

ED12 series proportional pressure regulator, 1 x M12

R414009571

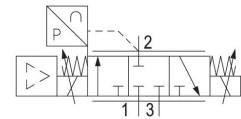
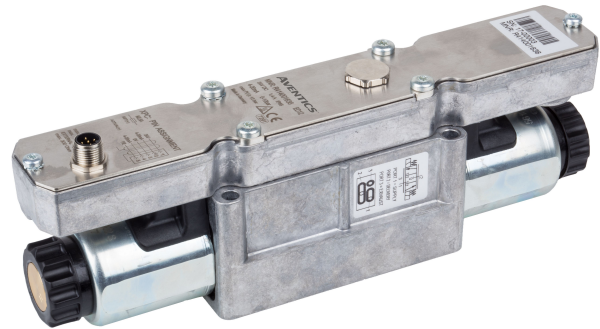
Series
ED12

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	Current control with actual output value
Control	Directly controlled
Control	Analog
Function	Air exhaust
Operational voltage DC	24 V
Max. current consumption	1400 mA
Actual output value	4 ... 20 mA
Nominal input value	4 ... 20 mA
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

ED12 series proportional pressure regulator, 1 x M12

R414009571

Series
ED12

2025-05-09

Protection class	IP65
Permissible ripple	5%
Max. particle size	50 µm
Min. oil content of compressed air	0 mg/m ³
Max. oil content of compressed air	1 mg/m ³
Type	Poppet valve
Mounting orientation	$\alpha = 0 \dots 90^\circ \pm \beta = 0 \dots 90^\circ$
Certificates	CE declaration of conformity
Electrical connection size	via signal connection
Signal connection	input and output
Signal connection	Plug
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.	R414009571

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.

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>).

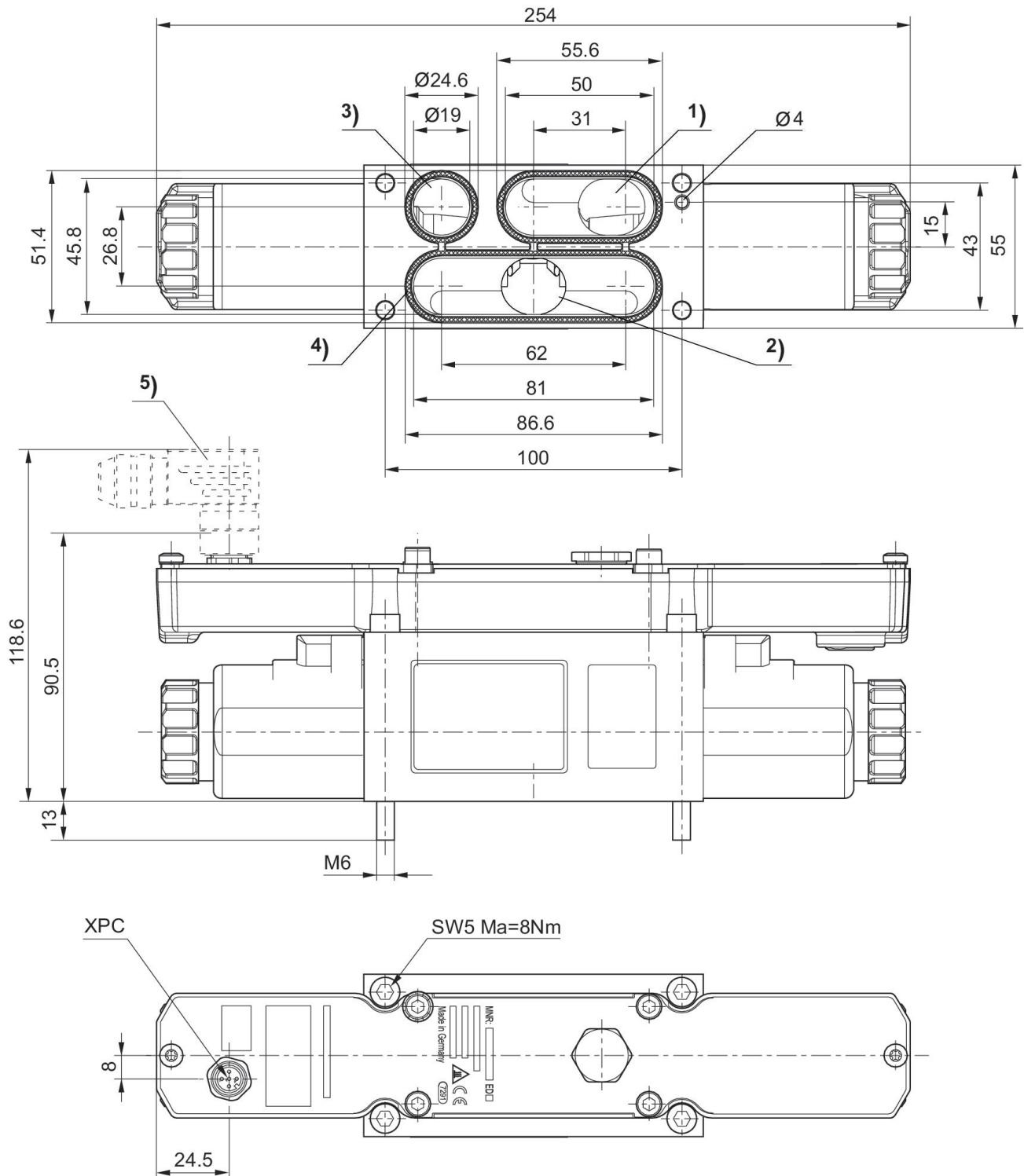
ED12 series proportional pressure regulator, 1 x M12

R414009571

Series
ED12

2025-05-09

Dimensions



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

ED12 series proportional pressure regulator, 1 x M12

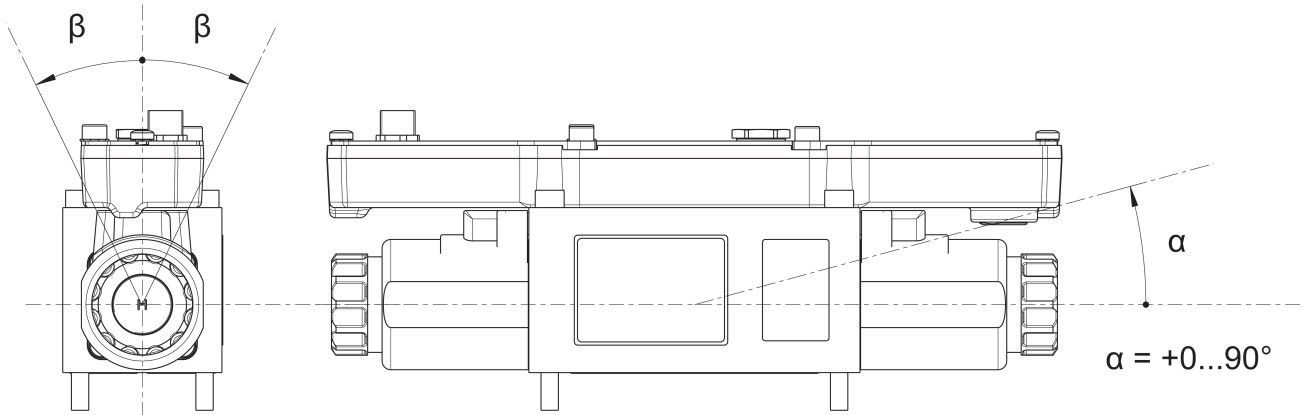
R414009571

Series
ED12

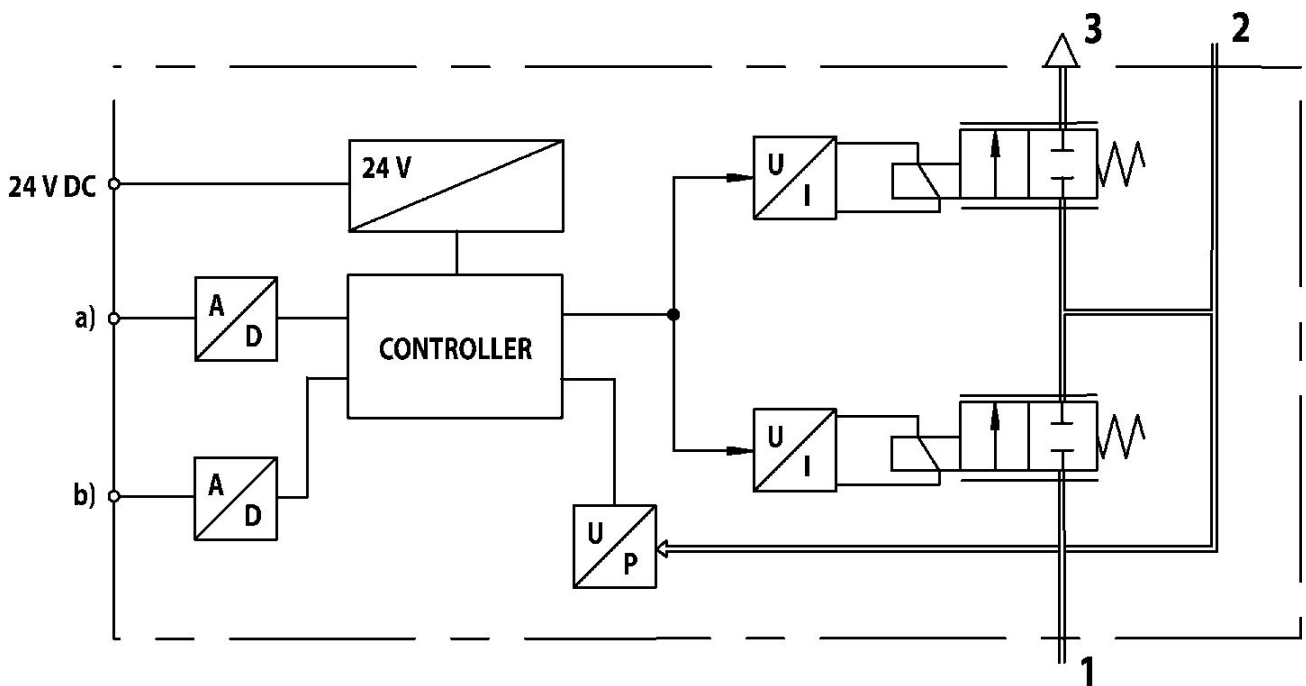
2025-05-09

Mounting orientation

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



Functional diagram



a) Nominal input value b) Actual output value The E/P pressure control valve modulates the pressure corresponding to an analog electrical nominal input value.

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

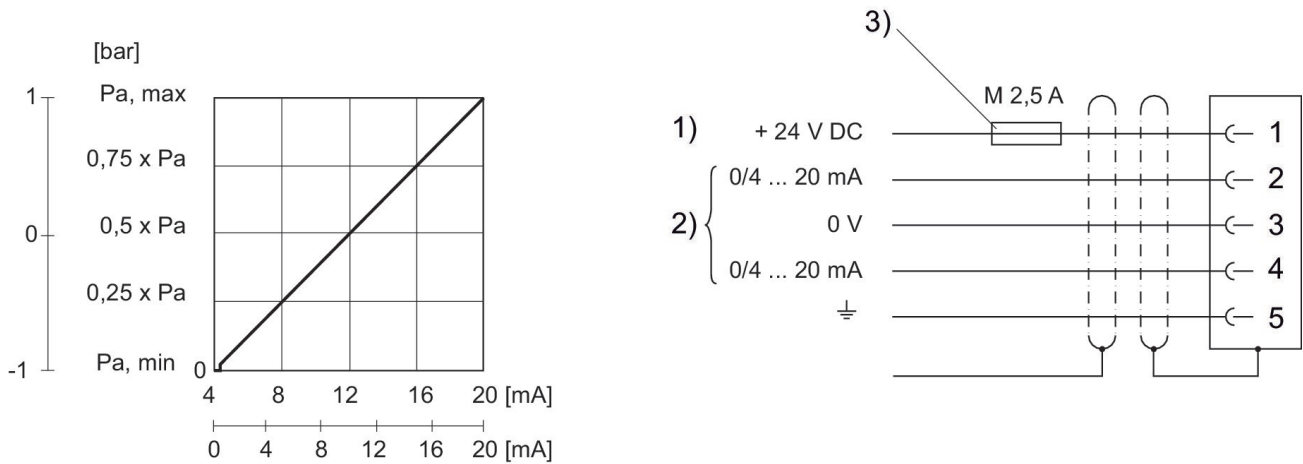
ED12 series proportional pressure regulator, 1 x M12

R414009571

Series
ED12

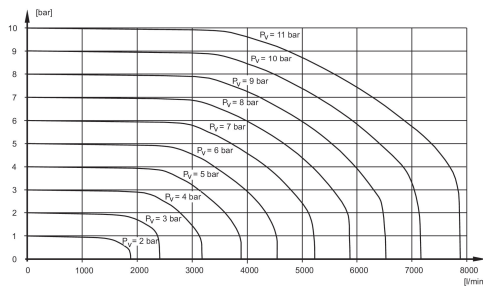
2025-05-09

Characteristic and pin assignment for current control with actual output value



- 1) Supply Voltage
- 2) Actual value (pin 4) and nominal value (pin 2) are related to 0 V (control voltage). Nominal input value current (ohmic load 100 Ω). Actual output value (max. total resistance of downstream devices < 300 Ω).
- 3) The operating voltage must be protected by an external M 2.5 A fuse. Connect the plug via a shielded cable to ensure EMC.

Durchflussdiagramm für Druckbereich bis 10 bar



Pv = Supply pressure