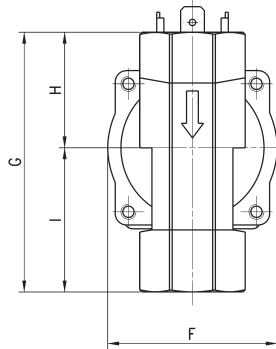


TABLE NOTE:

* = choose the suitable solenoid (see the table on page 2/1.30.03).



Mod.	Function	Orifice ØD (mm)	Kv (m³/h)	Pressure min-max (bar)	A	B	C	E	F	G	H	I	SW
CFB-B23L-W1-*	2/2 NC	11.5	2.1	0 + 15 [AC] - 0 + 8 [DC]	14	55.8	103.2	G3/8	45	64	28.2	35.8	28
CFB-B24N-W1-*	2/2 NC	13.5	2.5	0 + 15 [AC] - 0 + 8 [DC]	14	55.8	103.2	G1/2	45	69	30.7	38.3	28
CFB-B25P-W1-*	2/2 NC	18	5	0 + 15 [AC] - 0 + 5 [DC]	21	72	119.4	G3/4	71	93	43.5	49.5	42
CFB-B26R-W1-*	2/2 NC	26	8	0 + 15 [AC] - 0 + 5 [DC]	21	72	119.4	G1	71	93	43.5	49.5	42

Indirectly operated 2/2 NC solenoid valve



The pilot of these indirectly operated solenoid valves controls the diaphragm position through a differential pressure. These valves are therefore particularly suitable for controlling high fluid flow rates and require very low working pressures. Ports: from G3/8 to G2.

The standard diaphragm is supplied in NBR. On demand it can be supplied in FKM or EPDM.

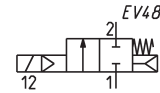
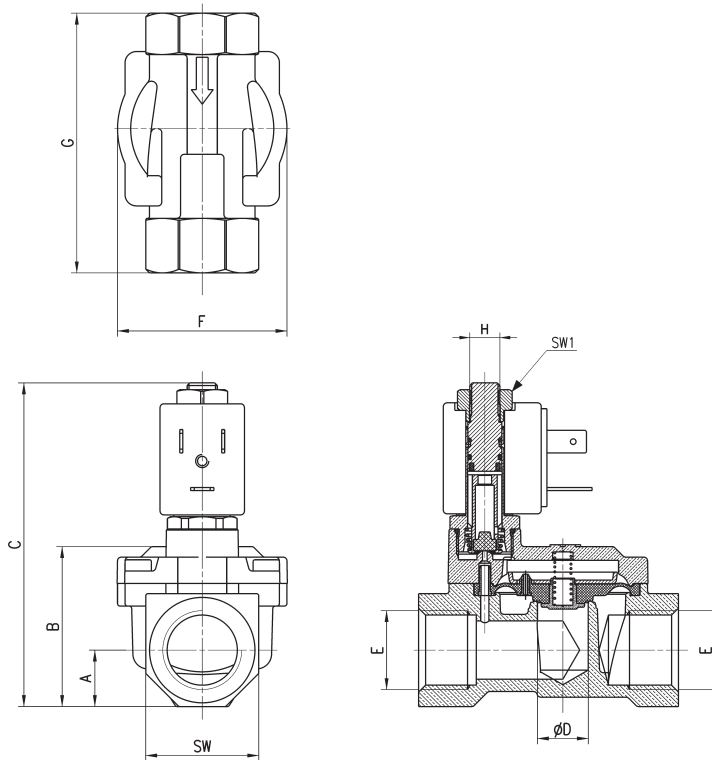


TABLE NOTE:

* = choose the suitable solenoid (see the table on page 2/1.30.03).



Mod.	Function	Orifice ØD (mm)	Kv (m³/h)	Pressure min-max (bar)	A	B	C	E	F	G	H	SW	SW1
CFB-A23L-R1-*	2/2 NC	11.5	1.7	0.1 + 15 [AC / DC]	12	32.5	78.5	G3/8	41.9	57	M8x0.75	24	13
CFB-A24N-R1-*	2/2 NC	13.5	3.8	0.1 + 15 [AC / DC]	15	39.7	85.7	G1/2	45	69	M8x0.75	30	13
CFB-A25P-R1-*	2/2 NC	18	5	0.2 + 15 [AC / DC]	18	46.5	91.5	G3/4	54.4	74	M8x0.75	34	13
CFB-A26R-R1-*	2/2 NC	26	11	0.2 + 12 [AC / DC]	22.5	59.8	104.5	G1	71	93	M8x0.75	45	13
CFB-A27T-R1-*	2/2 NC	32	17	0.4 + 12 [AC / DC]	27.5	73.5	130	G1 1/4	86.6	111	G1/8	55	14
CFB-A28X-R1-*	2/2 NC	45	27	0.4 + 10 [AC / DC]	31	85	138.3	G1 1/2	110	138	G1/8	62	14
CFB-A29Z-R1-*	2/2 NC	50	36	0.4 + 10 [AC / DC]	37.5	98.8	152	G2	110	145	G1/8	75	14

Indirectly operated 2/2 NO solenoid valve



The pilot of these indirectly operated solenoid valves controls the diaphragm position through a differential pressure. These valves are therefore particularly suitable for controlling high fluid flow rates and require very low working pressures.

Ports: from G3/8 to G2.

The standard diaphragm is supplied in NBR.

On demand it can be supplied in FKM or EPDM.

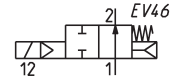
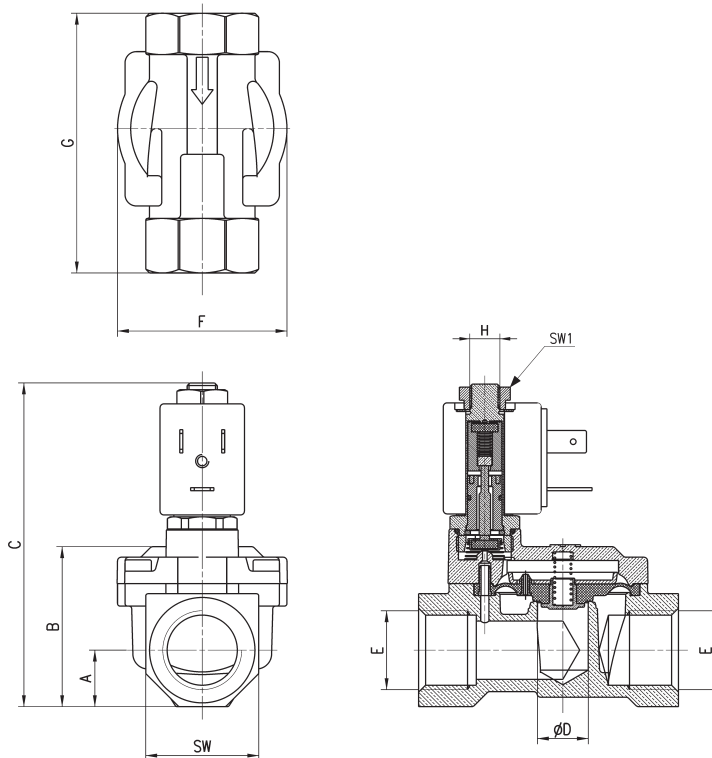


TABLE NOTE:

* = choose the suitable solenoid(see the table on page 2/1.30.03).



Mod.	Function	Orifice ØD (mm)	Kv (m³/h)	Pressure min-max (bar)	A	B	C	E	F	G	H	SW	SW1
CFB-A13L-R1-*	2/2 NO	11.5	1.7	0.1 + 15 [AC / DC]	12	32.5	78.5	G3/8	41.9	57	M8x0.75	24	13.5
CFB-A14N-R1-*	2/2 NO	13.5	3.8	0.1 + 15 [AC / DC]	15	39.7	85.7	G1/2	45	69	M8x0.75	30	13.5
CFB-A15P-R1-*	2/2 NO	18	5	0.2 + 15 [AC / DC]	18	46.5	92.7	G3/4	54.4	74	M8x0.75	36	13.5
CFB-A16R-R1-*	2/2 NO	26	11	0.2 + 12 [AC / DC]	22.5	59.8	104.5	G1	71	93	M8x0.75	45	13.5
CFB-A17T-R1-*	2/2 NO	32	17	0.4 + 12 [AC / DC]	27.5	73.5	130	G1 1/4	86.6	111	G1/8	55	14
CFB-A18X-R1-*	2/2 NO	45	27	0.4 + 10 [AC / DC]	31	85	138.3	G1 1/2	110	138	G1/8	62	14
CFB-A19Z-R1-*	2/2 NO	50	36	0.4 + 10 [AC / DC]	37.5	98.8	152	G2	110	145	G1/8	75	14

Series CFB stainless steel solenoid valves

2/2-way - Normally Closed (NC)

3/2-way - Normally Closed (NC)



- » Stainless steel version for particularly aggressive environment and fluids
- » High reliability over time, even in hard working conditions
- » Compact dimensions
- » Suitable to control inert and medical gases, alimentary fluids and beverages

The valve function is determined by a poppet and the operation is direct. Different versions are available according to the nominal diameter and to the threaded ports, as shown in the following tables. They can thus satisfy various requirements in terms of flow rates and working pressures.

Series CFB Stainless Steel directly operated solenoid valves for general purpose, 2/2-way and 3/2-way NC, are the ideal solution for a wide range of applications whereby the environment and fluids used can be particularly aggressive and contaminating. Special versions are available on demand.

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 and 3/2 NC
Operation	direct acting poppet type
Pneumatic connections	G1/8 ... G1/2 threads
Nominal diameter	1.5 ... 4 mm
Nominal flow	See Kv
Flow coefficient Kv (m ³ /h)	0.08 ... 0.28
Operating pressure	0 ÷ 4 ... 25 bar
Operating temperature	-10°C + +140°C
Media	air, water, liquid and gaseous fluids with max viscosity 37 cSt (5° E)
Response time	ON <15 msec - OFF <25 msec
Installation	in any position

MATERIALS IN CONTACT WITH THE MEDIUM

Body	stainless steel 316L
Seals	FKM (EPDM on demand)
Internal parts	stainless steel

ELECTRICAL FEATURES

Voltage	12 V DC, 24 V DC - 24V AC 50 Hz, 110 V AC 50/60 Hz, 220/230 V AC 50/60 Hz
Voltage tolerance	±5% (DC) - ±10% (AC)
Power consumption	19 W (DC) - 15 VA (AC)
Duty cycle	ED 100%
Electrical connection	H (180°C)
Protection class	DIN 43650 connector, (A Shaped) IP65 with connector

Special versions available on demand

It is recommended to use connections with internal diameters bigger than valve orifices, otherwise there may be a performance change.

CODING EXAMPLE

CFB	-	D	2	1	A	-	W	X	-	B8	E
-----	---	---	---	---	---	---	---	---	---	----	---

CFB	SERIES
D	OPERATION: D = direct
2	NUMBER OF WAYS - POSITIONS: 2 = 2/2-way NC 3 = 3/2-way NC
1	CONNECTIONS: 1 = G1/8 2 = G1/4 3 = G3/8 4 = G1/2
A	NOMINAL DIAMETER: A = 1.5 mm B = 2 mm C = 2.5 mm E = 3 mm F = 4 mm
W	SEALS MATERIAL: W = FKM E = EPDM (on demand)
X	BODY MATERIAL: X = stainless steel
B8	SOLENOID DIMENSION: B8 = 30 mm
E	SOLENOID VOLTAGE: B = 24V AC 50 Hz D = 110V AC 50/60 Hz E = 230V AC 50/60 Hz 2 = 12V DC 3 = 24V DC

TABLE FOR THE COUPLING BETWEEN SOLENOIDS AND VALVES

See solenoids and connectors for solenoids in the section 2/2.35.

Mod. B8 = mod.124-800

* = complete the code according to coding example

Mod.	24V AC 50 Hz	110V AC 50/60 Hz	220/230V AC 50/60 Hz	12V DC	24V DC
CFB-D21A-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D21B-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D21C-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D22B-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D22C-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D22E-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D23E-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D23F-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D24E-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D24F-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D32A-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D32B-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D32C-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)
CFB-D32E-*	B8B (15VA)	B8D (15VA)	B8E (15VA)	B82 (19W)	B83 (19W)

Directly operated solenoid valve, 2/2 and 3/2 NC

The direct control of these solenoid valves allows to operate with working pressures that are equal to zero.

Ports: from G1/8 to G1/2.

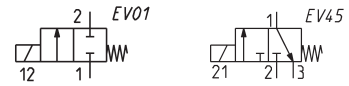
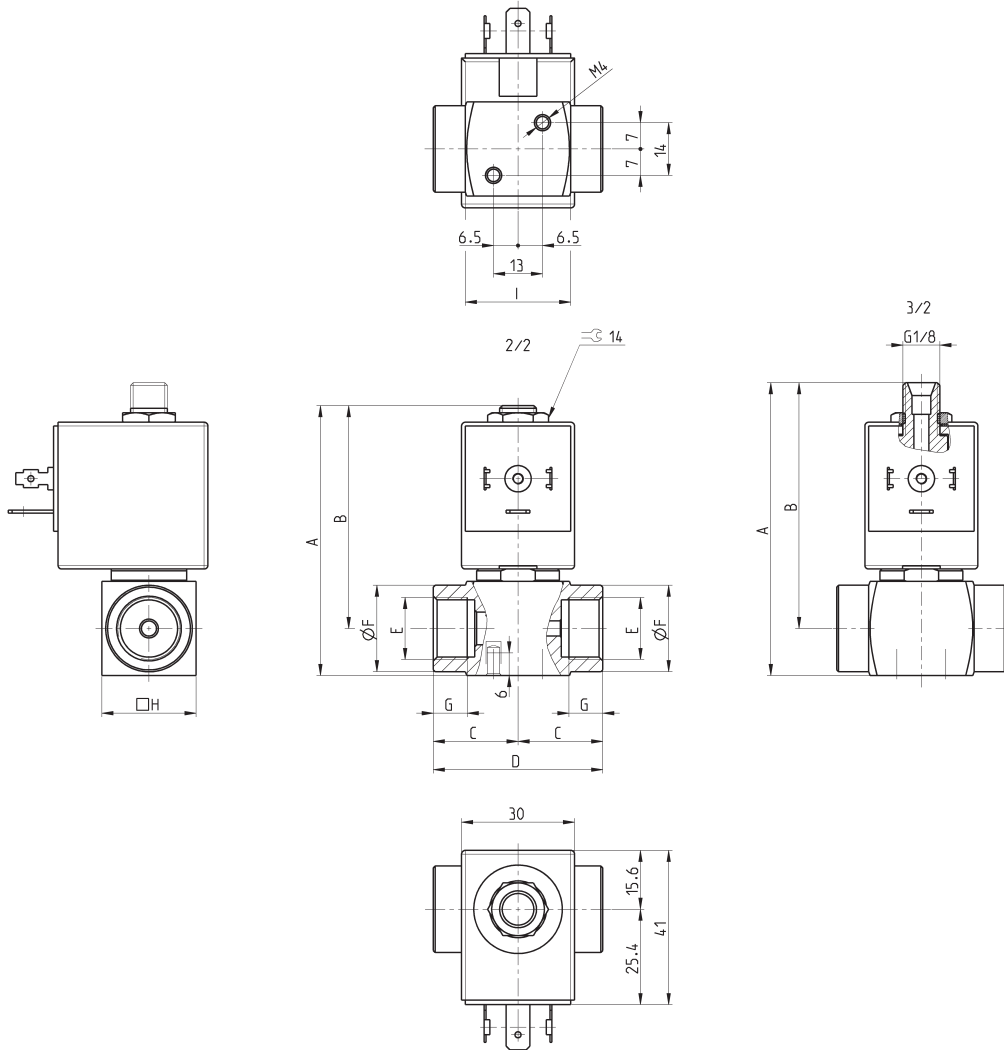


TABLE NOTE:
* = choose the suitable solenoid (see the coupling table).



Mod.	Function	Orifice Ø (mm)	Kv (m³/h)	Pressure min-max (bar)	A	B	C	D	E	F	G	H	I	Pneumatic symbol
CFB-D21A-...X-*	2/2 NC	1.5	0.08	0 + 25	71.7	59.2	21	42	G1/8	15	8	25	29	EV01
CFB-D21B-...X-*	2/2 NC	2	0.10	0 + 22	71.7	59.2	21	42	G1/8	15	8	25	29	EV01
CFB-D21C-...X-*	2/2 NC	2.5	0.14	0 + 15	71.7	59.2	21	42	G1/8	15	8	25	29	EV01
CFB-D22B-...X-*	2/2 NC	2	0.10	0 + 22	71.7	59.2	21	42	G1/4	18	8	25	28	EV01
CFB-D22C-...X-*	2/2 NC	2.5	0.14	0 + 15	71.7	59.2	21	42	G1/4	18	8	25	28	EV01
CFB-D22E-...X-*	2/2 NC	3	0.18	0 + 10	71.7	59.2	21	42	G1/4	18	8	25	28	EV01
CFB-D23E-...X-*	2/2 NC	3	0.18	0 + 10	71.7	59.2	22.5	45	G3/8	23	9.5	25	28	EV01
CFB-D23F-...X-*	2/2 NC	4	0.28	0 + 6	71.7	59.2	22.5	45	G3/8	23	9.5	25	28	EV01
CFB-D24E-...X-*	2/2 NC	3	0.18	0 + 10	76.7	61.7	24.5	49	G1/2	27.5	11	30	31	EV01
CFB-D24F-...X-*	2/2 NC	4	0.28	0 + 6	76.7	61.7	24.5	49	G1/2	27.5	11	30	31	EV01
CFB-D32A-...X-*	3/2 NC	1.5	0.08	0+13	77.8	65.3	21	42	G1/4	18	8	25	28	EV45
CFB-D32B-...X-*	3/2 NC	2	0.1	0+9	77.8	65.3	21	42	G1/4	18	8	25	28	EV45
CFB-D32C-...X-*	3/2 NC	2.5	0.14	0+5.5	77.8	65.3	21	42	G1/4	18	8	25	28	EV45
CFB-D32E-...X-*	3/2 NC	3	0.18	0+4	77.8	65.3	21	42	G1/4	18	8	25	28	EV45

Series 8 pneumatic operated cartridge valves

New versions

2/2-way - Normally Closed (NC)



- » Use with oxygen
- » Suitable also for general purpose
- » Compact design
- » High flow
- » Manifold assembly

Series 8 pneumatic operated valves are particularly suitable for applications requiring high flow combined with compact design.

The valve is pneumatic operated by electro-pilots which are dimensioned according to the size.

The cartridge design, which is ideal for manifold assembly, allows to reduce both dimensions and the number of pneumatic connections.

The standard function of the valve is 2/2-way NC.

It can however fulfill the 3/2-way NC function if inserted in a proper seat (see the following pages).

GENERAL DATA

TECHNICAL FEATURES

Function	2/2 NC
Operation	pneumatic operated poppet type
Pneumatic connections	manifold cartridge
Nominal diameter	5 ... 9 mm
Nominal flow	420 ... 1480 NI/min (air at 6 bar ΔP 1 bar)
Flow coefficient kv (l/min)	6.5 ... 23
Operating pressure	3 + 6 bar (0 + 6 bar with external pilot supply)
Operating temperature	0 + +50°C
Media	filtered air, class 5.4.4 according to ISO 8573-1 (max oil viscosity 32 cSt), inert gas
Response time (ISO 12238)	ON <10 msec - OFF <10 msec
Installation	in any position

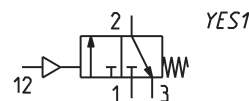
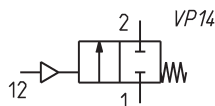
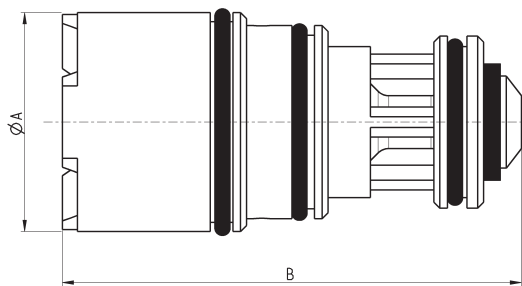
MATERIALS IN CONTACT WITH THE MEDIUM

Body	brass
Internal parts	aluminium
Seals	FKM

CODING EXAMPLE										
8	10	C5	1	00	-	F1	3	2	-	OX2
8	SERIES									
10	SIZE: 10 = Size 1 20 = Size 2 30 = Size 3									
C5	BODY DESIGN: C5 = cartridge									
1	NUMBER OF WAYS - FUNCTIONS: 1 = 2/2-way NC or 3/2-way NC NOTE: The function depends on the seat used (for further details see the following pages)									
00	PNEUMATIC CONNECTIONS: 00 = cartridge									
F1	NOMINAL DIAMETER: F1 = Ø 5.0 mm (size 1 only) G7 = Ø 6.6 mm (size 2 only) K1 = Ø 9.0 mm (size 3 only)									
3	SEAL MATERIAL: 3 = FKM									
2	BODY MATERIAL: 2 = brass									
OX2	OX2 = for use with oxygen (non volatile residual less than 33 mg/m ³) NOTE: the OX2 suffix must be added also in case of use with air/gas.									

Pneumatic cartridge valve 2/2-way NC

For 2/2-way (pneumatic symbol VP14) or 3/2-way (pneumatic symbol YES1) function, see the seat dimensioning in the next pages.

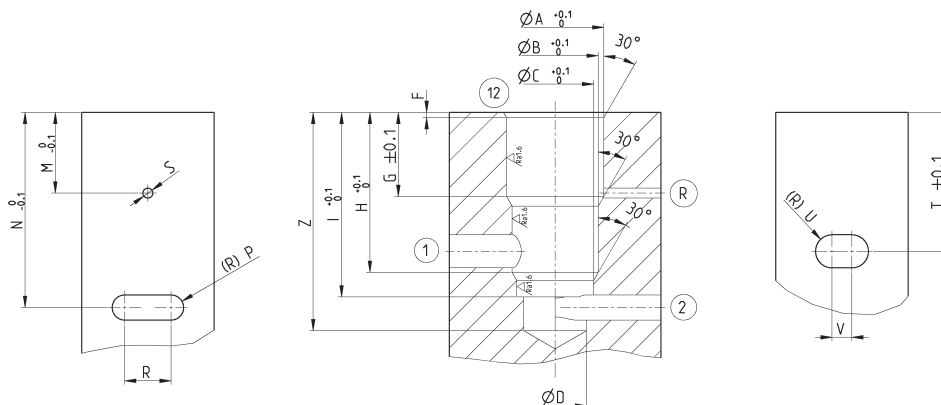


Mod.	ØA	B	Nominal diameter Ø (mm)	kv (l/min)	Qn (NI/min)	Min/max pressure (bar)	Min/max pilot pressure (bar)
810C5100-F132-OX2	10	26.7	5.0	6.5	420	0 + 6	3 + 6
820C5100-G732-OX2	14.5	30.3	6.6	12.5	800	0 + 6	3 + 6
830C5100-K132-OX2	22	34.8	9.0	23	1480	0 + 6	3 + 6

Seat for Series 8 pneumatic valve with 2/2-way NC function

NOTE IN THE DRAWING:

- 1 = inlet
- 2 = outlet
- 12 = pilot supply
- R = poppet chamber exhaust



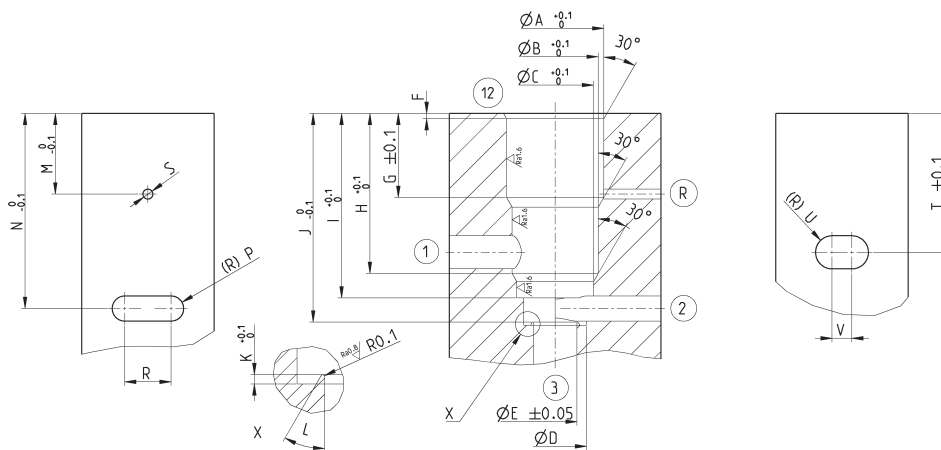
SERIES 8

Size	A	B	C	D	F	G	H	I	M	N	P	R	S	T	U	V	Z
1	10.4	9.7	9	8.2	0.8	14.5	20.7	25	13.2	26.3	1.5	5	1.5	19.1	3	5	30
2	14.65	12.95	11.55	9.5	0.8	12.8	24.2	27.9	12.2	28	1.9	7	1.5	21	2.5	3	33
3	22.1	20.6	19.6	16.2	0.5	15	28.7	33.4	13.5	37.4	4	4.4	2.5	24.8	3.75	5	41

Seat for Series 8 pneumatic valve with 3/2-way NC function

NOTE IN THE DRAWING:

- 1 = inlet
- 2 = outlet
- 3 = exhaust
- 12 = pilot supply
- R = poppet chamber exhaust



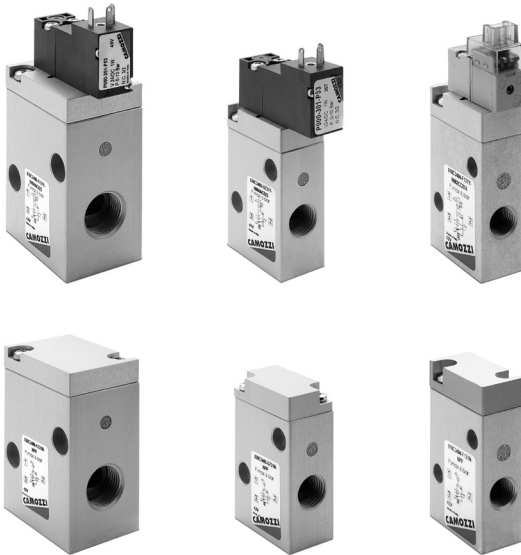
SERIES 8

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	U	V
1	10.4	9.7	9	8.2	5	0.8	14.5	20.7	25	28	0.3	45	13.2	26.3	1.5	5	1.5	19.1	3	5
2	14.65	12.95	11.55	9.5	6.6	0.8	12.8	24.2	27.9	31.55	0.5	30	12.2	28	1.9	7	1.5	21	2.5	3
3	22.1	20.6	19.6	16.2	9	0.5	15	28.7	33.4	38.05	1	60	13.5	37.4	4	4.4	2.5	24.8	3.75	5

Series 8 pneumatically and electropneumatically operated valves

New 

2/2-way - Normally Closed (NC), Normally Open (NO)
3/2-way - Normally Closed (NC), Normally Open (NO)



- » High flow
- » Available in 3 different sizes for general purpose
- » Version for use with oxygen available

The Series 8 enlarges the range of versions available with the cartridge valve directly integrated in an anodized aluminium body comprising also the pilot solenoid valve. The new bodies enable to have pneumatically operated versions with external piloting or electropneumatically operated versions with both external and internal piloting.

GENERAL DATA

TECHNICAL SPECIFICATIONS

Function	2/2 NC – 2/2 NO – 3/2 NC – 3/2 NO
Operation	pneumatic or electropneumatic
Pneumatic connections	G1/8 – G1/4 – G3/8
Nominal diameter	5 ... 9 mm
Flow coefficient kv (l/min)	6.5 ... 23
Nominal flow	420 ... 1480 NI/min (air at 6 bar ΔP 1 bar)
Operating pressure	3 ÷ 6 bar (0 ÷ 6 bar with external pilot supply)
External pilot pressure	3 ÷ 6 bar
Operating temperature	0 ÷ +50°C
Fluid	filtered air class 5.4.4 according to ISO 8573-1 (oil viscosity max. 32 cSt), inert gases
Response times	ON <10 msec - OFF <10 msec
Installation	any position

MATERIALS IN CONTACT WITH FLUID

Body	Aluminium
Seals	FKM
Internal parts	Aluminium – Brass

ELECTRICAL SPECIFICATIONS

Voltage	24 V DC – other voltages upon request
Voltage tolerance	Size 1 = ±10% - Size 2 and 3 = -10% +15%
Power consumption	Size 1 = 1.3 W (inrush) 0.25 W (holding) – Size 2 and 3 = 2 W
Duty cycle	ED 100%
Electrical connection	connectors – wires (length = 300 mm)
Protection class	Size 1 = IP50 – Size 2 and 3 = IP65 (with connector)

2

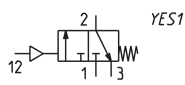
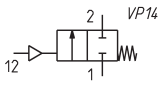
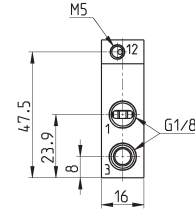
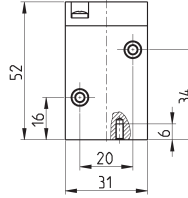
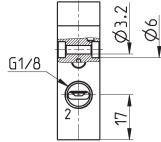
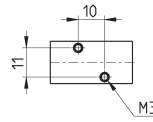
CONTROL

CODING EXAMPLE

8	10	C3	4	04	-	F1	3	1	Y	-	N	00	2C	C015
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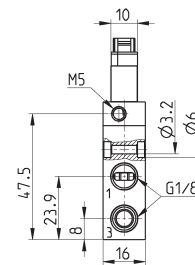
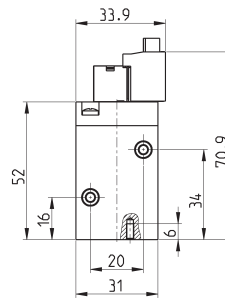
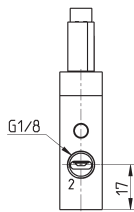
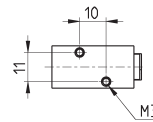
8	SERIES
10	SIZE: 10 = Size 1 20 = Size 2 30 = Size 3
C3	TYPE OF BODY: C3 = threaded body
4	NUMBER OF WAYS - FUNCTIONS: 1 = 2/2-way NC 2 = 2/2-way NO 4 = 3/2-way NC 5 = 3/2-way NO
04	PNEUMATIC CONNECTIONS: 04 = G1/8 (Size 1) 05 = G1/4 (Size 2) 06 = G3/8 (Size 3)
F1	NOMINAL DIAMETER: F1 = 5.0 mm (Size 1) G7 = 6.6 mm (Size 2) K1 = 9.0 mm (Size 3)
3	SEAL MATERIAL: 3 = FKM
1	BODY MATERIAL: 1 = aluminium
Y	MANUAL OVERRIDE: N = not provided Y = provided monostable
N	MOUNTING ACCESSORIES: N = not provided
00	OPTIONS: 00 = no option PP = pneumatic piloting PE = electropilot with external piloting
2C	ELECTRICAL CONNECTION: 2C = connection type KN 90° + protection + led (Size 1) 2F = connection type KN 90° in line + protection + led (Size 1) 3A = connection DIN EN 175 301-803-C (8 mm) 4A = industry standard connection (9.4 mm) 7A = wires - length 300 mm (Size 2 - 3)
C015	VOLTAGE - POWER CONSUMPTION: C012 = 12V DC 1.3/0.25W (Size 1) C014 = 24V DC 1.3/0.25W (Size 1) C020 = 12V DC 2W (Size 2 - 3) C023 = 24V DC 2W (Size 2 - 3) C025 = 48V DC 2W (Size 2 - 3)
	VERSION: = standard OX1 = for use with oxygen (non volatile residual less than 550 mg/m ²) OX2 = for use with oxygen (non volatile residual less than 33 mg/m ²)

Pneumatic valve size 1 - 2/2- and 3/2-way, NC and NO

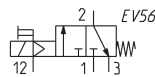
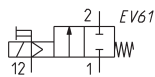
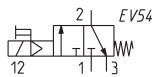
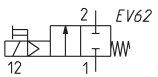


Mod.	Function	Pneumatic connection	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Min+max pressure (bar)	Min+max pilot pressure (bar)	Pilot supply	Symbol
810C3104-F131N-NPP	2/2 NC (for the NO function it is required to maintain a continuous pneumatic pilot supply)	G1/8	5.0	6.5	420	0 + 6	3 + 6	External	VP14
810C3404-F131N-NPP	3/2 NC (for the NO function it is required to maintain a continuous pneumatic pilot supply)	G1/8	5.0	6.5	420	0 + 6	3 + 6	External	YES1

Solenoid valve size 1, 2/2- and 3/2-way, NC

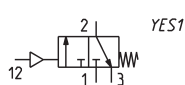
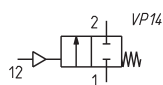
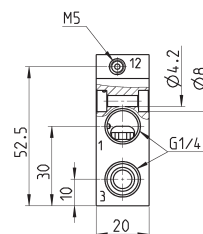
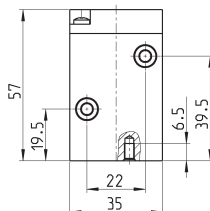
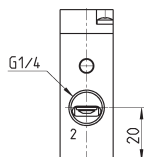
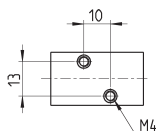


* please complete the code with ELECTRIC CONNECTION (option 2C or 2F) and VOLTAGE (see the CODING EXAMPLE).



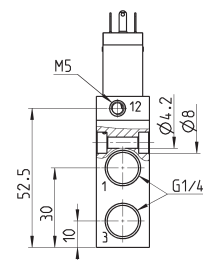
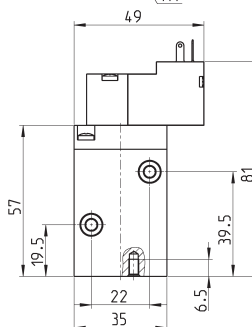
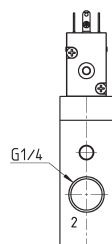
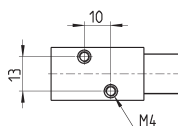
Mod.	Function	Pneumatic connection	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Min+max pressure (bar)	Min+max pilot pressure (bar)	Pilot supply	Symbol
810C3104-F131Y-N00*	2/2 NC	G1/8	5.0	6.5	420	3 + 6	-	Internal	EV62
810C3404-F131Y-N00*	3/2 NC	G1/8	5.0	6.5	420	3 + 6	-	Internal	EV54
810C3104-F131Y-NPE*	2/2 NC	G1/8	5.0	6.5	420	0 + 6	3 + 6	External	EV61
810C3404-F131Y-NPE*	3/2 NC	G1/8	5.0	6.5	420	0 + 6	3 + 6	External	EV56

Pneumatic valve size 2 - 2/2- and 3/2-way, NC and NO

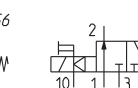
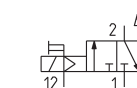
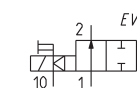
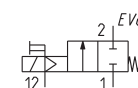
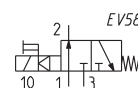
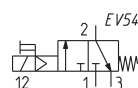
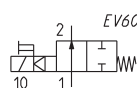
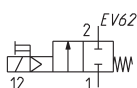


Mod.	Function	Pneumatic connection	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Min+max pressure (bar)	Min+max pilot pressure (bar)	Pilot supply	Symbol
820C3105-G731N-NPP	2/2 NC (for the NO function it is required to maintain a continuous pneumatic pilot supply)	G1/4	6.6	12.5	800	0 + 6	3 + 6	External	VP14
820C3405-G731N-NPP	3/2 NC (for the NO function it is required to maintain a continuous pneumatic pilot supply)	G1/4	6.6	12.5	800	0 + 6	3 + 6	External	YES1

Solenoid valve size 2, 2/2- and 3/2-way, NC and NO

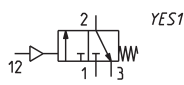
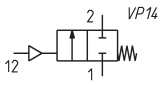
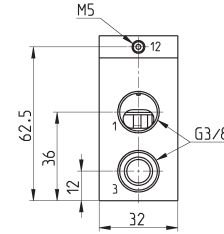
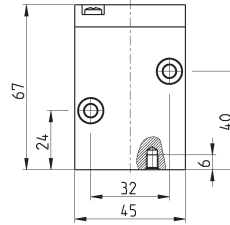
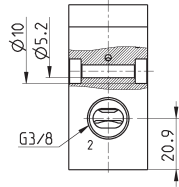
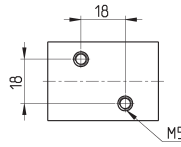


* please complete the code with ELECTRIC CONNECTION (option 3A, 4A o 7A) and VOLTAGE (see the CODING EXAMPLE).



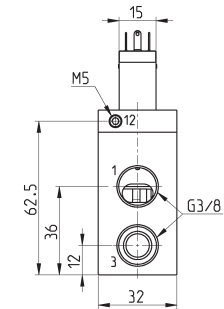
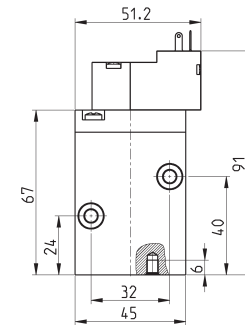
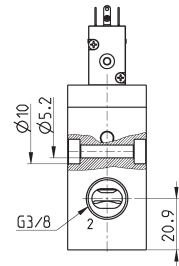
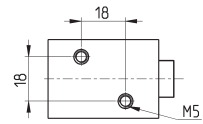
Mod.	Function	Pneumatic connection	Orifice Ø (mm)	kv (l/min)	Qn (NI/min)	Min+max pressure (bar)	Min+max pilot pressure (bar)	Pilot supply	Symbol
820C3105-G731Y-N00*	2/2 NC	G1/4	6.6	12.5	800	3 + 6	-	Internal	EV62
820C3205-G731Y-N00*	2/2 NO	G1/4	6.6	12.5	800	3 + 6	-	Internal	EV60
820C3405-G731Y-N00*	3/2 NC	G1/4	6.6	12.5	800	3 + 6	-	Internal	EV54
820C3505-G731Y-N00*	3/2 NO	G1/4	6.6	12.5	800	3 + 6	-	Internal	EV58
820C3105-G731Y-NPE*	2/2 NC	G1/4	6.6	12.5	800	0 + 6	3 + 6	External	EV61
820C3205-G731Y-NPE*	2/2 NO	G1/4	6.6	12.5	800	0 + 6	3 + 6	External	EV59
820C3405-G731Y-NPE*	3/2 NC	G1/4	6.6	12.5	800	0 + 6	3 + 6	External	EV56
820C3505-G731Y-NPE*	3/2 NO	G1/4	6.6	12.5	800	0 + 6	3 + 6	External	EV57

Pneumatic valve size 3 - 2/2- and 3/2-way, NC and NO

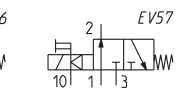
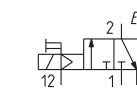
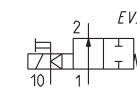
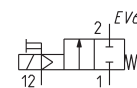
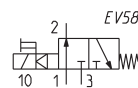
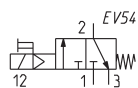
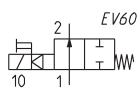
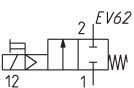


Mod.	Function	Pneumatic connection	Orifice \varnothing (mm)	kv (l/min)	Qn (NI/min)	Min+max pressure (bar)	Min+max pilot pressure (bar)	Pilot supply	Symbol
830C3106-K131N-NPP	2/2 NC (for the NO function it is required to maintain a continuous pneumatic pilot supply)	G3/8	9.0	23	1480	0 + 6	3 + 6	External	VP14
830C3406-K131N-NPP	3/2 NC (for the NO function it is required to maintain a continuous pneumatic pilot supply)	G3/8	9.0	23	1480	0 + 6	3 + 6	External	YES1

Solenoid valve size 3, 2/2- and 3/2-way, NC and NO



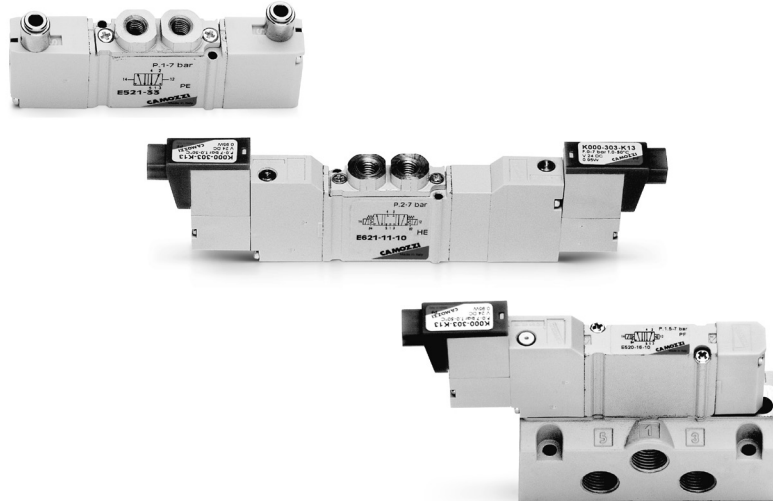
* please complete the code with ELECTRIC CONNECTION (option 3A, 4A o 7A) and VOLTAGE (see the CODING EXAMPLE).



Mod.	Function	Pneumatic connection	Orifice \varnothing (mm)	kv (l/min)	Qn (NI/min)	Min+max pressure (bar)	Min+max pilot pressure (bar)	Pilot supply	Symbol
830C3106-K131Y-N00*	2/2 NC	G3/8	9.0	23	1480	3 + 6	-	Internal	EV62
830C3206-K131Y-N00*	2/2 NO	G3/8	9.0	23	1480	3 + 6	-	Internal	EV60
830C3406-K131Y-N00*	3/2 NC	G3/8	9.0	23	1480	3 + 6	-	Internal	EV54
830C3506-K131Y-N00*	3/2 NO	G3/8	9.0	23	1480	3 + 6	-	Internal	EV58
830C3106-K131Y-NPE*	2/2 NC	G3/8	9.0	23	1480	0 + 6	3 + 6	External	EV61
830C3206-K131Y-NPE*	2/2 NO	G3/8	9.0	23	1480	0 + 6	3 + 6	External	EV59
830C3406-K131Y-NPE*	3/2 NC	G3/8	9.0	23	1480	0 + 6	3 + 6	External	EV56
830C3506-K131Y-NPE*	3/2 NO	G3/8	9.0	23	1480	0 + 6	3 + 6	External	EV57

Series E valves and solenoid valves

5/2-way monostable/bistable - 5/3 CC, CO, CP
 With outlets on the body - For individual or manifold assembly
 Size 10,5 mm



Series E valves have been designed to allow high flows with small overall dimensions. These valves are manufactured in three different sizes and are suitable for individual use or for mounting on manifolds. The manifolds allow a common inlet as well as the two exhausts and the pilot exhaust in common.

GENERAL DATA

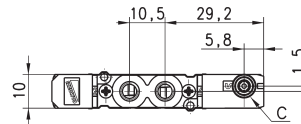
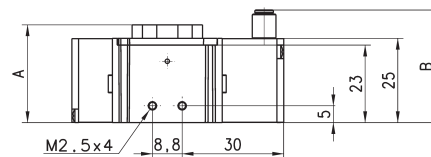
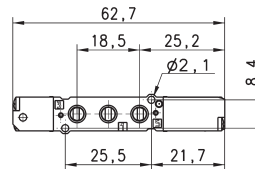
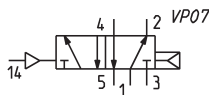
Construction	spool-type
Valve functions	5/2, 5/3 CC CO CP
Materials	zamak body, aluminium spool and sub-bases; technopolymer end-covers, joints NBR
Ports	valve = M5; manifold = M5 - tube Ø4; sub-base = G1/8
Temperature	0°C min + 50°C max
Fluid	filtered air (5 µm or lower), without lubricant; if lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.
Solenoid voltage	see coding
Voltage tolerance	± 10%
Power consumption	1W
Class of insulation	class F
Protection class	IP50

CODING EXAMPLE											
E	5	2	1	-	11	-	10	-	K	1	3
E	SERIES										
5	FUNCTION: 5 = 5/2 6 = 5/3 Centres Closed 7 = 5/3 Centres Open 8 = 5/3 Centres in Pressure										
2	SIZE: 2 = 10,5 mm										
1	BODY TYPE: 1 = body with threaded plate										
11	ACTUATION: 11 = electro-pneumatic, bistable 16 = electro-pneumatic, monostable 33 = pneumatic bistable - tube 3 36 = pneumatic monostable - tube 4 C33 = pneumatic bistable - tube 4 C36 = pneumatic monostable - tube 4										
10	INTERFACE: 10										
K	TYPE OF SOLENOID: K										
1	SOLENOID DIMENSION: 1 = 10x10										
3	SOLENOID VOLTAGE: 1 = 6V DC 2 = 12V DC 3 = 24V DC										

Pneumatically actuated valve, monostable - size 10,5

5/2-way

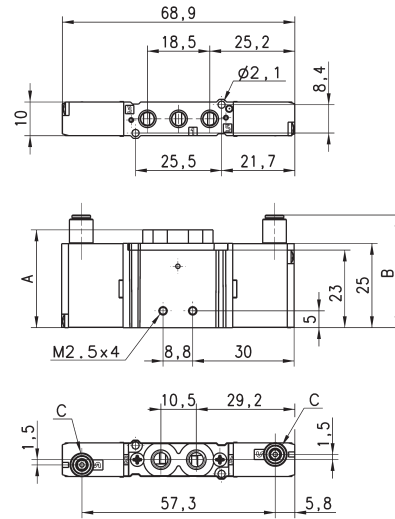
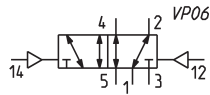
Note: the pilot pressure should never be lower than the operating pressure.



Mod.	A	B	C	Ports 1-3-5	Ports 2-4	Min pilot pressure (bar)	Working pressure (bar)	Flow rate (NI/min)
E521-36	29	33,4	Ø 3	M5	M5	2,5	2,5 + 7	200
E521-C36	29	39,1	Ø 4	M5	M5	2,5	2,5 + 7	200

Pneumatically actuated valve, bistable - size 10,5

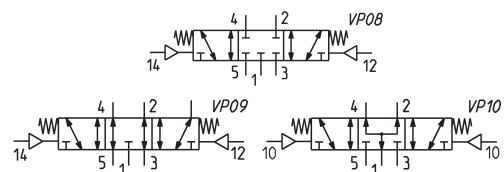
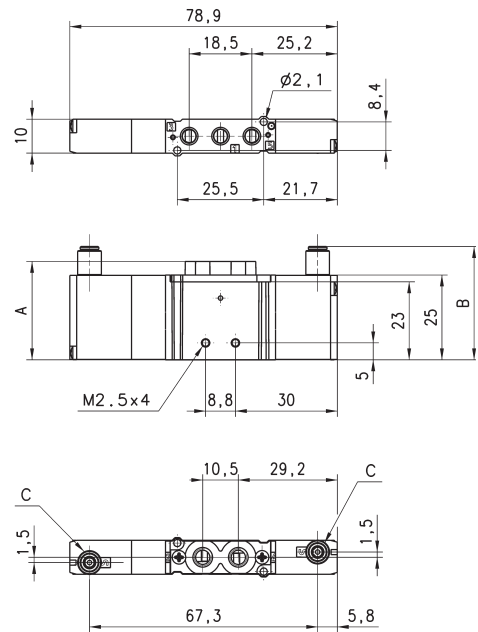
5/2-way



Mod.	A	B	C	Ports 1-3-5	Ports 2-4	Min pilot pressure (bar)	Working pressure (bar)	Flow rate (NL/min)
E521-33	29	33,4	Ø 3	M5	M5	1	-0,9 + 7	200
E521-C33	29	39,1	Ø 4	M5	M5	1	-0,9 + 7	200

Pneumatically actuated valve - size 10,5

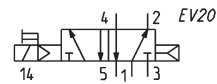
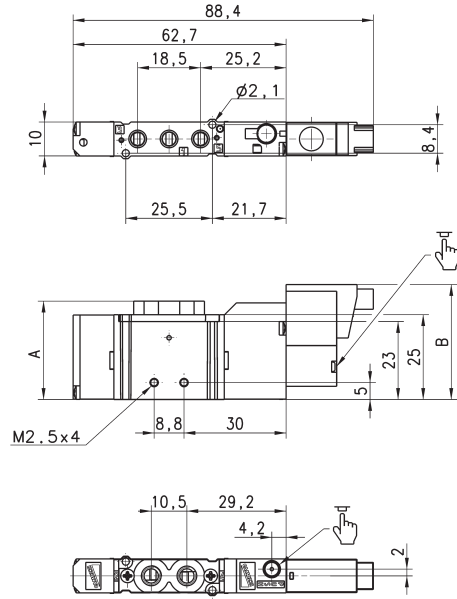
5/3-way

 CC = Centres closed
 CO = Centres open
 CP = Pressure centres


Mod.	A	B	C	Ports 1-3-5	Ports 2-4	Min pilot pressure (bar)	Working pressure (bar)	Flow rate NL/min	Symbol
E621-33	29	33,4	Ø 3	M5	M5	2	-0,9 + 7	200	VP08
E621-C33	29	39,1	Ø 4	M5	M5	2	-0,9 + 7	200	VP08
E721-33	29	33,4	Ø 3	M5	M5	2	-0,9 + 7	200	VP09
E721-C33	29	39,1	Ø 4	M5	M5	2	-0,9 + 7	200	VP09
E821-33	29	33,4	Ø 3	M5	M5	2	-0,9 + 7	200	VP10
E821-C33	29	39,1	Ø 4	M5	M5	2	-0,9 + 7	200	VP10

Electropneumatically actuated valve, monostable - size 10,5

5/2-way



For solenoid valves with solenoid type K, use connector 121-8...

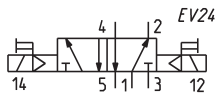
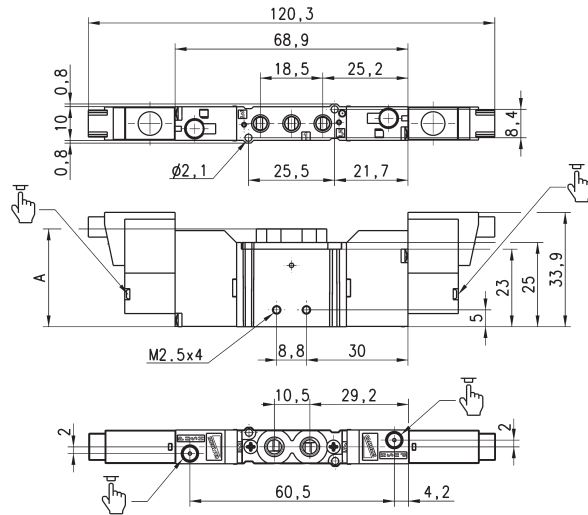
DIMENSIONS					
Mod.	A	Ports 1-3-5	Ports 2-4	working P. (bar)	Flow rate (NI/min)
E521-16-10-K10	29	M5	M5	2,5 ÷ 7	200

Electropneumatically actuated valve, bistable - size 10,5

5/2-way



Use connector Mod. 121-8... (see page 2/1.05.05).



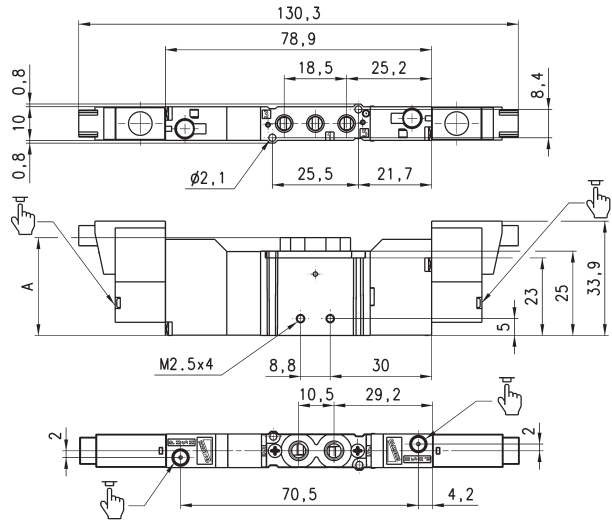
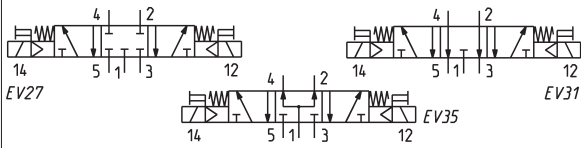
Mod.	A	Ports 1-3-5	Ports 2-4	working P. (bar)	Flow rate (NI/min)
E521-11-10-K10	29	M5	M5	1 ÷ 7	200

Electropneumatically actuated valve - size 10,5

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



Use connector Mod. 121-8... (see page 2/1.05.05).



Mod.	A	Ports 1-3-5	Ports 2-4	working P. (bar)	Flow rate (NI/min)	Symbol
E621-11-10-K10	29	M5	M5	2 + 7	200	EV27
E721-11-10-K10	29	M5	M5	2 + 7	200	EV31
E821-11-10-k10	29	M5	M5	2 + 7	200	EV35

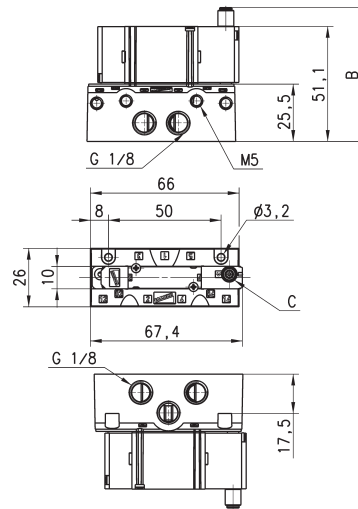
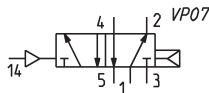
CODING EXAMPLE											
E	5	2	0	-	11	-	10	-	K	1	3
E	SERIES:										
5	FUNCTION: 5 = 5/2 6 = 5/3 Centres Closed 7 = 5/3 Centres Open 8 = 5/3 Centres in Pressure										
2	SIZE: 2 = 10,5 mm										
0	BODY TYPE: 0 = body for sub-base										
11	ACTUATION: 11 = electropneumatic bistable 16 = electropneumatic monostable 33 = pneumatic bistable - tube Ø 3 36 = pneumatic monostable - tube Ø 3 C33 = pneumatic bistable - tube Ø 4 C36 = pneumatic monostable - tube Ø 4										
10	INTERFACE: 10										
K	TYPE OF SOLENOID: K										
1	SOLENOID DIMENSIONS: 1 = 10x10										
3	SOLENOID VOLTAGE: 1 = 6V DC 2 = 12V DC 3 = 24V DC										

Pneumatically actuated valve, monostable - size 10,5

5/2-way



The single base is ordered separately from the valve. The pilot pressure should never be lower than the operating pressure.



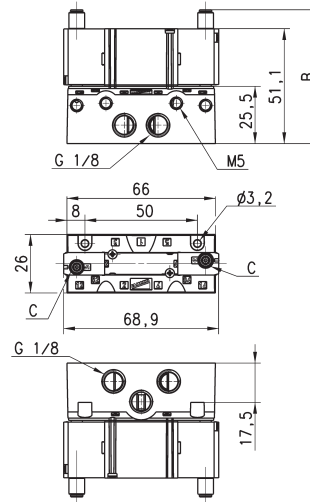
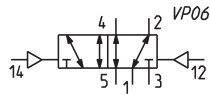
DIMENSIONS					
Mod.	B	C	min. pil P. (bar)	working P. bar	Flow rate (NI/min)
E520-36	59,5	Ø3	2,5	2,5 ÷ 7	280
E520-C36	65,2	Ø4	2,5	2,5 ÷ 7	280

Pneumatically actuated valve, bistable - size 10,5

5/2-way



The single base is ordered separately from the valve.


DIMENSIONS

Mod.	B	C	min. pil P. (bar)	working P. (bar)	Flow rate (NI/min)
E520-33	59,5	Ø3	1	-0,9 ÷ 7	280
E520-C33	65,2	Ø4	1	-0,9 ÷ 7	280

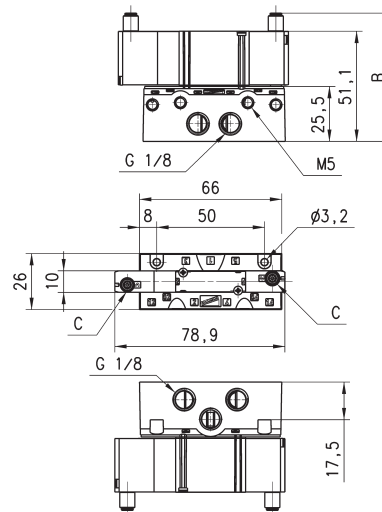
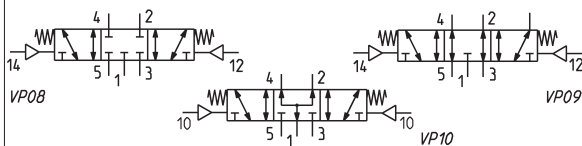
Pneumatically actuated valve - size 10,5

5/3-way

- CC = Centres Closed
- CO = Centres Open
- CP = Centres in Pressure



The single base is ordered separately from the valve.

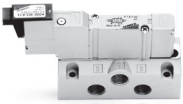

DIMENSIONS

Mod.	B	C	min. pil P. (bar)	working P. (bar)	Flow rate (NI/min)	Symbol
E620-33	59,5	Ø3	2	-0,9 ÷ 7	280	VP08
E620-C33	65,5	Ø4	2	-0,9 ÷ 7	280	VP08
E720-33	59,5	Ø3	2	-0,9 ÷ 7	280	VP09
E720-C33	65,5	Ø4	2	-0,9 ÷ 7	280	VP09
E820-33	59,5	Ø3	2	-0,9 ÷ 7	280	VP10
E820-C33	65,5	Ø4	2	-0,9 ÷ 7	280	VP10

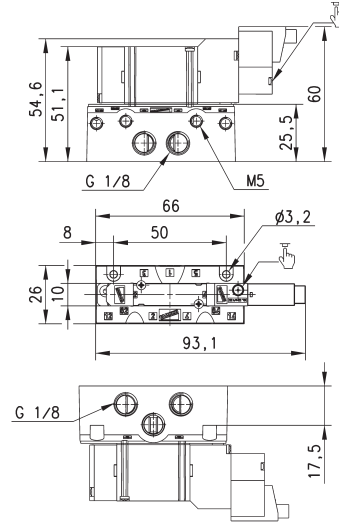
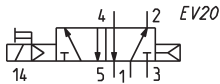
Electropneumatically actuated valve, monostable - size 10,5

5/2-way

In case of separate pilot supply, the pilot pressure should never be lower than the operating pressure.



The single base is ordered separately from the valve.



DIMENSIONS

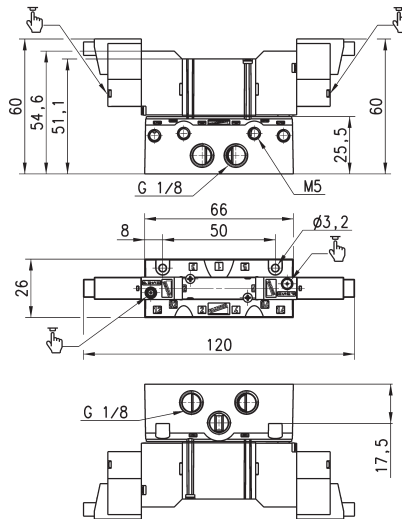
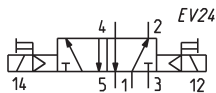
Mod.	working P. (bar)	Flow rate (NI/min)
E520-16-10-K10	2 ÷ 7	280

Electropneumatically actuated valve, bistable - size 10,5

5/2-way



The single base is ordered separately from the valve.



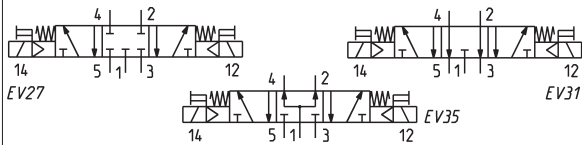
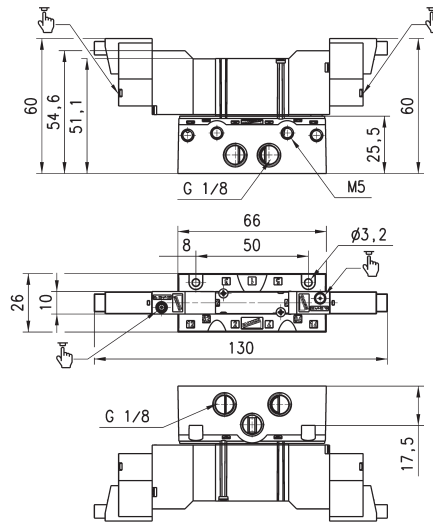
Mod.	working P. bar	Flow rate NI/min
E520-11-10-K10	2 ÷ 7	280

Electropneumatically actuated valve - size 10,5

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



The single base is ordered separately from the valve



Mod.	working P. bar	Flow rate NI/min	Symbol
E620-11-10-K10	2 ÷ 7	280	EV27
E720-11-10-K10	2 ÷ 7	280	EV31
E820-11-10-K10	2 ÷ 7	280	EV35

Torque for securing screws on manifolds and single sub-base

Mod.	Size (mm)	Torque (Nm)
E52...	10,5	0,3 ÷ 0,35

2

CONTROL

CODING EXAMPLE

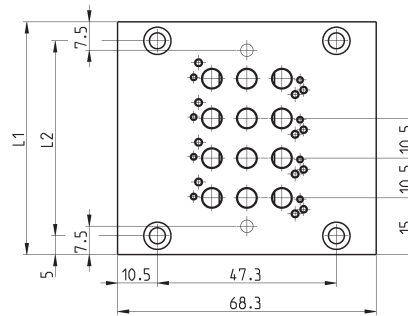
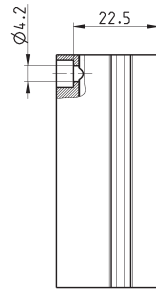
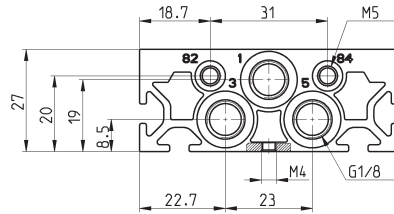
E5	2	1	-	1	0	02
-----------	----------	----------	----------	----------	----------	-----------

E5	SERIES
2	SIZE: 2 = size 10,5
1	BODY TYPE: 0 = body for sub-base assembly 1 = body with threads or tube port
1	TYPE OF SUB-BASE: 0 = single sub-base with side outlets 1 = manifold for threaded valve 2 = manifold for body mounted valve
0	PORTS: 0 = for valves with outlets on the body 1 = threaded C = tube 4
02	N° OF POSITIONS: 01 = single 03, 04, 06, 08, 10, 12 = multiple

NOTE: When constructing manifolds with 10 or more stations, it is recommended, in order to reduce the risk of pressure drop within the assembly, that pressure is supplied to port 1 at each end of the block. The exhaust ports 3 and 5 at each end should also be utilized (size 10,5 and 16 mm). The same provision should be made for 5 station manifolds of the 19 mm valves.
Manifolds complete with ports for external pilot supply are available on request.

Manifolds for valves with outlets on the body Size 10,5

The manifolds have been manufactured with common inlet and exhausts 3 and 5. There are also common exhausts for pilots 82 and 84.



Note: the manifolds are supplied complete with the seals and the valves, fixing screws.

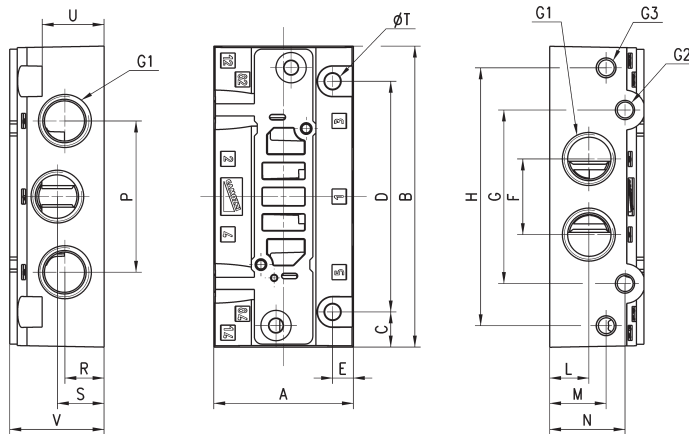
DIMENSIONS

Mod.	Size	Nr positions	02	03	04	05	06	07	08	09	10	11	12
E521-10..	10.5	L1	40.5	51	61.5	72	82.5	93	103.5	114	124.5	135	145.5
E521-10..	10.5	L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5

Single sub-base for base mounted valves - size 10,5



Note: The valve and its single sub-base are available on request.

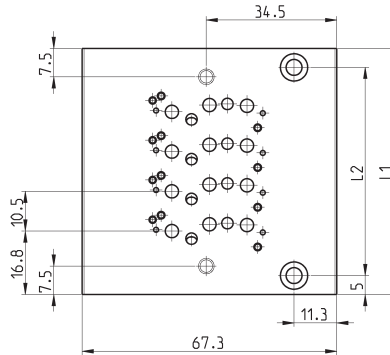
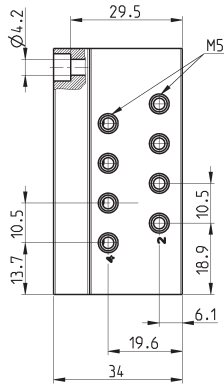
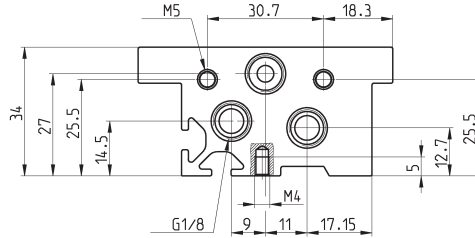


DIMENSIONS

Mod.	Size	G1	G2	G3	A	B	C	D	E	F	G	H	L	M	N	P	R	S	T	U	V
E520-0101	10,5	G1/8	M5	M5	26	66	8	50	4	15	37,3	57,3	8,2	17	18	24,5	8,2	17,2	32	17,5	25,5

Manifolds for base mounted valves size 10,5

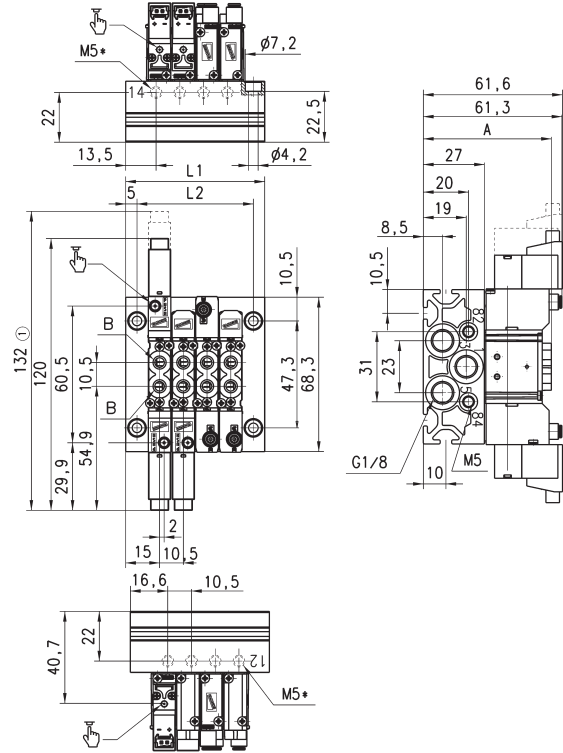
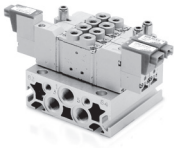
The manifolds have been manufactured with common inlet 1 and exhaust 3 and 5. There are also common exhausts for pilots 82 and 84.


DIMENSIONS

Mod.	Size	Nr positions	02	03	04	05	06	07	08	09	10	11	12
E520-21..	10.5	L1	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149
E520-21..	10.5	L2	34	44.5	55	65.5	76	86.5	97	107.5	118	128.5	139
E520-2C..	10.5	L1	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149
E520-2C..	10.5	L2	34	44.5	55	65.5	76	86.5	97	107.5	118	128.5	139

Manifolds with valves with outlets on the body - size 10.5

5/2 and 5/3, ports M5



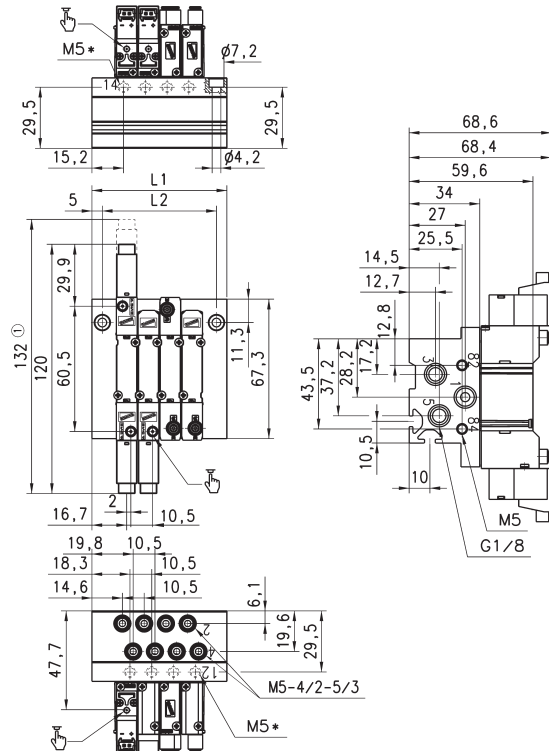
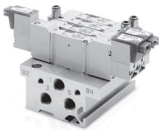
DIMENSIONS

Mod.	A	B	L1 - L2 N° 1 Position	L1 - L2 N° 2 Positions	Fixed quote for position
E521	56,6	M5	40,5 - 30,5	51 - 41	10,5
E52C	65,1	4/2	40,5 - 30,5	51 - 41	10,5

① Size referred to 5/3 valve M5*
Separate pilot supply on request.

Manifolds with valves for subbase - size 10.5

5/2 and 5/3



DIMENSIONS

N° Positions	2	3	4	5	6	7	8	9	10	11	12
L1	44	54,5	65	75,5	86	96,5	107	117,5	128	138,5	149
L2	34	44,5	55	65,5	76	86,5	97	107,5	118	128,5	139

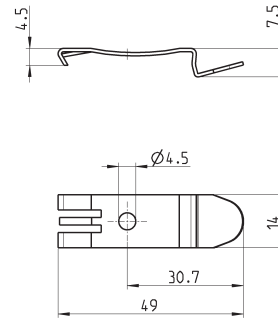
① Size referred to 5/3 valve M5*
Separate pilot supply on request.

Mounting brackets for DIN rail



DIN EN 50022 (7,5mm x 35mm - width 1)
Suitable for all manifolds.

Supplied with:
2x plates
2x screws M4x6 UNI 5931

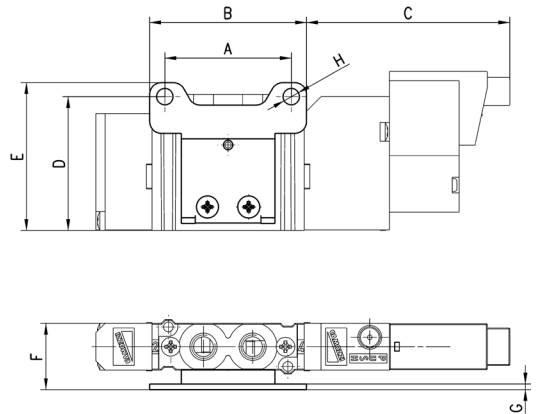


Mod.
PCF-E520

Horizontal mounting foot bracket for valves with outlets on the body



The following is supplied:
1x foot bracket
2x screws.

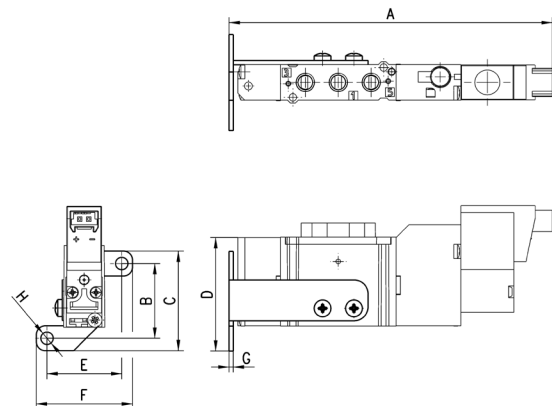


DIMENSIONS									
Mod.	Size	A	B	C	D	E	F	G	H
B1-E521	10,5	27	33,5	43,4	28,5	31,5	14,2	1,2	3,5

Vertical mounting foot bracket for valves with outlets on the body



The following is supplied:
1x foot bracket
2x screws
Monostable valves only.



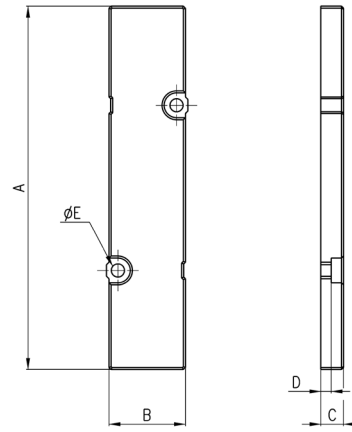
DIMENSIONS									
Mod.	Size	A	B	C	D	E	F	G	H
B2-E521	10,5	90,8	21	28	31,9	21	27	1,2	3,5



Blanking plate for manifolds - valves with outlets on the body



The following is supplied:
 1x blanking plate
 2x screws
 1x seal.



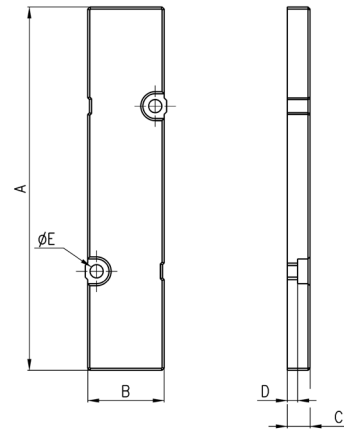
DIMENSIONS						
Mod.	Size	A	B	C	D	∅E
TP-E521	10,5	66	10	6	3,5	2,1



Blanking plate for manifolds - base mounted valves



The following is supplied:
 1x blanking plate
 2x screws
 1x seal.



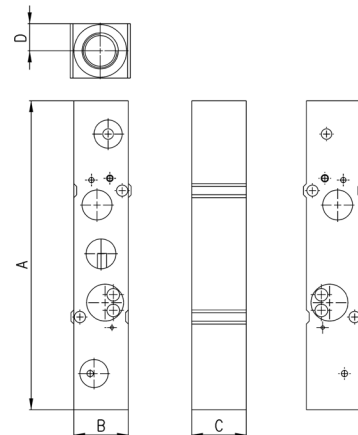
DIMENSIONS						
Mod.	Size	A	B	C	D	∅E
TP-E520	10,5	66	10	6	3,5	2,1



Intermediate plate for valves to provide a separate supply in 1



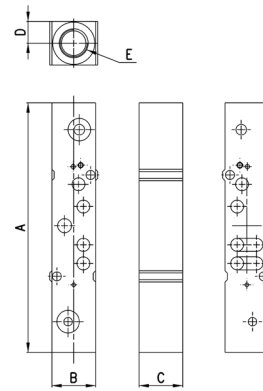
Base mounted valves.
 The following is supplied:
 1x plate
 2x screws
 1x interface seal
 2x O-Ring.



DIMENSIONS						
Mod.	Size	A	B	C	D	E
PCP-E521	10,5	72,5	10	10	5	M5


Intermediate plate for valves to provide a separate supply in 1

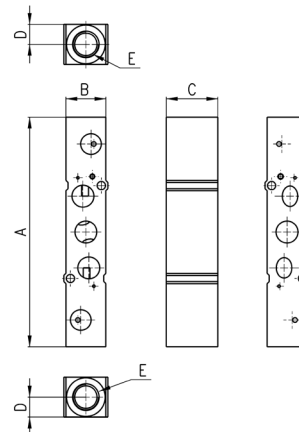
Base mounted valves.
The following is supplied:
1x plate
2x screws
1x interface seal
2x OR.



DIMENSIONS						
Mod.	Size	A	B	C	D	E
PCP-E520	10,5	72,5	10	10	5	M5


Intermediate plate for valves to provide separate supply in 3 and 5

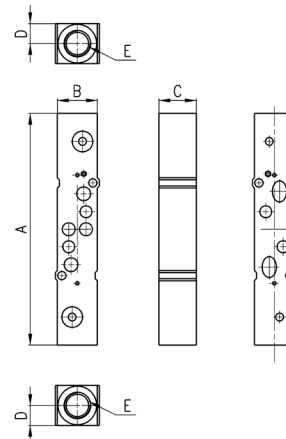
Kits for valves with outlets on the body
Mod. E2*1-**.
The following is supplied:
1x plate
2x screws
1x interface seal
2x OR.



DIMENSIONS						
Mod.	Size	A	B	C	D	E
PCS-E521	10,5	76	10	10	5	M5


Intermediate plate for valves to provide separate supply in 3 and 5

Kits for valves mounted on sub-base
Mod. E2*0-**.
The following is supplied:
1x plate
2x screws
1x interface seal
2x OR.



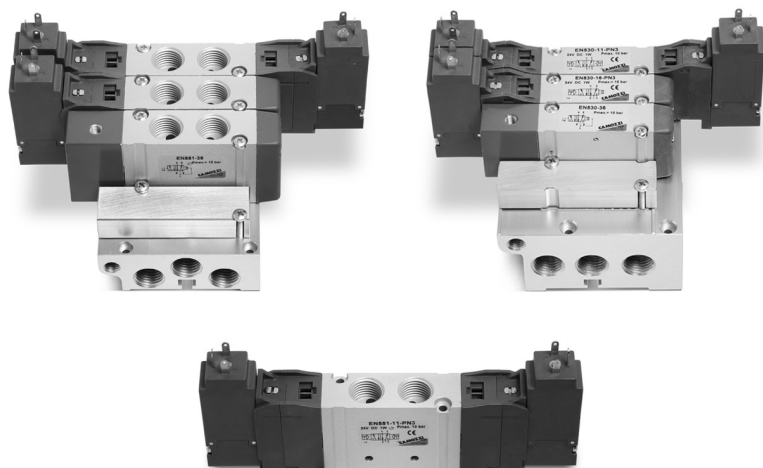
DIMENSIONS						
Mod.	Size	A	B	C	D	E
PCS-E520	10,5	76	10	10	5	M5

Series EN valves and solenoid valves

5/2-way - 5/3-way CC, CO, CP

With outlets on the body - For individual or manifold assembly

Size 16 - 19 mm



- » Mounting on any flat surface
- » Reduced dimensions
- » Aluminium body and end-covers in technopolymer
- » Space saving

2

CONTROL

Camozzi has developed a new series of valves to be used in applications requiring a reduced space of installation and in situations where the valves need to be located as near as possible to the operating elements. The single valves can be mounted on any flat surface, allowing compact machine design, which is also enhanced by the reduced dimensions of the valve itself. Thanks to their robust aluminium bodies, the valves Series EN offer the highest reliability.

This new generation of solenoid valves is the evolution of the previous Series E, size 16 - 19 mm valve with ports threaded into the body. As this valve is completely interchangeable with Series E, part of the code is maintained though the valve has a completely new shape and new components.

GENERAL DATA

Construction	spool-type
Valve functions	5/2 - 5/3 CC - 5/3 CO - 5/3 CP
Materials	body, spool, bases = AL end-covers = technopolymer joints = NBR PU
Ports	G1/8 - G1/4
Temperature	0°C min. + 50° C max
Fluid	filtered air without lubricant. If lubricated air is used, it is recommended to use ISOVG32 oil and to never interrupt lubrication.
Voltage	see coding
Voltage tolerance	± 10%
Power consumption	2W, 1W
Class of insulation	class F
Protection class	IP65 with connector DIN 40050

CODING EXAMPLE

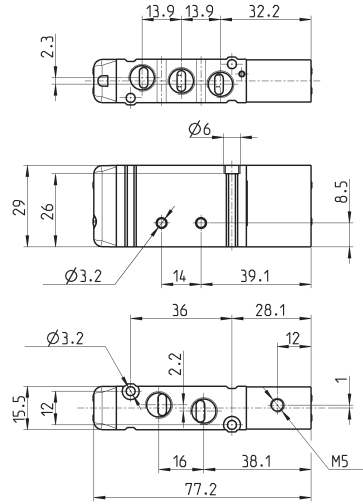
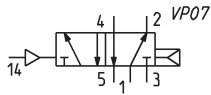
EN	5	3	1	-	11	-	PN3
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EN	SERIES
5	FUNCTION: 5 = 5/2 6 = 5/3 Centre Closed 7 = 5/3 Centre Open 8 = 5/3 Pressure Centre
3	SIZE: 3 = size 16 5 = size 19
1	BODY TYPE: 1 = body with threaded plate
11	ACTUATION: 11 = electro-pneumatic, bistable 16 = electro-pneumatic, monostable 33 = pneumatic bistable 36 = pneumatic monostable E11 = electro-pneumatic, bistable with external servo-pilot supply E16 = electro-pneumatic, monostable with external servo-pilot supply
PN3	TYPE OF SOLENOID: PN3 = 24V DC - 1W PN4 = 48V DC - 2W PN6 = 110V DC - 2W PN7 = 230V - 2W P13 = 24V DC - 1W P54 = 48V DC - 2W P56 = 110V DC - 2W W53 = 24V DC - 2W W54 = 48V DC - 2W In case of applications with alternate current, use a bridge rectifier connector (see pag. 2/2.07.39)

Pneumatically actuated valve, monostable - size 16

5/2-way

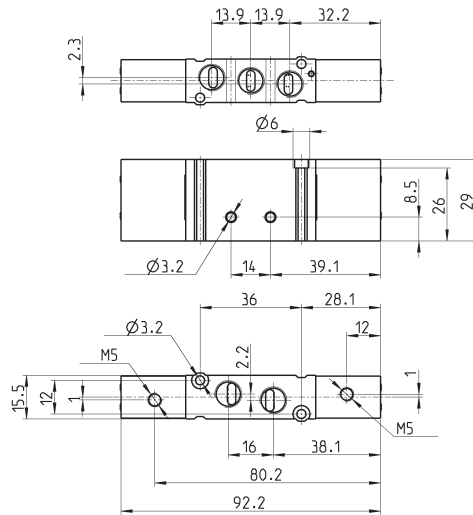
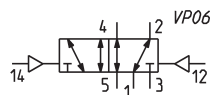
Note: the pilot pressure should never be lower than the operating pressure.



Mod.	Ports	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN531-36	G1/8	M5	2,5 + 10	-0,9 + 10	550

Pneumatically actuated valve, bistable - size 16

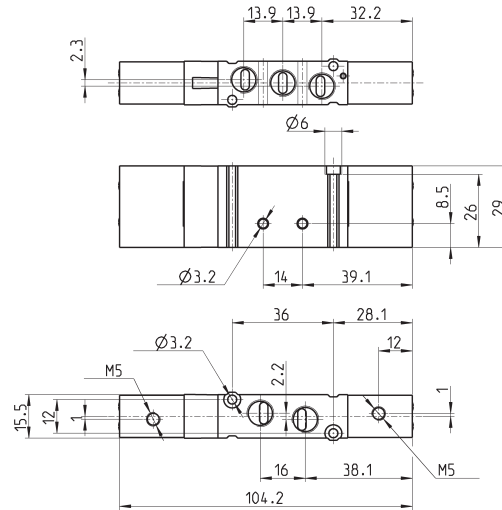
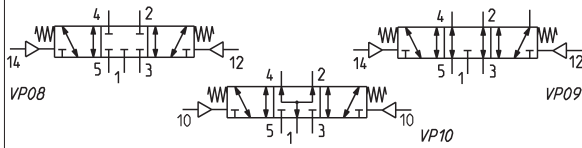
5/2-way



Mod.	Ports	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN531-33	G1/8	M5	2 + 10	-0,9 + 10	550

Pneumatically actuated valve - size 16

5/3-way
 CC = Centres closed
 CO = Centres open
 CP = Pressure Centres

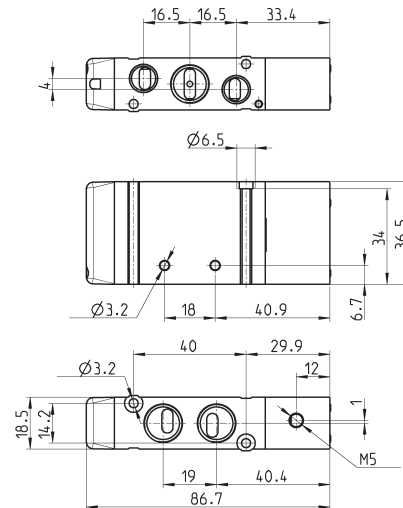
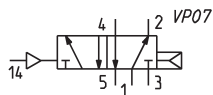


Mod.	Ports	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN631-33	G1/8	M5	3 + 10	-0.9 + 10	550	VP08
EN731-33	G1/8	M5	3 + 10	-0.9 + 10	550	VP09
EN831-33	G1/8	M5	3 + 10	-0.9 + 10	550	VP10

Pneumatically actuated valve, monostable - size 19

5/2-way

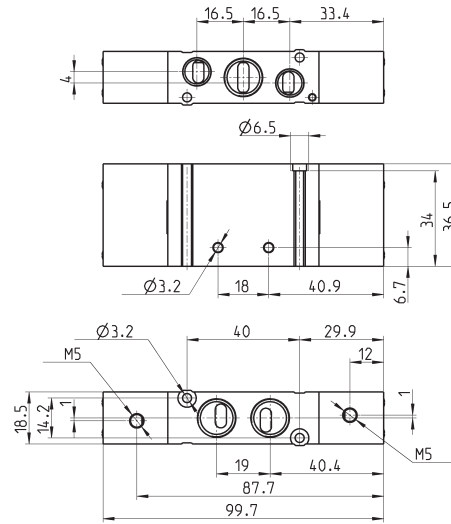
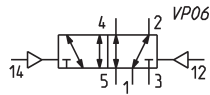
Note: the pilot pressure should never be lower than the operating pressure.



Mod.	Ports 1-2-4	Ports 3-5	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN551-36	G1/4	G1/8	M5	2.5 + 10	-0.9 + 10	920

Pneumatically actuated valve, bistable - size 19

5/2-way

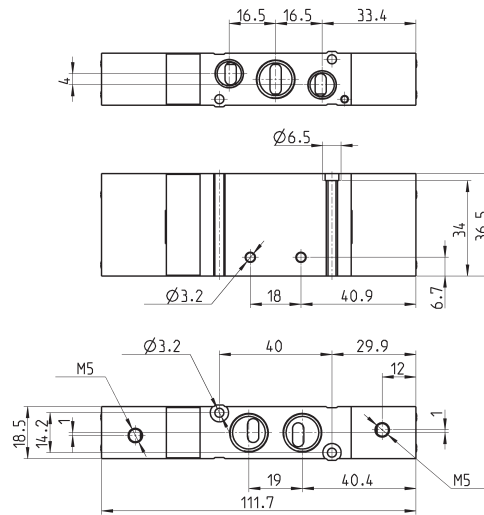
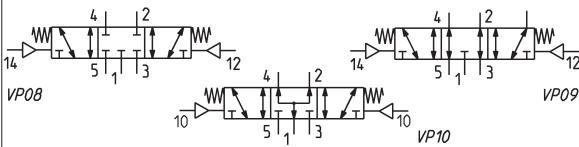


Mod.	Ports 1-2-4	Ports 3-5	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN551-33	G1/4	G1/8	M5	2 + 10	-0,9 + 10	920

Pneumatically actuated valve - size 19

5/3-way

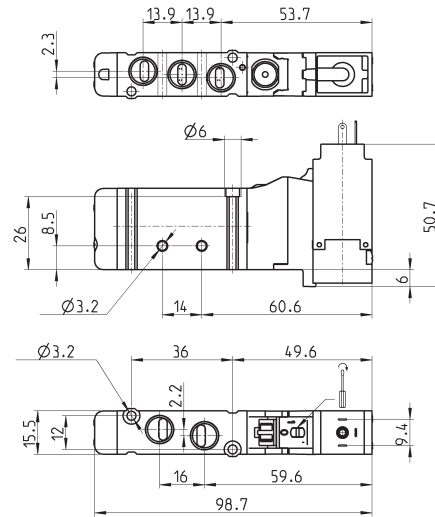
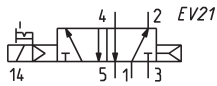
- CC = Centres closed
- CO = Centres open
- CP = Pressure Centres



Mod.	Ports 1-2-4	Ports 3-5	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN651-33	G1/4	G1/8	M5	3 + 10	-0,9 + 10	920	VP08
EN751-33	G1/4	G1/8	M5	3 + 10	-0,9 + 10	920	VP09
EN851-33	G1/4	G1/8	M5	3 + 10	-0,9 + 10	920	VP10

Electro-pneumatically actuated valve, monostable - size 16

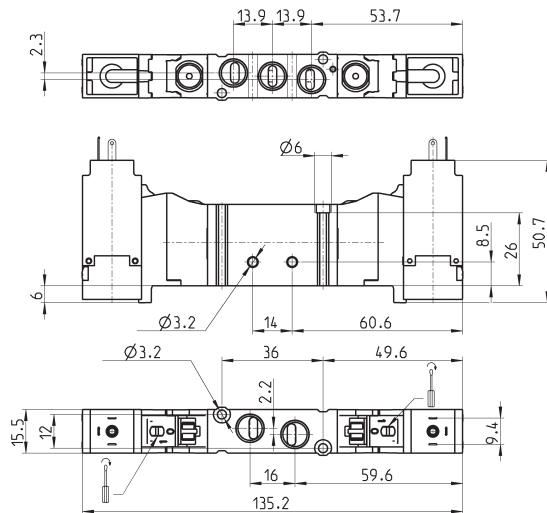
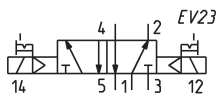
5/2-way


 Connectors: see pages
2/2.07.39-40


Mod.	Ports	Operating pressure (bar)	Flow (NI/min)
EN531-16-PN..	G1/8	2,5 + 10	550

Electro-pneumatically actuated valve, bistable - size 16

5/2-way


 Connectors: see pages
2/2.07.39-40.


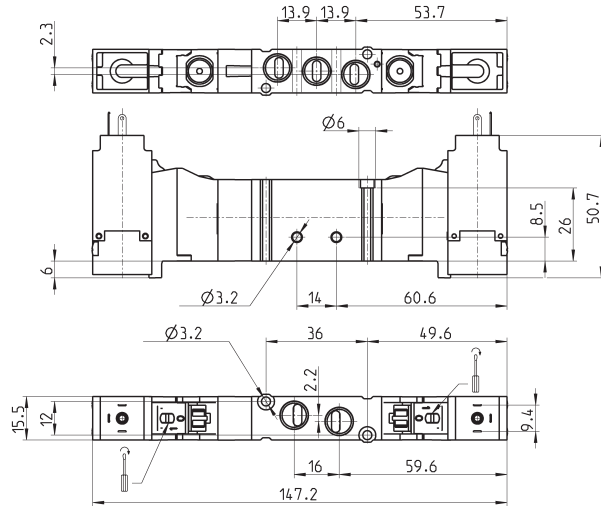
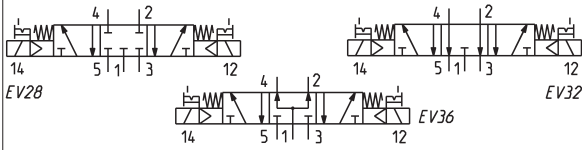
Mod.	Ports	Operating pressure (bar)	Flow (NI/min)
EN531-11-PN..	G1/8	2 + 10	550

Electro-pneumatically actuated valve - size 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Pressure Centres



Connectors: see pages
 2/2.07.39-40.



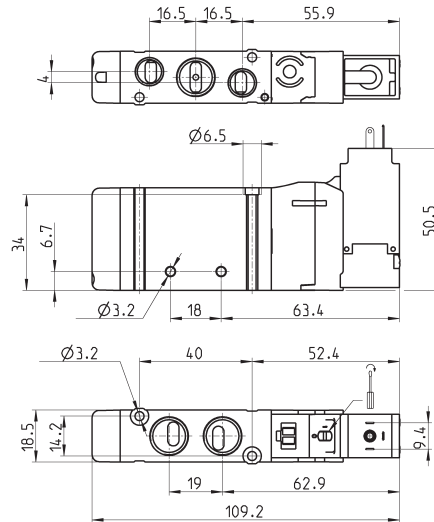
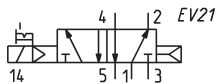
Mod.	Ports	Operating pressure (bar)	Flow (NI/min)	Symbol
EN631-11-PN..	G1/8	3 + 10	550	EV28
EN731-11-PN..	G1/8	3 + 10	550	EV32
EN831-11-PN..	G1/8	3 + 10	550	EV36

Electro-pneumatically actuated valve, monostable - size 19

5/2-way



Connectors: see pages
 2/2.07.39-40.



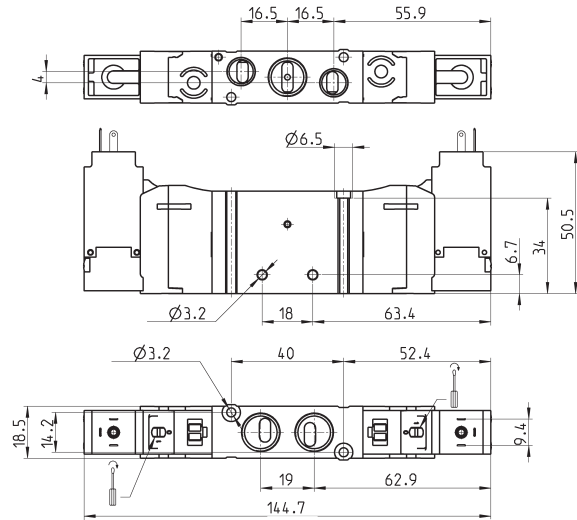
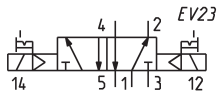
Mod.	Ports 1-2-4	Ports 3-5	Operating pressure (bar)	Flow (NI/min)
EN551-16-PN..	G1/4	G1/8	2,5 + 10	920

Electro-pneumatically actuated valve, bistable - size 19

5/2-way



Connectors: see pages 2/2.07.39-40.



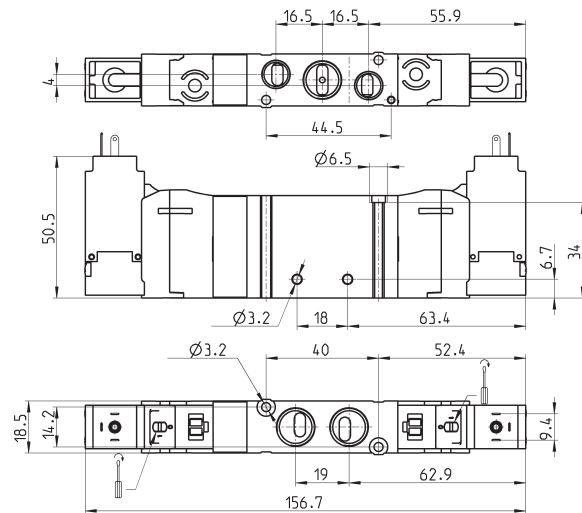
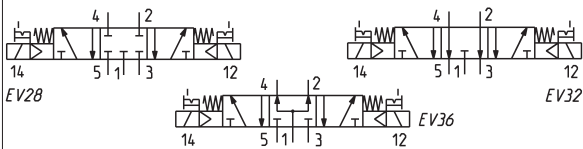
Mod.	Ports 1-2-4	Ports 3-5	Operating pressure (bar)	Flow (NI/min)
EN551-11-PN..	G1/4	G1/8	2 + 10	920

Electro-pneumatically actuated valve - size 19

5/3-way

 CC = Centres Closed
 CO = Centres Open
 CP = Pressure Centres


Connectors: see pages 2/2.07.39-40.



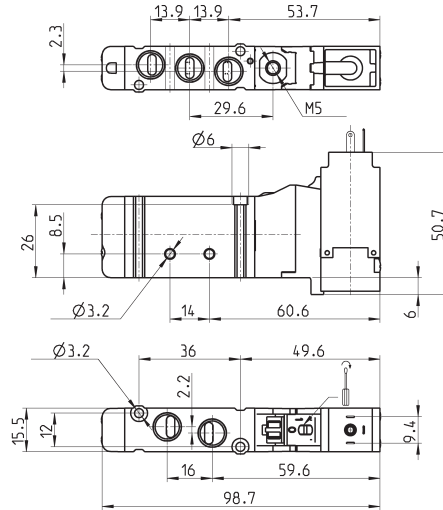
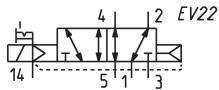
Mod.	Ports 1-2-4	Ports 3-5	Operating pressure (bar)	Flow (NI/min)	Symbol
EN651-11-PN..	G1/4	G1/8	3 + 10	920	EV28
EN751-11-PN..	G1/4	G1/8	3 + 10	920	EV32
EN851-11-PN..	G1/4	G1/8	3 + 10	920	EV36

Electro-pneum. valve, monostable - ext. servo-pilot supply - size 16

5/2-way



Connectors: see pages 2/2.07.39-40.



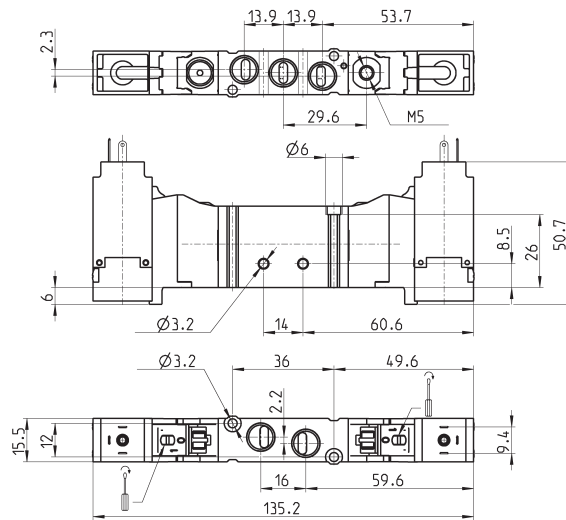
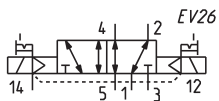
Mod.	Ports	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN531-E16-PN..	G1/8	M5	2,5 ± 10	- 0,9 ± 10	550

Electro-pneum. valve, bistable - ext. servo-pilot supply - size 16

5/2-way



Connectors: see pages 2/2.07.39-40.



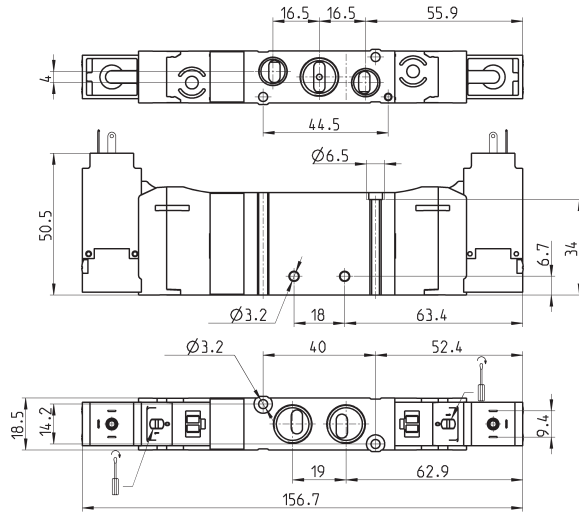
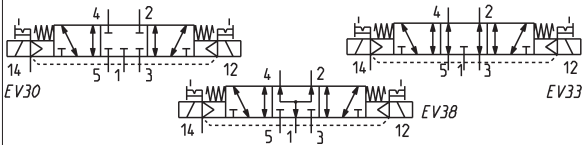
Mod.	Ports	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN531-E11-PN..	G1/8	M5	2 ± 10	- 0,9 ± 10	550

Electro-pneum. valve - ext. servo-pilot supply - size 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Pressure Centres



Connectors: see pages
 2/2.07.39-40.



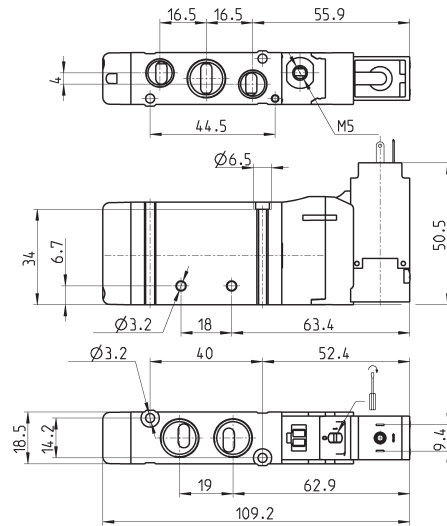
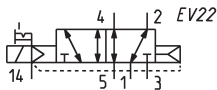
Mod.	Ports	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (Nl/min)	Symbol
EN631-E11-PN..	G1/8	M5	3 ÷ 10	-0,9 ÷ 10	550	EV30
EN731-E11-PN..	G1/8	M5	3 ÷ 10	-0,9 ÷ 10	550	EV33
EN831-E11-PN..	G1/8	M5	3 ÷ 10	-0,9 ÷ 10	550	EV38

Electro-pneum. valve, monostable - ext. servo-pilot supply - size 19

5/2-way



Connectors see pages
 2/2.07.39-40.



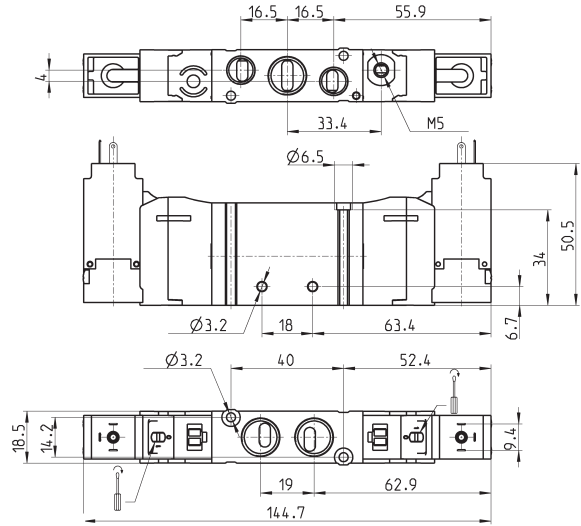
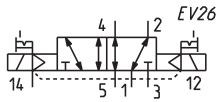
Mod.	Ports 1-2-4	Ports 3-5	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (Nl/min)
EN551-E16-PN..	G1/4	G1/8	M5	2,5 ÷ 10	- 0,9 ÷ 10	920

Electro-pneum. valve, bistable - ext. servo-pilot supply - size 19

5/2-way



Connectors: see pages 2/2.07.39-40.



Mod.	Ports 1-2-4	Ports 3-5	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN551-E11-PN..	G1/4	G1/8	M5	2 + 10	-0,9 + 10	920

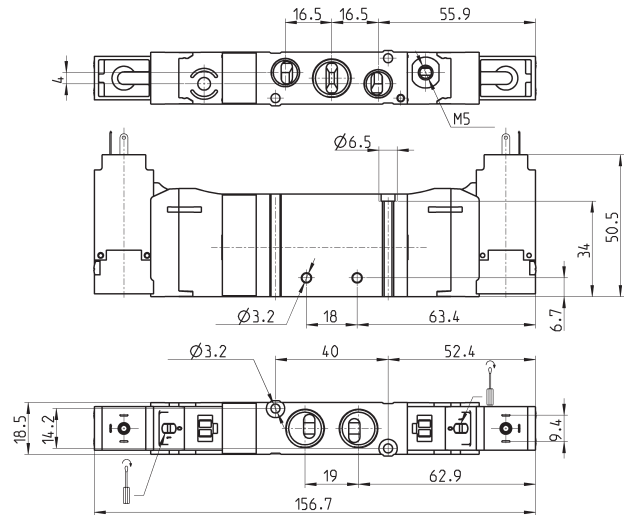
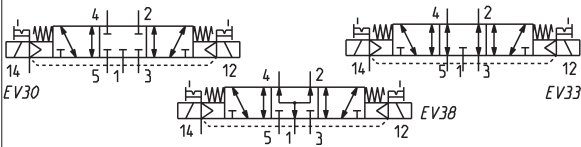
Electro-pneum. valve - ext. servo-pilot supply - size 19

5/3-way

- CC = Centres Closed
- CO = Centres Open
- CP = Pressure Centres



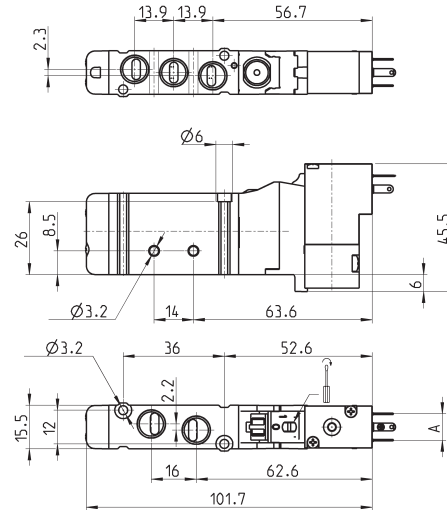
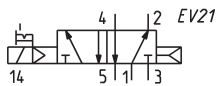
Connectors: see pages 2/2.07.39-40.



Mod.	Ports 1-2-4	Ports 3-5	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN651-E11-PN..	G1/4	G1/8	M5	3 + 10	-0,9 + 10	920	EV30
EN751-E11-PN..	G1/4	G1/8	M5	3 + 10	-0,9 + 10	920	EV33
EN851-E11-PN..	G1/4	G1/8	M5	3 + 10	-0,9 + 10	920	EV38

Electro-pneum. valve, monostable, solenoid P, W - size 16

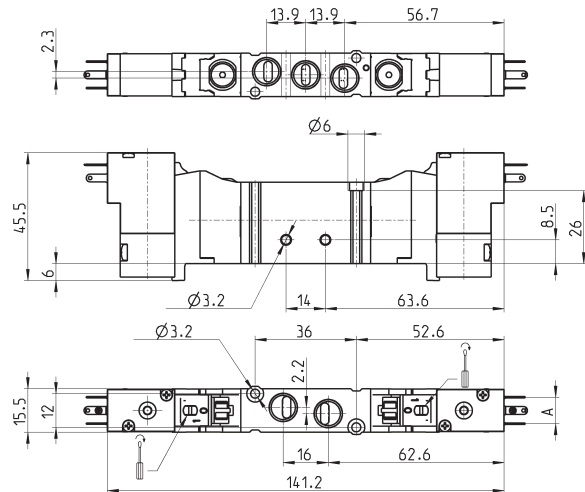
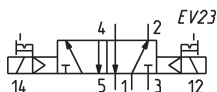
5/2-way


 Connectors: see pages
2/2.07.39-40.


Mod.	Ports	A	Operating pressure (bar)	Flow (NI/min)
EN531-16-P13	G1/8	9,4	2,5 + 10	550
EN531-16-P54	G1/8	9,4	2,5 + 10	550
EN531-16-P56	G1/8	9,4	2,5 + 10	550
EN531-16-W53	G1/8	8	2,5 + 10	550
EN531-16-W54	G1/8	8	2,5 + 10	550

Electro-pneum. valve, bistable, solenoid P, W - size 16

5/2-way


 Connectors: see pages
2/2.07.39-40.


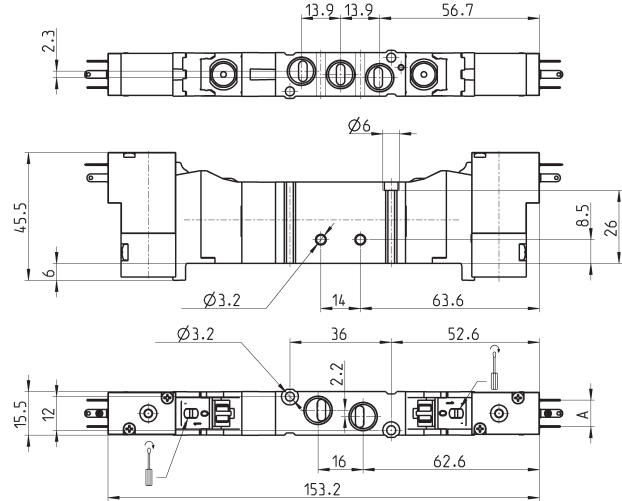
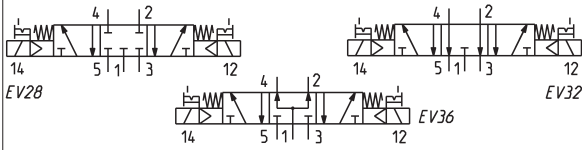
Mod.	Ports	A	Operating pressure (bar)	Flow (NI/min)
EN531-11-P13	G1/8	9,4	2 + 10	550
EN531-11-P54	G1/8	9,4	2 + 10	550
EN531-11-P56	G1/8	9,4	2 + 10	550
EN531-11-W53	G1/8	8	2 + 10	550
EN531-11-W54	G1/8	8	2 + 10	550

Electro-pneumatic valve, solenoid P, W - size 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Pressure Centres



Connectors: see pages
 2/2.07.39-40.



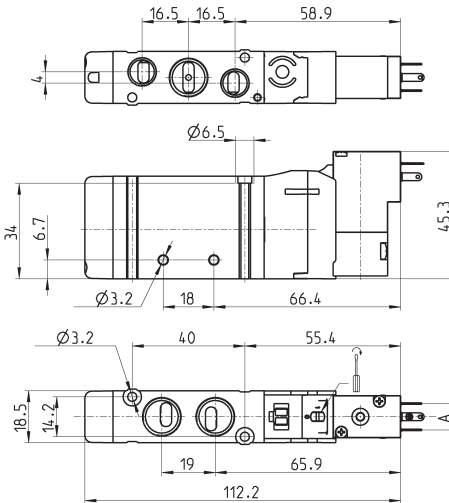
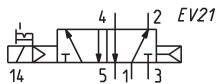
Mod.	Ports	A	Operating pressure (bar)	Flow (NI/min)	Symbol
EN631-11-P..	G1/8	9,4	3 + 10	550	EV28
EN731-11-P..	G1/8	9,4	3 + 10	550	EV32
EN831-11-P..	G1/8	9,4	3 + 10	550	EV36
EN631-11-W..	G1/8	8	3 + 10	550	EV28
EN731-11-W..	G1/8	8	3 + 10	550	EV32
EN831-11-W..	G1/8	8	3 + 10	550	EV36

Electro-pneum. valve, monostable, solenoid P, W - size 19

5/2-way



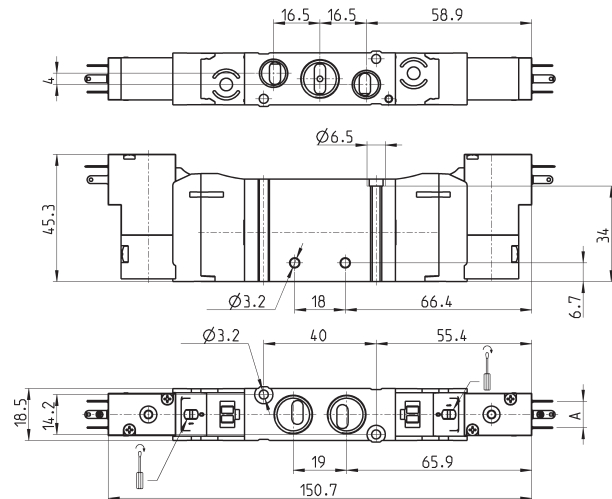
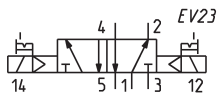
Connectors: see pages
 2/2.07.39-40.



Mod.	Ports 1-2-4	Ports 3-5	A	Operating pressure (bar)	Flow (NI/min)
EN551-16-P13	G1/4	G1/8	9,4	2,5 + 10	920
EN551-16-P54	G1/4	G1/8	9,4	2,5 + 10	920
EN551-16-P56	G1/4	G1/8	9,4	2,5 + 10	920
EN551-16-W53	G1/4	G1/8	8	2,5 + 10	920
EN551-16-W54	G1/4	G1/8	8	2,5 + 10	920

Electro-pneum. valve, bistable, solenoid P, W - size 19

5/2-way

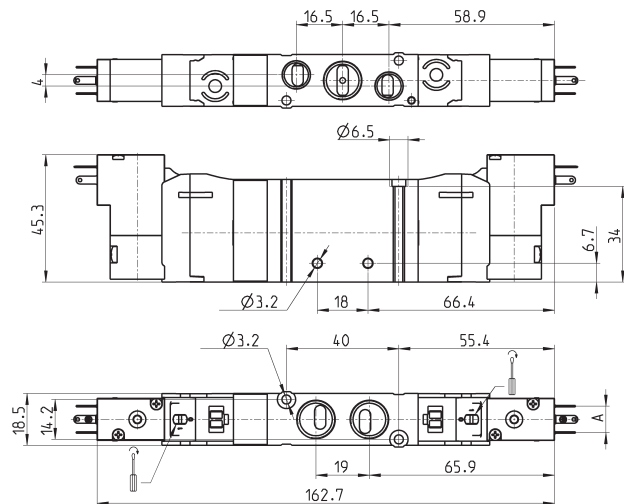
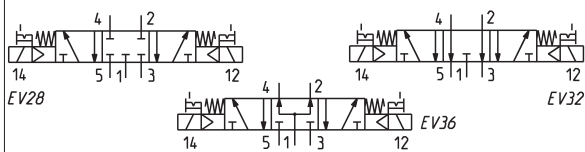

 Connectors: see pages
2/2.07.39-40.


Mod.	Ports 1-2-4	Ports 3-5	A	Operating pressure (bar)	Flow (NI/min)
EN551-11-P13	G1/4	G1/8	9,4	2 + 10	920
EN551-11-P54	G1/4	G1/8	9,4	2 + 10	920
EN551-11-P56	G1/4	G1/8	9,4	2 + 10	920
EN551-11-W53	G1/4	G1/8	8	2 + 10	920
EN551-11-W54	G1/4	G1/8	8	2 + 10	920

Electro-pneumatic valve, solenoid P, W - size 19

5/3-way

 CC = Centres Closed
CO = Centres Open
CP = Pressure Centres

 Connectors: see pages
2/2.07.39-40.


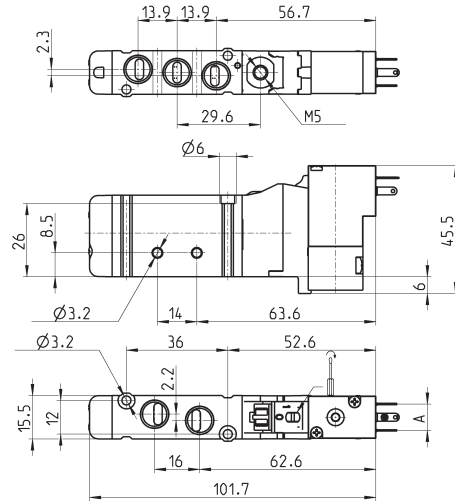
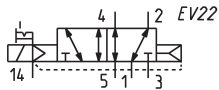
Mod.	Ports 1-2-4	Ports 3-5	A	Operating pressure (bar)	Flow (NI/min)	Symbol
EN651-11-P..	G1/4	G1/8	9,4	3 + 10	920	EV28
EN751-11-P..	G1/4	G1/8	9,4	3 + 10	920	EV32
EN851-11-P..	G1/4	G1/8	9,4	3 + 10	920	EV36
EN651-11-W..	G1/4	G1/8	8	3 + 10	920	EV28
EN751-11-W..	G1/4	G1/8	8	3 + 10	920	EV32
EN851-11-W..	G1/4	G1/8	8	3 + 10	920	EV36

Electro-pneum. valve, monost. ext. servo-pilot sup., sol. P/W - size 16

5/2-way



Connectors: see pages 2/2.07.39-40.



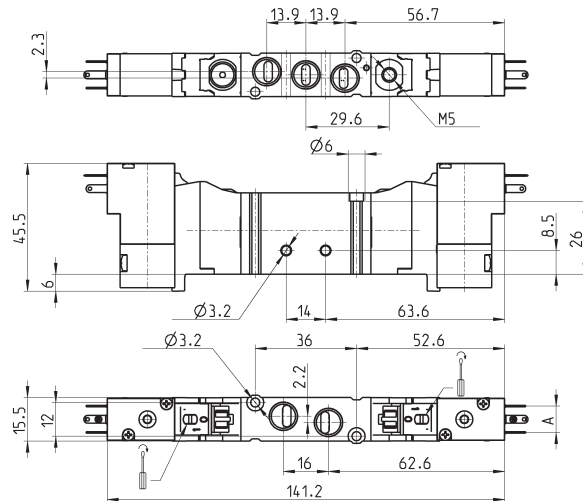
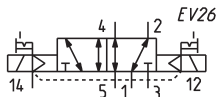
Mod.	Ports	A	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN531-E16-P..	G1/8	9,4	M5	2,5 + 10	-0,9 + 10	550
EN531-E16-W..	G1/8	8	M5	2,5 + 10	-0,9 + 10	550

Electro-pneum. valve, bistable ext. servo-pilot sup., sol. P/W - size 16

5/2-way



Connectors: see pages 2/2.07.39-40.



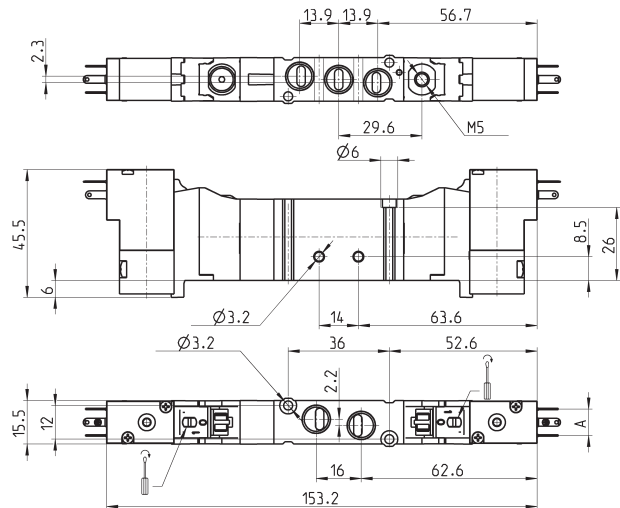
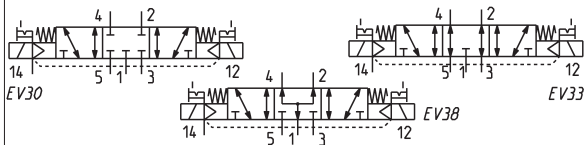
Mod.	Ports	A	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN531-E11-P..	G1/8	9,4	M5	2 + 10	-0,9 + 10	550
EN531-E11-W..	G1/8	8	M5	2 + 10	-0,9 + 10	550

Electro-pneum. valve, ext. servo-pilot supply, solenoid P, W - size 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Pressure Centres



Connectors: see pages
 2/2.07.39-40.



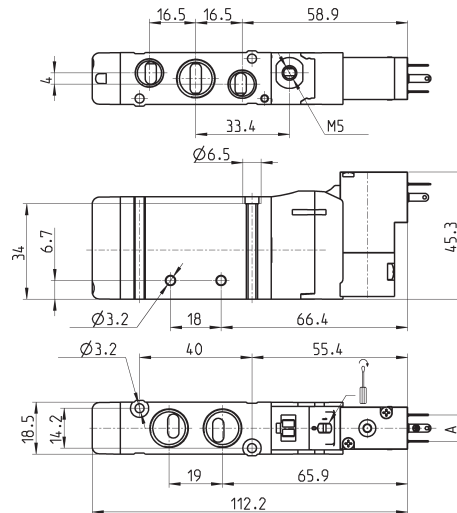
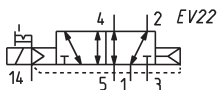
Mod.	Ports	A	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN631-E11-P..	G1/8	9,4	M5	3 + 10	-0,9 + 10	550	EV30
EN731-E11-P..	G1/8	9,4	M5	3 + 10	-0,9 + 10	550	EV33
EN831-E11-P..	G1/8	9,4	M5	3 + 10	-0,9 + 10	550	EV38
EN631-E11-W..	G1/8	8	M5	3 + 10	-0,9 + 10	550	EV30
EN731-E11-W..	G1/8	8	M5	3 + 10	-0,9 + 10	550	EV33
EN831-E11-W..	G1/8	8	M5	3 + 10	-0,9 + 10	550	EV38

Electro-pneum. valve, monost. ext. servo-pilot sup., sol. P/W - size 19

5/2-way



Connectors: see pages
 2/2.07.39-40.



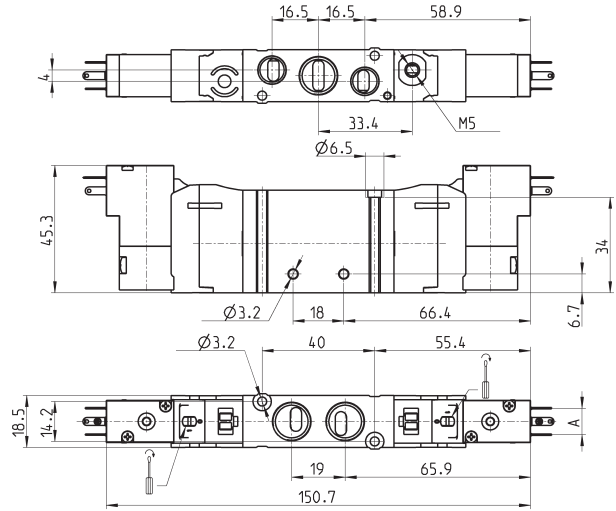
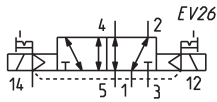
Mod.	Ports 1-2-4	Ports 3-5	A	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN551-E16-P..	G1/4	G1/8	9,4	M5	2,5 + 10	-0,9 + 10	920
EN551-E16-W..	G1/4	G1/8	8	M5	2,5 + 10	-0,9 + 10	920

Electro-pneum. valve, bistable ext. servo-pilot sup., sol. P/W - size 19

5/2-way



Connectors: see pages
2/2.07.39-40.



Mod.	Ports 1-2-4	Ports 3-5	A	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN551-E11-P..	G1/4	G1/8	9,4	M5	2 + 10	-0,9 + 10	920
EN551-E11-W..	G1/4	G1/8	8	M5	2 + 10	-0,9 + 10	920

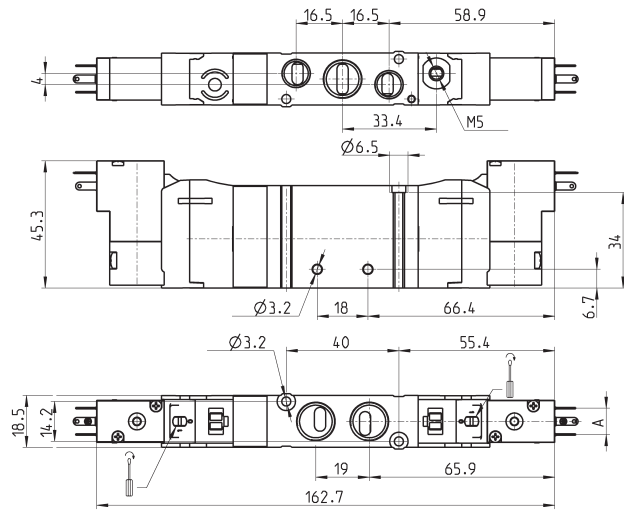
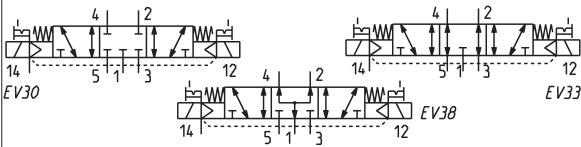
Electro-pneum. valve, ext. servo-pilot supply, solenoid P, W - size 19

5/3-way

- CC = Centres Closed
- CO = Centres Open
- CP = Pressure Centres

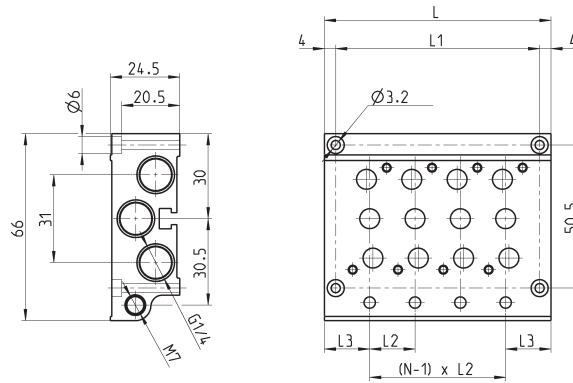


Connectors: see pages
2/2.07.39-40.



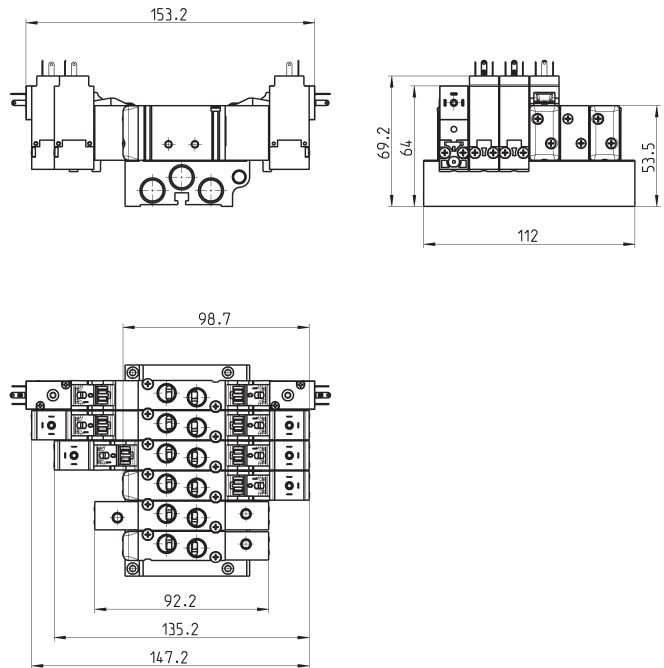
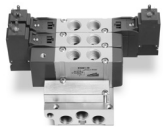
Mod.	Ports 1-2-4	Ports 3-5	A	Pilot supply	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN651-E11-P..	G1/4	G1/8	9,4	M5	3 + 10	-0,9 + 10	920	EV30
EN751-E11-P..	G1/4	G1/8	9,4	M5	3 + 10	-0,9 + 10	920	EV33
EN851-E11-P..	G1/4	G1/8	9,4	M5	3 + 10	-0,9 + 10	920	EV38
EN651-E11-W..	G1/4	G1/8	8	M5	3 + 10	-0,9 + 10	920	EV30
EN751-E11-W..	G1/4	G1/8	8	M5	3 + 10	-0,9 + 10	920	EV33
EN851-E11-W..	G1/4	G1/8	8	M5	3 + 10	-0,9 + 10	920	EV38

Manifold for valves size 16 and 19 (outlets on the body valve)



Mod.	Nr of valve positions	L	L1	L2	L3
EN531-1002	2	48	40	16	16
EN531-1003	3	64	56	16	16
EN531-1004	4	80	72	16	16
EN531-1005	5	96	88	16	16
EN531-1006	6	112	104	16	16
EN531-1008	8	144	136	16	16
EN531-1010	10	176	168	16	16
EN531-1012	12	208	200	16	16
EN551-1002	2	53	45	19	17
EN551-1003	3	72	64	19	17
EN551-1004	4	91	83	19	17
EN551-1005	5	110	102	19	17
EN551-1006	6	129	121	19	17
EN551-1008	8	167	159	19	17
EN551-1010	10	205	197	19	17
EN551-1012	12	243	235	19	17

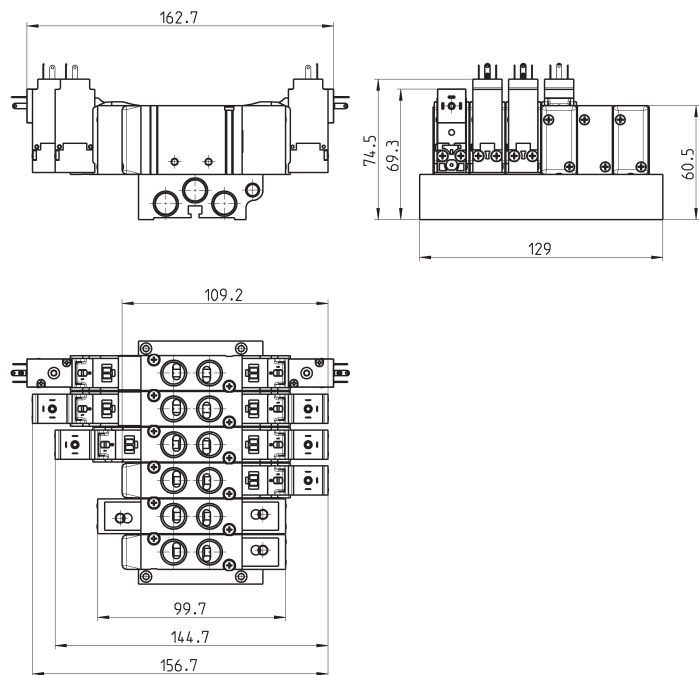
Manifolds complete with valves with outlets on the body - size 16
ports G1/8



2

CONTROL

Manifolds complete with valves with outlets on the body - size 19
ports G1/4



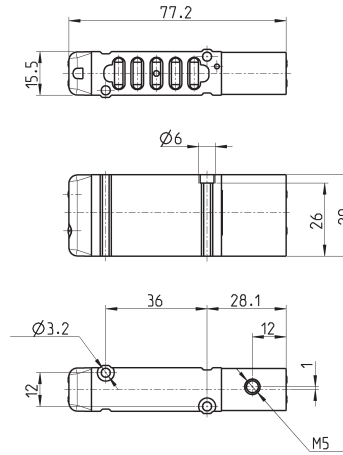
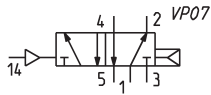
CODING EXAMPLE

EN	5	3	0	-	11	-	PN3
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EN	SERIES
5	FUNCTION: 5 = 5/2 6 = 5/3 Centre Closed 7 = 5/3 Centre Open 8 = 5/3 Pressure Centre
3	SIZE: 3 = size 16 5 = size 19
0	BODY TYPE: 0 = body for sub-base
11	ACTUATION: 11 = electro-pneumatic, bistable 16 = electro-pneumatic, monostable 33 = pneumatic bistable 36 = pneumatic monostable E11 = electro-pneumatic, bistable with external servo-pilot supply E16 = electro-pneumatic, monostable with external servo-pilot supply
PN3	TYPE OF SOLENOID: PN3 = 24V DC - 1W PN4 = 48V DC - 2W PN6 = 110V DC - 2W PN7 = 230V - 2W P13 = 24V DC - 1W P54 = 48V DC - 2W P56 = 110V DC - 2W W53 = 24V DC - 2W W54 = 48V DC - 2W In case of applications with alternate current, use a bridge rectifier connector (see pag. 2/2.07.40)

Monostable pneumatic valve with outlets on sub-base - size 16

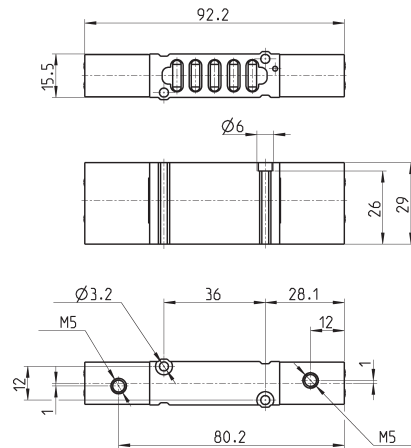
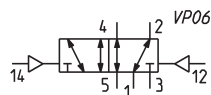
5/2-way



Mod.	Pilot supply	min. pilot Pressure (bar)	Working pressure (bar)	Flow rate (NI/min)
EN530-36	M5	2,5	2,5 ± 10	610

Bistable pneumatic valve with outlets on sub-base - size 16

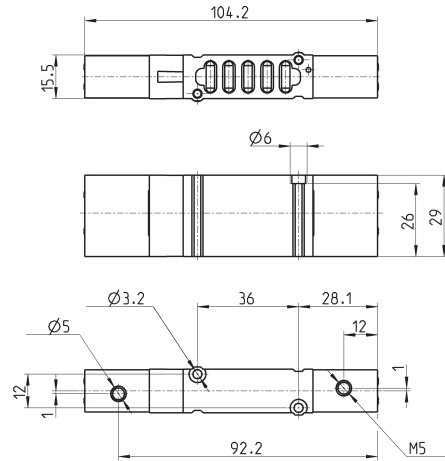
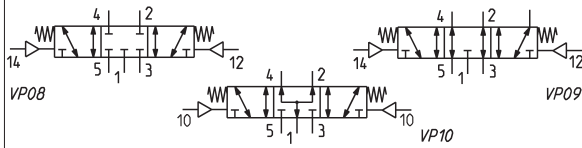
5/2-way



Mod.	Pilot supply	min. pilot pressure (bar)	Working pressure (bar)	Flow rate (NI/min)
EN530-33	M5	2	-0,9 ± 10	610

Pneumatically actuated valve with outlets on sub-base - size 16

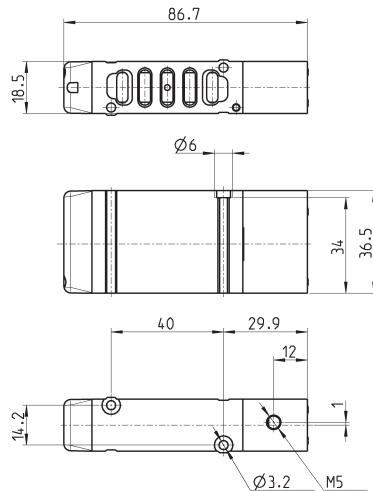
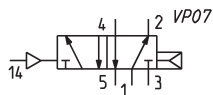
5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



Mod.	Pilot supply	min. pilot pressure (bar)	Working pressure (bar)	Flow rate (NI/min)	Symbol
EN630-33	M5	3	-0,9 ÷ 10	610	VP08
EN730-33	M5	3	-0,9 ÷ 10	610	VP09
EN830-33	M5	3	-0,9 ÷ 10	610	VP10

Pneumatic valve, monostable with outlets on sub-base - size 19

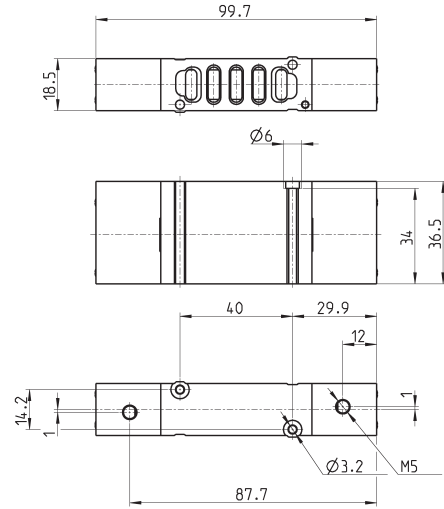
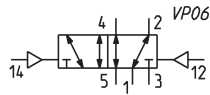
5/2-way



Mod.	Pilot supply	min. pilot pressure (bar)	working P. (bar)	Flow rate (NI/min)
EN550-36	M5	2,5	2 ÷ 10	1000

Pneumatic valve, bistable with outlets on sub-base - size 19

5/2-way

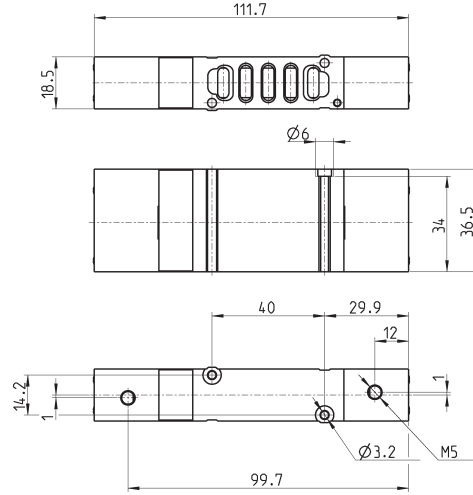
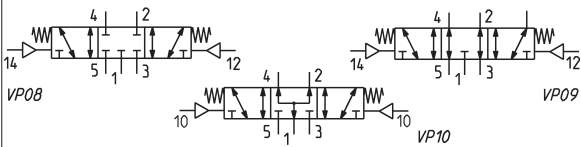


Mod.	Pilot supply	min. pilot pressure (bar)	Working pressure (bar)	Flow rate NI/min
EN550-33	M5	2	-0,9 + 10	1000

Pneumatically actuated valve with outlets on sub-base - size 19

5/3-way

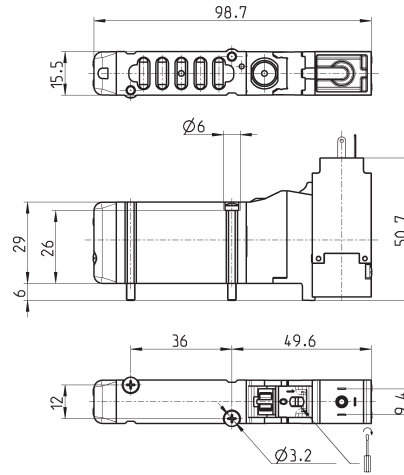
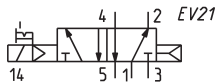
- CC = Centres Closed
- CO = Centres Open
- CP = Centres in Pressure



Mod.	Pilot supply	min. pilot pressure (bar)	working P. bar	Flow rate NI/min	Symbol
EN650-33	M5	3	-0,9 + 10	1000	VP08
EN750-33	M5	3	-0,9 + 10	1000	VP09
EN850-33	M5	3	-0,9 + 10	1000	VP10

Electropneumatic valve, monostable with outlets on sub-base - s. 16

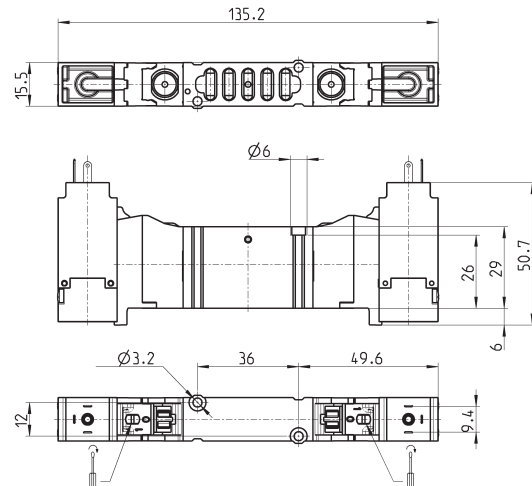
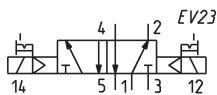
5/2-way


 Connectors: see pages
2/2.07.39-40.


Mod.	Working pressure (bar)	Flow rate (NI/min)
EN530-16-PN..	2,5 ÷ 10	610

Electropneumatic valve, bistable with outlets on sub-base - size 16

5/2-way


 Connectors: see pages
2/2.07.39-40.


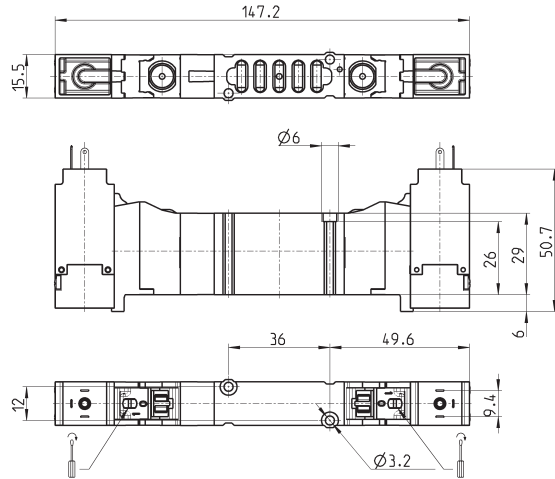
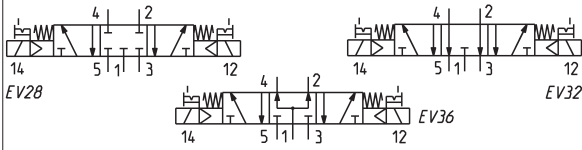
Mod.	Working pressure (bar)	Flow rate (NI/min)
EN530-11-PN..	2 ÷ 10	610

Electropneumtical valve with outlets on sub-base - size 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



Connectors: see pages
 2/2.07.39-40.



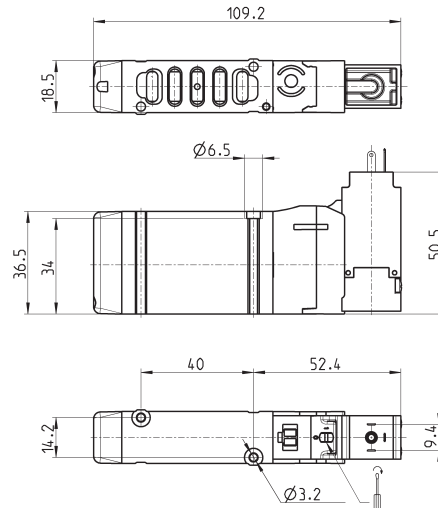
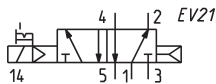
Mod.	Working pressure (bar)	Flow rate (NI/min)	Symbol
EN630-11-PN..	3 ÷ 10	610	EV28
EN730-11-PN..	3 ÷ 10	610	EV32
EN830-11-PN..	3 ÷ 10	610	EV36

Electropneumatic valve, monostable with outlets on sub-base - s. 19

5/2-way



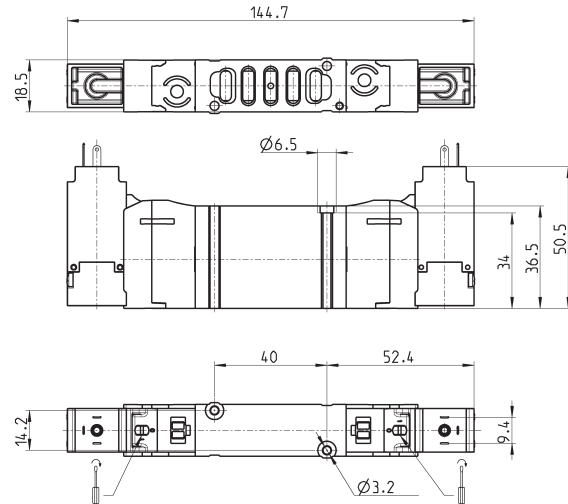
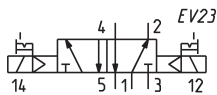
Connectors: see pages
 2/2.07.39-40.



Mod.	Working pressure (bar)	Flow rate (NI/min)
EN550-16-PN..	2,5 ÷ 10	1000

Electropneumatic valve, bistable with outlets on sub-base - size 19

5/2-way

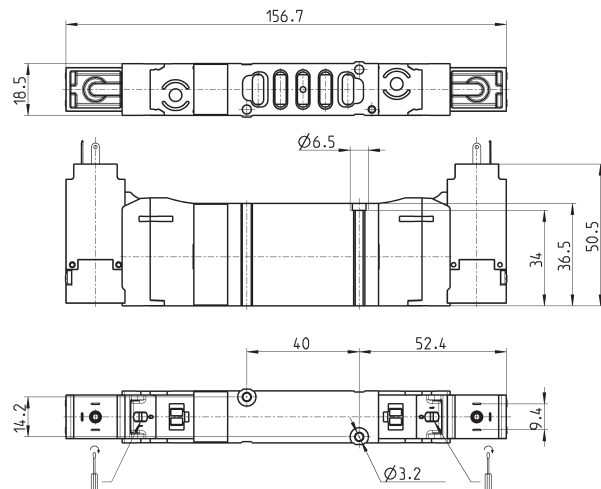
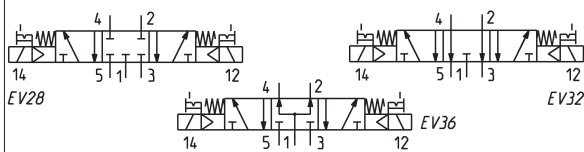

 Connectors: see pages
2/2.07.39-40.


Mod.	Working pressure (bar)	Flow rate (NI/min)
EN550-11-PN..	2 + 10	1000

Electropneumatic valve with outlets on sub-base - size 19

5/3-way

 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure

 Connectors: see pages
2/2.07.39-40.


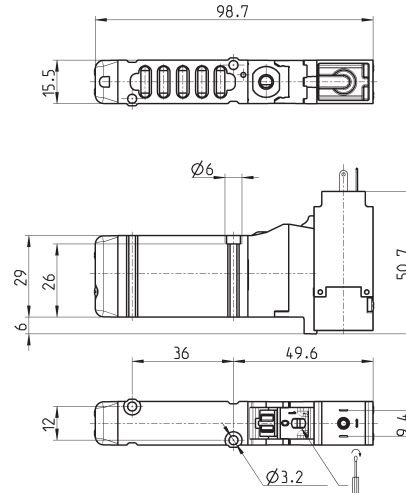
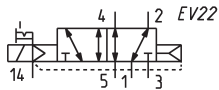
Mod.	Working pressure (bar)	Flow rate (NI/min)	Symbol
EN650-11-PN..	3 + 10	1000	EV28
EN750-11-PN..	3 + 10	1000	EV32
EN850-11-PN..	3 + 10	1000	EV36

Electro-pn. monost. valve, ext. pilot supply, outlets on sub-base - s. 16

5/2-way



Connectors: see pages 2/2.07.39-40.



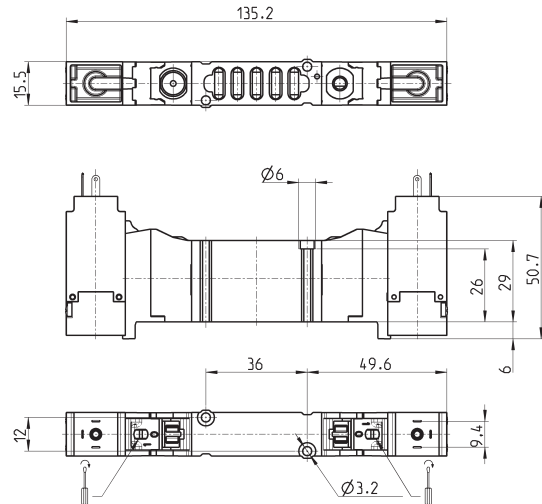
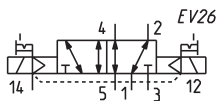
Mod.	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN530-E16-PN..	2,5 ÷ 10	- 0,9 ÷ 10	610

Electro-pn. bistable valve, ext. pilot supply, outlets on sub-base - s. 16

5/2-way



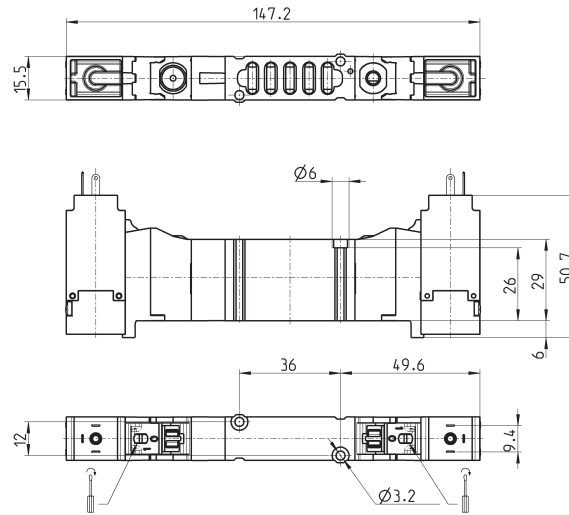
Connectors: see pages 2/2.07.39-40.



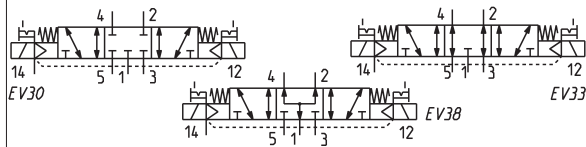
Mod.	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN530-E11-PN..	2 ÷ 10	- 0,9 ÷ 10	610

Electro-pneumatic valve, ext. pilot supply, outlets on sub-base - s. 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



Connectors: see pages 2/2.07.39-40.



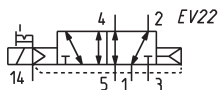
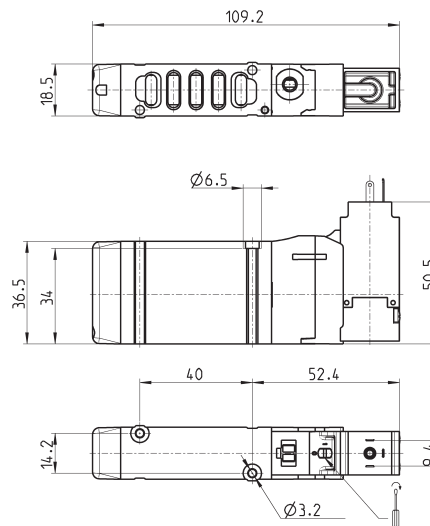
Mod.	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN630-E11-PN..	3 ÷ 10	-0,9 ÷ 10	610	EV30
EN730-E11-PN..	3 ÷ 10	-0,9 ÷ 10	610	EV33
EN830-E11-PN..	3 ÷ 10	-0,9 ÷ 10	610	EV38

Electro-pn. monost. valve, ext. pilot supply, outlets on sub-base - s. 19

5/2-way



Connectors: see pages 2/2.07.39-40.



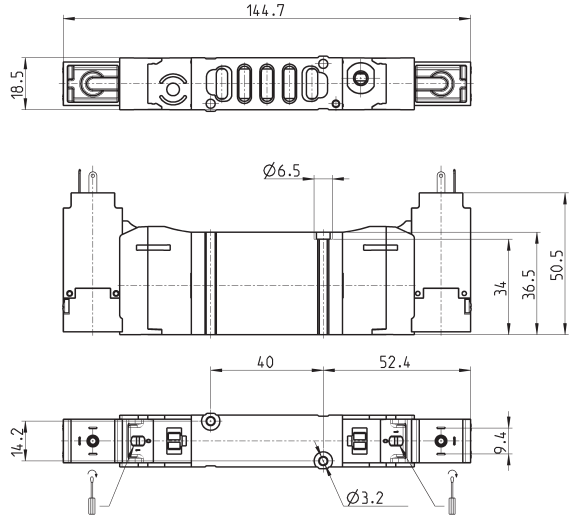
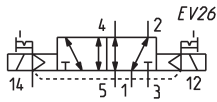
Mod.	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN550-E16-PN..	2,5 ÷ 10	- 0,9 ÷ 10	1000

Electro-pn. bistable valve, ext. pilot supply, outlets on sub-base - s. 19

5/2-way



Connectors: see pages 2/2.07.39-40.



Mod.	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN550-E11-PN..	2 + 10	-0,9 + 10	1000

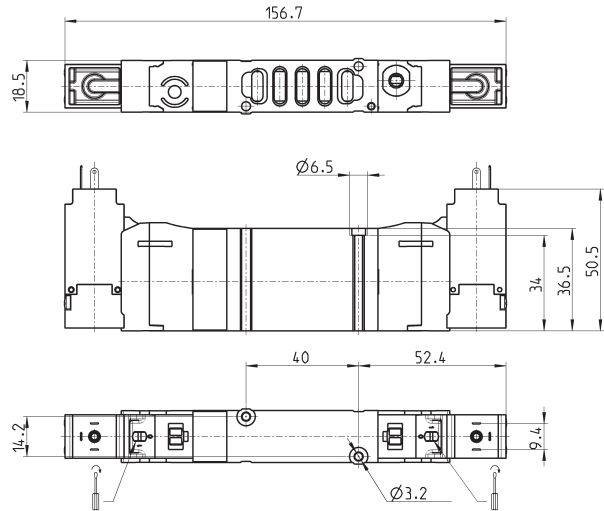
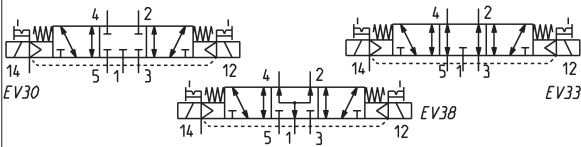
Electro-pneumatic valve, ext. pilot supply, outlets on sub-base - s. 19

5/3-way

- CC = Centres Closed
- CO = Centres Open
- CP = Centres in Pressure



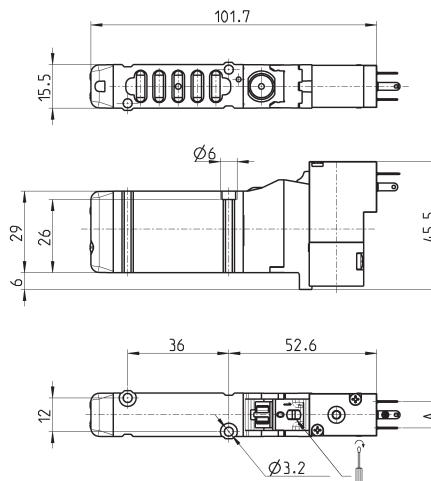
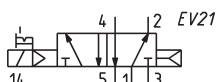
Connectors: see pages 2/2.07.39-40.



Mod.	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN650-E11-PN..	3 + 10	-0,9 + 10	1000	EV30
EN750-E11-PN..	3 + 10	-0,9 + 10	1000	EV33
EN850-E11-PN..	3 + 10	-0,9 + 10	1000	EV38

Electro-pn. monostable valve, sol. P / W, outlets on sub-base - s. 16

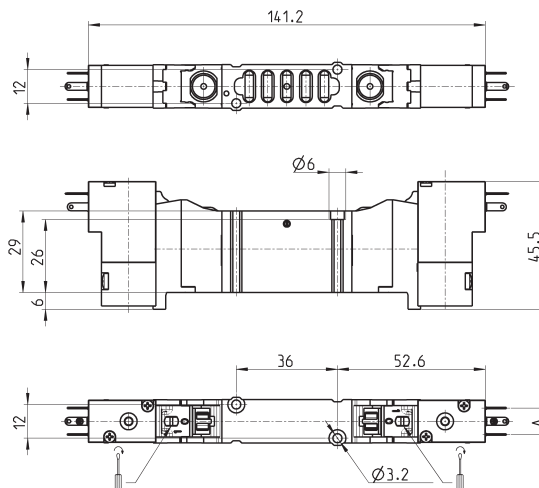
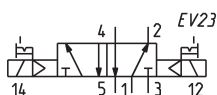
5/2-way


 Connectors: see pages
2/2.07.39-40.


Mod.	A	Operating pressure (bar)	Flow (NI/min)
EN530-16-P13	9,4	2,5 + 10	610
EN530-16-P54	9,4	2,5 + 10	610
EN530-16-P56	9,4	2,5 + 10	610
EN530-16-W53	8	2,5 + 10	610
EN530-16-W54	8	2,5 + 10	610

Electro-pn. bistable valve, sol. P / W, outlets on sub-base - size 16

5/2-way


 Connectors: see pages
2/2.07.39-40.


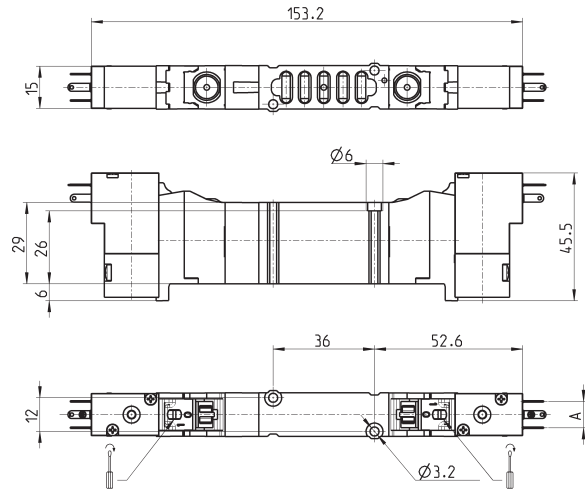
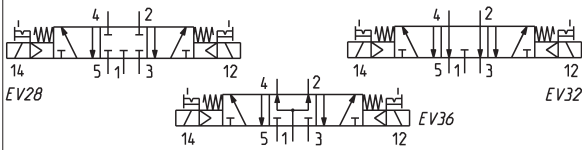
Mod.	A	Operating pressure (bar)	Flow (NI/min)
EN530-11-P13	9,4	2 + 10	610
EN530-11-P54	9,4	2 + 10	610
EN530-11-P56	9,4	2 + 10	610
EN530-11-W53	8	2 + 10	610
EN530-11-W54	8	2 + 10	610

Electro-pneumatic valve, sol. P / W, outlets on sub-base - size 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



Connectors: see pages
 2/2.07.39-40.



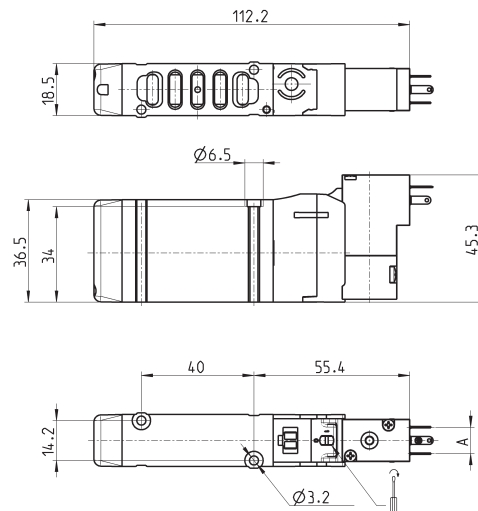
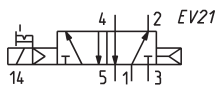
Mod.	A	Operating pressure (bar)	Flow (NI/min)	Symbol
EN630-11-P..	9,4	3 + 10	610	EV28
EN730-11-P..	9,4	3 + 10	610	EV32
EN830-11-P..	9,4	3 + 10	610	EV36
EN630-11-W..	8	3 + 10	610	EV28
EN730-11-W..	8	3 + 10	610	EV32
EN830-11-W..	8	3 + 10	610	EV36

Electro-pn. monostable valve, sol. P / W, outlets on sub-base - s. 19

5/2-way



Connectors: see pages
 2/2.07.39-40.



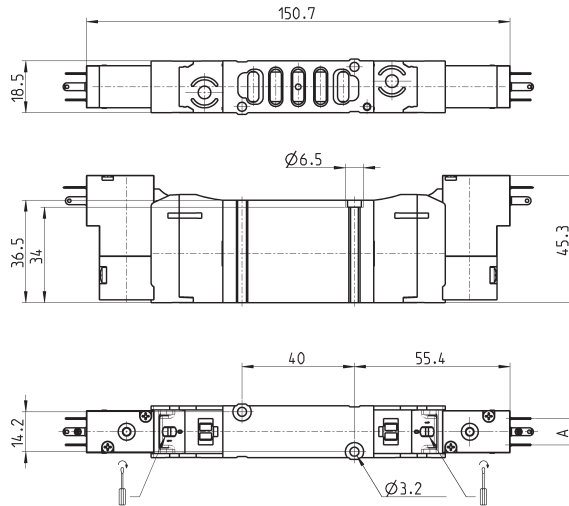
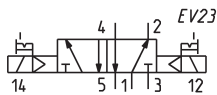
Mod.	Operating pressure (bar)	Flow (NI/min)
EN550-16-P13	2,5 + 10	1000
EN550-16-P54	2,5 + 10	1000
EN550-16-P56	2,5 + 10	1000
EN550-16-W53	2,5 + 10	1000
EN550-16-W54	2,5 + 10	1000

Electro-pn. bistable valve, sol. P / W, outlets on sub-base - size 19

5/2-way



Connectors: see pages 2/2.07.39-40.



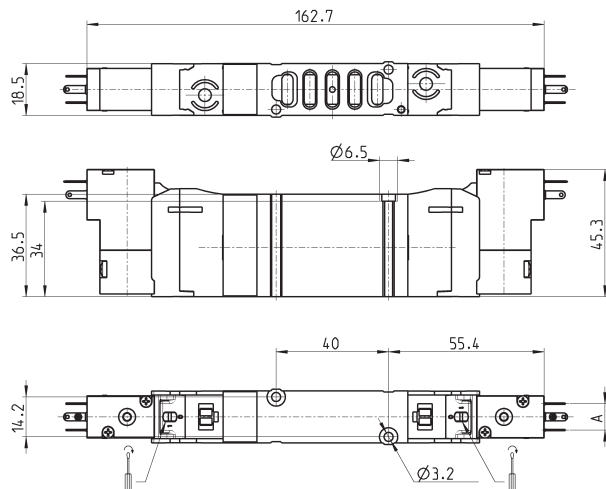
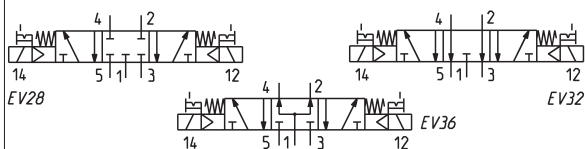
Mod.	A	Operating pressure (bar)	Flow (NI/min)
EN550-11-P13	9,4	2 + 10	1000
EN550-11-P54	9,4	2 + 10	1000
EN550-11-P56	9,4	2 + 10	1000
EN550-11-W53	8	2 + 10	1000
EN550-11-W54	8	2 + 10	1000

Electro-pneumatic valve, sol. P / W, outlets on sub-base - size 19

5/3-way

 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure


Connectors: see pages 2/2.07.39-40.



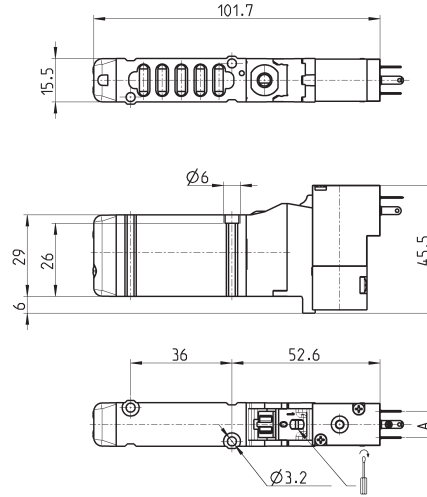
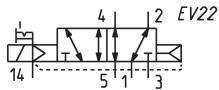
Mod.	A	Operating pressure (bar)	Flow (NI/min)	Symbol
EN650-11-P..	9,4	3 + 10	1000	EV28
EN750-11-P..	9,4	3 + 10	1000	EV32
EN850-11-P..	9,4	3 + 10	1000	EV36
EN650-11-W..	8	3 + 10	1000	EV28
EN750-11-W..	8	3 + 10	1000	EV32
EN850-11-W..	8	3 + 10	1000	EV36

Electro-pn. mono. valve, pilot sup. sol. P / W, outlets on base - s. 16

5/2-way



Connectors: see pages 2/2.07.39-40.



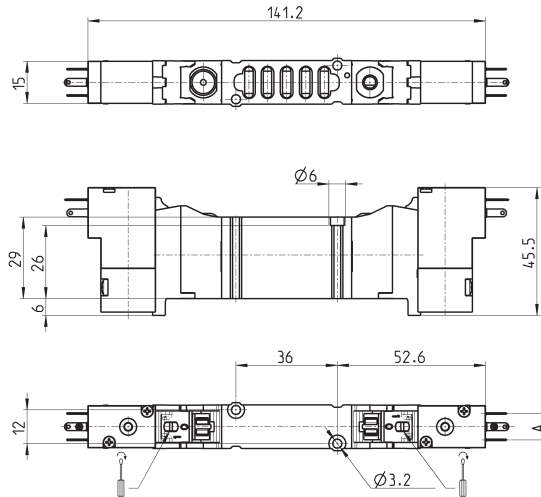
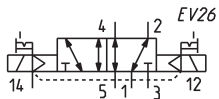
Mod.	A	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN530-E16-P..	9,4	2,5 ± 10	-0,9 ± 10	610
EN530-E16-W..	8	2,5 ± 10	-0,9 ± 10	610

Electro-pn. bistab. valve, pilot sup. sol. P / W, outlets on base - s. 16

5/2-way



Connectors: see pages 2/2.07.39-40.



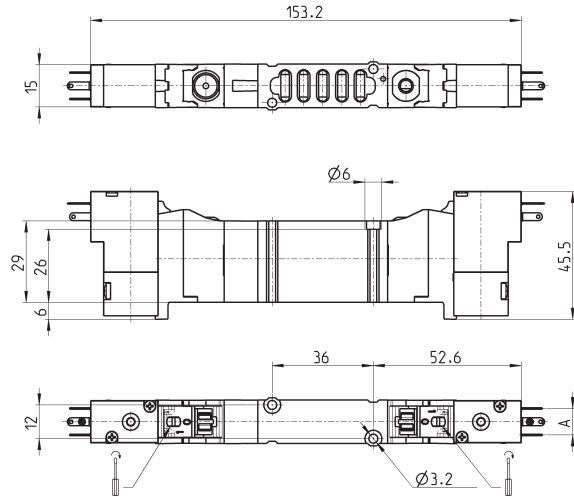
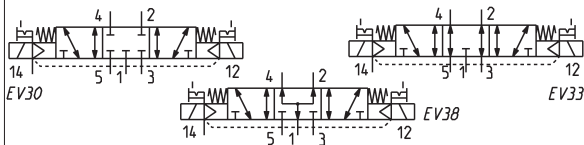
Mod.	A	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN530-E11-P..	9,4	2 ± 10	-0,9 ± 10	610
EN530-E11-W..	8	2 ± 10	-0,9 ± 10	610

Electro-pneum. valve, pilot sup. sol. P / W, outlets on base - s. 16

5/3-way
 CC = Centres Closed
 CO = Centres Open
 CP = Centres in Pressure



Connectors: see pages
 2/2.07.39-40.



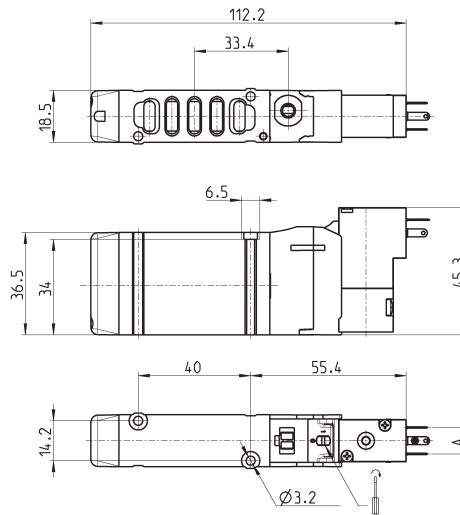
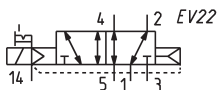
Mod.	A	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN630-E11-P..	9,4	3 + 10	-0,9 + 10	610	EV30
EN730-E11-P..	9,4	3 + 10	-0,9 + 10	610	EV33
EN830-E11-P..	9,4	3 + 10	-0,9 + 10	610	EV38
EN630-E11-W..	8	3 + 10	-0,9 + 10	610	EV30
EN730-E11-W..	8	3 + 10	-0,9 + 10	610	EV33
EN830-E11-W..	8	3 + 10	-0,9 + 10	610	EV38

Electro-pn. mono. valve, pilot sup. sol. P / W, outlets on base - s. 19

5/2-way



Connectors: see pages
 2/2.07.39-40.



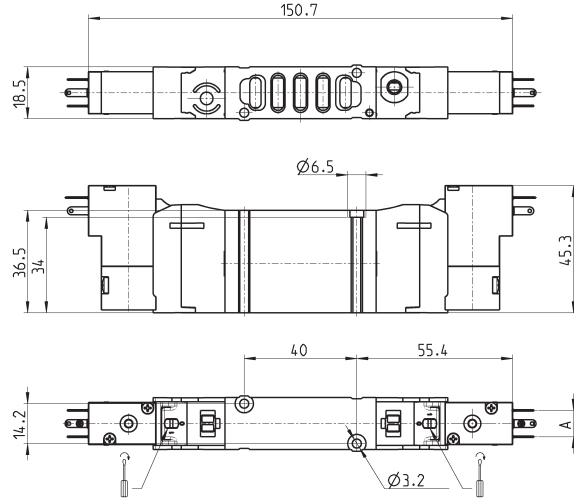
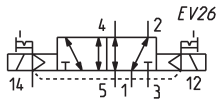
Mod.	A	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN550-E16-P..	9,4	2,5 + 10	-0,9 + 10	1000
EN550-E16-W..	8	2,5 + 10	-0,9 + 10	1000

Electro-pn. bistab. valve, pilot sup. sol. P / W, outlets on base - s. 19

5/2-way



Connectors: see pages 2/2.07.39-40.



Mod.	A	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)
EN550-E11-P..	9,4	2 + 10	-0,9 + 10	1000
EN550-E11-W..	8	2 + 10	-0,9 + 10	1000

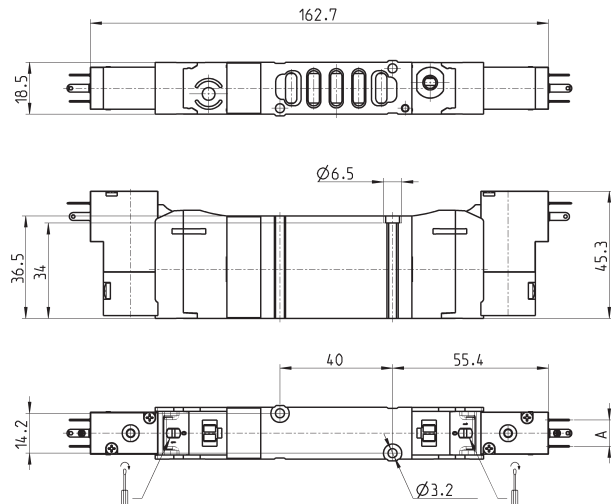
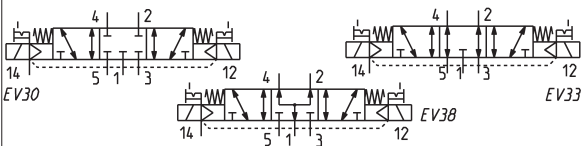
Electro-pneum. valve, pilot sup. sol. P / W, outlets on base - s. 19

5/3-way

CC = Centres Closed
CO = Centres Open
CP = Centres in Pressure

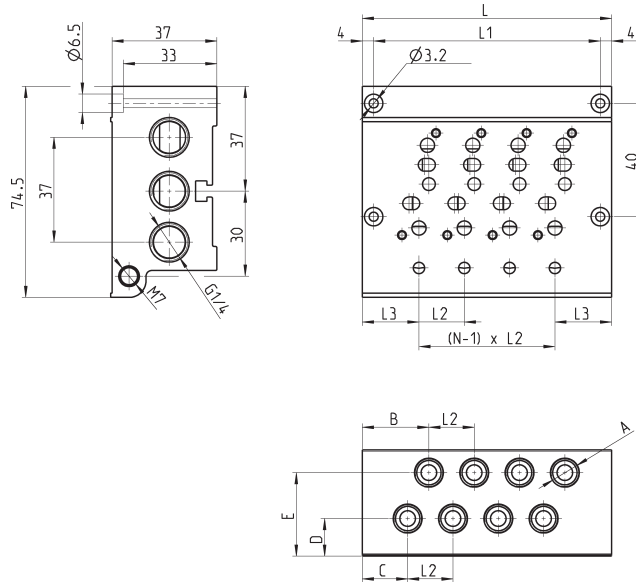


Connectors: see pages 2/2.07.39-40.



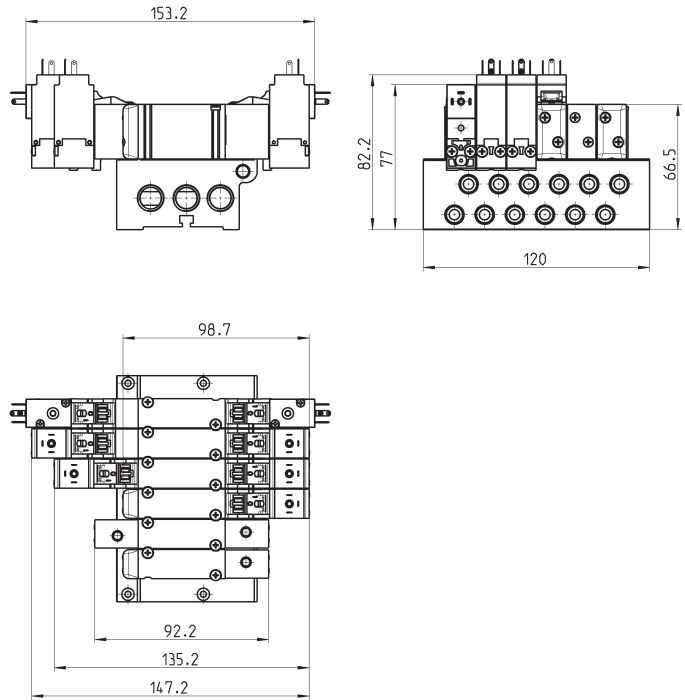
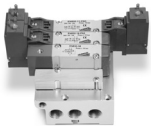
Mod.	A	Pilot supply pressure (bar)	Operating pressure (bar)	Flow (NI/min)	Symbol
EN650-E11-P..	9,4	3 + 10	-0,9 + 10	1000	EV30
EN750-E11-P..	9,4	3 + 10	-0,9 + 10	1000	EV33
EN850-E11-P..	9,4	3 + 10	-0,9 + 10	1000	EV38
EN650-E11-W..	8	3 + 10	-0,9 + 10	1000	EV30
EN750-E11-W..	8	3 + 10	-0,9 + 10	1000	EV33
EN850-E11-W..	8	3 + 10	-0,9 + 10	1000	EV38

Manifold for valves size 16 and 19 (outlets on manifolds)

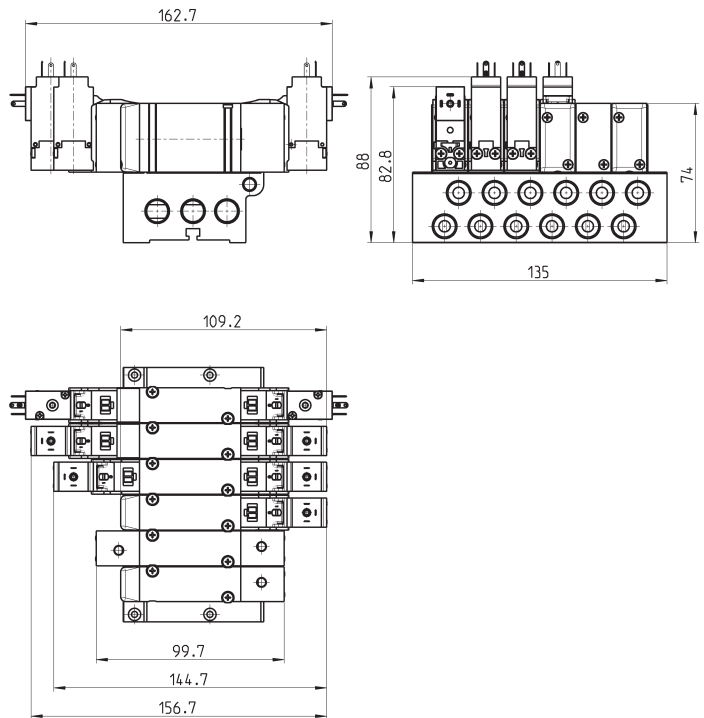
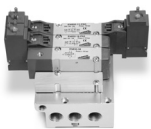


Mod.	Nr of valve positions	A	B	C	D	E	L	L1	L2	L3
EN530-2102	2	G1/8	23,5	16	12,8	29	56	48	16	20
EN530-2103	3	G1/8	23,5	16	12,8	29	72	64	16	20
EN530-2104	4	G1/8	23,5	16	12,8	29	88	80	16	20
EN530-2105	5	G1/8	23,5	16	12,8	29	104	96	16	20
EN530-2106	6	G1/8	23,5	16	12,8	29	120	112	16	20
EN530-2108	8	G1/8	23,5	16	12,8	29	152	144	16	20
EN530-2110	10	G1/8	23,5	16	12,8	29	184	176	16	20
EN530-2112	12	G1/8	23,5	16	12,8	29	216	208	16	20
EN550-2102	2	G1/4	23	15,5	10,5	28,2	59	51	19	20
EN550-2103	3	G1/4	23	15,5	10,5	28,2	78	70	19	20
EN550-2104	4	G1/4	23	15,5	10,5	28,2	97	89	19	20
EN550-2105	5	G1/4	23	15,5	10,5	28,2	116	108	19	20
EN550-2106	6	G1/4	23	15,5	10,5	28,2	135	127	19	20
EN550-2108	8	G1/4	23	15,5	10,5	28,2	173	165	19	20
EN550-2110	10	G1/4	23	15,5	10,5	28,2	211	203	19	20
EN550-2112	12	G1/4	23	15,5	10,5	28,2	249	241	19	20

Manifolds complete with base moutend valves - size 16



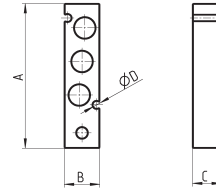
Manifolds complete with base moutend valves - size 19



Blanking plate for manifolds - valves with outlets on the body



The following is supplied:
 1x blanking plate
 2x screws
 1x seal

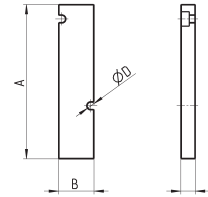


Mod.	Size	A	B	C	ØD
TP-EN531	16	60	14,5	12	3,2
TP-EN551	19	62	17,3	12	3,2

Blanking plate for manifolds - base mounted valves



The following is supplied:
 1x blanking plate
 2x screws
 1x seal



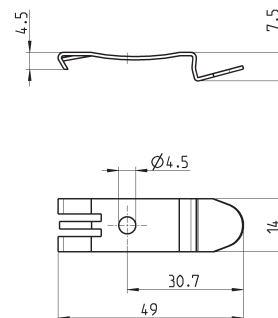
Mod.	Size	A	B	C	ØD
TP-EN530	16	64	14,7	6	3,2
TP-EN550	19	64	17	6	3,2

Mounting brackets for DIN rail



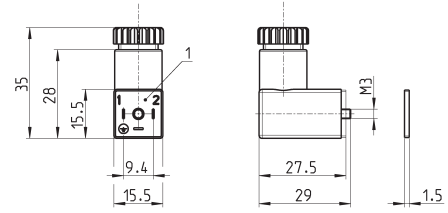
DIN EN 50022 (7,5mm x 35mm - width 1)
 Suitable for all manifolds.

Supplied with:
 2x plates
 2x screws M4x6 UNI 5931
 2x nuts



Mod.
PCF-EN531

Connector Mod. 125-... DIN 43650 pitch 9.4 mm

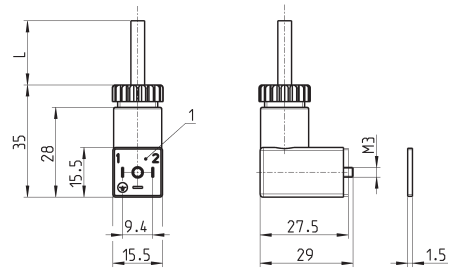


Mod.	description	colour	working voltage	cable holding	tightening torque
125-601	connector, diode + Led	transparent	10/50 V DC	PG7	0.3 Nm
125-701	connector, varistor + Led	transparent	24 V AC/DC	PG7	0.3 Nm
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Connector Mod. 125-... DIN 43650 pitch 9.4 mm with cable

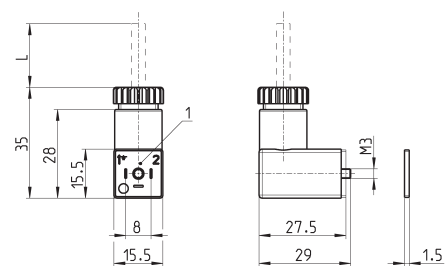
The internal rectifier circuit of the connector Mod. 125-900 allows to use solenoid valves with different AC voltage, even if the voltage indicated on the solenoid valve is DC.



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-501-2	moulded cable with diode + Led	black	10/50 V DC	2000 mm	-	0.3 Nm
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
125-601-2	pre-wired cable, diode + Led	transparent	10/50 V DC	2000 mm	PG7	0.3 Nm
125-571-3	moulded cable, varistor + Led	black	24 V AC/DC	3000 mm	-	0.3 Nm
125-900	pre-wired cable with voltage rectifier	black	6 V - 110 V AC/DC	2000 mm	PG7	0.3 Nm

1 = 90° adjustable connector

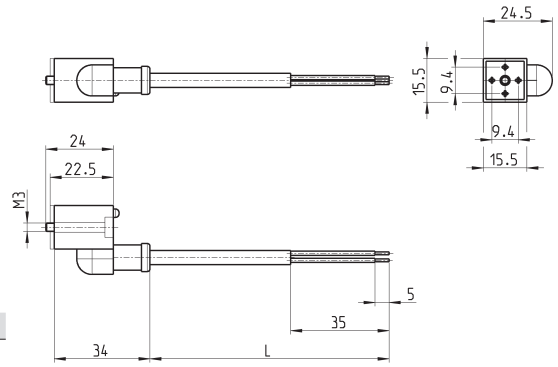
Connector Mod. 126-... DIN 43650 pitch 8 mm



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
126-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm
126-800	connector, without electronics	black	-	-	PG7	0.3 Nm
126-701	connector, varistor + Led	transparent	24 V AC/DC	-	PG7	0.3 Nm

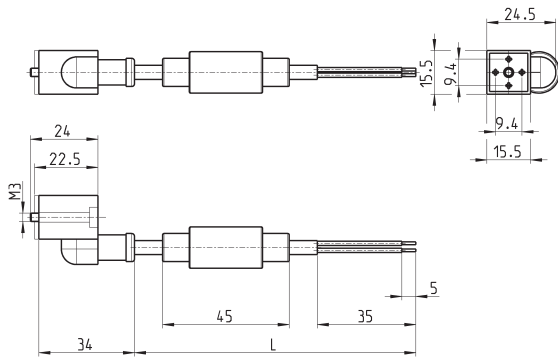
1 = 90° adjustable connector

In-line connectors with cable



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-503-2	in-line moulded cable, with diode + Led	black	24 V DC	2000 mm	-	0.3 Nm
125-503-5	in-line moulded cable, with diode + Led	black	24 V DC	5000 mm	-	0.3 Nm
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

In-line connectors with bridge rectifier



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-903-2	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	2000 mm	-	0.3 Nm
125-903-5	in-line moulded cable with voltage rectifier	black	6 V - 230 V AC/DC	5000 mm	-	0.3 Nm

Series 3 valves and solenoid valves

2x3/2, 3/2, 5/2 and 5/3-way CC CO CP
Ports: G1/8 and G1/4



Series 3 solenoid valves with G1/8 and G1/4 ports have been designed in the 3/2, 2 x 3/2, 5/2, 5/3 versions and with the following two devices of actuation:

- Electropneumatically actuated with mechanical spring return
- Electropneumatically actuated with external and internal air pressure supply

Series 3 valves are equipped with a manual override which allows a stable operation and they can use Series U or G solenoids (22x22).

Pneumatically actuated valves 3/2 NC become NO when the supply is on connection 3.

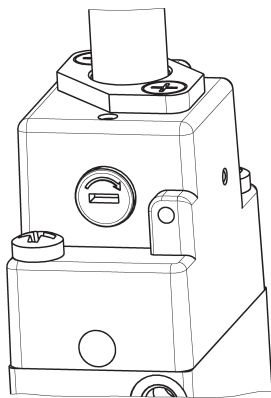
GENERAL DATA

Construction	spool - type
Valve group	2x3/2 - 3/2 - 5/2 - 5/3-way CC CO CP
Materials	AL body, stainless steel spool, NBR seals
Ports	G1/8 - G1/4
Installation	in any position
Operating temperature	0 ÷ 60°C (with dry air at -20°C)
Operating pressure	see tables
Fluid	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.

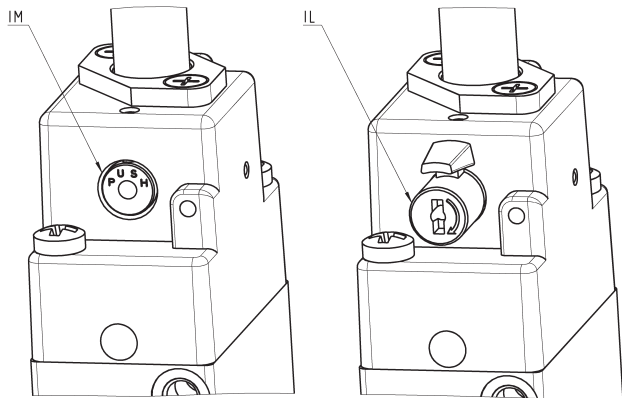
CODING EXAMPLE

3	3	8	D	-	015	-	02	-	U7	7
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3	SERIES
3	NUMBER OF WAYS - POSITIONS: 3 = 3/2 NC 4 = 3/2 NO 5 = 5/2 6 = 5/3 CC 7 = 5/3 CO 8 = 5/3 CP 9 = 1x3/2 NC + 1x3/2 NO
8	PORTS: 8 = G1/8 4 = G1/4
D	VERSION: = standard D = double valve 2x3/2 L = for manifold assembly (only for solenoid valves 3/2 with G1/8 ports)
015	ACTUATION: 011 = double solenoid 015 = single solenoid, spring return 016 = single solenoid, pneumatic spring return E11 = double solenoid external servo-command E15 = single solenoid, external servo-command 033 = pneumatic pneumatic 035 = pneumatic spring
02	SOLENOID INTERFACE: 02 = mech. sol. 22 x 22
U7	ENCAPSULATING MATERIAL / SOLENOID DIMENSIONS: A8 = PPS / 30 x 30 G7 = PA / 22 x 22 G8 = PA / 30 x 30 (24 V DC only) G9 = PA / 22 x 58 H8 = PA 6 V0 / 30 x 30 U7 = PET / 22 x 22
7	SOLENOID VOLTAGE: see the solenoids section from page 2.2.35.01
	TYPE OF MANUAL OVERRIDE: = bistable, standard IL = bistable, lever type (available on demand) IM = monostable (available on demand)

TYPES OF MANUAL OVERRIDE


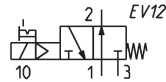
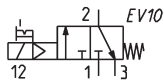
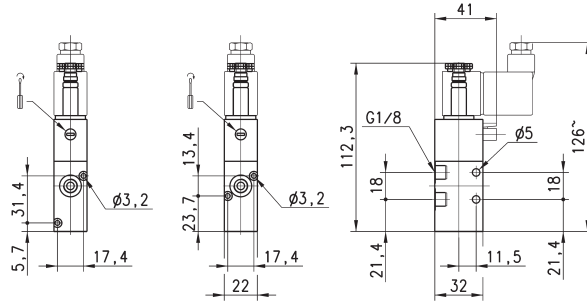
Example of solenoid valve with a bistable standard manual override.



Example of solenoid monostable valve (IM) and bistable valve with a lever type manual override (IL). Both versions are available on demand. To order them it is necessary to add IM or IL at the end of the code. Code ex.: 454-015-22-U77IL.

3/2-way solenoid valve, G1/8, monostable - Mod. 338..., Mod 348...

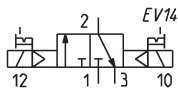
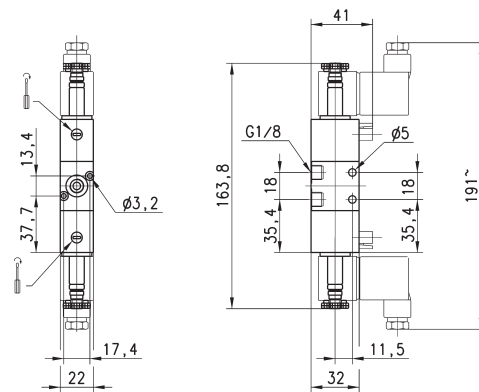
These solenoid valves, which have electropneumatic actuation and spring return, are available in the NC (closed) or NO (open) version.



Mod.	Mounting	Function	Flow rate (NI/min)	Operating pressure (bar)	Symbol
338-015-02	in-line	3/2 NC	700	2,5 + 10	EV10
338L-015-02	on manifold	3/2 NC	700	2,5 + 10	EV10
348-015-02	in-line	3/2 NO	700	2,5 + 10	EV12
348L-015-02	on manifold	3/2 NO	700	2,5 + 10	EV12

3/2-way solenoid valve, G1/8, bistable - Mod. 338...

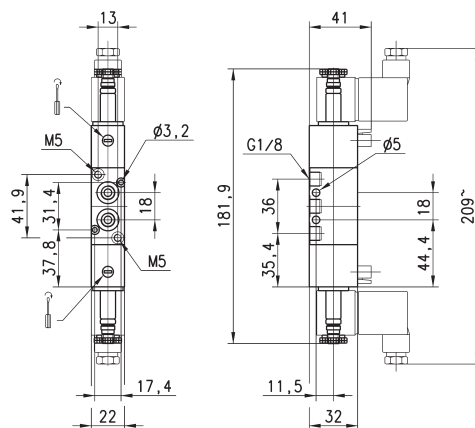
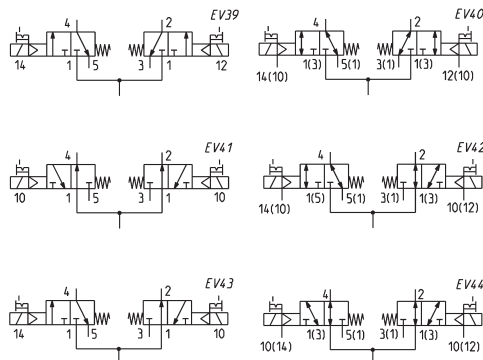
These solenoid valves, which have electropneumatic actuation and return, assume the NC (closed) or NO (open) position depending on the last pulse received.



Mod.	Mounting	Function	Flow rate (NI/min)	Operating pressure (bar)
338-011-02	in-line	3/2	700	1,5 + 10
338L-011-02	on manifold	3/2	700	1,5 + 10

2 x 3/2-way solenoid valve, G1/8 - Mod. 338D..., 348D... e 398D...

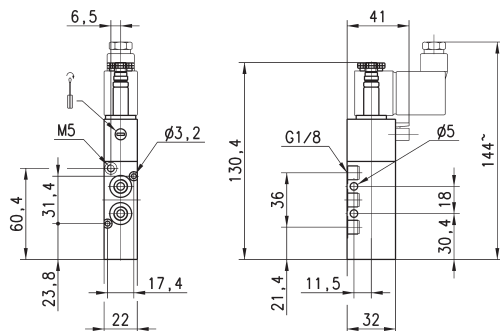
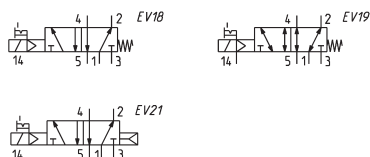
These solenoid valves are available in versions with 2 x 3/2 valves in the same valve.



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
338D-015-02	2 x 3/2 NC	700	2,5 + 10	-	EV39
348D-015-02	2 x 3/2 NO	700	2,5 + 10	-	EV41
338D-E15-02	2 x 3/2 NC	700	-0,9 + 10	2,5 + 10	EV40
348D-E15-02	2 x 3/2 NO	700	-0,9 + 10	2,5 + 10	EV44
398D-015-02	1 x 3/2 NC + 1 x 3/2 NO	700	2,5 + 10	-	EV43
398D-E15-02	1 x 3/2 NC + 1 x 3/2 NO	700	-0,9 + 10	2,5 + 10	EV42

5/2-way solenoid valve, G1/8, monostable - Mod. 358...

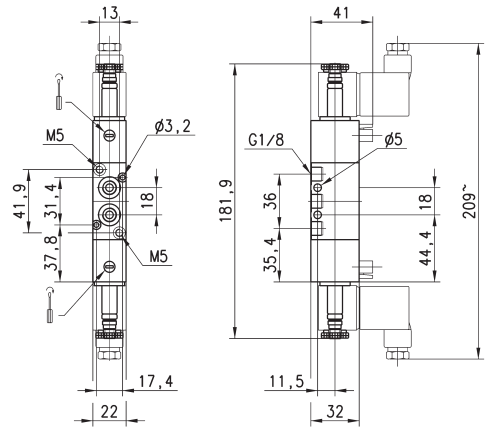
These solenoid valves, which have electropneumatic actuation and spring return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
358-015-02	5/2	700	2,5 + 10	-	EV18
358-E15-02	5/2	700	-0,9 + 10	2,5 + 10	EV19
358-016-02	5/2	700	2,5 + 10	-	EV21

5/2-way solenoid valve, G1/8, bistable - Mod. 358...

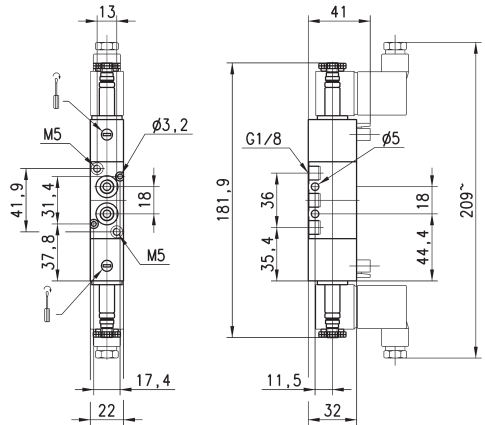
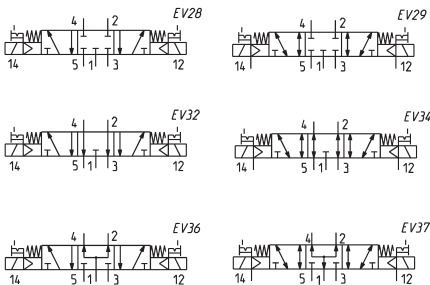
These solenoid valves, which have electropneumatic actuation and spring return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
358-011-02	5/2	700	1,5 + 10	-	EV23
358-E11-02	5/2	700	-0,9 + 10	1,5 + 10	EV25

5/3-way solenoid valve, G1/8, - Mod. 368... Mod. 378... Mod. 388...

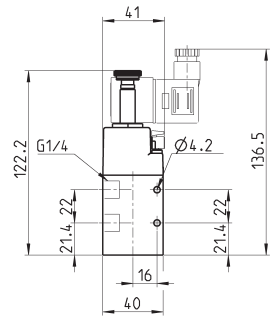
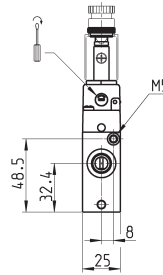
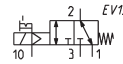
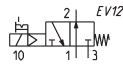
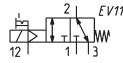
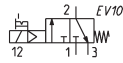
CC = Centres Closed CO = Centres Open CP = Pressure Centres



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
368-011-02	5/3 CC	700	2 + 10	-	EV28
368-E11-02	5/3 CC	700	-0,9 + 10	2 + 10	EV29
378-011-02	5/3 CO	700	2-10	-	EV32
378-E11-02	5/3 CO	700	-0,9 + 10	2 + 10	EV34
388-011-02	5/3 CP	700	2 + 10	-	EV36
388-E11-02	5/3 CP	700	-0,9 + 10	2 + 10	EV37

3/2-way solenoid valve, G1/4, monostable - Mod. 334... Mod 344...

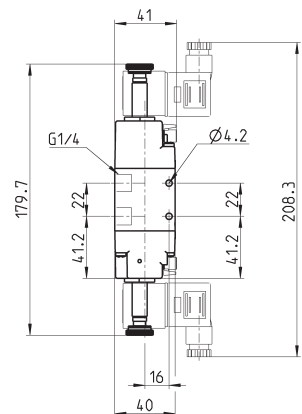
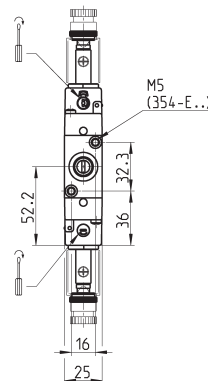
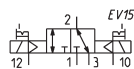
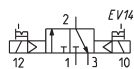
These solenoid valves, which have electropneumatic actuation and spring return, are available in the NC (closed) or NO (open) version.



Mod.	Mounting	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
334-015-02	in-line	3/2 NC	1300	2.5 + 10	-	EV10
334-E15-02	in-line	3/2 NC	1300	-0.9 + 10	2.5 + 10	EV11
344-015-02	in-line	3/2 NO	1300	2.5 + 10	-	EV12
344-E15-02	in-line	3/2 NO	1300	-0.9 + 10	2.5 + 10	EV13

3/2-way solenoid valve, G1/4, bistable - Mod. 334...

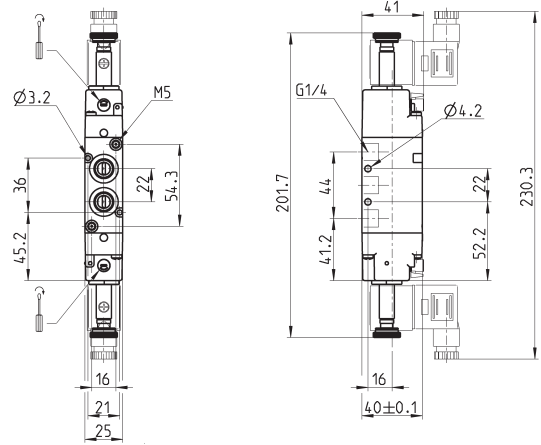
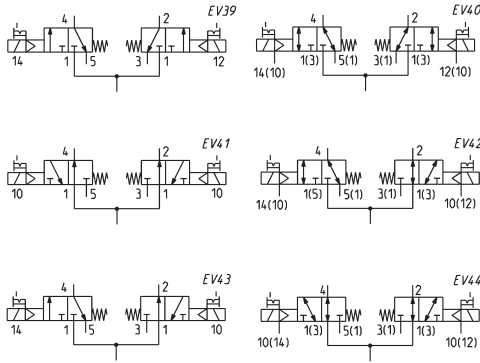
These solenoid valves, which have electropneumatic actuation and return assume the NC (closed) or NO (open) position depending on their last pulse received.



Mod.	Mounting	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
334-011-02	in-line	3/2	1300	1.5 + 10	-	EV14
334-E11-02	in-line	3/2	1300	1.5 + 10	2.5 + 10	EV15

2 x 3/2-way solenoid valve, G1/4 Mod. 334D... 344D... and 394D...

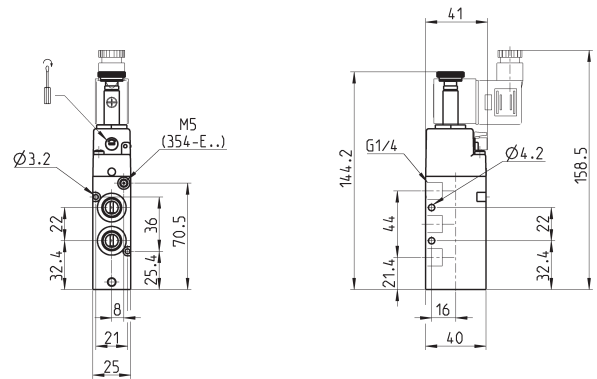
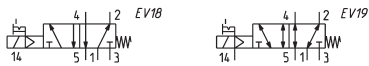
These solenoid valves are available in versions with 2 x 3/2 valves in the same valve.



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
334D-015-02	2 x 3/2 NC	1200	2,5 + 10	-	EV39
344D-015-02	2 x 3/2 NO	1050	2,5 + 10	-	EV41
334D-E15-02	2 x 3/2 NC	1200	-0,9 + 10	2,5 + 10	EV40
344D-E15-02	2 x 3/2 NO	1050	-0,9 + 10	2,5 + 10	EV44
394D-015-02	1 x 3/2 NC + 1 x 3/2 NO	1050	2 + 10	-	EV43
394D-E15-02	1 x 3/2 NC + 1 x 3/2 NO	1050	-0,9 + 10	2,5 + 10	EV42

5/2-way solenoid valve, G1/4, monostable - Mod. 354...

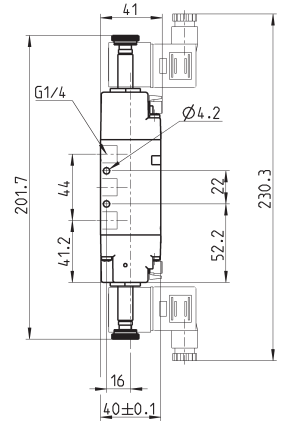
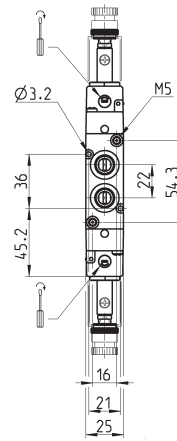
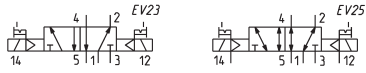
These solenoid valves, which have electropneumatic actuation and spring return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
354-015-02	5/2	1300	2,5 + 10	-	EV18
354-E15-02	5/2	1300	-0,9 + 10	2,5 + 10	EV19

5/2-way solenoid valve, G1/4, bistable - Mod. 354...

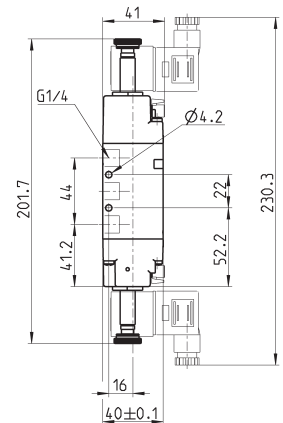
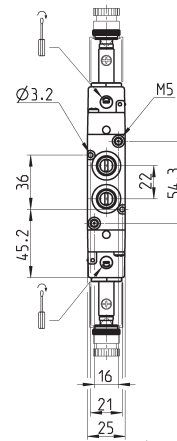
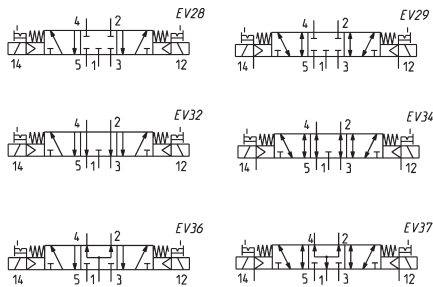
These solenoid valves, which have electropneumatic actuation and spring return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
354-011-02	5/2	1300	1,5 + 10	-	EV23
354-E11-02	5/2	1300	-0,9 + 10	2,5 + 10	EV25

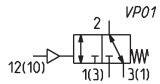
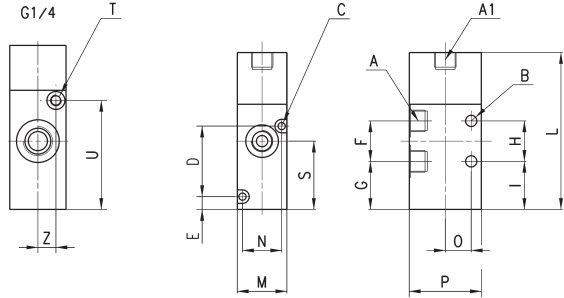
5/3-way solenoid valve, G1/4, - Mod. 364... Mod. 374... Mod. 384...

CC = Centres Closed CO = Centres Open CP = Pressure Centres



Mod.	Function	Flow rate (NI/min)	Operating pressure (bar)	Pilot pressure (bar)	Symbol
364-011-02	5/3 CC	1200	2,5 + 10	-	EV28
364-E11-02	5/3 CC	1200	-0,9 + 10	2,5 + 10	EV29
374-011-02	5/3 CO	1200	2,5 + 10	-	EV32
374-E11-02	5/3 CO	1200	-0,9 + 10	2,5 + 10	EV34
384-011-02	5/3 CP	1200	2,5 + 10	-	EV36
384-E11-02	5/3 CP	1200	-0,9 + 10	2,5 + 10	EV37

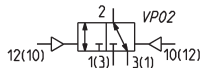
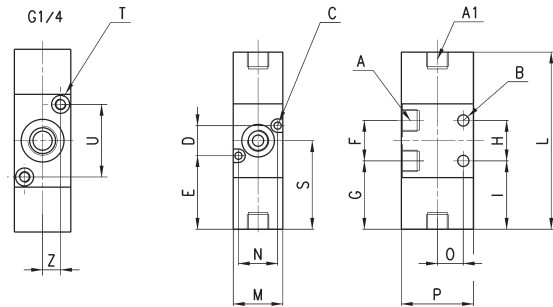
3/2-way valve, G1/8 or G1/4, monostable



DIMENSIONS

Mod.	Mounting	Function	Flow rate (NI/min)	Min. pilot press. (bar)	Working press. (bar)	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
338-035	in-line	3/2 NC	700	2.5	-0.9 + 10	G1/8	G1/8	5	3.2	-	5.7	18	21.4	18	21.4	69.8	22	-	11.5	32	30.4	-	-	-
338L-035	on manifold	3/2 NC	700	2.5	-0.9 + 10	G1/8	G1/8	-	3.2	31.4	5.7	18	21.4	-	21.4	69.8	22	17.4	11.5	32	30.4	-	-	-
334-035	in-line	3/2 NC	1300	3	-0.9 + 10	G1/4	-	4.1	-	-	-	22	21.4	22	21.4	73	25	-	16	40	32.4	M5	48.5	8

3/2-way valve, G1/8 or G1/4, bistable

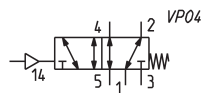
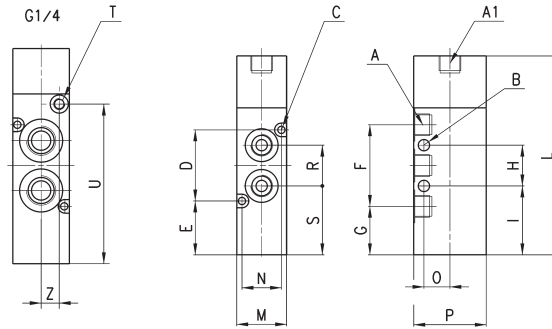


DIMENSIONS

Mod.	Mounting	Function	Flow rate (NI/min)	Min. pilot press. (bar)	Working press. (bar)	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
338-033	in-line	3/2	700	1.5	-0.9 + 10	G1/8	G1/8	5	-	-	-	18	30.4	18	30.4	78.8	22	-	11.5	32	41.7	-	-	-
338L-033	on manifold	3/2	700	1.5	-0.9 + 10	G1/8	G1/8	5	3.2	13.4	32.7	18	30.4	-	30.4	78.8	22	17.4	-	32	41.7	-	-	-
334-033	in-line	3/2	1300	2.5	-0.9 + 10	G1/4	-	4.1	-	-	-	22	29.7	22	29.7	81.3	25	-	16	40	40.7	M5	32.3	8

5/2-way valve, G1/8 or G1/4, monostable

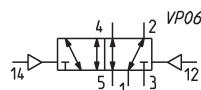
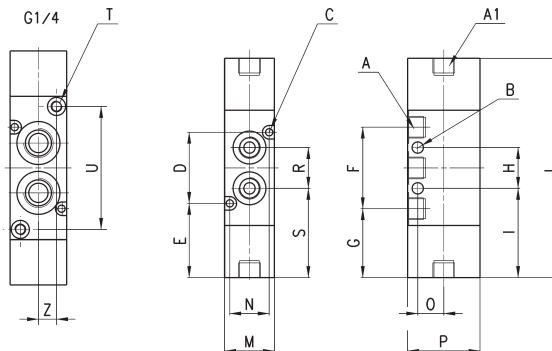
In-line or manifold mounting


DIMENSIONS

Mod.	Function	Flow rate (NI/min)	min pilot press. (bar)	Working press. (bar)	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
358-035	5/2	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	23,8	36	21,4	18	30,4	87,8	22	17,4	11,5	32	30,4	-	-	-
354-035	5/2	1300	3	-0,9 + 10	G1/4	-	4,1	3,2	36	25,4	44	21,4	22	30,4	95	25	21	16	40	32,4	M5	70,5	8

5/2-way valve, G1/8 or G1/4, bistable

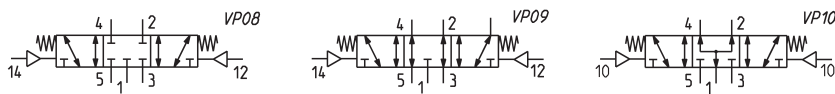
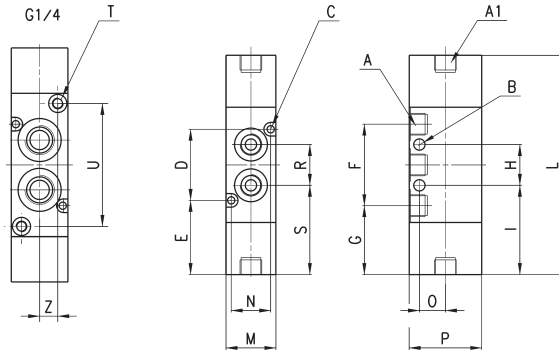
In-line or manifold mounting


DIMENSIONS

Mod.	Function	Flow rate (NI/min)	min. pilot pressure (bar)	Working pressure (bar)	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z
358-033	5/2	700	1,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-
354-033	5/2	1300	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8

5/3-way valve, G1/8 or G1/4

In-line or manifold mounting

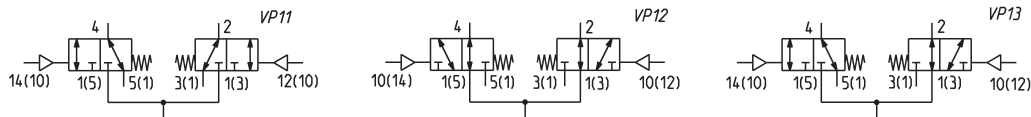
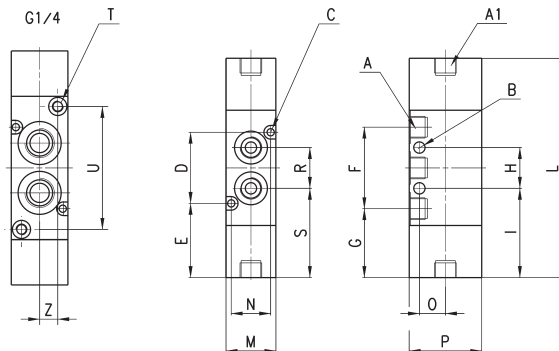


DIMENSIONS

Mod.	Function	Flow rate (Nl/min)	Min. pilot pr. (bar)	Working pr. (bar)	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z	Symb.
368-033	5/3 CC	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-	VP08
364-033	5/3 CC	1200	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8	VP08
378-033	5/3 CO	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-	VP09
374-033	5/3 CO	1050	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8	VP09
388-033	5/3 CP	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-	VP10
384-033	5/3 CP	1050	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8	VP10

2 x 3/2-way valve, G1/8 or G1/4

In-line or manifold mounting



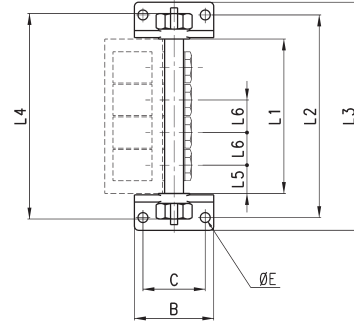
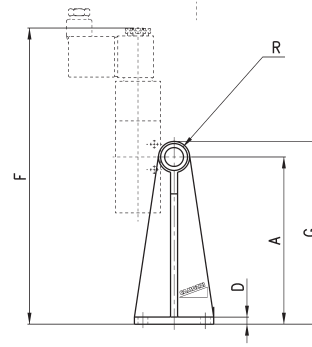
DIMENSIONS

Mod.	Function	Flow rate (Nl/min)	min. pilot pr. (bar)	Working pr. (bar)	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	S	T	U	Z	Symb.
338D-035	2x3/2 NC	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-	VP11
334D-035	2x3/2 NC	1050	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8	VP11
348D-035	2x3/2 NO	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-	VP12
344D-035	2x3/2 NO	1050	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8	VP12
398D-035	2x3/2 NC/NO	700	2,5	-0,9 + 10	G1/8	G1/8	5	3,2	31,4	32,8	36	30,4	18	39,4	96,8	22	17,4	11,5	32	39,4	-	-	-	VP13
394D-035	2x3/2 NC/NO	1050	2,5	-0,9 + 10	G1/4	-	4,1	3,2	36	33,7	44	29,7	22	40,7	103,3	25	21	16	40	40,7	M5	54,3	8	VP13

Manifold bars with separate exhausts (low version)


The following is supplied:

- 2x feet
- 1x manifold
- 1x inlet fitting
- 1x plug
- 4x washers


DIMENSIONS

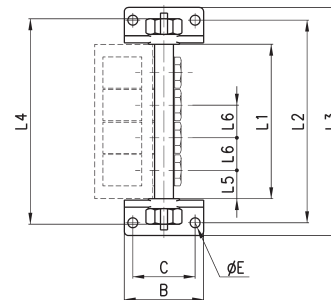
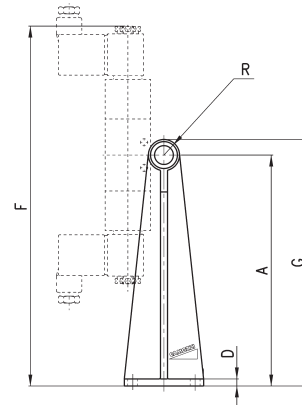
Mod.	Nr of valves	A	B	C	D	ØE	F	G	R	L1	L2	L3	L4	L5	L6	Suitable for Series
CNV-318-2	2	73	56	44	5	7	178	83	G1/4	63	97	115	99	20	23	3 - G1/8
CNV-318-3	3	73	56	44	5	7	178	83	G1/4	86	120	138	119	20	23	3 - G1/8
CNV-318-4	4	73	56	44	5	7	178	83	G1/4	109	143	161	142	20	23	3 - G1/8
CNV-318-5	5	73	56	44	5	7	178	83	G1/4	132	166	184	165	20	23	3 - G1/8
CNV-318-6	6	73	56	44	5	7	178	83	G1/4	155	189	207	188	20	23	3 - G1/8

The fixing screws of the valves Mod. 1631 01-1/8 must be ordered separately.

Manifold bars with separate exhausts (high version)


The following is supplied:

- 2x feet
- 1x manifold
- 1x inlet fitting
- 1x plug
- 4x washers


DIMENSIONS

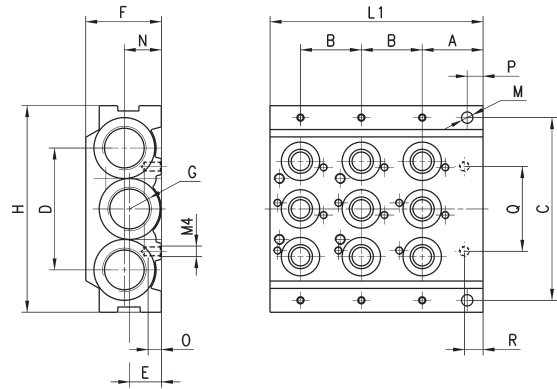
Mod.	Nr of valves	A	B	C	D	ØE	F	G	R	L1	L2	L3	L4	L5	L6	Suitable for Series
CNV-328-2	2	118	56	44	5	7	223	128	G1/4	63	97	115	99	20	23	3 - G1/8
CNV-328-3	3	118	56	44	5	7	223	128	G1/4	86	120	138	119	20	23	3 - G1/8
CNV-328-4	4	118	56	44	5	7	223	128	G1/4	109	143	161	142	20	23	3 - G1/8
CNV-328-5	5	118	56	44	5	7	223	128	G1/4	132	166	184	165	20	23	3 - G1/8
CNV-328-6	6	118	56	44	5	7	223	128	G1/4	155	189	207	188	20	23	3 - G1/8

The fixing screws of the valves Mod. 1631 01-1/8 must be ordered separately.

Initial / final Module with three positions - Mod. CNVL-...



The following is supplied:
 3x interface O-Rings manifold/manifold;
 2x fixing nuts;
 2x junction plugs;
 9x interface seals valve/manifold (CNVL-3H3)
 or 3x interface seals valve/manif. (CNVL-4H3);
 6x fixing screws for valves



DIMENSIONS

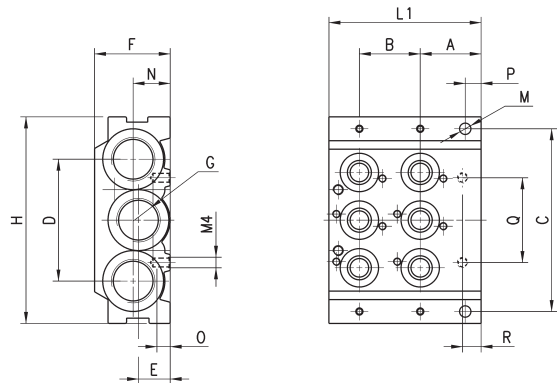
Mod.	A	B	C	D	E	F	H	L1	M	N	O	P	Q	R	G
CNVL-3H3	23	23	69,5	46	12	29	78	80,5	4,3	14	5	6	32	7	3/8
CNVL-4H3	26	26	88	60	14	29	98	91	4,3	-	5	5	38	7	1/2

CNVL-3H3: for Series 3, G1/8
 CNVL-4H3: for Series 3, G1/4

Initial / final Module with 2 positions - Mod. CNVL-...



Initial module with 2 positions
 The following is supplied:
 3x interface O-Rings manifold/manifold;
 2x fixing nuts;
 2x junction plugs;
 6x interface seals valve/manifold (CNVL-3H2)
 or 2x interface seals valve/manif. (CNVL-4H2);
 4x fixing screws for valves



DIMENSIONS

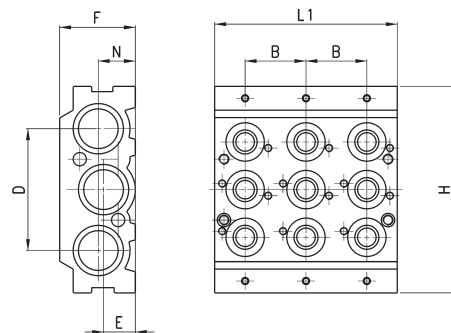
Mod.	A	B	C	D	E	F	H	L1	M	N	O	P	Q	R	G
CNVL-3H2	23	23	69,5	46	12	29	78	57,5	4,3	14	5	6	32	7	3/8
CNVL-4H2	26	26	88	60	14	29	98	65	4,3	-	5	5	38	7	1/2

CNVL-3H2: for Series 3, G1/8
 CNVL-4H2: for Series 3, G1/4

Intermediate module with 3 positions - Mod. CNVL-...



The following is supplied:
 3x interface O-Rings manifold/manifold;
 2x fixing nuts;
 2x junction plugs;
 9x interface seals valve/manifold (CNVL-3I3)
 or 3x interface seals valve/manif. (CNVL-4I3);
 6x fixing screws for valves



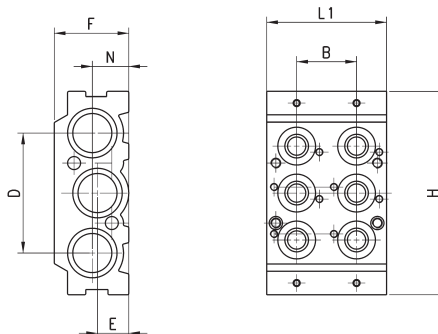
DIMENSIONS

Mod.	B	D	E	F	H	L1	N
CNVL-3I3	23	46	12	29	78	69	14
CNVL-4I3	26	60	14	29	98	78	-

CNVL-3I3: for Series 3, G1/8
 CNVL-4I3: for Series 3, G1/4

Intermediate module with 2 positions - Mod. CNVL-...


The following is supplied:
 3x interface O-Rings manifold/manifold;
 2x fixing nuts;
 2x junction plugs;
 6x interface seals valve/manifold (CNVL-312)
 or 2x interface seals valve/manif. (CNVL-412);
 4x fixing screws for valves

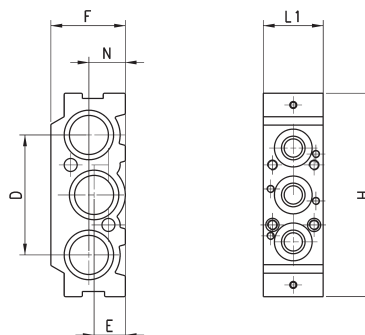

DIMENSIONS

Mod.	B	D	E	F	H	L1	N
CNVL-312	23	46	12	29	78	46	14
CNVL-412	26	60	14	29	98	52	-

CNVL-312: for Series 3, G1/8
 CNVL-412: for Series 3, G1/4

Intermediate module with 1 position - Mod. CNVL-...


The following is supplied:
 3x interface O-Rings manifold/manifold;
 2x fixing nuts;
 2x junction plugs;
 3x interface seals valve/manifold (CNVL-311)
 or 1x interface seal valve/manif. (CNVL-411);
 2x fixing screws for valves

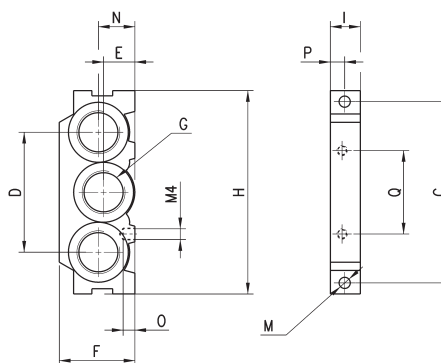

DIMENSIONS

Mod.	D	E	F	H	L1	N
CNVL-311	46	12	29	78	23	14
CNVL-411	60	14	29	98	26	-

CNVL-311: for Series 3, G1/8
 CNVL-411: for Series 3, G1/4

Terminal module Mod. CNVL-*H


The following is supplied:
 2x fixing nuts

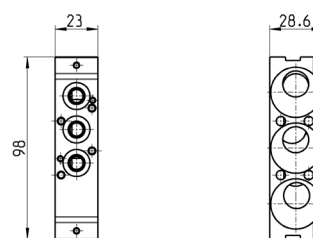

DIMENSIONS

Mod.	C	D	E	F	H	I	M	N	O	P	Q	G
CNVL-3H	69,5	46	12	29	78	11,5	4,3	14	5	6	32	3/8
CNVL-4H	88	60	14	29	98	13	4,3	-	5	8	29	1/2

CNVL-3H: for Series 3, G1/8
 CNVL-4H: for Series 3, G1/4

Interface module manifold between Series 3 G1/8 and G1/4


The following is supplied:
 3x interface seal
 2x screws
 2x pins
 4x plugs
 6x O-Rings



Mod.

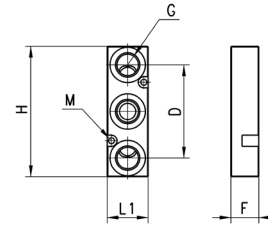
CNVL-4H-3H

It is possible to seat 1 valve,
 series 3 with G1/8 port.

Intermediate plate for additional inlet and exhaust pressure



The following is supplied:
3x O-Rings
2x fixing screws



DIMENSIONS							
Mod.	G	H	M	F	L1	D	F
CNVL-3P	G1/4	70	3.2	29	22	50	15
CNVL-4P	G1/4	73	3.2	29	25	50	20

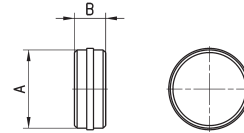
CNVL-3P: for Series 3, G1/8
CNVL-4P: for Series 3, G1/4

Separation diaphragm



For separation of channel: 1 - 3 - 5.

The following is supplied:
1x diaphragm

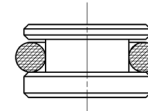


DIMENSIONS			
Mod.	A	B	
CNVL-3H-TP	15.6	6	for Series 3, G1/8
CNVL-4H-TP	23.8	8	for Series 3, G1/4

Blanking plug Mod. TCNVL for manifolds



The following is supplied:
1x blanking plug
1x O-Ring



Mod.	
TCNVL/3	for Series 3, G1/8
TCNVL/5	for Series 3, G1/4

Blanking plate Mod. CNVL for manifolds

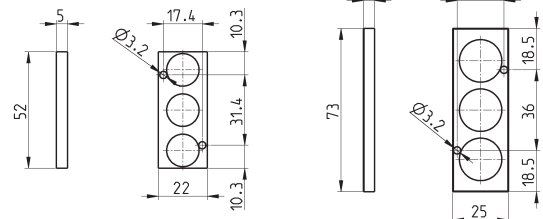
It is used to blank vacant positions of a manifold.



The following is supplied:
2x fixing screws
3x O-Rings

CNVL/1

CNVL/4



Mod.	
CNVL/1	for Series 3, G1/8
CNVL/4	for Series 3, G1/4

Series 4 valves and solenoid valves

New models

3/2, 5/2 and 5/3-way CC, CO
Ports: G1/8, G1/4, G1/2



Series 4 solenoid valves have been designed in the 3/2, 5/2, 5/3 versions and with the following two devices of actuation:

- electropneumatically actuated with mechanical spring return
- electropneumatically actuated and return with external and internal air pressure supply

Series 4 valves are equipped with a manual override which allows a stable operation and they are particularly suitable for mounting in arduous conditions.

All these valves can be operated by solenoids Series U, G A8 and H8. Moreover, valves with ports G1/2 only can be supplied with solenoids Series A6 (32x32).

Pneumatically actuated valves 3/2 NC become NO when the supply is on connection 3.

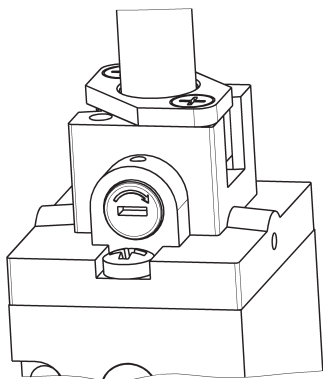
» New models with high flow (3300 and 4000 NI/min) available

GENERAL DATA

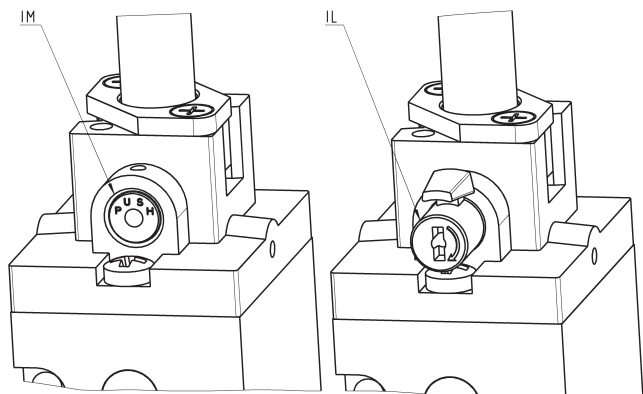
Construction	balanced spool type
Valve functions	3/2 - 5/2 - 5/3-way CC, CO
Materials	AL body and bases, stainless steel spool, technopolymer end cover, NBR PU seals
Ports	G1/8 - G1/4 - G1/2
Installation	in any position
Operating temperature	0 ÷ 60°C (with dry air at -20°C)
Operating pressure	see table
Medium	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.

CODING EXAMPLE									
4	5	4	-	015	-	22	-	U7	7
4	SERIES								
5	NUMBER OF WAYS - POSITIONS: 3 = 3/2 NC 4 = 3/2 NO 5 = 5/2 6 = 5/3 CC 7 = 5/3 CO								
4	PORTS: 8 = G1/8 4 = G1/4 2C = G1/2 2N = G1/2 (high flow)								
015	ACTUATION: 011 = double solenoid (horizontal solenoids) V11 = double solenoid (vertical solenoids) for G1/4 port only E11 = double solenoid external servo-command E15 = single solenoid external servo-command 015 = single solenoid, spring return (horizontal solenoids) V15 = single solenoid, spring return (vertical solenoid) for G1/4 port only 016 = single solenoid, pneumatic spring return (horizontal solenoid) V16 = single solenoid, pneumatic spring return (vertical solenoid) for G1/4 port only 33 = pneumatic pneumatic 34 = pneumatic differential 35 = pneumatic spring								
22	SOLENOID INTERFACE:: 22 = mech. sol. 22 x 22 50 = mech. sol. 32 x 32 (G1/2 only)								
U7	ENCAPSULATING MATERIAL / SOLENOID DIMENSIONS: A6 = PPS / 32 x 32 (G1/2 only) A8 = PPS / 30 x 30 G7 = PA / 22 x 22 G8 = PA / 30 x 30 (24 V DC only) G9 = PA / 22 x 58 H8 = PA 6 V0 / 30 x 30 U7 = PET / 22 x 22								
7	SOLENOID VOLTAGE: see solenoids section on page 2.2.35.01								
	TYPE OF MANUAL OVERRIDE: = bistable, standard IL = bistable, lever type (available on demand) IM = monostable (available on demand)								

TYPES OF MANUAL OVERRIDE



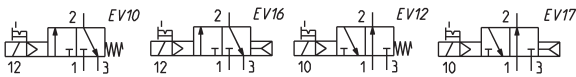
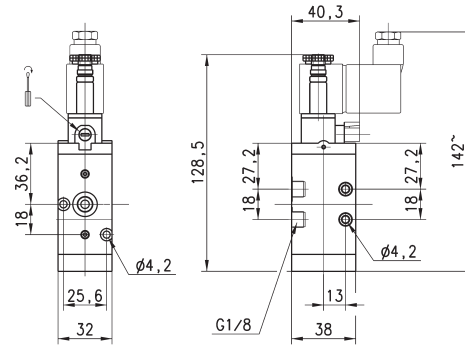
Example of solenoid valve with a bistable standard manual override.



Example of solenoid monostable valve (IM) and bistable valve with a lever type manual override (IL). Both versions are available on demand. To order them it is necessary to add IM or IL at the end of the code. Code ex.: 454-015-22-U77IL.

3/2-way solenoid valve G1/8, monostable - Mod. 438... and 448...

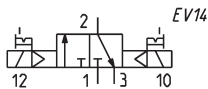
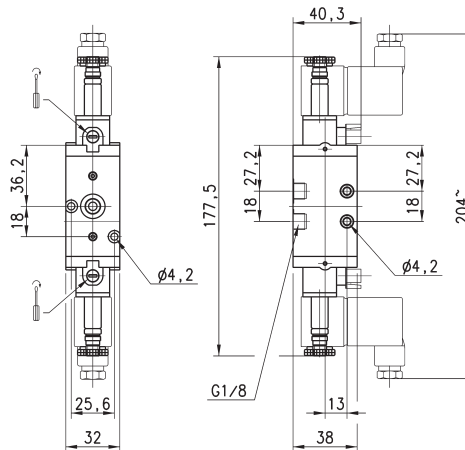
These solenoid valves, which have electropneumatic actuation and spring return, are available in the NC (closed) or NO (open) version.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
438-015-22	3/2 NC	650	2,5 + 10	EV10
438-016-22	3/2 NC	650	2,5 + 10	EV16
448-015-22	3/2 NO	650	2,5 + 10	EV12
448-016-22	3/2 NO	650	2,5 + 10	EV17

3/2-way solenoid valve G1/8, bistable - Mod. 438-011...

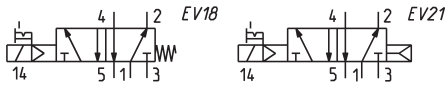
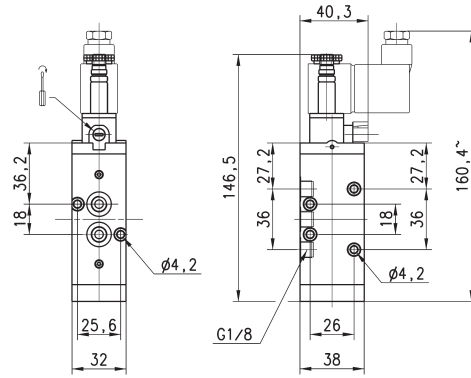
These solenoid valves, which have electropneumatic actuation and return, assume the NC (closed) or NO (open) operating status depending on the last pulse received.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)
438-011-22	3/2	700	2 + 10

5/2-way solenoid valves, G1/8, monostable - Mod 458...

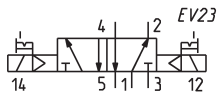
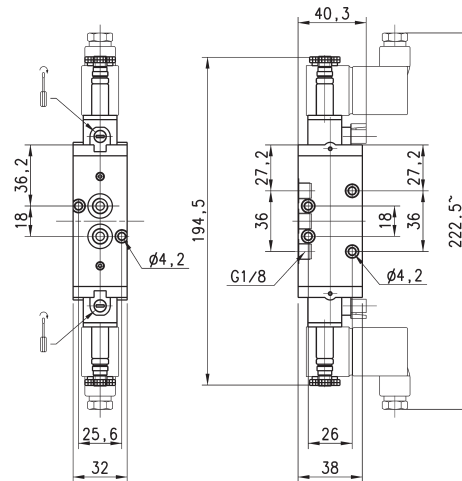
These solenoid valves, which have electropneumatic actuation and spring return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
458-015-22	5/2	650	2,5 + 10	EV18
458-016-22	5/2	650	2,5 + 10	EV21

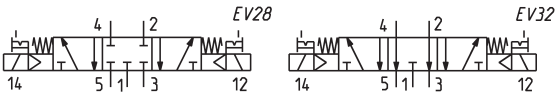
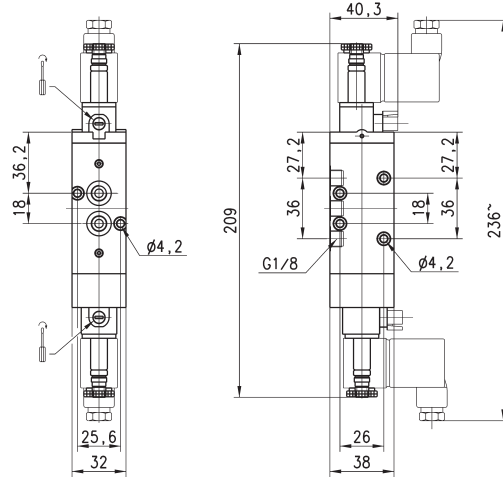
5/2-way solenoid valves, G1/8, bistable - Mod 458-011...

These solenoid valves, with electropneumatic actuation and return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)
458-011-22	5/2	650	2 + 10

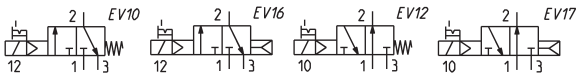
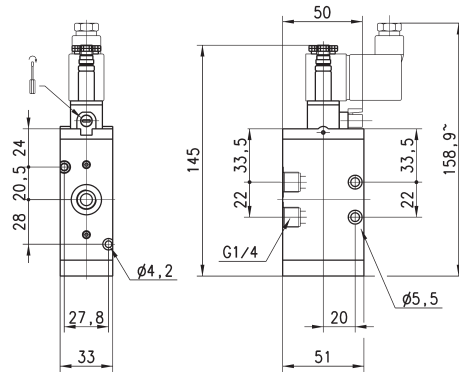
5/3-way solenoid valve, G1/8 - Mod. 468-011... and 478-011...

 CC = Centres Closed
 CO = Centres Open


Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
468-011-22	5/3 CC	600	2 + 10	EV28
478-011-22	5/3 CO	600	2 + 10	EV32

3/2-way solenoid valve, G1/4, monostable Mod. 434 and Mod. 444

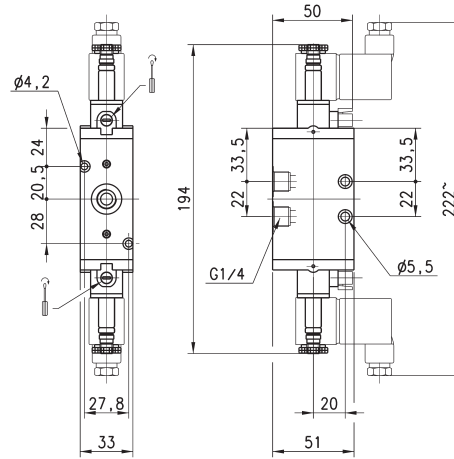
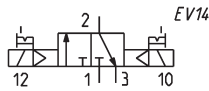
These solenoid valves, which have electropneumatic actuation and spring return, are available in the NC (closed) or NO (open) version.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
434-015-22	3/2 NC	1250	2 + 10	EV10
434-016-22	3/2 NC	1250	2 + 10	EV16
444-015-22	3/2 NO	1250	2 + 10	EV12
444-016-22	3/2 NO	1250	2 + 10	EV17

3/2-way solenoid valve, G1/4, bistable - Mod. 434-011...

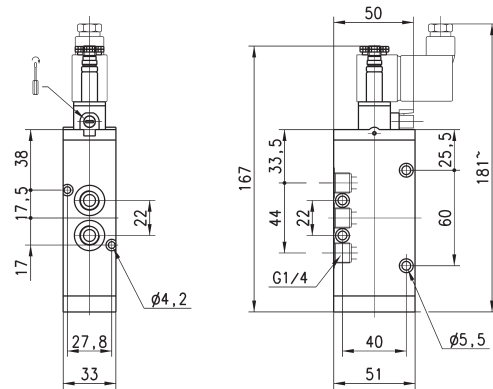
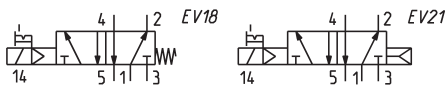
These solenoid valves, which have electropneumatic actuation and return, assume the NC (closed) or NO (open) position depending on the last pulse received.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)
434-011-22	3/2	1250	2 + 10

5/2-way solenoid valve, G1/4, monostable - Mod. 454...

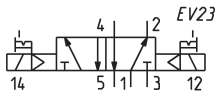
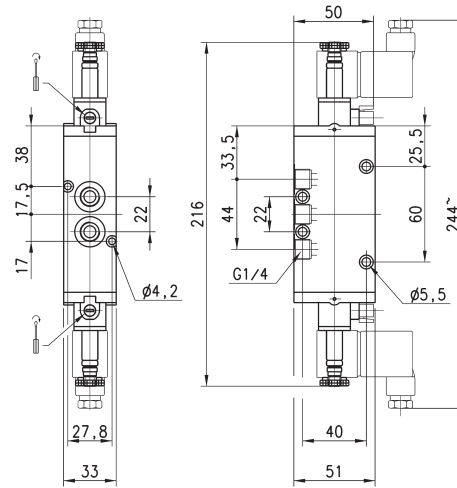
These solenoid valves, which have electropneumatic actuation and spring return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
454-015-22	5/2	1250	2,5 + 10	EV18
454-016-22	5/2	1250	2,5 + 10	EV21


5/2-way solenoid valve, G1/4, bistable - Mod. 454-011...

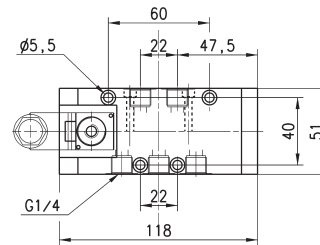
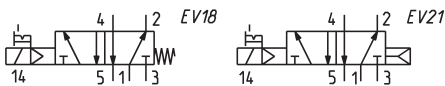
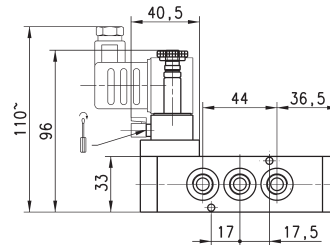
These solenoid valves, which have electropneumatic actuation and return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)
454-011-22	5/2	1250	2 ÷ 10


5/2-way solenoid valve, G1/4, monostable - Mod. 454-V...

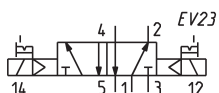
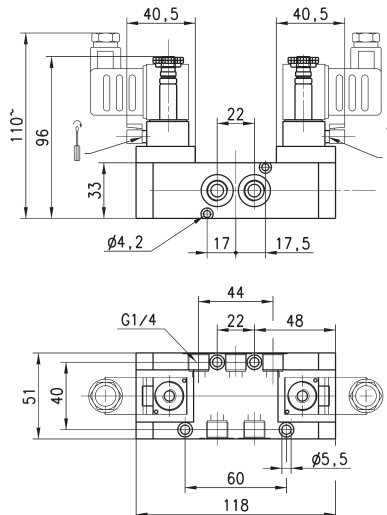
These solenoid valves, which have electropneumatic actuation and spring or pneumatic spring return are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
454-V15-22	5/2	1250	2,5 ÷ 10	EV18
454-V16-22	5/2	1250	2,5 ÷ 10	EV21

5/2-way solenoid valve, G1/4, bistable - Mod. 454-V11...

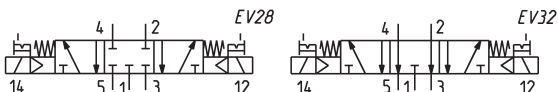
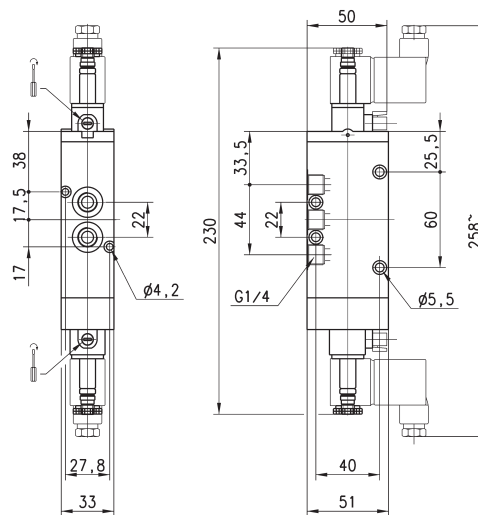
These solenoid valves, which have electropneumatic actuation and return, are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)
454-V11-22	5/2	1250	2 ÷ 10

5/3-way solenoid valve, G1/4 - Mod. 464-011... e 474-011...

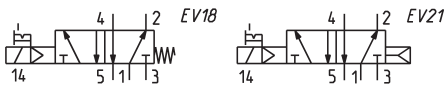
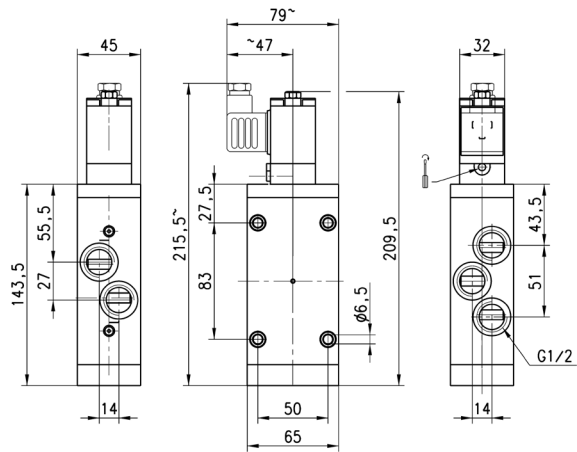
CC = Centres Closed
CO = Centres Open



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol
464-011-22	5/3 CC	1250	3 ÷ 10	EV28
474-011-22	5/3 CO	1250	3 ÷ 10	EV32

5/2-way solenoid valve, G1/2, monostable - Mod. 452C...

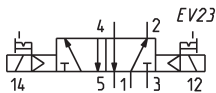
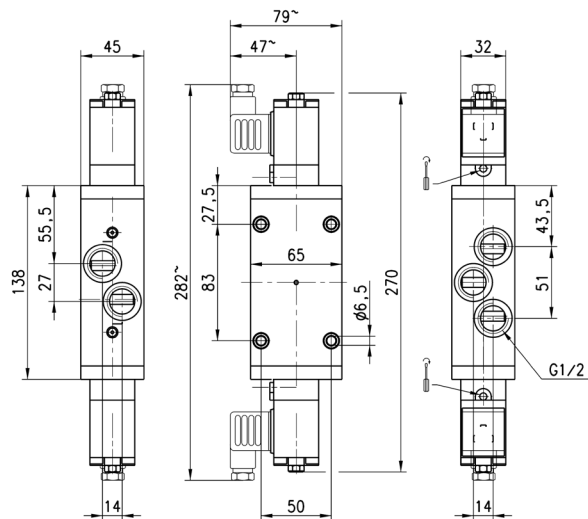

These solenoid valves, which have electropneumatic actuation and spring or pneumatic spring return are suitable for operating double-acting cylinders.



Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	Symbol	
452C-015-50-A6*	5/2	2500	2,5 + 10	EV18	* choose the desired voltage
452C-016-50-A6*	5/2	2500	2,5 + 10	EV21	* choose the desired voltage

5/2-way solenoid valve, G1/2, bistable - Mod. 452C-011...


These solenoid valves, which have electropneumatic actuation and return, are suitable for operating double-acting cylinders.



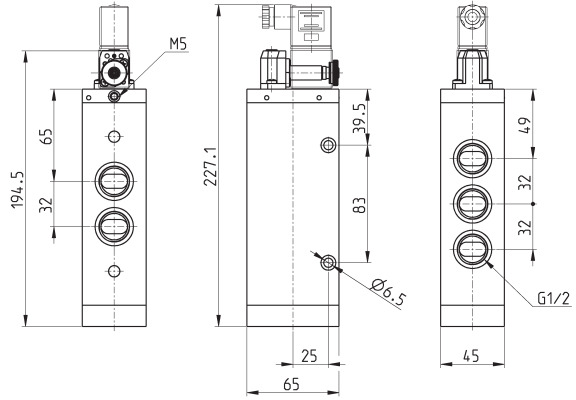
Mod.	Function	Flow rate Qn (NI/min)	Operating pressure (bar)	
452C-011-50-A6*	5/2	2500	2 + 10	* choose the desired voltage

5/2-way solenoid valve, G1/2, monostable - Mod. 452N-...

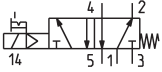
New models



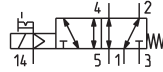
These solenoid valves, which have electropneumatic actuation and spring or pneumatic spring return are suitable for operating double-acting cylinders.



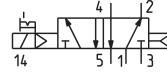
EV18



EV19



EV21



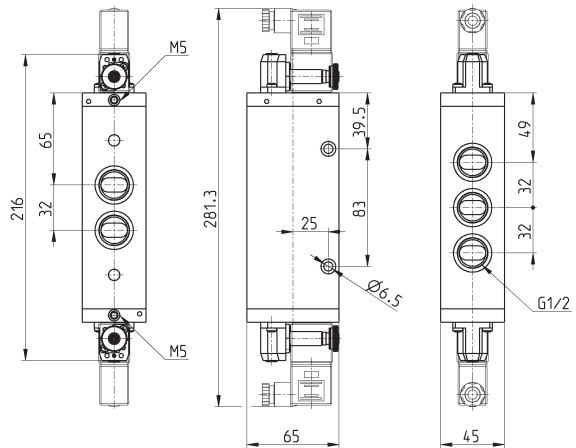
Mod.	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
452N-015-22	5/2	4000	-	2.5 + 10	EV18
452N-016-22	5/2	4000	-	2 + 10	EV21
452N-E15-22	5/2	4000	2.5	-0.9 + 10	EV19

5/2-way solenoid valve, G1/2, bistable - Mod. 452N-...

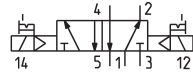
New models



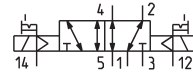
These solenoid valves, which have electropneumatic actuation and return, are suitable for operating double-acting cylinders.



EV23



EV25



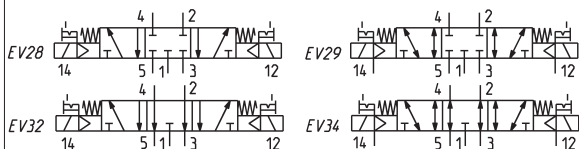
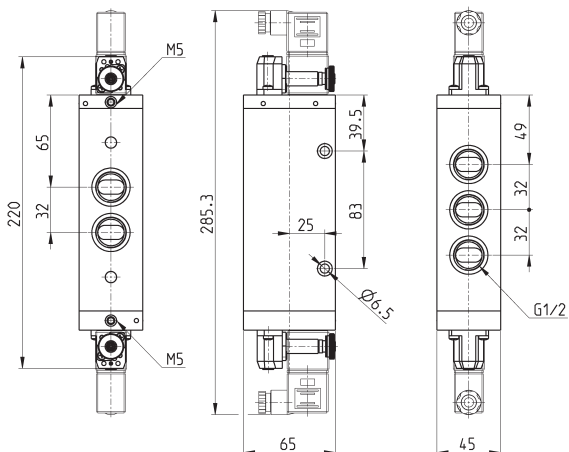
Mod.	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
452N-011-22	5/2	4000	-	2 + 10	EV23
452N-E11-22	5/2	4000	2	-0.9 + 10	EV25

5/3-way solenoid valve, G1/2, bistable - Mod. 462N-..., 472N-...

New models

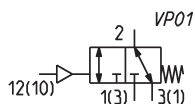
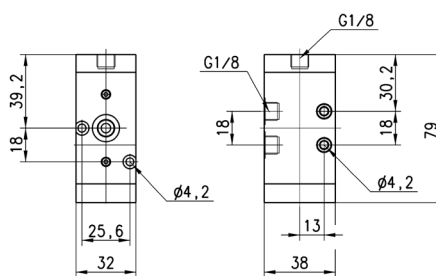


These solenoid valves, which have electropneumatic actuation and return, are suitable for operating double-acting cylinders.



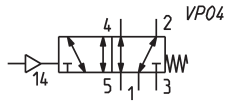
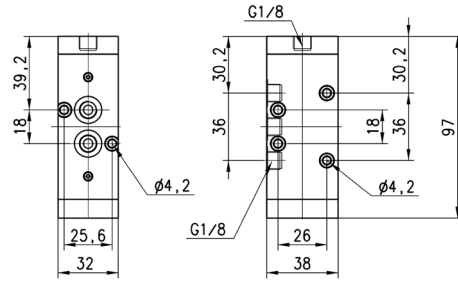
Mod.	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
462N-011-22	5/3 CC	3300	-	2 + 10	EV28
462N-E11-22	5/3 CC	3300	2	-0.9 + 10	EV29
472N-011-22	5/3 CO	3300	-	2 + 10	EV32
472N-E11-22	5/3 CO	3300	2	-0.9 + 10	EV34

3/2-way valve, G1/8 port, monostable Mod. 438-35



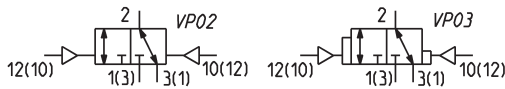
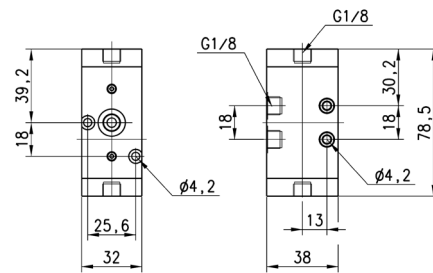
Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
438-35	in-line/on manifold	3/2 NC	700	2.5	-0.9 + 10

5/2-way valve, G1/8 port, monostable Mod. 458-35

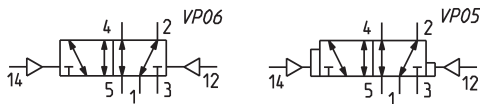
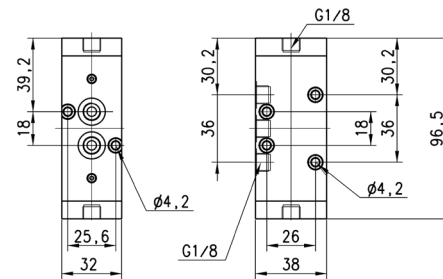


Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
458-35	in-line/manifold	5/2	700	2.5	-0.9 + 10

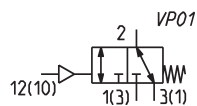
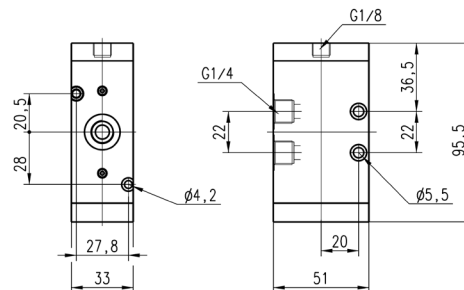
3/2-way valve, G1/8 port, bistable Mod. 438



Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
438-33	in-line/on manifold	3/2	700	2	-0.9 + 10	VP02
438-34	in-line/on manifold	3/2	700	2	-0.9 + 10	VP03

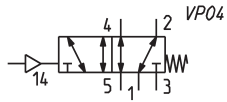
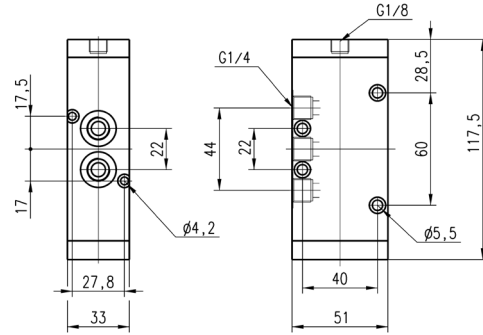
5/2-way valve, G1/8 port, bistable Mod. 458


Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
458-33	in-line/on manifold	5/2	700	2	-0.9 + 10	VP06
458-34	in-line/on manifold	5/2	700	2	-0.9 + 10	VP05

3/2-way valve, G1/4 port, monostable Mod. 434-35


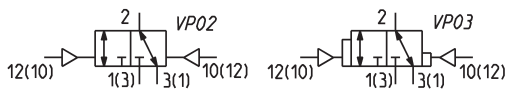
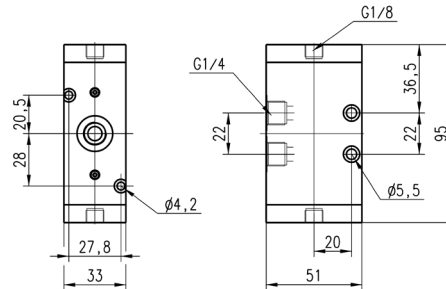
Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
434-35	in-line/on manifold	3/2 NC	1250	2.5	-0.9 + 10

5/2-way valve, G1/4 port, monostable Mod. 454-35

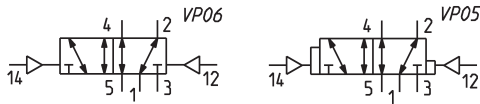
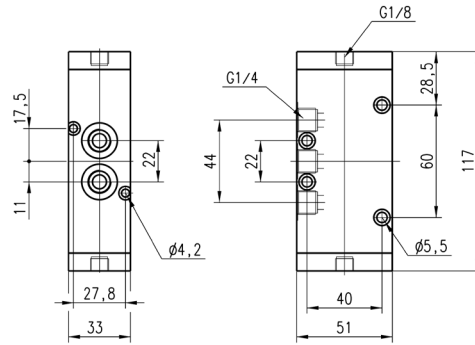


Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
454-35	in-line/on manifold	5/2	1250	2.5	-0.9 + 10

3/2-way valve, G1/4 port, bistable Mod. 434



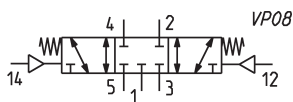
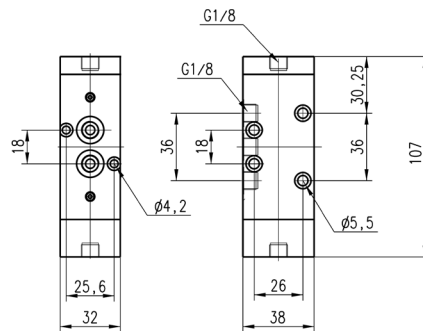
Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
434-33	in-line/on manifold	3/2 NC	1250	2	-0.9 + 10	VP02
434-34	in-line/on manifold	3/2 NC	1250	2	-0.9 + 10	VP03

5/2-way valve, G1/4 port, bistable Mod. 454


Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
454-33	in-line/on manifold	5/2	1250	2	-0.9 + 10	VP06
454-34	in-line/on manifold	5/2	1250	2	-0.9 + 10	VP05

5/3-way C.C. valve, G1/8, monostable, with central stable position

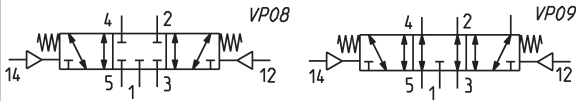
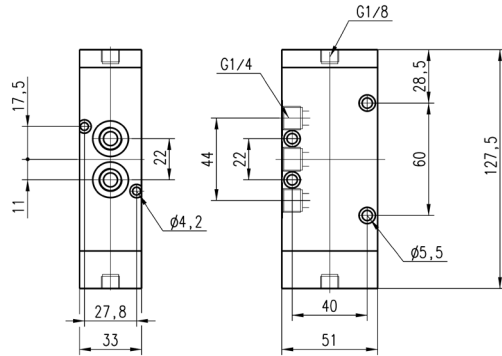
CC = Centres Closed



Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
468-33	in-line/on manifold	5/3 CC	700	2.5	-0.9 + 10

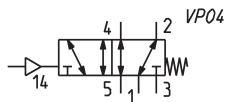
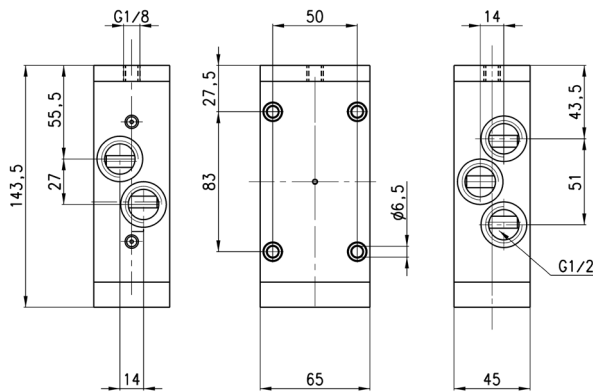
5/3-way CC CO valve, G1/4, monostable, central stable position

CC = Centres Closed
CO = Centres Open



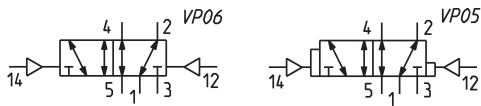
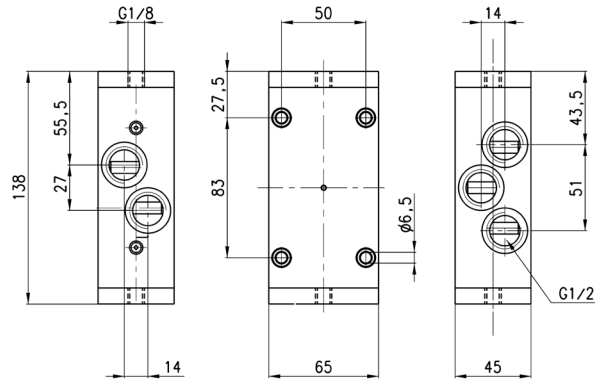
Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
464-33	in-line/on manifold	5/3 CC	1250	2.5	-0.9 + 10	VP08
474-33	in-line/on manifold	5/3 CO	1200	2.5	-0.9 + 10	VP09

5/2-way valve, G1/2 port, monostable Mod. 452C-35



Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
452C-35	in-line	5/2	2500	2.5	-0.9 + 10

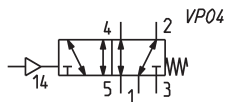
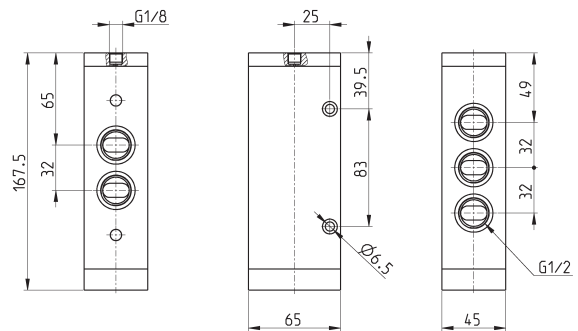
5/2-way valve, G1/2 port, bistable Mod. 452C



Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
452C-33	in-line	5/2	2500	2	-0.9 + 10	VP06
452C-34	in-line	5/2	2500	2	-0.9 + 10	VP05

5/2-way valve, G1/2 port, monostable Mod. 452N-35

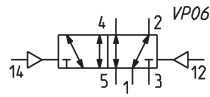
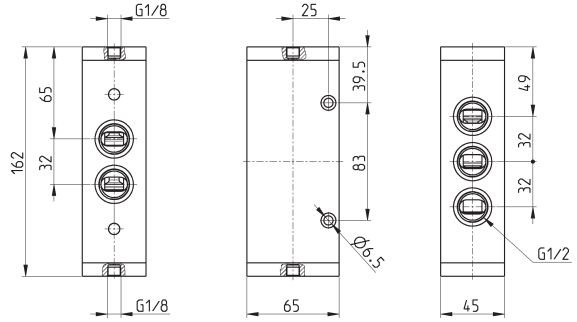
New model



Mod.	Mounting	Function	Flow rate Qn (NI/min)	min. pilot Pressure (bar)	Working pressure (bar)
452N-35	in-line	5/2	4000	2.5	-0.9 + 10

5/2-way valve, G1/2 port, bistable Mod. 452N-33

New model



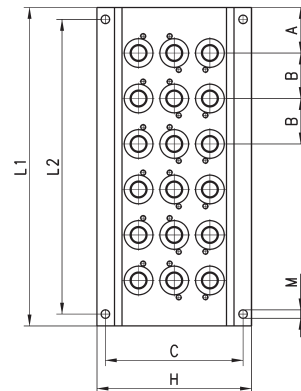
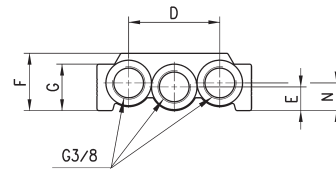
Mod.	Mounting	Function	Flow rate Qn (Nl/min)	min. pilot Pressure (bar)	Working pressure (bar)	Symbol
452N-33	in-line	5/2	4000	2	-0.9 ÷ 10	VP06

Manifold base with common exhausts

For valves Series 4, G1/8 (3/2, 5/2 or 5/3-way)

The following is supplied with:

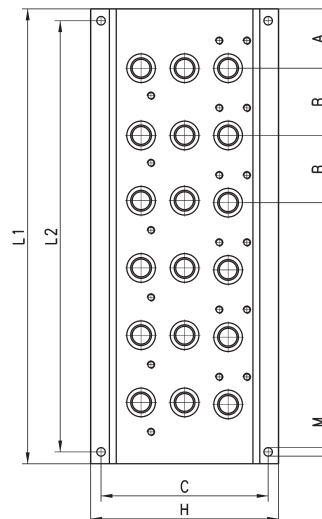
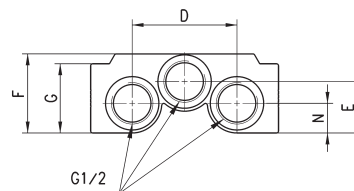
- 1x manifold
- 1x pair of fixing screws for valve position
- 1x interface seal for valve positions
- 2x guides for valve position



DIMENSIONS												
Mod.	A	B	C	D	E	F	G	H	L1	L2	M	N
CNVL-42	28	33	69,5	46	12	29	23,5	78	89	77	4,3	14
CNVL-43	28	33	69,5	46	12	29	23,5	78	122	110	4,3	14
CNVL-44	28	33	69,5	46	12	29	23,5	78	155	143	4,3	14
CNVL-45	28	33	69,5	46	12	29	23,5	78	188	176	4,3	14
CNVL-46	28	33	69,5	46	12	29	23,5	78	221	209	4,3	14

Manifold base with common exhausts

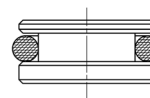
For valves Series 4, G1/4 (3/2, 5/2 or 5/3-way)
 The following is supplied :
 1x manifold
 1x pair of fixing screws for valve position
 1x interface seal for valve positions
 2x guides for valve position



DIMENSIONS												
Mod.	A	B	C	D	E	F	G	H	L1	L2	M	N
CNVL-52	30	34	84,5	53	26	40	35	95	94	82	4,3	15
CNVL-53	30	34	84,5	53	26	40	35	95	128	116	4,3	15
CNVL-54	30	34	84,5	53	26	40	35	95	162	150	4,3	15
CNVL-55	30	34	84,5	53	26	40	35	95	196	184	4,3	15
CNVL-56	30	34	84,5	53	26	40	35	95	230	218	4,3	15

Blanking plug Mod. TCNVL for manifolds

The following is supplied:
 1x blanking plug
 1x O-Ring



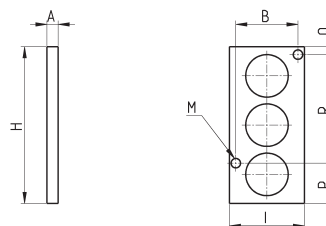
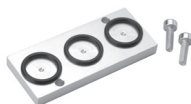
Mod.
TCNVL/3
TCNVL/5

TCNVL/3: for Series 4, G1/8
 TCNVL/5: for Series 4, G1/4

Blanking plate Mod. CNVL for manifolds

It is used to blank vacant positions of a manifold.

The following is supplied:
 2x fixing screws
 3x O-Rings



DIMENSIONS								
Mod.	A	B	H	I	M	P	Q	R
CNVL/2	5	25.6	52	32	4.2	17	17	18
CNVL/3	5	27.8	70	33.5	4.2	18	3.5	48.5

CNVL/2: for Series 4, G1/8
 CNVL/3: for Series 4, G1/4

Series 9 valves and solenoid valves

5/2 and 5/3-way CC CO

Sizes 1 - 2 - 3

According to the standard ISO 5599/1



Series 9 electropneumatically or pneumatically operated valves have been designed with sizes 1, 2 and 3, as recommended by the ISO Standards. The ease of pneumatic and electrical wiring makes these valves extremely flexible.

GENERAL DATA

Operating pressure	max. press. 10 bar (for minimum pressures see descriptions)
Nominal pressure	6 bar
Nominal flow	ISO 1 = 900 NI/min ISO 2 = 1610 NI/min ISO 3 = 4350 NI/min
Operating temperature	0 ÷ 60°C (with dry air at -20°C)
Fluid	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISOVG32 oil and to never interrupt the lubrication.
Electropneumatic interface	according CNOMO Standards

CODING EXAMPLE

9	5	1	-	000	-	P16	-	23	-	U7	7
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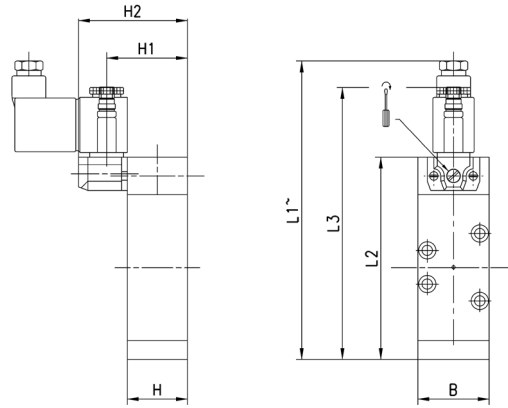
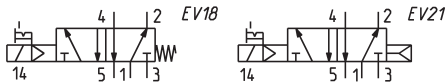
9	SERIES
5	NUMBER OF WAYS - POSITIONS: 5 = 5/2 6 = 5/3 CC 7 = 5/3 CO
1	SIZE: 1 = size 1 2 = size 2 3 = size 3
000	BODY DESIGN: 000 = valve body
P 16	ACTUATION: 33 = pneumatic, pneumatic return 34 = pneumatic, differential pneumatic return 35 = pneumatic, mechanical spring return P11 = double solenoid (horizontal solenoids) P15 = single solenoid, spring return (horizontal solenoids) P16 = solenoid, pneumatic spring return (horizontal solenoids)
23	SOLENOID INTERFACE: 23 = A531 - BC2 (Cnomo norm)
U7	SOLENOID MATERIAL / SOLENOID DIMENSIONS: A8 = PPS / 30 x 30 G7 = PA / 22 x 22 G8 = PA / 30 x 30 (24 V DC only) G9 = PA / 22 x 58 H8 = PA 6 V0 / 30 x 30 U7 = PET / 22 x 22
7	SOLENOID VOLTAGE: see the solenoids section on page 2.2.35.01

5/2-way solenoid valves, monostable - ISO 1, ISO 2, ISO 3

Available with electropneumatic actuation and spring return, they are suitable for mounting on a sub-base.



The following is supplied:
1x interface seal
4x fixing screws



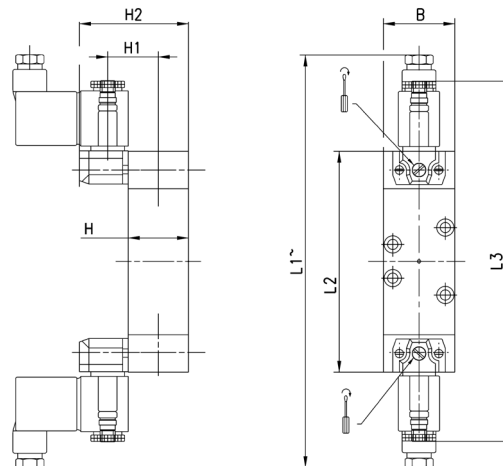
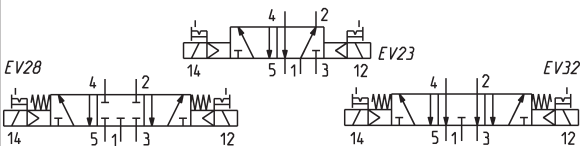
DIMENSIONS										
Mod.	Size ISO	B	L1	L2	L3	H	H1	H2	Min. operating pressure	Symbol
951-000-P15-23	1	38	153	108	146	32	43	58	2,5	EV18
952-000-P15-23	2	51	173	128	166	33	44	59	2,5	EV18
953-000-P15-23	3	65	218	173	211	45	56	71	2,5	EV18
951-000-P16-23	1	38	153	108	146	32	43	58	2,5	EV20
952-000-P16-23	2	51	173	128	166	33	44	59	2,5	EV20
953-000-P16-23	3	65	218	173	211	45	56	71	2,5	EV20

5/2-way, 5/3-way solenoid valves, bistable - ISO 1, ISO 2, ISO 3

Available with electropneumatic actuation and spring return, they are suitable for mounting on a sub-base.



The following is supplied:
1x interface seal
4x fixing screws



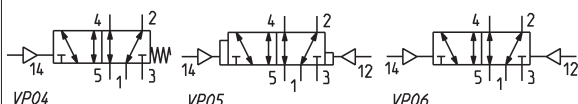
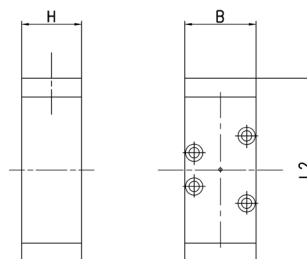
DIMENSIONS										
Mod.	Size ISO	B	L1	L2	L3	H	H1	H2	Min. operating pressure	Symbol
951-000-P11-23	1	38	208	118	194	32	43	58	2,5	EV23
952-000-P11-23	2	51	228	138	214	33	44	59	2,5	EV23
953-000-P11-23	3	65	273	183	259	45	56	71	2,5	EV23
961-000-P11-23	1	38	208	118	194	32	43	58	2,5	EV28
962-000-P11-23	2	51	228	138	214	33	44	59	2,5	EV28
963-000-P11-23	3	65	273	183	259	45	56	71	2,5	EV28
971-000-P11-23	1	38	208	118	194	32	43	58	2,5	EV32
972-000-P11-23	2	51	228	138	214	33	44	59	2,5	EV32
973-000-P11-23	3	65	273	183	259	45	56	71	2,5	EV32

5/2 -way valves, monostable, bistable - ISO 1, ISO 2, ISO 3


The Series 9 valves with ISO interface, size 1, 2 and 3, are available with the following types of actuation:

- pneumatic, with spring return
- pneumatic actuation and differential return
- pneumatic actuation and return

The following is supplied:
1x interface seal
4x fixing screws



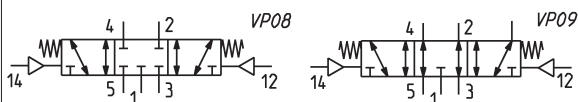
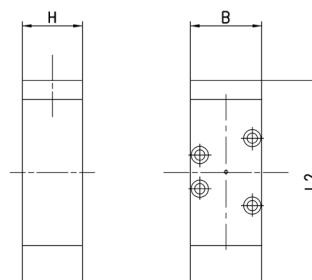
DIMENSIONS						
Mod.	Size ISO	B	L2	H	Min. operating pressure	Symbol
951-000-35	1	38	98	32	2,5	VP04
952-000-35	2	51	118	33	2,5	VP04
953-000-35	3	65	163	45	2,5	VP04
951-000-34	1	38	98	32	2	VP05
952-000-34	2	51	118	33	2	VP05
953-000-34	3	65	163	45	2	VP05
951-000-33	1	38	98	32	2	VP06
952-000-33	2	51	118	33	2	VP06
953-000-33	3	65	163	45	2	VP06

5/3-way valve, monostable, with stable central position - ISO 1, 2, 3


The Series 9 valves with ISO interface, size 1, 2 and 3, are available with pneumatic actuation and central resetting by a spring.

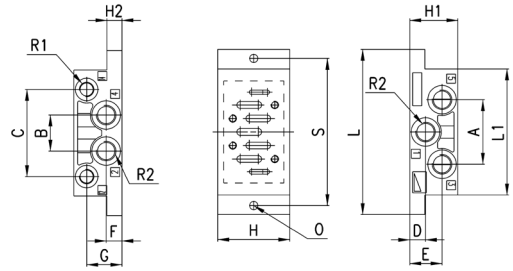
- There are two types of function:
- with closed centres
 - with open centres

The following is supplied:
1x interface seal
4x fixing screws



DIMENSIONS						
Mod.	Size ISO	B	L2	H	Min. operating pressure	Symbol
961-000-33	1	38	108	32	2,5	VP08
962-000-33	2	51	128	33	2,5	VP08
963-000-33	3	65	173	45	2,5	VP08
971-000-33	1	38	108	32	2,5	VP09
972-000-33	2	51	128	33	2,5	VP09
973-000-33	3	65	173	45	2,5	VP09

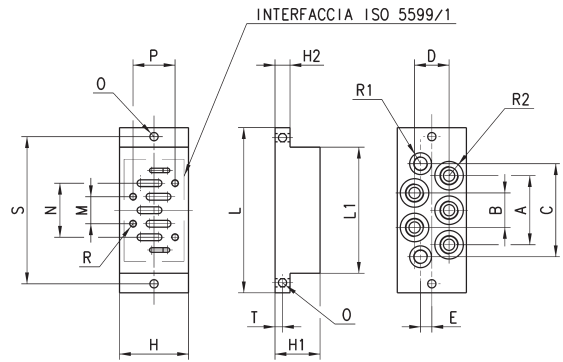
Single sub-base side outlets (VDMA 24345)



DIMENSIONS

Mod.	Size	A	B	C	D	E	F	G	H	H1	H2	L	L1	O	R1	R2	S
901-F1A	1	43	24	58	10.5	21.5	10.5	23.5	48	32	10	110	84	5.5	G1/8	G1/4	98
902-F2A	2	56	30	74	14	26	14	30	57	40	13	124	95	6.5	G1/8	G3/8	112
903-F3A	3	68	32	90	17	17	17	22	71	32	18	149	119	6.5	G1/8	G1/2	136

Single sub-base with rear outlets (VDMA 24345)

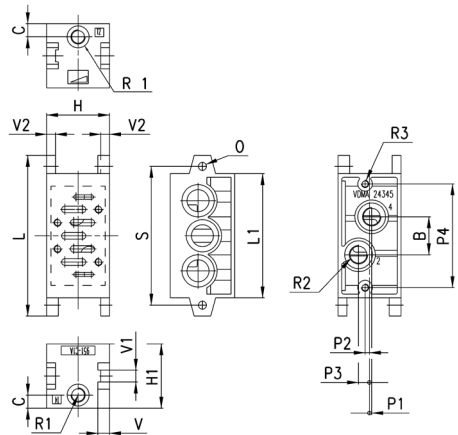


DIMENSIONS

Mod.	Size	A	B	C	D	E	H	H1	H2	L	L1	M	N	O	P	R	R1	R2	S	T
901-G1A	1	46	23	61	23	7.5	46	30	10	110	84	18	36	5.5	28	M5	G1/8	G1/4	98	5
902-G2A	2	56	28	72	28	8	56	35	13	124	95	24	48	6.5	38	M6	G1/8	G3/8	112	6.5
903-G3A	3	68	34	90	34	10	71	32	18	149	119	32	64	6.5	48	M8	G1/8	G1/2	136	9

Manifold sub-base with com. exhausts and inlet (VDMA 24345)

The following is supplied:
 2x fixing screws
 3x O-ring



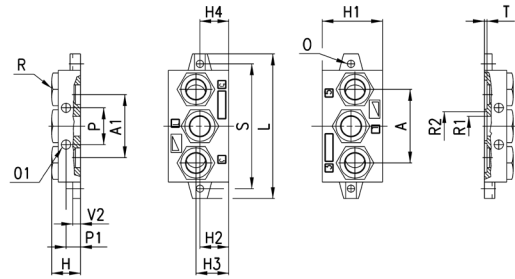
DIMENSIONS

Mod.	Size	B	C	H	H1	L	L1	O	P1	P2	P3	P4	R1	R2	R3	S	V	V1	V2
901-C1A	1	26	8.5	43	44	110	85	5.5	1.5	3	7.5	71	G1/8	G1/4	M5	95	8	8	6
902-C2A	2	30	9	56	45	135	100	6.5	5	3	6	86	G1/8	G3/8	M6	115	11	11	8
903-C3A	3	38	10	71	54	190	140	9	6	3	8	130	G1/8	G1/2	M8	168	13	13	8

Note: complete with fixing screws and O-ring.

End block for manifold sub-base (VDMA 24345)

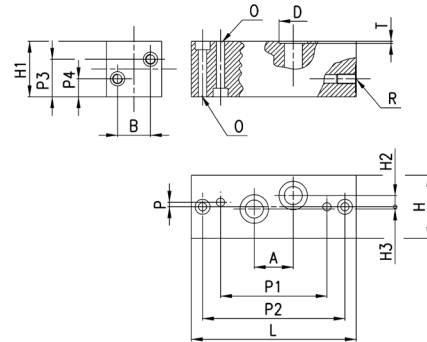

The following is supplied:
 2x end blocks (1 pair)
 2x fixing screws
 3x OR


DIMENSIONS

Mod.	Size	A	A1	H	H1	H2	H3	H4	L	O	O1	P	P1	R	ØR1	ØR2	S	T	V2
901-H1	1	56	48	22	46	22	25	22	110	5,5	7	28	11	G3/8	15	22,1	95	2	6
902-H2	2	68	63	26	47	23	25	24	135	6,5	9	35	13	G1/2	18,5	28,7	115	2	8
903-H3	3	104	94	30	56	22	25	25	190	9	12	52	15	G1	28	38	168	2,7	8

Interface with front outlets (VDMA 24345)

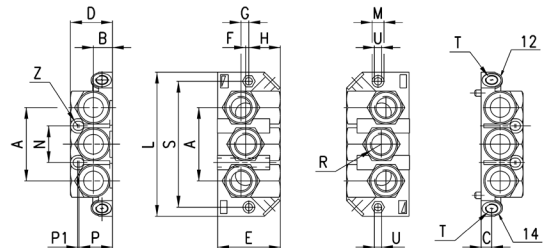

The following is supplied:
 2x fixing screws
 2x OR


DIMENSIONS

Mod.	Size	A	B	D	H	H1	H2	H3	L	O	P	P1	P2	P3	P4	R	T
901-N1	1	26	22	19	42	37	7,5	1,5	110	5,5	3	71	95	25	12	G1/4	1,4
902-N2	2	30	29	23	55	40	6	5	135	6,5	3	86	115	26	14	G3/8	1,4
903-N3	3	38	36	27	70	45	8	6	190	9	3	130	168	29	17	G1/2	1,4

End blocks for manifold bases with front outlets


The following is supplied:
 2x end blocks (1 pair)
 2x fixing screws
 3x OR

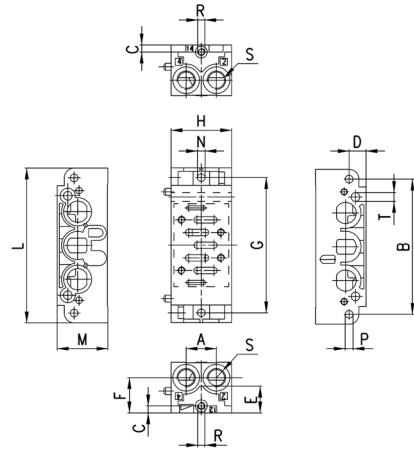

DIMENSIONS

Mod.	Size	A	B	C	D	E	F	G	H	L	M	N	P	P1	R	S	T	U	Z
901-HN1	1	56	14,5	8	32	48	2,5	6	24	110	9	28	25,5	1	3/8"	96	G1/8	5,5	3,5



Manifold bases with comm. inlet and exhaust ports and front outlet

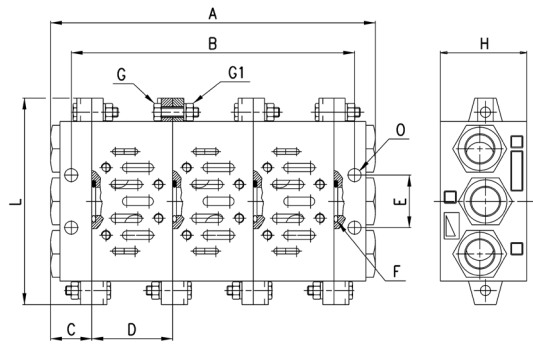
The following is supplied:
2x fixing screws
3x OR



DIMENSIONS																
Mod.	Size	A	B	C	D	E	F	G	H	L	M	N	P	R	S	T
901-N1A	1	21.5	96	5	12	19	25	96	43	110	36	5.5	5.5	M5	G1/4	6.2



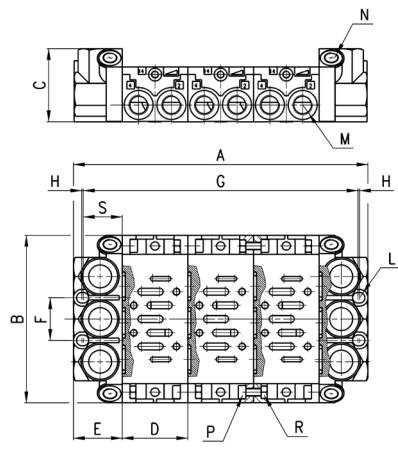
Assembly of manifold sub-base (VDMA 24345)



DIMENSIONS												
Size	A	B	C	D	E	F	OR	UNI 5739 G	UNI 57588 G1	H	L	O
1	n°D+2C	n°D+C	22	43	28	3068	M5X20	M5	46	110	7	
2	n°D+2C	n°D+C	26	56	35	3093	M6X25	M6	47	135	9	
3	n°D+2C	n°D+C	30	71	52	4125	M8X25	M8	56	190	12	



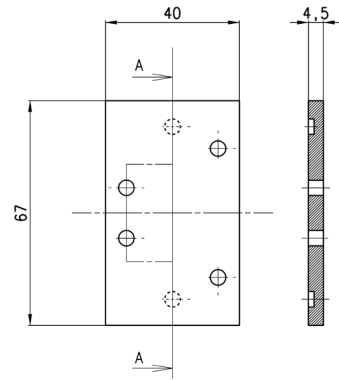
Assembly for front outlet manifold sub-bases



DIMENSIONS														
Size	A	B	C	D	E	F	G	H	L	M	N	UNI 5931 P, UNI 5588 R	S	
1	N° D+2E	110	48	43	32	28	n°D+25	1	3,5	G1/4	G1/8	M5X14	M5	25,5

Cover plate for unused positions

The following is supplied:
1x seal
4x screws

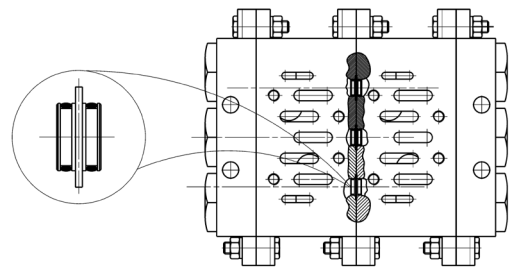


Mod.
901-TP

Mounting example



Separation tap lines 1 - 3 - 5 to be used with manifold type 901-C1A and 902-C2A

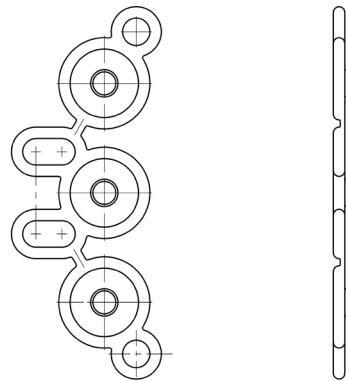


Mod.
901-C1A/TP
902-C2A/TP

Separation joint



Separation joint to be used with manifold type 901N



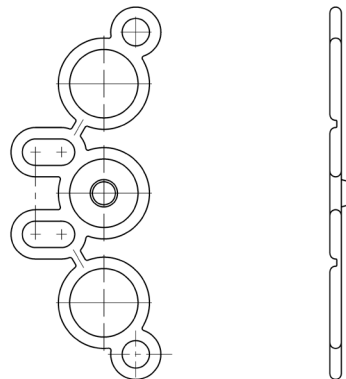
1 - 3 - 5 closed

Mod.
901-N1A/T

Separation joint



Separation joint to be used with manifold type 901N.
P plugged.

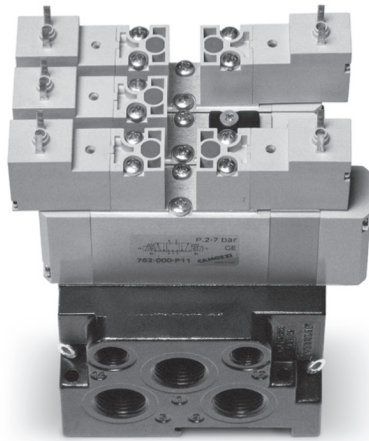


1 closed

Mod.
901-N1A/TP

Series 7 valves and solenoid valves

VDMA 24563 (ISO 15407-1)
5/2 - 5/3-way CC CO CP



Size 26 mm (VDMA 24563-01)
Size 18 mm (VDMA 24563-02)

GENERAL DATA

Construction	balanced spool type
Valve functions	5/2 - 5/3-way CC CO CP
Materials	AL body, spool base, polyamide endcovers, NBR seals
Mounting	by means of screws on the base
Ports	on sub-base
Operating temperature	0° C min. +50° C max
Fluid	filtered air (5 micron or less), without lubrication. If lubricated air is used, it is recommended to use ISOVG32 oil. Once applied the lubrication should never be interrupted.
Size	26 mm 18 mm
Installation	in any position
Operating pressure	P. max 7 bar
Nominal pressure	6 bar
Nominal flow	Qn Size 26 mm = 900 NI/min Qn Size 18 mm = 450 NI/min
Voltage	see coding
Voltage tolerance	± 10%
Power consumption	2W
Class of insulation	class F
Protection	IP54 (IP65 with connector DIN 40050)

CODING EXAMPLE

7	5	1	-	N	1	A	-	P16	-	15	-	W	2	3
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7	SERIES:
5	NUMBER OF WAYS - POSITIONS: 5 = 5/2 6 = 5/3 CC 7 = 5/3 CO 8 = 5/3 CP
1	SIZES: 1 = size 26 mm 2 = size 18 mm
N	SUBBASE: N = sub-base with front outlets
1	PORTS: 1 = G1/4 (Size 26 mm) 2 = G1/8 (Size 18 mm)
A	NUMBER OF SUBBASES: A = 1 * B = 2 * C = 3 * D = 4 * E = 5 * F = 6 * G = 7 * H = 8 * K = 9 * L = 10 * M = 11 * N = 12 * P = 13 * R = 14 * S = 15 *
P16	ACTUATION: 33 = pneumatic, bistable 36 = pneumatic, monostable P11 = electro-pneumatic, bistable P16 = electro-pneumatic, monostable
15	SOLENOID INTERFACE: 15 = 15x15
W	SOLENOID TYPES: W = Series W (24V - 48V DC only) P = Series P **
2	CONNECTION: 1 = wire 300 mm (Series W, 24V DC only) ** 2 = 2 pins (Series W, 24V - 48V DC) 5 = 2 pins+earth (Series P) **
3	SOLENOID VOLTAGE: 3 = 24V DC 4 = 48V DC ** 6 = 110V DC (with Series P solenoids only) ** B = 24V 50/60 Hz (with Series P solenoids only) ** C = 48V 50/60 Hz (with Series P solenoids only) ** D = 110V 50/60 Hz (with Series P solenoids only) **
	NOTES: * complete with the two end blocks ** on request

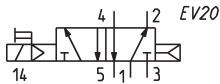
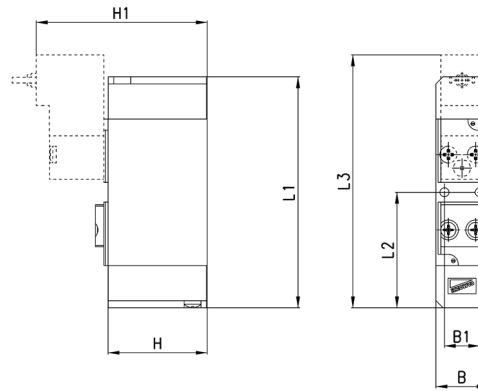
5/2-way solenoid valve, ISO 26 mm - 18 mm monostable



The Series 7 solenoid valves with interface ISO 26 mm and 18 mm which have electropneumatic actuation and spring return are suitable for mounting on a sub-base. For electrical actuation, 2 types of solenoid, Series W and Series P (available with a wide range of voltages, on request).

Connector Mod. 126-800.

The following is supplied:
1x interface seal
2x fixing screws



DIMENSIONS

Mod.	Size ISO	B	B1	L1	L2	L3	H	H1	Min. operating pressure
751-000-P16-15-W20	26 mm	26,5	19	99,7	49,85	98,8	39	64,3	3 bar
752-000-P16-15-W20	18 mm	18,5	12,5	82,2	41,1	90	35,2	60,5	3 bar

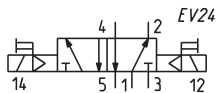
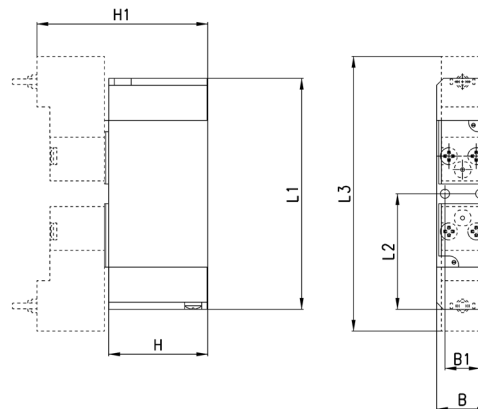
5/2-way solenoid valves, ISO 26 mm - 18 mm, bistable



The Series 7 solenoid valves with ISO 26 mm and 18 mm interface which have electropneumatic actuation and return are suitable for mounting on a sub-base. For electrical actuation, 2 types of solenoid Series W and Series P (available with a wide range of voltages, on request).

Connector Mod. 126-800.

The following is supplied:
1x interface seal
2x fixing screws



DIMENSIONS

Mod.	Size ISO	B	B1	L1	L2	L3	H	H1	Min. operating pressure
751-000-P11-15-W20	26 mm	26,5	19	99,7	49,85	98,8	39	64,3	2 bar
752-000-P11-15-W20	18 mm	18,5	12,5	82,2	41,1	97,8	35,2	60,5	2 bar

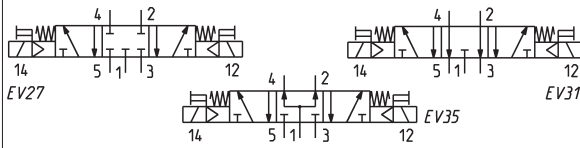
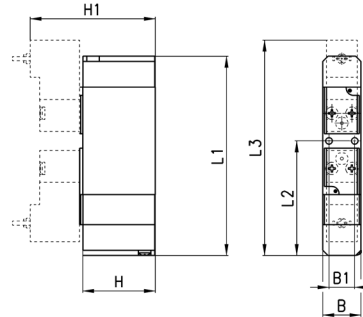
5/3-way solenoid valves, ISO 26 mm - 18 mm



The Series 7 solenoid valves with ISO 26 mm - 18 mm interface which have electropneumatic actuation and spring return are suitable for mounting on a sub-base. For electrical actuation, two types of solenoid Series W and Series P (are available with a large range of voltages, on request).

Connector Mod. 126-800.

The following is supplied:
1x interface seal
2x fixing screws



DIMENSIONS

Mod.	Size ISO	B	B1	L1	L2	L3	H	H1	Min. operating pressure	Symbol
761-000-P11-15-W20	26 mm	26,5	19	111,7	61,85	110,8	39	64,3	3 bar	EV27
762-000-P11-15-W20	18 mm	18,5	12,5	96,7	55,6	104,5	35,2	60,5	3 bar	EV27
771-000-P11-15-W20	26 mm	26,5	19	111,7	61,85	110,8	39	64,3	3 bar	EV31
772-000-P11-15-W20	18 mm	18,5	12,5	96,7	55,6	104,5	35,2	60,5	3 bar	EV31
781-000-P11-15-W20	26 mm	26,5	19	111,7	61,85	110,8	39	64,3	3 bar	EV35
782-000-P11-15-W20	18 mm	18,5	12,5	96,7	55,6	104,5	35,2	60,5	3 bar	EV35

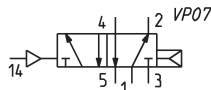
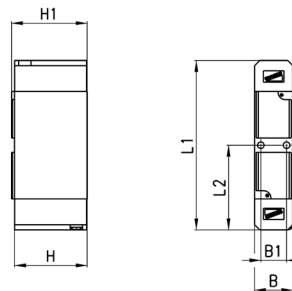
5/2-way solenoid valves ISO 26 mm - 18 mm, monostable



The Series 7 solenoid valves with ISO 26 mm and 18 mm interface which have pneumatic actuation and pneumatic spring return are suitable for mounting on a sub-base.

For the correct use of the valve, the pilot pressure must be the same or higher than the operating pressure.

The following is supplied:
1x interface seal
2x fixing screws



DIMENSIONS

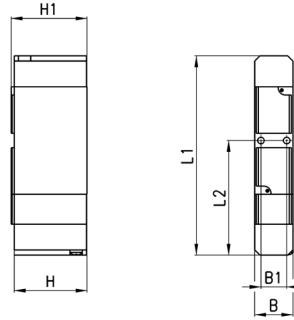
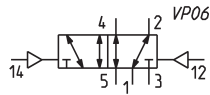
Mod.	Size ISO	B	B1	L1	L2	H	H1	Min. operating pressure
751-000-36	26 mm	26,5	19	99,7	49,85	39	40,5	3 bar
752-000-36	18 mm	18,5	12,5	82,2	41,1	35,2	36,7	3 bar

5/2-way solenoid valves ISO 26 mm - 18 mm, bistable



The Series 7 solenoid valves with ISO 26 mm and 18 mm interface which have pneumatic actuation and return are suitable for mounting on a sub-base.

The following is supplied:
1x interface seal
2x fixing screws



DIMENSIONS

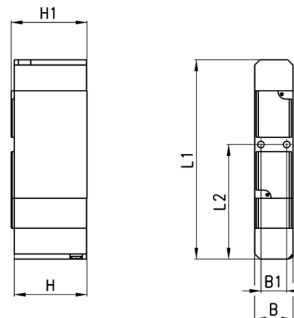
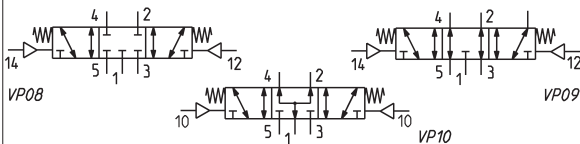
Mod.	Size ISO	B	B1	L1	L2	H	H1	Min. operating pressure
751-000-33	26 mm	26,5	19	99,7	49,85	39	40,5	2 bar
752-000-33	18 mm	18,5	12,5	82,2	41,1	35,2	36,7	2 bar

5/3-way solenoid valves, ISO 26 mm - 18 mm



The Series 7 solenoid valves with ISO 26 mm and 18 mm interface which have pneumatic actuation and mechanical spring return are suitable for mounting on a sub-base.

The following is supplied:
1x interface seal
2x fixing screws



DIMENSIONS

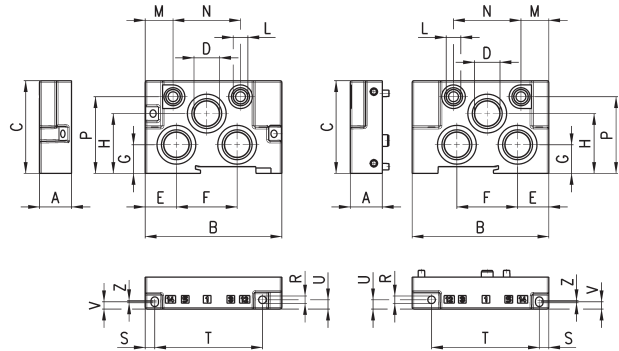
Mod.	Size ISO	B	B1	L1	L2	H	H1	Min. operating pressure	Symbol
761-000-33	26 mm	26,5	19	117,7	61,85	39	40,5	3 bar	VP08
762-000-33	18 mm	18,5	12,5	96,7	55,6	35,2	36,7	3 bar	VP08
771-000-33	26 mm	26,5	19	117,7	61,85	39	40,5	3 bar	VP09
772-000-33	18 mm	18,5	12,5	96,7	55,6	35,2	36,7	3 bar	VP09
781-000-33	26 mm	26,5	19	117,7	61,85	39	40,5	3 bar	VP10
782-000-33	18 mm	18,5	12,5	96,7	55,6	35,2	36,7	3 bar	VP10

End blocks for subbase

End blocks for subbase with conveyed inlets and exhausts and front outlets.



The following is supplied:
1x seal
2x fixing screws



DIMENSIONS

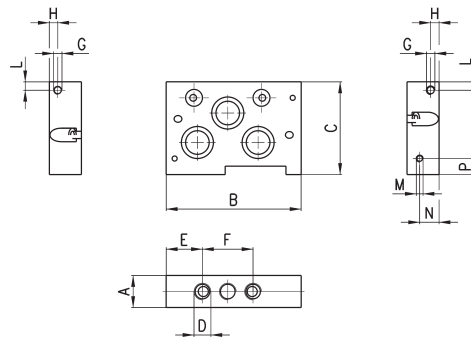
Mod.	Size ISO	A	B	C	D	E	F	G	H	L	M	N	P	R	S	T	U	V	Z
701C-HN1	26 mm	27	107	65	G1/2	23	60	24,5	43	G1/8	21,5	58	55,5	4,5	7,5	61,5	6	6,2	4
702C-HN2	18 mm	19	81	55	G3/8	18,5	36	17	35,5	G1/8	16,5	40	45,5	4,5	4,65	63,85	5,5	4,35	1,3

Intermediate supply module

Intermediate supply module for manifold bases with conveyed inlets and exhausts and front outlets.



The following is supplied:
1x seal
2x fixing screws



DIMENSIONS

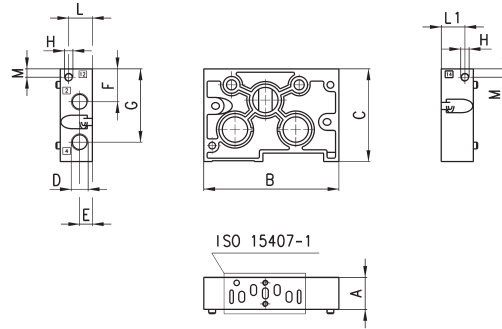
Mod.	Size ISO	A	B	C	D	E	F	G	H	L	M	N	P
701C-N1N	26 mm	27	100	65	G1/4	29	42	M5	6,5	10	M4	10	10
702C-N2N	18 mm	19	81	55	G1/8	22,5	28	M5	5	5	M4	11,5	9,5

Subbase for manifolds

Manifold subbase with conveyed inlets and exhausts and front outlets.



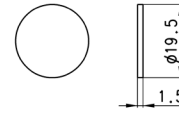
The following is supplied:
1x seal
2x fixing screws



DIMENSIONS												
Mod.	Size ISO	A	B	C	D	E	F	G	H	L	L1	M
701C-N1A for separated pilots	26 mm	27	107	65	G1/4	11	23	53	M5	20,7	20,7	6,5
702C-N2A for separated pilots	18 mm	19	81	55	G1/8	7,5	19,5	44,5	M5	13	6	7
701C-N1C	26 mm	27	107	65	G1/4	11	23	53	M5	20,7	20,7	6,5
702C-N2C	18 mm	19	81	55	G1/8	7,5	19,5	44,5	M5	13	6	7

Diaphragm cover for subbase

Diaphragm for subbase with conveyed inlet and exhausts and side outlets.



Mod.

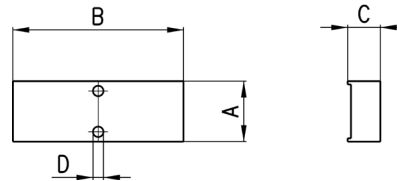
701C-N1A-TP

702C-N2A-TP

Excluder tap for subbase

The following is supplied:

- 1x seal
- 2x screws



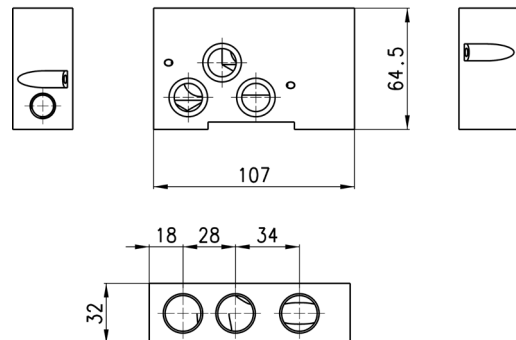
DIMENSIONS

Mod.	Size ISO	A	B	C	D
701-TP	26 mm	26,5	61,7	10	4,2
702-TP	18 mm	18,5	52,2	10	3,2

Interface between ISO 01 and ISO 02

The following is supplied:

- 1x tap S2610 3/8
- 5x OR
- 2x screws



Mod.

701C-702C-A

Series NA valves and solenoid valves

3/2 - 5/2 - 5/3-way CC CO CP
with holes configured according NAMUR standards



The pneumatic interface connection complies with NAMUR standards.
These solenoid valves can be equipped with solenoids that are in compliance with UL or ATEX standards.

GENERAL DATA

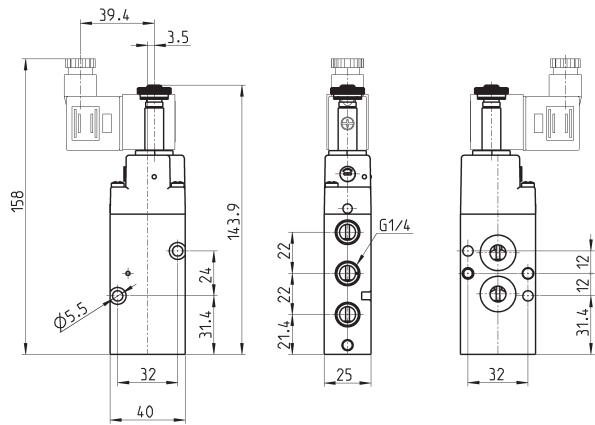
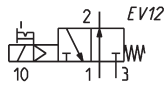
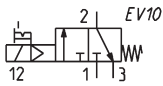
Construction	spool type (servo-pilot operated)
Valve functions	3/2-way NC, NO - 5/2-way - 5/3-way CC, CO, CP
Materials	AL body - stainless steel spool - NBR seals
Mounting	through 2 Ø5 holes in the valve body
Ports	2 - 4 = NAMUR 1 - 3 - 5 = G1/4
Installation	directly on a Namur Interface
Operating temperature	0 ÷ 60°C (using dry air -20°C)
Operating pressure	1,5 - 10 bar double solenoid 2,5 - 10 bar single solenoid
Nominal pressure	6 bar
Nominal flow	Qn = 1000 NI/min
Nominal diameter	8 mm
Fluid	filtered air without lubrication. If lubricated air is used, it is recommended to use ISOVG32 oil, and to never interrupt the lubrication.

CODING EXAMPLE

NA	5	4N	-	15	-	02	-	U7	7
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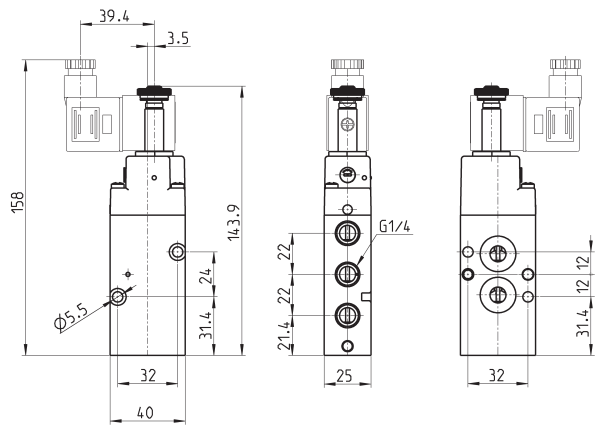
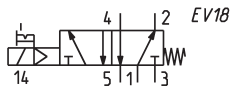
NA	SERIES NAMUR
5	NUMBER OF WAYS - POSITIONS: 3 = 3/2 NC 4 = 3/2 NO 5 = 5/2 6 = 5/3 CC 7 = 5/3 CO 8 = 5/3 CP
4N	PORTS: 4N = G1/4 supply ports according NAMUR standards
15	ACTUATION: 11 = double solenoid 15 = single solenoid, spring return 33 = pneumatic pneumatic 35 = pneumatic, spring
02	SOLENOID INTERFACE: 02 = mech. sol. 22 x 22
U7	SOLENOID MATERIAL / SOLENOID DIMENSIONS: A8 = PPS / 30 x 30 G7 = PA / 22 x 22 G8 = PA / 30 x 30 (24 V DC only) G9 = PA / 22 x 58 H8 = Self-extinguishing PA, Explosion-proof / 30 x 30 U7 = PET / 22 x 22
0	SOLENOID VOLTAGE: see solenoids section on page 2.2.35.01

3/2-way solenoid valve NC and NO



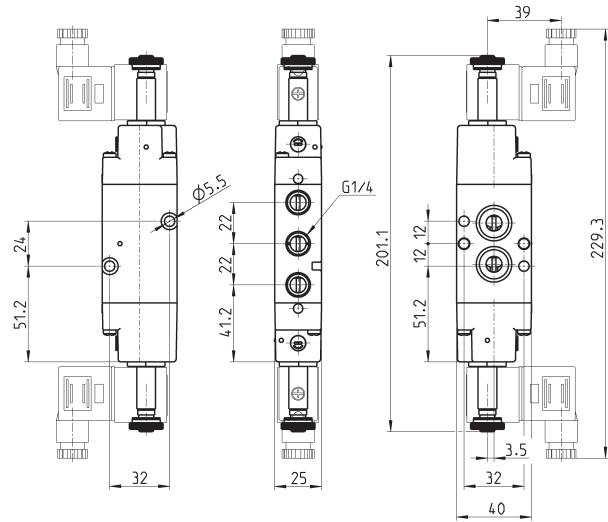
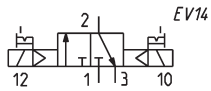
Mod.	Symbol
NA34N-15-02	EV10
NA44N-15-02	EV12

5/2-way solenoid valve, monostable



Mod.
NA54N-15-02

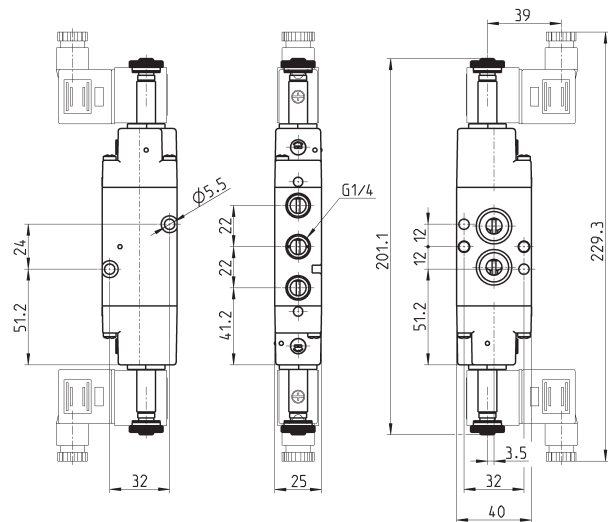
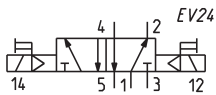
3/2-way solenoid valve, bistable



Mod.

NA34N-11-02

5/2-way, solenoid valve, bistable

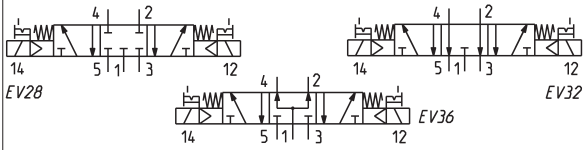
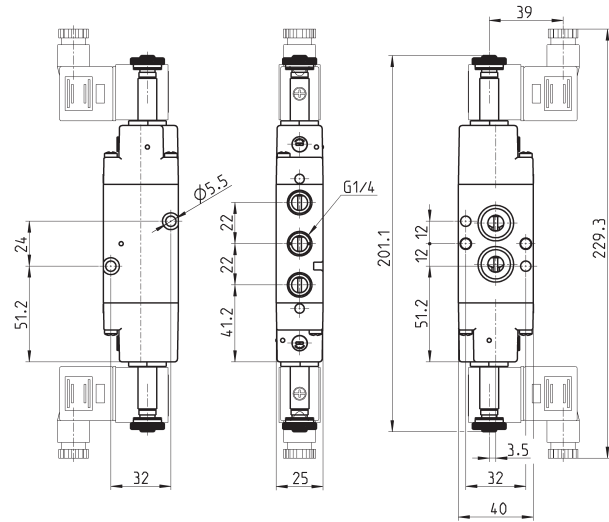


Mod.

NA54N-11-02

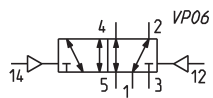
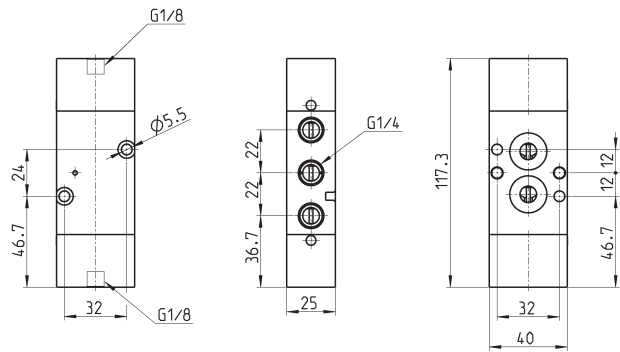
2/2.30.04

5/3-way solenoid valve CC CO CP



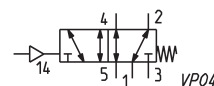
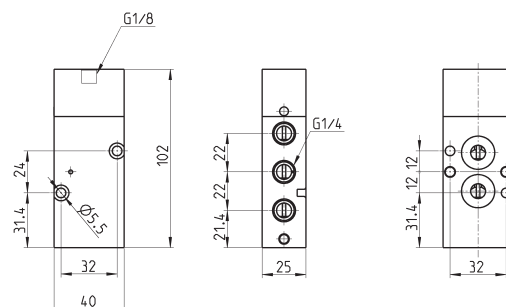
Mod.	Symbol
NA64N-11-02	EV28
NA74N-11-02	EV32
NA84N-11-02	EV36

5/2-way pneumatic valve, bistable



Mod.
NA54N-33

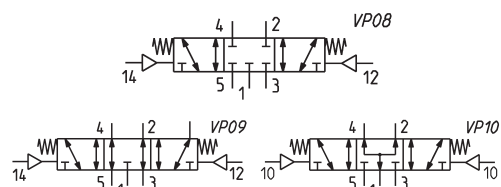
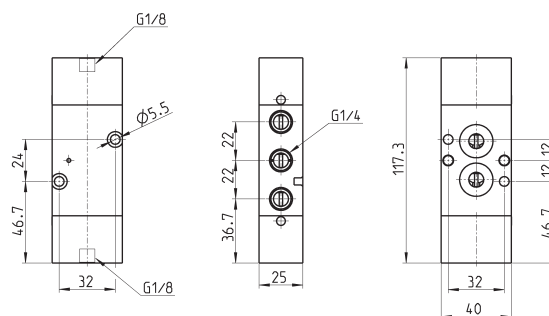
5/2-way pneumatic valve, monostable



Mod.

NA54N-35

5/3-way pneumatic valve CC CO CP



Mod.

NA64N-33

VP08

NA74N-33

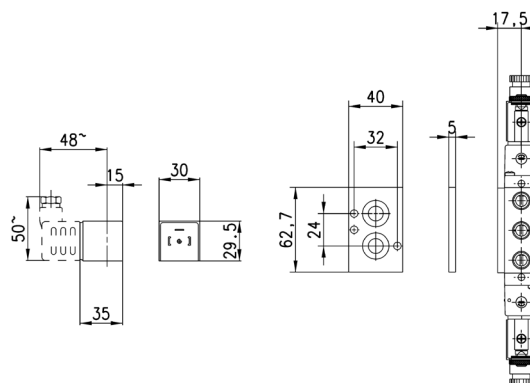
VP09

NA84N-33

VP10

Single subbase Mod. NA54-PC

Distance plate for the mounting of Series H8 solenoids

 Supplied with:
 2x screws
 2x O-rings


Mod.

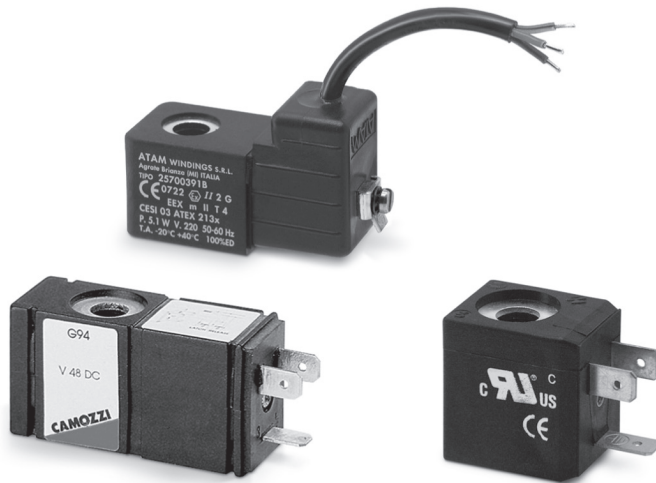
NA54-PC

Solenoids

GP... - B7... - G93 - U7... - U7...EX - G7... - A8... - B8... - H8... - B9...

Version A and B

Connections according to industrial standard
and to DIN EN 175 301-803 standards



The mechanical part of the tube in the solenoid valves Series A, 3, 4, 9 and NA allows the mounting of various types of solenoids.

- » Mod. GP...: in compliance with industrial standard (9.4mm) and designed to be mounted only on Series AP proportional valves, size 16 mm.
- » Mod. B...: to be used only with Series CFB solenoid valves (2/1.30).
- » Mod. G93: special solenoids with incorporated memory for pulsed operation.
- » Mod. U7...: standard solenoids are certified by UL as Recognized Component for USA and Canada. Solenoids Mod. U7 are available also with ATEX certification.
- » Mod. H8...: explosion-proof solenoids suitable for potentially explosive ambients (ATEX, IECEx).

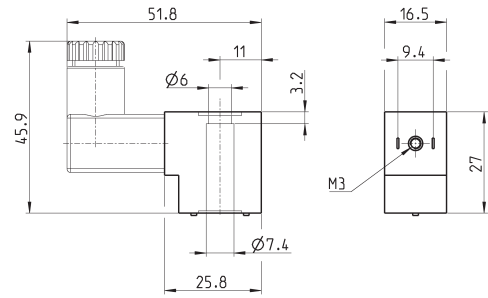
GENERAL DATA

	U7... / G7... / G93	A8...	B...	H8...
Wire insulation	class F (155° C)	class H (180° C)	class H (200° C)	class H (200° C)
Protection class	IP54 - DIN 40050	IP54 - DIN 40050	IP54 - DIN 40050	IP64
	IP65 (with connector Mod. 122-800 and Mod. 122-800EX)	IP65 (with connector Mod. 124-800)	IP65 (with connector Mod. 124-800)	
Operation	ED 100%	ED 100%	ED 100%	ED 100%
Tolerance V AC	-15% / +10%	-15% / +10%	±10%	-
Tolerance V DC	±10%	±10%	±5%	-


Solenoids Mod. GP...

Electrical connection: bipolar
Norm: industrial standard (9.4 mm)

Solenoid material: PA

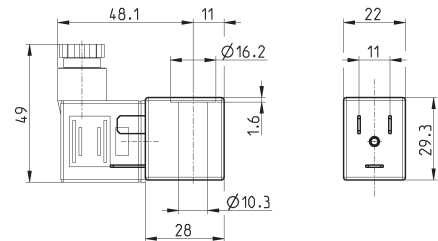


Mod.	Solenoid voltage	Power absorption
GPH	12 V DC	3 W
GP7	24 V DC	3 W


Solenoids Mod. B7...

Electrical connection: bipolar plus earth
Norm: DIN EN 175 301-803-B

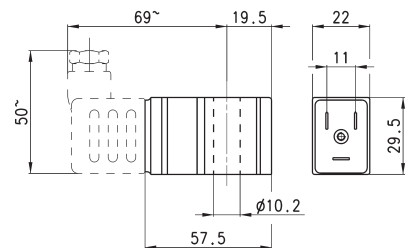
Solenoid material: PA-MXD6



Mod.	Solenoid voltage	Power absorption
B7B	24 V - 50/60 Hz	9 VA
B7D	110 V - 50/60 Hz	9 VA
B7E	230 V - 50/60 Hz	9 VA
B7H	24 V - 50/60 Hz	4 VA
B72	12 V - DC	10 W
B73	24 V - DC	10 W
B74	24 V - DC	7 W


Solenoids Mod. G93 (with memory)

Electrical connection: bipolar plus earth
Norm: DIN EN 175 301-803-B
Voltage tolerance: $\pm 10\%$
Pulsed operation (see description)



Mod.	Voltage	Minimum impulse latch/release	Consumption latch/release
G93	24 V DC	18 ms - 10 ms	168 mA - 80 mA

Description of solenoids Mod. G9...

Solenoids Mod. G9... can be replaced on all other Series

A solenoid valves or pilots allowing to change the valve functioning from:

- unstable functioning system (spring return) to:

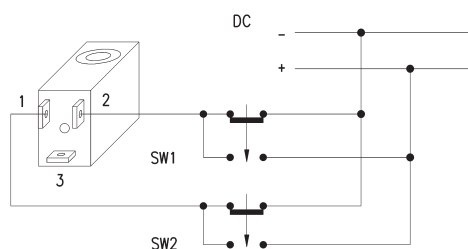
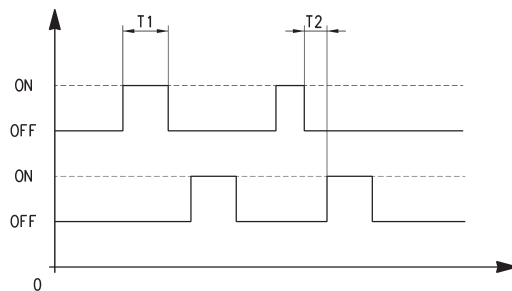
- stable functioning system (memory)

The stable functioning has the following advantages:

- with an impulse of about 20 ms after which the valve always remains in the controlled position.
- the valve remains in the controlled position (opened or closed) even if there is no power.
- when normally opened valves should be used, it is not necessary to use valves with special mechanical parts as a NC valve becomes a NO valve just by changing the control impulse sequence.
- The impulse control system facilitates the utilization with electronic circuits. The minimum required impulse for the function is 20 ms; if, for circuit reasons, the impulse last for a longer period, there is no danger of heating.
- magnet attraction command = Actuation SW1
- magnet release command = Actuation SW2

If the solenoids are mounted in batteries, a magnetic scheme type G90/L should be used.

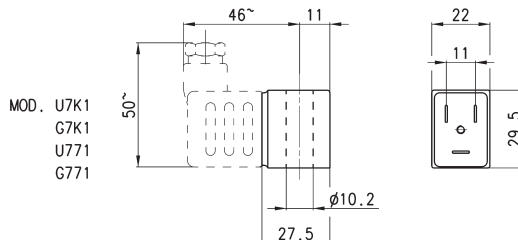
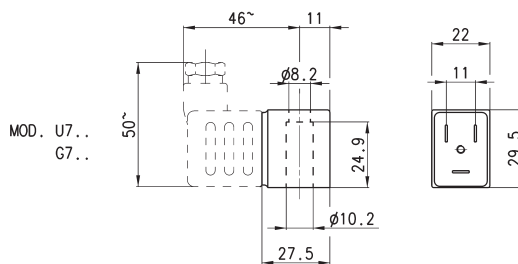
To facilitate the cabling a special connector is available, which contains a circuit which realises the inversion of the power supply to the solenoid, indispensable for the PLC command, 122-892 P with common positive or 122-893 N with common negative.



Solenoids Mod. U7... / U7*EX and Mod. G7...



Electrical connection: bipolar plus earth
 Norm: DIN EN 175 301-803-B
 Solenoid material: U7* = PET: G7* = PA
 To order the ATEX version of Mod. U7 (not available for Mod. U7F, U7K1 with voltage 125V 50/60Hz) it is necessary to add EX at the end of the code.
 Mod. U7*EX marked:
 II 3G Ex nA IIC T4 Gc X IP65
 II 3D Ex tc IIIC 130°C Dc X



Mod.	Sol. volt. (1)	Pow. abs. (1)	Sol. volt. (2)	Pow. abs. (2)	Sol. volt. (3)	Pow. abs. (3)
U7H	12 V DC	3.1 W	24V - 50/60 Hz	3.5 VA		
G7H	12 V DC	3.1 W	24V - 50/60Hz	3.5 VA		
U7K	110V - 50/60Hz	3.8 VA	125V - 50/60Hz	5.5 VA	72 V DC	4.8 W
U7K1	110V - 50/60Hz	5.8 VA	125V - 50/60Hz	8.3 VA	72 V DC	5.6 W
G7K	110V - 50/60Hz	3.8 VA	125V - 50/60Hz	5.5 VA	72 V DC	4.8 W
G7K1	110V - 50/60Hz	5.8 VA	125V - 50/60Hz	8.3 VA	72 V DC	5.6 W
U7J	230V - 50/60Hz	3.5 VA	240V - 50/60Hz	4 VA		
G7J	230V - 50/60Hz	3.5 VA	240V - 50/60Hz	4 VA		
U79	48 V DC	3.1 W				
G79	48 V DC	3.1 W				
U710	110 V DC	3.2 W				
G710	110 V DC	3.2 W				
U77	24 V DC	3.1 W	48V - 50/60Hz	3.8 VA		
U771	24 V DC	3.1 W	48V - 50/60Hz	3.8 VA		
G77	24 V DC	3.1 W	48V - 50/60Hz	3.8 VA		
G771	24 V DC	3.1 W	48V - 50/60Hz	3.8 VA		
U7F	380V - 50/60Hz	7 VA				
U72	12 V DC	5 W				
G72	12 V DC	5 W				
U73	24 V DC	5 W				
G73	24 V DC	5 W				

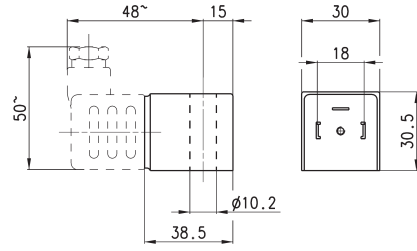
Notes to the table:
 Sol. volt. = Solenoid voltage
 Pow. abs. = Power absorption

Mod. U7K1, G7K1, U771 and G771 are to be used only with sol. valves series A, NO in line.

Solenoids Mod. A8...



Electrical connection: bipolar plus earth
 Norm: DIN EN 175 301-803-A



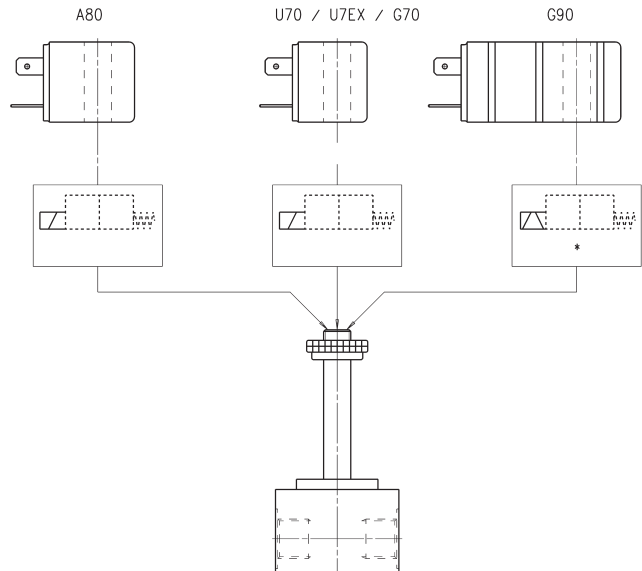
Mod.	Solenoid voltage	Power absorption
A8B	24V - 50/60Hz	5VA
A8D	110V - 50/60Hz	5VA
A8E	220V - 50/60Hz	5VA
A83	24V DC	4W

Solenoids for solenoid valves Series A, 3, 4, 9 and NA

All solenoids presented can be mounted on the following solenoid valves: Series A - 3 - 4 - 9 - NA

NB:

For the tightening of the solenoids' nut we recommend to do it manually, avoiding the use of any equipment.

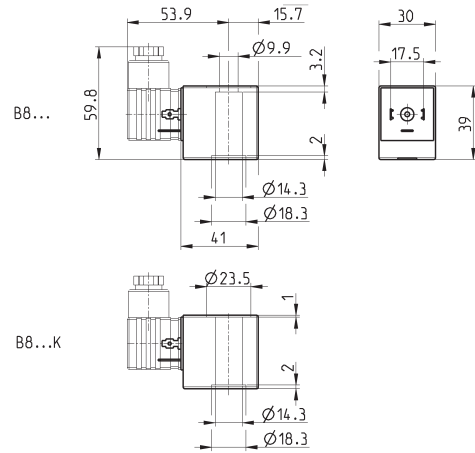


Solenoids Mod. B8...

Electrical connection: bipolar plus earth
Norm: DIN EN 175 301-803-A

Solenoid material: PA-MXD6

The B8*K models can be used only with some solenoid valves Series CFB (Mod. CFB-D1..., 2/2 NO).
Further details on page 2/1.30.03.



Mod.	Solenoid voltage	Power absorption
B8B	24 V - 50 Hz	15 VA
B8BK	24 V - 50 Hz	15 VA
B8D	110 V - 50/60 Hz	15 VA
B8DK	110 V - 50/60 Hz	15 VA
B8E	220/230 V - 50/60 Hz	15 VA
B8EK	230 V - 50/60 Hz	15 VA
B8F	220/230 V - 50/60 Hz	21 VA
B8FK	220/230 V - 50/60 Hz	21 VA
B82	12 V - DC	19 W
B82K	12 V - DC	19 W
B83	24 V - DC	19 W
B83K	24 V - DC	19 W

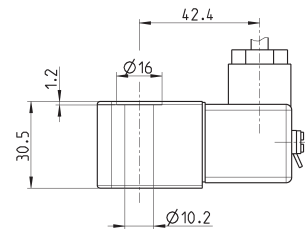
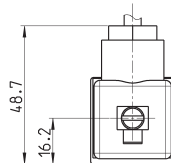
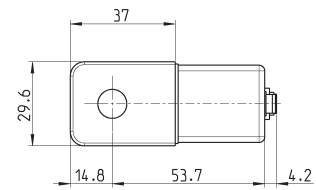
Solenoid Mod. H8.. for potentially explosive ambients

Certification in compliance with
EN 60079-0 EN 60079-18

ATEX :
II 2G Ex mb IIC T4 Gb
II 2D Ex mb IIIC T135°C Db
I M2 Ex mb I Mb
INERIS 06ATEX0002X

IECEX :
Ex mb IIC T4 Gb
Ex mb IIIC T135°C Db
Ex mb I Mb
IECEX INE 15.0053X

For Series NA use plate mod.
NA54-PC.



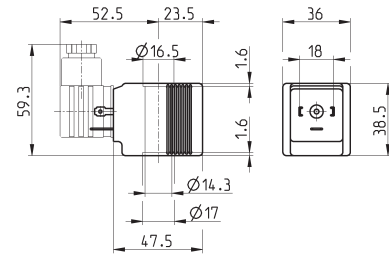
Mod.	Solenoid voltage	Power absorption
H8BI	24 V - DC	5.3 W
H8BI	24 V - 50/60 Hz	5.3 W
H8CI	48 V - 50/60 Hz	5.3 W
H8DI	110 V - 50/60 Hz	5.3 W
H8EI	230 V - 50/60 Hz	5.3 W

Temperature class/Max surface temperature: T4/135°C
Environment temperature: -20°C + 40°C
Connection: tripolar cable 3 m (other lengths on request)
Incapsulating material: self-extinguishing PA.

Solenoids Mod. B9...

 Electrical connection: bipolar plus earth
 Norm: DIN EN 175 301-803-A

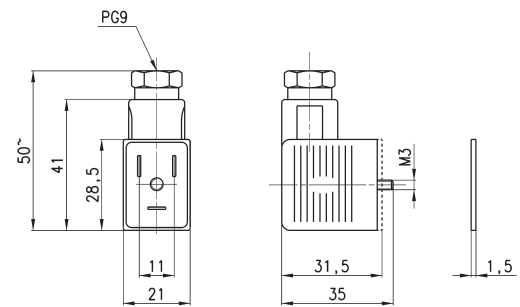
Solenoid material: PA-MXD6



Mod.	Solenoid voltage	Power absorption
B9B	24 V - 50 Hz	29 VA
B9D	110 V - 50/60 Hz	29 VA
B9E	230 V - 50 Hz	29 VA
B92	12 V - DC	30 W
B93	24 V - DC	30 W

Connectors Mod. 122-... DIN EN 175 301-803-B

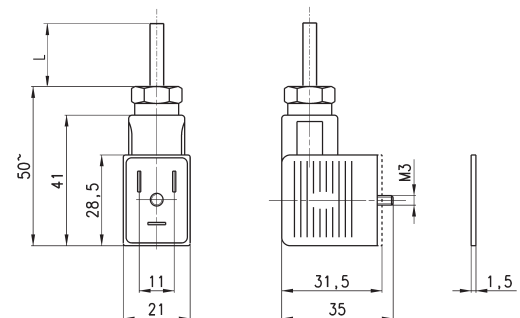
For solenoids Mod. U7/U7*EX, G7 and B7

 Mod. 122-800EX:
 for ATEX certified solenoids mod. U7*EX, with anti-screwing off screw mod. TORX.


Mod.	description	colour	working voltage	cable holding	tightening torque
122-601	connector, diode + Led	transparent	10/50 V DC	PG9	0.5 Nm
122-701	connector, varistor + Led	transparent	24 V AC/DC	PG9	0.5 Nm
122-702	connector, varistor + Led	transparent	110 V AC/DC	PG9	0.5 Nm
122-703	connector, varistor + Led	transparent	230 V AC/DC	PG9	0.5 Nm
122-800	connector, without electronics	black	-	PG9	0.5 Nm
122-800EX	connector, without electronics	black	-	PG9	0.5 Nm

Connectors Mod. 122-5... DIN EN 175 301-803-B with cable

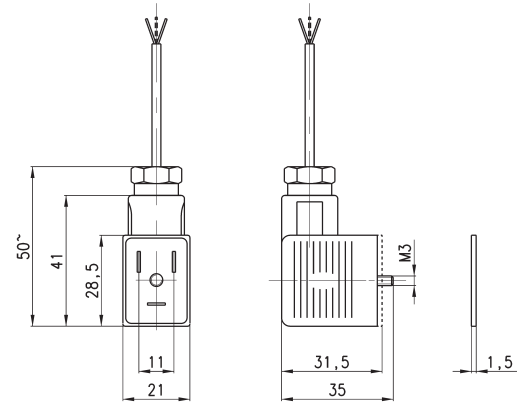
For solenoids Mod. U7/U7*EX, G7 and B7



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
122-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.5 Nm
122-550-5	moulded cable, without electronics	black	-	5000 mm	-	0.5 Nm
122-571-3	moulded cable, varistor + Led	black	-	3000 mm	-	0.5 Nm

Connectors Mod. 122-89*C DIN EN 175 301-803-B

For solenoids Mod. G9

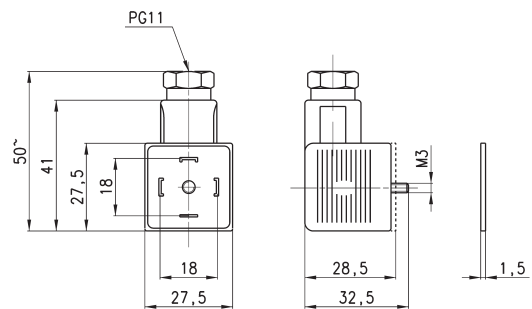


Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
122-892C	pre-wired connector, positive common	transparent	12/24V DC	2000 mm	PG9	0.5 Nm
122-893C	pre-wired connector, negative common	transparent	12/24V DC	2000 mm	PG9	0.5 Nm

Connector Mod. 124-... DIN EN 175 301-803-A

For solenoids Mod. A8 and Mod. B8/B9

Protection class IP65



Mod.	description	colour	working voltage	cable holding	tightening torque
124-800	connector, without electronics	black	-	PG9/PG11	0.5 Nm
124-702	connector, varistor + Led	black	110 V AC/DC	PG9/PG11	0.5 Nm
124-701	connector, varistor + Led	black	24 V AC/DC	PG9/PG11	0.5 Nm
124-703	connector, varistor + Led	black	230 V AC/DC	PG9/PG11	0.5 Nm

Series 3 Plug-In valve islands, Multipole and Fieldbus

New versions

Plug-In system for Series 3 solenoid valves, G1/8 port.
 Valve functions: 2x3/2, 5/2 and 5/3-way CO CC CP.
 Multipole with a 25-pin Sub-D connector.
 It can interface with all major serial communication protocols.



- » Flexible assembly through monostable and bistable 2- and 3-position modules
- » Electrical connection and front pneumatic outputs
- » Available protocols: PROFIBUS-DP, DeviceNet, CANopen, EtherNet/IP, EtherCAT, PROFINET

The electric and pneumatic modules have 2- and 3-position modularity. To optimize the signals distribution, electric modules are available for monostable and bistable valves. The pneumatic modularity enables the creation of zones with differentiated pressure. Manuals, instruction sheets and configuration files are available on the site <http://catalogue.camozzi.com> or by means of the QR code indicated on the table of the product.

The Multipole version of Series 3 Plug-In valve island can be easily installed thanks to the front position of the Sub-D connector. The accessories of the new connection system to the Series CX serial nets enable to handle up a multipole valve island by means of a Sub-D connector or through a node integrated in the island. The modularity of the electric and pneumatic parts allows to install up to a maximum of 22 solenoids on 22 valve positions.

GENERAL DATA

PNEUMATIC SECTION

Valve construction	spool type with seals
Valve functions	5/2 - 5/3 CC - 5/3 CO - 5/3 CP - 2x3/2 NO - 2x3/2 NC - 1 3/2 NO + 1 3/2 NC
Materials	AL body, stainless steel spool, NBR seals, technopolymer
Mounting	through-out holes in the manifold
Ports	valve = G1/8 - manifold = G3/8
Installation	in any position
Operating temperature	from 0°C to 60°C (with dry air at -20°C)
Nominal flow rate	Qn 700 Nl/min
Nominal diameter	7 mm
Fluid	Filtered air, class 7.4.4 according to ISO 8573-1-2010, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil, and to never interrupt the lubrication.

ELECTRICAL SECTION - MULTIPOLE VERSION

Max absorption	3 A
Type of connection	Multipole 25-pin male Sub-D
Supply voltage	24 V DC +/- 10%
Max number of solenoids	22 on 22 valve positions
Signalling	yellow LED
Duty cycle	ED 100%
Protection class	IP65

ELECTRICAL SECTION - FIELDBUS VERSION

General characteristics	see the section about the Series CX multi-serial module (2.3.50)
Max absorption	digital outputs/analogic inputs and outputs 3A digital/analogic inputs 3 A
Voltage tolerances	logic supply 24 V DC +/- 10% power supply 24 V DC +/- 10%

CODING EXAMPLE - MULTIPOLE VERSION										
3	P	8	-	03A	-	BDACAC	-	2BC3MU2BMXU2B2M	-	G77
3	SERIES									
P	TYPE: P = Plug-In									
8	SIZE: 8 = 1/8									
03A	CONNECTION: 000 = no connector/cable CONNECTOR WITH CABLE AXIAL OUTPUT: 03A = 3 m 05A = 5 m 10A = 10 m 15A = 15 m 20A = 20 m 25A = 25 m CONNECTOR WITH CABLE RADIAL OUTPUT: 03R = 3 m 05R = 5 m 10R = 10 m 15R = 15 m 20R = 20 m 25R = 25 m CONNECTOR WITHOUT CABLE: 4XA = 25-pin axial 4XR = 25-pin radial									
BDACAC	CONFIGURATION OF SUBBASE: A = 2 positions with bistable board B = 3 positions with bistable board C = 2 positions with monostable board D = 3 positions with monostable board									
2BC3MU2BMXU2B2M	VALVE FUNCTION: E = empty position M = 5/2 Monostable, internal servo-pilot supply B = 5/2 Bistable, internal servo-pilot supply C = 2 x 3/2 NC, internal servo-pilot supply A = 2 x 3/2 NO, internal servo-pilot supply G = 1 x 3/2 NC + 1 x 3/2 NO, internal servo-pilot supply H = 5/3 Closed Centres, internal servo-pilot supply K = 5/3 Exhaust Centres, internal servo-pilot supply N = 5/3 Pressure Centres, internal servo-pilot supply D = 5/2 Monostable, external servo-pilot supply Y = 5/2 Bistable, external servo-pilot supply Q = 2 x 3/2 NC, external servo-pilot supply R = 2 x 3/2 NO, external servo-pilot supply S = 1 x 3/2 NC + 1 x 3/2 NO, external servo-pilot supply V = 5/3 Closed Centres, external servo-pilot supply Z = 5/3 Exhaust Centres, external servo-pilot supply W = 5/3 Pressure Centres, external servo-pilot supply L = plate with closed free position X = supply plate and supplementary exhausts T = diaphragm on channels 1, 3, 5 U = diaphragm in supply 1 J = diaphragm exhausts 3 and 5									
G77	SOLENOID MATERIAL: G = PA U = PET									

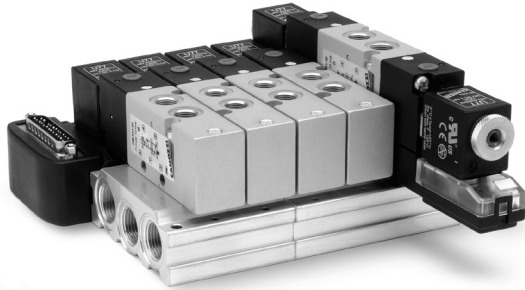
3P8-03R-ADCB-2B3MT2M3V-G77: valve island with 10 positions, radial connector and 3-meter cable.
 Bases: the first with 2 bistables positions, the second with 3 monostable pos., the third with 2 monostable pos., the fourth with 3 bistable pos.
 Valves: 2 bistable, 3 monostables, diaphragm on channels 1,3,5, 2 monostables, 3 Closed Centres, 24 V Solenoids.

CODING EXAMPLE - FIELDBUS VERSION

3	S	8	-	01	-	2AQRS	-	BDACAC	-	2BC3MU2BMXU2B2M	-	G77
----------	----------	----------	----------	-----------	----------	--------------	----------	---------------	----------	------------------------	----------	------------

3	SERIES
S	CONNECTION: S = Fieldbus
8	SIZE: 8 = 1/8
01	PROTOCOL: 01 = PROFIBUS-DP 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion Module
2AQRS	INPUT / OUTPUT MODULES: 0 = no module A = 8 digital inputs M8 B = 4 digital inputs M8 C = 2 analog inputs 4-20 mA D = 2 analog inputs 0-10 V E = 1 analog input 4-20 mA + 1 input 0-10 V Q = 4 M12 duo digital outputs R = 2 analog outputs 4-20 mA T = 2 analog outputs 0-10 V U = 1 analog output 4-20 mA + 1 output 0-10 V V = 1 analog output 4-20 mA + 1 input 0-10 V Z = 1 analog output 4-20 mA + 1 input 4-20 mA K = 1 analog output 0-10 V + 1 input 0-10 V Y = 1 analog output 0-10 V + 1 input 4-20 mA S = Initial subnet module
BDACAC	CONFIGURATION OF SUBBASE: A = 2 positions with bistable board B = 3 positions with bistable board C = 2 positions with monostable board D = 3 positions with monostable board
2BC3MU2BMXU2B2M	VALVE FUNCTION: E = empty position M = 5/2 Monostable, internal servo-pilot supply B = 5/2 Bistable, internal servo-pilot supply C = 2 x 3/2 NC, internal servo-pilot supply A = 2 x 3/2 NO, internal servo-pilot supply G = 1 x 3/2 NC + 1 x 3/2 NO, internal servo-pilot supply H = 5/3 Closed Centres, internal servo-pilot supply K = 5/3 Exhaust Centres, internal servo-pilot supply N = 5/3 Pressure Centres, internal servo-pilot supply D = 5/2 Monostable, external servo-pilot supply Y = 5/2 Bistable, external servo-pilot supply Q = 2 x 3/2 NC, external servo-pilot supply R = 2 x 3/2 NO, external servo-pilot supply S = 1 x 3/2 NC + 1 x 3/2 NO, external servo-pilot supply V = 5/3 Closed Centres, external servo-pilot supply Z = 5/3 Exhaust Centres, external servo-pilot supply W = 5/3 Pressure Centres, external servo-pilot supply L = plate with closed free position X = supply plate and supplementary exhausts T = diaphragm on channels 1, 3, 5 U = diaphragm in supply 1 J = diaphragm exhausts 3 and 5
G77	SOLENOID MATERIAL: G = PA U = PET

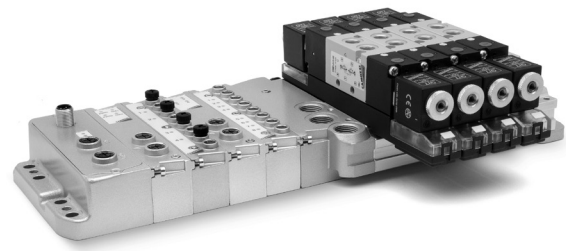
MULTIPOLE VERSION AND MULTIPOLE WITH SUB-D ADAPTER



In the Multipole version the front position of the 25 pin Sub-D connector makes the connection easier. The connectors with pre-wired cable, which are available in different lengths and with axial or radial orientation, simplify the electrical connection. The Island can be configured up to a max. of 22 solenoids, using monostable and bistable electrical modules, on 22 valve positions, for example 22 monostable solenoid valves.

Thanks to the 2- or 3-position pneumatic modularity, diaphragms and plates of supplementary supply, it is possible to create zones with differentiated pressure. The Multipole version of Series 3 valve island can be connected by means of a Sub-D adapter. In this way a standard Multipole Island can be inserted as expansion in the subnet of the Fieldbus version.

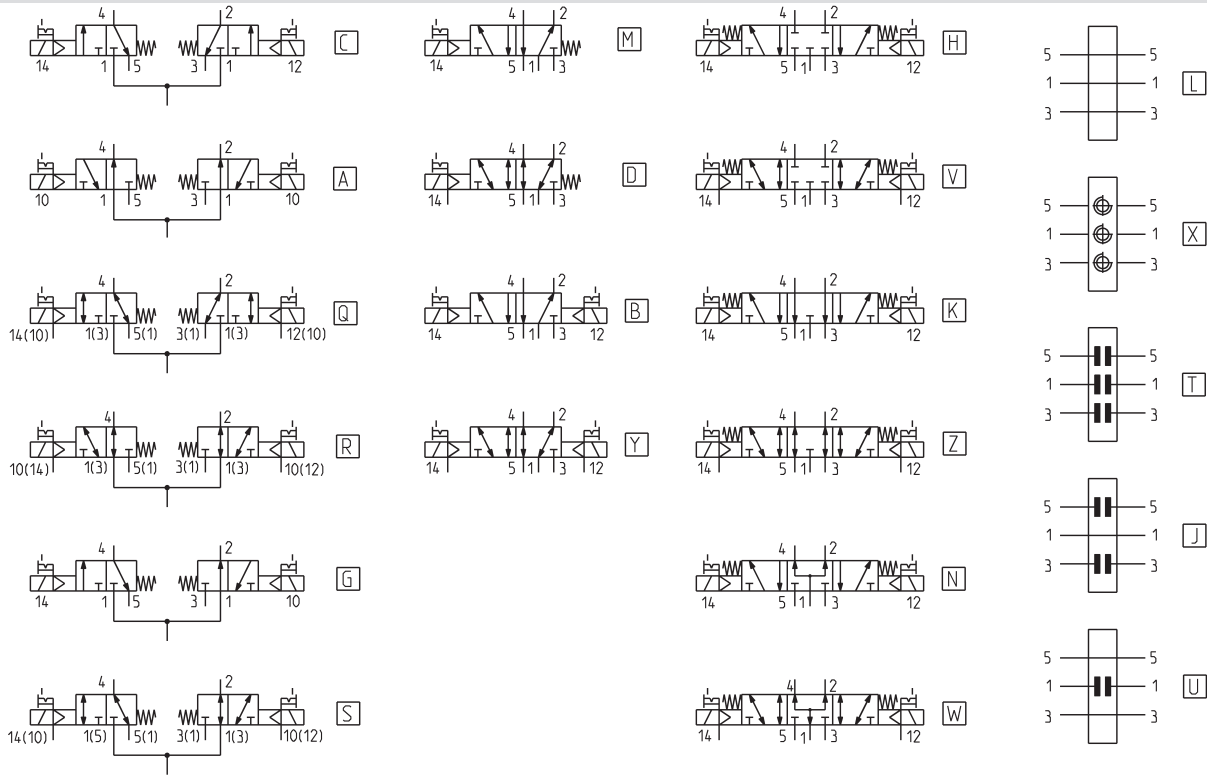
VERSIONS: FIELDBUS WITH CPU MODULE AND EXPANSION FIELDBUS



The Individual Fieldbus version of Series 3 can be interfaced through a specific module with the Series CX multi-serial module according to the different communication protocols (PROFIBUS-DP, DeviceNet, CANopen, EtherNet/IP, EtherCAT, PROFINET). Like the Multipole one, the Fieldbus version is able to create islands with 22 coils on 22 valve positions adding a wide range of electrical modules like digital/analog inputs/outputs of 0-10 V and 4-20 mA.

It is possible to insert Initial Subnet Modules in the version with CPU module. These Modules enable to create a subnet with tree structure or in series. On the subnet you can connect Expansion Islands. These expansions have the same possibilities to use the different electric modules, like digital and analog inputs and outputs and further Initial Subnet Modules. Also with this version the same rules as the CPU module and Multipole apply.

FUNCTIONS OF SOLENOID VALVES SERIES 3



Mod.	Function	Actuation/return	Servo-pilot	Working pressure (bar)	Pilot pressure (bar)	Code
338D-015-02	2 x 3/2 NC	solenoid/spring	internal	2,5 ÷ 10	-	C
348D-015-02	2 x 3/2 NO	solenoid/spring	internal	2,5 ÷ 10	-	A
398D-015-02	1 x 3/2 NC + 1 x 3/2 NO	solenoid/spring	internal	2,5 ÷ 10	-	G
358-015-02	5/2 monostable	solenoid/spring	internal	2,5 ÷ 10	-	M
358-011-02	5/2 bistable	solenoid/solenoid	internal	1,5 ÷ 10	-	B
368-011-02	5/3 CC	solenoid/solenoid	internal	2 ÷ 10	-	H
378-011-02	5/3 CO	solenoid/solenoid	internal	2 ÷ 10	-	K
388-011-02	5/3 CP	solenoid/solenoid	internal	2 ÷ 10	-	N
338D-E15-02	2 x 3/2 NC	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	Q
348D-E15-02	2 x 3/2 NO	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	R
398D-E15-02	1 x 3/2 NC + 1 x 3/2 NO	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	S
358-E15-02	5/2 monostable	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	D
358-E11-02	5/2 bistable	solenoid/solenoid	external	-0,9 ÷ 10	1,5 ÷ 10	Y
368-E11-02	5/3 CC	solenoid/solenoid	external	-0,9 ÷ 10	2 ÷ 10	V
378-E11-02	5/3 CO	solenoid/solenoid	external	-0,9 ÷ 10	2 ÷ 10	Z
388-E11-02	5/3 CP	solenoid/solenoid	external	-0,9 ÷ 10	2 ÷ 10	W
CNVL/1L	free position (electrical and pneumatic cover)	-	-	-	-	L
CNVL-3P1	plate for supply and outlets	-	-	-	-	X
CNVL-3H-TP (x1)	diaphragm for supply (1)	-	-	-	-	U
CNVL-3H-TP (x2)	diaphragm for outlets (3-5)	-	-	-	-	J
CNVL-3H-TP (x3)	diaphragm for supply (1) and outlets (3-5)	-	-	-	-	T

MODIFICATION OF A VALVE FUNCTION

In case a solenoid valve type M is inserted in a free position and a monostable or bistable electrical conveyor is already available, the following components must be ordered:

- 2x screws Cod. CNVL/21
- 3x interface seals Cod. CNVL-3H/7N
- 1x solenoid valve 358-015-02-(G77-U77)

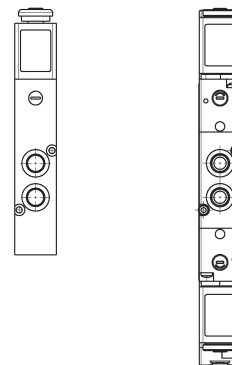
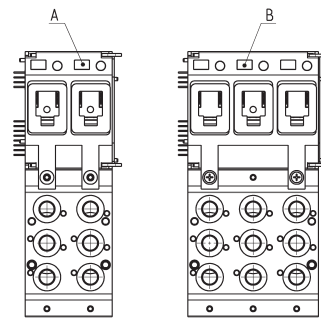
In case a solenoid valve type B is inserted in a free position and a bistable electrical conveyor is already available*, the following components must be ordered:

- 1x electrical module with bistable solenoid valve Cod. 3PAC-R-IF1
- 1x solenoid valve 358-015-02-(G77-U77)

* In case a monostable conveyor has been already mounted, it must be replaced by a bistable one, provided that the maximum number of 22 signals is not exceeded.

DRAWING NOTE:

- A = grey label (monostable)
- B = white label (bistable)



AVAILABLE ELECTRICAL MODULES



Serial module
3S8-...



Expansion module 3S8-
99-...



Initial subnet module
Cod. S



25 pin Sub-D adapter
module Mod. CXA-25P



8 digital inputs module
Cod. A



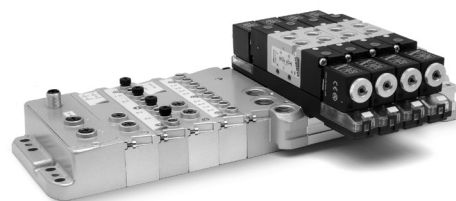
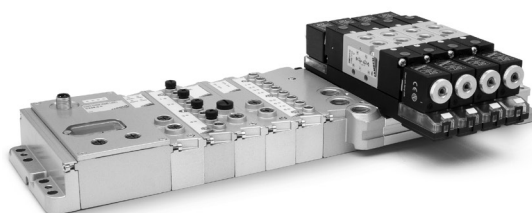
4 digital inputs module
Cod. B



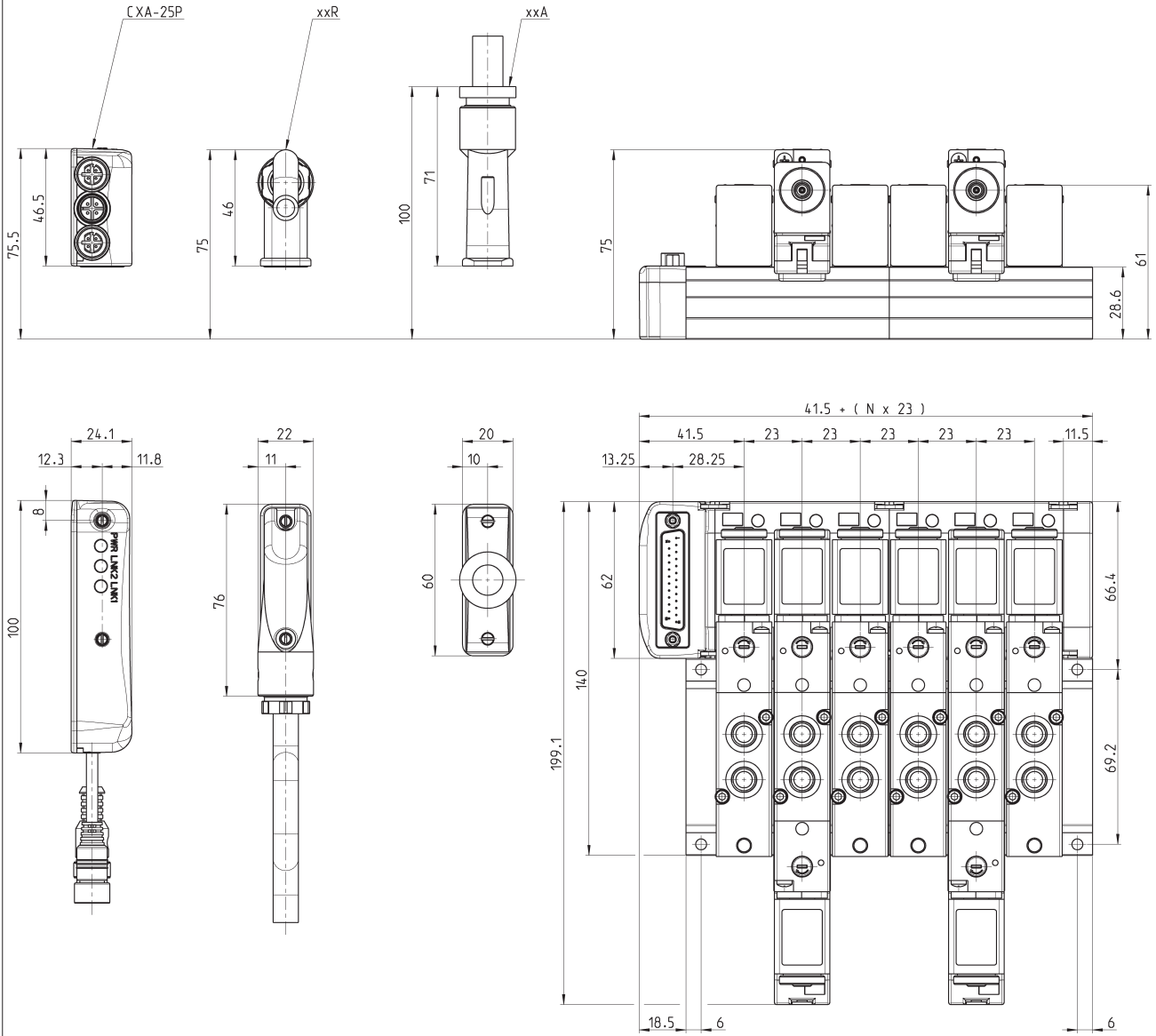
Mod. Anal. IN/OUT Cod.
C/D/E/R/T/U/V/Z/K/Y



Power digital outputs
module Cod. Q



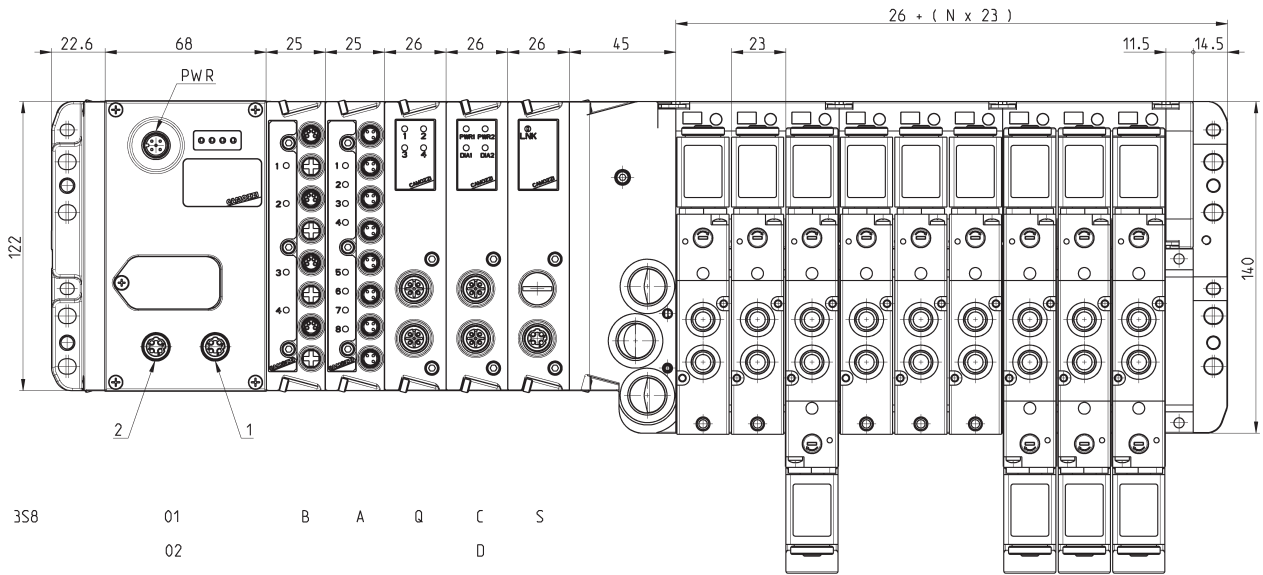
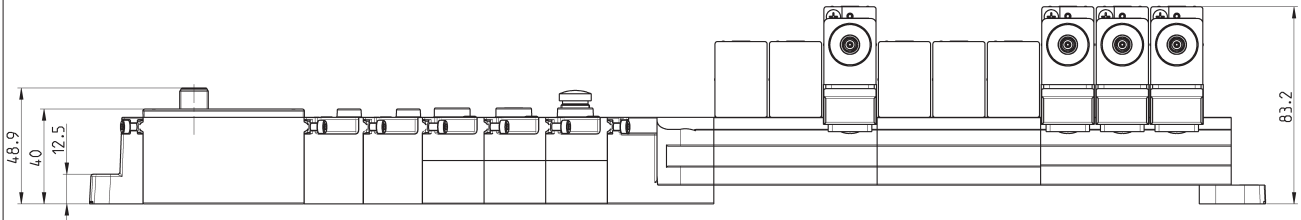
MULTIPOLE version - DIMENSIONS



FIELDBUS version with CPU MODULE - DIMENSIONS

DRAWING NOTE:

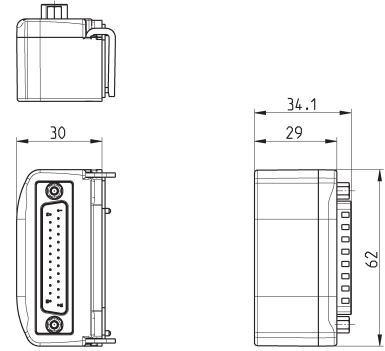
- 1. letters and numbers refer to the details which are reported in the coding example
- 2. N = number of valve positions



25-pin Sub-D connector module



Initial module to connect the Intermediate Electrical Modules

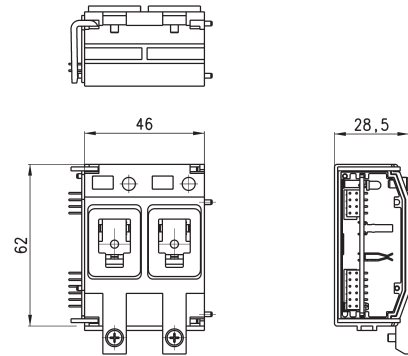


Mod.
3PBC-N-XS0

Intermediate electrical module - 2 positions, mono and bistable



To be mounted with subbases with 2 positions.
The type label in correspondence of LEDs is:
- grey in monostable intermediate modules
- white in bistable intermediate modules

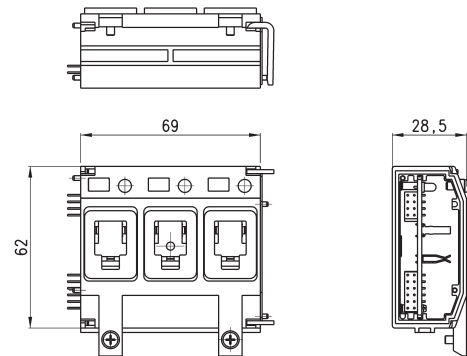


Mod.
3PAC-M-XI2 Monostable module
3PAC-R-XI2 Bistable module

Intermediate electrical module - 3 positions, mono and bistable

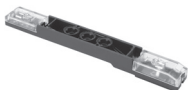


To be mounted with subbases with 3 positions.
The type label in correspondence of LEDs is:
- grey in monostable intermediate modules
- white in bistable intermediate modules

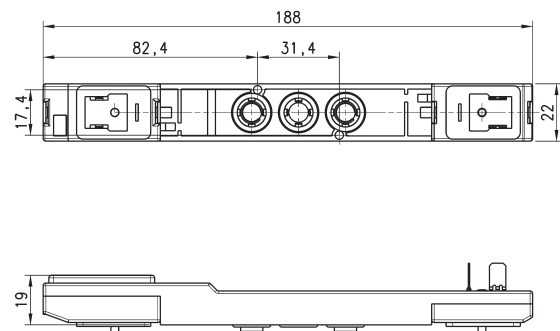


Mod.
3PAC-M-XI3 Monostable module
3PAC-R-XI3 Bistable module

Electrical Module for a bistable solenoid valve

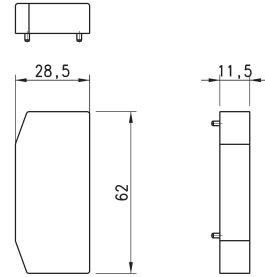


Supplied with:
2x screws for valve mounting
2x screws for solenoid mounting
1x interface seal
2x interface seals for solenoid



Mod.
3PAC-R-IF1

End cap for electric module



DIMENSIONS

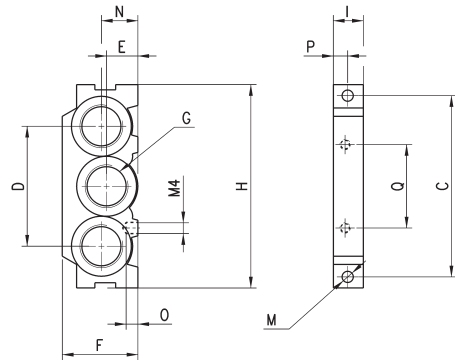
Mod.

3PAC-R-TP1

2

CONTROL

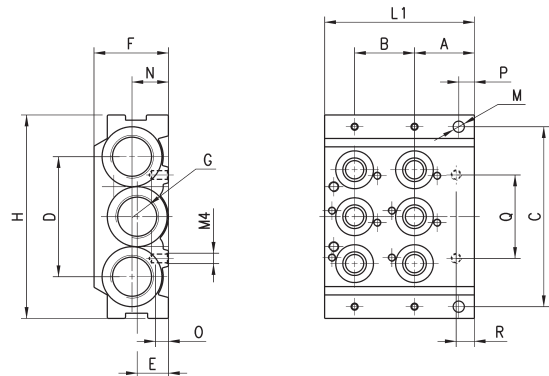
Terminal module Mod. CNVL-3H

 The following is supplied:
 2x fixing nuts


DIMENSIONS

Mod.	C	D	E	F	H	I	M	N	O	P	Q	G
CNVL-3H	69.5	46	12	29	78	11.5	4.3	14	5	6	32	3/8

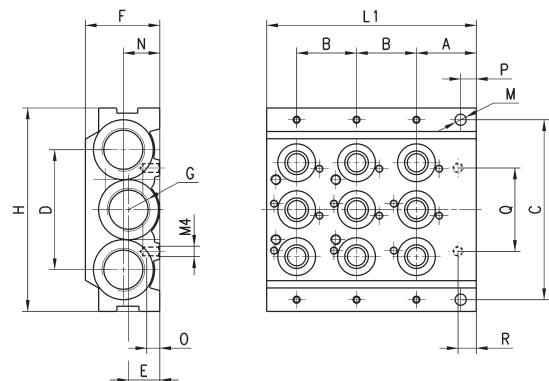
Initial/terminal pneumatic Module - 2 positions

 Supplied with:
 3x O-rings
 2x fixing screws
 2x junction plugs
 6x interface seals module/valve


DIMENSIONS

Mod.	A	B	C	D	E	F	G	H	L1	M	N	O	P	Q	R
CNVL-3H2	23	23	69,5	46	12	29	3/8	78	57,5	4,3	14	5	6	32	7

Initial/terminal pneumatic Module - 3 positions

 Supplied with:
 3x O-rings
 2x fixing screws
 2x junction plugs
 9x interface seals module/valve


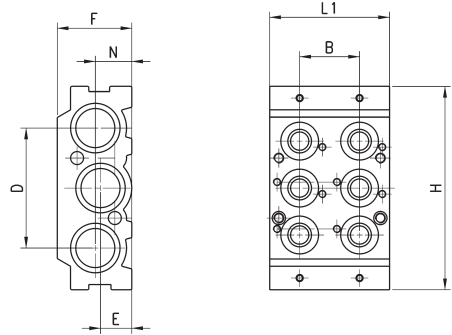
DIMENSIONS

Mod.	A	B	C	D	E	F	G	H	L1	M	N	O	P	Q	R
CNVL-3H3	23	23	69,5	46	12	29	3/8	78	80,5	4,3	14	5	6	32	7

Intermediate pneumatic Module - 2 positions



Supplied with:
 3x O-Rings
 2x fixing screws
 2x junction plugs
 6x interface seals module/valve

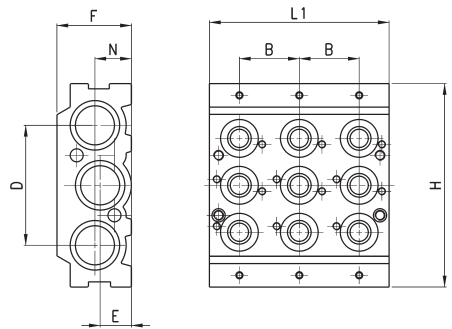


DIMENSIONS							
Mod.	B	D	E	F	H	L1	N
CNVL-3I2	23	46	12	29	78	46	14

Intermediate pneumatic Module - 3 positions



Supplied with:
 3x O-rings
 2x fixing screws
 2x junction plugs
 9x interface seals module/valve

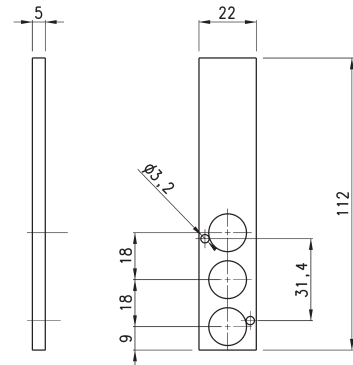


Mod.	B	D	E	F	H	L1	N
CNVL-3I3	23	46	12	29	78	69	14

Excluder tap for free position (cod. L)

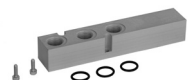


Supplied with:
 3x O-rings
 2x screws

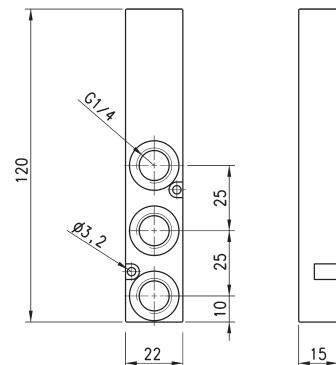


Mod.	CNVL/1L
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Intermediate plate for manifolds with outlets (cod. X)



Supplied with:
 3x O-rings
 2x screws



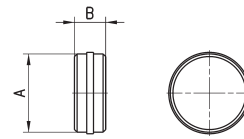
Mod.	CNVL-3P1
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Diaphragm for separation channels 1 - 3 - 5



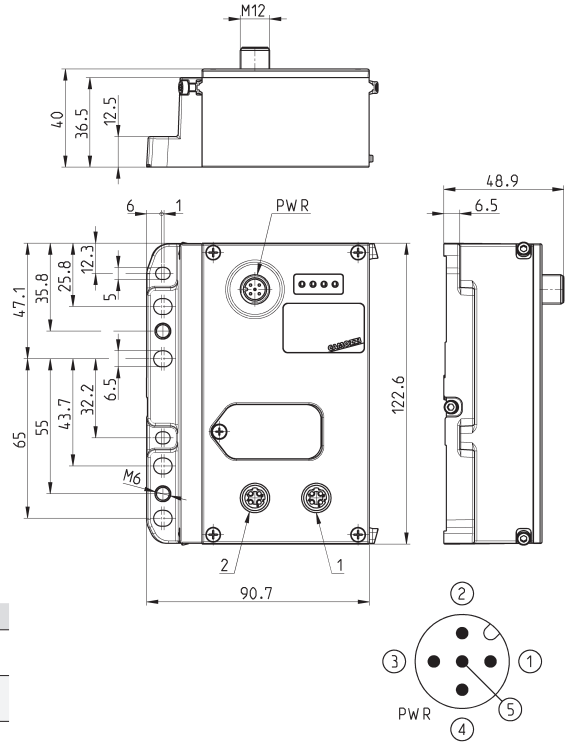
Supplied with:
1x diaphragm.

If you need cod. U, please order N° 1 piece.
If you need cod. J, please order N° 2 pieces.
If you need cod. T, please order N° 3 pieces.



Mod.	A	B
CNVL-3H-TP	15,6	6

CPU Module - pin configuration

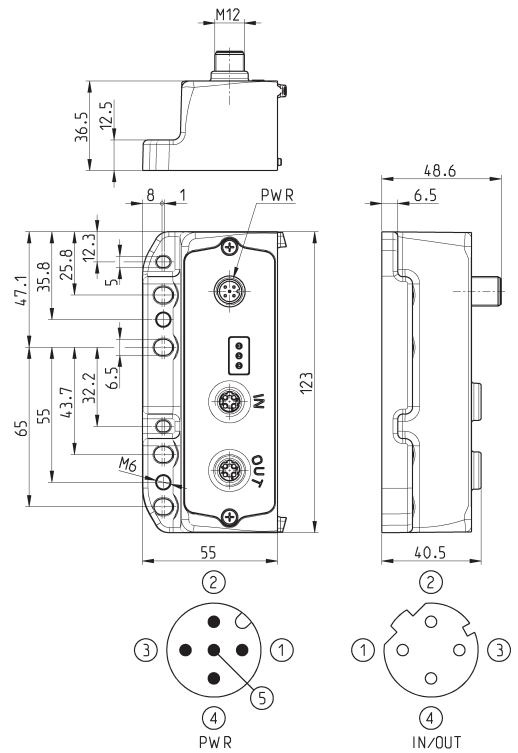


Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration



Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

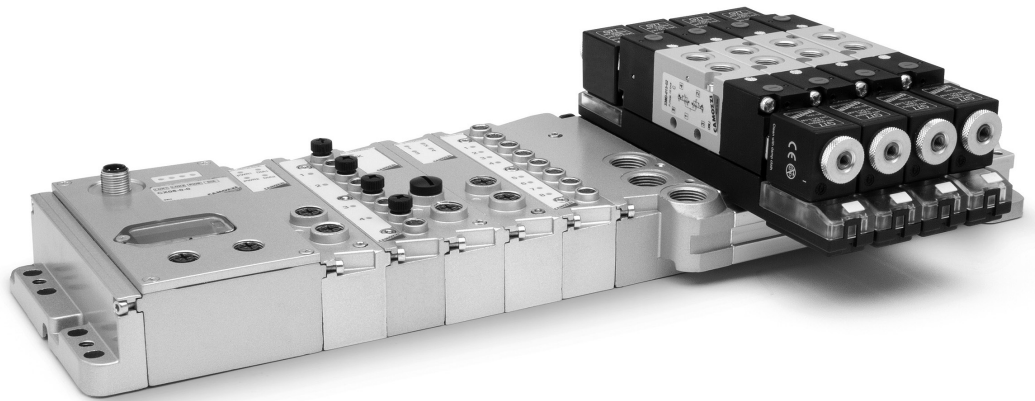
CPU Module - Characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet. All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet.

It has its own M12A 4 pin Male connection to supply the modules connected, distinguishing both logic supply and power supply.

Two M12 connections for Bus IN and Bus OUT of the main network, which M12 connection will take over the relative specifications according to the chosen protocol.

The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols, addressing is performed by means of the protocol itself. Leds indicating the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.



Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state.

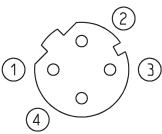
The valve island equipped with the Expansion Module can be used only in presence of a subnet.



Initial subnet module Mod. ME3-0000-SL

This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices.

Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 5 pin female.

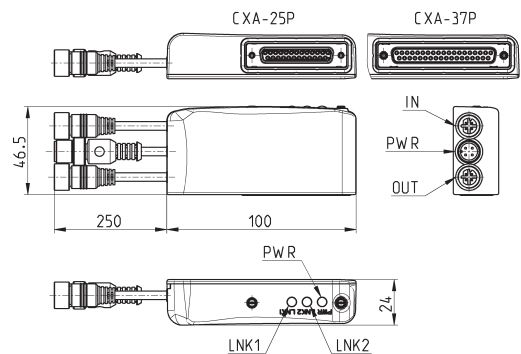


Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 5 pin female	5	100 m

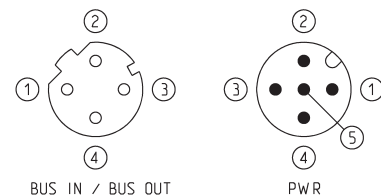
Sub-D adaptor module 25 pin Mod. CXA-25P



It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection. It can manage up to a maximum of 24 Output. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 5 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



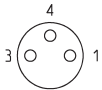
Led 1 = Yellow LNK1
 Led 2 = Yellow LNK2
 Led 3 = Green PWR, supply present and OK



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.

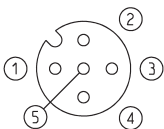


Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overtoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g

Analog input/output module Mod. ME3-****-AL

The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every analog output or input has a 12 bit resolution for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.

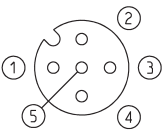
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

Digital power output module Mod. ME3-0004-DL

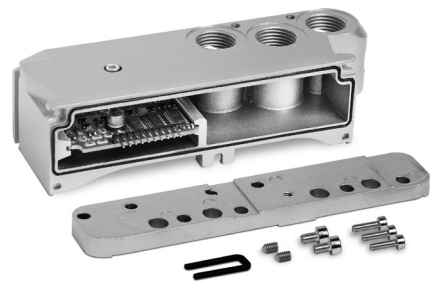
The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 + 50°C	100 g

Pneumatic/electric interface Module for Fieldbus version

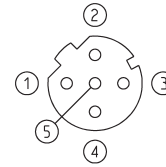
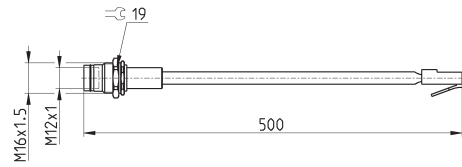
Supplied with:
1x module with card
1x foot for manifold



Mod.
ME3-003P-DI

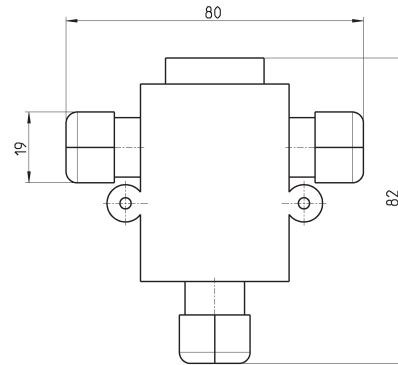
Adaptor and panel mount for Ethernet RJ45 to M12 D networks

For PROFINET, EtherCAT, EtherNet/IP



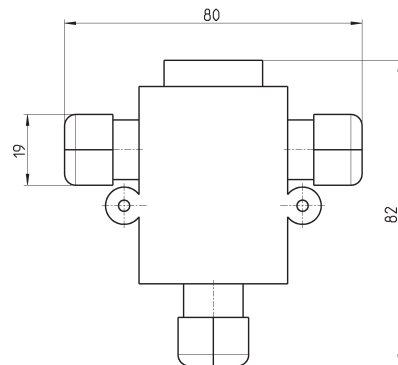
Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female	0.5

Profibus-DP data line tee



Mod.	CS-AA03EC
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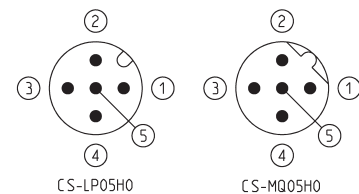
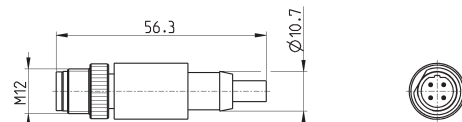
CANopen / DeviceNet data line tee



Mod.	CS-AA05EC
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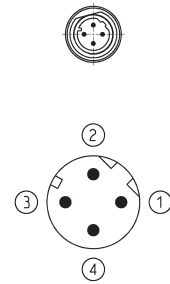
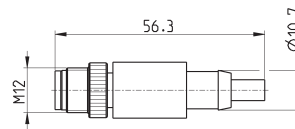
M12 male terminating resistor

For PROFIBUS, CANopen, DeviceNet



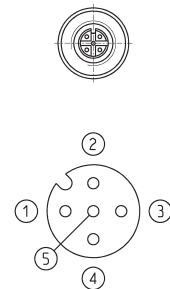
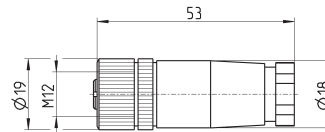
Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male	CANOpen / DeviceNet

Subnet terminating resistor



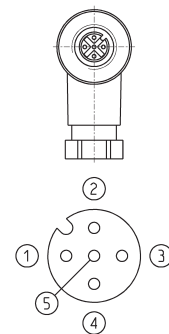
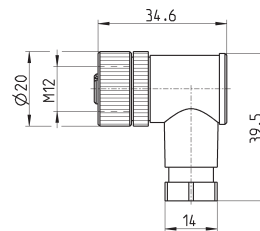
Mod.	description	type of connector	connection	Protocol
CS-SU04HB	moulded terminating resistor	straight	M12 D 4 pin	subnet

Straight connector for power supply



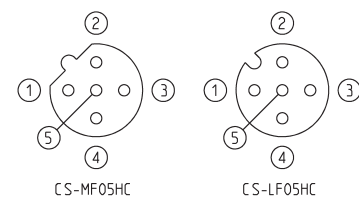
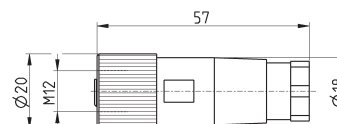
Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female	-

Angular connector for power supply



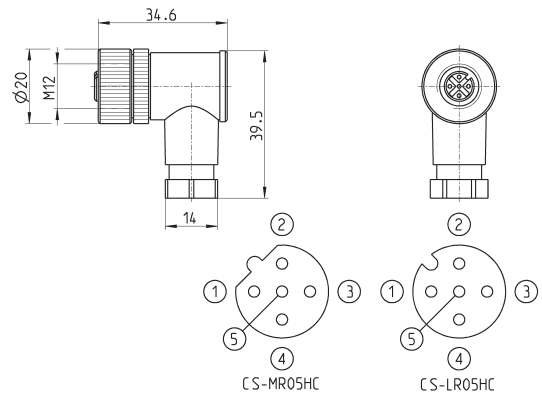
Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female	-

Straight female M12 connectors for Bus-IN



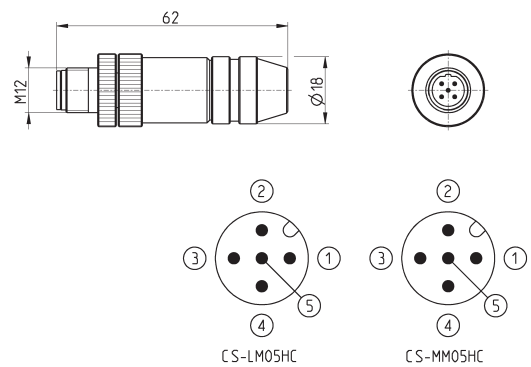
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

Straight male M12 connectors for Bus-OUT

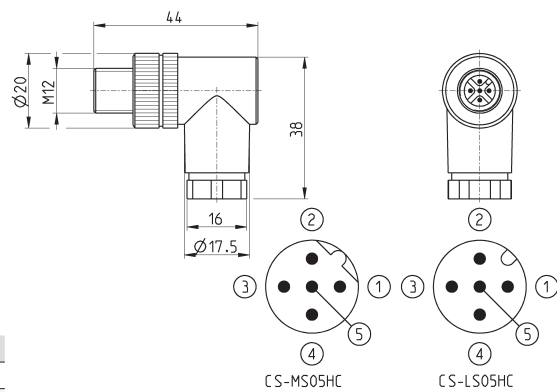


Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT



The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.

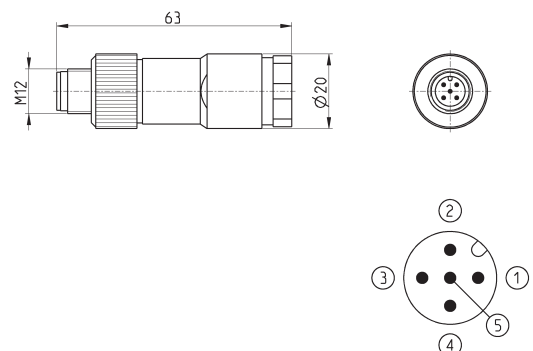


Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector



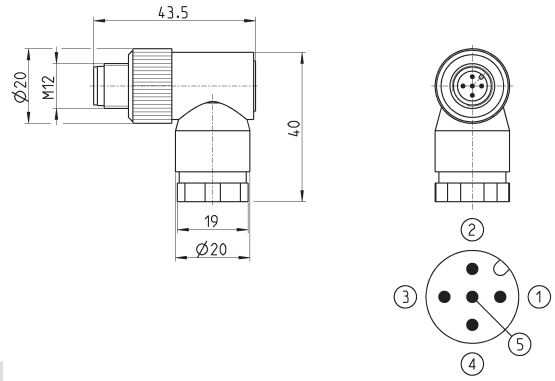
For the connection of the digital output modules and analog input/output modules.



Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

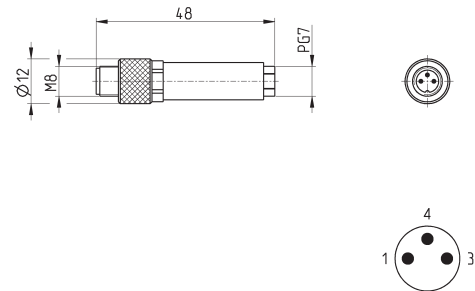
5 pin male angular M12 DUO connector

For the connection of the digital output modules ME3-0004-DL



Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

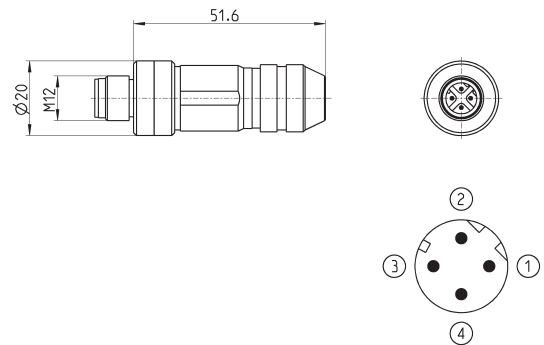
3 pin male M8 wiring connector for digital input modules



Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT

For PROFINET, EtherCAT, EtherNet/IP and for the subnet

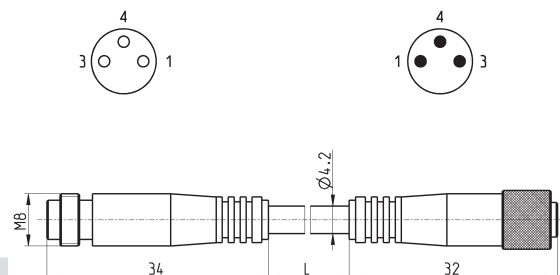


Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

Extension with M8 connector, 3 pin male / female

Non shielded

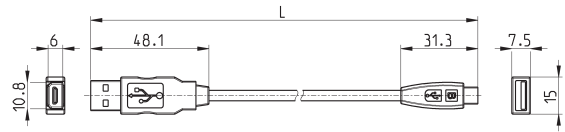
For the connection of the digital input modules ME3-0008 and ME3-0004



Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 poli male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5


USB to Micro USB cable Mod. G11W-G12W-2

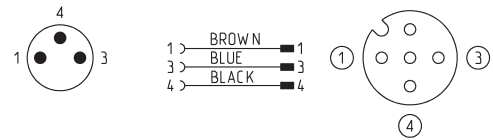
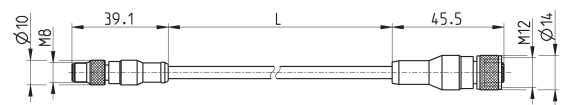
For the hardware configuration of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2


Adapter cable, M8 3-pin male - M12 4-pin female

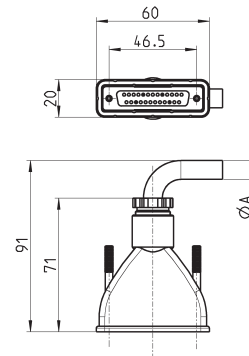
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable length "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Straight Sub-D 25 pin female connector with axial cable

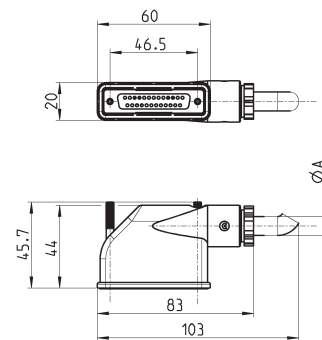
Protection class IP65



Mod.	∅A	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with axial cable

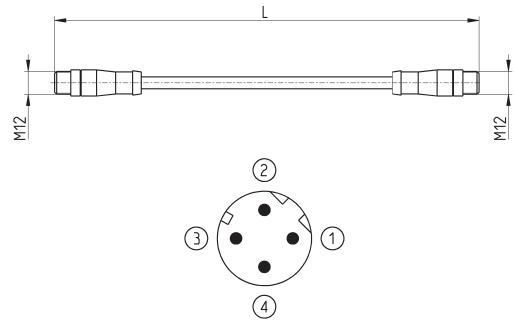
Protection class IP65



Mod.	∅A	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Cable with straight connectors

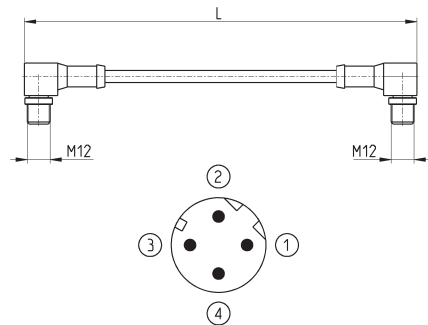
For PROFINET, EtherCAT, EtherNet/IP and subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	moulded cable	straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	moulded cable	straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	moulded cable	straight	2x M12 D 4 pin male	25

Cable with 90° angular connectors

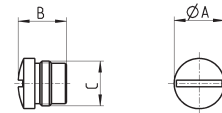
For PROFINET, EtherCAT, EtherNet/IP and subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	moulded cable	90°	2x M12 D 4 pin male	25

M8 and M12 connector cover caps

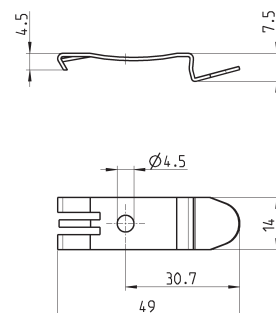
For digital and analog input/output modules and subnet



Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)


 Supplied with:
 2x plates
 2x screws M4x6 UNI 5931


Mod.
PCF-E520

Series F valve islands, Multipole and Fieldbus

 New versions 

Multipole integrated electrical connection (PNP)

Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC

It can interface with all major serial communication protocols.



- » Valve size: 12 and 14 mm
- » Modularity: single
- » Valve positions: from 2 to 24
- » Manual override: Push or Push & Turn
- » Available Protocols: PROFIBUS-DP, CANopen, DeviceNet, EtherNet/IP, PROFINET, EtherCAT

The Multipole version of Series F valve island can be easily integrated with the accessories of the new Series CX multi-serial module, thus connecting to the different serial nets provided. It is also possible to manage a standard multipole island by means of a Sub-D adapter or through an integrated node in the island. The typical Series F single modularity allows the installation of up to 24 solenoids on 24 valve positions, even in the Fieldbus version.

The use of technopolymer in this Series has allowed to realize a valve island which is characterized by small dimensions, high flow and reduced weight. The reduced dimensions, its flexibility during the assembly as well as the wide range of valve functions make Series F a highly innovative product which is suitable for several application requirements.

Usable silencers (Mod. 2939): see the section 2/9.05.

Manuals, instruction sheets and configuration files are available on the site <http://catalogue.camozzi.com> or by means of the QR code indicated on the label of the product.

GENERAL CHARACTERISTICS
PNEUMATIC SECTION

Valve construction	spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2x2/2 NO 2x2/2 NC 1x2/2 NC + 1x2/2 NO 2x3/2 NO 2x3/2 NC 1x3/2 NC + 1x3/2 NO
Materials	aluminium spool HNBR seals other seals in NBR brass cartridges technopolymer body and end covers
Connections	Inlets 2 and 4, size 1 (12 mm) = tube \varnothing 4; \varnothing 6 Inlets 2 and 4, size 2 (14 mm) = tube \varnothing 4; \varnothing 6; \varnothing 8 Supply 1, size 1 and 2 = tube \varnothing 8; \varnothing 10 Servo pilot 12/14, size 1 and 2 = tube \varnothing 6 Exhausts 3/5, size 1 and 2 = tube \varnothing 8; \varnothing 10 Exhausts 8/2/8/4, size 1 and 2 = tube \varnothing 6
Temperature	0 + 50°C
Air specifications	Filtered compressed air, non lubricated, class 6.4.4 according to ISO 8573-1:2010 standard. If lubrication is necessary, please use only oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 6.4.4 according to ISO 8573-1:2010 standard.
Valve sizes	12 mm 14 mm
Working pressure	- 0,9 + 10 bar
Pilot pressure	3 + 7 bar 4.5 + 7 bar (with working pressure exceeding 6 bar for the versions 2x2/2 and 2x3/2)
Flow rate	250 NI/min (12 mm) 500 NI/min (14 mm)
Mounting position	any position
Duty cycle	ED 100%
Protection class (according to EN 60529)	IP40

ELECTRICAL SECTION - MULTIPOLE VERSION

Supply voltage	24 V DC +/- 10%
Max number of solenoids	24
Max number of valve functions	24 (monostable)
Type of Sub-D connection	Sub-D 25 pin
Max absorption	0.8 A

ELECTRICAL SECTION - FIELDBUS VERSION

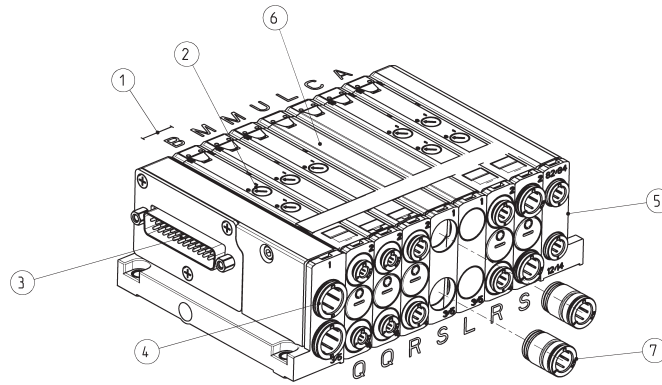
General characteristics	see the section about the Series CX multi-serial module (2.3.50)
Max absorption	digital outputs / analogic outputs and inputs 3 A digital/analogic inputs 3 A
Supply voltage	logic supply 24 V DC +/- 10% power supply 24 V DC +/- 10%
Max number of operable coils	24 on 24 valve functions (monostable)

CODING EXAMPLE - MULTIPOLE VERSION

F P 2 R M T A - MB2CMUL2B - 2QR3SLQR

F	SERIES
P	TYPE: P = pneumatic A = accessories
2	SIZE: 1 = 12 mm 2 = 14 mm
R	MANUAL OVERRIDE: P = pressure actuation control R = actuation control with push & turn device
M	ELECTRICAL CONNECTION: M = multipole
T	CARTRIDGES FOR LEFT TERMINAL: S = tube Ø 8 T = tube Ø 10 Note: the cartridges for the right terminal are for tube Ø 6.
A	SERVO-PILOT SUPPLY: A = internal B = external
MB2CMUL2B	SOLENOID VALVES AND ADDITIONAL PLATES *: M = 5/2 monostable D = 5/2 monostable with bistable electric board B = 5/2 bistable C = 2x3/2 NC A = 2x3/2 NO G = 3/2 NC + 3/2 NO E = 2x2/2 NC F = 2x2/2 NO I = 2/2 NC + 2/2 NO V = 5/3 CC L = free position with passing electric board W = free position with bistable electric board Z = free position with monostable electric board X = supplementary supply and exhaust T = separated supply and exhaust U = separated supply, supplementary exhaust K = supplementary supply, separated exhaust
2QR3SLQR	CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES *: Q = tube Ø 4 R = tube Ø 6 S = tube Ø 8 (not for Size 1) L = free position (no cartridges) W = free position with bistable electric board (no cartridges) Z = free position with monostable electric board (no cartridges)
<p>* in case of identical and consecutive codes, in the choices "SOLENOID VALVES AND ADDITIONAL PLATES" and "CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES", replace the letters with the number. With the choice "CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES" both of the following connections are defined: 2 and 4; 1 and 3/5.</p> <p>Examples: FP2RMTA-MBCCMULMMBB-QQRSSLRRRQRR FP2RMTA-MB2CMUL3M2B-2QR2SL3RQ2R</p>	

CODING - MULTIPOLE VERSION



1 2 3 4 5
6
7
FP2RMTA - B2MULCA - 2QRSLRS

FP...

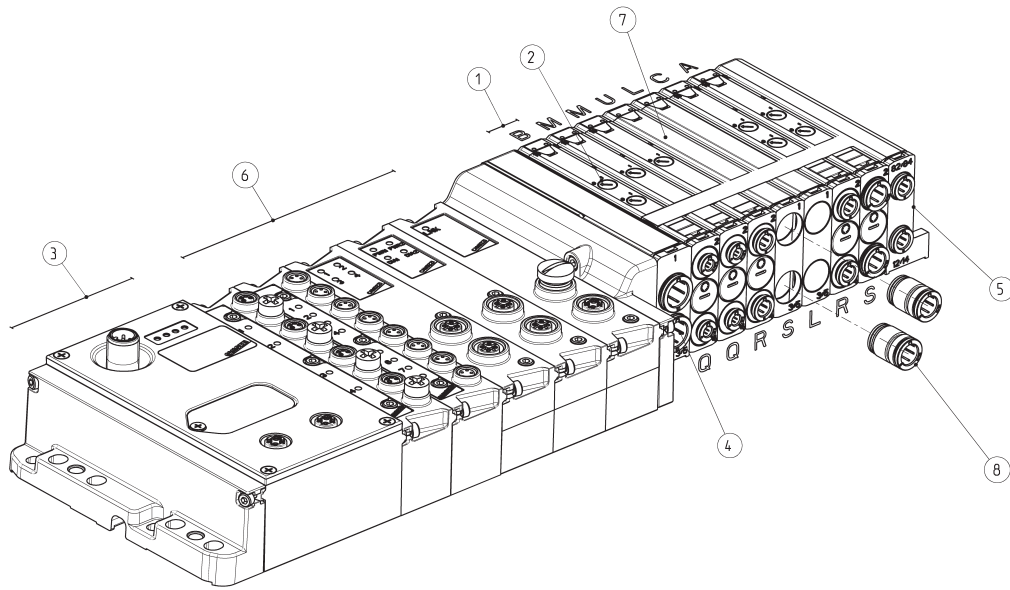
(1) SIZE	(2) MANUAL OVERRIDE	(3) ELECTRICAL CONNECTION	(4) CARTRIDGES for LEFT TERMINAL	(5) SERVO-PILOT SUPPLY	(6) SOLENOID VALVES and ADDITIONAL PLATES	(7) CARTRIDGES for SOLENOID VALVES and ADDITIONAL PLATES
1	12 mm	P pressure actuation control	M Multipole	S Ø8	A internal	M 5/2 monostable
2	14 mm	R actuation control with push & turn device	T Ø10	B external	D 5/2 monostable with bistable electric board	R Ø6
					B 5/2 bistable	S Ø8
					C 2x3/2 NC	L free position (no cartridges)
					A 2x3/2 NO	W free position with bistable electric board (no cartridges)
					G 3/2 NC + 3/2 NO	Z free position with monostable electric board (no cartridges)
					E 2x2/2 NC	
					F 2x2/2 NO	
					I 2/2 NC + 2/2 NO	
					V 5/3 CC	
					L free position with passing electric board	
					W free position with bistable electric board	
					Z free position with monostable electric board	
					X supplementary supply and exhaust	
					T separated supply and exhaust	
					U separated supply, supplementary exhaust	
					K supplementary supply, separated exhaust	

CODING EXAMPLE - FIELDBUS VERSION

F P 2 R 01 T A - ABCR - MB2CMUL2B - 2QR3SLQR

F	SERIES
P	TYPE: P = pneumatic A = accessories
2	SIZE: 1 = 12 mm 2 = 14 mm
R	MANUAL OVERRIDE: P = pressure actuation control R = actuation control with push & turn device
01	PROTOCOL: 01 = PROFIBUS-DP 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion Module
T	CARTRIDGES FOR PNEUMATIC/ELECTRICAL TERMINAL: S = tube Ø 8 T = tube Ø 10 Note: the cartridges for the right terminal are for tube Ø 6.
A	SERVO-PILOT SUPPLY: A = internal B = external
ABCR	INPUT / OUTPUT MODULES: 0 = no module A = 8 digital inputs M8 B = 4 digital inputs M8 C = 2 analog inputs 4-20 mA D = 2 analog inputs 0-10 V E = 1 analog input 4-20 mA + 1 input 0-10 V Q = 4 M12 duo digital outputs R = 2 analog outputs 4-20 mA T = 2 analog outputs 0-10 V U = 1 analog output 4-20 mA + 1 output 0-10 V V = 1 analog output 4-20 mA + 1 input 0-10 V Z = 1 analog output 4-20 mA + 1 input 4-20 mA K = 1 analog output 0-10 V + 1 input 0-10 V Y = 1 analog output 0-10 V + 1 input 4-20 mA S = Initial subnet module
MB2CMUL2B	SOLENOID VALVES AND ADDITIONAL PLATES: M = 5/2 monostable D = 5/2 monostable with bistable electric board B = 5/2 bistable C = 2x3/2 NC A = 2x3/2 NO G = 3/2 NC + 3/2 NO E = 2x2/2 NC F = 2x2/2 NO I = 2/2 NC + 2/2 NO V = 5/3 CC L = free position with passing electric board W = free position with bistable electric board Z = free position with monostable electric board X = supplementary supply and exhaust T = separated supply and exhaust U = separated supply, supplementary exhaust K = supplementary supply, separated exhaust
2QR3SLQR	CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES: Q = tube Ø 4 R = tube Ø 6 S = tube Ø 8 (not for Size 1) L = free position (no cartridges) W = free position with bistable electric board (no cartridges) Z = free position with monostable electric board (no cartridges)

CODING - FIELDBUS VERSION

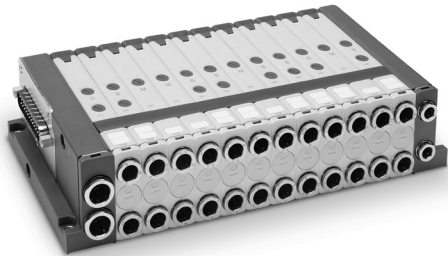


1 2 3 4 5 6 7 8
 F P 2 R 0 1 T A - A B Q R - B 2 M U L C A - 2 Q R S L R S

FP...

(1) SIZE	(2) MANUAL OVERRIDE	(3) PROTOCOL	(4) CARTRIDGES for LEFT TERMINAL	(5) SERVO-PILOT SUPPLY	(6) INPUT/OUTPUT MODULES	(7) SOLENOID VALVES and ADDITIONAL PLATES	(8) CARTRIDGES for SOLENOID VALVES and ADDITIONAL PLATES
1	12 mm P pressure	01 PROFIBUS-DP	S Ø8	A internal	0 no module	M 5/2 monostable	Q Ø4
2	14 mm R push & turn device	02 DeviceNet	T Ø10	B external	A 8 digital inputs M8	D 5/2 monostable with bistable electric board	R Ø6
		03 CANopen			B 4 digital inputs M8	B 5/2 bistable	S Ø8
		04 EtherNet/IP			C 2 analog IN 4-20 mA	C 2x3/2 NC	L free position with passing electric board (no cartridges)
		05 EtherCAT			D 2 analog IN 0-10 V	A 2x3/2 NO	W free position with bistable electric board (no cartridges)
		06 PROFINET			E 1 analog IN 4-20 mA + 1 IN 0-10 V	G 3/2 NC + 3/2 NO	Z free position with monostable electric board (no cartridges)
		99 Expansion Module			Q 4 M12 duo digital OUT	E 2x2/2 NC	
					R 2 analog OUT 4-20 mA	F 2x2/2 NO	
					T 2 analog OUT 0-10 V	I 2/2 NC + 2/2 NO	
					U 1 analog OUT 4-20 mA + 1 OUT 0-10 V	V 5/3 CC	
					V 1 analog OUT 4-20 mA + 1 IN 0-10 V	L free position with passing electric board	
					Z 1 analog OUT 4-20 mA + 1 IN 4-20 mA	W free position with bistable electric board	
					K 1 analog OUT 0-10 V + 1 IN 0-10 V	Z free position with monostable electric board	
					Y 1 analog OUT 0-10 V + 1 IN 4-20 mA	X supplementary supply and exhaust	
					S Initial subnet module	T separated supply and exhaust	
						U separated supply, supplement. exhaust	
						K supplement. supply, separated exhaust	

MULTIPOLE VERSION AND MULTIPOLE WITH SUB-D ADAPTER



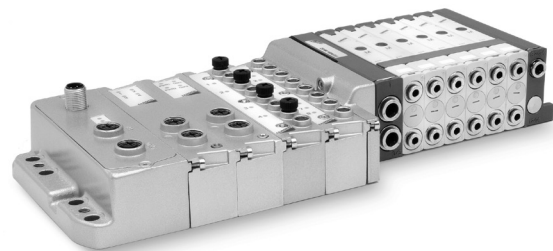
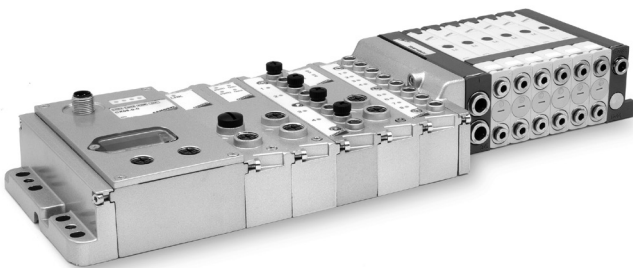
In the Multipole version the front position of the 25 pin Sub-D connector makes the connection easier. The connectors with pre-wired cable, which are available in different lengths and with axial or radial orientation, simplify the electrical connection. The Island can be configured up to a max. of 24 solenoids on 24 valve positions (24 monostable).

It is possible to create zones with differentiated pressure. It is available with PNP logic connection, internal electrical connections on boards.

The Multipole Island can be connected by means of a Sub-D adapter.

In this way a Multipole Island can be inserted as expansion in the subnet of the Fieldbus version.

VERSIONS: FIELDBUS WITH CPU MODULE AND EXPANSION FIELDBUS

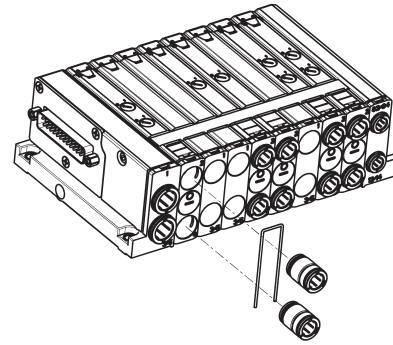


Thanks to the CX multi-serial node and a specific direct interface module with the pneumatic part of the island, Series F can be interfaced with the PROFIBUS-DP, DeviceNet, CANopen, PROFINET, EtherCAT, EtherNet/IP serial protocols. The Fieldbus version with CPU module follows the same configuration rules of the Multipole island and can be equipped with different electrical modules like digital/analog inputs/outputs of 0-10 V and 4-20 mA, as well as with Initial subnet modules.

It is possible to insert Initial Subnet Modules in the version with CPU module. These Modules enable to create a subnet with tree structure or in series. On the subnet you can connect Expansion Islands. These expansions have the same possibilities to use the different electric modules, like digital and analog inputs and outputs and further Initial Subnet Modules. Also with this version the same rules as the CPU module and Multipole apply.

INTERCHANGEABLE CONNECTIONS

Thanks to a fixing clip the cartridge fittings can be substituted with another one according to the size of the tube that has to be connected: Ø4, Ø6 and Ø8 for solenoid valves and Ø8, Ø10 for supply and exhaust plates.



TYPE OF BOARDS ON INTERMEDIATE PLATES

The solenoid valves Mod. M are equipped with an electrical board using a single signal. This enables to take full advantage of the characteristic of the Sub-D connector being able to connect up to 24 monostable valves.

To avoid that, in case of a change in the valve island, the addresses of the electrical coils positioned after the modification would change too, for example by replacing a monostable valve with a bistable one, the version with Cod. D is available and corresponds to a monostable valve equipped with a board that occupies two electrical signals.

The free position Cod. L is also available in the Z and W versions.

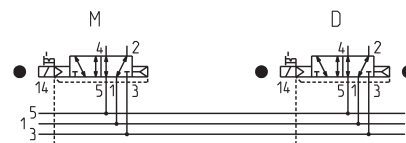
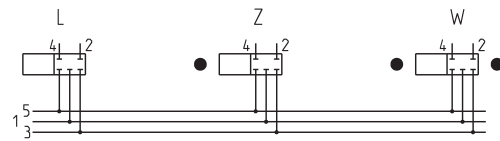
Cod. L: free position, no electrical signals are used

Cod. Z: free position with board with 1 electrical signal (not used)

Cod. W: free position with board with 2 electrical signals (not used)

Cod. M: 5/2-way monostable valve with board with 1 electrical signal

Cod. D: 5/2-way monostable valve with board with 2 electrical signals (one is not used)



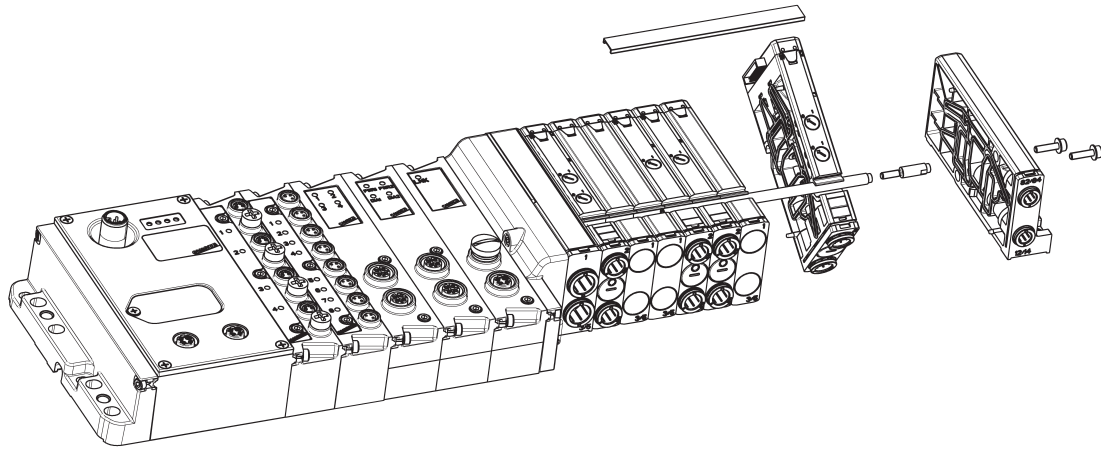
HOW TO MODIFY THE VALVE ISLAND (example)

In order to integrate or modify the valve island, it is enough to loosen the tie-rods, separate the valve function that has to be replaced and turn it so that it can be taken off.

Tie-rods can be supplied with even positions from 2 to 24 (see the following pages).

A single position joint bolt is supplied in case of a valve island with odd positions (see the following pages).

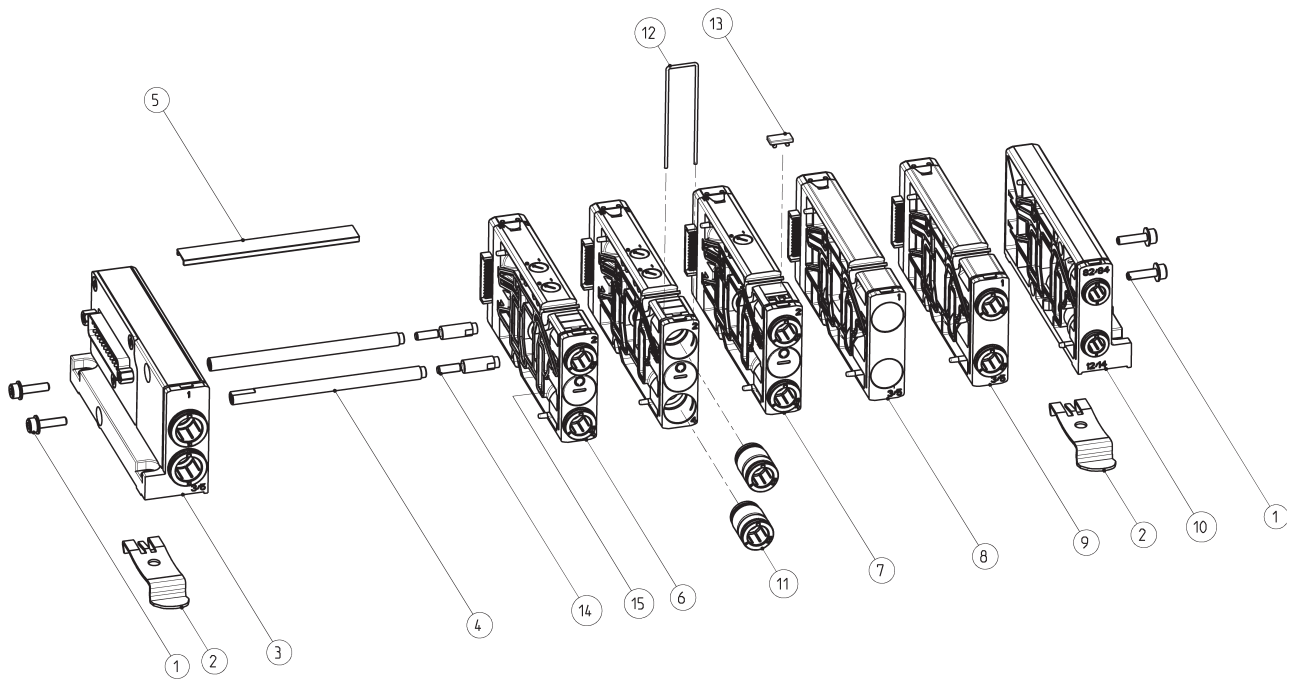
This operation can be performed on both versions with integrated serial node or with expansion module.



MULTIPOLE version - COMPONENTS

2

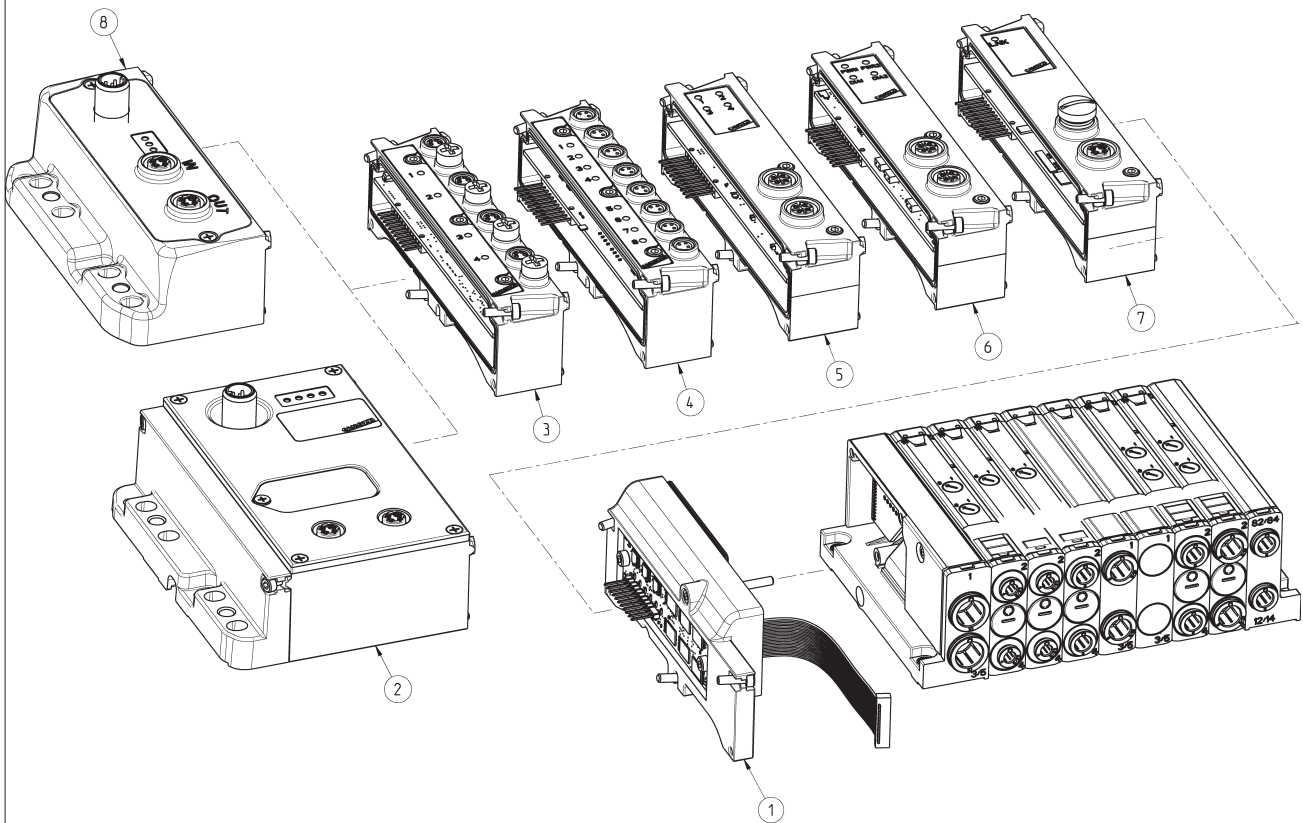
CONTROL



LIST OF COMPONENTS

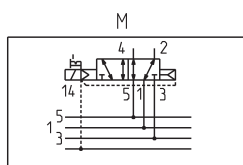
1	Grip screws with built-in washer
2	Bracket for the DIN rail connection
3	Left terminal
4	Tie-rods
5	Tie-rod plastic cover
6	Bistable solenoid valve
7	Monostable solenoid valve
8	Intermediate plate for free position
9	Intermediate plate for pressure zones with supplementary inlet and exhaust
10	Right terminal
11	Interchangeable cartridge fittings
12	Fixing clip for the cartridge fittings
13	Identification plates
14	Joint bolt for odd positions
15	Interface seal that cannot be lost

INDIVIDUAL FIELDBUS version and EXPANSION - COMPONENTS

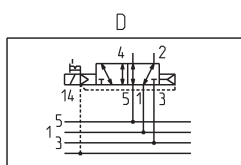


LIST OF COMPONENTS

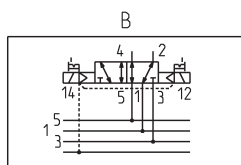
1	Direct interface with CX
2	CPU Series CX
3	4 digital Inputs module
4	8 digital Inputs module
5	4 digital Outputs module
6	Analog I/O module
7	Initial subnet module
8	Expansion module

AVAILABLE FUNCTIONS - SOLENOID VALVES SYMBOLS for FP..R - manual override WITH push&turn device


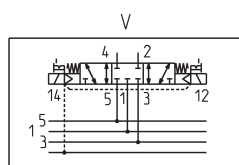
M = 5/2, monostable



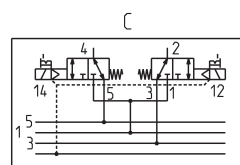
D = 5/2, monostable with bistable board



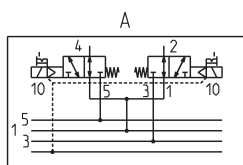
B = 5/2, bistable



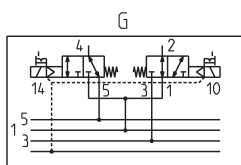
V = 5/3, Centres Closed



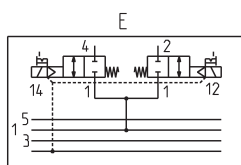
C = 2x3/2 NC



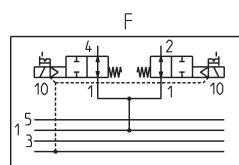
A = 2x3/2 NO



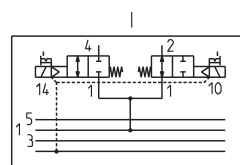
G = 1x3/2 NC + 1x3/2 NO



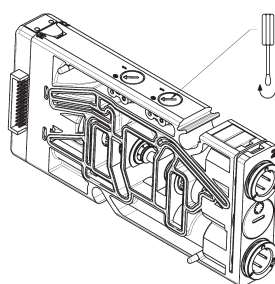
E = 2x2/2 NC



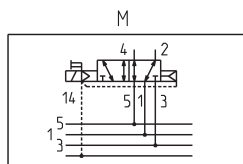
F = 2x2/2 NO



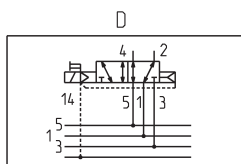
I = 1x2/2 NC + 1x2/2 NO



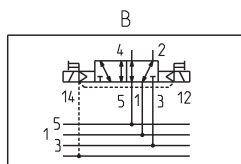
Manual override, version R :
pressure actuation control with PUSH & TURN device.

AVAILABLE FUNCTIONS - SOLENOID VALVES SYMBOLS for FP..P - manual override WITHOUT push&turn device


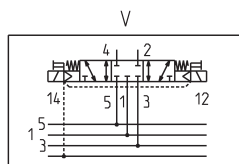
M = 5/2, monostable



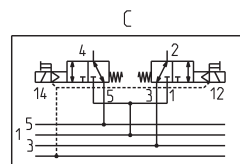
D = 5/2, monostable with bistable board



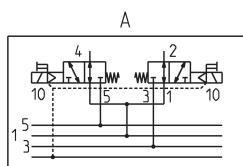
B = 5/2, bistable



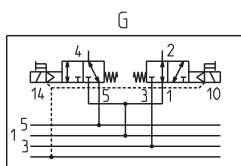
V = 5/3, Centres Closed



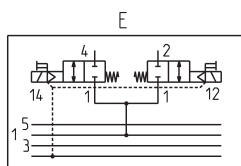
C = 2x3/2 NC



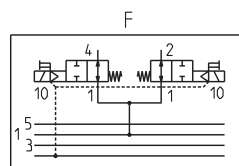
A = 2x3/2 NO



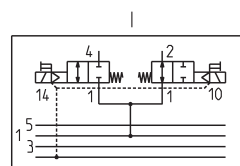
G = 1x3/2 NC + 1x3/2 NO



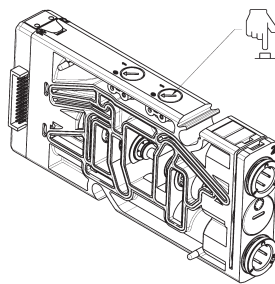
E = 2x2/2 NC



F = 2x2/2 NO



I = 1x2/2 NC + 1x2/2 NO



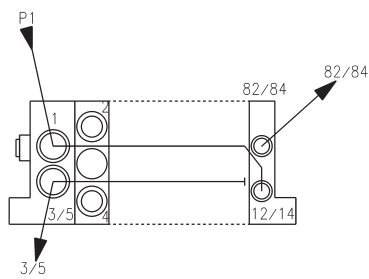
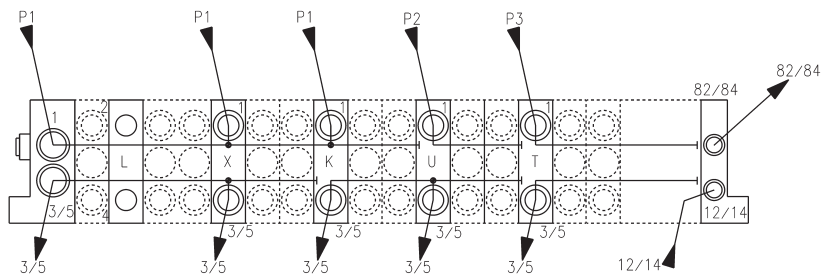
Manual override, version P :
pressure actuation control without PUSH & TURN device (PUSH only).

AVAILABLE FUNCTIONS - INTERMEDIATE AND TERMINAL PLATES

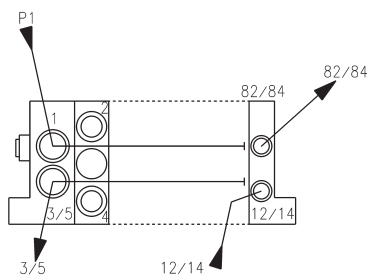
Example of valve island with differentiated pressures and exhausts.

DRAWING LEGEND:

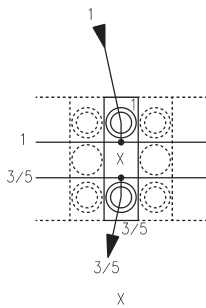
- A = internal servo-pilot
- B = external servo-pilot
- X = supplementary supply and exhaust
- K = supplementary supply, separated exhaust
- U = separated supply, supplementary exhaust
- T = separated supply and exhaust
- L = free position



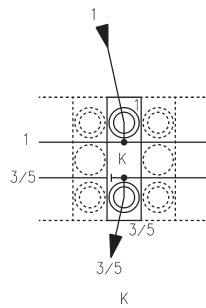
A



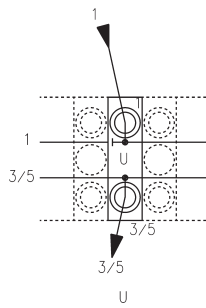
B



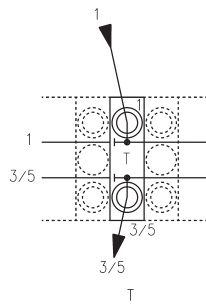
X



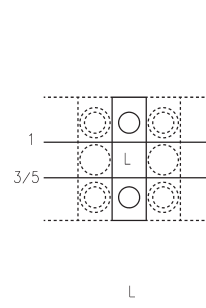
K



U

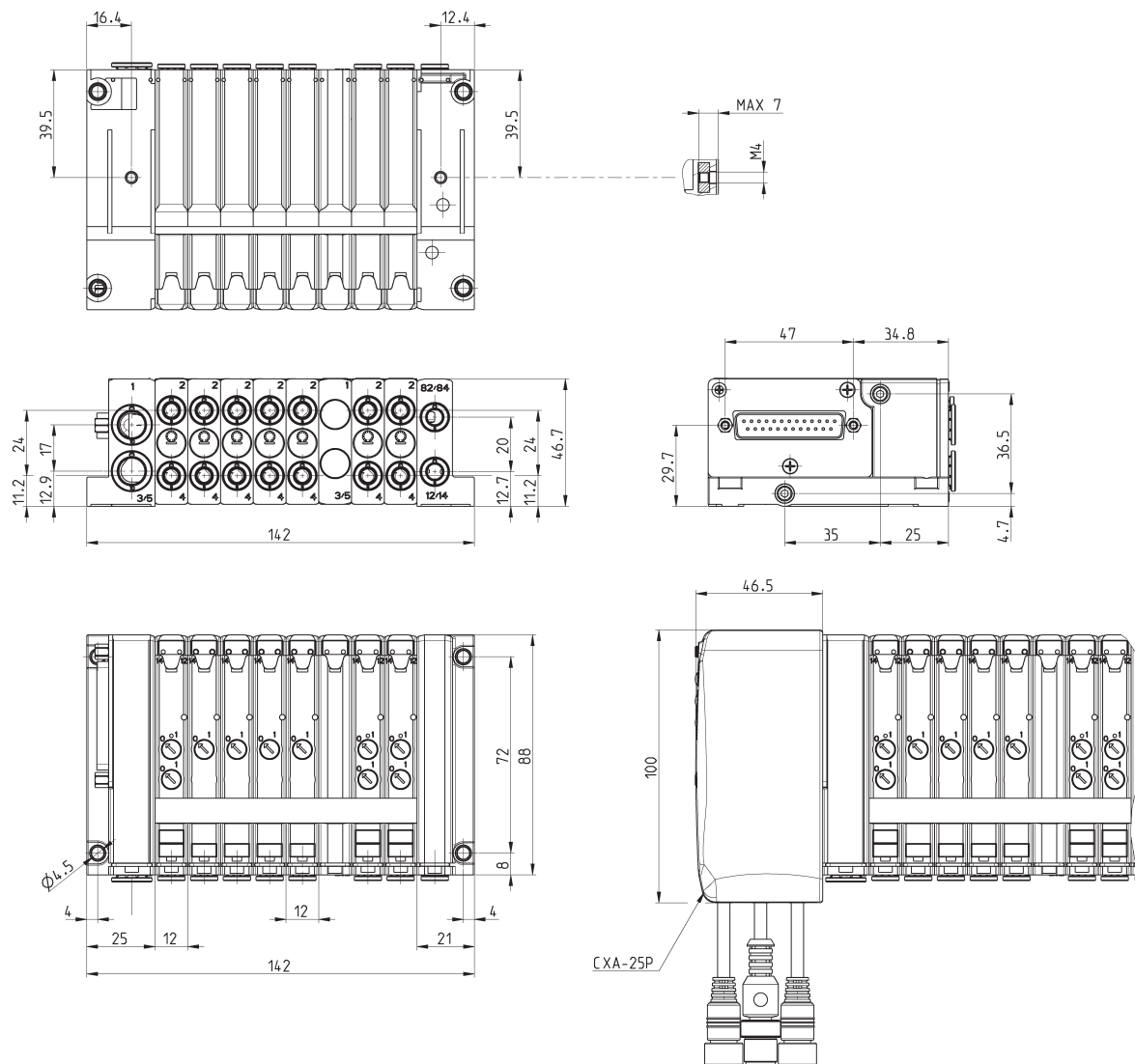


T

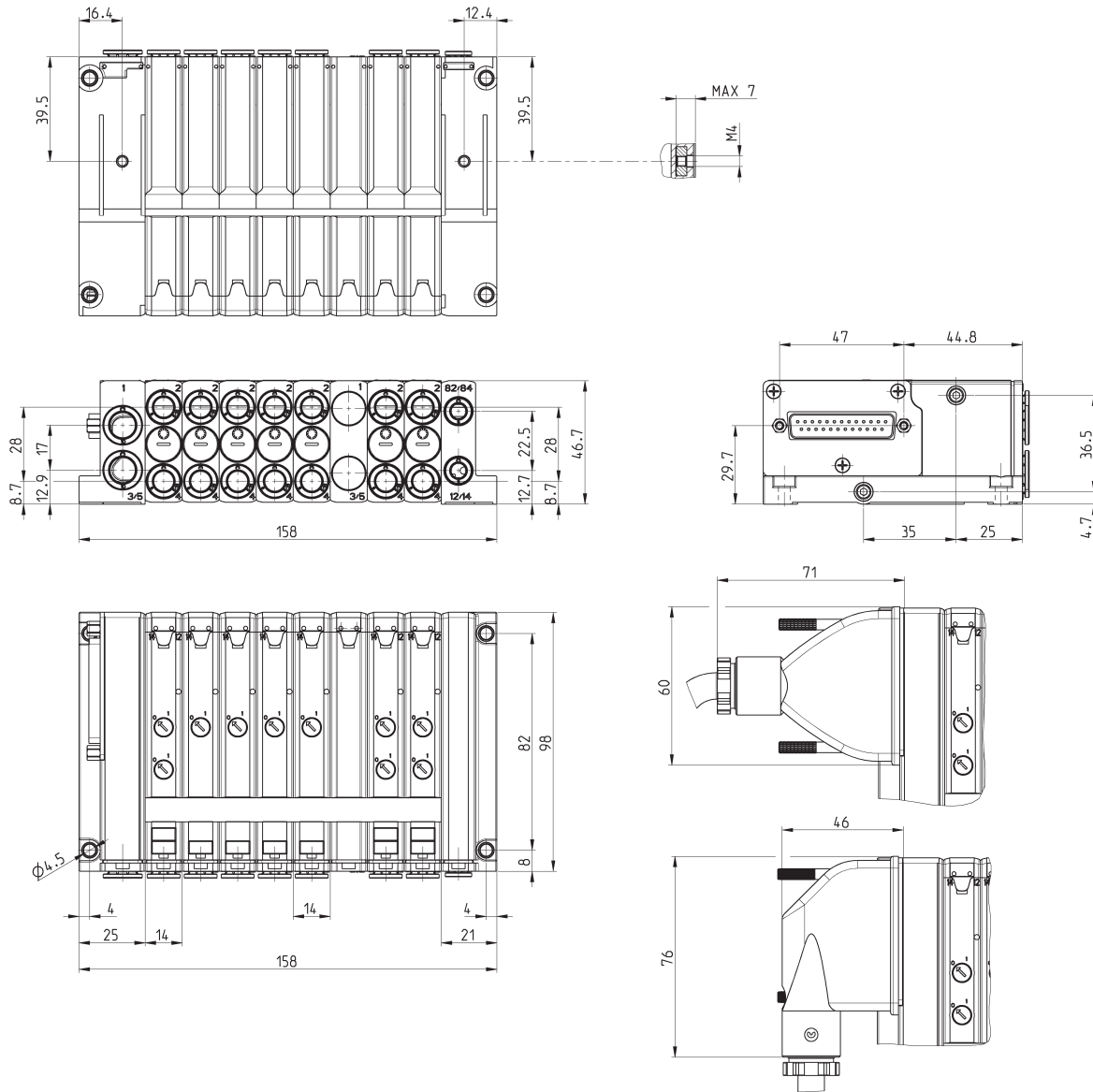


L

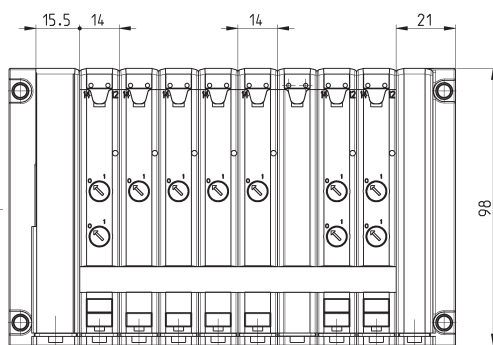
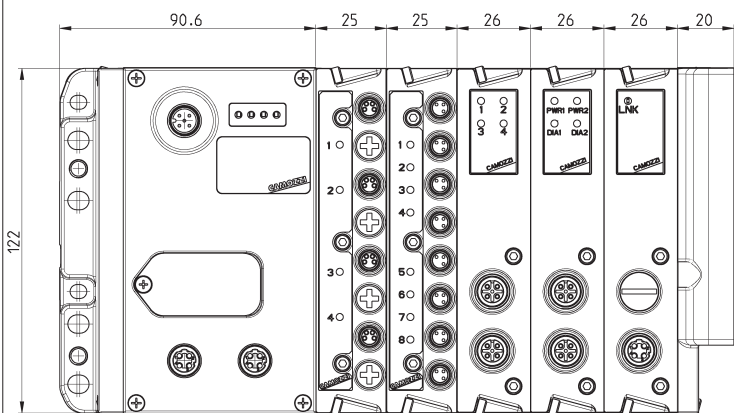
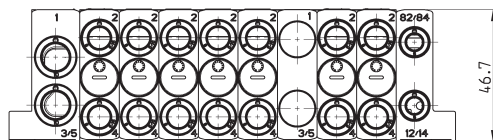
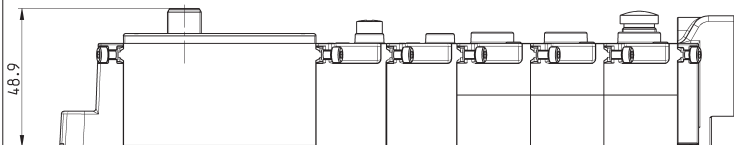
MULTIPOLE version - DIMENSIONS of size 12mm



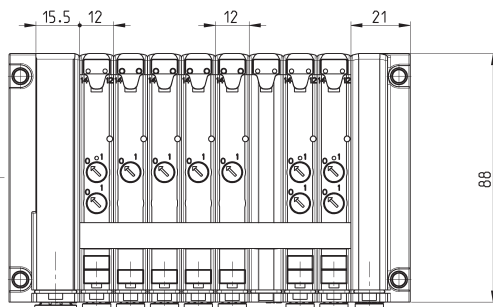
MULTIPOLE version - DIMENSIONS of size 14mm



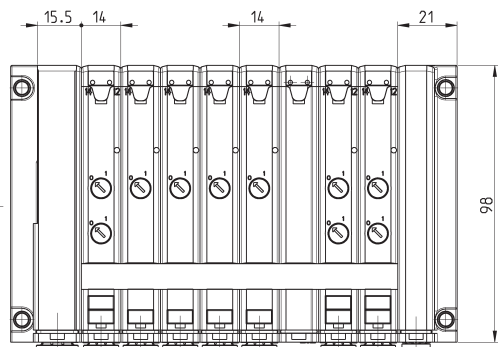
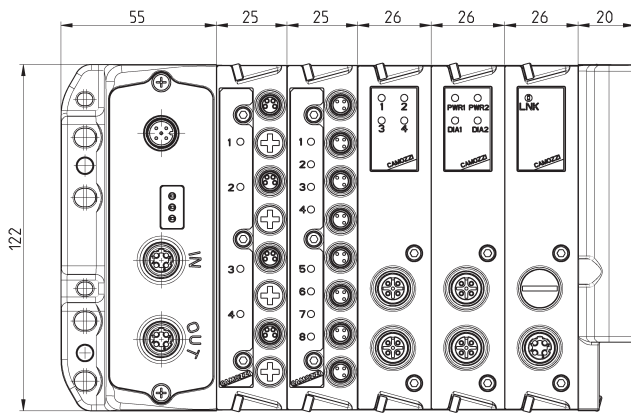
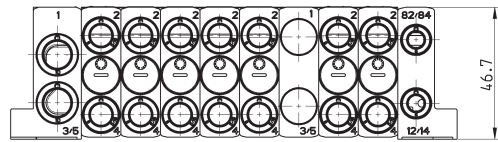
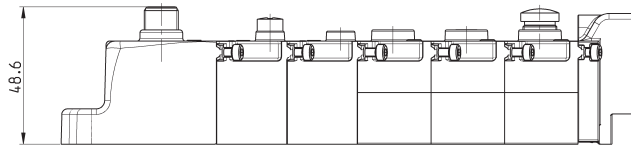
INDIVIDUAL FIELDBUS version - DIMENSIONS



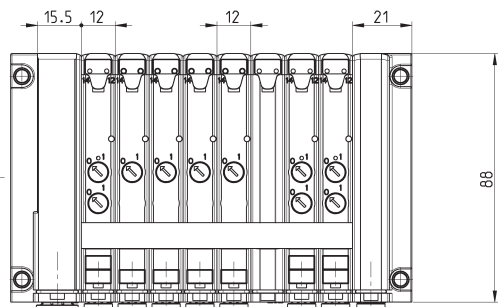
FP..	01	B	A	Q	C	S
	02				D	
	03				E	
	04				R	
	05				T	
	06				U	
					V	
					Z	
					K	
					Y	



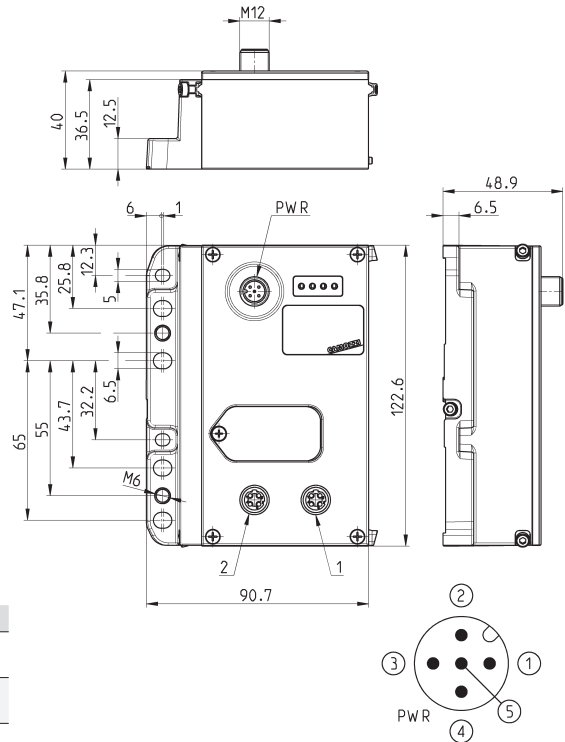
EXPANSION of the FIELDBUS version - DIMENSIONS



FP.. 99 B A Q C S
 D
 E
 R
 T
 U
 V
 Z
 K
 Y



CPU Module - pin configuration

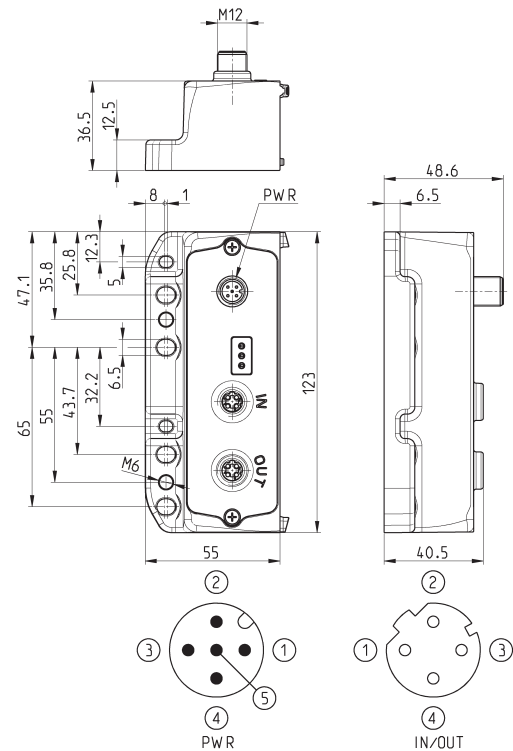


Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration



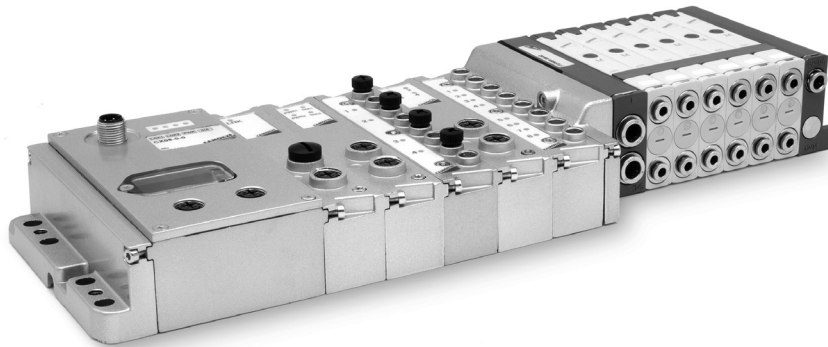
Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

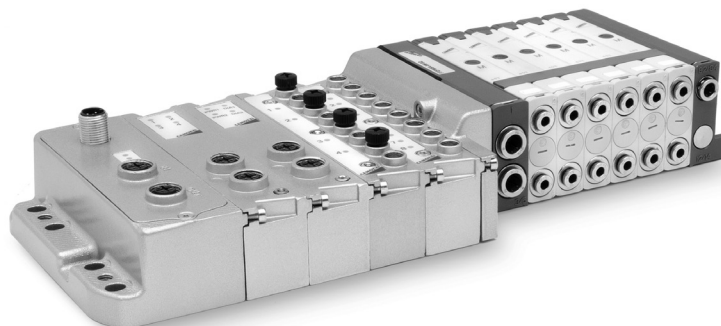
CPU Module - Characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet. All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet. It has its own M12 A 4 pin male connection to supply the modules connected, distinguishing both logic supply and power supply. Two M12 connections for Bus-IN and Bus-OUT of the main network, which M12 connection will take over the relative specifications according to the chosen protocol. The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols addressing is performed by means of the protocol itself. Leds indicate the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.



Expansion Module - Characteristics

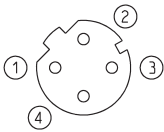
At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state. The valve island equipped with the Expansion Module can be used only in presence of a subnet.



Initial subnet module Mod. ME3-0000-SL

This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices.

Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 5 pin female.

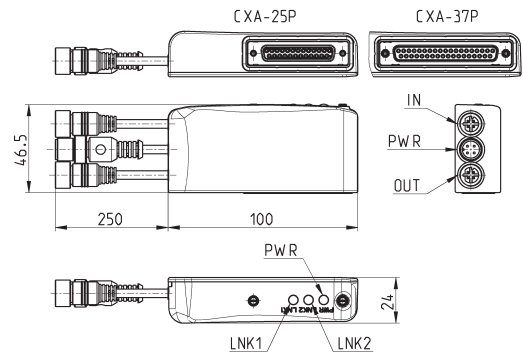


Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 5 pin female	5	100 m

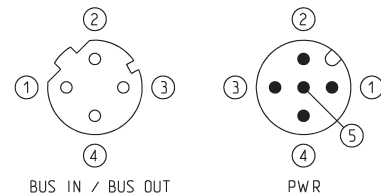
Sub-D adaptor module 25 pin Mod. CXA-25P



It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection. It can manage up to a maximum of 24 Output. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 5 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



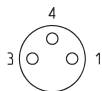
Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR,
supply present and OK



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.

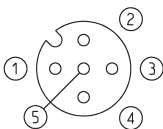


Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g

Analog input/output module Mod. ME3-****-AL

The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every analog output or input has a 12 bit resolution for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.

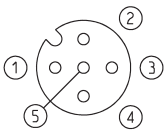
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

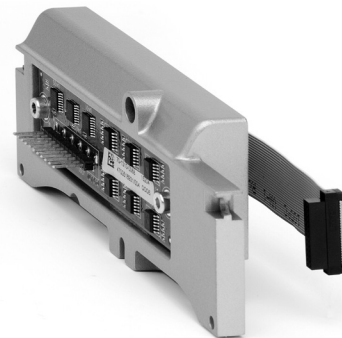
Digital power output module Mod. ME3-0004-DL

The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 + 50°C	100 g

Electric interface module for Fieldbus version

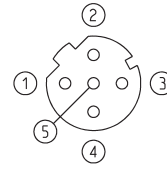
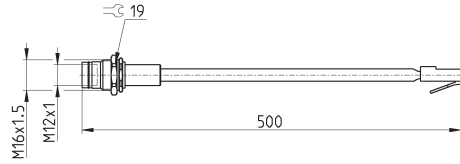


Mod.
ME3-00F0-DI

2/3.35.22

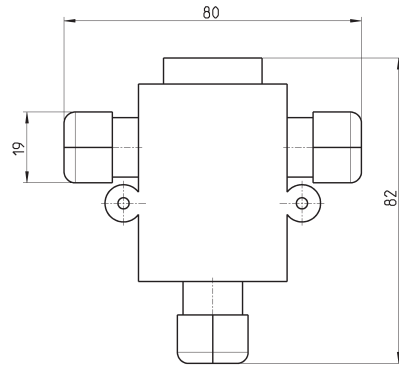
Adaptor and panel mount for Ethernet RJ45 to M12 D networks

For PROFINET, EtherCAT, EtherNet/IP



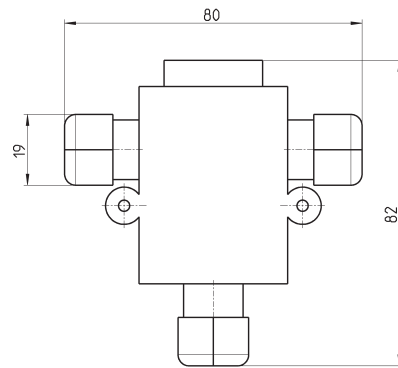
Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female	0.5

Profibus-DP data line tee



Mod.	CS-AA03EC
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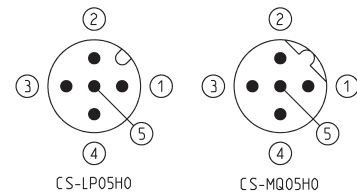
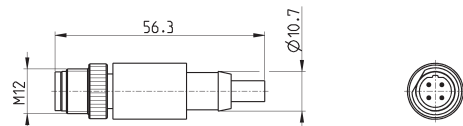
CANopen / DeviceNet data line tee



Mod.	CS-AA05EC
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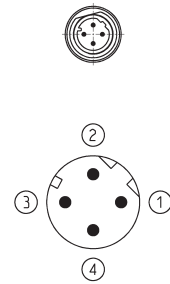
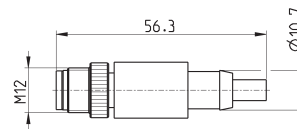
M12 male terminating resistor

For PROFIBUS, CANopen, DeviceNet



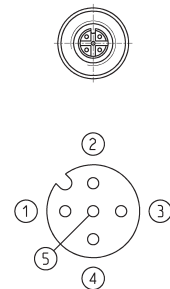
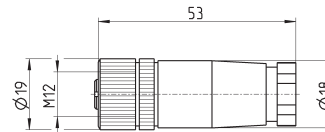
Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male	CANOpen / DeviceNet

Subnet terminating resistor



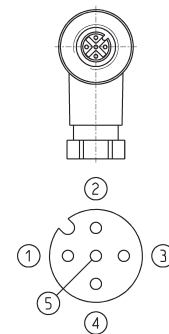
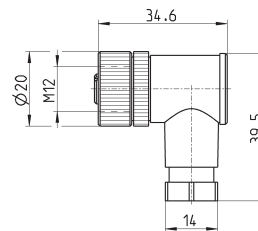
Mod.	description	type of connector	connection	Protocol
CS-SU04HB	moulded terminating resistor	straight	M12 D 4 pin	subnet

Straight connector for power supply



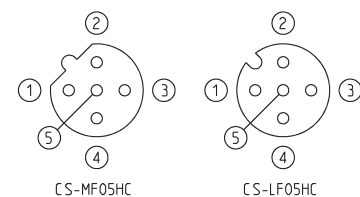
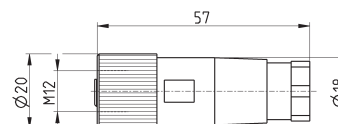
Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female	-

Angular connector for power supply



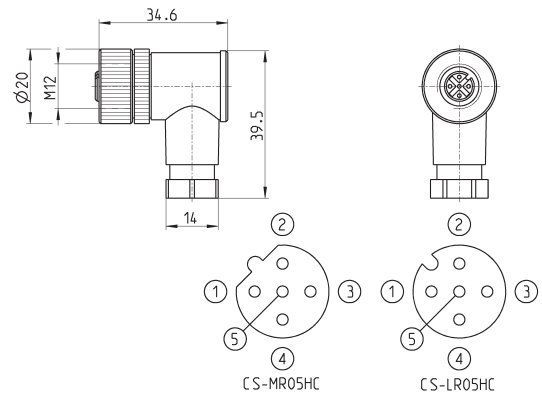
Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female	-

Straight female M12 connectors for Bus-IN



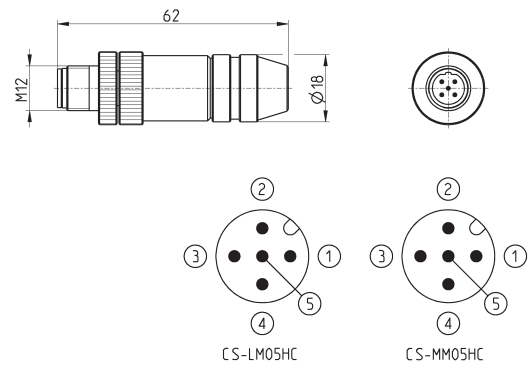
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

Straight male M12 connectors for Bus-OUT

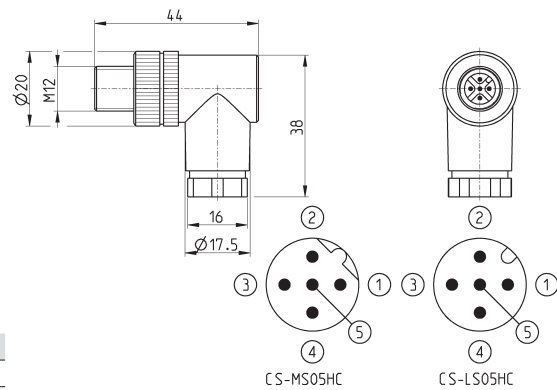


Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT



The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.

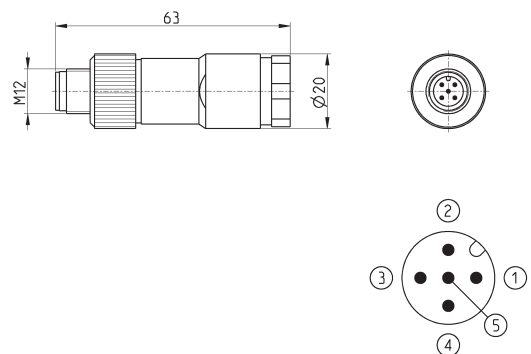


Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector



For the connection of the digital output modules and analog input/output modules.

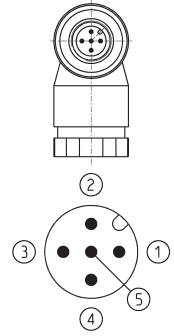
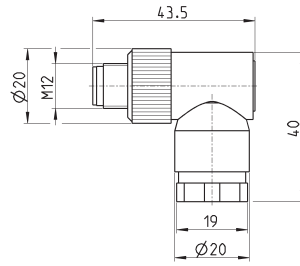


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

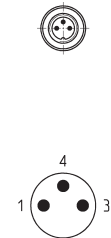
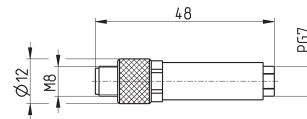


For the connection of the digital output modules ME3-0004-DL



Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

3 pin male M8 wiring connector for digital input modules

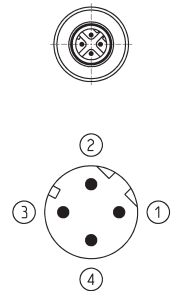
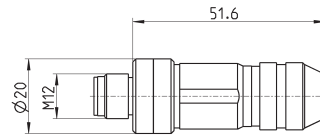


Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT



For PROFINET, EtherCAT, EtherNet/IP and for the subnet



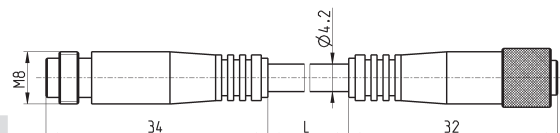
Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

Extension with M8 connector, 3 pin male / female



Non shielded

For the connection of the digital input modules ME3-0008 and ME3-0004

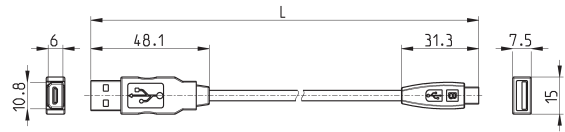


Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 pin male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5



USB to Micro USB cable Mod. G11W-G12W-2

For the hardware configuration of the Camozzi products

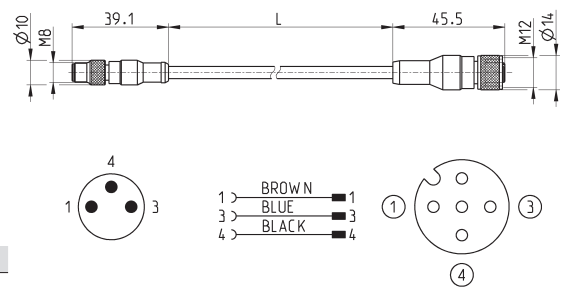


Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2



Adapter cable, M8 3-pin male - M12 4-pin female

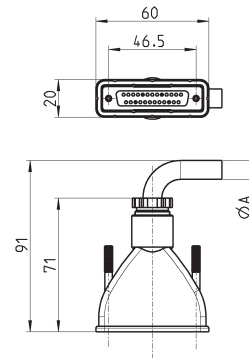
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable length "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Straight Sub-D 25 pin female connector with axial cable

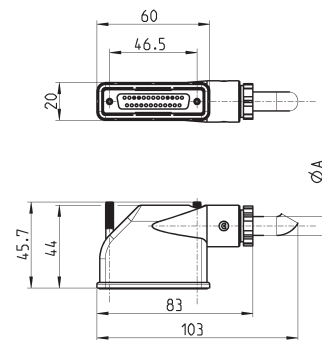
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with axial cable

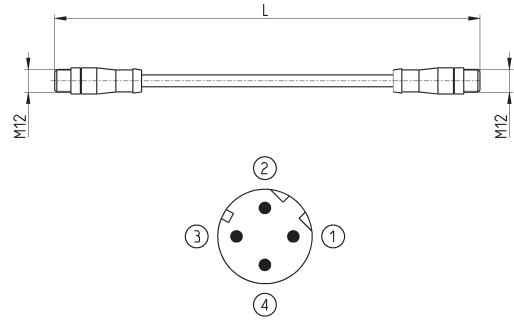
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Cables with straight connectors

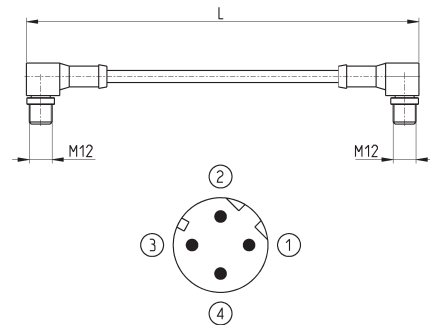
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	moulded cable	straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	moulded cable	straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	moulded cable	straight	2x M12 D 4 pin male	25

Cables with angular 90° connectors

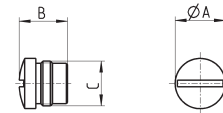
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	moulded cable	90°	2x M12 D 4 pin male	25

M8 and M12 connector cover caps

For digital and analog input/output modules and subnet

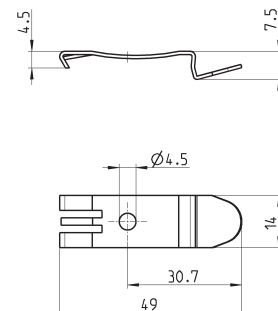


Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931

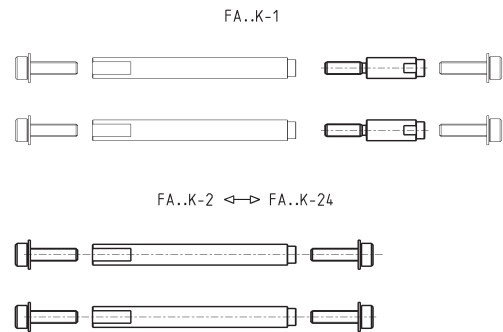


Mod.
PCF-E520

CODING EXAMPLES of SINGLE VALVE (spare part) and TERMINALS (accessories)

CODING EXAMPLE OF A SINGLE SOLENOID VALVE		CODING EXAMPLE OF INTERMEDIATE PLATES	
FP2V-MQR		FP2V-WQ	
F	Series	F	Series
P	Type: P = pneumatic	P	Type: P = pneumatic
2	Size: 1 = 12 mm 2 = 14 mm	2	Size: 1 = 12 mm 2 = 14 mm
V	Solenoid valve or additional plate	V	Solenoid valve or additional plate
-		-	
M	Type of function: M = 5/2 monostable D = 5/2 monostable with bistable board B = 5/2 bistable C = 2 x 3/2 NC A = 2 x 3/2 NO G = 3/2 NC + 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 2/2 NC + 2/2 NO V = 5/3 CC	W	Type of function: L = free position W = free position with bistable board Z = free position with monostable board X = supplementary power supply and exhaust T = separated power supply and exhaust U = separated power supply and supplementary exhaust K = supplementary power supply and separated exhaust
Q	Cartridges for solenoid valves: Q = Ø4 R = Ø6 S = Ø8 (not for Size 1)	Q	Cartridges for plates: Q = Ø4 R = Ø6 S = Ø8 (not for Size 1) L = free position (no cartridges) W = free position with bistable board (no cartridges) Z = free position with monostable board (no cartridges)
R	Type of manual override: R = push and turn (bistable) P = pressure (monostable)		
CODING EXAMPLE OF A LEFT TERMINAL		CODING EXAMPLE OF A RIGHT TERMINAL	
FA2T-S		FA2T-AR	
F	Series	F	Series
A	Accessory	A	Accessory
2	Size: 1 = 12 mm 2 = 14 mm	2	Size: 1 = 12 mm 2 = 14 mm
T	Type of accessory: T = terminal	T	Type of accessory: T = terminal
-		-	
S	Cartridges: = no cartridge S = Ø8 T = Ø10	A	Type of servo-pilot: A = internal B = external
		R	Cartridges: R = Ø6

Tie-rods for valves size 1 (12mm)

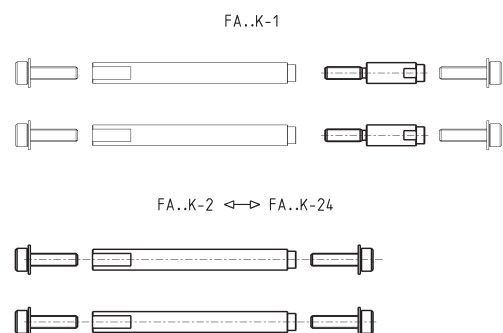


Mod.	Valve positions	NOTE
FA1K-2	2	*
FA1K-4	4	*
FA1K-6	6	*
FA1K-8	8	*
FA1K-10	10	*
FA1K-12	12	*
FA2K-12	14	*
FA1K-16	16	*
FA1K-18	18	*
FA1K-20	20	*
FA1K-22	22	*
FA1K-24	24	*
FA1K-1	-	**

* Tie-rod.
The supply includes
2 tie-rods and 4 screws.

** Joint bolt for odd positions.
The supply includes 2 joint bolts.

Tie-rods for valves size 2 (14mm)



Mod.	Valve positions	NOTE
FA2K-2	2	*
FA2K-4	4	*
FA2K-6	6	*
FA2K-8	8	*
FA2K-10	10	*
FA2K-12	12	*
FA2K-14	14	*
FA2K-16	16	*
FA2K-18	18	*
FA2K-20	20	*
FA2K-22	22	*
FA2K-24	24	*
FA2K-1	-	**

* Tie-rod.
The supply includes
2 tie-rods and 4 screws.

** Joint bolt for odd positions.
The supply includes 2 joint bolts.

Tie-rod plastic cover

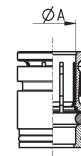

When ordering the cover, specify the length, measured in metres.

Mod.
LAMINA-EST-32

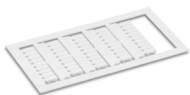
Interchangeable cartridges for valves/plates and for terminals

TABLE LEGEND:

- ✖ = compatible with
- V F1 = solenoid valve or additional plate, size 1
- Tdx F1 = right terminal, size 1
- Tsx F1 = left terminal, size 1
- V F2 = solenoid valve or additional plate, size 2
- Tdx F2 = right terminal, size 2
- Tsx F2 = left terminal, size 2



Mod.	ØA	V F1	Tdx F1	Tsx F1	V F2	Tdx F2	Tsx F2
6700 4-F1	4	✖					
6700 4-F2	4				✖		
6700 6-F1	6	✖	✖			✖	
6700 6-F2	6				✖		
6700 8-F1	8			✖			✖
6700 8-F2	8				✖		
6700 10-F1	10			✖			✖

Identification plates


The packaging contains 45 identification plates 9x5mm

Mod.
HP1/E

Series HN valve islands, Multipole and Fieldbus

New versions 

Multipole connection with 25 or 37 pins

Serial connection with the most common communication protocols

Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC



- » Valve flow: 400 and 700 NI/min
- » Modular subbases: 2 positions for valve size 10.5mm, single position for valve size 21mm
- » Subbases for monostable and bistable valves (size 10.5mm)
- » Protocols available: PROFIBUS-DP, CANopen, DeviceNet, EtherNet/IP, PROFINET, EtherCAT

Thanks to the large range of options available, the Series HN valve islands represent an excellent solution for different applications, particularly in automation systems.

Small dimensions, high flow, pneumatic and electric modularity, electric connections on boards, possibility to interface with the multi-serial node Series CX, optimization of the signal distribution thanks to subbases for monostable and bistable solenoid valves are only some of the features that make this series a particularly innovative product.

Manuals, instruction sheets and configuration files are available on the site <http://catalogue.camozzi.com> or by means of the QR code indicated on the label of the product.

GENERAL DATA
PNEUMATIC SECTION

Valve construction	spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2 x 2/2 NO 2 x 2/2 NC 1 x 2/2 NC+ 1 x NO 2 x 3/2 NC 2 x 3/2 NO 1 x 3/2 NC+ 1 x 3/2 NO
Materials	spool in aluminium spool seals in HNBR other seals in NBR cartridges in brass body and end covers in technopolymer subbases in aluminium
Connections	Inlets 2 and 4, size 10,5 mm: M7, tube Ø 4, tube Ø 6 Inlets 2 and 4, size 21 mm: G1/8, tube Ø 6, tube Ø 8 Supply 1: G1/4, tube Ø 8, tube Ø 10 Supply 12/14: M7 Exhausts 3 and 5: G1/4 or with integrated silencer Exhausts 82/84: M7
Temperature	0 ÷ 50°C
Air specifications	Filtered compressed air, non lubricated, class 6.4.4 according to ISO 8573-1:2010. If lubrication is necessary, please only use oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 6.4.4 according to ISO 8573-1:2010 (do not lubricate).
Valve sizes	10.5mm (2 valves for each subbase) 21mm (1 valve for each subbase)
Working pressure	- 0,9 ÷ 10 bar
Pilot pressure	3 ÷ 7 bar 4.5 ÷ 7 bar (with working pressure exceeding 6 bar for the versions 2x2/2 and 2x3/2)
Flow rate	400 NI/min (10.5mm) 700 NI/min (21mm)
Mounting position	any position
Protection class	IP 65

ELECTRICAL SECTION - MULTIPOLE VERSION

Type of Sub-D connector	25 or 37 pins
Max. absorption	0.8 A (with Sub-D connector 25 pins) 1 A (with Sub-D connector 37 pins)
Supply voltage	24 V DC +/- 10%
Max. number of coils to operate	24 on 20 valve positions (with Sub-D connector 25 pins) 32 on 28 valve positions (with Sub-D connector 37 pins)
Valve signalling	yellow led

ELECTRICAL SECTION - FIELDBUS VERSION

General data	see the CX section (2.3.50)
Max. absorption	digital outputs / analog outputs and inputs 3A digital/analog inputs 3A
Supply voltage	logic supply 24 V DC +/- 10% power supply 24 V DC +/- 10%
Max. number of coils to operate	32 on 28 valve positions

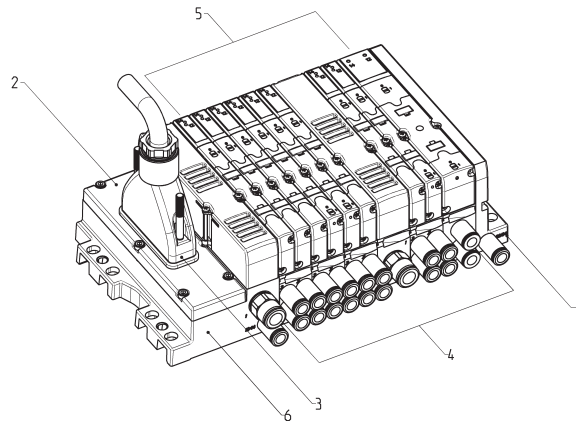
CODING EXAMPLE - MULTIPOLE VERSION

HN	5	M	-	03A	-	2Q4AZ2A	-	2B8M4C	-	A
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HN	SERIES		
5	SIZE: 1 = 10.5 2 = 21 5 = Mixed		
M	ELECTRICAL CONNECTION: M = Multipole 25 pin PNP N = Multipole 25 pin NPN H = Multipole 37 pin PNP L = Multipole 37 pin NPN		
03A	CONNECTION: 000 = without connector/cable	CONNECTOR WITH CABLE AXIAL OUTPUT: 03A = 3m 05A = 5m 10A = 10m 15A = 15m 20A = 20m 25A = 25m	CONNECTOR WITHOUT CABLE: 4XA = 25 pins axial 4XR = 25 pins radial 9XA = 37 pins axial 9XR = 37 pins radial
2Q4AZ2A	SUBBASES FOR 2 SOLENOID VALVES SIZE 1 (*): A (AZ) = M7 threads B (BZ) = 4 fittings for tube Ø4 C (CZ) = 4 fittings for tube Ø6 D (DZ) = channel 1, 3, 5 closed; M7 threads E (EZ) = channel 1, 3, 5 closed; cartridges tube Ø4 F (FZ) = channel 1, 3, 5 closed; cartridges tube Ø6 G (GZ) = channel 3, 5 closed; M7 threads H (HZ) = channel 3, 5 closed; cartridges tube Ø4 I (IZ) = channel 3, 5 closed; cartridges tube Ø6 L (LZ) = channel 1 closed; M7 threads M (MZ) = channel 1 closed; cartridges tube Ø4 N (NZ) = channel 1 closed; cartridges tube Ø6 (*) Subbases with "Z" at the end of their code are used with monostable solenoid valves FOR SOLENOID VALVES SIZE 2: Q = G 1/8 threads R = cartridges for tube Ø6 S = cartridges for tube Ø8	SUBBASES FOR PNEUMATIC SUPPLY: X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts FOR ELECTRICAL SUPPLY: K = separation of electrical supply	SEALS: T = diaphragm on channels 1, 3, 5 U = diaphragm on channel 1 V = diaphragm on channels 3, 5
2B8M4C	SOLENOID VALVES Size 1 and 2: 0 = island without solenoid valves M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position	SOLENOID VALVE + PRESSURE REGULATOR on channel 1 (size 2 only): N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO	
A	THREADED TERMINAL PLATES: A = 1, 12/14 in common 3/5, 82/84 threaded ports B = 1, 12/14 separated 3/5, 82/84 threaded ports C = 1, 12/14 in common 3/5, 82/84 with integrated silencer D = 1, 12/14 separated 3/5, 82/84 with integrated silencer	TERMINAL PLATES with FITTINGS FOR TUBE Ø 8 on PORT 1: E = 1, 12/14 in common 3/5, 82/84 conveyable F = 1, 12/14 separated 3/5, 82/84 conveyable G = 1, 12/14 in common 3/5, 82/84 with integrated silencer H = 1, 12/14 separated 3/5, 82/84 with integrated silencer	TERMINAL PLATES with FITTINGS FOR TUBE Ø 10 on PORT 1: I = 1, 12/14 in common 3/5, 82/84 conveyable L = 1, 12/14 separated 3/5, 82/84 conveyable M = 1, 12/14 in common 3/5, 82/84 with integrated silencer N = 1, 12/14 separated 3/5, 82/84 with integrated silencer

In presence of identical consequent codes both for the subbases as for the valves you need to substitute the letter with the number.
 Ex: HN5M-03A-ABCS-MMCCBBB-A is converted to HN5M-03A-ABCS-2M2C3B-A.

CODING - MULTIPOLE VERSION



H
N
5
M
 -
 0
3
A
 -
 3
B
X
B
R
 -
 3
M
2
B
M
X
M
V
C
 -
 D

HN...

(1)	SIZE	(2)	ELECTRICAL CONNECTION	(3)	CONNECTION	(4)	SUBBASES for 2 SOLENOID VALVES, size 1	(5)	SOLENOID VALVES Size 1 and 2	(6)	THREADED TERMINAL PLATES
1	10.5	M	Multipole 25 pin PNP	000	without connector/cable	A (AZ)	M7 threads	0	island without solenoid valves	A	1, 12/14 in common 3/5, 82/84 with thread
2	21	N	Multipole 25 pin NPN	03A	connector with axial output cable 3 m	B (BZ)	4 fittings tube Ø4	M	5/2 Monostable	B	1, 12/14 separated 3/5, 82/84 with thread
5	Mixed	H	Multipole 37 pin PNP	05A	connector with axial output cable 5 m	C (CZ)	4 fittings tube Ø6	B	5/2 Bistable	C	1, 12/14 in common 3/5, 82/84 with silencer
		L	Multipole 37 pin NPN	10A	connector with axial output cable 10 m	D (DZ)	channel 1, 3, 5 closed M7 threads	V	5/3 Centres Closed	D	1, 12/14 separated 3/5, 82/84 with silencer
				15A	connector with axial output cable 15 m	E (EZ)	channel 1, 3, 5 closed cartridges Ø4	C	2x 3/2 NC		TERMINAL PLATES fittings for tube Ø8, on port 1
				20A	connector with axial output cable 20 m	F (FZ)	channel 1, 3, 5 closed cartridges Ø6	A	2x 3/2 NO	E	1, 12/14 in common 3/5, 82/84 conveyable
				25A	connector with axial output cable 25 m	G (GZ)	channel 3, 5 closed M7 threads	G	1x 3/2 NC + 1x 3/2 NO	F	1, 12/14 separated 3/5, 82/84 conveyable
				03R	connector with radial output cable 3 m	H (HZ)	channel 3, 5 closed cartridges Ø4	E	2x 2/2 NC	G	1, 12/14 in common 3/5, 82/84 with silencer
				05R	connector with radial output cable 5 m	I (IZ)	channel 3, 5 closed cartridges Ø6	F	2x 2/2 NO	H	1, 12/14 separated 3/5, 82/84 with silencer
				10R	connector with radial output cable 10 m	L (LZ)	channel 1 closed M7 threads	I	1x 2/2 NC + 1x 2/2 NO		TERMINAL PLATES fittings for tube Ø10, on port 1
				15R	connector with radial output cable 15 m	M (MZ)	channel 1 closed cartridges Ø4	L	Free position	I	1, 12/14 in common 3/5, 82/84 conveyable
				20R	connector with radial output cable 20 m	N (NZ)	channel 1 closed cartridges Ø6		SOL. VALVE + PRESS. REG. channel 1 - size 2 only	L	1, 12/14 separated 3/5, 82/84 conveyable
				25R	connector with radial output cable 25 m		SUBBASES for SOLENOID VALVES, size 2	N	5/2 Monostable	M	1, 12/14 in common 3/5, 82/84 with silencer
				4XA	25 pin axial connector	Q	G1/8 threads	P	5/2 Bistable	N	1, 12/14 separated 3/5, 82/84 with silencer
				4XR	25 pin radial connector	R	cartridges for tube Ø6	Q	5/3 Centres Closed		
				9XA	37 pin axial connector	S	cartridges for tube Ø8	R	2x 3/2 NC		
				9XR	37 pin radial connector		SUBBASES FOR PNEUMATIC SUPPLY	S	2x 3/2 NO		
						X	supplem. supply and exhaust	T	1x 3/2 NC + 1x 3/2 NO		
						Y	supplem. supply and exhaust with silencer	U	2x 2/2 NC		
						W	supply from exhausts	X	2x 2/2 NO		
							SUBBASES FOR ELECTRICAL SUPPLY	Y	1x 2/2 NC + 1x 2/2 NO		
						K	separation of electrical supply				
							SEALS				
						T	Diaphragm on channels 1, 3, 5				
						U	Diaphragm on channel 1				
						V	Diaphragm on channels 3, 5				

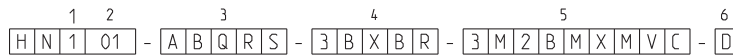
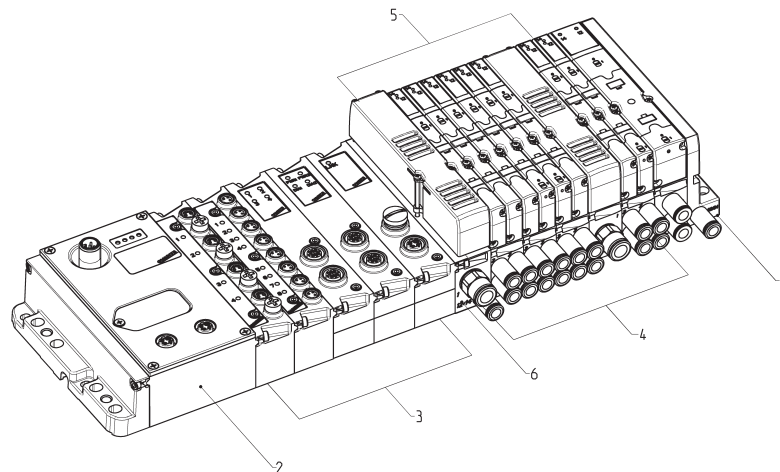
CODING EXAMPLE - FIELDBUS VERSION

HN	5	01	-	ABCD	-	2Q4AZ2A	-	2B8M4C	-	A
-----------	----------	-----------	----------	-------------	----------	----------------	----------	---------------	----------	----------

HN	SERIES									
5	SIZE: 1 = 10.5 2 = 21 5 = Mixed									
01	PROTOCOL: 01 = PROFIBUS-DP 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion module									
ABCD	INPUT / OUTPUT MODULES: 0 = no module			INPUT / OUTPUT MODULES: A = 8 Digital Inputs M8 B = 4 Digital Inputs M8 C = 2 Analog Inputs 4-20mA D = 2 Analog Inputs 0-10V E = 1 Analog Input 4-20mA + 1 Input 0-10V Q = 4 Digital Outputs M12 duo R = 2 Analog Outputs 4-20mA T = 2 Analog Outputs 0-10V U = 1 Analog Output 4-20mA + 1 Output 0-10V V = 1 Analog Output 4-20mA + 1 Input 0-10V Z = 1 Analog Output 4-20mA + 1 Input 4-20mA K = 1 Analog Output 0-10V + 1 Input 0-10V Y = 1 Analog Output 0-10V + 1 Input 4-20mA				INPUT / OUTPUT MODULES: S = Initial subnet module		
2Q4AZ2A	SUBBASES FOR 2 SOLENOID VALVES SIZE 1 (*): A (AZ) = M7 threads B (BZ) = 4 fittings for tube Ø4 C (CZ) = 4 fittings for tube Ø6 D (DZ) = channel 1, 3, 5 closed; M7 threads E (EZ) = channel 1, 3, 5 closed; cartridges tube Ø4 F (FZ) = channel 1, 3, 5 closed; cartridges tube Ø6 G (GZ) = channel 3, 5 closed; M7 threads H (HZ) = channel 3, 5 closed; cartridges tube Ø4 I (IZ) = channel 3, 5 closed; cartridges tube Ø6 L (LZ) = channel 1 closed; M7 threads M (MZ) = channel 1 closed; cartridges tube Ø4 N (NZ) = channel 1 closed; cartridges tube Ø6 (*) Subbases with "Z" at the end of their code are used with monostable solenoid valves FOR SOLENOID VALVES SIZE 2: Q = G 1/8 threads R = cartridges for tube Ø6 S = cartridges for tube Ø8				SUBBASES FOR PNEUMATIC SUPPLY: X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts FOR ELECTRICAL SUPPLY: K = separation of electrical supply			SEALS: T = diaphragm on channels 1, 3, 5 U = diaphragm seal on channel 1 V = diaphragm seal on channels 3, 5		
2B8M4C	SOLENOID VALVES Size 1 and 2: 0 = island without solenoid valves M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position				SOLENOID VALVE + PRESSURE REGULATOR on channel 1 (size 2 only): N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO					
A	THREADED TERMINAL PLATES: A = 1, 12/14 in common 3/5, 82/84 threaded ports B = 1, 12/14 separated 3/5, 82/84 threaded ports C = 1, 12/14 in common 3/5, 82/84 with integrated silencer D = 1, 12/14 separated 3/5, 82/84 with integrated silencer			TERMINAL PLATES with CARTRIDGES Ø 8: E = 1, 12/14 in common 3/5, 82/84 conveyable F = 1, 12/14 separated 3/5, 82/84 conveyable G = 1, 12/14 in common 3/5, 82/84 with integrated silencer H = 1, 12/14 separated 3/5, 82/84 with integrated silencer			TERMINAL PLATES with CARTRIDGES Ø 10: I = 1, 12/14 in common 3/5, 82/84 conveyable L = 1, 12/14 separated 3/5, 82/84 conveyable M = 1, 12/14 in common 3/5, 82/84 with integrated silencer N = 1, 12/14 separated 3/5, 82/84 with integrated silencer			

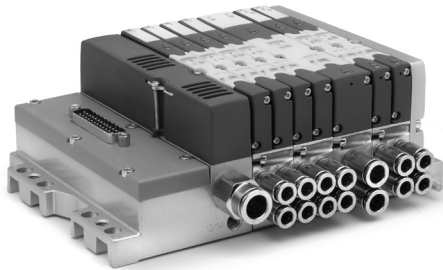
X, Y and K sub-bases will be equipped with threads or cartridges of the same size of port 1, see the choice "Type of terminal plates". In presence of identical consequent codes both for sub-bases and for valves, you need to substitute the letter with the number.
 Ex: HN501-ABCD-ABCS-MMCCBBB-A is converted to HN501-ABCD-ABCS-2M2C3B-A.

CODING - FIELDBUS VERSION



HN...

(1)	SIZE	(2)	PROTOCOL	(3)	INPUT / OUTPUT MODULES	(4)	SUBBASES FOR 2 SOLENOID VALVES, size 1	(5)	SOLENOID VALVES Size 1 and 2	(6)	THREADED TERMINAL PLATES
1	10.5	01	PROFIBUS-DP	0	no module	A (AZ)	M7 threads	0	island without solenoid valves	A	1, 12/14 in common 3/5, 82/84 threaded
2	21	02	DeviceNet	A	8 Digital IN M8	B (BZ)	fittings tube Ø4	M	5/2 Monostable	B	1, 12/14 separated 3/5, 82/84 threaded
5	Mixed	03	CANopen	B	4 Digital IN M8	C (CZ)	fittings tube Ø6	B	5/2 Bistable	C	1, 12/14 in common 3/5, 82/84 with silencer
		04	EtherNet/IP	C	2 Analog IN 4-20mA	D (DZ)	channel 1, 3, 5 closed; M7 threads	V	5/3 Centres Closed	D	1, 12/14 separated 3/5, 82/84 with silencer
		05	EtherCAT	D	2 Analog IN 0-10V	E (EZ)	channel 1, 3, 5 closed; cartridges Ø4	C	2x 3/2 NC		TERMINAL PLATES cartridges Ø8
		06	PROFINET	E	1 Analog IN 4-20mA + 1 IN 0-10V	F (FZ)	channel 1, 3, 5 closed; cartridges Ø6	A	2x 3/2 NO	E	1, 12/14 in common 3/5, 82/84 conveyable
		99	Expansion module	Q	4 Digital OUT M12 duo	G (GZ)	channel 3, 5 closed; M7 threads	G	1x 3/2 NC + 1x 3/2 NO	F	1, 12/14 separated 3/5, 82/84 conveyable
				R	2 Analog OUT 4-20mA	H (HZ)	channel 3, 5 closed; cartridges Ø4	E	2 x 3/2 NC	G	1, 12/14 in common 3/5, 82/84 with silencer
				T	2 Analog OUT 0-10V	I (IZ)	channel 3, 5 closed; cartridges Ø6	F	2x 3/2 NO	H	1, 12/14 separated 3/5, 82/84 with silencer
				U	1 Analog OUT 4-20mA + 1 OUT 0-10V	L (LZ)	channel 1 closed; M7 threads	I	1x 2/2 NC + 1x 2/2 NO		TERMINAL PLATES cartridges Ø10
				V	1 Analog OUT 4-20mA + 1 IN 0-10V	M (MZ)	channel 1 closed; cartridges Ø4	L	Free position	I	1, 12/14 in common 3/5, 82/84 conveyable
				Z	1 Analog OUT 4-20mA + 1 IN 4-20mA	N (NZ)	channel 1 closed, cartridges Ø6		SOL. VALVE + PRESS. REG. channel 1 - size 2 only	L	1, 12/14 separated 3/5, 82/84 conveyable
				K	1 Analog OUT 0-10V + 1 Input 0-10V		SUBBASES for SOLENOID VALVES, size 2	N	5/2 Monostable	M	1, 12/14 in common 3/5, 82/84 with silencer
				Y	1 Analog OUT 0-10V + 1 IN 4-20mA	Q	G1/8 threads	P	5/2 Bistable	N	1, 12/14 separated 3/5, 82/84 with silencer
				S	Initial subnet module	R	cartridges for tube Ø6	Q	5/3 Centres Closed		
						S	cartridges for tube Ø8	R	2x 3/2 NC		
							SUBBASES FOR PNEUMATIC SUPPLY	S	2x 3/2 NO		
						X	supplem. supply and exhaust	T	1x 3/2 NC + 1x 3/2 NO		
						Y	supplem. supply and exhaust with silencer	U	2x 2/2 NC		
						W	supply from exhausts	X	2x 2/2 NO		
							SUBBASES FOR ELECTRICAL SUPPLY	Y	1x 2/2 NC + 1x 2/2 NO		
						K	separation of electrical supply				
							SEALS				
						T	diaphragm on channels 1, 3, 5				
						U	diaphragm on channel 1				
						V	diaphragm on channels 3, 5				

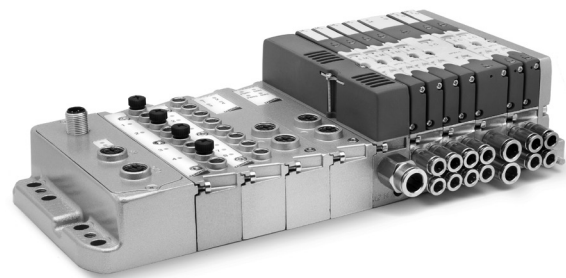
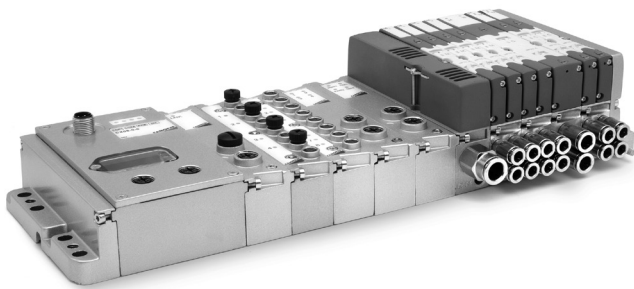
MULTIPOLE VERSION and MULTIPOLE WITH SUB-D ADAPTOR VERSION


2

CONTROL

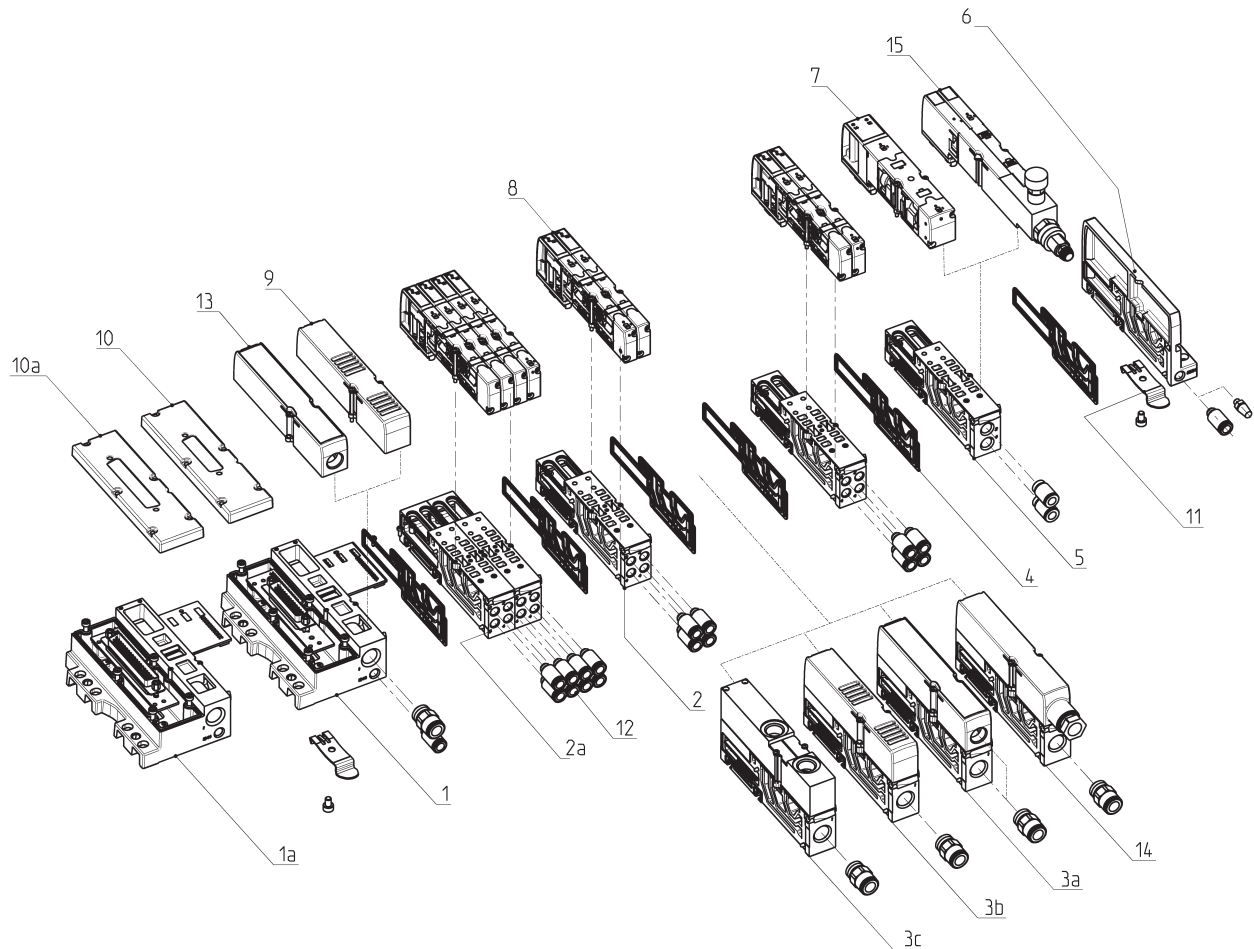
The Multipole version can be connected in a quick and secure way thanks to the electrical connection by means of a pre-wired cable with 25 or 37 pins with in-line or angular connection. It is possible to create zones with differentiated power supply and with separate pressure/exhaust. Thanks to the subbases with monostable board, islands can be realized up to maximum of 24 coils on 20 valve positions with the 25 pin connection and 32 coils on 28 valve positions with the 37 pin connection.

The Multipole Island of both 25 pins and 37 pins can be connected by means of a Sub-D adaptor, also of 25 or 37 pins. In this way a standard Multipole Island can be inserted as expansion in the subnet of the Serial version.

VERSIONS: FIELDBUS WITH CPU MODULE AND EXPANSION FIELDBUS


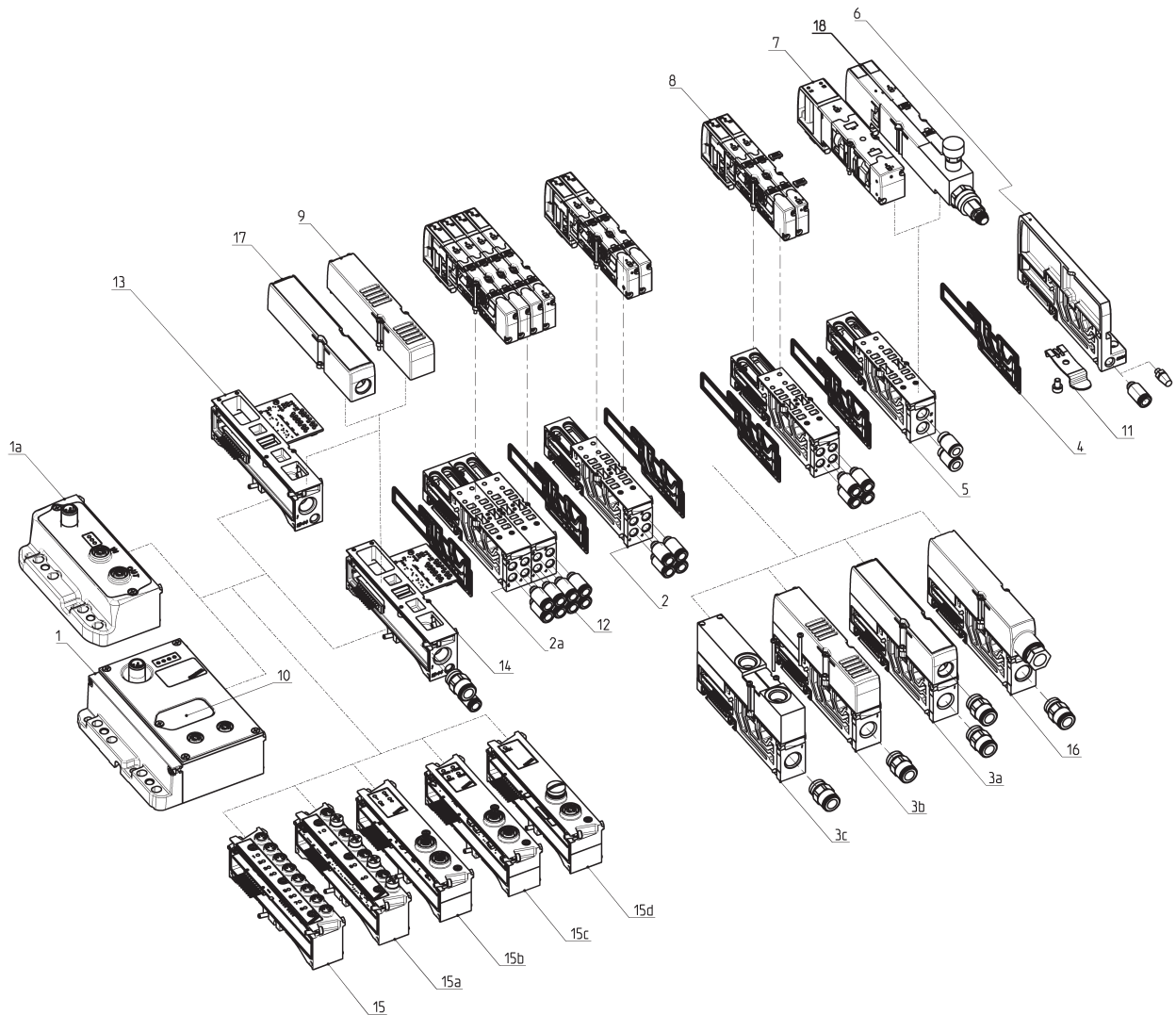
Thanks to the Series CX Multi-serial node and a special direct interface module with the pneumatic part of the island, it is possible to interface the Series HN with the PROFIBUS-DP, DeviceNet, CANopen, PROFINET, EtherCAT and EtherNet/IP serial protocols. The Fieldbus version with CPU has the same configuration rules of a Multipole island and can be equipped with different electric modules like digital/analog inputs/outputs of 0-10V and 4-20mA, as well as initial subnet Modules.

It is possible to insert Initial Subnet Modules in the version with CPU module. These Modules enable to create a subnet with tree structure or in series. On the subnet you can connect Expansion Islands. These expansions have the same possibilities to use the different electric modules, like digital and analog inputs and outputs and further Initial Subnet Modules. Also with this version the same rules as the CPU module and Multipole apply.

MULTIPOLE version - COMPONENTS

COMPONENTS

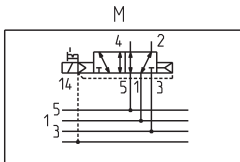
1	Electric interface group Multipole 25 pin	7	Solenoid valve, size 2
1a	Electric interface group Multipole 37 pin	8	Solenoid valve, size 1
2	Threaded subbase, size 10.5 - modularity 2	9	Cover with silencer
2a	Subbases without electric board	10	Multipole electric cover 25 pins
3a	Conveyable plate for supply and supplementary exhaust	10a	Multipole electric cover 37 pins
3b	Plate for supply and exhaust with silencer	11	Mounting bracket for DIN rail
3c	Plate for supply from exhausts	12	Quick-release fittings
4	Interface seals	13	Cover to convey exhausts 3 and 5
5	Threaded subbase, size 21 - modularity 1	14	Module to separate electrical supply and supplementary pneumatic supply
6	Right terminal (HA0T-H)	15	Valve size 10.5 with incorporated pressure regulator

INDIVIDUAL FIELDBUS version - COMPONENTS

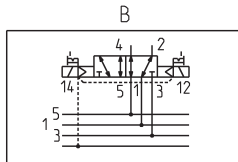


COMPONENTS

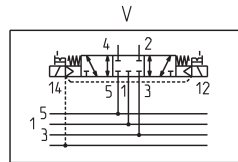
1	Multi-serial Module CX	11	Mounting bracket for DIN rail
1a	Expansion Module		
2	Threaded subbase, size 10.5 - modularity 2	12	Quick-release fittings
2a	Subbases without electric board		
3a	Conveyable plate for supply and supplementary exhaust	13	Direct interface module with Series HN with internal pilot supply
3b	Plate for supply and exhaust with silencer		
3c	Plate for supply from exhausts		
4	Interface seals	14	Direct interface module with Series HN with external pilot supply
5	Threaded subbase, size 21 - modularity 1	15	8 Digital Inputs module
		15a	4 Digital Inputs module
6	Right terminal (HA0T-H)	15b	4 Digital Outputs module
		15c	IN/OUT analog module
		15d	Initial subnet module
7	Solenoid valve size 2	16	Cover to convey exhausts 3 and 5
8	Solenoid valve size 1	17	Module to separate electrical supply and supplementary pneumatic supply
9	Cover with silencer	18	Valve size 10,5 with integrated pressure regulator
10	Cover for the access to rotary switches and for programming		

AVAILABLE FUNCTION - SYMBOLS FOR SOLENOID VALVES


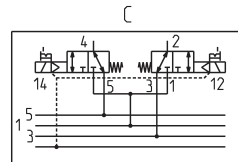
M = 5/2-way, Monostable



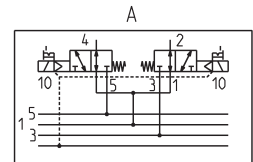
B = 5/2-way, Bistable



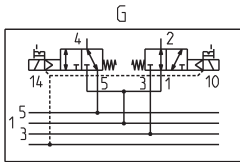
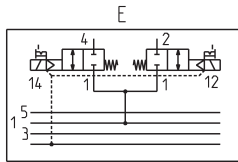
V = 5/3-way Centres Closed



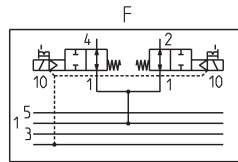
C = 2 x 3/2-way NC



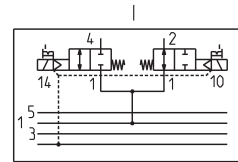
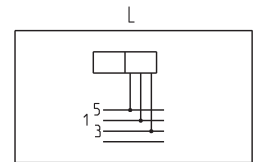
A = 2 x 3/2-way NO


 G = 1 x 3/2-way NC +
1 x 3/2-way NO


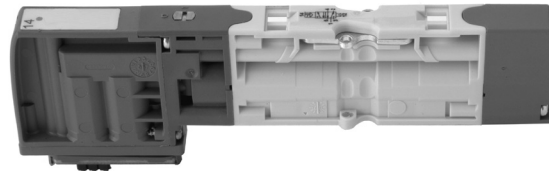
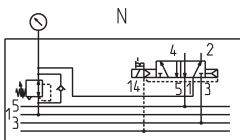
E = 2 x 2/2-way NC



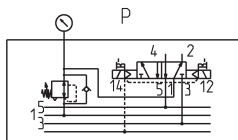
F = 2 x 2/2-way NO


 I = 1 x 2/2-way NC +
1 x 2/2-way NO


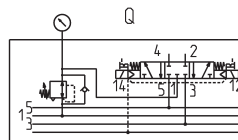
L = free position


AVAILABLE FUNCTIONS - SYMBOLS FOR SOLENOID VALVES WITH PRESSURE REGULATOR


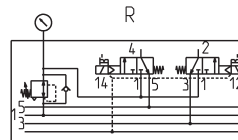
N = 5/2-way, Monostable



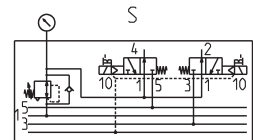
P = 5/2-way, Bistable



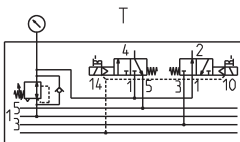
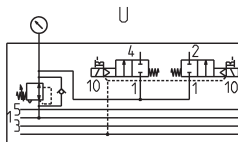
Q = 5/3-way Centres Closed



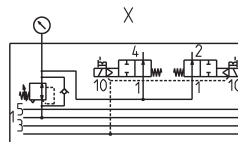
R = 2 x 3/2-way NC



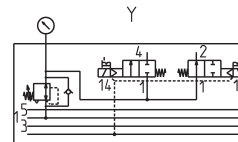
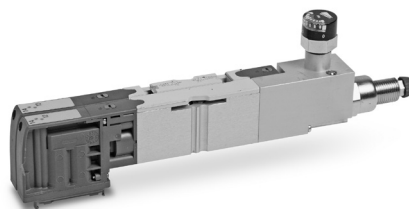
S = 2 x 3/2-way NO


 T = 1 x 3/2-way NC +
1 x 3/2-way NO


U = 2 x 2/2-way NC



X = 2 x 2/2-way NO


 Y = 1 x 2/2-way NC +
1 x 2/2-way NO


It can be assembled on subbase size 21 only.

AVAILABLE FUNCTIONS - SUBBASE TYPES



Through-subbase s. 10.5
A=M7, B=Ø4, C=Ø6 [*]



Diaphragm lines 1, 3 5
D=M7, E=Ø4, F=Ø6 [*]



Diaphragm line 1
L=M7, M=Ø4, N=Ø6 [*]



Diaphragm lines 3, 5
G=M7, H=Ø4, I=Ø6 [*]



Through-subbase s. 21
Q = 1/8, R = Ø6, S = Ø8



X = supplementary supply and exhaust



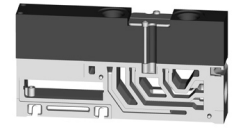
K = interm. plate to sep. elec. and suppl. supply



Y = suppl. supply + exhaust with silencer



Z = electro-pneum. interface for HP...F/G/R



W = plate for supply from exhausts



U = Diaphragm seal - Line 1



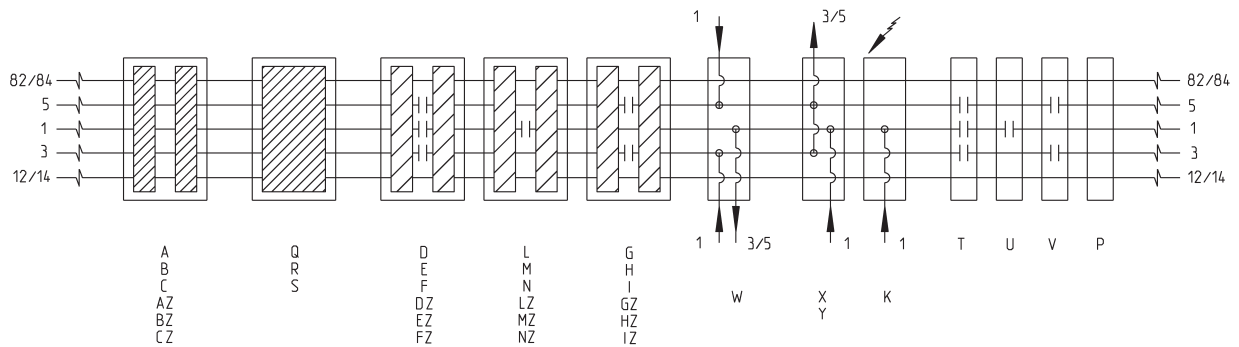
V = Diaphragm seal - Lines 3, 5



P = Through seal



T = Diaphragm seal - Lines 1, 3, 5

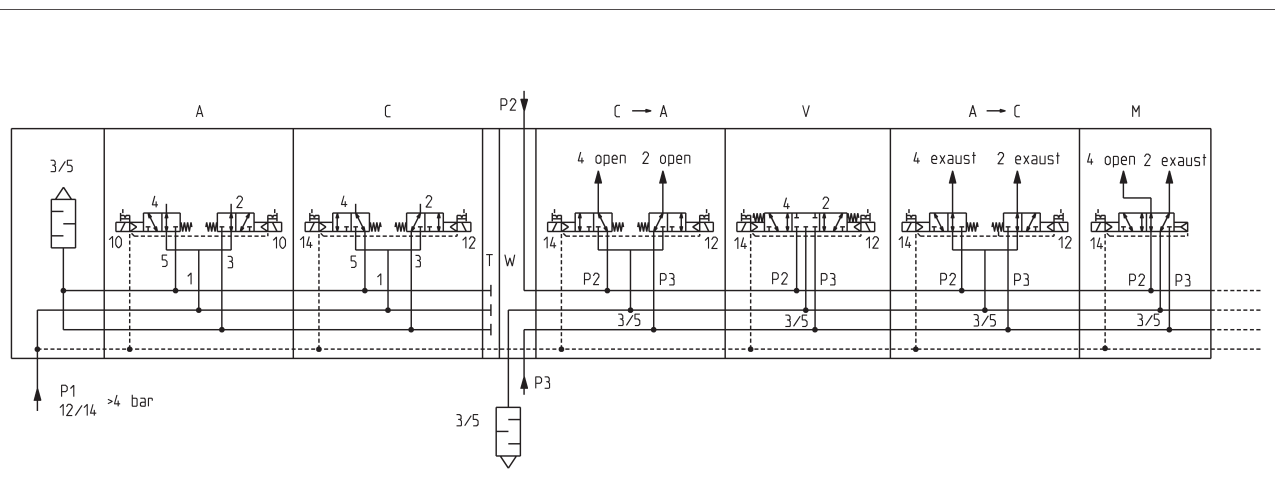


[*] The subbases A, B, C, D, E, F, G, H, I, L, M, N are available also with a board to be used with monostable solenoid valves. To order this version it is necessary to add Z at the end of the code of the standard subbase. Example: AZ instead of A. For further details we suggest you to see the coding example.

PROPER USE OF VALVE FUNCTIONS WITH INTERMEDIATE PLATE TYPE W

The intermediate plate cod. W is composed by a subbase which is equipped with an upper connection bracket. On this bracket there are two connections on which it is possible to apply two different pressures (ex. P2 and P3). In this configuration, the connection 1 on the subbase represents the exhaust 3/5. With this plate it is possible to supply the valves positioned downstream through the exhausts 3 and 5. When supplied from the exhausts, these valves have a different function compared with the ones supplied in the standard way. Some examples:

Solenoid valve mod. C at rest has outlets 2 and 4 active and corresponds to model "A", in presence of electrical inputs 12 and 14 outlets 2 (P3) and 4 (P2) close respectively; the configuration of solenoid valve mod. V at rest doesn't change, in presence of electrical input 12 outlet 4 (P2) is activated, in presence of electrical input 14 outlet 2 (P3) is activated; outlets 2 and 4 are closed in solenoid valve mod. A at rest which corresponds to model "C", in presence of electrical inputs 12 and 14 outlets 2 (P3) and 4 (P2) open respectively; outlet 4 (P2) is active in solenoid valve mod. M at rest, in presence of electrical input 14 the active outlet becomes outlet 2 (P3). All the valve functions, both 10.5 and 21 sizes, have this different operation. Solenoid valves with an integrated pressure regulator can't be used after an intermediate plate W. This plate requires in the initial part of the valve island a supply pressure of 4 bar at least. Otherwise, it is necessary to use the version with external servo pilot supply and apply a pressure of at least 4 bar on the connection 12/14. It is necessary to insert a seal type T before plate W.

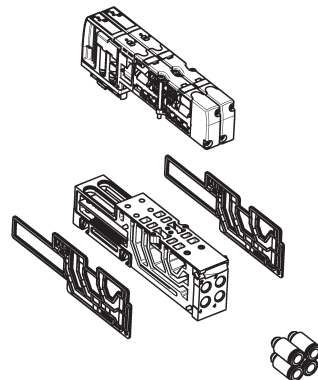

SUBBASES WITH MONOSTABLE BOARD

The subbases for valves Size 1 (10.5 mm) are set for housing 2 solenoid valves that may be both with double solenoid. Each subbase uses 4 electric signals. Even in case of monostable solenoid valves the subbase uses 4 electrical signals.

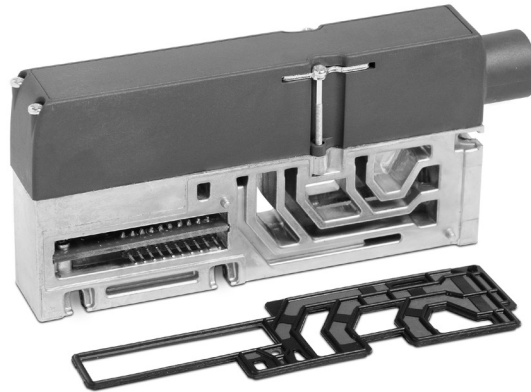
To increase the number of valve positions that can be connected with a single Sub-D connector, all the subbases Size 1 can add "Z" at the end of their code thus using 2 electrical signals. They are, therefore, suitable for the connection of monostable solenoid valves.

Examples:

Code A --> AZ with board for monostable solenoid valves
Code N --> NZ with board for monostable solenoid valves



MODULE TO SEPARATE ELECTRIC AND PNEUMATIC SUPPLY HA0M-K

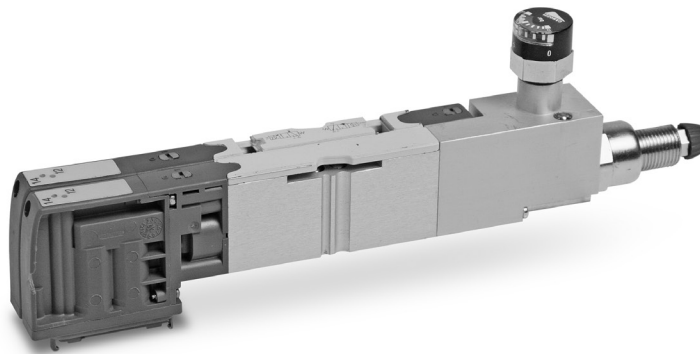


GENERAL DATA

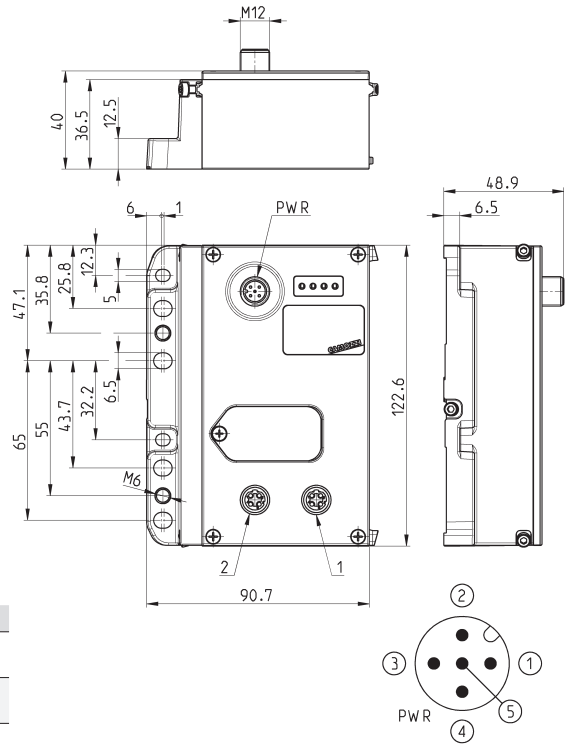
Connection	3 poles terminal block to be wired
Dimensions	130 x 20 mm
Signalling	None
Supply	24 V DC (+/- 10%)
Electrical protection	Fuse 2 A
Protection class	IP 65
Temperature	0°C + 50°C
Material	Plastics - Aluminium
Weight	100 g

VALVE WITH INTEGRATED PRESSURE REGULATOR HP2V

This solution has the advantage of reducing the valve island's overall height compared to traditional "sandwich" solutions. The pressure regulator allows to set the supply pressure of the lateral valve.



CPU Module - pin configuration

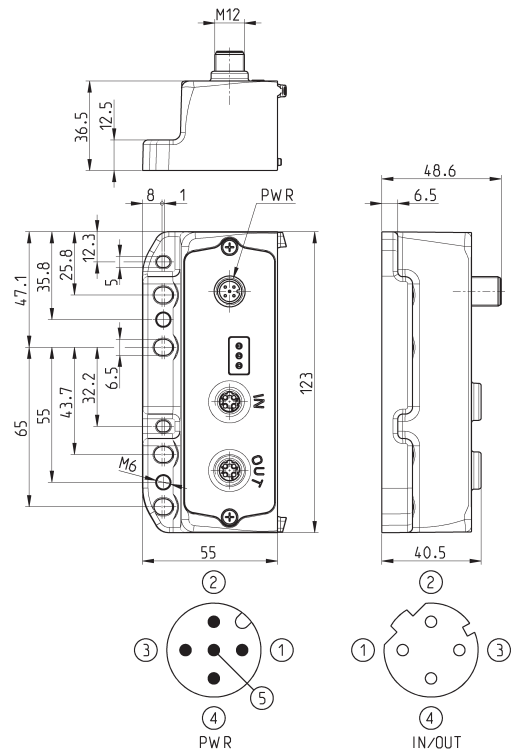


Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration



Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

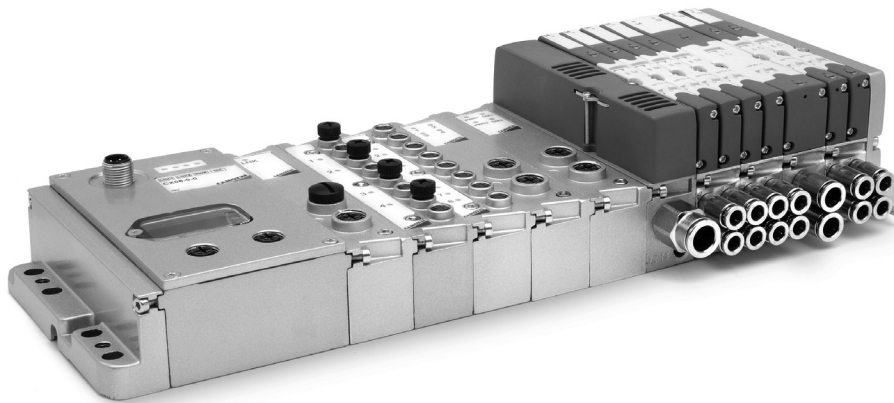
CPU Module - Characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet. All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet.

It has its own M12 A 4 pin male connection to supply the modules connected, distinguishing both logic supply and power supply.

Two M12 connections for Bus-IN and Bus-OUT of the main network, which M12 connection will take over the relative specifications according to the chosen protocol.

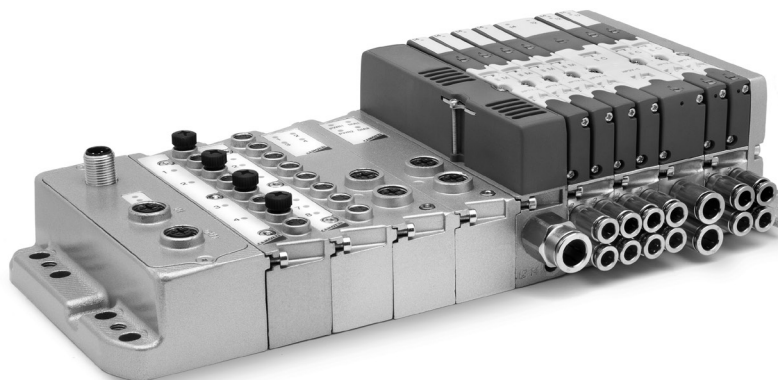
The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols addressing is performed by means of the protocol itself. Leds indicate the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.



Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state.

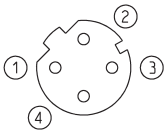
The valve island equipped with the Expansion Module can be used only in presence of a subnet.



Initial subnet module Mod. ME3-0000-SL

This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices.

Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 5 pin female.

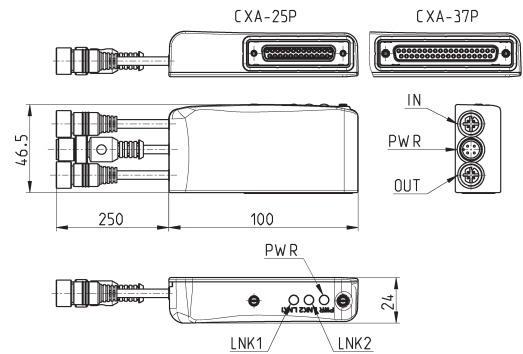


Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 5 pin female	5	100 m

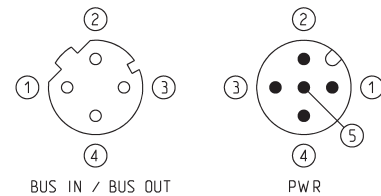
Sub-D adaptor module 25 and 37 pin Mod. CXA-25P and CXA-37P



It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D connection. In the 25 pin version, it can manage up to a maximum of 24 outputs, while with 37 pin version, the outputs become 32. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 5 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



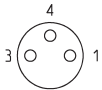
Led 1 = Yellow LNK1
 Led 2 = Yellow LNK2
 Led 3 = Green PWR,
 supply present and OK



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W
CXA-37P	Sub-D 37 broches	32	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.

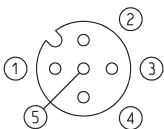


Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g

Analog input/output module Mod. ME3-****-AL

The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every analog output has a 12 bit resolution for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.

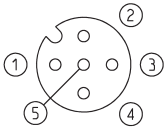
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

Digital power output module Mod. ME3-0004-DL

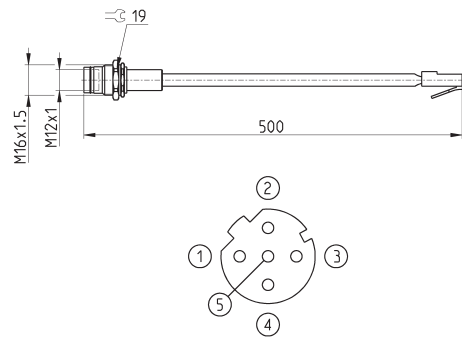
The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 + 50°C	100 g

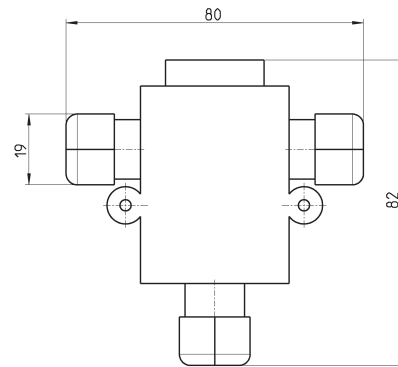
Adaptor and panel mount for Ethernet RJ45 to M12 D networks

For PROFINET, EtherCAT, EtherNet/IP



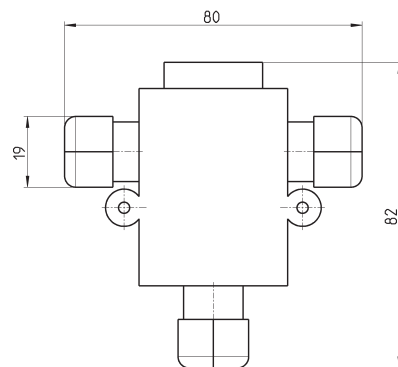
Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female	0.5

Profibus-DP data line tee



Mod.	CS-AA03EC
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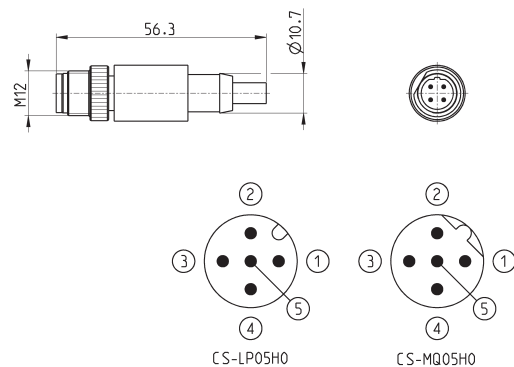
CANopen / DeviceNet data line tee



Mod.	CS-AA05EC
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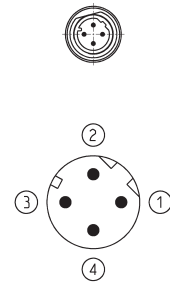
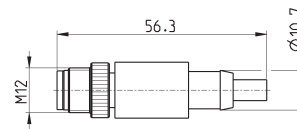
M12 male terminating resistor

For PROFIBUS, CANopen, DeviceNet



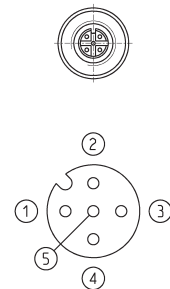
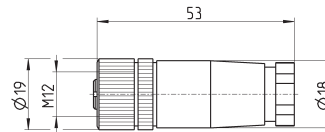
Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male	CANOpen / DeviceNet

Subnet terminating resistor



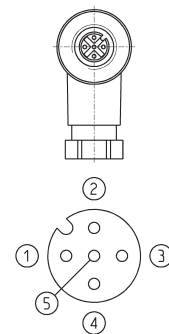
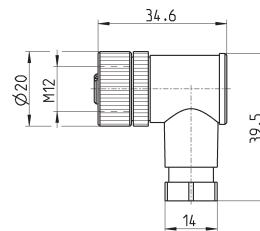
Mod.	description	type of connector	connection	Protocol
CS-SU04HB	moulded terminating resistor	straight	M12 D 4 pin	subnet

Straight connector for power supply



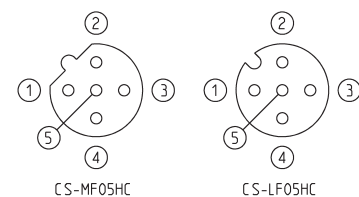
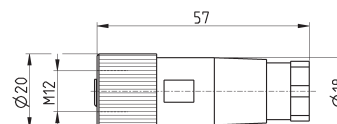
Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female	-

Angular connector for power supply



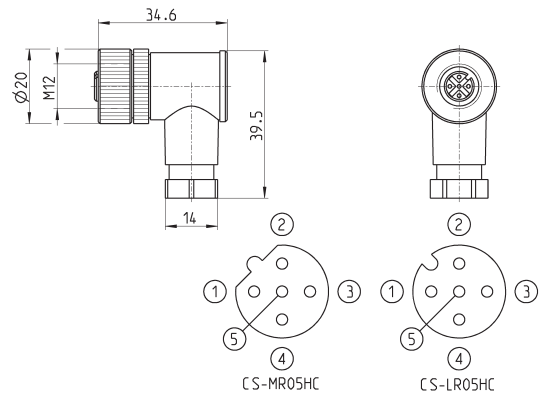
Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female	-

Straight female M12 connectors for Bus-IN



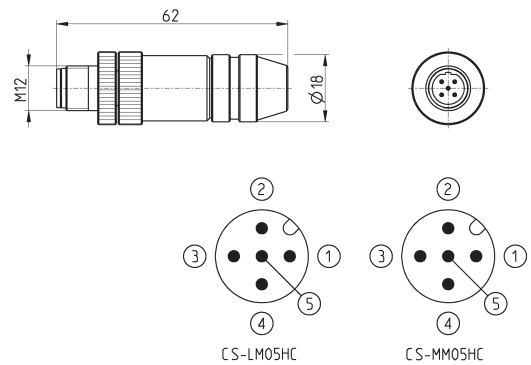
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

Straight male M12 connectors for Bus-OUT

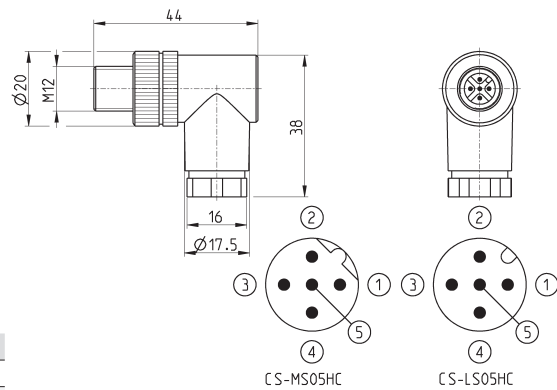


Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT



The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.

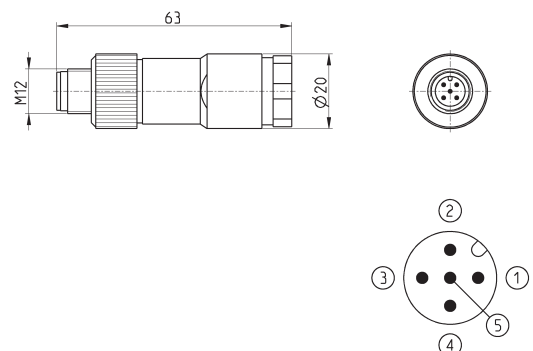


Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector



For the connection of the digital output modules and analog input/output modules.

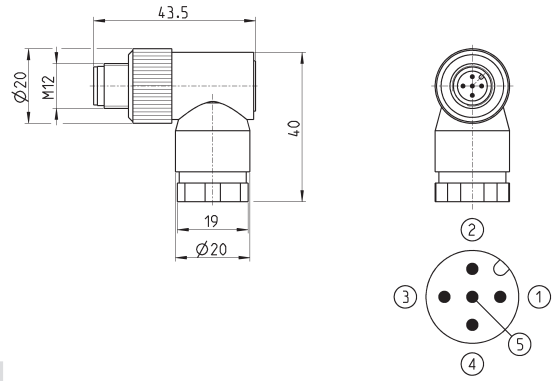


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

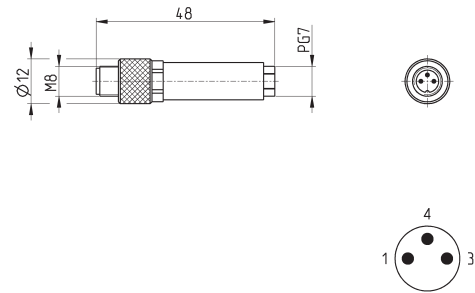


For the connection of the digital output modules ME3-0004-DL



Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

3 pin male M8 wiring connector for digital input modules

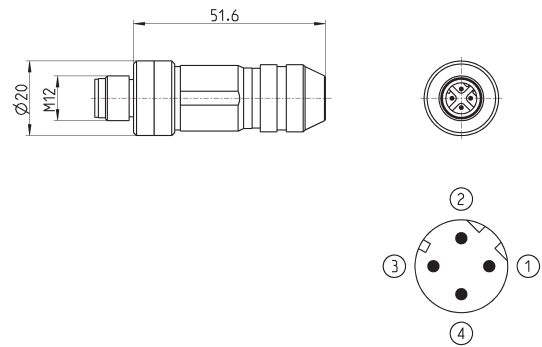


Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT



For PROFINET, EtherCAT, EtherNet/IP and for the subnet



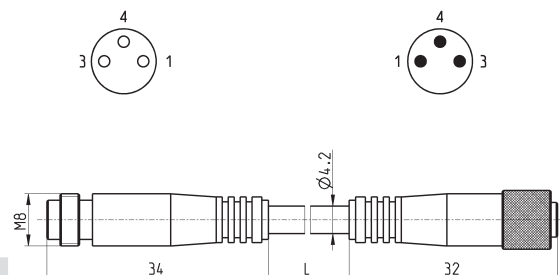
Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

Extension with M8 connector, 3 pin male / female

Non shielded



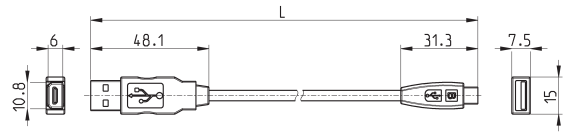
For the connection of the digital input modules ME3-0008 and ME3-0004



Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 pin male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5


USB to Micro USB cable Mod. G11W-G12W-2

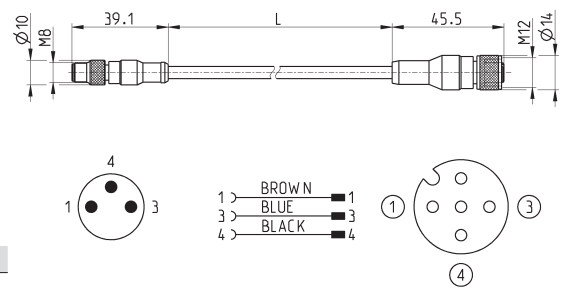
For the hardware configuration of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2


Adapter cable, M8 3-pin male - M12 4-pin female

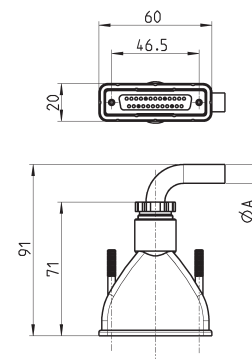
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable length "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5


Straight Sub-D 25 pin female connector with axial cable

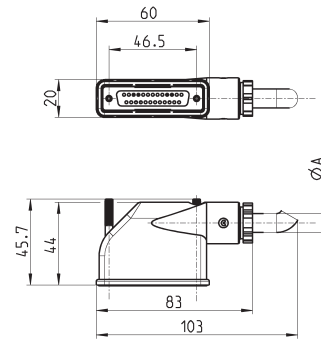
Protection class IP65



Mod.	∅A	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with axial cable

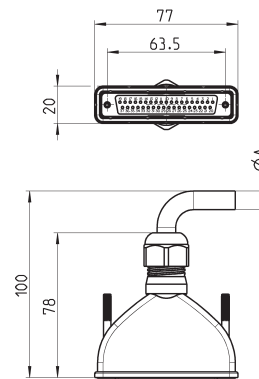
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Straight Sub-D 37 pin female connector with axial cable

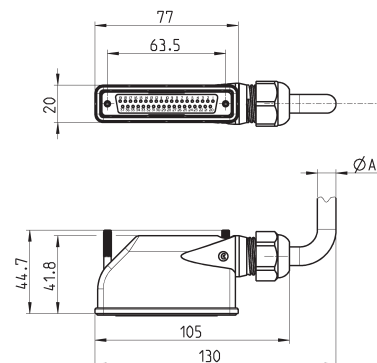
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G9X-3	12	37	3
G9X-5	12	37	5
G9X-10	12	37	10
G9X-15	12	37	15
G9X-20	12	37	20
G9X-25	12	37	25

Right angle Sub-D 37 pin female connector with radial cable

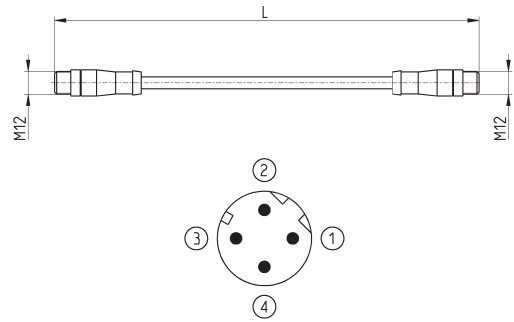
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G9X1-3	12	37	3
G9X1-5	12	37	5
G9X1-10	12	37	10
G9X1-15	12	37	15
G9X1-20	12	37	20
G9X1-25	12	37	25

Cables with straight connectors

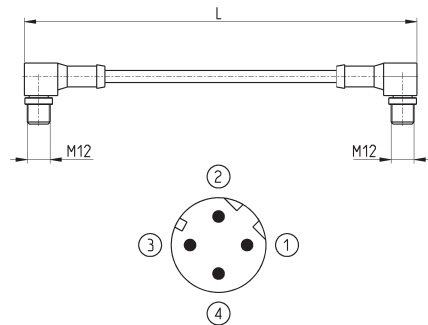
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	moulded cable	straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	moulded cable	straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	moulded cable	straight	2x M12 D 4 pin male	25

Cables with 90° angular connectors

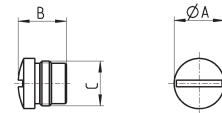
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	moulded cable	90°	2x M12 D 4 pin male	25

M8 and M12 connector cover caps

For digital and analog input/output modules and subnet

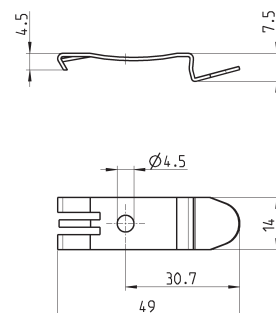


Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931



Mod.
PCF-E520

CODING EXAMPLE OF MULTIPOLE AND FIELDBUS INTERFACES - Accessories

HN	A	0	M	-	A
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HN	SERIES
A	TYPE: A = Accessory
0	SIZE: 0 = not defined
M	ELECTRICAL CONNECTION: M = 25 pin PNP Multipole N = 25 pin NPN Multipole H = 37 pin PNP Multipole L = 37 pin NPN Multipole I = HN interface with Series CX
A	TERMINALS: A = 1, 12/14 in common - 3/5, 82/84 with thread B = 1, 12/14 separated - 3/5, 82/84 with thread C = 1, 12/14 in common - 3/5, 82/84 with silencer D = 1, 12/14 separated - 3/5, 82/84 with silencer NOTE: The Right Terminal is supplied with seals and fixing screws and available as accessory with the commercial code HA0T-H

Detailed descriptions of the available accessories can be found in the components list on page 2/3.40.08 (Multipole version) e 2/3.40.09 (Fieldbus version)

CODING EXAMPLE OF SINGLE VALVE (Spare part)

H	P	1	V	-	M
----------	----------	----------	----------	----------	----------

H	SERIES
P	TYPE: P = pneumatic
1	SIZE: 1 = 10.5 2 = 21
V	TYPE OF ACCESSORY: V = Solenoid valve
M	SOLENOID VALVE: M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position SOLENOID VALVE + REGULATOR + SUBBASE N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO

Detailed descriptions of the available accessories can be found in the components list on page 2/3.40.08 (Multipole version) e 2/3.40.09 (Fieldbus version)

CODING EXAMPLE OF SUBBASES - Accessories

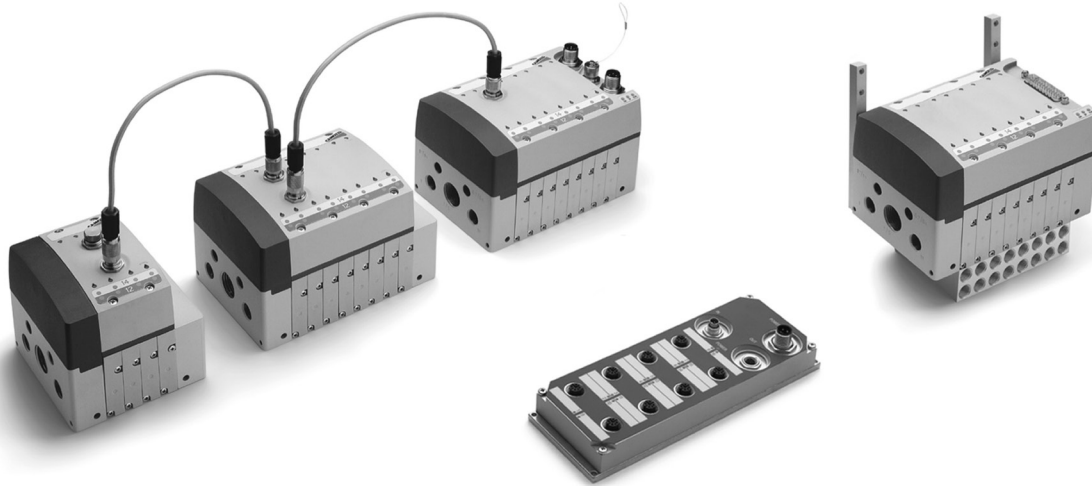
H	A	1	R	-	A
----------	----------	----------	----------	----------	----------

H	SERIES		
A	TYPE: A = accessories		
1	SIZE: 0 = for X-Y-K-T-U-V-Z 1 = 10,5 2 = 21		
S	TYPE OF ACCESSORY: R = subbase for multipole connection G = seal W = subbase without electronic board (option valid only for position 2a. See the components list on page 2/3.40.08 - Multipole version - and 2/3.40.09 - Fieldbus version)		
A	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> SUBBASE: A = through - M7 threads AZ = through - M7 threads, monostable D = channel 1, 3, 5 closed - M7 threads DZ = channel 1, 3, 5 closed - M7 threads, monostable G = channel 3, 5 closed - M7 threads GZ = channel 3, 5 closed - M7 threads, monostable Q = through - G1/8 threads X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts K = separation of electrical supply and supplementary pneumatic supply </td> <td style="width: 50%; vertical-align: top;"> SEAL: T = diaphragm seal for the closure of channels 1, 3, 5 U = diaphragm seal for the closure of channel 1 V = diaphragm seal for the closure of channels 3, 5 P = through </td> </tr> </table>	SUBBASE: A = through - M7 threads AZ = through - M7 threads, monostable D = channel 1, 3, 5 closed - M7 threads DZ = channel 1, 3, 5 closed - M7 threads, monostable G = channel 3, 5 closed - M7 threads GZ = channel 3, 5 closed - M7 threads, monostable Q = through - G1/8 threads X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts K = separation of electrical supply and supplementary pneumatic supply	SEAL: T = diaphragm seal for the closure of channels 1, 3, 5 U = diaphragm seal for the closure of channel 1 V = diaphragm seal for the closure of channels 3, 5 P = through
SUBBASE: A = through - M7 threads AZ = through - M7 threads, monostable D = channel 1, 3, 5 closed - M7 threads DZ = channel 1, 3, 5 closed - M7 threads, monostable G = channel 3, 5 closed - M7 threads GZ = channel 3, 5 closed - M7 threads, monostable Q = through - G1/8 threads X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts K = separation of electrical supply and supplementary pneumatic supply	SEAL: T = diaphragm seal for the closure of channels 1, 3, 5 U = diaphragm seal for the closure of channel 1 V = diaphragm seal for the closure of channels 3, 5 P = through		

Detailed descriptions of the available accessories can be found in the components list on page 2/3.40.08 (Multipole version) e 2/3.40.09 (Fieldbus version)
 NOTE: subbases are always supplied without connection fittings.

Series Y valve islands, Individual, Multipole and Fieldbus

Valve Island with integrated Pneumatics and Electronics. Available versions: Individual, Multipole, Fieldbus (Profibus-DP, DeviceNet, CANopen). Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC



Series Y solenoid valves are based on particular solutions regarding both the pneumatic, as well as the electronic part.

Sub-bases and valve bodies are integrated in a sole "module". Different kinds of cartridges and spools are inserted in the module to configure the desired valve function. The valve island can be expanded and modified and its maintenance is easy and safe. Several solutions are possible for the electric connection through the use of modules for digital electric inputs.

Manuals, instruction sheets and configuration files are available on the site <http://catalogue.camozzi.com> or by means of the QR code indicated on the label of the product.

- » Pneumatic modularity: 2, 4, 6 and 8 valve positions
- » Valve size: 12,5 mm
- » Flow rate: 800 NI/min

GENERAL AND ELECTRICAL DATA

Enclosed in the package there is a label on which it is possible to write each individual coil number.

PNEUMATIC SECTION

Valve construction	Spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2 x 2/2 NC 2 x 2/2 NO 1 x 2/2 NC + 1 x 2/2 NO 2 x 3/2 NC 2 x 3/2 NO 1 x 3/2 NC + 1 x 3/2 NO
Materials	Aluminium spool brass cartridge seals in NBR end covers and covers in technopolymer
Connections	Outlets 2 and 4: G1/8 Inlets 1 and 11: G1/4 Pilot ports: 12/14 and respective exhaust 82/84 G1/8 Exhausts 3/5: G1/2
Temperature	0 + + 50°C
Air specifications	Filtered compressed air, non lubricated, class 3.4.3 according to ISO 8573.1 standard. If lubrication is necessary, please use only oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 3.4.3 according to ISO 8573.1 standard.
Dimensions/size	12.5 mm
Working pressure	-0.9 ÷ 10 bar (with external servo pilot supply)
Pilot pressure	3 ÷ 7 bar
Flow rate	800 Nl/min

INLETS SECTION

Voltage	24 V ±10%
Max current	350 mA
Operating temperature	0°C + +50°C
Relative humidity	30-90% +25°C 30-50% +50°C
Conform with standards	EN 61131-2 EN 61000-6-2 EN 61000-6-4
Protection class	IP65
Max. number of connected inlets	48
Max. number of connected Inlet Modules	3
Max. distance between init. mod. and last input or expansion mod.	50 m
Max. cable length between sensor and input module	30 m

ELECTRICAL SECTION

Voltage	24V ±10%
Max. absorption	1300mA continuous 1600 mA latch
Operating temperature	0°C + +50°C
Continuous current	ED 100%
Protection class	IP50 Individual version IP65 Multipole version PNP IP65 Fieldbus versions
Baud rate	Profibus-Dp 12 Mbit/s EN 50170 DeviceNet 500 Kbit/s EN 50235 CAN open 500 Kbit/s EN 50235
Maximum number of nodes	Profibus-Dp 32/127 DeviceNet 64 CAN open 127
Maximum number of expansions per node	15
Max. length of internal Fieldbus	50 m
Relative humidity	30-90% +25°C 30-50% +50°C
Conform with standards	EN 61326-1 EN 61010-1
Max. number of solenoids connected/activated at the same time	32

HOW TO COMPOSE THE VALVE ISLAND (EXAMPLE)

- one or more pneumatic modules with either 2, 4, 6 or 8 valve positions incorporating the sub-base with two separated channels for supply and exhaust, and the seat for the valves. It is possible to join the different modules together with pins and fixing screws, thus increasing the number of valve positions;
- two terminal plates (right and left) on which it is possible to connect pressure inlets and exhausts;
- seals among the various elements;
- cartridges and spools which reproduce the different valve functions (further information on the following pages)
- one or more covers which integrate electronics and pilots distributing signals to valves (further information on the following pages)

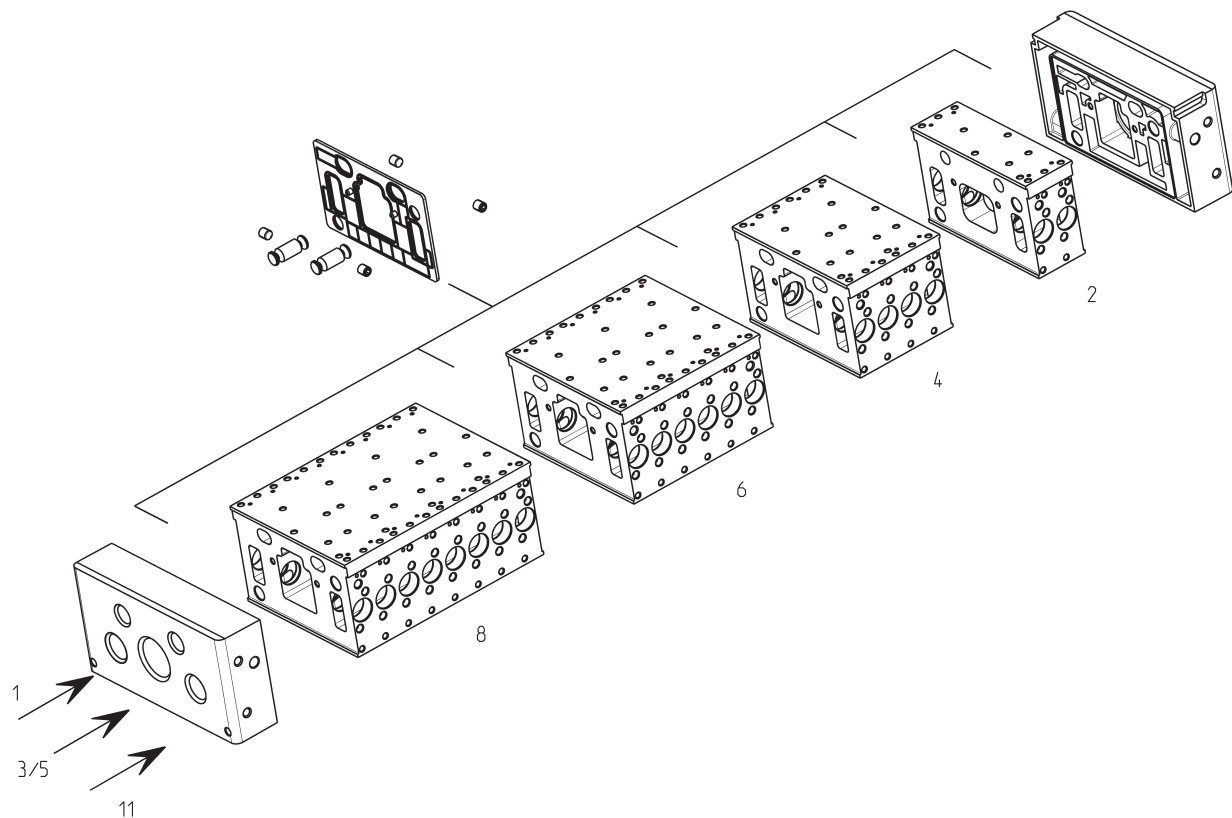


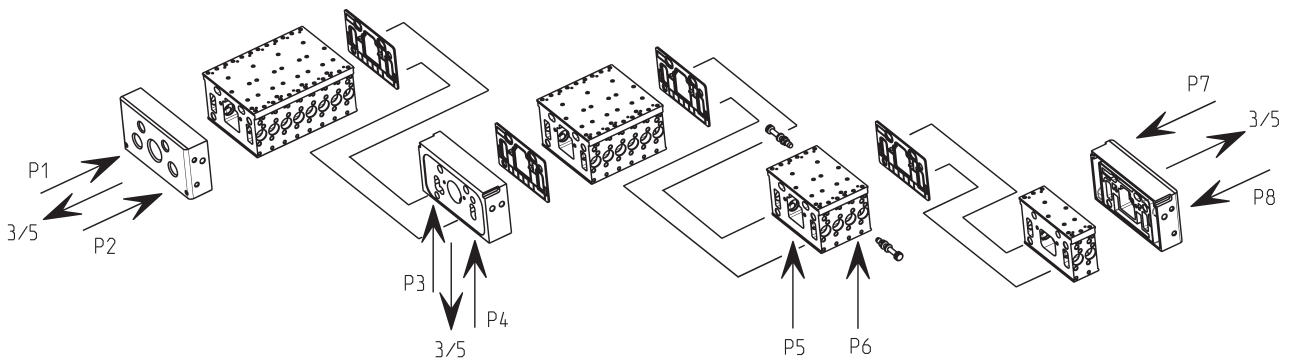
Plate for supplementary supply and exhaust

The two independent supplies allow the same valve to have different pressure values on outlets 2 and 4.

In this way a higher pressure can be used for the working operations and a lower pressure for the repositioning of the actuators, reducing the costs for generating compressed air.

The modularity of 2, 4, 6 or 8 valve positions allows, through the specific seals, to subdivide the island in pressure/exhaust zones without losing valve positions. Functions W or X can be used to supply the intermediate pressure zones of an island.

To avoid any possible problem during exhaust, the exhaust itself has been increased and it passes through on both sides.



Air specifications - filtering elements

To guarantee a proper air quality and to not compromise the functioning of the valves, we advise to adopt filtering elements according to class 3 of table DIN ISO 8573-1.

Filter models:
 MC104-F10
 MC238-F10
 MC202-F10
 N108-F10
 N104-F10



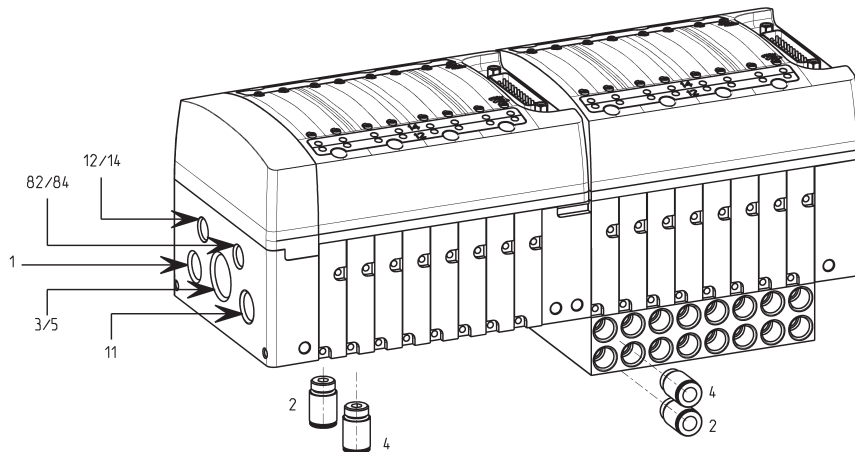
AIR QUALITY CLASS ACCORDING TO STANDARD DIN ISO 8573-1

Class	Solid bodies	Max. dimension of the particles	Water contents	dew-point	Oil quantity max. concentration mg/m ³
1		0,1 μ		-70°C	0,01
2		1 μ		-40°C	0,1
3		5 μ		-20°C	1
4		15 μ		+3°C	5
5		40 μ		+7°C	25

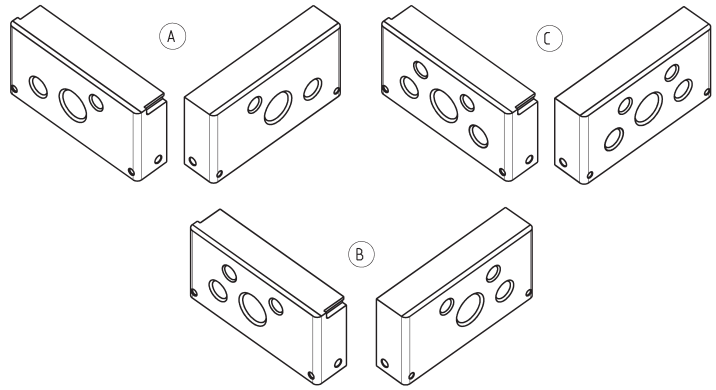
Connection by means of terminal plates

The connection to the compressed air source by means of terminal plates enables different types of connection. The fitting Mod. 6512 * (for dimensions see section 4/1.05) can be connected to inlets 2 and 4.

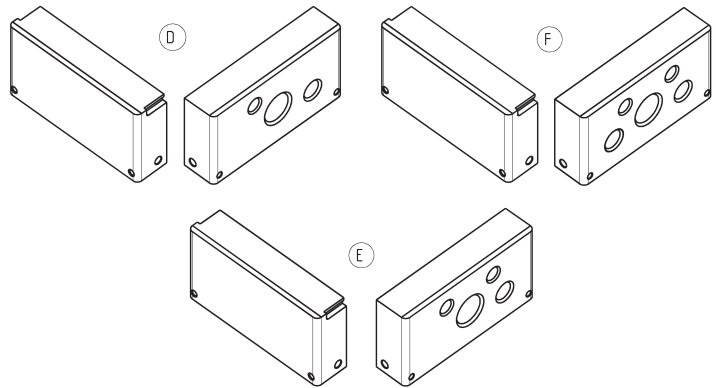
* It is possible to connect the following fittings, supplied with O-ring:
 6512-4-1/8-M
 6512-6-1/8-M
 6512-8-1/8-M



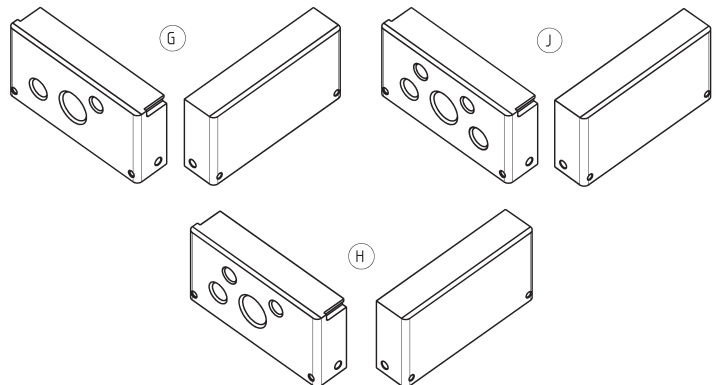
Supply (1-11)	Exhaust (3/5)	Servo-pilot supply (12/14)	Servo-pilot exhaust (82/84)	Inlets (2-4)
G1/4	G1/2	G1/8	G1/8	G1/8

TERMINAL PLATES - pneumatic connections from left and right


Terminal Plates					
Code	Common connections		Separated connections		
A	1 - 11	12/14	82/84	3/5	
B	1 - 11		12/14	82/84	3/5
C	-		1 - 11	12/14	82/84 3/5

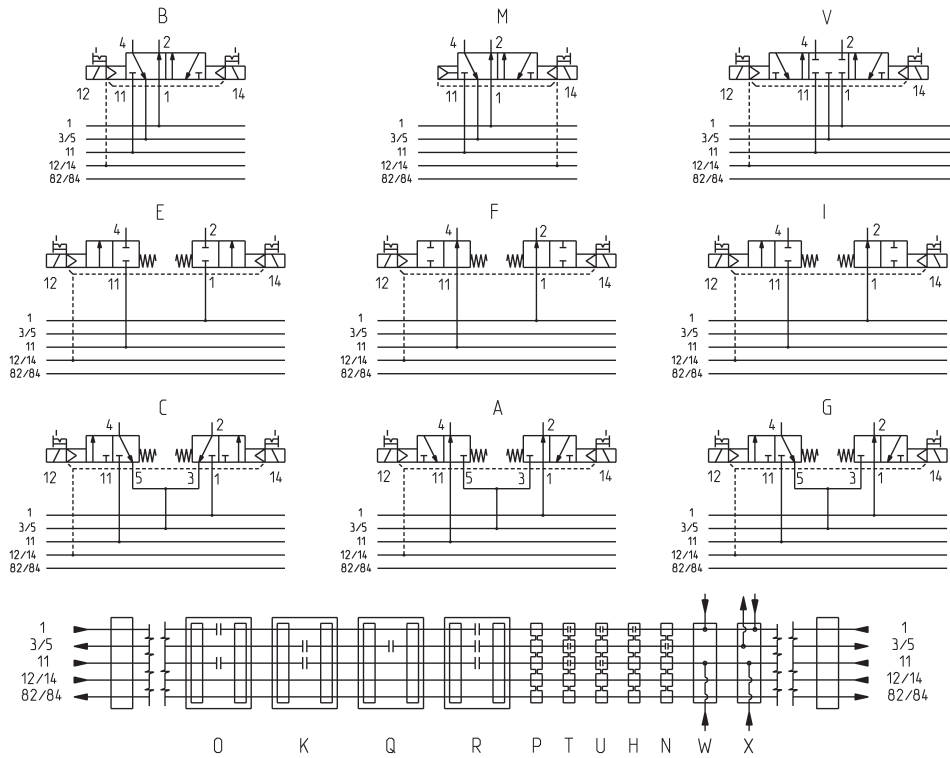
TERMINAL PLATES - pneumatic connections from the right


Terminal Plates					
Code	Common connections		Separated connections		
D	1 - 11	12/14	82/84	3/5	
E	1 - 11		12/14	82/84	3/5
F	-		1 - 11	12/14	82/84 3/5

TERMINAL PLATES - pneumatic connections from the left


Terminal Plates					
Code	Common connections		Separated connections		
G	1 - 11	12/14	82/84	3/5	
H	1 - 11		12/14	82/84	3/5
J	-		1 - 11	12/14	82/84 3/5

Available functions



Code	Function	Actuation/return	Working pressure (bar)	Pilot pressure (bar)	Symbol
M	5/2 Monostable	solenoid/pneumatic spring	-0,9 ÷ 10	3 ÷ 7	M
B	5/2 Bistable	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	B
V	5/3 Centres Closed	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	V
I	2 x 2/2 (1 NO + 1 NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	I
E	2 x 2/2 (NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	E
F	2 x 2/2 (NO)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	F
G	2 x 3/2 (1 NO + 1 NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	G
C	2 x 3/2 (NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	C
A	2 x 3/2 (NO)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	A
L	Free position	-	-	-	L
W	Additional supply from 2 and 4	-	-	-	W
T	Diaphragm seal (module's separation)	-	-	-	T
P	Through seal (module's separation)	-	-	-	P
T/	Diaphragm seal (separation of both modules and covers)	-	-	-	T
P/	Through seal (separation of both modules and covers)	-	-	-	P
U	Diaphragm seal 3/5 open	-	-	-	U
H	Diaphragm seal 3/5 - 11 open	-	-	-	H
N	Diaphragm seal 1 - 11 open	-	-	-	N
U/	Diaphragm seal 3/5 open (separation of both modules and covers)	-	-	-	U
K	Expansion module, 2 positions with 3/5 - 11 closed	-	-	-	K
R	Expansion module, 2 positions with 3/5 - 1 - 11 closed	-	-	-	R
O	Expansion module, 2 positions with 1 - 11 closed	-	-	-	O
Q	Expansion module, 2 positions with 3 - 5 closed	-	-	-	Q
X	Module for additional supply	-	-	-	X

Cartridges and spools for the creation of valve functions

The different valve functions are obtained by inserting the cartridges and spools in the seats of the pneumatic module. These seats have been designed at right angles with respect to the terminal plates.

The shape of cartridges and spools depends on the valve function required.

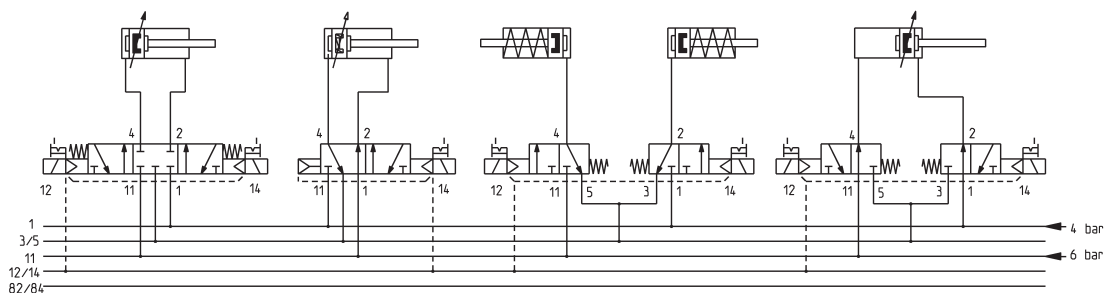
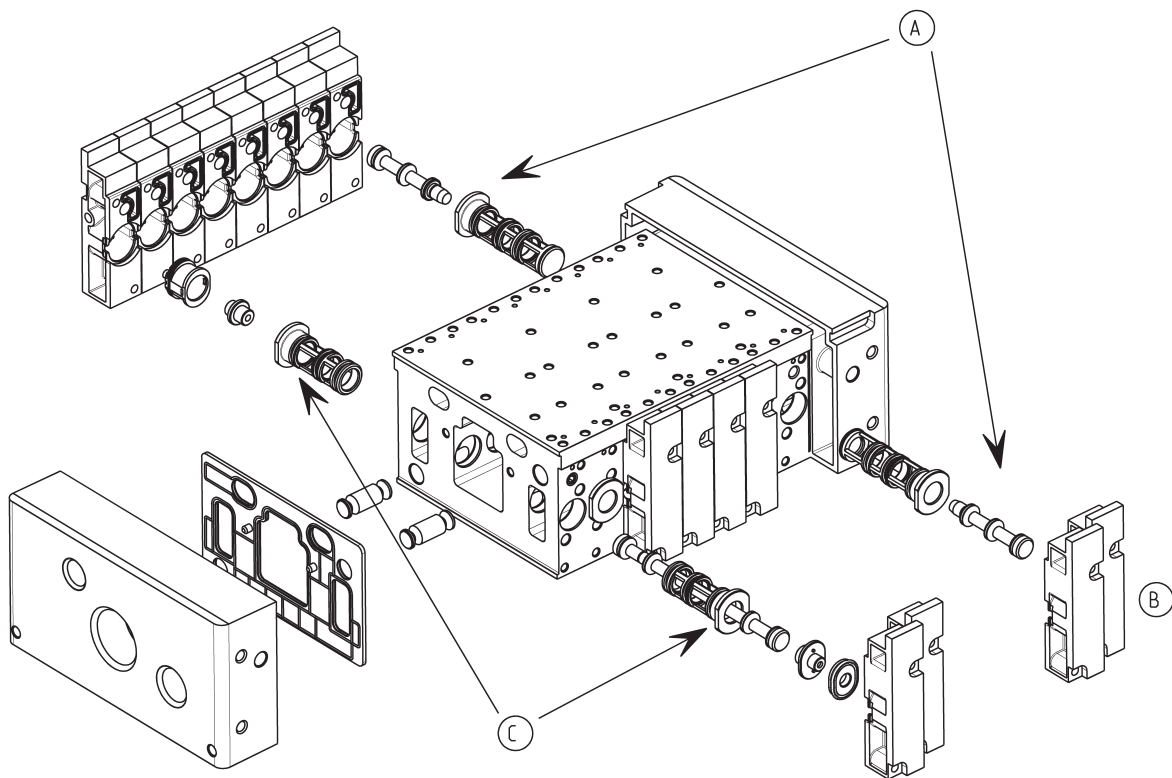
Example:

(A) = Cartridge and spool for a 3/2-way function

(B) = End cover

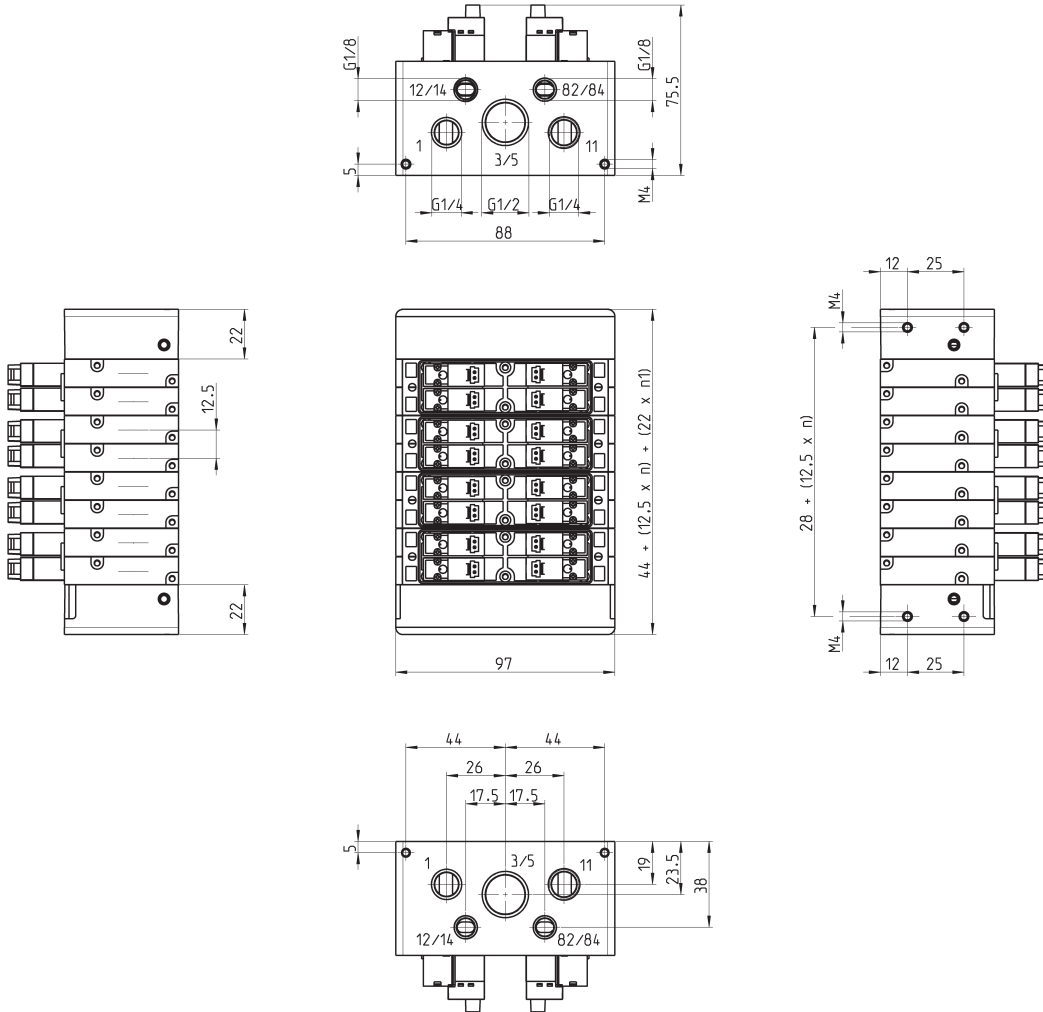
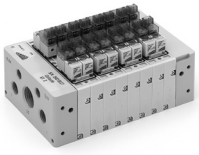
(C) = Cartridge and spool for a 5/2-way function

The modification or maintenance of a valve position is obtained removing the end cover "B" and replacing both the cartridge and the spool. During modification/maintenance, the tubing for the pneumatic connection can stay connected to the island, thus simplifying and optimising the whole operation.



Individual version - dimensions

n = number of valves
 n1 = number of supplementary power supply
 modules (cod. X)



Covers

The Multipole and Fieldbus versions use covers for the pilot valves, which guarantee the IP65 protection class as well as the mechanical protection of internal parts.

The covers combine:

- manual override in the monostable and bistable functions.
- A simple pressure is enough to obtain a monostable function, whereas the bistable function is obtained coupling a rotation.
- LEDs for the voltage signalling on the coil
 - diagnostic LEDs on Fieldbus versions
 - ports for the electrical connectors
 - integrated electronic boards
 - connection interface with the pilot valves
 - outlet protection against overvoltage, reversed polarity and short circuit
 - connections realized on printed circuit boards

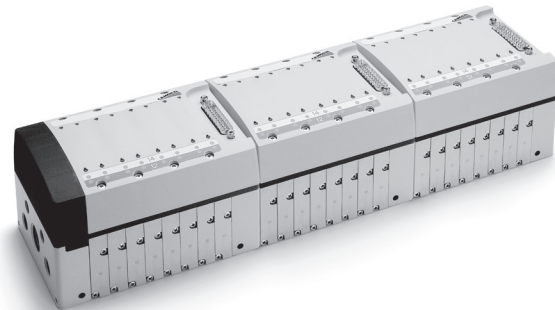


Covers - Multipole version

The Multipole cover is available in three sizes and allows the connection to valve islands with 4, 6 or 8 valve positions. Every position can be freely equipped with either monostable or bistable solenoid.

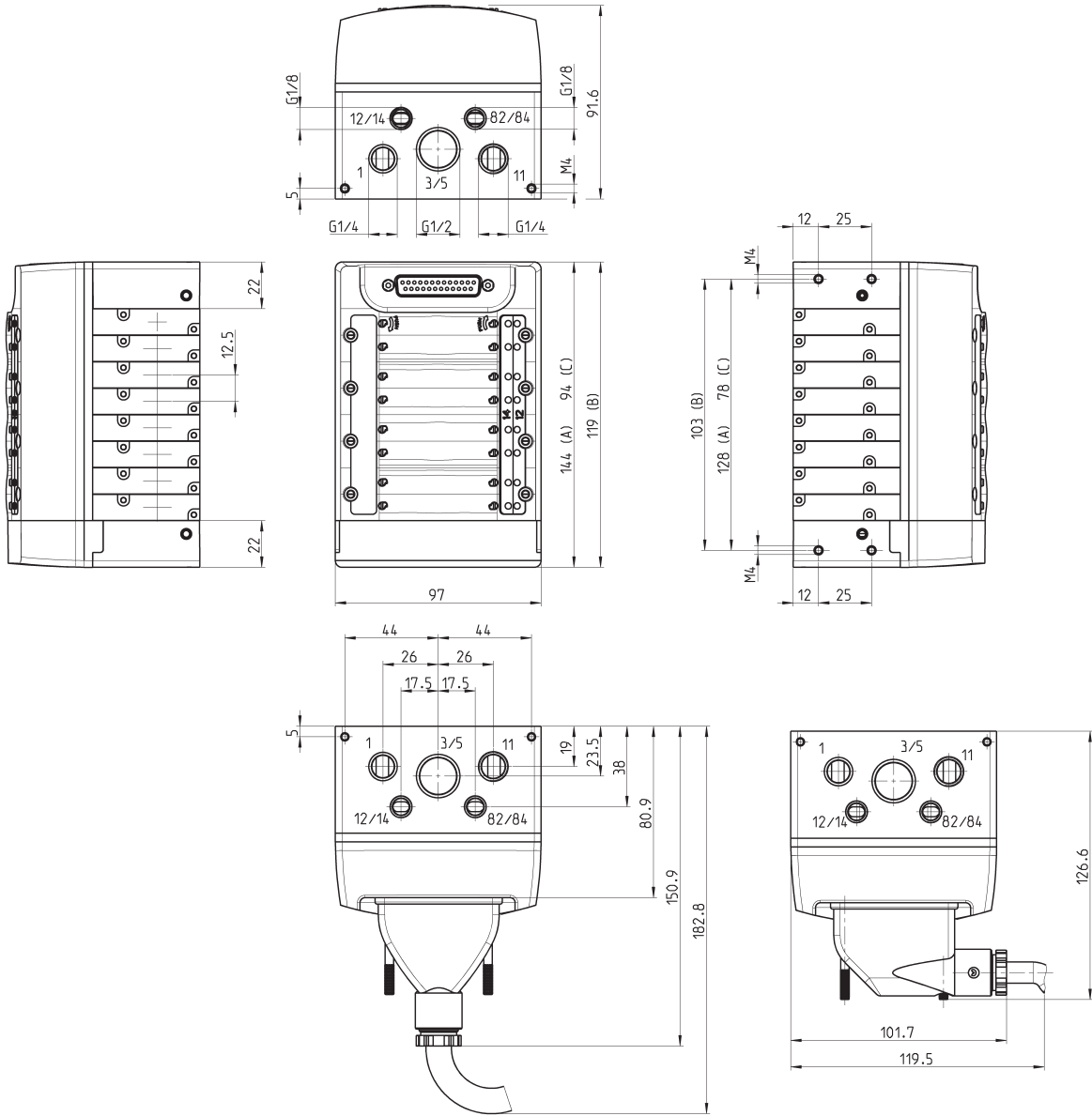
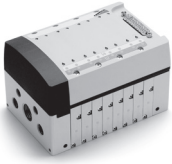
It is possible to join two or more valve islands placing a plate for intermediate supply, type "X", under every Sub-D plug. Pneumatic modules can be composed of 2, 4, 6 or 8 valve positions and separated by various seals.

A module for additional supply type "X" or a function "W" must be always inserted between two seals separating channels 1 and 11.



Multipole version - dimensions

- A = 8 positions
- B = 6 positions
- C = 4 positions

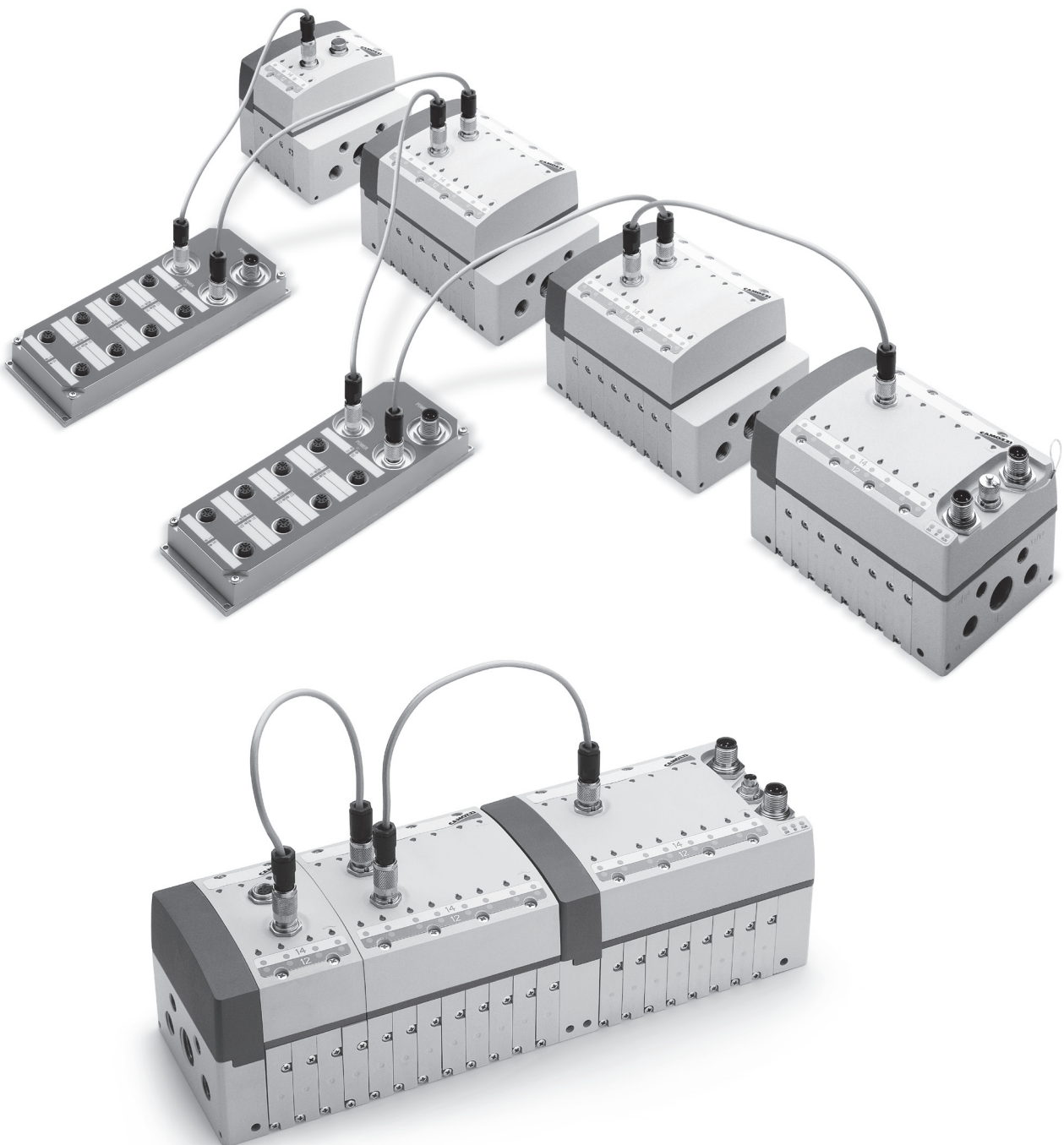


Covers - Fieldbus version

This version allows the direct connection to Profibus-Dp, DeviceNet, CANOpen. The main feature of this version is a starting module called "Initial module" to which the subfieldbus is connected for the management of the expansion modules. The Initial module can arrange up to 32 solenoids (outputs) and 48 inlets. To optimize the electronic part, a proper function allows the remoting of unused outlets on the expansion modules. It is thus possible to pilot 32 solenoids on 32 valve positions without losing any output signal.

Advantages:

- cost reduction thanks to a reduced number of initial modules that can be replaced by expansion modules;
- simplified code as the type of subbase is the same for bistable or monostable solenoid valves;
- saving of electrical signals that are not consumed by free positions and/or diaphragm seals;
- reduced dimensions, simplified connections and optimization of installation costs thanks to the covers modular structure which allows several islands to be joined together.



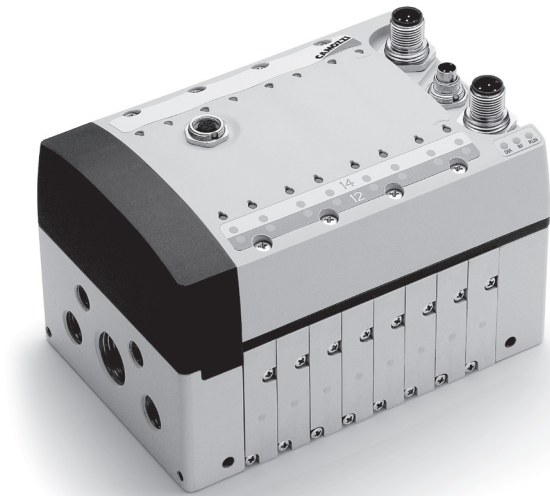
Fieldbus Initial Module - characteristics

The initial module has always 8 positions.

It is only the initial module to which the Fieldbus and electrical supply (24V DC) is connected.

The coils addressing can be sequential or customized by a specific configuration software that can be downloaded from our website <http://catalogue.camozzi.com/Downloads>, as well as the configuration file.

Pneumatic modules, available with 2, 4, 6, or 8 valve positions, can be separated by proper seals and allow the creation of different pressure/exhaust zones.



2

CONTROL

Fieldbus Expansion Module - characteristics

Versions available:

2 valve positions

4 valve positions

8 valve positions

The expansion modules:

- communicate among themselves and with the initial module through the Cam.I.Net subfieldbus.
- can be easily added to enlarge the valve island, thus avoiding the use and costs of free positions;
- can be positioned up to 50 metres from initial module and subdivided into up to 15 groups.

The particular construction of the islands allows the in-line mounting of all the Expansion modules.

Pneumatic modules, available with 2, 4, 6, or 8 valve positions, can be separated by proper seals and allow the creation of different pressure/exhaust zones.



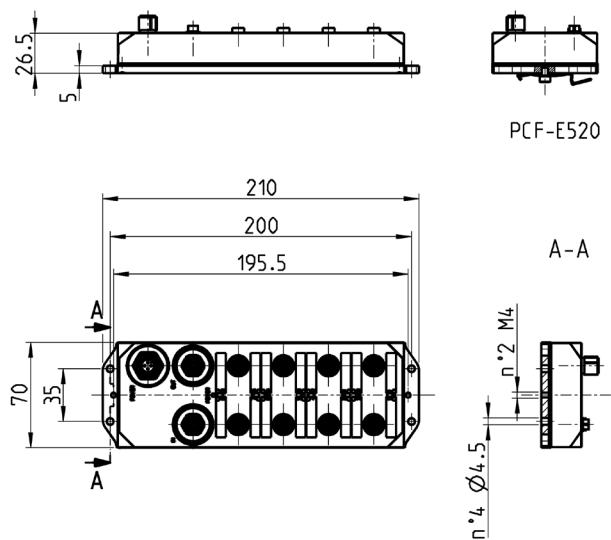
Electrical digital inputs module ME-1600-DL* - Characteristics

It allows the connection of 16 electrical input signals via 8 M12 DUO 5 poles connections. It is thus possible to connect 2 inputs for each connection.
 The input module can be positioned at any point of the Cam.I.Net. sub-fieldbus.
 3 input modules at most can be connected to the initial module, for a total of 48 inputs.

* not for the DeviceNet version

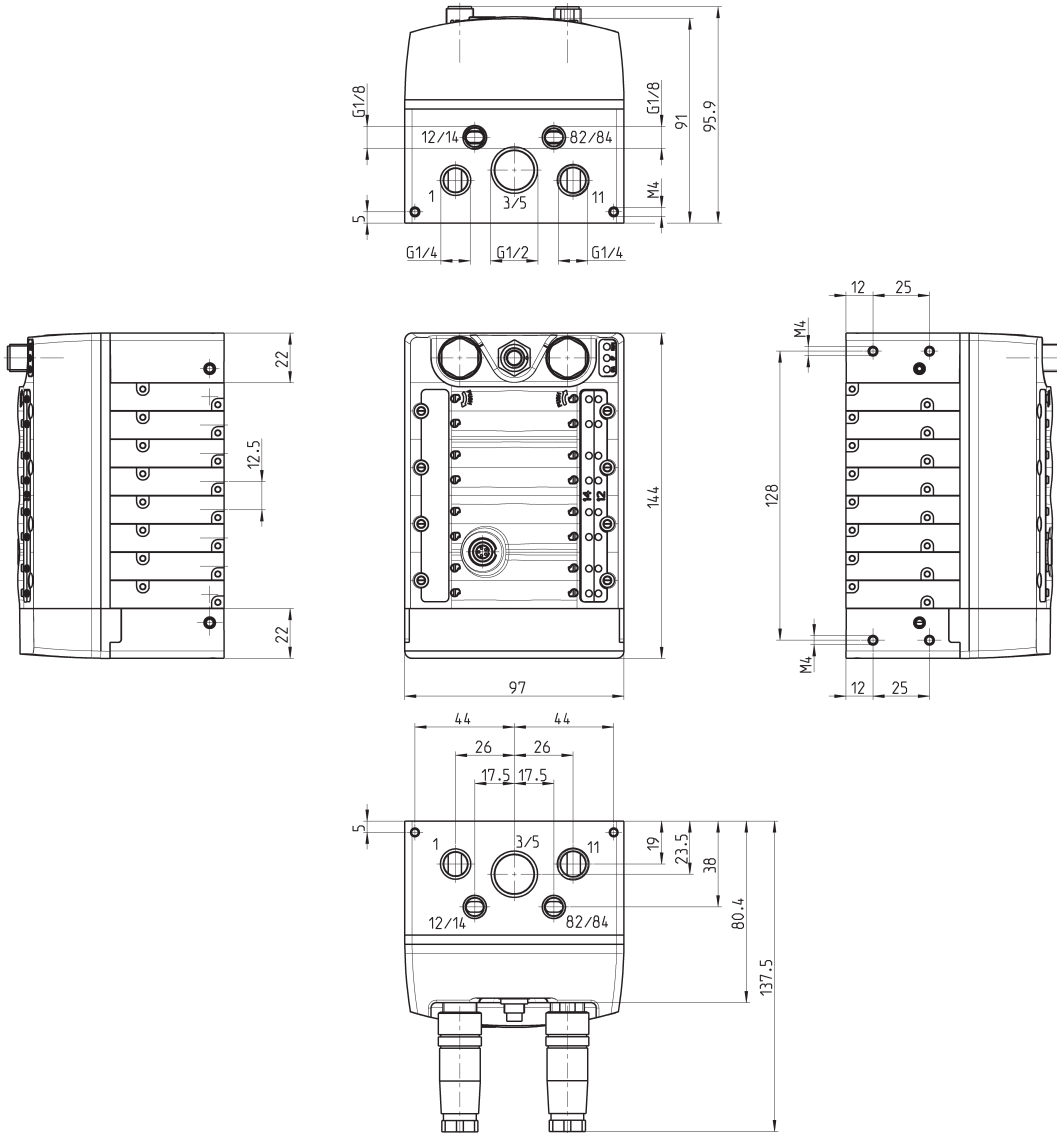
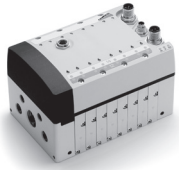

Digital Inputs Module ME-1600-DL* - dimensions

* not for the DeviceNet version

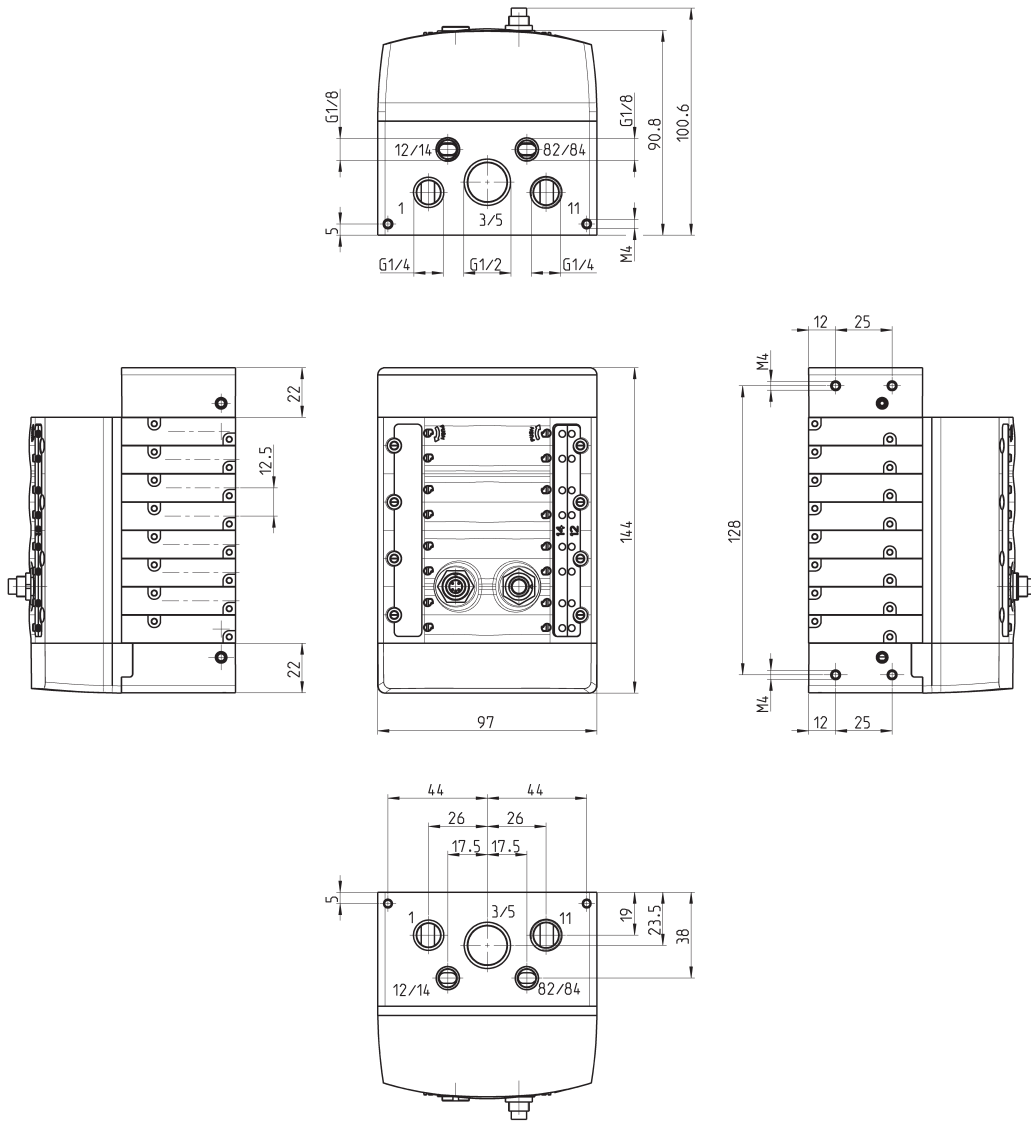
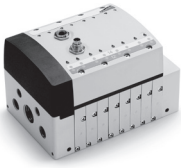


Fieldbus Initial Module - dimensions

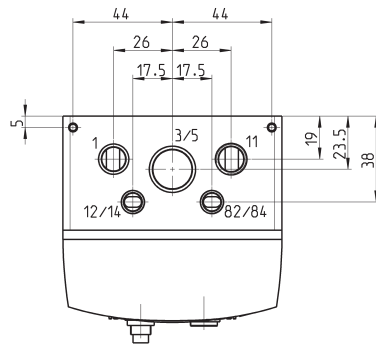
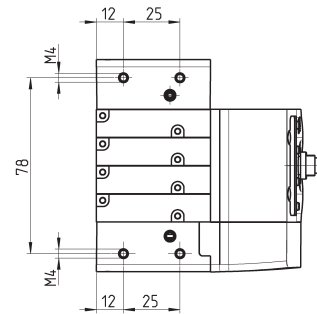
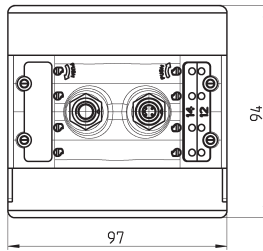
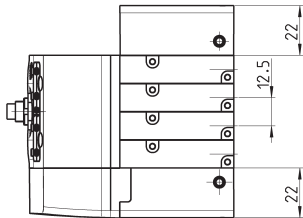
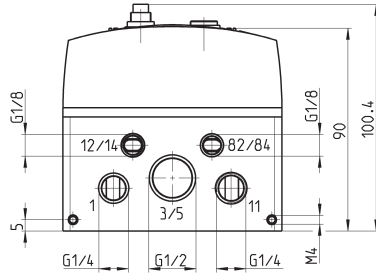
Dimensions don't change according to the different Fieldbus versions (Profibus-DP, CANopen, DeviceNet).



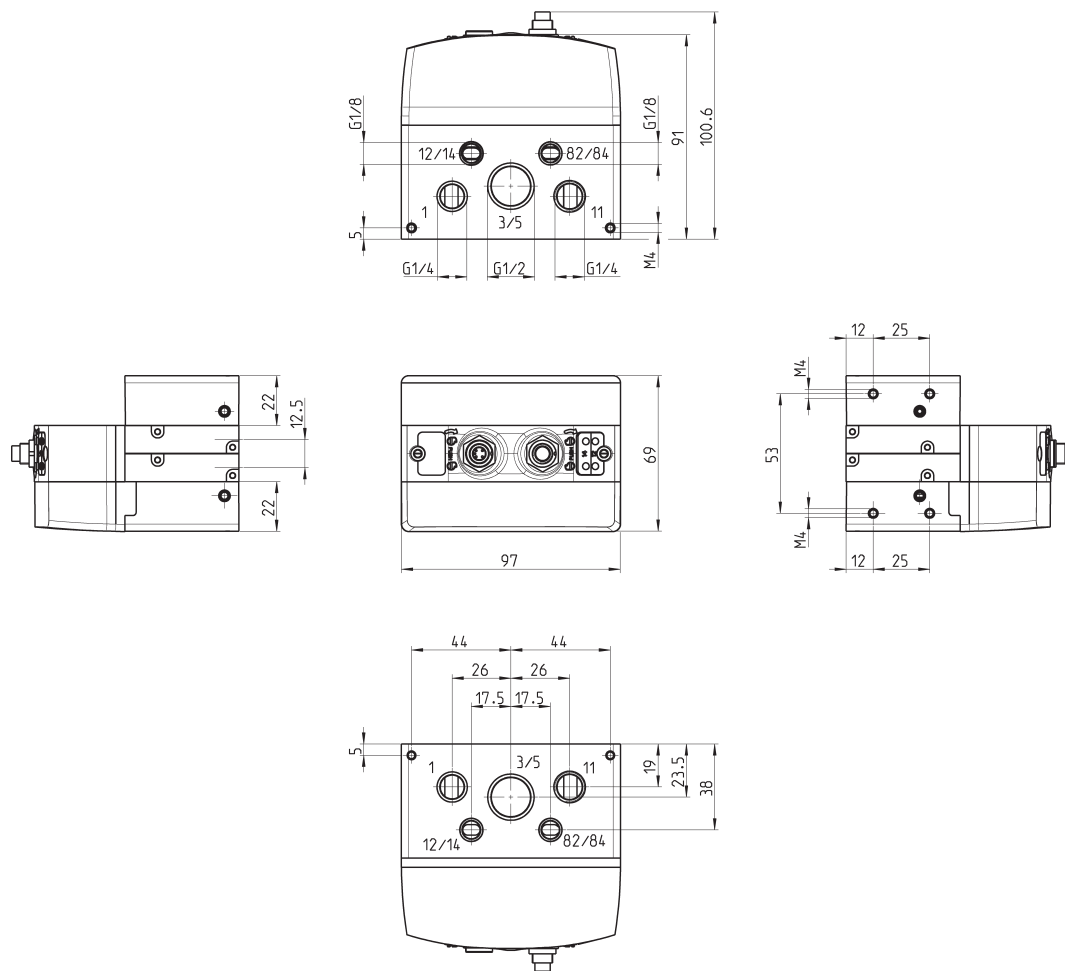
Fieldbus Expansion Module with 8 valve positions - dimensions



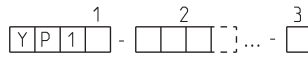
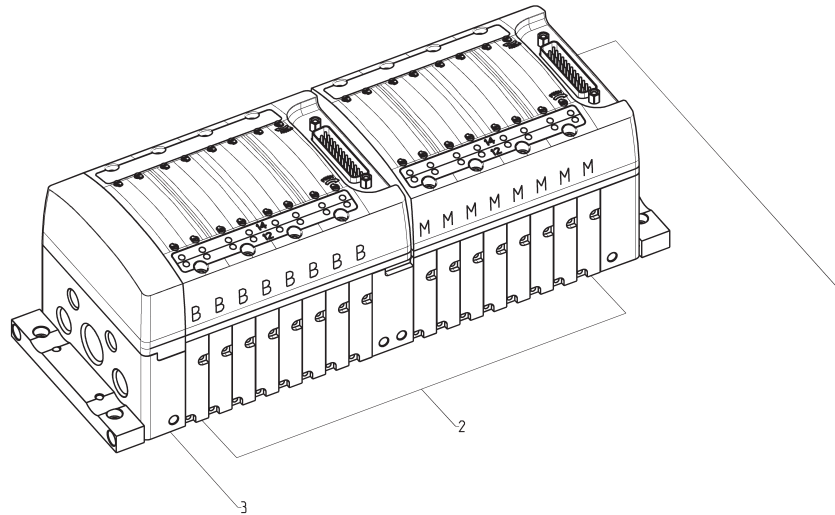
Fieldbus Expansion Module with 4 valve positions - dimensions



Fieldbus Expansion Module with 2 valve positions - dimensions



CODING



(1) Code	Type of electrical connection	(2) Code	Type of valve	(3) Code	Type of terminal plates
K	Individual		-		-
M	Multipole (PNP)		-		-
P	Profibus-Dp		-		-
D	DeviceNet		-		-
C	CANopen		-		-
E	Expansion		-		-
-		M	5/2 Monostable		-
-		B	5/2 Bistable		-
-		V	5/3 CC		-
-		I	2 x 2/2 1 NO + 1 NC		-
-		E	2 x 2/2 NC		-
-		F	2 x 2/2 NO		-
-		G	2 x 3/2 1 NO + 1 NC		-
-		C	2 x 3/2 NC		-
-		A	2 x 3/2 NO		-
-		L	Free position		-
-		W	Additional supply module from 2 and 4		-
-		T	Diaphragm seal (modules separation)		-
-		P	Through seal (modules separation)		-
-		T/	Diaphragm seal (modules and cover separation)		-
-		P/	Through seal (modules and cover separation)		-
-		U	Diaphragm seal 3/5 opened		-
-		H	Diaphragm seal 3/5-11 opened		-
-		N	Diaphragm seal 1-11 opened		-
-		U/	Diaphragm seal 3/5 opened, modules and cover separ.		-
-		K	Module with 2 positions and 3/5-11 closed		-
-		R	Module with 2 positions and 3/5-1-11 closed		-
-		O	Module with 2 positions and 1-11 closed		-
-		Q	Module with 2 positions and 3/5 closed		-
-		X	Additional supply module		-
-				A	in common 1/11 - 12/14 individual 82/84 - 3/5
-				B	in common 1/11 individual 12/14 - 82/84 - 3/5
-				C	individual 1/11 - 12/14 - 82/84 - 3/5
-				D	in common 1/11 - 12/14 individual 82/84 - 3/5
-				E	in common 1/11 individual 12/14 - 82/84 - 3/5
-				F	individual 1/11 - 12/14 - 82/84 - 3/5
-				G	in common 1/11 - 12/14 individual 82/84 - 3/5
-				H	in common 1/11 individual 12/14 - 82/84 - 3/5
-				J	individual 1/11 - 12/14 - 82/84 - 3/5
-				Z	modules without terminal plate

Coding example 1

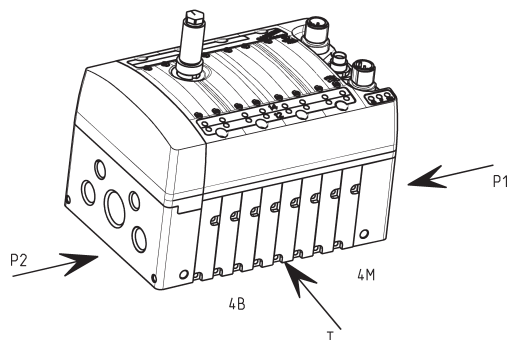
Valve island with Profibus-DP connection made of:

- 4x solenoid valves type M
- 1x diaphragm seal Mod. T
- 4x solenoid valves type B
- Terminals with 1 and 11 in common on both sides and 12 /14 separated.

Code:

YP1P-4MT4B-B

For the code composition see the coding table on page 2/3.10.19


Coding example 2

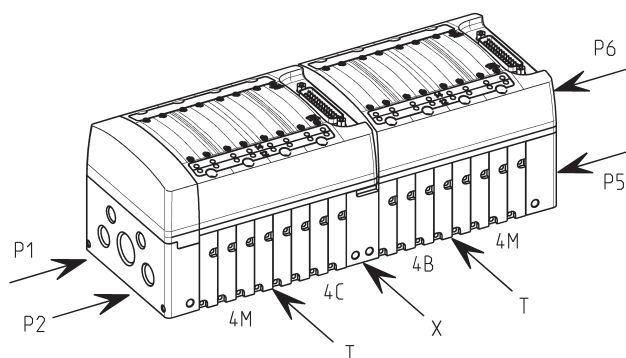
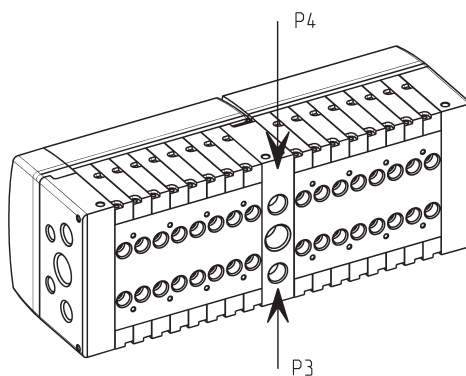
Valve island with Multipole connection made of:

- 4x solenoid valves type M
- 1x diaphragm seal Mod. T for the separation of pressure zones
- 4x solenoid valves type B
- 1x through-out seal Mod. P
- 1x intermediate additional supply module Mod. X
- 1x through-out seal Mod. P
- Terminals with individual connection
- 4x solenoid valves type C
- 1x diaphragm seal Mod. T for the separation of pressure zones
- 4x solenoid valves type M

Code:

YP1M-4MT4BPXP4CT4M-C

For the code composition see the coding table on page 2/3.10.19

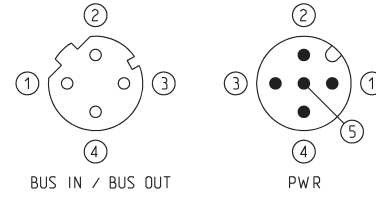
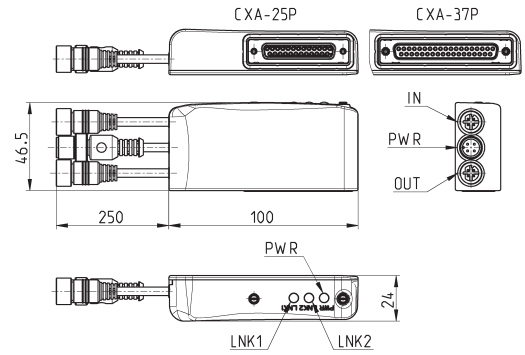


Sub-D adaptor module 25 pin Mod. CXA-25P



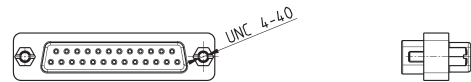
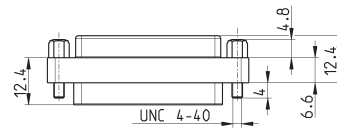
It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection. It can manage up to a maximum of 24 Output. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 5 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a maximum length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.

Led 1 = Yellow LNK1
 Led 2 = Yellow LNK2
 Led 3 = Green PWR,
 supply present and OK



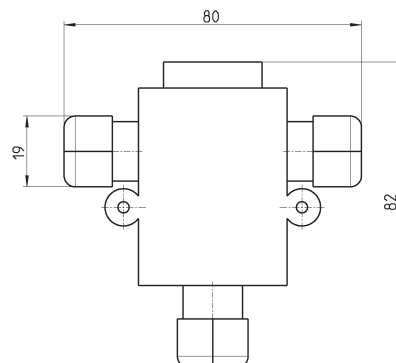
Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W

25M-25F Sub-D adaptor

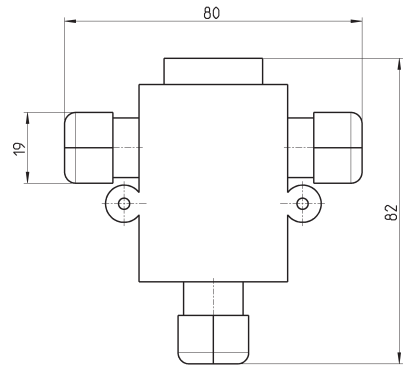


Mod.	description	type of connector	connection	cable length (m)
G2X-G2W	moulded adaptor	in line	Sub-D 25 pin female - Male	-

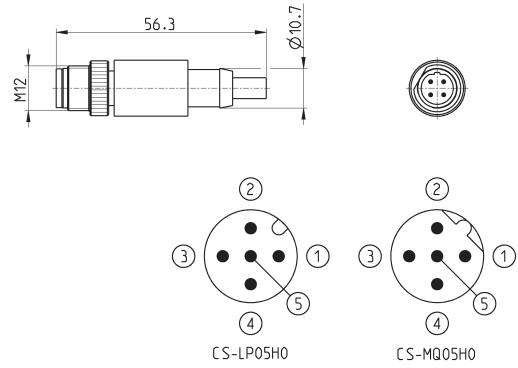
Profibus-DP data line tee



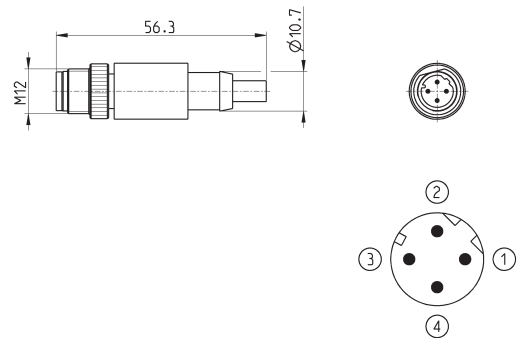
Mod.	CS-AA03EC
------	------------------

CANopen / DeviceNet data line tee

 Mod.
CS-AA05EC
M12 male terminating resistor

For PROFIBUS, CANopen, DeviceNet



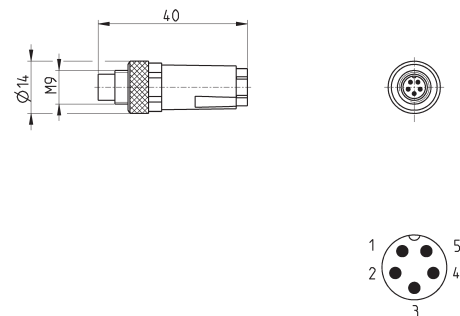
Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male	CANOpen / DeviceNet

Series CX subnet terminating resistor


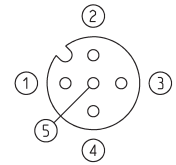
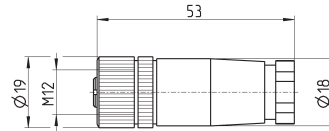
Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

Terminal resistance Cam.I.Net

Connector with sub-serial terminal resistance

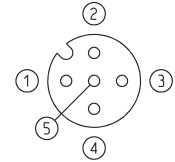
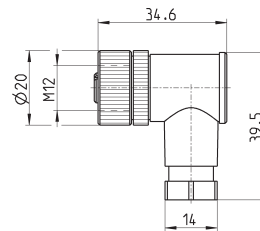

 Mod.
CS-FP05H0

Straight connector for power supply



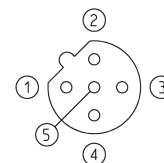
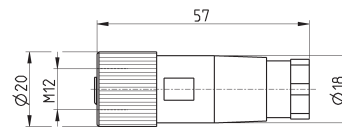
Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female	-

Angular connector for power supply

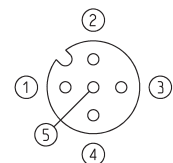


Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female	-

Straight female M12 connectors for Bus-IN



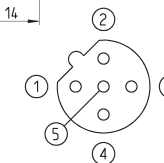
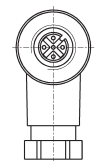
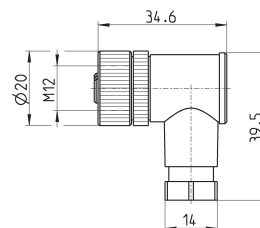
CS-MF05HC



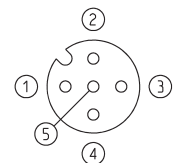
CS-LF05HC

Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



CS-MR05HC

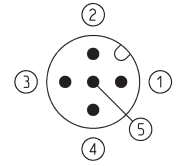
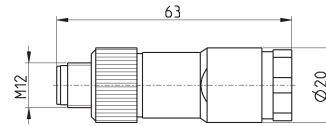


CS-LR05HC

Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

5 pin male straight M12 DUO connector

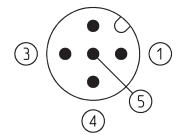
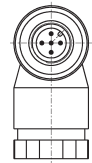
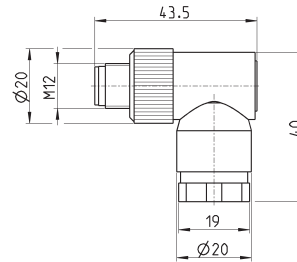
For the connection of the digital input modules.



Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

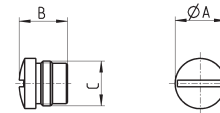
For the connection of the digital input modules.



Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

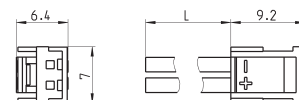
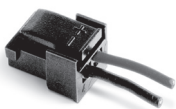
M8 and M12 connector cover caps

For digital and analog input/output modules and subnet



Mod.	A	B	C [Connection]
CS-LFTP	13.5	13	M12

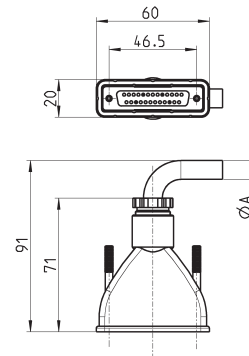
Connector Mod. 121-8.. for Individual version



Mod.	description	colour	L = cable length (mm)	cable holding
121-803	crimped cable	black	300	crimping
121-806	crimped cable	black	600	crimping
121-810	crimped cable	black	1000	crimping
121-830	crimped cable	black	3000	crimping

Straight Sub-D 25 pin female connector with axial cable

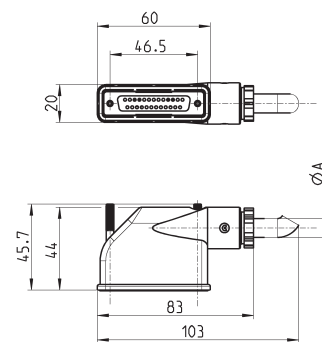
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with axial cable

Protection class IP65

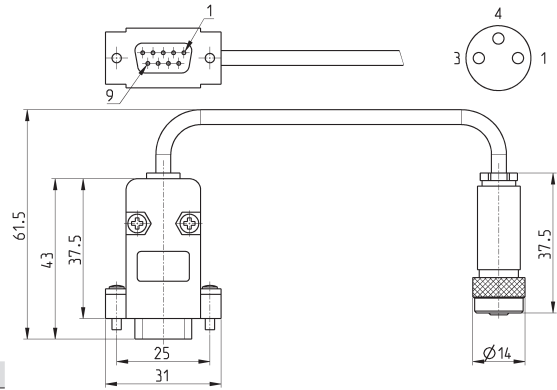


Mod.	ØA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Programming cable

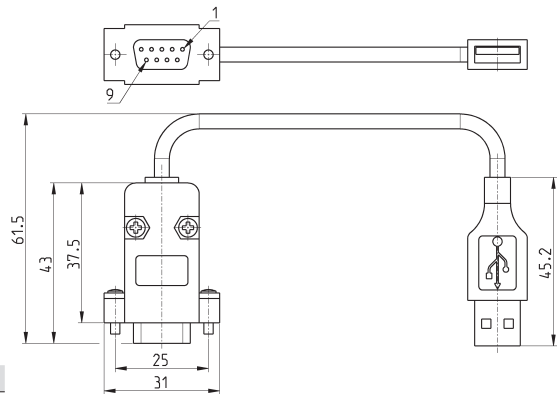


Manuals, configurator and configuration files are available on our website <http://catalogue.camozzi.com> in the section Downloads.



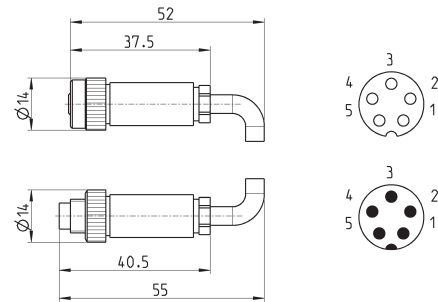
Mod.	cable length (mt)
CS-FZ03AD-C500	5

USB SERIAL converter for programming cable



Mod.	cable length (m)
G8X3-G8W-1	1

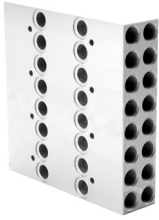
Expansion cable



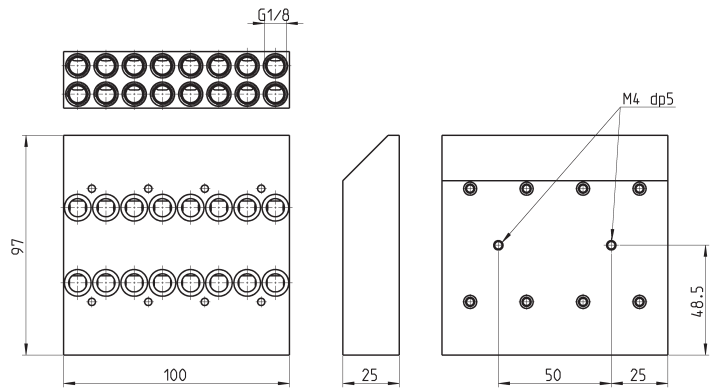
Mod.	cable length (mt)
CS-FW05HE-D025	0,25
CS-FW05HE-D100	1
CS-FW05HE-D250	2,5
CS-FW05HE-D500	5
CS-FW05HE-DA00	10

Interface with 8 valve positions

Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.



Supplied with:
1x interface 8 pos.
8x screws M3x25 UNI 5931
16x interface seals



Mod.

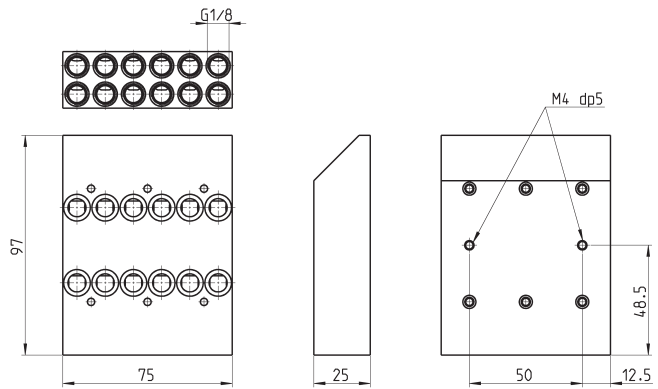
YA1K-N8

Interface with 6 valve positions

Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.



Supplied with:
1x interface 6 pos.
6x screws M3x25 UNI 5931
12x interface seals



Mod.

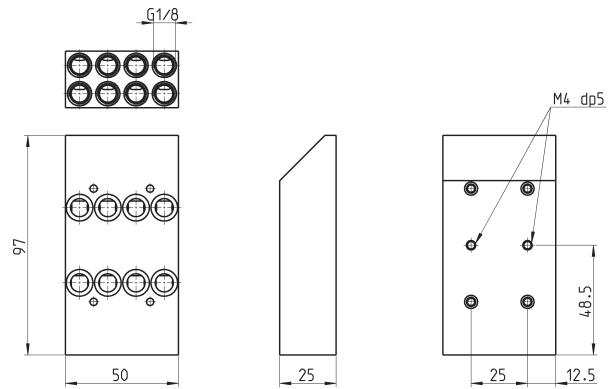
YA1K-N6

Interface with 4 valve positions

Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.



Supplied with:
1x interface 4 pos.
4x screws M3x25 UNI 5931
8x interface seals



Mod.

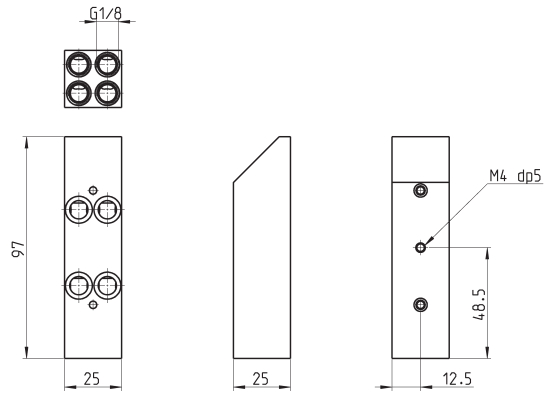
YA1K-N4

Interface with 2 valve positions

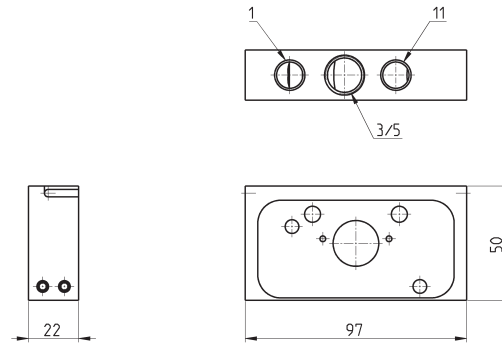
Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.



Supplied with:
 1x interface 2 pos.
 2x screws M3x25 UNI 5931
 4x interface seals



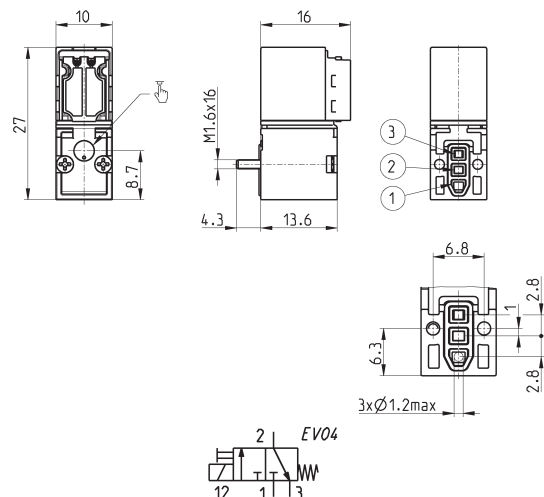
Mod.
YA1K-N2

Intermediate plate for supplementary supplies and exhausts cod. X


Mod.	1	3/5	11
YA1K-N1X/1	G1/4	G3/8	G1/4

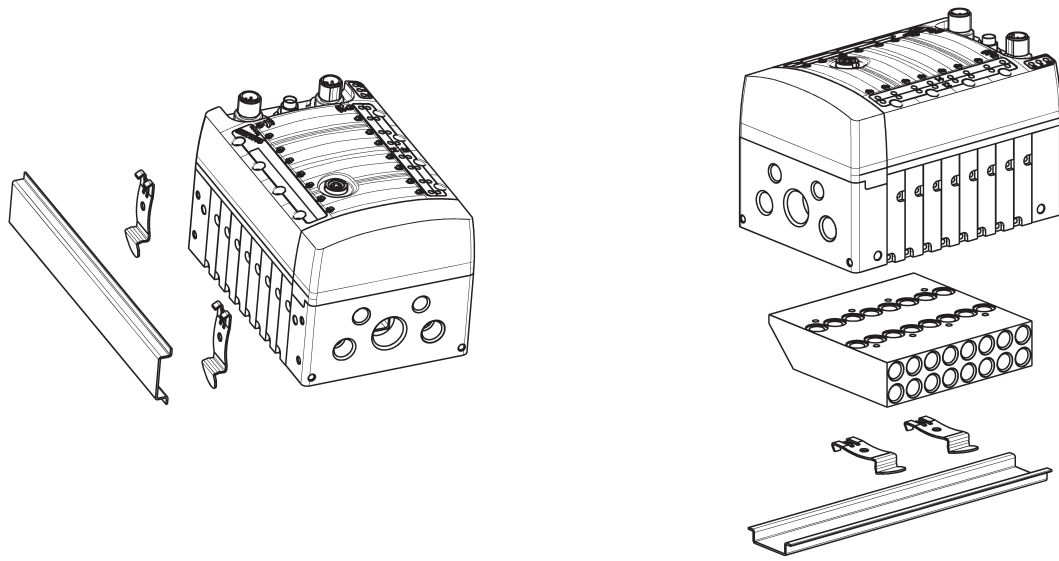
Solenoid valve Mod. KN000-303-KY3N - spare part for Series Y

Supplied with:
 1x interface seal
 2x screws M1.6x16 UNI 10227



Mod.
KN000-303-KY3N

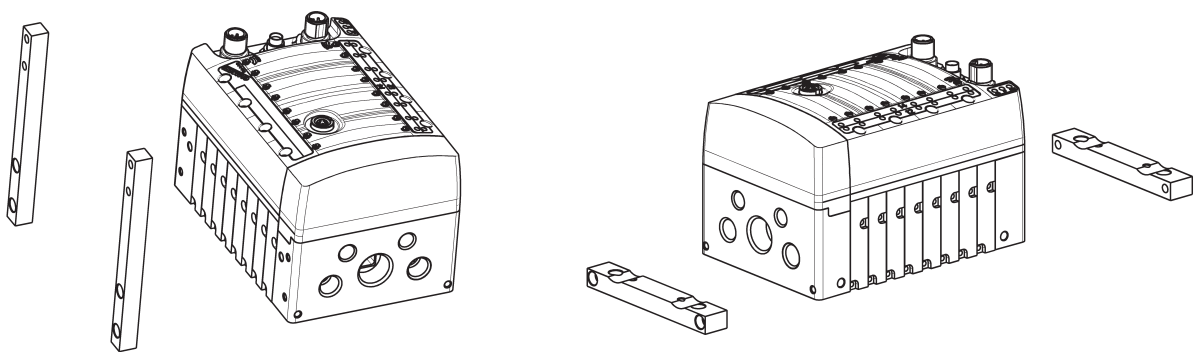
Mounting solutions on DIN EN 50022 rail



2

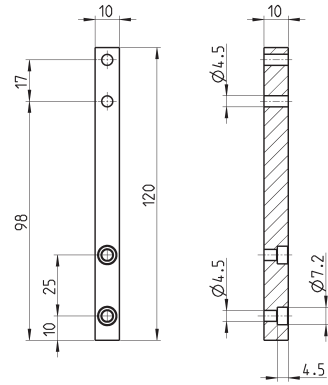
CONTROL

Wall mounting solutions



Vertical foot

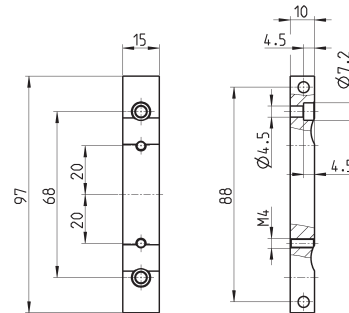
Supplied with:
2x vertical feet
2x screws M4x10 UNI 5931



Mod.

YA1K-B2
Horizontal foot

Supplied with:
2x horizontal feet
2x screws M4x14 UNI 5931

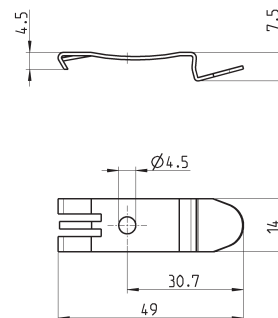


Mod.

YA1K-B1
Mounting brackets for DIN rail

DIN EN 50022 (7,5mm x 35mm - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931



DIMENSIONS

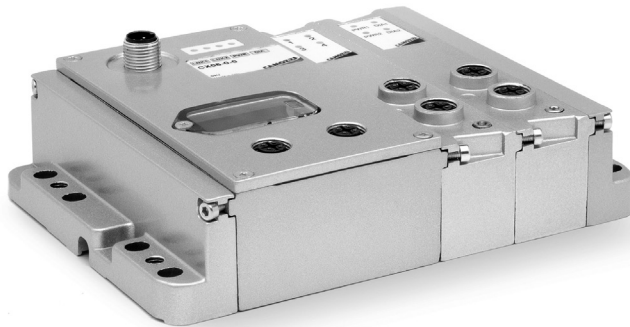
Mod.

PCF-E520

Series CX multi-serial module

New 

Interface with: PROFIBUS, CANopen, DeviceNet, EtherNet/IP,
PROFINET, EtherCAT
Compatible with all Camozzi valve islands



- » Maximum flexibility in use
- » Mounting in hard application conditions
- » Easily changeable
- » Analog I/O modules
- » Digital I/O modules
- » Multi-communication protocols

2

CONTROL

The Series CX serial module, with IP65 protection class, interface with all major serial communication protocols as well as the new generation EtherCAT, EtherNet/IP and PROFINET protocols. The highly resistant aluminium structure makes it suitable for mountings even in hard application conditions.

This serial module can be coupled with electric input and output modules and is able to handle up to a maximum of 1024 I/O. Its interface modules enable direct connection to Series F, HN and 3 valve islands. Through a subnet the connection system can be extended to remote valve islands.

Manuals, instruction sheets and configuration files are available on the site <http://catalogue.camozzi.com> or by means of the QR code indicated on the label of the product.

GENERAL DATA

Number of digital outputs	1024
Number of digital inputs	1024
Maximum input absorption	1,5 A
Maximum output absorption	3 A
Logical supply voltage *	24 V DC +/-10%
Power supply voltage *	24 V DC +/-10%
Protection	overload and reverse polarity
Protection class	IP65
Conform with standards	EN-61326-1 EN-61010-1
Operating temperature	0-50°C
Material	Aluminium

* the voltage range can change according to the range required by the external connected elements.

CODING EXAMPLE

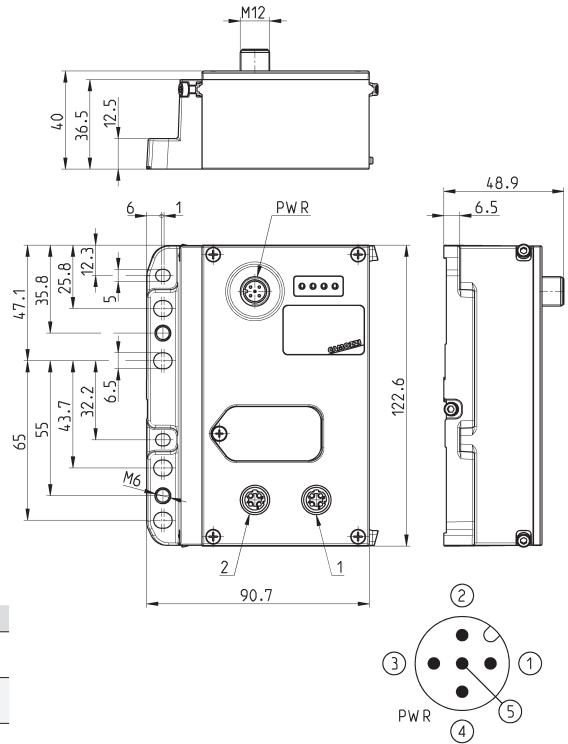
CX	05	-	2AC	-	QT2S
-----------	-----------	----------	------------	----------	-------------

CX	SERIES
05	PROTOCOL: 01 = PROFIBUS 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion Module
2AC	INPUTS: 0 = no module nA = 8 digital inputs M8 nB = 4 digital inputs M8 nC = 2 IN 4-20 mA nD = 2 IN 0-10 V nE = 1 IN 4-20 mA + 1 IN 0-10 V
QT2S	OUTPUTS: 0 = no module nQ = 4 M12 duo digital outputs nR = 2 OUT 4-20 mA nT = 2 OUT 0-10 V nU = 1 OUT 4-20 mA + 1 OUT 0-10 V nV = 1 OUT 4-20 mA + 1 IN 0-10 V nZ = 1 OUT 4-20 mA + 1 IN 4-20 mA nK = 1 OUT 0-10 V + 1 IN 0-10 V nY = 1 OUT 0-10 V + 1 IN 4-20 mA nS = initial subnet module

Fieldbus protocols - Technical data

Protocol	Max nr of nodes defined by the protocol	Communication speed defined by the protocol	Max number of I/O	LED 1 Yellow-Green	LED 2 Yellow-Green	LED 3 Red-Green	LED 4 Red
PROFIBUS	32/127	9,6 kBit/s per 1000 m 12 Mbit/s per < 100 m	1024 Input 1024 Output	absent	Green RUN	Red DIA	Red BF
CANopen	127	125 kBit/s 500 m 1 Mbit/s per 4 m	1024 Input 1024 Output	absent	Green IO	Red DIA	Red BF
DeviceNet	64	125 kBit/s 500 m 500 kbit/s per 100 m	1024 Input 1024 Output	absent	Green RUN	Red NS	Red MF
PROFINET	unlimited	100 Mbit/s per 100 m	1024 Input 1024 Output	Yellow LNK1	Yellow LNK2	Green PWR	Red DIA
EtherNet/IP	unlimited	100 Mbit/s per 100 m	1024 Input 1024 Output	Yellow LNK1	Yellow LNK2	Green PWR	Red DIA
EtherCAT	unlimited	100 Mbit/s per 100 m	1024 Input 1024 Output	Yellow LNK1	Yellow LNK2	Green PWR	Red DIA

CPU Module - pin configuration

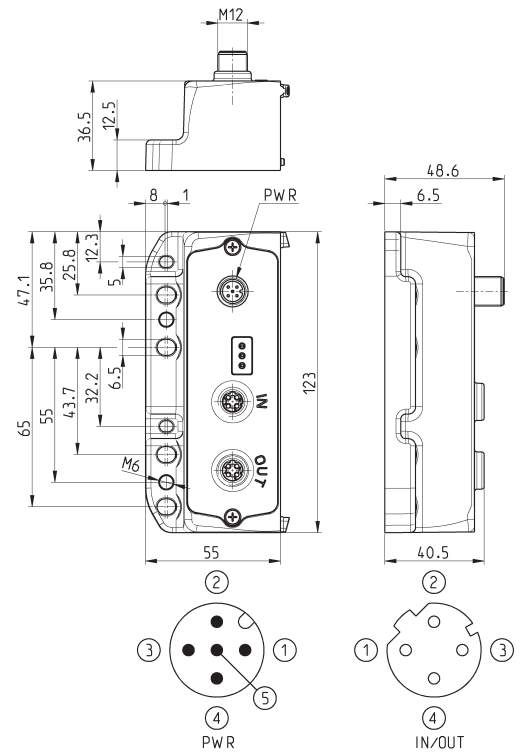


Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration



Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

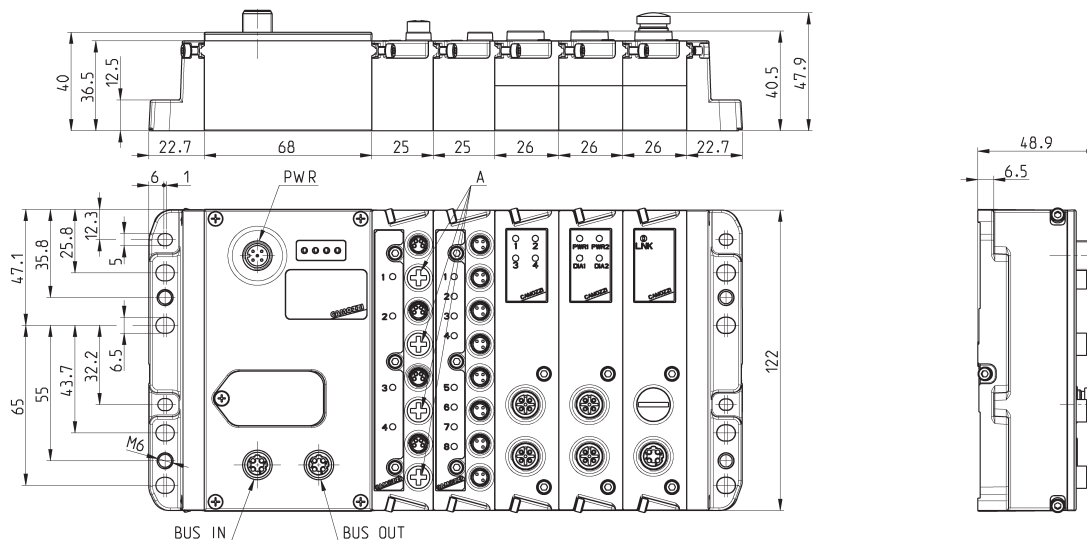
CPU Module - Characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet. All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet.

It has its own M12 A 4 pin male connection to supply the modules connected, distinguishing both logic supply and power supply.

Two M12 connections for Bus-IN and Bus-OUT of the main network, which M12 connection will take over the relative specifications according to the chosen protocol.

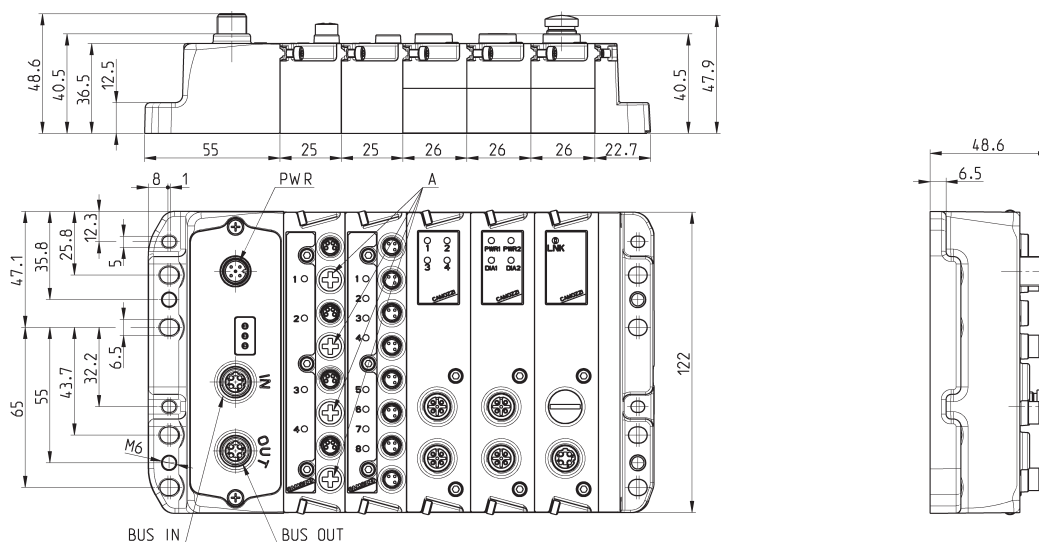
The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols addressing is performed by means of the protocol itself. Leds indicate the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.



Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state.

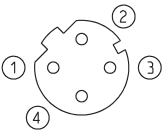
The valve island equipped with Expansion Module can be used only in presence of a subnet.



Initial subnet module Mod. ME3-0000-SL

This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices.

Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 5 pin female.



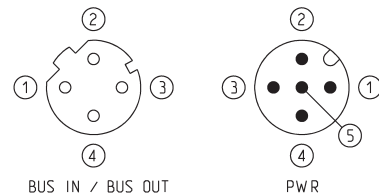
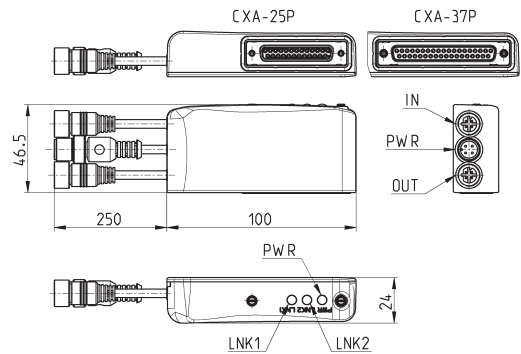
Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 5 pin female	5	100 m

Sub-D adaptor module 25 and 37 pin Mod. CXA-25P and CXA-37P



Led 1 = Yellow LNK1
 Led 2 = Yellow LNK2
 Led 3 = Green PWR, supply present and OK

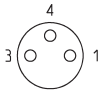
It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection (Series F, HN and 3) or 37 pin connection (Series HN). It has its own M12A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 5 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The 25 pin adaptor module manages a fixed number of 24 digital outputs, while the 37 pin adaptor module manages a fixed number of 32 digital outputs. In both cases, every output can provide a maximum of 3 W to 24 V DC, with PWM outputs for which it is possible to set the working frequency value.



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W
CXA-37P	Sub-D 37 pin	32	M12D 5 pin female	M12D 5 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.

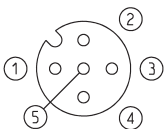


Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 + 50°C	110 g

Analog input/output module Mod. ME3-****-AL

The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 female pin connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every output or input occupies 12 digital I/O, in order to create a 12 bit digital/analogic conversion, for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.

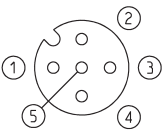
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

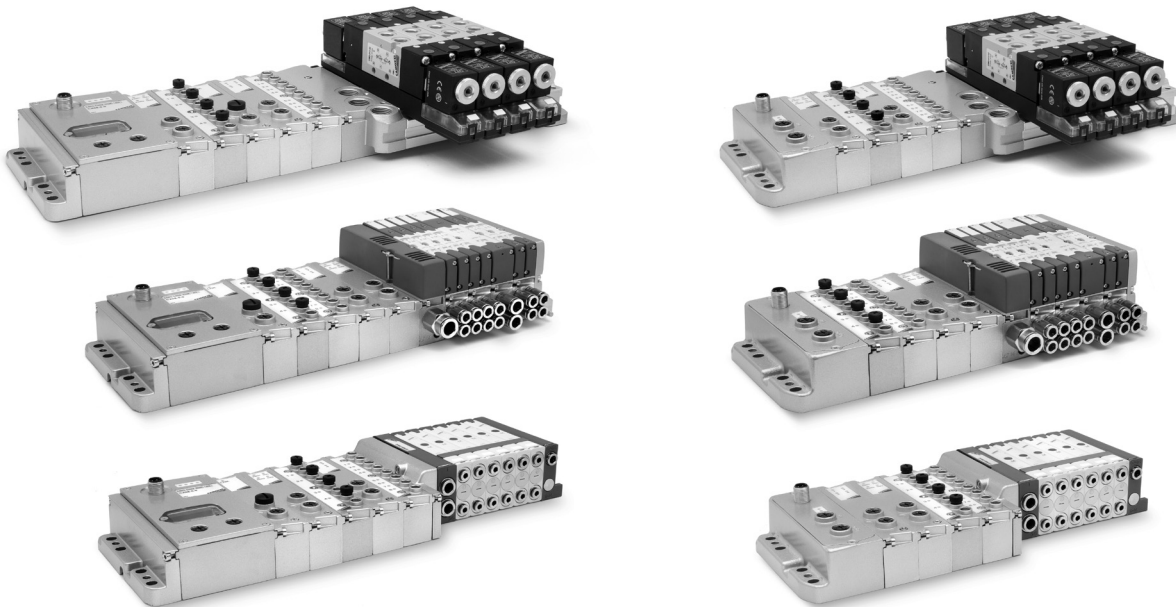
Digital power output module Mod. ME3-0004-DL

The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 + 50°C	100 g

Direct interface with Series F, Series HN and Series 3 valve islands



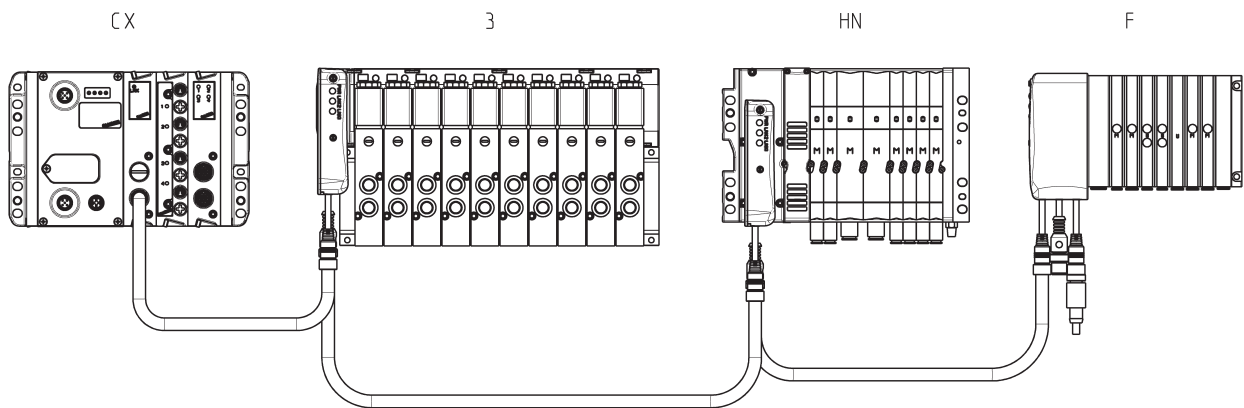
These direct interface modules allow to connect a CPU, CX or an expansion module directly to a valve island of the Series F, HN or 3. Before these interface modules you can only connect different digital or analog electric modules or the initial module of the subnet.

Downstream the interface modules, only the provided valve islands can be connected. The valve islands that can be connected to the interface modules have the same rules as the multipole version of the same Series.

Network topology configuration with the CX solution - Example 1

Multi-serial solution composed of:

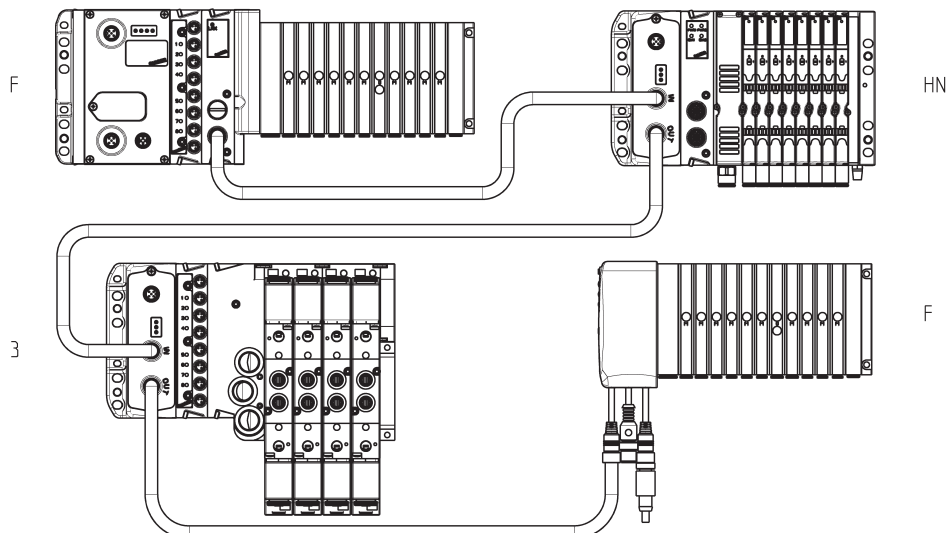
- a CX module with initial subnet module
- a Series 3 Multipole valve island with CXA-25P adaptor
- a Series HN Multipole valve island with CXA-25P adaptor
- a Series F Multipole valve island with CXA-25P adaptor



Network topology configuration with the CX solution - Example 2

Multi-serial solution composed of:

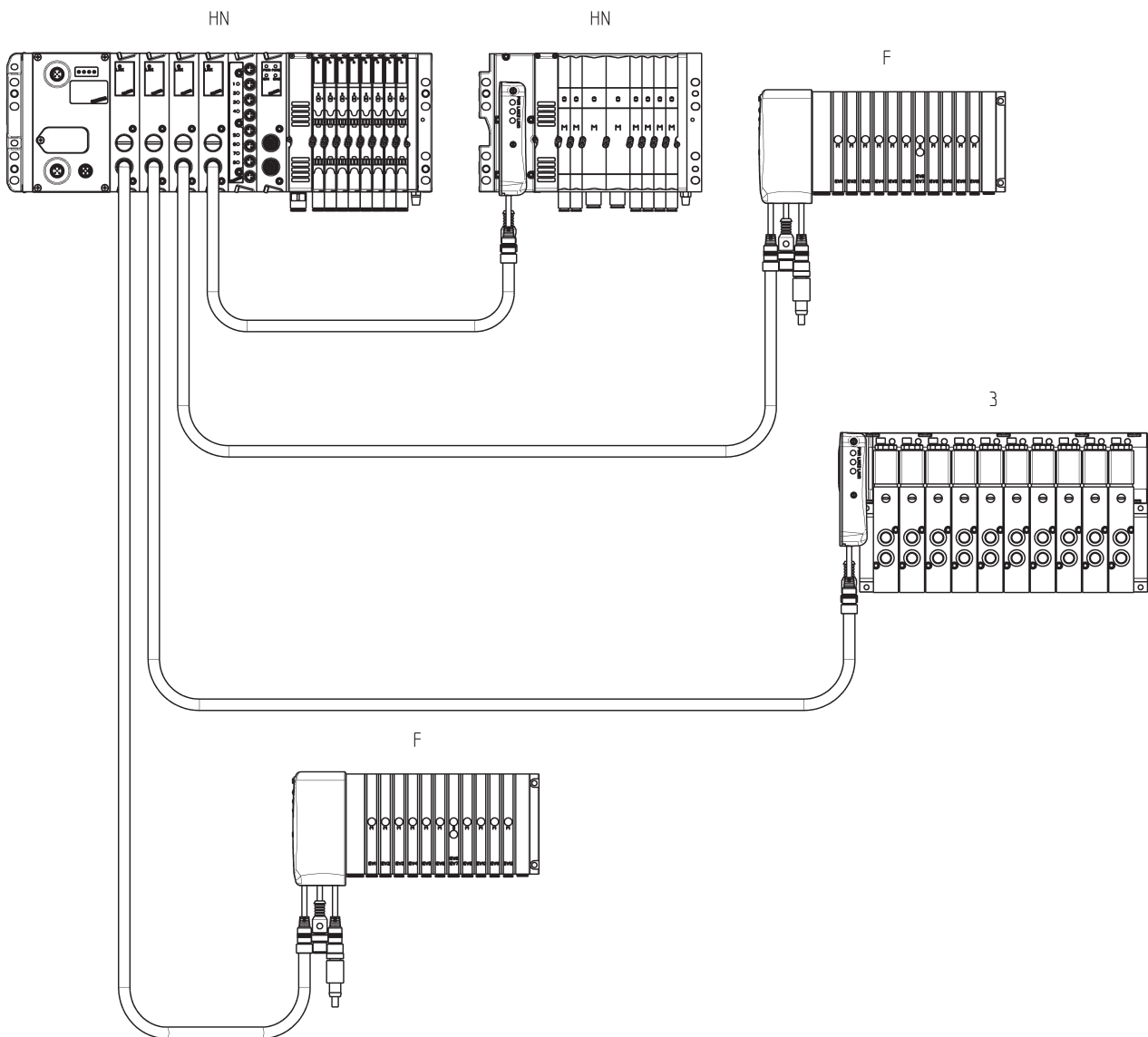
- a Series F Fieldbus valve island
- a Series HN Fieldbus expansion
- a Series 3 Fieldbus Expansion
- a Series F Multipole valve island with CXA-25P adaptor



Network topology configuration with the CX solution - Example 3

Multi-serial solution with star connection composed of:

- a Series HN Fieldbus valve island with initial subnet modules
- on the first branch a Series F Multipole valve island with CXA-25P adaptor
- on the second branch a Series 3 Multipole valve island with CXA-25P adaptor
- on the third branch a Series F Multipole valve island with CXA-25P adaptor
- on the fourth branch a Series HN Multipole valve island with CXA-37P adaptor



Network topology configuration with the CX solution - Example 4

Multi-serial solution with tree connection composed of an initial module, two branches and a further branch.

Initial module:

- Series 3 Fieldbus valve island with 2 initial subnet modules

First branch of the initial module:

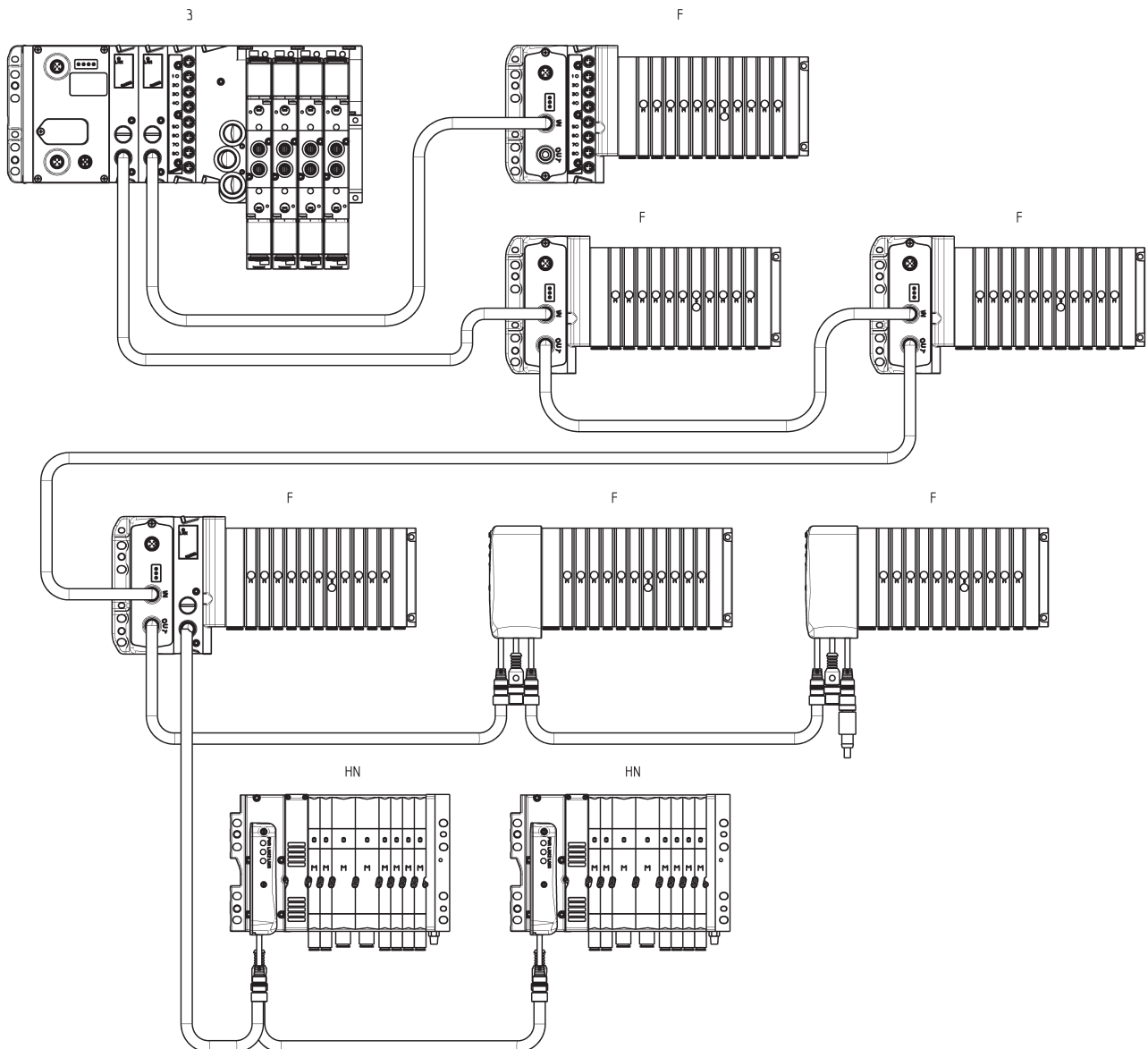
- 5 Series F valve islands of which 3 Fieldbus and 2 Multipole with CXA-25P adaptor

Further branch:

- 2 Series HN Multipole valve islands with CXA-25P and CXA-37P adaptor

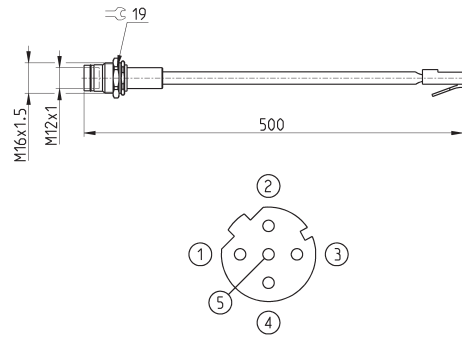
Second branch of the initial module:

- a Series F Fieldbus Expansion



Adaptor and panel mount for Ethernet RJ45 to M12 D networks

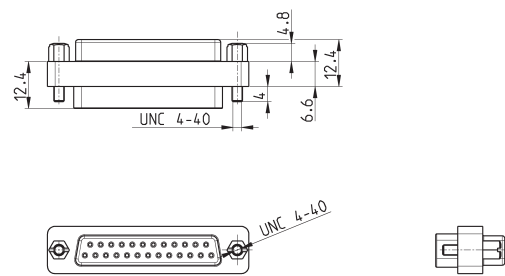
For PROFINET, EtherCAT, EtherNet/IP



Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female	0.5

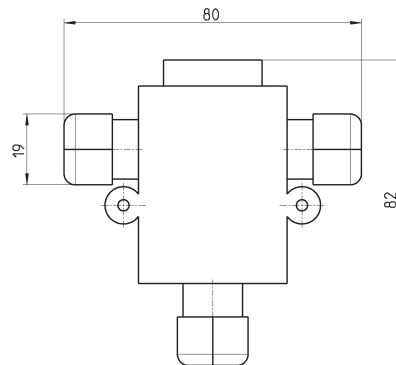
25M-25F Sub-D adaptor

For Series Y valve islands with CXA-25P



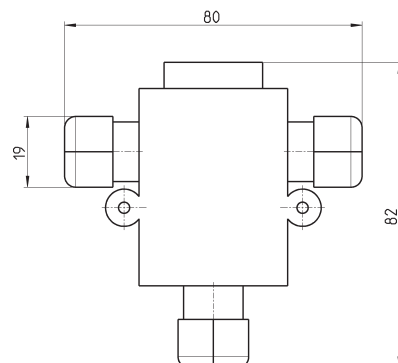
Mod.	description	type of connector	connection	cable length (m)
G2X-G2W	moulded adaptor	in line	Sub-D 25 pin female - male	-

Profibus-DP data line tee



Mod.	CS-AA03EC
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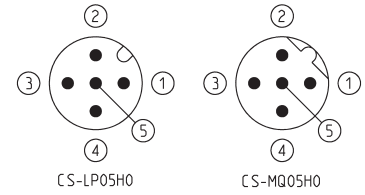
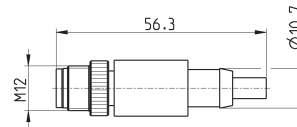
CANopen / DeviceNet data line tee



Mod.	CS-AA05EC
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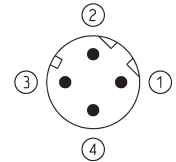
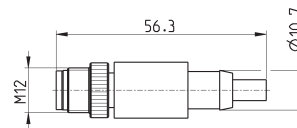
M12 male terminating resistor

For PROFIBUS, CANopen, DeviceNet



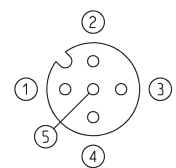
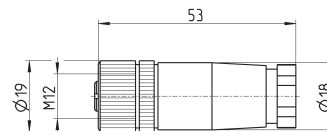
Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male	CANOpen / DeviceNet

Subnet terminating resistor



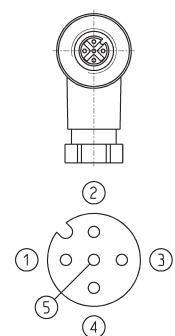
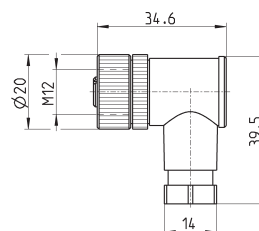
Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

Straight connector for power supply



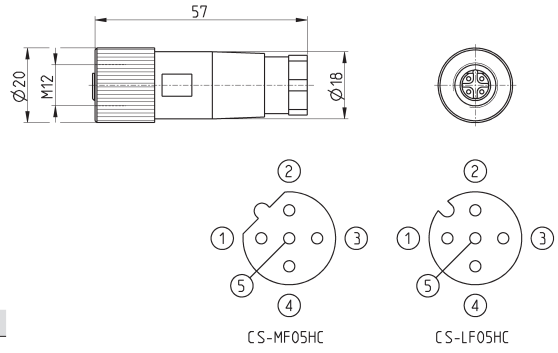
Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female	-

Angular connector for power supply



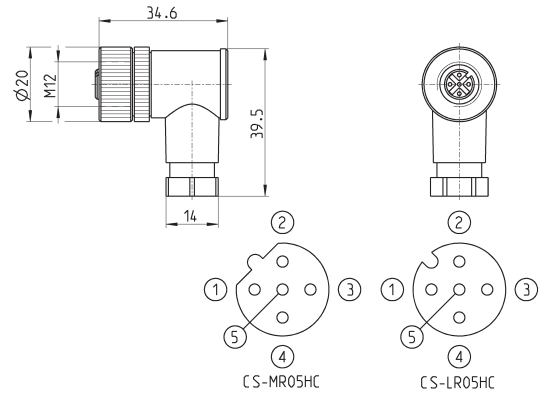
Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female	-

Straight female M12 connectors for Bus-IN



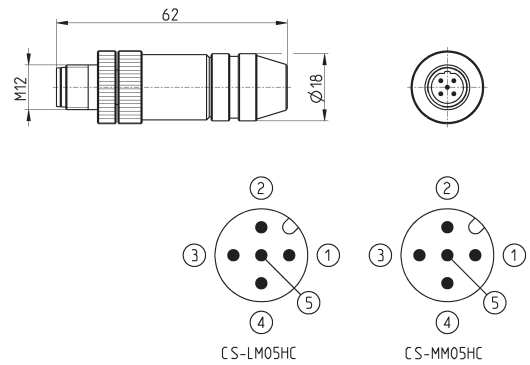
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

Straight male M12 connectors for Bus-OUT

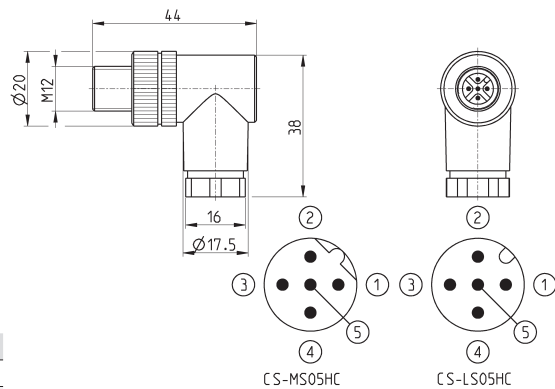


Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT



The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.

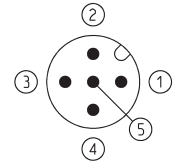
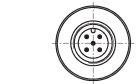
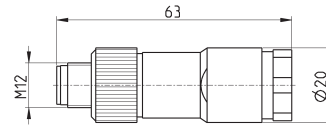


Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector



For the connection of the digital output modules and analog input/output modules.

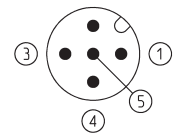
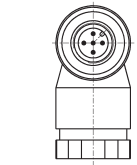
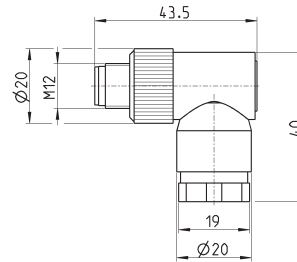


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

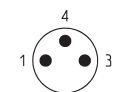
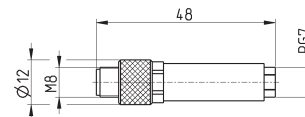


For the connection of the digital output modules ME3-0004-DL



Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

3 pin male M8 wiring connector for digital input modules

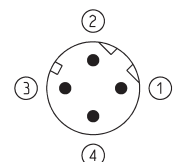
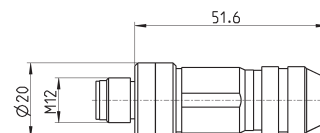


Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT



For PROFINET, EtherCAT, EtherNet/IP and subnet



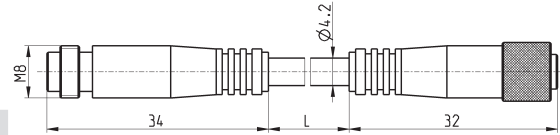
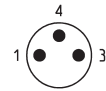
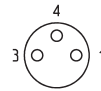
Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-



Extension with M8 connector, 3 pin male / female

Non shielded

For the connection of the digital input modules ME3-0008 and ME3-0004

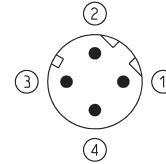
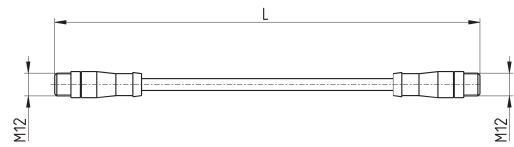


Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 pin male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5



Cable with straight connectors

For PROFINET, EtherCAT, EtherNet/IP and subnet

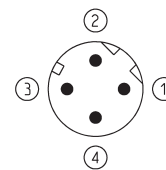
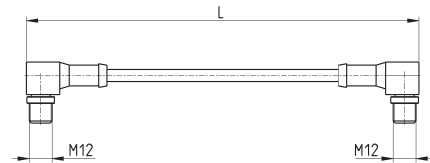


Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10



Cable with 90° angular connectors

For PROFINET, EtherCAT, EtherNet/IP and subnet

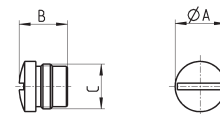


Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10



M8 and M12 connector cover caps

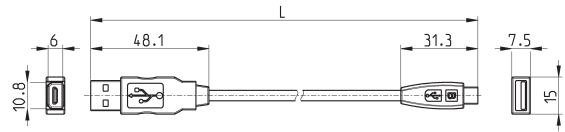
For digital and analog input/output modules and subnet



Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12


USB to Micro USB cable Mod. G11W-G12W-2

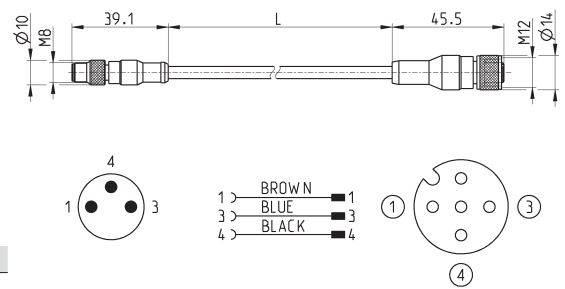
For the hardware configuration of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2


Adapter cable, M8 3-pin male - M12 4-pin female

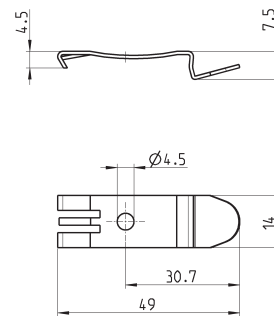
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable length "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5


Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

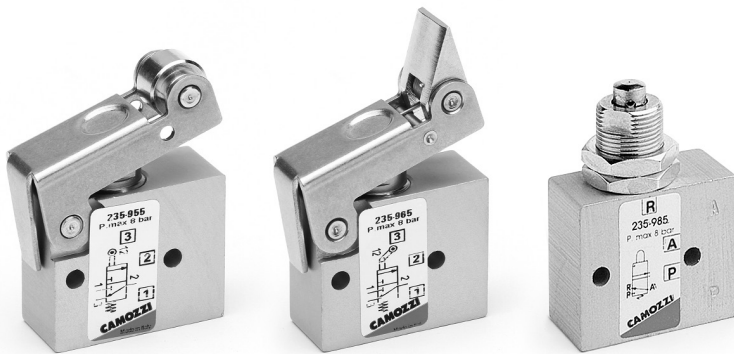
 Supplied with:
 2x plates
 2x screws M4x6 UNI 5931


Mod.	PCF-E520
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Series 2 mechanically operated minivalves

3/2-way

Ports M5, cartridge \varnothing 4



Series 2 mechanically operated miniature valves, 3/2-way normally closed, are available with M5 threaded ports or with an integrated super-rapid fitting for \varnothing 4mm tubes.

The devices are actuated by a plunger, roller/lever or a unidirectional lever.

GENERAL DATA

Construction	poppet type
Valve group	3-way/2-position
Materials	aluminium body, brass plunger, NBR seals
Mounting	by means of screws in the through-holes of the valve body
Ports	M5, \varnothing 4mm cartridge
Room temperature	0°C + 60°C
Fluid temperature	0°C + 50°C
Operating pressure	0 bar + 10 bar
Fluid	Filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

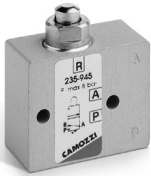
CODING EXAMPLE

2	3	4	-	94	5
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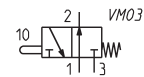
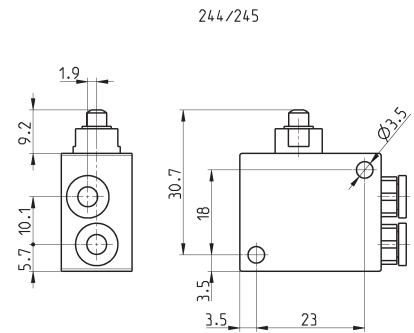
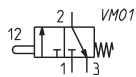
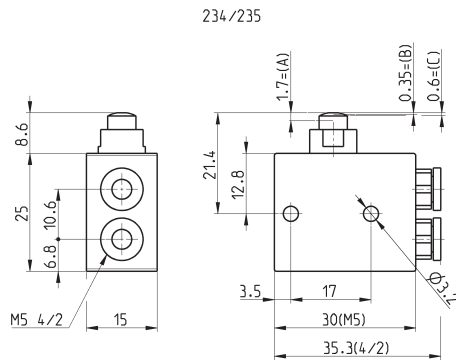
2	SERIES
3	FUNCTION 3 = 3/2-way NC 4 = 3/2-way NO
4	PORTS 4 = cartridge \varnothing 4mm 5 = M5
94	ACTUATION 94 = plunger 95 = lever/roller 96 = unidirectional lever 98 = plunger, panel mounting
5	RESETTING 5 = spring return

2

CONTROL

Minivalves with plunger


DRAWING LEGEND
 A = total stroke
 B = pre-stroke
 C = effective stroke

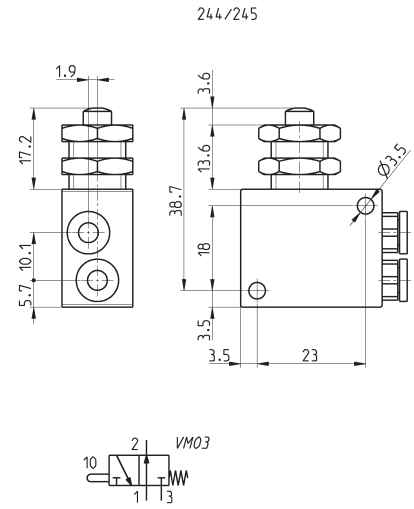
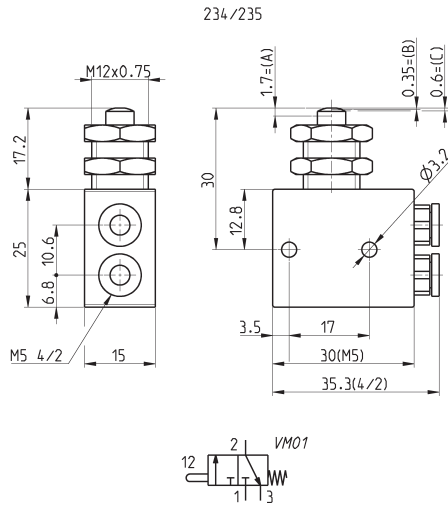


Mod.	Operating pressure (bar)	Flow Qn (NI/min)	Actuating force at 6 bar (N)	SYMBOL
234-945	2 + 10	60	6	VM01
235-945	2 + 10	60	6	VM01
244-945	2 + 10	60	6	VM03
245-945	2 + 10	60	6	VM03

Minivalves with plunger, panel mounting

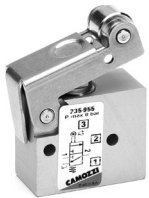


DRAWING LEGEND
 A = total stroke
 B = pre-stroke
 C = effective stroke

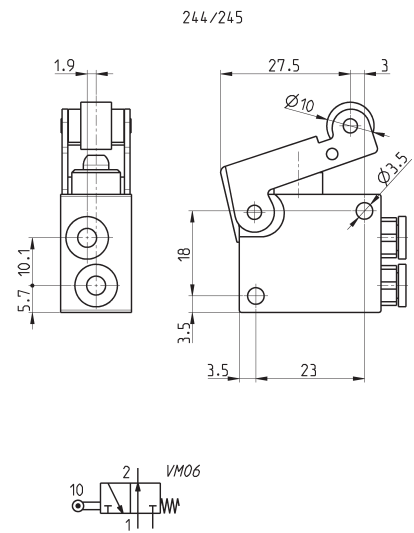
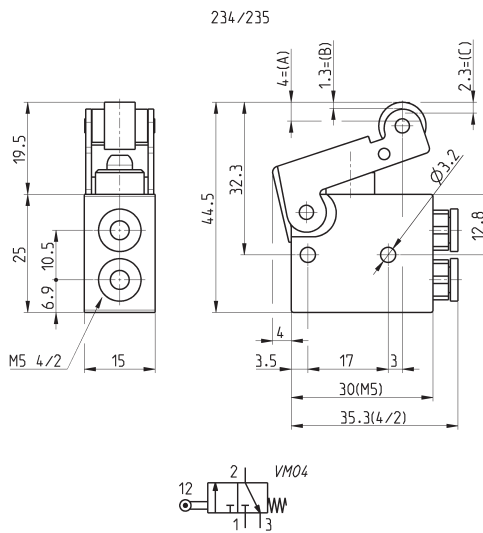


Mod.	Operating pressure (bar)	Flow Qn (NI/min)	Actuating force at 6 bar (N)	SYMBOL
234-985	2 + 10	60	6	VM01
235-985	2 + 10	60	6	VM01
244-985	2 + 10	60	6	VM03
245-985	2 + 10	60	6	VM03

Minivalves with lever/roller

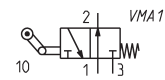
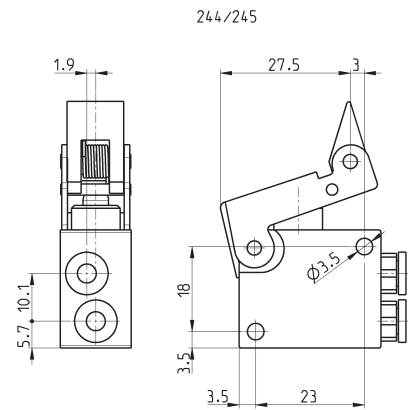
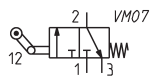
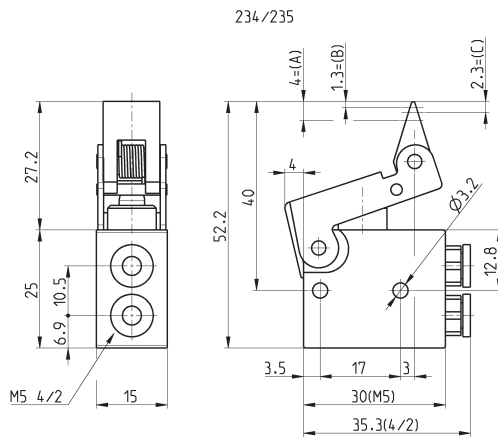
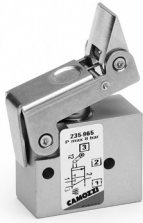


DRAWING LEGEND
 A = total stroke
 B = pre-stroke
 C = effective stroke



Mod.	Operating pressure (bar)	Flow Qn (NI/min)	Actuating force at 6 bar (N)	SYMBOL
234-955	2 + 10	60	6	VM04
235-955	2 + 10	60	6	VM04
244-955	2 + 10	60	6	VM06
245-955	2 + 10	60	6	VM06

Minivalves, unidirectional lever



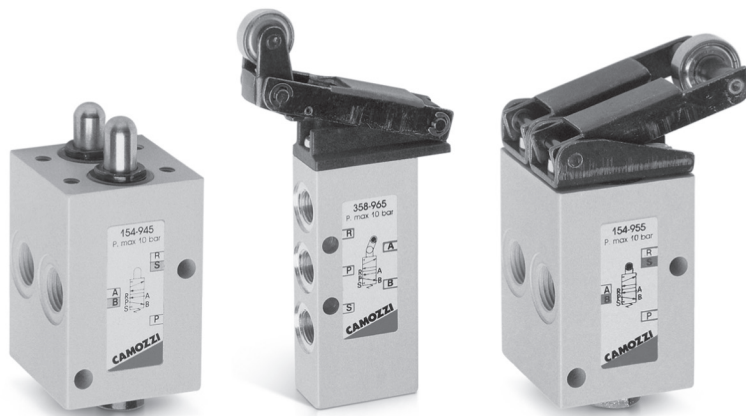
DRAWING LEGEND
 A = total stroke
 B = pre-stroke
 C = effective stroke

Mod.	Operating pressure (bar)	Flow Qn (Nl/min)	Actuating force at 6 bar (N)	SYMBOL
234-965	2 ÷ 10	60	6	VM07
235-965	2 ÷ 10	60	6	VM07
244-965	2 ÷ 10	60	6	VMA1
245-965	2 ÷ 10	60	6	VMA1

Series 1 and 3 mechanically operated valves

Series 1: 3/2-way and 5/2-way, ports G1/8 and G1/4

Series 3: 3/2-way and 5/2-way, ports G1/8



These mechanically operated valves have been designed with three different types of actuation:

- plunger
- lever/roller
- unidirectional lever/roller

In each case, return is triggered by a mechanical spring.

3/2-way monostable valves Series 3 are normally closed in the rest position when pressure is supplied in 1 and are normally open when pressure is supplied on connection 3, the user port 2 remaining unchanged.

5/2-way valves Series 3 can be supplied via the ports 3 and 5 with two different pressures if a cylinder has to be operated using a delivery pressure which is different from the return pressure.

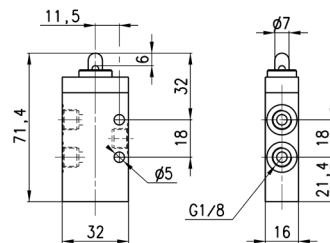
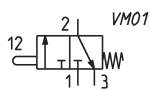
GENERAL DATA

Construction	spool-type (Series 3), poppet-type (Series 1)
Valve group	3/2, 5/2 way/pos.
Materials	aluminium body, brass poppet, stainless steel spool, NBR seals
Ports	G1/8, G1/4
Ambient temperature	0°C + 60°C
Medium temperature	0°C + 50°C
Operating pressure	see models
Fluid	Filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

CODING EXAMPLE

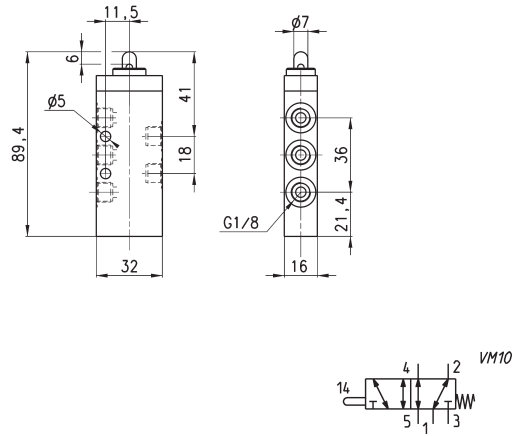
3	3	8	-	94	5
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3	SERIES: 1 3
3	FUNCTION: 3 = 3/2 ways NC 4 = 3/2 ways NO (only Series 1) 5 = 5/2 ways
8	PORTS: 8 = G1/8 4 = G1/4 (only Series 1)
94	ACTUATION: 94 = plunger 95 = lever/roller 96 = unidirectional roller
5	RESETTING: 5 = spring return

Valve Mod. 338-945


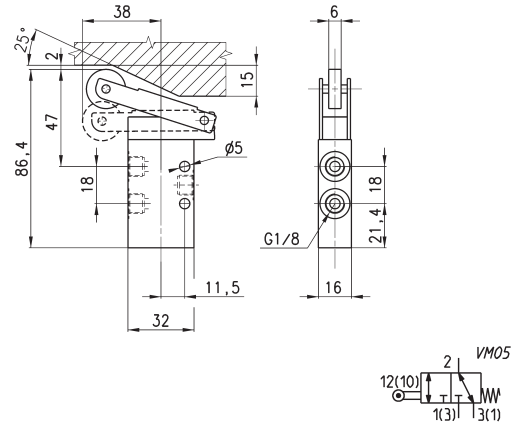
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
338-945	-0.9 ÷ 10	700	32

Valve Mod. 358-945



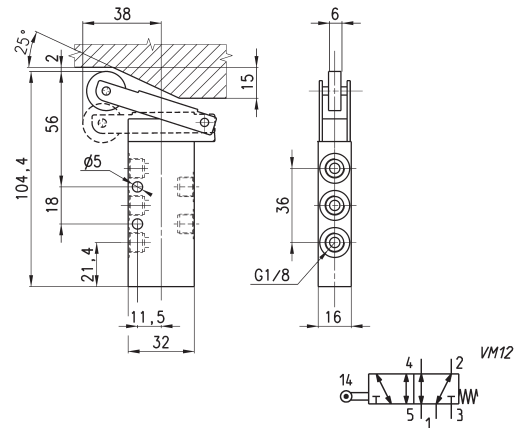
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
358-945	-0.9 ÷ 10	700	35

Valve Mod. 338-955



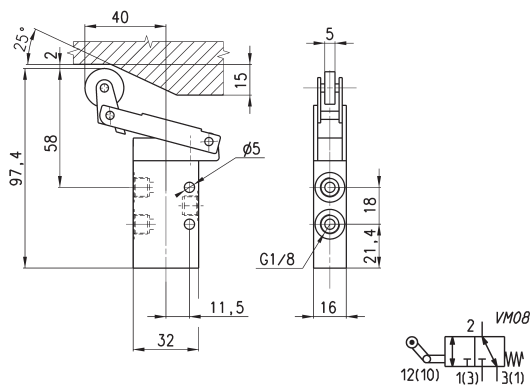
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
338-955	-0.9 ÷ 10	700	15

Valve Mod. 358-955



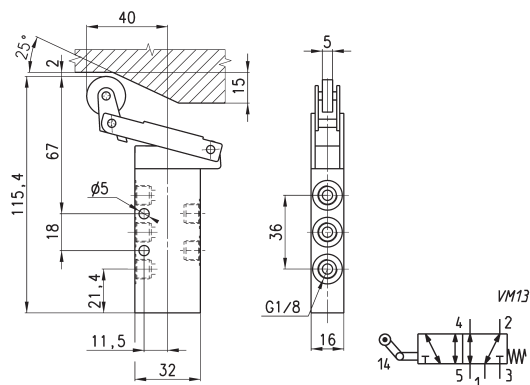
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
358-955	-0.9 ÷ 10	700	17

Valve Mod. 338-965



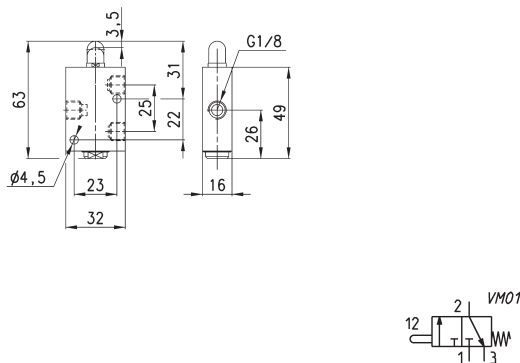
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
338-965	-0.9 + 10	700	15

Valve Mod. 358-965



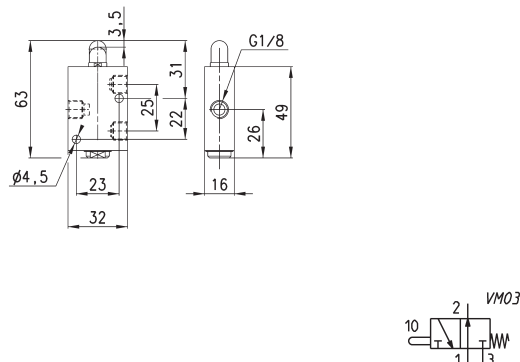
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
358-965	-0.9 + 10	700	16

Valve Mod. 138-945



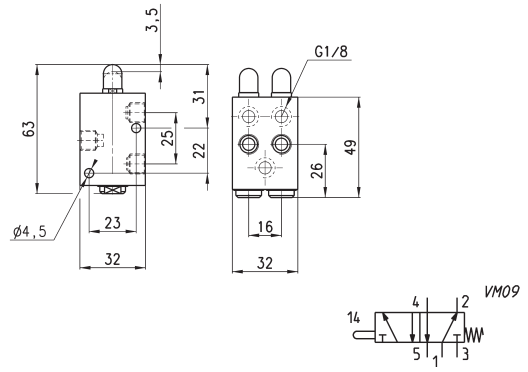
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
138-945	0 + 10	500	70

Valve Mod. 148-945



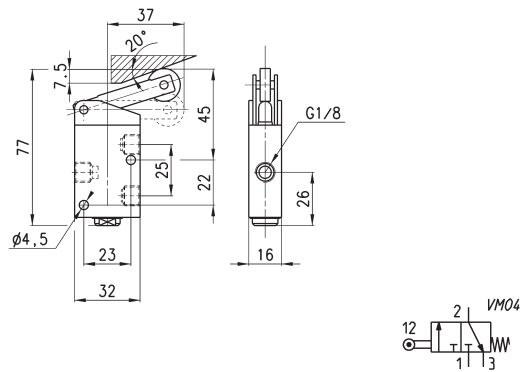
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
148-945	0 + 10	500	70

Valve Mod. 158-945



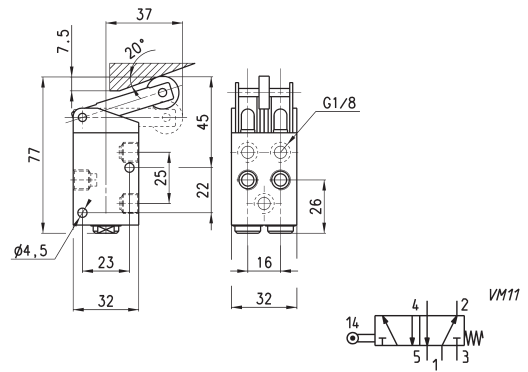
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
158-945	0 + 10	500	120

Valve Mod. 138-955



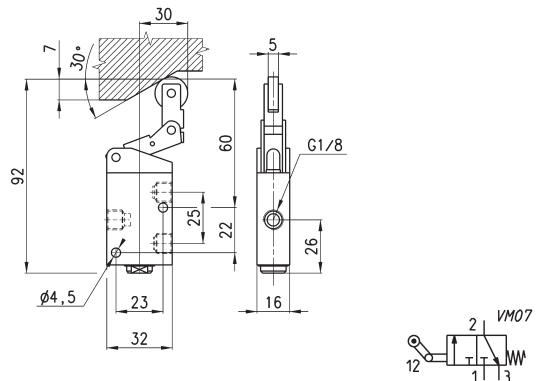
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
138-955	0 + 10	500	36

Valve Mod. 158-955



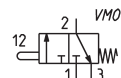
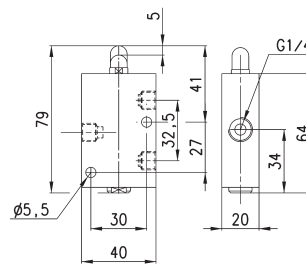
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
158-955	0 + 10	500	92

Valve Mod. 138-965



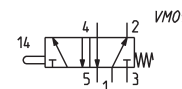
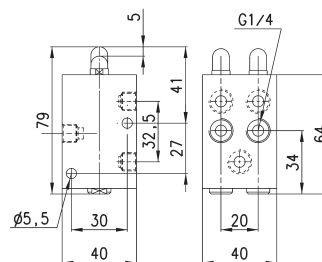
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
138-965	0 + 10	500	41

Valve Mod. 134-945



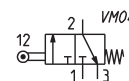
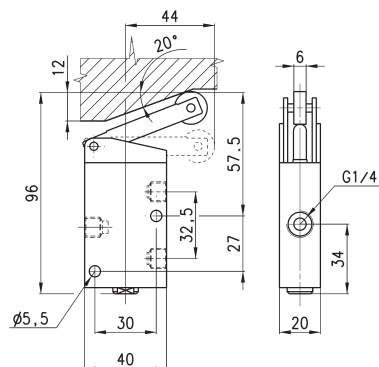
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
134-945	0 + 10	1250	64

Valve Mod. 154-945



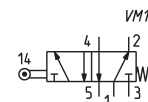
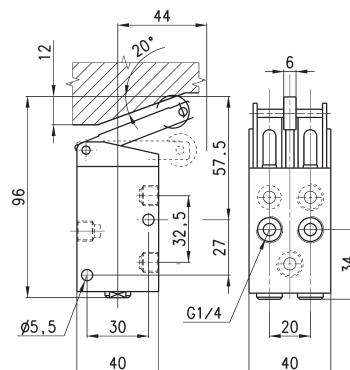
Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
154-945	0 + 10	1250	147

Valve Mod. 134-955



Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
134-955	0 + 10	1250	41

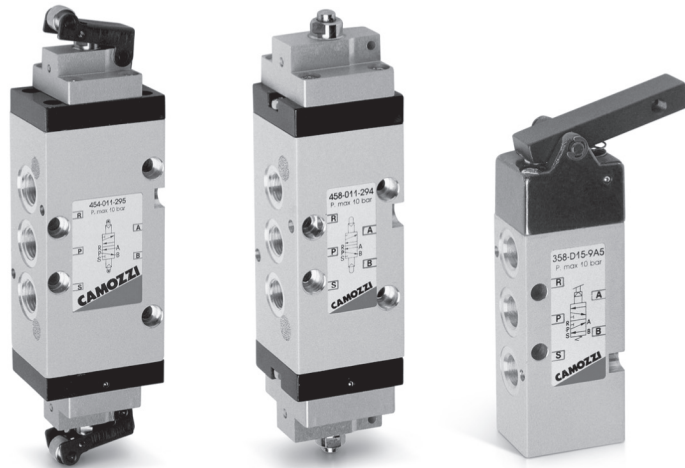
Valve Mod. 154-955



Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
154-955	0 + 10	1250	110

Series 3 and 4 mechanically operated sensor valves

3/2 and 5/2-way
Ports G1/8, G1/4



The particular mechanical device allows these end-stroke valves to operate with very low actuating forces. Series 3 has been designed with a mechanical lever device which works in negative pressure. To increase sensitivity it is possible to add to the lever a steel extension with \varnothing 3 mm.

GENERAL DATA

Construction	spool-type (servocontrolled)
Valve group	3/2, 5/2 way/pos.
Materials	aluminium body, stainless steel spool, NBR seals
Ports	G1/8, G1/4
Ambient temperature	0°C + 60°C
Medium temperature	0°C + 50°C
Operating pressure	see models
Fluid	Filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

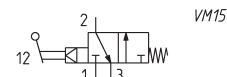
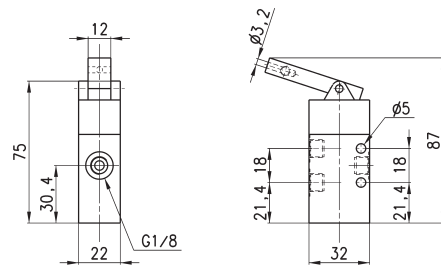
CODING EXAMPLE

3	3	8	-	D15	-	9A5
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3	SERIES: 3 4					
3	FUNCTION: 3 = 3/2-way NC 4 = 3/2-way NO 5 = 5/2-way					
8	PORTS: 8 = G1/8 4 = G1/4					
D15	ACTUATION: D15 = pressure drop/spring 015 = pressure/spring 011 = pressure/pressure					
9A5	DEVICES: 9A5 = lever sensor, spring return 194 = plunger sensor, spring return 294 = plunger sensor, bistable 195 = lever/roller, spring return 295 = lever/roller, bistable					

Valve Mod. 338-D15-9A5

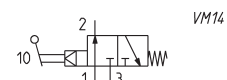
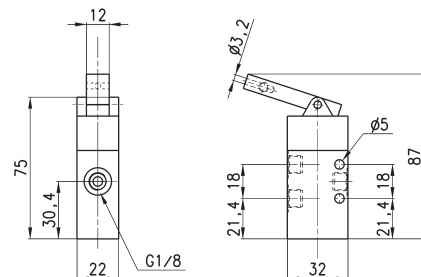
The function of the valve is indicated by the symbol when operating between 4 and 10 bar.



Mod.	Operating pressure (bar)	Flow rate (Nl/min)	Actuating force at 6 bar (N)
338-D15-9A5	4 ÷ 10	700	2

Valve Mod. 348-D15-9A5

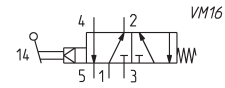
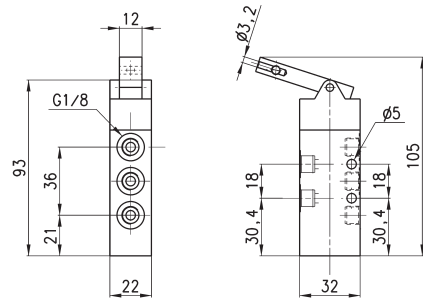
The function of the valve is indicated by the symbol when operating between 4 and 10 bar.



Mod.	Operating pressure (bar)	Flow rate (Nl/min)	Actuating force at 6 bar (N)
348-D15-9A5	4 ÷ 10	700	2

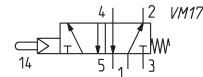
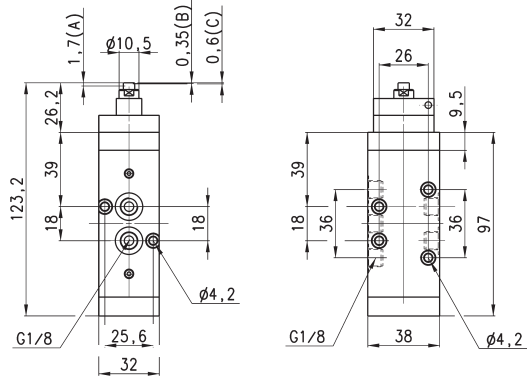
Valve Mod. 358-D15-9A5

The function of the valve is indicated by the symbol when operating between 4 and 10 bar.



Mod.	Operating pressure (bar)	Flow rate (Nl/min)	Actuating force at 6 bar (N)
358-D15-9A5	4 ÷ 10	700	2

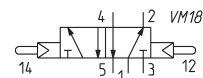
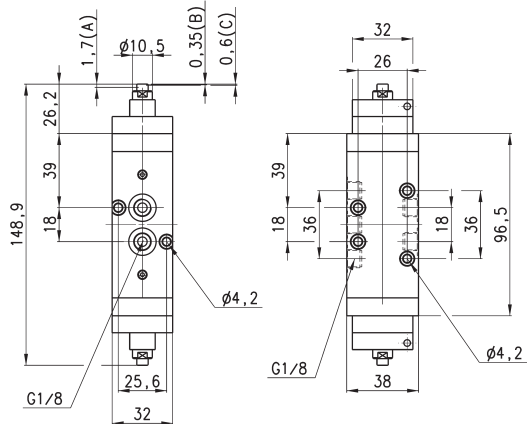
Valve Mod. 458-015-194



(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Mod.	Operating pressure (bar)	Flow rate (Nl/min)	Actuating force at 6 bar (N)
458-015-194	2.5 ÷ 8	650	6

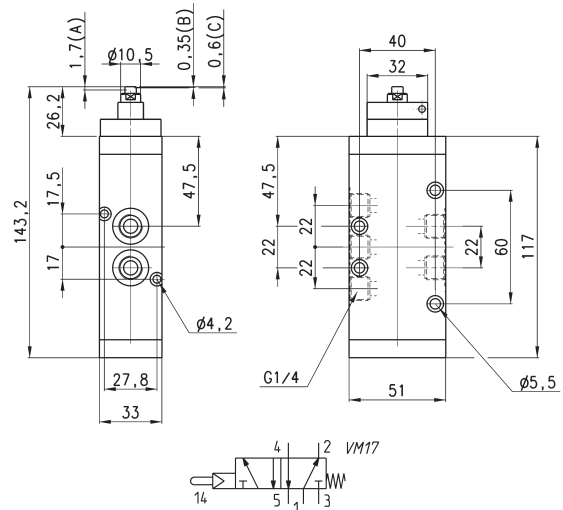
Valve Mod. 458-011-294



(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Mod.	Operating pressure (bar)	Flow rate (Nl/min)	Actuating force at 6 bar (N)
458-011-294	2 ÷ 8	650	6

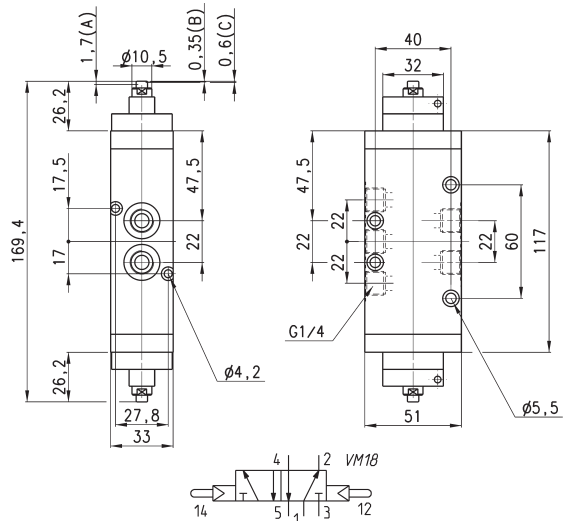
Valve Mod. 454-015-194



(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
454-015-194	2.5 ÷ 8	1250	6

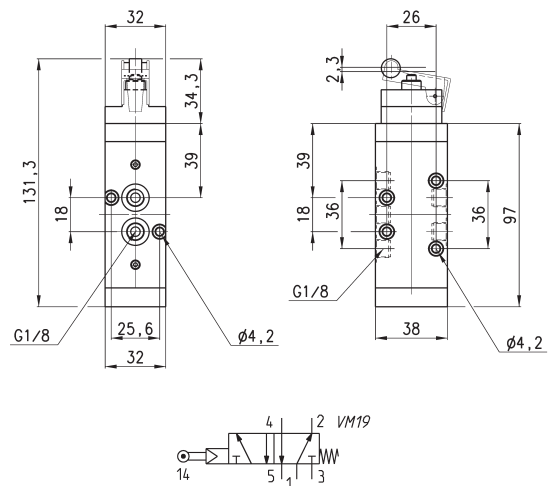
Valve Mod. 454-011-294



(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
454-011-294	2 ÷ 8	1250	6

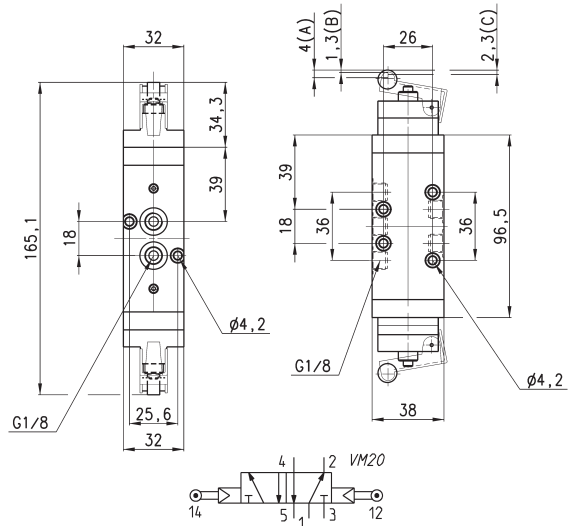
Valve Mod. 458-015-195



(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
458-015-195	2.5 ÷ 8	650	4

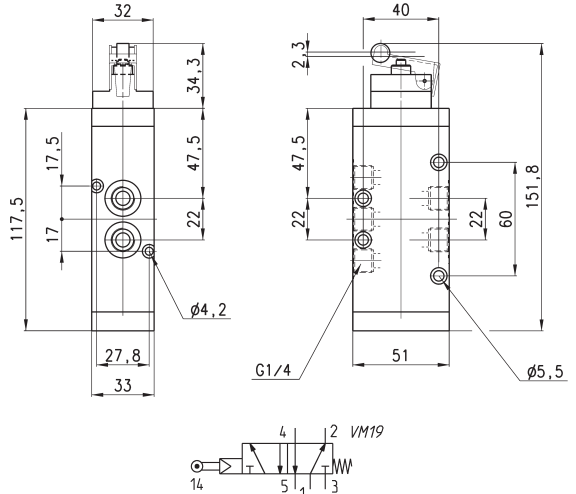
Valve Mod. 458-011-295



Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
458-011-295	2 ÷ 8	650	4

(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

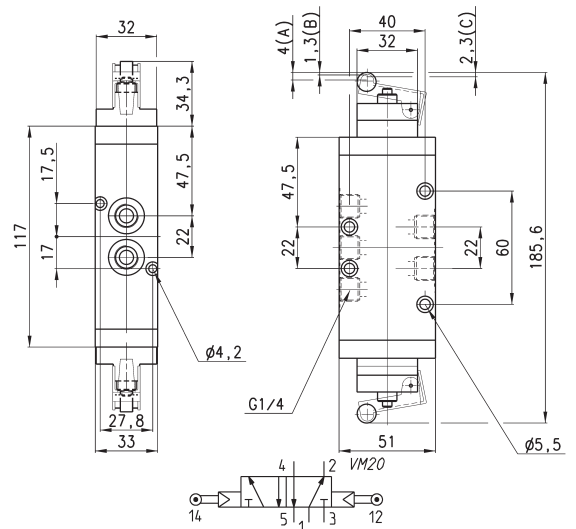
Valve Mod. 454-015-195



Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
454-015-195	2.5 ÷ 8	1250	4

(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Valve Mod. 454-011-295



Mod.	Operating pressure (bar)	Flow rate (NI/min)	Actuating force at 6 bar (N)
454-011-295	2 ÷ 8	1250	4

(A) = total stroke
(B) = pre-stroke
(C) = useful stroke

Foot operated pedal

Electrical and pneumatic - Series 3

Pneumatic - Series 2

Series 3: G1/4, 5/2-way - NC / NO contacts

Series 2: M5; 4/2 tube; 3/2-way NC

2

CONTROL



The pedals can be supplied in either a pneumatic or electrical foot operated version. The pneumatic type is available with a 5/2 valve and G1/4 front ports, which allow the fittings and silencers to be assembled conveniently on the front face. A 3/2 operation can be obtained by closing an outlet port. The electrical type is available with a single-pole changeover contact microswitch and a front wire outlet (PG9).

The pedal can be operated as bistable or monostable, by switching the selector placed under the small red protection flap, as shown in the drawing.

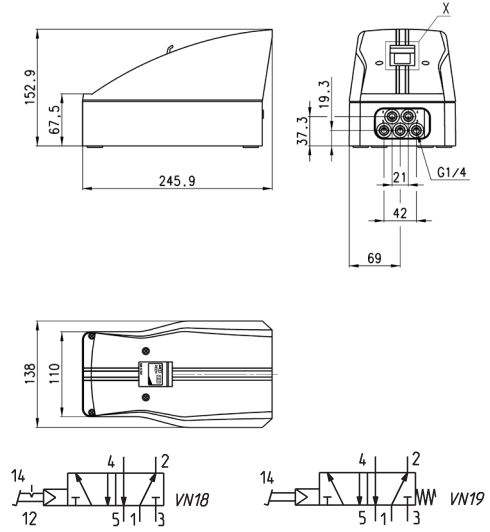
GENERAL DATA

Construction	spool-type
Valve group	5/2, 3/2 NC way/pos.
Materials	- Series 3: aluminium body - stainless steel spool - NBR seals - plastic casing - Series 2: aluminium body - OT58 poppet - NBR seals.
Ports	- Series 3: G1/4 gas - Series 2: M5; tube 4/2.
Ambient temperature	0°C + 50 °C (with dry air at - 10°C)
Medium temperature	0°C + 50 °C
Construction	single-pole changeover contact microswitch
Cable entry	by means of wire PG9
Protection class	IP20
Fluid	Filtered air, without lubrication.

If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

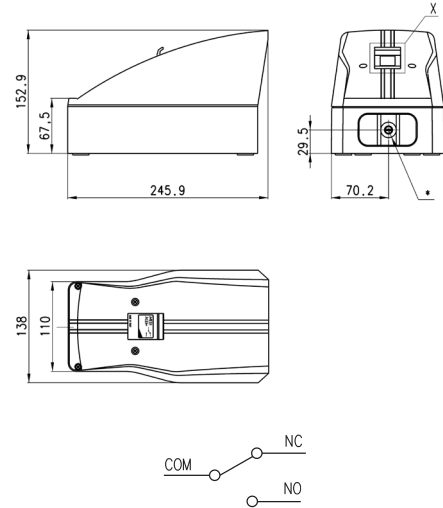
Pneumatic foot operated pedal Series 3

Actuating force at 6 bar = 17N
 Operating pressure = 2,5 ÷ 8 bar
 Flow rate = 650NI/min.



Mod.	Symbol
354N-925	VN18 - VN19

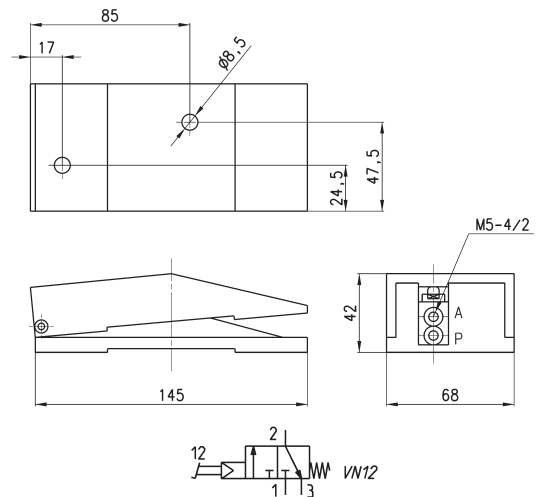
Electrical foot operated pedal Series 3



Mod.
3E2-925

Pneumatic foot operated pedal Series 2

Operating pressure = 2 ÷ 8 bar
 Flow rate = 60 NI/min.



Mod.
234-925
235-925

Series 2 manually operated console minivalves

3/2 and 5/3-way CC, CO, CP
Ports M5, Cartridge Ø 4

2

CONTROL



This series of miniature valves has been especially designed to satisfy all the application requirements of the controls industry with particular attention paid to the operating characteristics required from these components:

- short operational stroke
- small dimensions

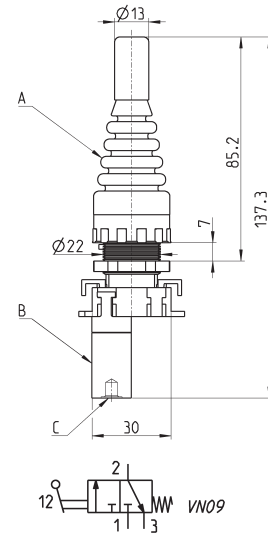
GENERAL DATA

Valve group	3/2-way
Construction	poppet-type (closed centres)
Materials	aluminium body, brass plunger, NBR seals
Mounting	panel
Ports	M5 or cartridge dia. 4
Ambient temperature	0°C + 60°C
Medium temperature	0°C + 50°C
Operating pressure	see models

CODING EXAMPLE					
2	3	4	-	97	5
2	SERIES				
3	FUNCTION: 3 = 3/2-way NC 4 = 3/2-way NO 8 = 5/3-way CO (function realized with 2x 3/2-way NC valves)				
4	PORTS: 4 = cartridge \varnothing 4 5 = M5				
97	MODE OF OPERATION: 87 = 3 position selector 89 = push button 97 = palm switch 90 = joystick 99 = 2 position selector 92 = pedal 904 = key				
5	RESETTING: 5 = spring return 0 = stable 2 = latching-twist to release 54= joystick				

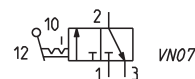
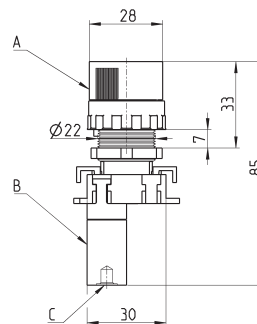


Minivalves Mod. 234-905, 235-905



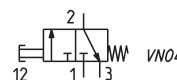
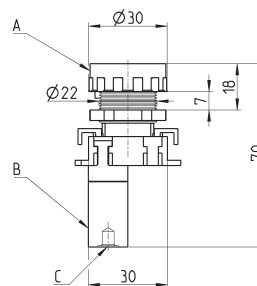
Mod.	Operating pressure (bar)	Flow (NI/min)	A	B	C (Supply/port)
234-905	2 + 8	60	200-905	234-000	$\varnothing 4/2$
235-905	2 + 8	60	200-905	235-000	M5

Minivalves Mod. 234-990, 235-990



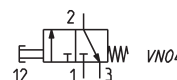
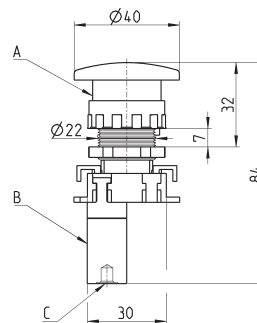
Mod.	Operating pressure (bar)	Flow (Nl/min)	A	B	C (Supply/port)
234-990	2 ÷ 8	60	200-990	234-000	Ø4/2
235-990	2 ÷ 8	60	200-990	235-000	M5

Minivalves Mod. 234-895, 235-895



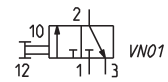
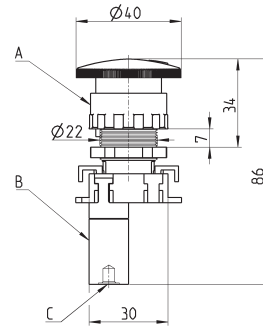
Mod.	Operating pressure (bar)	Flow (Nl/min)	Actuating force at 6 bar (N)	A	B	C (Supply/port)
234-895	2 ÷ 8	60	7	200-895	234-000	Ø4/2
235-895	2 ÷ 8	60	7	200-895	235-000	M5

Minivalves Mod. 234-975, 235-975



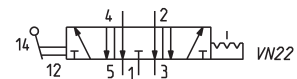
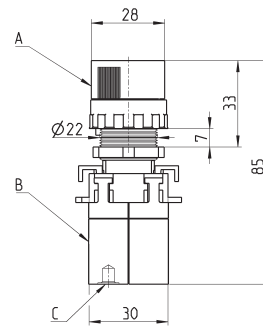
Mod.	Operating pressure (bar)	Flow (Nl/min)	Actuating force at 6 bar (N)	A	B	C (Supply/port)
234-975	2 ÷ 8	60	7	200-975	234-000	Ø4/2
235-975	2 ÷ 8	60	7	200-975	235-000	M5

Minivalves Mod. 234-972, 235-972



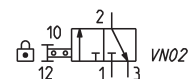
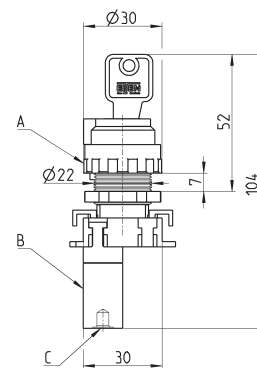
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force at 6 bar (N)	A	B	C (Supply/port)
234-972	2 ÷ 8	60	7	200-972	234-000	Ø4/2
235-972	2 ÷ 8	60	7	200-972	235-000	M5

Minivalves Mod. 284-870, 285-870



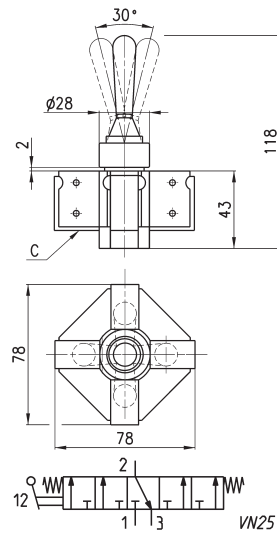
Mod.	Operating pressure (bar)	Flow (NI/min)	A	B	C (Supply/port)
284-870	2 ÷ 8	60	200-870	234-000	Ø4/2
285-870	2 ÷ 8	60	200-870	235-000	M5

Minivalves Mod. 234-904, 235-904



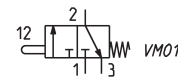
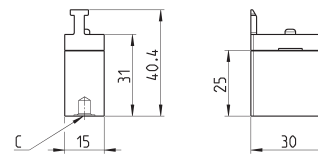
Mod.	Operating pressure (bar)	Flow (NI/min)	A	B	C (Supply/port)
234-904	2 ÷ 8	60	200-904	234-000	Ø4/2
235-904	2 ÷ 8	60	200-904	235-000	M5

Joystick valves Mod. 234-9054, 235-9054



Mod.	Minimum pressure (bar)
234-9054	2
235-9054	2

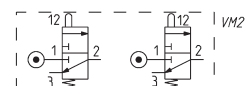
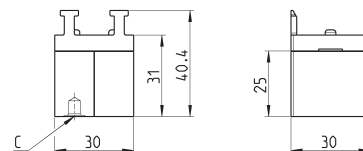
Minivalves Mod. 234-000, 235-000



Mod.	Operating pressure (bar)	Flow (NI/min)
234-000	2 + 8	60
235-000	2 + 8	60

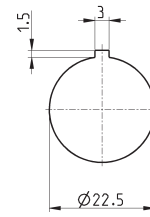
Minivalves Mod. 284-000, 285-000

The codes shown in the table are composed by two 3/2-way valves NC which can be operated with the control device Mod. 200-870 only.



Mod.	Operating pressure (bar)	Flow (NI/min)
284-000	2 + 8	60
285-000	2 + 8	60

Drilling for mounting

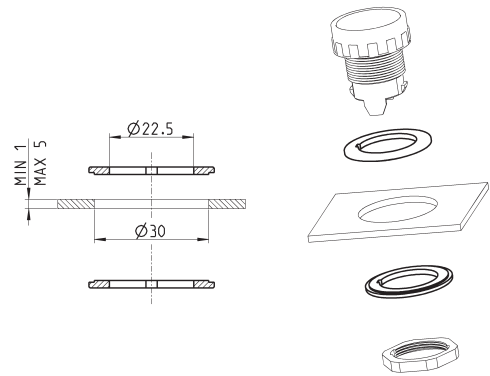


2

CONTROL

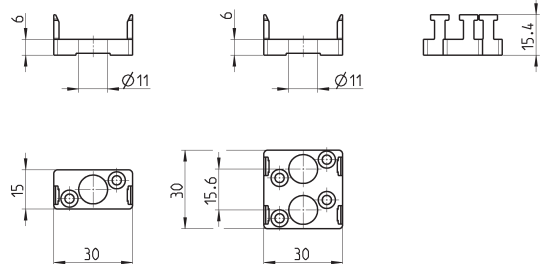
Adaptor

Panel hole adaptor Ø30
Supplied with:
2x reduction rings



Mod.
200-2230

End cover



Mod.
210-000
220-000

Series 1, 3, 4 and VMS manually operated valves

Series 1, 3 and 4: 3/2-, 5/2- and 5/3-way CC, CO; ports G1/8, G1/4
 Series VMS: 3/2-way; ports M5, G1/8, G1/4, G3/8, G1/2 and G3/4



Series 3 manual valves (G1/8) and Series 4 (G1/4), 3/2-, 5/2- and 5/3-way, are available with several devices designed to satisfy different needs. Series 1 is provided with two devices: pushbutton (3/2-way) and lever (3/2 and 5/2-way). Series VMS valves are 3/2-way slide valves which are available with ports M5, G1/8, G1/4, G3/8, G1/2 and G3/4.

The 3/2-way valves Series 3 and 4 are normally closed when 1 is the inlet and they can also be normally open when 3 is the inlet.

Series 3 and 4 5/2-way valves can be supplied via ports 3 and 5 with two different pressures, if a cylinder has to be operated using a delivery pressure which is different from the return pressure.

GENERAL DATA

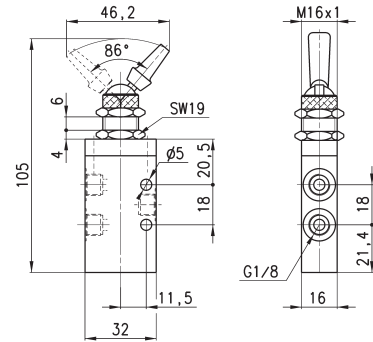
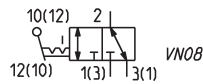
Construction	Series 3 and 4: spool-type Series 1: poppet-type Series VMS: slide
Function	Series 1, 3 and 4: 3/2 - 5/2 - 5/3 ways CC CO Series VMS: 3/2-way
Materials	aluminium body, stainless steel spool, brass poppet, NBR seals
Ports	Series 1, 3 and 4: G1/8, G1/4 Series VMS: M5, G1/8, G1/4, G3/8, G1/2, G3/4
Ambient temperature	0°C + 60°C
Medium temperature	0°C + 50°C
Operating pressure	see the single models
Fluid	Filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

SERIES 1, 3, 4 CODING EXAMPLE

3	3	8	-	900
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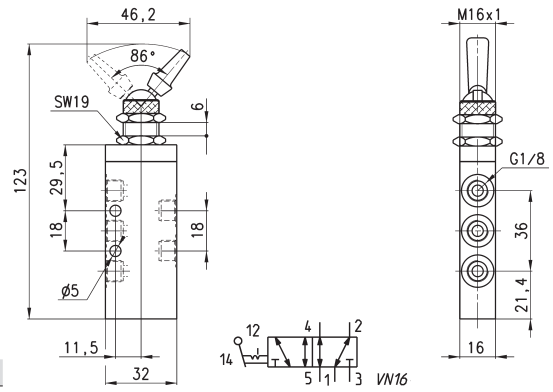
3	<p>SERIES:</p> <p>1 3 4</p>
5	<p>FUNCTION:</p> <p>3 = 3/2-way NC 5 = 5/2-way 6 = 5/3-way CC 7 = 5/3-way CO</p>
8	<p>PORTS:</p> <p>8 = G1/8 4 = G1/4</p>
900	<p>RESETTING:</p> <p>895 = pushbutton, monostable, black 896 = pushbutton, monostable, green 897 = pushbutton, monostable, red 900 = lever, bistable 905 = lever, monostable 910 = knob, bistable 915 = knob, monostable 935 = digital monostable 975 = palm-switch, monostable, black 976 = palm-switch, monostable, green 977 = palm-switch, monostable, red 990 = switch, bistable</p>

Valve Mod. 338-990



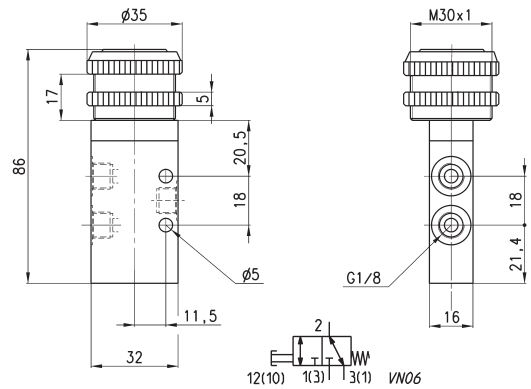
Mod.	Operating pressure (bar)	Flow (Nl/min)	Actuating force (N)
338-990	-0.9 + 10	700	18

Valve Mod. 358-990



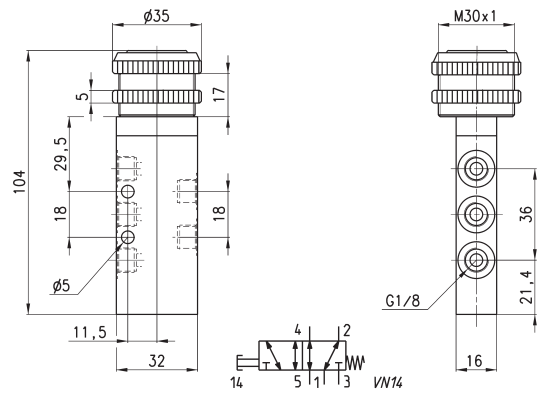
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
358-990	-0.9 + 10	700	18

Valves Mod. 338-89...



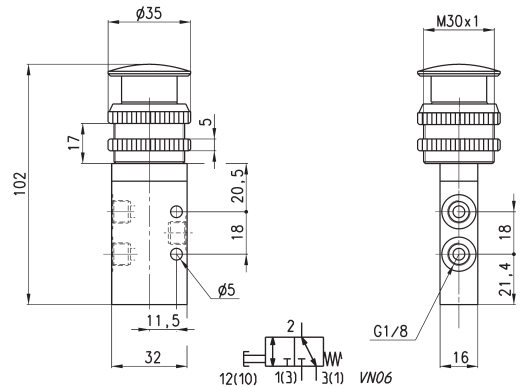
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Colors
338-895	-0.9 + 10	700	35	Black
338-896	-0.9 + 10	700	35	Green
338-897	-0.9 + 10	700	35	Red

Valves Mod. 358-89...



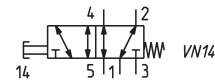
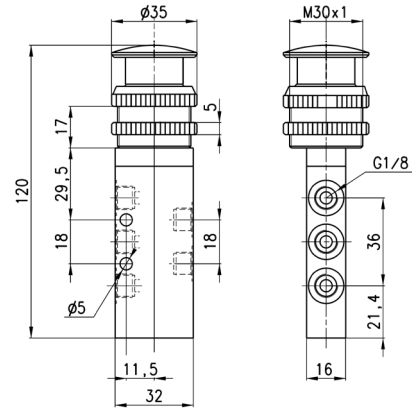
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Colors
358-895	-0.9 + 10	700	35	Black
358-896	-0.9 + 10	700	35	Green
358-897	-0.9 + 10	700	35	Red

Valves Mod. 338-97...



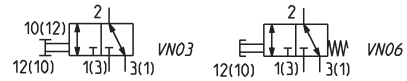
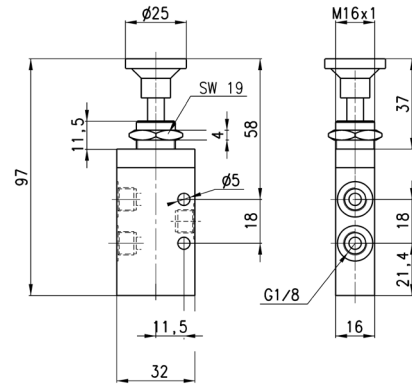
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Colors
338-975	-0.9 + 10	700	35	Black
338-976	-0.9 + 10	700	35	Green
338-977	-0.9 + 10	700	35	Red

Valves Mod. 358-97...



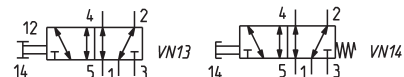
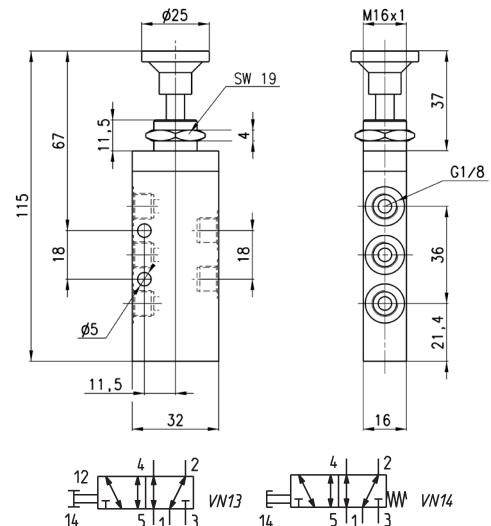
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Colors
358-975	-0.9 + 10	700	35	Black
358-976	-0.9 + 10	700	35	Green
358-977	-0.9 + 10	700	35	Red

Valves Mod. 338-91...



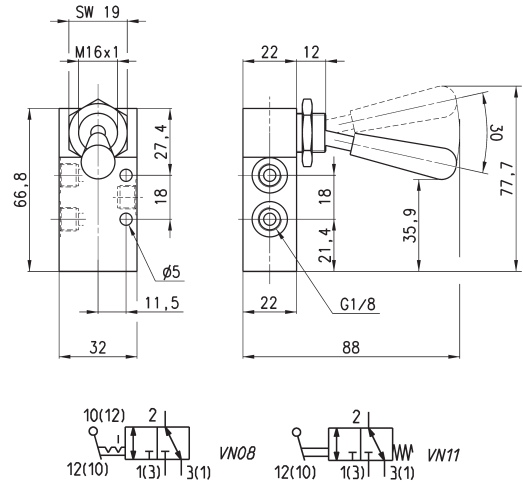
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
338-910	-0.9 + 10	700	6	VN03
338-915	-0.9 + 10	700	35	VN06

Valves Mod. 358-91...



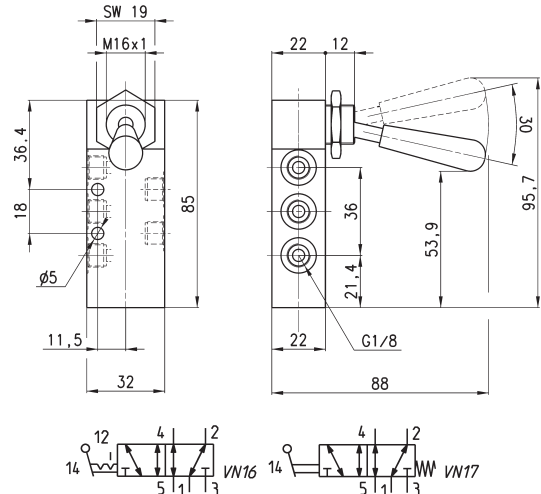
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
358-910	-0.9 + 10	700	6	VN13
358-915	-0.9 + 10	700	35	VN14

Valves Mod. 338-90...



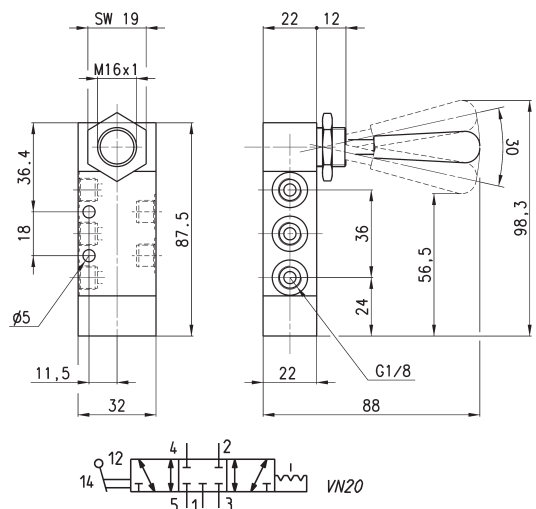
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
338-900	-0.9 ÷ 10	700	5	VN08
338-905	-0.9 ÷ 10	700	22	VN11

Valves Mod. 358-90...



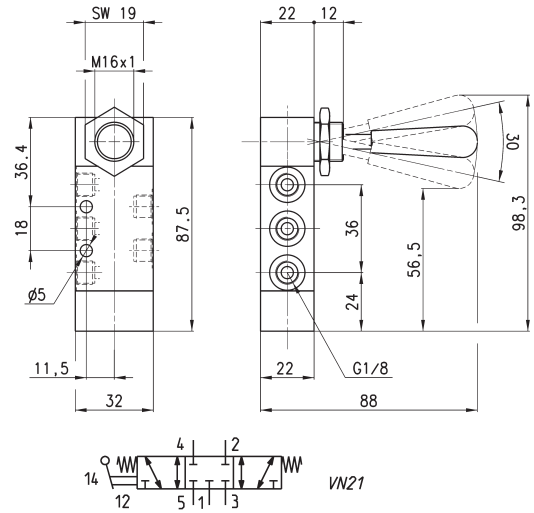
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
358-900	-0.9 ÷ 10	700	5	VN16
358-905	-0.9 ÷ 10	700	22	VN17

Valve Mod. 368-900



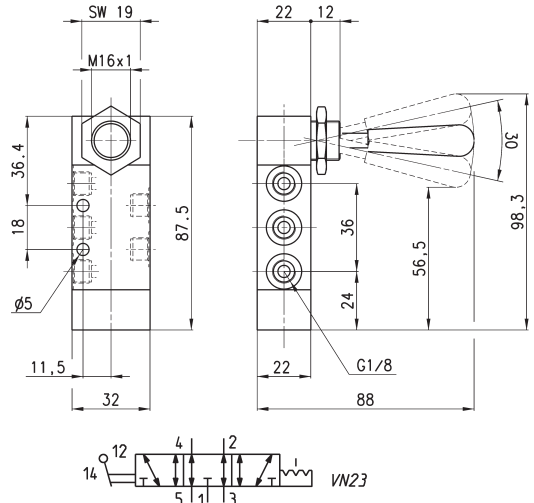
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
368-900	-0.9 ÷ 10	500	5

Valve Mod. 368-905



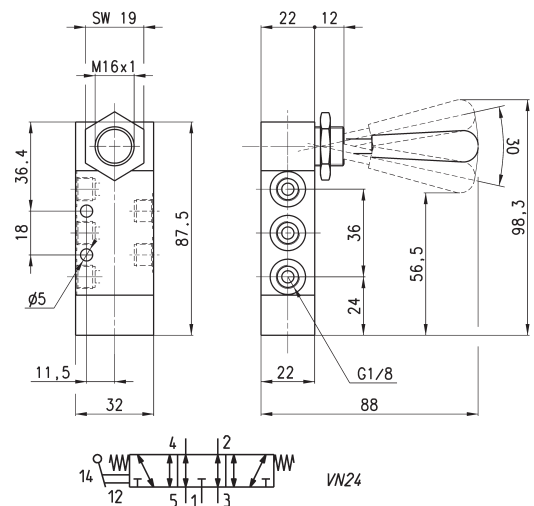
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
368-905	-0.9 ÷ 10	500	20

Valve Mod. 378-900



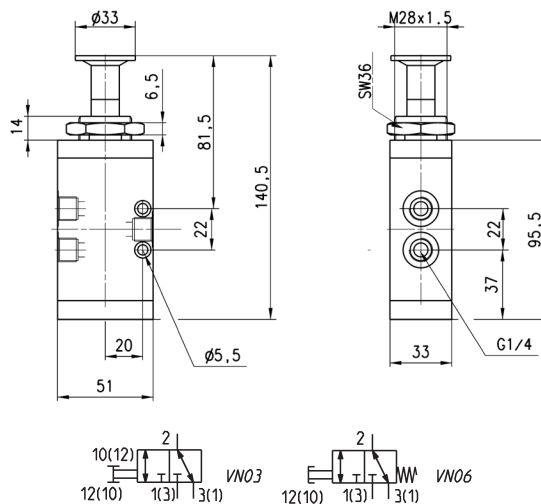
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
378-900	-0.9 ÷ 10	500	5

Valve Mod. 378-905



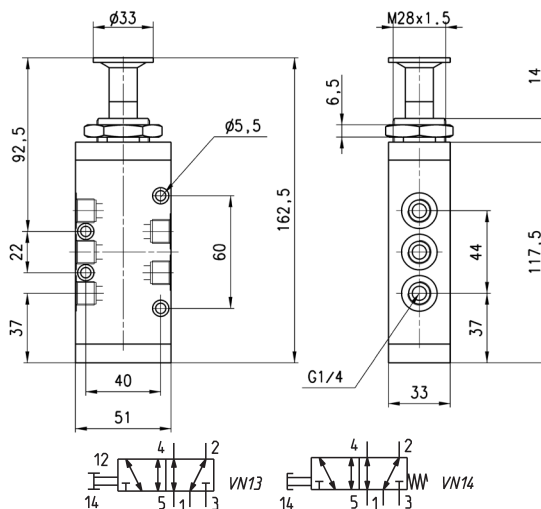
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
378-905	-0.9 ÷ 10	500	20

Valves Mod. 434-91...



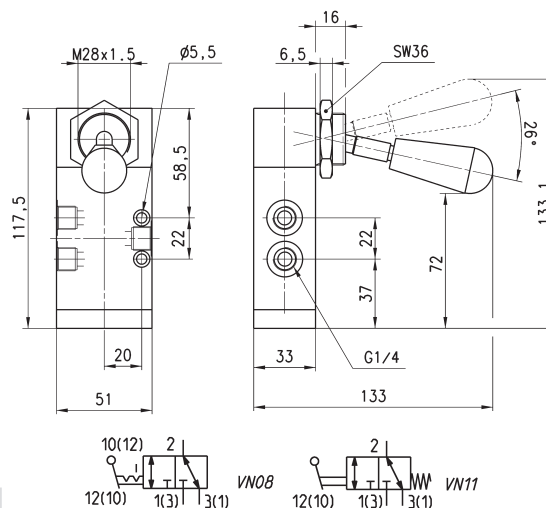
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
434-910	-0.9 ÷ 10	1250	10	VN03
434-915	-0.9 ÷ 10	1250	37	VN06

Valves Mod. 454-91...



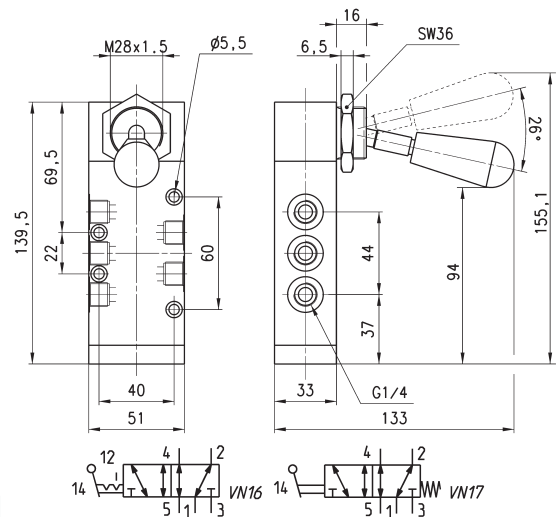
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
454-910	-0.9 ÷ 10	1250	10	VN13
454-915	-0.9 ÷ 10	1250	37	VN14

Valves Mod. 434-90...



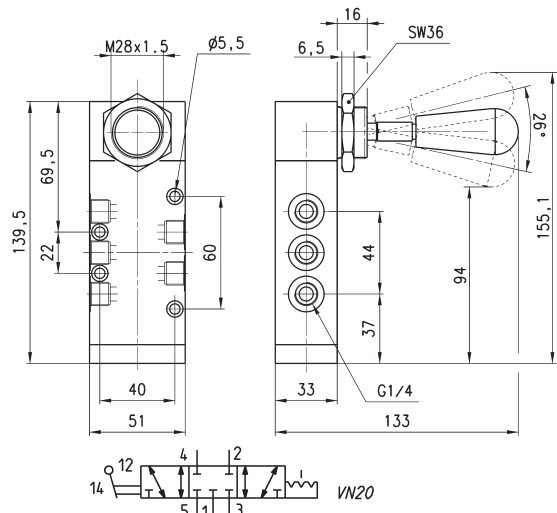
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
434-900	-0.9 ÷ 10	1250	5	VN08
434-905	-0.9 ÷ 10	1250	37	VN11

Valves Mod. 454-90...



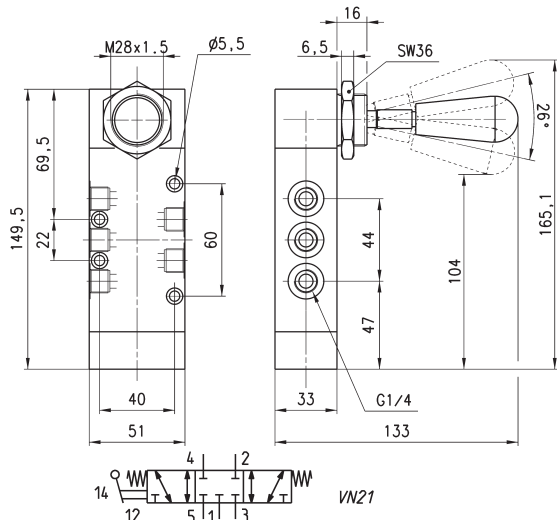
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)	Symbol
454-900	-0.9 ÷ 10	1250	5	VN16
454-905	-0.9 ÷ 10	1250	37	VN17

Valve Mod. 464-900



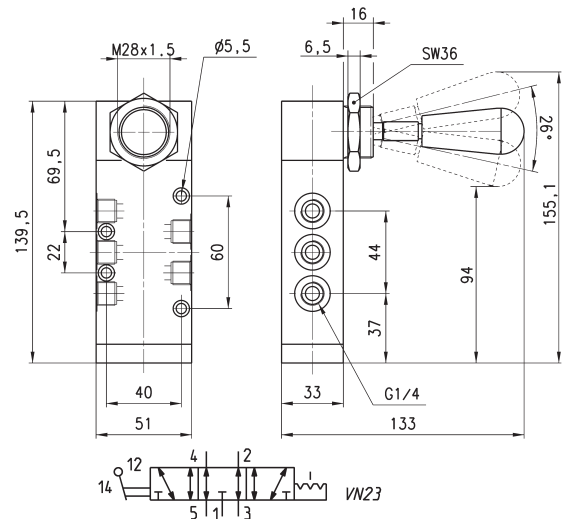
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
464-900	-0.9 ÷ 10	1250	5

Valve Mod. 464-905



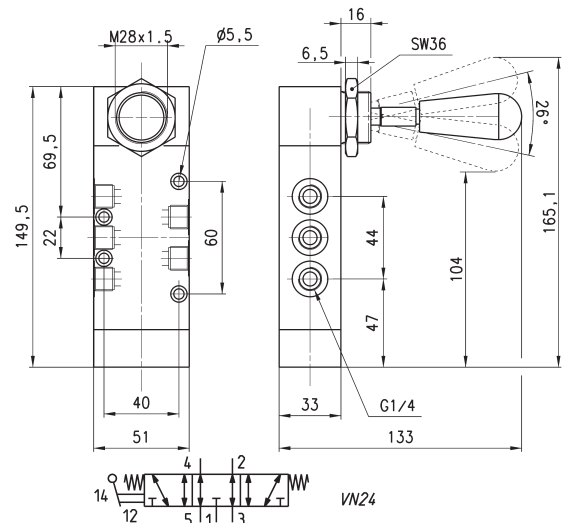
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
464-905	-0.9 ÷ 10	1250	10

Valve Mod. 474-900



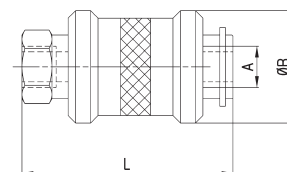
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
474-900	-0.9 ÷ 10	1250	5

Valve Mod. 474-905

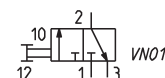


Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
474-905	-0.9 ÷ 10	1250	10

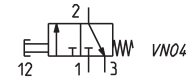
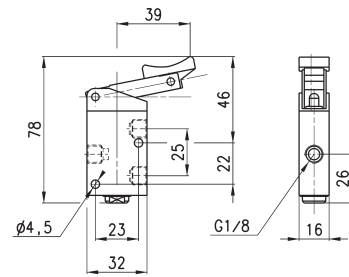
Series VMS slide valves



Mod.	A	ØB	L	Flow at 6 bar ΔP 1 (NI/min) 1-2	Flow at 6 bar ΔP 1 (NI/min) 2-3	Operating press. (bar)	Operating temp. (°C)
VMS-105-M5	M5	15	33,5	140	145	0 ÷ 15	-10 ÷ 80
VMS-118-1/8	G1/8	25	48	600	740	0 ÷ 15	-10 ÷ 80
VMS-114-1/4	G1/4	30	58	1200	1780	0 ÷ 15	-10 ÷ 80
VMS-138-3/8	G3/8	35	70	2100	1830	0 ÷ 15	-10 ÷ 80
VMS-112-1/2	G1/2	40	80	3350	4030	0 ÷ 15	-10 ÷ 80
VMS-134-3/4	G3/4	49,5	83	5350	5000	0 ÷ 15	-10 ÷ 80

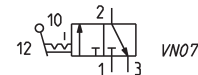
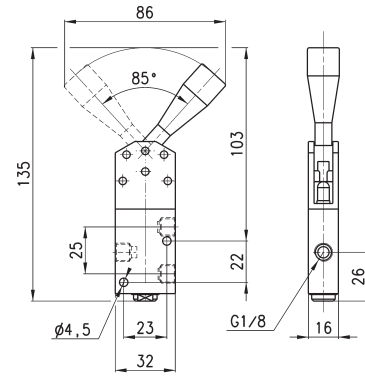


Valve Mod. 138-935



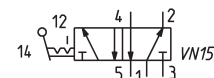
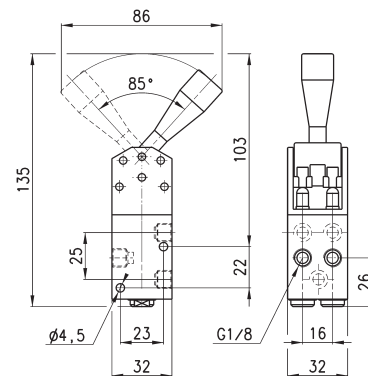
Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
138-935	0 ÷ 10	500	38

Valve Mod. 138-900



Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
138-900	0 ÷ 10	500	25

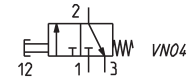
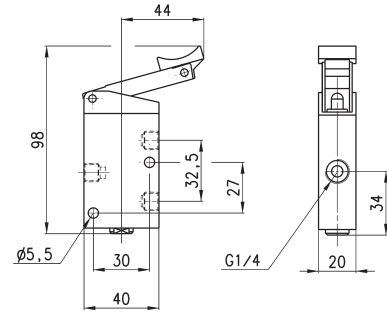
Valve Mod. 158-900



Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
158-900	0 ÷ 10	500	45



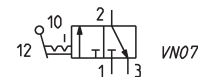
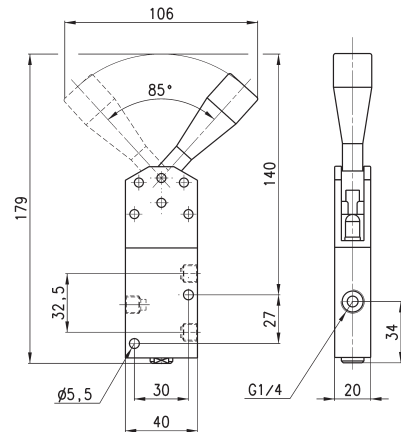
Valve Mod. 134-935



Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
134-935	0 ÷ 10	1250	40



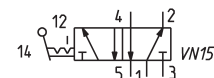
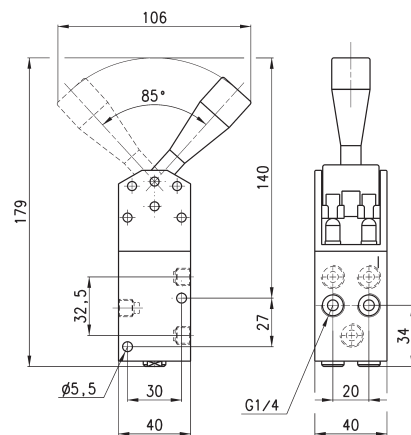
Valve Mod. 134-900



Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
134-900	0 ÷ 10	1250	30



Valve Mod. 154-900



Mod.	Operating pressure (bar)	Flow (NI/min)	Actuating force (N)
154-900	0 ÷ 10	1250	55

Series 2 mini-handle valves

Handle with incorporated micro valve 3/2 NC and NO
Handle with incorporated micro switch

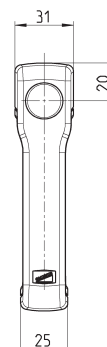
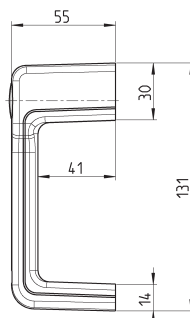
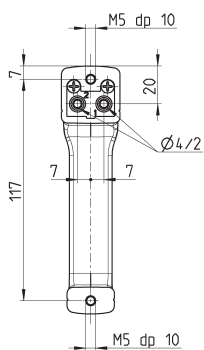


Manual handle with integrated pneumatic micro valve 3/2 or with an electrical micro switch with single pole changeover contacts.
Rugged construction particularly suited to be incorporated in to other equipment.

GENERAL DATA

Construction	poppet-type (closed centres)
Valve group	way/pos. 3/2 way NC and NO
Nominal diameter	2,5 mm
Fixing	N°2 holes M5
Ports	push in cartdrige Ø4
Installation	in any position
Operating temperature	0 ÷ +70°C (-20°C with dry air)
Operating pressure	2 ÷ 8 bar
Nominal flow rate	Qn 60 Nl/min. (6 bar Δ p1)
Fluid	Filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.
Actuating force	at 6 bar 13N
Construction	switch device
Electrical connections	3 wires Ø external 2,2 mm internal section 0,5 length 30 cm NC = black wire NO = blue wire
Fixing	N° 2 holes M5
Mounting	in any position
Operating temperature	0 ÷ +70°C
Protection class	IP40
Activation stroke	2 mm
Actuating force	5 N

Handle 3/2 NC and NO

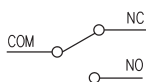
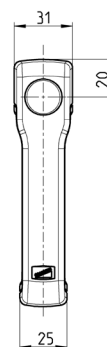
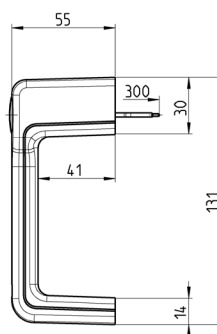
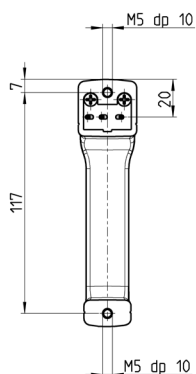


2

CONTROL

Mod.	Symbol
234-885	VN04
244-885	VN05

Handle



Electrical characteristics						
Mod.	Voltage	Non-inductive load Resist. NC / NO	Non-inductive load Lamp NC / NO	Inductive load NC / NO	Inductive load Motor NC/NO	
234-88E	125VAC	5A	1,5 A / 0,7 A	3 A	2,5 A / 1,3 A	
	250 VAC	3A	1 A / 0,5 A	2 A	1,5 A / 0,8 A	
	8 VDC	5A	2 A	5 A / 4 A	3 A	
	14 VDC	5A	2 A	4 A	3 A	
	30 VDC	4A	2 A	3 A	3 A	
	125 VDC	0,4A	0,05 A	0,4 A	0,05 A	
	250 VDC	0,2A	0,03 A	0,2 A	0,03 A	
234-88E	The above-mentioned values refer to steady-state-current	The inductive load refers to power factor = 0,4 in AC. and a time constant of 7 msec max. in DC.	Lamp load has an inrush current of 10 times the steady-state current.	Motor load has an inrush current of 6 times the steady-state current.	If the switch is used in a DC circuit and is subjected to a surge connect a surge suppressor across the switch.	

Series 2L basic logic valves

Cartridge Ø 4 mm.
or - and - yes - not - memory



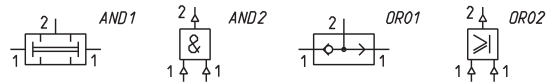
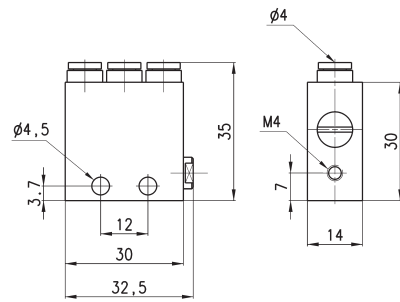
Series 2L basic logic functions are available in 5 different models and can be mounted separately by means of 2 passing holes in the body. Bracket Mod. 2LQ-8A allows to have the inlets and outlets on the front side, facilitating the mounting of the connection tubes.

All models are constructed with the pressure window incorporated, which allows an easy detection of any problems. Moreover the fittings are incorporated into the valve body and are super-rapid Ø4. The "NOT" element has an actuating pressure of 0,3 bar.

GENERAL DATA

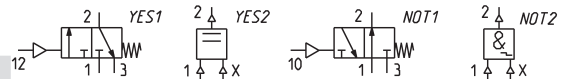
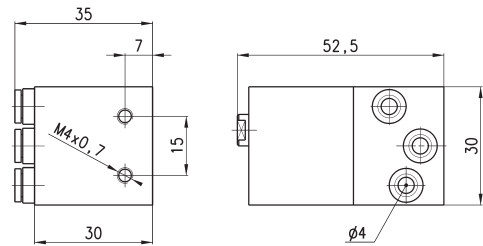
Construction	poppet (spool memory)
Materials	aluminium body; NBR seals; OT58 brass
Valve group	automatic valves (logic units)
Ports	cartridge Ø 4
Operating temperature	0°C + 60°C (-20°C with dry air)
Operating pressure	2 bar ÷ 10 bar
Nominal flowrate	100 NI/min. (6 bar ΔP = 1)
Fluid	filtered air, without lubricant. If lubricated air is used, it is recommended to use oil ISO VG32. Once applied the lubrication should never be interrupted.

Basic logic valves AND / OR



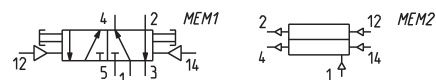
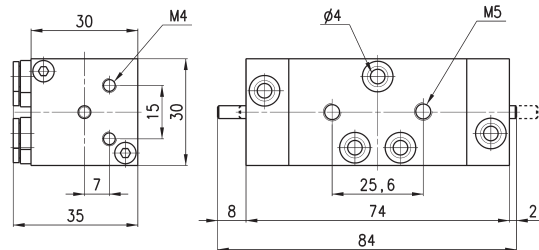
Mod.	Function	Pneumatic symbol	Logic symbol
2LD-SB4-B	AND	AND1	AND2
2LR-SB4-B	OR	OR01	OR02

Basic logic valves YES / NOT



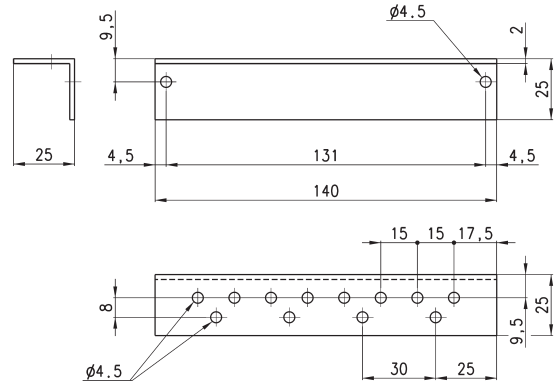
Mod.	Function	Pneumatic symbol	Logic symbol
2LS-SB4-B	YES	YES1	YES2
2LT-SB4-B	NOT	NOT1	NOT2

Basic logic valves "Memory"



Mod.	Function	Pneumatic symbol	Logic symbol
2LM-SB4-B	Memory	MEM1	MEM2

Right-angled bracket



Mod.
2LQ-8A

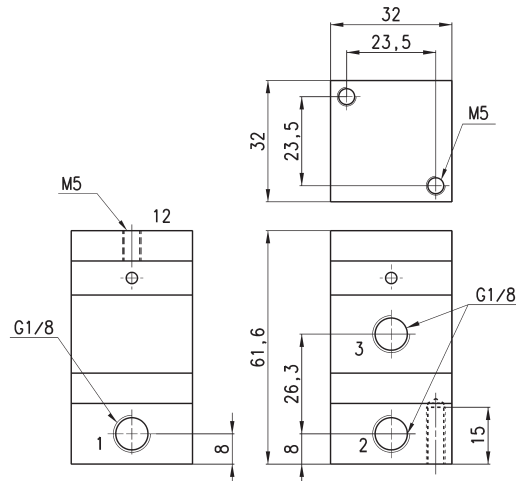
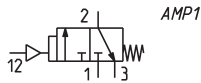
Pneumatically operated 3/2 NC amplifier valve - G1/8 ports



The amplifier valve Mod. 2LA-AM is able to change low pressure signals into signals with pressure from 2 to 8 bar. The poppet type construction shows a minimum permanent air consumption at rest.

Mounting: with M5 screws
Installation: in any position
Fluid: filtered air, without lubricant

Materials:
- AL body
- NBR seals



Mod.	Working pressure (bar)	Min/max operating pressure (bar)	Permanent air consumption at rest (NI/min)	Nominal flow (NI/min ΔP 1)
2LA-AM	2 + 8	0.03 / 0.6	3.3	120

Sender and receiver sensor Series 2L - M5 ports

Materials: aluminium - brass
 Construction: nozzle without moving parts
 Threading mounting: M22 x 1
 Mounting diameter: 22.5 mm
 Mounting bracket: B20-25, E20-25
 Max air consumption: P 2 bar \approx 45 NI/min
 Fluid: filtered air, without lubricant

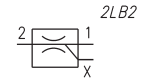
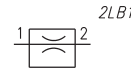
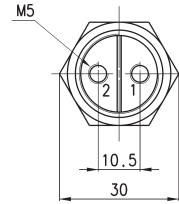
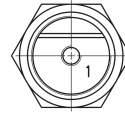
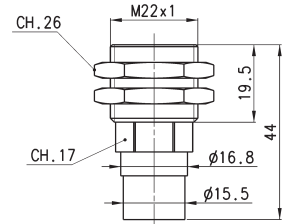
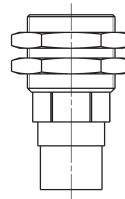
Conditions of functioning: the receiver pressure (2LB-SR) has to be lower or equal compared with the sender pressure (2LB-SE)

The receiver nozzle (2LB-SR) is supplied to ensure the self-cleaning. The air jet of the sender (2LB-SE) avoids the free outflow of the air jet from the receiver. A back pressure is thus produced that generates at outlet A a pilot pressure which is sent to the amplifier drive. When an object interrupts the air jet between the two sensors, this signal becomes zero.



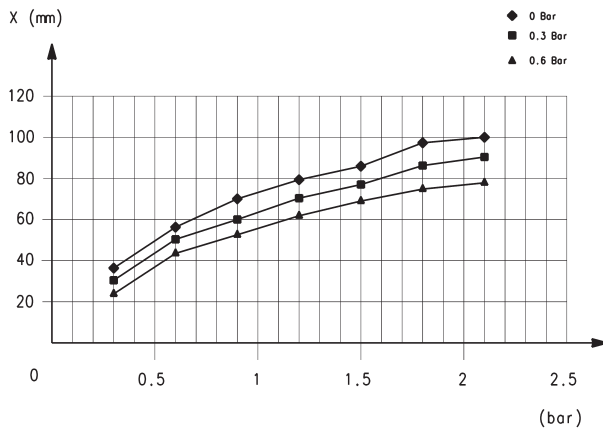
2LB-SE

2LB-SR

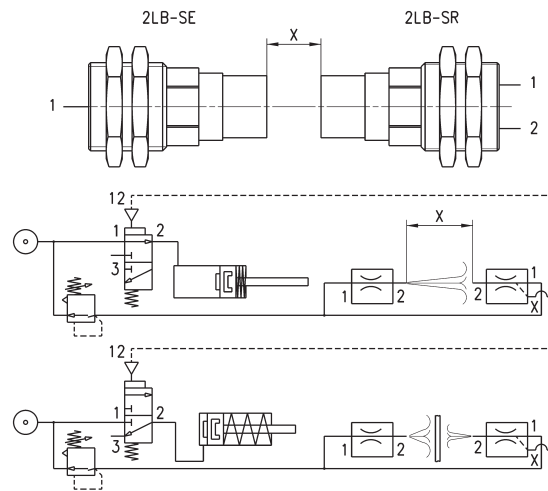


Mod.	Type	Min. pressure	Max pressure	Temperature	Symbol
2LB-SE	Sender	0.3 bar	2 bar	-20°C + +60°C	2LB1
2LB-SR	Receiver	0.3 bar	0.6 bar	-20°C + +60°C	2LB2

SENDER AND RECEIVER SENSORS SERIES 2L



DISTANCE DIAGRAM between
 SENDER (2LB-SE) and RECEIVER (2LB-SR)
 according to the supply pressures



X = distance between nozzles (30 mm + 80 mm)

Circuit selector Mod. SCS

Ports: G1/8



» Channelling of two signals coming alternately from two different points towards the same point

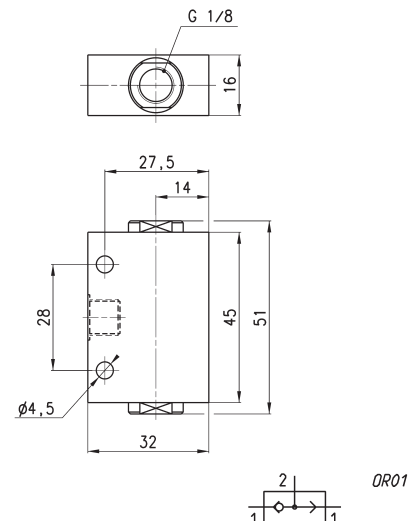
The circuit selector Mod. SCS - 668-06 enables two signals coming alternately from two different points to be channelled towards the same point.

GENERAL DATA

Valve group	automatic valves
Construction	poppet-type
Materials	AL body brass bush Delrin poppet NBR seals
Mounting	in any position
Ports	G1/8
Operating temperature	0°C + 80°C (with dry air -20°C)
Medium	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

Circuit selector Mod. SCS

The selector is mounted by through holes in the body.



Mod.	Flow (NI/min)	Min. operating pressure (bar)	Max working pressure (bar)
SCS-668-06	800	0.2	10

Series VNR unidirectional valves

Ports: M5, G1/8, G1/4, G3/8, G1/2, G3/4, G1

2

CONTROL

» Operations at low pressures



Series VNR unidirectional valves, thanks to their poppet-type construction, can operate at low pressures both when there is a free flow and during retention.

GENERAL DATA

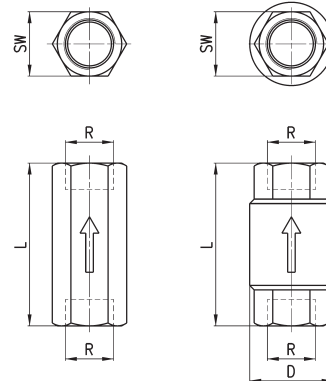
Valve group	automatic valves
Construction	poppet-type
Materials	brass body stainless steel spring NBR seals
Mounting	in any position
Ports	M5, G1/8, G1/4, G3/8, G1/2, G3/4, G1
Operating temperature	0°C + 80°C (with dry air -20°C)
Medium	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

Series VNR unidirectional valves



M5-G1/8-G1/4

G3/8-G1/2-G3/4-G1



VNR1

DIMENSIONS

Mod.	R	L	SW	D	Flow (NI/min)	Min. operating pressure (bar)	Max working pressure (bar)
VNR-205-M5	M5	25	8	9	50	1	10
VNR-210-1/8	G1/8	34	13	15	600	0.2	10
VNR-843-07	G1/4	43	17	20	1400	0.2	10
VNR-238-3/8	G3/8	55	23	34.5	3000	0.02	25
VNR-212-1/2	G1/2	58.5	27	34.5	5800	0.02	25
VNR-234-3/4	G3/4	65	33	41.5	8000	0.06	25
VNR-201-01	G1	74.5	40	48	13000	0.06	25

Series VSO, VSC quick exhaust valves

Series VSO ports: M5, G1/8, cartridge $\varnothing 4$

Series VSC ports: G1/8, G1/4, G1/2



Series VSC and VSO quick exhaust valves are commonly used to increase the speed of cylinders or for rapid depressurisation of tanks containing compressed air.

Mod. VSO 425-M5, VSO 426-04: they are particularly suitable to be mounted on solenoid valves and valves incorporating a $\varnothing 4$ cartridge.

Mod. VSO 4-1/8: it is particularly suitable for direct mounting on the actuator connection. The air coming in from the jointed part (1) is used by the threaded side (2), whilst the exhaust (3) passes through the holes sideways to the valve body.

Mod. VSC: they are particularly suitable to be mounted directly on the cylinder mouth through the use of a nipple. It is recommended to mount a silencer on the outlet.

- » Suitable to rapidly discharge air contained in tanks, systems or cylinder chambers.
- » Threaded versions and with fitting

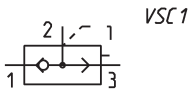
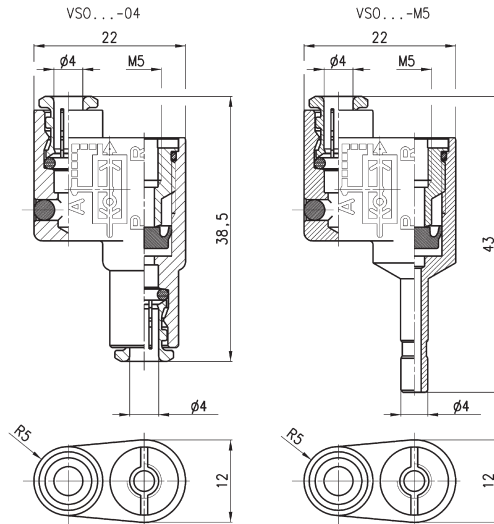
2

CONTROL

GENERAL DATA

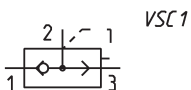
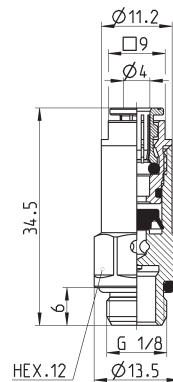
Valve group	automatic valves
Construction	poppet-type
Materials	Series VSO: brass body - NBR seals Series VSC: brass body - Desmopan seal
Mounting	in any position
Ports	Series VSO: M5, G1/8, cartridge $\varnothing 4$ Series VSC: G1/8, G1/4, G1/2
Operating temperature	0°C ÷ 80°C (with dry air -20°C)
Fluid	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

Quick exhaust valves Mod. VSO 425-M5, VSO 426-04



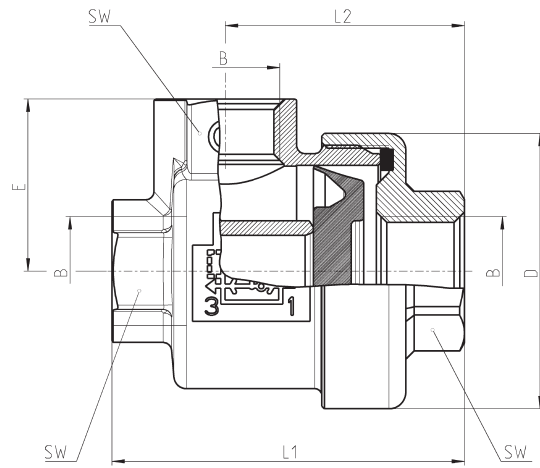
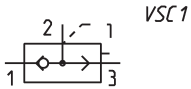
Mod.	Ports	Flow rate at 6 bar 1 > 2 (NI/min)	Flow rate at 6 bar 2 > 3 (NI/min)	Min. operating pressure (bar)	Max working pressure (bar)
VSO 425-M5	M5	50 ($\Delta P = 1$ bar)	100 ($\Delta P = 1$ bar)	1	16
VSO 426-04	cartridge $\phi 4$	50 ($\Delta P = 1$ bar)	100 ($\Delta P = 1$ bar)	1	16

Quick exhaust valve Mod. VSO 4-1/8



Mod.	Ports	Flow rate at 6 bar 1 > 2 (NI/min)	Flow rate at 6 bar 2 > 3 (NI/min)	Min. operating pressure (bar)	Max working pressure (bar)
VSO 4-1/8	G 1/8	50 ($\Delta P = 1$ bar)	330 (free flow)	0.5	16

Series VSC quick exhaust valves



Mod.	B	D	E	L1	L2	SW	Ports	Medium inlet flow rate 1 > 2 [flow at 6 bar, ΔP 1 bar] (NI/min)	Medium exhaust flow rate 2 > 3 [flow at 6 bar, ΔP 1 bar] (NI/min)	Min. operating pressure (bar)	Max working pressure (bar)
VSC 588-1/8	1/8	28	17.5	36.5	25	14	G1/8	630	940	0.5	12
VSC 544-1/4	1/4	33	20.5	42	28.5	17	G1/4	860	1600	0.3	12
VSC 522-1/2	1/2	43	27	57.5	39.5	24	G1/2	4700	6250	0.2	12

Adjustable overpressure exhaust valve Mod. VMR 1/8-B10

Ports: G1/8

2

CONTROL



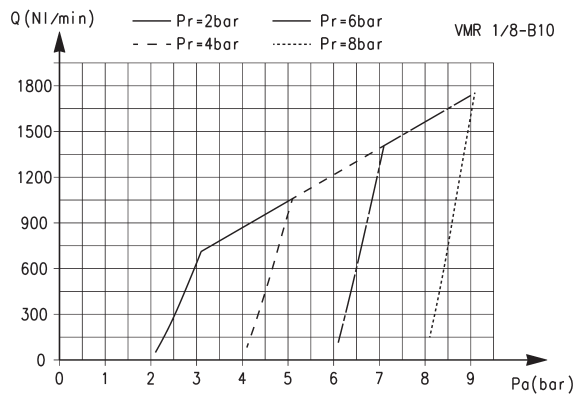
» Able to maintain pressure constant at a set value which allows the overpressure to exhaust

The adjustable valve Mod. VMR 1/8-B10 allows to discharge the overpressure that can be generated in a volume.

GENERAL DATA

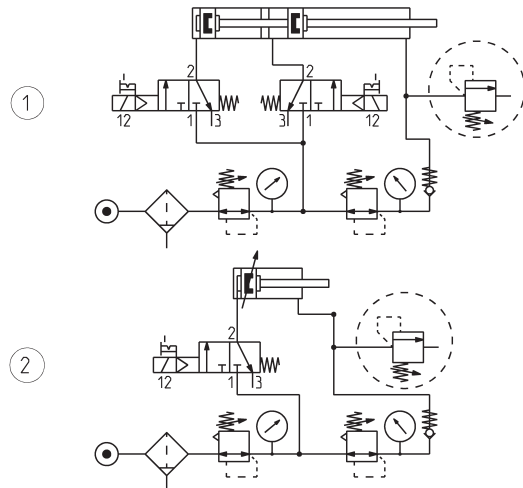
Valve group	automatic valves
Construction	diaphragm type
Materials	brass body zinc-plated steel spring NBR seals
Mounting	in any position
Ports	G1/8
Operating temperature	-5°C + 50°C (with the dew point of the fluid lower than 2°C at the min. working temperature)
Medium	filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.

FLOW DIAGRAM and FUNCTIONING SCHEMES



FLOW DIAGRAM

Pa = Inlet pressure
Pr = Regulated pressure
Q = Flow



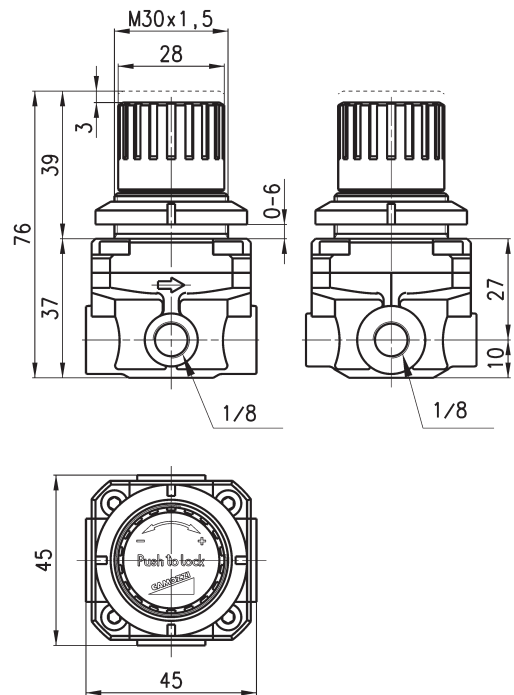
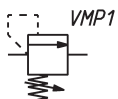
FUNCTIONING SCHEME 1: overpressure exhaust in a cylinder chamber or in a tank when the set value has been exceeded.

FUNCTIONING SCHEME 2: VMR valve with maximum adjustable pressure allows pressure in a cylinder chamber or in tank to exhaust in the atmosphere every time the set regulation value is exceeded.

2

CONTROL

Valve with maximum adjustable pressure Mod. VMR 1/8-B10



Mod.	Working pressure (bar)
VMR 1/8-B10	1 ÷ 8

Series VBO - VBU blocking valves

Unidirectional valves (VBU) and bidirectional valves (VBO)
Ports G1/8, G1/4, G3/8 and G1/2



- » Series VBU: unidirectional valves with operating pressure from 0.3 to 10 bar
- » Series VBO: bidirectional valves with operating pressure from 0 to 10 bar
- » Direct mounting on cylinders or on distribution and fluid control blocks

These unidirectional and bidirectional blocking valves have been realised in order to enable mounting directly on cylinders.

They can be used as high flow valves for blows, cleaning of pieces, filling of volumes.

For these applications it is suggested to connect the supply to port 2 (having the male thread).

These valves can be mounted directly also on distribution and fluid control blocks.

GENERAL DATA

Construction	poppet type
Valve group	unidirectional and bidirectional blocking valve
Materials	Brass - NBR seals - stainless steel springs - PTFE
Mounting	by male thread
Ports	G1/8 - G1/4 - G3/8 - G1/2
Position	in any position
Operating temperature	0°C ÷ 80°C (with dry air -20°C)
Operating pressure	VBU: 0,3 ÷ 10 bar, VBO: 0 ÷ 10 bar
Nominal pressure	6 bar
Nominal flow	see graph
Nominal diam.	G1/8 ø 5,5 mm - G1/4 ø 8 mm - G3/8 ø 11 mm - G1/2 ø 15 mm
Fluid	filtered air, without lubrication. If lubricated air is used, it is recommended to use oil ISO VG32. Once applied, the lubrication should never be interrupted.

CODING EXAMPLE

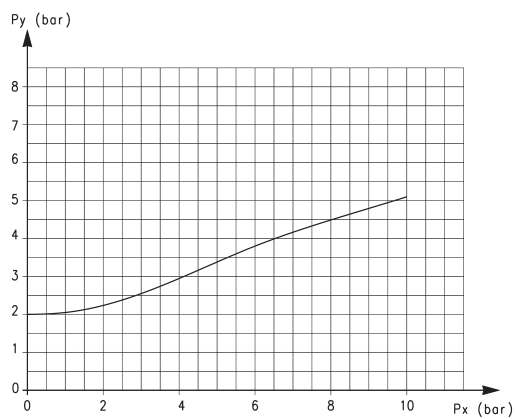
VB	U	1/8
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VB	SERIES: VB
U	VERSIONS: U = unidirectional O = bidirectional
1/8	PORTS: G1/8 G1/4 G3/8 G1/2

2

CONTROL

DIAGRAM OF THE PILOT PRESSURE



This diagram shows the relation between working pressure (P_x) and pilot pressure required in order to operate the valve (P_y).
The opening pressure of the unidirectional valve is 0,3 bar.

FLOW DIAGRAMS OF UNIDIRECTIONAL AND BIDIRECTIONAL VALVES

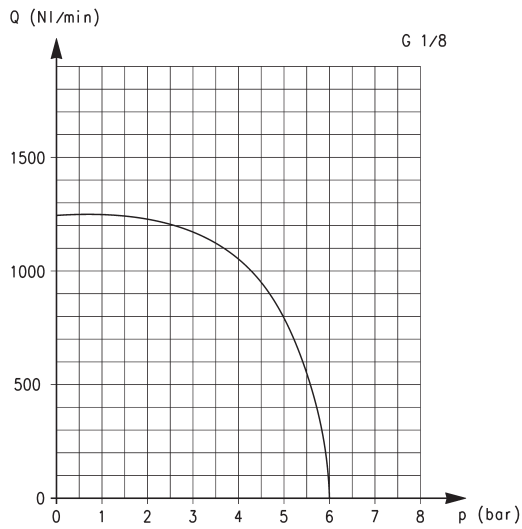


Diagram for valves VBU and VBO with G1/8 ports.

Q is the flow measured in NI/min and determined with an inlet pressure of 6 bar.

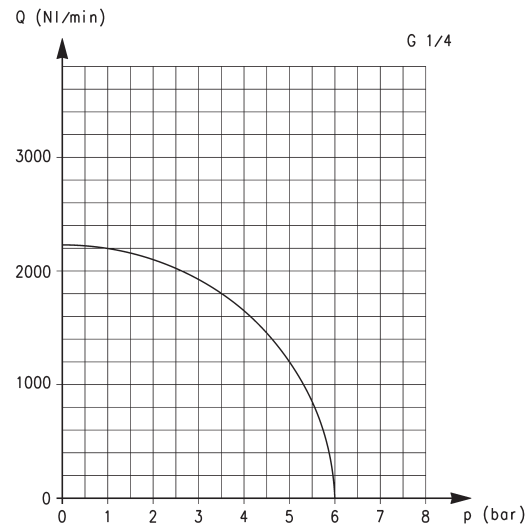


Diagram for valves VBU and VBO with G1/4 ports.

Q is the flow measured in NI/min and determined with an inlet pressure of 6 bar.

FLOW DIAGRAMS OF UNIDIRECTIONAL AND BIDIRECTIONAL VALVES

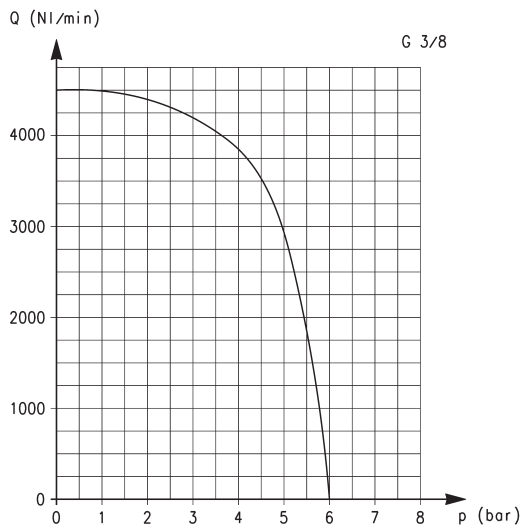


Diagram for valves VBU and VBO with G3/8 ports.

Q is the flow measured in NI/min and determined with an inlet pressure of 6 bar.

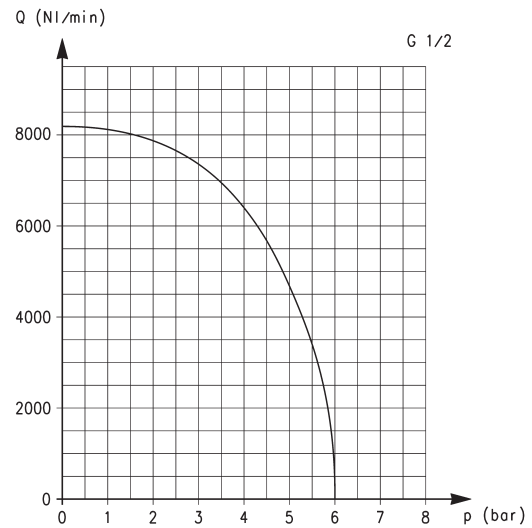
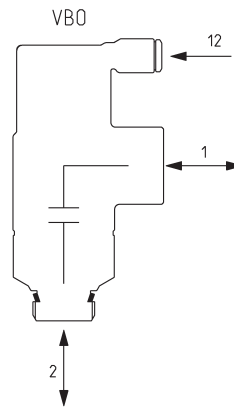
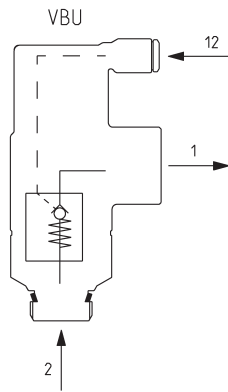
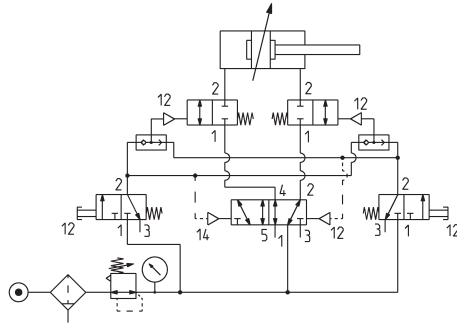
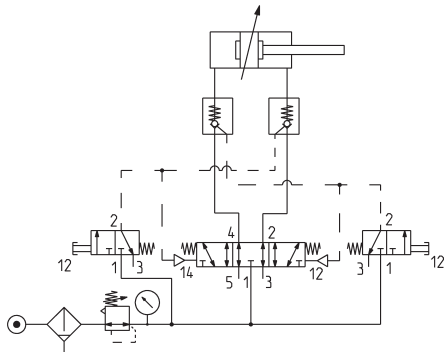
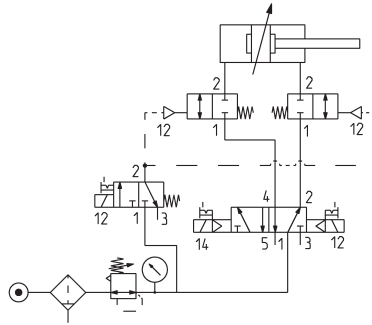
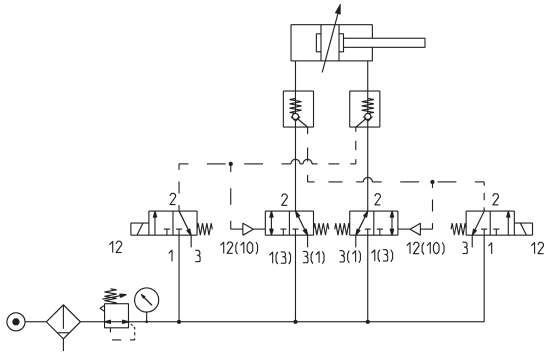


Diagram for valves VBU and VBO with G1/2 ports.

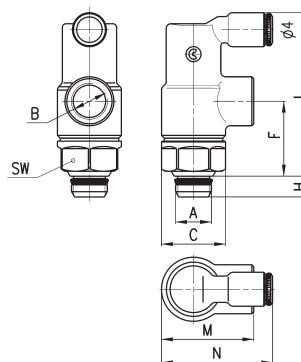
Q is the flow measured in NI/min and determined with an inlet pressure of 6 bar.

APPLICATION SCHEMES

VBU = UNIDIRECTIONAL blocking valve
 VBO = BIDIRECTIONAL blocking valve

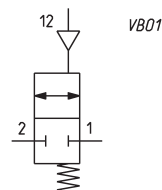
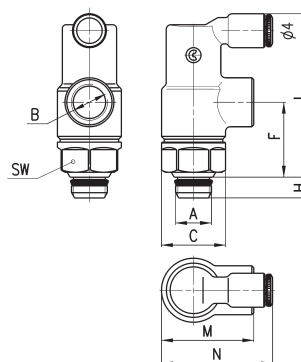


Unidirectional blocking valve



DIMENSIONS									
Mod.	A	B	C	F	H	L	M	N	SW
VBU 1/8	1/8	1/8	16,9	20	5,5	43	24,5	30	15
VBU 1/4	1/4	1/4	20,5	25	7	50	32,2	33,5	19
VBU 3/8	3/8	3/8	26,8	33	8	67	40	39,5	24
VBU 1/2	1/2	1/2	30	45,5	9	85,7	52	48	27

Bidirectional blocking valve



DIMENSIONS									
Mod.	A	B	C	F	H	L	M	N	SW
VBO 1/8	1/8	1/8	16,9	20	5,5	43	24,5	30	15
VBO 1/4	1/4	1/4	20,5	25	7	50	32,2	33,5	19
VBO 3/8	3/8	3/8	26,8	33	8	67	40	39,5	24
VBO 1/2	1/2	1/2	30	45,5	9	85,7	52	48	27

Series SCU, MCU, SVU, MVU, SCO, MCO flow control valves

Unidirectional and bidirectional banjo flow control regulators
Ports: M5, G1/8, G1/4, G3/8, G1/2



These unidirectional and bidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders. The great variety of adjustable fittings makes it possible to complete the regulator with the most suitable system in relation to the available tube.

Only the G1/2 model is supplied complete with banjo flow controllers. For the other models the banjo flow controller is to be requested separately.

GENERAL DATA

Construction	needle type
Valve group	unidirectional and bidirectional controller
Materials	body and regulation screw: M5 = stainless steel; 1/8 - 1/4 - 3/8 - 1/2 = OT; seals = NBR
Mounting	by male thread
Ports	M5 - G1/8 - G1/4 - G3/8 - G1/2
Installation	in any position
Operating temperature	0°C + 80°C (with dry air - 20°C)
Operating pressure	1 + 10 bar
Nominal pressure	6 bar
Nominal flow	see graph
Nominal diameter	M5 = 1,5 mm - G1/8 = 2 mm - G1/4 = 4 mm - G3/8 = 7 mm - G1/2 = 12 mm
Fluid	filtered air

CODING EXAMPLE

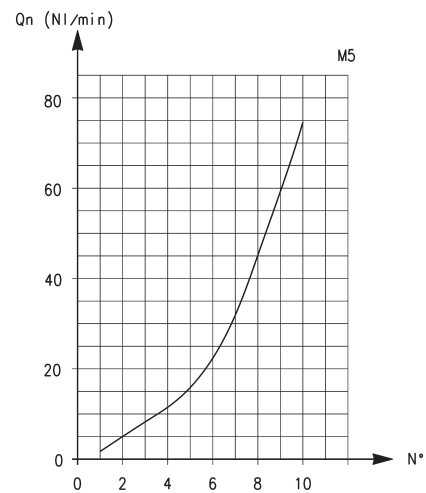
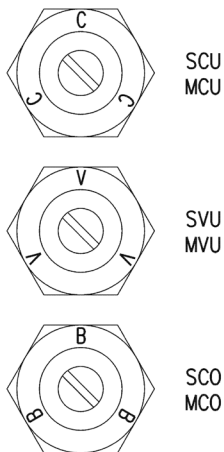
M	CU	7	02	-	M5
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M	ACTUATION: M = Manual S = Screwdriver
CU	ASSEMBLY: CU = on cylinders unidirectional VU = on valves unidirectional CO = bidirectional
7	VERSIONS: 6 = needle (screwdriver operated) 7 = needle (manual operated)
02	NOMINAL DIAMETER: 02 = \varnothing 1,5 max 04 = \varnothing 2 max 06 = \varnothing 4 max 08 = \varnothing 7 max 10 = \varnothing 12 max
M5	PORTS: M5 = M5 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8 1/2 = G1/2

2

CONTROL

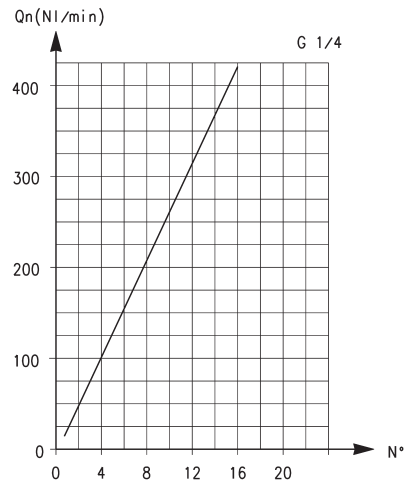
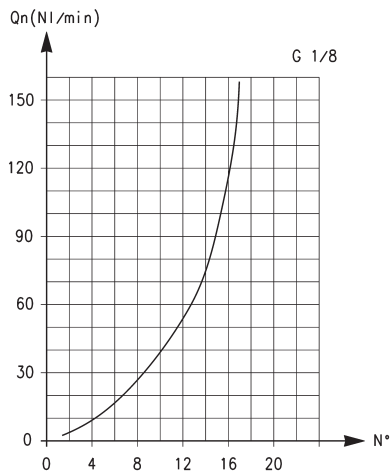
To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in NI/min (see cylinder Table); determine the stroke time of the cylinder; refer to graph to see which controller is the right type.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS


IDENTIFICATION OF DIFFERENT TYPES:
 SCU - MCU = assembly directly on the cylinders
 SVU - MVU = assembly directly on the valves
 SCO - MCO = assembly directly on the cylinders or valves

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 70
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 33
 Qn = supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet
 N° = number of screw turns.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS



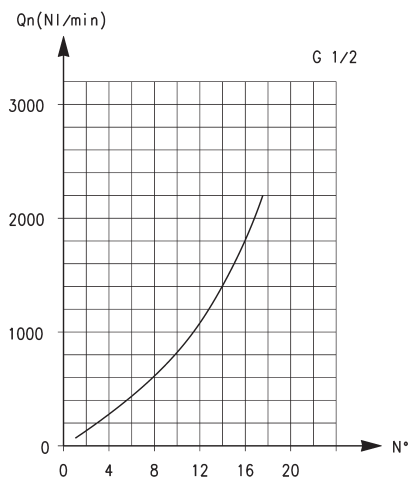
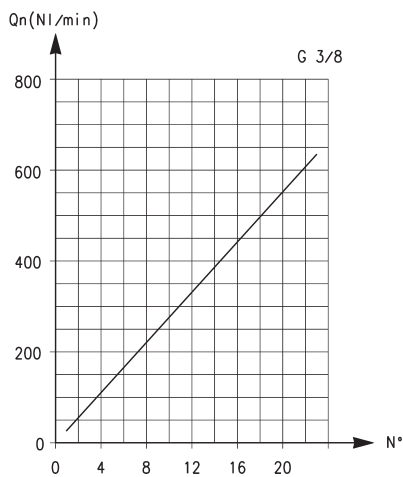
Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 200
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 70

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 530
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 160

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns.

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS



Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 710
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 410

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 2570
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 1330

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns.

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns.



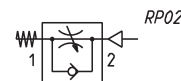
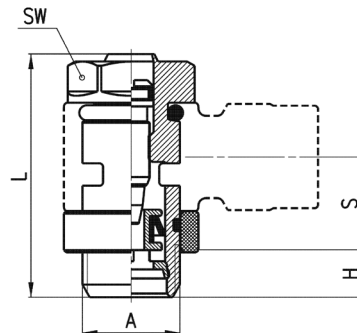
Unidirectional flow controllers Series SCU

For mounting on single-acting or double-acting cylinders.

Adjustment of setting by a screwdriver.

Ports: M5, G1/8, G1/4 and G3/8.

Assembly with fittings Mod. 6610; 6620; 1610; 1620; 2023; 1170.



Note: M5 flow controllers must be used together with M6 adjustable fittings.

DIMENSIONS					
Mod.	A	H	L	S	SW
SCU 602-M5	M5	3,5	21,5	5,5	8
SCU 604-1/8	G1/8	5	31,5	12,5	12
SCU 606-1/4	G1/4	6	32,5	12,5	15
SCU 608-3/8	G3/8	7	40,5	12,5	18



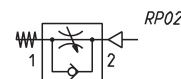
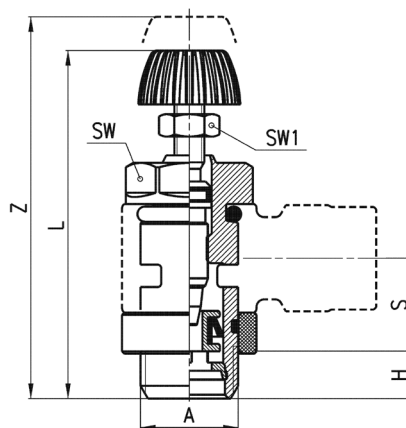
Unidirectional flow controllers Series MCU

For mounting on single-acting or double-acting cylinders.

Adjustment of setting by a manually operated knurled screw.

Ports: M5, G1/8, G1/4, G3/8.

Assembly with fittings Mod. 6610; 6620; 1610; 1620; 2023; 1170.



Note: M5 flow controllers must be used together with M6 adjustable fittings.

DIMENSIONS							
Mod.	A	H	L	S	SW	SW1	Z
MCU 702-M5	M5	3,5	31	5,5	8	5,5	35
MCU 704-1/8	G1/8	5	41	12,5	12	7	46
MCU 706-1/4	G1/4	6	43,5	12,5	15	7	49
MCU 708-3/8	G3/8	7	52,5	12,5	18	10	60,5



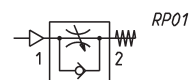
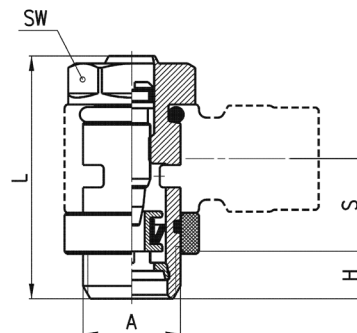
Unidirectional flow controllers Series SVU

For mounting on valves.

Adjustment of setting by a screwdriver.

Ports: M5, G1/8, G1/4.

Assembly with fittings Mod. 6610; 6620; 1610; 1620; 2023; 1170.



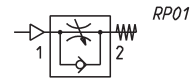
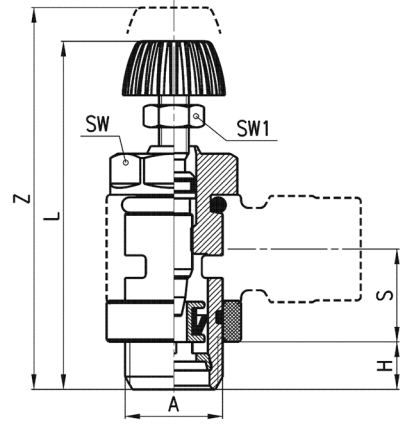
Note: M5 flow controllers must be used together with M6 adjustable fittings.

DIMENSIONS					
Mod.	A	H	L	S	SW
SVU 602-M5	M5	3,5	21,5	5,5	8
SVU 604-1/8	G1/8	5	31,5	12,5	12
SVU 606-1/4	G1/4	6	32,5	12,5	15

Unidirectional flow controllers Series MVU

For mounting on valve. Adjustment of setting by a manually operated knurled screw.
Ports: M5, G1/8, G1/4.

Assembly with fittings Mod. 6610; 6620; 1610; 1620; 2023; 1170.



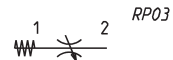
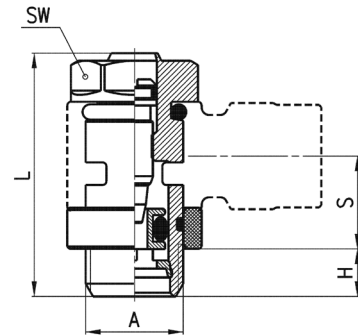
DIMENSIONS							
Mod.	A	H	L	S	SW	SW1	Z
MVU 702-M5	M5	3,5	31	5,5	8	5,5	35
MVU 704-1/8	G1/8	5	41	12,5	12	7	46
MVU 706-1/4	G1/4	6	43,5	12,5	15	7	49

Note: M5 flow controllers must be used together with M6 adjustable fittings.

Bidirectional flow controllers Series SCO

Adjustment of setting by a screwdriver.
Ports: M5, G1/8, G1/4.

Assembly with fittings Mod. 6610; 6620; 1610; 1620; 2023; 1170; 2905.



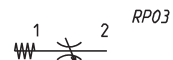
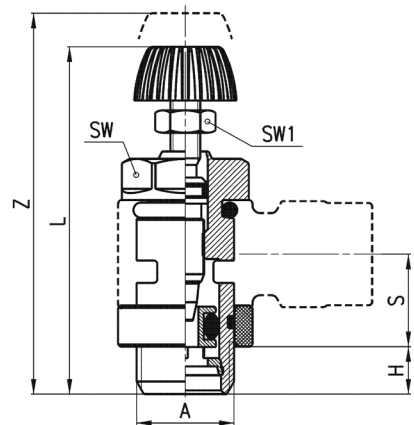
DIMENSIONS					
Mod.	A	H	L	S	SW
SCO 602-M5	M5	3,5	21,5	5,5	8
SCO 604-1/8	G1/8	5	31,5	12,5	12
SCO 606-1/4	G1/4	6	32,5	12,5	15

Note: M5 flow controllers must be used together with M6 adjustable fittings.

Bidirectional flow controllers Series MCO

Adjustment of setting by a manually operated knurled screw.
Ports: M5, G1/8, G1/4.

Assembly with fittings Mod. 6610; 6620; 1610; 1620; 2023; 1170; 2905.

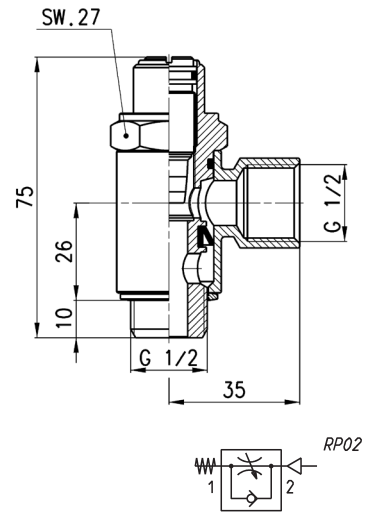


DIMENSIONS							
Mod.	A	H	L	S	SW	SW1	Z
MCO 702-M5	M5	3,5	31	5,5	8	5,5	35
MCO 704-1/8	G1/8	5	41	12,5	12	7	46
MCO 706-1/4	G1/4	6	43,5	12,5	15	7	49

Note: M5 flow controllers must be used together with M6 adjustable fittings.


Unidirectional flow controllers Series SCU

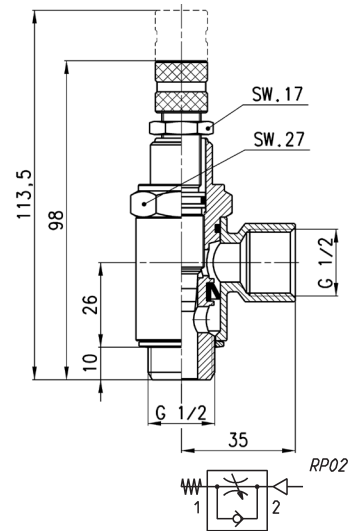
For mounting on single-acting or double-acting cylinders.
Screwdriver adjustment.



Mod.
SCU 610-1/2


Unidirectional flow controllers Series MCU

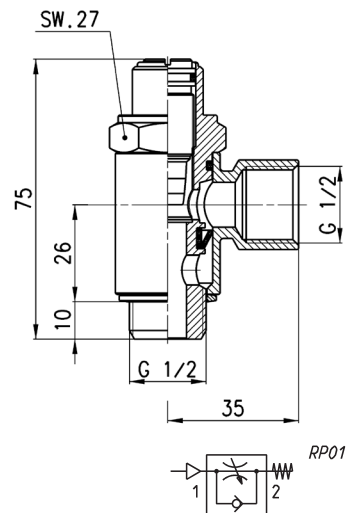
For mounting on single-acting or double-acting cylinders.
Adjustment of setting by a manually operated knurled screw.



Mod.
MCU 710-1/2


Unidirectional flow controllers Series SVU

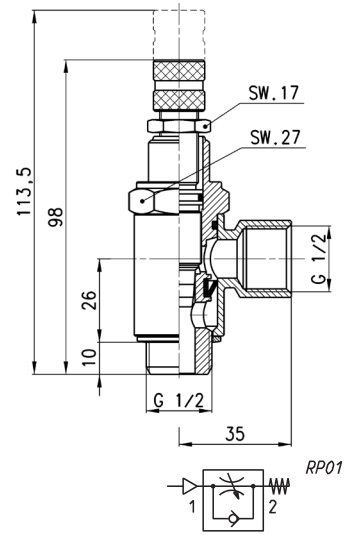
For mounting on valves.
Screwdriver adjustment.



Mod.
SVU 610-1/2

Unidirectional flow controllers Series MVU

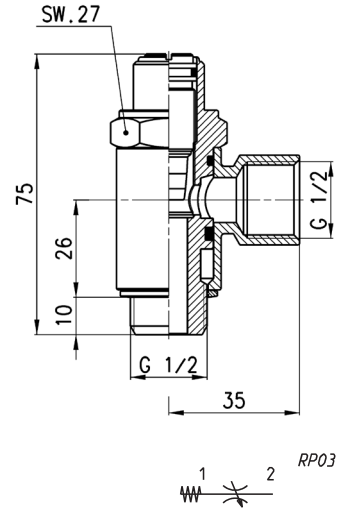
For mounting on valve.
Adjustment of setting by a manually operated knurled screw.



Mod.
MVU 710-1/2

Bidirectional flow controllers Series SCO

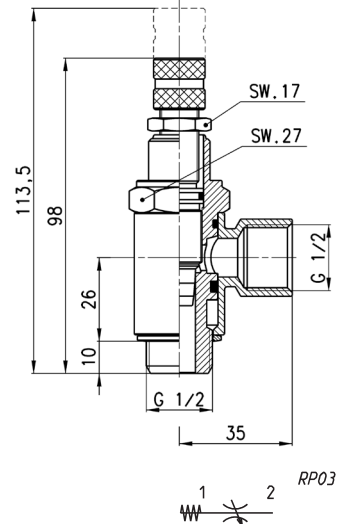
Screwdriver adjustment.



Mod.
SCO 610-1/2

Bidirectional flow controllers Series MCO

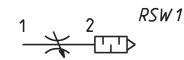
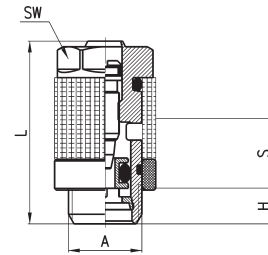
Adjustment of setting by a manually operated knurled screw.



Mod.
MCO 710-1/2


Silenced exhaust controllers Mod. SCO + 2905

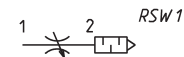
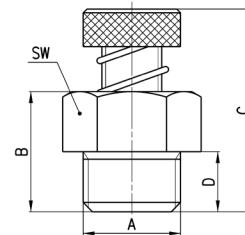
The flow control valve Mod. SCO and the silencer Mod. 2905 are supplied separately.
For further information about the silencer see page 2/9.05.04.


DIMENSIONS

Mod.	A	H	L	S	SW
SCO 602-M5+2905 M5	M5	3.5	21.5	5.5	8
SCO 604-1/8+2905 1/8	G1/8	5	31.5	12.5	12
SCO 606-1/4+2905 1/4	G1/4	6	32.5	12.5	15


Series RSW flow control valves with silencer

Ports: G1/8, G1/4, G1/2.


DIMENSIONS

Mod.	A	B	C	D	SW	Q* (Nl/min)
RSW 1/8	G1/8	10.5	22	6	13	410
RSW 1/4	G1/4	13	27	7.5	16	650
RSW 3/8	G3/8	16	30	9.5	20	1100
RSW 1/2	G1/2	18	40	10.5	26	1700

*determined with supply pressure 6 bar with free flow; ensuring screw is open to maximum output.

Series PSCU, PMCU, PSVU, PMVU, PSCO, PMCO flow control valves

Unidirectional and bidirectional flow regulators with banjo in brass (M5) or in technopolymer (G1/8, G1/4, G3/8)
Ports: M5, G1/8, G1/4, G3/8

2

CONTROL



These unidirectional and bidirectional flow controllers have been designed as small as possible so as to be mounted directly on valves or cylinders.
The great variety of adjustable fittings makes it possible to complete the regulator with the most suitable system in relation to the available tube.

All models are supplied complete with banjo flow controllers.

GENERAL DATA

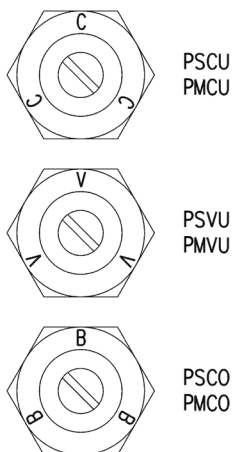
Construction	needle type
Valve group	unidirectional and bidirectional controller
Materials	body, regulation screw: stainless steel (M5), brass (G1/8 - G1/4 - G3/8) collet and insert = brass banjo: brass (M5), technopolymer (G1/8 - G1/4 - G3/8) controller = technopolymer - seals = NBR
Mounting	by male thread
Ports	M5 - G1/8 - G1/4 - G3/8
Installation	in any position
Operating temperature	0°C + 60°C (with dry air -20°C)
Operating pressure	1 + 10 bar
Nominal pressure	6 bar
Nominal flow	see graph
Nominal diameter	M5 = 1.5 mm - G1/8 = 2 mm - G1/4 = 4 mm - G3/8 = 7 mm
Fluid	filtered air

CODING EXAMPLE

P	M	CU		7	04	-	1/8	-	4
----------	----------	-----------	--	----------	-----------	----------	------------	----------	----------

P	SERIES
M	ACTUATION: M = Manual S = Screwdriver
CU	ASSEMBLY: CU = on cylinders unidirectional VU = on valves unidirectional CO = bidirectional
7	VERSIONS: 6 = needle (screwdriver operated) 7 = needle (manual operated)
04	NOMINAL DIAMETER: 02 = Ø1.5 MAX 04 = Ø2 MAX 06 = Ø4 MAX 08 = Ø7 MAX
1/8	PORTS: M5 = M5 1/8 = G1/8 1/4 = G1/4 3/8 = G3/8
4	TUBE: 4 = Ø 4 6 = Ø 6 8 = Ø 8 10 = Ø 10 12 = Ø 12

To ensure the right choice of unidirectional flow controller, proceed as follows:
calculate the quantity of air in NI/min (see cylinders table); determine the stroke time of the cylinder; refer to graph to see which is the right type of controller.

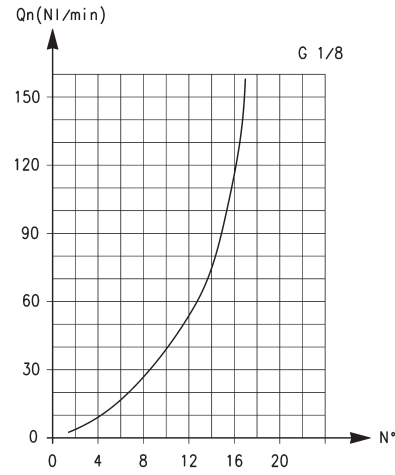
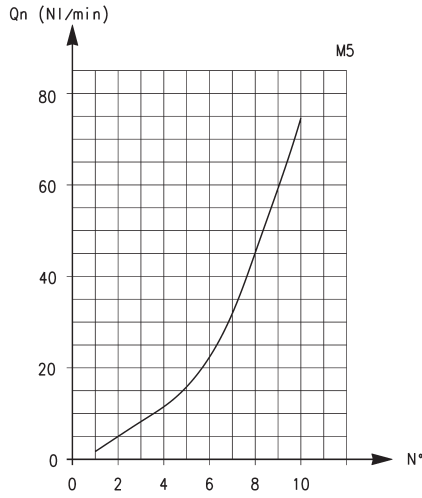
UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROLLERS

IDENTIFICATION OF DIFFERENT TYPES:

PSCU - PMCU = assembly directly on the cylinders

PSVU - PMVU = assembly directly on the valves

PSCO - PMCO = assembly directly on the cylinders or valves

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS



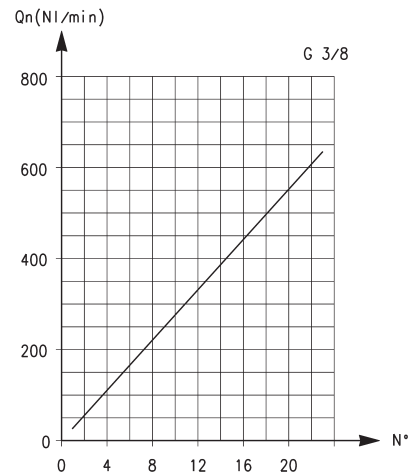
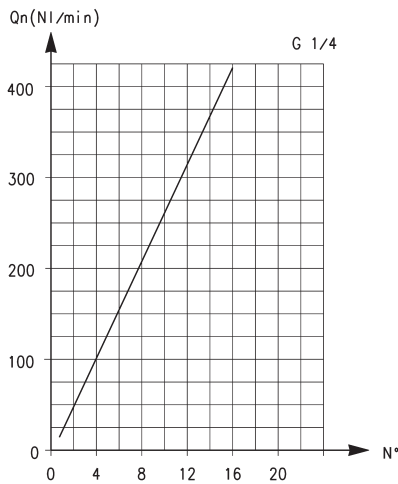
Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 70
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 33

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 200
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 70

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS



Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 530
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 160

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 710
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 410

Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns

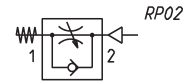
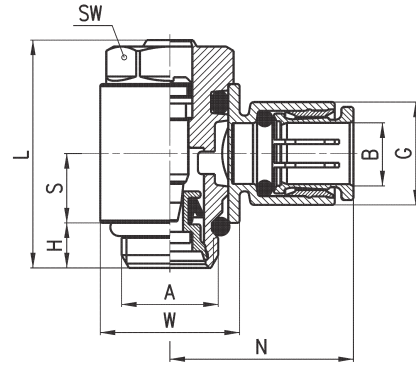
Qn = supply pressure of 6 bar and with ΔP = 1 bar at the outlet
 N° = number of screw turns



Unidirectional flow controllers Series PSCU

For mounting on single-acting or double-acting cylinders.
A screwdriver must be used to adjust the registration setting.
Ports: M5, G1/8, G1/4 and G3/8.

Port M5: banjo in brass



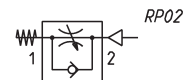
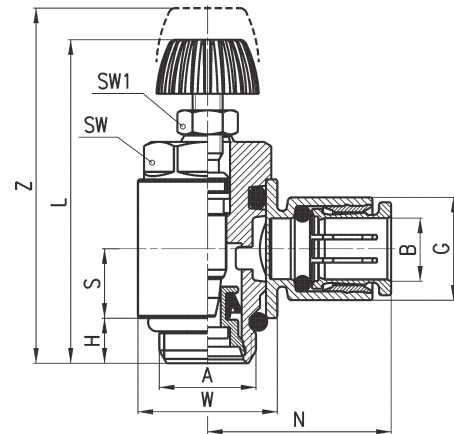
DIMENSIONS									
Mod.	A	B	G	H	L	N	S	W	SW
PSCU 602-M5-4	M5	4	8.6	3.5	21.5	18	5.7	8	8
PSCU 602-M5-6	M5	6	10.4	3.5	21.5	19	5.7	8	8
PSCU 604-1/8-4	G1/8	4	11.6	5	27	21	7.75	14	12
PSCU 604-1/8-6	G1/8	6	11.6	5	27	21	7.75	14	12
PSCU 604-1/8-8	G1/8	8	13.9	5	27	22.5	7.75	14	12
PSCU 606-1/4-6	G1/4	6	13.9	6	30.5	24.5	9.25	18.6	15
PSCU 606-1/4-8	G1/4	8	13.9	6	30.5	24.5	9.25	18.6	15
PSCU 606-1/4-10	G1/4	10	16.1	6	30.5	27	9.25	18.6	15
PSCU 608-3/8-10	G3/8	10	20.2	7	36.5	29	11	22	18
PSCU 608-3/8-12	G3/8	12	20.2	7	36.5	29	11	22	18



Unidirectional flow controllers Series PMCU

For mounting on single-acting or double-acting cylinders.
A manually operated knurled screw must be used to adjust the registration setting.
Ports: M5, G1/8, G1/4 and G3/8.

Port M5: banjo in brass



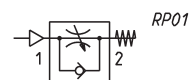
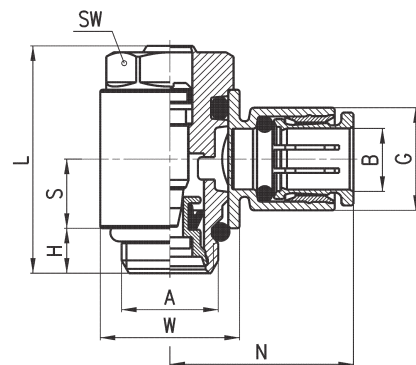
DIMENSIONS											
Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PMCU 702-M5-4	M5	4	8.6	3.5	31	18	5.7	8	8	5.5	35
PMCU 702-M5-6	M5	6	10.4	3.5	31	19	5.7	8	8	5.5	35
PMCU 704-1/8-4	G1/8	4	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCU 704-1/8-6	G1/8	6	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCU 704-1/8-8	G1/8	8	13.9	5	36.5	22.5	7.75	14	12	7	42.5
PMCU 706-1/4-6	G1/4	6	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCU 706-1/4-8	G1/4	8	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCU 706-1/4-10	G1/4	10	16.1	6	42	27	9.25	18.6	15	7	48
PMCU 708-3/8-10	G3/8	10	20.2	7	48.5	29	11	22	18	10	56.5
PMCU 708-3/8-12	G3/8	12	20.2	7	48.5	29	11	22	18	10	56.5



Unidirectional flow controllers Series PSVU

For mounting on valves.
A screwdriver must be used to adjust the registration setting.
Ports: M5, G1/8, G1/4 and G3/8.

Port M5: banjo in brass



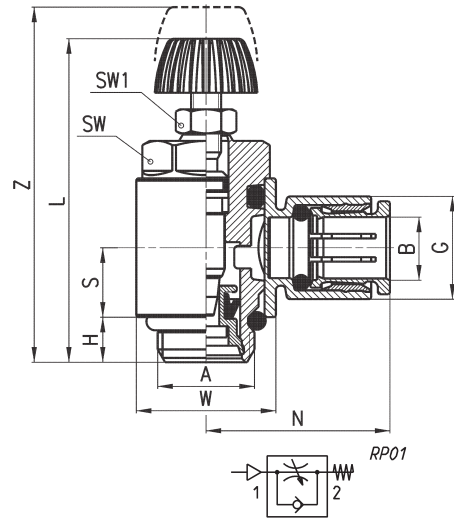
DIMENSIONS									
Mod.	A	B	G	H	L	N	S	W	SW
PSVU 602-M5-4	M5	4	8.6	3.5	21.5	18	5.7	8	8
PSVU 602-M5-6	M5	6	10.4	3.5	21.5	19	5.7	8	8
PSVU 604-1/8-4	G1/8	4	11.6	5	27	21	7.75	14	12
PSVU 604-1/8-6	G1/8	6	11.6	5	27	21	7.75	14	12
PSVU 604-1/8-8	G1/8	8	13.9	5	27	22.5	7.75	14	12
PSVU 606-1/4-6	G1/4	6	13.9	6	30.5	24.5	9.25	18.6	15
PSVU 606-1/4-8	G1/4	8	13.9	6	30.5	24.5	9.25	18.6	15
PSVU 606-1/4-10	G1/4	10	16.1	6	30.5	27	9.25	18.6	15
PSVU 608-3/8-10	G3/8	10	20.2	7	36.5	29	11	22	18
PSVU 608-3/8-12	G3/8	12	20.2	7	36.5	29	11	22	18

Unidirectional flow controllers Series PMVU

For mounting on valve.
A manually operated knurled screw must be used to adjust the registration setting.
Ports: M5, G1/8, G1/4 and G3/8.



Port M5: banjo in brass



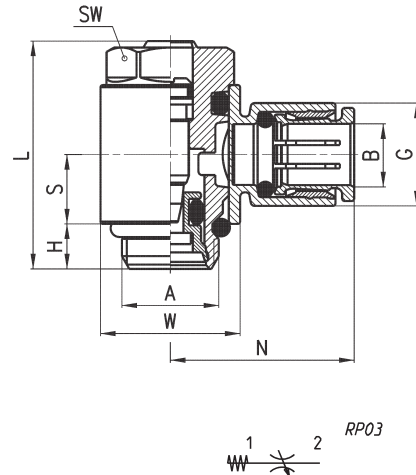
DIMENSIONS											
Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PMVU 702-M5-4	M5	4	8.6	3.5	31	18	5.7	8	8	5.5	35
PMVU 702-M5-6	M5	6	10.4	3.5	31	19	5.7	8	8	5.5	35
PMVU 704-1/8-4	G1/8	4	11.6	5	36.5	21	7.75	14	12	7	42.5
PMVU 704-1/8-6	G1/8	6	11.6	5	36.5	21	7.75	14	12	7	42.5
PMVU 704-1/8-8	G1/8	8	13.9	5	36.5	22.5	7.75	14	12	7	42.5
PMVU 706-1/4-6	G1/4	6	13.9	6	42	24.5	9.25	18.6	15	7	48
PMVU 706-1/4-8	G1/4	8	13.9	6	42	24.5	9.25	18.6	15	7	48
PMVU 706-1/4-10	G1/4	10	16.1	6	42	27	9.25	18.6	15	7	48
PMVU 708-3/8-10	G3/8	10	20.2	7	48.5	29	11	22	18	10	56.5
PMVU 708-3/8-12	G3/8	12	20.2	7	48.5	29	11	22	18	10	56.5

Bidirectional flow controllers Series PSCO

A screwdriver must be used to adjust the registration setting.
Ports: M5, G1/8, G1/4 and G3/8.



Port M5: banjo in brass



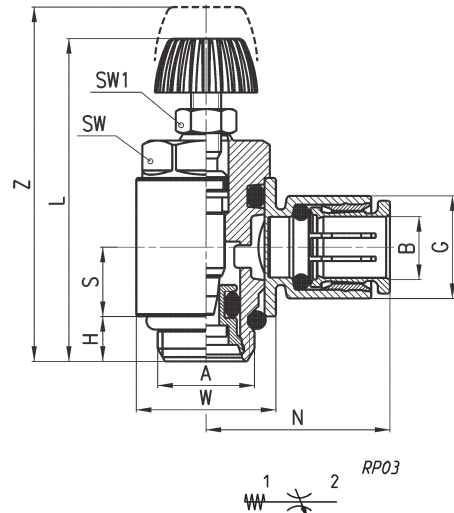
DIMENSIONS										
Mod.	A	B	G	H	L	N	S	W	SW	
PSCO 602-M5-4	M5	4	8.6	3.5	21.5	18	5.7	8	8	
PSCO 602-M5-6	M5	6	10.4	3.5	21.5	19	5.7	8	8	
PSCO 604-1/8-4	G1/8	4	11.6	5	27	21	7.75	14	12	
PSCO 604-1/8-6	G1/8	6	11.6	5	27	21	7.75	14	12	
PSCO 604-1/8-8	G1/8	8	13.9	5	27	22.5	7.75	14	12	
PSCO 606-1/4-6	G1/4	6	13.9	6	30.5	24.5	9.25	18.6	15	
PSCO 606-1/4-8	G1/4	8	13.9	6	30.5	24.5	9.25	18.6	15	
PSCO 606-1/4-10	G1/4	10	16.1	6	30.5	27	9.25	18.6	15	
PSCO 608-3/8-10	G3/8	10	20.2	7	36.5	29	11	22	18	
PSCO 608-3/8-12	G3/8	12	20.2	7	36.5	29	11	22	18	

Bidirectional flow controllers Series PMCO

A manually operated knurled screw must be used to adjust the registration setting.
Ports: M5, G1/8, G1/4 and G3/8.



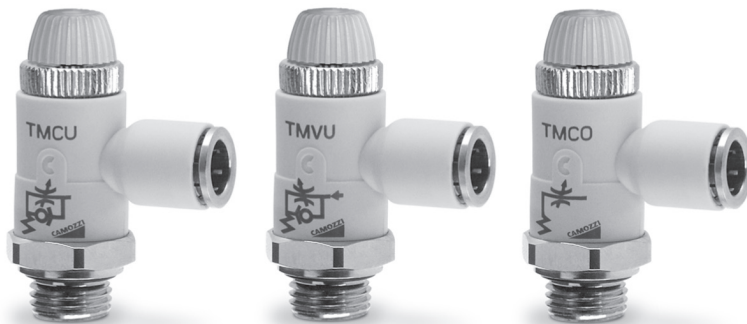
Port M5: banjo in brass



DIMENSIONS											
Mod.	A	B	G	H	L	N	S	W	SW	SW1	Z
PMCO 702-M5-4	M5	4	8.6	3.5	31	18	5.7	8	8	5.5	35
PMCO 702-M5-6	M5	6	10.4	3.5	31	19	5.7	8	8	5.5	35
PMCO 704-1/8-4	G1/8	4	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCO 704-1/8-6	G1/8	6	11.6	5	36.5	21	7.75	14	12	7	42.5
PMCO 704-1/8-8	G1/8	8	13.9	5	36.5	22.5	7.75	14	12	7	42.5
PMCO 706-1/4-6	G1/4	6	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCO 706-1/4-8	G1/4	8	13.9	6	42	24.5	9.25	18.6	15	7	48
PMCO 706-1/4-10	G1/4	10	16.1	6	42	27	9.25	18.6	15	7	48
PMCO 708-3/8-10	G3/8	10	20.2	7	48.5	29	11	22	18	10	56.5
PMCO 708-3/8-12	G3/8	12	20.2	7	48.5	29	11	22	18	10	56.5

Series TMCU, TMVU, TMCO flow control valves

Unidirectional and bidirectional banjo flow controllers with nominal diameter 2 - 3,8 - 5,8 - 8 mm
Ports: G1/8, G1/4, G3/8, G1/2



Series TMCU, TMVU, TMCO unidirectional and bidirectional flow controllers have been revised in order to decrease their dimensions and improve their flow rate characteristics. Their construction allows for easy assembly to cylinders and valves and allows the regulation adjustment to be precise and gradual.

GENERAL DATA

Construction	needle - type
Valve group	unidirectional and bidirectional controller
Materials	brass - technopolymer - NBR
Mounting	by male threaded
Threaded ports	G1/8 - G1/4 - G3/8 - G1/2
Installation	in any position
Operating temperature	0°C ÷ 60°C (with dry air -20°C)
Operating pressure	0,5 ÷ 10 bar
Nominal pressure	6 bar
Nominal flow	see graph
Nominal dia.	Tube 4 Ø2 - Tube 6 Ø3,8 - Tube 8 Ø5,8 - Tube 10 and 12 Ø8
Fluid	filtered air If lubricated air is used, it is recommended to use ISOVG 32 oil. Once applied the lubrication should never be interrupted.

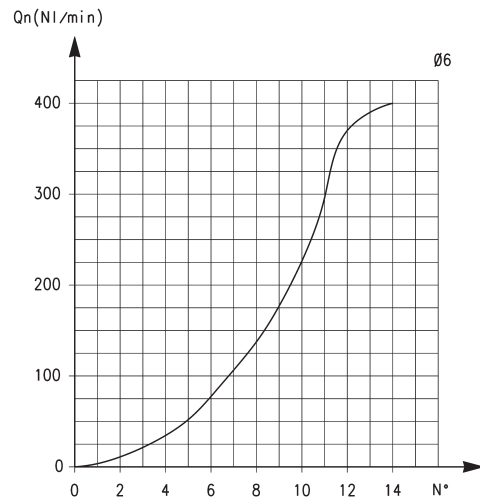
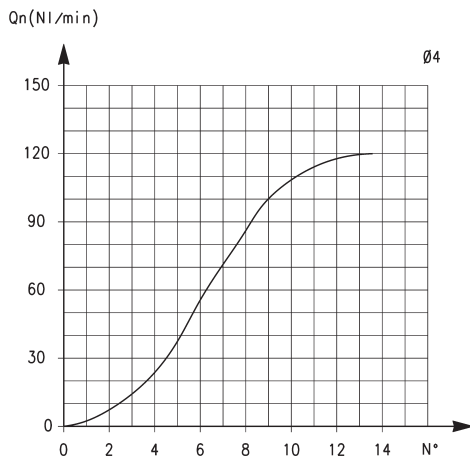
CODING EXAMPLE

TM	CU		9	74	-	1/8	-	6
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TM	ACTUATION: TM = manual																				
CU	ASSEMBLY: CU = on cylinders unidirectional VU = on valves unidirectional CO = bidirectional																				
9	VERSIONS: 9 = manual needle																				
74	REGULATION: <table border="0"> <thead> <tr> <th></th> <th>step</th> <th>-</th> <th>ø tube</th> </tr> </thead> <tbody> <tr> <td>72 =</td> <td>2</td> <td></td> <td>4</td> </tr> <tr> <td>74 =</td> <td>3.8</td> <td></td> <td>6</td> </tr> <tr> <td>76 =</td> <td>5.8</td> <td></td> <td>8</td> </tr> <tr> <td>78 =</td> <td>8</td> <td></td> <td>10</td> </tr> </tbody> </table>		step	-	ø tube	72 =	2		4	74 =	3.8		6	76 =	5.8		8	78 =	8		10
	step	-	ø tube																		
72 =	2		4																		
74 =	3.8		6																		
76 =	5.8		8																		
78 =	8		10																		
1/8	PORTS: 1/8 1/4 3/8 1/2																				
6	Ø TUBE: 4 6 8 10																				

To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in NI/min (see cylinder Table); determine the stroke time of the cylinder; refer to graph to see which controller is the right type.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS

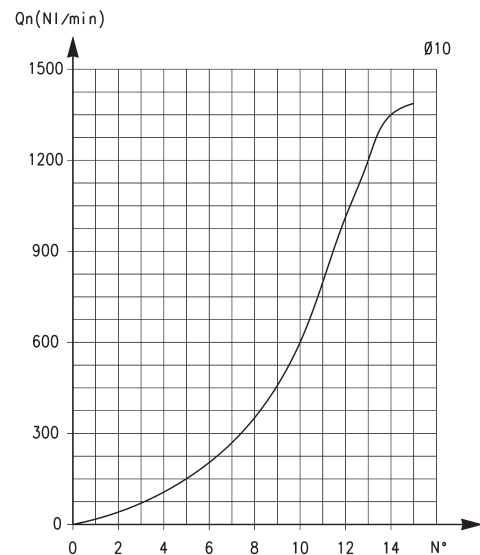
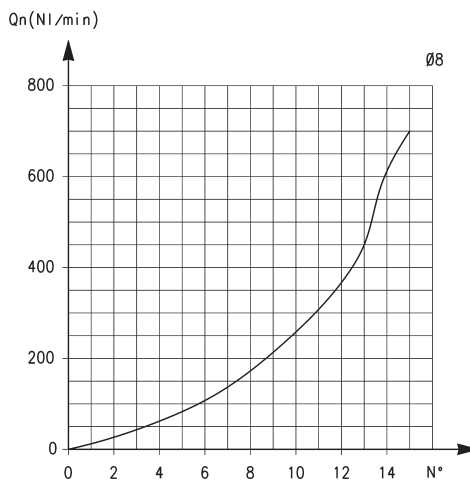

TUBE Ø4

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 400
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 280
 Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet
 N° = number of screw turns.

TUBE Ø6

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 550
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 280
 Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet
 N° = number of screw turns.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS


TUBE Ø8

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 890
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 460
 Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet
 N° = number of screw turns.

TUBE Ø10

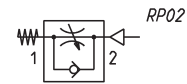
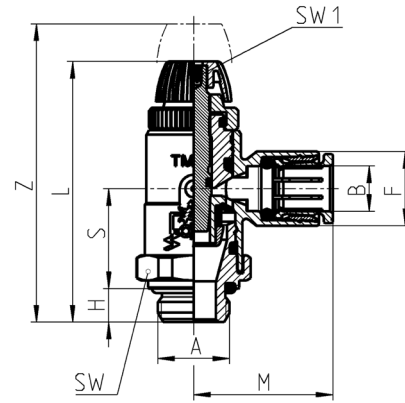
Flow Qn (NI/min.) from 2 → 1 with controller OPEN: Ø 10-1200/Ø12-1250
 Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: Ø 10-600/Ø12-600
 Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet
 N° = number of screw turns.

Series TMCU valves

Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Adjustment of setting by a hexagonal male key or a manually operated knurled screw.
Ports: G1/8, G1/4, G3/8, G1/2



DIMENSIONS										
Mod.	A	B	F	H	L	M	S	SW	SW1	Z
TMCU 972-1/8-4	G1/8	4	11,5	5	43	21,5	16,5	16	1,5	50
TMCU 974-1/8-6	G1/8	6	11,5	5	43	21,5	16,5	16	1,5	50
TMCU 974-1/4-6	G1/4	6	11,5	6	44	21,5	16,5	17	1,5	51
TMCU 976-1/8-8	G1/8	8	13,5	5	47	25	17,5	19	2,5	54
TMCU 976-1/4-8	G1/4	8	13,5	6	48,5	25	18	19	2,5	55,5
TMCU 976-3/8-8	G3/8	8	13,5	7	49,5	25	18	20	2,5	56,5
TMCU 978-3/8-10	G3/8	10	16	7	51	29	17	25	2,5	59,5
TMCU 978-1/2-10	G1/2	10	16	8	52	29	17	25	2,5	60,5

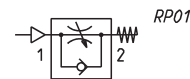
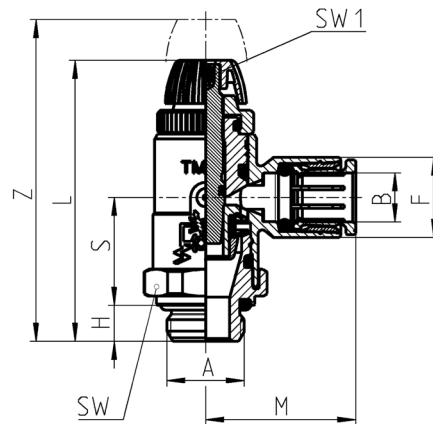


Series TMVU valves

Unidirectional flow controller for mounting on valves.
Adjustment of setting by a hexagonal male key or a manually operated knurled screw.
Ports: G1/8, G1/4, G3/8, G1/2



DIMENSIONS										
Mod.	A	B	F	H	L	M	S	SW	SW1	Z
TMVU 972-1/8-4	G1/8	4	11,5	5	43	21,5	16,5	16	1,5	50
TMVU 974-1/8-6	G1/8	6	11,5	5	43	21,5	16,5	16	1,5	50
TMVU 974-1/4-6	G1/4	6	11,5	6	44	21,5	16,5	17	1,5	51
TMVU 976-1/8-8	G1/8	8	13,5	5	47	25	17,5	19	2,5	54
TMVU 976-1/4-8	G1/4	8	13,5	6	48,5	25	18	19	2,5	55,5
TMVU 976-3/8-8	G3/8	8	13,5	7	49,5	25	18	20	2,5	56,5
TMVU 978-3/8-10	G3/8	10	16	7	51	29	17	25	2,5	59,5
TMVU 978-1/2-10	G1/2	10	18	8	52	29	17	25	2,5	60,5

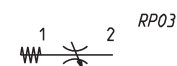
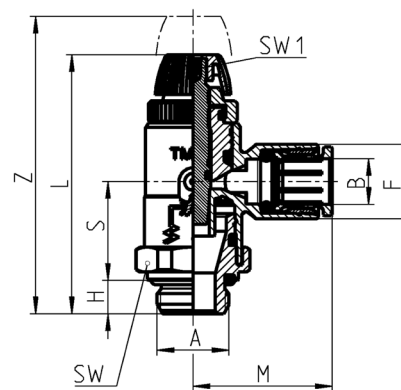


Series TMCU valves

Bidirectional flow controller.
Adjustment of setting by a hexagonal male key or a manually operated knurled screw.
Ports: G1/8, G1/4, G3/8, G1/2



DIMENSIONS										
Mod.	A	B	F	H	L	M	S	SW	SW1	Z
TMCU 972-1/8-4	G1/8	4	11,5	5	43	21,5	16,5	16	1,5	50
TMCU 974-1/8-6	G1/8	6	11,5	5	43	21,5	16,5	16	1,5	50
TMCU 974-1/4-6	G1/4	6	11,5	6	44	21,5	16,5	17	1,5	51
TMCU 976-1/8-8	G1/8	8	13,5	5	47	25	17,5	19	2,5	54
TMCU 976-1/4-8	G1/4	8	13,5	6	48,5	25	18	19	2,5	55,5
TMCU 976-3/8-8	G3/8	8	13,5	7	49,5	25	18	20	2,5	56,5
TMCU 978-3/8-10	G3/8	10	16	7	51	29	17	25	2,5	59,5
TMCU 978-1/2-10	G1/2	10	16	8	52	29	17	25	2,5	60,5



Series GSCU, GMCU, GSVU, GMVU, GSCO, GMCO flow control valves

Unidirectional and bidirectional banjo flow controllers with nominal diameter 1,5 - 3,5 - 5 mm
 Ports: M5, G1/8 and G1/4



These unidirectional and bidirectional flow controllers have been designed as small as possible to enable mounting directly on valves or cylinders. The flow regulation range is wide and gradual, allowing the regulation to be very accurate either at minimum or maximum flow.

GENERAL DATA

Construction	needle - type
Valve group	unidirectional and bidirectional controller
Materials	body and screws M5 inox; 1/8 - 1/4 - 3/8 - 1/2 OT58 seals NBR
Mounting	by male threaded
Installation	in any position
Operating temperature	0°C + 80°C (with dry air -20°C)
Operating pressure	1 ÷ 10 bar
Nominal pressure	6 bar
Nominal flow	see graph
Nominal diameter	M5 = 1.5 mm - G1/8 = 2 mm - G1/4 = 4 mm G3/8 = 7 mm - G1/2 = 12 mm
Fluid	filtered air

CODING EXAMPLE

GM	CU		9	03	-	1/8	-	6
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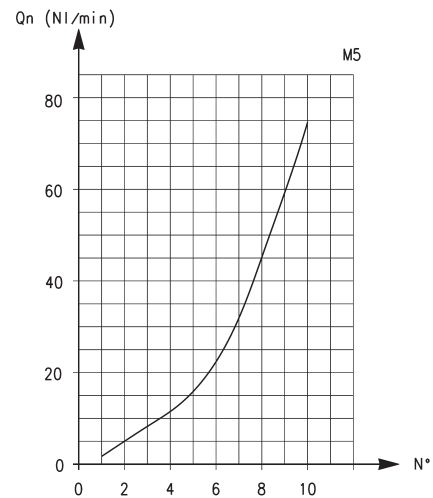
GM	ACTUATION: GM = manual GS = screwdriver																					
CU	ASSEMBLY: CU = on cylinders unidirectional VU = on valves unidirectional CO = bidirectional																					
9	VERSIONS: 8 = needle (screwdriver operated) 9 = needle (manually operated)																					
03	FLOW CONTROL RANGE: <table border="1"> <thead> <tr> <th></th> <th>size</th> <th>∅ tube</th> </tr> </thead> <tbody> <tr> <td>13 =</td> <td>1.5</td> <td>3</td> </tr> <tr> <td>14 =</td> <td>1.5</td> <td>4</td> </tr> <tr> <td>03 =</td> <td>3.5</td> <td>6</td> </tr> <tr> <td>04 =</td> <td>3.5</td> <td>8</td> </tr> <tr> <td>05 =</td> <td>5</td> <td>8</td> </tr> <tr> <td>06 =</td> <td>5</td> <td>10</td> </tr> </tbody> </table>		size	∅ tube	13 =	1.5	3	14 =	1.5	4	03 =	3.5	6	04 =	3.5	8	05 =	5	8	06 =	5	10
	size	∅ tube																				
13 =	1.5	3																				
14 =	1.5	4																				
03 =	3.5	6																				
04 =	3.5	8																				
05 =	5	8																				
06 =	5	10																				
1/8	PORTS: M5 1/8 1/4																					
6	∅ TUBE: 3 4 6 8 10																					

To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in NI/min (see cylinder Table); determine the stroke time of the cylinder; refer to graph to see which controller is the right type.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS

2

CONTROL



To ensure the right choice of unidirectional flow controller, proceed as follows: calculate the quantity of air in NI/min (see cylinder Table); determine the stroke time of the cylinder; refer to graph to see which controller is the right type.

In the case of bidirectional regulators, refer to the graph and check whether the flow control range is suitable for the work required.

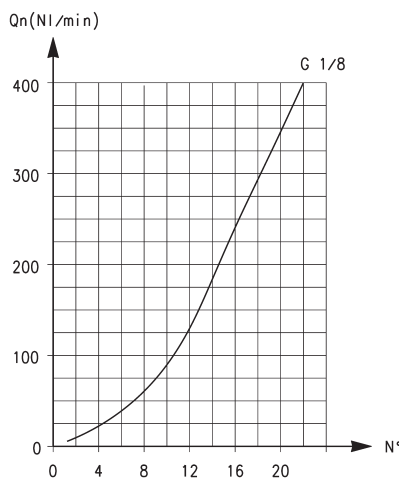
M5

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 70

Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 33

N° = number of screw turns

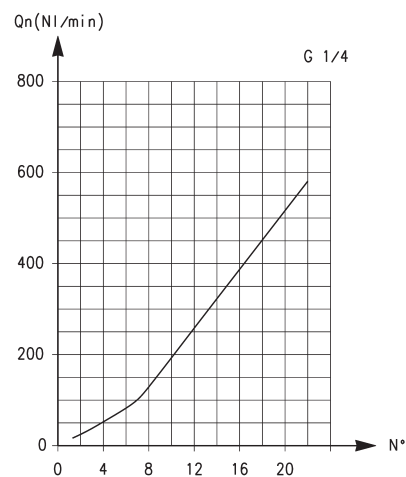
 NB: Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet.

UNIDIRECTIONAL AND BIDIRECTIONAL FLOW CONTROL REGULATORS

G1/8

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 440

Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 170

N° = number of screw turns

 NB: Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet.

G1/4

Flow Qn (NI/min.) from 2 → 1 with controller OPEN: 790

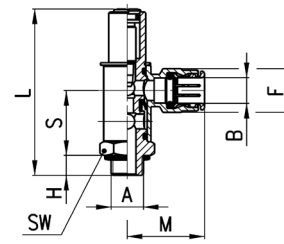
Flow Qn (NI/min.) from 2 → 1 with controller CLOSED: 460

N° = number of screw turns

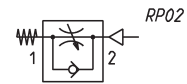
 NB: Qn is determined with a supply pressure of 6 bar and with $\Delta P = 1$ bar at the outlet.

Valves Series GSCU

Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Screwdriver adjustment.
Ports: M5, G1/8, G1/4 .

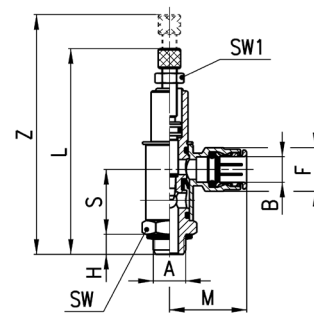


DIMENSIONS								
Mod.	A	B	S	H	L	M	F	SW
GSCU 813-M5-3	M5	3	12	3	27,5	12,5	6,5	8
GSCU 814-M5-4	M5	4	12	3	27,5	19	8,8	8
GSCU 803-1/8-6	G1/8	6	22,5	5	50	26,5	13	14
GSCU 804-1/8-8	G1/8	8	22,5	5	50	28	15	14
GSCU 805-1/4-8	G1/4	8	27	7	67,5	28,5	15	19
GSCU 806-1/4-10	G1/4	10	27	7	67,5	31	17,5	19

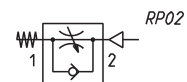


Valves Series GMCU

Unidirectional flow controller for mounting on single-acting or double-acting cylinders.
Knurled screw adjustment.
Ports: M5, G1/8, G1/4.

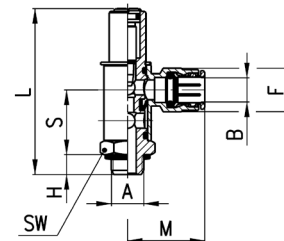


DIMENSIONS										
Mod.	A	B	S	H	L	Z	M	F	SW	SW1
GMCU 913-M5-3	M5	3	12	3	37	42,5	12,5	6,5	8	5,5
GMCU 914-M5-4	M5	4	12	3	37	42,5	19	8,8	8	5,5
GMCU 903-1/8-6	G1/8	6	22,5	5	65,5	72,5	26,5	13	14	7
GMCU 904-1/8-8	G1/8	8	22,5	5	65,5	72,5	28	15	14	7
GMCU 905-1/4-8	G1/4	8	27	7	85	97,5	28,5	15	19	10
GMCU 906-1/4-10	G1/4	10	27	7	85	97,5	31	17,5	19	10

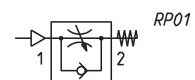


Valves Series GSVU

Unidirectional flow controller for mounting on valves.
Screwdriver adjustment.
Ports: M5, G1/8, G1/4.



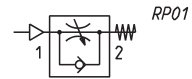
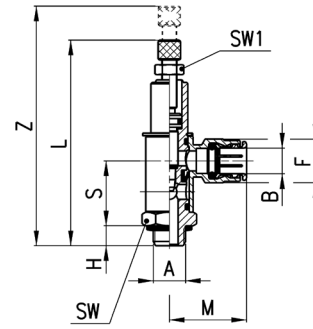
DIMENSIONS								
Mod.	A	B	S	H	L	M	F	SW
GSVU 813-M5-3	M5	3	12	3	27,5	12,5	6,5	8
GSVU 814-M5-4	M5	4	12	3	27,5	19	8,8	8
GSVU 803-1/8-6	G1/8	6	22,5	5	50	26,5	13	14
GSVU 804-1/8-8	G1/8	8	22,5	5	50	28	15	14
GSVU 805-1/4-8	G1/4	8	27	7	67,5	28,5	15	19
GSVU 806-1/4-10	G1/4	10	27	7	67,5	31	17,5	19





Valves Series GMVU

Unidirectional flow controller for mounting on valve.
Adjustment of setting by a manually operated knurled screw.
Ports: M5, G1/8, G1/4.

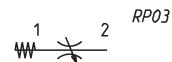
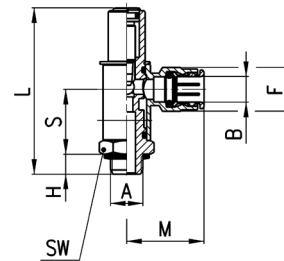


DIMENSIONS										
Mod.	A	B	S	H	L	Z	M	F	SW	SW1
GMVU 913-M5-3	M5	3	12	3	37	42,5	12,5	6,5	8	5,5
GMVU 914-M5-4	M5	4	12	3	37	42,5	19	8,8	8	5,5
GMVU 903-1/8-6	G1/8	6	22,5	5	50	72,5	26	13	14	7
GMVU 904-1/8-8	G1/8	8	22,5	5	50	72,5	28	15	14	7
GMVU 905-1/4-8	G1/4	8	27	7	67,5	97,5	29	15	19	10
GMVU 906-1/4-10	G1/4	10	27	7	67,5	97,5	31	17,5	19	10



Valves Series GSCO

Bidirectional flow controller.
Screwdriver adjustment.
Ports: M5, G1/8, G1/4.

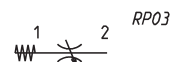
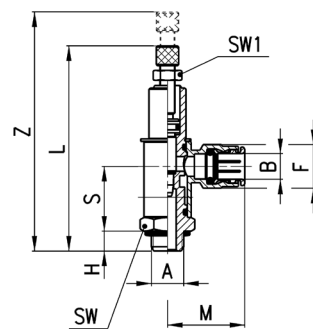


DIMENSIONS								
Mod.	A	B	S	H	L	M	F	SW
GSCO 813-M5-3	M5	3	12	3	27,5	12,5	6,5	8
GSCO 814-M5-4	M5	4	12	3	27,5	19	8,8	8
GSCO 803-1/8-6	G1/8	6	22,5	5	50	26,5	13	14
GSCO 804-1/8-8	G1/8	8	22,5	5	50	28	15	14
GSCO 805-1/4-8	G1/4	8	27	7	67,5	28,5	15	19
GSCO 806-1/4-10	G1/4	10	27	7	67,5	31	17,5	19



Valves Series GMCO

Bidirectional flow controller.
Adjustment of setting by a manually operated knurled screw.
Ports: M5, G1/8, G1/4.



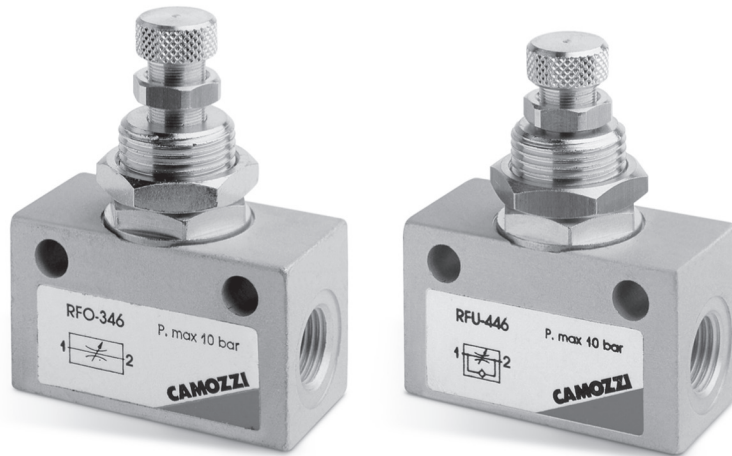
DIMENSIONS										
Mod.	A	B	S	H	L	Z	M	F	SW	SW1
GMCO 913-M5-3	M5	3	12	3	37	42,5	12,5	6,5	8	5,5
GMCO 914-M5-4	M5	4	12	3	37	42,5	19	8,8	8	5,5
GMCO 903-1/8-6	G1/8	6	22,5	5	65,5	72,5	26,5	13	14	7
GMCO 904-1/8-8	G1/8	8	22,5	5	65,5	72,5	28	15	14	7
GMCO 905-1/4-8	G1/4	8	27	7	85	97,5	28,5	15	19	10
GMCO 906-1/4-10	G1/4	10	27	7	85	97,5	31	17,5	19	10

Series RFU and RFO flow control valves

Unidirectional and bidirectional

Ports: M5, G1/8, G1/4, G3/8 and G1/2

Nominal diameters: 1,5 mm (M5), 2 and 3 mm (G1/8),
4 and 6 mm (G1/4), 7 mm (G3/8 and G1/2)



- » Series RFU: unidirectional flow control valves for the speed regulation of a cylinder
- » Series RFO: bidirectional flow control valves for the air flow regulation in both directions and for the pressurization or depressurization of a container.

2

CONTROL

The unidirectional flow controllers are equipped with M5, G1/8, G1/4, G3/8 and G1/2 ports.

G1/8 and G1/4 ports are available with two different types of adjustment (see diagrams), whereas M5, G3/8 and G1/2 ports have just one type of adjustment. All models can be panel or wall mounted or they can be mounted on cylinders, as required.

To choose the most suitable model, it is recommended to:

1. calculate the quantity of air in NI/min (see the cylinders tables in the catalogue appendix);
2. determine the stroke time of the cylinder;
3. check the flow diagrams (see pages 2/7.20.03 and 2/7.20.04).

GENERAL DATA

Construction	needle-type
Valve group	unidirectional and bidirectional controller
Materials	AL body - brass needle (not nickel-plated) - NBR seals
Mounting	with screws in the holes of the valve body or panel mounted
Threaded ports	M5 - G1/8 - G1/4 - G3/8 - G1/2
Installation	as required
Operating temperature	0°C ÷ 80°C (with dry air - 20°C)
Operating pressure	1 ÷ 10 bar (for models with M5 - G1/8 - G1/4 ports) 2 ÷ 10 bar (for models with G3/8 - G1/2 ports)
Nominal pressure	6 bar
Nominal flow	see graph
Nominal diameter	M5 = 1,5 - G1/8 = 2 or 3 mm - G1/4 = 4 or 6 mm - G3/8 and G1/2 = 7 mm
Fluid	filtered air

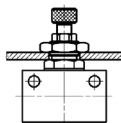
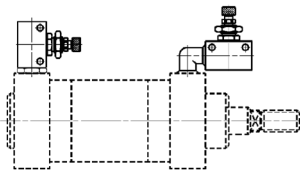
CODING EXAMPLE

RF	U		4	8	2	-	1/8
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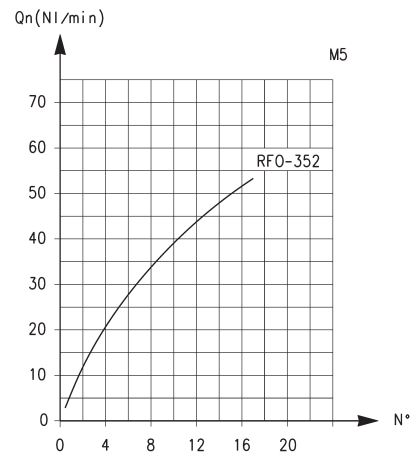
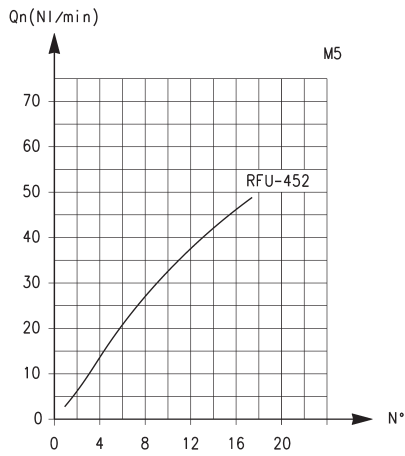
RF	SERIES
U 4	FUNCTION: U 4 = unidirectional O 3 = bidirectional
8	PORTS: 4 = G1/4 5 = M5 6 = G3/8 7 = G1/2 8 = G1/8
2	FLOW CONTROL RANGE: 2 = \varnothing 1.5 mm max (for ports M5) \varnothing 2 mm max (for ports 1/8 only) 3 = \varnothing 3 mm max (for ports 1/8 only) 4 = \varnothing 4 mm max (for ports 1/4 only) 6 = \varnothing 6 mm max (for ports 1/4 only) 7 = \varnothing 7 mm max (for ports 3/8, 1/2 only)
1/8	PORTS: M5 1/8 1/4 3/8 1/2

2

CONTROL

EXAMPLES OF SERIES RFO - RFU VALVES ASSEMBLY


FLOW DIAGRAMS (1 → 2) - VALVES SERIES RFU / RFO - M5 PORTS



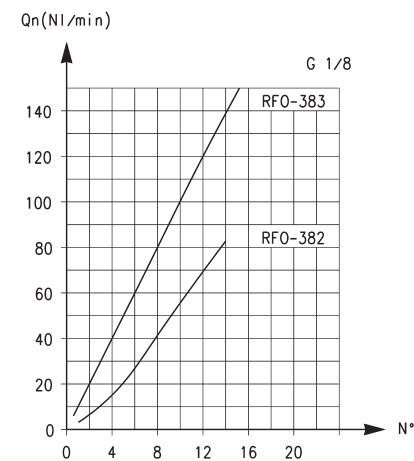
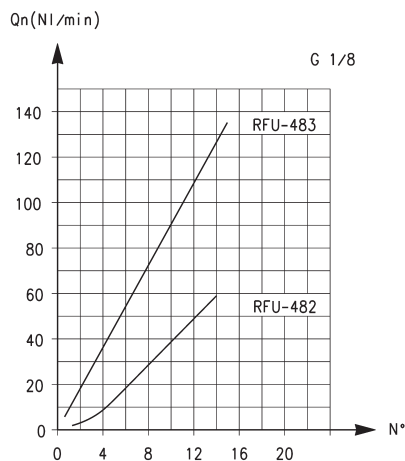
RFU 452-M5: flow from 2 → 1 needle type OPEN = 55 NI/min
CLOSED = 41 NI/min

RFO 352-M5

N° = number of screw turns
Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and ΔP = 1 bar at the outlet.

N° = number of screw turns
Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and ΔP = 1 bar at the outlet.

FLOW DIAGRAMS (1 → 2) - VALVES SERIES RFU / RFO - G1/8 PORTS

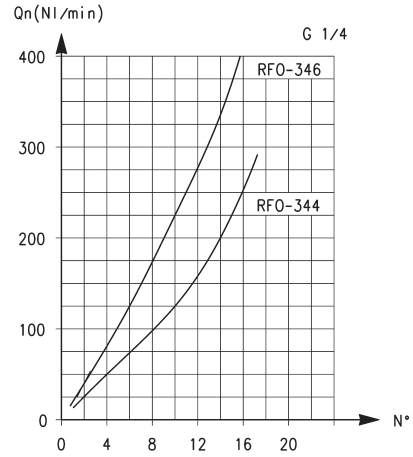
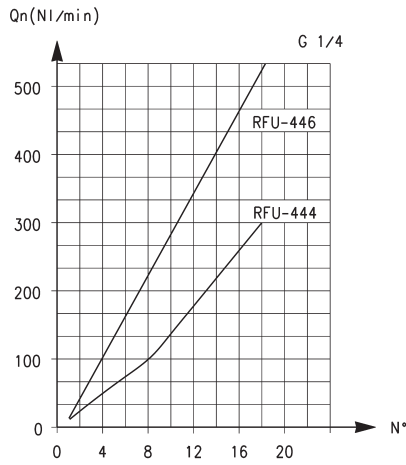


RFU 482-1/8: flow from 2 → 1 needle type OPEN = 149 NI/min
CLOSED = 130,5 NI/min
RFU 483-1/8: flow from 2 → 1 needle type OPEN = 180 NI/min
CLOSED = 140 NI/min

RFO 382-1/8 - RFO 383-1/8

N° = number of screw turns
Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and ΔP = 1 bar at the outlet.

N° = number of screw turns
Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and ΔP = 1 bar at the outlet.

FLOW DIAGRAMS (1 → 2) - VALVES SERIES RFU / RFO - G1/4 PORTS


RFU 444-1/4: flow from 2 → 1 needle type OPEN = 680 NI/min
 CLOSED = 534 NI/min
 RFU 446-1/4: flow from 2 → 1 needle type OPEN = 680 NI/min
 CLOSED = 534 NI/min

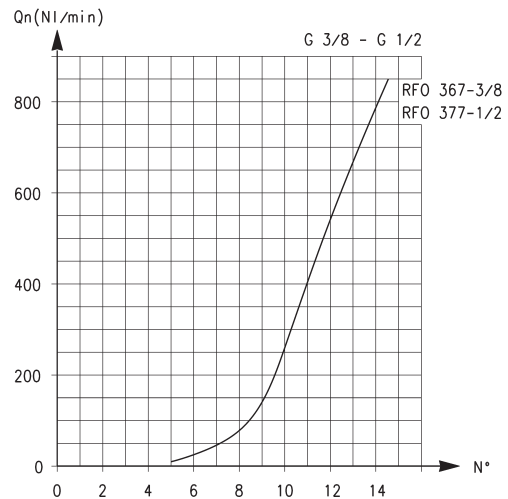
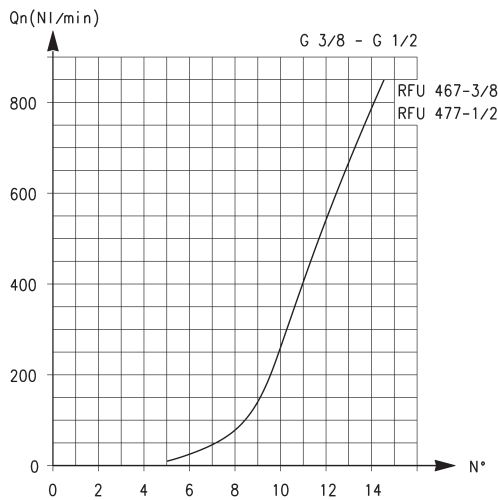
RFO 344-1/4 - RFO 346-1/4

N° = number of screw turns.

Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and $\Delta P = 1$ bar at the outlet.

N° = number of screw turns

Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and $\Delta P = 1$ bar at the outlet.

FLOW DIAGRAMS (1 → 2) - VALVES SERIES RFU / RFO - G3/8, G1/2 PORTS


RFU 467-3/8: flow from 2 → 1 needle type OPEN = 1700 NI/min
 CLOSED = 1700 NI/min
 RFU 477-1/2: flow from 2 → 1 needle type OPEN = 1700 NI/min
 CLOSED = 1700 NI/min

RFO 367-3/8 - RFO 377-1/2

N° = number of screw turns

Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and $\Delta P = 1$ bar at the outlet.

N° = number of screw turns

Note: the flow (Qn) is determined with a pressure of 6 bar at the inlet and $\Delta P = 1$ bar at the outlet.

Unidirectional flow control valves Series RFU

To regulate the cylinder speed, the discharging chamber air flow has to be controlled. Therefore, it is recommended to connect the valve threaded outlet 1 to the cylinder inlet and the outlet 2 to the valve user port.

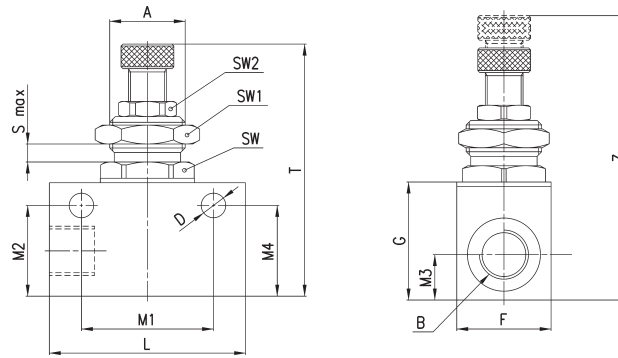


TABLE NOTE:

* knurled ring nut



RFU1



DIMENSIONS

Mod.	∅	A	B	D	F	G	L	M1	M2	M3	M4	T	Z	S _{Max}	SW	SW1	SW2
RFU 452-M5	1,5	M10x1	M5	4,2	14	16	26	18,5	13,2	7	13,2	39	44,5	3	12	14	8
RFU 482-1/8	2	M12x1	G1/8	4,5	16	21	34	24,5	16,5	8	16,5	46	51	4	14	17	9
RFU 483-1/8	3	M12x1	G1/8	4,5	16	21	34	24,5	16,5	8	16,5	46	51	4	14	17	9
RFU 444-1/4	4	M20x1,5	G1/4	6,5	25	30	52	35	24	12	24	60	69	7	22	24	14
RFU 446-1/4	6	M20x1,5	G1/4	6,5	25	30	52	35	24	12	24	60	69	7	22	24	14
RFU 467-3/8	7	M18x1	G3/8	6,5	27	42	56	43	34,5	28	7,5	75	85	8	22	22	*
RFU 477-1/2	7	M18x1	G1/2	6,5	27	42	56	43	34,5	28	7,5	75	85	8	22	22	*

Bidirectional flow control valves Series RFO

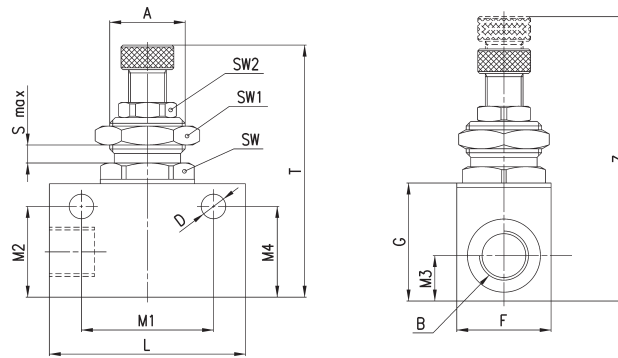


TABLE NOTE:

* knurled ring nut



RFO1



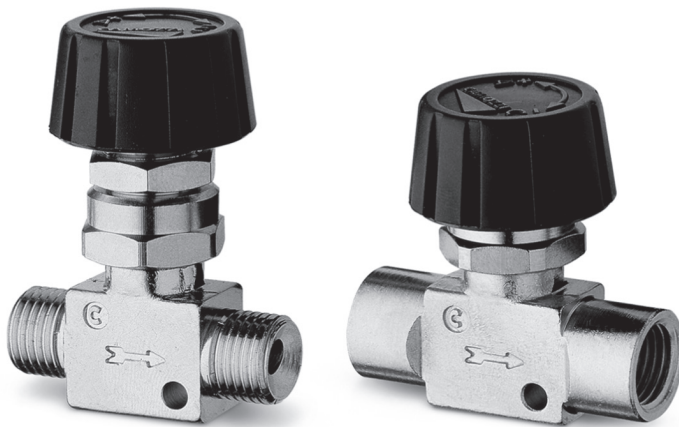
DIMENSIONS

Mod.	∅	A	B	D	F	G	L	M1	M2	M3	M4	T	Z	S _{Max}	SW	SW1	SW2
RFO 352-M5	1,5	M10x1	M5	4,2	14	16	26	18,5	13,2	7	13,2	39	44,5	3	12	14	8
RFO 382-1/8	2	M12x1	G1/8	4,2	16	21	34	24,5	16,5	8	16,5	46	51	4	14	17	9
RFO 383-1/8	3	M12x1	G1/8	4,5	16	21	34	24,5	16,5	8	16,5	46	51	4	14	17	9
RFO 344-1/4	4	M20x1,5	G1/4	6,5	25	30	52	35	24	12	24	60	69	7	22	24	14
RFO 346-1/4	6	M20x1,5	G1/4	6,5	25	30	52	35	24	12	24	60	69	7	22	24	14
RFO 367-3/8	7	M18x1	G3/8	6,5	27	42	56	43	34,5	28	7,5	75	85	8	22	22	*
RFO 377-1/2	7	M18x1	G1/2	6,5	27	42	56	43	34,5	28	7,5	75	85	8	22	22	*

Series 28 flow control valves

Bidirectional

Ports: G1/8, G1/4, G3/8, G1/2



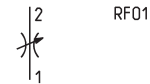
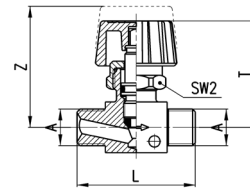
These are bidirectional control valves made entirely of nickel-plated brass, with NBR seals and a technopolymer control knob.

They are suitable for regulating compressed air, water or mineral oil. For models 2810, 2820, 2819 and 2829 exists the possibility to connect plastic, brass or copper tubes, using nut Mod. 1303 and cushion sleeve Mod. 1310/1320.

GENERAL DATA

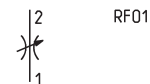
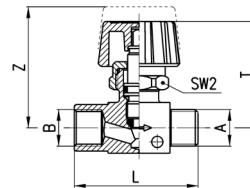
Construction	cone - type
Materials	body = nickel-plated brass control knob = technopolymer seals = NBR
Ports	G1/8, G1/4, G3/8, G1/2
Installation	as required
Operating pressure	0°C + 80°C (with dry air - 20°)
Operating pressure	0 ÷ 10 bar
Nominal flowrate	see table

Valve Mod. 2810



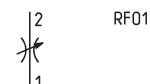
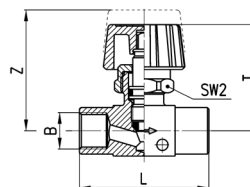
DIMENSIONS							
Mod.	A	L	T	Z	SW2	$\Delta 1\text{bar NI/min}$	Free flow NI/min
2810 1/8	G1/8	40	37	42,5	19	415	590
2810 1/4	G1/4	42	37	42,5	19	508	740
2810 3/8	G3/8	42	37	42,5	19	620	900
2810 1/2	G1/2	54	42	48	22	1540	2080

Valve Mod. 2820



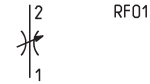
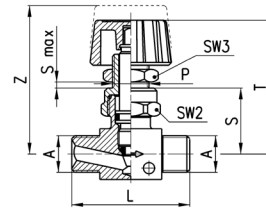
DIMENSIONS								
Mod.	A	B	L	T	Z	SW2	$\Delta 1\text{bar NI/min}$	Free flow NI/min
2820 1/8	G1/8	G1/8	41	37	42,5	19	400	640
2820 1/4	G1/4	G1/4	44	37	42,5	19	530	840
2820 3/8	G3/8	G3/8	55,5	41,5	48	22	1415	1990
2820 1/2	G1/2	G1/2	59	42	49	22	1520	2150

Valve Mod. 2830



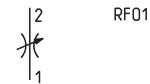
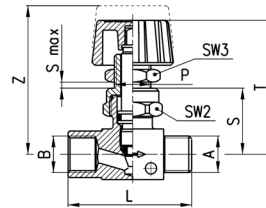
DIMENSIONS							
Mod.	B	L	T	Z	SW2	$\Delta 1\text{bar NI/min}$	Free flow NI/min
2830 1/8	G1/8	42	37	42,5	19	415	635
2830 1/4	G1/4	46	37	42,5	19	530	850
2830 3/8	G3/8	62	41,4	48	22	1415	1980
2830 1/2	G1/2	64	42	49	22	1520	2100

Valve Mod. 2819



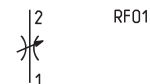
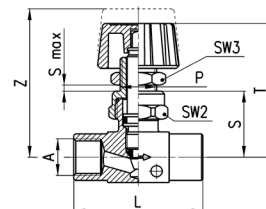
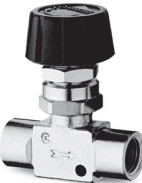
DIMENSIONS										
Mod.	A	L	P	S	T	Z	S _{Max}	SW2	SW3	
2819 1/8	G1/8	40	1/4	23	47	52,5	7	19	17	
2819 1/4	G1/4	42	1/4	23	47	52,5	7	19	17	

Valve Mod. 2829



DIMENSIONS										
Mod.	A	B	L	P	S	T	Z	S max	SW2	SW3
2829 1/8	G1/8	G1/8	41	1/4	23	47	52,5	7	19	17
2829 1/4	G1/4	G1/4	44	1/4	23	47	52,5	7	19	17

Valve Mod. 2839



DIMENSIONS										
Mod.	A	L	P	S	T	Z	S max	SW2	SW3	
2839 1/8	G1/8	42	1/4	23	47	52,5	7	19	17	
2839 1/4	G1/4	46	1/4	23	47	52,5	7	19	17	
2839 3/8	G3/8	62	14X1	28	56,5	63	7	22	17	
2839 1/2	G1/2	64	14X1	29	57	64	7	22	17	

Pressure switches, Transducers, Pressure indicators

Series PM: adjustable-diaphragm pressure switches, with setting visual scale, with exchange contacts

Series TRP: electro-pneumatic transducers

Series 2950: pressure indicators, ports M5



Series PM diaphragm pressure switches are available with NC (normally closed) contacts and with NO (normally open) contacts.

Series PM681 pressure switches with setting visual scale comply with EN60730 standards and are suitable for signalling pressure through a normally closed Reed contact.

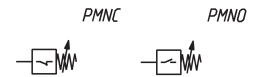
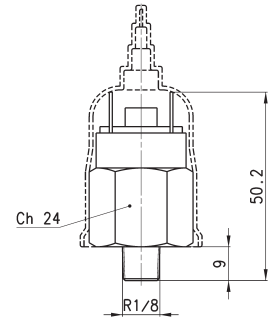
A regulating screw, which can be adjusted using a small screwdriver, allows the switch to be set to the required pressure. The calibrated diaphragm enables an electrical signal to be generated or inhibited depending on the pressure set.

GENERAL DATA

Construction	with adjustable diaphragm
Ports	R1/8, G1/4 (Serie PM) tube 4/2 (Series TRP) M5 (Series 2950)
Mounting	using thread in body
Max. nr. of pulses per 1'	200
Pressure	1 + 10 bar max.
Operating temperature	-5°C + +60°C
Max. power	100 VA
Voltage	220 V
Isolation voltage	1500 V
Max current	0.5 A
Pressure switches protection class	IP40 (Mod. PM681-1, PM681-3) IP54 (Mod. PM11-NC, PM11-NA) IP65 (Mod. PM11-SC)


Series PM adjustable-diaphragm pressure switches

Supplied with a rubber cap providing protection class IP54.

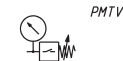
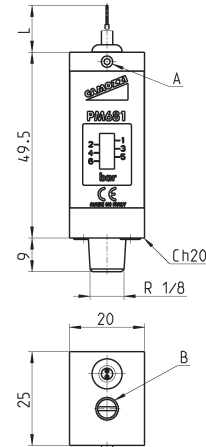


PMNC = normally closed
PMNO = normally open

Mod.	Function	Max Voltage	Max Power	Service Type	Insulation voltage	Symbol
PM11-NC	NC = normally closed	48 V AC DC	24 VA	Heavy	500 V	PMNC
PM11-NA	NA = normally open	48 V AC DC	24 VA	Heavy	500 V	PMNO


Series PM681-... - pressure switches with setting visual scale

In compliance with EN60730 standard
Protection class IP40
Electric connection: PVC cable 2 x 0.22 mm
Electric contact: Reed SPST NO
Body in anodized aluminium and threaded fitting in brass
Hysteresis: 0.8 bar max

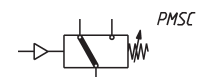
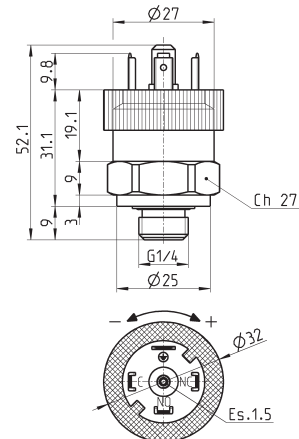


A = SETTING GRAIN LOCKING B = ADJUSTMENT SCREW

Mod.	L	Max switch voltage	Max switch current	Max switch capacity	Max fluid temperature	Max pressure	Setting range	Weight
PM681-1	1 m	48 V	0.5 A	10 W	60°C	20 bar	1 + 6 bar	95 g
PM681-3	3 m	48 V	0.5 A	10 W	60°C	20 bar	1 + 6 bar	95 g

Pressure switch with exchange contacts Mod. PM11-SC

Protection class IP65
(with connector Mod. 124-830)



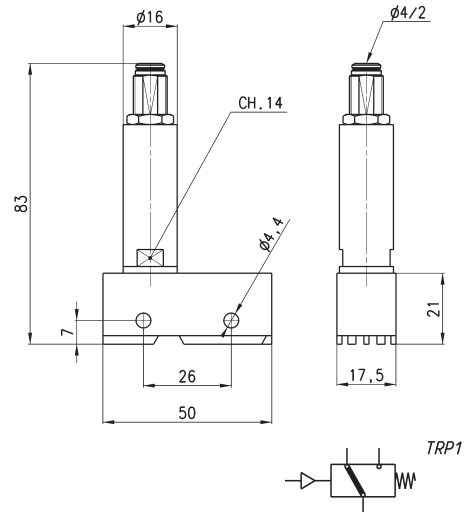
(*) SC = exchange contacts

DIMENSIONS						
Mod.	Function	Max Voltage	Operating Temperature	Actuation time	Setting range	Max Hysteresis
PM11-SC	SC (*)	250V AC - 30V DC	-25°C +85°C	> 0,1 ms	2 + 10 bar	0.8 bar

Electro-pneumatic transducer Series TRP



Series TRP electro-pneumatic transducer is particularly suitable to convert a pneumatic signal into an electrical signal. The contacts are NC (normally closed) or NO (normally open), thus making it possible to generate or eliminate current when the pneumatic signal is present. Minimum operating pressure 2,5 bar.

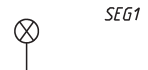
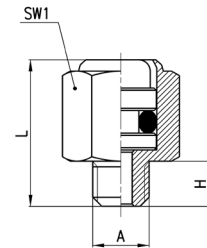


Mod.
TRP-8

Pressure indicators Series 2950

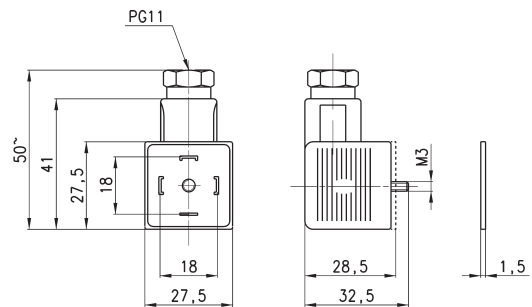


The pressure indicator Mod. 2950-M5 is passive element (no spring, red colour). It is useful for detecting pressure manually without having to remove the connections.



DIMENSIONS				
Mod.	A	H	L	SW1
2950 M5	M5	4	13.5	8

3-pole connector Mod. 124-830 for pressure switch Mod. PM11-SC



Mod.	description	colour	working voltage	cable holding	tightening torque
124-830	three-pole connector without electronics	black	-	PG9/PG11	0.5 Nm
124-830EX	three-pole ATEX connector without electronics	black	-	PG9/PG11	0.5 Nm

Series SWDN electronic vacuum/pressure switches

With digital display
High precision, easy to use



- » Compact and lightweight
- » Digital indicator: precision electronic insertion with two separated switch outputs
- » Switching point and hysteresis can be programmed with a membrane keypad.

APPLICATIONS:

- electronic vacuum/pressure switch for safety monitoring, optimization of cycle times or energy saving devices;
- it can be installed directly on the gripping point of a handling system;
- setting of the limit vacuum value and continuous vacuum control;
- perfectly suitable for customer needs.

ELECTRIC CONNECTION:

the device is available with hardwired cable of 2 meters or can be supplied with M8 connector. Accessories and extensions have to be ordered separately. Codes can be found at the end of this section.

GENERAL DATA

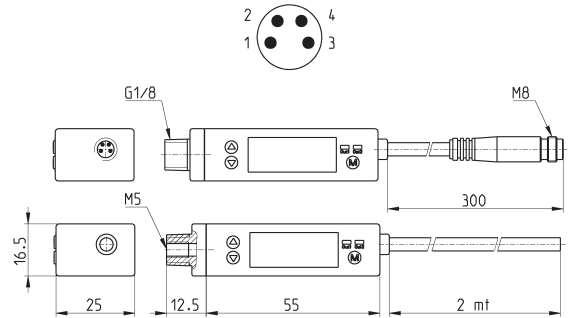
Type of pressure/vacuum switch	electronic with polycarbonate housing
Port	with external thread G1/8 and internal thread M5
Display	3 digit display with membrane keypad for the values set up
LED	integrated LED indicators for switching state
Electric connection	with M8 4-pole connector or pre-wired cable of 2 meters

CODING EXAMPLE						
SWDN	-	V01	-	P3	-	2
SWDN	SERIES					
V01	SET PRESSURE RANGE: V01 = from -1 bar to 1 bar P10 = from 0 bar to 10 bar					
P3	TYPE OF ELECTRIC CONNECTION: P3 = 2 PNP outputs + 1 analog output 1 - 5 V DC (this version is available with 5-pole cable only) P4 = 2 PNP outputs					
2	ELECTRIC CONNECTION: 2 = cable of 2 meters M = M8 4 pin connector					



Vacuum/Pressure switch Series SWDN

- 1 = brown (+)
- 2 = white (OUT 2)
- 3 = blue (-)
- 4 = black (OUT 1)
- Analogic output = orange



Mod.
SWDN-V01-P3-2
SWDN-V01-P4-2
SWDN-V01-P4-M
SWDN-P10-P3-2
SWDN-P10-P4-2
SWDN-P10-P4-M

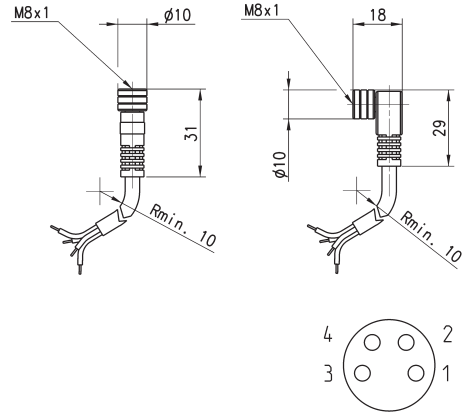
TECHNICAL DATA
CHARACTERISTICS

	SWDN-V01-...	SWDN-P10-...
Rated pressure range (set-value)	-1 + 1 bar	0 + 10 bar
Setting pressure range (it can be displayed on the screen)	-1 + 1 bar	-1 + 10 bar
Withstand (Maximum) pressure	3 bar	15 bar
Fluid	Air, non-corrosive gases, incombustible gases	
Set pressure resolution:		
kPa	0,1	-
MPa	-	0,001
Kgf/cm ²	0,001	0,01
bar	0,001	0,01
Psi	0,01	0,1
InHg	0,1	-
mmHg	1	-
mmH ₂ O	0,1	-
Power supply voltage	12-24 VDC ± 10%, ripple (P-P) 10% or less	
Current consumption	≤ 55mA	
PNP switch output	2 outputs with open collector max. load current of 80mA max. power supply voltage of 24VDC residual voltage ≤ 1V (with load current of 80mA)	
Repeatability (switch output)	≤ ± 0,2% F.S. ± 1 digit	
Analog output (where foreseen)	1 - 5V ± 5% F.S. (within the linear range: ≤ ± 1% F.S.)	1 - 5V ± 2,5% F.S.
Hysteresis:	Hysteresis mode Window comparator mode	Adjustable Fixed (3 digits)
Response time	≤ 2,5ms (chattering-proof function: 24ms, 192ms and 768ms)	
Output short circuit protection	YES	
7 segment LED display	3 ½ digit (sampling rate of 5 times/sec)	
Indicator accuracy	≤ ± 2% F.S. ± 1 digit (ambient temperature: 25 ± 3°C)	
Indicator	green LED (OUT1), red LED (OUT2)	
Environment:	IP40	
Protection class	IP40	
Temperature	Operation: 0 + 50°C Storage: -20 + 60°C (without condensation or freezing)	
Relative humidity	Operation/Storage: 35 + 85% (without condensation)	
Withstand (Max.) voltage	1000 VAC in 1 min (between case and lead wire)	
Insulation resistance	50MΩ min. (at 500VDC between case and lead wire)	
Vibration	Total amplitude 1.5 mm 10Hz-55Hz-10Hz scan for 1 minute 2 hours each direction of X, Y and Z	
Shock	980 m/s ² (100G) 3 times each direction of X, Y and Z	
Changes due to temperature	≤ ± 2% F.S. of detected pressure (25°C) within the operating temperature range	
Port size	G1/8 - M5	
Lead wire	Oil-resistance cable (0,15 mm ²)	
Weight	About 67 g for the version with 2-meter lead wire About 35 g for the version with male connector	

Circular M8 4-pole connectors, Female

Protection class: IP65

Materials: PU non shielded cable



Mod.	Type of connector	Cable length (m)
CS-DF04EG-E200	straight	2
CS-DF04EG-E500	straight	5
CS-DR04EG-E200	90°	2
CS-DR04EG-E500	90°	5

Series SWCN electronic vacuum/pressure switches

With digital display
High precision, easy to use

2

CONTROL



- » Compact and lightweight
- » Digital indicator: precised electronic insertion with two separated switch outputs
- » Switching point and hysteresis can be programmed with a membrane keypad
- » Upper and lower limit values can be programmed through two PNP switch outputs

APPLICATIONS:

- electronic vacuum/pressure switch for safety monitoring, optimization of cycle times or energy saving devices;
- it can be installed directly on the gripping point of a handling system;
- setting of the limit vacuum value and continuous vacuum control;
- perfectly suitable for customer needs.

ELECTRIC CONNECTION:

the device is available with hardwired cable of 2 meters or can be supplied with M8 connector. Accessories and extensions have to be ordered separately. Codes can be found at the end of this section.

GENERAL DATA

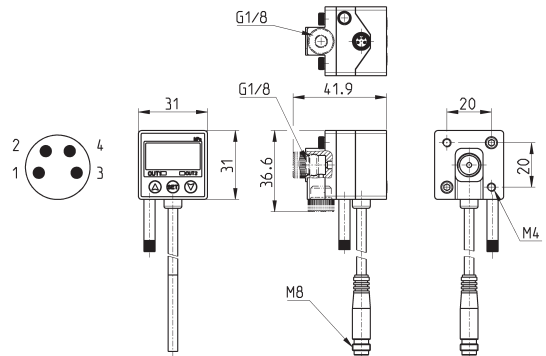
Type of pressure/vacuum switch	electronic with polycarbonate housing
Port	with external thread G1/8 and internal thread M5
Display	3 digit display with membrane keypad for the values set up
LED	integrated LED indicators for switching state
Electric connection	with M8 4-pole connector or pre-wired cable of 2 meters

CODING EXAMPLE						
SWCN	-	V01	-	P3	-	2
SWCN	SERIES					
V01	SET PRESSURE RANGE: V01 = from -1 bar to 1 bar P10 = from 0 bar to 10 bar					
P3	TYPE OF ELECTRIC CONNECTION: P3 = 2 PNP outputs + 1 analog output 1 - 5 V DC (this version is available with 5-pole cable only) P4 = 2 PNP outputs					
2	ELECTRIC CONNECTION: 2 = cable of 2 meters M = M8 4 pin connector					



Vacuum/Pressure switch Series SWCN

- 1 = brown (+)
- 2 = white (OUT 2)
- 3 = blue (-)
- 4 = black (OUT 1)
- Analogic output = orange



Mod.
SWCN-V01-P3-2
SWCN-V01-P4-2
SWCN-V01-P4-M
SWCN-P10-P3-2
SWCN-P10-P4-2
SWCN-P10-P4-M

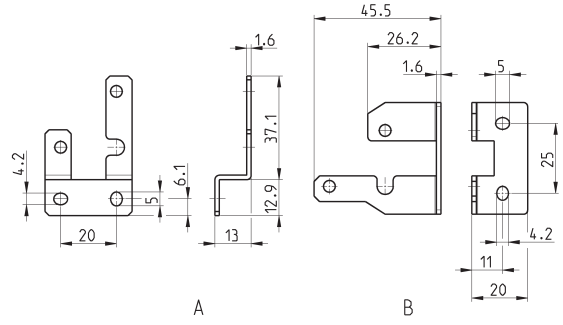
TECHNICAL DATA
CHARACTERISTICS

		SWCN-V01-...	SWCN-P10-...
Rated pressure range (set-value)		-1 + 1 bar	0 + 10 bar
Setting pressure range (it can be displayed on the screen)		-1 + 1 bar	-1 + 10 bar
Withstand (Maximum) pressure		3 bar	15 bar
Fluid		Air, non-corrosive gases, incombustible gases	
Set pressure resolution:	kPa	0,1	-
	MPa	-	0,001
	Kgf/cm ²	0,001	0,01
	bar	0,001	0,01
	Psi	0,01	0,1
	InHg	0,1	-
	mmHg	1	-
	mmH ₂ O	0,1	-
Power supply voltage		12-24 VDC ± 10%, ripple (P-P) 10% or less	
Current consumption		≤ 55mA	
PNP switch output		2 outputs with open collector max. load current of 80mA max. power supply voltage of 24VDC residual voltage ≤ 1V (with load current of 80mA)	
Repeatability (switch output)		≤ ± 0,2% F.S. ± 1 digit	
Analog output (where foreseen)		1 - 5V ± 5% F.S. (within the linearity range: ≤ ± 1% F.S.)	1 - 5V ± 2,5% F.S.
Hysteresis:	Hysteresis mode	Adjustable	
	Window comparator mode	Fixed (3 digits)	
Response time		≤ 2,5ms (chattering-proof function: 24ms, 192ms and 768ms)	
Output short circuit protection		YES	
7 segment LED display		3 ½ digit (sampling rate of 5 times/sec)	
Indicator accuracy		≤ ± 2% F.S. ± 1 digit (ambient temperature: 25 ± 3°C)	
Indicator		green LED (OUT1), red LED (OUT2)	
Environment:	Protection class	IP65	
	Temperature	Operation: 0 + 50°C Storage: -20 + 60°C (without condensation or freezing)	
	Relative humidity	Operation/Storage: 35 + 85% (without condensation)	
	Withstand (Max.) voltage	1000 VAC in 1 min ((between case and lead wire)	
	Insulation resistance	50MΩ min. (at 500VDC between case and lead wire)	
	Vibration	Total amplitude 1.5 mm 10Hz-55Hz-10Hz scan for 1 minute 2 hours each direction of X, Y and Z	
	Shock	980 m/s ² (100G) 3 times each direction of X, Y and Z	
	Changes due to temperature		≤ ± 2% F.S. of detected pressure (25°C) within the operating temperature range
Port size		G1/8 - M5	
Lead wire		Oil-resistance cable(0,15 mm ²)	
Weight		About 105 g for the version with 2-meter lead wire About 71 g for the version with male connector	

Mounting bracket Mod. SWCN-B

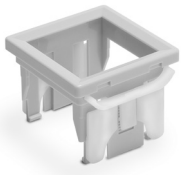


- Supplied with:
- 4 fixing screws M4x5 ISO 724 (fine pitch)
 - 1 fixing bracket for surface mounting (A)
 - 1 fixing bracket for wall mounting (B)

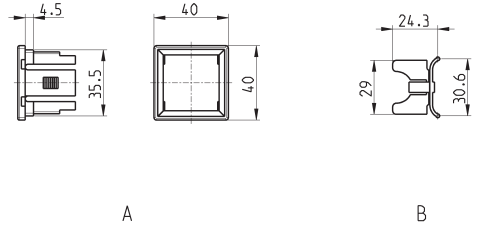


Mod.
SWCN-B

Panel mounting set Mod. SWCN-F



- Supplied with:
- 1 pressure switch holder (A)
 - 2 panel mounting brackets (B)

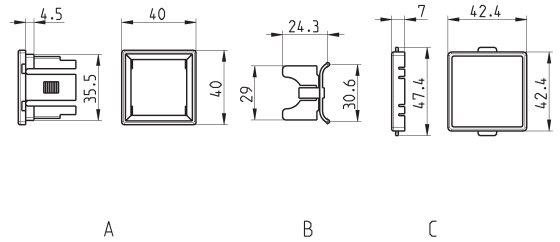


Mod.
SWCN-F

Panel mounting set + transparent cover Mod. SWCN-FP



- Supplied with:
- 1 pressure switch holder (A)
 - 2 panel mounting brackets (B)
 - 1 transparent cover (C)

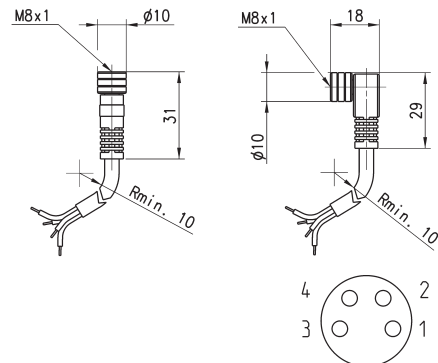


Mod.
SWCN-FP

Circular M8 4-pole connectors, Female



With PU sheathing, non shielded cable.
Protection class: IP65

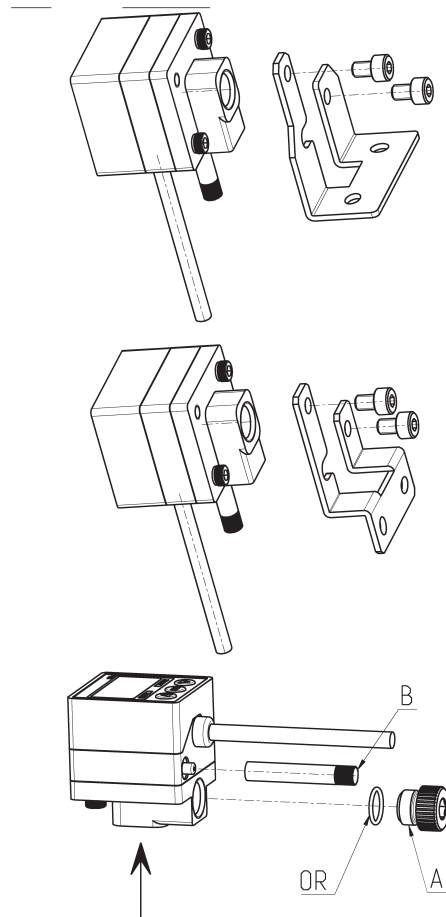


Mod.	Type of connector	Cable length (m)
CS-DF04EG-E200	straight	2
CS-DF04EG-E500	straight	5
CS-DR04EG-E200	right angle (90 degrees)	2
CS-DR04EG-E500	right angle (90 degrees)	5

Example of mounting with bracket Mod. SWCN-B and standard accessories
A: ADDITIONAL POWER SUPPLY

In case of use, please unscrew plug A from one side and mount it on the other one.

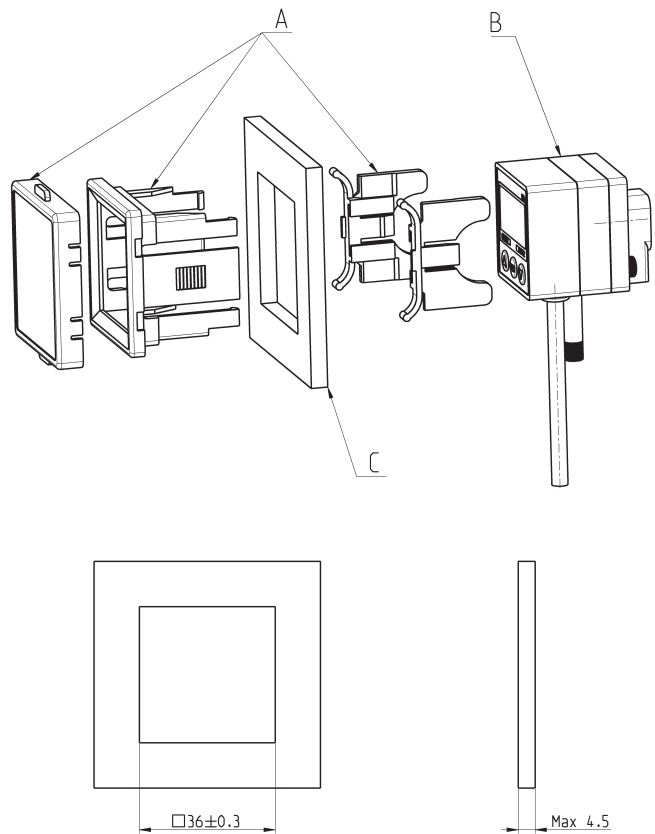
B: Use of the AIR FILTER TUBE to reach the IP 65 protection class.


Example of mounting with panel mounting set Mod. SWCN-F

A = PANEL MOUNTING SET MOD. SWCN-F

B = PRESSURE SWITCH MOD. SWCN-...

C = PANEL



Silencers

Series: 2901 - 2903 - 2921 - 2931 - 2938 - 2939 - 2905 - RSW
 Ports: M5, G1/8, G1/4, G3/8, G1/2, G3/4, G1



The silencers are indispensable elements for eliminating or reducing the characteristic noise of compressed air during discharge operations. They should always be placed on the outlets of 3/2, 5/2 or 5/3-way valves.

When carrying out maintenance, the silencers should be degreased using white spirit or paraffin and compressed air blown through them in the opposite direction to operation.

Flow rate: determined with inlet supply 6 bar and output in atmosphere.

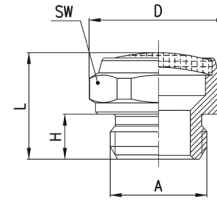
Noise level: determined through a test which is carried out using a phonometer. Placing the phonometer one meter away from the application at the same height for a period of ten seconds gives an average reading of the noise generated.

GENERAL DATA

Construction	body with male and female thread
Materials used for body	2901 - 2903: brass 2921 - 2931: coppering steel 2938 - 2939: polyethylene
Materials used for silencing	2901 - 2903: stainless steel 2921 - 2931: bronze (sintered) 2938 - 2939: polyethylene
Ports	M5 - G1/8 - G1/4 - G3/8 - G1/2 - G3/4 - G1

Silencers Series 2901

New model



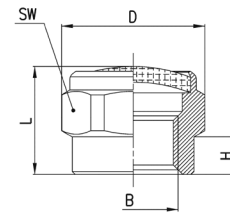
DIMENSIONS

Mod.	A	D	H	L	SW	Max operating pressure (bar)	Flow rate (NI/min)	Noise db (A)	
2901 M5	* M5	9	4	8.5	8	10	150	66	* sintered bronze silencer element
2901 1/8	G1/8	15.3	5	12	14	10	700	76	
2901 1/4-17	G1/4	18.5	6	14	17	10	1000	78	
2901 1/4-22	G1/4	23.5	6	15	22	10	1600	80	
2901 3/8	G3/8	23.5	7	16	22	10	1500	76	
2901 1/2	G1/2	29.5	8	17.5	27	10	3400	86	
2901 3/4	G3/4	34	9	20	32	6	4100	87	
2901 1	G1	43	11	24.5	40	6	7600	88	

SIL 1



Silencers Series 2903



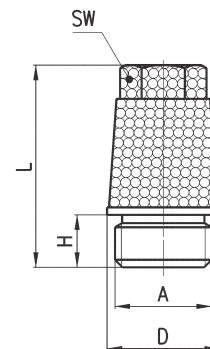
DIMENSIONS

Mod.	B	D	H	L	SW	Max. Oper. Pressure	Flow rate NI/Min	Noise db(A)
2903 1/8	G1/8	15,3	4	11	14	10	700	74

SIL 1



Silencers Series 2921



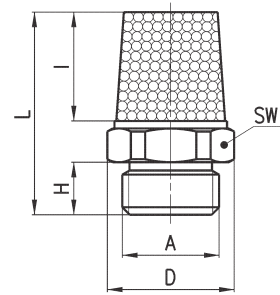
DIMENSIONS

Mod.	A	D	H	L	SW	Max. Oper. Pressure	Flow rate NI/Min	Noise db(A)
2921 1/8	G1/8	12	4,5	21,5	8	10	1730	81
2921 1/4	G1/4	15	6	28	10	10	3300	85
2921 3/8	G3/8	19	8	37	13	10	4250	79
2921 1/2	G1/2	23	9	43,5	15	10	6800	87
2921 3/4	G3/4	30	10	56	19	10	9800	84
2921 1	G1	37	12	67	24	10	10900	86

SIL 1



Silencers Series 2931

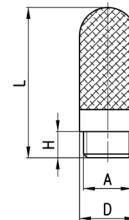


DIMENSIONS										
Mod.	A	D	H	I	L	SW	Max. Oper. Pressure	Flow rate NI/Min	Noise db (A)	
2931 M5	M5	7,7	4	8	16,5	7	10	450	69	
2931 M7	M7	9	5	8,5	20	8	10	1130	76	
2931 1/8	G1/8	13	4,5	13	21	12	10	1927	88	
2931 1/4	G1/4	16,2	6	16,5	27	15	10	3200	86	
2931 3/8	G3/8	20	7	23	35,5	19	10	4560	81	
2931 1/2	G1/2	24,5	8	28	42	23	10	6800	87	
2931 3/4	G3/4	32	9	37	54	30	10	9600	84	
2931 1	G1	38,5	11	47	67	36	10	10800	86	

SIL 1



Silencers Series 2938



DIMENSIONS							
Mod.	A	D	H	L	Max. Oper. Pressure	Flow rate NI/Min	Noise db (A)
2938 M5	M5	6,5	4,1	23	10	546	67
2938 1/8	G1/8	12,5	5,7	34	10	1441	75
2938 1/4	G1/4	15,5	7	42,5	10	2752	79
2938 3/8	G3/8	18,5	11,5	67,5	10	4735	73
2938 1/2	G1/2	23,5	11	77	10	8534	86

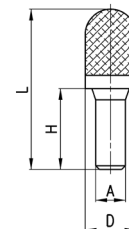
SIL 1



Operating temperature:
- 40 / + 80 °C

Silencers Series 2939

Operating temperature:
- 40 / + 80 °C



DIMENSIONS							
Mod.	øA	D	H	L	Max. Oper. Pressure	Flow rate NI/Min	Noise db (A)
2939 4	4	7	16	32	10	335	80
2939 6	6	12,5	20,5	45	10	632	79 *
2939 8	8	13,5	21,5	43,5	10	1229	89 *
2939 10	10	15,5	26,5	57,5	10	2650	87 *

SIL 1

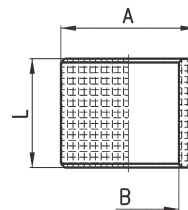


* this code can be used on the Valve Island Series F (see the section 2/3.16).



Silencing bush Series 2905

For flow control valves Mod. SCO and MCO
(see the section 2/7.05)



DIMENSIONS			
Mod.	A	B	L
2905 1/8	14	10	14.5
2905 1/4	18	13.5	14.5
2905 3/8	21	16.8	14.5

Series AP directly operated proportional valves

New models 

2/2-way proportional valves, NC
Sizes: 16 - 22 mm



Series AP directly operated 2/2-way proportional solenoid valves, NC, with nominal diameters range from 0.8 to 2.4 mm, can be used where an open loop flow control is required, with gas mixtures, to control free flows or blows, or emptying chambers using vacuum.

Series AP proportional valves have been manufactured to optimize and reduce friction and stick-slip effects. The output flow is proportional to the control signal. As they can work also in vacuum, a minimum working pressure is not required.

- » PWM or current operation
- » Open loop flow control
- » Also suitable for use with vacuum

Several versions available:

- » with body in PVDF (size 16mm only),
- » with rear flanged bodies
- » with lower flanged bodies,
- » suitable for use with oxygen
- » Seals in FKM and NBR

2

CONTROL

GENERAL DATA

Function	2/2 NC			
Operation	proportional directly operated			
Ports	M5 - G1/8 - with rear flanges - with lower flanges			
Hysteresis	Size 16mm: 12% FS - Size 22mm: 10% FS			
Repeatability	Size 16mm: 7% FS - Size 22mm: 7% FS			
Operating temperature	0 ÷ 60°C			
Medium	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas. All the valves are suitable for use with oxygen.			
Installation	any position			
Materials	body = brass / PVDF (for size 16mm only) seals = NBR and FKM			
Nominal resistance	GP7	GPH	U711	U712
Rated current	193 ohm 125 mA	48 ohm 250 mA	85 ohm 271 mA	22 ohm 542 mA

NOTE: Having a counterpressure on the outlet connection of at least 25% of the inlet pressure ensures the good functioning of the valve and improves its performance. Example: with inlet Pressure = 1 bar on the outlet connection, a min. counterpressure of 250 mbar is recommended.

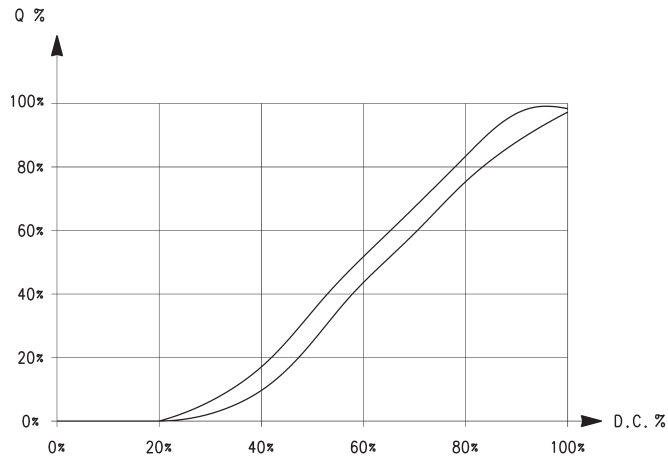
CODING EXAMPLE

AP	-	7	2	1	1	-	L	R	2	-	U	7	11	OX2
----	---	---	---	---	---	---	---	---	---	---	---	---	----	-----

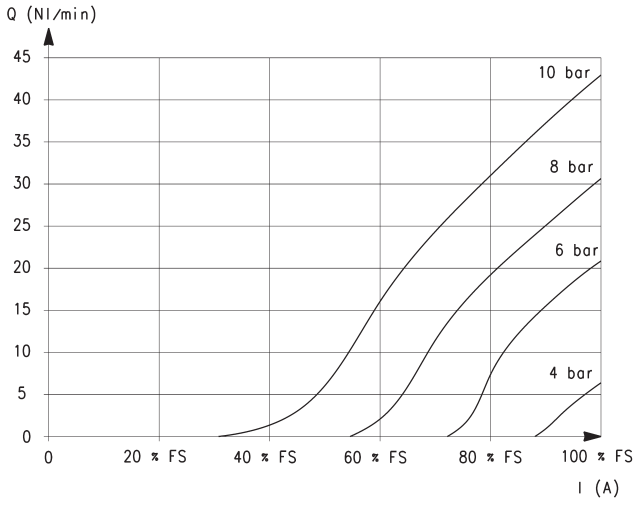
AP	SERIES
7	BODY: 6 = Size 16 mm 7 = Size 22 mm
2	NUMBER OF WAYS: 2 = 2-way
1	VALVE FUNCTION: 1 = NC
1	PORTS: 0 = M5 (for size 16 mm only) 1 = G1/8 (for size 22 mm only) L = male hose adaptor (for body in PVDF only, size 16 mm) 4 = with rear flanges 5 = with lower flanges
L	NOMINAL DIAMETER: D = \varnothing 0.8 mm (for size 16 mm only) F = \varnothing 1 mm H = \varnothing 1.2 mm L = \varnothing 1.6 mm N = \varnothing 2 mm (for size 22 mm only) Q = \varnothing 2.4 mm (for size 22 mm only)
R	SEAL MATERIAL: R = NBR W = FKM
2	BODY MATERIAL: 2 = brass 3 = PVDF (for size 16 mm only)
U	ENCAPSULATING MATERIAL: G = PA (for size 16 mm only) U = PET (for size 22 mm only)
7	SOLENOID DIMENSIONS: P = 16x26 DIN EN 175301-803-C (for size 16 mm only) 7 = 22x22 DIN 43650 B (for size 22 mm only)
11	SOLENOID VOLTAGE: H = 12 V DC 3 W (for size 16 mm only) 7 = 24 V DC 3 W (for size 16 mm only) 11 = 24 V DC 6.5 W (for size 22 mm only) 12 = 12 V DC 6.5 W (for size 22 mm only)
OX2	VERSION: OX2 = version with ASTM G93-03 Certification Level B (FKM seals only) = non-certified NBR version

FLOW GRAPH

Flow characteristic curve of a proportional valve

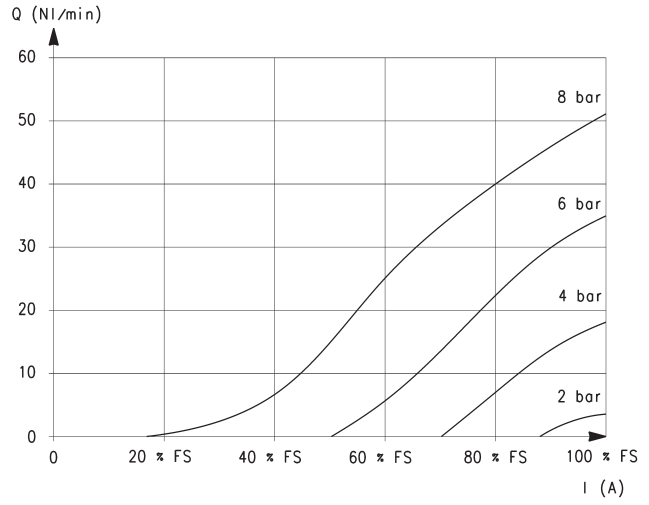
 Q = flow
D.C. = duty cycle


FLOW DIAGRAMS - size 16mm



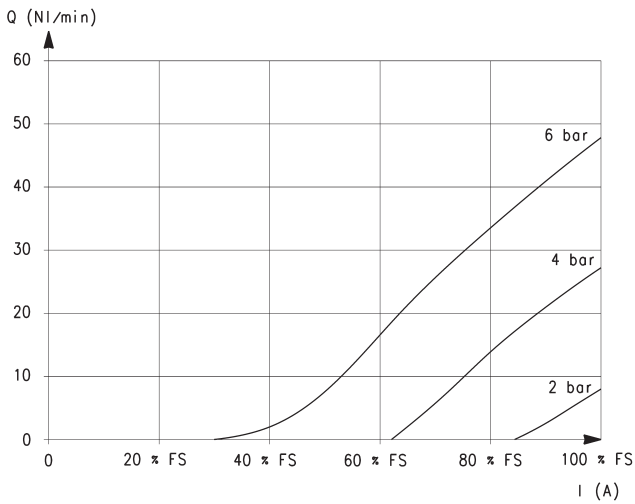
Nozzle 0.8mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale



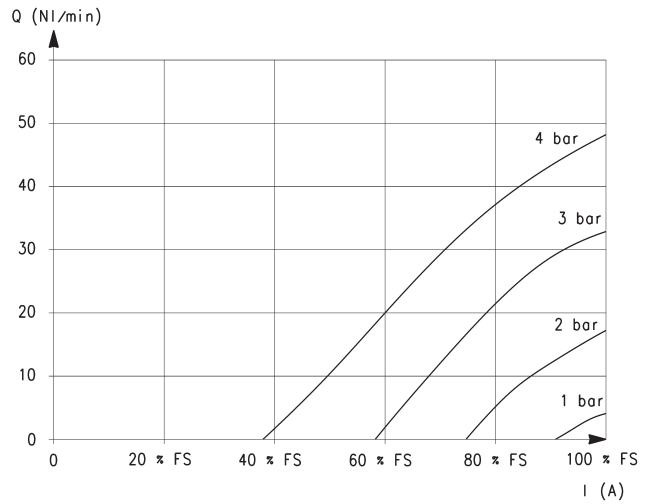
Nozzle 1mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale



Nozzle 1.2mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale



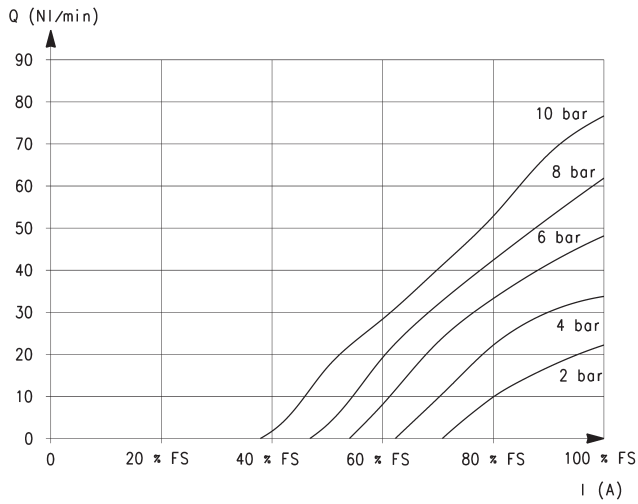
Nozzle 1.6mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale

FLOW DIAGRAMS - size 22mm

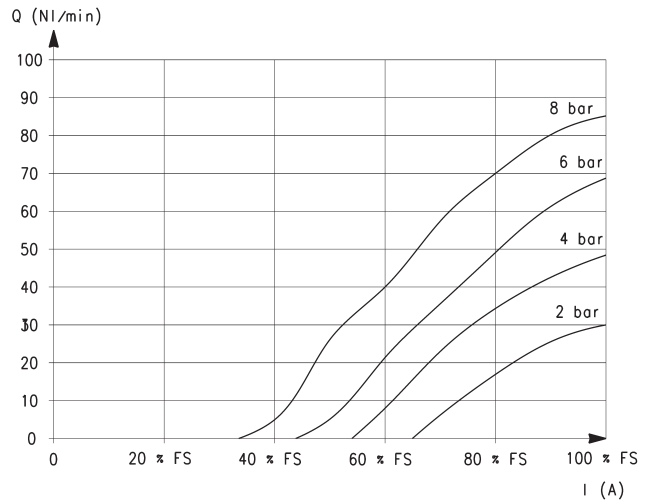
2

CONTROL



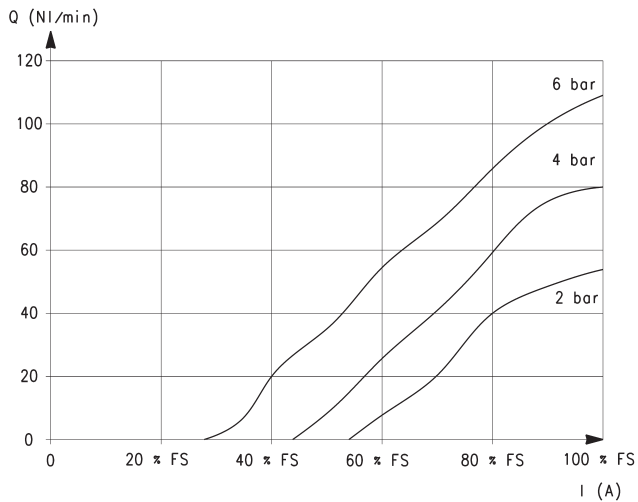
Nozzle 1mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale



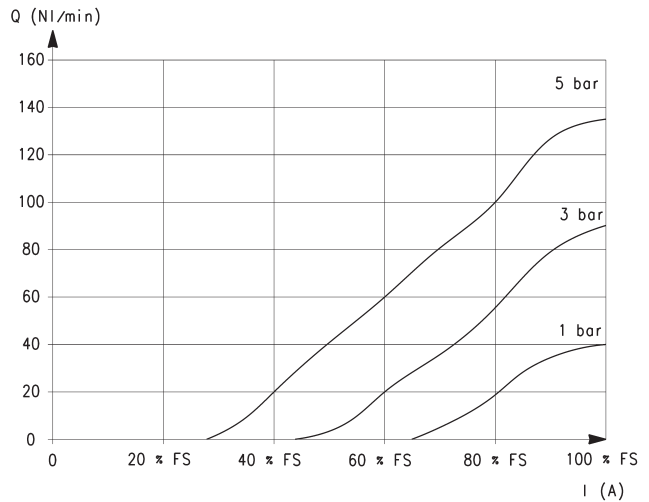
Nozzle 1.2mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale



Nozzle 1.6mm

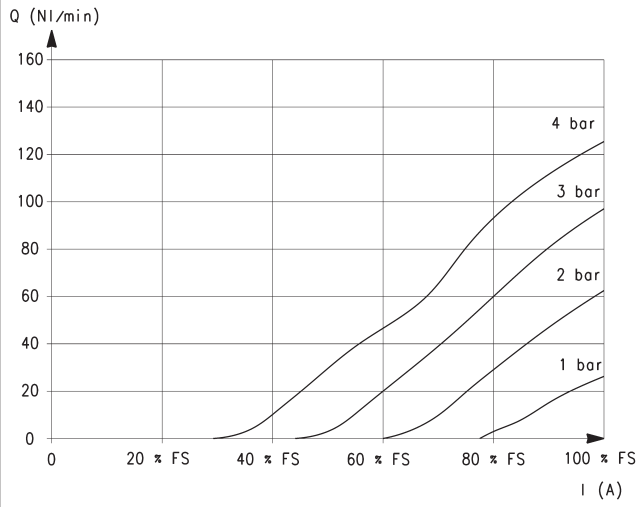
Q = Flow (NI/min)
I = Current (A)
FS = Full scale



Nozzle 2mm

Q = Flow (NI/min)
I = Current (A)
FS = Full scale

FLOW DIAGRAM - size 22mm



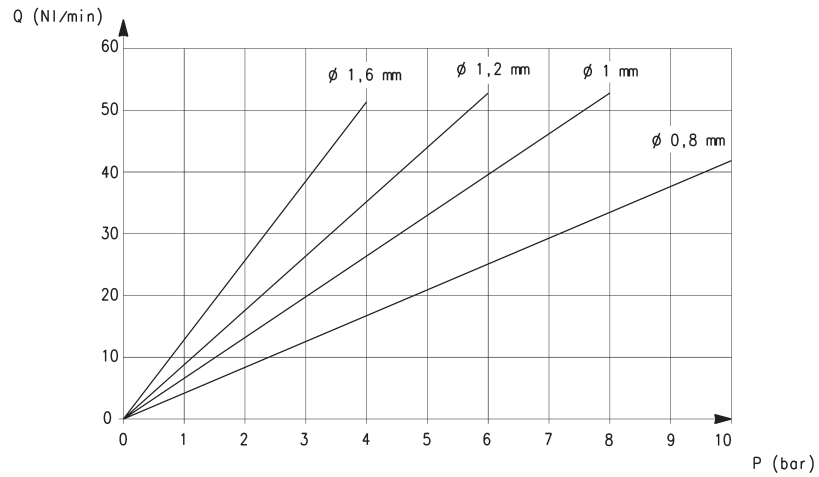
Nozzle 2.4mm

Q = Flow (NI/min)
 I = Current (A)
 FS = Full scale

MAXIMUM FLOW AND RESPONSE TIMES - size 16mm

Maximum flow according to the inlet pressure

DIAGRAM LEGEND:

 Q = flow (NI/min)
 I = current (A)


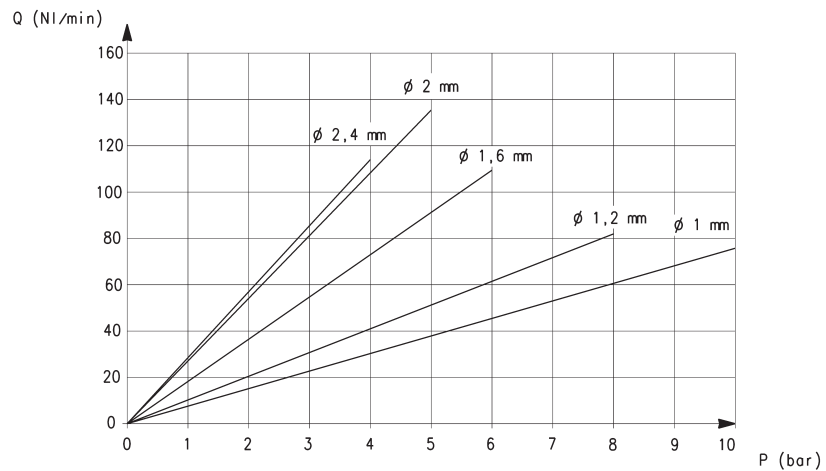
RESPONSE TIMES calculated according to the maximum flow at each operating pressure. [Electromechanical response time: 10 ms]

ø	Pin [bar]	Load response time [ms]			Exhaust response time [ms]		
		0% - 10%	0% - 90%	10% - 90%	100% - 90%	100% - 10%	90% - 10%
0.8 mm	10	12	43	31	11	39	28
1 mm	8	12	42	30	11	38	27
1.2 mm	6	10	41	31	11	41	30
1.6 mm	4	10	40	30	11	40	29

MAXIMUM FLOW AND RESPONSE TIMES - size 22mm

Maximum flow according to the inlet pressure

DIAGRAM LEGEND:

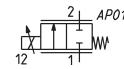
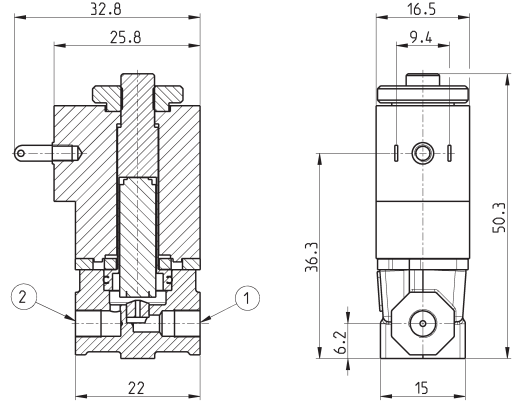
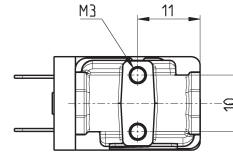
 Q = flow (NI/min)
 I = current (A)


RESPONSE TIMES calculated according to the maximum flow at each operating pressure. [Electromechanical response time: 10 ms]

ø	Pin [bar]	Load response time [ms]			Exhaust response time [ms]		
		0% - 10%	0% - 90%	10% - 90%	100% - 90%	100% - 10%	90% - 10%
1 mm	10	10	36	26	10	36	26
1.2 mm	8	10	45	35	12	38	26
1.6 mm	6	12	45	33	12	40	28
2 mm	5	12	42	30	11	34	26
2.4 mm	4	11	45	34	12	44	32

Series AP proportional valves - size 16mm

For the use with vacuum connect the line to connection 2.



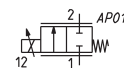
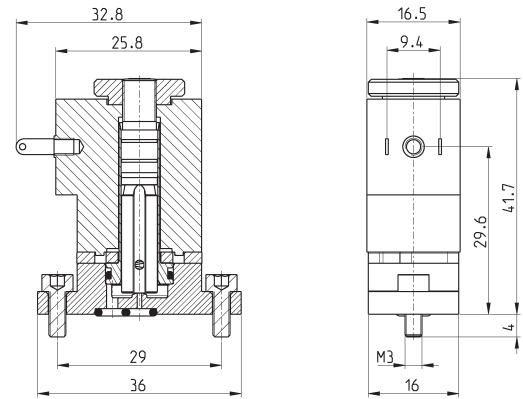
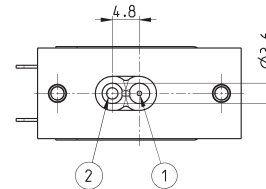
* choose the desired voltage

Mod.	Port 1	Port 2	Function	Orifice Ø (mm)	kv (l/min)	Max pressure (bar)	Max flow (NI/min)
AP-6210-DR2-GP*	M5	M5	2/2 NC	0.8	0.3	10	43
AP-6210-FR2-GP*	M5	M5	2/2 NC	1	0.45	8	53
AP-6210-HR2-GP*	M5	M5	2/2 NC	1.2	0.57	6	53
AP-6210-LR2-GP*	M5	M5	2/2 NC	1.6	0.78	4	52
AP-6210-DW2-GP*OX2	M5	M5	2/2 NC	0.8	0.3	10	43
AP-6210-FW2-GP*OX2	M5	M5	2/2 NC	1	0.45	8	53
AP-6210-HW2-GP*OX2	M5	M5	2/2 NC	1.2	0.57	6	53
AP-6210-LW2-GP*OX2	M5	M5	2/2 NC	1.6	0.78	4	52

Series AP proportional valves - size 16mm, with lower flanges

New

For the use with vacuum connect the line to connection 2.

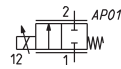
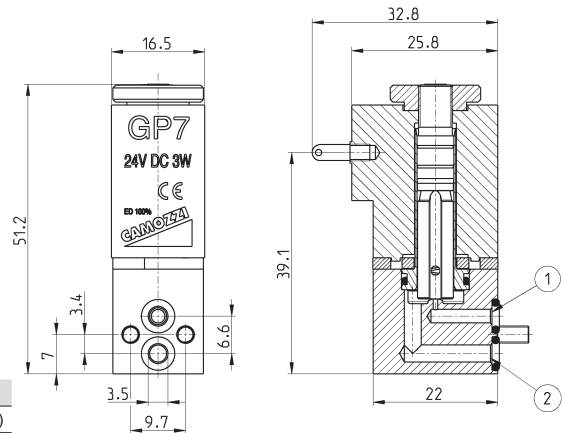
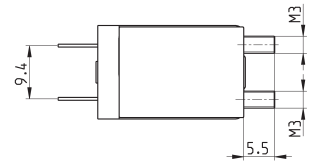


* choose the desired voltage

Mod.	Func.	Orifice Ø (mm)	kv (l/min)	Max pressure (bar)	Max flow (NI/min)
AP-6215-DR2-GP*	2/2 NC	0.8	0.3	10	43
AP-6215-FR2-GP*	2/2 NC	1	0.45	8	53
AP-6215-HR2-GP*	2/2 NC	1.2	0.57	6	53
AP-6215-LR2-GP*	2/2 NC	1.6	0.78	4	52
AP-6215-DW2-GP*OX2	2/2 NC	0.8	0.3	10	43
AP-6215-FW2-GP*OX2	2/2 NC	1	0.45	8	53
AP-6215-HW2-GP*OX2	2/2 NC	1.2	0.57	6	53
AP-6215-LW2-GP*OX2	2/2 NC	1.6	0.78	4	52


Series AP proportional valves - size 16mm, with rear flanges
New

For the use with vacuum connect the line to connection 2.

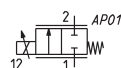
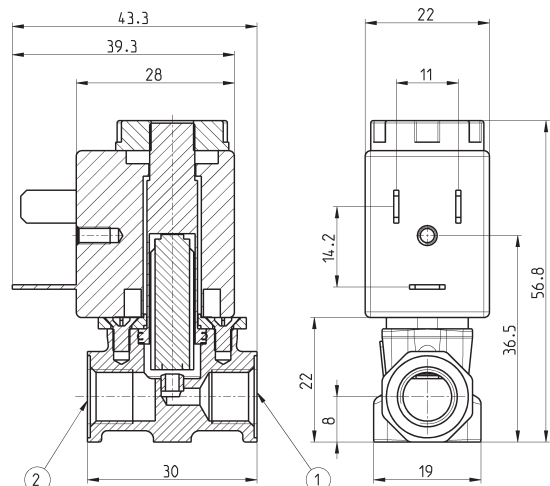
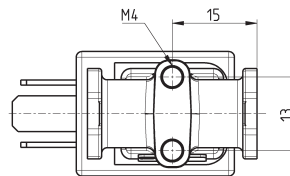


* choose the desired voltage

Mod.	Func.	Orifice Ø (mm)	kv (l/min)	Max pressure (bar)	Max flow (Nl/min)
AP-6214-DR2-GP*	2/2 NC	0.8	0.3	10	43
AP-6214-FR2-GP*	2/2 NC	1	0.45	8	53
AP-6214-HR2-GP*	2/2 NC	1.2	0.57	6	53
AP-6214-LR2-GP*	2/2 NC	1.6	0.78	4	52
AP-6214-DW2-GP*OX2	2/2 NC	0.8	0.3	10	43
AP-6214-FW2-GP*OX2	2/2 NC	1	0.45	8	53
AP-6214-HW2-GP*OX2	2/2 NC	1.2	0.57	6	53
AP-6214-LW2-GP*OX2	2/2 NC	1.6	0.78	4	52


Series AP proportional valves - size 22mm

For the use with vacuum connect the line to connection 2.



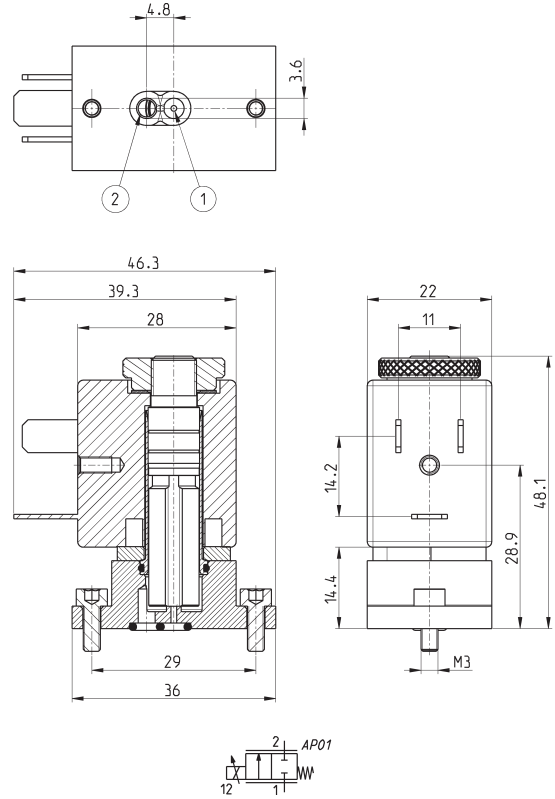
* choose the desired voltage

Mod.	Port 1	Port 2	Function	Orifice Ø (mm)	kv (l/min)	Max pressure (bar)	Max flow (Nl/min)
AP-7211-FR2-U7*	G1/8	G1/8	2/2 NC	1	0.5	10	75
AP-7211-HR2-U7*	G1/8	G1/8	2/2 NC	1.2	0.7	8	85
AP-7211-LR2-U7*	G1/8	G1/8	2/2 NC	1.6	1.2	6	110
AP-7211-NR2-U7*	G1/8	G1/8	2/2 NC	2	1.7	5	135
AP-7211-QR2-U7*	G1/8	G1/8	2/2 NC	2.4	1.7	4	113
AP-7211-FW2-U7*OX2	G1/8	G1/8	2/2 NC	1	0.5	10	75
AP-7211-HW2-U7*OX2	G1/8	G1/8	2/2 NC	1.2	0.7	8	85
AP-7211-LW2-U7*OX2	G1/8	G1/8	2/2 NC	1.6	1.2	6	110
AP-7211-NW2-U7*OX2	G1/8	G1/8	2/2 NC	2	1.7	5	135
AP-7211-QW2-U7*OX2	G1/8	G1/8	2/2 NC	2.4	1.7	4	113

Series AP proportional valves - size 22mm, with lower flanges

New

For the use with vacuum connect the line to connection 2.

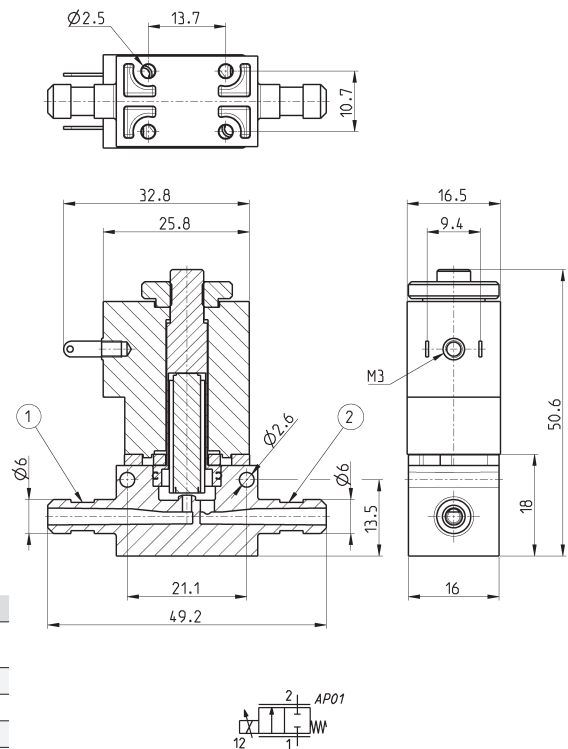


* choose the desired voltage

Mod.	Func.	Orifice Ø (mm)	kv (l/min)	Max pressure (bar)	Max flow (NI/min)
AP-7215-FR2-U7*	2/2 NC	1	0.5	10	75
AP-7215-HR2-U7*	2/2 NC	1.2	0.7	8	85
AP-7215-LR2-U7*	2/2 NC	1.6	1.2	6	110
AP-7215-NR2-U7*	2/2 NC	2	1.7	5	135
AP-7215-QR2-U7*	2/2 NC	2.4	1.7	4	113
AP-7215-FW2-U7*OX2	2/2 NC	1	0.5	10	75
AP-7215-HW2-U7*OX2	2/2 NC	1.2	0.7	8	85
AP-7215-LW2-U7*OX2	2/2 NC	1.6	1.2	6	110
AP-7215-NW2-U7*OX2	2/2 NC	2	1.7	5	135
AP-7215-QW2-U7*OX2	2/2 NC	2.4	1.7	4	113

Series AP proportional valves, size 16mm - body in PVDF

For the use with vacuum connect the line to connection 2.

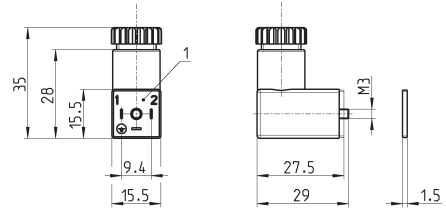


* choose the desired voltage
** pneumatic connection with tube and clamps

Mod.	Port 1	Port 2	Function	Orifice Ø (mm)	kv (l/min)	Max pressure (bar)	Max flow (NI/min)
AP-621L-DR3-GP*	Ø6 **	Ø6 **	2/2 NC	0.8	0.3	10	43
AP-621L-FR3-GP*	Ø6 **	Ø6 **	2/2 NC	1	0.45	8	53
AP-621L-HR3-GP*	Ø6 **	Ø6 **	2/2 NC	1.2	0.57	6	53
AP-621L-LR3-GP*	Ø6 **	Ø6 **	2/2 NC	1.6	0.78	4	52
AP-621L-DW3-U7*OX2	Ø6 **	Ø6 **	2/2 NC	0.8	0.3	10	43
AP-621L-FW3-U7*OX2	Ø6 **	Ø6 **	2/2 NC	1	0.45	8	53
AP-621L-HW3-U7*OX2	Ø6 **	Ø6 **	2/2 NC	1.2	0.57	6	53
AP-621L-LW3-U7*OX2	Ø6 **	Ø6 **	2/2 NC	1.6	0.78	4	52

Connector Mod. 125-800 DIN 43650 pitch 9.4 mm

For size 16 mm only

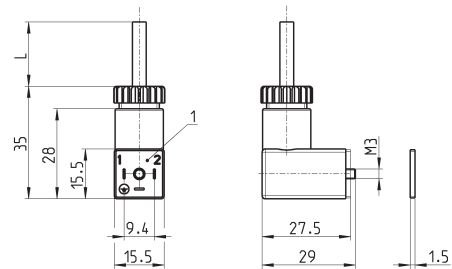


Mod.	description	colour	working voltage	cable holding	tightening torque
125-800	connector, without electronics	black	-	PG7	0.3 Nm

1 = 90° adjustable connector

Connector Mod. 125-550- DIN 43650 pitch 9.4 mm with cable

For size 16 mm only

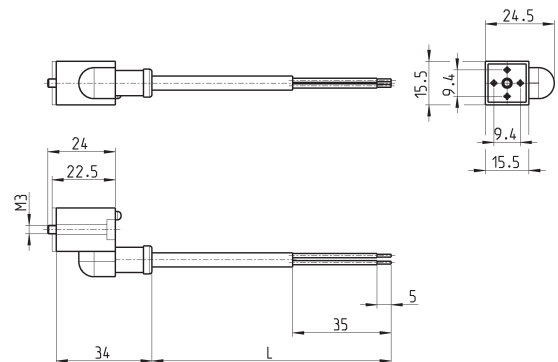


Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.3 Nm

1 = 90° adjustable connector

In-line connectors with cable Mod. 125-553

For size 16 mm only

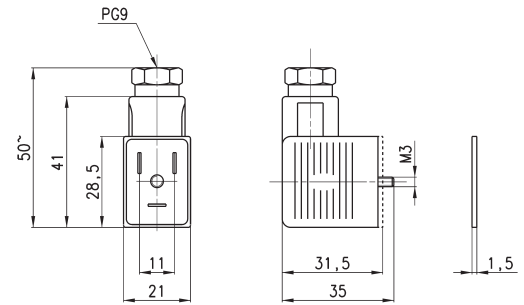


Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
125-553-2	in-line moulded cable, without electronics	black	-	2000 mm	-	0.3 Nm
125-553-5	in-line moulded cable, without electronics	black	-	5000 mm	-	0.3 Nm

Connectors Mod. 122-800 DIN 43650

For size 22 mm only

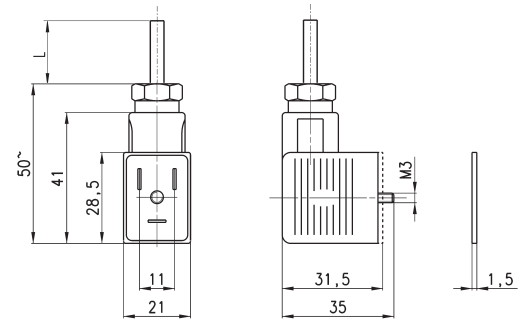
Mod. 122-800EX:
for ATEX certified solenoids Mod. U7*EX,
with anti-screwing off screw Mod. TORX.



Mod.	description	colour	working voltage	cable holding	tightening torque
122-800	connector, without electronics	black	-	PG9	0.5 Nm
122-800EX	connector, without electronics	black	-	PG9	0.5 Nm

Connectors Mod. 122-550 DIN 43650 with cable

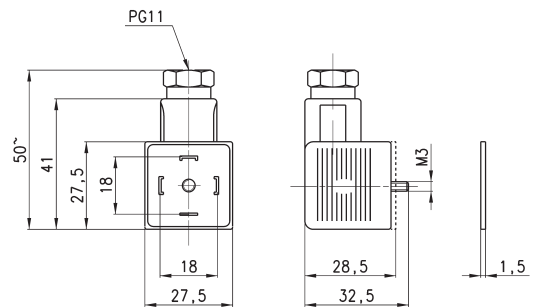
For size 22 mm only



Mod.	description	colour	working voltage	cable length [L]	cable holding	tightening torque
122-550-1	moulded cable, without electronics	black	-	1000 mm	-	0.5 Nm
122-550-5	moulded cable, without electronics	black	-	5000 mm	-	0.5 Nm

Connector Mod. 124-800 DIN 43650

Protection class IP65



Mod.	description	colour	working voltage	cable holding	tightening torque
124-800	connector, without electronics	black	-	PG9/PG11	0.5 Nm

Series CP directly operated proportional solenoid valves

New models

2/2-way NC proportional valves
 Sizes: 16 and 20 mm

2

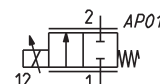
CONTROL



- » High flow
- » Great precision
- » Low hysteresis
- » High working dynamics
- » Cartridge body for installation in reduced space

Series CP valves have been designed to optimize dimensions and reduce friction and stick-slip effects. The output flow is proportional to the control signal. As they can work also in vacuum, a minimum working pressure is not required. Their cartridge design makes them particularly compact, thus they can be mounted directly near the workstation.

Series CP directly operated proportional solenoid valves can be used where an open loop flow control is required, with gas mixtures or to control flows.



GENERAL DATA

TECHNICAL FEATURES	Size 16mm	Size 20mm
Function	2/2 NC	2/2 NC
Operation	proportional directly operated cartridge	proportional directly operated cartridge
Pneumatic connections		
Nominal diameters	1 - 1.5 - 2 mm	3 - 3.5 mm
Free flow capacity	70 - 80 - 90 l/min	145 - 165 Nl/min
Operating pressure	2.8 - 2 bar	2.8 - 2 bar
Max overpressure	16 bar	16 bar
Linearity	3% FS	5% FS
Hysteresis	10% FS	15% FS
Repeatability	5% FS	5% FS
Operating temperature	10°C + 50°C	10°C + 50°C
Media	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas. Also suitable for use with oxygen.	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas. Also suitable for use with oxygen.
Installation	in any position	in any position
MATERIALS IN CONTACT WITH THE MEDIUM		
Body	brass, stainless steel, PPS	brass, stainless steel, PPS
Seals	FKM	FKM
ELECTRICAL FEATURES		
Operation	PWM > 1000 Hz or current control	PWM > 500 Hz or current control
Operation voltage	6 - 11 - 24 V DC	6 - 11 - 24 V DC
Max power consumption	2 W	3.7 - 3 W
Nominal resistance	11.8 - 37.6 - 184.7 Ohm	6.4 - 25.1 - 102.1 Ohm
Rated current	410 - 238 - 103 mA	615 - 313 - 154 mA
Duty cycle	100%	100%
Electrical connection	cable 300mm AWG24	cable 300mm AWG24
Protection class	IP00 / IP40	IP00 / IP40
Average lifecycles	50000000	50000000
Versions available on demand	base with 1/8 - 1/4 ports	base with 1/8 - 1/4 ports

CODING EXAMPLE

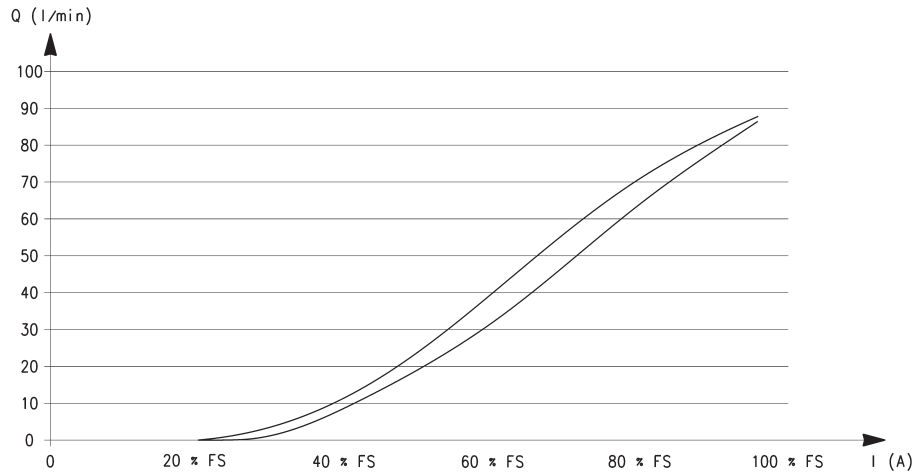
CP - C 6 2 1 - G W 2 - 0 P 3

CP	SERIES
C	PORTS: C = cartridge S = subbase
6	BODY SIZE: 6 = size 16mm 7 = size 20mm
2	NUMBER OF PORTS: 2 = 2-way
1	FUNCTION: 1 = NC
G	ORIFICE DIAMETRES: F = 1mm (size 16mm only) G = 1.5mm (size 16mm only) N = 2mm (size 16mm only) M = 3mm (size 20mm only) P = 3.5mm (size 20mm only)
W	SEAL MATERIAL: W = FKM
2	BODY MATERIAL: 2 = BRASS
0	OVERMOULDING MATERIAL OF COIL: 0 = cartridge
P	COIL DIMENSIONS: P = \varnothing 16 7 = \varnothing 20
3	VOLTAGE: 1 = 6 V DC 3.1 W (size 16mm only) 3 = 24 V DC 3.1 W (size 16mm only) 5 = 12 V DC 3.1 W (size 16mm only) 7 = 6 V 4.8 W (only \varnothing 3.5, size 20mm) 9 = 24 V 4.8 W (only \varnothing 3.5, size 20mm) 2 = 12 V DC 4.3 W (size 20mm only) 4 = 24 V DC 4.3 W (size 20mm only) 6 = 6 V DC 4.3 W (size 20mm only) 8 = 12 V 4.8 W (only \varnothing 3.5, size 20mm)

HYSTERESIS AND RESPONSE TIMES

DIAGRAM LEGEND:

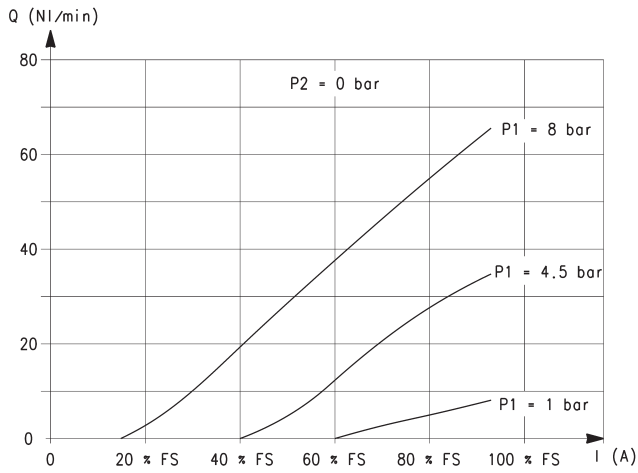
Q = flow (l/min)
I = current (A)
FS = full scale



RESPONSE TIMES calculated according to the maximum flow at each operating pressure. [Electromechanical response time: 10 ms]

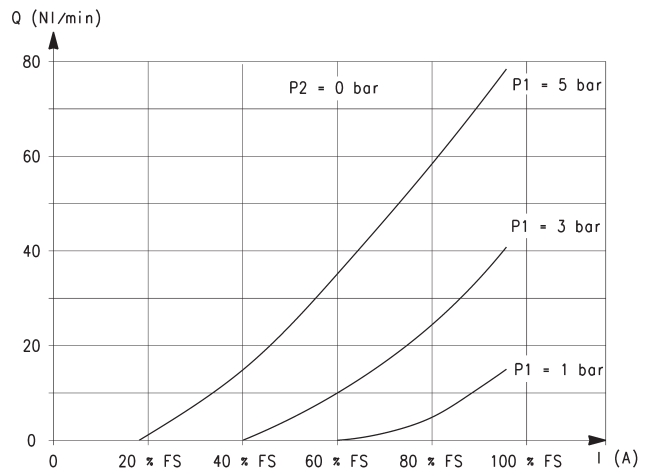
\varnothing	Pin [bar]	Load response time [ms]			Exhaust response time [ms]		
		0% - 10%	0% - 90%	10% - 90%	100% - 90%	100% - 10%	90% - 10%
1 mm	8	12	42	30	9	33	24
1.5 mm	5	12	39	27	9	33	24
2 mm	3	11	39	28	9	33	26
3 mm	2.8	13	29	16	14	28.5	14.5
3.5 mm	2	15	31	16	12.5	27.5	15

FLOW DIAGRAMS - Size 16mm



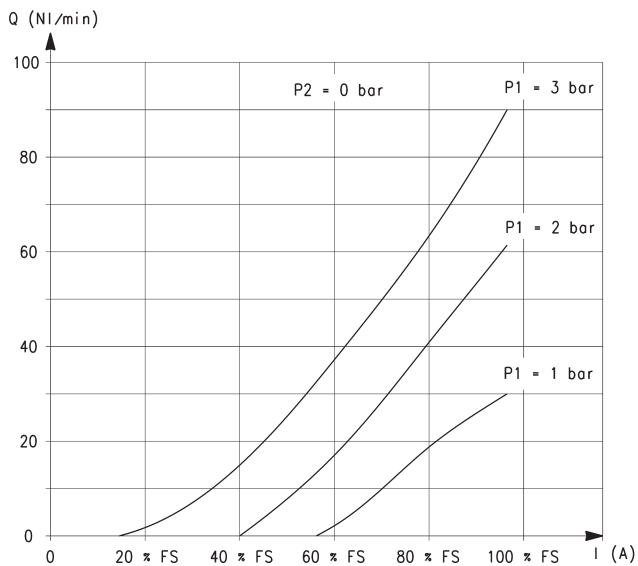
Nominal diameter 1mm

Q = flow (l/min)
 I = current (A)
 P1 = pressure in load (bar)
 P2 = 0 [free flow pressure] (bar)



Nominal diameter 1.5mm

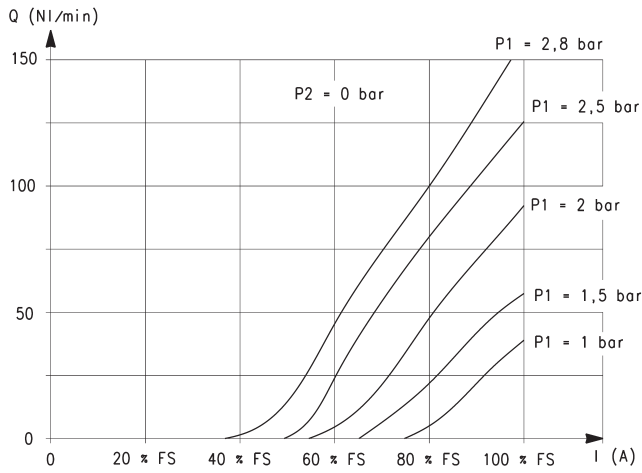
Q = flow (l/min)
 I = current (A)
 P1 = pressure in load (bar)
 P2 = 0 [free flow pressure] (bar)



Nominal diameter 2mm

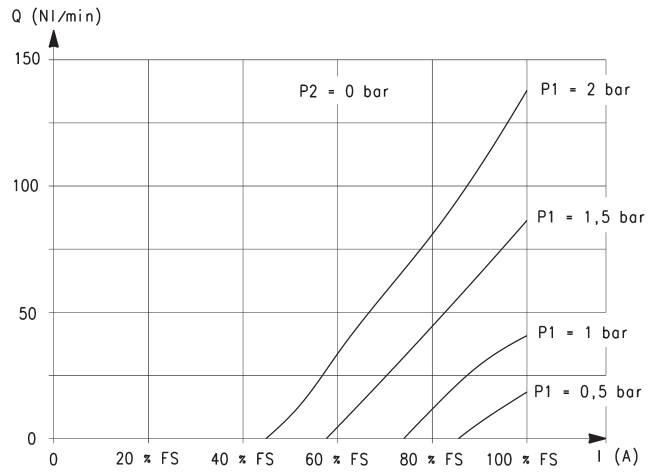
Q = flow (l/min)
 I = current (A)
 P1 = pressure in load (bar)
 P2 = 0 [free flow pressure] (bar)

FLOW DIAGRAMS - Size 20mm



Nominal diameter 3mm

Q = flow (l/min)
 I = current (A)
 P1 = pressure in load (bar)
 P2 = 0 [free flow pressure] (bar)



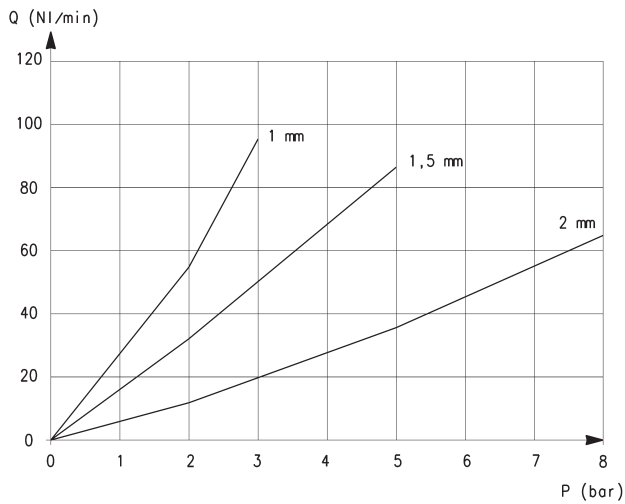
Nominal diameter 3.5mm

Q = flow (l/min)
 I = current (A)
 P1 = pressure in load (bar)
 P2 = 0 [free flow pressure] (bar)

2

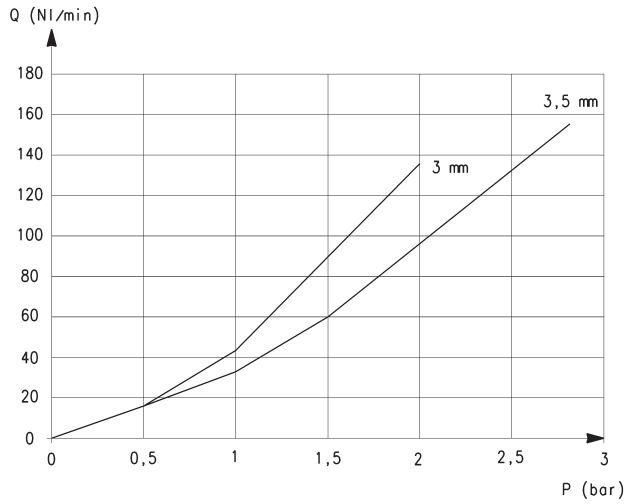
CONTROL

MAXIMUM FLOW ACCORDING TO THE INLET PRESSURE



Size 16 mm

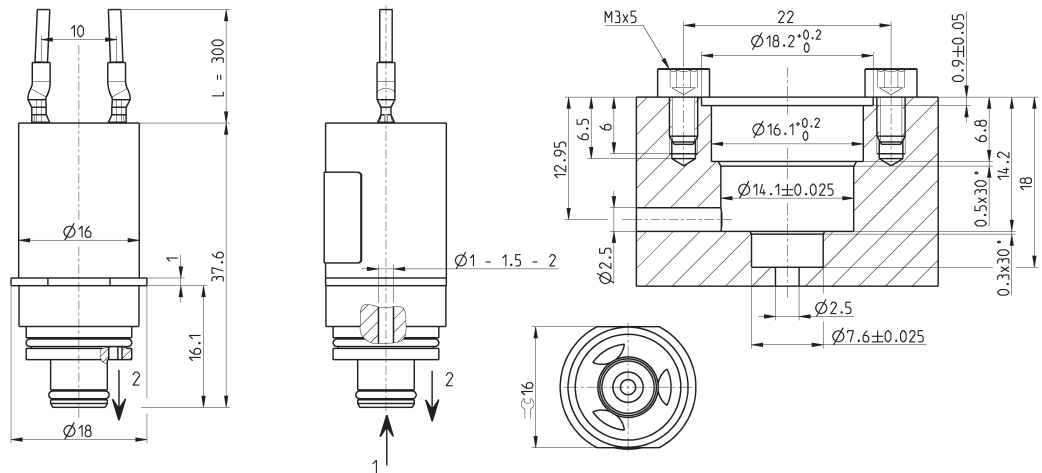
Q = Flow (NI/min)
 P = Inlet pressure (bar)



Size 20 mm

Q = Flow (NI/min)
 P = Inlet pressure (bar)

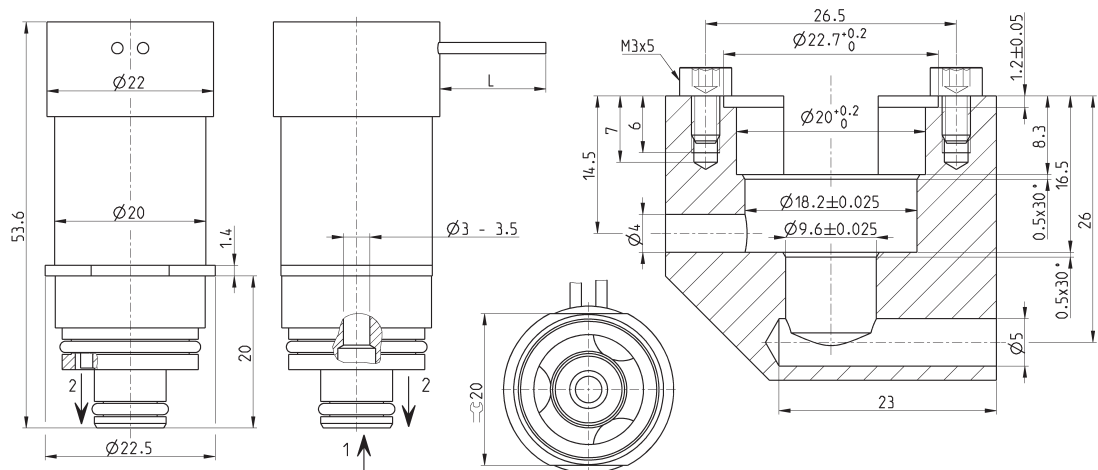
Solenoid valves, size 16mm - dimensions



Mod.	Orifice Ø (mm)	Max operating pressure (bar)	Max flow (NI/min)	Max flow kv (l/min)	Operation voltage (V DC)	Max current (mA)
CP-C621-FW2-0P1	1	8	70	0.55	6	410
CP-C621-GW2-0P1	1.5	5	80	0.88	6	410
CP-C621-NW2-0P1	2	3	90	1.42	6	410
CP-C621-FW2-0P3	1	8	70	0.55	24	103
CP-C621-GW2-0P3	1.5	5	80	0.88	24	103
CP-C621-NW2-0P3	2	3	90	1.42	24	103
CP-C621-FW2-0P5	1	8	70	0.55	11	238
CP-C621-GW2-0P5	1.5	5	80	0.88	11	238
CP-C621-NW2-0P5	2	3	90	1.42	11	238

Solenoid valves, size 20mm - dimensions

New



Mod.	Orifice Ø (mm)	Max operating pressure (bar)	Max flow (NI/min)	Max flow kv (l/min)	Operation voltage (V DC)	Max current (mA)
CP-C721-MW2-072	3	2.8	150	2.8	6	615
CP-C721-MW2-074	3	2.8	150	2.8	12	313
CP-C721-MW2-076	3	2.8	150	2.8	24	154
CP-C721-PW2-072	3.5	2	130	3	6	615
CP-C721-PW2-074	3.5	2	130	3	12	313
CP-C721-PW2-076	3.5	2	130	3	24	154

Series 130 electronic control device for proportional valves

PWM control device, with current control system for directly operated proportional valves



- » Closed loop current control (max current that can be provided = 1A)
- » Management of up and down ramp
- » Command signal 0-10V and 4-20mA
- » Regulation of min and max current (Span and Offset)

A control system of the provided current allows to compensate variations due to heating of the solenoid or to the variation of the supply voltage. It is possible to adjust the maximum current and the minimum current provided to the solenoid. The outlet signal can have a ramp progress that is adjustable between 0 and 5 s. The device has a firmware dedicated to the proportional valve to pilot in order to guarantee the best performance.

Series 130 electronic control device allows to pilot any proportional valve with a maximum current of 1 A.

It turns a standard inlet signal (0-10V or 4-20 mA) into a PWM signal to obtain at the solenoid outlet a current which is proportional to the inlet signal.

GENERAL DATA

Material of container	Polycarbonate
Electrical connections	screw
Environmental temperature	0 ÷ 50°C
Mounting	in any position
Power supply	6 V ÷ 24 V DC (± 10%)
Consumption	0.4 W (without valve)
Analogical input	0 ÷ 10 V 4 ÷ 20 mA
Input impedance	>30 Kohm with inlet under voltage <200 ohm with inlet under current
Output PWM	120 Hz ÷ 11.7 KHz (fixed, according to the valve chosen)
Maximum current (valve)	1 A
Protection	Polarity inversion, short circuit of the outlet
External diameter of cable jacket	5 ÷ 7.5 mm with seal only 4 ÷ 6 mm with reducer and seal
Conductor section	26 ÷ 16 AWG / 0,13 ÷ 1,5 mm ²
Maximum length supply/signal cable	10 m
Maximum length valve cable	5 m
IP protection class according to EN 60529	IP 54
Ramp function	Adjustable time from 0 to 5 s
Regulation min. current (Offset)	0% ÷ 40% F.S.
Regulation maximum current	50% ÷ 100% F.S.

CODING EXAMPLE

130	-	2	2	2
-----	---	---	---	---

130	SERIES
2	VOLTAGE: 2 = 24 V DC (max power 24 W) 3 = 12 V DC (max power 12 W) 4 = 6 V DC (max power 6 W) 5 = 11 V DC (max power 11 W)
2	POWER: 1 = 3 W 2 = 6.5 W 3 = 3.2 W 4 = 4.3 W 5 = 10 W
2	PWM FREQUENCY: 2 = 500 Hz 3 = 1 KHz

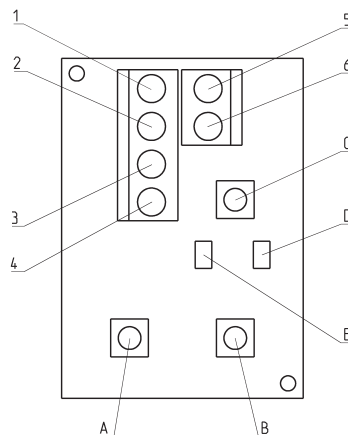
NOTE: it is possible to realize configurations with voltage, power and PWM frequency values that are not yet foreseen in the coding example. For further information we suggest you to contact our technical department.

ELECTRICAL CONNECTIONS AND SETTINGS
DRAWING LEGEND:

- 1 = 6 ÷ 24 V DC (supply)
- 2 = 0 V (Ground) common also for the reference signal
- 3 = analogical reference signal 0 ÷ 10V DC
- 4 = analogical reference signal 4 ÷ 20 mA
- A = regulation of min. current (OFFSET)
- B = regulation of max. current (SPAN)
- C = regulation of the PWM outlet up and down ramp
- D = red LED
- E = yellow LED

Note 1: the GND of the reference signal and the GND of supply have to be linked together.

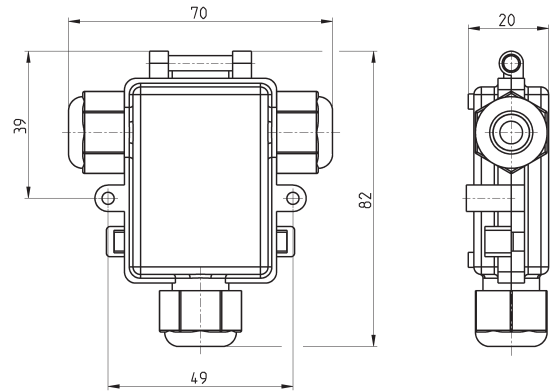
Note 2: For the valve connection use a connector without protection - diodes, varistors, etc... - as these might alter the regulation of the device.



Series 130 electronic control

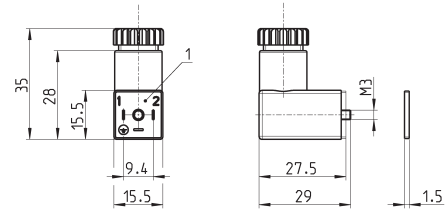


NOTE: it is possible to realize configurations with voltage, power and PWM frequency values that are not shown in the table below. For further information we suggest you to contact our technical department.



Mod.	Matching valve family	Valve voltage (Output)	Adjusted power	Adjusted frequency
130-222	Series AP - size 22 mm	24 V DC	6.5 W	500 Hz
130-322	Series AP - size 22 mm	12 V DC	6.5 W	500 Hz
130-252	Series AP - size 22 mm	24 V DC	10 W	500 Hz
130-352	Series AP - size 22 mm	12 V DC	10 W	500 Hz
130-213	Series AP - size 16 mm	24 V DC	3 W	1000 Hz
130-313	Series AP - size 16 mm	12 V DC	3 W	1000 Hz
130-433	Series CP - size 16 mm	6 V DC	3.2 W	1000 Hz
130-533	Series CP - size 16 mm	11 V DC	3.2 W	1000 Hz
130-233	Series CP - size 16 mm	24 V DC	3.2 W	1000 Hz
130-442	Series CP - size 20 mm	6 V DC	4.3 W	500 Hz
130-342	Series CP - size 20 mm	12 V DC	4.3 W	500 Hz
130-242	Series CP - size 20 mm	24 V DC	4.3 W	500 Hz

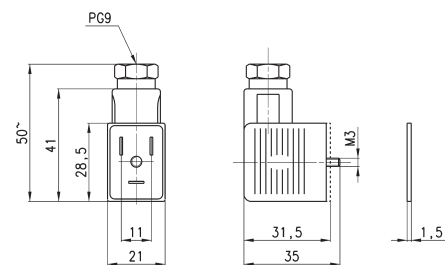
Connector Mod. 125-800 DIN 43650 pin spacing 9,4mm



1 = 90° adjustable connector

Mod.
125-800

Connector Mod. 122-800 DIN 43650 (PG)



Mod.	Torque (Nm)
122-800	0.5

Series LR digital proportional servo valves

3/3-way directly operated servo valves for the flow (LRWD2), pressure (LRPD2) and position (LRXD2) control

2

CONTROL



- » Digital version which is completely configurable through USB
- » Rotating spool system with a metal to metal seal
- » High flow rate
- » Electronic control to ensure high precision in the flow control
- » 3-way-function with 4 - 6 mm nominal diameters
- » Compact version for cabinet mounting on DIN-rail
- » Position control version

Series LR digital proportional servo valves are direct driven 3/3-way valves with a patented rotating spool system with closed loop control circuit. The electronic board is integrated into the valve's body ready to connect.

Series LR*D2 digital proportional servo valve has been designed to be as compact as possible in order to save space and to be mounted on a DIN-rail. Thanks to this new digital version, the valve can be configured through a USB connection according to different requirements.

GENERAL DATA

Power supply	24 V DC +/- 10%, max absorption 1.5 A
Command signal	+/- 10 V 0-10 V 4-20 mA
Hysteresis	1% FS LRWD2 - 0,2% FS LRPD2
Linearity	1% FS LRWD2 - 0.3% FS LRPD2
Switching time	see the following pages
Working temperature	from 0 to 50° C
Relative humidity of air	max. 90%
Direction of assembly	any
Maximum flow	see the diagrams on the following pages
Medium	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Supply pressure	-0.9 to 10 bar
Leakage	< 1% of maximum flow rate
Electrical connection	male connector M12 8 poles

CODING EXAMPLE

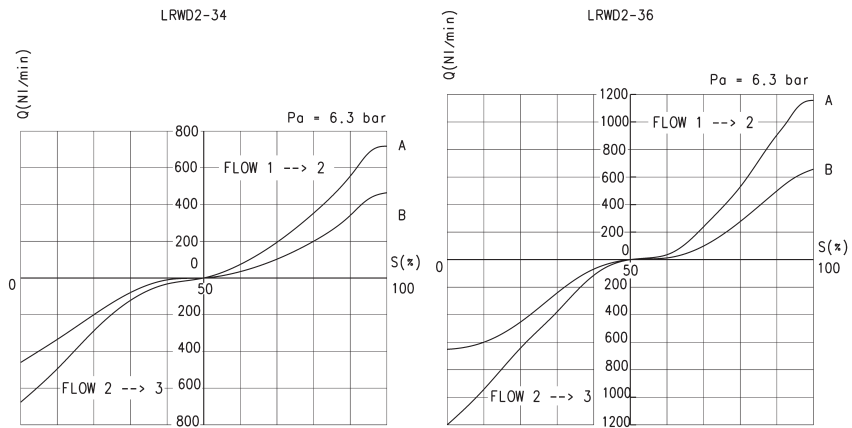
L | R | W | D | 2 | - | 3 | 4 | - | 1 | - | A | - | 00

L	SERIES: L = proportional servo valves
R	TECHNOLOGY: R = rotating spool
W	VERSION: W = flow control P = pressure control X = position control
D	ELECTRONICS: D = digital
2	MODEL: 2 = compact DIN-RAIL
3	FUNCTION: 3 = 3/3-way
4	NOMINAL DIAMETER: 4 = 4 mm 6 = 6 mm
1	COMMAND SIGNAL (Setpoint): 1 = +/- 10 V 2 = 0 - 10 V 4 = 4 - 20 mA
A	INPUT SIGNAL: 2 = 0 - 10 V (LRPD2 and LRXD2 only) 4 = 0 - 5V (LRPD2 and LRXD2 only) 5 = 4 - 20mA (LRPD2 and LRXD2 only) A = internal encoder (LRWD2 only) B = 1 bar (internal sensor - LRPD2 only) D = 10 bar (internal sensor - LRPD2 only) E = 250 mbar (internal sensor - LRPD2 only) F = +/-1 bar (internal sensor - LRPD2 only)
00	CABLE: 00 = no cable 2F = straight cable of 2 m 2R = 90° cable of 2 m 5F = straight cable of 5 m 5R = 90° cable of 5 m

FLOW DIAGRAMS FOR VALVES LRWD2-34 AND LRWD2-36

LEGEND:

- A = free flow
- B = ΔP1
- Q = flow (NI/min)
- S = set point (%)
- Pa = inlet pressure (bar)



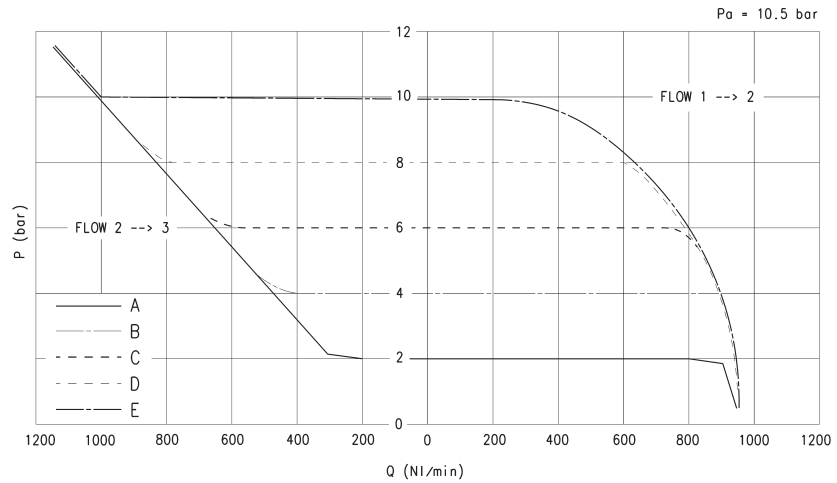
RESPONSE TIMES ACCORDING TO THE COMMAND SIGNAL IN COMPLIANCE WITH THE ISO 10094-2 STANDARD

COMMAND SIGNAL	-5% + 5%	+5% - 5%	-25% + 25%	+25% - 25%	-90% + 90%	+90% - 90%
Time [ms] LRWD2-34	4	5	6	9	10	10
Time [ms] LRWD2-36	5	5	6	6	10	10

* closed valve with SET POINT = 0
loaded valve with SET POINT = +
exhaust valve with SET POINT = -

FLOW DIAGRAMS FOR VALVE LRPD2-34

LEGEND:
 P = regulated pressure (bar)
 F = flow (NI/min)
 Pa = inlet pressure (bar)


RESPONSE TIMES WITH COMMAND SIGNAL BETWEEN 0% AND 100% IN COMPLIANCE WITH ISO 10094-2 STANDARD

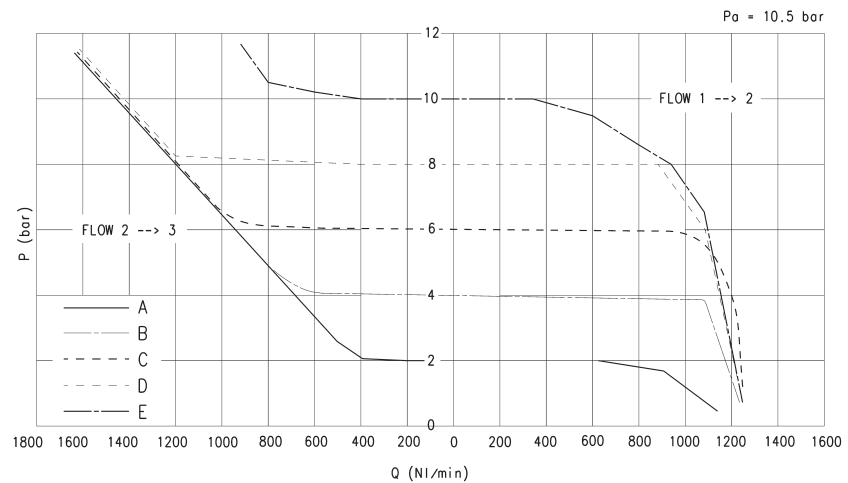
	Without volume	Volume 0,5 l	Volume 2 l
Filling [ms]	24	313	1841
Exhaust [ms]	35	663	3640

valve with SET POINT = 0% and regulated pressure = 0 bar

valve with SET POINT = 100% and regulated pressure = maximum pressure
 (example: 10 - 1 bar or 250 mbar)

FLOW DIAGRAMS FOR VALVE LRPD2-36

LEGEND:
 P = regulated pressure (bar)
 F = flow (NI/min)
 Pa = inlet pressure (bar)


RESPONSE TIMES WITH COMMAND SIGNAL BETWEEN 0% AND 100% IN COMPLIANCE WITH ISO 10094-2 STANDARD

	Without volume	Volume 0,5 l	Volume 2 l
Filling [ms]	20	263	1560
Exhaust [ms]	32	357	1905

valve with SET POINT = 0% and regulated pressure = 0 bar

valve with SET POINT = 100% and regulated pressure = maximum pressure
 (example: 10 - 1 bar or 250 mbar)

Series LRXD2 - pneumatic and electrical schemes for the installation

The LRXD2 servo valves are proportional valves with a high-precision integrated control for the positioning of pneumatic cylinders. The valves include a patented 3-way system based on the rotating spool principle with electronic control of the spool position. The servo pneumatic closed loop system allows the control of the position through the feedback of the external positioning sensor or of the Camozzi 6PF cylinder with the integrated linear transducer. The electronic board which is integrated in the valve body manages speed and acceleration directly. The Master valve Mod. LRXD2 is equipped with a proper signal to command a LRXD2 valve that will work as a slave-valve.

Configuration for the position control with two valves (Fig. 1)

A = Slave LRWD2-3*-2-A-00 - B = Master LRXD2-3*-4-00 - C = 6PF cylinder...

Configuration for the position control with a LRXD2 valve (Fig. 2)

A = Master LRXD2-3*-4-00 - B = PR104-... - C = 6PF cylinder...

Fig.1

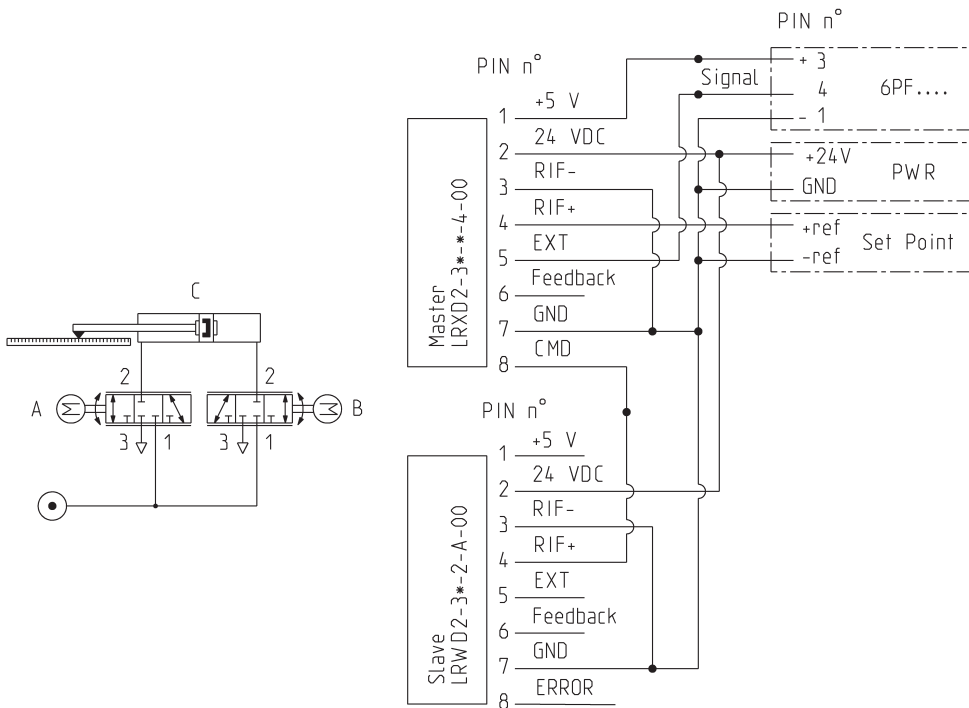
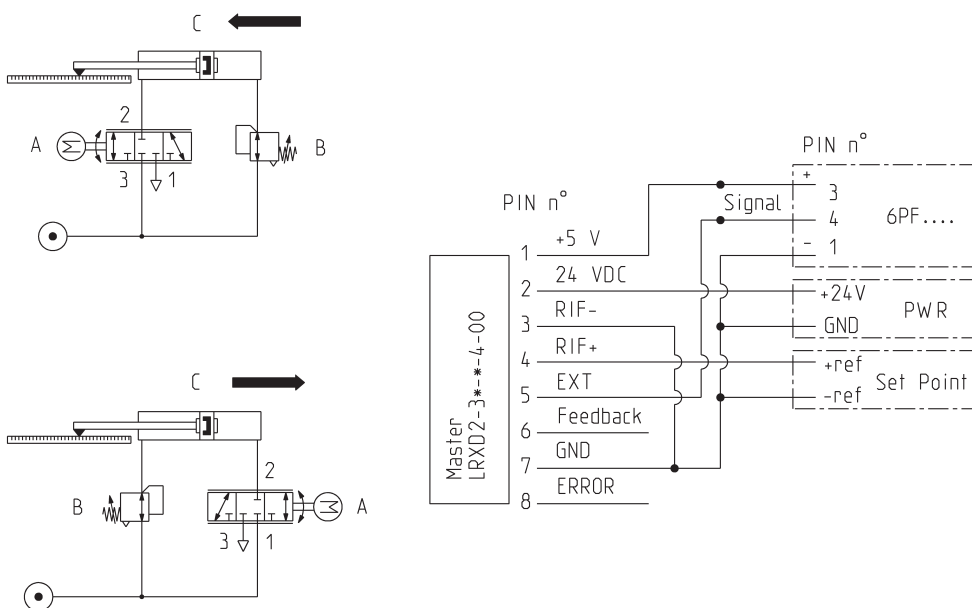
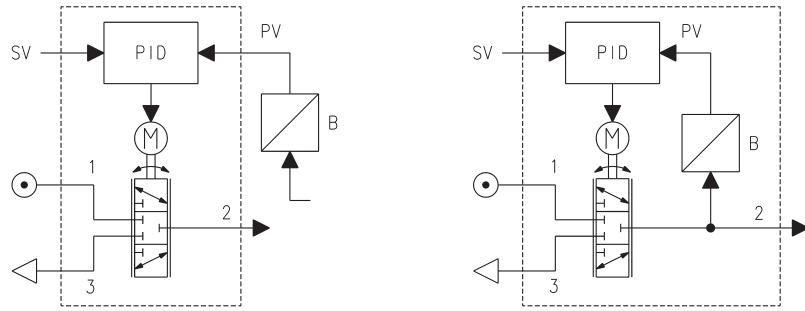


Fig.2



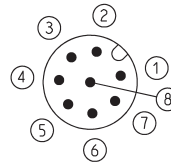
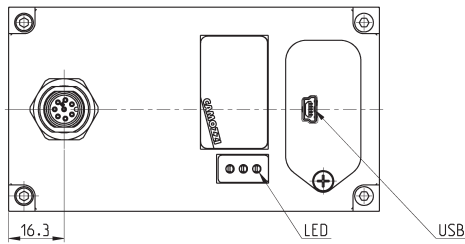
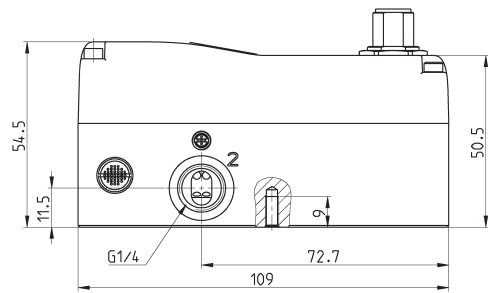
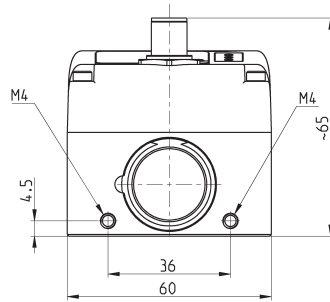
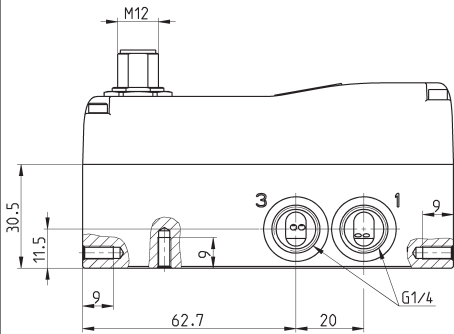
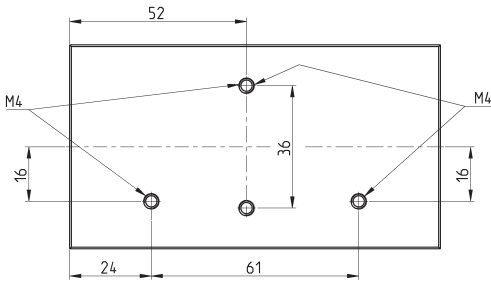
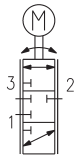
Series LRPD2 - pneumatic scheme for the installation

SV = setpoint value
 PV = process value
 B = sensor
 PID = proportional control,
 integrative, derivative



Series LR digital proportional servo valves - dimensions

The detailed user and maintenance manual and the Hardware configuration Software of the valve is available online at <http://catalogue.camozzi.com>.



PIN	SIGNAL	DESCRIPTION
1	+5V	+5V power supply for external potentiometer transducer (ref. GND). If used, it is necessary to connect RIF- with GND.
2	24 V DC	24V DC power supply (logic and motor): connect to the positive pole of the 24V DC power supply (ref. GND)
3	RIF-	GND reference or NEGATIVE pole of the command signal (0-10V / 4-20mA / ±10V)
4	RIF+	POSITIVE reference of the command signal (0-10V / 4-20mA / ±10V)
5	EXT	for LRWD valve: not used for LRXD valve: feedback signal of the external transducer 0-5V / 0-10V / 4-20mA (ref. RIF-) for LRPD valve: feedback signal of the external transducer 0-5V / 0-10V / 4-20mA (ref. RIF-). To be used only with LRPD2 valve versions with external sensor.
6	FBK	feedback signal 0-10V / 4-20mA (ref. GND)
7	GND	common (reference pin 1 and 2): connect to the negative pole of the 24V DC power supply (compulsory)
8	ERR	for LRWD and LRPD valve: error signal (output) 0-24V (ref. GND) for LRXD valve: command signal 0-10V for slave valve (ref. GND)

Series LR digital proportional servo valves - technical characteristics

* To order the complete code, please replace the asterisk with 4 or 6 according to the desired nominal diameter.

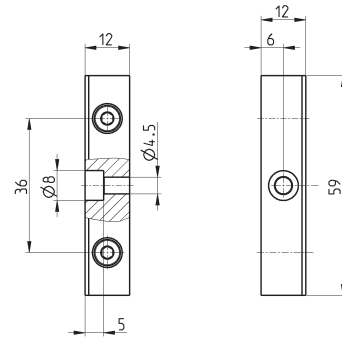


Mod.	Control	Command/Input signal	Sensor/External signal	
LRWD2-3*-1-A-00	flow	+/- 10 V	-	
LRWD2-3*-2-A-00	flow	0-10 V	-	
LRWD2-3*-5-A-00	flow	4..20 mA	-	
LRPD2-3*-1-2-00	pressure	+/- 10 V	0..10 V	
LRPD2-3*-2-2-00	pressure	0-10 V	0..10 V	
LRPD2-3*-5-2-00	pressure	4..20 mA	0..10 V	
LRPD2-3*-1-4-00	pressure	+/- 10 V	0 - 5 V	
LRPD2-3*-2-4-00	pressure	0-10 V	0 - 5 V	
LRPD2-3*-5-4-00	pressure	4..20 mA	0 - 5 V	
LRPD2-3*-1-5-00	pressure	+/- 10 V	4..20 mA	
LRPD2-3*-2-5-00	pressure	0-10 V	4..20 mA	
LRPD2-3*-5-5-00	pressure	4..20 mA	4..20 mA	
LRPD2-3*-1-B-00	pressure	+/- 10 V	1 bar internal	
LRPD2-3*-2-B-00	pressure	0-10 V	1 bar internal	
LRPD2-3*-5-B-00	pressure	4..20 mA	1 bar internal	
LRPD2-3*-1-D-00	pressure	+/- 10 V	10 bar internal	
LRPD2-3*-2-D-00	pressure	0-10 V	10 bar internal	
LRPD2-3*-5-D-00	pressure	4..20 mA	10 bar internal	
LRPD2-3*-1-E-00	pressure	+/- 10 V	250 mbar internal	
LRPD2-3*-2-E-00	pressure	0-10 V	250 mbar internal	
LRPD2-3*-5-E-00	pressure	4..20 mA	250 mbar internal	
LRPD2-3*-1-F-00	pressure	+/- 10 V	+1/-1 bar internal	
LRPD2-3*-2-F-00	pressure	0-10 V	+1/-1 bar internal	
LRPD2-3*-5-F-00	pressure	4..20 mA	+1/-1 bar internal	
LRXD2-3*-1-4-00	position	+/- 10 V	0-5 V	suitable to work with the 6PF cylinder (see the section 1.1.27)
LRXD2-3*-2-4-00	position	0-10 V	0-5 V	suitable to work with the 6PF cylinder (see the section 1.1.27)
LRXD2-3*-5-4-00	position	4..20 mA	0-5 V	suitable to work with the 6PF cylinder (see the section 1.1.27)
LRXD2-3*-1-2-00	position	+/- 10 V	0-10 V	
LRXD2-3*-2-2-00	position	0-10 V	0-10 V	
LRXD2-3*-5-2-00	position	4..20 mA	0-10 V	
LRXD2-3*-1-5-00	position	+/- 10 V	4..20mA	
LRXD2-3*-2-5-00	position	0-10 V	4..20mA	
LRXD2-3*-5-5-00	position	4..20mA	4..20mA	

Fixing foot Mod. LRADB



Supplied with:
2x feet
4x screws



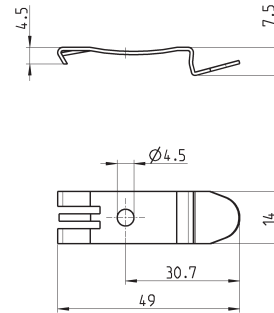
Mod.
LRADB

Mounting brackets for DIN-rail Mod. PCF-EN531



DIN EN 50022 (7,5mm x 35mm - width 1)

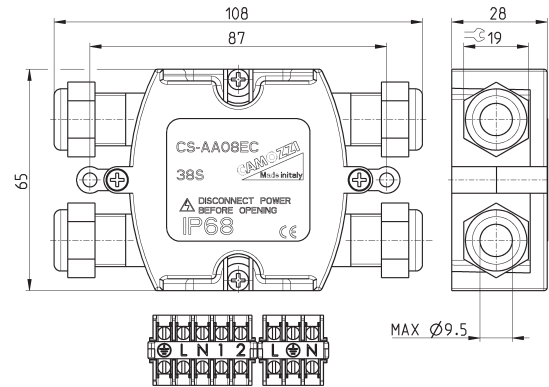
Supplied with:
2x mounting brackets
2x screws M4x6 UNI 5931
2x nuts



Mod.
PCF-EN531

Electrical tee box Mod. CS-AA08EC

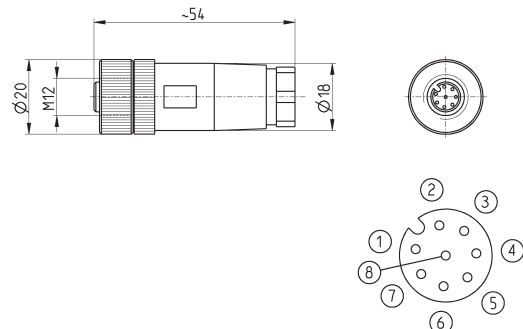
Connection valve-PLC-external transducer



CS-AA08EC

Straight female connector M12 8 poles

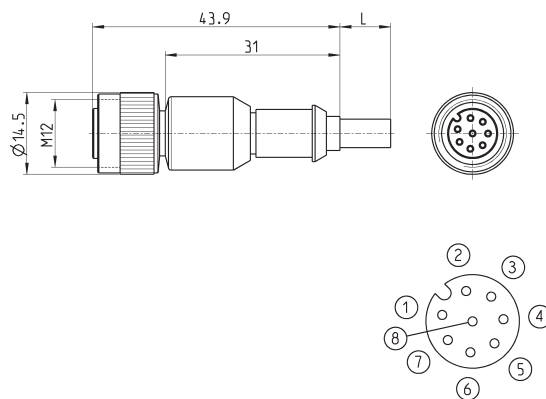
For electric supply and commands



CS-LF08HC


Cable with straight female connector M12 8 poles

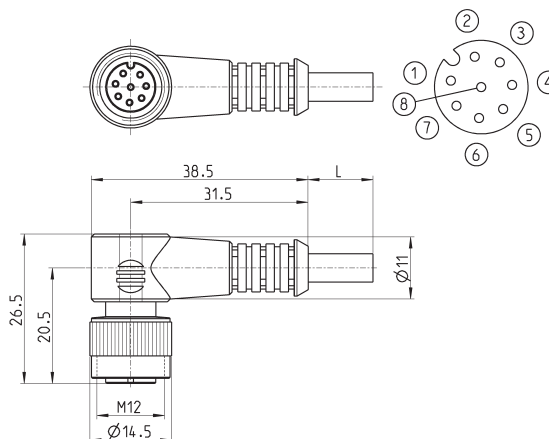
For electrical supply and commands



Mod.	Cable length (m)
CS-LF08HB-C200	2
CS-LF08HB-C500	5


Cable with angular (90°) female connector M12 8 poles

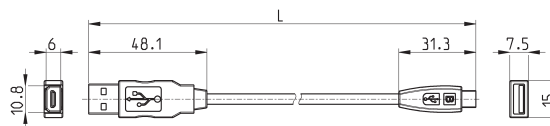
For electric supply and commands



Mod.	Cable length (m)
CS-LR08HB-C200	2
CS-LR08HB-C500	5


USB to Micro USB cable Mod. G11W-G12W-2

For the hardware configuration of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2

Series K8P electronic proportional micro regulator

Proportional regulator for the pressure control



- » High precision
- » Reduced response times
- » Minimum consumption
- » Self-regulation function
- » Flexibility of use
- » Compact design

The K8P regulator adjusts the outlet pressure through the operation of two K8 monostable valves according to the inlet signal and to the retroactivity of the internal pressure sensor. A self-adjusting function has been integrated into the regulator control algorithm to guarantee the highest levels of performance apart from the volume connected.

Series K8P electronic proportional micro regulators have evolved from our Series K8 mini-solenoid valves. Series K8P regulators guarantee excellent pressure regulation, fast response times, self-regulation and low energy consumption. Series K8P is a high performance proportional pressure regulator which is suitable for use in all applications where high precision, quick response times and low consumption are required.

GENERAL DATA

Fluids	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas		
Range of regulated pressure	0.5 ÷ 10 bar 0.15 ÷ 3 bar		
Max inlet pressure	11 bar (0.5 ÷ 10 bar) 4 bar (0.15 ÷ 3 bar)		
Operating pressure	0 ÷ +50°C		
Analogical input	0-10 V DC	4-20 mA	Ripple ≤ 0,2%
Analogical output	0.5 - 9.5 V [Feedback]		
Analog input impedance	20.000 Ω for versions 0-10 V 250 Ω for versions 4-20 mA		
Maximum flow	Inlet P 10 bar - regulated P 6 bar 12 l/min Inlet P 4 bar - regulated P 3 bar 6 l/min		
Supply / Use	24 V - ~1 W		
Function	3/2 NC		
Linearity	≤ ± 1% FS		
Hysteresis	±0,5% FS		
Repeatability	±0,5% FS		
Minimal set point change	50 mV => 50 mB (10 bar) - 100mV => 30 mB (3 bar)		
Electrical connection	M8 4 Pin (Male)		

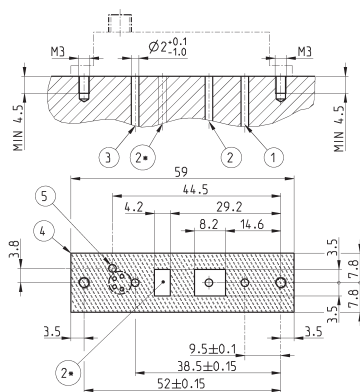
In compliance with the European Directive 2004/108/EC

CODING EXAMPLE

K8P	-	0	-	D	5	2	2	-	0
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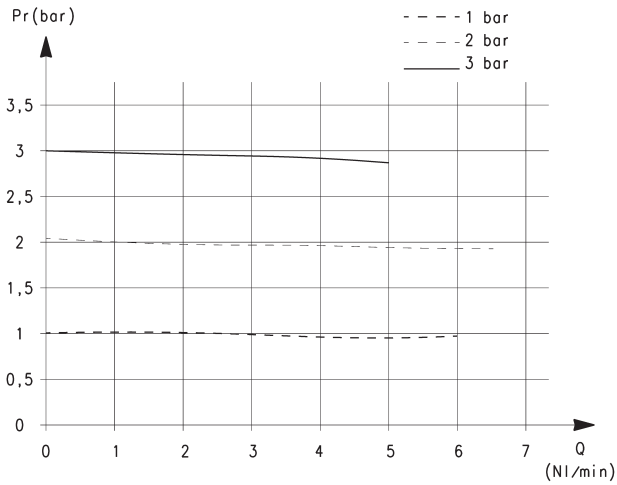
K8P	SERIES
0	BODY DESIGN: 0 = Stand alone S = Standard Sub-base L = Light Sub-base T = Light Sub-base for the pressure remote reading
D	WORKING PRESSURE: D = 0 -10 bar E = 0 - 3 bar
5	VALVE FUNCTIONS: 5 = 2-way NC
2	COMMAND: 2 = 0-10 V DC 3 = 4-20 mA
2	OUTPUT SIGNAL: 2 = 0-10 V
0	CABLE LENGTH: 0 = without cable 2F = straight cable, 2 m 2R = right angle cable (90 degrees), 2 m 5F = straight cable, 5 m 5R = right angle cable (90 degrees), 5 m
APPLICATIONS The K8P proportional regulator can be used as a pilot valve to control the opening of high flow valves or to check the high flow pressure regulators proportionally (version with sub-base for the pressure remote reading). It enables proportional control of power in lifting systems and can be used with inert gas to maintain a constant pressure in pneumatic cylinders or expansion valve chambers. It has also been designed to maintain a constant pressure during the pulling power applied to the wires in winding machines, to modulate pressure during the smoothing process in woodworking machines or to adjust the opening of diaphragm valves.	

2 CONTROL

Interface for single use without sub-base

DRAWING LEGEND

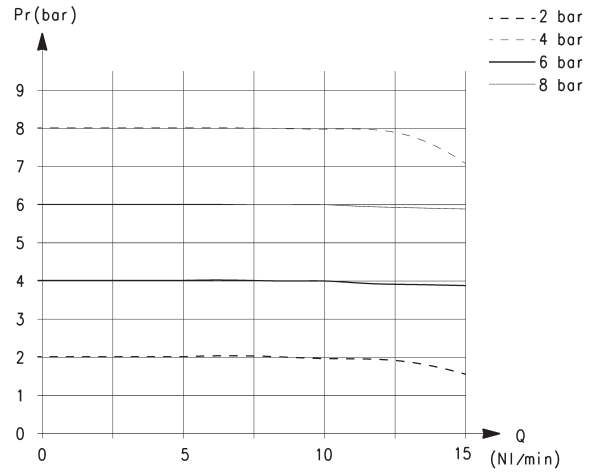
	Notes
1 = Supply	Pneumatic connection
2 = Outlet	Pneumatic connection
2* = area for possible positioning of outlet port 2	Do not exceed the indicated outline
3 = Exhaust	Pneumatic connection
4 = OUTLET DIMENSION	
5 = VENT PORT FOR IP65	Optional when a OR seal is mounted

FLOW DIAGRAMS



Pr = Outlet pressure (bar)*
Q = Flow (NI/min)*

* = Inlet pressure 4 bar



Pr = Outlet pressure (bar)*
Q = Flow (NI/min)*

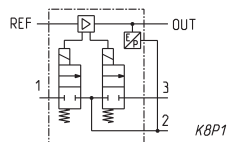
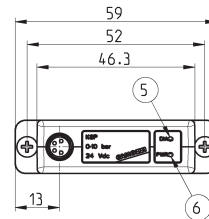
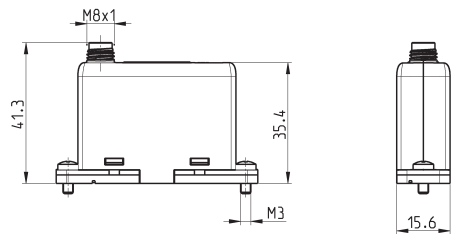
* = Inlet pressure 10 bar

Series K8P electronic proportional micro regulator - dimensions

MALE CONNECTOR M8 4 POLES
Pin 1: +24 V DC (Power supply)
Pin 2: Command analogical signal 0-10 V DC or 4-20 mA
Pin 3: 0 V (Ground) common also for the command signal
Pin 4: Output analogical signal (according to the regulated pressure)



5 red LED
6 green LED



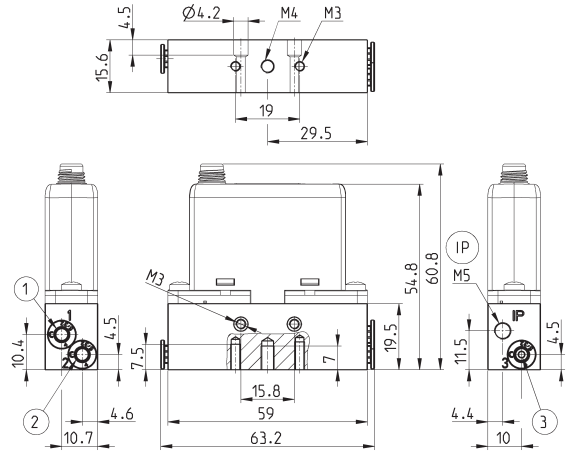
Mod.

K8P-0-D5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-0-E5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-L-E5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-L-D5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-S-D5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-S-E5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-T-D5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)
K8P-T-E5*2-0	* according to the type of command desired, insert: 2 (0-10 V DC) or 3 (4-20 mA)

Standard Sub-base

Note: the use of a silencer on the exhaust is recommended. *

* Mod. 2939 4



1 = Power supply
2 = Outlet
3 = Exhaust

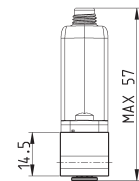
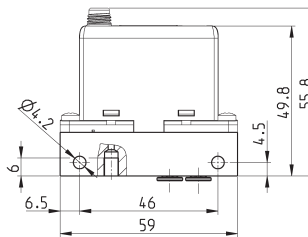
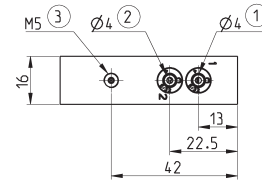
IP = IP65 connection

Mod.
K8P-AS

Light Sub-base

Note: the use of a silencer on the exhaust is recommended. *

* Mod. 2931 M5, 2938 M5, 2901 M5



1 = Power supply
2 = Outlet
3 = Exhaust

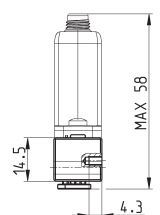
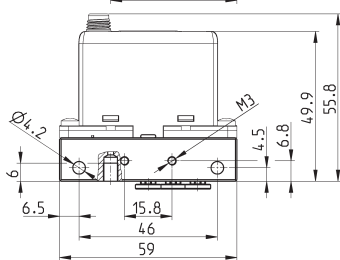
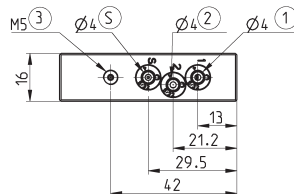
Mod.
K8P-AL

Light Sub-base for the pressure remote reading

Note: the use of a silencer on the exhaust is recommended. *

* Mod. 2931 M5, 2938 M5, 2901 M5

In the version Light sub-base for the pressure remote reading it is also possible to use the fixing bracket B2-E531 (see page 5/2.05.15).



1 = Power supply
2 = Outlet
3 = Exhaust

S = remote-mounted sensor

Mod.
K8P-AT

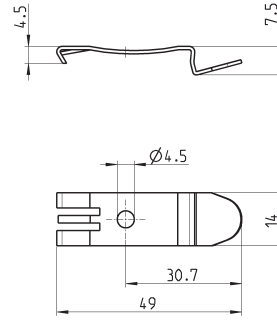
Mounting bracket for DIN rail

DIN EN 50022 (7,5mm x 35mm - width 1)



Supplied with:
1x plate
1x screw M4x6 UNI 5931

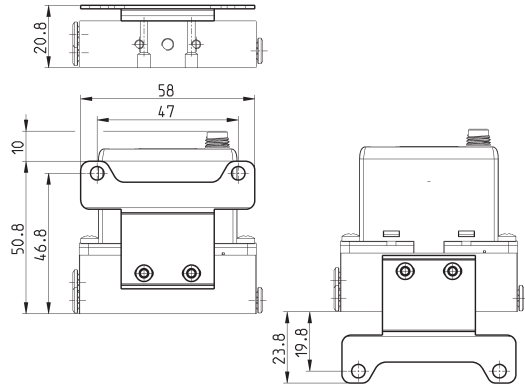
Note: this accessory cannot be used with the Light sub-base version.



Mod.
PCF-K8P

Bracket for horizontal mounting, for standard sub-base

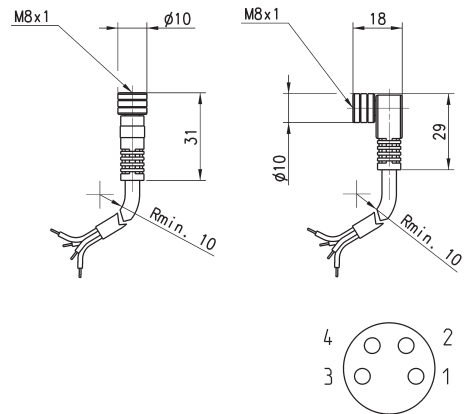
Supplied with:
1x mounting bracket
2x screws M3x8 UNI 5931



Mod.
K8P-B1

Circular M8 4-pole connectors, Female

With PU sheathing, non shielded cable.
Protection class: IP65



Mod.	Type of connector	Cable length (m)
CS-DF04EG-E200	straight	2
CS-DF04EG-E500	straight	5
CS-DR04EG-E200	right angle (90 degrees)	2
CS-DR04EG-E500	right angle (90 degrees)	5

Series MX-PRO electronic proportional regulator

Ports: G1/2

Manifold ports: G1/2

Modular - Available with built-in pressure gauges or ports for gauges

2

CONTROL



- » High precision
- » Low electric consumption
- » High exhaust flow
- » Modular with Series MX2
- » Available also in the MANIFOLD and external servo pilot supply versions

Series MX-PRO electronic proportional pressure regulator is the result of combining advanced technology of Series K8P electronic proportional micro regulator, with reliability and high performance of Series MX2 modular regulators.

This new regulator ensures high precision in pressure regulation, high flow rate and low consumption. Moreover, it can take the most of Series MX ease of assembly to provide particularly compact Manifolds.

GENERAL DATA

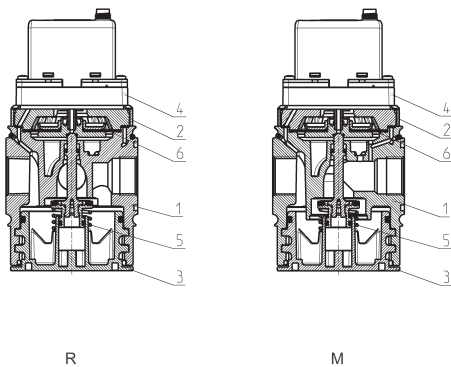
Construction	modular, compact, diaphragm type
Materials	see tables on the following pages
Ports	G1/2
Mounting	vertical in-line, wall-mounting (by means of clamps)
Working temperature	0°C + 50°C
Max inlet pressure	11 bar (10 bar), 4 bar (3 bar)
Regulated pressure	0.5 + 10 bar, 0.15 + 3 bar
Overpressure exhaust	with relieving (standard) without relieving
Nominal flow	see flow diagrams (following pages)
Air specifications	Filtered compressed air, non lubricated, class 3.4.3 according to ISO 8573.1 standard. If lubrication is necessary, please use only oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 3.4.3 according to ISO 8573.1 standard.
Pressure gauge	version with built-in pressure gauge (standard) version with G1/8 port
Analogical input	0-10 V DC Ripple ≤ 0.2% 4-20 mA
Analogical output	0.5-9.5 V DC [Feedback]
Electrical supply	24 V DC ± 10%
Linearity	≤ ± 1% FS
Hysteresis	±0.5% FS
Repeatability	±0.5% FS
Sensibility	0.3% FS
Protection class	IP51
Electrical connection	M8 4 Pin (Male)

CODING EXAMPLE											
MX	2	-	1/2	-	R	CV	2	0	4	-	LH
MX	SERIES										
2	SIZE: 2 = G1/2										
1/2	PORTS: 1/2 = G1/2										
R	TYPE OF REGULATOR: R = pressure regulator M = Manifold pressure regulator (G1/2 only)										
CV	COMMAND: CV = electrical command 0-10 V DC CA = electrical command 4-20 mA EV = electrical command 0-10 V DC with external servo pilot supply EA = electrical command 4-20 mA with external servo pilot supply										
2	OPERATING PRESSURE (1 bar = 14,5 psi): 1 = 0.15 ÷ 3 bar 2 = 0.5 ÷ 10 bar (standard)										
0	DESIGN TYPE: 0 = relieving (standard) 1 = without relieving										
4	PRESSURE GAUGE: 0 = without pressure gauge (with threaded port for gauges) 2 = with built-in pressure gauge 0-6 and working pressure 0.15 ÷ 3 bar 4 = with built-in pressure gauge 0-12 and working pressure 0.5 ÷ 10 bar (standard)										
LH	FLOW DIRECTION: = from left to right (standard) LH = from right to left										

For the assembly of a single component with fixing flanges or wall-mounting, see the section "FRL Series MX Assembled" (pag. 3/1.50.01)

Series MX-PRO electronic proportional regulators - materials

R = pressure regulator
M = Manifold pressure regulator



PARTS	MATERIALS
1 = Body	Aluminium
2 = Covering	Polyacetal
3 = Valve holder plug	Polyacetal
4 = Upper base	Polyamide
5 = Lower spring	Zinc-plated steel
6 = Diaphragm	NBR
Seals	NBR

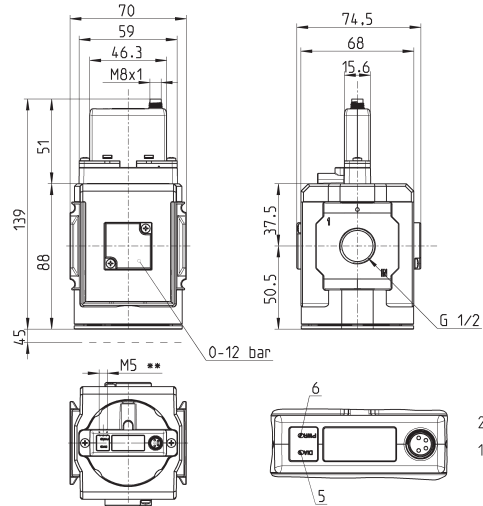
Series MX-PRO electronic proportional regulators



- Male connector M8 4 poles
- Pin 1: +24 V DC (Power supply)
- Pin 2: Command analogical signal
0-10 V DC or 4-20 mA
- Pin 3: 0 V (Ground) common also
for the command signal
- Pin 4: Output analogical signal
(according to the
regulated pressure)
- 5 red LED
- 6 green LED

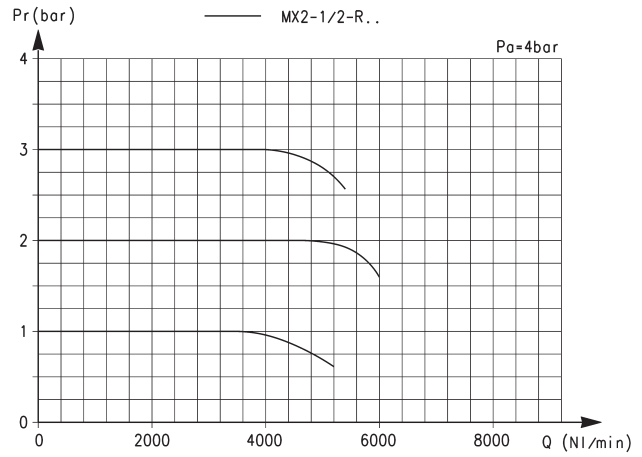
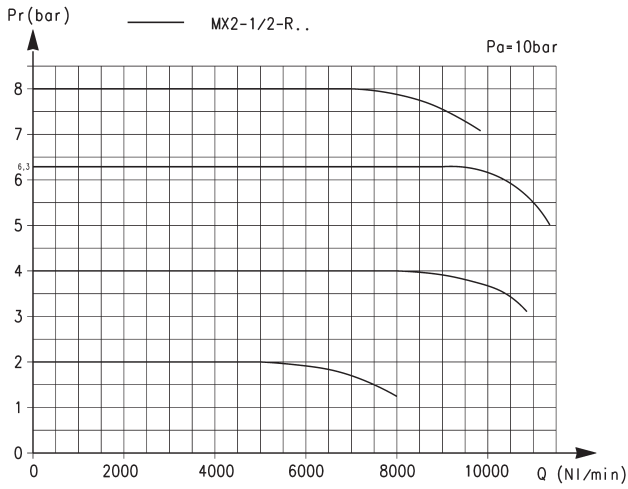
Accessories: see MX accessories (3/1.49)
Assembled FRL: see Series MX (3/1.50)
Connection cables: see Series K8P (2/15.37)

DRAWING NOTE
** = in the versions with external servo pilot supply only (MX2-1/2-REV... and MX2-1/2-REA...)



Mod.	Ports	Electrical command	Operating pressure (1 bar = 14,5 psi)	Relieving	Pressure gauge
MX2-1/2-RCV102	G1/2	0-10 V DC	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-RCV112	G1/2	0-10 V DC	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-RCV204	G1/2	0-10 V DC	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-RCV214	G1/2	0-10 V DC	0.5 + 10 bar	no	with built-in pressure gauge 0-12
MX2-1/2-RCA102	G1/2	4-20 mA	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-RCA112	G1/2	4-20 mA	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-RCA204	G1/2	4-20 mA	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-RCA214	G1/2	4-20 mA	0.5 + 10 bar	no	with built-in pressure gauge 0-12
MX2-1/2-RCV100	G1/2	0-10 V DC	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-RCV110	G1/2	0-10 V DC	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-RCV200	G1/2	0-10 V DC	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-RCV210	G1/2	0-10 V DC	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-RCA100	G1/2	4-20 mA	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-RCA110	G1/2	4-20 mA	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-RCA200	G1/2	4-20 mA	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-RCA210	G1/2	4-20 mA	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-REV100	G1/2	0-10 V DC	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-REV102	G1/2	0-10 V DC	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-REV110	G1/2	0-10 V DC	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-REV112	G1/2	0-10 V DC	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-REV200	G1/2	0-10 V DC	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-REV204	G1/2	0-10 V DC	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-REV210	G1/2	0-10 V DC	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-REV214	G1/2	0-10 V DC	0.5 + 10 bar	no	with built-in pressure gauge 0-12
MX2-1/2-REA100	G1/2	4-20 mA	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-REA102	G1/2	4-20 mA	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-REA110	G1/2	4-20 mA	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-REA112	G1/2	4-20 mA	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-REA200	G1/2	4-20 mA	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-REA204	G1/2	4-20 mA	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-REA210	G1/2	4-20 mA	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-REA214	G1/2	4-20 mA	0.5 + 10 bar	no	with built-in pressure gauge 0-12

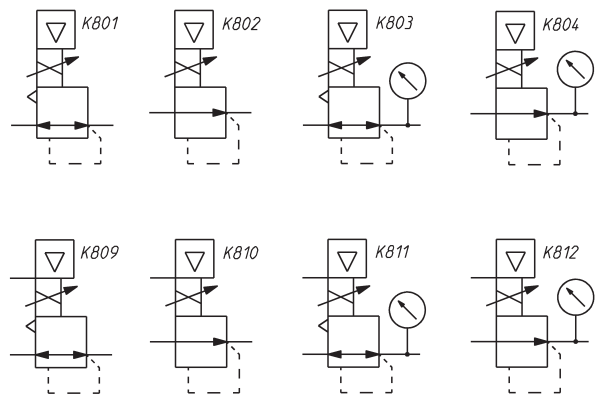
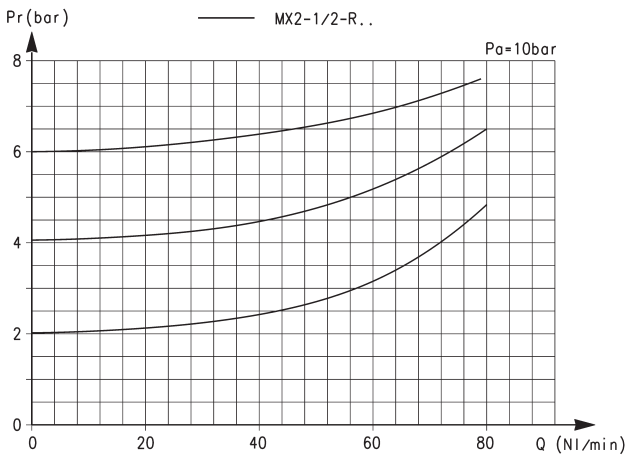
FLOW DIAGRAMS - STANDARD VERSION



Pr = Regulated pressure
Q = Flow
Pa = Inlet pressure

Pr = Regulated pressure
Q = Flow
Pa = Inlet pressure

FLOW DIAGRAM AND PNEUMATIC SYMBOLS - STANDARD VERSION



Exhaust flow diagram

Pr = Regulated pressure
Q = Flow
Pa = Inlet pressure

- K801 = relieving, electrical command
- K802 = NO relieving, electrical command
- K803 = relieving, electrical command, built-in pressure gauge
- K804 = NO relieving, electrical command, built-in pressure gauge
- K809 = relieving, electrical command, ext. servo pilot supply
- K810 = NO reliev., electrical command, ext. servo pilot supply
- K811 = reliev., el. com., built-in pr. gauge, ext. servo pilot supply
- K812 = NO reliev., el. com., built-in pr. gauge, ext. servo pilot sup.

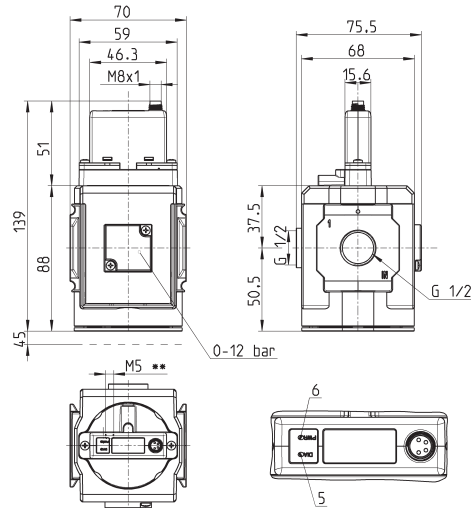
Series MX-PRO Manifold regulators - dimensions



- Male connector M8 4 poles
- Pin 1: +24 V DC (Power supply)
- Pin 2: Command analogical signal
0-10 V DC or 4-20 mA
- Pin 3: 0 V (Ground) common also
for the command signal
- Pin 4: Output analogical signal
(according to the
regulated pressure)
- 5 red LED
- 6 green LED

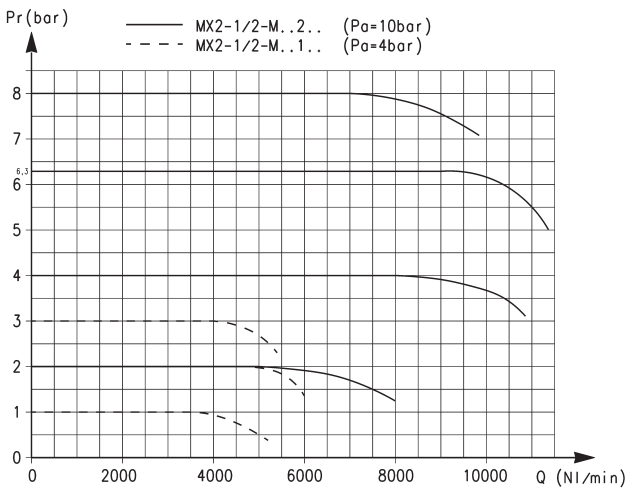
Accessories: see MX accessories (3/1.49)
Assembled FRL: see Series MX (3/1.50)
Connection cables: see Series K8P (2/15.37)

DRAWING NOTE
** = in the versions with external servo pilot supply only (MX2-1/2-REV... and MX2-1/2-REA...)



Mod.	Ports	Electrical command	Operating pressure (1 bar = 14,5 psi)	Relieving	Pressure gauge
MX2-1/2-MCV102	G1/2	0-10 V DC	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-MCV112	G1/2	0-10 V DC	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-MCV204	G1/2	0-10 V DC	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-MCV214	G1/2	0-10 V DC	0.5 + 10 bar	no	with built-in pressure gauge 0-12
MX2-1/2-MCA102	G1/2	4-20 mA	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-MCA112	G1/2	4-20 mA	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-MCA204	G1/2	4-20 mA	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-MCA214	G1/2	4-20 mA	0.5 + 10 bar	no	with built-in pressure gauge 0-12
MX2-1/2-MCV100	G1/2	0-10 V DC	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-MCV110	G1/2	0-10 V DC	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-MCV200	G1/2	0-10 V DC	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-MCV210	G1/2	0-10 V DC	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-MCA100	G1/2	4-20 mA	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-MCA110	G1/2	4-20 mA	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-MCA200	G1/2	4-20 mA	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-MCA210	G1/2	4-20 mA	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-MEV100	G1/2	0-10 V DC	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-MEV102	G1/2	0-10 V DC	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-MEV110	G1/2	0-10 V DC	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-MEV112	G1/2	0-10 V DC	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-MEV200	G1/2	0-10 V DC	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-MEV204	G1/2	0-10 V DC	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-MEV210	G1/2	0-10 V DC	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-MEV214	G1/2	0-10 V DC	0.5 + 10 bar	no	with built-in pressure gauge 0-12
MX2-1/2-MEA100	G1/2	4-20 mA	0.15 + 3 bar	yes	without pressure gauge
MX2-1/2-MEA102	G1/2	4-20 mA	0.15 + 3 bar	yes	with built-in pressure gauge 0-6
MX2-1/2-MEA110	G1/2	4-20 mA	0.15 + 3 bar	no	without pressure gauge
MX2-1/2-MEA112	G1/2	4-20 mA	0.15 + 3 bar	no	with built-in pressure gauge 0-6
MX2-1/2-MEA200	G1/2	4-20 mA	0.5 + 10 bar	yes	without pressure gauge
MX2-1/2-MEA204	G1/2	4-20 mA	0.5 + 10 bar	yes	with built-in pressure gauge 0-12
MX2-1/2-MEA210	G1/2	4-20 mA	0.5 + 10 bar	no	without pressure gauge
MX2-1/2-MEA214	G1/2	4-20 mA	0.5 + 10 bar	no	with built-in pressure gauge 0-12

FLOW DIAGRAMS - MANIFOLD VERSION

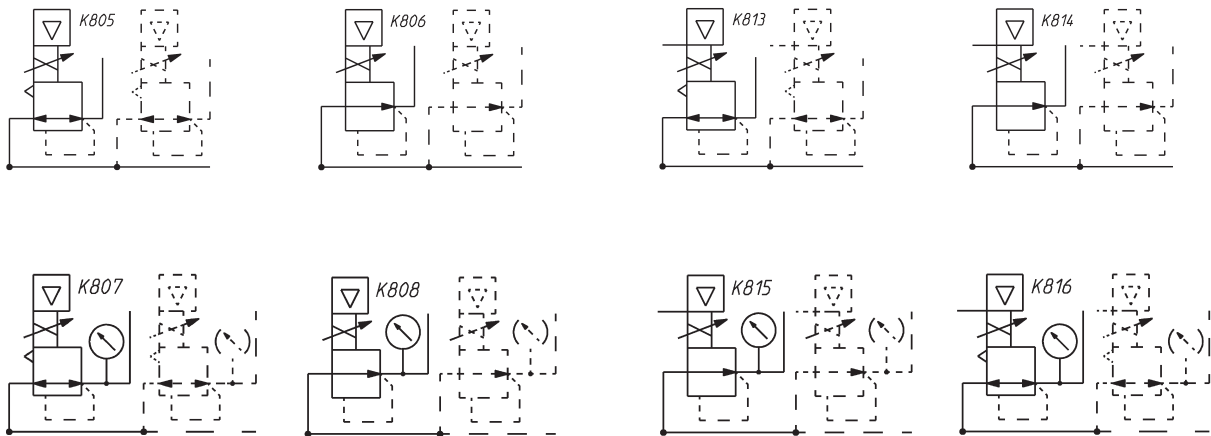


Pr = Regulated pressure

Q = Flow

Pa = Inlet pressure

PNEUMATIC SYMBOLS - MANIFOLD VERSION



- K805 = MANIFOLD reg., relieving, electrical command
- K806 = MANIFOLD reg., NO relieving, electrical command
- K807 = MANIFOLD reg., relieving, electrical command and built-in pressure gauge
- K808 = MANIFOLD reg., NO relieving, electrical command and built-in pressure gauge

- K813 = MANIFOLD reg., relieving, electrical command, and external servo pilot supply
- K814 = MANIFOLD reg., NO relieving, electrical command, and external servo pilot supply
- K815 = MANIFOLD reg., relieving, electrical command, built-in pressure gauge and external servo pilot supply
- K816 = MANIFOLD reg., NO relieving, electrical command, built-in pressure gauge and external servo pilot supply

Rapid clamp kit Mod. MX2-...

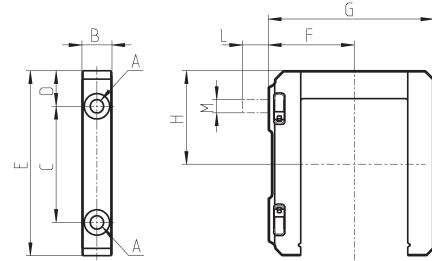


The kit MX2-X is supplied with:
 1 rapid clamp, 1 O-ring OR 3125 *,
 2 exagonal nuts M5, 2 screws M5x69.

The kit MX2-Z is supplied with:
 1 rapid clamp, 1 O-ring OR 3125 *,
 1 exagonal nut M5, 1 screw M5x69,
 1 screw M5x85 for wall fixing.

* it can be ordered separately (cod. 160-39-11/19)

Materials: technopolymer clamp, NBR O-ring,
 zinc-plated steel nuts and screws.



DIMENSIONS

Mod.	A	B	C	D	E	F	G	H	L	M	Notes
MX2-X	5.2	12	46	14	73.5	37.5	70.5	37	-	-	
MX2-Z	5.2	12	46	14	73.5	37.5	70.5	37	14	M5	kit with wall fixing screw

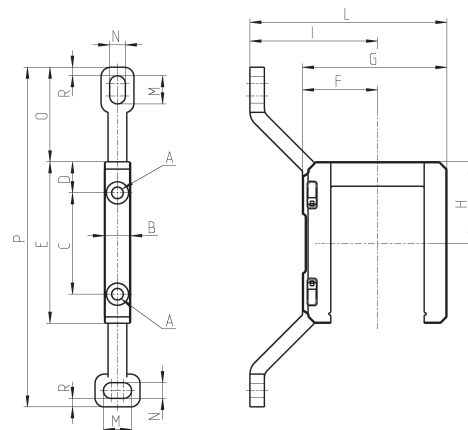
Rapid clamp kit with wall fixing brackets



The kit MX2-Y is supplied with:
 1 wall rapid clamp, 1 O-ring OR 3125 **, 2 exagonal
 nuts, 2 screws M5x69.

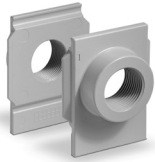
** it can be separately ordered (cod. 160-39-11/19)

Materials: technopolymer clamp, NBR O-ring,
 zinc-plated steel nuts and screws.



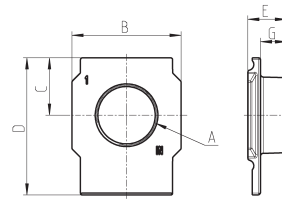
Mod.	A	B	C	D	E	F	G	H	I	L	M	N	O	P	R
MX2-Y	5,2	12	46	14	73,5	32,5	70,5	37	70,5	103	12	6,5	42	152	4

Terminal flanges (IN/OUT)



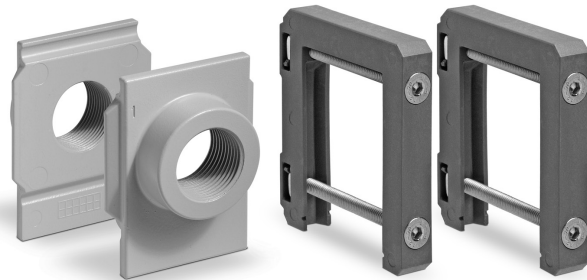
The kit is supplied with:
 - 1 flange INLET side
 - 1 flange OUTLET side

Materials: painted aluminium flanges.

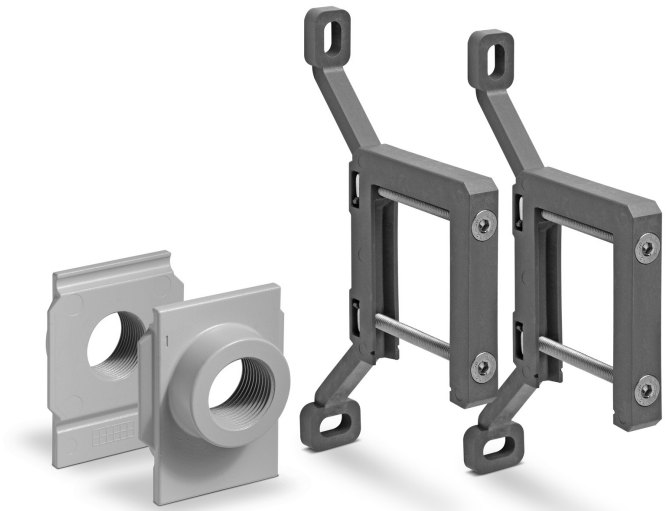


Mod.	A	B	C	D	E	G
MX2-3/8-FL	G3/8	50	26,5	63,5	17	11
MX2-1/2-FL	G1/2	50	26,5	63,5	17	11
MX2-3/4-FL	G3/4	50	26,5	63,5	17	11

Rapid clamps kit + flanges



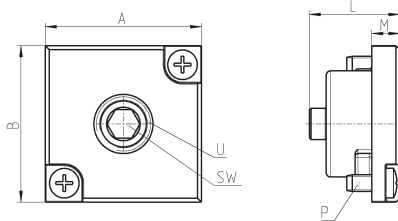
Mod.	The kit is supplied with:
MX2-3/8-HH	1x MX2-3/8-FL + 2x MX2-X
MX2-1/2-HH	1x MX2-1/2-FL + 2x MX2-X
MX2-3/4-HH	1x MX2-3/4-FL + 2x MX2-X
MX2-3/8-JJ	1x MX2-3/8-FL + 2x MX2-Z
MX2-1/2-JJ	1x MX2-1/2-FL + 2x MX2-Z
MX2-3/4-JJ	1x MX2-3/4-FL + 2x MX2-Z

Rapid clamps kit with wall fixing brackets + flanges


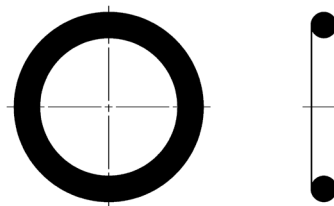
Mod.	The kit is supplied with:
MX2-3/8-KK	1x MX2-3/8-FL + 2x MX2-Y
MX2-1/2-KK	1x MX2-1/2-FL + 2x MX2-Y
MX2-3/4-KK	1x MX2-3/4-FL + 2x MX2-Y

Block for pressure gauge fixing


The kit is supplied with:
 1 block
 1 grain
 2 screws
 1 seal



DIMENSIONS							
Mod.	A	B	L	M	P	U	SW
MX2-R26-P	28	28	16.5	5	M3X7	1/8	5

O-ring for assembling


Mod.	O-ring	For assembly
160-39-11/19	OR 3125	MX2

Series ER100 digital electro-pneumatic regulators

Port G1/4



- » Compact design
- » Digital display
- » Analog and digital input
- » Programmable
- » Zero/span adjustment function
- » Error display function, pressure display
- » Preset memory function 8-set points (3 bits).

2

CONTROL

GENERAL DATA ER104-5xxx

Model	ER104-5 0/1/2 X Analog type	ER104-5 P X Parallel type
Fluid	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Max. working pressure	7 bar	7 bar
Min. working pressure	Control pressure + max. control pressure x 0,2	Control pressure + max. control pressure x 0,2
Pressure control range	0,3 ÷ 5 bar	0,3 ÷ 5 bar
Class protection	IP40	IP40
Power supply voltage	24 V DC +/- 10% (stabilized power supply with a ripple rate of 1% or less)	24 V DC +/- 10% (stabilized power supply with a ripple rate of 1% or less)
Consumption current	0.15 A (or less rush current 0.6 A or less when power is turned on)	0.15 A (or less rush current 0.6 A or less when power is turned on)
Input signal (Input impedance)	0 ÷ 10 V DC (6,7 kΩ) 0 ÷ 5 V DC (10 kΩ) 4 ÷ 20 mA DC (250 Ω)	10 bit
Preset input	8 points	N/A
Output signal Note 1	Analog output 1-5 VDC (load to be connected impedance 500 kW or more) Switch output NPN or PNP, open collector output, 30 V or less, 50 mA or less, voltage drop 2.4 or less, compatible for use with PLC or Relay	Analog output 1-5 VDC (load to be connected impedance 500 kW or more) Switch output NPN or PNP, open collector output, 30 V or less, 50 mA or less, voltage drop 2.4 or less, compatible for use with PLC or Relay
Error Output signal	NPN or PNP open collector output, 30 V or less, 50 mA or less, voltage drop 2,4 V or less, compatible for use with PLC or Relay	NPN or PNP open collector output, 30 V or less, 50 mA or less, voltage drop 2,4 V or less, compatible for use with PLC or Relay
Direct memory setting	0,05 ÷ 5 bar minimum input width 0,01 bar	0,05 ÷ 5 bar minimum input width 0,01 bar
Hysteresis Note 2	0.5% F.S. or less	0.5% F.S. or less
Linearity Note 2	±0.3% F.S. or less	±0.3% F.S. or less
Resolution Note 2	0.2% F.S. or less	0.2% F.S. or less
Repeatability Note 2	0.3% F.S. or less	0.3% F.S. or less
Temperature characteristics: Zero point fluctation	0.15% F.S./°C or less	0.15% F.S./°C or less
Temperature characteristics: Span point fluctation	0.07% F.S./°C or less	0.07% F.S./°C or less
Max. flow rate (ANR) Note 3	400 l/min (see diagram)	400 l/min (see diagram)
Step response time No load Note 4	0.2 sec. or less	0.2 sec. or less
Step response time 1000 cm ³ load Note 4	0.8 sec. or less	0.8 sec. or less
Mechanical vibration proof	98 m/s ² or less	98 m/s ² or less
Ambient temperature	5°C ÷ 50 °C	5°C ÷ 50 °C
Fluid temperature	5°C ÷ 50 °C	5°C ÷ 50 °C
Connection port size	G1/4	G1/4
Mounting direction	Free	Free
Weight	250g	250g
Note 1:	Select either analog or switch output.	
Note 2:	This characteristic is guaranteed within a regulation range between 10 and 90% of the full scale, with a power voltage of 24V±10%, a supply pressure of 1 bar higher compared with the set pressure (ex. regulation of 3 bar, supply pressure of 3+1 = 4 bar) and a volume connected to the outlet without any loss. In applications with great air consumption, such as the blowing, the indicated tolerance may change.	
Note 3:	The above apply when working pressure and control pressure are maximum	
Note 4:	The above apply when working pressure is maximum and the step is as follows: 50% F.S. -> 100%F.S. 50% F.S. -> 60% F.S. 50% F.S. -> 40% F.S.	

GENERAL DATA ER104-9xxx

Model	ER104-9 0/1/2 X Analog type	ER104-9P X Parallel type
Fluid	Filtered air according to ISO 132	Filtered air according to ISO 132
Max. working pressure	10 bar	10 bar
Min. working pressure	Control pressure + Max. control pressure + 1 bar	Control pressure + Max. control pressure + 1 bar
Pressure control range	0,5 + 9 bar	0,5 + 9 bar
Class protection	IP40	IP40
Power supply voltage	DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less)	DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less)
Consumption current	0.15 A or less rush current 0.6 A or less when power is turned on	0.15 A or less rush current 0.6 A or less when power is turned on
Input signal (Input impedance)	0 a 10 VDC (6.7kΩ) 0 a 5 VDC (10kΩ) 4 a 20 mADC (250 Ω)	10 bit
Preset input	8 points	N/A
Output signal Note 1	Analog output 1-5 VDC (load to be connected impedance 500 KW or more) Switch output NPN or PNP, open collector output, 30 V or less, 50 mA or less voltage drop 2.4.V or less, compatible for usage in PLC and Relay.	Analog output 1-5 VDC (load to be connected impedance 500 KW or more) Switch output NPN or PNP, open collector output, 30 V or less, 50 mA or less, voltage drop 2.4.V or less, compatible for usage in PLC and Relay.
Error output signal	NPN or PNP, open collector output, 30 V or less, 50 mA or less, voltage drop 2.4 or less, compatible for usage in PLC and Relay	NPN or PNP, open collector output, 30 V or less, 50 mA or less, voltage drop 2.4 or less, compatible for usage in PLC and Relay
Direct memory setting	0,05 + 9 bar minimum input width 0,01 bar setting resolution 0,02 bar	0,05 + 9 bar minimum input width 0,01 bar setting resolution 0,02 bar
Hysteresis Note 2	0.5% F.S. or less	0.5% F.S. or less
Linearity Note 2	±0.3% F.S. or less	±0.3% F.S. or less
Resolution Note 2	0.2% F.S. or less	0.2% F.S. or less
Repeatability Note 2	0.3% F.S. or less	0.3% F.S. or less
Temperature characteristics: Zero point fluctuation	0.15% F.S./°C or less	0.15% F.S./°C or less
Temperature characteristics: Span point fluctuation	0.07% F.S./°C or less	0.07% F.S./°C or less
Max. flow rate Note 3	400 l/min (see diagram)	400 l/min (see diagram)
Step response time No load Note 4	0.82 sec. or less	0.2 sec. or less
Step response time 1000 cm³ load Note 4	0.8 sec. or less	0.8 sec. or less
Mechanical vibration proof	98 m/s² or less	98 m/s² or less
Ambient temperature	5°C + 50 °C	5°C + 50 °C
Fluid temperature	5°C + 50 °C	5°C + 50 °C
Connecting port size	G1/4	G1/4
Mounting direction	Free	Free
Weight	250g	250g
Note 1	Select either analog or switch output.	
Note 2	This characteristic is guaranteed within a regulation range between 10 and 90% of the full scale, with a power voltage of 24V±10%, a supply pressure of 1 bar higher compared with the set pressure (ex. regulation of 3 bar, supply pressure of 3+1 = 4 bar) and a volume connected to the outlet without any loss. In applications with great air consumption, such as the blowing, the indicated tolerance may change.	
Note 3	The above apply when working pressure and control pressure are maximum.	
Note 4	The above apply when working pressure and control pressure is maximum and the step is as follows: 50% F.S. -> 100%F.S. 50% F.S. -> 60% F.S. 50% F.S. -> 40% F.S.	

STANDARD CODES
Models

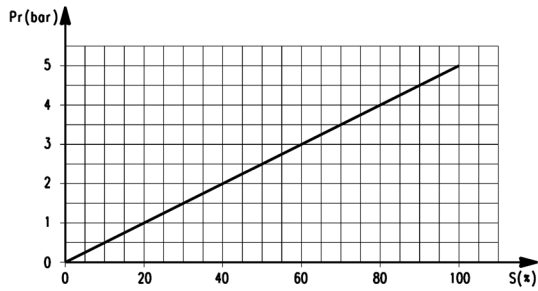
ER104-50AP	ER104-52AP	ER104-5PSP	ER104-90SP	ER104-92SP
ER104-50SP	ER104-52SP	ER 104-90AP	ER104-92AP	ER104-9PSP

CODING EXAMPLE

ER	1	04	-	5	0	AN
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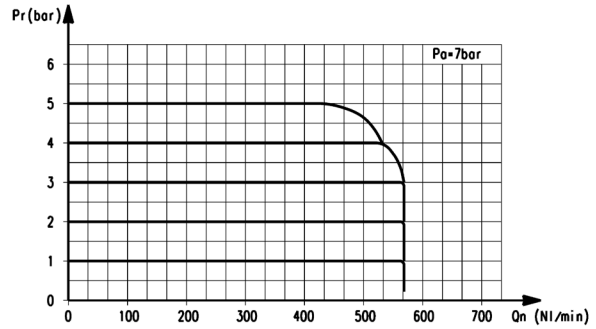
ER	SERIES
1	SIZE: 1 = size 1
04	PORT: 04 = G1/4
5	WORKING PRESSURE: 5 = 0 ÷ 5 bar 9 = 0.5 ÷ 9 bar
0	INPUT: 0 = 0 - 10 V DC 1 = 0 - 5 V DC 2 = 4 - 20 mA P = Parallel 10 bit
AN	OUTPUT: AN = 1 - 5 V analog, error (NPN) AP = 1 - 5 V analog, error (PNP) SN = switch (NPN), error (NPN) SP = switch (PNP), error (PNP)

DIAGRAMS



ER104-5xxx
Input/Output characteristics

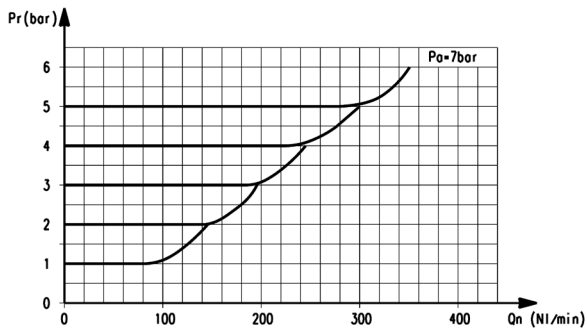
Pr = outlet pressure (bar)
S = input signal (%)



ER104-5xxx
Flow characteristics

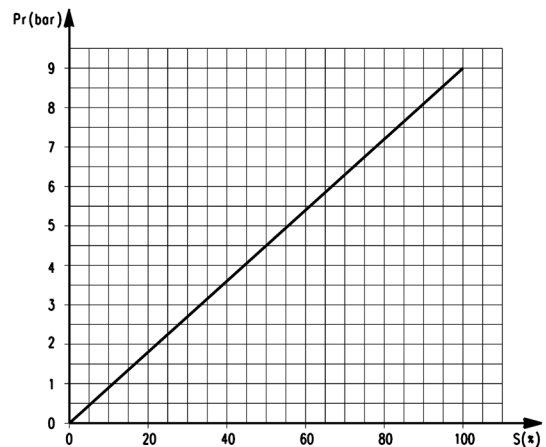
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = operating pressure (bar)

DIAGRAMS



ER104-5xxx
Exhaust characteristics

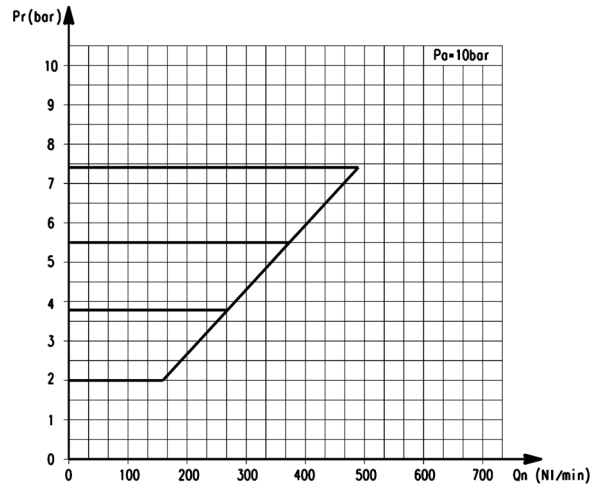
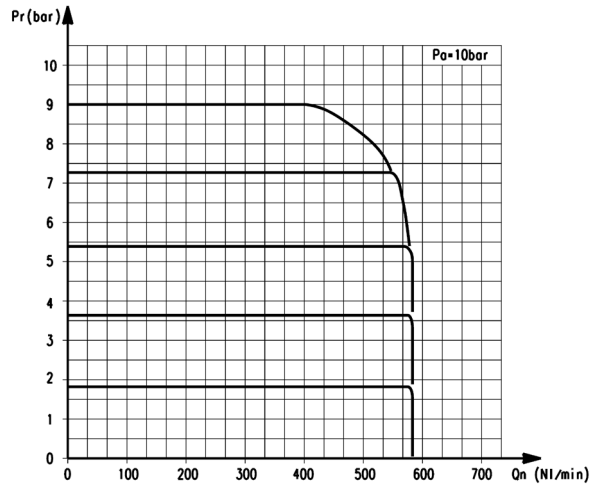
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = operating pressure (bar)



ER104-9xxx
Input/Output characteristics

Pr = outlet pressure (bar)
S = input signal (%)

DIAGRAMS



ER104-9xxx
Flow characteristics

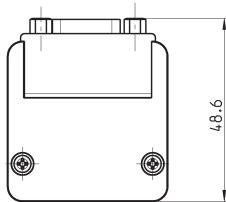
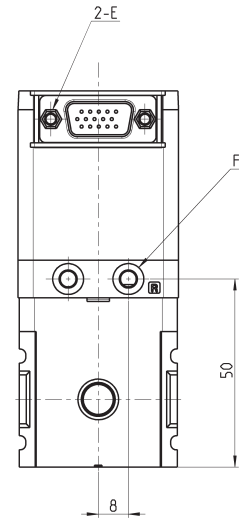
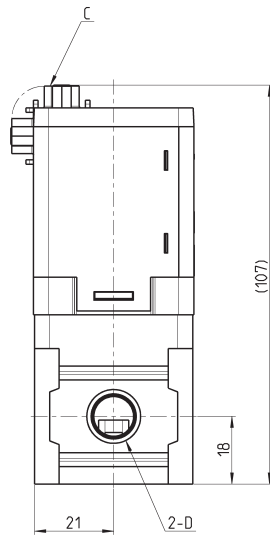
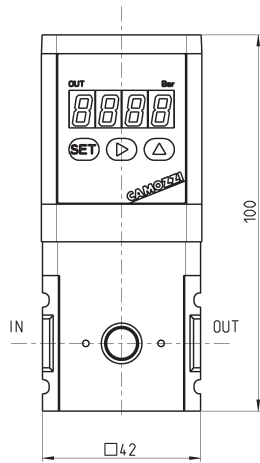
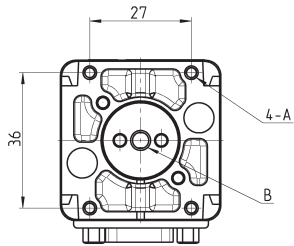
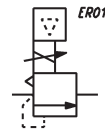
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = operating pressure (bar)

ER104-9xxx
Exhaust characteristics

Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = operating pressure (bar)

Proportional regulator Series ER100

See connectors on page 2/15.51.09

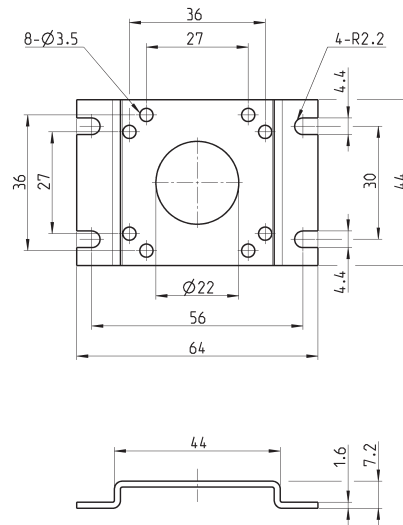


DIMENSIONS

Mod.	A	B	C	D	E	F
ER104	M3 depth 6	Ø5.3 EXH port	D sub-connector 15 pins/plugs	G1/4	4-40 UNC	Ø4.2 Port R (pilot air exhaust port)

Bracket ER1-B1

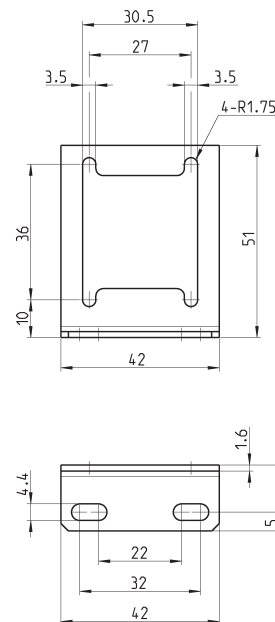
Floor installation type


DIMENSIONS

Mod.

ER1-B1
Bracket ER1-B2

Wall installation type


DIMENSIONS

Mod.

ER1-B2

Series ER200 digital electro-pneumatic regulators

Ports G1/4 and G3/8



- » Compact design
- » Digital display
- » Analog and digital input
- » Programmable
- » Zero/span adjustment function
- » Error display function, pressure display
- » Preset memory function 8-set points (3 bits).

GENERAL DATA ER2XX-5XXX

Model	ER204-5 0/1/2 X ER238-5 0/1/2 X Analog type	ER204-5P X ER238-5P X Parallel type
Fluid	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas	filtered compressed air, unlubricated, according to ISO 8573-1 class 3.4.3, inert gas
Max. working pressure	7 bar	7 bar
Min. working pressure	Control pressure + max. control pressure + 1 bar	Control pressure + max. control pressure + 1 bar
Pressure control range	0,3 + 5 bar	0,3 + 5 bar
Class protection	IP40	IP40
Power supply voltage	DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less)	DC24V ± 10% (stabilized power supply with a ripple rate of 1% or less)
Consumption current	0.15 A (rush current 0.6 A or less)	0.15 A (rush current 0.6 A or less)
Input signal(Input Impedance)	0 to 10 VDC (6.7k Ω) 0 to 5 VDC (10k Ω) 4 to 20 mAADC (250 Ω)	10 bit
Preset Input	8 points	N/A
Output signal Note 1	Analog output 1-5 VDC (load to be connected impedance 500 kΩ or more) Switch output NPN or PNP, open collector output, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay.	Analog output 1-5 VDC (load to be connected impedance 500 kΩ or more) Switch output NPN or PNP, open collector output, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay.
Error output signal	NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay.	NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay.
Direct memory setting	0,05 + 5 bar minimum input width 0,01 bar	0,05 + 5 bar minimum input width 0,01 bar
Hysteresis Note 2	0.5% F.S. or less	0.5% F.S. or less
Linearity Note 2	±0.3% F.S. or less	±0.3% F.S. or less
Resolution Note 2	0.2% F.S. or less	0.2% F.S. or less
Repeatability Note 2	0.3% F.S. or less	0.3% F.S. or less
Temperature characteristics: zero point fluctuation	0.15% F.S./°C or less	0.15% F.S./°C or less
Temperature characteristics: span point fluctuation	0.07% F.S./°C or less	0.07% F.S./°C or less
Max. flow rate(ANR) Note 3	1500 l/min	1500 l/min
Step response time: no load	0.2 sec. or less	0.2 sec. or less
Step response time: With load 1000 cm³	0.8 sec. or less	0.8 sec. or less
Mechanical vibration proof	98 m/s² or less	98 m/s² or less
Ambient temperature	5°C + 50 °C	5°C + 50 °C
Fluid temperature	5°C + 50 °C	5°C + 50 °C
Connecting port size IN/OUT	G1/4 - G3/8	G1/4 - G3/8
Connecting port size EXHAUST	G3/8	G3/8
Mounting	Free	Free
Weight	450g	450g
Note 1:	Select either analog or switch output.	
Note 2:	This characteristic is guaranteed within a regulation range between 10 and 90% of the full scale, with a power voltage of 24V±10%, a supply pressure of 1 bar higher compared with the set pressure (ex. regulation of 3 bar, supply pressure of 3+1 = 4 bar) and a volume connected to the outlet without any loss. In applications with great air consumption, such as the blowing, the indicated tolerance may change.	
Note 3:	The above apply when working pressure and control pressure are maximum.	
Note 4:	The above apply when working pressure is maximum and the step is as follows: 50% F.S. -> 100% F.S. 50% F.S. -> 60% F.S. 50% F.S. -> 40% F.S.	

GENERAL DATA ER2XX-9XXX

Model	ER204-9 0/1/2 X ER238-9 0/1/2 X Analog type	ER238-9P X ER238-9P X Parallel type
Fluid	Cleaned air	Cleaned air
Max. working pressure	10 bar	10 bar
Min. working pressure	Control pressure + max. control pressure + 1 bar	Control pressure + max. control pressure + 1 bar
Pressure control range	0,5 - 9 bar	0,5 - 9 bar
Class protection	IP40	IP40
Power supply voltage	DC24V \pm 10% (stabilized power supply with a ripple rate of 1% or less)	DC24V \pm 10% (stabilized power supply with a ripple rate of 1% or less)
Consumption current	0.15 A (rush current 0.6 A or less)	0.15 A (rush current 0.6 A or less)
Input signal (Input Impedance)	0 to 10 VDC (6.7k Ω) 0 to 5 VDC (10k Ω) 4 to 20 mADC (250 Ω)	10 bit
Preset input	8 points	N/A
Output signal	Analog output 1-5 VDC (load to be connected impedance 500 k Ω) Switch output NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay	Analog output 1-5 VDC (load to be connected impedance 500 k Ω) Switch output NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay
Error output signal	NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay	NPN or PNP, open collector, 30 V, 50 mA, voltage drop 2.4 V, compatible for usage in PLC and Relay
Direct memory setting	0,05 - 9 bar - min. input 0,01 bar max. error 0,02 bar	0,05 - 9 bar - min. input 0,01 bar max. error 0,02 bar
Hysteresis Note 2	0.5% F.S. or less	0.5% F.S. or less
Linearity Note 2	\pm 0.3% F.S. or less	\pm 0.3% F.S. or less
Resolution Note 2	0.2% F.S. or less	0.2% F.S. or less
Repeatability Note 2	0.3% F.S. or less	0.3% F.S. or less
Temperature characteristics: Zero point fluctuation	0.15% F.S./ $^{\circ}$ C or less	0.15% F.S./ $^{\circ}$ C or less
Temperature characteristics: Span point fluctuation	0.07% F.S./ $^{\circ}$ C or less	0.07% F.S./ $^{\circ}$ C or less
Max. flow rate(ANR) Note 3	1500 l/min	1500 l/min
Step response time No load	0.2 sec. or less	0.2 sec. or less
Step response time Load 1000 cm3	0.8 sec. or less	0.8 sec. or less
Mechanical vibration proof	98 m/s 2	98 m/s 2
Ambient temperature	5 to 50 $^{\circ}$ C	5 to 50 $^{\circ}$ C
Fluid temperature	5 to 50 $^{\circ}$ C	5 to 50 $^{\circ}$ C
Connecting port size IN/OUT	G1/4 - G3/8	G1/4 - G3/8
Connecting port size EXHAUST	G3/8	G3/8
Mounting	Free	Free
Weight	450g	450g
Note 1:	Select either analog or switch output	
Note 2:	This characteristic is guaranteed within a regulation range between 10 and 90% of the full scale, with a power voltage of 24V \pm 10%, a supply pressure of 1 bar higher compared with the set pressure (ex. regulation of 3 bar, supply pressure of 3+1 = 4 bar) and a volume connected to the outlet without any loss. In applications with great air consumption, such as the blowing, the indicated tolerance may change.	
Note 3:	The above apply when working pressure and control pressure are maximum.	
Note 4:	The above apply when working pressure is maximum and the step is as follows: 50% F.S. -> 100% F.S. 50% F.S. -> 60% F.S. 50% F.S. -> 40% F.S.	

STANDARD CODES
Models

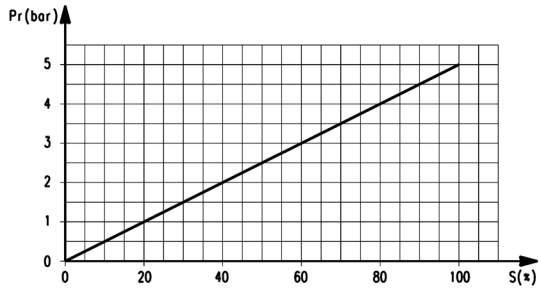
ER238-50AP	ER238-52AP	ER238-5PSP	ER238-90SP	ER238-92SP
ER238-50SP	ER238-52SP	ER238-90AP	ER238-92AP	ER238-9PSP

CODING EXAMPLE

ER	2	04	-	5	0	AN
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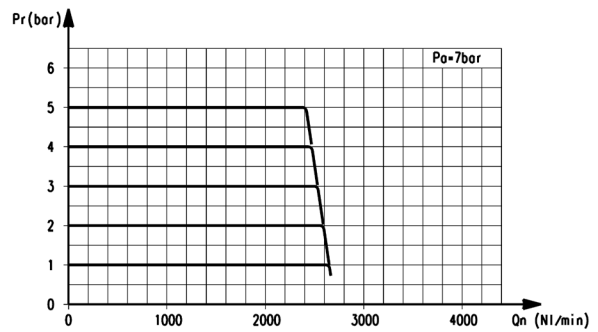
ER	SERIES
2	SIZE: 2 = size 2
04	PORT: 04 = G1/4 38 = G3/8
5	WORKING PRESSURE: 5 = 0 ÷ 5 bar 9 = 0.5 ÷ 9 bar
0	INPUT: 0 = 0 - 10 V DC 1 = 0 - 5 V DC 2 = 4 - 20 mA P = Parallel 10 bit
AN	OUTPUT: AN = 1 - 5 V analog error (NPN) AP = 1 - 5 V analog, error (PNP) SN = switch(NPN), error(NPN) SP = switch (PNP), error (PNP)

DIAGRAMS



ER2xx-5xxx
Input/Output characteristics

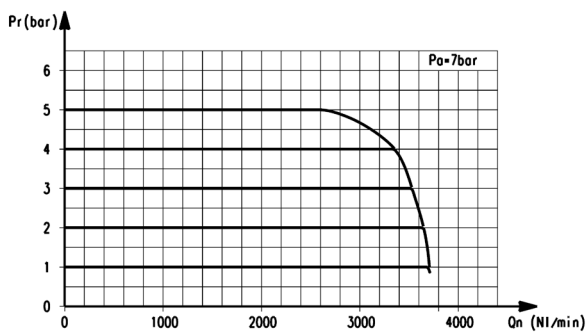
Pr = outlet pressure (bar)
S = input signal (%)



ER204-5xxx
Flow characteristics

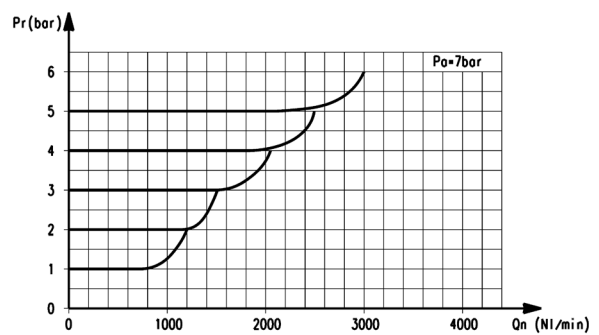
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

DIAGRAMS



ER238-5xxx
Flow characteristics

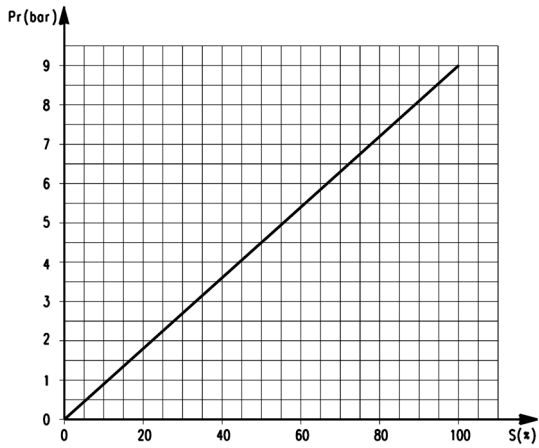
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)



ER2xx-5xxx
Exhaust characteristics

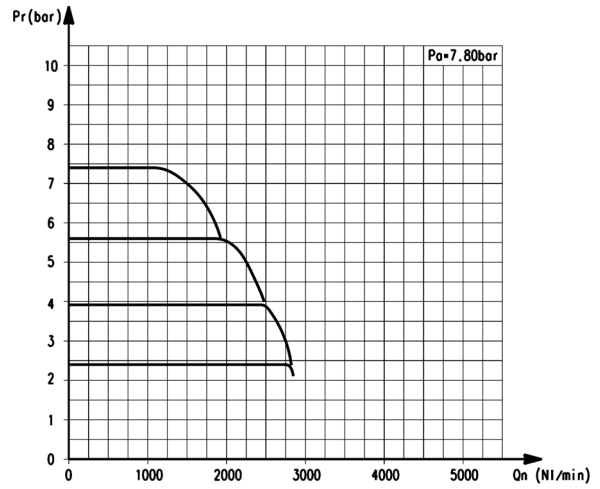
Pr = outlet pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

DIAGRAMS



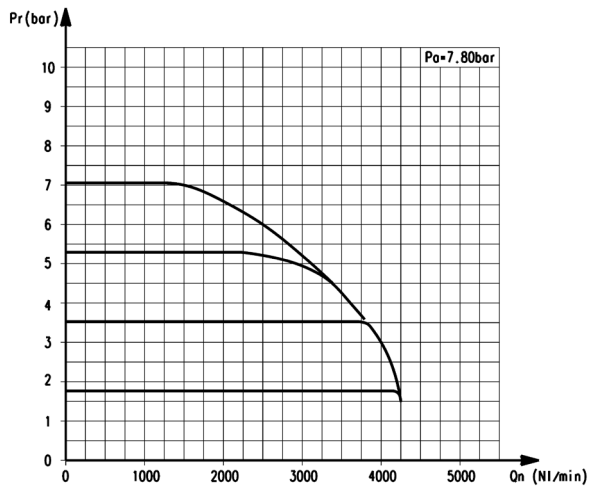
ER2xx-9xxx
Input/Output characteristics

Pr = output pressure (bar)
S = inlet signal (%)
Pa = working pressure (bar)



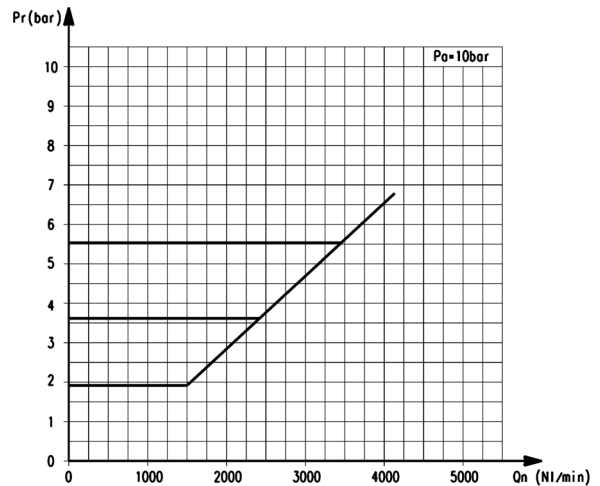
ER204-9xxx
Flow characteristics
Pr = output pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

DIAGRAMS



ER238-9xxx
Flow characteristics

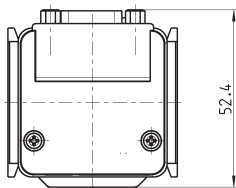
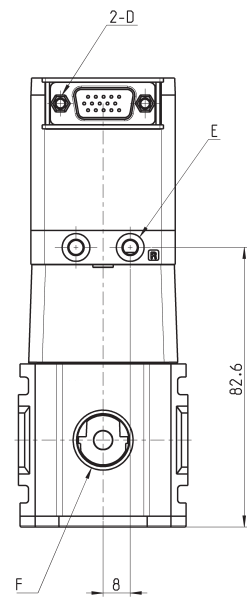
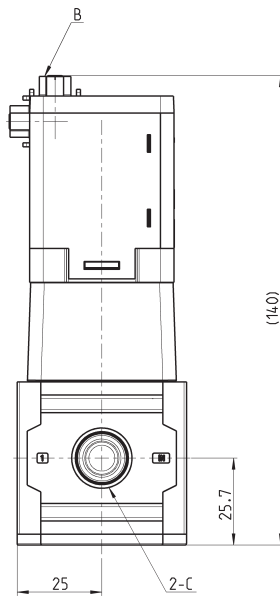
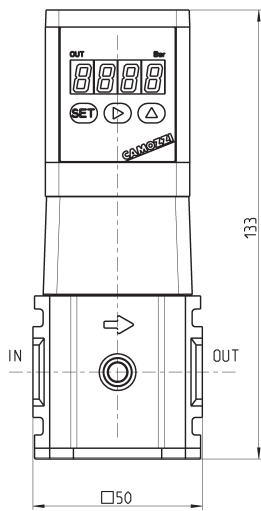
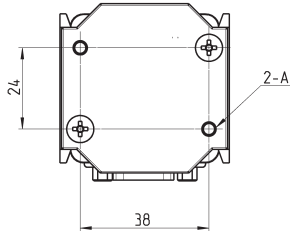
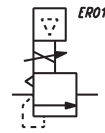
Pr = output pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)



ER2xx-9xxx
Exhaust characteristics

Pr = output pressure (bar)
Qn = flow (l/min)
Pa = working pressure (bar)

Proportional regulators Series ER200

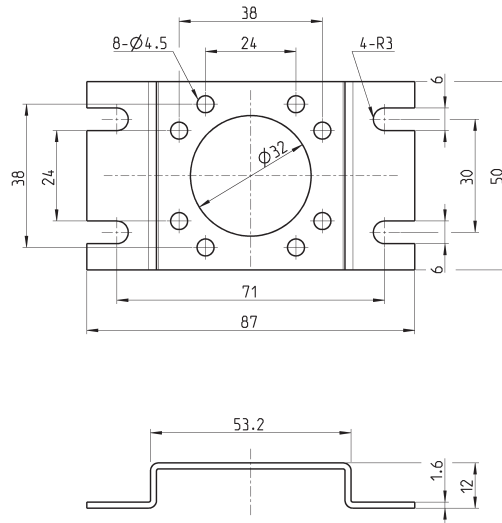


DIMENSIONS

Mod.	A	B	C	D	E	F
ER204	M4 depth 12	D sub-connector 15 pins/plugs	G1/4	4-40 UNC	Ø4.2 Port R (pilot air exhaust port)	G3/8 EXH port
ER238	M4 depth 12	D sub-connector 15 pins/plugs	G3/8	4-40 UNC	Ø4.2 Port R (pilot air exhaust port)	G3/8 EXH port

Bracket ER2-B1

Floor installation type mounting

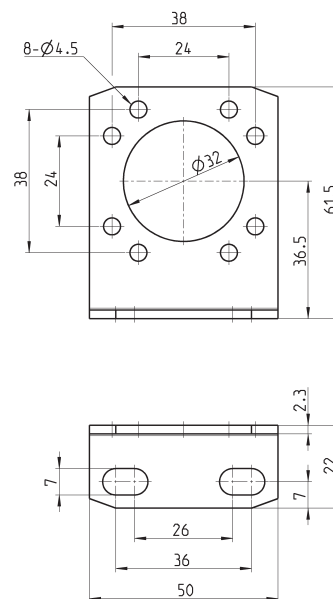


Mod.

ER2-B1

Bracket ER2-B2

Wall installation type mounting



Mod.

ER2-B2

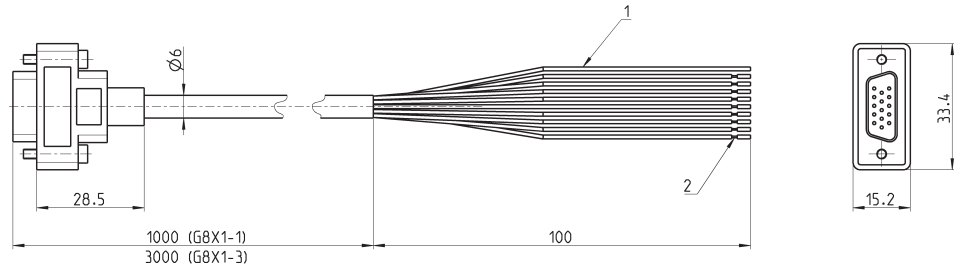
Cable and connector for regulator with analog Input

To check the correspondence between pin and cables' colour, please refer to the instruction sheet included in the packaging or to the user manual.



- 1 = shield wire*
- 2 = 9-AWG26

* Connect the shield wire to the power's minus (0 V) side.



Mod.
G8X1-1
G8X1-3

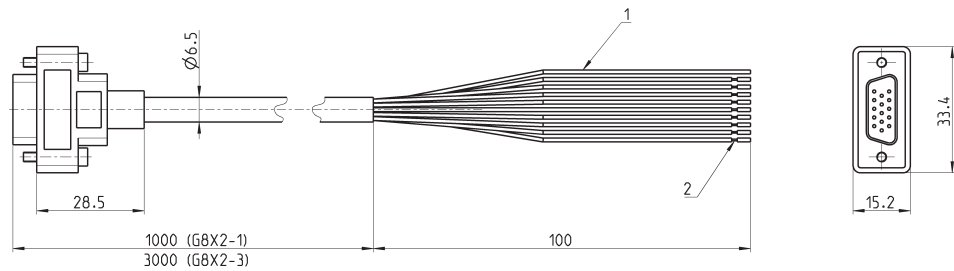
Cable and connector for regulator with parallel Input

To check the correspondence between pin and cables' colour, please refer to the instruction sheet included in the packaging or to the user manual.



- 1 = shield wire*
- 2 = 9-AWG26

* Connect the shield wire to the power's minus (0 V) side.



Mod.
G8X2-1
G8X2-3