

Series IS12-PD



AVENTICS™ Series IS12-PD



















3/2-directional valve, Dual valve, IS12-PD series, size 1

- ISO 5599-1, ISO 13849-1
- 2 x 5/2
- Safe pressurization and exhaust $Q_n = 1800 \text{ l/min}$ (Exhaust)
- With spring return
- single solenoid
- Compressed air connection output G 1/4
- Electrical connection Plug, M12 Plug, EN 175301-803, form A
- Manual override without detent



Version	Spool valve
Sealing principle	Soft sealing
Blocking principle	Double base plate principle
Connection type	Plate connection
Standards	ISO 5599-1, ISO 13849-1
Working pressure min./max.	See table below
Control pressure min./max.	3.5 ... 10 bar
Ambient temperature min./max.	0 ... 50 °C
Medium temperature min./max.	0 ... 50 °C
Medium	Compressed air
Max. particle size	5 μm
Oil content of compressed air	0 ... 0.01 mg/m ³
Protection class with connection	IP65
Compatibility index	15
Duty cycle	100 %
Typ. switch-on time	See table below
Switch-on time max.	18 ms
Typ. switch-off time	40 ms
Switch-off time max.	40 ms
Version sensor	electronic PNP, with LED
Sensor connection	Plug, M8, 3-pin, with knurled screw
Operating voltage sensor DC min./max.	10 ... 30 V DC
Voltage drop sensor U at I _{max}	≤ 2,5 V
Vibration resistance sensor	10 - 55 Hz, 1 mm
Shock resistance sensor	30 g / 11 ms
Cable length sensor	0.3 m
Protection class sensor acc. to DIN EN 61140	Class III
Weight	See table below

Technical data

Part No.		MO	Operational voltage DC	Voltage tolerance DC
R422003622			24 V	-10% / +10%
R422003623			24 V	-10% / +10%
R422003624			24 V	-10% / +10%
R422003625			24 V	-10% / +10%
R422003189			24 V	-10% / +10%
R422003190			24 V	-10% / +10%
R422003191			24 V	-10% / +10%
R422003192			24 V	-10% / +10%

Part No.	Power consumption DC	Pilot	Nominal flow 1 ▶ 2	Nominal flow 4 ▶ 5
R422003622	4.5 W	External	800 l/min	1050 l/min
R422003623	4.5 W	Internal	800 l/min	1050 l/min
R422003624	4.4 W	External	800 l/min	1050 l/min
R422003625	4.4 W	Internal	800 l/min	1050 l/min
R422003189	4.5 W	External	800 l/min	1050 l/min
R422003190	4.5 W	Internal	800 l/min	1050 l/min
R422003191	4.4 W	External	800 l/min	1050 l/min
R422003192	4.4 W	Internal	800 l/min	1050 l/min

Part No.	Nominal flow 4ext ▶ 5	Working pressure min./max.	Typ. switch-on time
R422003622	700 l/min	1 ... 10 bar	20 ms
R422003623	700 l/min	3.5 ... 10 bar	20 ms
R422003624	700 l/min	1 ... 10 bar	20 ms
R422003625	700 l/min	3.5 ... 10 bar	20 ms
R422003189	700 l/min	1 ... 10 bar	20 ms
R422003190	700 l/min	3.5 ... 10 bar	30 ms
R422003191	700 l/min	1 ... 10 bar	20 ms
R422003192	700 l/min	3.5 ... 10 bar	30 ms

Part No.	Compatibility index	Electrical connection Pilot valve	Weight	Fig.	
R422003622	15	Plug M12	2.2 kg	Fig. 1	-
R422003623	15	Plug M12	2.2 kg	Fig. 1	-
R422003624	15	Plug EN 175301-803, form A	2.2 kg	Fig. 1	-
R422003625	15	Plug EN 175301-803, form A	2.2 kg	Fig. 1	-
R422003189	15	Plug M12	2.4 kg	Fig. 2	1)
R422003190	15	Plug M12	2.4 kg	Fig. 2	1)
R422003191	15	Plug EN 175301-803, form A	2.4 kg	Fig. 2	1)
R422003192	15	Plug EN 175301-803, form A	2.4 kg	Fig. 2	1)

Nominal flow Q_n at 6 bar and $\Delta p = 1$ bar

1) Dual valve with integrated non-return valve. Guaranteed minimum opening pressure of the non-return valve is 0,3 bar., The safety function "safe venting" limited to category 1 and level PL = c.

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).

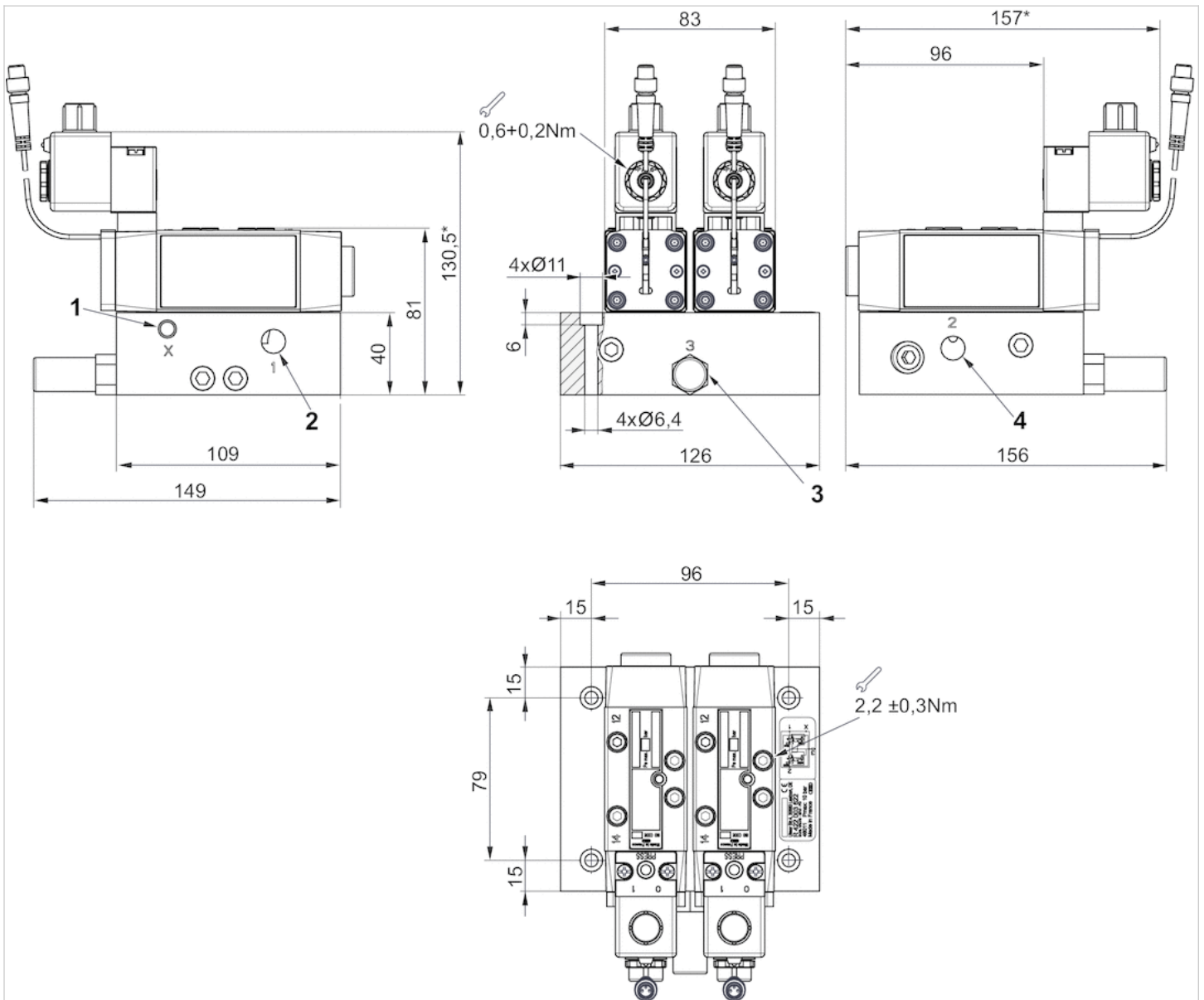
When the valve is not actuated, the sensor sends a signal through pin 4 of the sensor connection.
 When the valve is actuated, the sensor does not send a signal through pin 4 of the sensor connection.
 The dual valve includes two IS12-PD-5/2-SR valves with position detection and fulfills the safety function "safe venting" and "protection against unexpected start-up". The dual valve permits use in categories 3 and 4 in accordance with ISO 13849-1 to achieve a control system performance level (PL) of up to PL = e.
 On its own, the valve with position detection is not a safety component and is not a complete safety solution. It is designed to increase the diagnostic coverage (DC) of the control system.
 For use in categories 3 to 4, additional requirements of DIN EN ISO 13849-1:2008-12 (e.g. CCF, DC, PLr, software, systematic errors) are taken into consideration by the user.

Technical information

Housing	Polyamide Aluminum
Seals	Acrylonitrile butadiene rubber

Dimensions

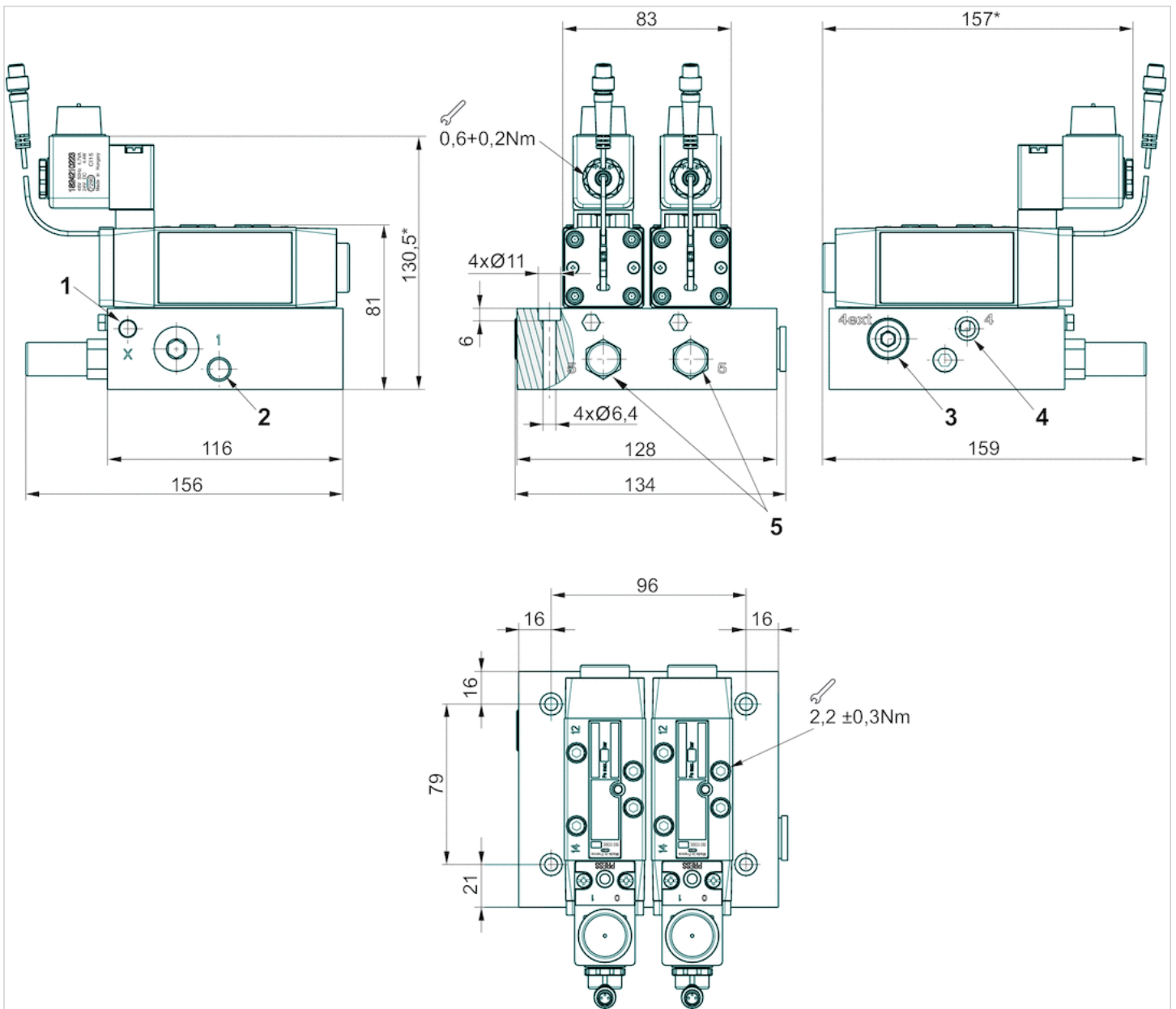
Dimensions, Fig. 1



*) max.

- 1) External pilot pressure G1/8
- 2) Input pressure G1/4
- 3) Exhaust G 1/4
- 4) Output pressure G1/4

Dimensions, Fig. 2, Dual valve with integrated non-return valve

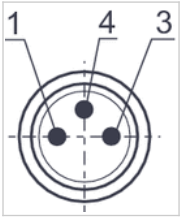


*) max.

- 1) External pilot pressure G1/8
- 2) Input pressure G1/4
- 3) Exhaust in with non-return valve G1/4
- 4) Output pressure G1/4
- 5) Exhaust G 1/4

Pin assignments

PIN assignment sensor



Pin assignment:

1 = (+)

3 = (-)

4 = (OUT)









3/2-directional valve, Dual valve, IS12-PD series, size 2

- ISO 13849-1
- Safe pressurization and exhaust $Q_n = 3000 \text{ l/min}$ (Exhaust)
- With spring return
- single solenoid
- Compressed air connection output G 1/2
- Electrical connection Plug, M12 Plug, EN 175301-803, form A
- Manual override with detent



Version	Spool valve
Sealing principle	Soft sealing
Blocking principle	Double base plate principle
Connection type	Plate connection
Standards	ISO 13849-1
Working pressure min./max.	See table below
Control pressure min./max.	3 ... 10 bar
Ambient temperature min./max.	0 ... 50 °C
Medium temperature min./max.	0 ... 50 °C
Medium	Compressed air
Max. particle size	5 µm
Oil content of compressed air	0 ... 0.01 mg/m ³
Protection class with connection	IP65
Compatibility index	15
Duty cycle	100 %
Typ. switch-on time	20 ms
Typ. switch-off time	50 ms
Version sensor	electronic PNP, with LED
Sensor connection	M8x1, 3-pin, with knurled screw
Operating voltage sensor DC min./max.	10 ... 30 V DC
Voltage drop sensor U at I _{max}	≤ 2,5 V
Vibration resistance sensor	10 - 55 Hz, 1,5 mm
Shock resistance sensor	30 g / 11 ms
Cable length sensor	0.3 m
Protection class sensor acc. to DIN EN 61140	Class III
Weight	3.7 kg

Technical data

Part No.		MO	Operational voltage DC	Voltage tolerance DC
R422003729			24 V	-10% / +10%
R422003730			24 V	-10% / +10%
R422003980			24 V	-10% / +10%
R422003982			24 V	-10% / +10%

Part No.	Power consumption DC	Pilot	Nominal flow 1 ► 2	Nominal flow 2 ► 3
R422003729	4.5 W	External	1950 l/min	3000 l/min
R422003730	4.5 W	Internal	1950 l/min	3000 l/min
R422003980	4.4 W	External	1950 l/min	3000 l/min
R422003982	4.4 W	Internal	1950 l/min	3000 l/min

Part No.	Working pressure min./max.	Compatibility index	Electrical connection Pilot valve
R422003729	1 ... 10 bar	15	Plug M12
R422003730	3 ... 10 bar	15	Plug M12
R422003980	1 ... 10 bar	15	Plug EN 175301-803, form A
R422003982	3 ... 10 bar	15	Plug EN 175301-803, form A

Nominal flow Qn at 6 bar and $\Delta p = 1$ bar

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).

When the valve is not actuated, the sensor sends a signal through pin 4 of the sensor connection.

When the valve is actuated, the sensor does not send a signal through pin 4 of the sensor connection.

The dual valve includes two IS12-PD-5/2-SR valves with position detection and fulfills the safety function "safe venting" and "protection against unexpected start-up". The dual valve permits use in categories 3 and 4 in accordance with ISO 13849-1 to achieve a control system performance level (PL) of up to PL = e.

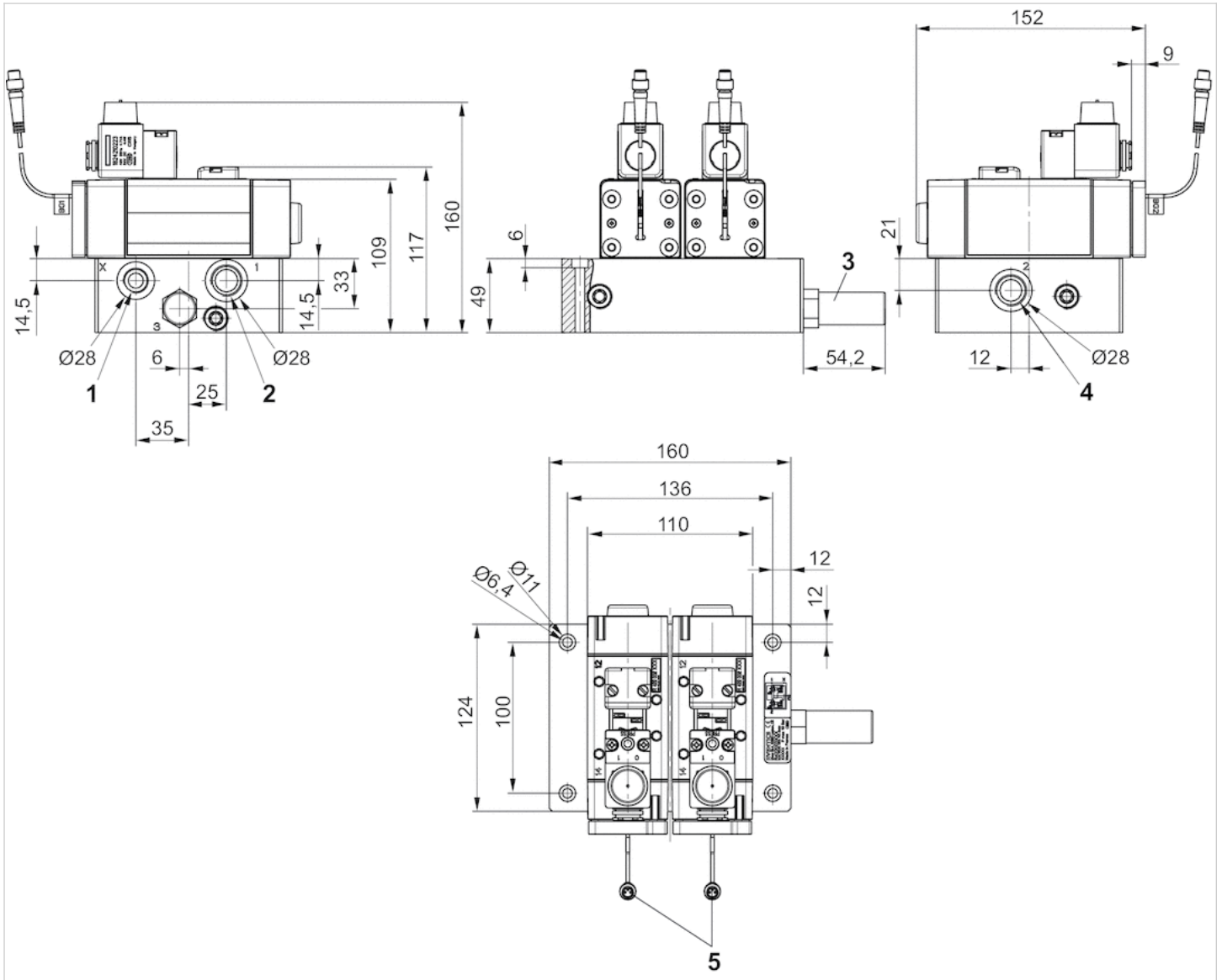
On its own, the valve with position detection is not a safety component and is not a complete safety solution. It is designed to increase the diagnostic coverage (DC) of the control system.

For use in categories 3 to 4, additional requirements of DIN EN ISO 13849-1:2008-12 (e.g. CCF, DC, PLr, software, systematic errors) are taken into consideration by the user.

Technical information

Housing	Polyamide Aluminum
Seals	Acrylonitrile butadiene rubber

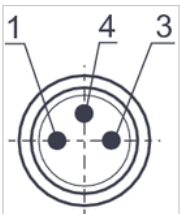
Dimensions



- 1) External pilot pressure G3/8
- 2) Input pressure G1/2
- 3) Exhaust G 1/2
- 4) Output pressure G1/2
- 5) Sensor plug M8, 3-pin

Pin assignments

PIN assignment sensor



Pin assignment:

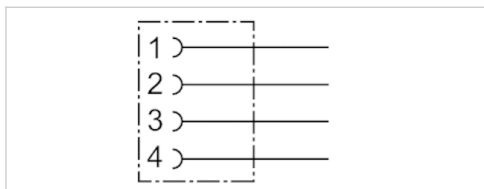
- 1 = (+)
- 3 = (-)
- 4 = (OUT)

Round plug connector, Series CON-RD

- Socket, M12x1, 4-pin, A-coded, straight, 180°
- UL (Underwriters Laboratories)
- unshielded



Connection type	Screws
Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.015 kg



Technical data

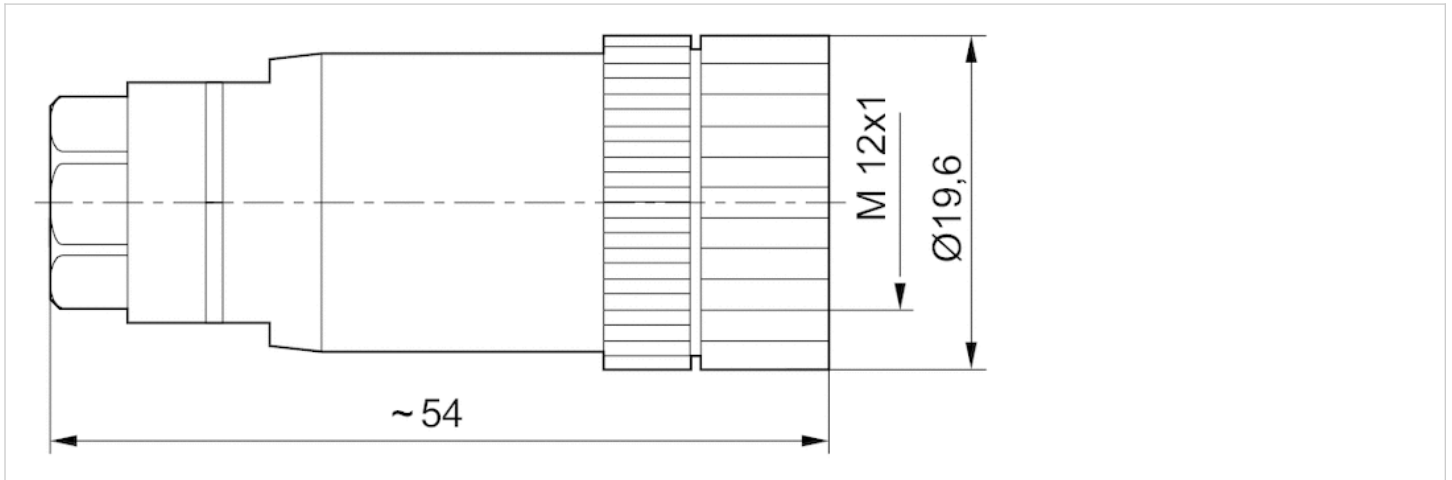
Part No.	Max. current	suitable cable-Ø min./max
1834484177	4 A	4 / 6 mm

Technical information

Material	
Housing	Polyamide

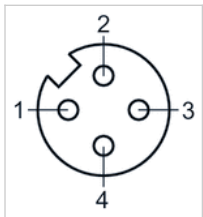
Dimensions

Dimensions



Pin assignments

Pin assignment, socket



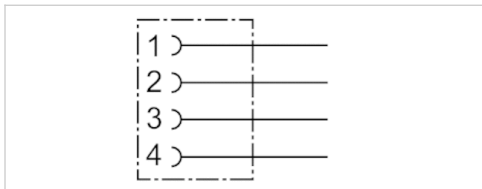
Round plug connector, Series CON-RD

- Socket, M12x1, 4-pin, A-coded, straight, 180°
- UL (Underwriters Laboratories)
- unshielded



Connection type	Screws
Ambient temperature min./max.	-25 ... 90 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.029 kg

The delivered product may vary from that in the illustration.



Technical data

Part No.	Max. current	suitable cable-Ø min./max
8941054324	4 A	4 mm

Technical information

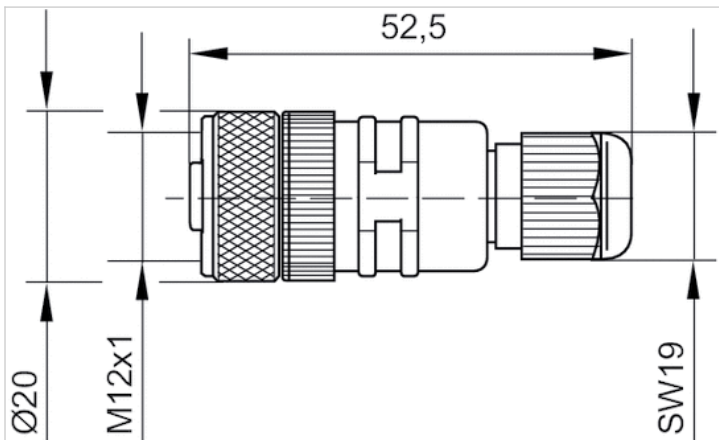
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polybutyleneterephthalate
Seals	Fluorocarbon caoutchouc

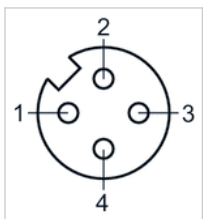
Dimensions

Dimensions



Pin assignments

Pin assignment, socket

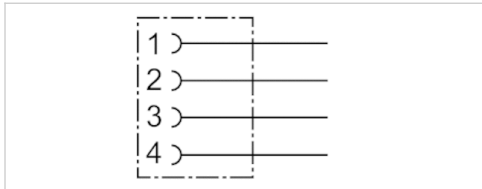


Round plug connector, Series CON-RD

- Socket, M12x1, 4-pin, A-coded, angled, 90°
- unshielded



Connection type	Screws
Ambient temperature min./max.	-25 ... 90 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Weight	0.027 kg



Technical data

Part No.	Max. current	suitable cable-Ø min./max
8941054424	4 A	4 mm

Technical information

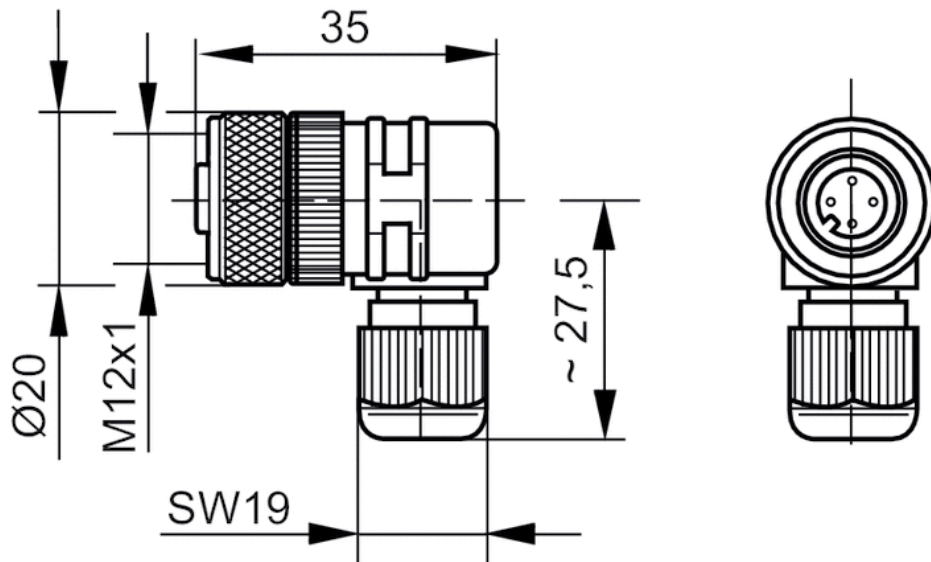
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polybutyleneterephthalate
Seals	Fluorocarbon caoutchouc

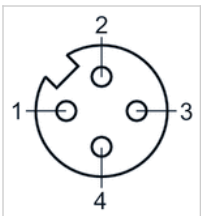
Dimensions

Dimensions



Pin assignments

Pin assignment, socket

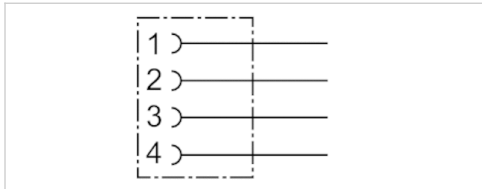


Round plug connector, Series CON-RD

- Socket, M12x1, 4-pin, A-coded, angled, 90°
- 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
1834484178	4 A	4 mm

Technical information

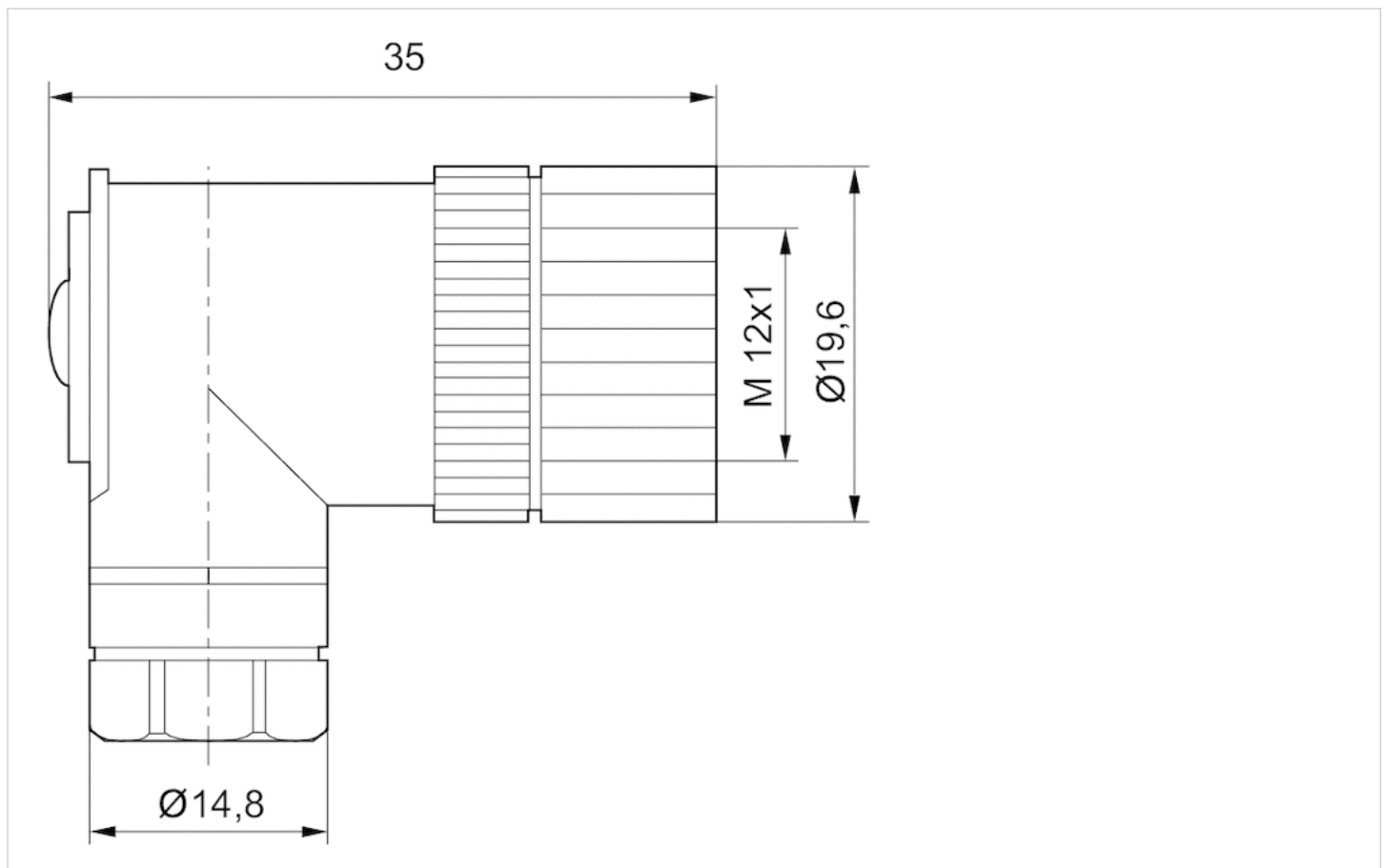
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polyamide

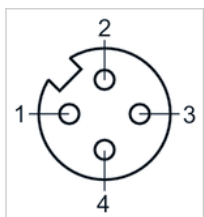
Dimensions

Dimensions



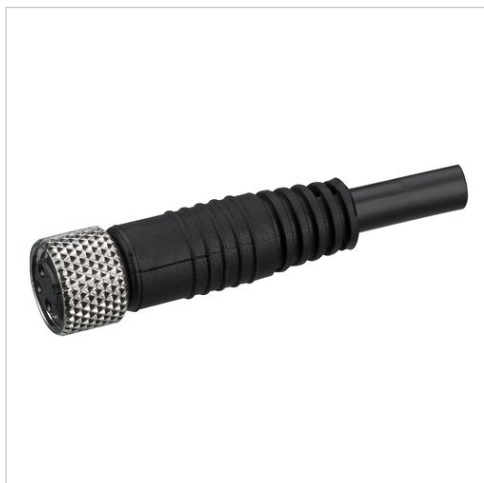
Pin assignments

Pin assignment, socket

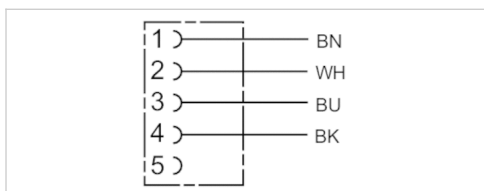


Round plug connector, Series CON-RD

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



Ambient temperature min./max.	-25 ... 70 °C
Operational voltage	48 V AC/DC
Protection class	IP67
Wire cross-section	0.34 mm ²
Weight	0.122 kg



Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length
1834484256	4 A	4	5.2 mm	3 m

Technical information

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

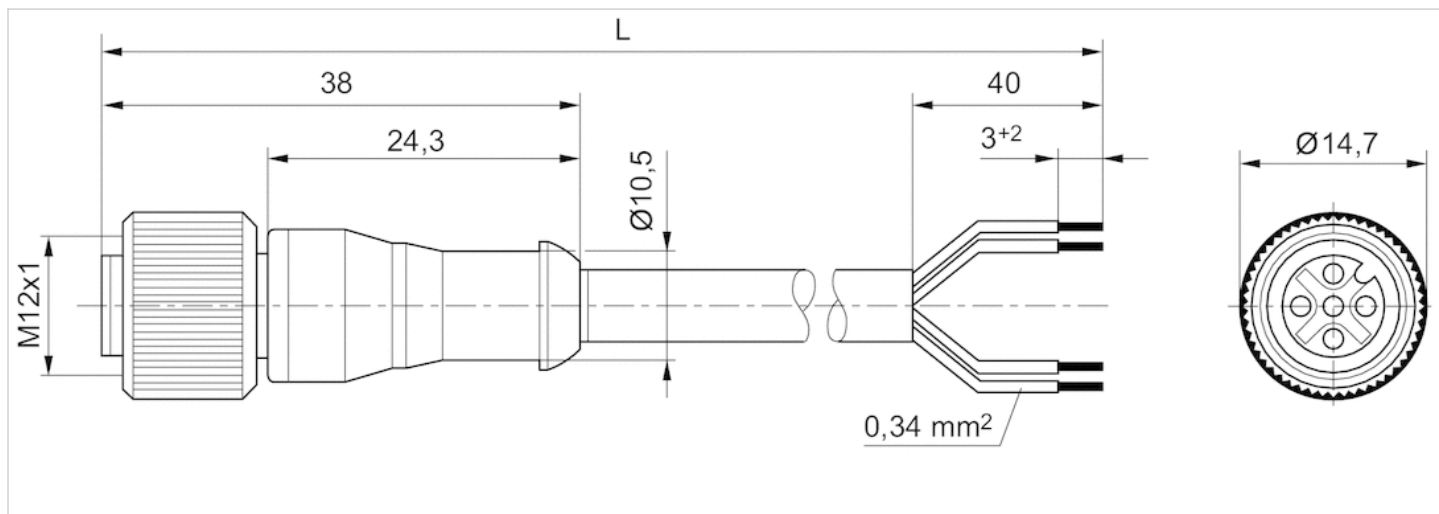
Technical information

Material

Cable sheath	Polyurethane
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Dimensions

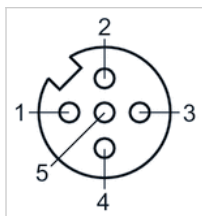
Dimensions



L = length

Pin assignments

Pin assignment, socket



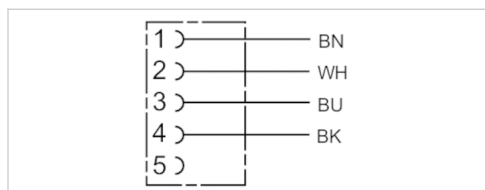
- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) not assigned

Round plug connector, Series CON-RD

- Socket M12x1 5-pin A-coded angled 90°
- open cable ends
- for DeviceNet
- with cable
- unshielded



Ambient temperature min./max.	-40 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP65
Wire cross-section	0.34 mm ²
Weight	0.126 kg



Technical data

Part No.	Max. current	Number of wires	Cable-Ø	Cable length
1834484259	4 A	4	5.2 mm	3 m

Technical information

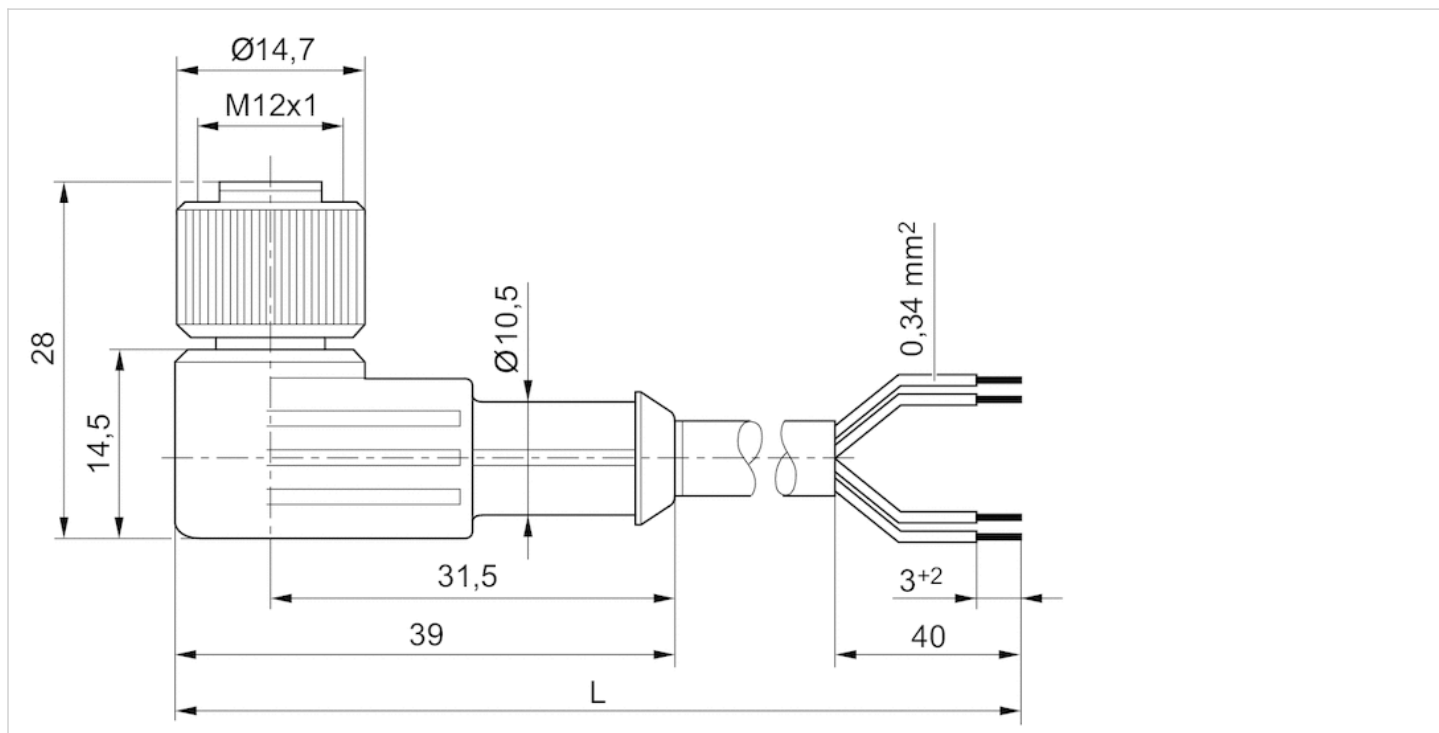
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Cable sheath	Polyurethane

Dimensions

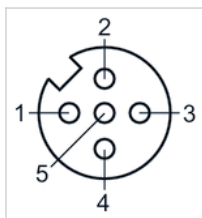
Dimensions



L = length

Pin assignments

Pin assignment, socket



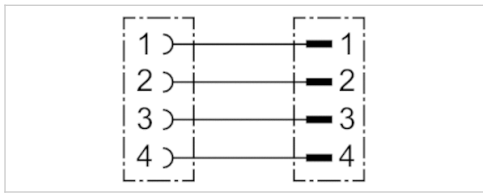
- (1) BN=brown
- (2) WH=white
- (3) BU=blue
- (4) BK=black
- (5) not assigned

Round plug connector, Series CON-RD

- Socket M12x1 4-pin A-coded straight 180°
- Plug M12x1 4-pin A-coded straight 180°
- EN 61076-2-101
- with cable
- unshielded



Ambient temperature min./max.	-40 ... 105 °C
Protection class	IP65 IP67 IP68 IP69
Wire cross-section	0.34 mm ²
Weight	0.258 kg



Technical data

Part No.	Max. current	Number of wires	Bending radius min.	Cable-Ø	Cable length	Delivery unit
R402003760	4 A	4	45 mm	4.5 mm	5 m	1 piece

Technical information

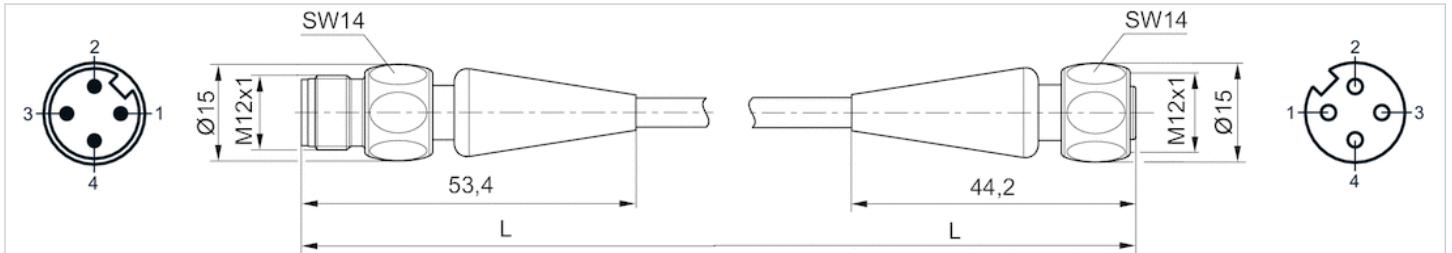
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polypropylene
Seals	Ethylene propylene diene monomer rubber
Cable sheath	Polyvinyl chloride

Dimensions

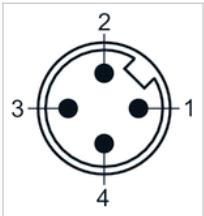
Dimensions



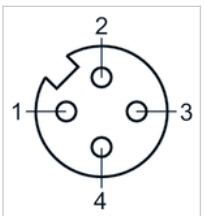
L = cable length

Pin assignments

Plug pin assignment



Pin assignment, socket

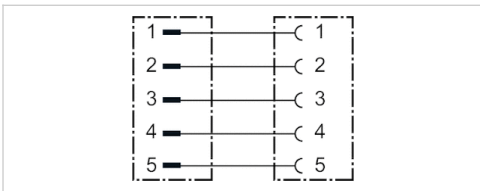


Round plug connector, Series CON-RD

- Socket M12x1 5-pin A-coded straight 180°
- Plug M12x1 5-pin A-coded angled 90°
- with cable
- suitable for dynamic laying
- unshielded



Ambient temperature min./max.	-25 ... 85 °C
Operational voltage	48 V AC/DC
Protection class	IP68
Wire cross-section	0.34 mm ²
Mounting screw tightening torque	0.8 Nm
Weight	0.114 kg



Technical data

Part No.	Max. current	Number of wires	Bending radius min.	Cable-Ø	Cable length
R412021694	4 A	5	50 mm	5 mm	2 m

suitable for dynamic laying

Technical information

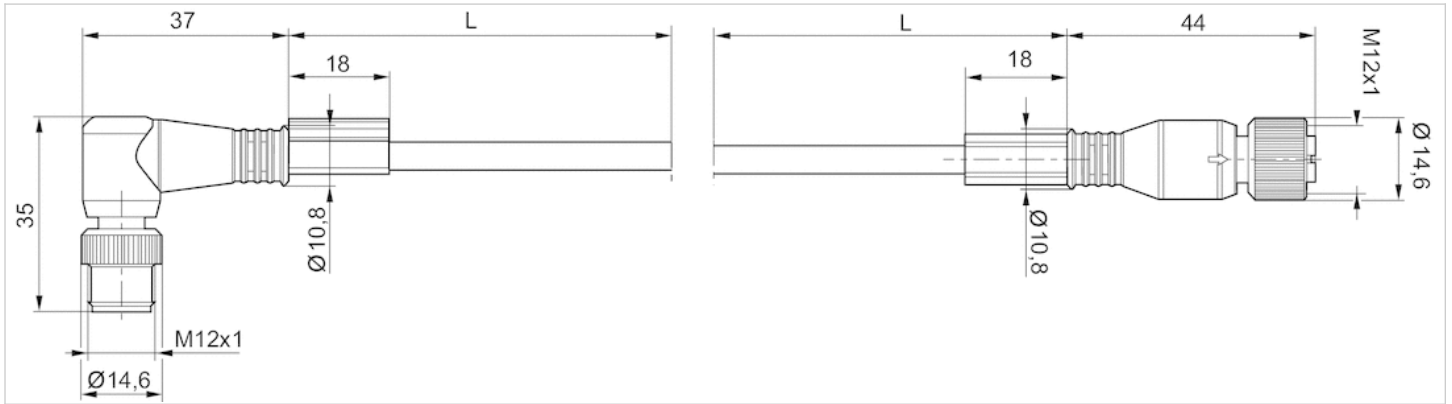
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Housing	Polyurethane
Cable sheath	Polyurethane

Dimensions

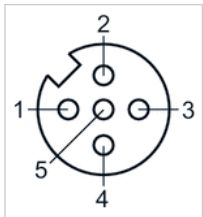
Dimensions



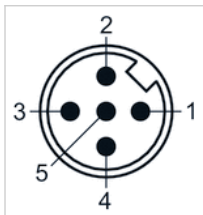
L = length

Pin assignments

Pin assignment, socket



Plug pin assignment

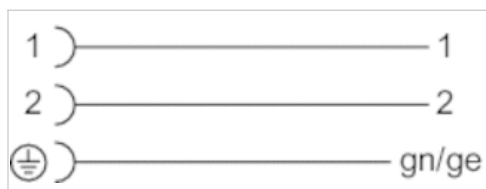


Valve plug connector, series CON-VP

- Socket, 2+E, angled, 90°
- EN 175301-803
- unshielded



Connection type	Screws
Ambient temperature min./max.	-40 ... 90 °C
Protection class	IP65
Mounting screw tightening torque	0.4 Nm
Weight	0.03 kg



Technical data

Part No.	Max. current	Contact assignment	suitable cable-Ø min./max
1834484048	10 A	2+E	6 / 8 mm

Profile seal

Technical information

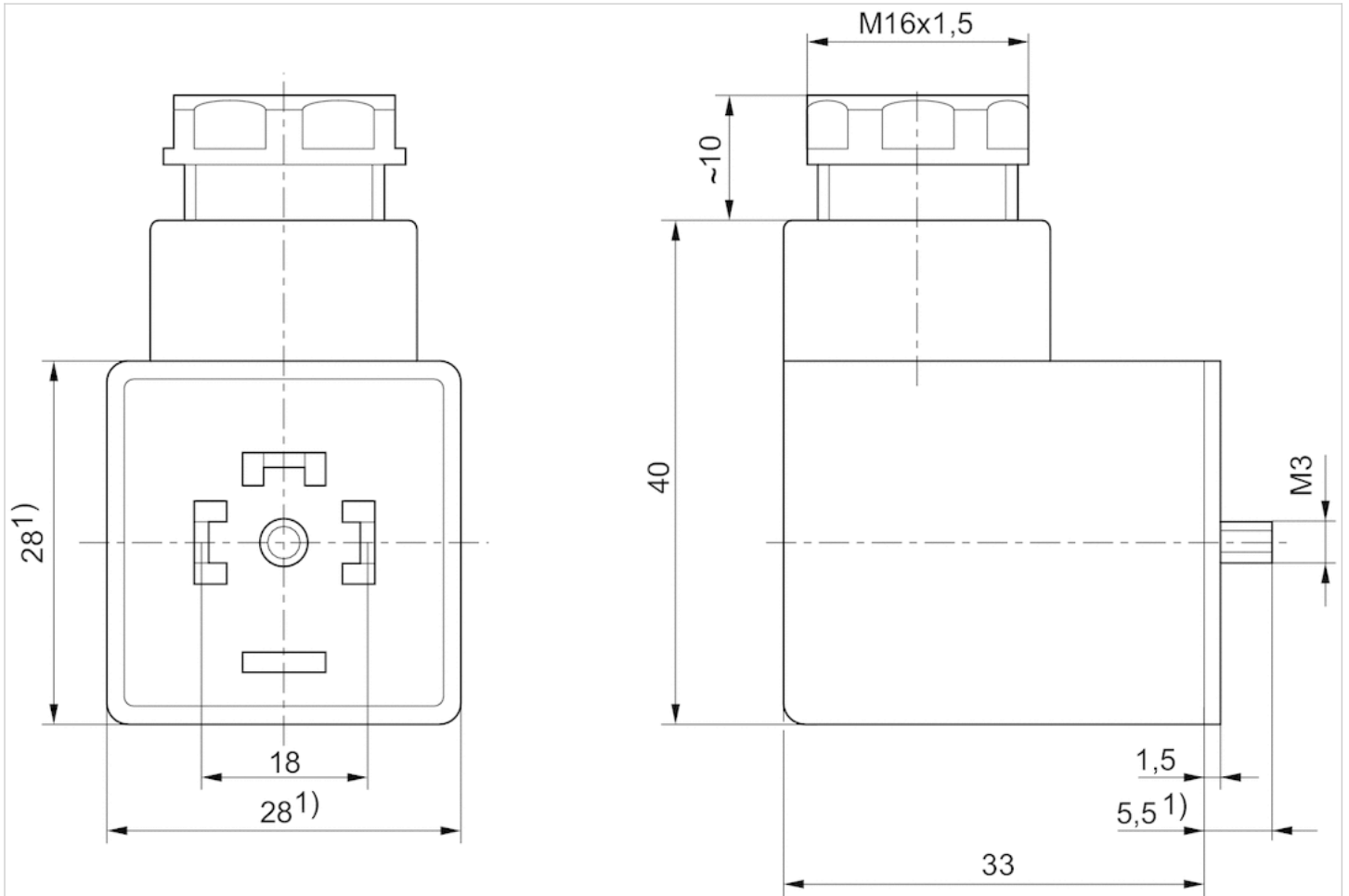
The specified protection class is only valid in assembled and tested state.

Technical information

Material	
Seals	caoutchouc/butadiene caoutchouc

Dimensions

Dimensions



1) Max.

Valve plug connector, series CON-VP

- Socket form A 2+E angled 90°
- open cable ends 3-pin
- with cable
- unshielded



Ambient temperature min./max.	-20 ... 80 °C
Operational voltage	230 V AC/DC
Protection class	IP67
Wire cross-section	0.75 mm ²
Mounting screw tightening torque	0.4 Nm
Weight	0.2 kg



Technical data

Part No.	Contact assignment	Number of wires	Cable-Ø	Cable length	Fig.
1834484160	2+E	3	5.9 mm	3 m	Fig. 1

Scope of delivery incl. flat gasket

Technical information

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

Technical information

Material	
Seals	caoutchouc/butadiene caoutchouc
Cable sheath	Polyvinyl chloride

Dimensions

Fig. 1

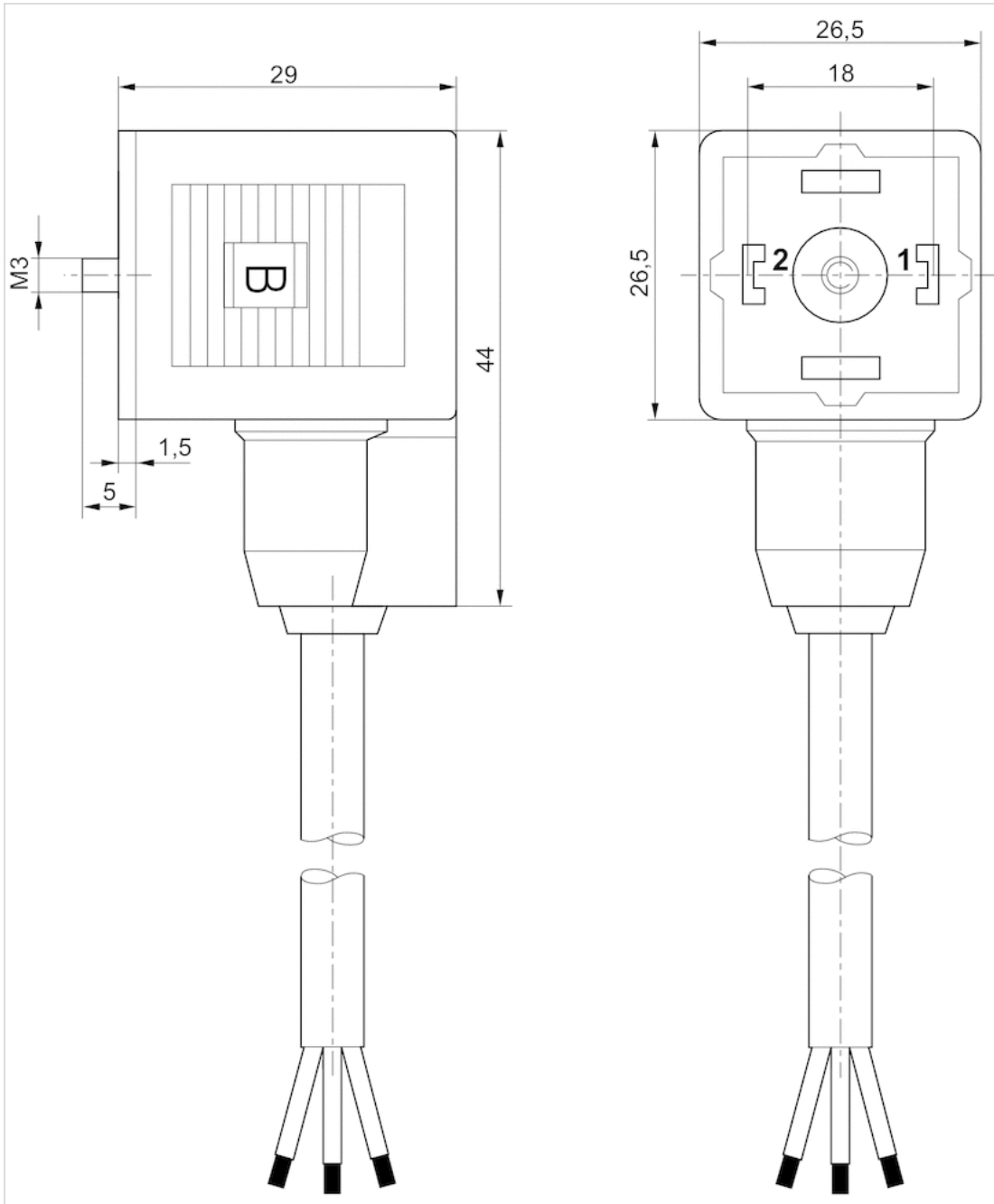
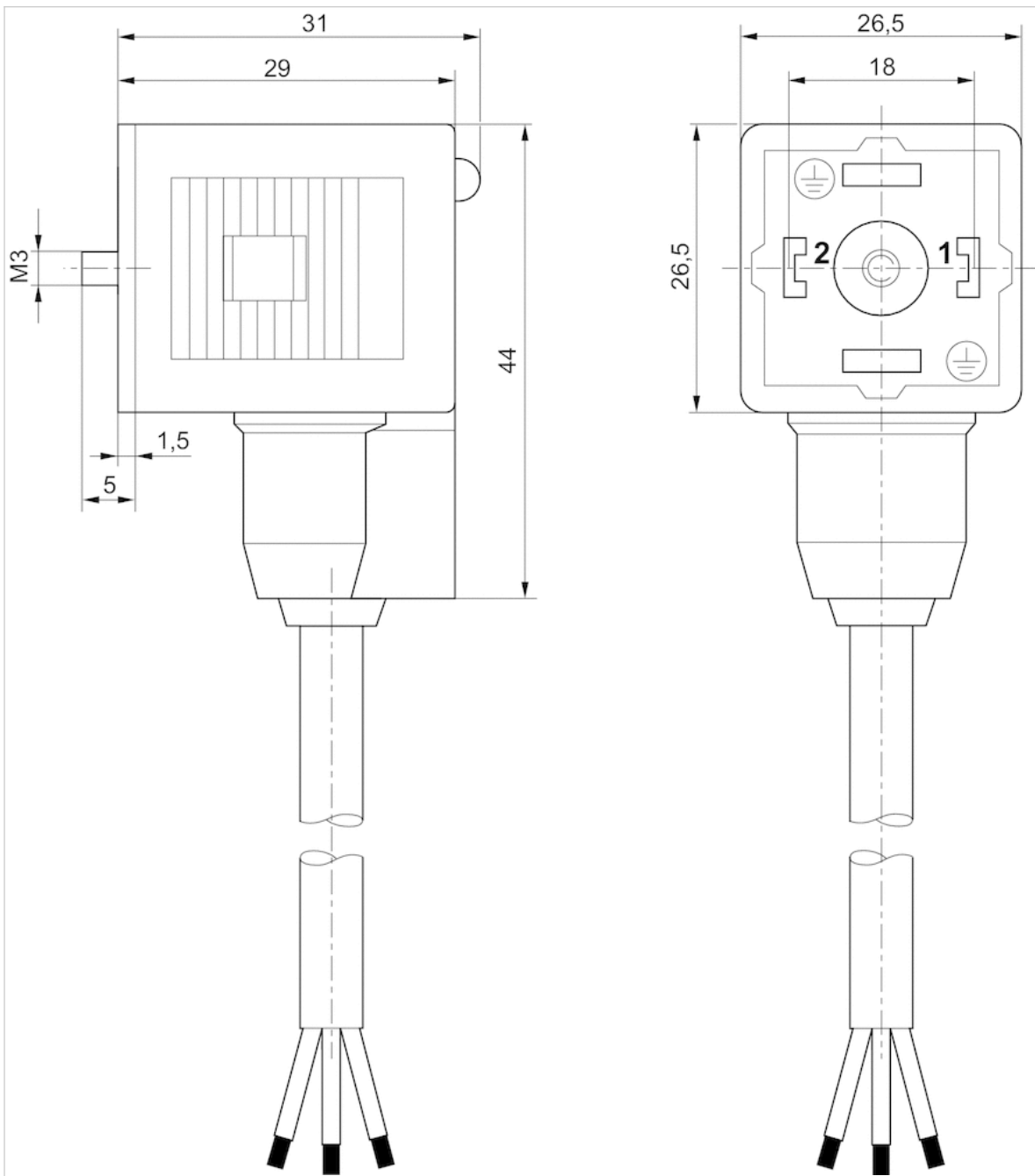
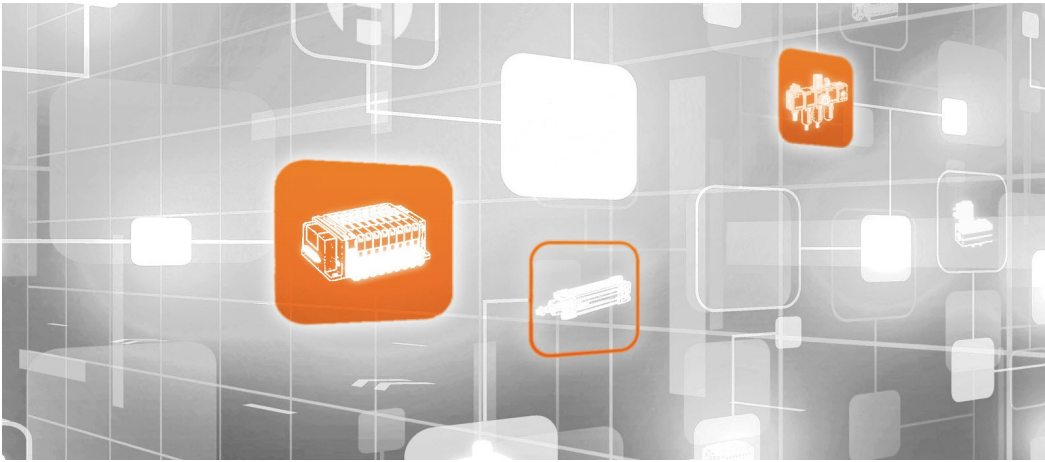


Fig. 2



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2019-03



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