

Proportional Flow Control Valve

3

Product group

G PC P 040

Function

- 2/2 NC
- Proportional direct-acting
- Media: H₂, N₂, air, mixture of H₂ and N₂
- Wide proportionality between solenoid current and flow rate
- Nominal working pressure (NWP) 16 barg
- Maximum pressure (MAWP) up to 25 barg
- Low leakage
- High switching life time

Construction

- Compact design
- Central fastening or flange mounting
- Protection class according to DIN EN 60529: IP6K9K if mounted properly and with suitable mating connector
- Electrical connection via plug TE MCP 2.8 mm

Application examples

- Fuel gas quantity control in fuel cells

Standards and tests

- IATF 16949

Options and accessories on request

- Various electrical plug connections
- Other control pressure ranges
- ATEX version for stationary applications
- Customer-specific mechanical interface
- Version for natural gas

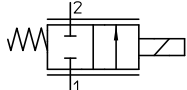


Fig. 1: Type G PC P 040 K69 V01



Fig. 1: Type G PC P 040 K69 V03 / V04

Technical data

G PC P 040 K69 ...	V01 / V04	V03
Function	2/2 NC	
Operation principle	proportional direct acting	
Voltage control	PWM > 350 Hz	
Rated voltage U_N (V DC)	12 (9 ... 16) / 24 (18 ... 32)	
Rated resistance R_{20} (Ω)	4.8 / 21.4	
Rated current I_N (A)	1.6 / 0.8	
Limit current I_G (A)	1.6 / 0.8	
Rated power P_{20} (W)	12 (1.6 A) / 13.5 (0.8 A)	
Inductance (mH)	12.3 (1 kHz, 1 V, 1.6 A)	
Isolation class	H	
Relative duty cycle	S1 100% ED (depending on installation space and heat dissipation)	
Ambient temperature ($^{\circ}\text{C}$)	-40 ... +100	
Protection class	IP6K9K	
Service life (full stroke, control action)	> 3.000.000, > 25.000.000	
Nominal width (mm)	2.8	3.3
K_v at I_N (m^3/h)	0.23	0.32
Rated operating pressure (NWP) (barg)	16	
Maximum input pressure (MAWP) (barg)	25	20
Burst pressure (barg)	> 3xMAWP	
Circuit diagram		
Hysteresis (10-90%, 350 Hz PWM)	< 15% FS (5 -> 0 bar)	
Linearity (10-90%, 350 Hz PWM)	< 10% FS (5 -> 0 bar)	
Reaction time (ms)	30 @ 0-100%, PWM: 1000Hz, U_N	
Media	air, H_2 (gaseous hydrogen)	
Leakage P-seat (Helium @ $p=\text{MAWP}$) (mbar l/s)	1×10^{-4}	
Leakage A-space (Helium @ $p=\text{MAWP}$) (mbar l/s)	1×10^{-4}	
Weight (kg)	0.42	
Compliant to	Regulation (EC) No. 1907/2006 (REACH) Directive 2011/65/EU (RoHS II + RoHS III) Directive 2000/53/EG (ELV)	

Rated voltage


Nominal voltages are listed in above table and are also standard values. The possibility of winding adjustments to other nominal voltages can get checked on request.

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

Supply availability

The shown device is a basic device as a basis for customer-specific developments and designs. Samples and variants on request.

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.

Dimensional drawing

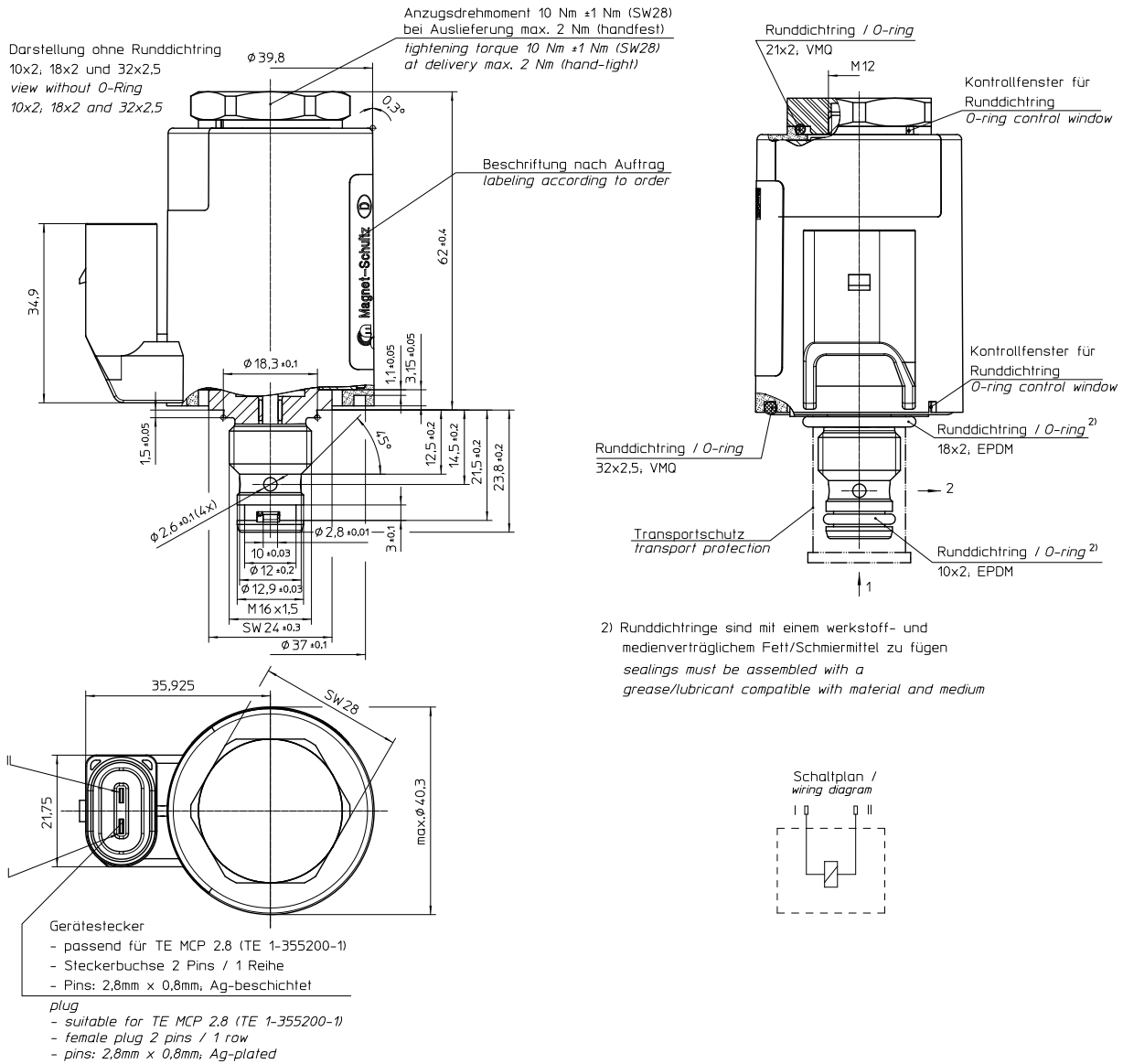
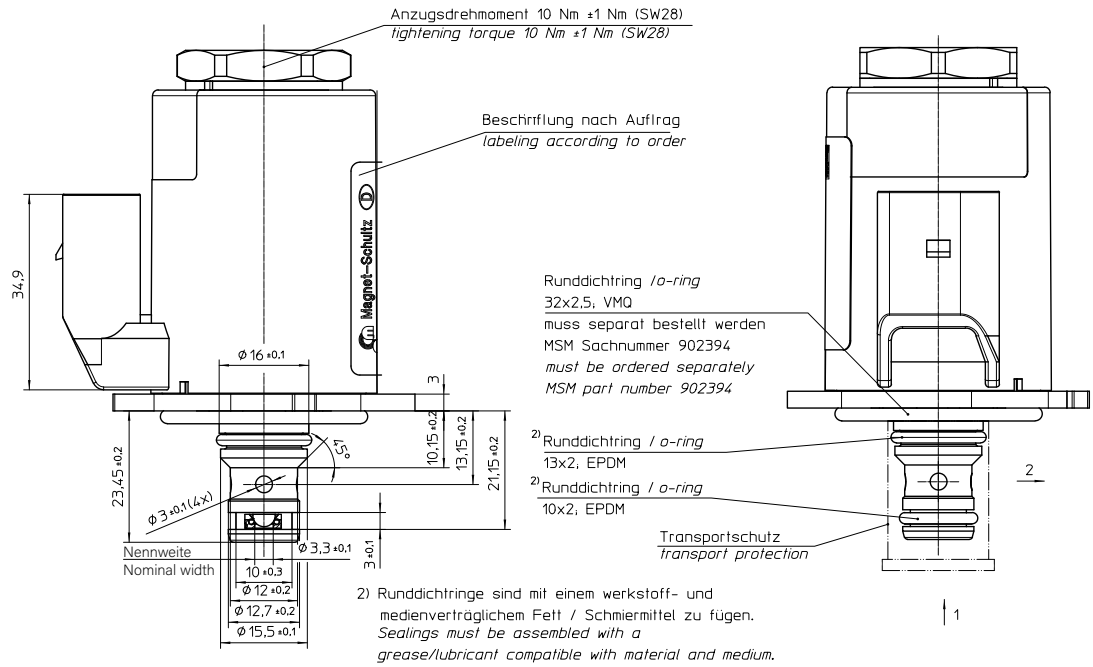


Fig. 3: Type G PC P 040 K69 V01 (G013561 Index m)

Dimensional drawing

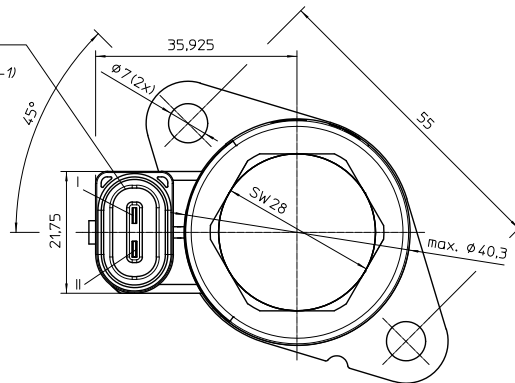


Gerätestecker

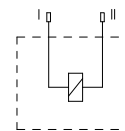
- passend für TE MCP 2,8 (TE 1-355200-1)
- Steckerbuchse 2 Pins / 1 Reihe
- Pins: 2,8mm x 0,8mm, Ag-beschichtet

plug

- suitable for TE MCP 2,8 (TE 1-355200-1)
- female plug 2 pins / 1 row
- pins: 2,8mm x 0,8mm, Ag-plated



Schaltplan



Type	Nominal width (mm)
G PC P 040 K69 V03 V03	3.3
G PC P 040 K69 V03 V04	2.8

Fig. 4: Type G PC P 040 K69 V03 / V04 (G013920 Index f)

Characteristic curve

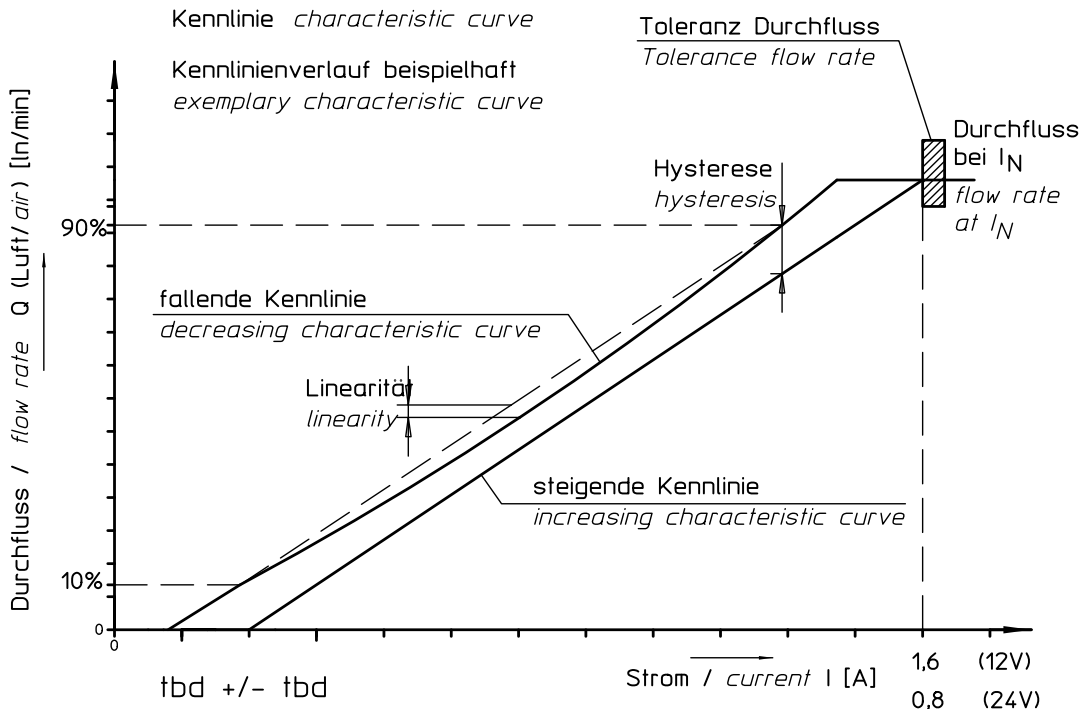


Fig. 5: Characteristic curve Type G PC P 040 K69 V01 / V03 / V04 (Reference G013561 Index m)

Installation dimensions (sketch with guide values)

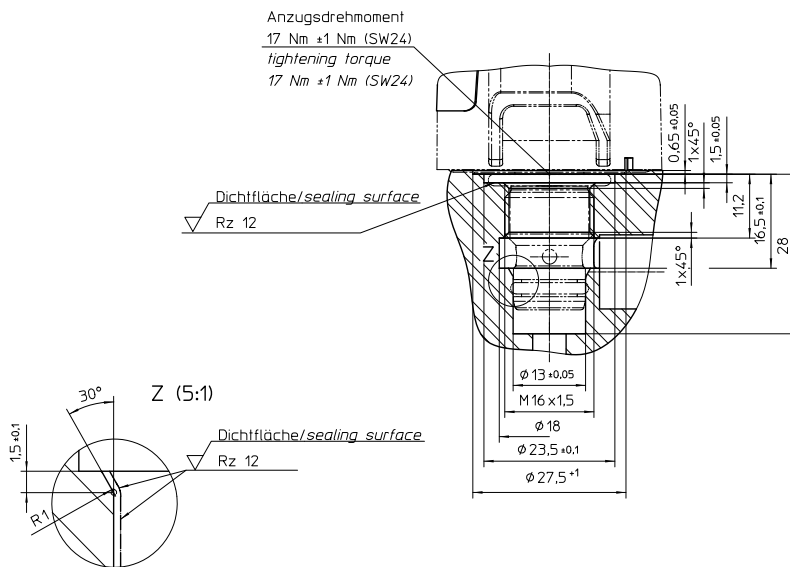


Fig. 6: Connection diagram Type G PC P 040 K69 V01 (G013561 Index m)

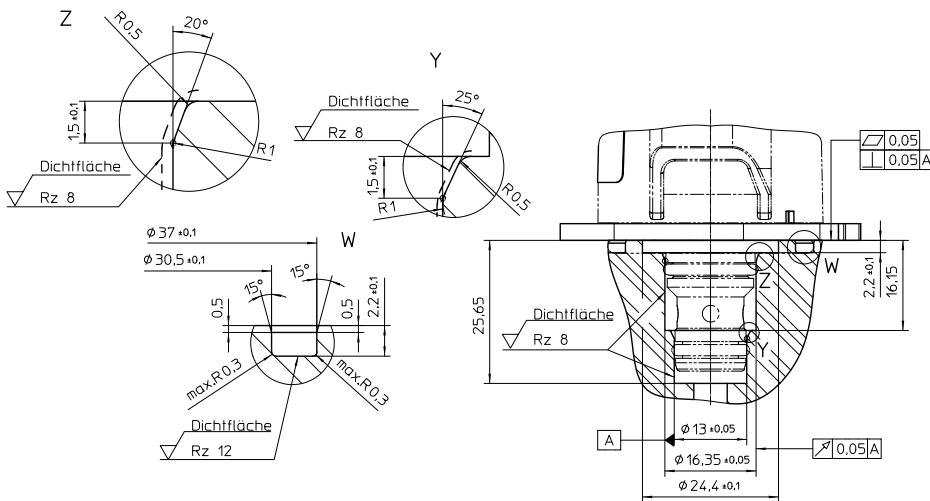


Fig. 7: Connection diagram Type G PC P 040 K69 V03 / V04 (Reference G013561 Index m)

Type code

Example	G PC P	040	K69 V01	Designation	Material no.	
Type	G PC P				12VDC 100%ED with HSA	24VDC 100%ED with HSA
Size		040				
Code for execution			K69 V01	Thread Nominal width 2,8 mm	G013561004	G013561003
			K69 V03	Flange Nominal width 3,3 mm	G013920002	G013920001
			K69 V04	Flange Nominal width 2,8 mm	G013945001	G013915002

Example

Type G PC P 040 K69 V01
 Voltage == 12 V DC
 Operating mode S1 / 100 % / HSA
 Material no. ¹⁾ G013561004

1) optional specification