

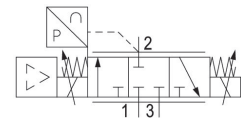
# ED12 series proportional pressure regulator, 2 x M12

R414009670

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                                              |
| Output signal                      | constant voltage<br>Switch output                        |
| Operational voltage DC             | 24 V                                                     |
| Max. current consumption           | 1400 mA                                                  |
| Actual output value                | 0 ... 20 mA                                              |
| Nominal input value                | 0 ... 20 mA                                              |
| Min. regulation range              | 0 bar                                                    |
| Max. regulation range              | 2 bar                                                    |
| Min. working pressure              | 0.5 bar                                                  |
| Max. working pressure              | 3 bar                                                    |
| Hysteresis                         | < 0,015 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               | $\alpha = 0 \dots 90^\circ \pm \beta = 0 \dots 90^\circ$ |

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|                                       |                              |
|---------------------------------------|------------------------------|
| Certificates                          | CE declaration of conformity |
| 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<br>Steel, chrome-plated            |
| Seal material    | Hydrogenated acrylonitrile butadiene rubber |
| Part No.         | R414009670                                  |

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

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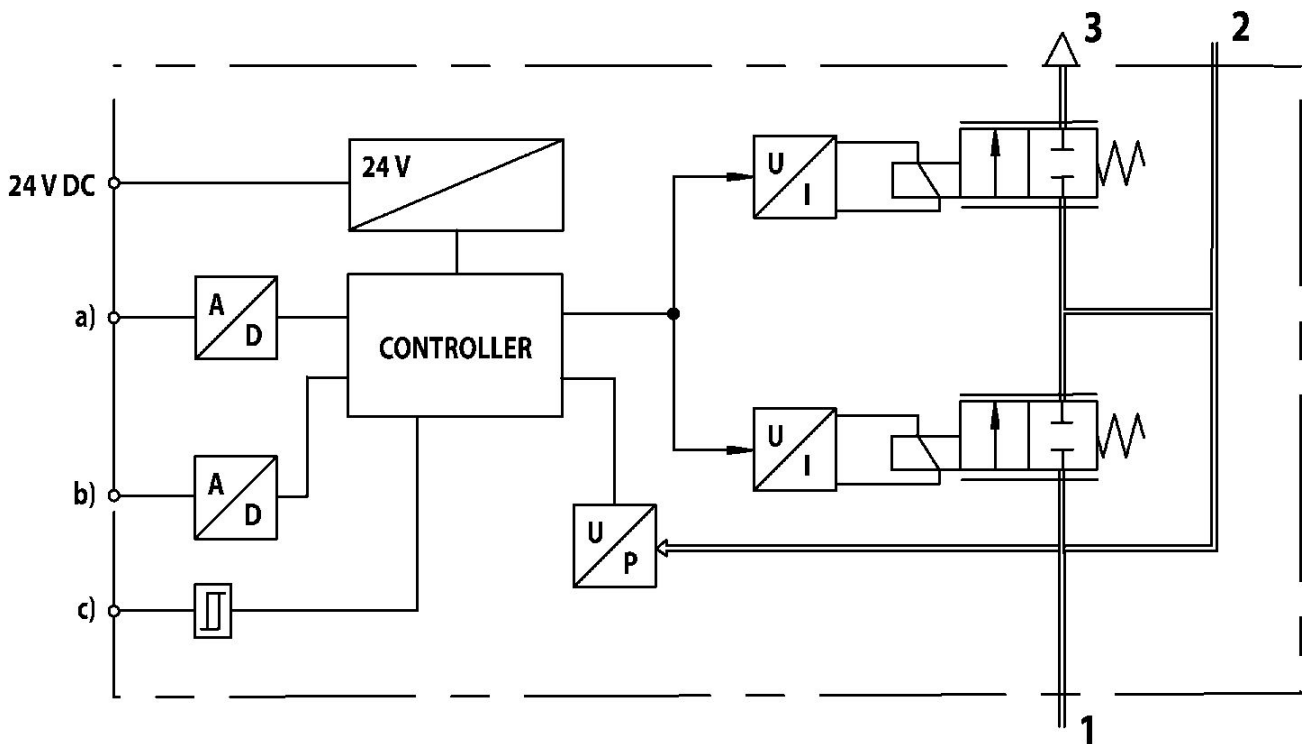
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## Mounting orientation

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



## Functional diagram



a) Nominal input value b) Actual output value c) Switch output (acknowledge signal) 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

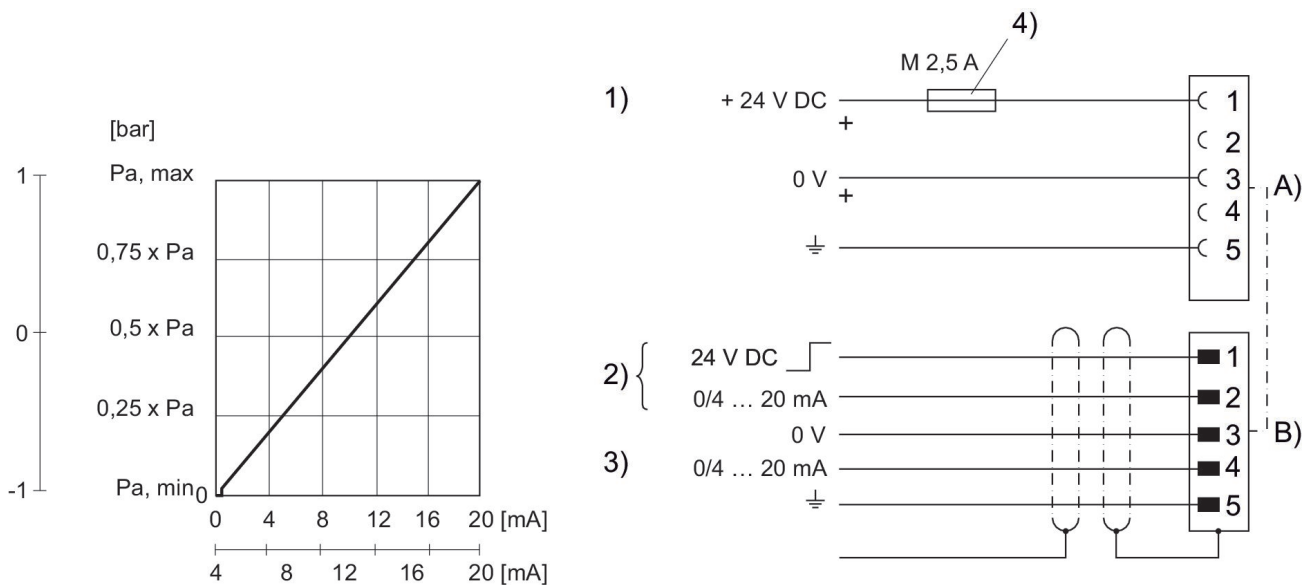
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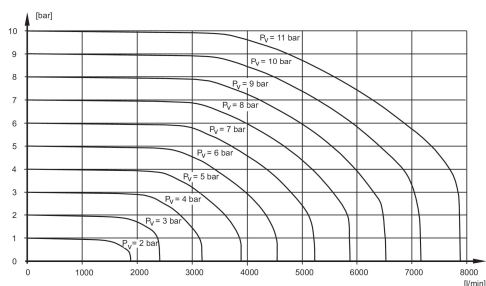
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## Characteristic and pin assignment for current control with actual output value



- 1) Supply Voltage
- 2) Switch output (pin 1) and nominal value (pin 2) are related to 0 V. Input current nominal value (ohmic load 100 Ω).
- 3) Actual value (pin 4) is related to 0 V (max. total resistance of downstream devices < 300 Ω).
- 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