

## Product Description

The construction of the sensor enables fixed connection to the measured surface by using screw placed in to the hole in the sensor case. The structure of the sensors also enables fast response to the changes in temperature in particular when silicone grease is applied between the measured surface and the sensor.

## Application

- Plastic and Rubber Machines
- Packaging Machinery
- Machine building, plant and vessel construction
- Energy and power plant technology
- Chemical and petrochemical industry
- Food and beverage industry
- Heating and air-conditioning technology

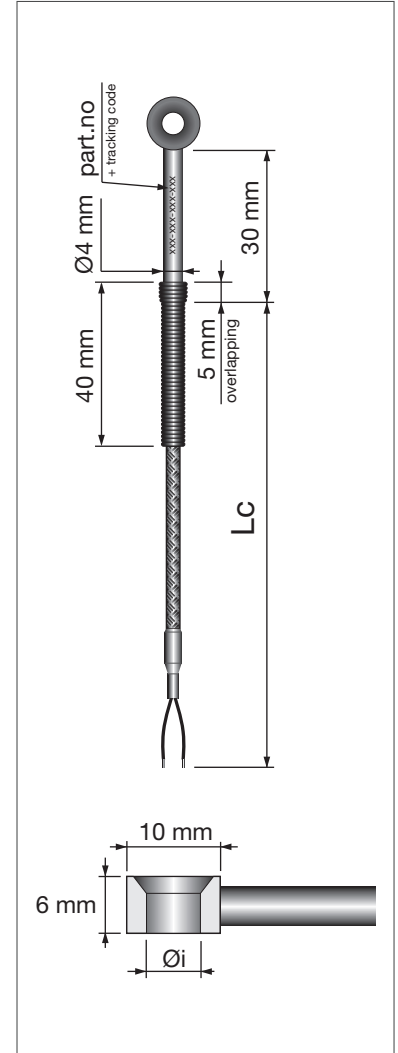


## Sensor Specification

- Number of Sensing Elements: 1
- Type of Thermocouple Sensing Junction: Ungrounded
- Thermocouple Tolerance: Class 1 - EN 60584  
Class Special - ASTM E230
- Thermocouples are also available according to color coding DIN 43714 (withdrawn)
- RTD Tolerance: Class B - EN 60751

## Technical Features

- Ring Dimensions:  $\text{Ø}i$  4,1 mm /  $\text{Ø}e$  10,0 mm / H 6,0 mm / 120°  
 $\text{Ø}i$  5,1 mm /  $\text{Ø}e$  10,0 mm / H 6,0 mm / 120°
- Ring Material: AISI 304L (1.4307)
- Sheath Diameter:  $\text{Ø}4$  mm
- Sheath Length: 30 mm
- Sheath Material: AISI 316L (1.4404)
- Anti-kink spring Length: 40 mm
- Spring material: AISI 303 (1.4305)
- Terminals: stripped leads or split leads
- Max Operating Temperature: depending on the selected cable type
- Polyolefin Heat-Shrink Sleeve: used only with "BRA" type cable
- Product Identification: Product part number and work order number are laser printed on sensor sheath



## Product Configurator

5SR

TYPE OF SENSOR	
J	TC J (Fe-Co)
K	TC K (Cr-Al)
D	RTD - PT100 (2 wires)
F	RTD - PT100 (3 wires)
G	RTD - PT1000 (2 wires)
H	RTD - PT1000 (3 wires)

WIRE COLOUR CODE	
A	ASTM E230 (TC)
D	DIN 43714 (TC)
E	EN 60584 (TC)
R	EN 60751 (RTD)

MOUNTING HOLE ( $\text{Ø}i$ )	
4	4,1 mm
5	5,1 mm

TYPE OF CABLE	
1	SIL (max 200°C)
2	MFA (max 220°C)
3	BRA (RTD max 220°C / TC max 400°C)

ORDER QUANTITY	
S	10 pcs
T	20 pcs
U	50 pcs
V	75 pcs
W	100 pcs
X	150 pcs
Y	200 pcs

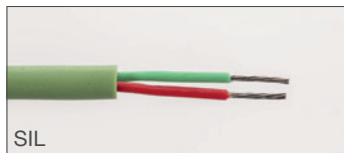
TERMINALS	
S	Stripped Leads
P	Split Leads

CABLE LENGTH ( $L_c$ )	
A	500 mm
B	1000 mm
C	1500 mm
D	2000 mm
E	3000 mm

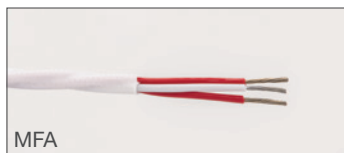


## Temperature sensor cables

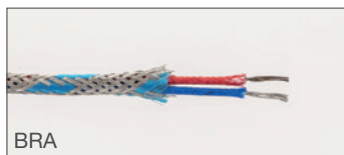
The cables for temperature sensors are the heart of instruments that measure temperature because they are the ones that form the circuit that determines the difference in potential (thermocouple) or transmit the electrical signal (RTD), which then in both cases the measuring instruments convert into the temperature reading. The cables offered by Zoppas meet the requirements of DIN, IEC and ASTM standards. Although the temperature sensor is designed to run at very high temperature, sensor lead wires and terminations are rated for much lower temperatures. Care should be taken to make sure that the sensor lead end temperatures do not exceed their limitations.



Cable Code	SIL
Description	Twisted MFA or Silicone insulated conductors covered with external silicone sheath
Features	Silicone rubber is a common choice for cable temperature sensors. Silicone rubber cables have excellent flexibility at both low temperatures and high temperatures. Furthermore, silicone rubber cables have accomplished electrical insulation properties.
Wire type	Solid or Stranded
Outside Shape	Rounded
External Jacket	Silicone rubber
Conductor Insulation	MFA - Probe diameter $\leq 4$ mm
Conductor Insulation	Silicone - Probe diameter $> 4$ mm
Temperature range	-40°C / +200°C
Type of conductors	J or K (Thermocouple) - Tinned Cu (RTD)



Cable Code	MFA
Description	Twisted MFA insulated conductors covered with external MFA sheath
Features	MFA cables are heat resistant, chemically inert, and have great dielectric properties. Resistant to oils, acids other adverse agents and fluids.
Wire type	Solid or Stranded
Outside Shape	Rounded
External Jacket	MFA
Conductor Insulation	MFA
Temperature range	-40°C / +220°C
Type of conductors	J or K (Thermocouple) - Tinned Cu (RTD)



Cable Code	BRA
Description	Twisted fiberglass insulated conductors, fiberglass filling and external tinned copper armoring
Features	The tinned copper braided cable provides abrasion resistance, easy installation into cable trays or ducts and resistance to high temperature (up to 400°C). Will not prevent ingress of fluids.
Wire type	Solid or Stranded
Outside Shape	Rounded
External Jacket	Tinned Copper
Conductor Insulation	Fiberglass
Temperature range	Thermocouple: 0°C / 400°C - RTD: 0°C / 220°C
Type of conductors	J or K (Thermocouple) - Tinned Cu (RTD)



Cable Code	SNG
Description	Single wire made of solid or stranded conductors PFA insulated
Features	PFA cable is similar to MFA, but has a slightly different chemical composition, allowing it to withstand even higher temperatures than MFA. Good mechanical strength and flexibility.
Wire type	Solid or Stranded
Outside Shape	Rounded
Conductor Insulation	PFA
Temperature range	-40°C / +250°C
Type of conductors	J or K (Thermocouple) - Cu (RTD)

## Standard color coding

The cables' color codigings offered by Zoppas meet the requirements of DIN, IEC and ASTM standards.

Standard colors	DIN 43714	IEC 584-3	ASTM E230	RTD TYPE
Thermo couple type				
J				2 wires
K				3 wires

## Terminals

Our temperature sensors are available with two types of terminals: stripped leads or split leads terminals are made of tin plated electrolytic copper. Working Temperature Range: -20 / +115°C.

