Proportional Pressure-Reducing Valve for Hydraulics

13
Product group

V1300.4982 **VR 030**

Function

- 3/2 NC
- Large proportionality between magnetic current and control pressure
- Largely constant operating pressure in the flow range
- Tank pressure (static pressure armature space): 30 bar
- Small hysteresis through precise armature bearing
- Quick response times

Fig. 1: Type VR 030 AA 035 V02/V12

Construction

- Compact design
- Fastening via flange fastening
- Electrical connection and protection class:
  - Plug connection AMP-Stecker
    - DIN VDE 0470/EN 60529: IP65
  - Plug connection Deutsch DT04-2P
    - DIN VDE 0470/EN 60529: IP6K6
    - ISO 20653: IPX9K

Fig. 2: Type VR 030 AA 080 V01

Application examples

- In particular proportional actuator in hydraulic control chains and control loops

Options and accessories on request

- Filter at pump connection
- Further max. control pressures
- Versions with reduced leakage and optimized stick-slip effect
- Falling control curve
- Other flow rates
- Further electrical connections
- Manual override

Technical data

VR 030 AA 035		V02	V12	V03	V11
Hydraulic data					
Control pressure	(bar)	28,5	22,5	28,5	22,5
Input pressure	(bar)	max. 50			
Tank pressure static	(bar)	max. 30			
Tolerance band for pressure control characteristic curve as delivered from the factory (applies for horizontal installation position and for lower characteristic curve) I_1 = 0,6 A (12 V); I_1 = 0,3 A (24 V) I_2 = 1,5 A (12 V); I_2 = 0,75 A (24 V)	 (bar) (bar)	 p = 5,75 ±1,75 p = 28,5 ±2,5	 p = 4,75 ±1,75 p = 22,5 ±2,5	 p = 5,75 ±1,75 p = 28,5 ±2,5	 p = 4,75 ±1,75 p = 22,5 ±2,5
Flow P → A (Δp=10 bar)	(l/min)	≥ 4	≥ 4,5	≥ 4	≥ 4,5
Flow A → T (Δp=10 bar)	(l/min)	≥ 4	≥ 5	≥ 4	≥ 5
Leakage P → T	(l/min)	< 0,1 (50° oil temperature) (reduced leakage on request)			
Hysteresis (with PWM 100 Hz) in new condition		< 0,85 bar (optimized stick-slip effect on request)	≤ 0,6 bar (optimized stick-slip effect on request)	< 0,85 bar (optimized stick-slip effect on request)	≤ 0,6 bar (optimized stick-slip effect on request)
Medium		Hydraulic oil according to DIN 51524, ATF oil			
Oil temperature	(°C)	-20 to + 80			
Oil pollution degree		20 / 18 / 15 according to ISO 4406:1999			
Elektrical data					
Resistance	(Ω)	4,5 ±6% (12 V) / 19,5 ±6% (24 V)			
Limit current	(A)	1,5 (12 V) / 0,75 (24 V)			
Operating mode		S1 (100 %)			
Operating frequency PWM	(Hz)	100			
Plug connector		AMP-Junior Timer (Coding 1)		Fa. Compagnie Deutsch DT04-2P	
Ambient temperature	(°C)	-30 bis +80			

VR 030 AA 080		V01
Hydraulic data		
Control pressure	(bar)	32
Input pressure	(bar)	max. 50
Tank pressure static	(bar)	max. 30
Tolerance band for pressure control characteristic curve as delivered from the factory (applies for horizontal installation position and for lower characteristic curve)		
I_1 = 0,35 A (24 V)	(bar)	p = 6,25 ±2,75
I_2 = 0,75 A (24 V)	(bar)	p = 32 ±3
Flow P → A (Δp= 5 bar)	(l/min)	≥ 9,5
Flow A → T (Δp= 5 bar)	(l/min)	≥ 10
Leakage P → T	(l/min)	≤ 0,05 de-energised / ≤ 0,3 energised (50° oil temperature)
Hysteresis (with PWM 150 Hz) in new condition		< 1 bar
Medium		Hydraulic oil according to DIN 51524, ATF oil
Oil temperature	(°C)	-20 to + 80
Oil pollution degree		20 / 18 / 15 according to ISO 4406:1999
Mesh width filter	(µm)	160
Filter surface	(mm^2)	≤ 160
Elektrical data		
Resistance	(Ω)	19,5 ±6% (24 V)
Limit current	(A)	0,75 (24 V)
Operating mode		S1 (100 %)
Operating frequency PWM	(Hz)	150
Plug connector		Fa. Compagnie Deutsch DT04-2P
Ambient temperature	(°C)	-30 bis +80

Rated voltage

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 to 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.

This publication is for information purposes only and is not to be regarded as a binding representation of the products, unless this is expressly confirmed by us.

Dimensional drawing

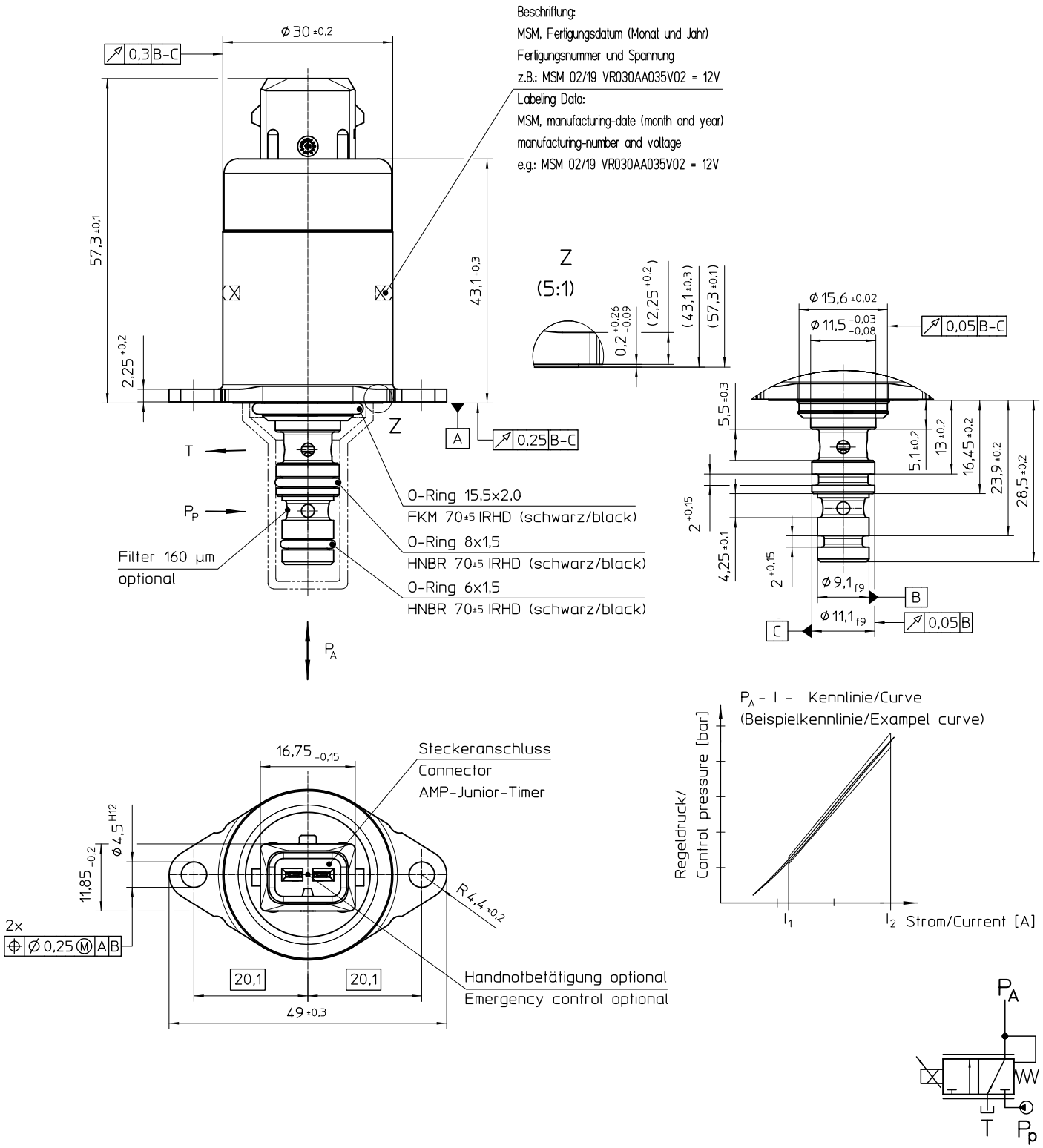

Fig. 3: Type VR 030 AA 035 V02 / V12

Dimensional drawing

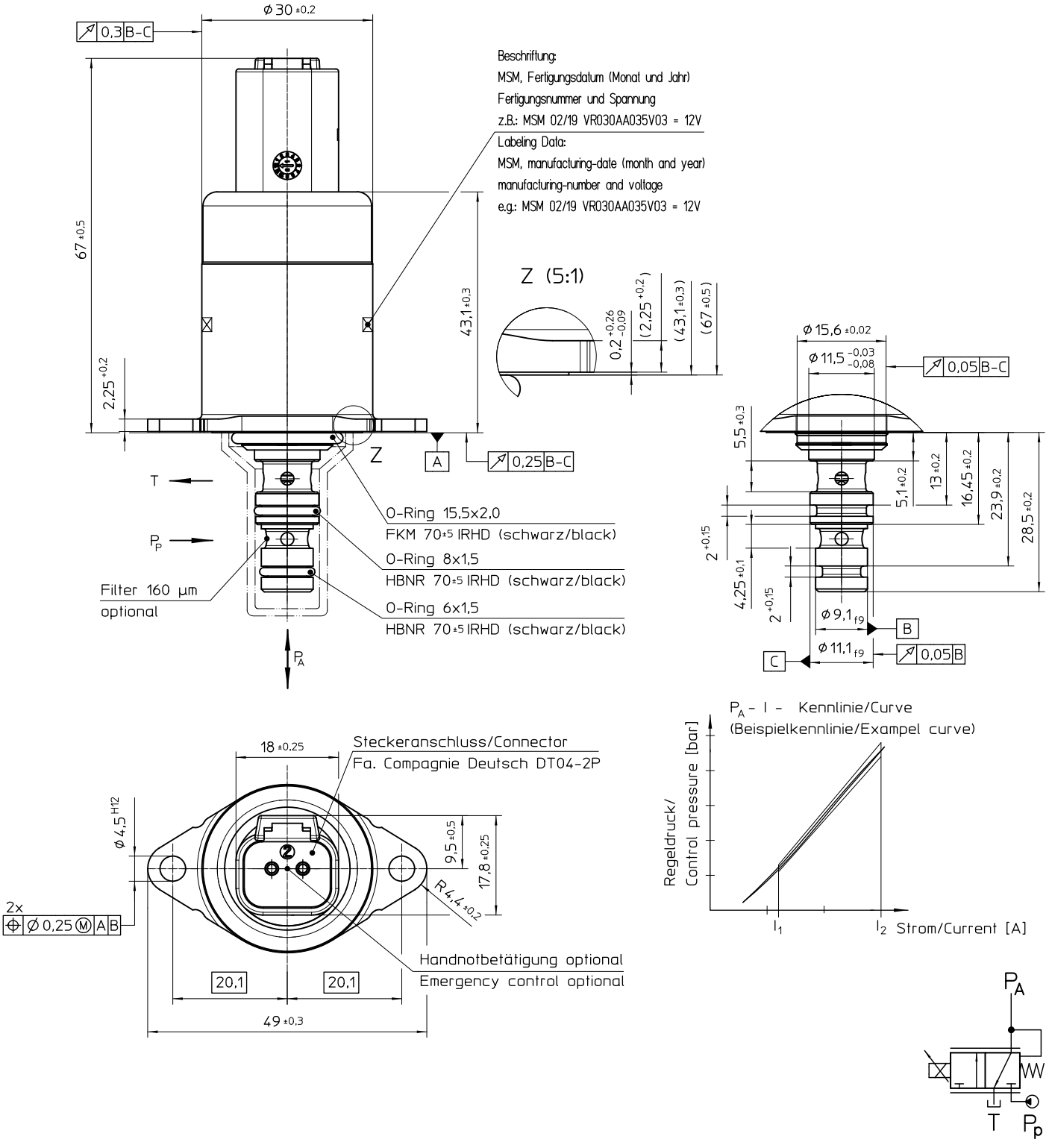

Fig. 4: Type VR 030 AA 035 V03 / V11

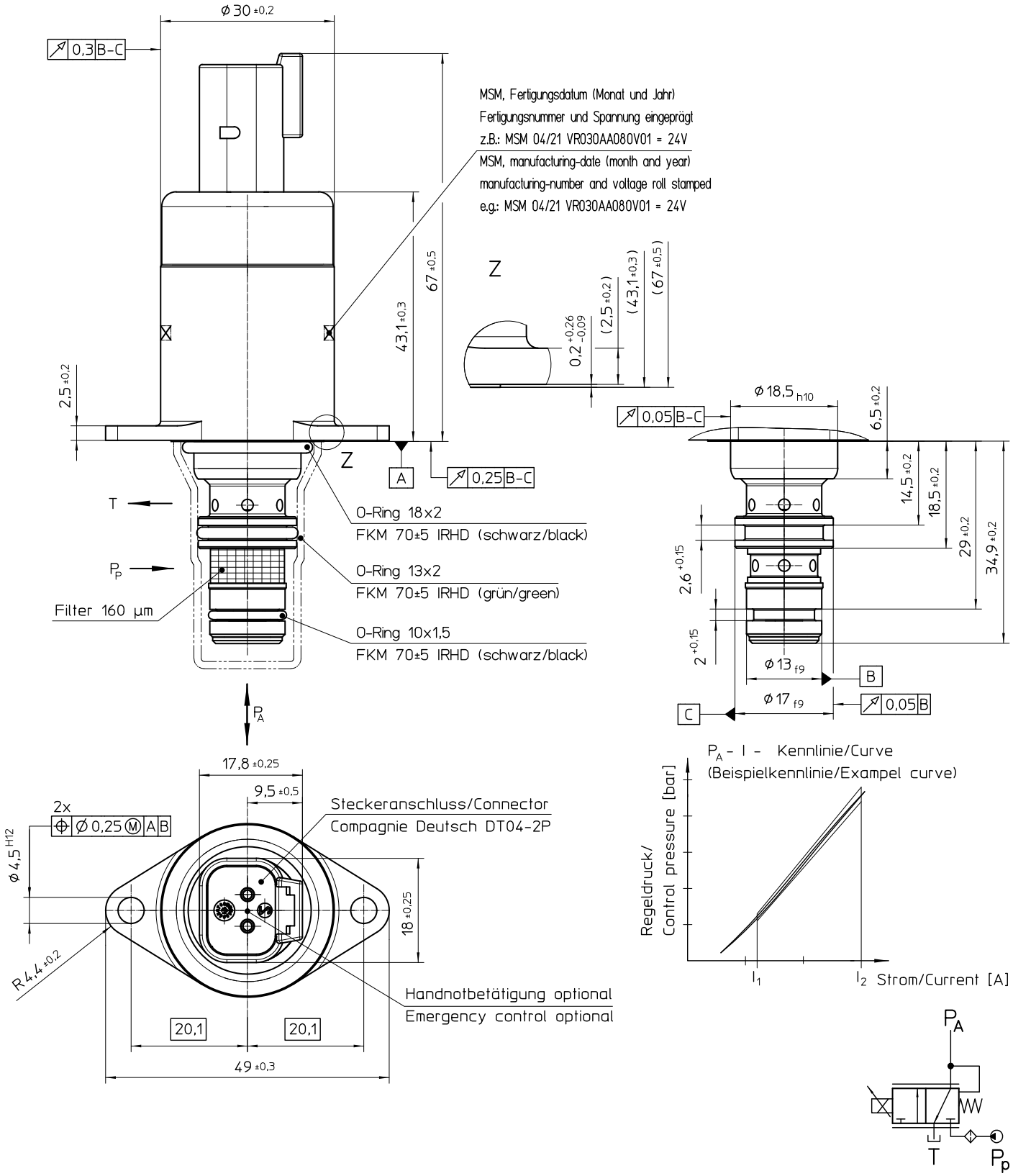

Fig. 5: Type VR 030 AA 080 V01

Recommended cavity

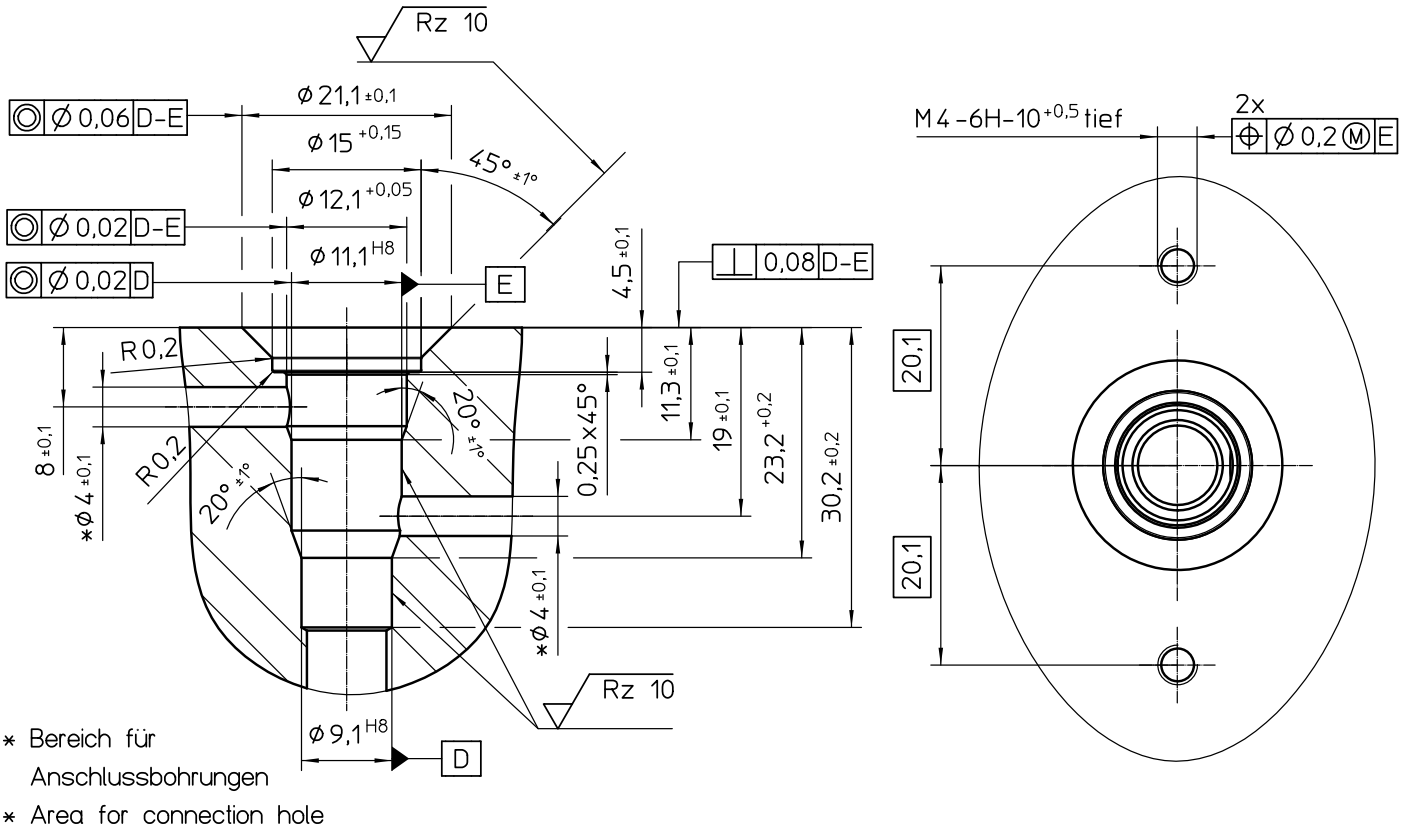

Fig. 6: Recommended cavity Type VR 030 AA 035 V02
Type VR 030 AA 035 V03
Type VR 030 AA 035 V11
Type VR 030 AA 035 V12

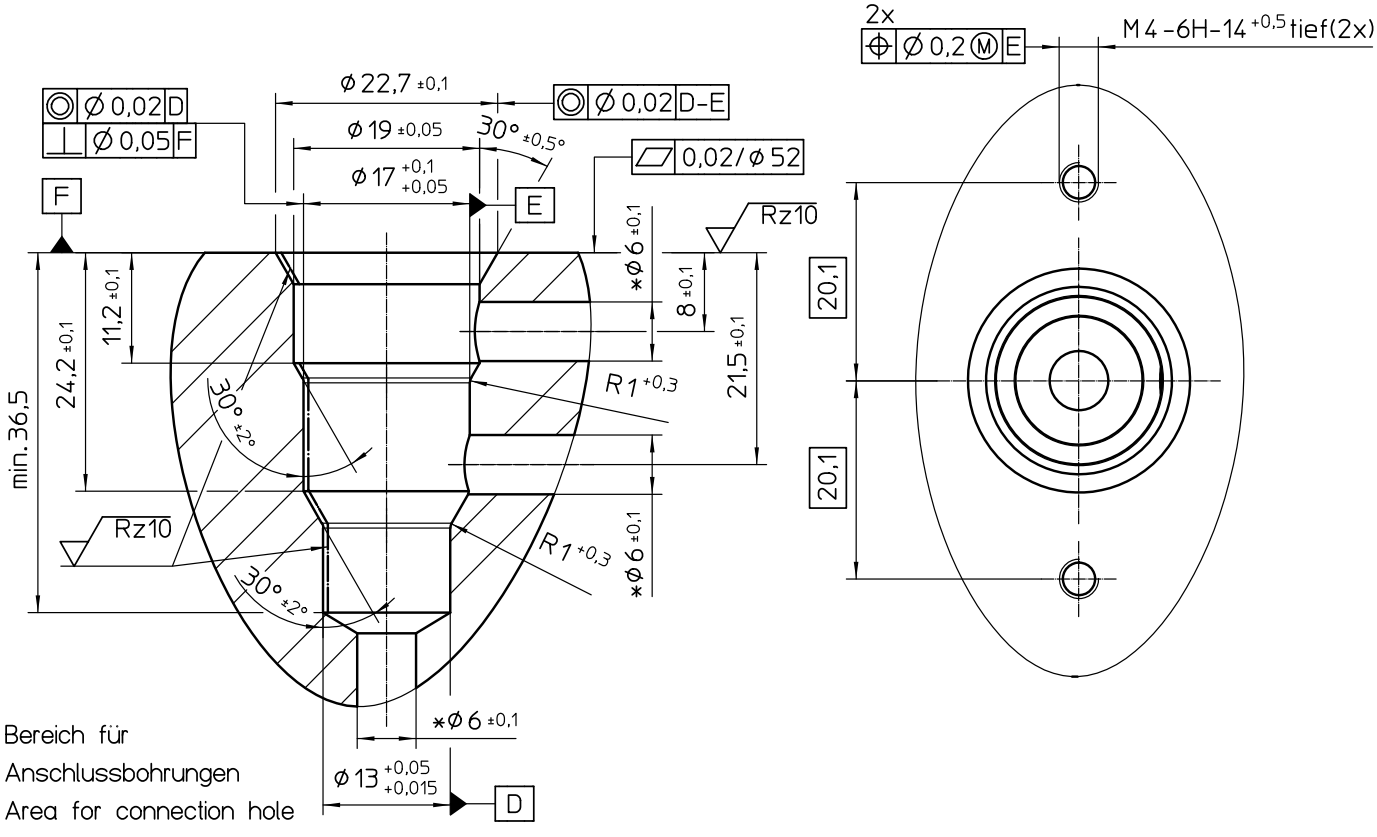

Fig. 7: Recommended cavity Type VR 030 AA 080 V01

Variants of electrical connection/Manual override:

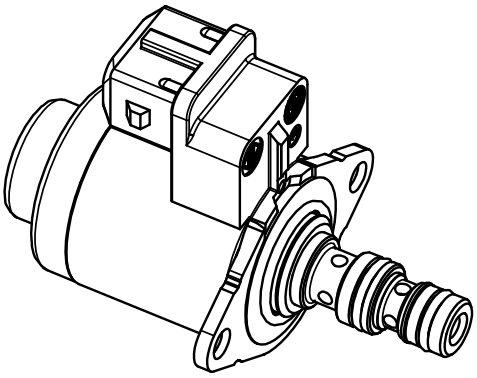

Fig. 8: axis-parallel plug

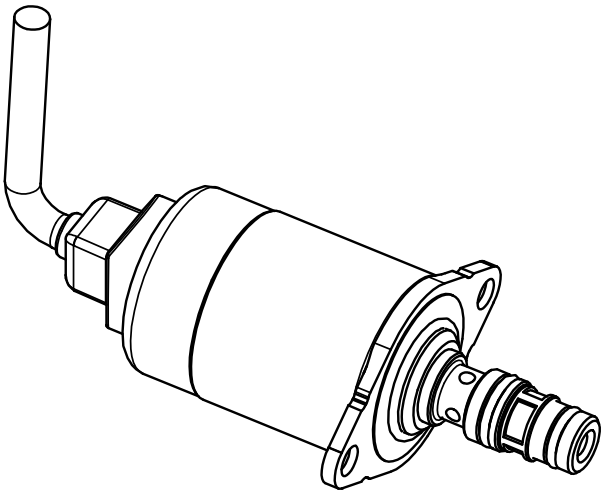

Fig. 9: Cable version

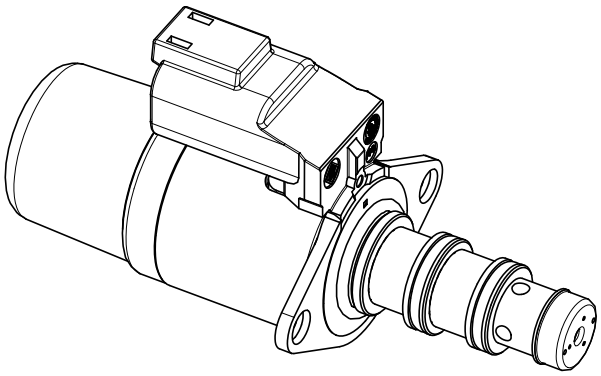

Bild 10: Manual override