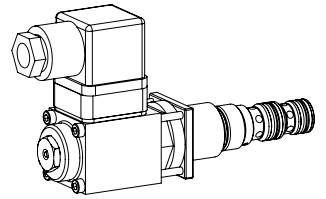


Proportional pressure reducing cartridge

- ◆ pilot operated
- ◆ $Q_{max} = 20 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$
- ◆ $p_{N \text{ red max}} = 315 \text{ bar}$

M18 x 1,5
Wandfluh standard



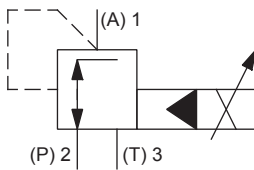
DESCRIPTION

Pilot operated proportional pressure reducing valve in screw-in cartridge construction for cavity according to Wandfluh standard. Proportionally to the solenoid current, the solenoid force and the pressure in port A (1) rise. The valve functions practically independently of the pressure in port P (2). Pressure increase in the consumer port A (1) to above the adjusted value, e.g. through an active consumer, is avoided by discharging excess oil to the tank T (3). With the solenoid deenergised, the oil flows freely from port P (2) to consumer port A (1). For the control, Wandfluh proportional amplifiers are available (see register 1.13).

APPLICATION

The electrical remote control in conjunction with process controls allows economical solutions with repeatable processes. The screw-in cartridge is perfectly suitable for installation in control blocks and is installed in sandwich- (vertical stacked systems) and in flange plates (corresponding data sheets in this register). For machining the cartridge cavity in steel and aluminum blocks, cavity tools are available (hire or purchase). Please refer to the data sheets in register 2.13.

SYMBOL



ACTUATION

| | |
|------------|--|
| Actuation | Proportional solenoid, wet pin push type, pressure tight |
| Execution | PI29V (Data sheet 1.1-90) |
| Connection | Connector socket EN 175301 – 803 |

TYPE CODE

| | | | | | | | | | | | | | | | | |
|--|-------------|----------------------------------|---------|----------------------------------|---|---|---|------|---|----------------------|---|----------------------|---|----------------------|---|----------------------|
| Pressure reducing valve | | | | | M | V | P | PM18 | - | <input type="text"/> | - | <input type="text"/> | - | <input type="text"/> | # | <input type="text"/> |
| Pilot operated | | | | | | | | | | | | | | | | |
| Proportional | | | | | | | | | | | | | | | | |
| Screw-in cartridge M18 x 1,5 | | | | | | | | | | | | | | | | |
| Nominal pressure range $p_{N \text{ red}}$ | 20 bar | <input type="text" value="20"/> | 200 bar | <input type="text" value="200"/> | | | | | | | | | | | | |
| | 100 bar | <input type="text" value="100"/> | 315 bar | <input type="text" value="315"/> | | | | | | | | | | | | |
| Nominal voltage U_N | 12 VDC | <input type="text" value="G12"/> | | | | | | | | | | | | | | |
| | 24 VDC | <input type="text" value="G24"/> | | | | | | | | | | | | | | |
| Sealing material | NBR | <input type="text"/> | | | | | | | | | | | | | | |
| | FKM (Viton) | <input type="text" value="D1"/> | | | | | | | | | | | | | | |
| Design index (subject to change) | | | | | | | | | | | | | | | | |

2.3-610

GENERAL SPECIFICATIONS

| | |
|---------------------|--|
| Designation | Proportional pressure reducing valve |
| Construction | Pilot operated |
| Mounting | Screw-in cartridge construction |
| Nominal size | M18 x 1,5 according to Wandfluh standard |
| Actuation | Proportional solenoid |
| Ambient temperature | -25...+70 °C |
| Weight | 0,40 kg |
| MTTFd | 150 years |

ELECTRICAL SPECIFICATIONS

| | |
|---------------------------|---|
| Protection class | IP65 |
| Relative duty factor | 100 % DF |
| Service life time | 10 ⁷ (number of switching cycles, theoretically) |
| Voltage tolerance | ± 10 % with regard to nominal voltage |
| Standard nominal voltage | 12 VDC, 24 VDC |
| Limiting current at 50 °C | I _G = 1080 mA (12 VDC) I _G = 540 mA (24 VDC) |

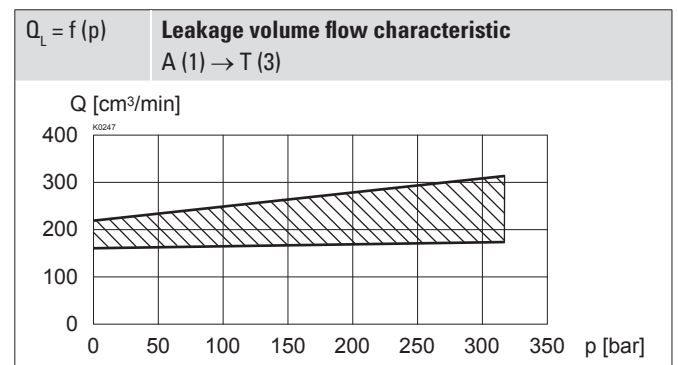
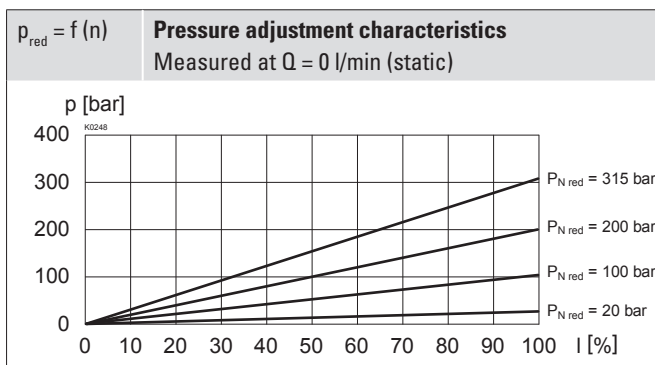
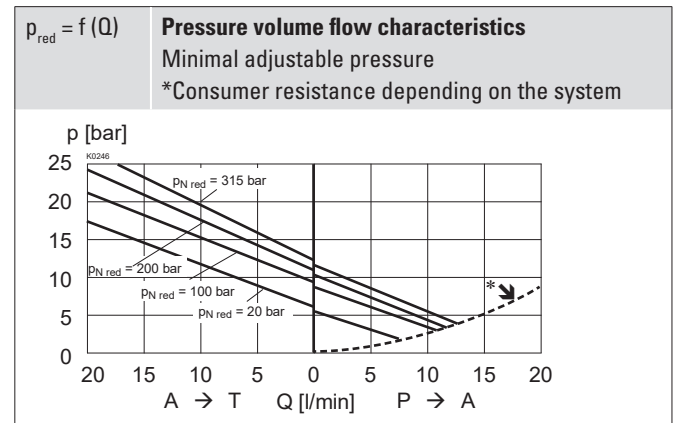
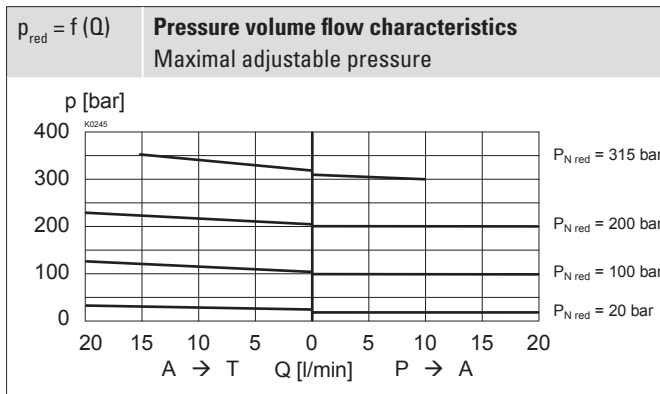
Note! Other electrical specifications see data sheet 1.1-90


HYDRAULIC SPECIFICATIONS

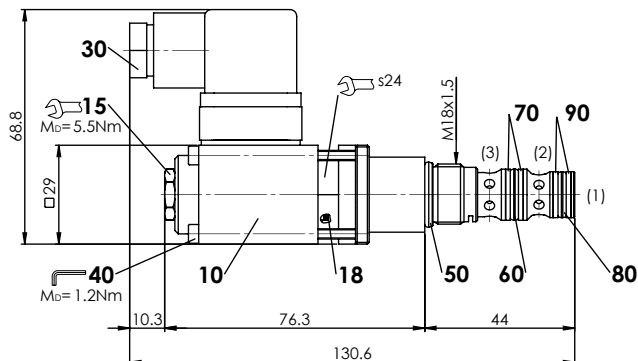
| | |
|--------------------------|---|
| Working pressure | p _{max} = 350 bar |
| Nominal pressure range | P _{N red} = 20 bar, 100 bar, 200 bar, 315 bar |
| Volume flow range | Q = 0...20 l/min |
| Leakage oil | See characteristics |
| Hysteresis | ≤ 4 % at optimal dither signal |
| Repeatability | ≤ 1 % at optimal dither signal |
| Fluid | Mineral oil, other fluid on request |
| Viscosity range | 12 mm ² /s...320 mm ² /s |
| Temperature range fluid | -25...+70 °C (NBR) -20...+70 °C (FKM) |
| Contamination efficiency | Class 18 / 16 / 13 |
| Filtration | Required filtration grade β _{6...10} ≥ 75, see data sheet 1.0-50 |

PERFORMANCE SPECIFICATIONS

Oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$

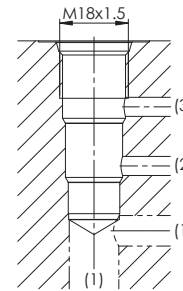


DIMENSIONS



HYDRAULIC CONNECTION

Cavity drawing according to Wandfluh standard



Note! For detailed cavity drawing and cavity tools see data sheet 2.13-1020



PARTS LIST

| Position | Article | Description |
|----------|----------|-----------------------------------|
| 10 | 256.2418 | Proportional solenoid PI29V-G12 |
| | 256.2453 | Proportional solenoid PI29V-G24 |
| 15 | 253.8000 | Manual override HB4,5 |
| 30 | 219.2002 | Electric plug B (black) |
| 40 | 246.0151 | Socket head screw M3 x 50 DIN 912 |
| | 251.1004 | Seal kit MVPPM18 |
| | 251.3117 | Seal kit MVPPM18-D1 |
| | 251.3118 | Seal kit MVPPM18-D2 |

Seal kit consisting of:

| | | |
|----|------------|---------------------------|
| 18 | O-ring | ID 12,42 x 1,78 |
| 50 | O-ring | ID 15,60 x 1,78 |
| 60 | O-ring | ID 11,11 x 1,78 |
| 70 | Back. ring | PTFE rd 12,1 x 15 x 1,4 |
| 80 | O-ring | ID 9,25 x 1,78 |
| 90 | Back. ring | PTFE rd 10,6 x 13,5 x 1,4 |

ACCESSORIES

| | |
|---------------------------------------|--------------------|
| Proportional amplifier | Register 1.13 |
| Flange body / sandwich plate NG3-Mini | Data sheet 2.3-800 |
| Threaded body | Data sheet 2.9-210 |
| Technical explanations | Data sheet 1.0-100 |
| Filtration | Data sheet 1.0-50 |

MANUAL OVERRIDE

Standard: HB4,5

Optionally: Screw plug (HBO), no actuation possible.

Attention! If the manual override is actuated, the nominal pressure level may be exceeded.



SURFACE TREATMENT

- ◆ All external parts of the cartridge as well the solenoid coil are zinc-nickel coated

STANDARDS

| | |
|--------------------------|-------------------|
| Cartridge cavity | Wandfluh standard |
| Solenoids | DIN VDE 0580 |
| Connection execution D | EN 175301 – 803 |
| Protection class | EN 60 529 |
| Contamination efficiency | ISO 4406 |

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

INSTALLATION NOTES

| | |
|-------------------|--|
| Mounting type | Screw-in cartridge M18 x 1,5 |
| Mounting position | Any, preferably horizontal |
| Tightening torque | $M_D = 40$ Nm Screw-in cartridge $M_D = 1,2$ Nm solenoid screws |

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