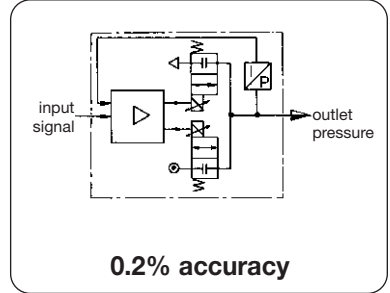
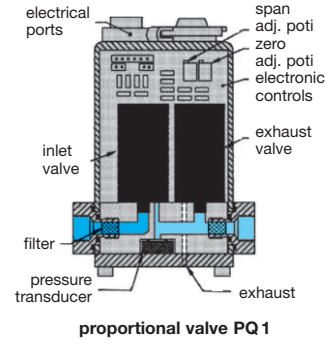


Technical Features	
● Fast and accurate	● <b>Linearity</b> <math>\leq \pm 0.15\% \text{ FS BFUL}</math>
● Immune to shock and vibration	● <b>Hysteresis</b> <math>\leq \pm 0.15\% \text{ FS BFUL}</math>
● Mounting in any position	● <b>Reproducibility</b> <math>\leq \pm 0.02\% \text{ FS}</math>
● Immune to supply pressure fluctuation	● <b>Response</b> <math>< 2\text{s}</math> for 90% step change at 0.1 l volume
● Can be field calibrated	● <b>Pressure range</b> 0 to 10 mbar / 0.15 psi up to 0... 70 bar/1000 psi
● No air consumption in steady state	● <b>Input signal</b> 0 to 10 V, 4 to 20 mA, or 0 to 20 mA
	● <b>Feedback signal</b> 0 to 10 V, or 4 to 20 mA



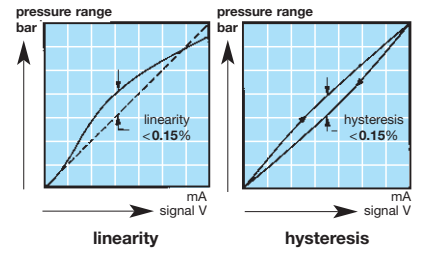
## General features PQ

<b>description</b>	Two solenoid valves control 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.	
<b>PQ1</b>	Is a <b>single loop</b> model consisting of valves, manifold, internal pressure transducer and electronic controls. All elements are assembled in small cubic housing.	
<b>PQ2</b>	Like PQ1 but with a <b>double loop</b> control scheme. In addition to the internal pressure transducer, PQ2 also receives a feedback signal from an external sensing device.	
<b>protection</b>	Nema 4 / IP 65	<b>mounting position:</b> any
<b>temperature range</b>	- 5 °C to 70 °C / 23 °F to 158 °F -10 °C to 80 °C / 14 °F to 176 °F	operating temperature storage temperature
<b>materials</b>	Housing: aluminium Elastomer: Viton	Manifold: brass Valves: stainless steel Transducer: silicon, aluminium, nickel



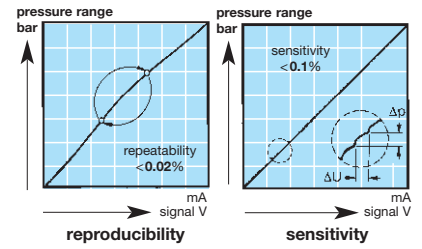
## Pneumatic features

<b>media</b>	Lubricated or non-lubricated, dry or humid compressed air or gas. Not recommended for liquids. With volume booster for liquids. For more information, contact AirCom.	
<b>supply pressure</b>	Minimum 10% above outlet pressure, for maximum value see table on next page. Supply up to 75 bar on request.	
<b>flow capacity</b>	35 l/min / 1.2 scfm at 7 bar supply pressure and open outlet for filling e.g. a tank 3.5 l/min / 0.1 scfm controlled outlet pressure	<b>C<sub>v</sub> capacity</b> 0.04
<b>constant bleed</b>	No constant bleed in steady state	<b>exhaust</b> orifice as on main valve



## Electrical features

<b>supply voltage</b>	24 V DC (15 - 24 V DC) Current: 250 mA standard,	12 V DC optional 525 mA high flow version
<b>command signal</b>	Voltage: 0 - 10 V: less than 3 mA Current: 4 - 20 mA:	Impedance: 4.700 Ω Impedance: 100 Ω
<b>fail freeze</b>	If input signal falls to zero outlet pressure will fall to zero If supply voltage falls to zero outlet pressure will remain the same	
<b>security</b>	Protection against incorrect polarity of signal and supply voltage Protection against excessive supply voltage – voltage peaks!	
<b>monitor signal</b>	Voltage: 0 ... 10 V, > 4700 Ω as option 4 - 20 mA, < 100 Ω Current: 4 ... 20 mA sinking (open collector outlet)	

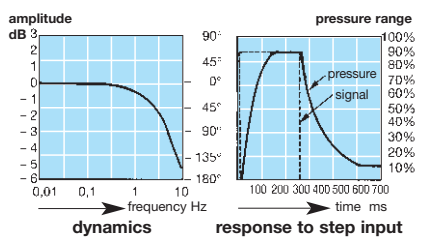


## Accuracy

<b>linearity</b>	0.15% FS	<b>reproducibility:</b>	0.02% FS
<b>hysteresis</b>	0.15% FS	<b>sensitivity:</b>	0.1 % FS
<b>accuracy</b>	0.2 % FS	<b>response time:</b>	10 ... 15 ms
<b>temperature influence</b>	0.01% at 0 ... 50 °C, 1% at 50 ... 70 °C ambient atmosphere		
<b>dynamics</b>	4.5 Hz critical frequency at 3 dB and 0.3 l volume		
<b>regulating time</b>	<math>< 2 \text{ s}</math> to fill 0.1 l volume to 90% of the initial pressure <math>< 40 \text{ s}</math> to fill 2.0 l volume to 90% of the initial pressure		

## Adjustment factory setting is recommended

<b>range</b>	The max. 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.
<b>zero</b>	The zero point can be increased by up to 20% of the final value, e.g. from 0 to 1.2 bar.



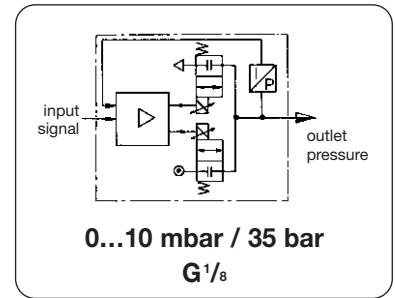
<b>For your information:</b>	1 bar: 14.8 psi	1 l/min: 0.035 scfm	1 mm: 0.039 inch
	1 psi: 0.069 bar	1 scfm: 28.3 l/min	1 inch: 25.4 mm

# Proportional Pressure Regulator with Single Loop 0.2% Accuracy PQ1

**Description** The pneumatic proportional valve 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 in to or out of the system. Accurate pressure is maintained by these two valves.

**Construction** 1/4" NPT female ports at both ends for supply pressure and outlet pressure. Calibration access and the connector for supply voltage and input signal on the top. Mounting bracket optional.

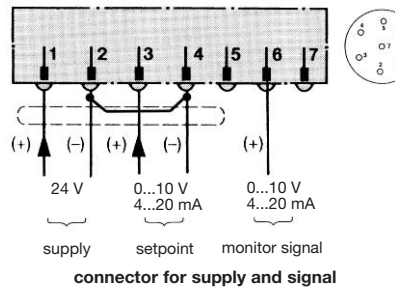
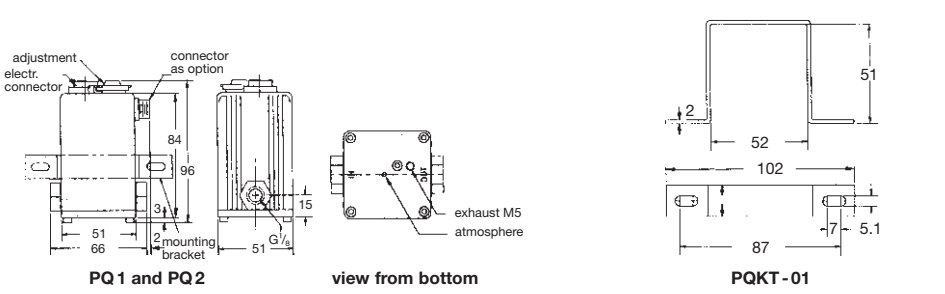


Dimensions			Accuracy	Supply pressure	Pressure range	Order number
H	W	D	% FS	max*2	bar	
mm	mm	mm				

Single loop, G <sup>1/8</sup>			signal and monitor signal 0 ... 10 V supply voltage 24 V DC, flow 35 l/min*1		PQ1				
96	67	51	5%	20 mbar	0 ... 10 mbar	PQ1EE-B1			
				40 mbar	0 ... 20 mbar	PQ1EE-B2			
			3%	100 mbar	0 ... 50 mbar	PQ1EE-B5			
				200 mbar	0 ... 100 mbar	PQ1EE-C1			
			0.8%	400 mbar	0 ... 200 mbar	PQ1EE-C2			
				800 mbar	0 ... 400 mbar	PQ1EE-C4			
			0.2%	1000 mbar	0 ... 600 mbar	PQ1EE-C6			
				96	67	51	0.2%	2 bar	0.2... 1 bar
			2 bar					0 ... 1 bar	PQ1EE-01
			3 bar				0 ... 2 bar	PQ1EE-02	
9 bar	0 ... 4 bar	PQ1EE-04							
9 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							
96	67	51	0.2%				0 bar	-1... 0 bar	PQ1EE-X0
				2 bar	-1... +1 bar	PQ1EE-X1			



Special options	add the appropriate letter	Accessories
4 ... 20 mA	input and monitor signal	IC PQ1IC-...
flow 100 l/min	high flow version	HF PQ1...HF
proportional inlet	stepless valve without digital increments of on/off solenoids	V PQ1...V
reverse acting	reverse outlet signal	A30 PQ1...A30
mounting at booster	including material and adjustment	A40 PQ1...A40
connector + cable	straight connector + 2.0 m cable	PRK-A2L
	angle connector + 2.0 m cable	PRK-C2L
mounting bracket		PQKT-01



\*1 at 7 bar supply pressure and 6 bar outlet pressure, 3 l/min regulated flow rate, 35 l/min with open outlet.      \*2 higher supply pressure on request

<b>For your information:</b>	1 bar: 14.8 psi 1 psi: 0.069 bar	1 l/min: 0.035 scfm 1 scfm: 28.3 l/min	1 mm: 0.039 inch 1 inch: 25.4 mm	<b>Technical data:</b> see previous page
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**Order example:**  
**PQ1EE-10**

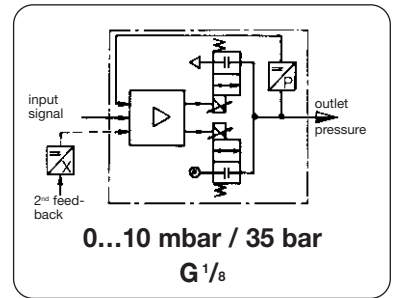
# Proportional Pressure Regulator with Second Loop 0.2% Accuracy **PQ2**

**Description** The pneumatic proportional valve 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 2<sup>nd</sup> 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 equilibrium. 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.

**Ext. press. transducer** An auxiliary electrical receptacle is integrated into the device for external feedback. If using PQ2 in conjunction with a volume booster, AirCom pressure transducers are ideal for the 2nd loop feedback signal.



Dimensions			Accuracy	Supply pressure	Pressure range	Order number
H	W	D	% FS	max*2	bar	
mm	mm	mm				

Double loop, G <sup>1/8</sup>			input signal and second loop 0 ... 10V flow 35 l/min*1, supply 24 V DC, with connector	PQ2		
96	67	51	5%	20 mbar	0... 10 mbar	PQ2EE - B1
			3%	40 mbar	0... 20 mbar	PQ2EE - B2
			1%	100 mbar	0... 50 mbar	PQ2EE - B5
			0.8%	200 mbar	0...100 mbar	PQ2EE - C1
			0.5%	400 mbar	0...200 mbar	PQ2EE - C2
			0.2%	800 mbar	0...400 mbar	PQ2EE - C4
96	67	51	0.2%	1000 mbar	0...600 mbar	PQ2EE - C6
			0.2%	2 bar	0.2... 1 bar	PQ2EE - E1
				2 bar	0... 1 bar	PQ2EE - 01
				3 bar	0... 2 bar	PQ2EE - 02
				9 bar	0... 4 bar	PQ2EE - 04
				9 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				
96	67	51	0.2%	38 bar	0... 25 bar	PQ2EE - 25
				38 bar	0... 30 bar	PQ2EE - 30
				38 bar	0... 35 bar	PQ2EE - 35
				0 bar	-1... 0 bar	PQ2EE - X0
				2 bar	-1... +1 bar	PQ2EE - X1

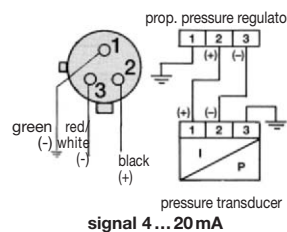
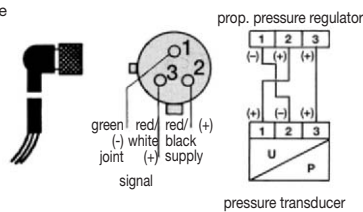
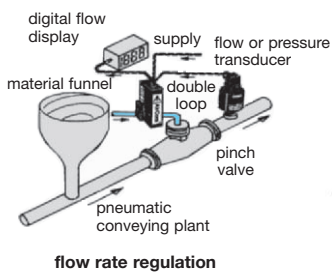


**Example:**  
booster with proportional valve and 2<sup>nd</sup> feedback via pressure transducer

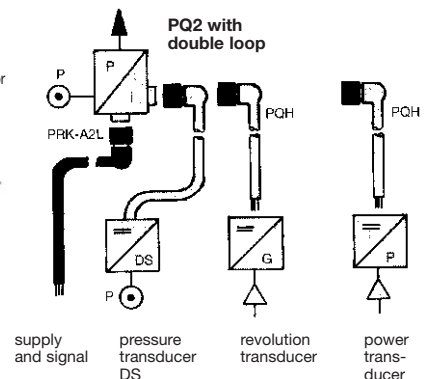
Special options	add the appropriate letter	Accessories	
4 ... 20 mA	input and monitor signal	IC	PQ2IC-..
flow 100 l/min	high flow version	HF	PQ2...HF
proportional inlet	stepless valve without digital increments of on/off solenoids	V	PQ2...V
reverse acting	reverse outlet signal	A30	PQ2...A30
mounting at booster	including material and adjustment	A40	PQ2...A40
connector and cable	straight connector + 0.9 m cable for 2 <sup>nd</sup> loop angle connector + 1.8 m cable for 2 <sup>nd</sup> loop	PQH-L1	
connector and cable	straight connector + 2.0 m cable for supply + signal angle connector + 2.0 m cable for supply + signal	PQH-L2	
		PRK-A2L	
		PRK-C2L	



**PRK-A2L PRK-C2L**  
connector with 2 m cable



**connector PQH23 for second feedback**



\*1 at 7 bar supply pressure and open outlet  
3 l/min regulated flow rate, 35 l/min open outlet.

\*2 higher supply pressure on request

<b>For your information:</b>	1 bar: 14.8 psi	1 l/min: 0.035 scfm	1 mm: 0.039 inch	<b>Technical data:</b>
	1 psi: 0.069 bar	1 scfm: 28.3 l/min	1 inch: 25.4 mm	see previous page

**Order example:**  
**PQ2EE - 10**