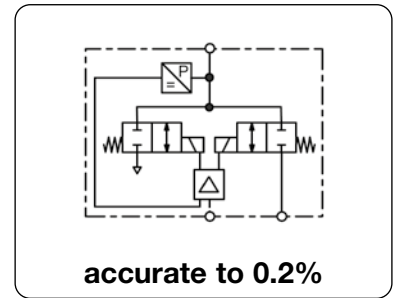


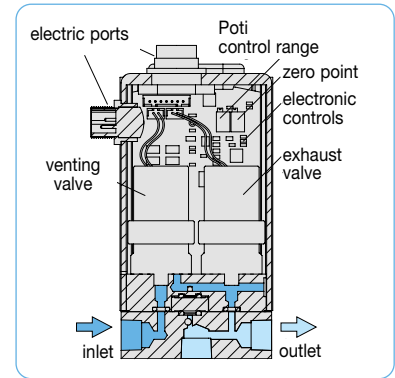
Technical features

• Pressure range	0...10 mbar up to 0...35 bar	• Linearity	± 0.15% FS
• Input signal	0...10 V and 4...20 mA	• Hysteresis	± 0.15% FS
• Security	constant outlet pressure at voltage drop	• Response sensitivity	< 0.1% FS
• Response time	10 to 15 ms	• Repeatability	± 0.02% FS
• Adjustment	zero point and span	• Protection class	IP 65
• Sensitivity	immune to shock and vibration up to 25 g	• Air consumption	without constant bleed



General technical features

Description	Two solenoid valves control the system pressure. One valve is for inlet control, the other for outlet control. A strain gauge pressure transducer measures system pressure and provides a feedback signal to the electronic controls. Any difference between command and feedback signals causes one of the solenoid valves to open, causing system pressure to increase or decrease.		
Mounting position	any, immune to shock and vibration up to 25 g		
Protection class	IP 65 housing		
Temperature range	-5 °C to 70 °C / 23 °F to 158 °F		
Material	Body: aluminium	Elastomer: FKM	
	Transducer: aluminium and silicon	Valves: nickel-plated brass	



Pneumatic features

Media	dry, un lubricated and 5 µm filtered compressed air or non-corrosive gases
Supply pressure	see chart, minimum 10% above outlet pressure
Flow rate	35 l/min at 7 bar supply pressure and open outlet, optionally 100 l/min 3 l/min at controlled outlet pressure
Exhaust	same nominal size as on inlet valve, thus same relief capacity
Air consumption	without constant bleed, Option X58: < 2 l/min

Electrical features

Supply voltage	15 ... 24 V DC, reverse voltage protection existing
Power consumption	3.6 W for regulation, 0.5 W non-regulating
Signal range	0 ... 10 V, optionally 4 ... 20 mA
Impedance	4.7 kΩ at voltage signal, 100 Ω at current signal 10 kΩ at voltage signal, 100 Ω at current signal, for external feedback
Monitor signal impedance	> 4.7 kΩ at voltage signal, < 100 Ω at current signal
Electrical connector	plug M16x0.75, 7-pin, with coupling socket
Monitor signal	0 ... 10 V, optionally 4 ... 20 mA
Security	constant outlet pressure at voltage drop

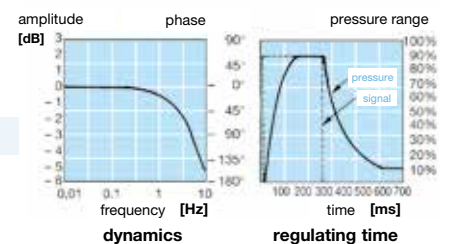
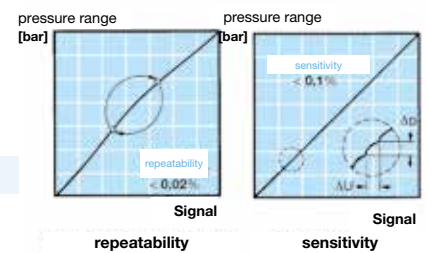
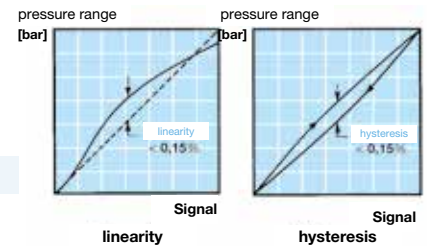
Accuracy

Linearity/Hysteresis	± 0.15% FS
Response sensitivity	< 0.1% FS
Response time	10 to 15 ms
Repeatability	± 0.02% FS
Temperature influence	< 0.01% FS per °C/K at 0 °C to 50 °C / 32 °F to 122 °F < 1.00% FS per °C/K at 50 °C to 70 °C / 122 °F to 158 °F
Accuracy over all	± 0.2 % FS
Regulating time	< 2 s to fill 0.1 l volume to 90% of the initial pressure (or to exhaust) < 40 s to fill 2 l volume to 90% of the initial pressure (< 80 s to exhaust)

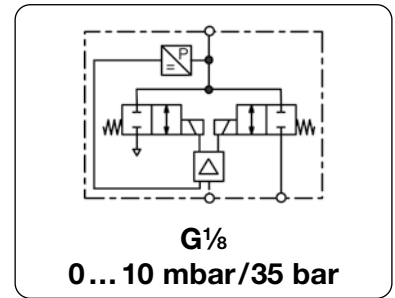
Adjustment

Zero point	The zero point can be increased by up to 20% of full scale, e.g. from 0 bar to 1.2 bar at a 6 bar regulator. External adjustment via potentiometer Z "zero".
Span	The maximum pressure value of the control range can be reduced by up to 20% depending on the selected pressure range, e.g. from 6 to 4.8 bar. External adjustment via potentiometer S "span".

*1 at 7 bar supply pressure and 3 bar outlet pressure



Description	The pneumatic proportional pressure regulator produces outlet pressure in proportion to an electrical command input signal. It comprises a complete closed loop servo system consisting of valves, manifold, housing and electronic controls.
Single loop	Pressure is controlled by two solenoid valves. One valve functions as inlet control, the other as exhaust. The pressure outlet is measured by an internal pressure transducer which provides a feedback signal to the electronic controls. This feedback signal is compared with the command input signal. Any difference between the two signals causes one of the two solenoid valves to open, allowing flow into or out of the system. Accurate pressure is maintained by these two valves.
Accuracy	Linearity / Hysteresis: ± 0.15% FS Response sensitivity: < 0.1% FS Repeatability: ± 0.02% FS Accuracy over all: ± 0.2% FS



Dimensions			Flow rate	Supply pressure	Accuracy	Connection thread	Pressure range	Order number
A	B	C	l/min*1	max. mbar/bar*2	%	G	mbar/bar	E*

Single loop regulator			0 ... 10 V input and feedback signal, supply voltage 24 V DC, 35 l/min*1, with coupling socket		PQ1			
51	106	8	on request	10 mbar	0.2	G ¹ / ₈	0 ... 5 mbar	PQ1EE-A5
				20 mbar			0 ... 10 mbar	PQ1EE-B1
				40 mbar			0 ... 20 mbar	PQ1EE-B2
				100 mbar			0 ... 50 mbar	PQ1EE-B5
				200 mbar			0 ... 100 mbar	PQ1EE-C1
				400 mbar			0 ... 200 mbar	PQ1EE-C2
				800 mbar			0 ... 400 mbar	PQ1EE-C4
				1 000 mbar			0 ... 600 mbar	PQ1EE-C6
51	106	8	35	2 bar	0.2	G ¹ / ₈	0 ... 1 bar	PQ1EE-01
				3 bar			0 ... 2 bar	PQ1EE-02
				7 bar			0 ... 4 bar	PQ1EE-04
				7 bar			0 ... 6 bar	PQ1EE-06
				9 bar			0 ... 8 bar	PQ1EE-08
				15 bar			0 ... 10 bar	PQ1EE-10
				15 bar			0 ... 12 bar	PQ1EE-12
				24 bar			0 ... 16 bar	PQ1EE-16
				24 bar			0 ... 20 bar	PQ1EE-20
				38 bar			0 ... 25 bar	PQ1EE-25
				38 bar			0 ... 30 bar	PQ1EE-30
				38 bar			0 ... 35 bar	PQ1EE-35
51	106	8	35	0 bar	0.2	G ¹ / ₈	0 ... -1 bar	PQ1EE-V0
				2 bar			-1 ... +1 bar	PQ1EE-V1



PQ1

Special options, add the appropriate letter or number

4-20 mA input and monitor signal	PQ1 IC- . . .
flow 100 l/min increased flow rate, max. 10 bar, not combinable with Opt. . .X58	PQ1HF
continuous regulation*3 improved characteristic curve through proportional inlet valve, max. 10 bar	PQ1X58
declining curve inverted outlet	PQ1X59

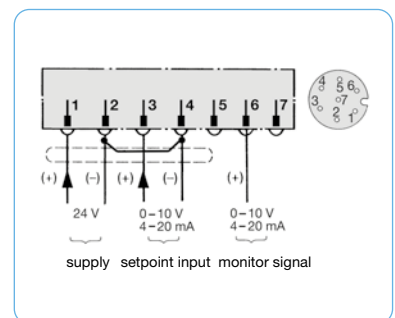
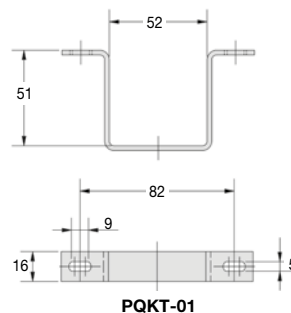
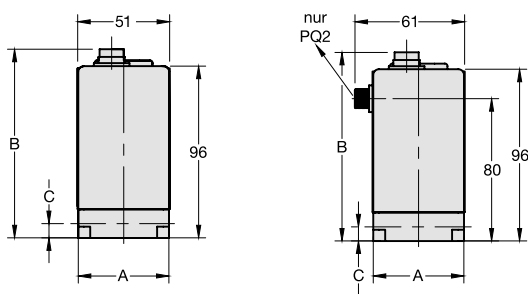
Accessories, enclosed

coupling socket	M16x0,75, 7-pin with 2 m cable	straight	PRK-A2L
		angular	PRK-C2L
mounting bracket	made of steel		PQKT-01



PRK-A

PRK-C



*1 at 7 bar supply pressure and open outlet, at regulated flow rate of 3 l/min
*2 higher supply pressure on request
*3 air consumption

* Product group

Technical details: see previous page

PDF CAD
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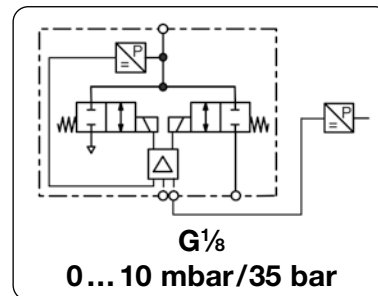


Order example:
PQ1EE-A5

PROPORTIONAL PRESSURE REGULATOR WITH DOUBLE LOOP, ACCURATE TO 0.2%

PQ2

Description	The pneumatic proportional pressure regulator produces outlet pressure in proportion to an electrical command input signal. It comprises a complete closed loop servo system consisting of valves, manifold, housing and electronic controls.
Double loop	The servo valve expands in single loop operation by combining an additional feedback from an external sensing device with the internal transducer. The external sensor provides information on the control status. The PQ2 then compares the command signal with the second loop feedback signal. Should there be a difference in the signal comparisons, the servo valve will make adjustments to the internal loop to bring the system into balance. This provides accurate final outlet. The acceptance of electrical feedback from an external sensor enables precise control of conditions such as pressure, force, torque, position or flow.
External pressure transducer	Any pressure transducer for 0-10 V and 4-20 mA output signal and suitable for 15-24V DC supply voltage can be applied. An appropriate coupling socket plus cable is required.



Dimensions			Flow rate	Supply pressure	Accuracy	Connection thread	Pressure range	Order number
A	B	C						
mm	mm	mm	l/min*1	max. mbar/bar*2	%	G	mbar/bar	E*

Double loop regulator				0 ... 10 V input / feedback / second loop signal, supply voltage 24 V DC, 35 l/min*1, with both coupling sockets				PQ2	
51	106	8	on request	10 mbar	0.2	G ^{1/8}	0 ... 5 mbar	PQ2EE-A5	
				20 mbar			0 ... 10 mbar	PQ2EE-B1	
				40 mbar			0 ... 20 mbar	PQ2EE-B2	
				100 mbar			0 ... 50 mbar	PQ2EE-B5	
				200 mbar			0 ... 100 mbar	PQ2EE-C1	
				400 mbar			0 ... 200 mbar	PQ2EE-C2	
				800 mbar			0 ... 400 mbar	PQ2EE-C4	
				1000 mbar			0 ... 600 mbar	PQ2EE-C6	
51	106	8	35	2 bar	0.2	G ^{1/8}	0 ... 1 bar	PQ2EE-01	
				3 bar			0 ... 2 bar	PQ2EE-02	
				7 bar			0 ... 4 bar	PQ2EE-04	
				7 bar			0 ... 6 bar	PQ2EE-06	
				9 bar			0 ... 8 bar	PQ2EE-08	
				15 bar			0 ... 10 bar	PQ2EE-10	
				15 bar			0 ... 12 bar	PQ2EE-12	
				24 bar			0 ... 16 bar	PQ2EE-16	
				24 bar			0 ... 20 bar	PQ2EE-20	
				38 bar			0 ... 25 bar	PQ2EE-25	
				38 bar			0 ... 30 bar	PQ2EE-30	
				38 bar			0 ... 35 bar	PQ2EE-35	
51	106	8	35	0 bar	0.2	G ^{1/8}	0 ... -1 bar	PQ2EE-V0	
				2 bar			-1 ... +1 bar	PQ2EE-V1	

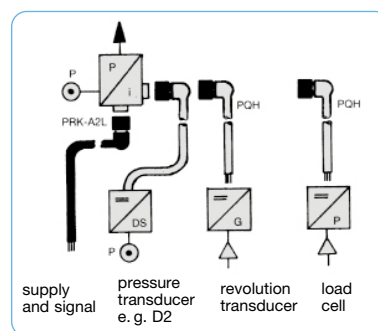
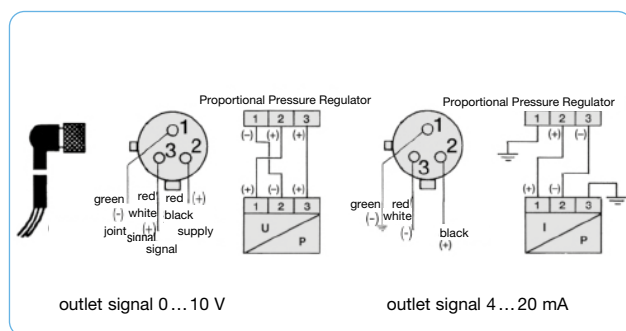


Special options, add the appropriate letter or number

4-20 mA input / feedback / second loop signal	PQ2 IC- . . .
flow 100 l/min increased flow rate, max. 10 bar	PQ2 HF
continuous regulation*3 improved characteristic curve through proportional inlet valve, max. 10 bar	PQ2 X58
declining curve inverted outlet	PQ2 X59

Accessories, enclosed

coupling socket	M16x0.75, 7-pin with 2.0 m cable, supply and signal, straight	PRK-A2L
coupling socket	1/2" UNF, 3-pin with 0.9 m cable, for second loop, angular	PRK-C2L
coupling socket		PQH-L1
coupling socket		PQH-L2
mounting bracket	made of steel	PQKT-01



*1 at 7 bar supply pressure and open outlet, at regulated flow rate of 3 l/min
*2 higher supply pressures on request *3 air consumption

Technical details: see previous page

PDF CAD
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* Product group
Order example:
PQ2EE-A5