

## Series ED12

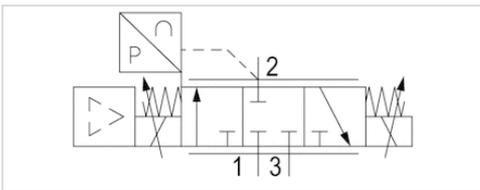


AVENTICS™ Series ED12



# E/P pressure regulator, Series ED12

- Qn = 2600 l/min
- Electr. connection via signal connection
- Signal connection input and output, Plug, M12, 5-pin



Version	Poppet valve
Mounting orientation	$\alpha = 0 \dots 90^\circ \pm \beta = 0 \dots 90^\circ$
Certificates	CE declaration of conformity
Working pressure max	See table below
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	50 $\mu\text{m}$
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow Qn	2600 l/min
Control	Analog
DC operating voltage	24 V
Voltage tolerance DC	-20% / +30%
Permissible ripple	5%
Max. power consumption	1400 mA
Protection class	IP65
Weight	2.3 kg

## Technical data

Part No.	Working pressure max	Pressure setting range min./max.	Nominal input value
			Min./max.
R414002794	3 bar	-1 ... 1 bar	0 ... 20 mA
R414009658	3 bar	0 ... 1 bar	0 ... 20 mA
R414009659	3 bar	0 ... 1 bar	4 ... 20 mA
R414009661	3 bar	0 ... 1 bar	0 ... 10 V
R414009662	3 bar	0 ... 2 bar	0 ... 20 mA
R414009663	3 bar	0 ... 2 bar	4 ... 20 mA
R414009665	3 bar	0 ... 2 bar	0 ... 10 V
R414009570	8 bar	0 ... 6 bar	0 ... 20 mA
R414009571	8 bar	0 ... 6 bar	4 ... 20 mA
R414009573	8 bar	0 ... 6 bar	0 ... 10 V
R414001635	12 bar	0 ... 10 bar	0 ... 20 mA
R414001636	12 bar	0 ... 10 bar	4 ... 20 mA
R414002867	12 bar	0 ... 10 bar	0 ... 10 V

Part No.	Actual output value	Control	Hysteresis	Fig.
	Min./max.			
R414002794	0 ... 20 mA	Analog	0.015 bar	Fig. 1
R414009658	0 ... 20 mA	Analog	0.015 bar	Fig. 1
R414009659	4 ... 20 mA	Analog	0.015 bar	Fig. 1
R414009661	0 ... 10 V	Analog	0.015 bar	Fig. 2
R414009662	0 ... 20 mA	Analog	0.015 bar	Fig. 1
R414009663	4 ... 20 mA	Analog	0.015 bar	Fig. 1

Part No.	Actual output value	Control	Hysteresis	Fig.
	Min./max.			
R414009665	0 ... 10 V	Analog	0.015 bar	Fig. 2
R414009570	0 ... 20 mA	Analog	0.03 bar	Fig. 1
R414009571	4 ... 20 mA	Analog	0.03 bar	Fig. 1
R414009573	0 ... 10 V	Analog	0.03 bar	Fig. 2
R414001635	0 ... 20 mA	Analog	0.03 bar	Fig. 1
R414001636	4 ... 20 mA	Analog	0.03 bar	Fig. 1
R414002867	0 ... 10 V	Analog	0.03 bar	Fig. 2

Minimum working pressure = 0.5 bar + max. required secondary pressure, Additional pressure setting ranges available on request

## Technical information

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 the MediaCentre).

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  $\Delta p = 0.2$  bar

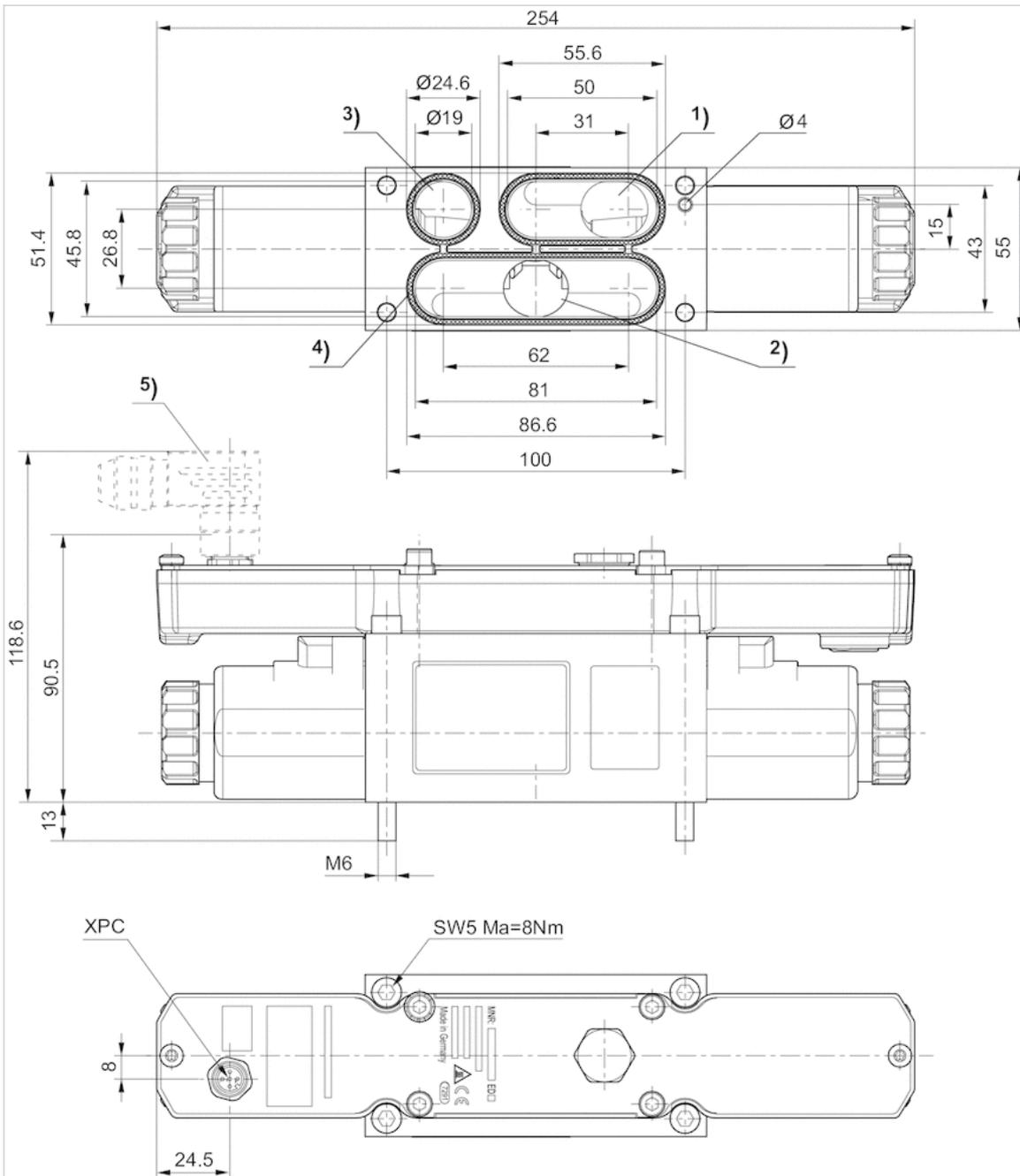
The protection class is only ensured when the plug is mounted properly. For detailed information, see operating instructions.

## Technical information

Material	
Housing	Aluminum Steel
Seals	Hydrogenated acrylonitrile butadiene rubber

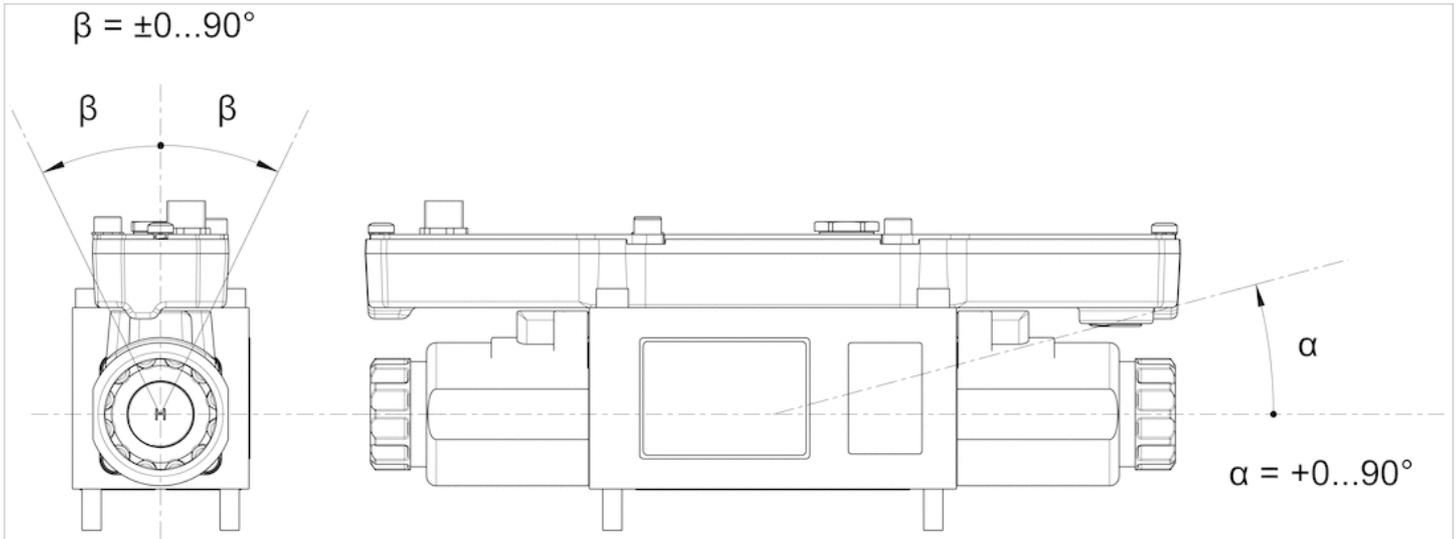
# Dimensions

## Dimensions



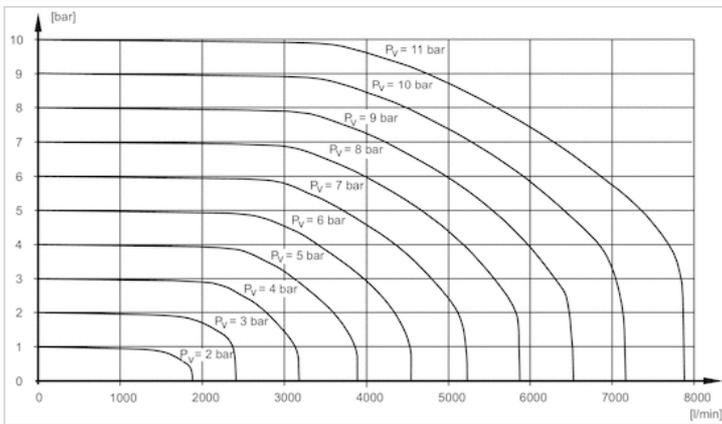
- 1) Operating pressure
- 2) Working pressure
- 3) Exhaust
- 4) Seal (not assembled)
- 5) Accessories not supplied

### Mounting orientation



### Diagrams

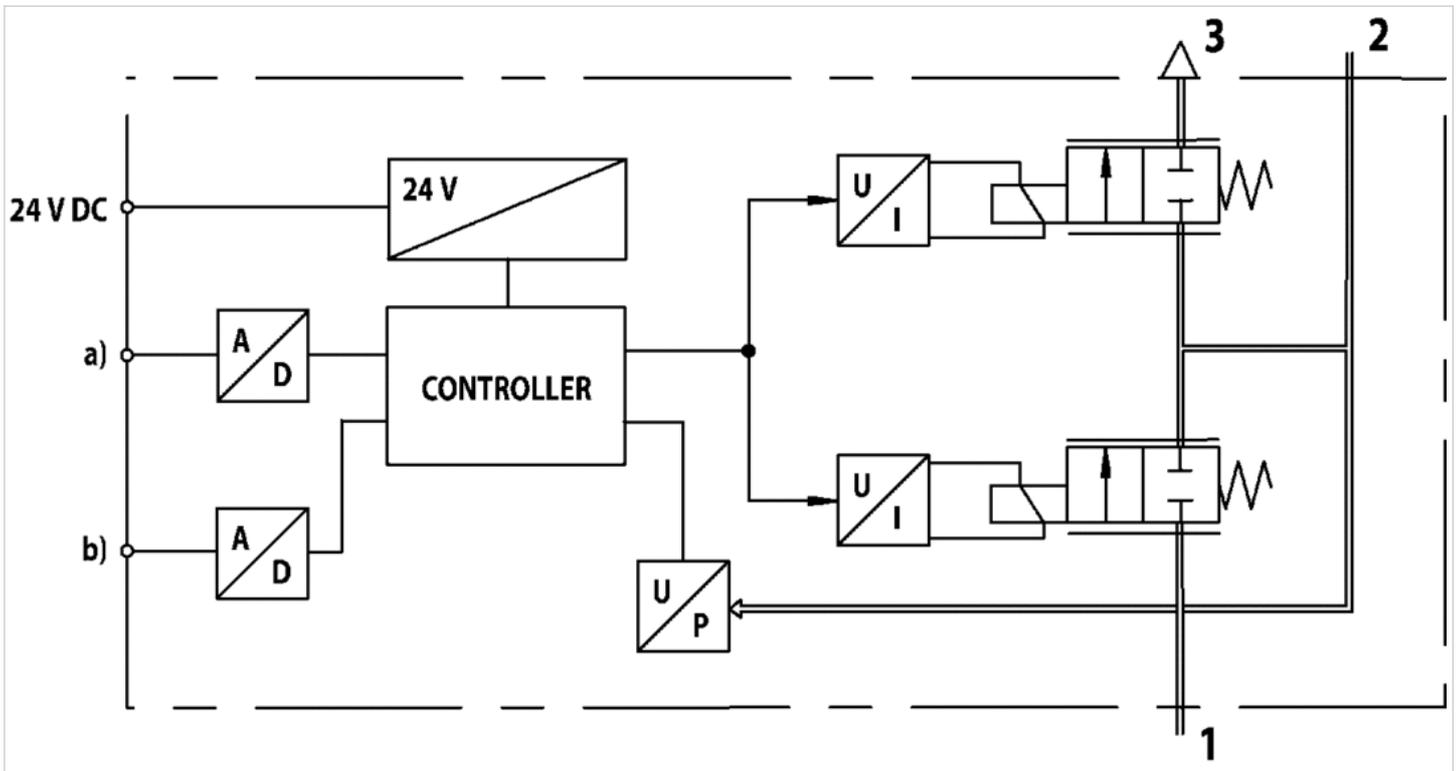
#### Flow diagram



$P_v$  = Supply pressure

Circuit diagram

Functional diagram

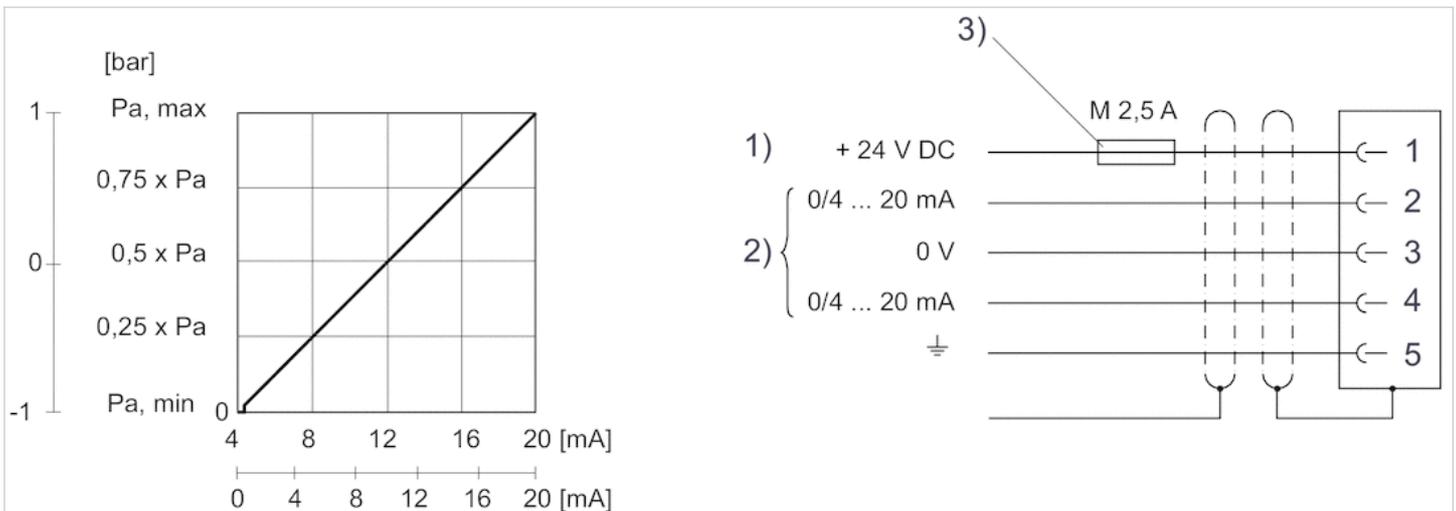


a) Nominal input value b) Actual output value

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

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



1) Supply Voltage

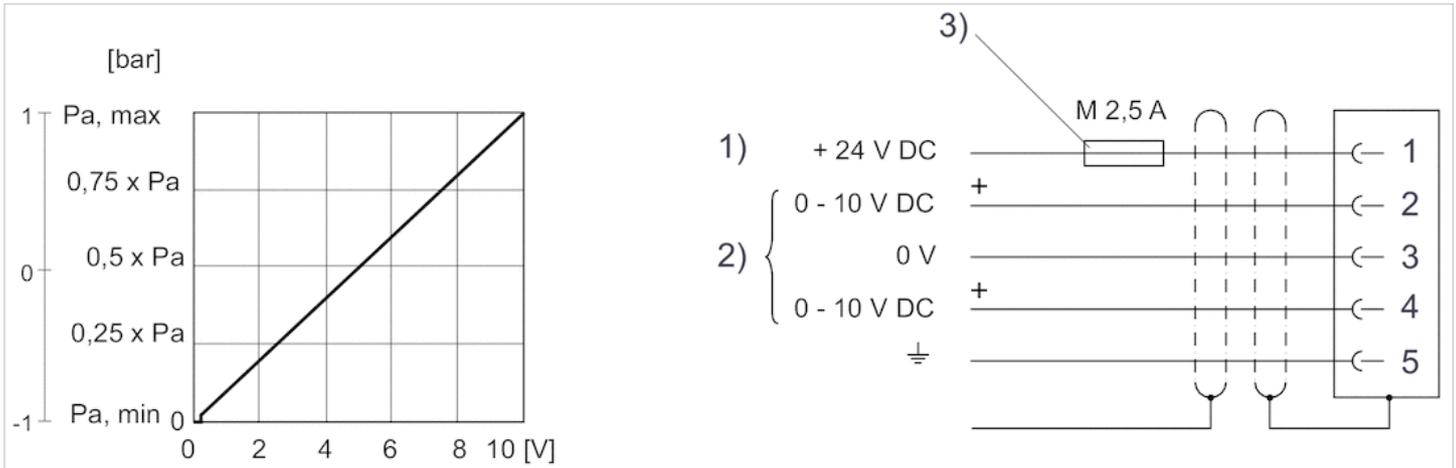
2) Actual value (pin 4) and nominal value (pin 2) are related to 0 V (control voltage).

Nominal input value current (ohmic load 100 Ω). Actual output value (max. total resistance of downstream devices 300 Ω).

3) The operating voltage must be protected by an external M 2.5 A fuse.

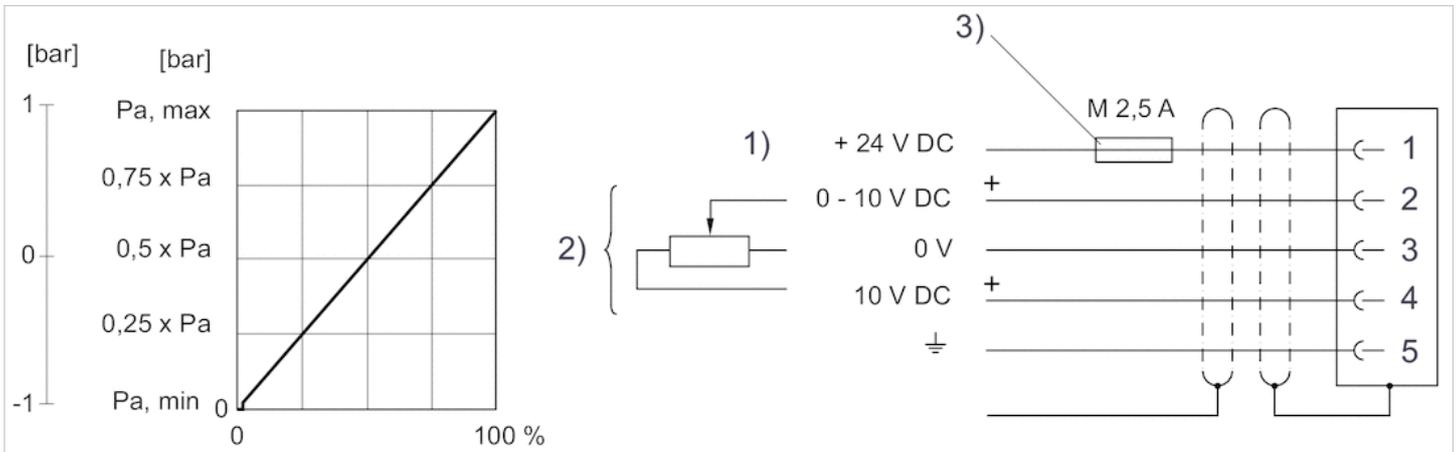
Connect the plug via a shielded cable to ensure EMC.

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



- 1) Supply Voltage
- 2) Actual value (pin 4) and target value (pin 2) are related to 0 V.  
If the supply voltage is switched off, the voltage input value is high-ohmic.  
Input resistance under supply voltage: 1 MΩ  
Voltage output (actual value): external working resistance 10 kΩ
- 3) The operating voltage must be protected by an external M 2.5 A fuse.  
Connect the plug via a shielded cable to ensure EMC.

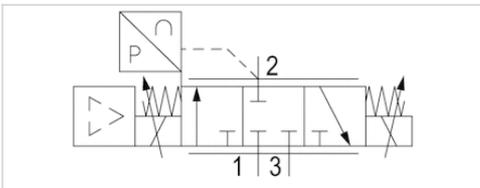
Fig. 3, Characteristic and pin assignment for potentiometer control without actual output value



- 1) Supply Voltage
- 2) Actual value (pin 2) is related to 0 V.  
If the supply voltage is switched off, the voltage input value is high-ohmic.  
Input resistance under supply voltage: 1 MΩ
- 3) The operating voltage must be protected by an external M 2.5 A fuse.  
Connect the plug via a shielded cable to ensure EMC.

# E/P pressure regulator, Series ED12

- Qn = 2600 l/min
- Electr. connection Plug, M12, 5-pin
- Signal connection input and output, Socket, M12, 5-pin



Version	Poppet valve
Mounting orientation	$\alpha = 0 \dots 90^\circ \pm \beta = 0 \dots 90^\circ$
Certificates	CE declaration of conformity
Working pressure max	See table below
Ambient temperature min./max.	5 ... 50 °C
Medium temperature min./max.	5 ... 50 °C
Medium	Compressed air
Max. particle size	50 µm
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
Nominal flow Qn	2600 l/min
Control	Analog
DC operating voltage	24 V
Voltage tolerance DC	-20% / +30%
Permissible ripple	5%
Max. power consumption	1400 mA
Protection class	IP65
Weight	2.3 kg

## Technical data

Part No.	Working pressure max	Pressure setting range min./max.	Nominal input value
			Min./max.
R414009666	3 bar	0 ... 1 bar	0 ... 20 mA
R414009667	3 bar	0 ... 1 bar	4 ... 20 mA
R414009668	3 bar	0 ... 1 bar	0 ... 10 V
R414009669	3 bar	0 ... 1 bar	0 ... 10 V
R414009670	3 bar	0 ... 2 bar	0 ... 20 mA
R414009671	3 bar	0 ... 2 bar	4 ... 20 mA
R414009672	3 bar	0 ... 2 bar	0 ... 10 V
R414009673	3 bar	0 ... 2 bar	0 ... 10 V
R414009574	8 bar	0 ... 6 bar	0 ... 20 mA
R414009575	8 bar	0 ... 6 bar	4 ... 20 mA
R414009576	8 bar	0 ... 6 bar	0 ... 10 V
R414002870	8 bar	0 ... 6 bar	0 ... 10 V
R414000728	12 bar	0 ... 10 bar	0 ... 20 mA
R414000729	12 bar	0 ... 10 bar	4 ... 20 mA
R414000730	12 bar	0 ... 10 bar	0 ... 10 V
R414000731	12 bar	0 ... 10 bar	0 ... 10 V

Part No.	Actual output value	Control	Hysteresis	Fig.	
	Min./max.				
R414009666	0 ... 20 mA	Analog	0.015 bar	Fig. 1	-
R414009667	4 ... 20 mA	Analog	0.015 bar	Fig. 1	-
R414009668	-	Analog	0.015 bar	Fig. 3	1)

Part No.	Actual output value	Control	Hysteresis	Fig.	
	Min./max.				
R414009669	0 ... 10 V	Analog	0.015 bar	Fig. 2	-
R414009670	0 ... 20 mA	Analog	0.015 bar	Fig. 1	-
R414009671	4 ... 20 mA	Analog	0.015 bar	Fig. 1	-
R414009672	-	Analog	0.015 bar	Fig. 3	1)
R414009673	0 ... 10 V	Analog	0.015 bar	Fig. 2	-
R414009574	0 ... 20 mA	Analog	0.03 bar	Fig. 1	-
R414009575	4 ... 20 mA	Analog	0.03 bar	Fig. 1	-
R414009576	-	Analog	0.03 bar	Fig. 3	1)
R414002870	0 ... 10 V	Analog	0.03 bar	Fig. 2	-
R414000728	0 ... 20 mA	Analog	0.03 bar	Fig. 1	-
R414000729	4 ... 20 mA	Analog	0.03 bar	Fig. 1	-
R414000730	-	Analog	0.03 bar	Fig. 3	1)
R414000731	0 ... 10 V	Analog	0.03 bar	Fig. 2	-

Minimum working pressure = 0.5 bar + max. required secondary pressure, Additional pressure setting ranges available on request

1) Output 10V constant to supply a set point potentiometer.

## Technical information

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 the MediaCentre).

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.

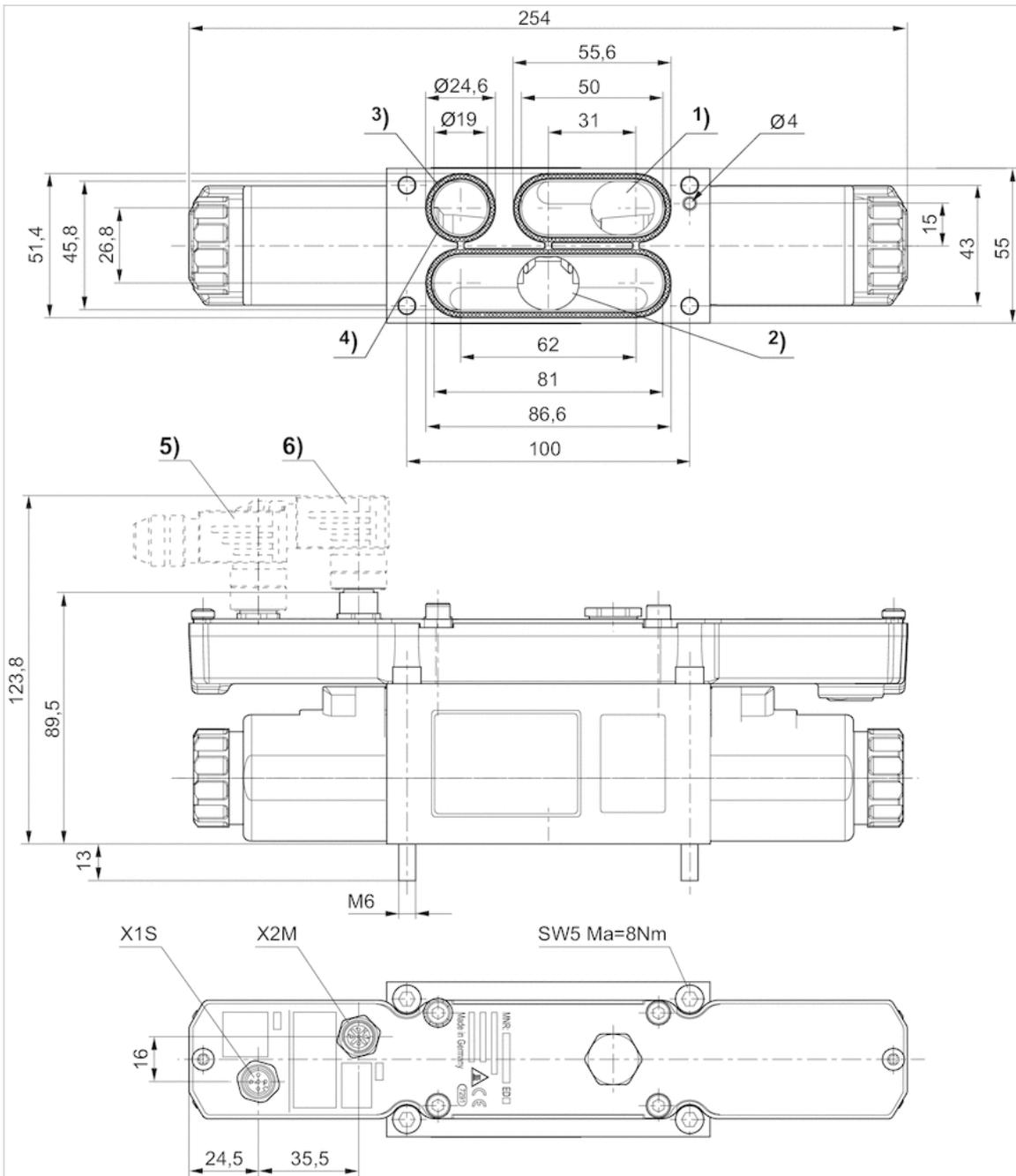
## Technical information

### Material

Housing	Aluminum Steel
Seals	Hydrogenated acrylonitrile butadiene rubber

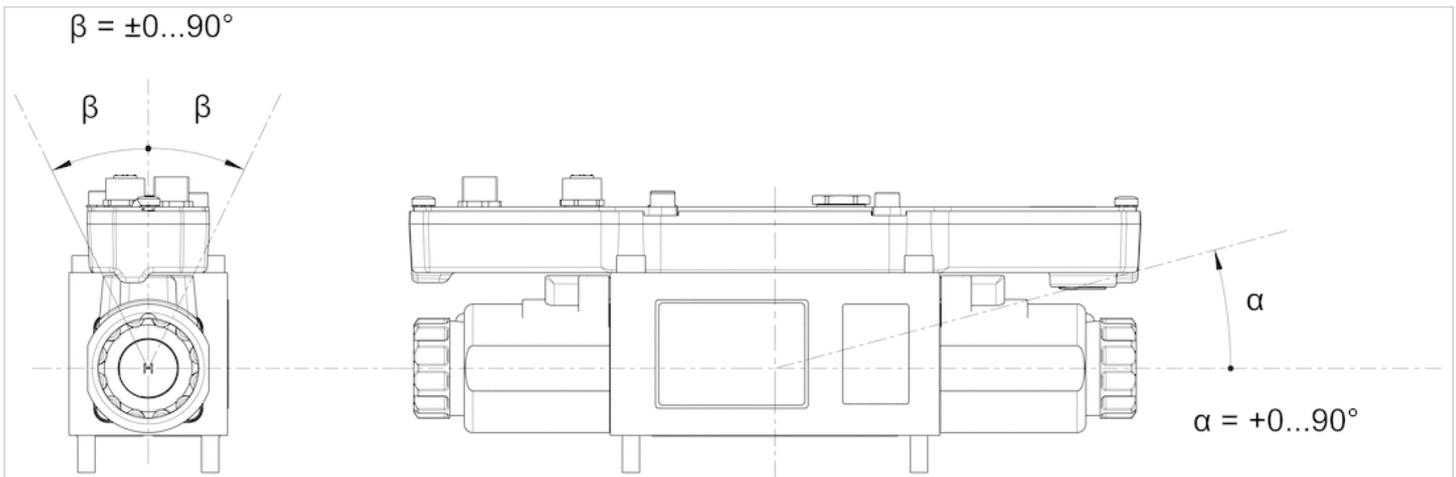
# Dimensions

## Dimensions



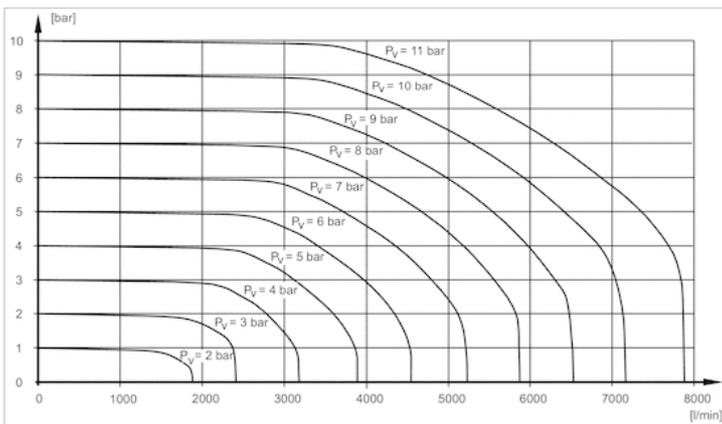
- 1) Operating pressure
- 2) Working pressure
- 3) Exhaust
- 4) Seal (not assembled)
- 5) + 6) Accessories not supplied

## Mounting orientation



## Diagrams

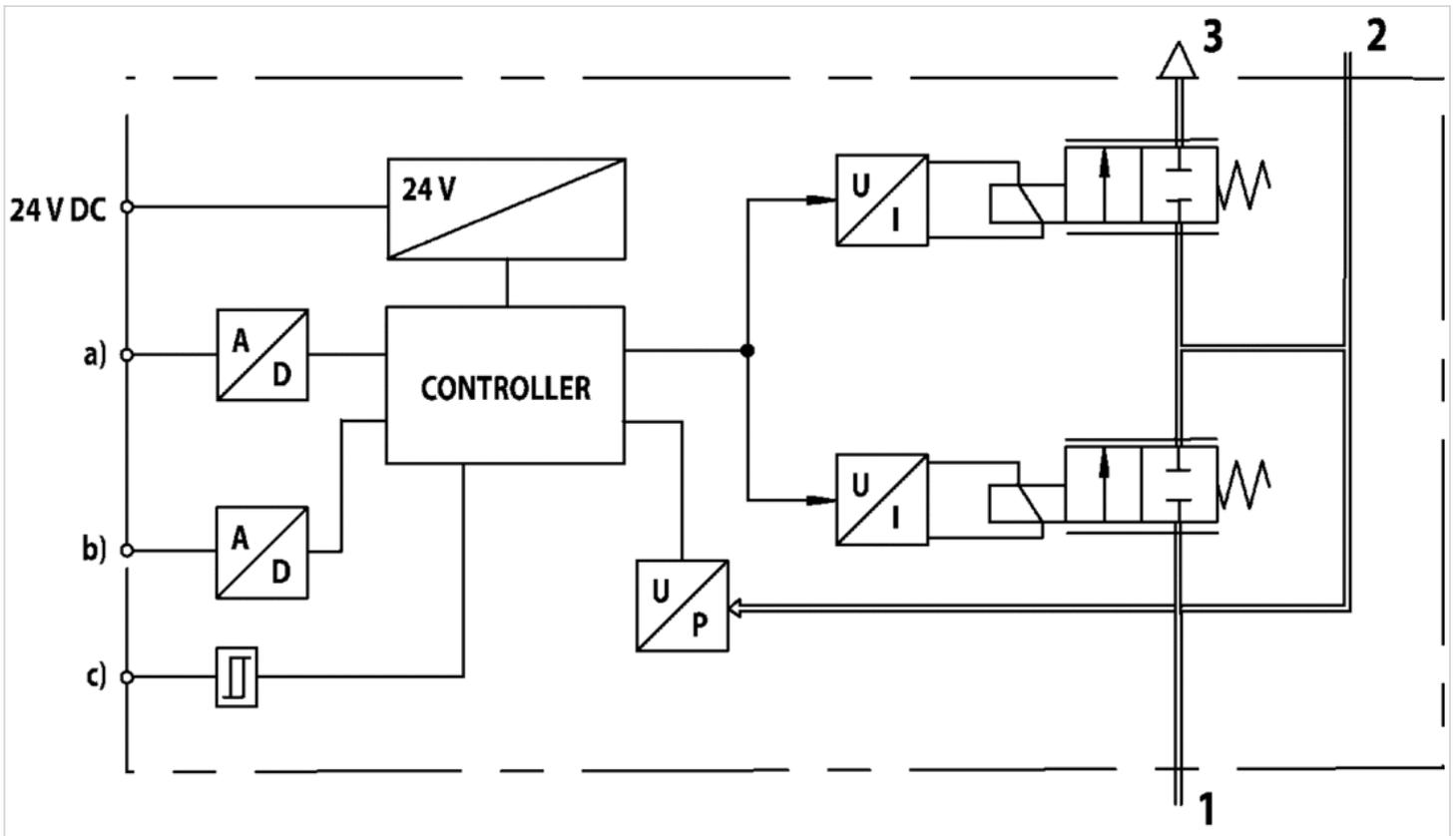
### Flow diagram



$P_v$  = Supply pressure

Circuit diagram

Functional diagram

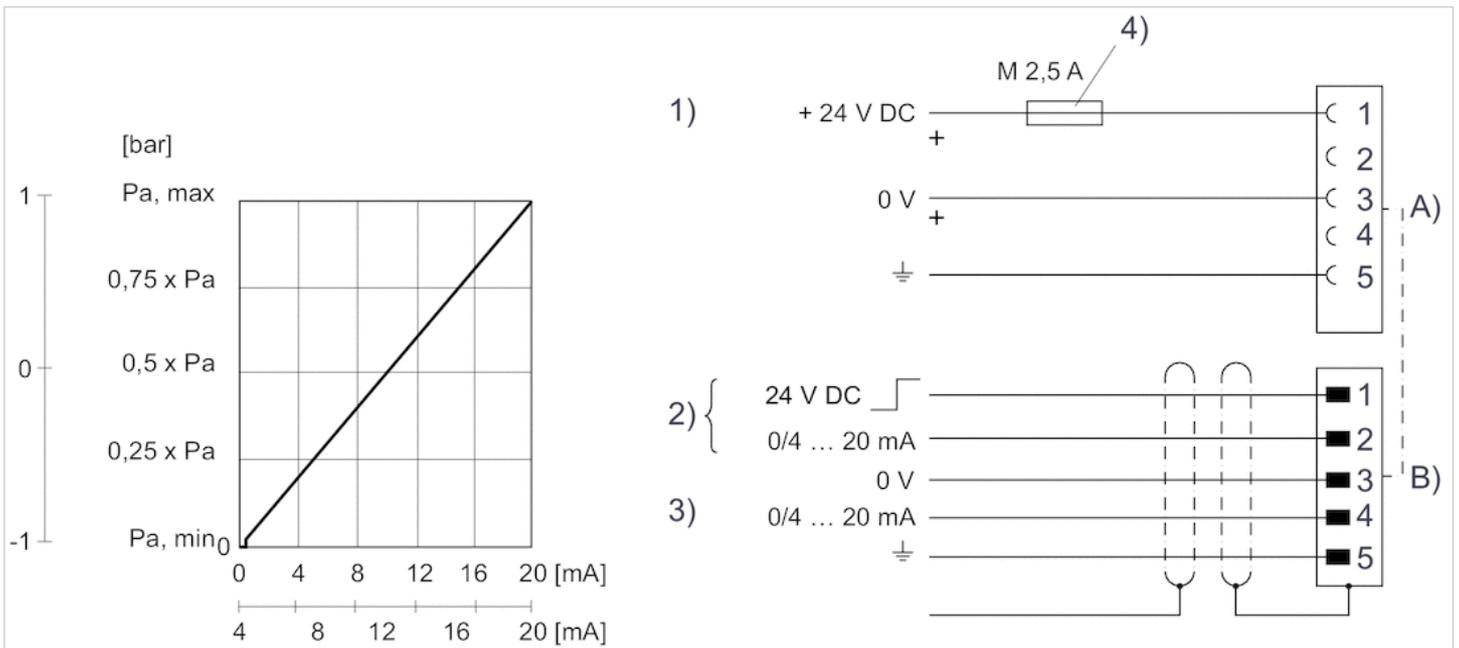


- a) Nominal input value
- b) Actual output value
- c) Switch output (acknowledge signal)

The E/P pressure control valve modulates the pressure corresponding to an analog electrical nominal input value.

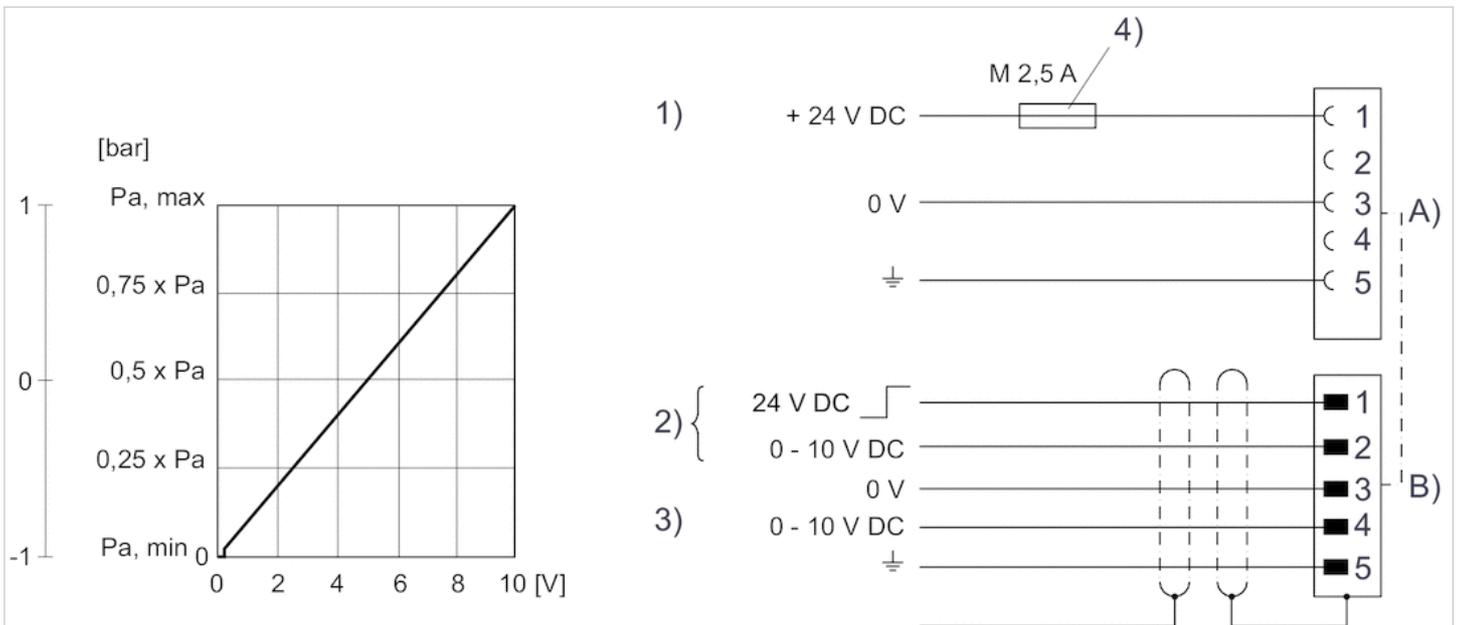
- 1) Operating pressure
- 2) Working pressure
- 3) Exhaust

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



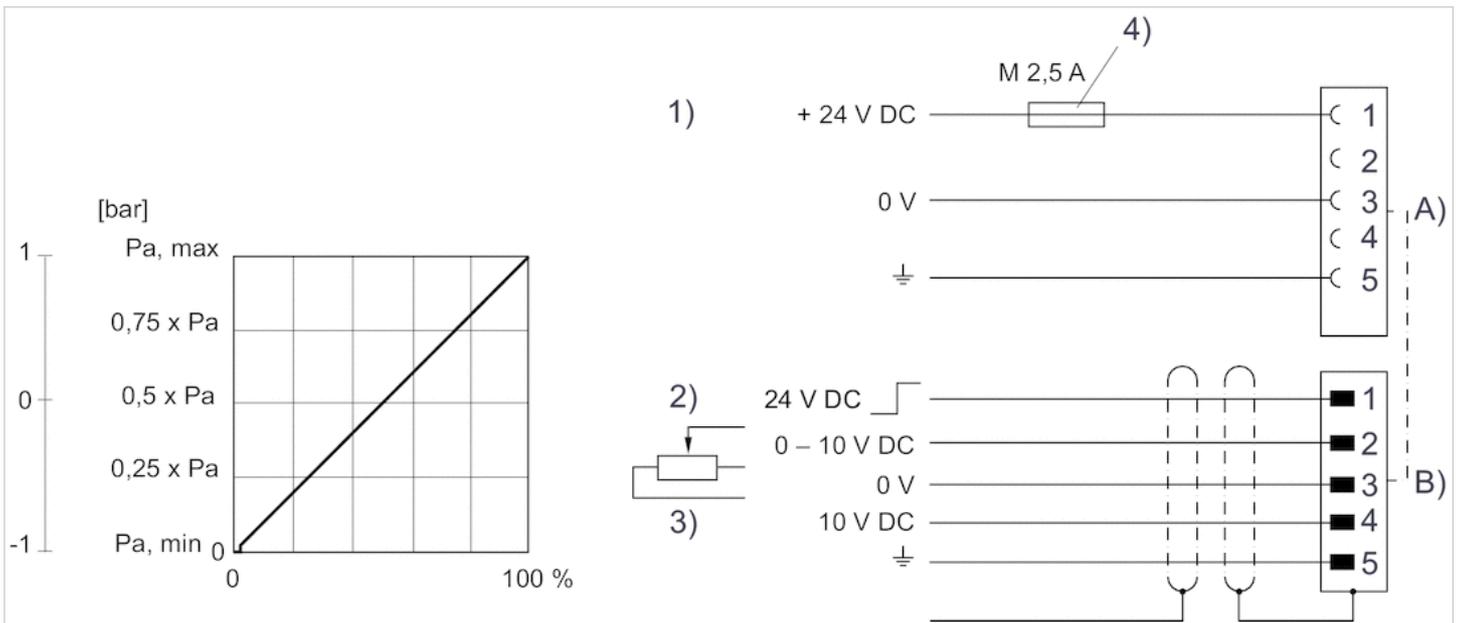
- 1) Supply Voltage
  - 2) Switch output (pin 1) and nominal value (pin 2) are related to 0 V. Input current nominal value (ohmic load 100 Ω).
  - 3) Actual value (pin 4) is related to 0 V (max. total resistance of downstream devices 300 Ω).
  - 4) The operating voltage must be protected by an external M 2.5 A fuse.
- Connect plug X2M via a shielded cable to ensure EMC.  
 A) Plug X1S B) Plug X2M

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



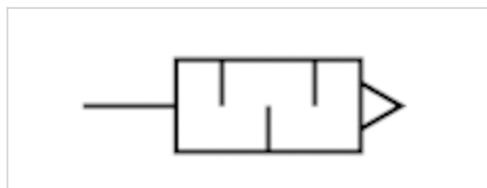
- 1) Supply Voltage
  - 2) Switch output (pin 1) and nominal value (pin 2) are related to 0 V.
  - 3) Potentiometer control (min. 0-2 kΩ, max. 0-10 kΩ)
  - 4) The operating voltage must be protected by an external M 2.5 A fuse.
- Connect plug X2M via a shielded cable to ensure EMC.
- A) Plug X1S B) Plug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

# Silencers, series SI1

- G 3/4
- Sintered bronze



Working pressure min./max.	0 ... 10 bar
Ambient temperature min./max.	-25 ... 80 °C
Medium	Compressed air
Sound pressure level	92 dB
Weight	0.13 kg
Comment	Flow characteristic curves can be found under "Diagrams".



## Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
1827000004	G 3/4	8394 l/min	1 piece

Weight per piece

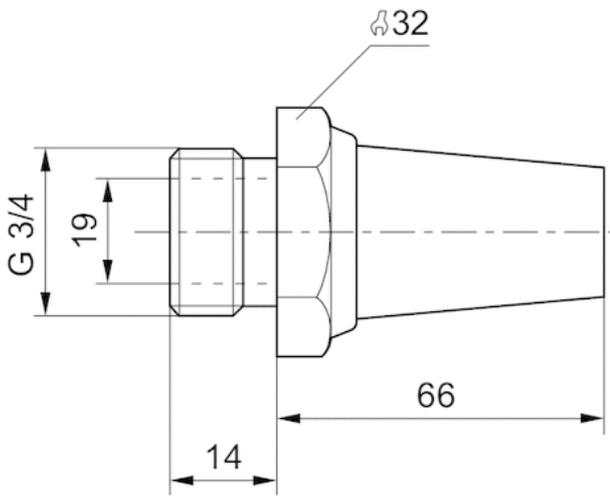
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

## Technical information

Material	
Silencer	Sintered bronze
Thread	Brass

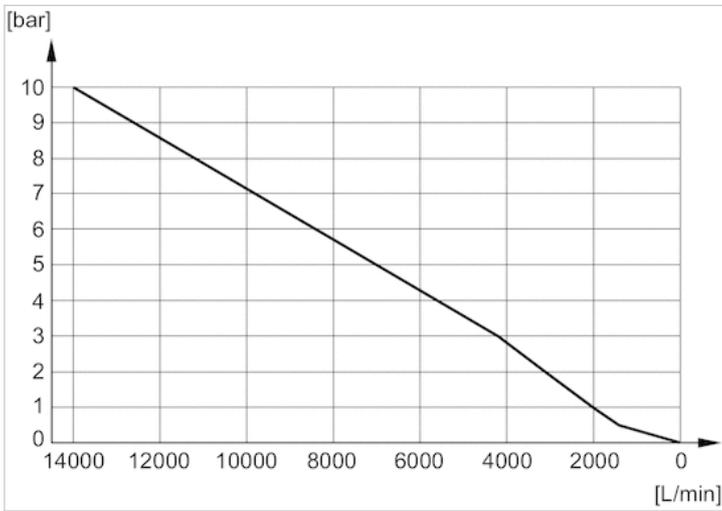
## Dimensions

### Dimensions in mm



## Diagrams

### Flow diagram, 1827000004



# Single subbase, Series ED12



Medium  
Weight

Compressed air  
1.13 kg

## Technical data

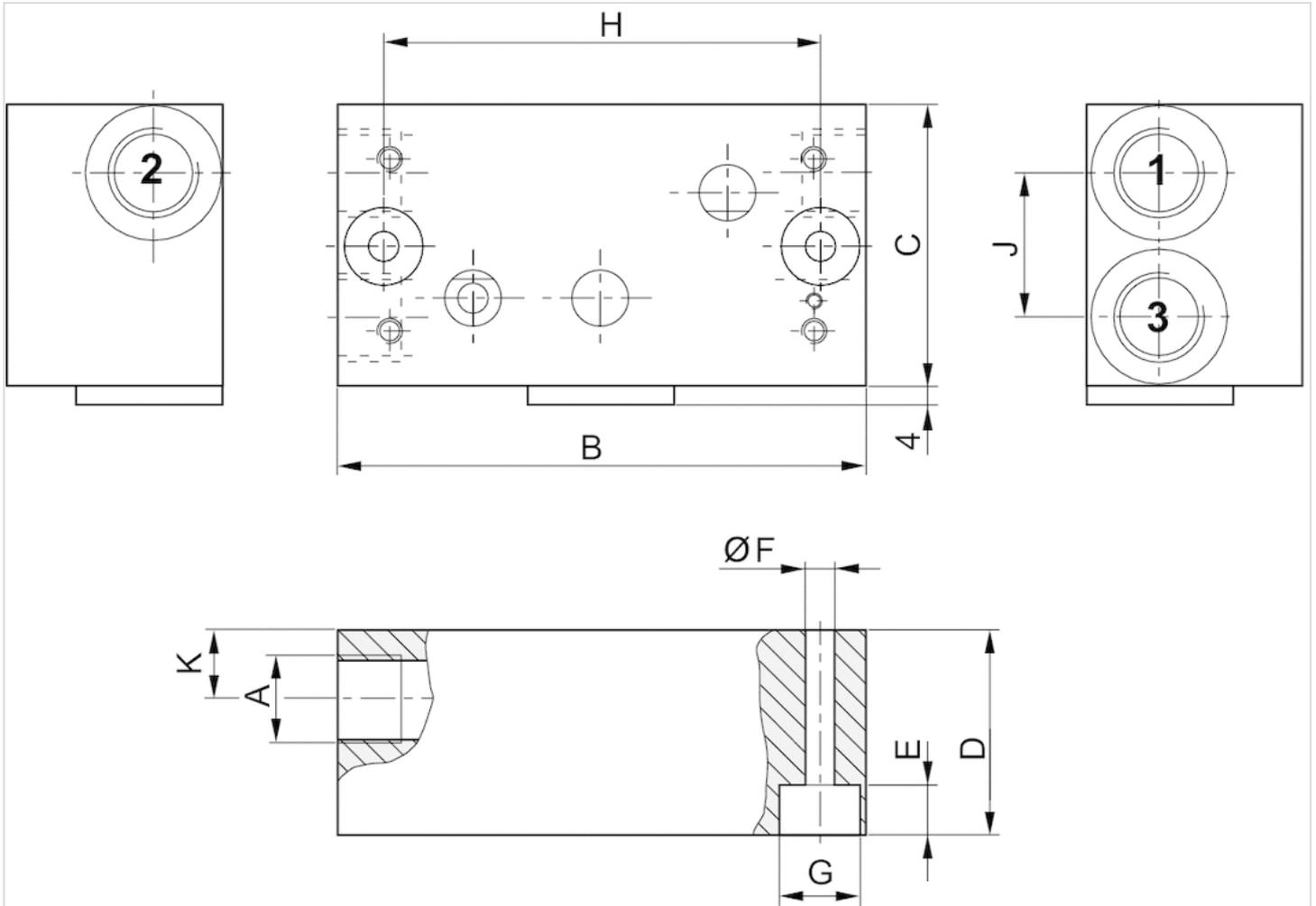
Part No.	Type
5610221012	ISO 5599-1, size 3

## Technical information

Material	
Base plate	Aluminum

## Dimensions

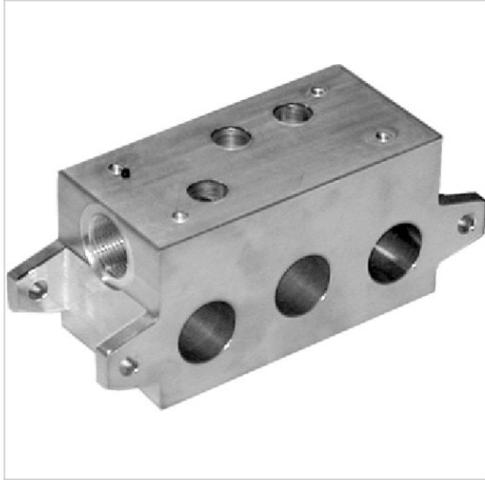
### Dimensions



## Dimensions

Part No.	A	B	C	D	E	F	G	H	J	K
5610221012	G 3/4	120	80	54	14	8.5	18	100	43	18

# Stacking assembly subplate, ISO size 3



Medium  
Weight

Compressed air  
1.63 kg

## Technical data

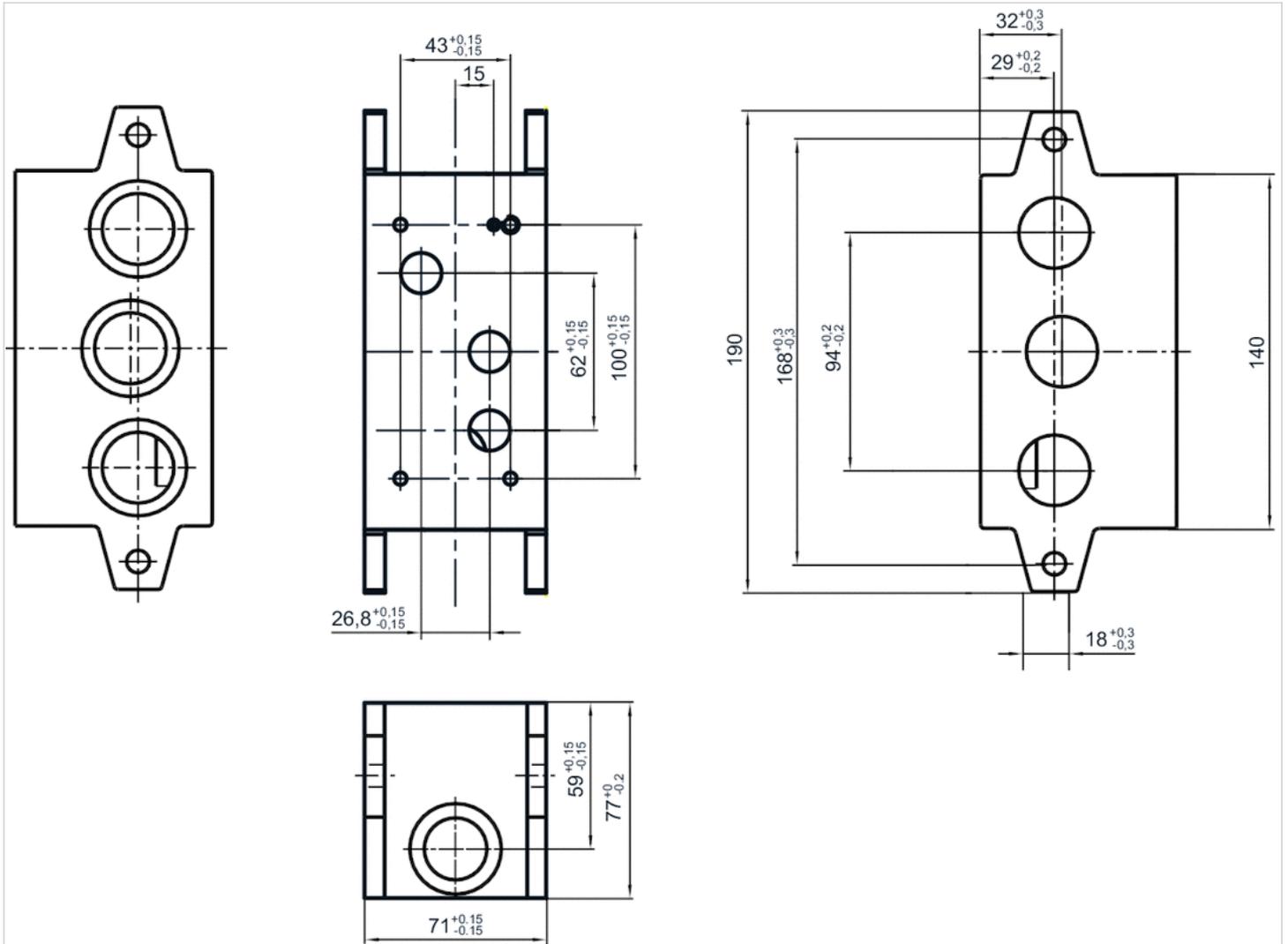
Part No.	Type
8985049912	ISO 5599-1, size 3

## Technical information

Material	
Base plate	Aluminum

# Dimensions

## Dimensions

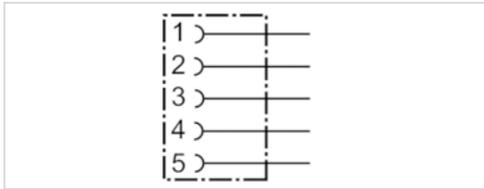


# Round plug connector, Series CON-RD

- Socket, M12x1, 5-pin, A-coded, angled, 90°
- for CANopen
- UL (Underwriters Laboratories)
- shielded



Connection type	Screws
Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.072 kg



## Technical data

Part No.	Max. current	suitable cable-Ø min./max
1824484029	4 A	6 / 8 mm

## Technical information

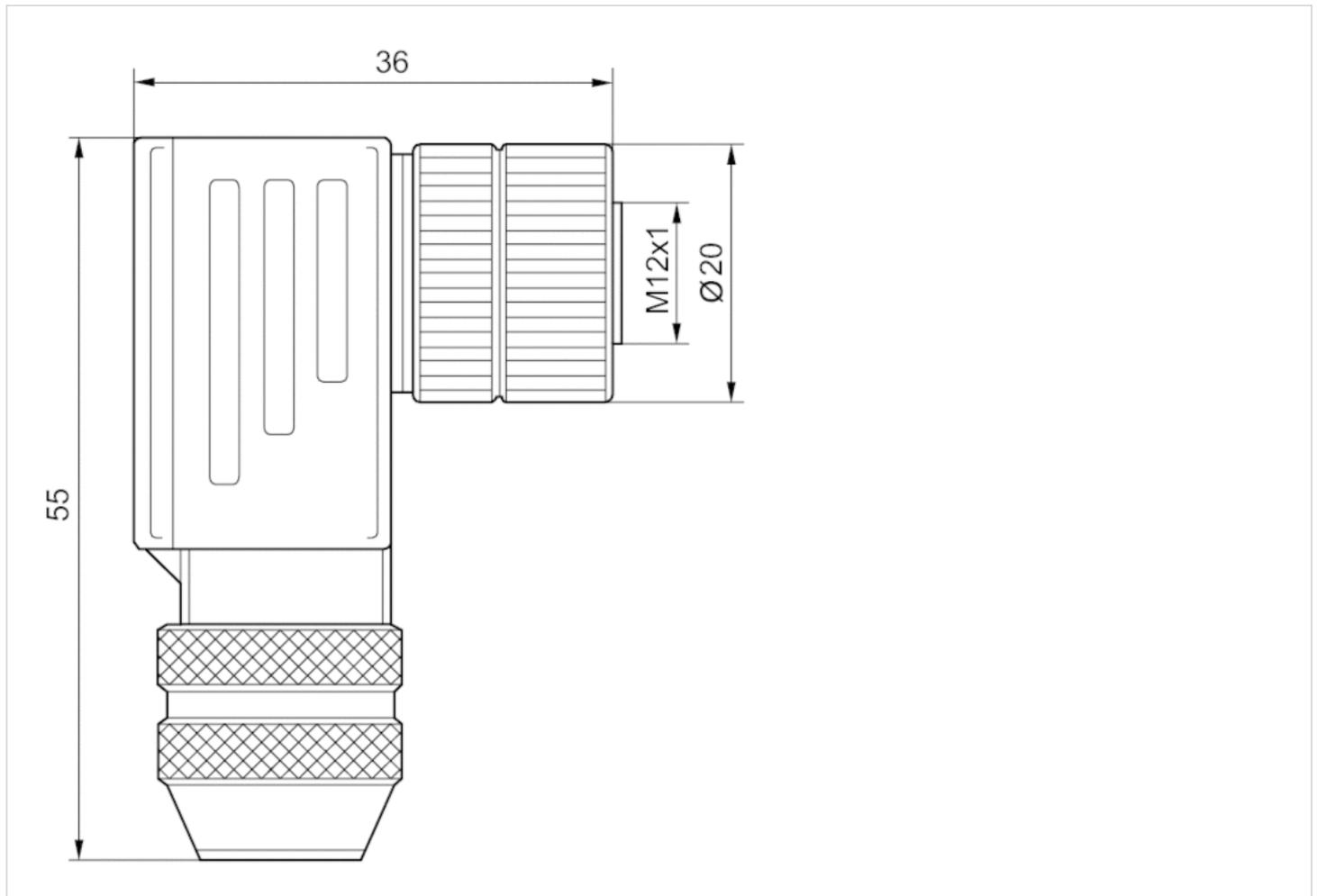
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Die cast zinc

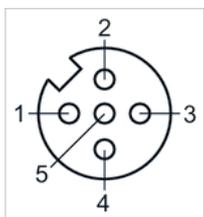
## Dimensions

### Dimensions



## Pin assignments

### Pin assignment, socket

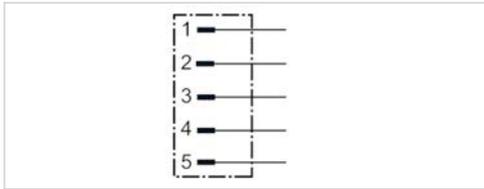


# Round plug connector, Series CON-RD

- Plug, M12x1, 5-pin, A-coded, angled, 90°
- for CANopen
- UL (Underwriters Laboratories)
- shielded



Connection type	Screws
Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.068 kg



## Technical data

Part No.	Max. current	suitable cable-Ø min./max
1824484028	4 A	6 / 8 mm

## Technical information

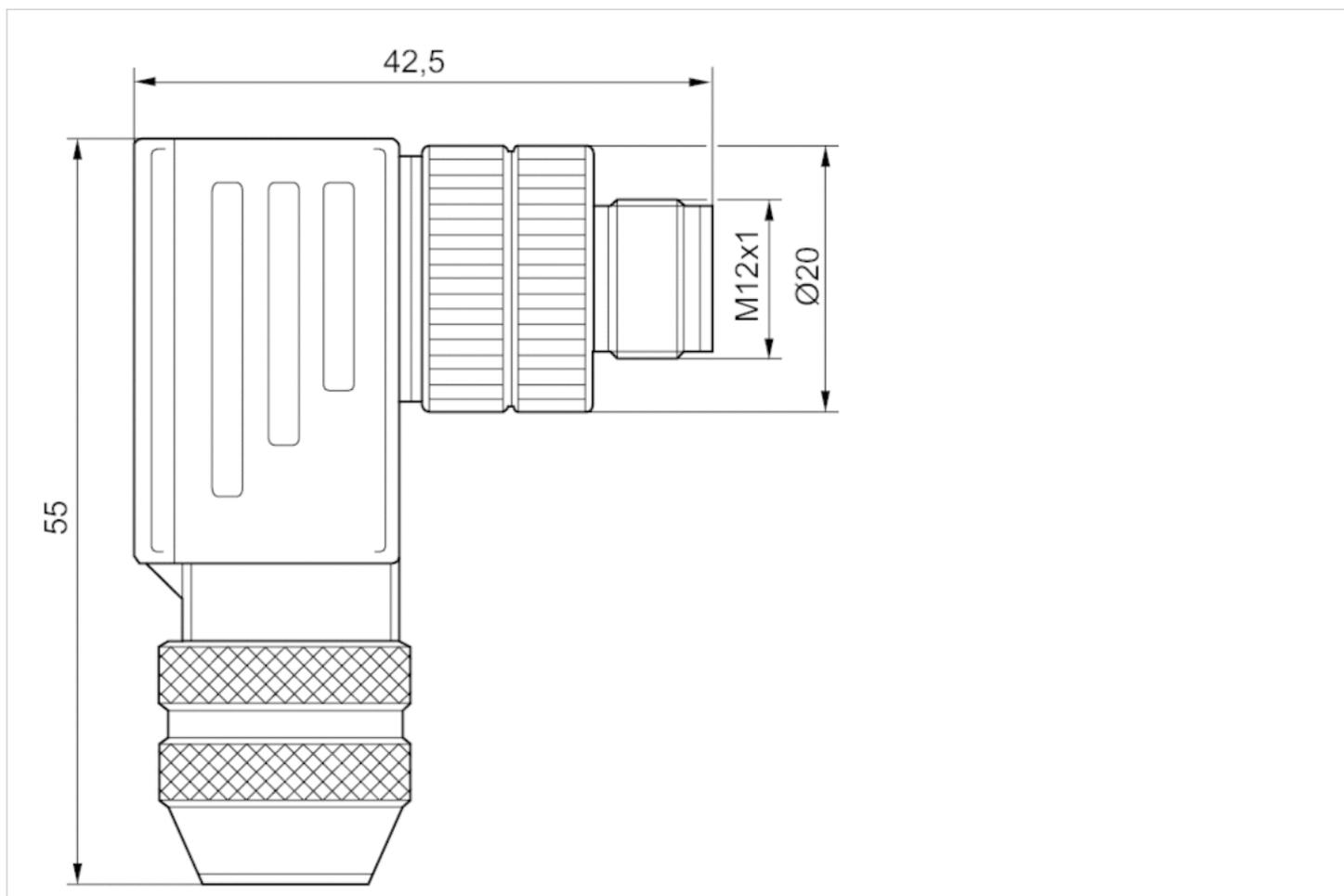
The specified protection class is only valid in assembled and tested state.

## Technical information

Material	
Housing	Brass, nickel-plated

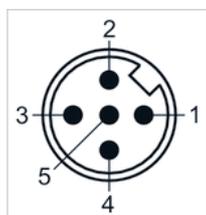
## Dimensions

### Dimensions



## Pin assignments

### Plug pin assignment

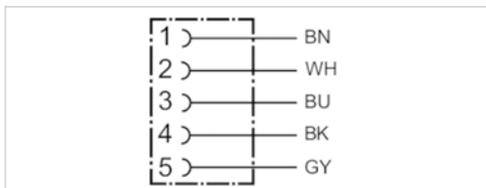


# Round plug connector, Series CON-RD

- Socket M12x1 5-pin A-coded angled 90°
- open cable ends
- with cable
- shielded



Ambient temperature min./max.	-25 ... 80 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Wire cross-section	0.34 mm <sup>2</sup>
Weight	See table below



## Technical data

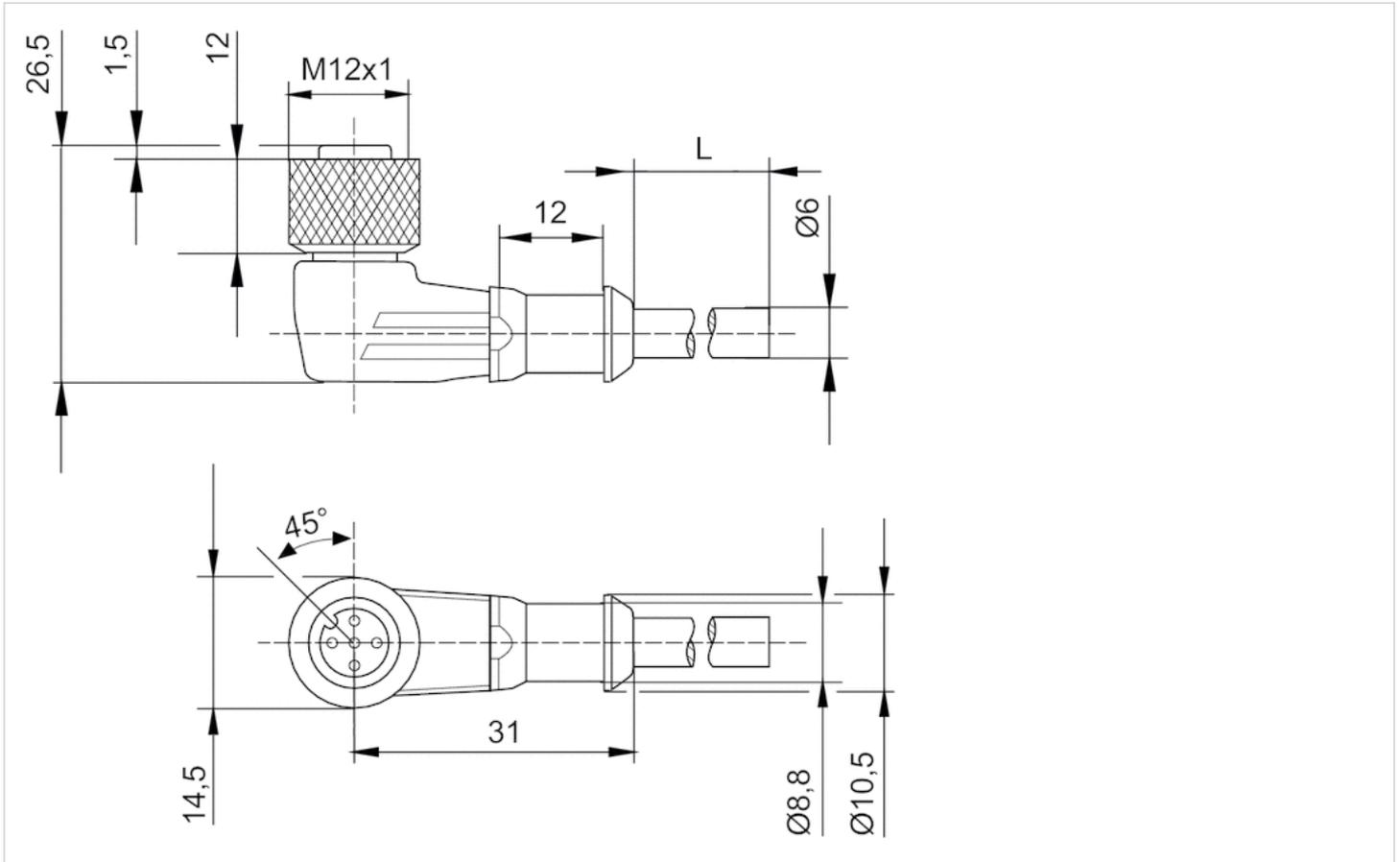
Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Weight
R419800109	4 A	5	6 mm	2.5 m	0.145 kg
R419800110	4 A	5	6 mm	5 m	0.27 kg
R419800546	4 A	5	6 mm	10 m	0.514 kg

## Technical information

Material	
Housing	Thermoplastic elastomer
Cable sheath	Polyurethane

## Dimensions

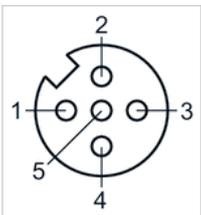
### Dimensions



L = length

## Pin assignments

### Pin assignment, socket



- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) GY=grey

# Base plate gasket, Series ED12



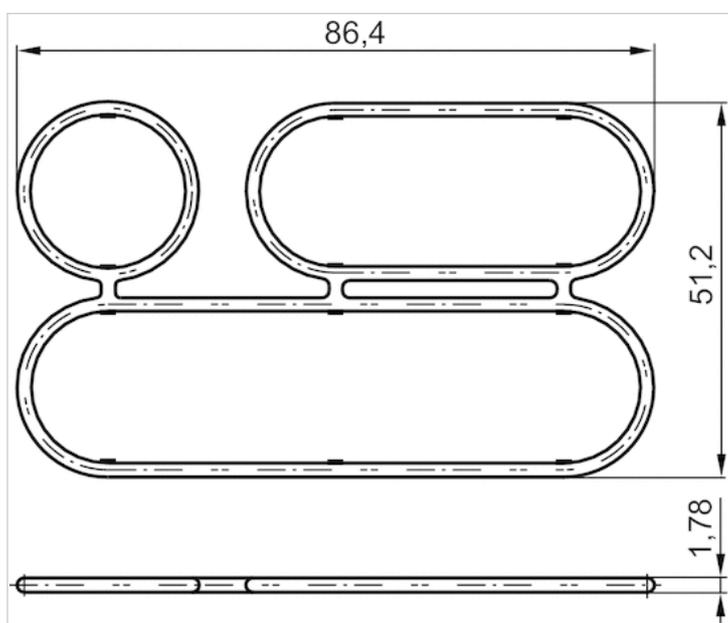
Weight

0.07 kg

## Technical data

Part No.	Type
5610220092	4 mounting screws according to DIN 912 - M6x70 and base plate gasket

## Dimensions



# Efficient pneumatic solutions, our program: cylinders and drives, valves and valve systems, air supply management



Visit us: [Emerson.com/Aventics](https://www.emerson.com/Aventics)

Your local contact: [Emerson.com/contactus](https://www.emerson.com/contactus)



Emerson.com



[Facebook.com/EmersonAutomationSolutions](https://www.facebook.com/EmersonAutomationSolutions)



[LinkedIn.com/company/Emerson-Automation-Solutions](https://www.linkedin.com/company/Emerson-Automation-Solutions)



[Twitter.com/EMR\\_Automation](https://twitter.com/EMR_Automation)

An example configuration is depicted on the title page. The delivered product may thus vary from that in the illustration. Subject to change. This Document, as well as the data, specifications and other information set forth in it, are the exclusive property of AVENTICS GmbH. It may not be reproduced or given to third parties without its consent. Only use the AVENTICS products shown in industrial applications. Read the product documentation completely and carefully before using the product. Observe the applicable regulations and laws of the respective country. When integrating the product into applications, note the system manufacturer's specifications for safe use of the product. The data specified only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that the products are subject to a natural process of wear and aging.

The Emerson logo is a trademark and service mark of Emerson Electric Co. Brand logotype are registered trademarks of one of the Emerson family of companies. All other marks are the property of their respective owners. © 2017 Emerson Electric Co. All rights reserved.  
2019-03



## CONSIDER IT SOLVED™