PROPORTIONAL PRESSURE REGULATOR, PROGRAMMABLE   PD

| 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, PR 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.

G⅛ to G⅜ or flange programmable
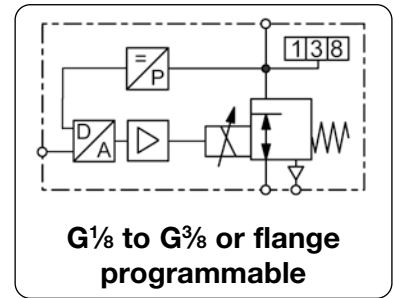
General technical features

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
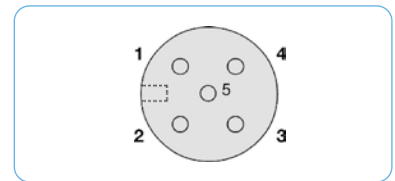
Electrical features

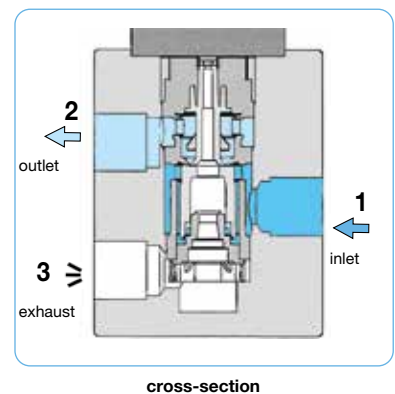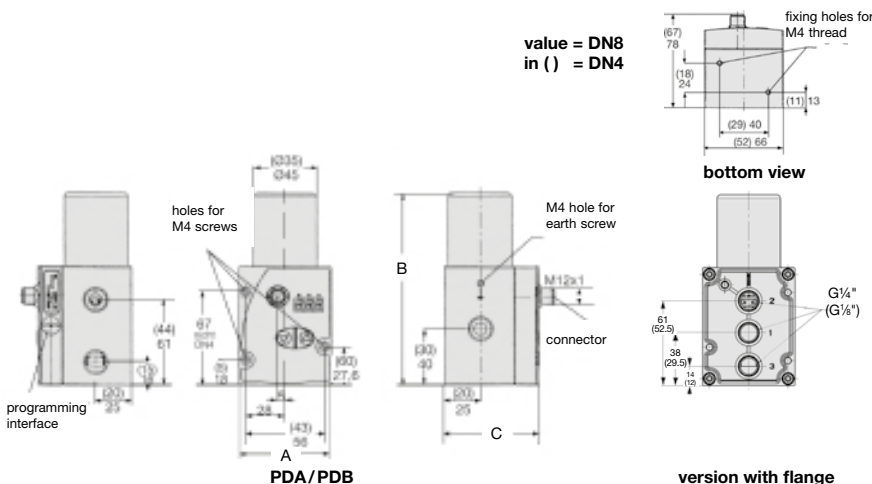|	
Supply voltage	24 V DC ± 10%
Electrical connection	M12x1, 5-pin plug, with coupling socket
Power consumption	12 W at nominal size 4, 40 W at nominal size 8
Current consumption	850 mA at nominal size 4, 1640 mA at nominal size 8
Command signal	0-10 V, 0-20 mA, 4-20 mA
Impedance	100 kΩ at voltage signal (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	Response sensitivity	< 0,5% FS
Repeatability	< 0,5% FS	Minimum setpoint	100 mV (0.2 mA / 4.2 mA)
Minimum outlet pressure	1% FS	Over all accuracy	± 0,5% FS

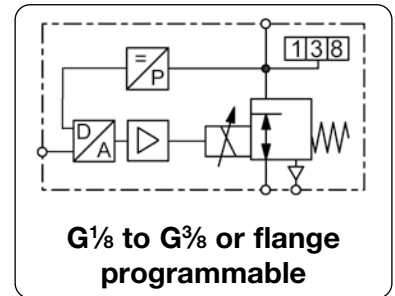## Adjustment and parameter settings

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).

value = DN8
in ( ) = DN4

bottom view

PDA/PDB

version with flange

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, PR 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

Power consumption	21 W at DN4, 40 W at DN8	
Pressure switch	PNP, adjustable ± 5% from setpoint	
Linearity/Hysteresis	< 0.5% FS / < 1% FS	Repeatability < 0.5% FS
Mounting position	any	Protection class IP65
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

G⅛ to G⅜ or flange programmable

Dimensions			Nominal size	Flow rate	Supply max.	Connection thread	Pressure range	Order number	E*
A mm	B mm	C mm	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**

A mm	B mm	C mm	DN	l/min*¹	bar	G	bar	Order number
52	112	67	4	0.43	470	6	G⅛	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	G¼	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	G¼	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	G⅜	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	PD**B**..-...
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		for PDA41/82 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

PR adapter	with USB plug and 1 m cable	**PDUSB**
software	basic version "light"	**PDSOFT1***²
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**
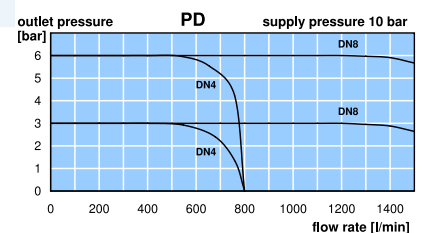
*¹ at 6 bar supply pressure and 5 bar outlet pressure
*² You do not need any software to use the valve!

Technical details: see previous page

PDF CAD
www.aircom.net

outlet pressure [bar] — PD — supply pressure 10 bar
flow rate [l/min]

* Product group

Order example:
PDA41-010

Proport. pressure

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