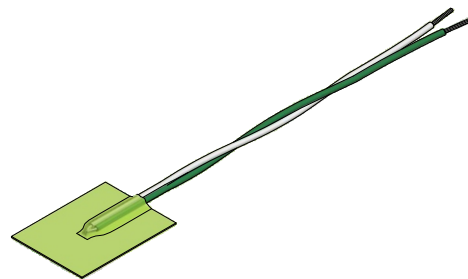


Applications

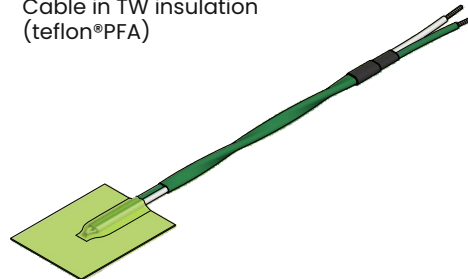
- Temperature measurement of pipeline surface
- General industrial services
- Laboratories

Features

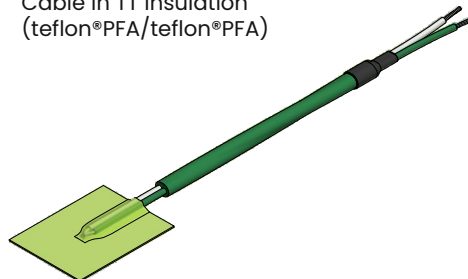
- Single thermocouple
- Sensing element according to (PN-EN 60584-1):
Type K (NiCr-NiAl),
Type J (Fe-CuNi),
Type N (NiCrSi-NiSi),
Type E (NiCr-CuNi),
Type T (Cu-CuNi)
- For sticking with self-adhesive tape teflon® tape



TTE500
Cable in TW insulation
(teflon®PFA)



TTE500
Cable in TT insulation
(teflon®PFA/teflon®PFA)



TTE500
Cable in TCuT insulation
(teflon®FEP/Cu braid/teflon®FEP)

Thermocouples of this series are designed for surface temperature measurement.

The sensor consists of silicone case, self-adhesive tape and thermocouple cable.

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

Temperature transmitter (Option)

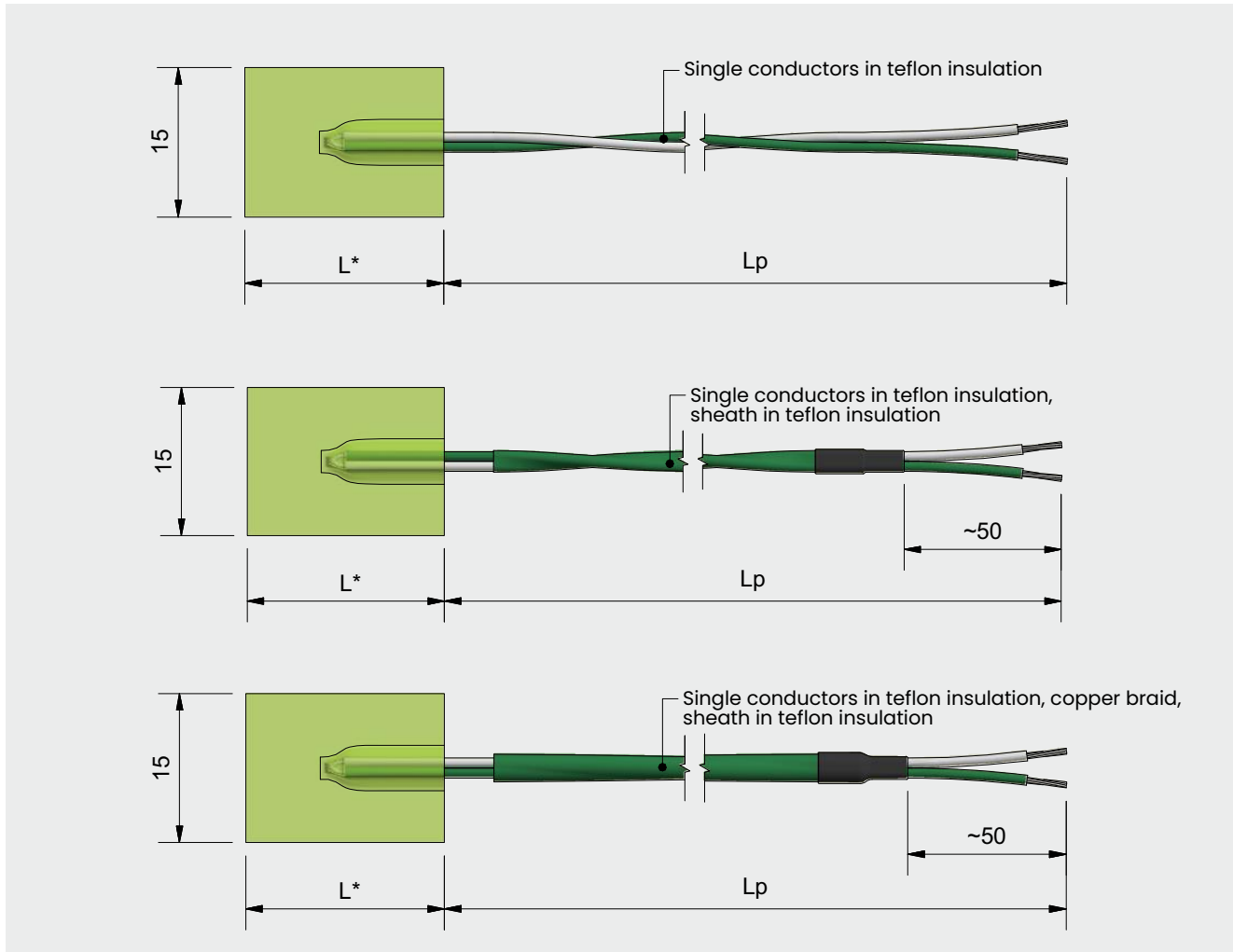
There is possibility of using standard temperature transmitter (4÷20mA, 0÷10V) or temperature transmitter with HART®, Profibus® PA, Foundation Fieldbus communication protocol, mounted inside electrical control cabinet.

ATEX, IECEx, EAC Ex versions

Intrinsically safe designs are available for applications in hazardous areas. These models are provided with certificate for „intrinsically safe“ type of protection according to Directive 2014/34/UE (ATEX), IECEx scheme and EAC Ex TR-CU 012/2011 (Eurasian Economic Union).

Intrinsically safe (Exi) XI-TTE500

Designs



* Minimum length of self-adhesive tape = 15 mm

Basic values of Thermocouples type J, K, N according to PN-EN 60584 / IEC 584

Temperature		°C	100	200
Basic value	Type J	mV	5.27	10.78
	Type K	mV	4.10	8.14
	Type N	mV	2.77	5.91
Tolerance	Class 1	°C	±1.5	±1.5
	Class 2	°C	±2.5	±2.5

Tolerance

The PN-EN 60584 Standard defines the formulas for calculating acceptable measure tolerance. More information available in the general thermocouple thermometer sheet.

Type J (Fe-CuNi)

Class	Temperature range	Tolerance
1	-40 °C .. +375 °C	± 1.5 °C
	+375 °C .. +750 °C	± 0.0040 x t
2	-40 °C .. +333 °C	± 2.5 °C
	+333 °C .. +750 °C	± 0.0075 x t

Electrical parameters

Isolation resistance > 10 GΩ (test 500 VDC)

Type K (NiCr-Ni), Type N (NiCrSi-NiSi)

Class	Temperature range	Tolerance
1	-40 °C .. +375 °C	± 1.5 °C
	+375 °C .. +1000 °C	± 0.0040 x t
2	-40 °C .. +333 °C	± 2.5 °C
	+333 °C .. +1200 °C	± 0.0075 x t

Insulation types of connection cable

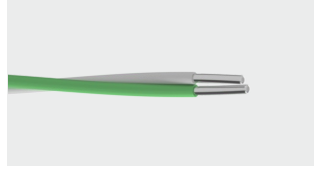
TCuT insulation

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



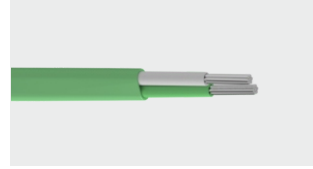
TW insulation

Conductor: Teflon® PFA



TT insulation

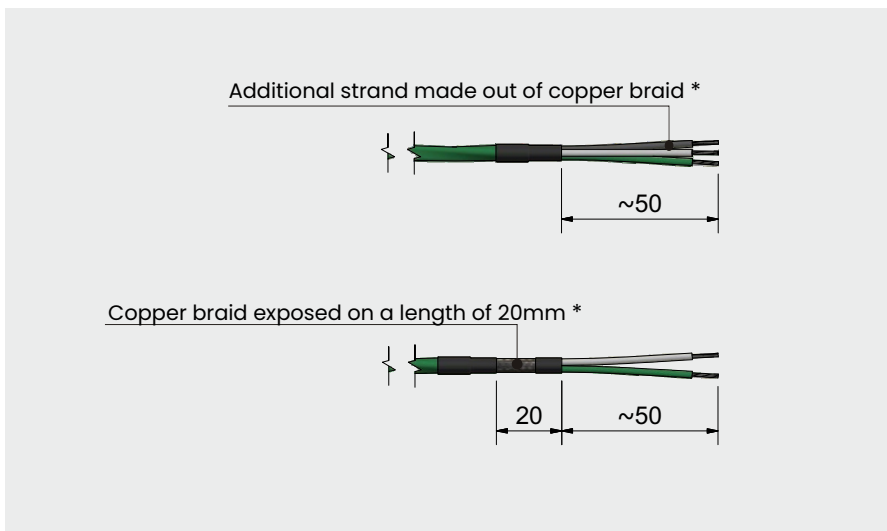
Conductor: Teflon® PFA
Sheath: Teflon® PFA



Available measuring range

Measuring range	Insulation type	
-50 .. +180°C	TCuT	teflon® FEP
-50 .. +180°C	TW,TT	teflon® PFA

Non-standard sensor versions



* Available only for TCuT cable insulation

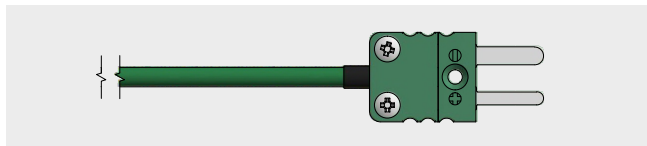
Connectors (optional)

Sensors with connection cable can be equipped with connector.

Available options:

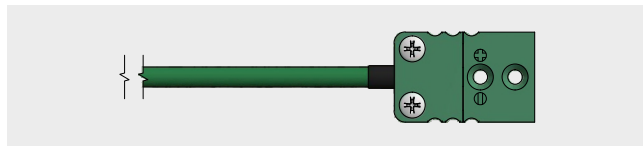
Connector S-010-(thermocouple type)-W

Miniature plug, 2-pin.



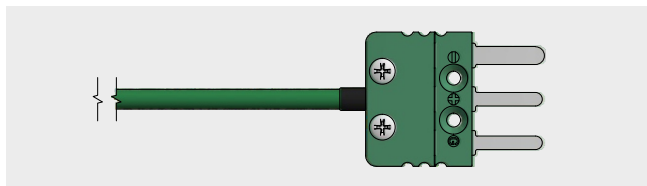
Connector S-010-(thermocouple type)-G

Miniature socket, 2-pin.



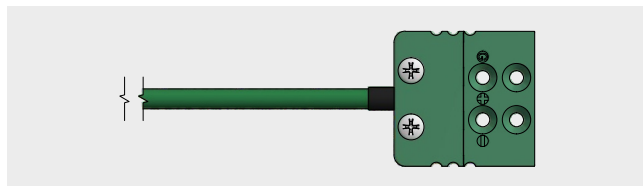
Connector S-013-(thermocouple type)-W

Miniature plug, 3-pin.



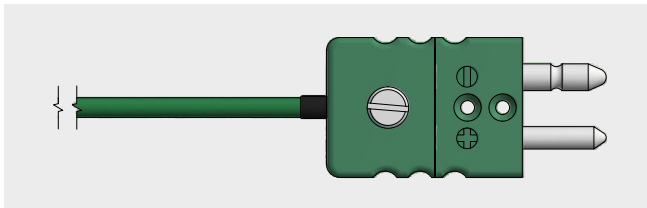
Connector S-013-(thermocouple type)-G

Miniature socket, 3-pin.



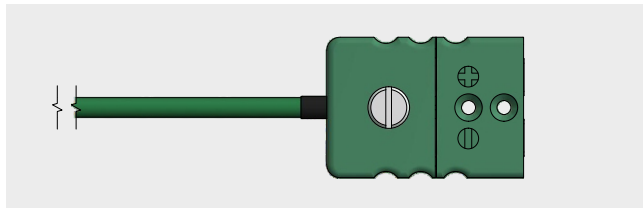
Connector S-020-(thermocouple type)-W

Standard plug, 2-pin.



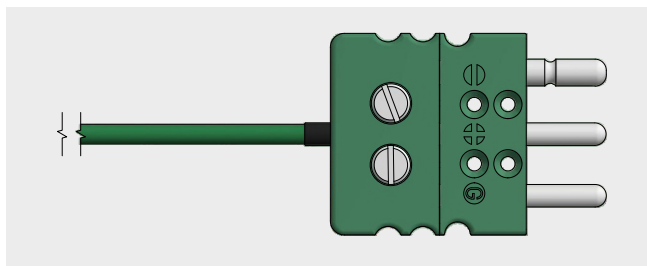
Connector S-020-(thermocouple type)-G

Standard socket, 2-pin.



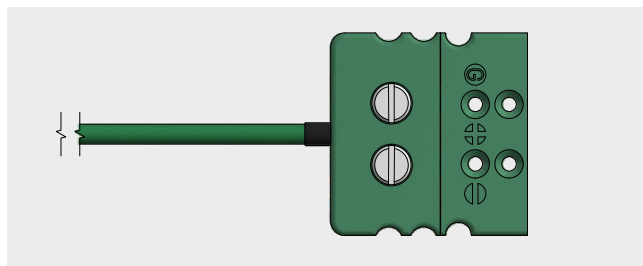
Connector S-023-(thermocouple type)-W

Standard plug, 3-pin.



Connector S-023-(thermocouple type)-G

Standard socket, 3-pin.



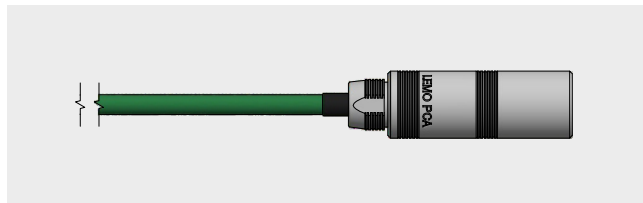
Connector LEMO® FFA

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.



Ordering code

TTE500 - 1 - 2 - 3 - 4 - 5 - 6

1	<input type="text"/>	Thermocouple type		
		J	Type J (Fe-CuNi)	
		K	Type K (NiCr-Ni)	
		xxx	other, please specify	
2	<input type="text"/>	Self-adhesive tape length L		
		15	15 mm	
		20	20 mm	
		xxx	other, please specify	
3	<input type="text"/>	Connecting cable length Lp		
		1000	1000 mm	
		2500	2500 mm	
		xxx	other, please specify	
4	<input type="text"/>	Tolerance class		
		1	Class 1 acc. to PN-EN 60584-1	
		2	Class 2 acc. to PN-EN 60584-1	
5	<input type="text"/>	Connecting cable type		Temperature range of sensor
		TW	Teflon® PFA	-50 .. +200°C
		TT	Teflon® PFA / Teflon® PFA	-50 .. +200°C
		TCuT	Teflon® FEP / Cu braid / Teflon® FEP	-50 .. +200°C
6	<input type="text"/>	Connector (optional)		
			brak złącza, przewód zakończony wolnymi końcami	
		S-013-Cu-W	Wtyk miniaturowy, 3-pinowy	
		FFA.1S	Wtyk LEMO® FFA rozmiar 1S	
		xxx	inny, należy określić	

Example

TTE500-K-15-2000-1-TW

TC sensor type K, self-adhesive tape length 15 mm, connection cable length Lp=2000 mm, tolerance class 1, single conductors in teflon insulation.

TTE500-J-20-2500-2-TT-LEMO® FFA.1S

TC sensor type J, self-adhesive tape length 20 mm, connection cable length Lp=2500 mm, tolerance class 2, single conductors in teflon insulation, sheath in teflon insulation, connection cable equipped with LEMO® FFA plug size 1S.