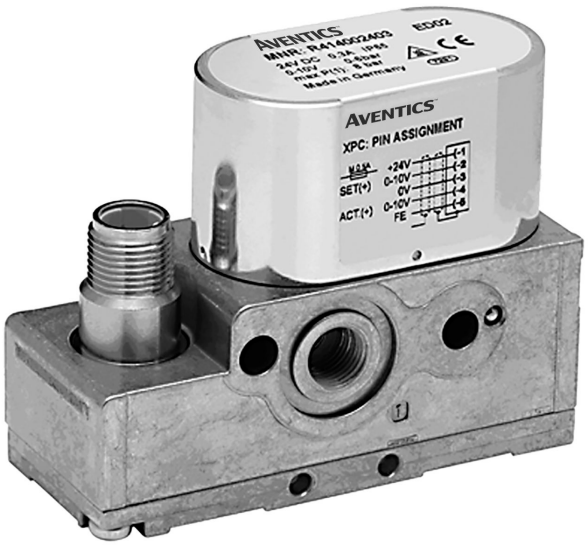
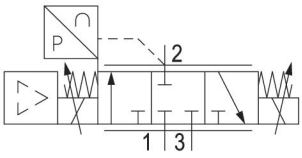
E/P pressure regulator, Series ED02

R414002401

Series ED02

- Highly dynamic E/P pressure regulator
- Stackable without base plate
- Nominal width 2
- Flow [[120] l/min]
- Pressure range -[[1]bar] ... [[10]bar]
- AES fieldbus connection





Technical data

Control
Analog

Regulation range min.
0 bar

Regulation range max.
6 bar

Working pressure min.
0.5 bar

Working pressure max
8 bar

Hysteresis
< [[0,05] bar]

Medium
Compressed air

Nominal flow Qn
120 l/min

Min. ambient temperature
0 °C

Max. ambient temperature
50 °C

Min. medium temperature
0 °C

Max. medium temperature
50 °C

DC operating voltage
24 V

Permissible ripple
5%

Max. power consumption
300 mA

Protection class
IP65

Max. particle size
50 µm

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

Compressed air connection input
G 1/8
1/8 NPT

Compressed air connection output
G 1/8
1/8 NPT

Electrical connection size
via signal connection

Signal connection
input and output

Signal connection
Plug

Signal connection
M12

Signal connection
5-pin

Actual output value
4 ... 20 mA

Nominal input value
4 ... 20 mA

Industry
Industrial

Weight
0.32 kg

Material

Housing material
Die-cast aluminum
Steel

Seal material
Hydrogenated acrylonitrile butadiene rubber

Part No.
R414002401

Technical information

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

ED02 series valves can be assembled into blocks using tie rods (see accessories).

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

The compressed air connection threads fit both G 1/8 and 1/8 NPTF.

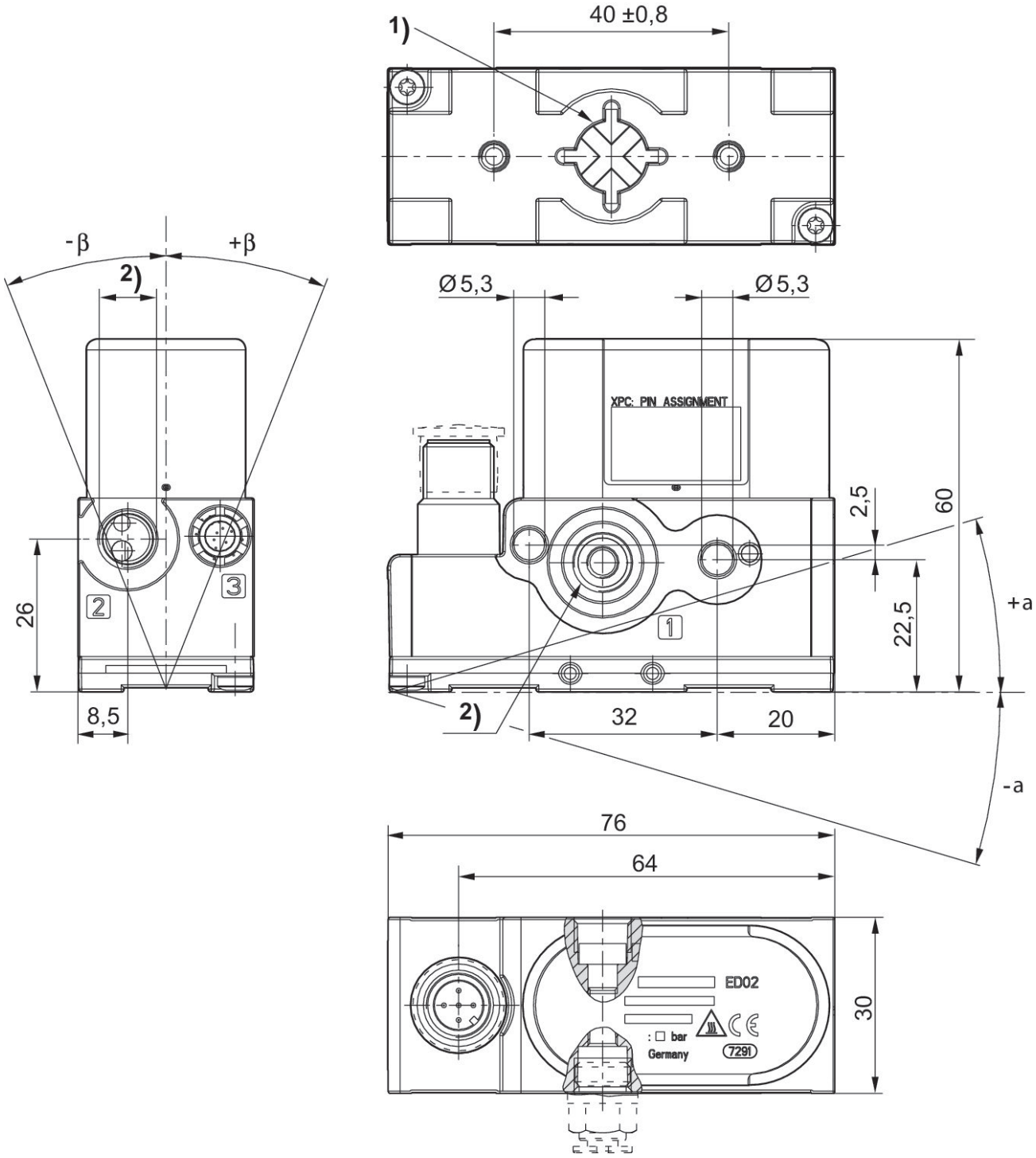
The min. control pressure must be adhered to, since otherwise faulty switching and valve failure may result!

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

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

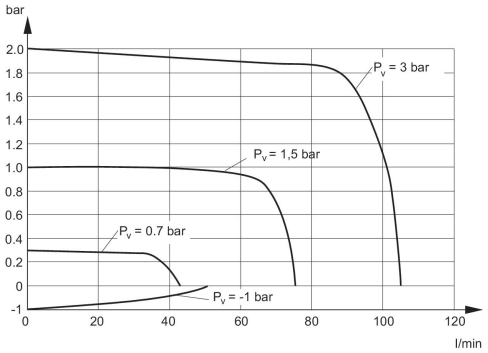
Use only the approved oils from AVENTICS. Further information can be found in the “Technical information” document (available in https://www.emerson.com/en-us/support).

Dimensions



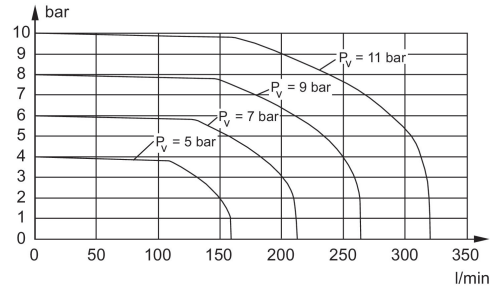
1) Housing exhaust
2) Universal threaded connection, suitable for G1/8 according to ISO 228/1:2000 and 1/8-27 NPTF

Flow diagram for pressure range up to 2 bar



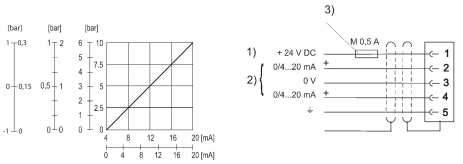
Pv = Supply pressure

Durchflussdiagramm für Druckbereich bis 10 bar



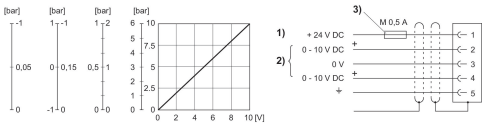
Pv = Supply pressure

Fig. 1
Characteristic and pin assignment for current control with actual output value



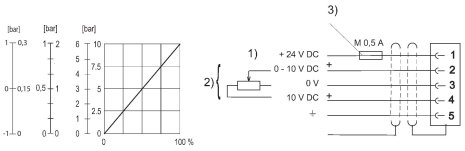
1) Supply Voltage 2) Actual value (pin 4) and nominal value (pin 2) are related to 0 V. Current control (ohmic load 100 Ω). Actual value output (max. total resistance of downstream devices < 500 Ω). 3) The operating voltage must be protected by an external M 0.5 A fuse. Connect the plug via a shielded cable to ensure EMC.

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



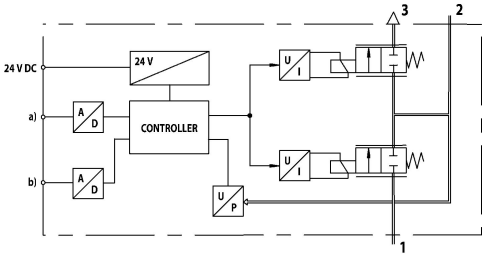
1) Supply voltage 2) Actual value (pin 4) and nominal value (pin 2) are related to 0 V. Min. load resistance of nominal value output = 1 kΩ. 3) The operating voltage must be protected by an external M 0.5 A fuse. Connect the plug via a shielded cable to ensure EMC.

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



1) Supply voltage 2) Potentiometer supply (pin 4) and nominal value (pin 2) are related to 0 V. Potentiometer resistance min. 0-2 kΩ, max. 0-10 kΩ. 3) The operating voltage must be protected by an external M 0.5 A fuse. Connect the plug via a shielded cable to ensure EMC.

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