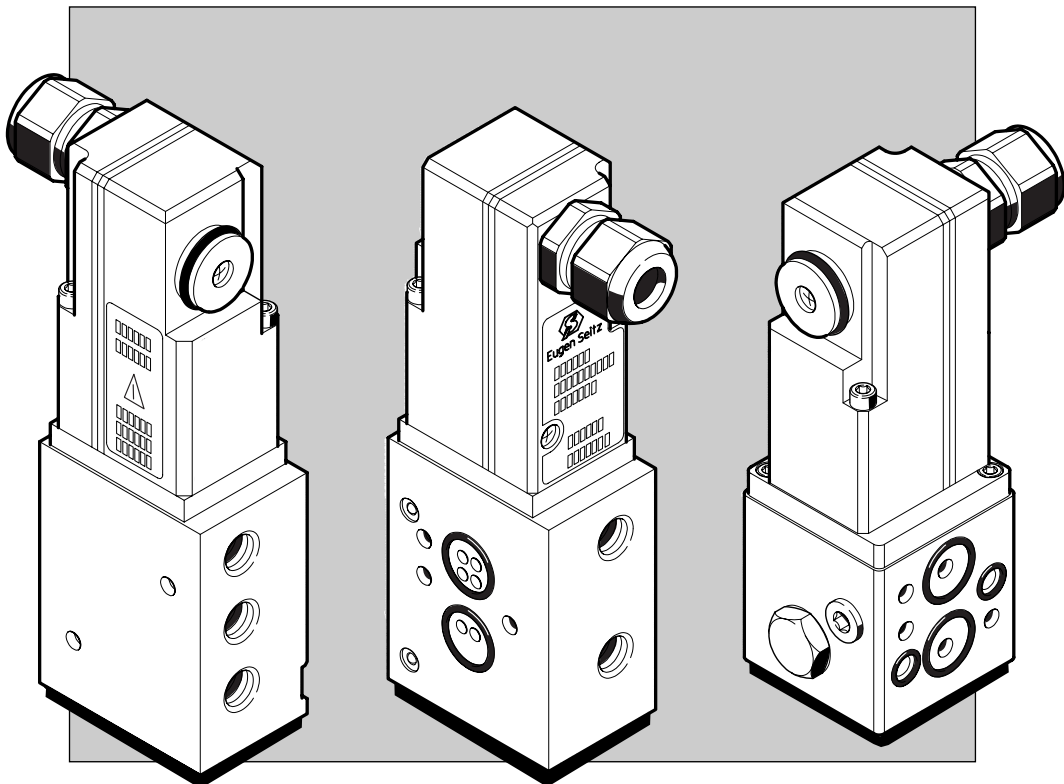


Pilot operated solenoid valves for pneumatic actuators

- **3/2 and 5/2 way solenoid valves**
- **Orifice size 6 and 12 mm**
- **EEx ia IIC T6 30 mW**
- **EEx ia IIC T6 7 mW for profibus PA**
- **NAMUR and threaded connections**
- **Pressure range 0 (2) ... 8 bar**



The valve group CP-12

The valve group CP-12 belongs to the pilot operated solenoid valve series, and complements the valve group CP-11 with pilot valves of low power consumption which can be controlled with the Profibus PA.

Depending on the type and application, the valves are piloted with internal or external control air.

The valves are exceedingly reliable, and can be employed for open air service under harsh ambient conditions.

Application

Valves of the group CP-12 are chiefly employed for controlling pneumatic actuators in the chemical, petrochemical and processing industries.

With the NAMUR interface they are particularly suitable for quarter-turn actuators. The integrated spring chamber ventilation protects models with spring return against contaminated ambient air.

Valves with external control air are especially suitable as safety valves for actuators with positioner. They are characterized by their high venting capacity.

Standard models

Design

Pilot operated spool valve and poppet valve

Functions

Depending on type 3/2-way or 5/2-way, single or dual solenoid

Pressure range

2 ... 8 bar and 0 ... 8 bar, depending on Type (see type overview)

Media

- Dry, filtered compressed air
- Instrument air
- Nitrogen and other inert gases

Flow direction

See function symbol

Temperatures

- Medium: (-40) -25...+60°C (+80°C)
 - Ambient: (-40) -25...+60°C (+80°C)
- depending on type

Pilot valve

See technical data "Pilot valves"

Materials

- Housing: Ematal treated aluminium
- Seals: Nitrile butadiene rubber (NBR)
- Spool: Altef coated aluminium
- Internal parts: Various materials
- General: No non-ferrous metals
- End plugs: Nickle plated brass
- Pilot valve: See technical data "Pilot valves"

Operating life

> 5 million switchings

Mounting position

Any position

Stile of fitting

- Pipe installation
- NAMUR interface

Pilot valve

The pilot valve is designed in the type of protection "EEx ia", and comprises a 2/2-way NO solenoid valve on the basis of the proven jet baffle plate system, an air flow rate regulator, and a pneumatically operated 3/2-way NC valve of 2 mm orifice size.

Thanks to the pneumatic interface between the pilot valve and the main valve, the pilot valve can be turned 180°, and/or exchanged.

By way of models of differing power ratings, the pilot valves are suitable for connection to intrinsically safe circuits of a great number of commercially available valve control modules. In particular the version with a power rating of < 10 mW permits the employment with Profibus PA.

Solenoid valve for universal application

New and unique, with incorporated automatic shuttle valve. A universally employable solenoid valve for all applications with spring return:

Type CP 0632 CPU with NAMUR interface and threaded connections can be employed on linear actuators and quarter-turn actuators alike, without modification.

With the mounting plate available as supplementary accessory, the valve can be

fitted to the NAMUR rib and tube-connected.

Manual override

Depending on the pilot valve, the solenoid valves are available with push-button for manual actuation.

Adapter with filter

In order to prevent solenoid valve failure we offer an adapter filter in our product line. The built in sieve, with mesh width 0.1 mm, filters dirt particles and can be easily cleaned or replaced.

The adapter has a G ¼ straight male thread with O-ring seal (NBR) and is available with G ¼ or NPT ¼ connection thread (see Fig. 20).

G ¼ – NPT ¼	Order No. 125.298.00
G ¼ – G ¼	Order No. 125.889.00
G ⅜ – NPT ¼	Order No. 150.836.00
G ⅜ – G ¼	Order No. 150.835.00

Exhaust protector IP65

Suitable for solenoid valves with NAMUR connection and integral spring chamber ventilation. The spring chamber of the actuator and the solenoid itself are protected against the penetration of aggressive ambient air or rain by the non-return system. Functional reliability and operating life are thereby increased.

Order No. 126.920.00 (see Fig. 21)

EMATAL - Corrosion protection

Eugen Seitz AG aluminium valves are "hard ematalised" as standard.

Ematal is a surface treatment in which a very hard and compact aluminium oxide layer with titanium oxide intercalation is applied to the valve. This produces a long-lasting protection against corrosion and mechanical stress.

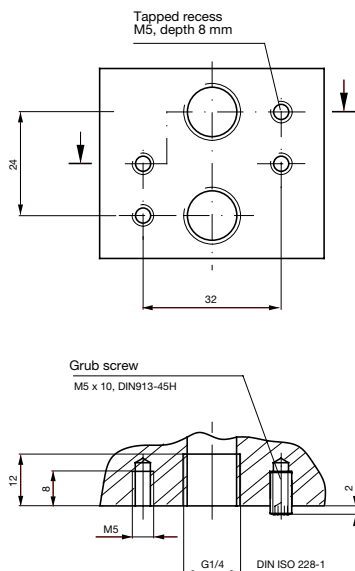
For detailed information with an overview of the chemical resistance please request the technical information "Hard ematal surface treatment for solenoid valves".



NAMUR interface

For quarter turn actuators

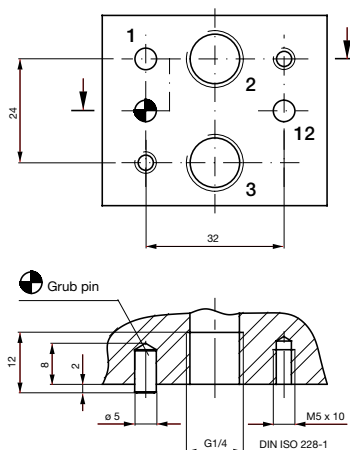
The NAMUR interface allows solenoid valves to be screwed simply and directly onto the quarter turn actuator. Time-consuming, complicated assembly is no longer necessary. A grub screw guarantees that the established initial position cannot be changed by simply turning the valve.



For actuators with linear movements

Solenoid valves with the NAMUR interface for actuators with linear movements are mountable directly on position regulators and signal devices of linear actuators with the corresponding interface without a connecting plate.

The control signal of the positioner leads by the solenoid valve through the additional pressure connection 1 on the NAMUR flange area. Connection 12 supplies the necessary control air.



NAMUR flow control plate

An intermediate flow control plate is available as an accessory for the 3/2 way and 5/2 way valves with NAMUR interface.

Order no. 126.938.00 (see figure 15)
Order no. 117.402.00 (see figure 16)

NAMUR connection plate

A NAMUR connection plate for direct mounting on the NAMUR rib of diaphragm actuators is also available as an accessory.

Order no. 124.579.00 (see figure 17)

Clamp complete, for attachment to NAMUR lantern

Order no. 127.618.00 (see figure 19)

Mounting plate

A plate for mounting on the NAMUR rib or otherwise fastening on plant is available as an accessory for the universal solenoid valve type CP 0632 CPU oH.

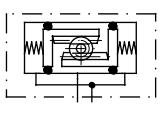
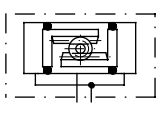
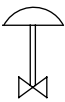
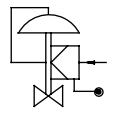
Order no. 126.391.00 (see figure 18)

Clamp complete, for attachment to NAMUR lantern

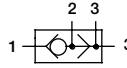
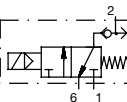
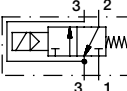
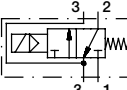
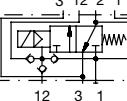
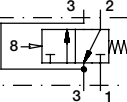
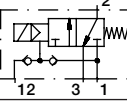
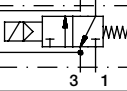
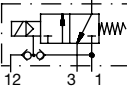
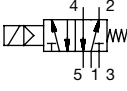
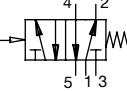
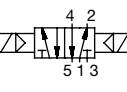
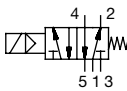
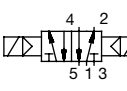
Order no. 127.618.00 (see figure 19)

Application overview

The valve group CP-11 is characterised by its versatility.

The individual types are suitable for the following applications																
Application	Connection	CP 0632 CNP	CP 0632 CND	CP 0632 CNE	CP 0632 CNX	CP 0632 CPU	CP 0632 CNP	CP 0632 CGK	CP 1232 CNE	CP 1232 CGK	CP 0652-NE	CP 0652-NP	CP 0652-BNE	CP 0652-GE	CP 0652-BGE	Symbol
Control of a single-acting quarter-turn actuator	NAMUR	•	•	•	•	•	•	•								
	threaded				•		•		•							
Control of a double-acting quarter-turn actuator	NAMUR									•	•	•				
	threaded												•	•		
Control of a single acting actuator with linear movement	NAMUR	•	•	•	•	•	•	•								
	threaded				•		•		•							
Safety quick exhaust of an actuator with positioner	NAMUR				•		•									
	threaded				•		•		•							

Type overview

Function	Interface or port size	Functional symbol	Number of pilot valves	Orifice size [mm]	kv-value [m³/h] [l/min]	Press. [bar]	Weight [kg]*	Mode of operating Remarks	Valve type	Fig.-no..
3/2 NC	NAMUR and G 1/4		-	inflow 4 outflow 5	0,13/2,2 0,5/8,6	2...8	0,25	pilot air operated spring return	CP 0532 CNP	1
			1	inflow 2 outflow 5	0,1/1,8 0,5/8,6	2...8	0,46	pilot solenoid operated spring return	CP 0532 CNE	2
			1	6	0,65/11	2...8	0,7	pilot air operated spring return	CP 0632 CNE	3
			1	inflow 6 outflow 7	0,5/8 0,65/10	2...8	0,6	pilot air operated spring return	CP 0632 CNX	4
			1	inflow 6 outflow 7	0,5/8 0,65/10	0(2)...8	0,6	pilot solenoid operated with internal or external control air supply, automatic shuttle valve and add. G 1/4 ports	CP 0632 CPU	5
			-	6	0,365/11	0...8	0,43	pilot air operated spring return	CP 0632 CNP	13
	G 1/4		1	inflow 6 outflow 7	0,72/12 1,38/23	0(2)...8	0,6	pilot solenoid operated with internal or external control air supply and automatic shuttle valve.	CP 0632 CGK	6
	NAMUR and G 1/2		1	12	3,8/63	2...8	0,97	pilot air operated spring return	CP 1232 CNE	7
G 1/4 and G 1/2		1	12	3,8/63	0(2)...8	0,97	pilot solenoid operated with internal or external control air supply and automatic shuttle valve.	CP 1232 CGK	8	
5/2	NAMUR and G 1/4		1	6	0,65/11	2...8	0,7	pilot air operated spring return	CP 0652 -NE	9
			-	6	0,65/11	0...8	0,43	pilot air operated spring return	CP 0652 -NP	14
			2	6	0,65/11	2...8	0,9	pilot air operated bistabil	CP 0652 BNE	11
	G 1/4		1	6	0,65/11	2...8	0,7	pilot air operated vorgesteuert	CP 0652 -GE	10
			2	6	0,65/11	2...8	0,9	pilot air operated bistabil	CP 0652 BGE	12

* incl. pilot valve



Dimensional drawings

Figure 1

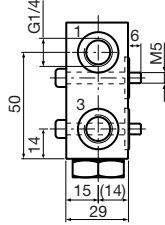
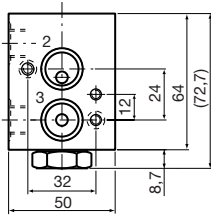


Figure 2

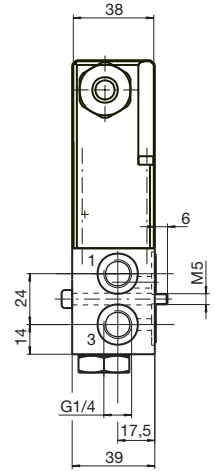
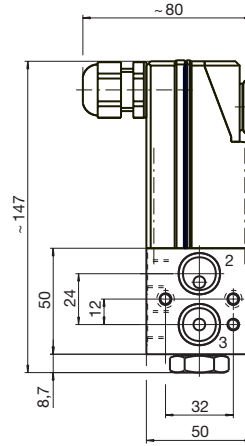


Figure 3

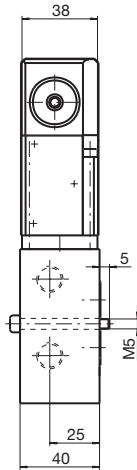
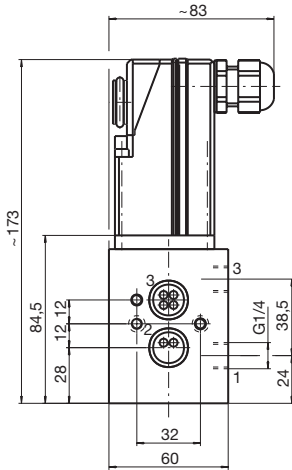


Figure 4

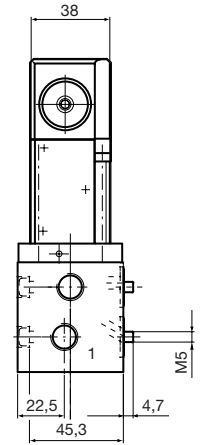
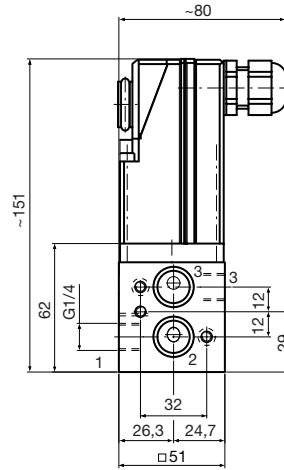


Figure 5

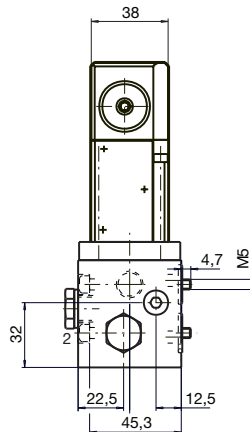
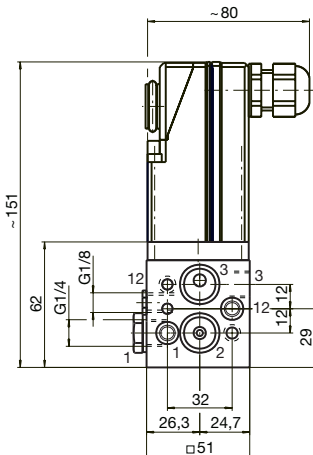
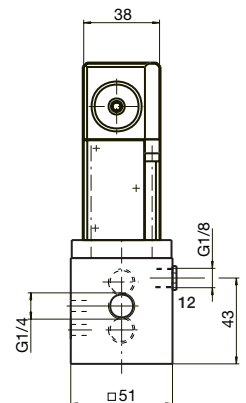
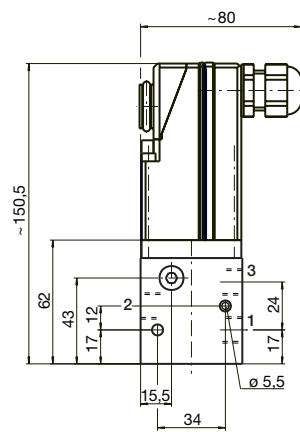


Figure 6



Dimensional drawings

Figure 7

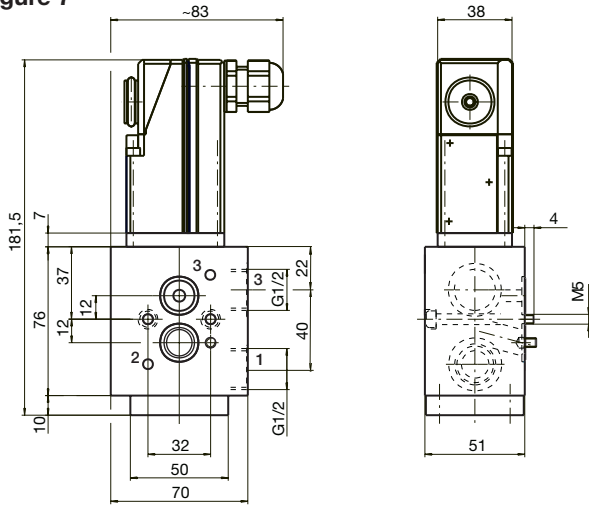


Figure 8

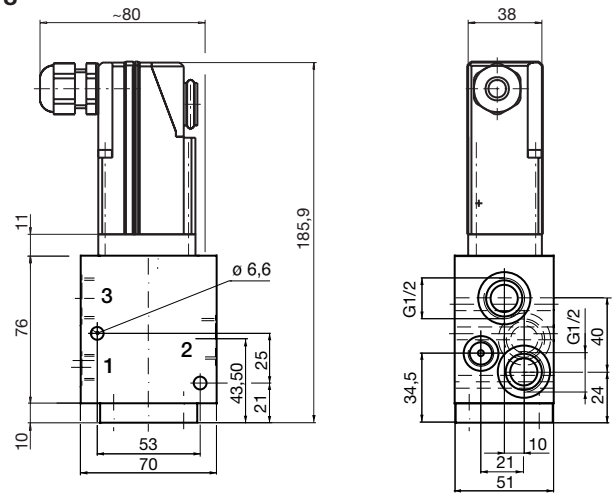


Figure 9

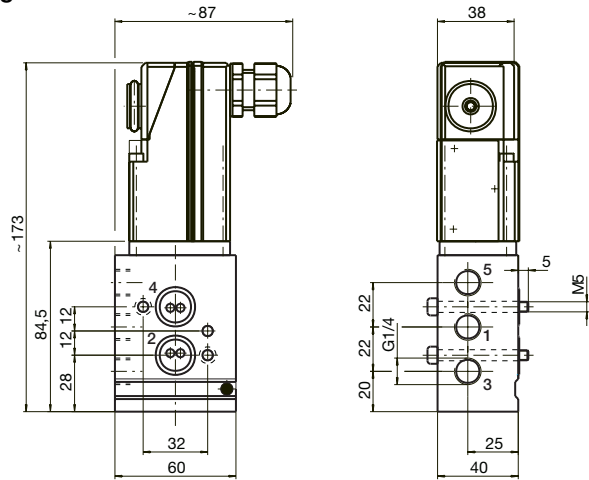


Figure 10

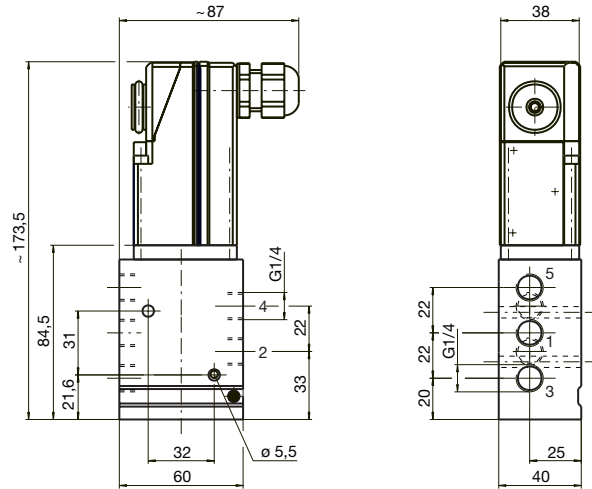


Figure 11

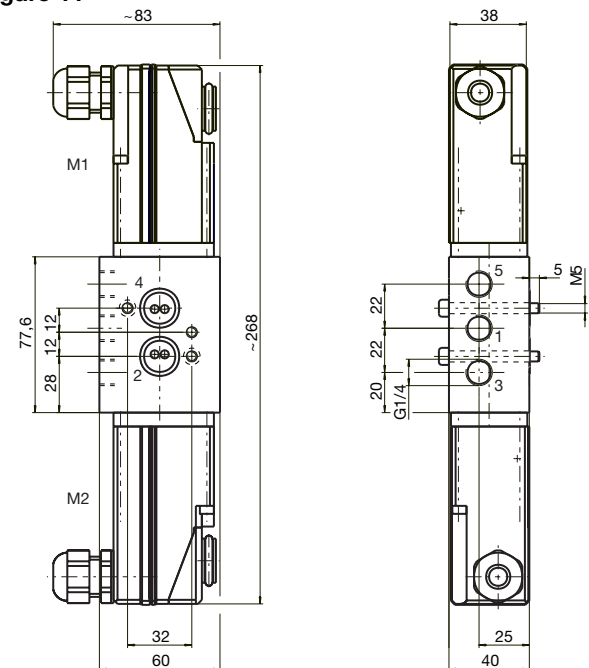
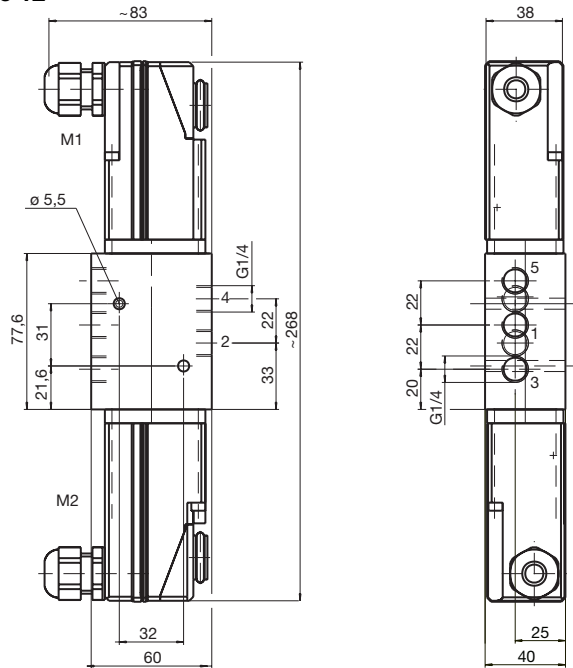


Figure 12



Dimensional drawings accessories

Figure 13

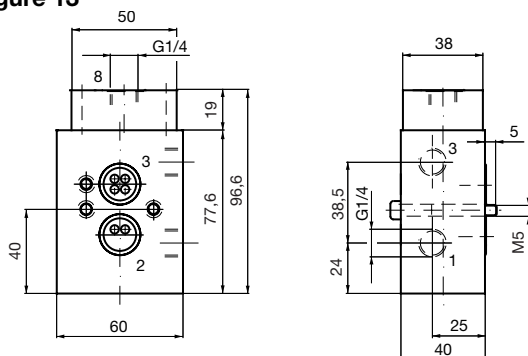


Figure 14

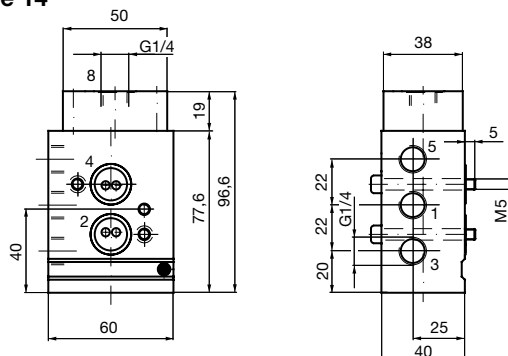


Figure 15 NAMUR flow control plate

For single-acting quarter-turn actuators.
Closing or opening time adjustable.

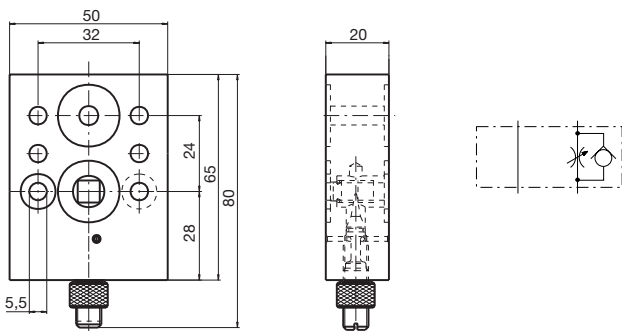


Figure 16 NAMUR flow control plate

For single-acting quarter-turn actuators - closing time adjustable. For double-acting quarter-turn actuators - closing and opening time adjustable.

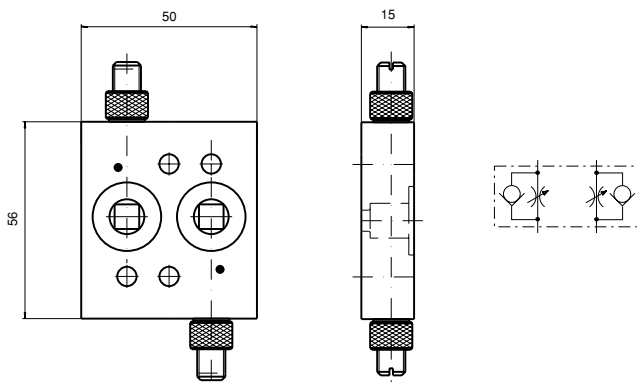


Figure 17 NAMUR connection plate

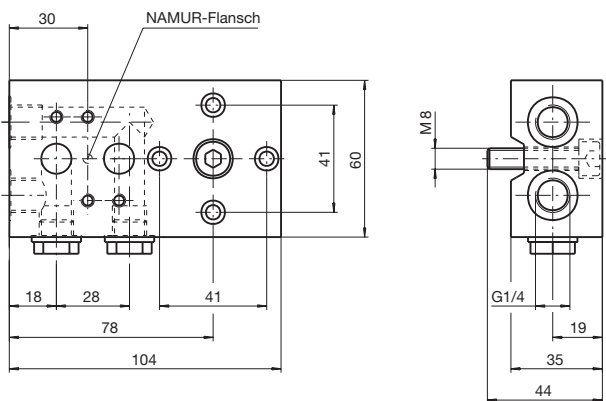


Figure 18 Mounting plate for type CP 0632 CPU

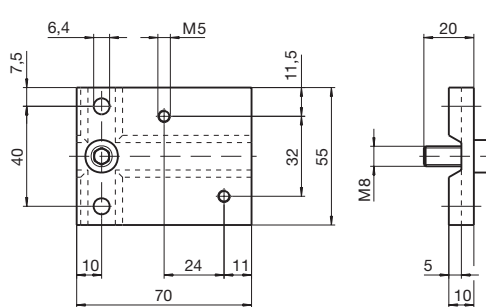


Figure 19 Clamp complete

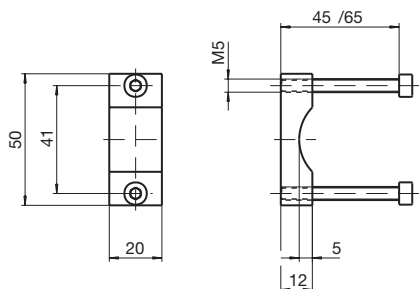
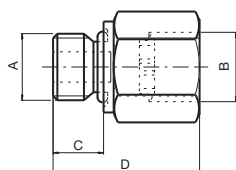
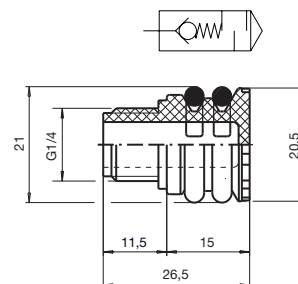


Figure 20 Adapter with filter

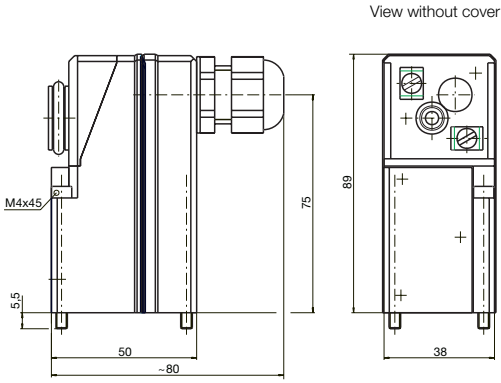





A	B	C	D
G 1/4	NPT 1/2	10	29
G 1/4	G 1/4	10	29
G 1/8	NPT 1/2	8	28
G 1/8	G 1/4	8	28

Figure 21 Exhaust protector IP65



Technical data of pilot valves

Dimensional drawing			
	Applications	for remote I/O and valve drivers	for profibus PA or other bus-systems
Type	PV 12F73 Ci oH	PV 12F73 Xi oH-2	PV 12F73 Xi oH
Function	3/2 NC		
Pressure range	2 ... 8 bar	2 ... 8 bar	2 ... 6 bar
Orifice size	2 mm		
Kv	0.1 m³/h		
Medium	dry, filtered air		
Air consumption	< 0.3 m³/h		
Seals	NBR, MVQ und EPDM		
Housing material	PBT with 30 % glass fibre		
Ambient and medium temps.	-40°C ... +80°C for T5 -40°C ... +50°C for T6	-40°C ... +80°C for T5 -40°C ... +60°C for T6	-30°C ... +60°C
Min. values for functioning	16 V / 2.4 mA / 30 mW	7 V / 4.3 mA / 30 mW	6.4 V / 1.2 mA / 7 mW
Max. values for intrinsic safety	U _i = 40 V / I _i = 200 mA P _i = 750 mW	U _i = 40 V / I _i = 200 mA P _i = 850 mW	U _i = 40 V / I _i = 200 mA P _i = 850 mW
Ex-protection	⊕ II 2 G EEx ia IIC T5 / T6		
Degree of protection	IP 65		
Connection	terminals for max. 1.5 mm² conductor cross-section		
Cable port	M 20x1,5 for cable ø 5 mm ... 9 mm		
Certificates			
Weight	0,22 kg	0,22 kg	0,22 kg

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Subject of technical changes and changes in the scope of delivery.

How to order

Valve type **CP 0632 CPU** mounted with pilot valve type **PV 12F73 Ci oH**

