

## Pressure regulators → Proportional Valves

**E/P pressure regulator, Series ED05**

►  $Q_n = 1000$  l/min ► compressed air connection output: G 1/4 ► Electr. connection: via signal connection ► Signal connection: input and output, Plug, M12, 5-pin



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|   |   |
|---|---|
| Version   | Poppet valve                                |
| Control   | Analog                                      |
| Certificates  | CE declaration of conformity                |
| Ambient temperature min./max.                       | +0 °C / +70 °C                              |
| Medium temperature min./max.                        | +0 °C / +70 °C                              |
| Medium  | Compressed air                              |
| Max. particle size                                  | 50 $\mu$ m                                  |
| Max. oil content of compressed air                  | 1 mg/m <sup>3</sup>                         |
| $Q_n$   | 1000 l/min                                  |
| Mounting orientation                                | $\alpha = 0-90^\circ$ $\beta = 0-90^\circ$  |
| Hysteresis  | < 0,06 bar                                  |
| DC operating voltage                                | 24 V  |
| Voltage tolerance DC                                | -20% / +20%                                 |
| Permissible ripple                                  | 5%  |
| Max. power consumption                              | 1.3 A                                       |
| Protection class with electrical connector/<br>plug | IP 65                                       |
| Compressed air connection input                     | G 1/4                                       |
| Compressed air connection output                    | G 1/4                                       |
| Compressed air connection, exhaust                  | G 1/4                                       |
| Weight  | 0.95 kg                                     |
| <br>  |   |
| Materials:  |   |
| Housing   | Die-cast aluminum; Steel                    |
| Seal  | Hydrogenated acrylonitrile butadiene rubber |

Nominal flow  $Q_n$  with working pressure 7 bar, with secondary pressure 6 bar and  $\Delta p = 0.2$  bar

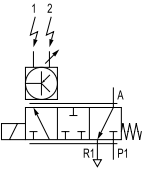
**Technical Remarks**

- 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 air pressure must remain constant during the life cycle.
- Use only the approved oils from Bosch Rexroth, see chapter „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.

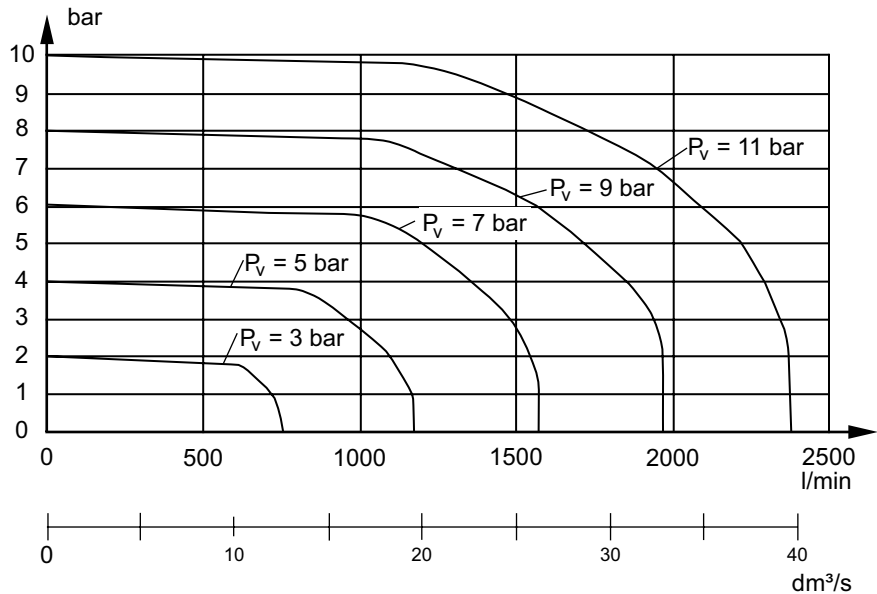
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|  | Operating pressure | Pressure setting range | Nominal input value |    | Actual output value |    | Fig.   | Note | Part No.          |
|--|--------------------|------------------------|---------------------|----|---------------------|----|--------|------|-------------------|
|  | Max.               | min./max.              |                     |    |                     |    |        |      |                   |
|  | [bar]              | [bar]                  |                     |    |                     |    |        |      |                   |
|  | 11                 | 0 / 6                  | 0 - 20              | mA | 0 - 20              | mA | Fig. 1 | -    | <b>R414002003</b> |
|  |                    | 0 / 6                  | 4 - 20              | mA | 4 - 20              | mA | Fig. 1 | -    | <b>R414002004</b> |
|  |                    | 0 / 6                  | 0 - 10              | V  | 0 - 10              | V  | Fig. 2 | -    | <b>R414002005</b> |
|  |                    | 0 / 6                  | 0 - 20              | mA | -                   | -  | Fig. 3 | 1)   | R414002006        |
|  |                    | 0 / 6                  | 4 - 20              | mA | -                   | -  | Fig. 3 | 1)   | <b>R414002294</b> |
|  |                    | 0 / 6                  | 0 - 10              | V  | -                   | -  | Fig. 3 | 1)   | <b>R414002295</b> |
|  |                    | 0 / 10                 | 0 - 20              | mA | 0 - 20              | mA | Fig. 1 | -    | R414002007        |
|  |                    | 0 / 10                 | 4 - 20              | mA | 4 - 20              | mA | Fig. 1 | -    | <b>R414002008</b> |
|  |                    | 0 / 10                 | 0 - 10              | V  | 0 - 10              | V  | Fig. 2 | -    | <b>R414002009</b> |
|  |                    | 0 / 10                 | 0 - 20              | mA | -                   | -  | Fig. 3 | 1)   | R414002010        |
|  |                    | 0 / 10                 | 4 - 20              | mA | -                   | -  | Fig. 3 | 1)   | R414002296        |
|  |                    | 0 / 10                 | 0 - 10              | V  | -                   | -  | Fig. 3 | 1)   | <b>R414002297</b> |

1) Acknowledge signal - output from + Ub, if the outlet pressure corresponds to the setpoint +/- 200 mbar

**Flow diagram**

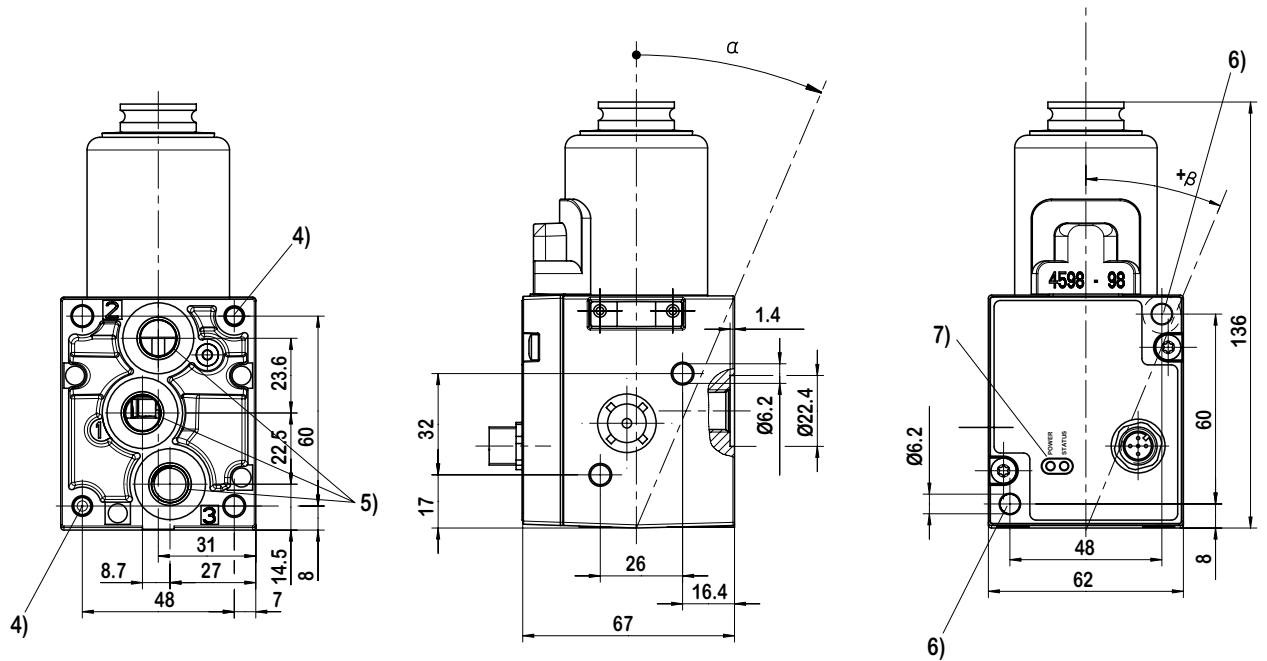
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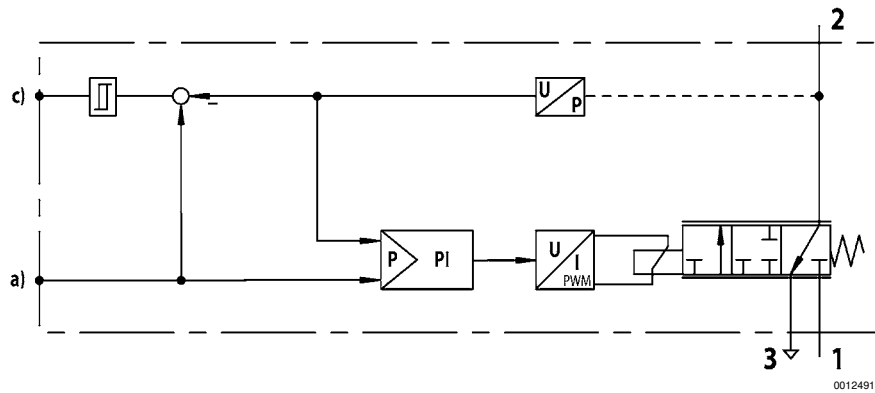
**Dimensions**



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- 4) Core hole 15 mm deep for self-tapping screws M6
- 5) Universal threaded connection, suitable for G1/4 according to ISO 228/1:2000 and 1/4-27 NPTF
- 6) Through hole
- 7) Green LED display; power = pressure control in operation; status = output pressure corresponds to the set point +/- 200 mbar.

**Functional diagram**



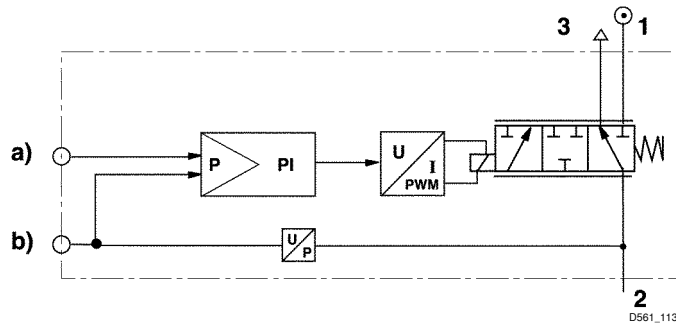
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- a) Nominal input value
  - c) Switch output (acknowledge signal)
- The E/P pressure control valve modulates the pressure corresponding to an analog electrical nominal input value.
- 1) Operating pressure
  - 2) Working pressure
  - 3) Exhaust

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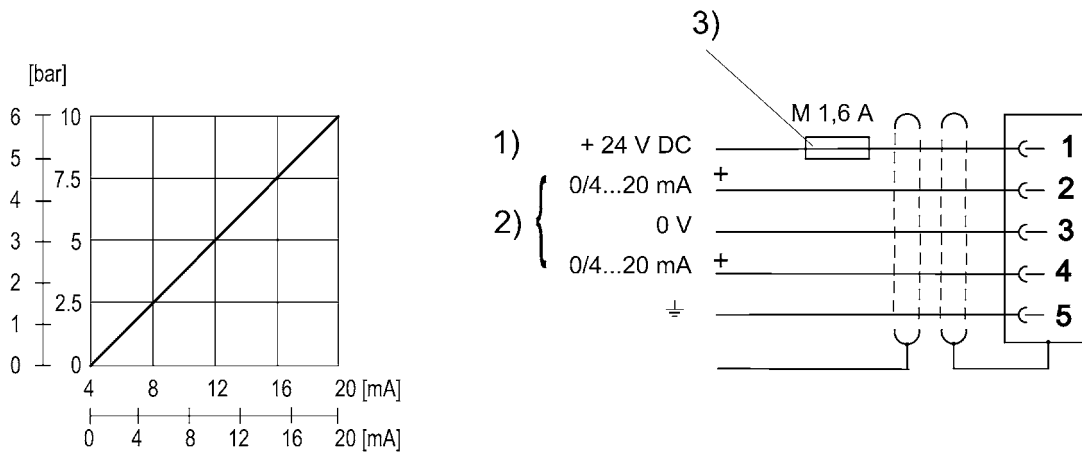


a) Nominal input value b) Actual output value

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

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



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1) Operational voltage

2) Actual value (pin 4) and nominal value (pin 2) are related to 0 V (control voltage).

Nominal input value current (ohmic load  $100 \Omega$ ). Actual output value (max. total resistance of downstream devices  $< 300 \Omega$ ).

3) The operating voltage must be protected by an external M 1.6 A fuse.

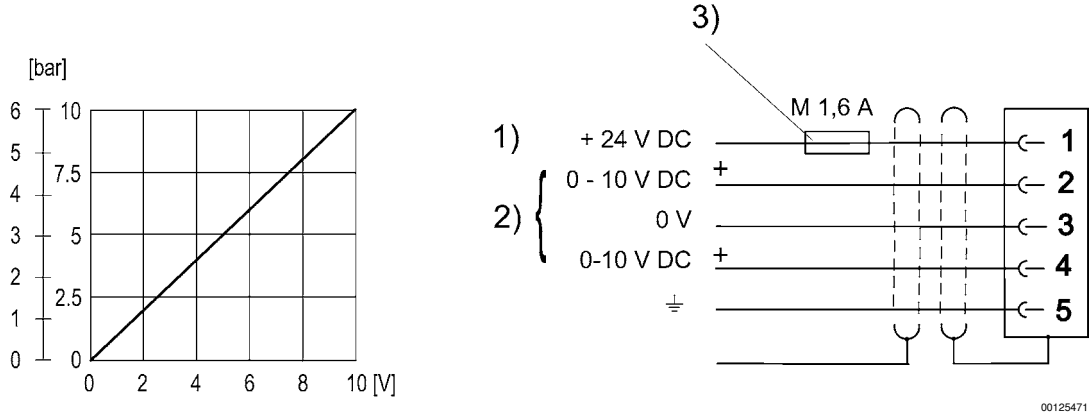
Connect plug 2 via a shielded cable to ensure EMC.

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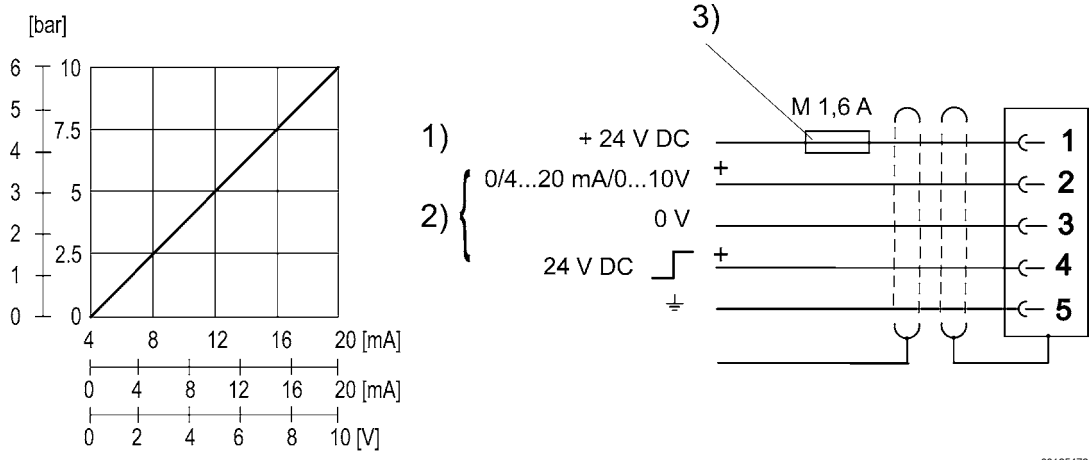
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**Fig. 2, Characteristic and pin assignment for voltage control with actual output value**



- 1) Operational voltage
- 2) Actual value (pin 4) and nominal value (pin 2) are related to 0 V (control voltage).

**Fig. 3, Characteristic and pin assignment for current and voltage control with actual output value**



- 1) Operational voltage
- 2) Nominal value (pin 2) and switch output (pin 4) are related to 0 V. Acknowledge signal
- 3) The operating voltage must be protected by an external M 1.6 A fuse.