

series AS3-SV

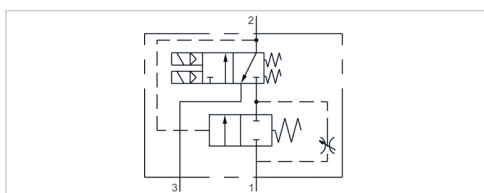


AVENTICS™ series AS3-SV



3/2 directional safety valve, Series AS3-SV

- Safe exhaust and protection against unexpected start-up ■ category 4, PL e ■ Soft-start function
- 3/2
- Compressed air connection output : G 1/2
- Electrical connection : M12, 5-pin, A-coded



Activation	Electrically
Sealing principle	Soft sealing
Standards	ISO 13849-1
Working pressure min./max.	2 ... 10 bar
Ambient temperature min./max.	-5 ... 50 °C
Medium temperature min./max.	-5 ... 50 °C
Medium	Compressed air Neutral gases
Max. particle size	5 µm
Oil content of compressed air	0 ... 1 mg/m ³
Nominal flow 1 ► 2	3700 l/min
Nominal flow 2 ► 3	7200 l/min
Protection class with connection	IP65
Duty cycle	100 %
Max. power consumption	280 mA
Version sensor	PNP
Weight	4.3 kg

Technical data

Part No.	Compressed air connection	
	Input	Output
R412026223	G 1/2	G 1/2

Part No.	Compressed air connection	Operational voltage	Voltage tolerance
	Exhaust	DC	DC
R412026223	1"	24 V	-10% / +10%

Part No.	Power consumption	Nominal resistance
	DC	
R412026223	6 W	40 Ω

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).

The AS3-SV safety valve is a redundant system according to the requirements of ISO 13849-1 and -2, in which the pneumatic safety functions “safe exhaust” and “prevention of unexpected start-ups” are ensured, including in case of a safety valve fault (e.g. due to wear).

The safety function of the 3/2 valve from the AS3-SV series is that the machine/system is only supplied with pneumatic energy (compressed air) when the redundant electrical control and therefore both valve elements are actuated simultaneously. The supply with compressed air is switched off and the system is exhausted if the redundant electrical control is not available.

In contrast to the functions “safe exhaust” and “prevention of unexpected start-ups” of the valve AS3-SV, the “soft start” function does not fulfil the safety function according to ISO 13849.

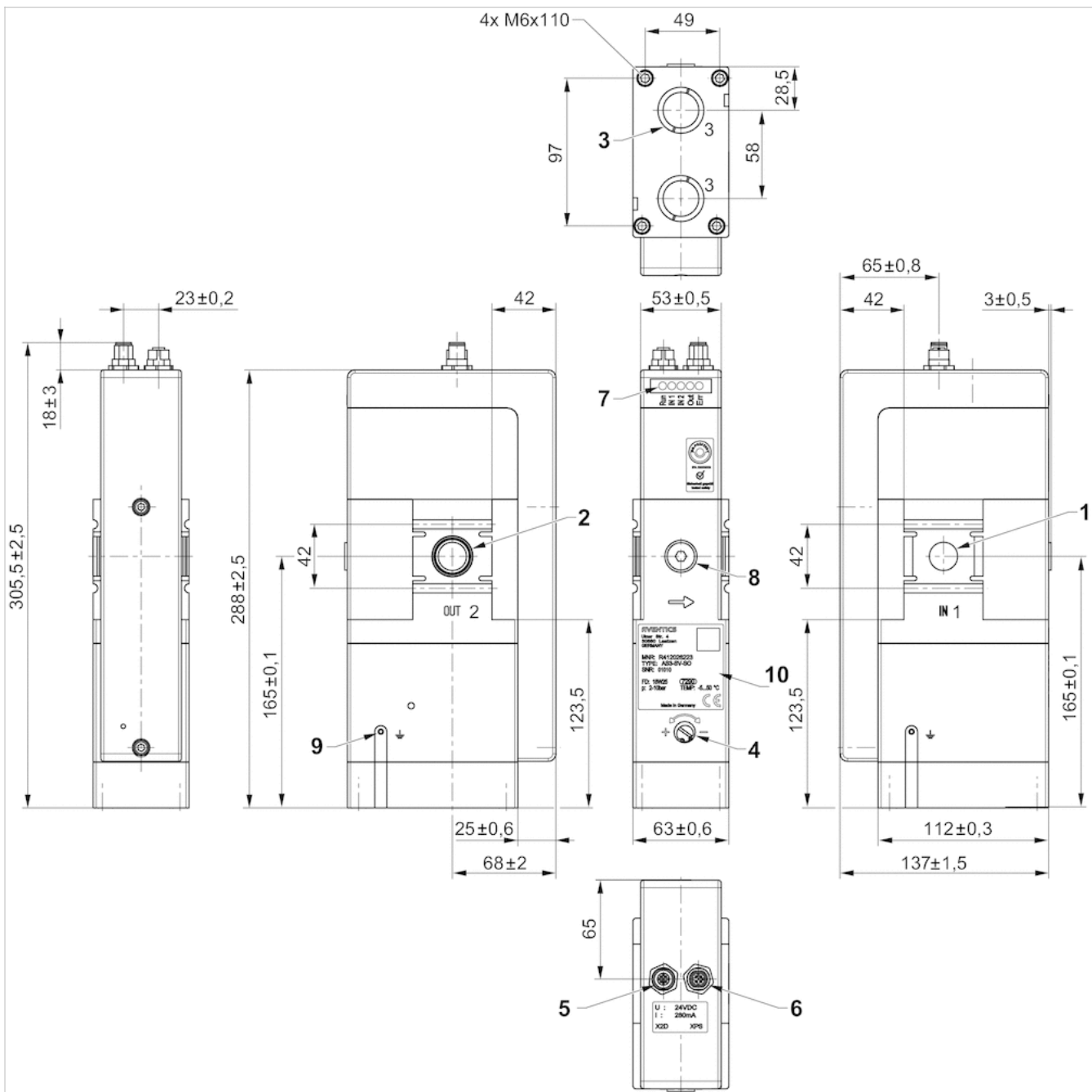
If using as a single valve, it is recommended to mount the AS3-SV with the block assembly kit W05. If the AS3-SV is installed in an air preparation unit, use one mounting clip R412026828 when adding to the end of the maintenance unit and two mounting clips R412026828 when installing in the middle. Please observe the operating instructions for this.

Technical information

Material	
Housing	Aluminum, painted
Seals	Nitrile butadiene rubber

Dimensions

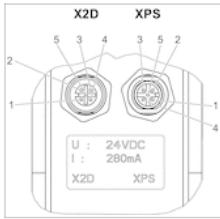
Dimensions



1) Compressed air supply port 12) Operating line port 23) Exhaust port 34) Adjustment screw for soft-start5) Plug X2D, M12 female safety inputs6) Plug XPS, M12 male voltage supply7) LED display8) Pressure gauge connection G1/4 (optional)9) Port for functional ground M310) Name plate (identification of the AS3-SV safety valve)

Pin assignments

Pin assignments



Socket (female), X2D, M12, A-coded, 5-pin

- 1) S21 Clock signal S22
- 2) S22 Safety input 2
- 3) S11 Clock signal for S12
- 4) S12 Safety input 1
- 5) Not connected (NC)

Plug (male), XPS, M12, A-coded, 5-pin

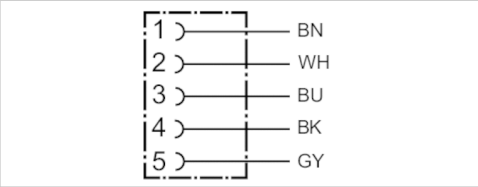
- 1) 24 V DC
- 2) Signal contact 42. (Potential-free contact)
- 3) 0 V
- 4) Input signal X2
- 5) Signal contact 41. (Potential-free contact)

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 mm²
Weight	See table below



Technical data

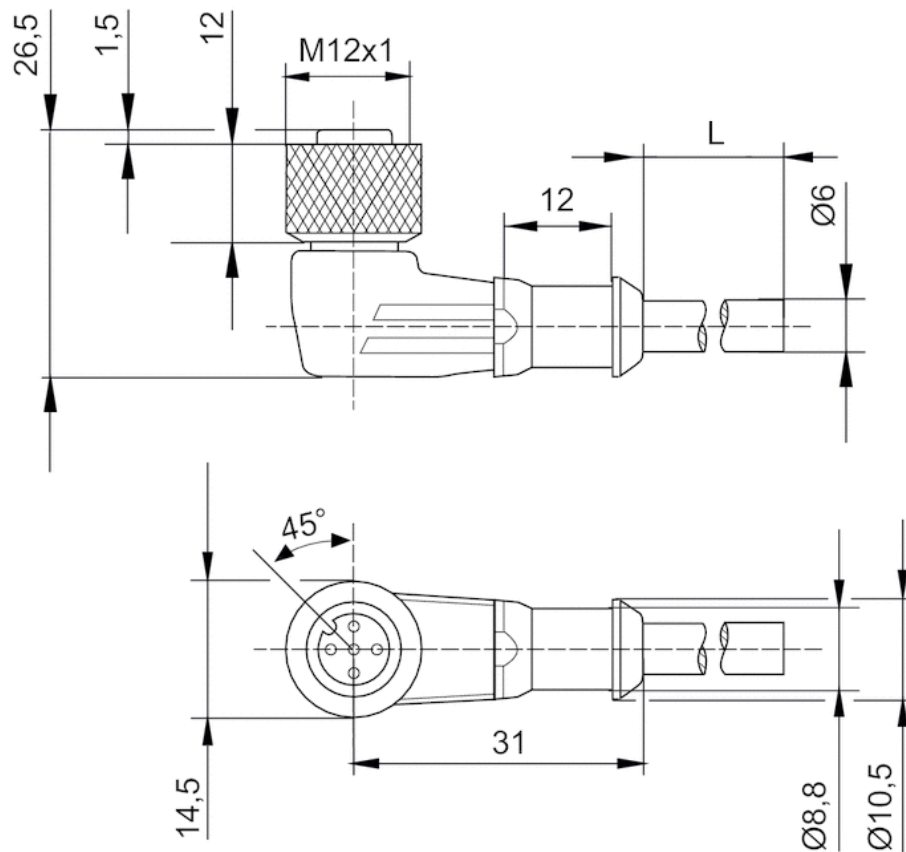
Part No.	Max. current	Number of wires	Cable-Ø	Cable length	Weight
R419800109	4 A	5	6 mm	2.5 m	0.145 kg
R419800110	4 A	5	6 mm	5 m	0.27 kg
R419800546	4 A	5	6 mm	10 m	0.514 kg

Technical information

Material	
Housing	Thermoplastic elastomer
Cable sheath	Polyurethane

Dimensions

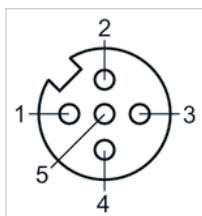
Dimensions



L = length

Pin assignments

Pin assignment, socket



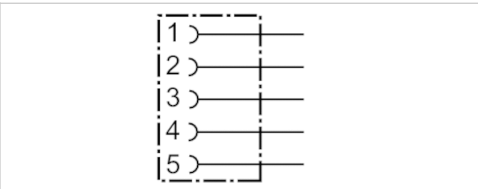
- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) GY=grey

Round plug connector, Series CON-RD

- Socket, M12x1, 5-pin, A-coded, straight, 180°
- for DeviceNet
- unshielded



Connection type	Screws
Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.016 kg



Technical data

Part No.	Max. current	suitable cable-Ø min./max
4407230020	4 A	4 mm

Technical information

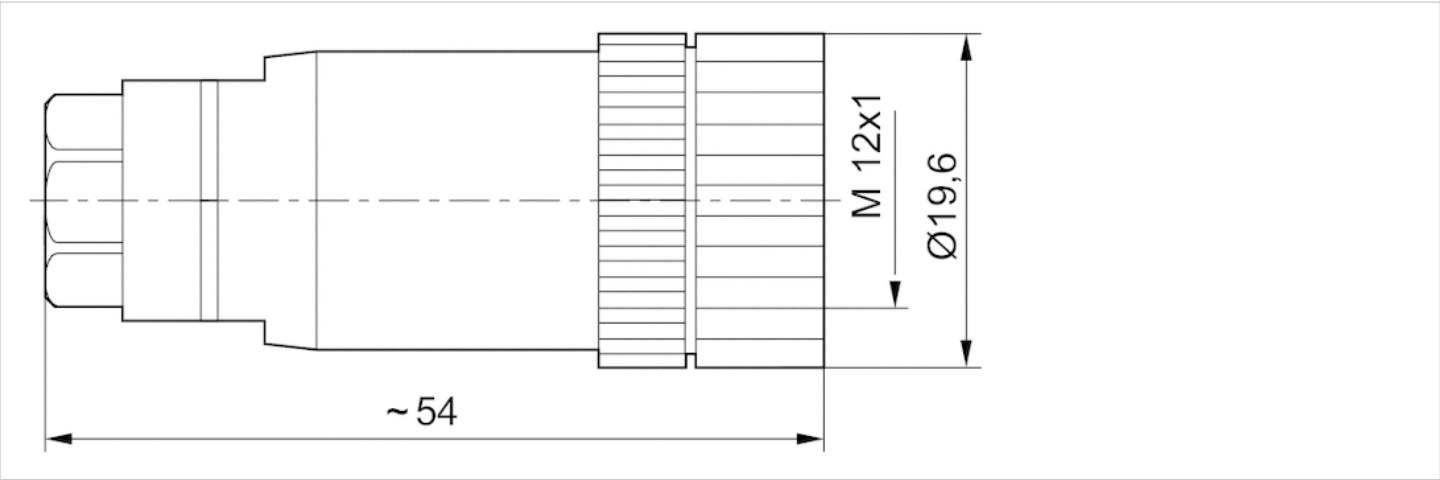
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polyamide

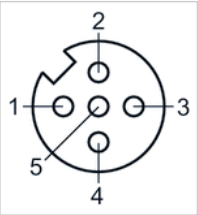
Dimensions

Dimensions



Pin assignments

Pin assignment, socket

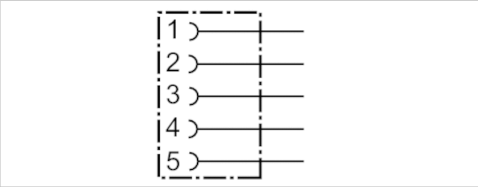


Round plug connector, Series CON-RD

- 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

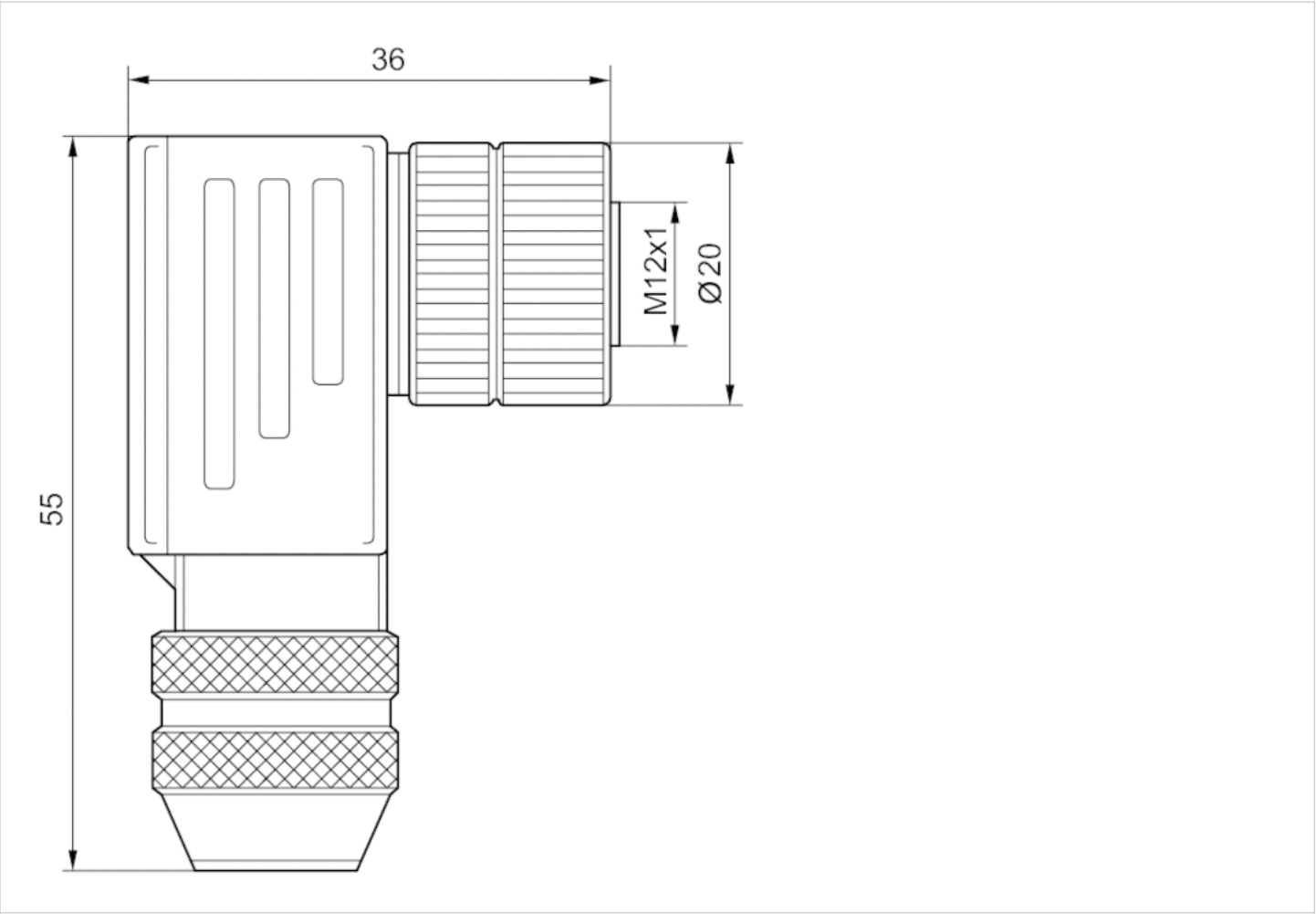
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Die cast zinc

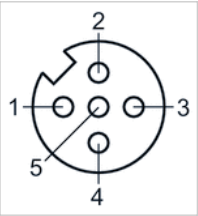
Dimensions

Dimensions



Pin assignments

Pin assignment, socket



Round plug connector, Series CON-RD

- Plug M12x1 5-pin A-coded straight 180°
- open cable ends 5-pin
- with cable
- unshielded



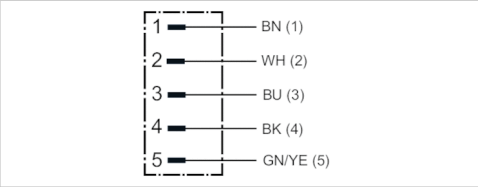
Protection class

Weight

IP68

See table below

The delivered product may vary from that in the illustration.



Technical data

Part No.	Number of wires	Cable length	Weight
8946203432	5	2 m	0.102 kg
8946203442	5	5 m	0.238 kg

with self-clinching screw

Technical information

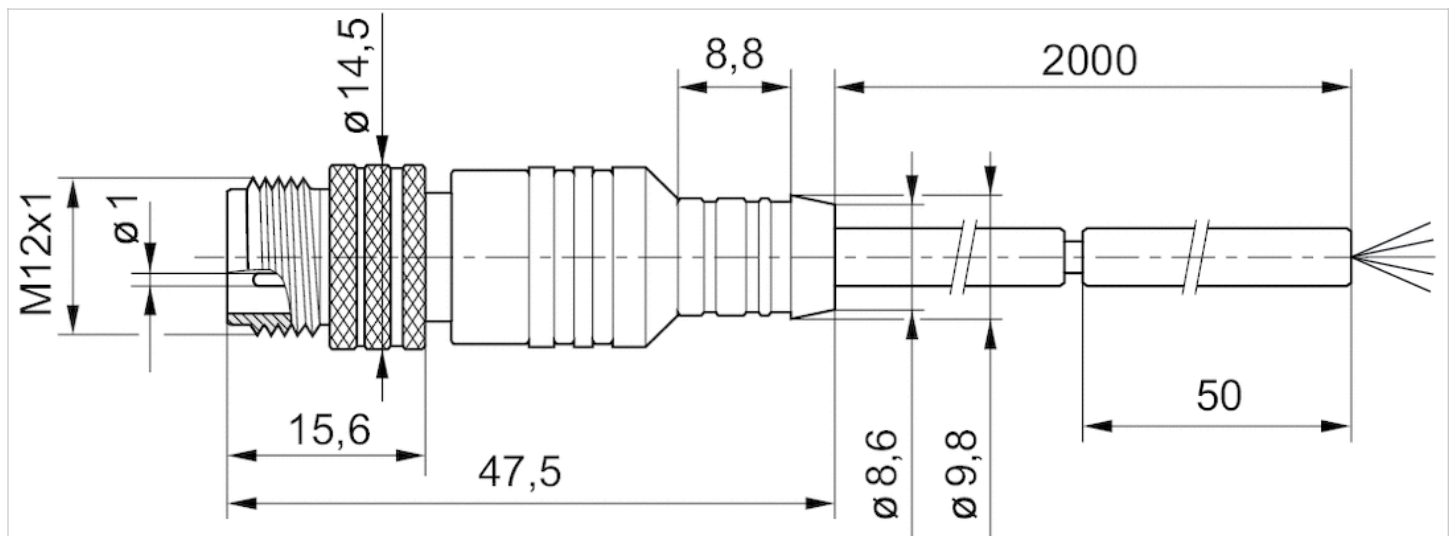
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Cable sheath	Polyvinyl chloride

Dimensions

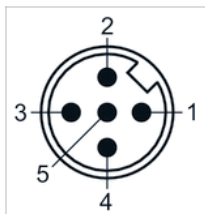
Dimensions



L = length

Pin assignments

Plug pin assignment



- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) GRN-Y=green-yellow

Round plug connector, Series CON-RD

- Plug M12x1 5-pin A-coded angled 90°
- open cable ends 5-pin
- with cable
- suitable for dynamic laying
- unshielded



Ambient temperature min./max.	See table below
Operational voltage	48 V AC/DC
Protection class	IP68
Wire cross-section	0.34 mm ²
Mounting screw tightening torque	0.8 Nm
Weight	See table below

1	BN (1)
2	WH(2)
3	BU (3)
4	BK (4)
5	GR (5)

Technical data

Part No.	Ambient temperature min./max.	Max. current	Number of wires	Bending radius min.	Cable-Ø	Cable length
R412021691	-40 ... 85 °C	4 A	5	50 mm	5 mm	2 m
R412021692	-40 ... 85 °C	4 A	5	50 mm	5 mm	5 m
R412021693	-25 ... 85 °C	4 A	5	50 mm	5 mm	10 m

Part No.	Weight
R412021691	0.093 kg
R412021692	0.2 kg
R412021693	0.381 kg

suitable for dynamic laying

Technical information

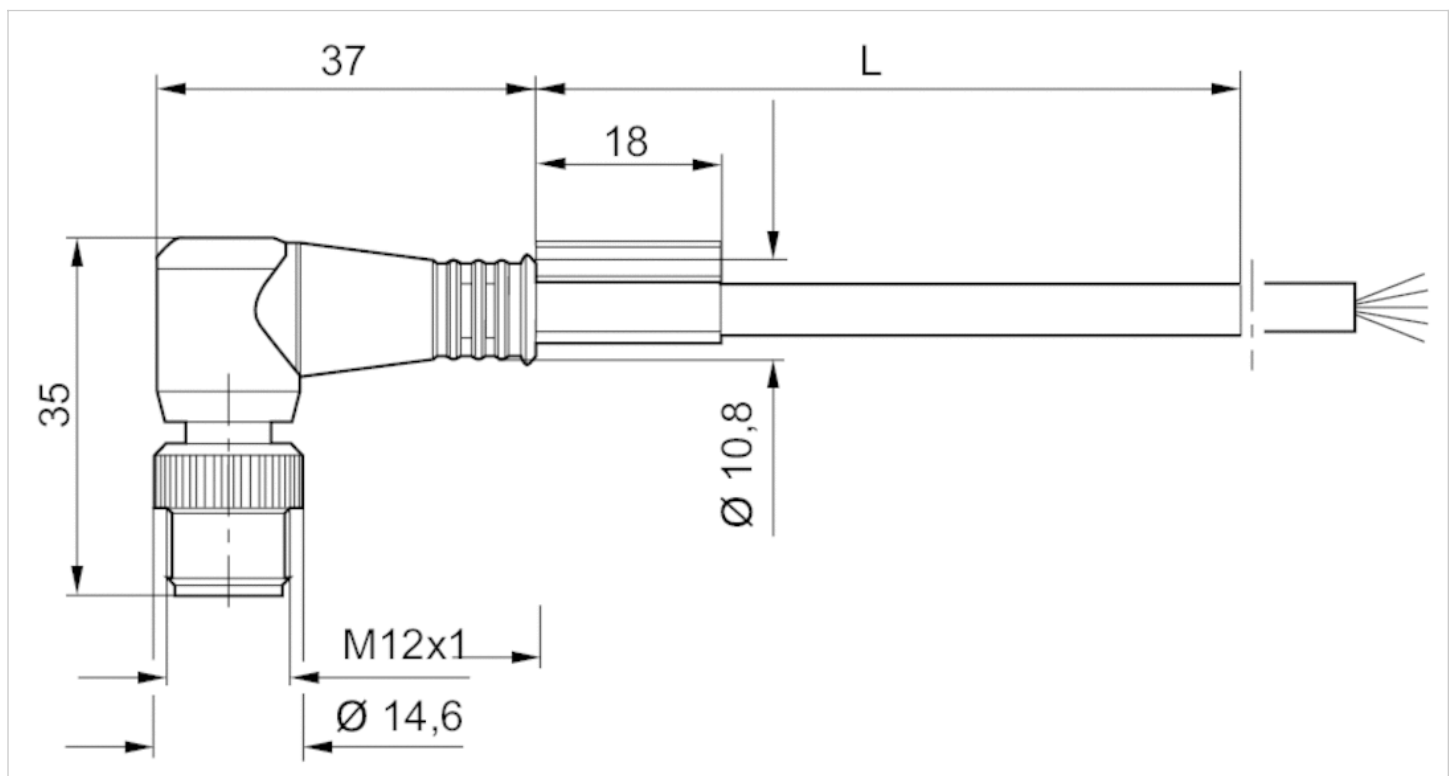
The specified protection class is only valid in assembled and tested state.

Technical information

Housing	Polyurethane
---------	--------------

Dimensions

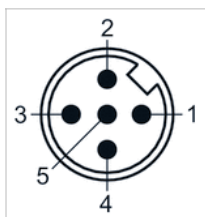
Dimensions



L = length

Pin assignments

Plug pin assignment



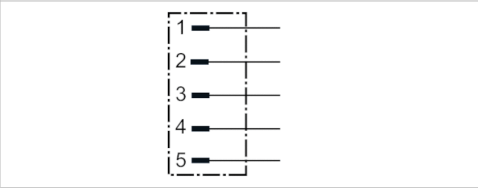
- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) GY=grey

Round plug connector, Series CON-RD

- Plug, M12x1, 5-pin, A-coded, straight, 180°
- for CANopen, DeviceNet
- UL (Underwriters Laboratories)
- shielded



Connection type	Screws
Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.48 kg



Technical data

Part No.	Max. current	suitable cable-Ø min./max
8942051612	4 A	6 / 8 mm

Technical information

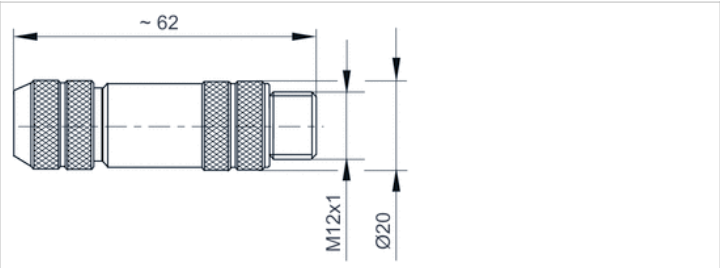
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Brass, nickel-plated

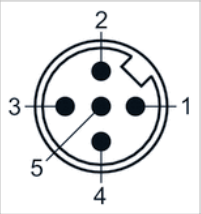
Dimensions

Dimensions



Pin assignments

Plug pin assignment



Round plug connector, Series CON-RD

- 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

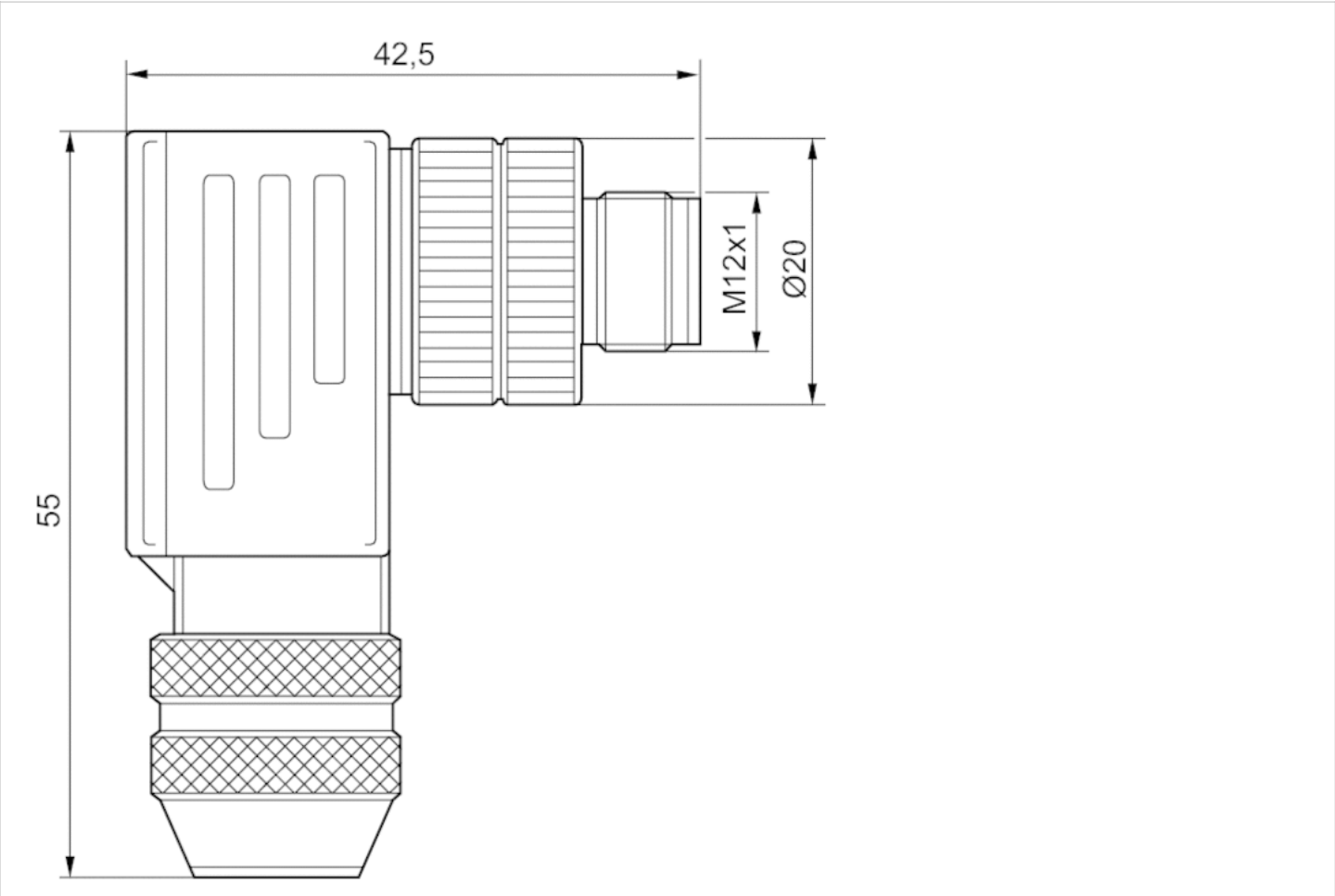
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Brass, nickel-plated

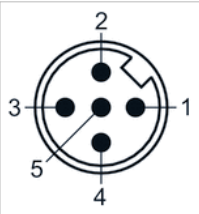
Dimensions

Dimensions



Pin assignments

Plug pin assignment



Mounting clip, Series AS3-MBR-...-W03, Aluminum



Ambient temperature min./max.

-10 ... 50 °C

Weight

0.133 kg

Technical data

Part No.
R412026828

Scope of delivery incl. 2 mounting screws M5x68-4.8-A2R according to EN ISO 7046-1 (countersunk screw with type H X-slot), 1x O-ring

Technical information

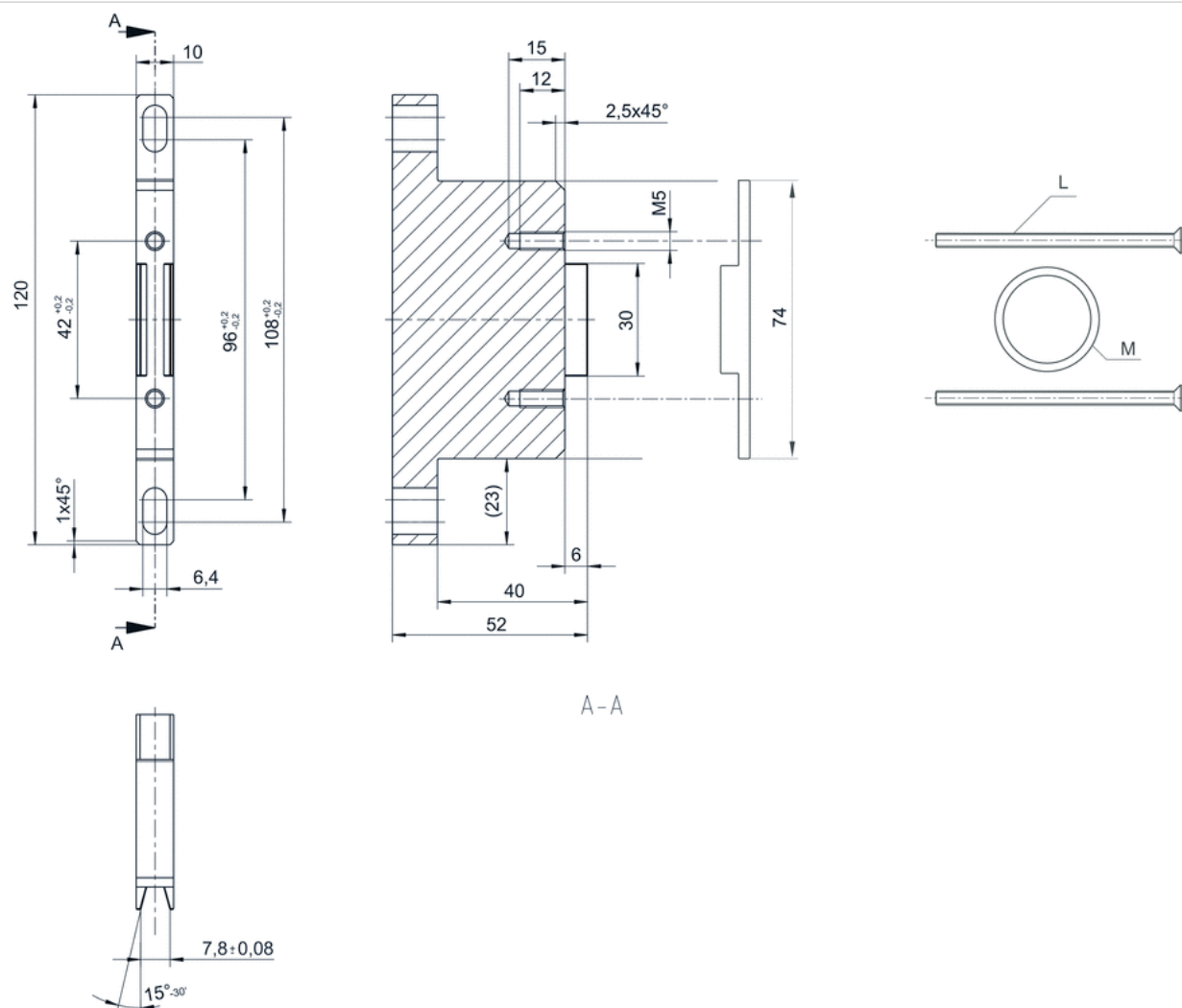
This mounting clip is recommended for installing an AS3-SV safety valve in an air preparation unit.

Technical information

Material	
Housing	Aluminum
Seal	Acrylonitrile butadiene rubber

Dimensions

Dimensions



L = Mounting screw
M = O-ring

Block assembly kit, Series AS3-MBR-...-W05

- G 3/8 - G 1/2



Ambient temperature min./max.

-10 ... 50 °C

Weight

0.825 kg

Technical data

Part No.	Port
R412007367	G 1/2

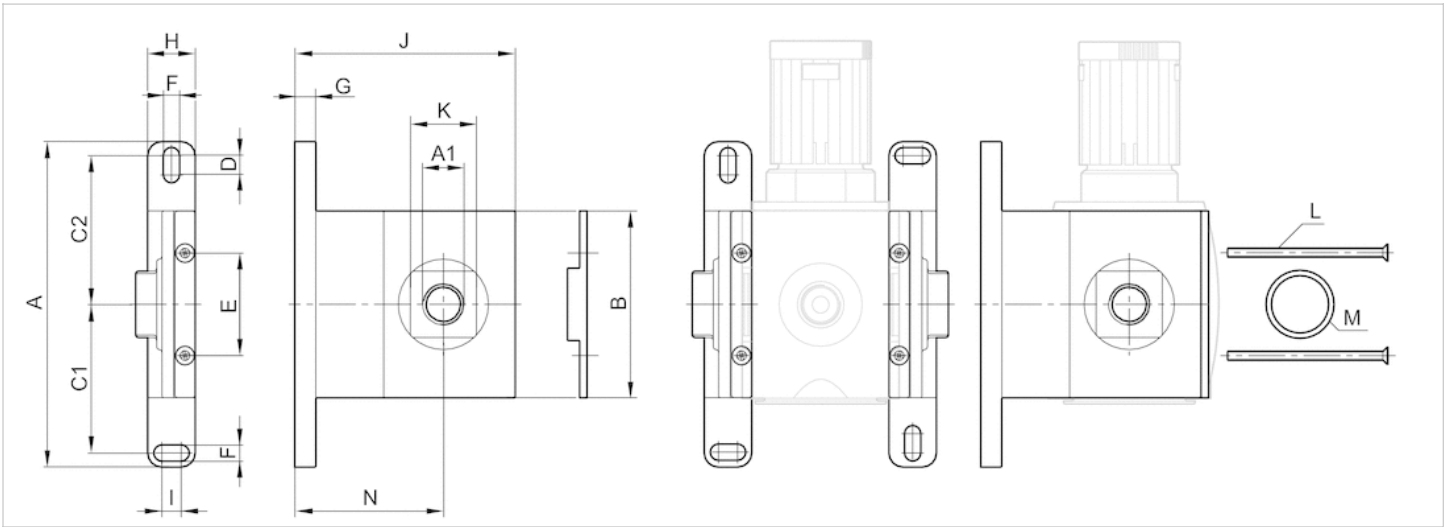
Scope of delivery incl. 4 mounting screws M5x68-4.8-A2R according to EN ISO 7046-1 (countersunk screw with type H X-slot), 2x O-ring

Technical information

Material	
Housing	Die cast zinc, painted
Seal	Acrylonitrile butadiene rubber

Dimensions

Dimensions



Dimensions

Part No.	A1	A	B	C1	C2	D	E	F	G	H	I	J	K	L	M	N
R412007367	G 1/2	120	75	54	54	8	42	6.4	7	20	8	102.5	30	M5x68	23x2	72

Silencers, series SI1

- G 1

- Metal braiding



Working pressure min./max.

0 ... 15 bar

Ambient temperature min./max.

-10 ... 150 °C

Medium

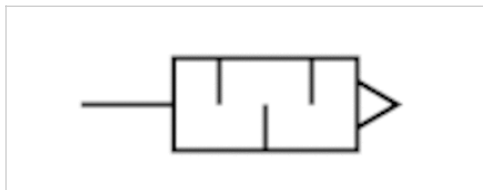
Compressed air

Sound pressure level

104 dB

Comment

Flow characteristic curves can be found under "Diagrams".



Technical data

Part No.	Compressed air connection	Flow	Delivery unit
		Qn	
R412010249	G 1	10642 l/min	2 piece

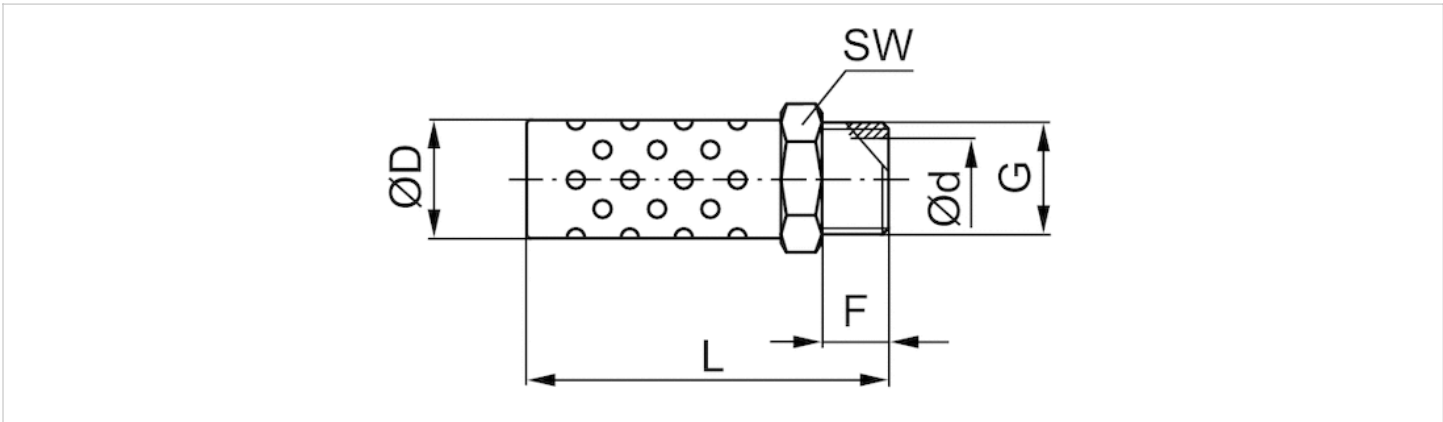
Nominal flow Qn at p1 = 6 bar (absolute) freely discharged. Sound pressure level measured at 6 bar against atmosphere at 1 m distance.

Technical information

Material	
Silencer	Metal braiding
Thread	Aluminum

Dimensions

Dimensions



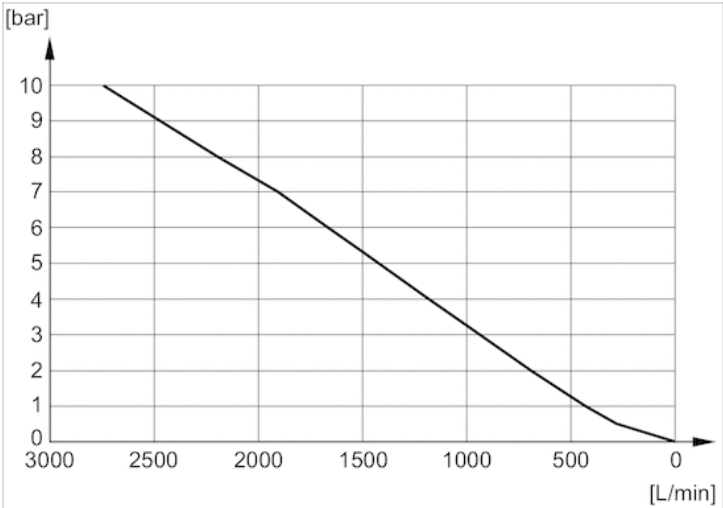
Dimensions

R412010249	G 1	91	15.5	32.3	26	34
------------	-----	----	------	------	----	----

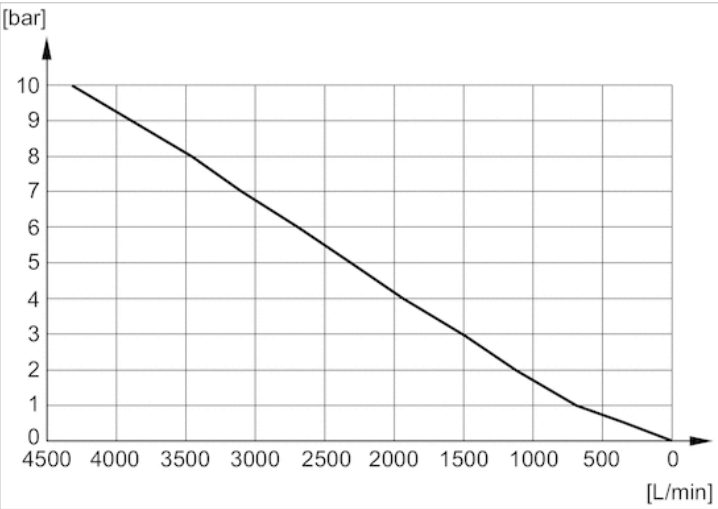
Sound pressure level measured at 6 bar at 1 m distance

Diagrams

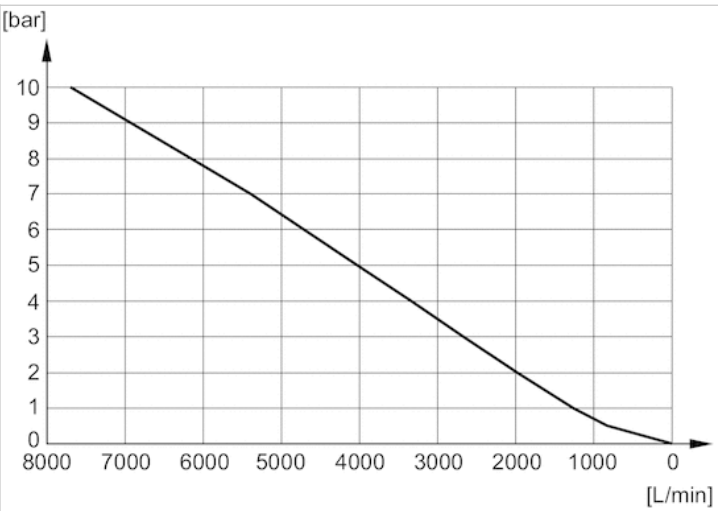
Flow diagram, R412010283



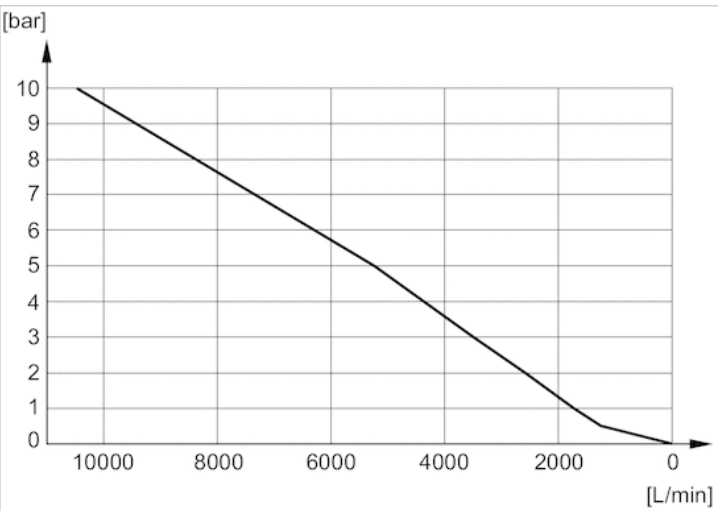
Flow diagram, R412010245



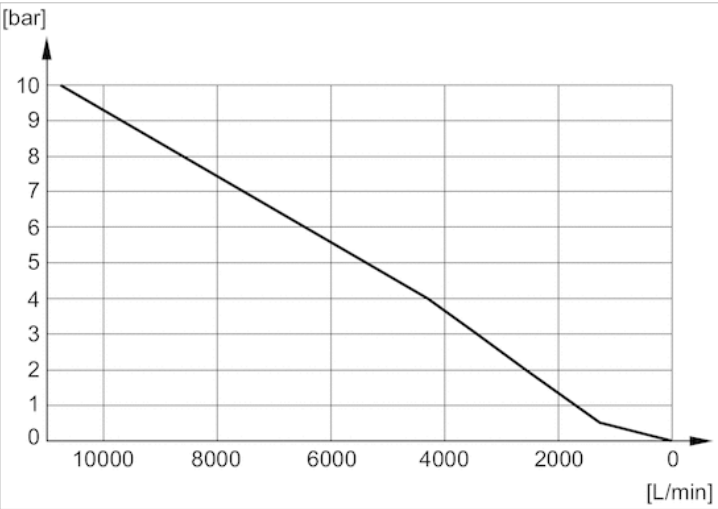
Flow diagram, R412010246



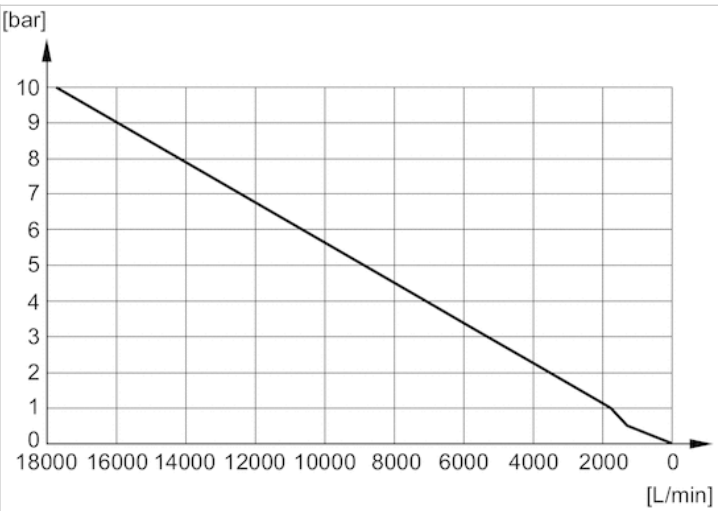
Flow diagram, R412010247



Flow diagram, R412010248



Flow diagram, R412010249



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



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

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



[Emerson.com](https://emerson.com)



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



[LinkedIn.com/company/Emerson-Automation-Solutions](https://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™