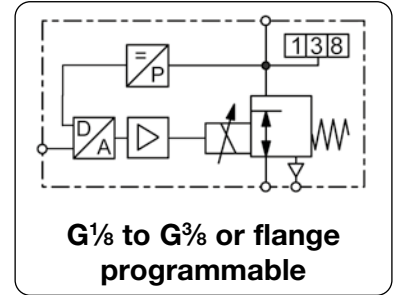


Description The proportional pressure regulator is digitally controlled and works as a 3/2 valve with proportional magnet and closed loop. The digital control system offers advantages at installation and commissioning for adapting the valve to special applications. The regulator can be set and optimised using a PC, RS232 adapter and software.

Software Display: signal, outlet pressure, PID parameters, pressure switch signal etc.
Scope function: view setpoint, outlet pressure, internal signals from PID control

Parameters command signal, zero point, overload threshold, ramp
Valve diagnosis: parameters factory-set or customised, optimization of the valve.

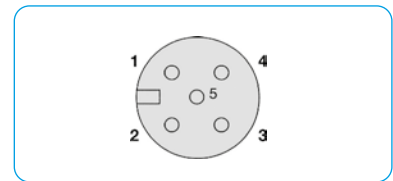


General technical features

Description 3-port/2-way valve with proportional magnet and digital control
Mounting position any, preferably upright
Protection class IP65 with mounted coupling socket
Temperature range 0 °C to 50 °C / 32 °F to 122 °F ambient
Material Body: aluminium Inner valve: POM (Polyacetal)
Elastomer: NBR/Buna N and FPM

Pneumatic features

Media dry, lubricated or unlubricated and 50 µm filtered compressed air or non-corrosive gases
Supply pressure see chart
Flow rate see chart, at 7 bar supply pressure and open outlet
Exhaust same nominal size as on inlet valve, thus same relief capacity
Air consumption without air consumption



view from solder pin side

Electrical features

Supply voltage 24 V DC ± 10%
Electrical connection M12x1, 5-pin plug, with coupling socket
Power consumption 12 W at nominal size 4, 40 W at nominal size 8
Current consumption 850 mA at nominal size 4, 1640 mA at nominal size 8
Command signal 0-10 V, 0-20 mA, 4-20 mA
Impedance 100 kΩ at voltage signal (0.1 mA current consumption)
500 Ω at current signal
Feedback output 0-10 V = 3 bar only, 6 bar and 10 bar pressure range possible

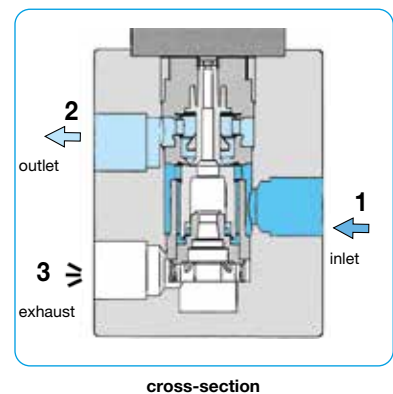
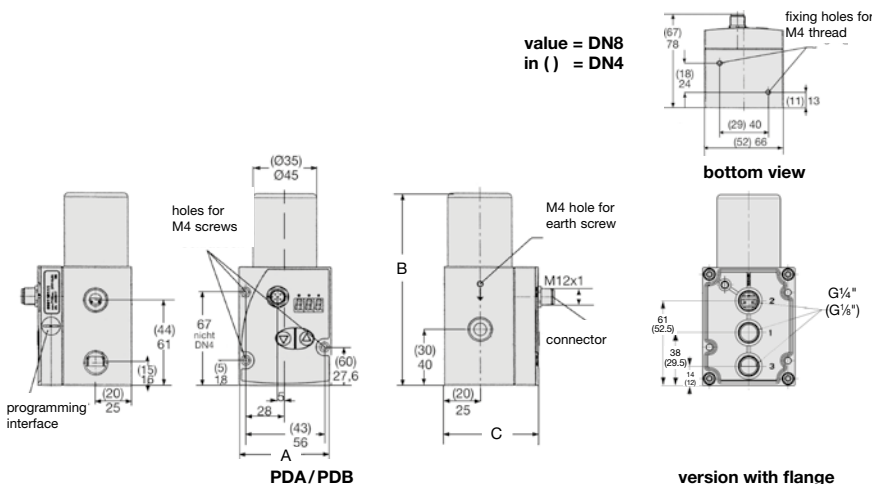
| pin | description | 5-wire cable (2m) |
|---------|--------------------------------|-------------------|
| 1 | 24 V supply voltage | brown |
| 2 | analog input signal | white |
| 3 | supply ground | blue |
| | analog ground | |
| 4 | analog outlet signal | black |
| 5 | digital pressure switch signal | grey |
| housing | EMC shield | shield |

Accuracy

Linearity/Hysteresis < 1,0% FS
Repeatability < 0,5% FS
Minimum outlet pressure 1% FS
Response sensitivity < 0,5% FS
Minimum setpoint 100 mV (0.2 mA / 4.2 mA)
Over all accuracy ± 0,5% FS

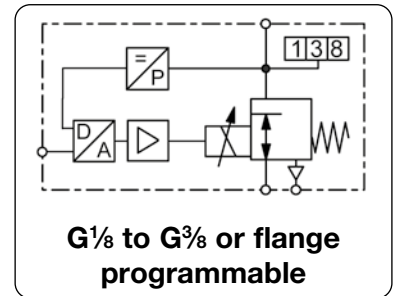
Adjustment and parameter settings

Zero point / range Zero point and range can be calibrated percentagewise.
Control mode / Amplification Through the software different control modes may be chosen. All parameters of P/PI/PID controllers can be tuned.
Diagnosis A diagnostic tool including data recording is available within the software.
Characteristic curve Increasing or decreasing curve can be set (increasing by standard).



cross-section

| | | | |
|------------------------------|--|------------------------|------------------------------------|
| Description | The proportional pressure regulator is digitally controlled and works as a 3/2 valve with proportional magnet and closed loop. The digital control system offers advantages at installation and commissioning for adapting the valve to special applications. The regulator can be set and optimised using a PC, RS232 adapter and software. | | |
| Media | dry, lubricated, unlubricated and 50 µm filtered compressed air or non-corrosive gases | | |
| Supply voltage | 24 V DC ± 10 V, residual ripple < 10% | | |
| Signal range | 0-10 V, 100 kΩ impedance, 0/4-20 mA, 250 Ω impedance | | |
| Electrical connection | plug M12x1, 5-pin, with coupling socket | Pressure switch | PNP, adjustable ± 5% from setpoint |
| Power consumption | 21 W at DN4, 40 W at DN8 | | |
| Linearity/Hysteresis | < 0.5% FS / < 1% FS | | |
| Mounting position | any | | |
| Temperature range | fluid: 0 °C to 60 °C / 32 °F to 140 °F ambient: 0 °C to 50 °C / 32 °F to 122 °F | | |
| Material | Body: aluminium | Elastomer: NBR/Buna-N | Inner valve: POM |



| Dimensions | | | Nominal size | Flow rate | Supply max. | Connection thread | Pressure range | Order number |
|------------|---|---|--------------|-----------|-------------|-------------------|----------------|--------------|
| A | B | C | DN | l/min*1 | bar | G | bar | |

| Proportional pressure regulator | | | | | | 0-10 V input and outlet signal, supply 24 V DC, without display, with coupling socket | | PD | |
|---------------------------------|-----|----|---|------|------|---|------|----------|-----------|
| 52 | 112 | 67 | 4 | 0.43 | 470 | 6 | G1/8 | 0 ... 1 | PDA41-010 |
| | | | | | | 6 | | 0 ... 3 | PDA41-030 |
| | | | | | | 9 | | 0 ... 5 | PDA41-050 |
| | | | | | | 9 | | 0 ... 6 | PDA41-060 |
| | | | | | | 13 | | 0 ... 8 | PDA41-080 |
| | | | | | | 13 | | 0 ... 10 | PDA41-100 |
| | | | | | | 13 | | 0 ... 12 | PDA41-120 |
| | | | | | | 6 | G1/4 | 0 ... 1 | PDA42-010 |
| | | | | | | 6 | | 0 ... 3 | PDA42-030 |
| | | | | | | 9 | | 0 ... 5 | PDA42-050 |
| | | | | | | 9 | | 0 ... 6 | PDA42-060 |
| | | | | | | 13 | | 0 ... 8 | PDA42-080 |
| | | | | | | 13 | | 0 ... 10 | PDA42-100 |
| | | | | | | 13 | | 0 ... 12 | PDA42-120 |
| 66 | 138 | 78 | 8 | 1.2 | 1300 | 6 | G1/4 | 0 ... 1 | PDA82-010 |
| | | | | | | 6 | | 0 ... 3 | PDA82-030 |
| | | | | | | 9 | | 0 ... 5 | PDA82-050 |
| | | | | | | 9 | | 0 ... 6 | PDA82-060 |
| | | | | | | 13 | | 0 ... 8 | PDA82-080 |
| | | | | | | 13 | | 0 ... 10 | PDA82-100 |
| | | | | | | 13 | | 0 ... 12 | PDA82-120 |
| | | | | | | 6 | G3/8 | 0 ... 1 | PDA83-010 |
| | | | | | | 6 | | 0 ... 3 | PDA83-030 |
| | | | | | | 9 | | 0 ... 5 | PDA83-050 |
| | | | | | | 9 | | 0 ... 6 | PDA83-060 |
| | | | | | | 13 | | 0 ... 8 | PDA83-080 |
| | | | | | | 13 | | 0 ... 10 | PDA83-100 |
| | | | | | | 13 | | 0 ... 12 | PDA83-120 |



PDA without display



PDB with display



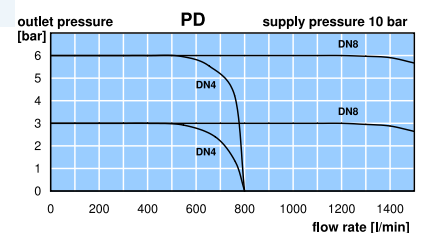
programming via PC

Special options, add the appropriate letter or number

| | | |
|---------------------------|--|------------------|
| display | 3-digit, red | PDB |
| NPT | connection thread | PD N |
| 0-20 mA | setpoint input and monitor signal | PD 1 |
| 4-20 mA | setpoint input and monitor signal | PD 2 |
| flange version | | PD . . F |
| cascade regulation | w/o monitor signal 2. sensor, electr. feedback 0-10 V | PD KU |
| | w/o monitor signal 2. sensor, electr. feedback 4-20 mA | PD KI |

Accessories, enclosed

| | | |
|------------------------|--|------------------|
| RS232 module | with D-sub plug and 2 m cable | PDRS232 |
| | with USB plug and 2 m cable | PDUSB |
| software | basic version "light" | PDSOFT1 |
| coupling socket | M12x1, 5-pin, with 2 m cable, 5 x 0.25 angular | KM12-C5-2 |
| | 5 m cable, 5 x 0.25 angular | KM12-C5-5 |



*1 at 6 bar supply pressure and 5 bar outlet pressure

Technical details: see previous page

PDF CAD
www.aircom.net



Order example:
PDA41-010