

## Product Description

Thermocouples and Resistance thermometer for immersion of this series are used for the measurement of liquid and gaseous media at low pressure. The miniature connection head is for indoor or outdoor non-hazardous locations, providing protection against dust, rain, splashing and hose-directed water.

## Application

- Plant and Vessel construction
- Propulsion Technology
- Air-conditioning and refrigeration systems
- Process Technology
- Boiler construction
- Refineries and Ships

## 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- Thermocouples are also available according to color coding DIN 43714 (withdrawn)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

- Terminal Head Standard: DIN 43729 – Type “B”
- Electrical Connection: Ceramic Terminal Block mounted inside the connection head
- Head Material: Alloy-Aluminum
- Head Dimensions: Ø50 mm x H50 mm
- Color: Grey
- Head Protection Degree: IP66
- Connection Head Working Temperature: -40 ÷ 100°C
- Cable Entry thread: PG9
- Process Connection Thread : 1/4" GAS
- Process Connection Wrench Size: 17 mm (H 8,00 mm)
- Process Connection Fitting Material: AISI 304L (1.4307)
- Probe Material: Ø6 mm - AISI 316L (1.4404)
- Probe Material: Ø8 mm - AISI 304L (1.4307)
- Max operating temperature: 400°C Thermocouple sensors  
300°C RTD sensors
- Product Identification: Product part number and work order number are laser printed on sensor sheath

## Product Configurator

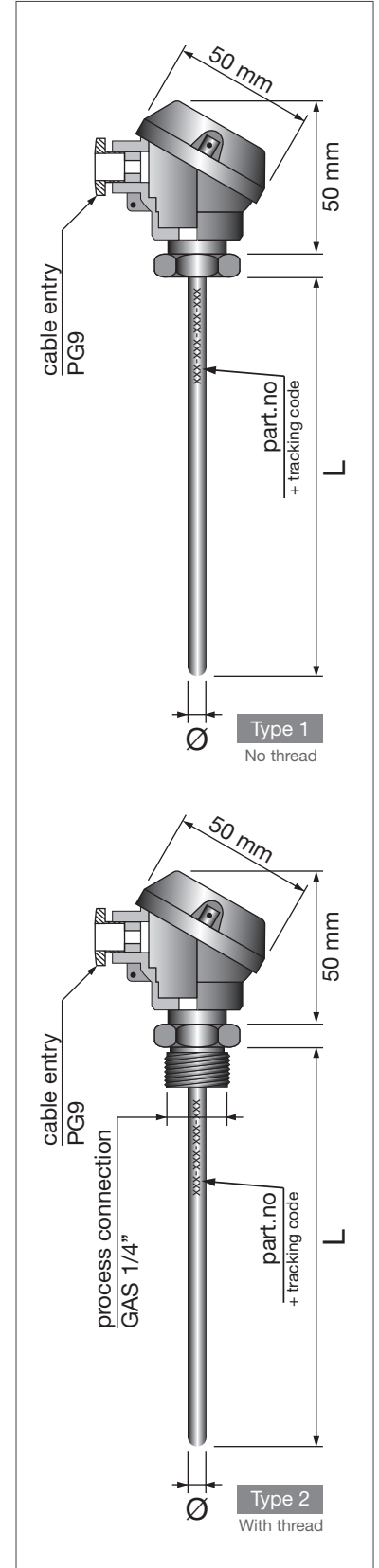
TYPE OF SENSOR		ORDER QUANTITY	
J	TC J (Fe-Co)	S	10 pcs
K	TC K (Cr-Al)	T	20 pcs
D	RTD - PT100 (2 wires)	U	50 pcs
F	RTD - PT100 (3 wires)	V	75 pcs
G	RTD - PT1000 (2 wires)	W	100 pcs
H	RTD - PT1000 (3 wires)	X	150 pcs
		Y	200 pcs

WIRE COLOUR CODE		PROCESS CONNECTION THREAD (T)	
A	ASTM E230 (TC)	N	No Thread (Type 1)
D	DIN 43714 (TC)	A	1/4" GAS (Type 2)
E	EN 60584 (TC)		
R	EN 60751 (RTD)		

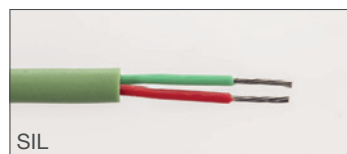
  

STEM DIAMETER (Ø)		IMMERSION LENGTH (L)	
B	Ø6 mm	A	50 mm
		B	100 mm
C	Ø8 mm	C	150 mm
		D	200 mm
		E	250 mm
		F	300 mm
		G	400 mm

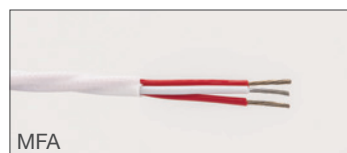


## Temperature sensor cables

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 (White for RTD sensors)
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 (White for RTD sensors)
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 armouring
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	Twisted cables made of solid or stranded insulated conductors
Features	PFA 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 (TC) or Stranded (RTD)
Outside Shape	Rounded
Conductor Insulation	PFA
Temperature range	TC -65°C / +260°C - RTD -65°C / +200°C
Type of conductors	J or K (Thermocouple) - Cu (RTD)

## Standard color coding

Color coding of the thermocouple cables according to DIN, IEC and ASTM standards.

Color coding of RTD cables is also represented here below.

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

## 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. Flexible temperature sensors available only with Stripped Leads.

