

AVENTICS ED07 Dynamic Direct Acting Pressure Regulator

The AVENTICS Series ED07 offers proportional pressurization and the exhaust valves are controlled separately to deliver dynamic control for the most demanding applications.

Highly dynamic proportional pressure regulator

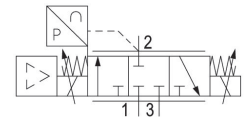
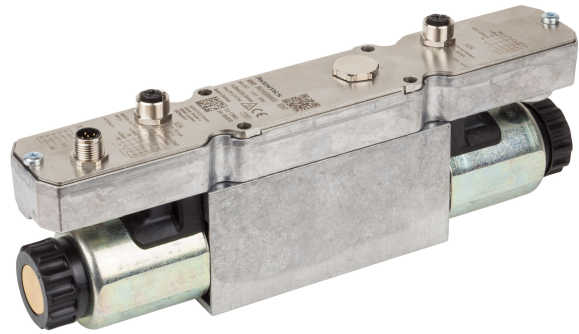
Stackable with base plate

Nominal width 7

Flow 1300 l/min

Pressure range -1 ... 20 bar

EtherCAT, AES fieldbus connection



Technical data

Type	External sensor input (pressure, flow or force sensor)
Control	Directly controlled
Control	Analog
Function	Air exhaust
Actual output value	Analog
Min. regulation range	0 bar
Max. regulation range	10 bar
Hysteresis	< 0,03 bar < 0,03 bar
Medium	Compressed air
Nominal flow Qn	1300 l/min
Min. ambient temperature	5 °C
Max. ambient temperature	50 °C
Min. medium temperature	5 °C
Max. medium temperature	50 °C
Operational voltage DC	24 V
Max. current consumption	1400 mA
Protection class	IP65
Permissible ripple	5%

E/P pressure regulator, Series ED07

2024-02-20

R414009800

Max. particle size	50 µm
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 type	Plug
Electrical connection size	M12
Electrical connection number of poles	5-pin
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	2.05 kg

Material

Housing material	Die-cast aluminum Steel, chrome-plated
Seal material	Hydrogenated acrylonitrile butadiene rubber
Part No.	R414009800

Technical information

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

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

If the external sensor fails, the pressure regulator can open fully and the maximum permissible pressure in your system may be exceeded.

The short-circuit-resistant switch output (X2M pin 1) switches to +Ub when the regulated pressure is within the tolerance range of ± 200 mbar for at least 100 ms (applies to external sensor 0 – 10 bar).

The supply pressure is controlled when the set point is applied but the external sensor's signal is missing (e.g. wire break).

Set up appropriate measures to ensure fail-safe behavior even in case of failure of the external sensor.

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.

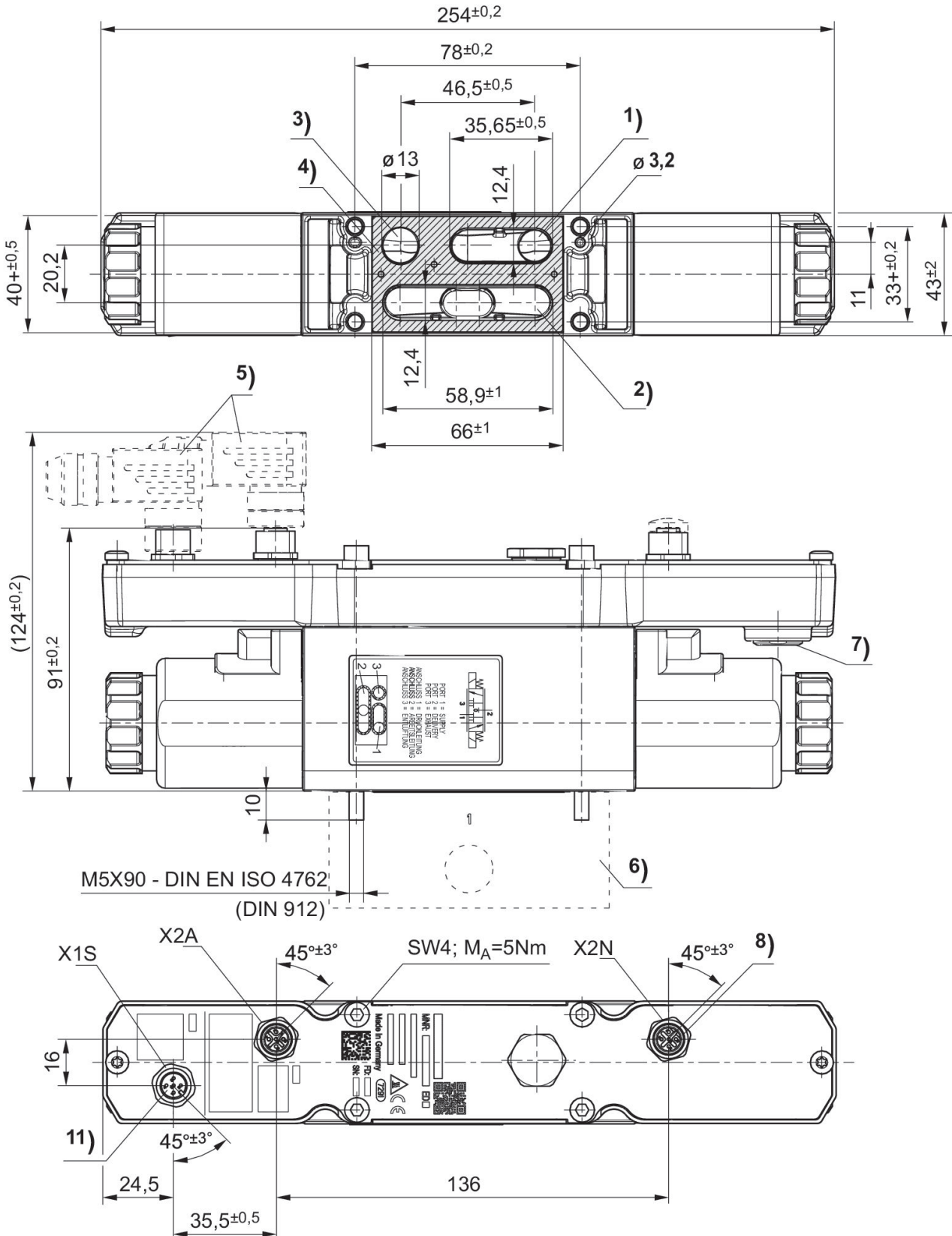
Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in <https://www.emerson.com/en-us/support>).

E/P pressure regulator, Series ED07

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Dimensions



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

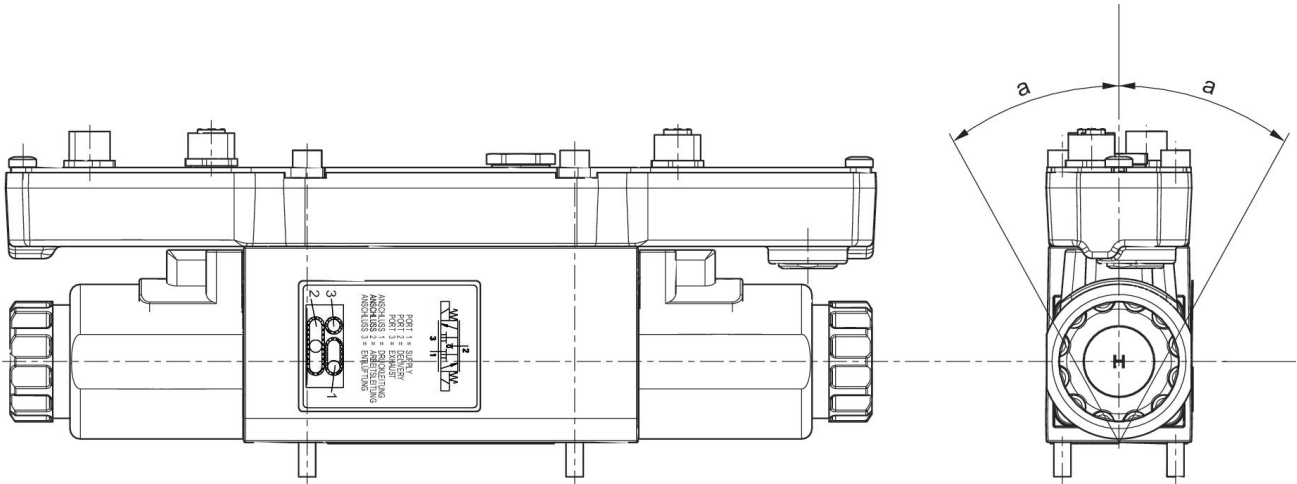
E/P pressure regulator, Series ED07

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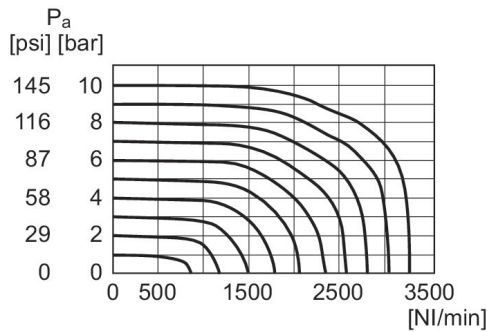
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- 4) Flat gasket
- 5) Accessories not supplied
- 6) Base plate not included in the scope of delivery
- 7) Gore membrane
- 8) Plug

Mounting orientation

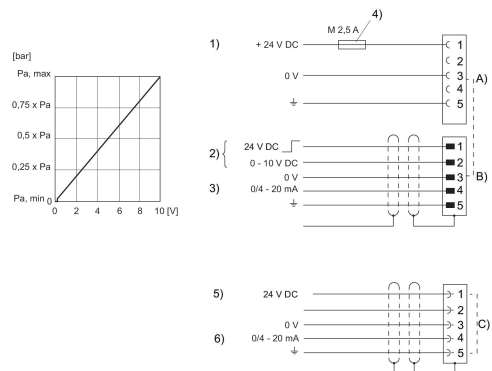


Flow diagram



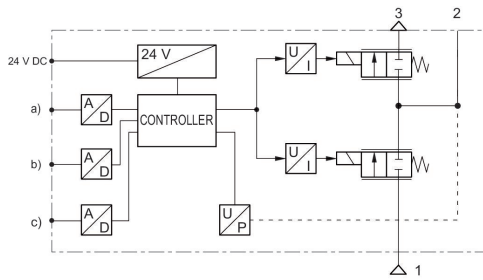
Pa = Working pressure

Characteristic and pin assignment for current control with actual output value and external sensor input



- 1) Supply voltage 2) Switch output (pin 1) and set point (pin 2) are related to 0 V. 3) Actual value (pin 4) is related to 0 V (external resistance min. 10 kilohms) 4) The supply voltage must be protected by an external fuse M 2.5 A. Connect plugs X2A and 2XN via a shielded cable to ensure EMC. If a supply voltage of 1 megaohm is applied, the voltage input value is high-ohmic.
 - 5) Supply voltage for external sensor
 - 6) External sensor input is related to 0 V.
- If the supply voltage is switched off, the voltage input value is high-ohmic. If the supply voltage is switched on, the voltage input value is 1 megaohm.

Functional diagram



a) Nominal input value (w) b) Actual output value (x) c) External sensor input
(ext) 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

Connect plugs X2A and X2N via a shielded cable to ensure EMC.