

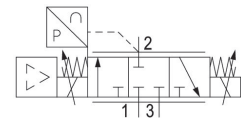
ED12 series proportional pressure regulator, 2 x M12

R414009576

Series
ED12

2025-05-09

- Robust poppet valve technology
- Very high control precision and dynamics
- Suitable for a wide range of applications
- High air flow rates
- ED12 supports different types of connectivity from Analog Version to Fieldbus connection via EtherCAT



AVENTICS ED12 Dynamic Direct Acting Pressure Regulator

The AVENTICS ED12 direct acting pressure regulator offers proportional pressurization and the exhaust valves are controlled separately to deliver dynamic control for the most demanding applications.

Technical data

Type	Potentiometer control without actual output value
Control	Directly controlled
Control	Analog
Function	Air exhaust
Output signal	constant voltage Switch output
Operational voltage DC	24 V
Max. current consumption	1400 mA
Nominal input value	0 ... 10 V
Min. regulation range	0 bar
Max. regulation range	6 bar
Min. working pressure	0.5 bar
Max. working pressure	8 bar
Hysteresis	< 0,03 bar
Medium	Compressed air
Nominal flow Qn	2600 l/min
Min. ambient temperature	5 °C
Max. ambient temperature	50 °C
Min. medium temperature	5 °C
Max. medium temperature	50 °C
Protection class	IP65
Permissible ripple	5%
Max. particle size	50 µm
Min. oil content of compressed air	0 mg/m³
Max. oil content of compressed air	1 mg/m³
Type	Poppet valve
Mounting orientation	$\alpha = 0 \dots 90^\circ \pm \beta = 0 \dots 90^\circ$
Certificates	CE declaration of conformity

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Electrical connection type	Plug
Electrical connection size	M12
Electrical connection number of poles	5-pin
Signal connection	input and output
Signal connection	Socket
Signal connection	M12
Signal connection	5-pin
Industry	Industrial
Weight	2.3 kg

Material

Housing material	Aluminum Steel, chrome-plated
Seal material	Hydrogenated acrylonitrile butadiene rubber
Part No.	R414009576

Technical information

With oil-free, dry air, other installation positions are possible on request.

Nominal flow Q_n with working pressure 7 bar, with secondary pressure 6 bar and $\Delta p = 0.2$ bar

The protection class is only ensured when the plug is mounted properly. For detailed information, see operating instructions.

Minimum working pressure = 0.5 bar + max. required secondary pressure

The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in <https://www.emerson.com/en-us/support>).

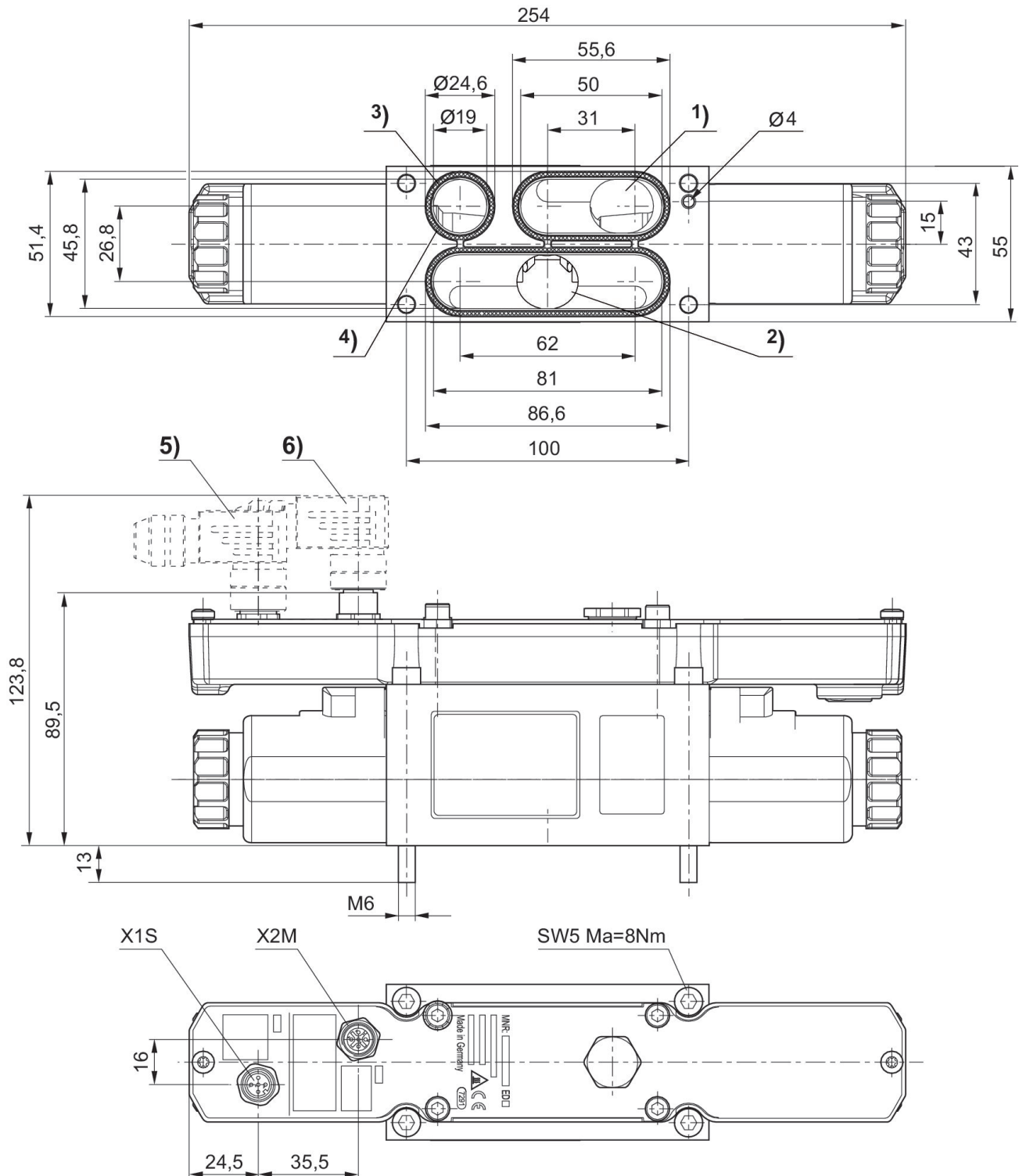
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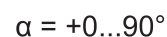
Dimensions



1) Operating pressure 2) Working pressure 3) Exhaust 4) Seal (not assembled) 5) + 6) Accessories not supplied

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$$\beta = \pm 0 \dots 90^\circ$$


The diagram illustrates a closed-loop control system for a two-motor drive. A 24V DC source is connected to a 24V block, which provides power to the system. The system includes a CONTROLLER block. The feedback loop consists of three sensors: a) a current sensor (A/D) measuring the current in the first motor branch, b) a current sensor (A/D) measuring the current in the second motor branch, and c) a position sensor (I) measuring the position of the second motor. The CONTROLLER block outputs control signals to two motor branches. Each branch consists of a voltage-to-current (U/I) converter, a motor (represented by a trapezoid with an upward arrow), and a load resistor. The output of the second motor branch is connected to a position-to-voltage (U/P) converter, which provides the feedback signal to the CONTROLLER. The system is connected to a three-phase supply (1, 2, 3) via a switch.

- 1) Operating pressure
- 2) Working pressure
- 3) Exhaust

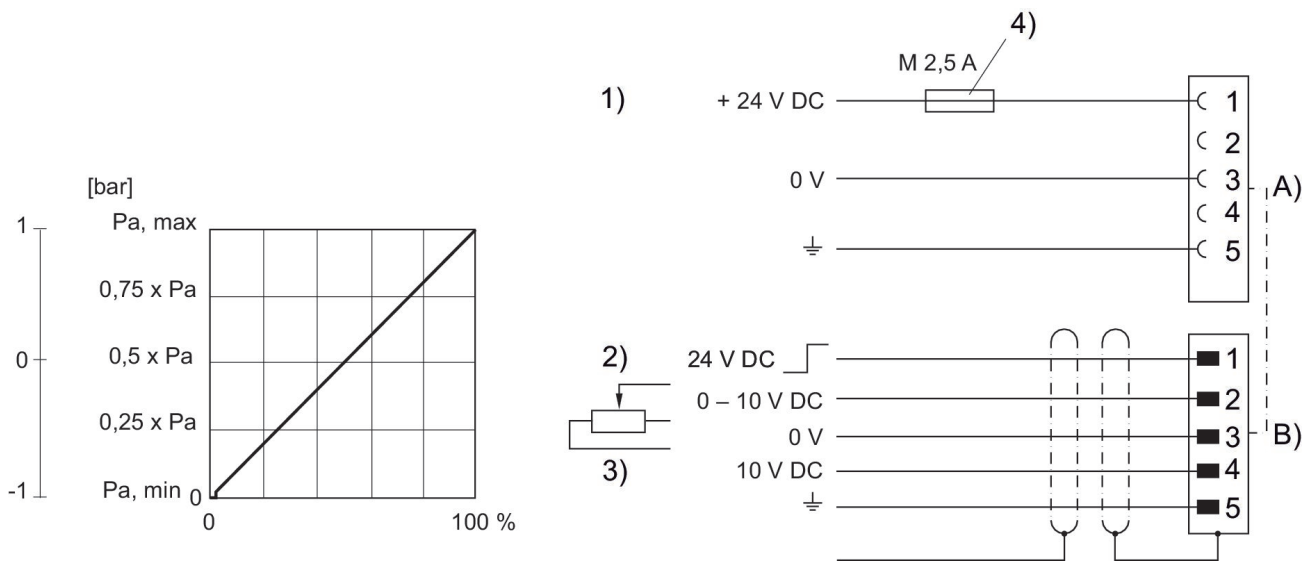
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Characteristic and pin assignment for potentiometer control without actual output value



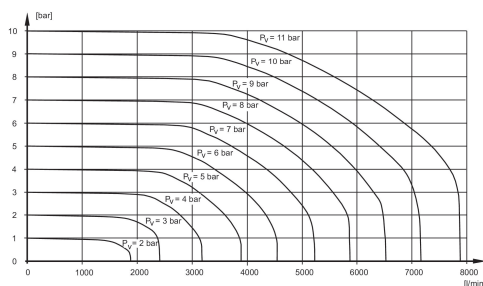
1) Supply Voltage

2) Switch output (pin 1) and nominal value (pin 2) are related to 0 V.

3) Potentiometer control (min. 0-2 kΩ, max. 0-10 kΩ)

4) The operating voltage must be protected by an external M 2.5 A fuse. Connect plug X2M via a shielded cable to ensure EMC. A) Plug X1S B) Plug X2M

Durchflussdiagramm für
Druckbereich bis 10 bar



Pv = Supply pressure