

Sensor technologies ▶ Flow sensors

Series AF1

Brochure



Sensor technologies ▶ Flow sensors

Series AF1

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Part numbers marked in bold are available from the central warehouse in Germany, see the shopping basket for more detailed information

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Flow sensor, air supply on the left, Series AF1

▶ Qn = 150 - 5000 l/min ▶ diaphragm principle ▶ Electrical connection: Plug, M12x1, 5-pin



00138948_a

Frame size	AS3
Mounting orientation	Any
Certificates	CE declaration of conformity, with reference to EMC directive
Output signal	2 x PNP / NPN and 1 x analog voltage 2 x PNP / NPN and 1 x analog current
Display	LED
Flow display unit	l/h, l/sec, m³/h, gal/h
Working pressure min./max.	0 bar / 16 bar
Ambient temperature min./max.	-10 °C / +50 °C
Medium temperature min./max.	-10 °C / +50 °C
Medium	Compressed air
Max. particle size	5 µm
DC operating voltage Min.	15 V DC
DC operating voltage Max.	30 V DC
Max. power consumption	300 mA
Output signal digital max.	100 mA
Response time	< 15 ms
Precision (% of full scale value)	± 3 % (according to DIN 1343)
Protection class	IP65
 Materials:	
Housing	Aluminum; Polyamide
Front plate	Acrylonitrile butadiene styrene

Technical Remarks

- The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C.
- The protection class is only ensured when the plug is mounted properly. For detailed information, see operating instructions.
- The device is designed to be installed in AS series maintenance units or to be fitted as a stand-alone device using a W05 block assembly kit.
- The device may not be installed behind a regulator or filter regulator.
- Liquid oil or water must be separated via prefiltering. If it is not separated sufficiently, drifting may result.

Qn Min. [l/min]	Qn Max. [l/min]	Analog output current	Analog output voltage	Weight [kg]	Part No.
150	2000	- 4 - 20 mA	0 - 10 V DC -	0.395	R412010638 R412010673
250	5000	- 4 - 20 mA	0 - 10 V DC -	0.395	R412010637 R412010674

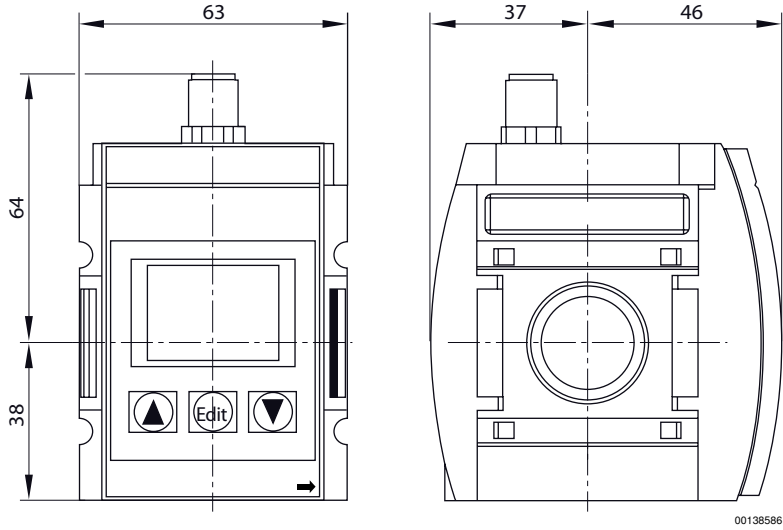
Part numbers marked in bold are available from the central warehouse in Germany, see the shopping basket for more detailed information

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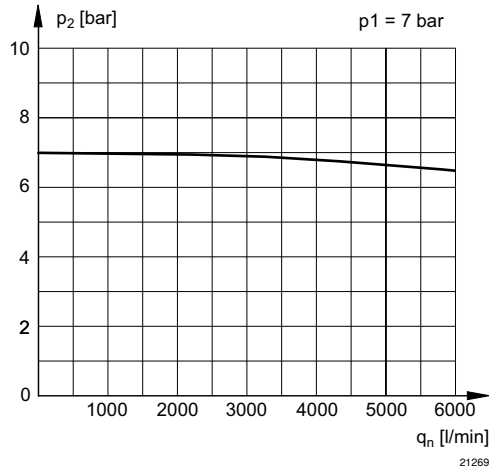
Flow sensor, air supply on the left, Series AF1

> $Q_n = 150 - 5000 \text{ l/min}$ > diaphragm principle > Electrical connection: Plug, M12x1, 5-pin

Dimensions



Flow diagram



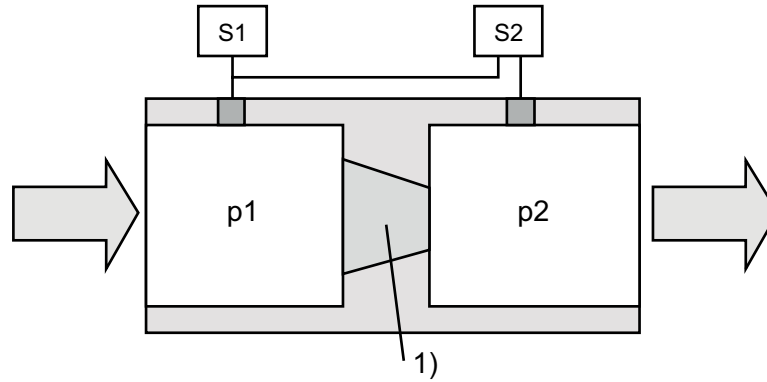
p1 = working pressure
 p2 = secondary pressure
 qn = nominal flow

Sensor technologies ▶ Flow sensors

Flow sensor, air supply on the left, Series AF1

▶ $Q_n = 150 - 5000 \text{ l/min}$ ▶ diaphragm principle ▶ Electrical connection: Plug, M12x1, 5-pin

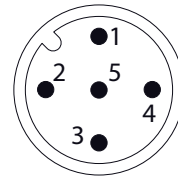
Functional diagram



21270

S1, S2 = Sensor
 p1 = working pressure
 p2 = secondary pressure
 1) Shield

Pin assignments



00138442

(1) 24 V DC
 (2) OUT 1
 (3) 0 V
 (4) OUT 2
 (5) Analog OUT

Flow sensor, air supply on the right, Series AF1

▶ Qn = 150 - 2000 l/min ▶ diaphragm principle ▶ Electrical connection: Plug, M12x1, 5-pin



00138948_a

Frame size	AS3
Mounting orientation	Any
Certificates	CE declaration of conformity, with reference to EMC directive
Output signal	2 x PNP / NPN and 1 x analog voltage 2 x PNP / NPN and 1 x analog current
Display	LED
Flow display unit	l/h, l/sec, m³/h, gal/h
Working pressure min./max.	0 bar / 16 bar
Ambient temperature min./max.	-10 °C / +50 °C
Medium temperature min./max.	-10 °C / +50 °C
Medium	Compressed air
Max. particle size	5 µm
DC operating voltage	15 V DC
Min.	
DC operating voltage	30 V DC
Max.	
Max. power consumption	300 mA
Output signal digital max.	100 mA
Response time	< 15 ms
Precision (% of full scale value)	± 3 % (according to DIN 1343)
Protection class	IP65
Materials:	
Housing	Aluminum; Polyamide
Front plate	Acrylonitrile butadiene styrene

Technical Remarks

- The pressure dew point must be at least 15 °C under ambient and medium temperature and may not exceed 3 °C.
- The protection class is only ensured when the plug is mounted properly. For detailed information, see operating instructions.
- The device is designed to be installed in AS series maintenance units or to be fitted as a stand-alone device using a W05 block assembly kit.
- The device may not be installed behind a regulator or filter regulator.
- Liquid oil or water must be separated via prefiltering. If it is not separated sufficiently, drifting may result.

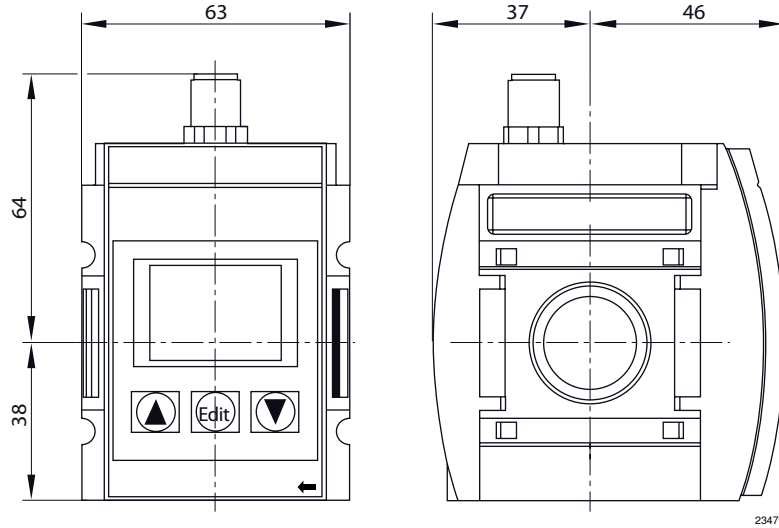
Qn Min.	Qn Max.	Analog output current	Weight	Part No.
[l/min]	[l/min]		[kg]	
150	2000	4 - 20 mA	0.395	R412010863

Sensor technologies ▶ Flow sensors

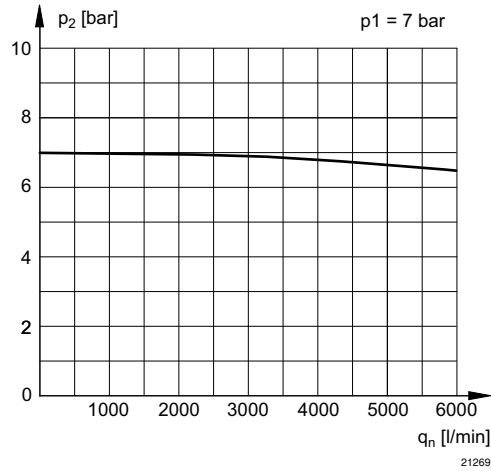
Flow sensor, air supply on the right, Series AF1

▶ $Q_n = 150 - 2000 \text{ l/min}$ ▶ diaphragm principle ▶ Electrical connection: Plug, M12x1, 5-pin

Dimensions



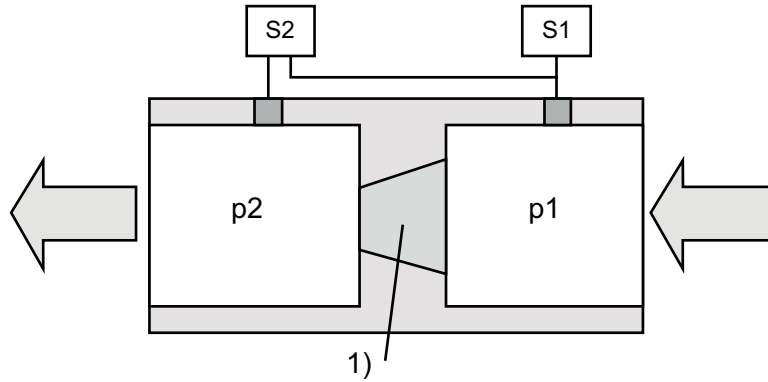
Flow diagram



p1 = working pressure
 p2 = secondary pressure
 qn = nominal flow

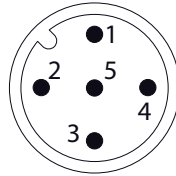
Flow sensor, air supply on the right, Series AF1

 ▶ $Q_n = 150 - 2000 \text{ l/min}$ ▶ diaphragm principle ▶ Electrical connection: Plug, M12x1, 5-pin

Functional diagram


23480

S1, S2 = Sensor
 p1 = working pressure
 p2 = secondary pressure
 1) Shield

Pin assignments


00138442

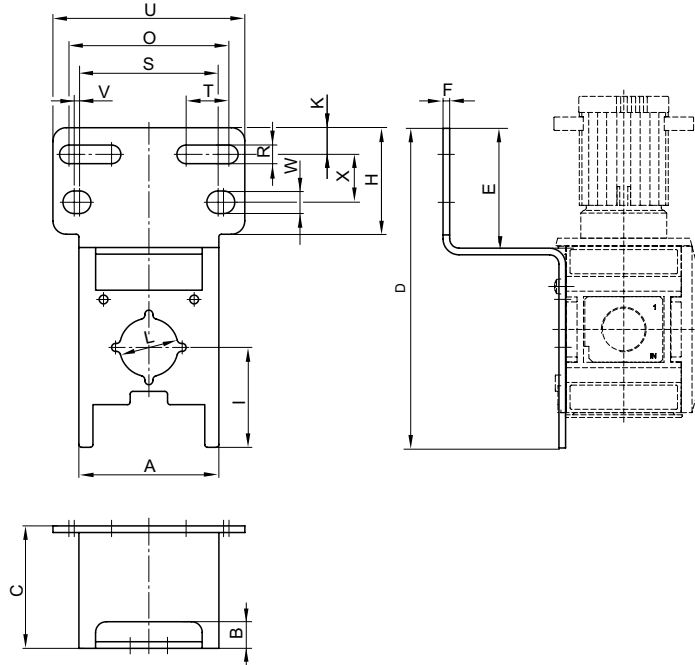
(1) 24 V DC
 (2) OUT 1
 (3) 0 V
 (4) OUT 2
 (5) Analog OUT

Series AF1
Accessories

Mounting plate, Series AS3-MBR-...-W01



00124431



00124430

Part No.	A	B	C	D	E	F	H	I	K	O	R	S
R412007368	52.5	10	46	120	45	2.5	40	37.5	10	60	7	52
Part No.	T	U	V	W	X	Material	Surface	Material Seal				
R412007368	16	72	2	8.5	18	Steel	galvanized	Acrylonitrile Butadiene Rubber				
Part No.	Weight [kg]	Ambient temperature min./max. [C°]										
R412007368	0.13	-10 / +50										

Scope of delivery incl. 2 mounting screws 3x10 (Torx 10 IP) DIN EN ISO 10664

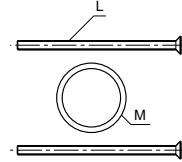
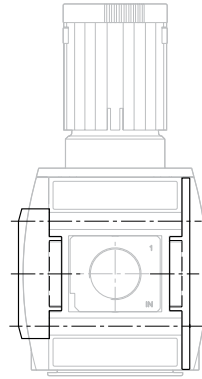
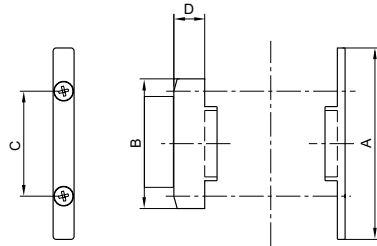
Series AF1 Accessories

Block assembly kit, Series AS3-MBR-...-W04

▶ suitable for ATEX



00119405



00127746

Part No.	A	B	C	D	L	M	Material	Material Seal
R412007371	75	75	42	12.5	M5x68	23,1x1,78	Polyamide	Acrylonitrile Butadiene Rubber

Part No.	Weight [kg]	Ambient temperature min./max. [C°]						
R412007371	0.032	-10 / +50						

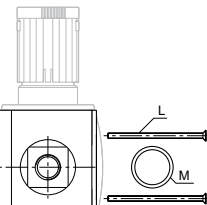
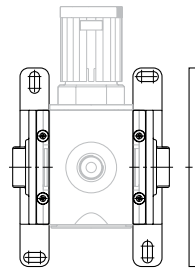
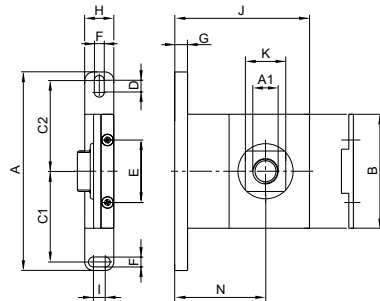
Scope of delivery incl. 2 mounting screws M5x68-4.8-A2R according to EN ISO 7046-1 (countersunk screw with type H X-slot), 1x O-ring
Suitable for use in Ex zones 1, 2, 21, 22

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

▶ G 3/8 - G 1/2



00119818



00127749

Part No.	A1	A	B	C1	C2	D	E	F	G	H	I	J	K	L
R412007366	G 3/8	120	75	54	54	8	42	6.4	7	20	8	102.5	30	M5x68
R412007367	G 1/2	120	75	54	54	8	42	6.4	7	20	8	102.5	30	M5x68

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Series AF1
Accessories

Part No.	M	N	Material	Surface	Material Seal	Weight [kg]
R412007366	23,1x1,78	72	Die cast zinc	Painted	Acrylonitrile Butadiene Rubber	0.825
R412007367	23,1x1,78	72	Die cast zinc	Painted	Acrylonitrile Butadiene Rubber	0.825

Part No.	Ambient temperature min./max. [C°]									
R412007366	-10 / +50									
R412007367	-10 / +50									

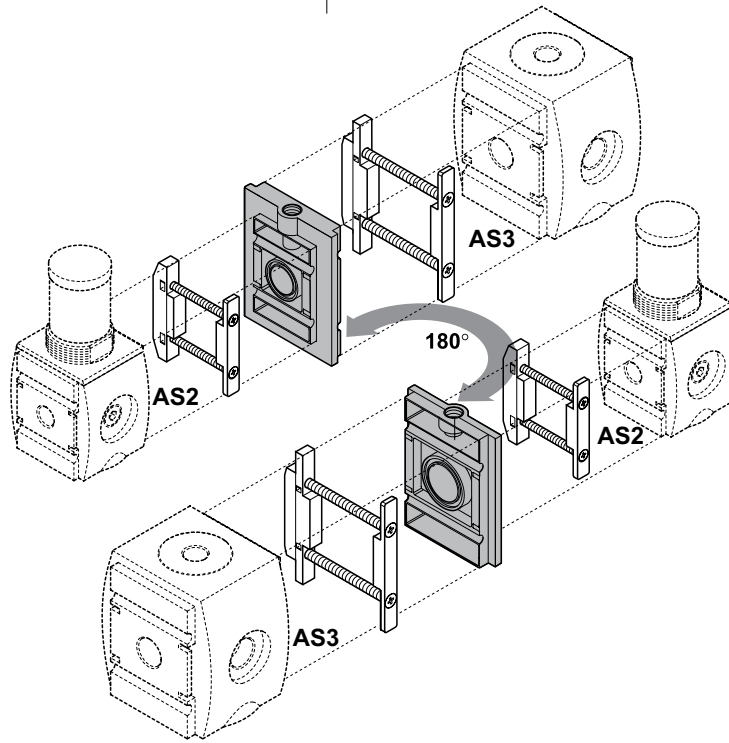
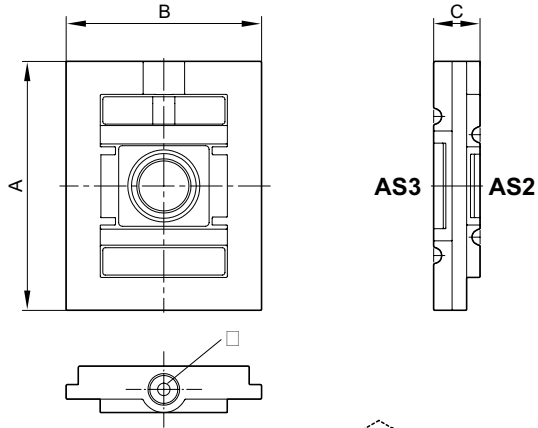
Scope of delivery incl. 4 mounting screws M5x68-4.8-A2R according to EN ISO 7046-1 (countersunk screw with type H X-slot), 2x O-ring

Series AF1
Accessories

Block assembly kit, Series AS2/AS3-MBR-...-W07



00134004



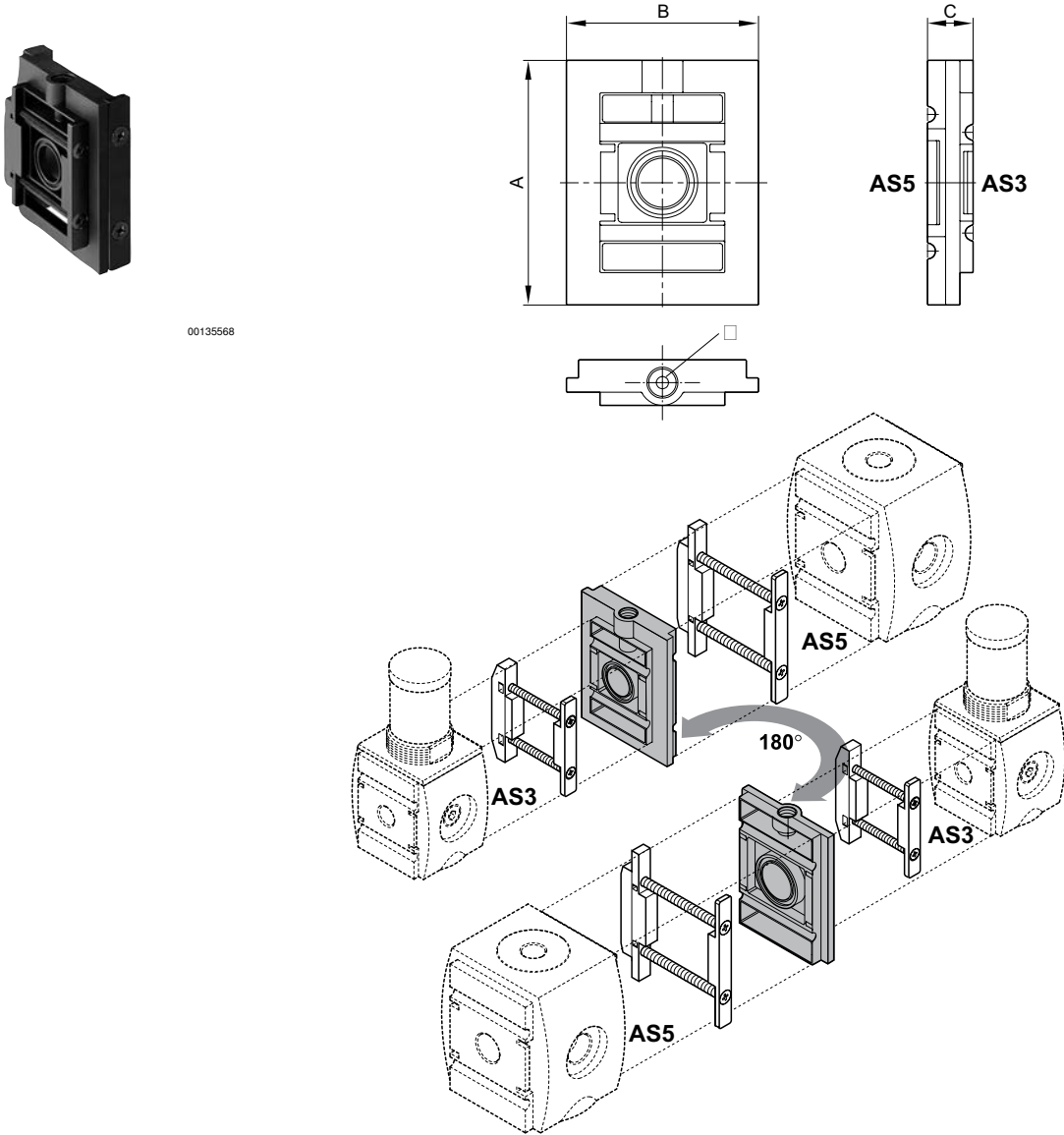
00134003

scope of delivery incl. seal

Part No.	A	B	C	D								
R412010121	75	61	14	G 1/8								

Series AF1
Accessories

Block assembly kit, Series AS3/AS5-MBR-...-W07



00135568

00134014

scope of delivery incl. seal

Part No.	A	B	C	D	Material Seal	Ambient temperature min./max. [C°]			
R412010122	102	80	18	G 1/4	Acrylonitrile Butadiene Rubber	-10 / +50			

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Series AF1 Accessories

Connecting cable, Series CN2

▶ Plug, M12x1, 5-pin, straight ▶ open cable ends, 5-pin



Protection class

IP68

Materials:

Housing color

Black

Cable sheath

Polyvinyl chloride

The delivered product may vary from that in the illustration.

00118468

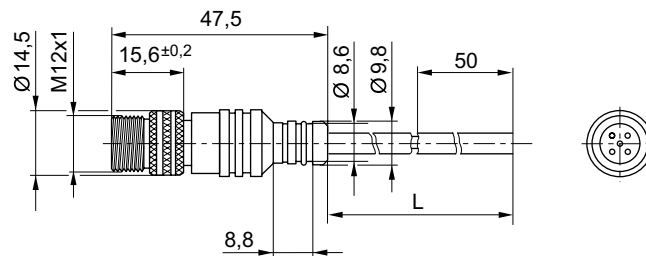
Technical Remarks

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

Number of wires	Cable length L [m]	Weight [kg]	Note	Part No.
5	2	0.097	1)	8946203432
	5	0.228		8946203442

1) with self-clinching screw

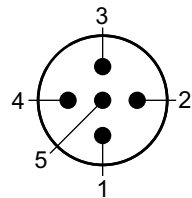
Dimensions



00128423

L = length

Pin assignment



Stecker_5-polig

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

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Series AF1 Accessories

Connecting cable, Series CN2

▶ Socket, M12, 5-pin, A-coded, angled ▶ without wire end ferrule, tin-plated, 5-pin ▶ screened

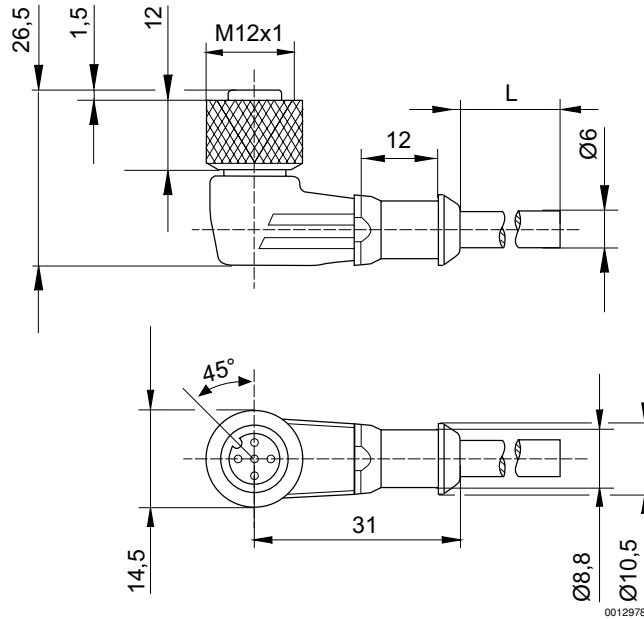


Ambient temperature min./max. -25°C / +80°C
 Wire cross-section 0.34 mm²
 Materials:
 Cable sheath Polyurethane

00129794

Max. current [A]	Number of wires	Cable-Ø [mm]	Cable length L [m]	Weight [kg]	Part No.
4	5	6	2.5	0.153	R419800109
			5	0.285	R419800110
			10	0.542	R419800546

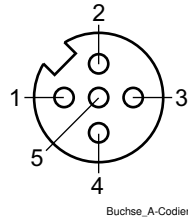
Dimensions



L = length

Series AF1
Accessories

Pin assignment



- (1) = brown
- (2) = white
- (3) = blue
- (4) = black
- (5) = grey

AVENTICS GmbH
Ulmer Straße 4
30880 Laatzen, GERMANY
Phone +49 511 2136-0
Fax +49 511 2136-269
www.aventics.com
info@aventics.com



Find more contact information at
www.aventics.com/contact

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15-12-2016

An example configuration is depicted on the title page. The delivered product may thus vary from that in the illustration. Subject to change. © AVENTICS S.à r.l.
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