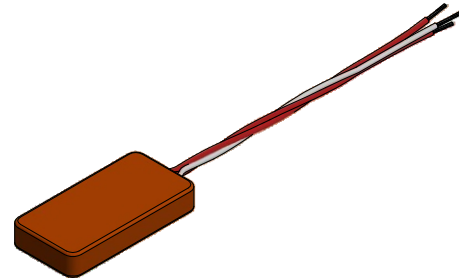


Applications

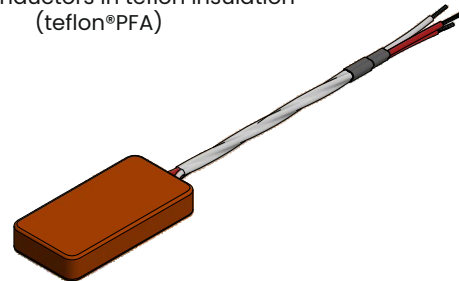
- Temperature measurement of pipeline surface
- General industrial services
- Laboratories

Features

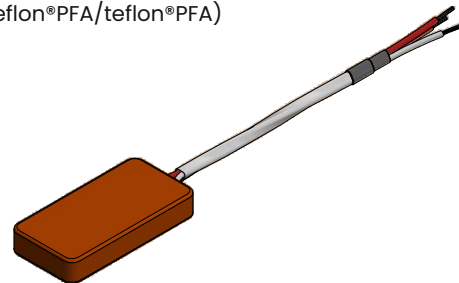
- Single RTD
- 2-, 3-, 4-wire connection
- Sensing element:
Pt100, Pt500, Pt1000 (IEC751),
Ni100, Ni500, Ni1000 (DIN43760),
Cu50, Cu100 (GOST 6651-2009)
- For sticking with self-adhesive
teflon® tape



TOPE501
Single conductors in teflon insulation
(teflon®PFA)



TOPE501
Cable in TT insulation
(teflon®PFA/teflon®PFA)



TOPE501
Cable in TCuT insulation
(teflon®PFA/Cu braid
/teflon®PFA)

Resistance thermometers of this serie are designed for surface temperature measurement.

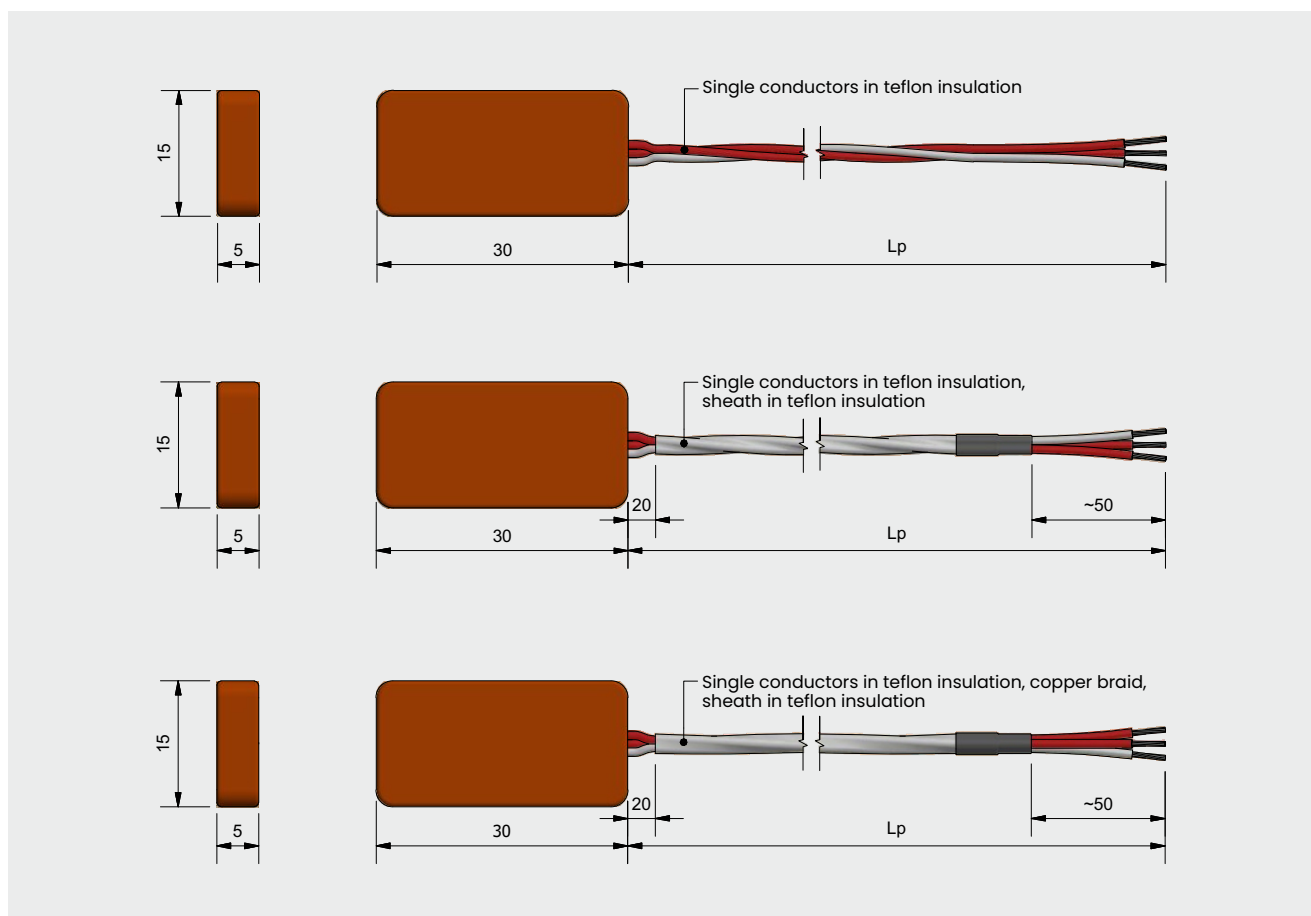
The sensor consists of Pt100 thermometric resistor (or other according to request), silicone case, self-adhesive tape and cable.

Length, accuracy, cable insulation and method of connection can be selected individually for the respective application.

Temperature transmitter (Option)

There is possibility of using standard temperature transmitter (4÷20mA, 0÷10V) or temperature transmitter with HART®, Profibus® PA, Foundation Fieldbus communication protocol, mounted inside electrical control cabinet.

Designs



Measuring range

from -50°C to +180°C

Sensing element

Single or double

Pt100, Pt500, Pt1000 (IEC 751, $\alpha=0.00385$)

Ni100, Ni500, Ni1000 (DIN43760, $\alpha=0.00618$)

Cu50, Cu100 (GOST 6651-94, $\alpha=0.00426$)

Tolerance class

Platinum Class A ($\pm 0.15^\circ\text{C}$ in temp. 0°C)

Class B ($\pm 0.30^\circ\text{C}$ in temp. 0°C)

Nickel ($\pm 0.40^\circ\text{C}$ in temp. 0°C)

Copper ($\pm 0.30^\circ\text{C}$ in temp. 0°C)

PN-EN 60751 standard defines the formulas for calculating acceptable measure tolerance.

Class of tolerance	Tolerance °C
A	$\pm 0.15 + (0.002 \times t)$
B	$\pm 0.30 + (0.005 \times t)$

Electrical parameters

Measuring current nom. 0,1 mA to 1 mA

Isolation resistance $> 10 \text{ G}\Omega$ (test 500 VDC)

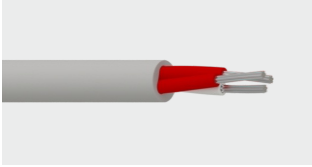
Housing material

Silicone

Insulation types of connection cable

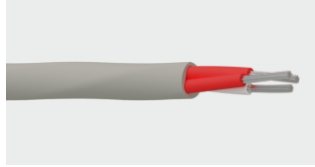
JJ insulation

Conductor: PVC
Sheath: PVC



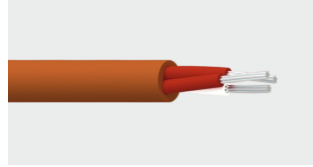
SLSL insulation

Conductor: Silikon
Sheath: Silikon



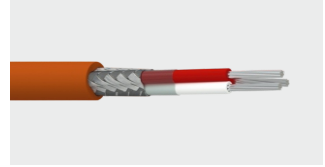
TSL insulation

Conductor: Teflon® FEP
Sheath: Silicone



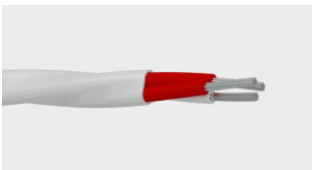
TPSL insulation

Conductor: Teflon®FEP
Screen: Copper braid
Sheath: Silicone



TT insulation

Conductor: Teflon® PFA
Sheath: Teflon® PFA



TP insulation

Conductor: Teflon® PFA
Sheath: Stainless steel braid



TCuT insulation

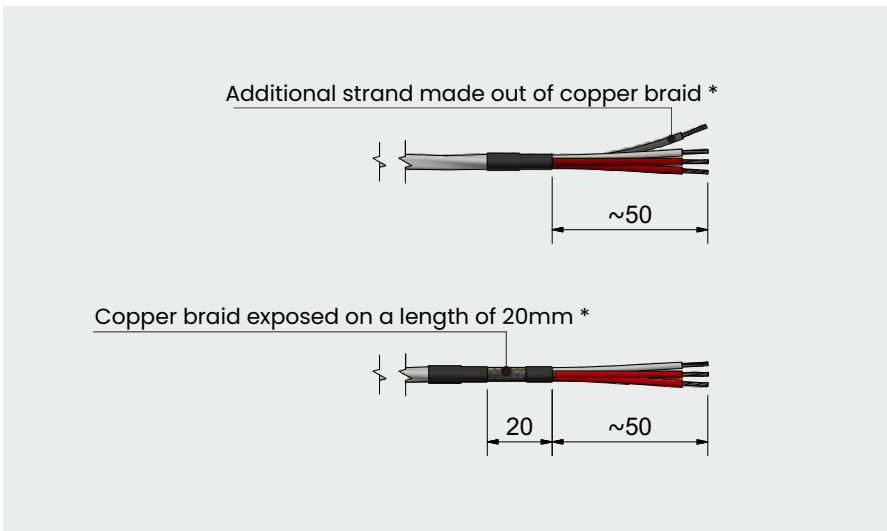
Conductor: Teflon® PFA
Screen: Copper braid
Sheath: Teflon® PFA



Available measuring range

Measuring range	Insulation type	
-10 .. +105°C	JJ	PVC
-50 .. +180°C	SLSL, TSL, TPSL	silicone
-50 .. +180°C	TW, TT, TP, TCuT	teflon® PFA

Non-standard sensor versions



* Available only for TCuT and TPSL cable insulation

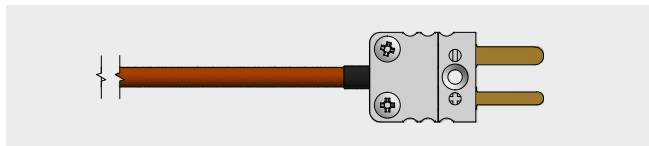
Connectors (optional)

Sensors with connection cable can be equipped with connector.

Available options:

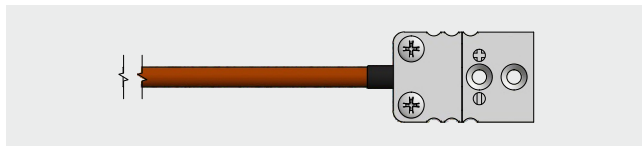
Connector S-010-Cu-W

Miniature plug, 2-pin.



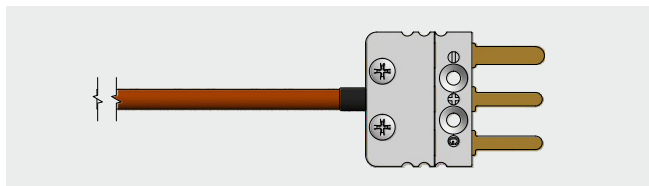
Connector S-010-Cu-G

Miniature socket, 2-pin.



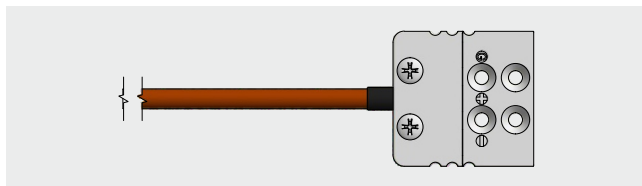
Connector S-013-Cu-W

Miniature plug, 3-pin.



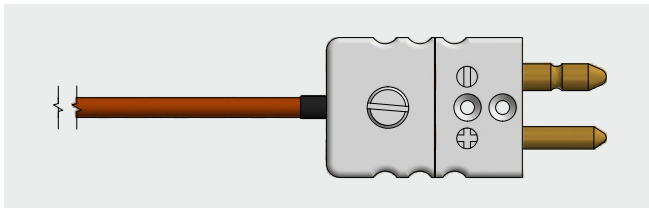
Connector S-013-Cu-G

Miniature socket, 3-pin.



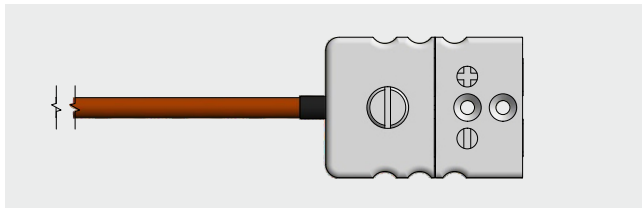
Connector S-020-Cu-W

Standard plug, 2-pin.



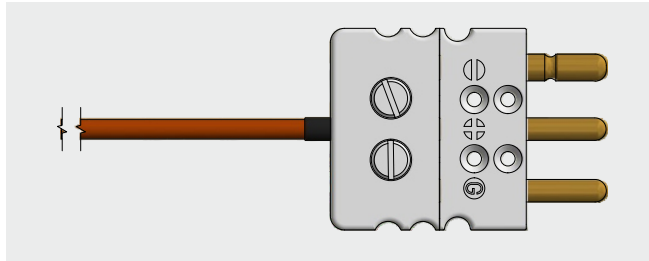
Connector S-020-Cu-G

Standard socket, 2-pin.



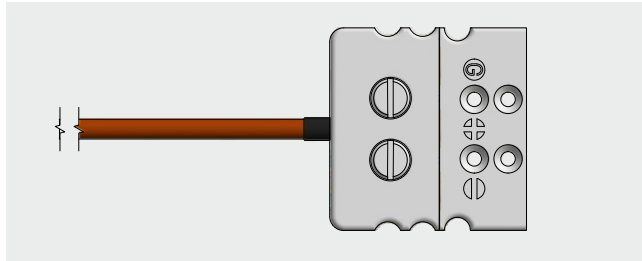
Connector S-023-Cu-W

Standard plug, 3-pin.



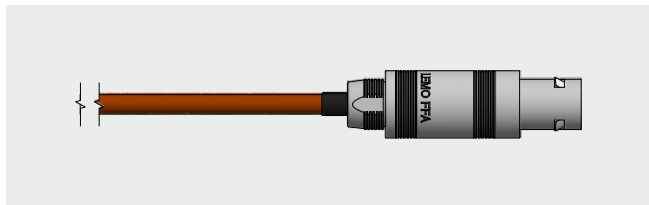
Connector S-023-Cu-G

Standard socket, 3-pin.



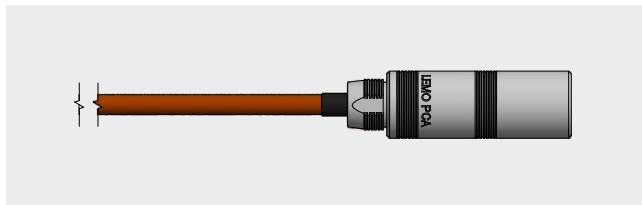
Connector LEMO® FFA

Plug size from 0S to 3S. 2-, 3-, 4-, 6-pin.



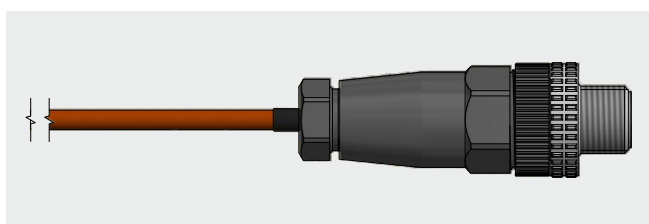
Connector LEMO® PCA

Plug size from 0S to 3S. 2-, 3-, 4-, 6-pin.



Hirschmann M12 series

4-pin.



Ordering code

TOPE501 - 1 - 2 - 3 - 4 - 5 - 6

1	<input type="text"/>	Type of sensing element			
		1xPt100	Single Pt100 IEC 751, $\alpha=0.00385$		
		1xNi100	Single Ni100 DIN43760, $\alpha=0.00618$		
	xxx	other, please specify			
2	<input type="text"/>	Connecting cable length Lp			
		1000	1000 mm		
		2500	2500 mm		
	xxx	other, please specify			
3	<input type="text"/>	Tolerance class			
		A	Class A wg PN-EN 60751 / IEC 751 (available only for platinum sensing elements)		
		B	Class B acc. to PN-EN 60751 / IEC 751 / DIN43760 / GOST 6651-94		
4	<input type="text"/>	Measuring circuit			
		2	2-wire (available only in B tolerance class)		
		3	3-wire		
		4	4-wire		
5	<input type="text"/>	Connecting cable type		Temperature range of sensor	
		JJ	PVC / PVC	-10 .. +105°C	
		SLSL	Silicone / Silicone	-50 .. +180°C	
		TSL	Teflon® FEP / Silicone	-50 .. +180°C	
		TPSL	Teflon® FEP / Cu braid / Silicone	-50 .. +180°C	
		TW	Teflon® PFA	-50 .. +180°C	
		TT	Teflon® PFA / Teflon® PFA	-50 .. +180°C	
		TP	Teflon® PFA / Stainless steel	-50 .. +180°C	
TCuT	Teflon® PFA / Cu braid / Teflon® PFA	-50 .. +180°C			
6	<input type="text"/>	Connector (optional)			
			without connector, free end conductors of connection cable		
		S-013-Cu-W	Miniature plug, 3-pin		
		FFA.IS	Connector LEMO® FFA size IS		
	xxx	other, please specify			

Example

TOPE501-1xPt100-5000-A-3-TCuT

RTD sensor 1xPt100, cable length Lp=5000 mm, tolerance class A, 3-wire measuring circuit, cable in TCuT insulation type .

TOPE501-1xPt100-1000-A-3-TT-LEMO® FFA.IS

RTD sensor 1xPt100, cable length Lp=1000 mm, tolerance class A, 3-wire measuring circuit, cable in TT insulation type, equipped with LEMO® FFA plug size IS.