

EPR 50



ELECTRONIC PRESSURE REGULATOR
PNEUMATIC DIVISION

MATRIX
mechatronics

EPR 50 - ELECTRONIC PRESSURE REGULATOR

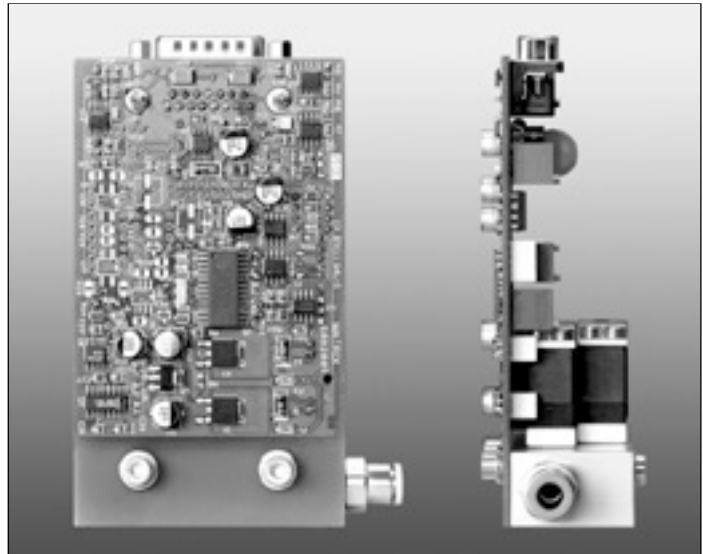
The EPR 50 is a closed loop, panel mounting, electronic pressure regulator able to convert a variable analog or digital input signal (current, voltage, RS-232) into a proportional pneumatic output and maintain with precision a required downstream pressure. Equipped with an 8 bit microcontroller, it can process signals and commands, carry out complex functions and easily interface with other control/monitor systems via serial RS-232, perfectly integrating in applications which had required more elaborate and expensive systems up till now.

The compact and functional design, overall performances and reliability make for an effortless integration in any advanced pneumatic system that requires an active component quickly adaptable to any specific requirements.

The input signal, which may be analog (0-5 V, 0-10 V, 4-20 mA) or digital (serial RS-232), is processed by the microcontroller and converted into a proportional pressure output by using PWM (Pulse Width Modulation) controlled high-speed solenoid valves for feed and exhaust functions.

An integrated pressure sensor continuously monitors the output pressure of the EPR 50 providing a feedback to the controller that compares this value to the desired setpoint, which is set by the input signal. Thus any variation of the output pressure can be quickly and precisely compensated in order to maintain the requested downstream pressure. This closed loop system has a reaction time of less than 5 ms. In addition, the EPR 50 may supply an analog output (0-7 V) in proportion to the downstream pressure (0-7 bar).

When combined with an external volume booster (power stage), the EPR 50 operates as a proportional pilot-valve guaranteeing extremely fast response times and high precision even at higher flow rate levels.



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TYPICAL APPLICATIONS

The EPR 50 may normally be used in any advanced industrial application which requires to quickly adjust and maintain with precision a pressure value setting in order to easily manage complex processes or functions. These include positioning, tensioning, movement, speed and force control in robotic equipments, tensioning systems, testing devices, winding devices, dispensing systems, welding equipments, clamping devices, etc. within food, automotive, textile, paper, packaging and machine tools industries.

FEATURES

- Competitive performance/price ratio
- Compact size and lightweight, designed for panel mounting
- Very fast response times for a precise and reliable output pressure regulation
- Quickly adaptable to any specific requirement with programmable configuration
- Low power consumption. No air consumption in steady condition
- Remote control through serial RS-232

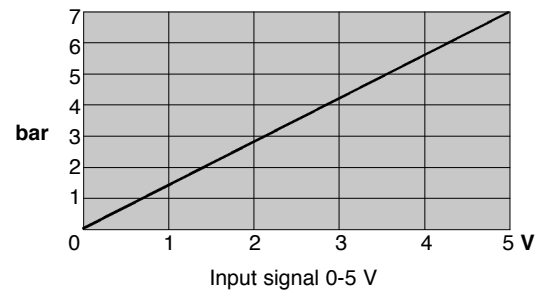


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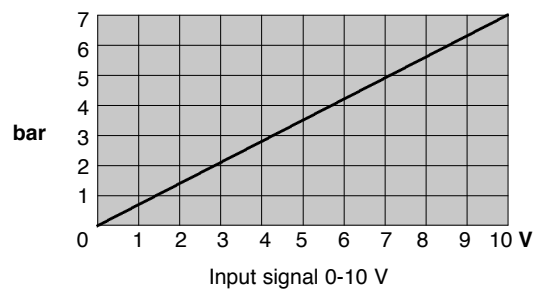
GENERAL CHARACTERISTICS

Dimensions	- 118 x 64 x 40 mm ⁽¹⁾
Weight	- 200 g
Protection ratio	- N/A
Pneumatic connections	- G 1/8
Operating temperature	- -10 to +50 C°
Handled fluid	- Filtered, non-lubricated and dry air
Filtration ratio	- 20 µ
Supply voltage	- 24 Vdc ± 10%
Maximum power consumption	- 2 W
Maximum flow rate	- 60 NI/min @ 6 bar
Reaction time	- < 5 ms
Response time (*)	- 60 ms ⁽²⁾ - 100 ms ⁽³⁾
Sensibility	- < 0,5 % F.S.
Linearity	- < 0,5 % F.S.
Hysteresis	- < 0,5 % F.S.
Repeatability	- < 0,5 % F.S.
<i>(*)</i> Volume 30 cm ³ • @ P = 8 bar • <i>(1)</i> without fittings • <i>(2)</i> from 2 to 4 bar (rise time) • <i>(3)</i> from 4 to 2 bar (fall time)	

Outlet pressure according to the analog voltage signal

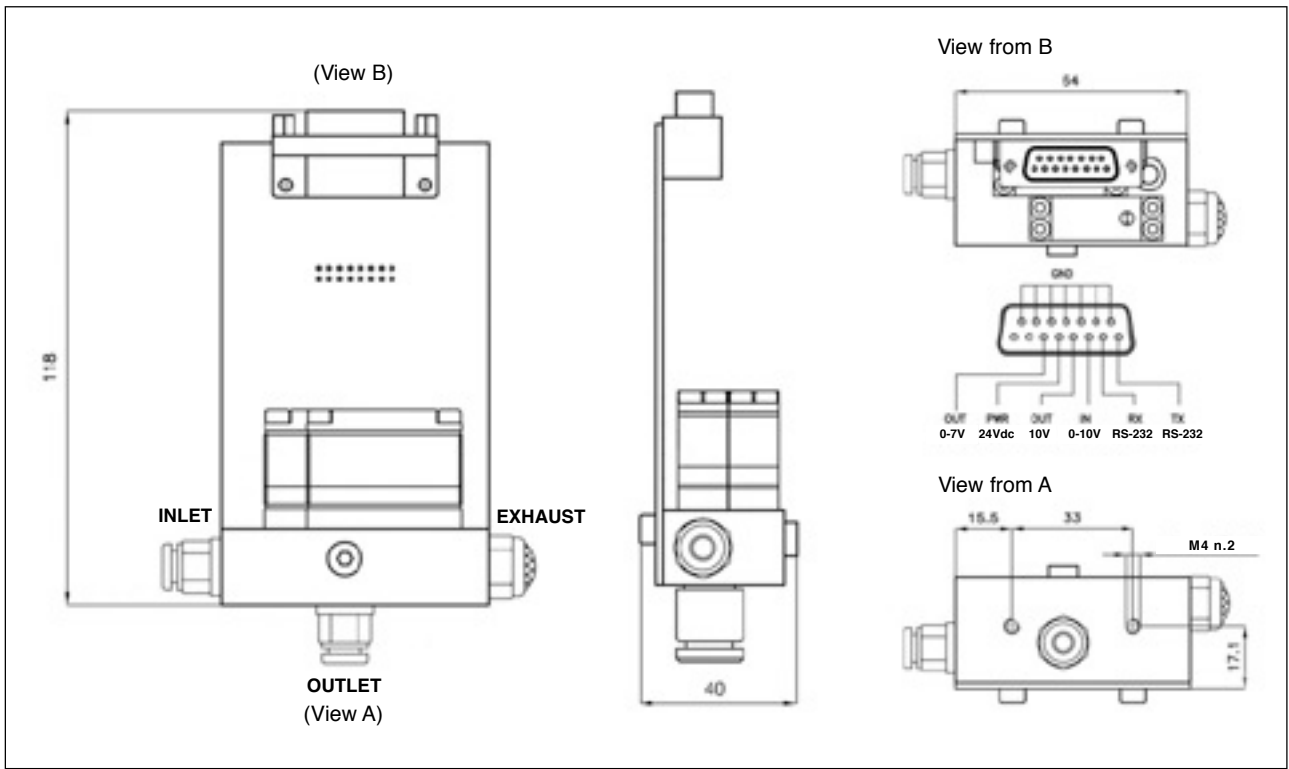


Outlet pressure according to the analog voltage signal



IDENTIFICATION CODE

E	P	R	0	0	5	0	A	0	0	0	0	
INLET PRESSURE RANGE												
0 1-8 bar												
1 1-16 bar												
ELECTRICAL CONNECTION TYPE												
0 D-Sub 15 poles male												
SUBPLATE TYPE												
0 Standard												
OUTLET PRESSURE RANGE (REGULATED)												
0 0-7 bar												
3 0-12 bar (1-16 bar inlet pressure range only)												
6 0-5 bar												
INPUT TYPE												
0 0-5 Vdc, 0-10 Vdc, RS-232												
1 0-5 Vdc, 0-10 Vdc, RS-232, 4-20 mA												



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