Electro-Pneumatic Regulating Valve

Pressure control valves ND 3, M14x1.5, analogue actuation

Rexroth
Bosch Group

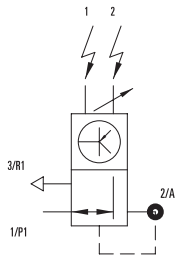
Technical data

Type		Poppet valve
Operating pressure		max. 8 bar *
Output pressure		0 ... 6 bar
Hysteresis		0.02 bar
Nominal flow	Qn	300 Nl/min.
At supply pressure = 7 bar Output pressure = 6 bar and Δp = 0,2 bar		
Ambient temperature range		-20° bis + 60° C
Admissible medium		Condensate-free and non-lubricated compressed air, filtered 50 µm
Weight		3.0 kg
Materials	Housing / Seals	Al-diecasting / NBR
Supply voltage		DC 24 V ± 20 %
Admissible ripple		5%
Current consumption max.		0.3 A
Protection with plug		IP 65 according to DIN VDE 0470
Assembly position		Vertical
Strength of vibration		4g / 2...100Hz

Application Area

Electro-pneumatic pressure control valves convert an electrical signal (current, voltage, resistance) proportionally into pneumatic pressure. They are used where electrical control is required to act directly on a change of pressure or force.

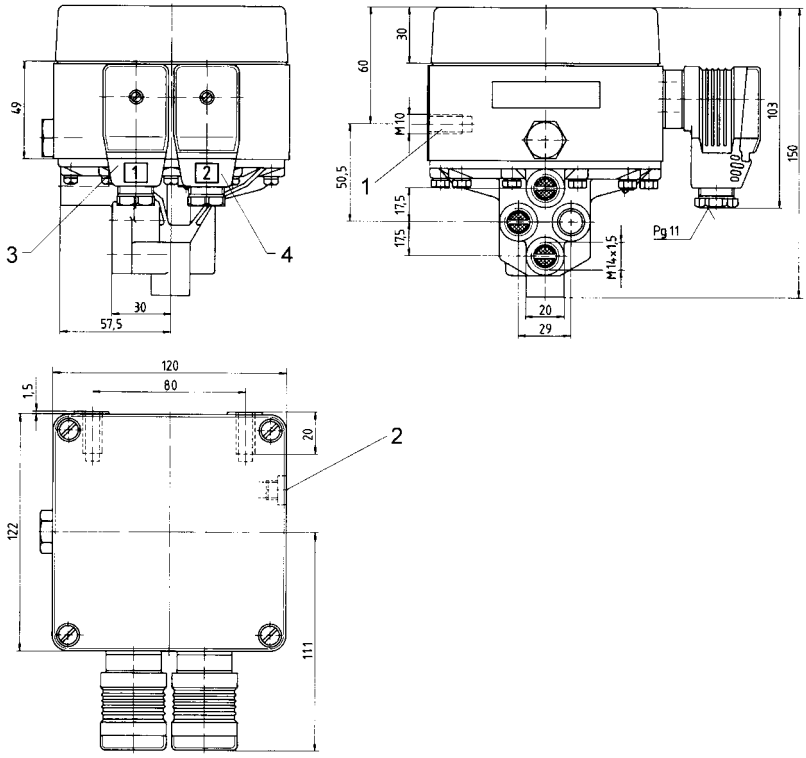
Type number

	Nominal input value **	Nominal input value ** alternative	Type number
	4 - 20 mA 0 - 10 V DC 2 - 10 kOhm	0 - 20 mA 2 - 10 V DC	**346 056 550 0**

*Min. supply pressure: 0.5 bar + max. required output pressure
** Adjusting of characteristic line by means of switch "S" on the electronic card. 4 - 20 mA characteristic line adjusted ex works.

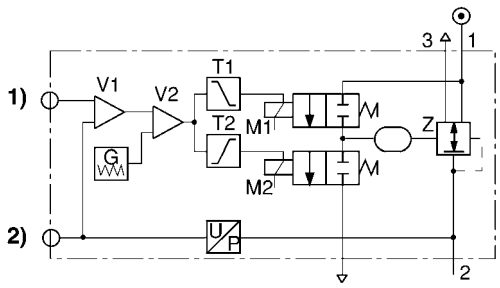
Accessories (to be ordered separately)

	Spare part	Type number
	Electronic card	**546 007 681 2**
	Pressure converter	**894 045 012 2**
	Repair kit (pneumatic part)	**346 056 001 2**



1) Mounting thread
2) Loosen plug screw to clean filter
3) Plug 1
4) Plug 2

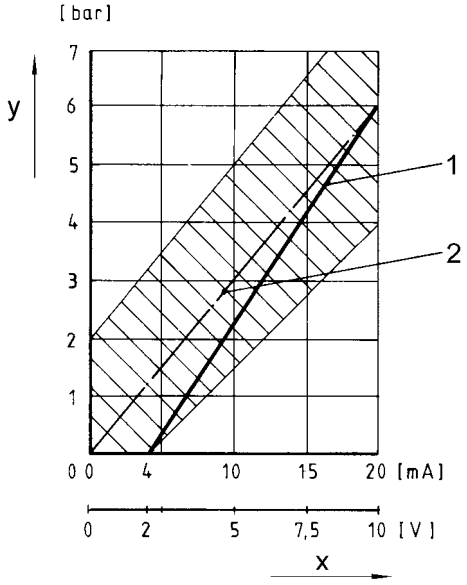
Functional diagram



1) Nominal input value
2) Actual output value

The E/P pressure control valve modulates pressure corresponding to an analogue electrical nominal input value. The integrated electronics make a comparison between the nominal value and the pressure in the working line (actual value), which is measured by a piezo-resistive pressure sensor. The controller generates electrical positioning signals, which either charge or vent control area Z of the relay valve by means of two pilot valves (M 1, M 2) in order to obtain the required pressure in the working line.

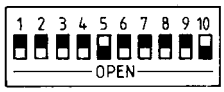
Characteristic line



x) Input current or input voltage, y) Energized pressure
1) Characteristic line 1, 2) Characteristic line 2

Switch position and pin assignment for current-activation

Abb. 1/Fig. 1



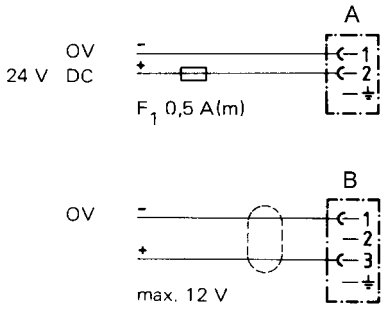
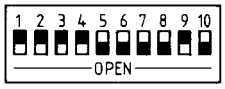
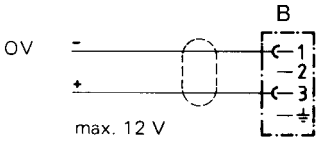


Abb. 2/Fig. 2

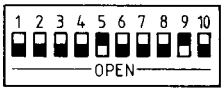




1) Supply voltage 2) Nominal input current (Ohmic load 100 Ω max. 50mA; max. 12 V; to plug 1; pin 1)
3) Actual output value (Max. total resistance of downstream devices < 300 Ω.
The actual value is measured between plug 2, pin 3 and plug 1, pin 1. The actual value is short circuit resistant for a limited time.)
4) The supply voltage must be protected by an external M 0.5 A fuse.
5) Shielding must comply with local limiting conditions. In extreme cases the power supply must also be shielded.
A) Plug 1 B) Plug 2
Fig. 1: Delivery status 4 - 20 mA, Fig. 2: Alternative 0 - 20 mA

Switch position and pin assignment for voltage activation

Abb. 1/Fig. 1



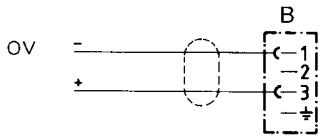
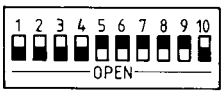
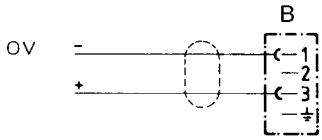


Abb. 2/Fig. 2

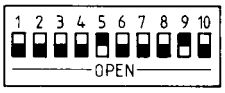


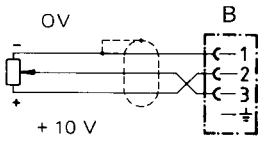


To ensure the EMV plug 2 (B) has to be connected through a screened cable.
Fig. 1: Voltage control 0 - 10 V, Fig. 2: Voltage control 2 - 10 V

Switch position and pin assignment for potentiometer activation

Abb. 1/Fig. 1





To ensure the EMV plug 2 has to be connected through a screened cable.
Fig. 1: Potentiometer activation 2 - 10 k Ohm
B) Plug 2