

Proportional Flow Control Valve

3

Product group

G PC P 040 GEN 2

Function

- 2/2 NC
- Proportional direct-acting
- Pressure supported opening
- 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
- Flange mounting
- Protection class according to DIN EN 60529: IP6K9K if mounted properly and with suitable mating connector
- Plug suitable for Hirschmann '1.2 Seal-Star' e.g. FA Connector Pins Ag-coated Coding A
- Integrated input filter

Application examples

- Fuel gas quantity control in fuel cells

Standards and tests

- IATF 16949

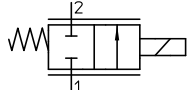
Options and accessories on request

- Valve block
- Various electrical plug connections and codings
- Other control pressure ranges
- ATEX version for stationary applications
- Alignment of flange to the plug has been rotated by 90°
- Customer-specific mechanical interface
- Version for natural gas



Fig. 1: Type G PC P 040 K69 V24 / V27

Technical data

G PC P 040 K69 ...	V24	V27
Function	2/2 NC	
Operation principle	proportional direct acting	
Voltage control	350 Hz PWM	
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)	13.5 (1.6 A, 1 kHz, 1 V) / 57 (0.8 A, 1 kHz, 1 V)	
Isolation class	H	
Relative duty cycle	S1 100% ED (depending on installation space and cooling)	
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), N ₂ mixture of H ₂ and N ₂	
Leakage P-seat (Helium @ p=MAWP) (mbar l/s)	1x10 ⁻⁴	
Leakage A-space (Helium @ p=MAWP) (mbar l/s)	1x10 ⁻⁴	
Weight (kg)	ca. 0.4	
Compliant to	Regulation (EC) No. 1907/2006 (REACH) Directive 2011/65/EU (RoHS II + RoHS III) Directive 2000/53/EG (ELV)	

Rated voltage


Rated 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).

Delivery capacity

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 online 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

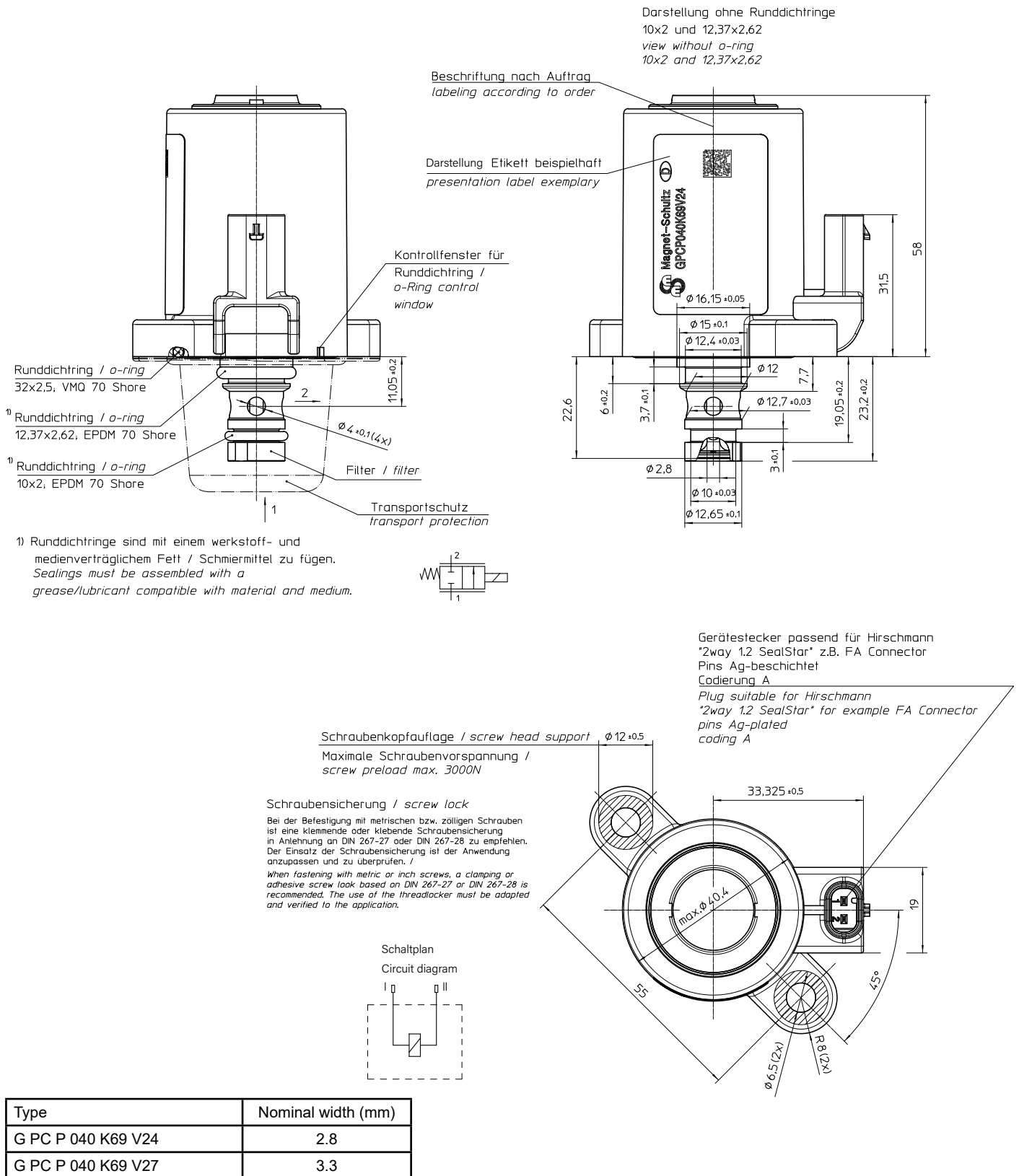


Fig. 4: Type G PC P 040 K69 V24 / V27 (Reference G014137 Index -)

Characteristic curve

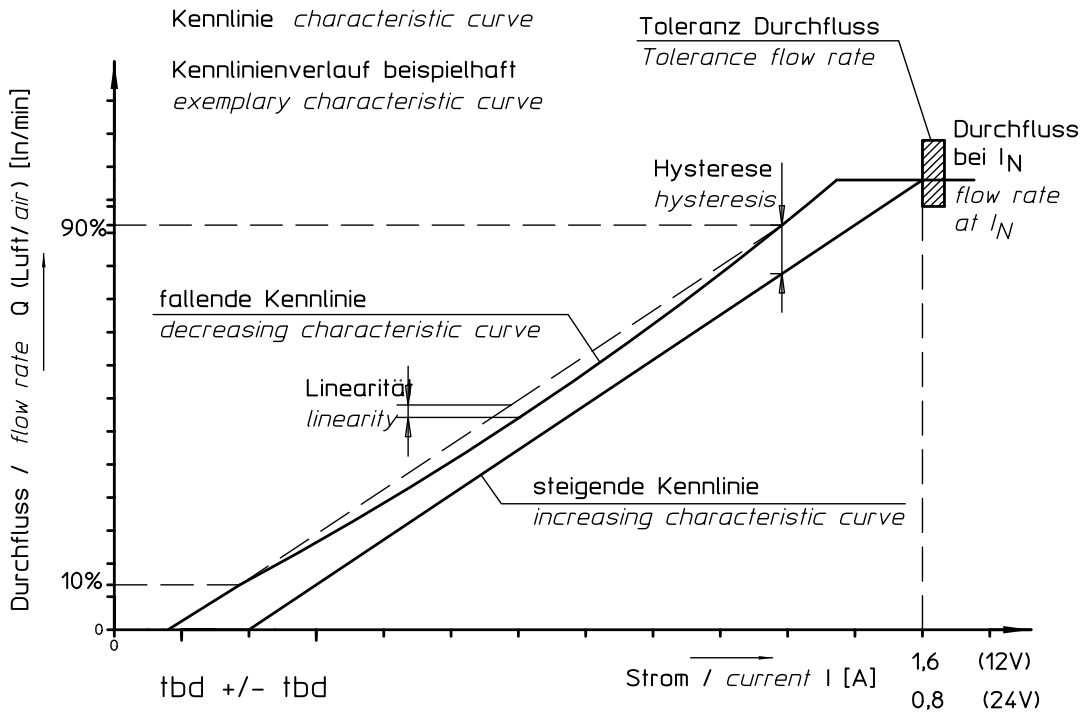


Fig. 5: Characteristic curve Type G PC P 040 K69 V24 / V27 (Reference G014137 Index -)

Installation diagram (sketch with reference values)

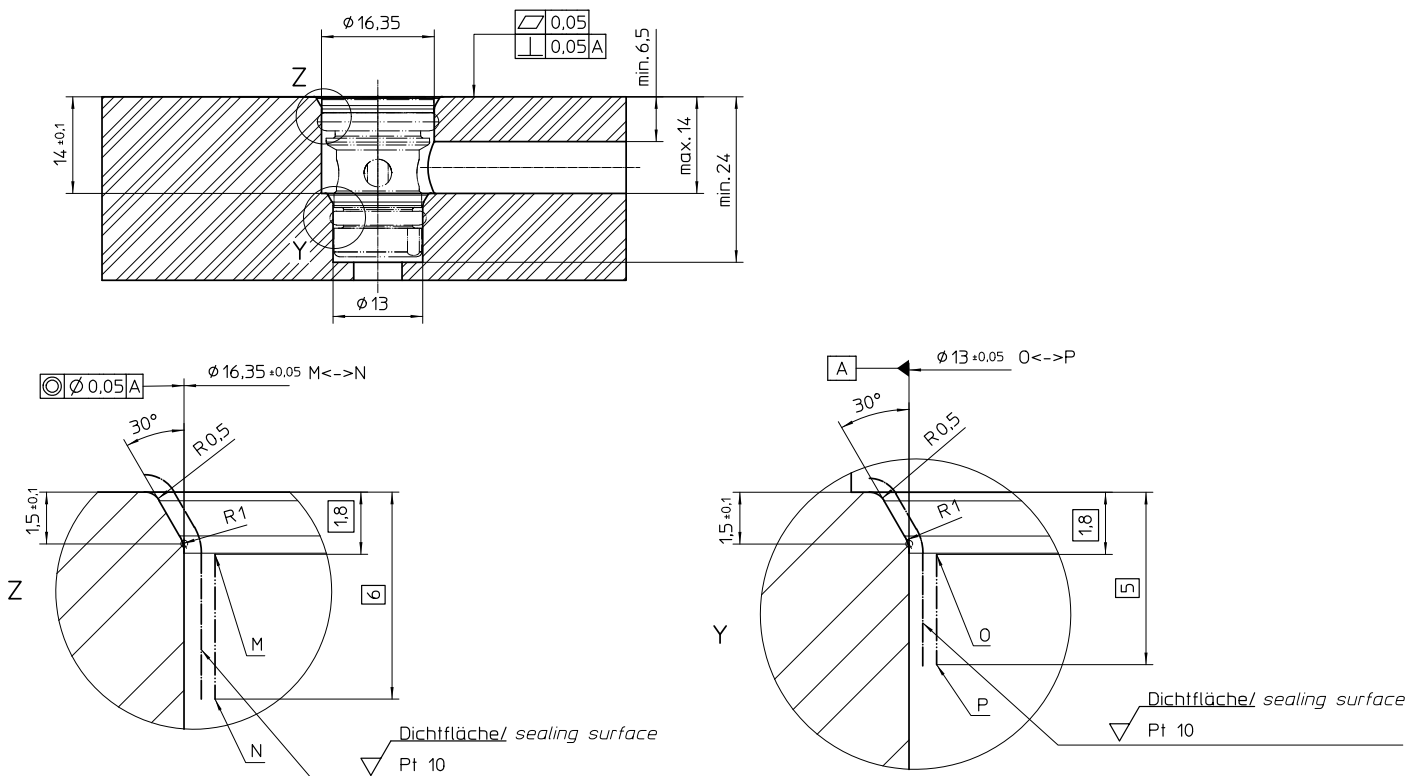


Fig. 6: Connection diagram type G PC P 040 K69 V24 / V27 (G014137 Index -)

Type code

Example	G PC P	040	K69 V24	Designation	Material no.	
Type	G PC P				12VDC 100%ED with HSA	24VDC 100%ED with HSA
Size		040				
Code for execution			K69 V24	Nominal width 2,8 mm	G014137001	G014137002
			K69 V27	Nominal width 3,3 mm	G014141001	G014141002

Example

Type G PC P 040 K69 V24
Voltage == 12 V DC
Operating mode S1 / 100 % / HSA
Material no. ¹⁾ G014137001

¹⁾ optional specification

