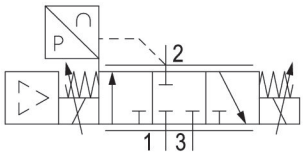
# ED12 series proportional pressure regulator

## R414009671

General series information
AVENTICS ED12 Dynamic Direct Acting Pressure Regulator

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




## Technical data

| | |
|---|---|
| Control | Directly controlled |
| Control | Analog |
| Function | Air exhaust |
| Actual output value | constant voltage<br>Switch output |
| Regulation range min. | 0 bar |
| Regulation range max. | 2 bar |
| Working pressure min. | 0.5 bar |
| Working pressure max | 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 |
| DC operating voltage | 24 V |
| Max. current consumption | 1400 mA |
| Protection class | IP65 |
| Permissible ripple | 5% |
| Max. particle size | 50 µm |
| Oil content of compressed air min. | 0 mg/m³ |
| Oil content of compressed air max. | 1 mg/m³ |
| Type | Poppet valve |
| Mounting orientation | α = 0 ... 90° ±β = 0 ... 90° |
| 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 |
| Actual output value | 4 ... 20 mA |
| Nominal input value | 4 ... 20 mA |
| Industry | Industrial |
| Weight | 2.3 kg |

## Material

| | |
|---|---|
| Housing material | Aluminum<br>Steel, chrome-plated |
| Seal material | Hydrogenated acrylonitrile butadiene rubber |
| Part No. | R414009671 |

## Technical information

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

Nominal flow Qn with working pressure 7 bar, with secondary pressure 6 bar and Δp = 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!

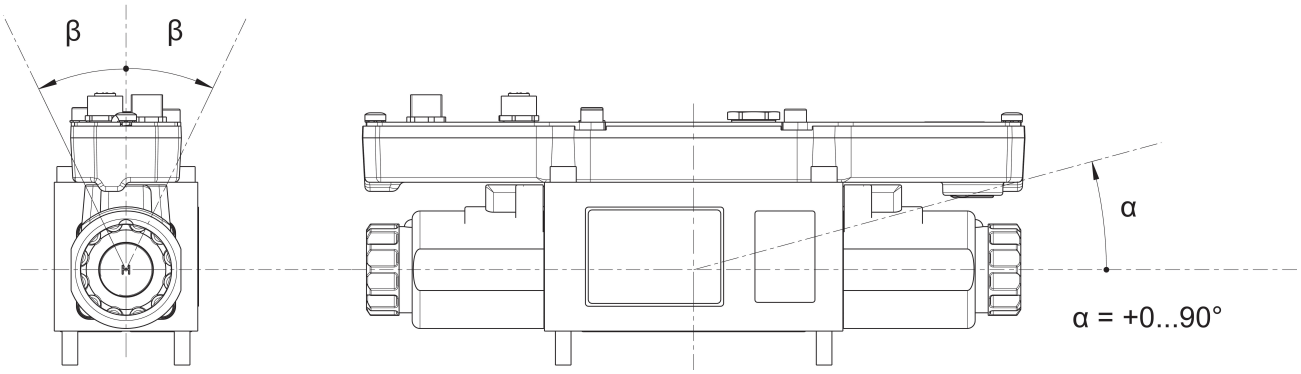
The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

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

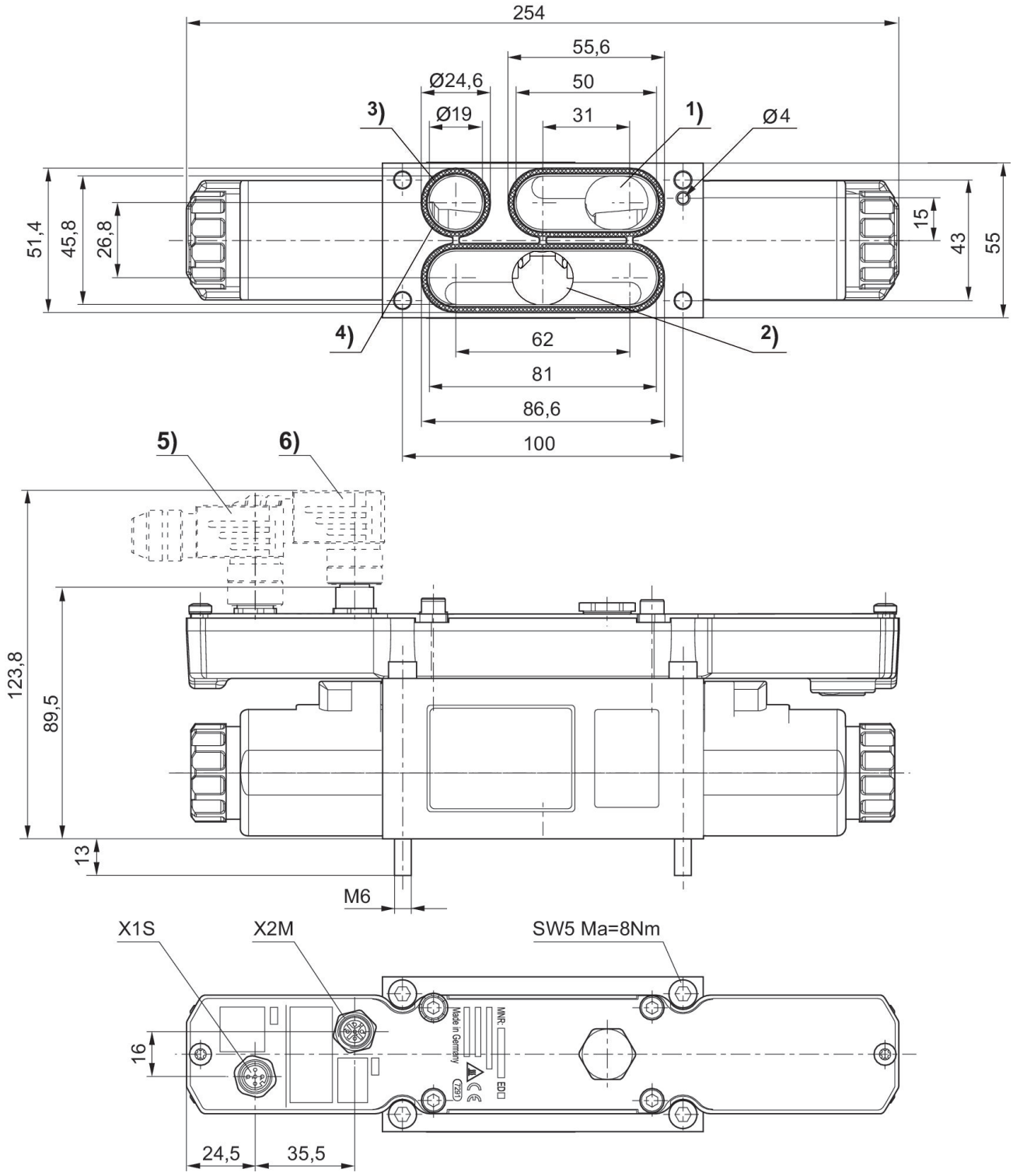
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in https://www.emerson.com/en-us/support).

## Mounting orientation

β = ±0...90°

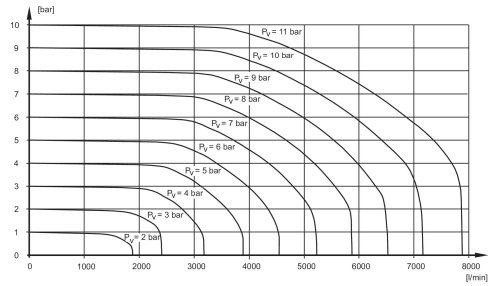


## Dimensions



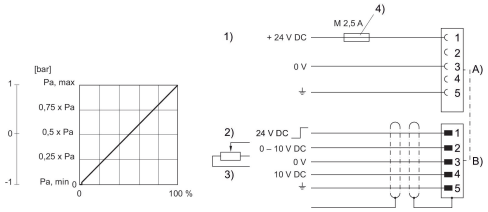

1) Operating pressure 2) Working pressure 3) Exhaust 4) Seal (not assembled) 5) + 6) Accessories not supplied

## Flow diagram



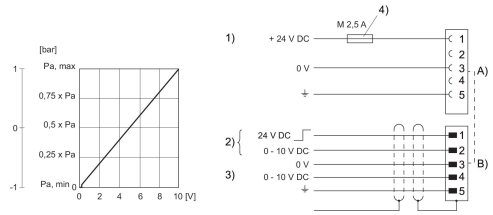

Pv = Supply pressure

## Fig. 3
### Characteristic and pin assignment for potentiometer control without actual output value



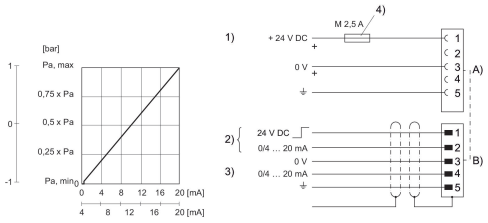

1) Supply Voltage
2) Switch output (pin 1) and nominal value (pin 2) are related to 0 V.
3) Potentiometer control (min. 0-2 kΩ, max. 0-10 kΩ)
4) The operating voltage must be protected by an external M 2.5 A fuse. Connect plug X2M via a shielded cable to ensure EMC. A) Plug X1S B) Plug X2M

## Fig. 2
### Characteristic and pin assignment for voltage control with actual output value



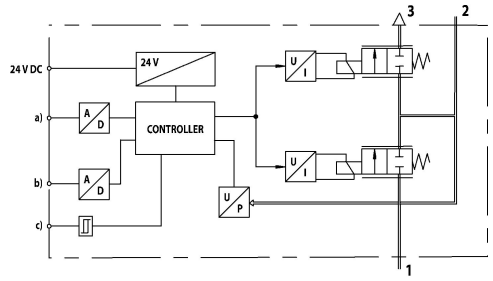

1) Supply Voltage
2) Switch output (pin 1) and nominal value (pin 2) are related to 0 V.
3) Actual value (pin 4) is related to 0 V (min. load resistance 1 kΩ).
4) The operating voltage must be protected by an external M 2.5 A fuse. Connect plug X2M via a shielded cable to ensure EMC. A) Plug X1S B) Plug X2M

## Fig. 1
### 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

## 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