

Electro-Pneumatic Devices Valves and Positioners



E/P Pressure control valves

E/P Pressure control valve, Series ED05

Proportional solenoid, VDS link



Technical Data

Type		Poppet valve
Supply pressure	max.	11 bar (160psi)
Output pressure		see table
Hysteresis		< 0,06 bar (<1 psi)
Nominal flow rate	Q _n	1000 l/min (35.3 SCFM)
at supply pressure = 7 bar (102 psi), at output pressure = 6 bar (87 psi), and pressure drop Δp = 0,2 bar (3 psi)		
Ambient temperature range	min./max.	0 °C / +70 °C (+32 °F / +158 °F)
Medium		Condensate-free and non-lubricated compressed air, filtered 50 μm
Weight		1,1 kg (2.425 lbs)
Materials	Body Seals	Zn-diecasting, Al, POM, chromated steel NBR (Nitrile Butadien Rubber)
Supply voltage		24 V DC ± 20 %
Permissible ripple		5 %
Current consumption		1,3 A
Resolution		10 bit (0.1 bar (1 psi) - 1 bit)
Length code		16 bit input and output
Protection with plug		IP 55 to IEC 529 (DIN VDE 0470) IP 65 (NEMA 4) optional
Installation position		optional, if condensate-free and non lubricated compressed air is guaranteed, otherwise see drawing



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.

Part no.

Supply pressure min./max. [bar] (psi)	Output pressure min./max. [bar] (psi)	Part no.	Manual no.
10 / 12 (145 / 172)	0 / 10 (0 / 145)	5610141540	8858903883

Accessories (to be ordered separately)

Accessory	Part no.	Type
Silencer G1/4	1827000001	
Subbase single	5610141002	incl. screws and sealings
Subbase double	5610141012	incl. screws and sealings
Subbase triple	5610141022	incl. screws and sealings
Connection cable 300 mm (1.0 ft.)	8946202852	VDS
Connection cable 500 mm (1.6 ft.)	8946202802	VDS
Connection cable 1000 mm (3.3 ft.)	8946202812	VDS
Connection cable 2000 mm (6.6 ft.)	8946202822	VDS
Connection cable 5000 mm (16.4 ft.)	8946202832	VDS
Connection cable 10000 mm (32.8 ft.)	8946202842	VDS
Connection MiniDin - M12 1000 mm (3.3 ft.)	5460424342	VDS
Plug 24 V, M12 4-pole female	8941054324	straight
Plug 24 V, M12 4-pole female	8941054424	angled

For bus modules and cables see bus sections of this chapter

- 1 = Brown
- 2 = White
- 3 = Blue
- 4 = Black
- 5 = Grey



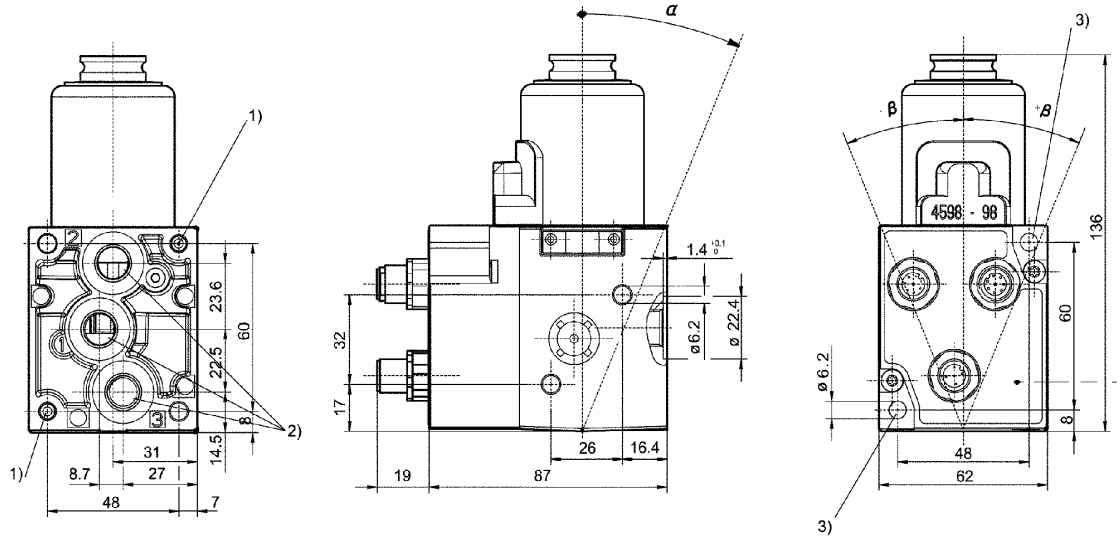
Standard Rexroth 12mm connection cable pin-out

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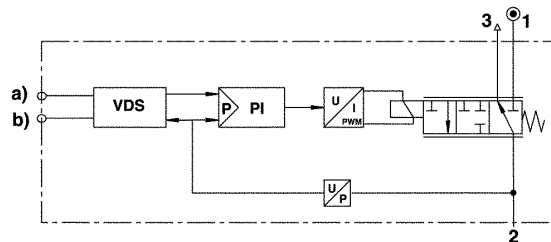
Drawing



- 1) Core hole 15 deep for automatic ridge screws M6
 - 2) Universal threaded connection, suitable for G1/4 to ISO 228/1 and 1/4-27 NPTF
 - 3) Through hole
- Fitting position: $\alpha = 0 \dots 90^\circ$
 $\pm \beta = 0 \dots 90^\circ$

G ports are to ISO 1179-1 with ISO 228-1 threads.

Functional diagram



- a) Nominal input value.
- b) Actual output value.

The VDS E/P pressure control valve modulates the pressure corresponding to a digital electrical nominal input value (10 bit). The integrated electronics make a comparison between the nominal input value and the pressure in the output line (actual value), which is measured by a piezo-resistive pressure sensor. The controller generates a setting, which is controlled by a voltage/current converter and a proportional solenoid, in order to obtain the required pressure.