

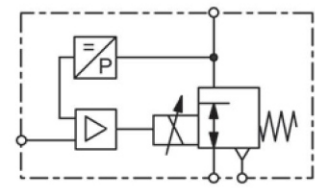
PRE - Régulateur proportionnel de pression, très réactif - G1/8" ou G1/4", 16 bar

PRE - Very quick proportional pressure regulator, G1/8" or G1/4", 16 bar

Description

Piezo-operated proportional pressure valve based on the principle of a piezo element which bends when voltage is applied. At the end of the piezo element is a flapper valve, which operates against a precision nozzle to create back pressure on the control diaphragm of a booster relay. A pressure transducer provides feedback of the outlet pressure compared with the setpoint value with correction by the electronic control system if necessary.

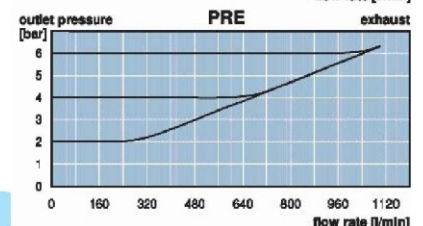
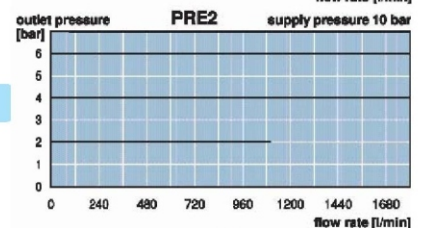
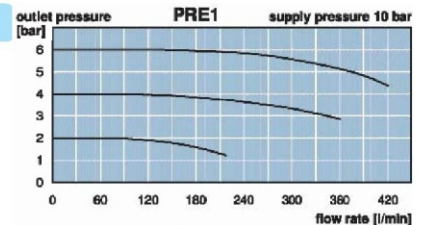
Minimal power consumption	<ul style="list-style-type: none"> • no self-heating, even none at pressure absence • safe battery operation over a long period • almost no power consumption necessary for regulation • extremely quick regulating operations • low-noise regulation especially for medical and laboratory technology • particularly suitable for portable devices in conjunction with battery operation • ideal for limited space conditions
Piezo element	
Small and light design	
PRE1	DN 2.5, 350 l/min, coupling socket M8x1, 3-pin, monitor signal optionally 0... P_{2max} \approx 0...10 V, max. 1 mA, $R_{\Omega} > 1k\Omega$
PRE2	DN 6, 1600 l/min, coupling socket M12x1.5, 5-pin, monitor signal standard 0... P_{2max} \approx 0...10 V, max. 1 mA, $R_{\Omega} > 1k\Omega$



0 - 100 mbar / 10 bar
10 ms, 400 mW, 1600 l/min

General features

Description	Piezo-operated 3-port/2-way proportional pressure regulator with internal pressure sensor and closed loop.
Protection class	IP 30 for PRE1 according to DIN EN 60529 IP 65 for PRE2 according to DIN EN 60529 with coupling socket and tapped exhaust
Mounting position	any
Temperature range	0 °C to 50 °C / 32 °F to 122 °F
Material	Body: plastic Elastomer: NBR/Buna-N Inner valve: brass and spring steel

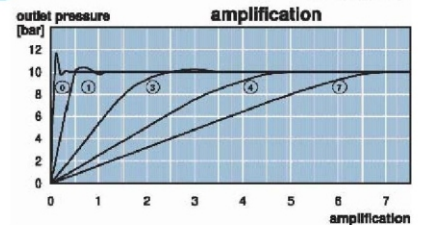


Pneumatic features

Media	dry, unlubricated and 5 μ m filtered compressed air or non-corrosive gases
Supply pressure	min. 1.5 bar (at $P_2 \leq 8$ bar) or 2 bar (at $P_2 \geq 8$ bar) and additional P_1 min. 1 bar greater than P_2 max. 2.5 bar up to 17 bar, depending on pressure range according to chart
Flow rate	PRE1: max. 350 l/min at $P_1 = 10$ bar, $P_2 = 6$ bar and open outlet DN 5.5 PRE2: max. 1600 l/min at $P_1 = 10$ bar, $P_2 = 6$ bar and open outlet DN 6
Exhaust	PRE1: 180 l/min at $P_2 = 6$ bar, 20 l/min at $P_2 = 200$ mbar PRE2: 1000 l/min at $P_2 = 6$ bar, 400 l/min at $P_2 = 2$ bar
Air consumption	PRE1: < 0.4 l/min at 0...200 mbar, < 0.5 l/min at 0...2 bar, < 0.6 l/min at 0...8 bar PRE2: < 1.5 l/min independent of pressure range

Electrical features

Supply voltage	PRE1: 24 V DC $\pm 10\%$, 0.4 W, current consumption max. 15 mA PRE2: 24 V DC $\pm 10\%$, 0.8 W, current consumption max. 30 mA
Command signal	4...20 mA or 0...10 V
Impedance	PRE1: 61 k Ω at voltage signal, 550 Ω at current signal PRE2: 55 k Ω at voltage signal, 500 Ω at current signal
Electrical connector	PRE1: coupling socket M8x1, 3-pin PRE1-R: coupling socket M8x1, 4-pin PRE2: coupling socket M12x1.5, 5-pin
Monitor signal	PRE1-R: as option 0... P_{2max} / 0...10 V, max. 1 mA, $R_{\Omega} > 1k\Omega$ PRE2: standard 0... P_{2max} / 0...10 V, max. 1 mA
Electronic switch	PRE2 only, PNP, "on" when setpoint and actual value match in the tolerance range 0 V: off, 23 V = on, output current < 200 mA, tolerance P2: $< 2\%$
Failsafe	If signal or electrical supply fails, outlet pressure falls to zero and the regulator exhausts.
Note	For long connection lines shielding is to be used. Pay attention to voltage drops. As the case may be, current signal is preferable.

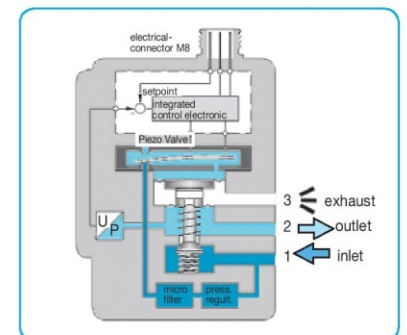


Accuracy

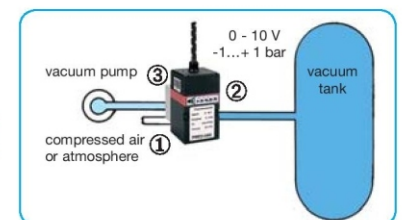
Linearity	$< 0.5\%$ FS, at 0.1 and 0.2 bar range $< 1\%$ FS
Hysteresis	$< 0.2\%$ FS, at 0.1 and 0.2 bar range $< 0.5\%$ FS
Response sensitivity	$< 0.1\%$ FS, at 0.1 and 0.2 bar range $< 0.5\%$ FS at PRE1 $< 0.2\%$ FS at PRE2
Repeatability	$< 0.2\%$ FS, at 0.1 and 0.2 bar range $< 0.5\%$ FS
Response time	10 ms
Over all accuracy	$\pm 0.2\%$ FS

Adjustment

Zero point	calibration only by factory
Range	calibration only by factory



cross-section PRE1



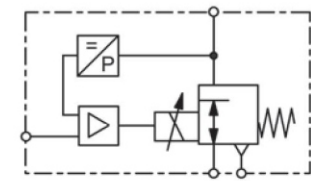
PRE2-V1 for vacuum

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Technical features

• Highly dynamic	10 ms, critical frequency 43 Hz	• Linearity	< 0.5% or 1% FS
• Low power consumption	400 mW / 800 mW nominal power	• Hysteresis	< 0.2% or 0.5% FS
• No self-heating	due to low power consumption	• Response sensitivity	< 0.1% or 0.5% FS
• Battery operation	due to low power consumption	• Repeatability	< 0.2% or 0.5% FS
• For portable devices	up to 3 bar pressure range	• Failsafe	exhaust at power breakdown
• No over-oscillation	adjustable closed loop amplification	• Protection class	IP 30 or IP 65
• No resonance oscillation	adjustable closed loop amplification	• Two-wire system	for signal 4...20 mA



0 ... 100 mbar / 10 bar
10 ms, 400 mW, 1600 l/min

Dimensions			Supply pressure	Flow rate	Connection thread	Pressure range	Order number for inlet signal	
A	B	C	max. bar	l/min*1	G	bar	4-20 mA	0-10 V

Proportional valve							PRE	PRE
supply voltage 24 V DC, constant bleed, with straight coupling socket and 5 m cable								
36	61	54	2.5	50	G1/8	0...0.1	PRE1-IA1	PRE1-UA1
				100		0...0.2	PRE1-IA2	PRE1-UA2
			6.0	200	0... 2	PRE1-I02	PRE1-U02	
				250	0... 5	PRE1-I05	PRE1-U05	
				280	0... 6	PRE1-I06	PRE1-U06	
46	84	68	350	G1/4	0... 8	PRE1-I08	PRE1-U08	
			800		-1... 1	PRE2-IV1	PRE2-UV1	
			1500		-1... 6	PRE2-I06V1	PRE2-U06V1	
2.5	900	1700	2.5	300	-0.2... 0.2	PRE2-IA2V1	PRE2-UA2V1	
						0... 1	PRE2-I01	PRE2-U01
			7.0	1100	0... 2	PRE2-I02	PRE2-U02	
						0... 6	PRE2-I06	PRE2-U06
			12	1700	0... 10	PRE2-I10	PRE2-U10	
						0... 16	PRE2-I16	PRE2-U16



PRE1



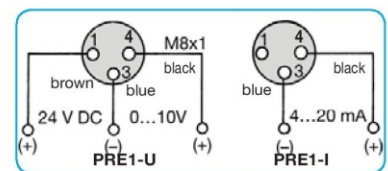
PRE2

Special options, add the appropriate letter

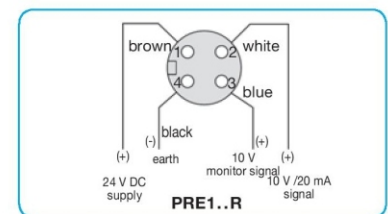
monitor signal	0-10 V, standard at PRE2	for PRE1	PRE1-...R
flange connection	without manifold		PRE-...F
w/o coupling socket	and without cable		PRE-...H
mounting clips	for DIN rail		PRE-...C
deviant pressure ranges			PRE-...XX

Accessories

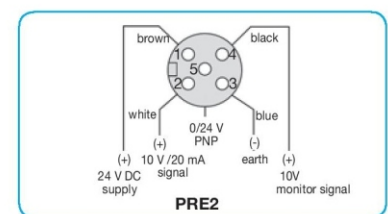
coupling socket	with 5 m cable, angular	M8x1, 3-pin	for PRE1	KM08-C3-5
		M8x1, 4-pin	for PRE1-R	KM08-C4-5
		M12x1.5, 5-pin	for PRE2	KM12-C5-5



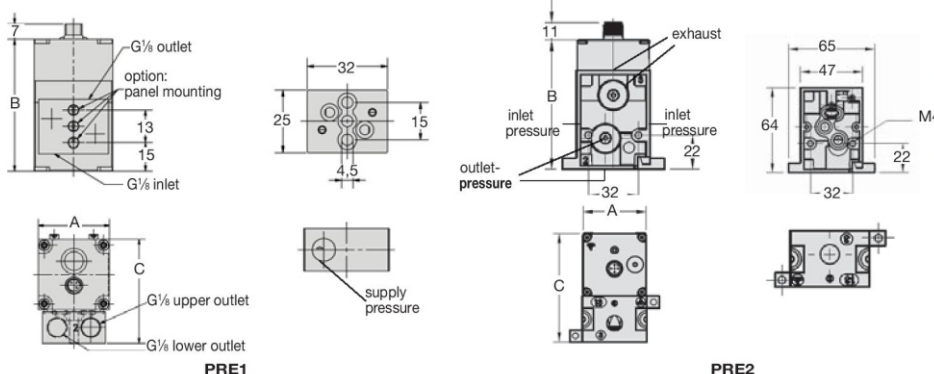
connection diagram



connection diagram



connection diagram



*1 at open outlet