

Sensor technologies ▶ Pressure sensors








## Series PE5

Brochure



Sensor technologies ▶ Pressure sensors

## Series PE5

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## Sensor technologies ▶ Pressure sensors

### Pressure sensor, Series PE5

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin



23003

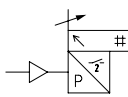
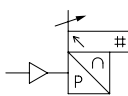
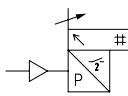
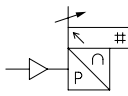
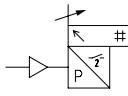
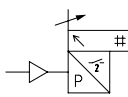
Certificates	CE declaration of conformity cULus RoHS Conforms with REACH Free of substances that impair surface wetting in the coating process
Measurement	Relative pressure
Display	LCD display, 4 digits Color setting: green or red
Units displayed	bar, psi, kPa, MPa, inHg
Switching logic	NO/NC (adjustable)
Ambient temperature min./max.	+0 °C / +60 °C
Medium temperature min./max.	+0 °C / +60 °C
Medium	Compressed air (max. 40 µm)
Max. oil content of compressed air	40 mg/m³
Shock resistance max. (XYZ direction)	30 g
Vibration resistance (XYZ direction)	5 g (10 - 150 Hz)
Precision (% of full scale value)	±1.5% in temperature range of 10 - 30 °C ± 2 % including temperature drift
Repeatability (% of full scale value)	± 0,2 %
Switching time	< 5 ms
Switching point	adjustable 0-100%
Resetting point	adjustable 0-100%
Hysteresis	adjustable
Delayed hysteresis	adjustable
Window function	adjustable
DC operating voltage min./max.	17 V DC - 30 V DC
Analog output	0 - 10 V DC, 4 - 20 mA
Quiescent current consumption	<40 mA
Analog output linearity	<± 0.5% of the final value
Maximum load (analog current output)	600 Ω
Short circuit resistance	Max. 600 ohms (current output) Min. 3K ohms (voltage output)
Mounting types	Directly on hat rail and wall mounting For panel installation using mounting kit via double nipple
Protection class	IP65 IP67 with connections assembled
Weight	0.04 kg
Materials:	
Housing	Polycarbonate
Seals	Acrylonitrile Butadiene Rubber
Blanking plug	Polyoxymethylene
Electr. connection	Aluminum, black anodized

#### Technical Remarks

- Alternative pressure connection (G1/4) on the rear side (closed with plug)
- Display color selectable, red or green
- The IO-Link device description (IODD) for the PE5 pressure sensor is available for download in the Media Centre.

### Pressure sensor, Series PE5

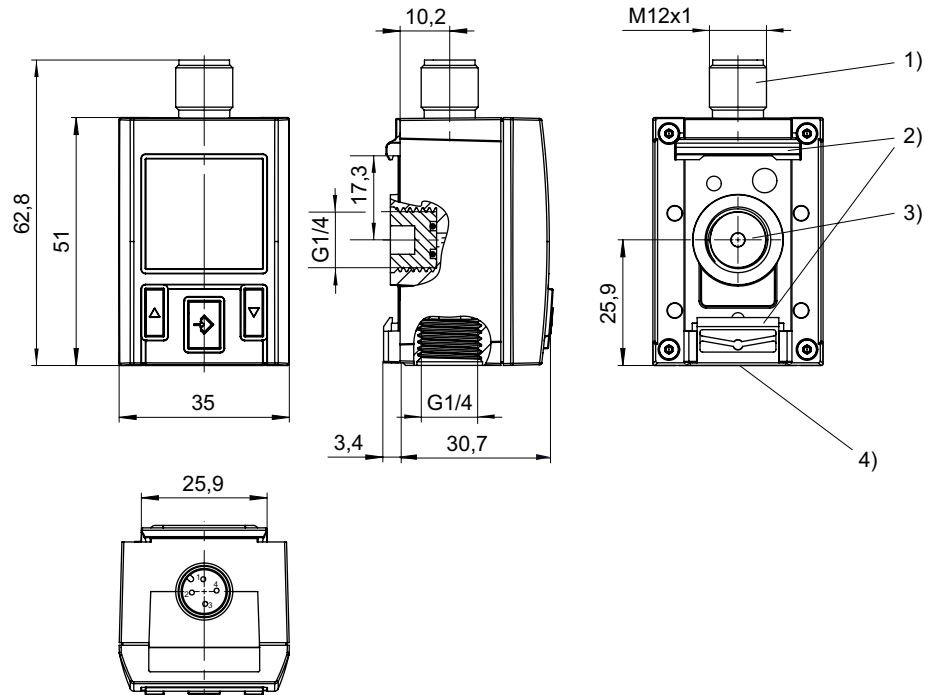
▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

	Operating pressure range min./max.	Protection against overpressure	Output signal		Compressed air connection	Fig.	Part No.
			Analog	digital			
	[bar]						
	-1 / 0	5 bar	-	2 outputs, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010761</b>
					push-in fitting, Ø 4	Fig. 2	<b>R412010760</b>
	-1 / 0	5 bar	1 output, 0 - 10 V DC, 4 - 20 mA	1 output, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010769</b>
					push-in fitting, Ø 4	Fig. 2	<b>R412010768</b>
	-1 / 0	5 bar	-	1 output, PNP, NPN, push-pull, 1x IO-Link	Internal thread, G 1/4	Fig. 1	<b>R412010775</b>
	-1 / 0			1 output, PNP, NPN, push-pull, 1x IO-Link	push-in fitting, Ø 4	Fig. 2	<b>R412010774</b>
	-1 / 1			2 outputs, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010763</b>
	-1 / 1			2 outputs, PNP, NPN, Push-pull	push-in fitting, Ø 4	Fig. 2	<b>R412010762</b>
	0 / 6	15 bar	1 output, 0 - 10 V DC, 4 - 20 mA	1 output, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010771</b>
					push-in fitting, Ø 4	Fig. 2	<b>R412010770</b>
	0 / 6	15 bar	-	2 outputs, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010765</b>
				2 outputs, PNP, NPN, Push-pull	push-in fitting, Ø 4	Fig. 2	<b>R412010764</b>
				1 output, PNP, NPN, push-pull, 1x IO-Link	Internal thread, G 1/4	Fig. 1	<b>R412010777</b>
				1 output, PNP, NPN, push-pull, 1x IO-Link	push-in fitting, Ø 4	Fig. 2	<b>R412010776</b>
	0 / 10	15 bar	1 output, 0 - 10 V DC, 4 - 20 mA	1 output, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010773</b>
					push-in fitting, Ø 4	Fig. 2	<b>R412010772</b>
	0 / 10	15 bar	-	2 outputs, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010767</b>
	0 / 10	15 bar		2 outputs, PNP, NPN, Push-pull	push-in fitting, Ø 4	Fig. 2	<b>R412010766</b>
	0 / 10	15 bar		1 output, PNP, NPN, push-pull, 1x IO-Link	Internal thread, G 1/4	Fig. 1	<b>R412010779</b>
	0 / 10	15 bar		1 output, PNP, NPN, push-pull, 1x IO-Link	push-in fitting, Ø 4	Fig. 2	<b>R412010778</b>
	0 / 12	16 bar		2 outputs, PNP, NPN, Push-pull	Internal thread, G 1/4	Fig. 1	<b>R412010782</b>
	0 / 12	16 bar		2 outputs, PNP, NPN, Push-pull	push-in fitting, Ø 4	Fig. 2	<b>R412010781</b>
	0 / 12	16 bar		1 output, PNP, NPN, push-pull, 1x IO-Link	Internal thread, G 1/4	Fig. 1	<b>R412010806</b>
	0 / 12	16 bar		1 output, PNP, NPN, push-pull, 1x IO-Link	push-in fitting, Ø 4	Fig. 2	<b>R412010805</b>

## Pressure sensor, Series PE5

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

Fig. 1



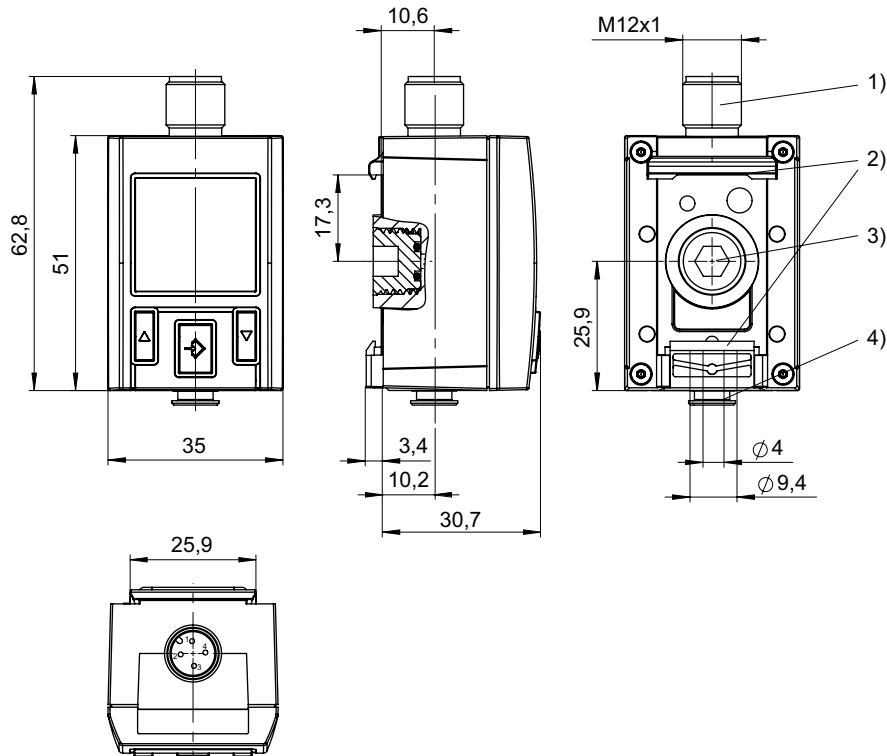
- 1) M12x1 electrical connection
- 2) Mounting for hat rail and wall mounting
- 3) Alternative pressure connection (G1/4) closed with plug
- 4) Pressure connection G1/4

22838

### Pressure sensor, Series PE5

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

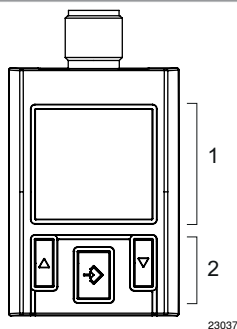
Fig. 2



22841

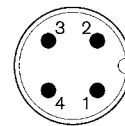
- 1) M12x1 electrical connection
- 2) Mounting for hat rail and wall mounting
- 3) Alternative pressure connection (G1/4) closed with plug
- 4) Pressure connection, tubing  $\varnothing$  4 mm

### Display and operation area



- 1) LCD display
- 2) Control panel with 3 buttons

### Pin assignments, M12x1



00129833

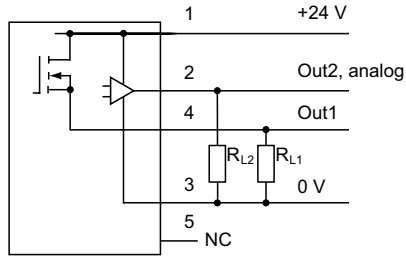
- Pin 1: operational voltage + UB  
 Pin 2: switch output Out2, analog: A or V, digital: PNP, NPN, push-pull  
 Pin 3: 0 V  
 Pin 4: switch output Out1, analog: A or V, digital: PNP, NPN, push-pull

Sensor technologies ▶ Pressure sensors

**Pressure sensor, Series PE5**

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

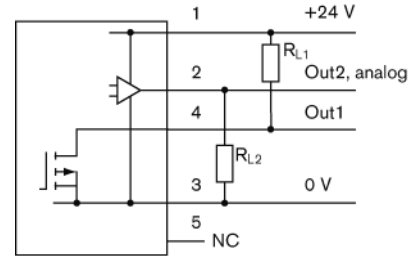
Block diagram, 1x PNP and 1x analog



00129834

RL = storable position

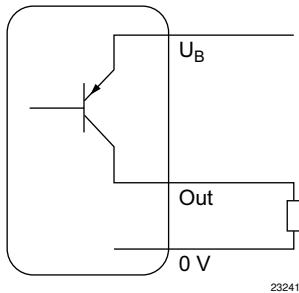
Block diagram, 1x NPN and 1x analog



00129836

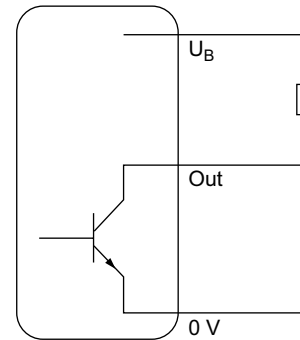
RL = storable position

Operating mode, PNP



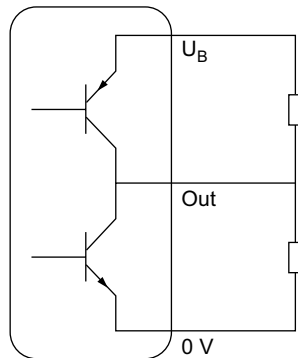
23241

Operating mode, NPN



23242

Operating mode, Push-pull



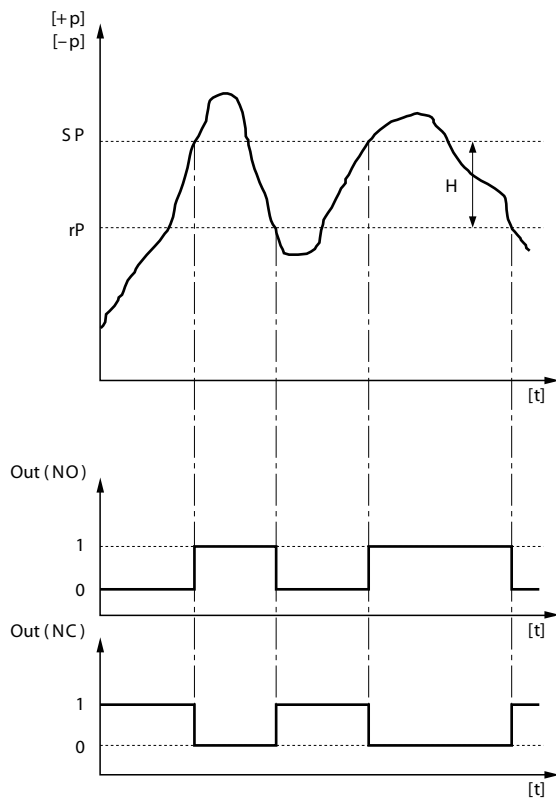
23243

### Pressure sensor, Series PE5

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

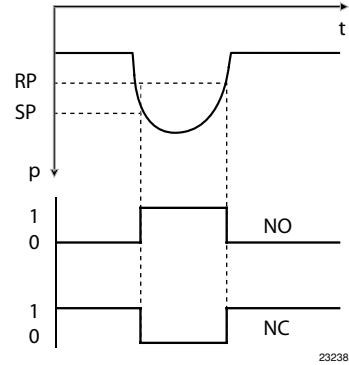
Hysteresis function: switching and resetting behavior dependent on pressure  $p$  and time  $t$ , In case of overpressure

Hysteresis function: switching and resetting behavior dependent on pressure  $p$  and time  $t$ , In case of underpressure



00129816

H: Hysteresis  
 SP = switching point  
 RP = resetting point  
 Out (NC): switch output, break contact  
 Out (NO): switch output, make contact



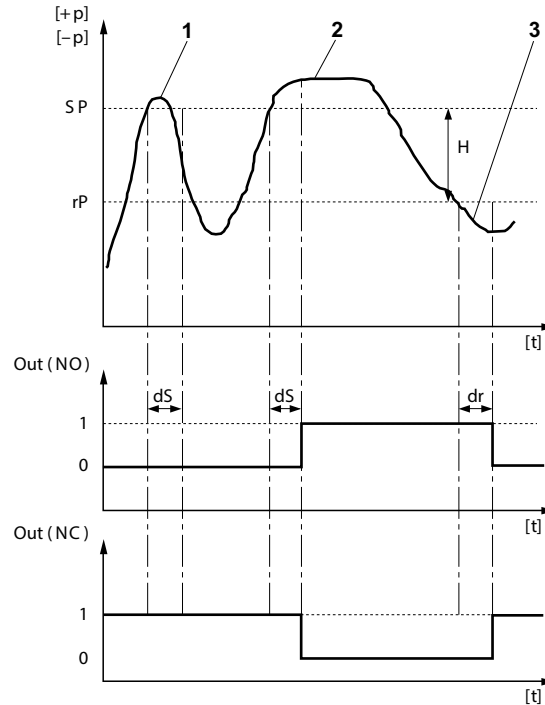
23238



**Pressure sensor, Series PE5**

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

Delayed hysteresis function: switching and resetting behavior depending on pressure p and time t

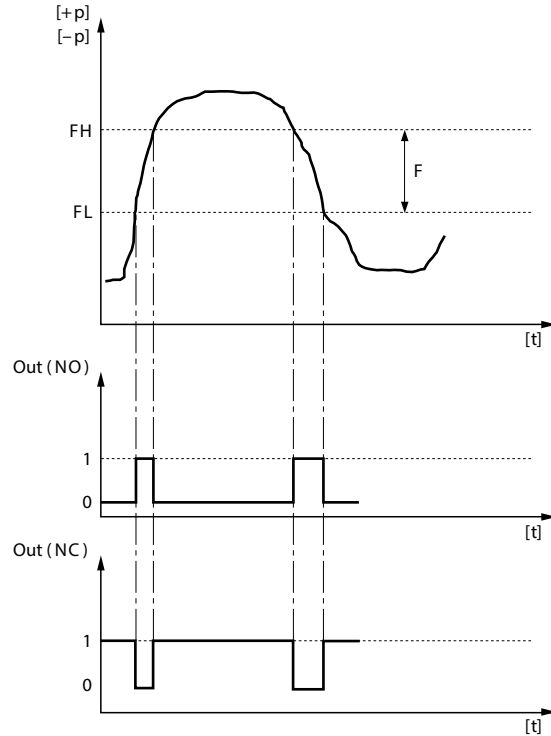


00129814

- H: Hysteresis
- SP = switching point
- RP = resetting point
- Out (NC): switch output, break contact
- Out (NO): switch output, make contact
- dS: switching delay
- dR = reset delay
- 1) period of pressure over the switching point < dS: pressure sensor does not switch
- 2) Period of pressure over the switching point > dS: pressure sensor switches
- 3) Period of pressure under the resetting point > dR: pressure sensor switches

**Pressure sensor, Series PE5**

▶ Operating pressure: -1 - 12 bar ▶ electronic ▶ Output signal digital: 2 outputs - 1 output ▶ IO-Link ▶ electr. connection: Plug, M12x1, 4-pin

**Window function: switching and resetting behavior depending on pressure p and time t**


00129815

FH: pressure band, upper value  
 FL: pressure band, lower value  
 Out (NC): switch output, break contact  
 Out (NO): switch output, make contact

Sensor technologies ▶ Pressure sensors

**Series PE5**  
Accessories

**Connecting cable, Series CN2**

▶ Socket, M12x1, 5-pin, A-coded, angled ▶ without wire end ferrule, tin-plated, 4-pin ▶ for CANopen, DeviceNet



00107009\_c

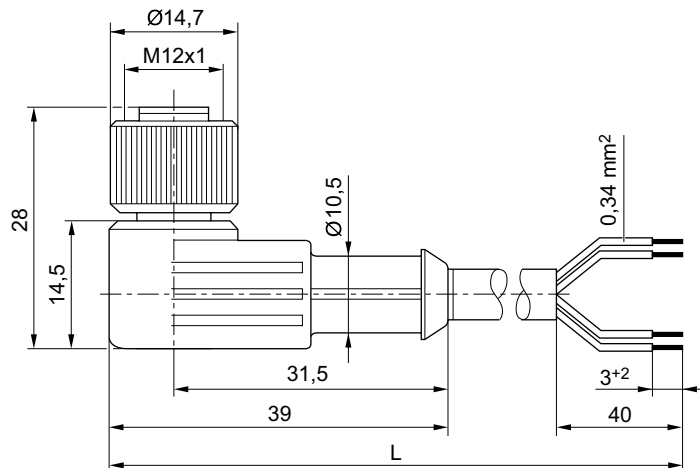
Ambient temperature min./max. -40°C / +85°C  
 Protection class IP65  
 Materials:  
 Cable sheath Polyurethane

**Technical Remarks**

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

	Operational voltage max.		Max. current [A]	Number of poles	Wire cross-section [mm <sup>2</sup> ]	Cable length L [m]	Weight [kg]	Part No.															
	[V AC]	[V DC]																					
<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>1</td><td>↷</td><td>BN</td></tr> <tr><td>2</td><td>↷</td><td>WH</td></tr> <tr><td>3</td><td>↷</td><td>BU</td></tr> <tr><td>4</td><td>↷</td><td>BK</td></tr> <tr><td>5</td><td>↷</td><td></td></tr> </table>	1	↷	BN	2	↷	WH	3	↷	BU	4	↷	BK	5	↷		48	48	4	4	0.34	3	0.13	<b>1834484259</b>
1	↷	BN																					
2	↷	WH																					
3	↷	BU																					
4	↷	BK																					
5	↷																						
	5	0.202	<b>1834484260</b>																				
	10	0.387	<b>1834484261</b>																				

**Dimensions**

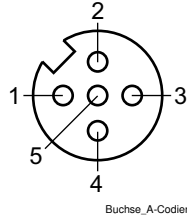


00107205\_b

L = length

### Series PE5 Accessories

#### Pin assignment



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

### 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 mm<sup>2</sup>

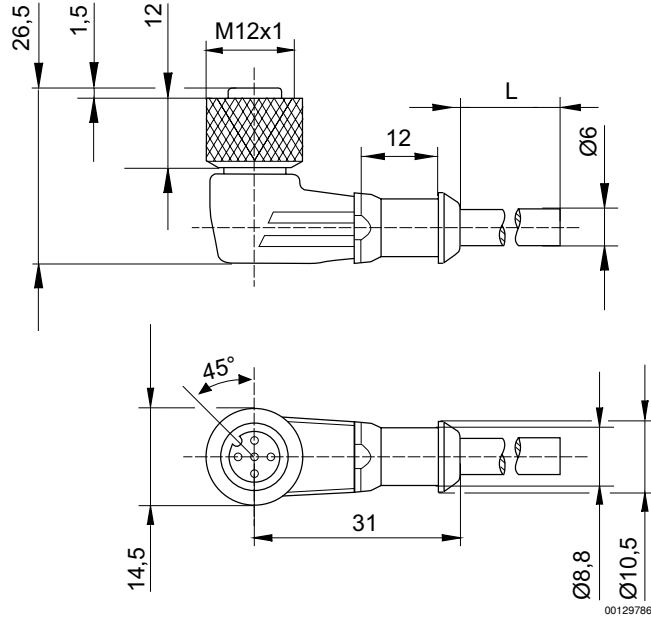
Materials:  
Cable sheath Polyurethane

00129794

Max. current	Number of poles	Cable-Ø	Cable length L	Weight	Part No.
[A]		[mm]	[m]	[kg]	
4	5	6	2.5	0.153	<b>R419800109</b>
			5	0.285	<b>R419800110</b>

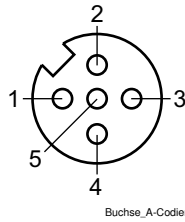
**Series PE5**  
Accessories

**Dimensions**



L = length

**Pin assignment**



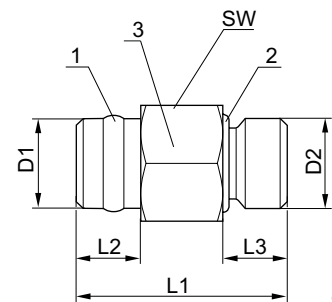
- (1) = brown
- (2) = white
- (3) = blue
- (4) = black
- (5) = grey

**Double nipple, Series PE5**



00130375

- 1) sealing ring Polytetrafluorethylen
- 2) O-ring - Acrylnitril-Butadien-Kautschuk
- 3) Housing - brass, nickel-plated



00129846

## Series PE5 Accessories

Delivery quantity	Weight	Part No.
[piece]	[kg]	
2	0.04	<b>R412010015</b> <b>R412010016</b>

Part No.	D1	D2	L1	L2	L3	SW						
<b>R412010015</b>	G 1/8	G 1/4	30	10	8,5	17						
<b>R412010016</b>	G 1/4	G 1/4	30	10	8,5	17						

## Double nipple

▶ external thread ▶ G 1/4 ▶ external thread ▶ G 1/8 - G 1/4 ▶ FPT-S-RDO



00136365

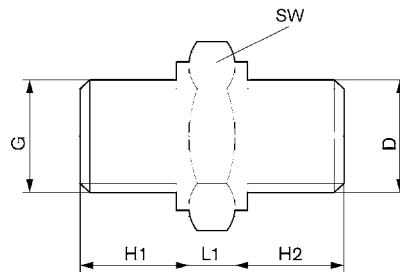
Ambient temperature min./max.  
Working pressure min./max.

-20°C / +80°C  
0 bar / 16 bar

Materials:  
Screw  
Housing  
Seal  
Thread

Brass, nickel-plated  
Brass, nickel-plated  
Polyvinyl chloride, hard  
Brass, nickel-plated

## Dimensions



00107922

Part No.	Port D	Port G	H1	H2	L1	SW	Delivery quantity [Piece]					
<b>1823391016</b>	G 1/8	G 1/4	10	7	5	17	10					
<b>1823391017</b>	G 1/4	G 1/4	10	10	5	17	10					



**Series PE5**  
**Accessories**

Part No.	Ambient temperature min./max.	Material	Material Seal	Order quantity [Piece]			
<b>R412010406</b>	0 / 60	Acrylonitrile butadiene styrene	Polyurethane	1			
Included in scope of delivery: 1 front frame (1), 1 wall mounting (2), 2 attachment screws M4x40 (3), 2 hexagonal nuts (4)							

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[www.aventics.com/contact](http://www.aventics.com/contact)

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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.

02-09-2016

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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