

## Proportional Flow Control Valve

# 3

Product group

### G PC P 040

#### Function

- 2/2 NC
- Proportional direct-acting
- Media: H<sub>2</sub>, N<sub>2</sub>, air, mixture of H<sub>2</sub> and N<sub>2</sub>
- 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

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

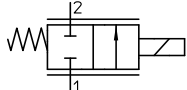


Fig. 1: Type G PC P 040 K69 V01



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 $R_{20}$ ( $\Omega$ )	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 $I_N$ ( $\text{m}^3/\text{h}$ )	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, $\text{H}_2$ (gaseous hydrogen)	
Leakage P-seat (Helium @ $p=\text{MAWP}$ ) (mbar l/s)	$1 \times 10^{-4}$	
Leakage A-space (Helium @ $p=\text{MAWP}$ ) (mbar l/s)	$1 \times 10^{-4}$	
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 only be 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](http://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

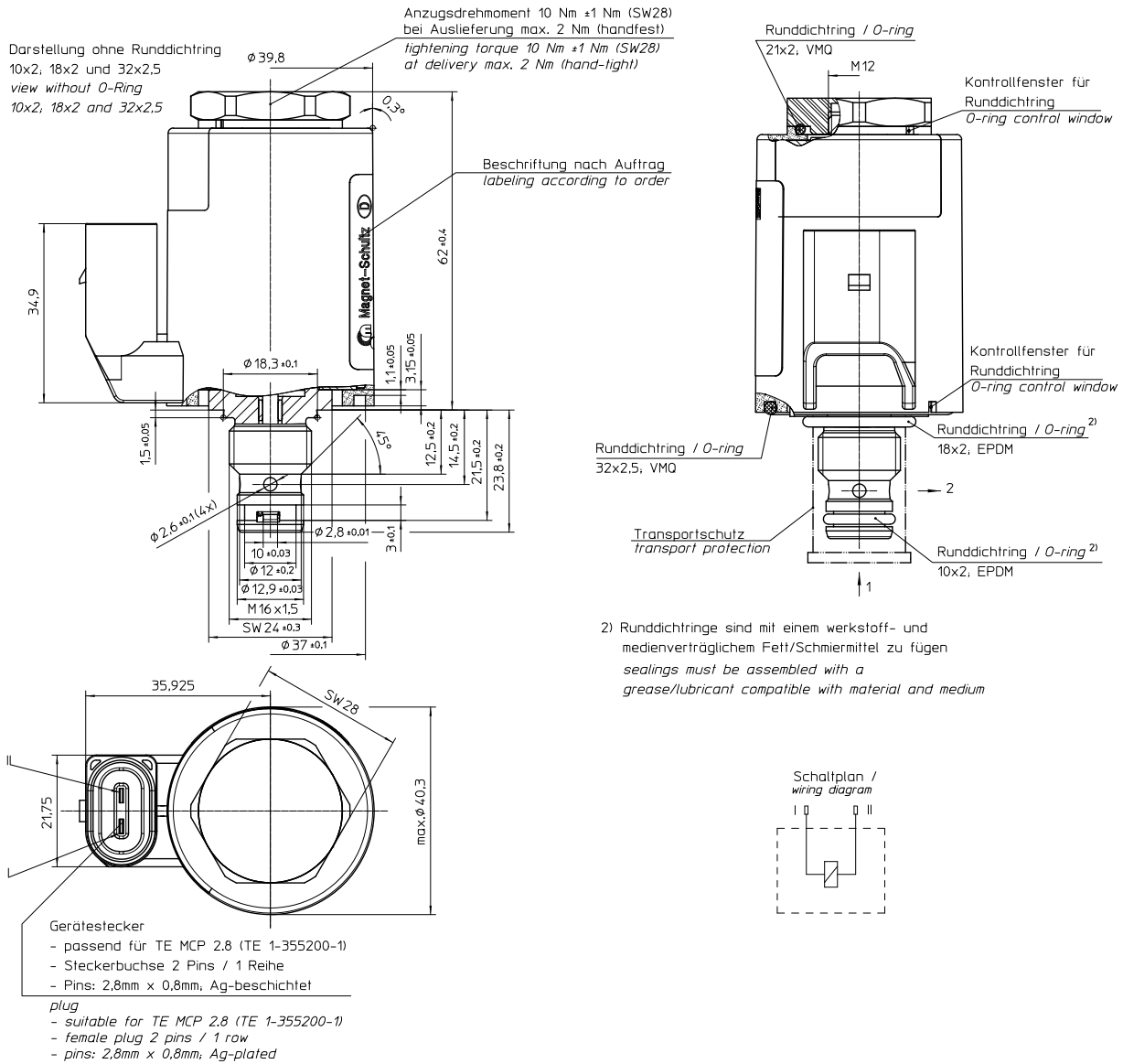
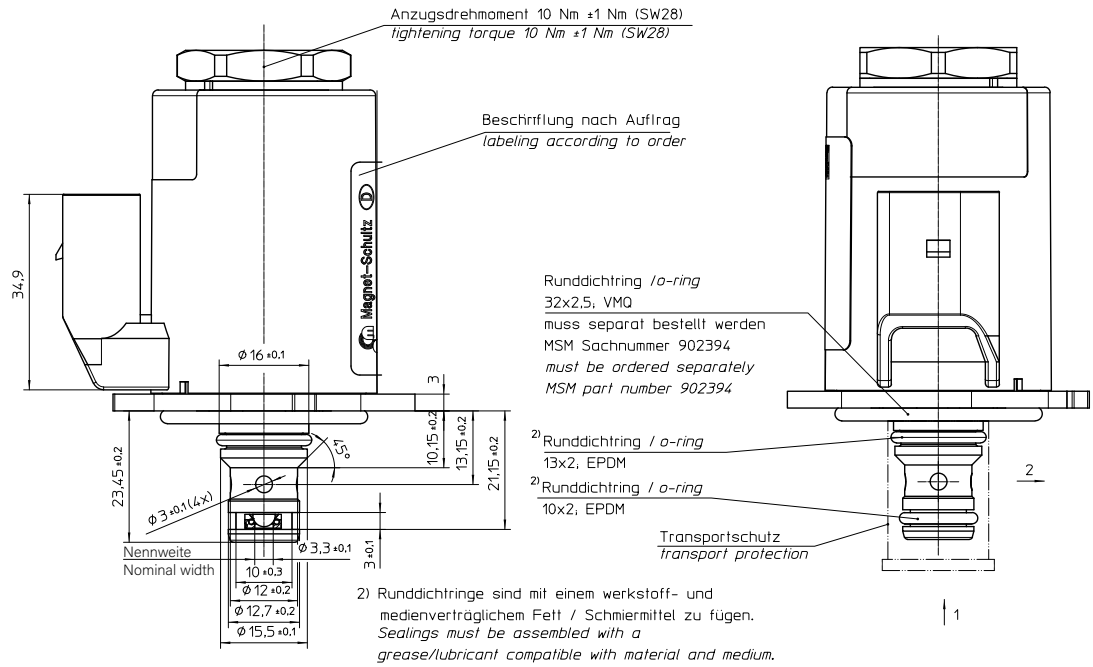


Fig. 3: Type G PC P 040 K69 V01 (G013561 Index m)

## Dimensional drawing

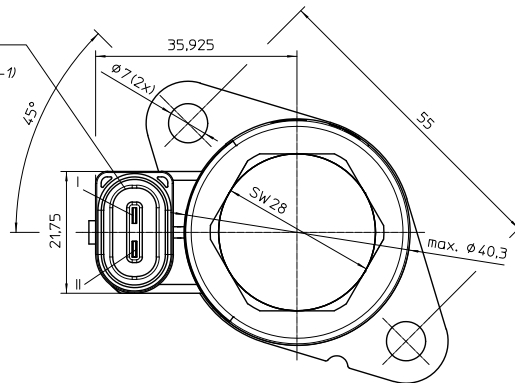


### Gerätestecker

- 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



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

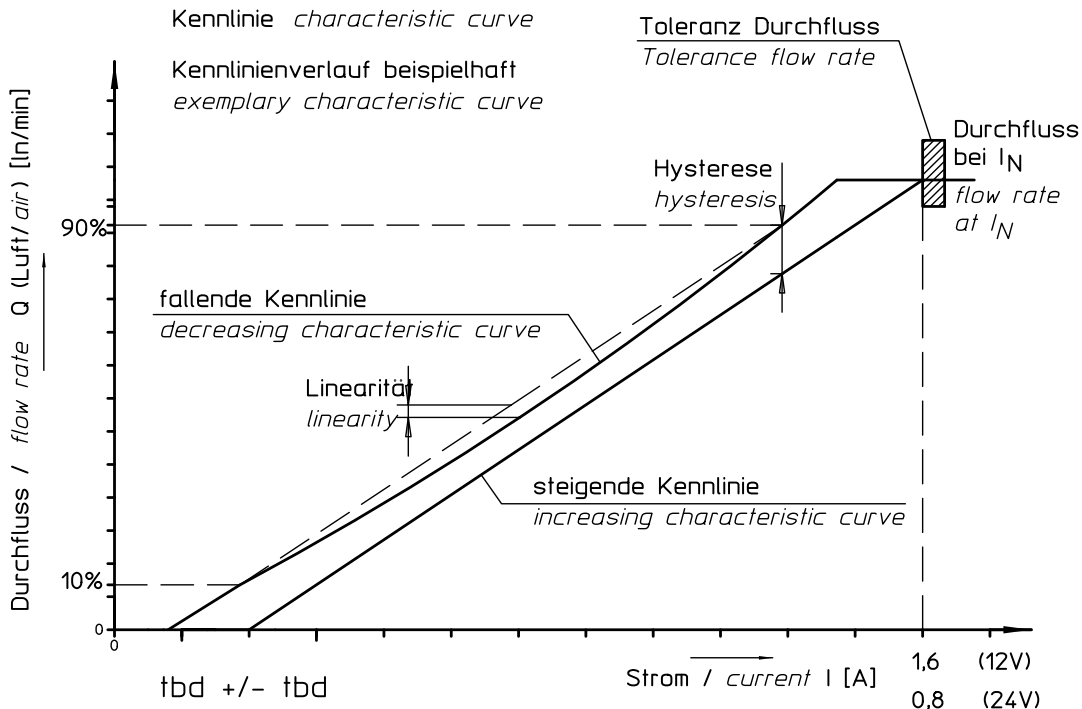


Fig. 5: Characteristic curve Type G PC P 040 K69 V01 / V03 / V04 (Reference G013561 Index m)

### Installation dimensions (sketch with guide values)

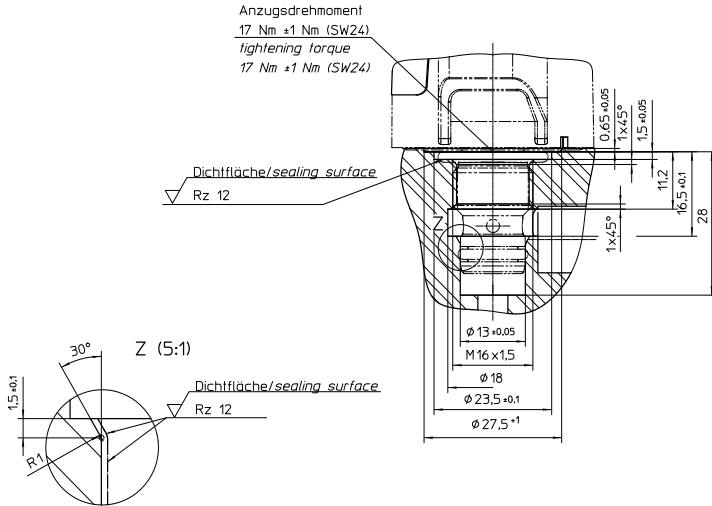


Fig. 6: Connection diagram Type G PC P 040 K69 V01 (G013561 Index m)

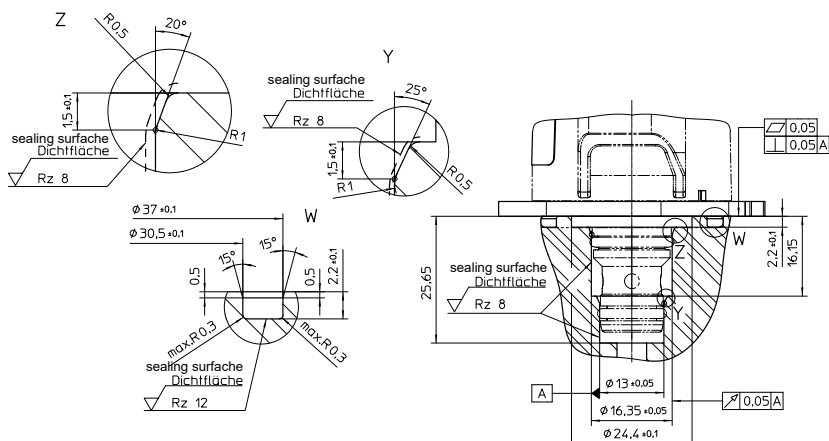


Fig. 7: Connection diagram Type G PC P 040 K69 V03 / V04 (Reference G013561 Index m)

## 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	G013561002	G013561003
			K69 V03	Flange Nominal width 3,3 mm	G013920002	G013920001
			K69 V04	Flange Nominal width 2,8 mm	G013945001	G013945002

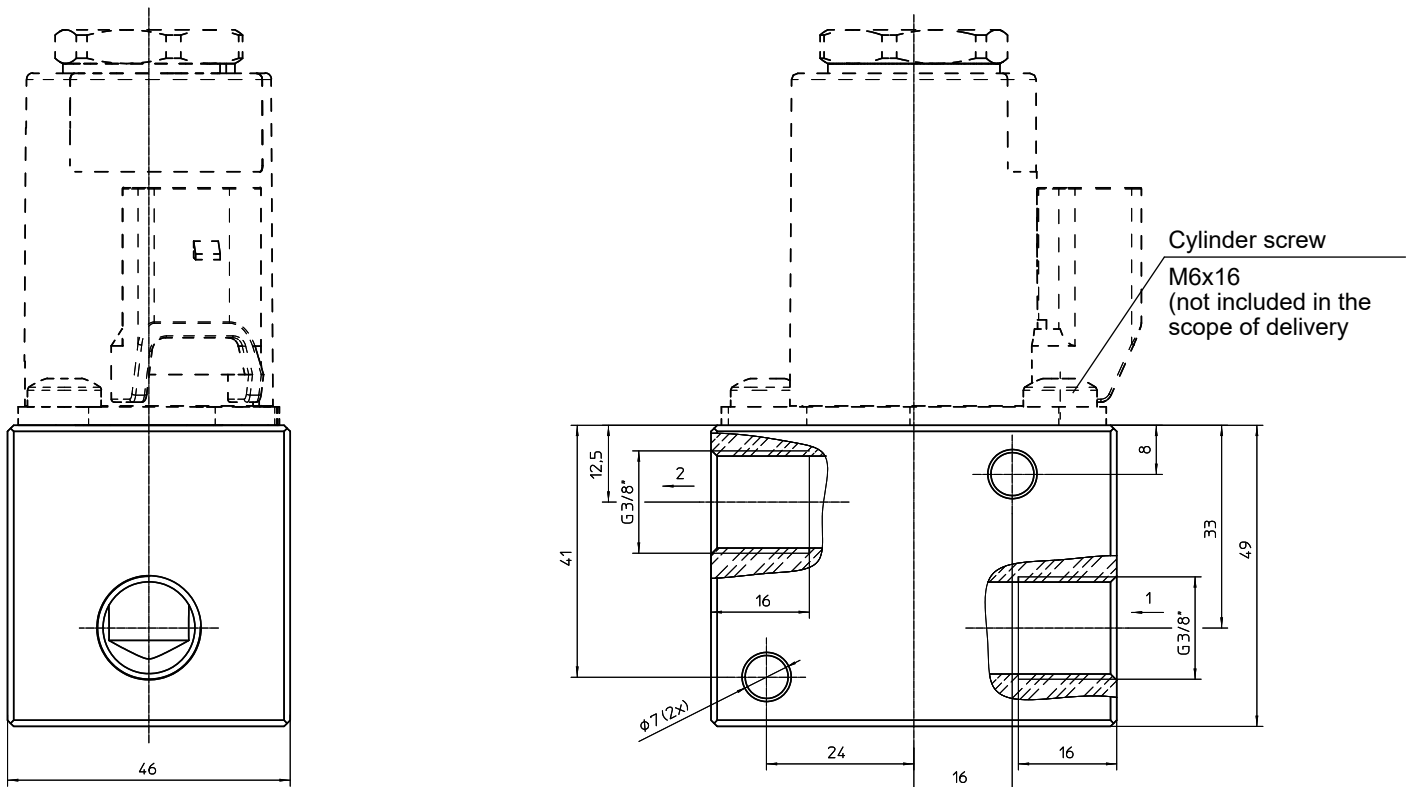
## Example

Type                    G PC P 040 K69 V01  
 Voltage                == 12 V DC  
 Operating mode       S1 / 100 % / HSA  
 Material no. <sup>1)</sup>        G013561002

<sup>1)</sup> optional specification

## Accessories

### Valve block E-G040-877T1



## Order example valve block

Type                    E-G040-877T1

Material: EN AW-6082T6