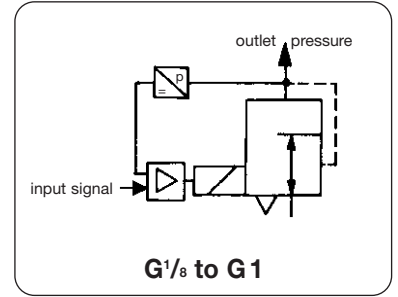


Description

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.

- very solid industrial system
- no air consumption in steady state
- high flow capacity
- fast and accurate
- excellent sensitivity
- exhaust and pressure orifices are of equal size
- immune to shock and vibration
- poppet construction for long life
- feedback signal analogue to outlet pressure
- zero and range adjustable
- plug-in electrical connector

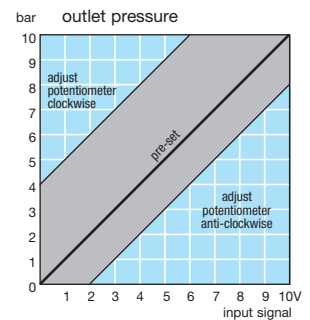
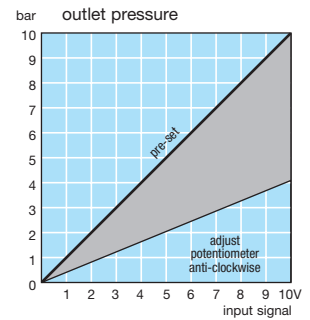
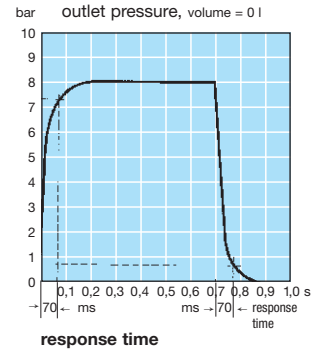


General features

description	3/2 way poppet valve with proportional magnet, integrated hybrid PCB and closed loop with pressure transducer in compact monoblock assembly	
temperature range	0 to 60 °C / 140 °F (50 °C / 122 °F for G ^{1/8}) fluid temperature 0 to 40 °C / 104 °F ambient temperature, higher temperature on request	
materials	Body G ^{1/8} : brass	Body G ^{1/4} to G1: aluminium Inner valve: stainless steel
mounting position	any	Seals G ^{1/8} : FPM/Viton Seals G ^{1/4} to G1: NBR (Buna N) and brass
		protection class: IP 54, IP65 with special connector

Pneumatic features

media	Lubricated or dry compressed air or neutral gases, CO ₂ as option filtered to 40 µm, without condensate	
supply pressure	max. 25 bar (G ^{1/8}), max. 55 bar (G ^{1/4}), max. 16 bar (G ^{1/2} and G1) at least 10% above required outlet pressure	
flow capacity	G ^{1/8} : 300 l/min / 10 scfm	G ^{1/4} : 1100 l/min / 38 scfm
	G ^{1/2} : 4000 l/min / 140 scfm	G1: 6800 l/min / 240 scfm
exhaust attention	Equivalent to the forward pressure flow If the proportional valve is controlled without or with excessively low supply pressure, the device will become inadmissibly hot!	



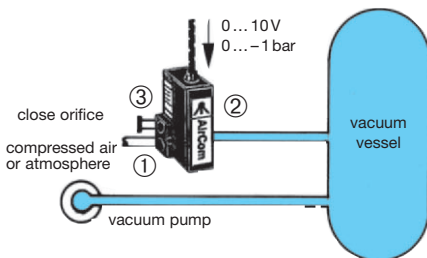
Electrical features

supply	24 V DC +15% - 10%, stabilised		
input signal	power consumption at G ^{1/8} : 12 W, G ^{1/4} : 22 W, G ^{1/2} : 30 W, G1: 40 W 0 to 10 V, 0/4 to 20 mA, digital 8 bit or profibus DP, interbus S etc. forward signal, reversible as option		
impedance	10 kΩ at 0 to 10 V, 1 mA current consumption 500 Ω at 4 to 20 mA		
connector	7-pin connector for analogue signal	plug-in connector	
	16-pin connector for digital signal	DIN 43650	

Accuracy and adjustment

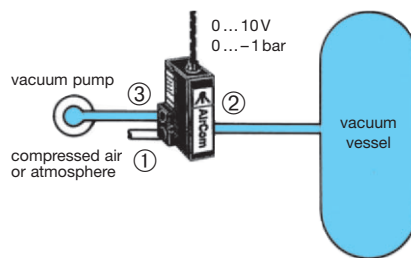
linearity	< 1% FS	repeatability:	< 0.1% FS
hysteresis	< 1% FS	resolution:	< 0.1% FS
response time	< 1s from 10 to 90% of outlet pressure into a 1 l load, 70 ms without load		
dynamic at 3dB	limit frequency 15 Hz (G ^{1/8}), 7 Hz (G ^{1/4}), 5 Hz (G ^{1/2}), 3 Hz (G1)		
range	adjustment + 5% FS or -10% FS		
zero	adjustment ± 10% FS		
amplification	adjustment 1:1 up to 1:10		

Vacuum regulation



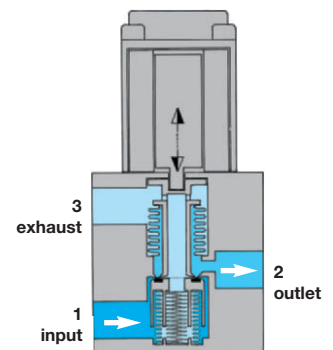
Upstream regulation (V2)

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



Downstream regulation (V1)

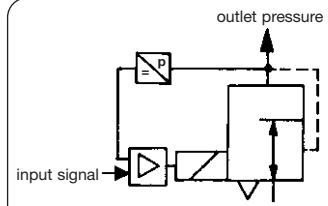
The vacuum pump saves energy and it is easy to fill the vessel either with vacuum or pressure. A filter is recommended at orifice ①.



For your information:	1 bar: 14.8 psi	1 l/min: 0.035 scfm	1 mm: 0.039 inch	Pressure gauge: Please consult chapter "Gauges"
	1 psi: 0.069 bar	1 scfm: 28.3 l/min	1 inch: 25.4 mm	

Technical features

Pressure range	10 to 100 mbar/1.4 psi up to 1 to 50 bar/740 psi	Linearity	< 0.5% / 1% FS
Input signal	0 to 10 V, 0/4 to 20 mA, digital, profi-interbus etc.	Hysteresis	< 0.5% / 1% FS
Feedback signal	0 to 10 V, 0 to 20 mA, 4 to 20 mA	Sensitivity	< 0.1% FS
Flow capacity	300 l/min/10 scfm up to 6800 l/min / 240 scfm	Repeatability	< 0.1% FS
Exhaust capacity	equivalent to forward flow capacity	Response	70 ms / 1 s
Current consumption	1 mA at 10 V control signal	Power consumption	12 / 22 / 30 / 40 W
Pressure sensors	100/500 mbar, 1/5/10/16/20/50 bar	Air consumption	no constant bleed



G 1/8 to G 1
100 mbar to 50 bar

Dimensions			Nominal	K _v -	Flow	Connection	Supply	Pressure	Order
H	W	D	value	value	rate	thread	pressure	range	number
mm	mm	mm	DN	(m³/h)	l/min*1	G	max. bar	bar	

AirTronic® proportional valve

signal 0 to 10 V
supply voltage 24 V DC

PR

80	35	63	3	0.2	250	G 1/8	0.5	0... 0.1	PRA00-A100
								0... 0.5	PRA00-A500
								0... 1	PRA00-0100
								0... 6	PRA00-0600
								0...10	PRA00-1000
114	52	74	6	0.6	820	G 1/4	0.5	0... 0.1	PR000-A100
								0... 0.5	PR000-A500
								0... 1	PR000-0100
								0... 6	PR000-0600
								0...10	PR000-1000
150	70	101	12	1.2	1700	G 1/2	3	0... 1	PR100-0100
								0... 6	PR100-0600
								0...10	PR100-1000
								0...12	PR100-1200
								0...20	PR100-2000
190	96	115	20	4.8	6500	G 1	3	0... 1	PR200-0100
								0... 6	PR200-0600
								0...10	PR200-1000
								0...12	PR200-1200
								0...20	PR200-2000



proportional pressure regulator
PRA00-1000



proportional pressure regulator
PR100-1000



proportional pressure regulator with booster
PRA00-1000 and R119-16J



PRK-A PRK-C
connector with cable

Special options

add or change the appropriate letter or number

input signal	0...20 mA		
	4...20 mA		
	8 bit digital with hold		
	profibus DP 8	> G 1/4	interbus S
feedback signal	0...10 V		
	0...20 mA		
	4...20 mA		
ext. feedback signal	0...10 V 4	0...20 mA 5	4...20 mA
special adjustment	indicate on order		
DIN rail clips	for mounting on DIN rail		
connector IP 65	environment protection		
stainless steel	EPDM, FDA authorized, only G 1/4		
brass body	body only		
for vacuum	downstream regulation		
for vacuum	upstream regulation		
for oxygen	clean		
pressure switch	NPN*2 electronic outlet		
ext. pneum. feedback	G 1/4	G 1/2	G 1
enable function	with digital command signal		
with ramp	0.2 to 10s, on request 20s		
for absolute pressure			
for helium / hydrogen	max. 10 bar, not intrinsically safe only PR0		
straight connector	with 2 m cable, 7-wire, 0.14 Ø		
straight connector IP 65	with 2 m cable, 7-wire, 0.14 Ø		
angle connector	with 2 m cable, 7-wire, 0.14 Ø		
other cable lengths	indicate on order		

Accessories

1	PR..1-....
2	PR..2-....
3	PR..3-....
7	PR..7-....
1	PR.1-....
2	PR.2-....
3	PR.3-....
6	PR.6-....
Y0	PR...-Y0..
0C	PR...-0C
06	PR...-06
SS	PR0...-SS
19	PR...-19
V1	PR...-V1
V2	PR...-V2
18	PR...-18
09	PR...-09
04	PR...-04
15	PR...-15
20	PR...-20
0A	PR...-0A
0W	PR...-0W
PRK-A2L	
PRK-I2L	
PRK-C2L	
PRK-...	

*1 at 7 bar supply pressure and open outlet

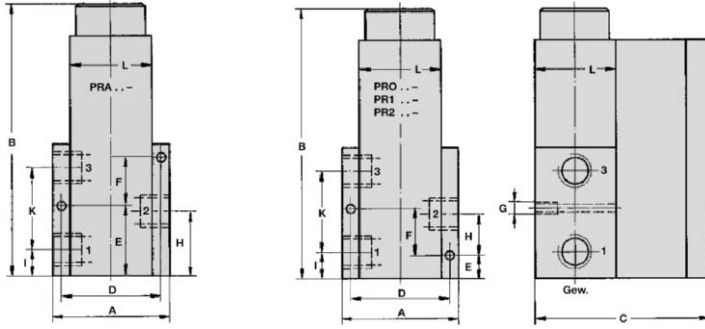
*2 Signal of pressure switch when nominal value agrees with actual value, within a tolerance range of 5% - 15%.
Example: A 10 bar device has a tolerance range of 5% = 0.5 bar. With a set outlet pressure of 6 bar, the pressure switch transmits a signal between 5.5 and 6.5 bar.

For your information:	1 bar: 14.8 psi	1 l/min: 0.035 scfm	1 mm: 0.039 inch	Pressure gauge: Please consult chapter "Gauges"
	1 psi: 0.069 bar	1 scfm: 28.3 l/min	1 inch: 25.4 mm	



Order example:
PR000-1000

Dimensions and Connecting Plan for "AirTronic" Proportional Regulator



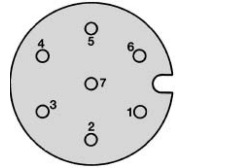
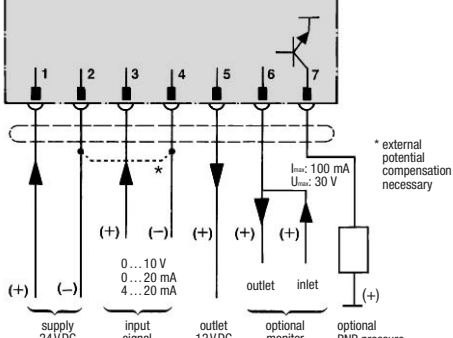
proport.-regul.	thread	A	B	C	D	E
PRA...-	G 1/8	35	80	63	29	18
PR0...-	G 1/4	52	114	74	43	10
PR1...-	G 1/2	70	150	101	57.5	12
PR2...-	G 1	96	190	115	79	15

proport.-regul.	F	G	H	I	K	L
PRA...-	7	M 4	15	10	16,6	25
PR0...-	20	M 5	17	11*	34	35
PR1...-	28	M 6	23	15	48,5	45
PR2...-	33	M 8	30	20	60	60

* 14 mm > 30 bar

"AirTronic" proportional pressure regulator with integrated PCB

"AirTronic" proportional pressure regulator with integrated PCB

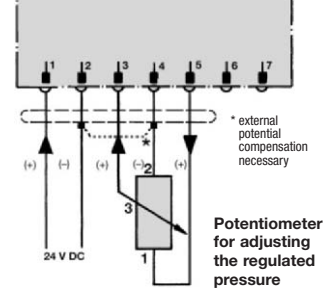


colour of wire		
pin	4-wire	7-wire
1	white	grey
2	brown	blue
3	yellow	yellow
4	green	green
5	-	brown
6	-	white
7	-	pink

pin numbers seen from solder pin side

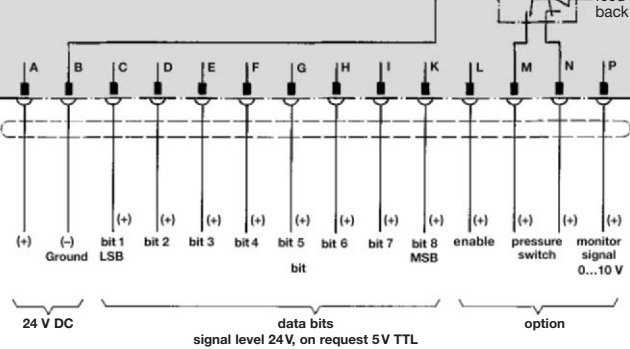
"AirTronic" connecting plan

"AirTronic" proportional pressure regulator with integrated PCB

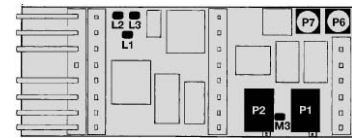


Connecting plan with potentiometer

"AirTronic" proportional pressure regulator with digital control

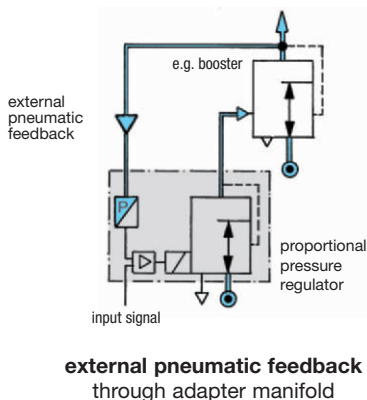


Connecting plan for digitally controlled proportional pressure regulator

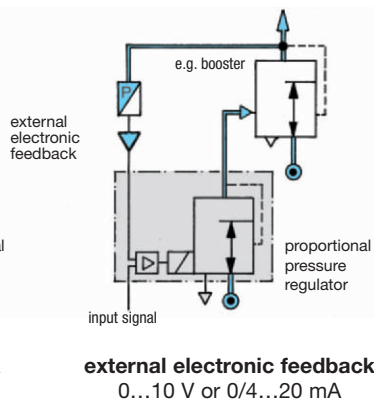


- P1: range: -10%...+5%
- P2: zero: ± 10%
- P6: option PNP press. switch: 5...15%
- P7: proportional amplifying: 1...11
- M3: measuring point offset zero
- L1: GND ground
- L2: solenoid +24 V
- L3: solenoid (pulse width modulation) PWM

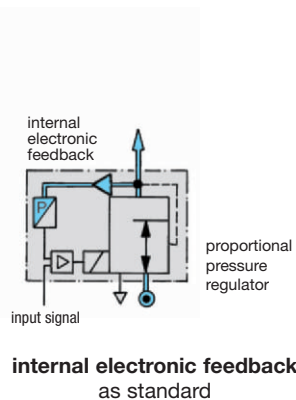
Adjustment of the proportional regulator



external pneumatic feedback through adapter manifold



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



internal electronic feedback as standard