3
Product group

Proportional solenoid valve for pneumatic application

V PR M

Function

- 2/2 NC
- Proportional direct-acting
- Armature space pressure tight up to 16 bar static pressure
- High linearity
- Quick response times
- Low hysteresis
- High switching life time

Fig. 1: Type V PR M 016

Authorized media

- Neutral media
- Suitable for oxygen

Construction

- Compact design
- 2 construction sizes ø (mm) 16, 20
- For installation on customer AL block
- Insulation materials of the excitation winding correspond to thermal class H
- Electrical connection via free flexible lead ends
- Protection class according to DIN VDE / EN 60529 depending on the electrical connection IP 00 - IP 40 provided by the customer

Application examples

- Flow control in pneumatic devices

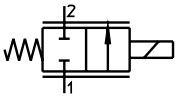
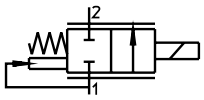
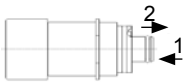
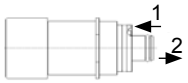
Options

- Further electrical connections
- Other fastening modes and cavities in the valve area
- Please contact us for application related solutions

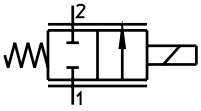
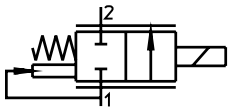
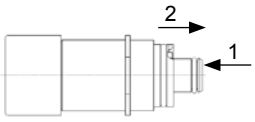
Standards

- Design and testing according to DIN VDE 0580
- Quality management to ISO 9001
- FDA compliant variants

Technical data

V PR M 016 K00	A02	A03	A04	A05
Function	2/2 NC opening pressure-supported			2/2 NC pressure supported closed
Control	Proportional direct-acting			
Circuit diagram				
Electrical data				
Rated voltage	12 VDC			
Rated power	2,0 W			
Resistance R_{20}	47.7 Ohm			
Rated current	0.205 A			
Limit current	0.205 A			
Limit power	3.0 W			
Insulation class	F			
Relative duty cycle	100 %			
Reference temperature	+10°C bis +50°C			
Protection class				
Electrical connection	Free lead ends AWG 24			
Switching service life (full strokes)	50 Mio.			
Pneumatic data				
Nominal width p seat	1.0 mm	1.5 mm	2 mm	2 mm
Rated flow at I_N and p_{max} (Kv)	60 l/min (1.0 l/min)	80 l/min (1.0 l/min)	90 l/min (1.0 l/min)	30 l/min (0.9 l/min)
Rated flow at I_N and 2 bar (Kv)				
Pressure range	0 – 8 bar	0 – 5 bar	0 – 3 bar	0 – 1.6 bar
Overload pressure	16 bar			
Rated stroke	0.5 mm			
Flow direction	1 - 2			
Circuit diagram	„Pressure from below“ 			„Pressure from the side“ 
Permitted media	Neutral gases, suitable for oxygen			
Materials				
Sealing material	FKM FDA-conform, BAM-oxygen suitability			
Materials in contact with media	Stainless steel, PPS			

[1] further pressure ranges up to 8 bar on request

V PR M 020 K00	A01	A02	A10
Function	2/2 NC opening pressure-supported		2/2 NC pressure balanced
Control	Proportional direct-acting		
Circuit diagram			
Electrical data			
Rated voltage	12 VDC		12 VDC
Rated power	2,4 W		3,1 W
Resistance R20	25,1 Ohm		25,1 Ohm
Rated current	0,313 A		0,35 A
Limit current	0,313 A		0,35 A
Limit power	3,7 W		4,2 W
Insulation class	H		
Relative duty cycle	100 %		
Reference temperature	+10°C bis +50°C		
Protection class			
Electrical connection	Free lead ends AWG 24 (2 x 300 mm)		
Switching service life (full strokes)	50 Mio.		
Pneumatic data			
Nominal width p seat [1]	3,0 mm	3,5 mm	4,4 mm
Rated flow at l_N and p_{max} (Kv)	150 l/min (3,0 l/min)	130 l/min (3,3 l/min)	200 l/min @ 2,8 bar (4,0 l/min)
Pressure range [1]	0 – 2,8 bar	0 – 2 bar	0 – 7 bar
Overload pressure	16 bar		10 bar
Rated stroke	0,5 mm		
Flow direction	1 - 2		
Circuit diagram	„Pressure from below“ 		
Permitted media	Neutral gases, suitable for oxygen		
Materials			
Sealing material	FKM FDA-konform, BAM-oxygen suitability		FKM, NBR
Materials in contact with media	Brass, stainless steel, PPS		

[1] further pressure ranges up to 8 bar on request

Construction size 16

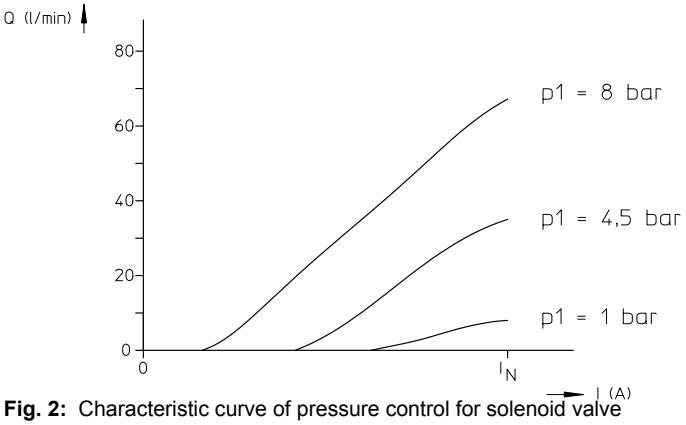


Fig. 2: Characteristic curve of pressure control for solenoid valve Type V PR M 016 K00 A02 (NW 1,0 mm)

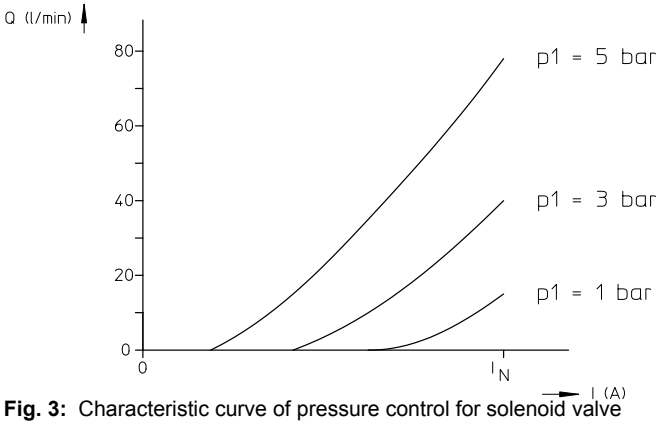


Fig. 3: Characteristic curve of pressure control for solenoid valve Type V PR M 016 K00 A03 (NW 1,5 mm)

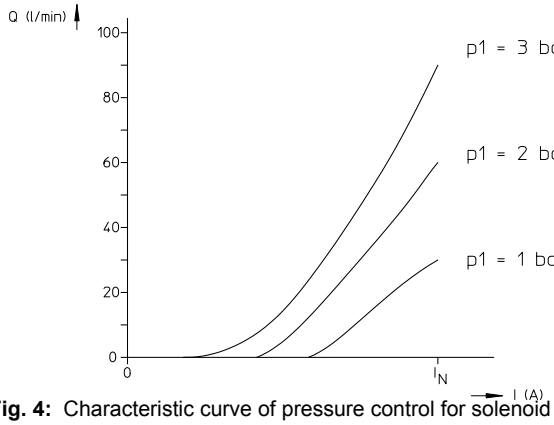


Fig. 4: Characteristic curve of pressure control for solenoid valve Type V PR M 016 K00 A04 (NW 2,0 mm)

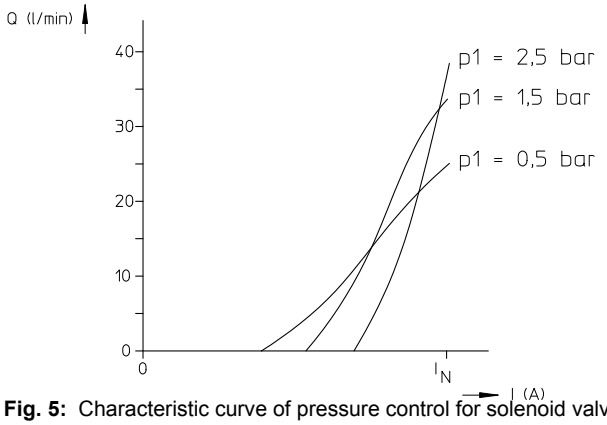


Fig. 5: Characteristic curve of pressure control for solenoid valve Type V PR M 016 K00 A05 (NW 2,0 mm, pressure from the side)

Construction size 20

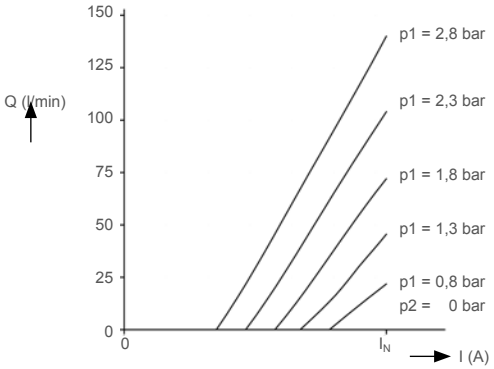


Fig. 6: Characteristic curve of pressure control for solenoid valve Type V PR M 020 K00 A01 (NW 3,0 mm)

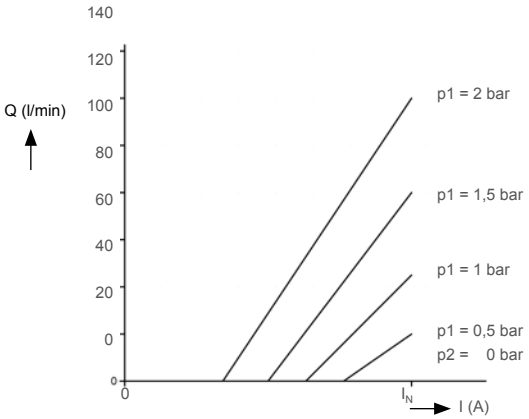


Fig. 7: Characteristic curve of pressure control for solenoid valve Type V PR M 020 K00 A02 (NW 3,5 mm)

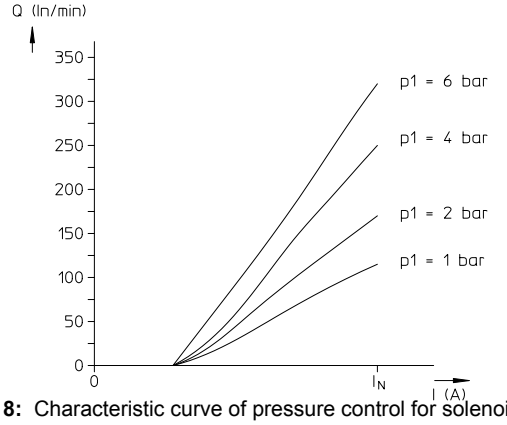


Fig. 8: Characteristic curve of pressure control for solenoid valve Type V PR M 020 K00 A10 (NW 4,4 mm, pressure compensated)

Dimensional drawing V PR M 016

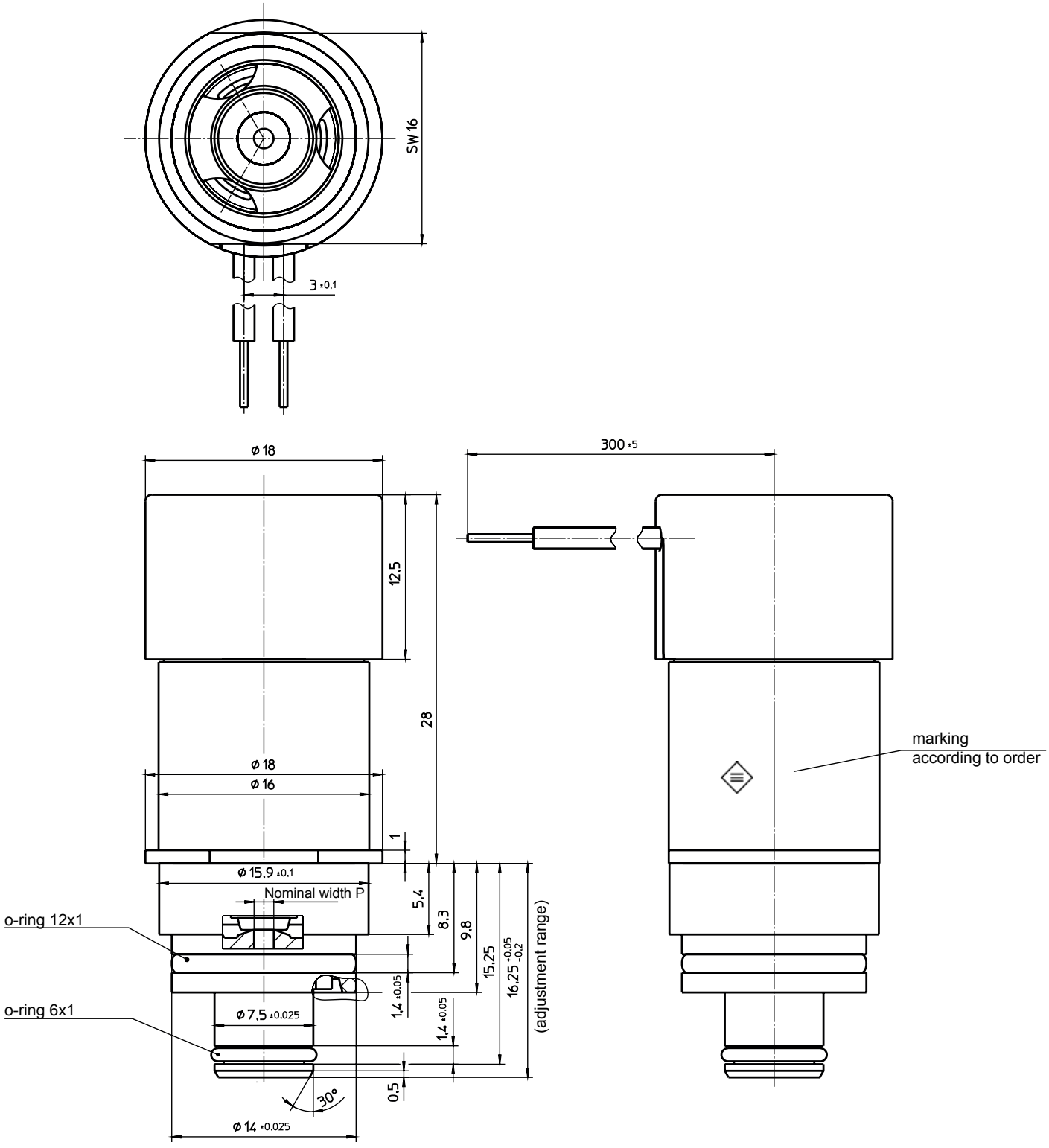


Fig. 9: Type V PR M 016 K00 A02/A03/A04/A05

Dimensional drawing V PR M 020

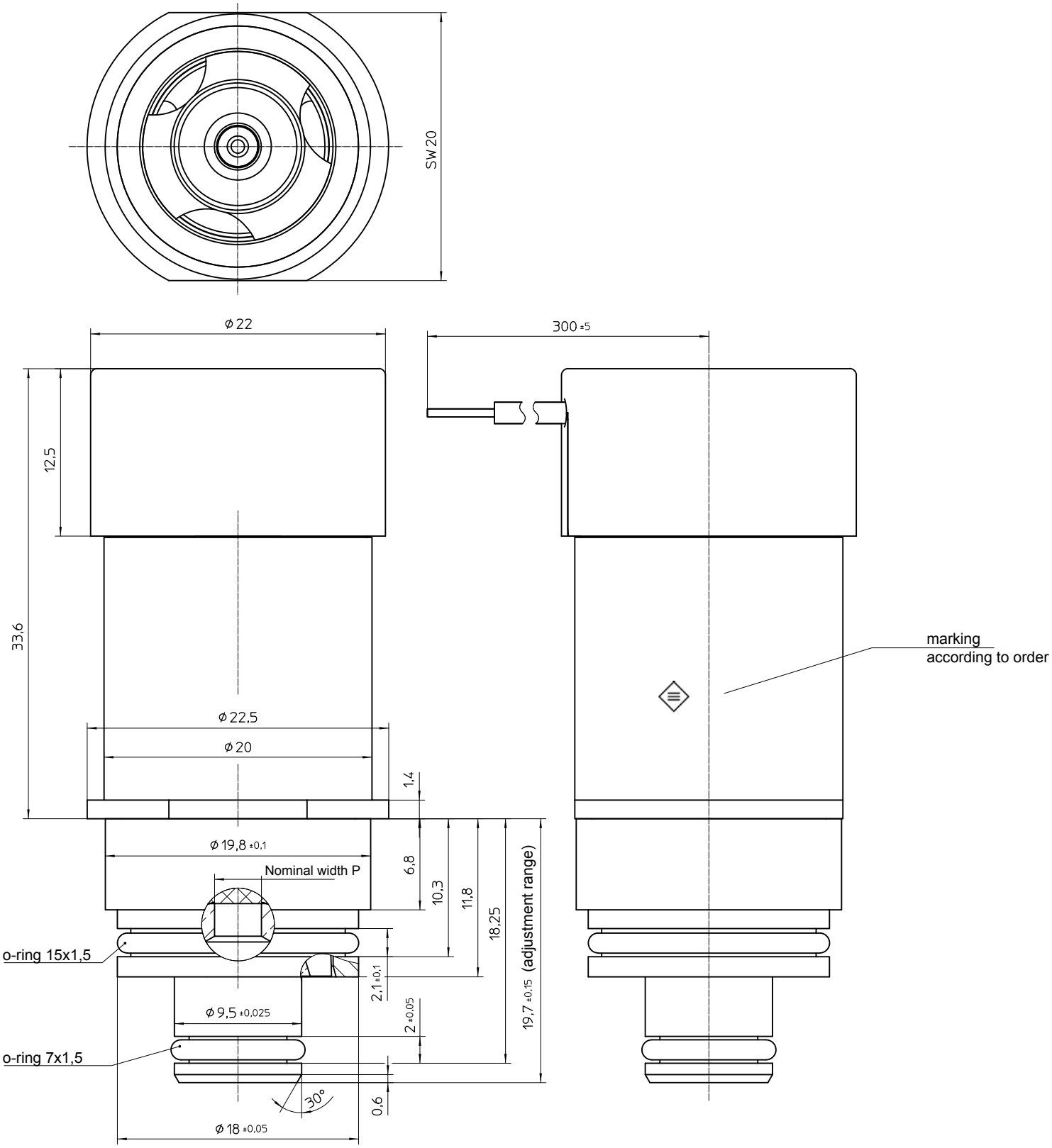


Fig. 10: Type V PR M 020 K00 A01/A02/A10

Circuit diagrams

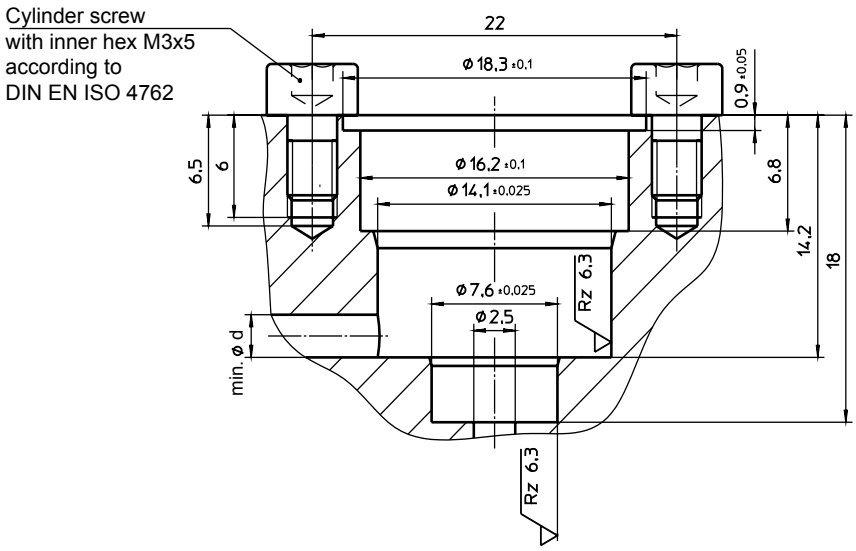
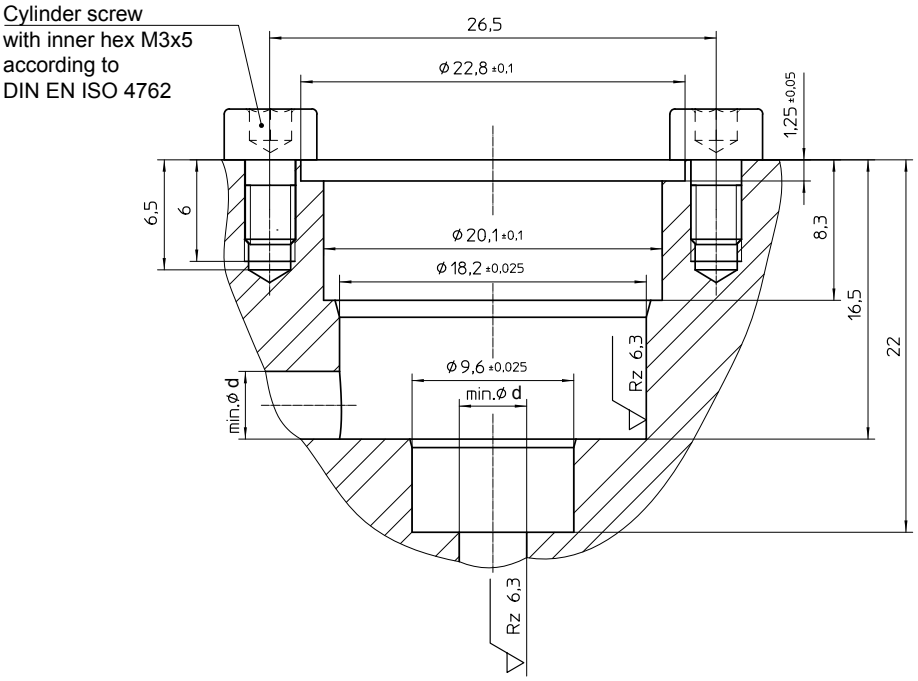


Fig. 11: Type V PR M 016 K00 A02/A03/A04/A05



Type V PR M 020 K00	d
A01/A02	4
A10	5

Fig. 12: Type V PR M 020 K00 A01/A02/A10

Rated voltage

Rated voltage is 12 VDC, an winding adaption is possible in the range of 6 to 24 VDC on request.

Standard values for voltage and operating mode: 12 V, S1 (100%).

The devices correspond to protection class III. Electrical equipment of protection class III may be only connected to low voltage systems (PELV, SELV)(IEC 60364-4-4-41).

Information and remarks concerning European directives can be taken from the correspondent information sheet which is available under *Produktinfo.Magnet-Schultz.com*.

Please make sure that the described devices are suitable for your application. Our offers for these devices are based on the assumption of maximal 8 in an FMEA severity table, i. e. in case of malfunction of the device model as offered, there is, amongst others, no jeopardy of life or limb. Supplementary information concerning its proper installation can be taken also from the –Technical Explanation, the effective DIN VDE0580 as well as the relevant specifications.

This part list is a document for technically qualified personnel.

The present publication is for informational purposes only and shall not be construed as mandatory illustration of the products unless otherwise confirmed expressively.

Type code

Type	Construction size ø (mm)	Nominal width (mm)	Flow (l/min)	Pressure range (bar)	Remark	Voltage
V PR M 016 K00 A02	16	1.0	60	0 - 8		12V, 100%ED
V PR M 016 K00 A03		1.5	80	0 - 5		
V PR M 016 K00 A04		2.0	90	0 - 3		
V PR M 016 K00 A05		2.0	30	0 - 1.6		
V PR M 020 K00 A01	20	3.0	150	0 - 2.8		
V PR M 020 K00 A02		3.5	130	0 - 2		
V PR M 020 K00 A10		4.4	200	0 - 7		

Order example

Type	V PR M 016 K00 A03
Voltage	⎓ 12 V DC
Operating mode	S1 (100 %)

Specials designs

Please do not hesitate to ask for our assistance with the solution of your application-oriented task. In order to find rapidly a reliable solution we need complete details about your application conditions. The details should be specified as precisely as possible in accordance with the relevant -Technical Explanations.

If necessary, please request the support of our corresponding technical office.