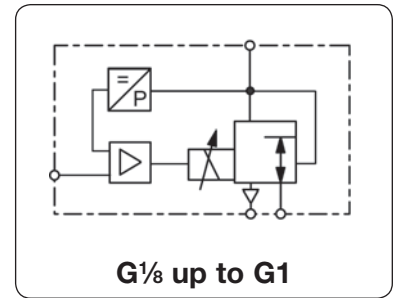


Description	The pneumatic proportional valve controls the outlet pressure in proportion to an electrical command input signal. It comprises a complete closed loop servo system in a compact monoblock assembly with proportional solenoid valve, electronic regulator and internal pressure transducer. In the process, the outlet pressure is transformed into a proportional electrical signal and compared with the input signal. If the outlet pressure exceeds the preset setpoint, the valve exhausts down to the pressure desired. The valve has no constant bleed. At absence of input signal or supply voltage the valve exhausts. The power supply of the setpoint potentiometer is provided by the proportional valve via connector pin number 5.
Pressure transducer	Open transducers: 100 mbar, 500 mbar, 1 bar and vacuum
Application examples	Proportional pressure regulators are being used for blowing machines, ultrasonic equipments, testing machines, painting systems, contouring systems, laser welding machines, textile machines, cheese presses, pneumatic brakes, clamping devices and medical engineering.



General technical features

Description	3-port/2-way valve with proportional magnet, integrated hybrid PCB and closed loop with pressure transducer in compact monoblock assembly.
Mounting position	any, preferably upright
Protection class	IP 54 with standard connector, IP 65 with special connector
Temperature range	0 °C up to 50 °C / 32 °F to 122 °F, high temperature version on request
Material	Body: brass (G ¹ / ₈) and aluminium (G ¹ / ₄ , G ¹ / ₂ u. G1) Inner valve: brass and SST Seals: NBR/Buna-N, on request EPDM or FKM FKM for 50 bar version

Pneumatic features

Media	dry, lubricated, unlubricated and 50 µm filtered compressed air or non-corrosive gases
Supply pressure	see chart, min. 10% above outlet pressure
Flow rate	see chart, at 7 bar inlet pressure and open outlet
Exhaust	same nominal size as on inlet valve, thus same relief capacity
Air consumption	without air consumption

Electrical features

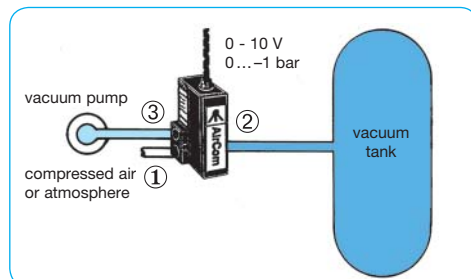
Supply voltage	24 V DC + 15% - 10%, residual ripple max. 10%
Power consumption	12 W at G ¹ / ₈ , 22 W at G ¹ / ₄ , 30 W at G ¹ / ₂ , 44 W at G1
Current consumption	0.5A at G ¹ / ₈ , 1.0A at G ¹ / ₄ , 1.25A at G ¹ / ₂ , 1.7A at G1
Command signal	0 ... 10 V, 0 ... 20 mA, 4 ... 20 mA, digital or Profibus DB rising curve as standard, optionally declining curve
Impedance	100 kΩ at voltage signal (0.1 mA current consumption) 500 Ω at current signal
Electrical connector	circular plug according to DIN 43651, 7-pin plug for analogue signal 16-pin plug for digital signal

Accuracy

Linearity / Hysteresis	< 1% FS
Response sensitivity	< 0.1% FS
Repeatability	< 0.1% FS
Over all accuracy	± 0.5%
Regulating time	< 1 s over the range, 70 ms at 10 to 90% or 90 to 10% of the range

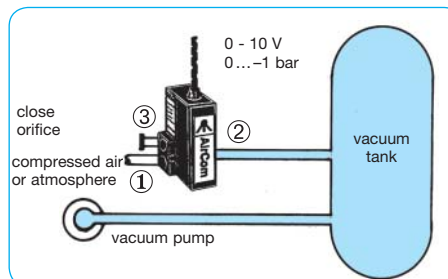
Adjustment

Zero point	calibration ± 10% FS via potentiometer P2
Range	calibration + 5% FS or -10% FS via potentiometer P1
Amplification	calibration 1:1 up to 1:10 via potentiometer P7



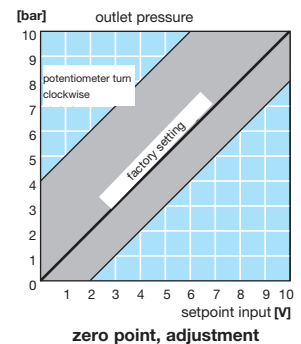
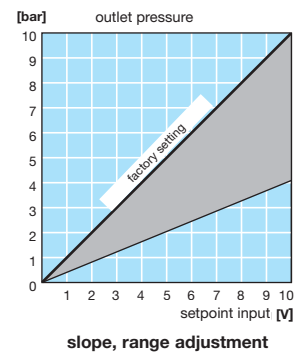
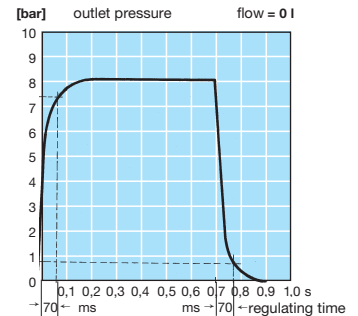
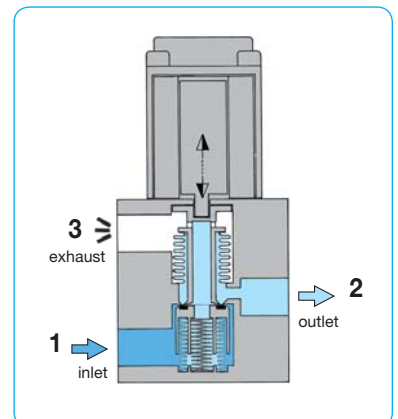
Downstream regulation (V1)

The vacuum pump saves energy and it is easy to fill the tank either with vacuum or pressure. A filter is recommended at orifice ①.

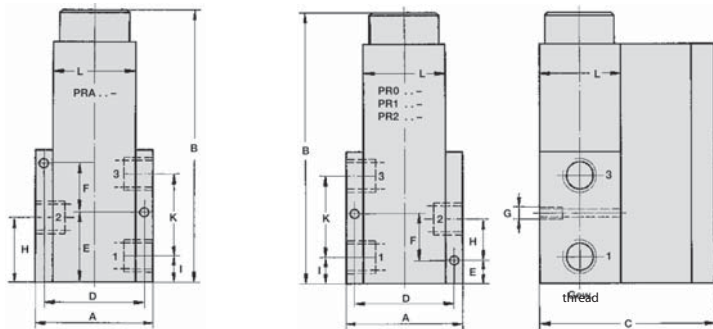


Upstream regulation (V2)

Upstream installation is preferred if rapid evacuation of a tank or system is required. A filter is recommended at orifice ①.



Dimensions and Connection Diagram "AirTronic"®



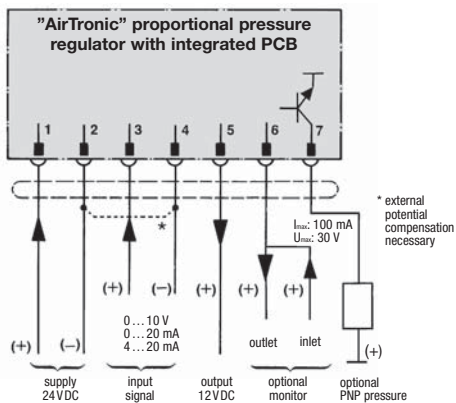
1: inlet
2: outlet
3: exhaust

Proport. regulator	thread	A	B	C	D	E
PRA ...	G 1/8	35	80	63	29	18
PR0 ...	G 1/4	52	105	74	43	10
PR1 ...	G 1/2	70	150	101	57.5	12
PR2 ...	G 1	96	190	115	79	15

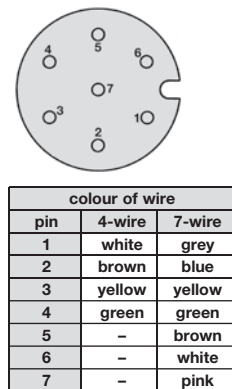
Proport. regulator	F	G	H	I	K	L
PRA ...	7	M 4	15	10	16.6	25
PR0 ...	20	M 4	16	11*	34	36
PR1 ...	28	M 6	23	15	48.5	45
PR2 ...	33	M 8	30	20	60	60

* 14 mm from 30 bar pressure range on

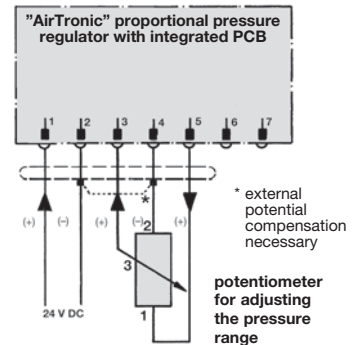
"AirTronic"® proportional pressure regulator with integrated PCB



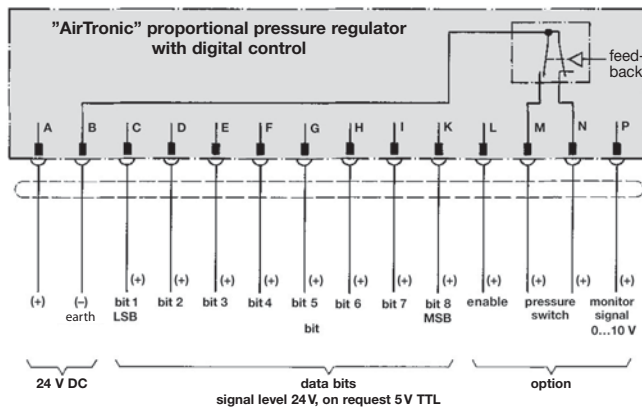
"AirTronic"® connection diagram



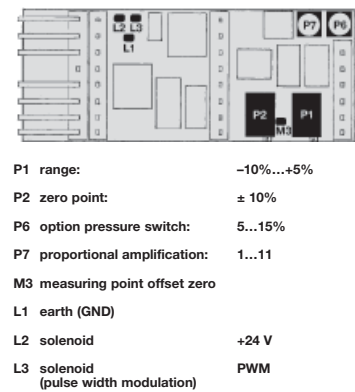
pin numbers seen from solder pin side



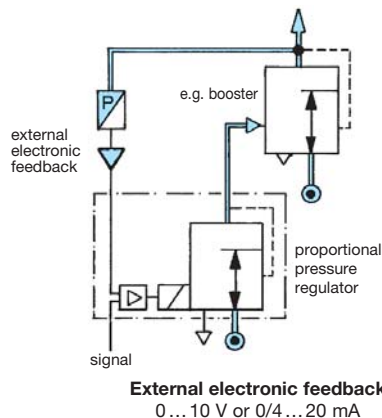
Connection diagram with potentiometer



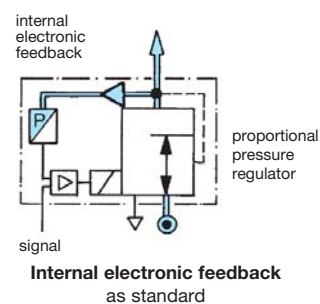
Connection diagram for digitally controlled proportional pressure regulator



Adjustment of the proportional regulator



External electronic feedback
0...10 V or 0/4...20 mA



Internal electronic feedback
as standard