

Thermo Speed Edition

2012

UTECO Express Catalogue Temperature Sensor

UTECO



Temperature Sensor Sector

UTECO

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Dear Customers,

You will find below a standardized list of special cables from us, which are always in stock at our warehouse, capable of solving the immediate need of the most demanding applications.

The catalogue includes code, type, basic technical description and a photo for visual recognition of our product.

This is a indicative list. Cables with different numbers of cores or pairs, different sections (mm²), insulation or color codes (standard), etc. are also available.

If your requests are not covered by this list, please contact us.

Resistance thermometer head type suitable for measuring temperatures of liquids and gases with screw in mounting fitting

Type	Diameter	Length	Temperature	Product Code	Article No
1xPt100	8mm	100mm	260° C	4-07-ZE-8B-42-8	4070001
1xPt100	8mm	100mm	400° C	4-07-ZE-8B-43-2	4070002
2xPt100	8mm	100mm	260° C	4-07-HE-8B-40-8	4070003
2xPt100	8mm	100mm	400° C	4-07-HE-8B-40-6	4070004



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class B, single or double, IEC 751, 2, 3, 4 or 6 wire system

Outside diameter: 8mm

Sheath material: AISI 316 Ti

Process connection: R1/2 BSP

Probe length: 100mm or to be specified

Temperature range: from -50° C to +400° C

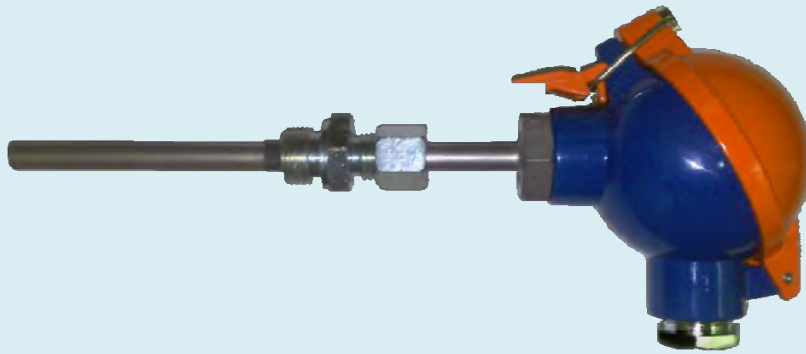
Terminal head: TYPE BUZ IP 65

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Resistance thermometer head type suitable for measuring temperatures of liquids and gases with screw in compression fitting

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Type	Diameter	Length	Temperature	Product Code	Article No
1xPt100	10mm	300mm	400° C	4-07-ZH-EB-41-9	4070005



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class B, single or double, IEC 751, 2, 3, 4 or 6 wire system

Outside diameter: 10mm

Sheath material: AISI 316 Ti

Process connection: R1/2 BSP ERMETO

Probe length: 300mm or to be specified

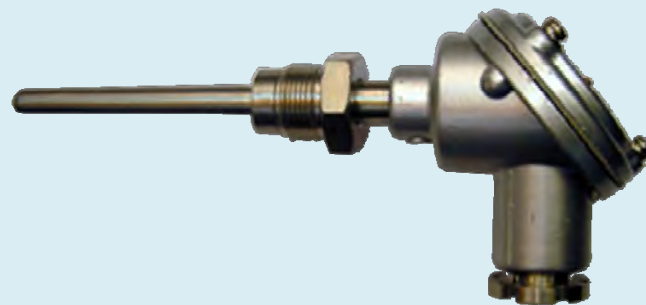
Temperature range: from -50° C to +400° C

Terminal head: TYPE BUZ IP 65

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Temperature sensor for diesel exhaust systems Temperature sensor for Diesel Exhaust System Excellent vibration proof and shock performance at high temperature

Type	Sort of Element	Length in mm	Diameter in mm	Temperature	Product Code	Article No
1x100	12mm	100mm	R 3/4 BSP	0-650° C	4-07-ZI-8B-53-9	4072221
1x100	12mm	110mm	R 3/4 BSP	0-650° C	4-07-ZI-9B-54-5	4072229
1x100	12mm	150mm	R 3/4 BSP	0-650° C	4-07-ZI-AB-54-0	4072222
1x100	12mm	200mm	R 3/4 BSP	0-650° C	4-07-ZI-BB-54-6	4072223
1x100	15mm	200mm	R 3/4 BSP	0-650° C	4-07-ZM-BB-52-0	4072224
1x100	15mm	250mm	R 3/4 BSP	0-650° C	4-07-ZM-GB-52-0	4072225
1x100	12mm	250mm	R 3/4 BSP	0-650° C	4-07-ZI-GB-52-1	4072230
1x100	15mm	300mm	R 3/4 BSP	0-650° C	4-07-ZM-EB-50-5	4072231
1x100	12mm	80mm	R 3/4 BSP	0-200° C	4-07-ZI-6B-51-9	4072228
1x100	12mm	100mm	R 3/4 BSP	0-200° C	4-07-ZI-8B-54-0	4072226
1x100	12mm	150mm	R 3/4 BSP	0-200° C	4-07-ZI-AB-54-4	4072227



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class B, 3 wire system

Outside diameter: 12mm or 15mm

Sheath material: AISI 316 Ti Nr.14571

Process connection: R1/2 BSP

Probe length: 80mm - 300mm or to be specified

Temperature range: from -0° C to +650° C

Terminal head: Cast Aluminum IP65

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Resistance thermometer with terminal head form J suitable for measuring temperatures of liquids and gases

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Type	Diameter	Length	Temperature	Product Code	Article No
1x100	7mm	50mm	260° C	4-23-ZD-3B-40-2	4231001



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class A, IEC 751, 2, 3, or 4 wire system

Outside diameter: 7mm

Sheath material: AISI 316 Ti

Process connection: Thread R1/2 BSP **Probe**

length: 50mm or to be specified

Temperature range: from -50° C to +260° C

Terminal head: terminal head form J Pg9, IP54

Bearing oil Resistance thermometer with spring loaded system

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Type	Diameter	Length	Temperature	Product Code	Article No
2xPT100	8mm	360mm	-50 +260° C	4-23-HE-ZB-40-1	4230002
2xPT100		690mm	-50 +260° C	4-23-HE-MB-40-1	4230003



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class B, IEC 751,3 wire system

Outside diameter: 8,0mm

Sheath material: AISI 316 Ti

Cold end: 40mm

Process connection: thread ½ pipe

Probe length: 155mm, 360mm, 690mm or to be specified

Temperature range: -50° C to +260° C

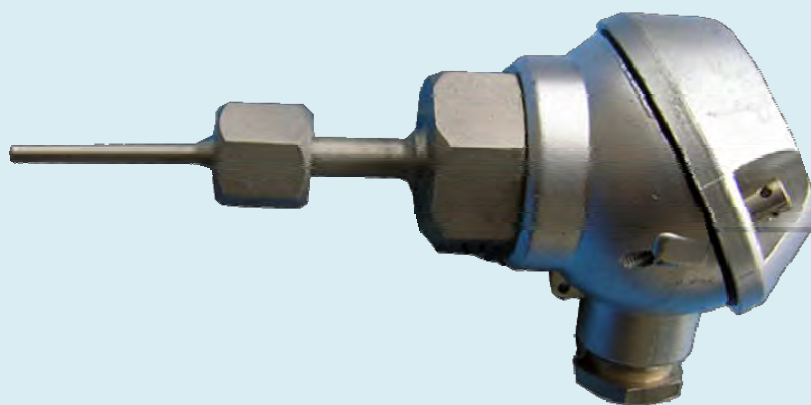
Terminal head:

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Resistance thermometer suitable for measuring temperatures for food and pharmaceutical industries

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Type	Diameter	Length	Temperature	Product Code	Article No
1xPt100	3mm	33 mm	260° C	4-23-Z4-2B-01-1	4234001



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class A, IEC 751, 2, 3, or 4 wire system

Outside diameter: 3mm

Sheath material: AISI 316 Ti

Cold end: 20mm

Process connection: Thread R1/2 BSP female

Probe length: 33mm

Temperature range: from -50° C to +260° C

Terminal head: terminal head form J, Aluminum die – Casting, Pg9, IP54

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Thermocouples with terminal head form A. Preferred choice for measuring temperatures in liquids and gases. Application includes heating installations, ovens, furnace and plant engineering

Measure- ment insert	Diameter in mm	Length in mm	Tempera- ture	Material	Product Code	Article No
1 x K	22x2	710	1150° C	1.4841	4-11-4S-MA-00-4	4114001
1 x K	22x2	1000	1150° C	1.4841	4-11-4S-P0-00-1	4114002
1 x K	22x2	1200	1150° C	1.4841	4-11-4S-R0-00-1	4114003
2 x K	22x2	1000	1150° C	1.4841	4-11-5S-P0-00-1	4115001
2 x K	22x2	1200	1150° C	1.4841	4-11-5S-R0-00-1	4115002
1 x K	22x2	1400	1150° C	1.4841	4-11-4S-SA-00-2	4114004
1 x K	21,3x2,6	710	1150° C	4C54(14749)	4-11-4S-MA-00-3	4114005
1 x K	21,3x2,6	1000	1150° C	4C54(14749)	4-11-4S-PA-00-1	4114006
1 x K	21,3x2,6	1200	1150° C	4C54(14749)	4-11-4S-RA-00-2	4114007
2 x K	21,3x2,6	1200	1150° C	4C54(14749)	4-11-5S-RA-00-5	4115003



Specifications

The measuring insert is fitted with thermocouples according to class1 or class2 or EN 60584 and DIN 43710 respectively.

Probe diameter: 17,15 x 2,31mm / 21,3 x 2,65mm / 22 x 2mm
(26 x 18mm can also be supplied)

Sheath material: EN 1.4841, EN 14749, EM4845, EN 14835, 353MA, 24816, Kanthal AF
(Kanthal APM can also be supplied)

Process connection: Screwed pipe joint 3/4", 1" or to be specified
Stop flange 22mm diameter to DIN 43734

Probe length: 500mm, 1000mm, 1200mm, 1400mm or to be specified

Temperature range: from -200° C to +1400° C

Terminal head: Form A DIN 43729, aluminum die-casting, M 20 x 1,5 IP 54 or BUZH

Transmitter: programmable transmitter output. 4 – 20 mA / 20 – 4 mA
(Profibus PA can also be supplied)

Outdoor resistance thermometer for HVAC applications mainly used for measuring temperatures outdoors

Measurement insert	Output	Temperature	Product Code	Article No
1xPt100	-	-30°C +80°C	4-35-ZO-00-01-2	4351300
1xPt100	0-10V	-50°C +50°C	4-35-ZO-0B-00-1	4351301
1xPt100	4-20 mA	-30°C +60°C	4-35-ZO-00-00-7	4351302
1xPt1000	-	-30°C +80°C	4-35-K6-1B-00-1	4351303



Specifications

Resistance type and tolerances: Resistance thermometer Pt100 or Pt1000 class A accuracy $\pm 0,150^{\circ}\text{C}$ to 0°C , IEC751 3-wire system

Terminal Box: Plastic PC housing IP65

Transmitter: analog transmitter, output 4 – 20 mA or 0-10V

Versions: Pt500, Ni1000, Ni120, or NTC10K Ω can also be supplied

Indoor resistance thermometer for HVAC applications Mainly used for measuring temperatures in rooms and in air ducts

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Measurement insert	Output	Temperature	Product Code	Article No
1xPt100	-	-30° C +80°C	4-35-ZO-00-00-0	4351000
1xPt100	4-20 mA	0° C +50°C	4-35-ZO-00-00-4	4351001
1xPt100	0-10V	0° C +50°C	4-35-ZO-00-01-3	4351002
1xPt1000	-	-30° C +80°C	4-35-KO-00-00-0	4351003



Specifications

Resistance type and tolerances: Resistance thermometer Pt100 or Pt1000 class A accuracy $\pm 0,15^{\circ}\text{C}$ to 0°C , IEC751 3-wire system

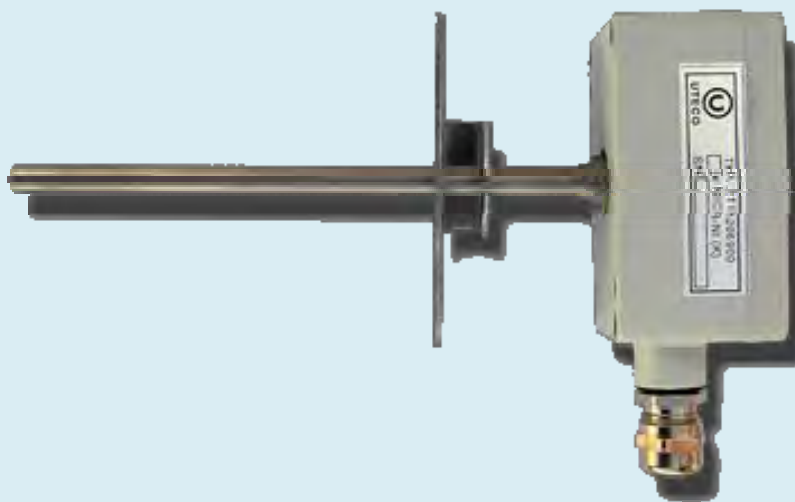
Terminal Box: Plastic PC housing IP20

Transmitter: analog transmitter, output 4 – 20 mA or 0-10V

Versions: Pt500, Ni1000, Ni120, or NTC10K Ω can also be supplied

Duct Resistance thermometer for HVAC

Measurement insert	Diameter	Length	Temperature	Product Code	Article No
1xPt100	8mm	200mm	-50°C +260°C	4-35-ZE-BB-00-2	4352006
1xPt1000	8mm	200mm	-50°C +260°C	4-35-KE-BB-00-1	4352007
0-10V	8mm	200mm	0°C + 50°C	4-35-ZE-BB-00-1	4352008
4-20MA	8mm	200mm	-30°C + 60°C	4-35-ZE-BB-00-5	4352009



Specifications

The measuring insert is normally fitted with a Pt100 or Pt1000 Temp. Sensor to EN 60751 Class A in 2-wire, 3-wire and 4-wire circuit. Version with Pt500, Ni 1000, Ni 120, NTC 10 K Ω , KTx 11-6 can also be supplied.

Terminal Box: Plastic PVC housing IP65

Protection Tube: Stainless steel 1-4571 diameter 8mm or to be specified

Immersion length: 200mm or to be specified

Transmitter: analog transmitter, output 4 – 20 mA or 0-10V by Jumo Germany

Outdoor temperature sensor For temperature measuring in outdoor areas, cold stores and greenhouses

Measurement insert	Temperature	Product Code	Article No
1xPT 100	from -50°C to +90°C	4-35-Z0-00-10-0	4353001
1xPT1000	from -50°C to +90°C	4-35-K0-00-10-0	4353002



Specifications

Resistance type an tolerance thermometer P+100 or P+1000 class A accuracy $\pm 0,15^{\circ}\text{C}$ (IEC 751), 2 0 3 system wire

Terminal box: Material PA6, Color: pure white similar to RAC 9010

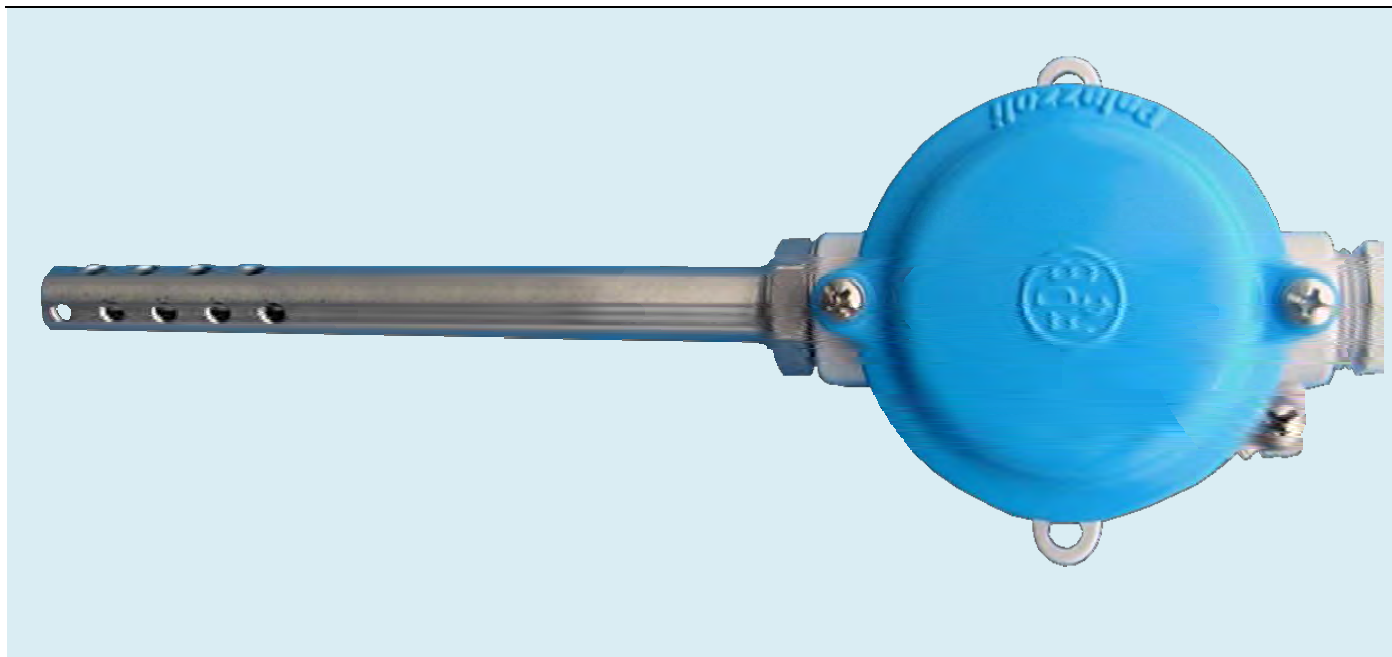
Cable entry: PE 14

Protection: IP65

Terminal Clamp: Screwing terminal max 1,5mm² Version Pt500, Ni 1000, NTC 10K Ω , KTY 21-5 can also be supplied

Resistance thermometer for refrigerated warehouses & outdoors

Measurement insert	Diameter	Length	Temperature	Product Code	Article No
1xPt100	14mm	150mm	-50°C +260°C	4-35-ZL-AB-00-0	4351006
2xPt100	14mm	150mm	-50°C +260°C	4-35-HL-98-00-1	4351007
1xPt100	8mm	100mm	-50°C +260°C	4-35-ZE-8B-00-5	4351008
4-20MA	8mm	100mm	-50°C +260°C	4-35-ZE-8B-00-3	4351009
0-10V	8mm	100mm	-50°C +260°C	4-35-ZE-8B-00-2	4351010



Specifications

The measuring insert is normally fitted with a Pt100 Temp. Sensor to EN 60751 Class A in 2-wire, 3-wire, 4-wire and 6-wire circuit, single or duplex resistance thermometer.

Connection Box: Material Aluminum, Protection IP65

Protection Tube: round 14mm stainless steel perforated with open end

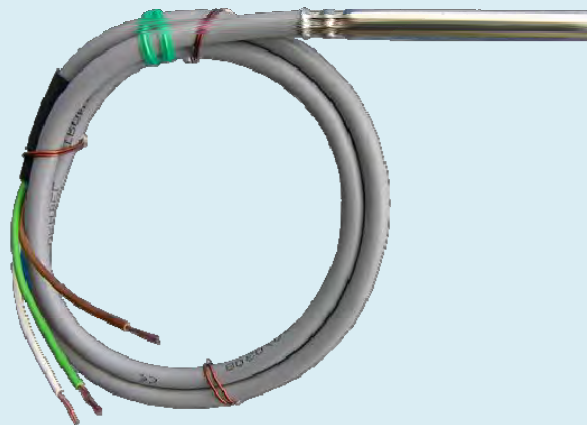
Measuring Insert: Pt100 Class A, 1/3 or 1/5 DIN

Transmitter: analog transmitter, output signal 4 – 20 mA or 0-10V by Jumo Germany

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Resistance thermometer with PVC extension cable Preferred for temperature measurement of liquids, gases, solids such as hot plates and welding jaws. Application includes HVAC and refrigeration, heating installations, ovens, plan engineering and laboratories.

<u>Measurement insert</u>	<u>Diameter</u>	<u>Length</u>	<u>Temperature</u>	<u>Cable length</u>	<u>Product Code</u>	<u>Article No</u>
1xPt100	6mm	50mm	80° C	3m	4-25-ZA-3B-00-3	4256501
1xPt100	6mm	50mm	80° C	5m	4-25-ZA-3B-05-8	4256502
1xPt1000	6mm	50mm	80° C	5m	4-25-KA-3B-00-3	4256505
NTC 10ko	6mm	50mm	80° C	3m	4-25-XA-3B-00-9	4256507
AD 592	6mm	200mm	80° C	5m	4-25-XA-BB-00-1	4256200
KTY 11-6	6mm	50mm	80° C	3,5m	4-25-XA-2B-00-1	4256509



Specifications

Resistance thermometer Pt100 to EN 60751 class A or B available with 2, 3 or 4 wire circuit. Versions with Pt1000, Pt500, Ni1000, Ni120, NTC10Ko, KTY 11-6, KTY84, AD592 (available with single or twin resistance thermometer)

Probe Diameter: 6mm or to be specified

Probe Length: 50mm, 160mm or to be specified

Protection tube: Stainless steel 14571

Protection: IP 67

Resistance thermometer with silicon extension cable Preferred for temperature measurement of liquids, gases, solids such as hot plates and welding jaws. Application includes HVAC and refrigeration, heating installations, ovens, plan engineering and laboratories.

<u>Measurement insert</u>	<u>Diameter</u>	<u>Length</u>	<u>Temperature</u>	<u>Cable length</u>	<u>Product Code</u>	<u>Article No</u>
1xPt100	6mm	50mm	180° C	3m	4-25-ZA-3B-01-2	4256500
1xPt100	6mm	160mm	180° C	3m	4-25-ZA-AB-01-6	4256160
1xPt1000	6mm	50mm	180° C	5m	4-25-KA-3B-01-3	4256506
KTY 84	6mm	50mm	180° C	0,3m	4-25-XA-3B-01-0	4256508



Specifications

Resistance thermometer Pt100 to EN 60751 class A, B or 1/3 DIN available with 2, 3 or 4 wire circuit. Versions with Pt1000, Pt500, Ni1000, Ni120, NTC10Ko, KTY 11-6, KTY84, AD592 (available with single or twin resistance thermometer)

Probe Diameter: 6mm or to be specified

Probe Length: 50mm, 160mm or to be specified

Protection tube: Stainless steel 14571

Protection: IP 67

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Resistance thermometer with Teflon extension cable Preferred for temperature measurement of liquids, gases, solids such as hot plates and welding jaws. Application includes HVAC and refrigeration, heating installations, ovens, plan engineering and laboratories.

<u>Measurement insert</u>	<u>Diameter</u>	<u>Length</u>	<u>Temperature</u>	<u>Cable length</u>	<u>Product Code</u>	<u>Article No</u>
1xPt100	4mm	40mm	260°C	1,5m	4-25-Z6-2B-00-5	4257501
1xPt100	3mm	22mm	260°C	2m	4-25-Z4-1B-00-4	4257502
1xPt100	3mm	22mm	260°C	3m	4-25-Z4-1B-00-2	4257505



Specifications

Resistance thermometer Pt100 to EN 60751 class A or B available with 2, 3 or 4 wire circuit. Versions with Pt1000, Pt500, Ni1000, Ni120, NTC10Ko, KTY 11-6, KTY84, AD592 (available with single or twin resistance thermometer)

Probe Diameter: 6mm or to be specified

Probe Length: 50mm, 160mm or to be specified

Protection tube: Stainless steel 14571

Protection: IP 67

Encapsulated resistance thermometer cable type IP65 Preferred for temperature measurement of liquids and gases

Type	Diameter	Cable Length	Temperature Range	Product Code	Article No
1x100	5mm	5000mm	-50°C +105°C	3-88-10-3G-01-8	3880001
1x1000	5mm	5000mm	-50°C +105°C	3-88-10-3G-02-1	3880002
10KΩ	5mm	1500mm	-50°C +105°C	3-88-12-00-01-3	3880003



Specifications

Resistance type and tolerances: resistance thermometer PT100, Class B or A IEC 751 3 or 4 wire system, thermistor $10K\Omega \pm 1\%$ @25°C $B(25/85)=3977 \pm 0.75\%$

Compensating cable: Stranded copper wires 2 or 4x0,30mm²(22AWG) with single conductor polypropylene insulation and overall thermoplastic elastomer insulation outer diam. ~3.5mm

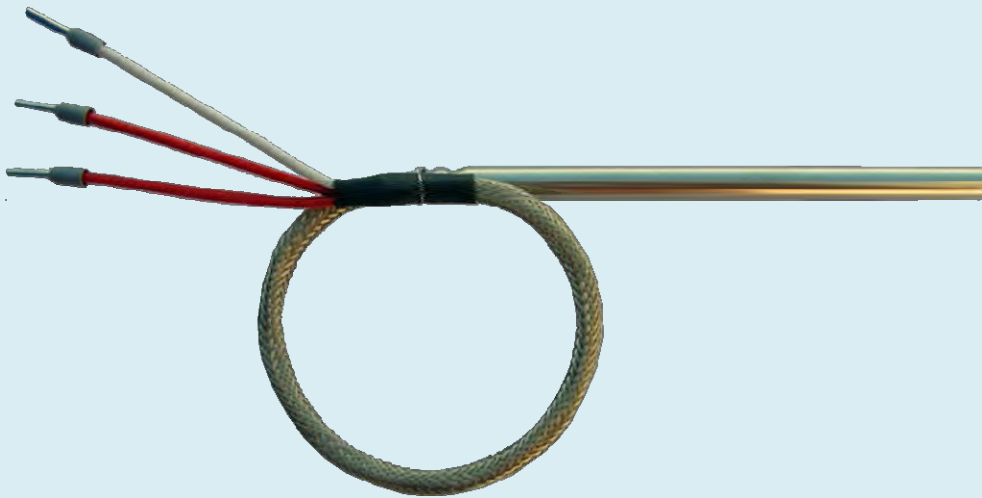
Protection: IP68

Insulation resistance: 100MΩ with 100VDC

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Resistance thermometer with fiber glass – braided extension cable Preferred for temperature measurement in dry environments at temperature range between 0°C and +400°C

Type	Diameter	Probe Length	Cable Length	Product Code	Article No
1xPt100	6mm	50mm	2m	4-25-ZA-3B-05-9	4251001
1xPt100	6mm	50mm	5m	4-25-ZA-3B-07-3	4251002
1xPt100	6mm	160mm	1.5m	4-25-ZA-AB-00-3	4251003
1xPt1000	6mm	50mm	2m	4-25-KA-3B-00-7	4251004
1xPt1000	8mm	150mm	1.5m	4-25-KE-AB-00-1	4251005



Specifications

Resistance type and tolerances: resistance thermometer PT100 ή PT1000, Class B (single or twin) Accuracy: $\pm 0,20^\circ \text{C}$ to 0°C , IEC 751, 2 or 3 or 4 wire circuit

Outside diameter: 6,8mm or to be specified

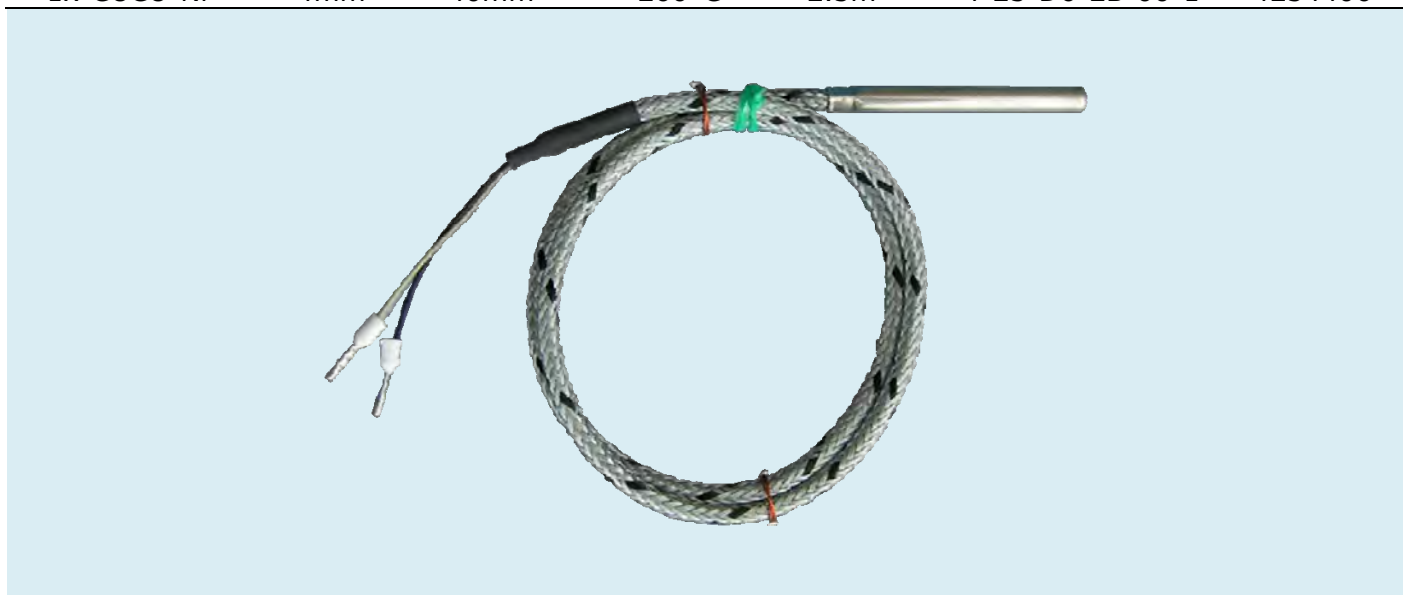
Sheath material: St.St. 1.4571

Probe Length: 50mm, 150mm or to be specified

Temperature range: 0°C +400°C

Thermocouple with extension cable preferred use in measuring temperatures of gases, on solids, welding jaws, heating installations, ovens and plant engineering.

<u>Measurement insert</u>	<u>diameter</u>	<u>Length</u>	<u>Temperature</u>	<u>Cable length</u>	<u>Product Code</u>	<u>Article No</u>
1xFe-Konst.	3mm	25mm	400°C	1m	4-25-24-1B-00-4	4253250
1xFe-Konst.	4mm	25mm	400°C	1m	4-25-26-1B-00-4	4254251
1xFe-Konst.	4mm	40mm	400°C	2m	4-25-26-2B-02-3	4254402
1xFe-Konst.	4mm	50mm	400°C	1m	4-25-26-3B-00-3	4254501
1xFe-Konst.	5mm	70mm	400°C	3m	4-25-29-5B-00-2	4255701
1xFe-Konst.	6mm	30mm	400°C	1.5m	4-25-2A-2B-00-6	4256300
1xFe-Konst.	3mm	80mm	400°C	1m	4-25-24-6B-00-2	4253800
1xNICKR-Ni	4mm	40mm	400°C	3m	4-25-46-2B-00-6	4254401
1xNICKR-Ni	6mm	50mm	400°C	6m	4-25-4A-3B-00-8	4256504
1xNICKR-N	6mm	100mm	400°C	3m	4-25-4A-8B-00-6	4256100
1x-CUCU-Ni	4mm	40mm	260°C	2.5m	4-25-D6-2B-00-1	4254406



Specifications

Thermocouple to EN 60584 or Din 43710 Class 1 or 2 type of thermocouple J,K,T,L,E (available with single or twin resistance thermometer)

Probe Diameter: 3mm,4mm,5mm,6mm,8mm or to be specified

Probe Length: 25mm,40mm,50mm 70mm, 100mm or to be specified

Protection tube: stainless steel 1.4571

Thermocouple and resistance thermometers with bayonet lock Preferred for measuring temperatures in solids, on bearings and molding tools.

<u>Measurement insert</u>	<u>Diameter</u>	<u>Probe Length</u>	<u>Cable length</u>	<u>Product Code</u>	<u>Article No</u>
Fe-Konst.(J)	8mm	10mm	3m	4-30-2E-09-11-7	4302800
Fe-Konst.(J)	8mm	10mm	2m	4-30-2E-09-11-8	4302801
Fe-Konst.(J)	8mm	10mm	5m	4-30-2E-09-10-3	4302802
Fe-Konst.(J)	8mm	10mm	4m	4-30-2E-09-11-9	4302803
Pt100	8mm	10mm	3m	4-30-ZE-09-10-1	4302804
Pt100	8mm	10mm	4m	4-30-ZE-09-11-0	4302805



Specifications

The measuring insert is normally fitted with thermocouples to EN 60584 Class 2.
The sensor is normally PT100 Temperature sensor to EN 60751, Class B or 3 wire circuit.

Probe Diameter: 8mm

Probe Length: 10mm

Material: AISI 304

Process connection: Bayonet lock, 12mm or to be specified R 1/4 BSP

Connection cable: Metal braiding, temperature 0-400°C

TSS Temperature Sensor Sector

Surface resistance thermometer and thermocouple ring type Preferred use for measuring temperatures on round or flat surfaces of closed pipe systems

<u>Measuring Insert</u>	<u>Length</u>	<u>Cable Length</u>	<u>Temperature Range</u>	<u>Product Code</u>	<u>Article No</u>
Fe-konst. 1xPt100	20mm 20mm	3m 3m	0°C +400°C -50°C +260°C	4-33-2E-07-00-1 4-33-Z6-1B-60-7	4332000 4332002



Specifications

Pt100 Temperature Sensor EN60751 Cl.B, 2 or 3 wire and thermocouple Type J to EN 60584

For temperature from -50°C +400°C

Quick and easy installation

Low thermal mass

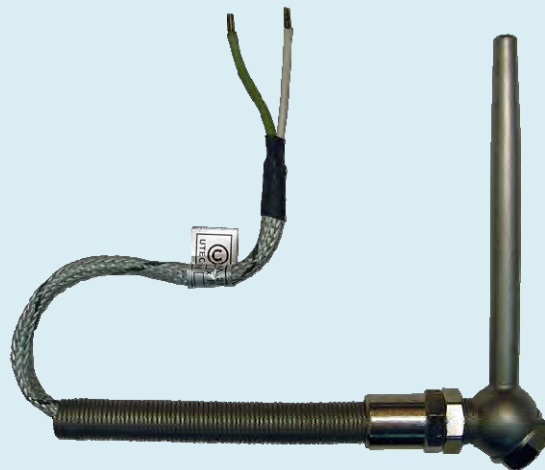
Protection tube: Stainless steel 1.4571

Ring dimension: Φ 10x5mm

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Thermocouple temperature sensor with cable and single protection tube.
Preferred for measuring temperature exhaust system. Excellent vibration proof and shock proof.

<u>Measurement insert</u>	<u>Diameter</u>	<u>Probe Length</u>	<u>Cable length</u>	<u>Emperature</u>	<u>Product Code</u>	<u>Article No</u>
1xK	9,5m	186mm	3m	0-800°C	4-27-4Z-BB-01-7	4270001
1xK	9,5m	236mm	3m	0-800°C	4-27-4Z-GB-00-2	4270002
1xK	9,5m	286mm	3m	0-800°C	4-27-4Z-EB-00-9	4270003
1xK	9,5m	316mm	3m	0-800°C	4-27-4Z-EB-00-9	4270004



Specifications

The measuring insert is fitted with thermocouple to EN60581

Tube Diameter: 9,5mm or to be specified

Probe Length: 186mm, 236 mm, 286 mm, 316 mm or to be specified

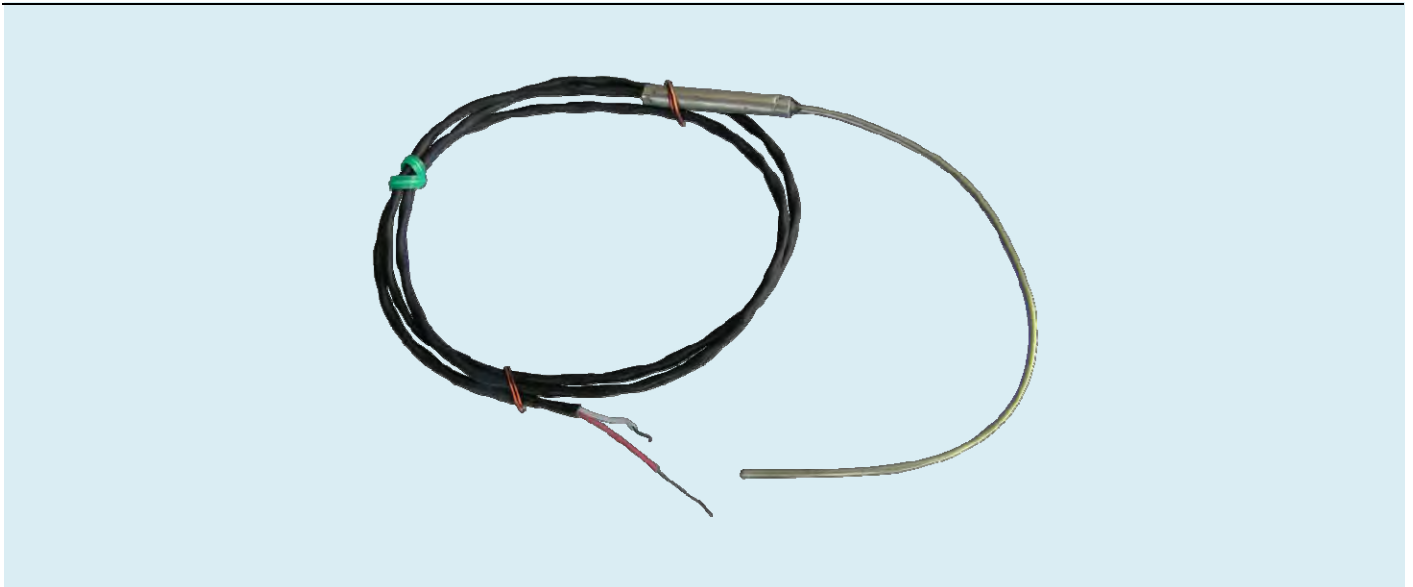
Compensating cable: Silicone-Fiberglass-Braiding and steel flexible tube

Protection: IP67

Temperature: 0-800°C

Mineral insulated thermocouple (type Mantel) Preferred for temperature measurement of liquids and gases on solids such as hot plates and welding jaws. Application include heating installations, ovens, plant engineering and laboratories.

<u>Measurement insert</u>	<u>Diameter</u>	<u>Length</u>	<u>Temperature</u>	<u>Cable length</u>	<u>Product Code</u>	<u>Article No</u>
1xJ	1.5mm	110mm	600°C	3m	3-88-10-I4-06-3	38810000
1xK	1.5mm	150mm	600°C	1.5m	3-88-10-84-04-0	38810001
1xJ	2mm	80mm	600°C	1.5m	3-88-10-I6-04-3	38810002
1xJ	1mm	150mm	600°C	2m	3-88-10-Z3-07-2	38810003



Specifications

Probe Diameter: Thermocouple typ K or J to EN 60584 or Din 43710 flexible sheath with shock protected sensor as single or twin thermocouple

Tube diam. : 0,5mm,1mm,1,5mm,2mm,3mm or to be specified

Tube Length: 100mm,150mm,200mm or to be specified

Sheath material: stainless steel 1.4571 (thermocouple typ J) Inconell 600(thermocouple typ k)

Connecting cable: silicon, ambient temp. -50 to +180°C

Teflon: ambient temp. -190°C to +260°C

Metal braiding, ambient, ambient temp. :-20°C to +350°C

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Mineral insulated thermometer (type Mantel). Preferred for temperature measurement of temperatures in pipe and tank systems e.g. in oil tankers, or part of a volume measuring system.

Measurement insert	Diameter	Length	Temperature	Cable length	Product Code	Article No
1xPT100	3mm	2000mm	-50 to +260°C	0.5m	3-88-10-38-52-3	4440000
1xPT100	3mm	4000mm	-50 to +260°C	0.5m	3-88-10-38-52-2	4440001
1xPT100	3mm	6000mm	-50 to +260°C	0.5m	3-88-10-38-00-3	4440002
1xPT100	3mm	8000mm	-50 to +260°C	0.5m	3-88-10-38-00-4	4440003
1xPT100	3mm	9000mm	-50 to +260°C	0.5m	3-88-10-38-00-5	4440004
1xPT100	3mm	10000mm	-50 to +260°C	0.5m	3-88-10-38-01-7	4440005
1xPT100	3mm	12000mm	-50 to +260°C	0.5m	3-88-10-38-02-2	4440006
1xPT100	3mm	14000mm	-50 to +260°C	0.5m	3-88-10-38-67-0	4440007
1xPT100	3mm	15000mm	-50 to +260°C	0.5m	3-88-10-38-01-8	4440008
1xPT100	3mm	17000mm	-50 to +260°C	0.5m	3-88-10-38-01-9	4440009
1xPT100	3mm	20000mm	-50 to +260°C	0.5m	3-88-10-3A-56-6	4440010
1xPT100	3mm	22000mm	-50 to +260°C	0.5m	3-88-10-38-02-1	4440011
1xPT100	3mm	25000mm	-50 to +260°C	0.5m	3-88-10-38-02-0	4440012
1xPT100	3mm	27000mm	-50 to +260°C	0.5m	3-88-10-38-01-9	4440013
1xPT100	3mm	31000mm	-50 to +260°C	0.5m	3-88-10-38-00-6	4440014



Specifications

Resistance thermometer Pt100 $\pm 0,2$ at 0°C or Class A $\pm 0,15$ at 0°C acc. To IEC 751 3wire or 4wire system

Probe Diameter: 3mm, 4.5mm or to be specified

Process Connection : 1/8 BSP (male)

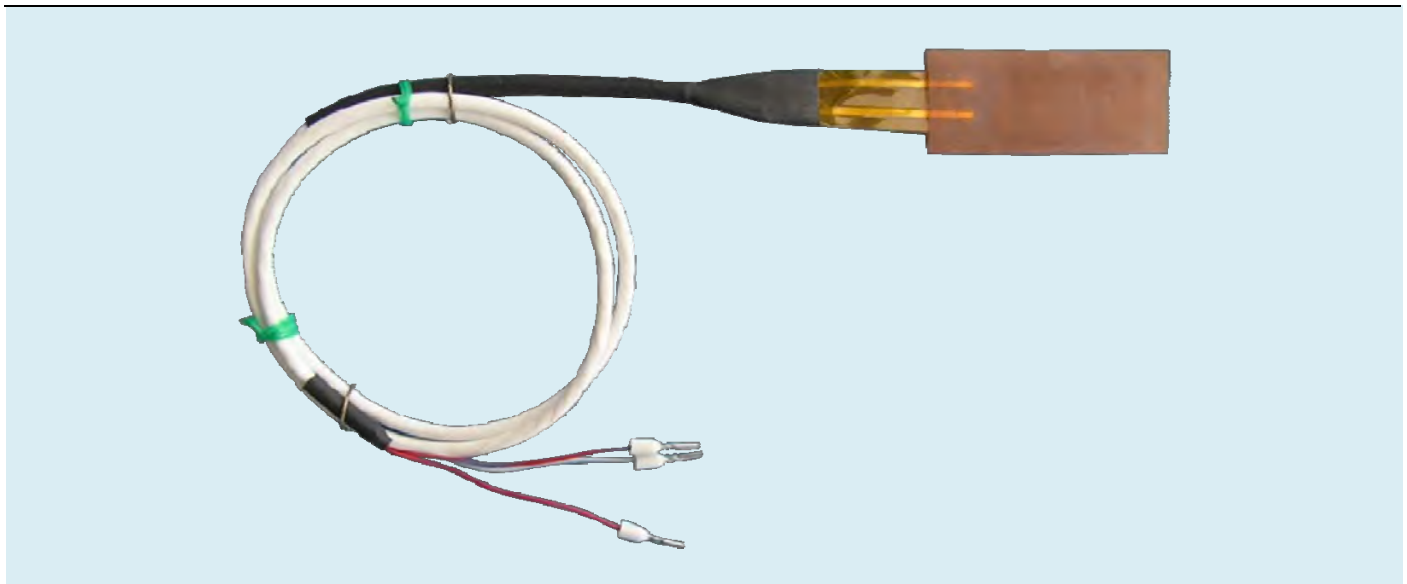
Response Time: (main values) measured at velocities in water 0.4m/s $t_{0.5}=11\text{sec}$

Sheath Material: A151 316

Connecting Cable: Teflon: ambient temp. -50°C to +260°C

Film surface resistance thermometer Preferred for temperature measurement of round or flat surfaces

Nominal Value	Type	Sensor Body	Cable Length	Product Code	Article No
1xPt100	PF 12150	W L T 21 50 0.3	3m	4-33-Z0-3J-00-1	4331200
1xPt100	PF 12150	21 50 0.3	5m	4-33-Z0-00-00-1	4331201



Specifications

Resistance type and tolerances:

Resistance thermometers Pt100, Class B $\pm(0,30K+0,005 \times |t|)$ Alpha=3.850-10-3/o C, IEC 751
2-3 wire system

Temperature range: -80°C +180°C

Sensor body: 21X50X0,3mm

TSS Temperature Sensor Sector

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Slot Surface Sensor For temperature measurement on surfaces and is primarily used for temperature measurement in solar installations

Measurement insert	Temperature	Product Code	Article No
1xPt 100	from -20°C to +120°C	4-35-Z0-00-10-0	4330000
1xPt1000	from -20°C to +120°C	4-35-K0-00-10-0	4330001

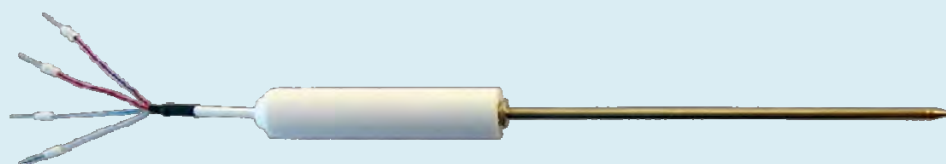


Specifications

Resistance type and tolerance: Resistance thermometer P+100 or P+1000 class B from $\pm 0,30^{\circ}\text{C}$ to 0°C (IEC 751), 2 0 3 system wire
Temperature range: from -20°C to 120°C
Protection mode: IP65

Food temperature Insertion Resistance Thermometer Particularly suitable for cooking and baking processes in all areas of food processing and preservation

<u>Measurement insert</u>	Diameter	length	Cable length	Product Code	Article No
1xPt100	4mm	150mm	4m	4-49-Z6-AB-02-3	4491001
1xPt100	4mm	150mm	5m	4-49-Z6-AB-01-7	4491002
1xPt100	4mm	150mm	3m	4-49-Z6-AB-02-4	4491003
1xPt1000	4mm	150mm	4m	4-49-K6-AB-00-3	4492001



Specifications

Resistance type and tolerances: Resistance thermometer Pt100 ,class A,(single or twin) accuracy $\pm 0,15^{\circ}\text{C}$ to 0°C , IEC751 3,4 or 6wire circuit

Outside diam.:4mm (oblique, angled at 45o)

Sheath material :St.St.1.4571

Probe length: 150mm

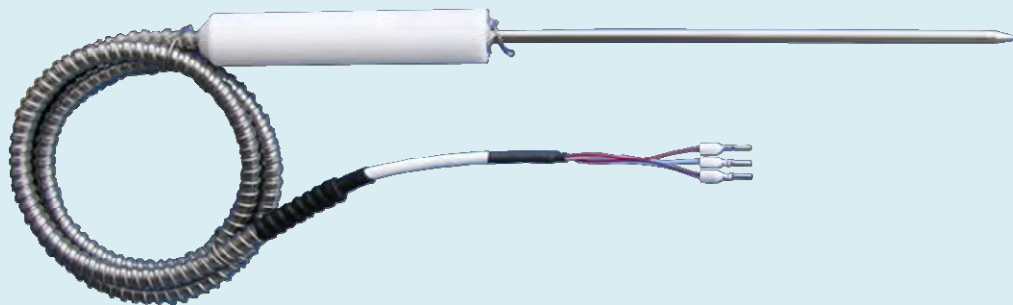
Connecting cable: Teflon (PTFE)-Braiding—

Protection : IP67

Temp. range:-50°C +260°C

Food temperature Insertion Resistance Thermometers are particularly suitable for cooking and baking processes in all areas of food processing and preservation

Measurement insert	Diameter	length	Cable Length	Product Code	Article No
	4mm				
	150mm				
1xPt100	4mm		4m	4-49-Z6-AB-00-3	4490001
1xPt100	150mm		3m	4-49-Z6-AB-00-9	4490002
1xPt100	4mm		5m	4-49-Z6-AB-01-6	4490003
2xPt100	150mm		3m	4-49-H6-AB-00-6	4490004
	4mm				
	150mm				



Specifications

Resistance type and tolerances: Resistance thermometer Pt100 ,class A,(single or twin) accuracy $\pm 0,15^{\circ}\text{C}$ to 0°C , IEC751 3,4 or 6wire circuit

Outside diam.: 4mm (oblique, angled at 45°)

Sheath material : St.St.1.4571

Probe length: 150mm

Connecting cable: Teflon (PTFE)-Braiding—Teflon and stainless steel corrugated tube

Protection : IP67

Temp. range: $-50+260^{\circ}\text{C}$

TSS Temperature Sensor Sector

High temperature handheld probes for bigieta surface measurement For temperature from 0 to 1260°C Type K (NICR-NI) measures hot metal surfaces. Specially designed for heavy duty.

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<u>Measurement insert</u>	Diameter	length	Cable Length	Product Code	Article No
1xK	50mm	150mm	2m	4-39-4X-A9-00-1	4394444



Specifications

Specifically designed for use where surface temperatures reach at to 1260°C and rough handling is routine UTECO's foundry probe uses large, heavy duty tips that can penetrate surface slag to measure the true temperature of the casting.

The surface to be measured must be electrically conductive.

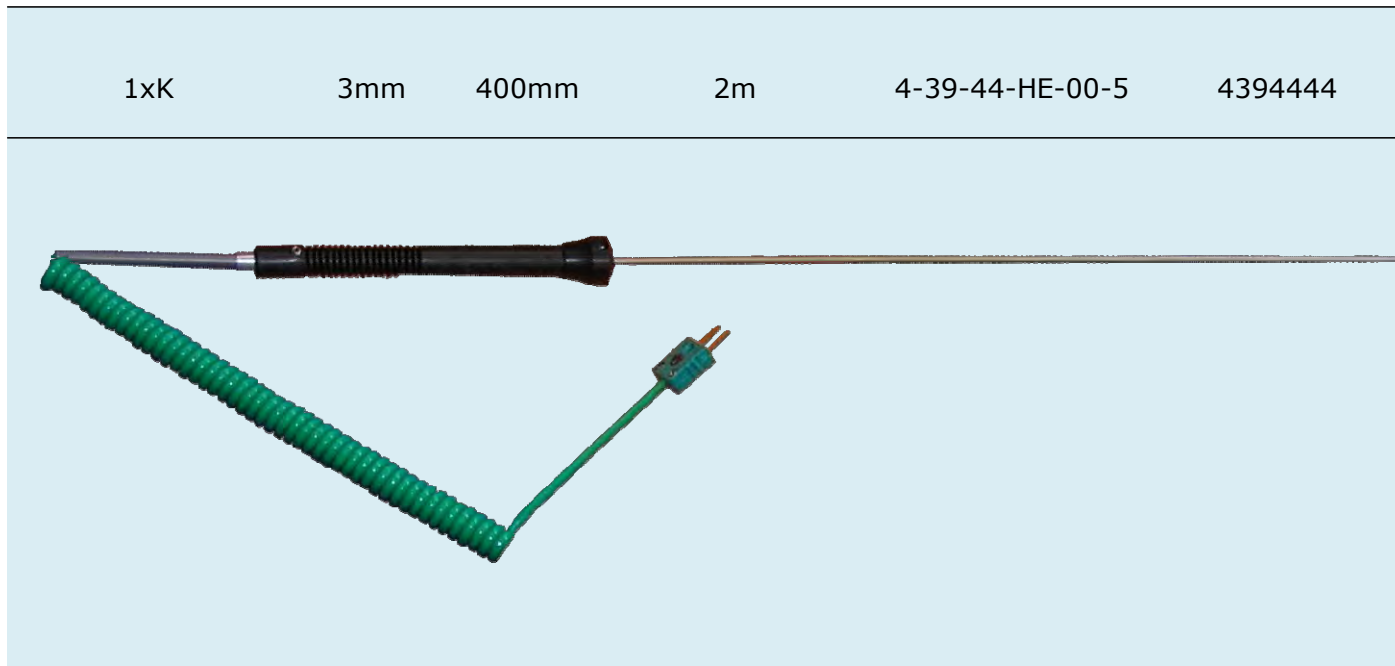
The lead wires are 16-gage stranded wire with high temperature insulation and stainless steel overbraiding for added protection length 760mm

TSS Temperature Sensor Sector

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Portable temperature sensor type K (NIR-NI) Suitable for measurement in gases, fluids and liquids

<u>Measurement insert</u>	Diameter	length	Cable Length	Product Code	Article No
1xK	3mm	400mm	2m	4-39-44-HE-00-5	4394444



Specifications

Measuring temperature: from -200°C up to +1160°C

Thermocouple type: (NIR-NI) type K

Accuracy: class 1

Hand ; grip material: PVC suitable up to 90°C

Length 100mm

Pocket material: INcone 11600

Mini thermocouple plug: (NIR-NI)

Length: 300mm, 400mm, 600mm or to be specified

Diameter: 0,5mm, 1,0mm, 1,5mm, 3,0mm, 4,5mm or 6,00mm

Heavy-Duty Industrial Thermocouple Wire Shielded Extension Cables

Measurement insert	Cable Length	Temperature	Product Code	Article No
1xK	5m		4-47-42-AB-00-3	4474222
1xK	7m		4-47-42-AB-00-9	4474233
1xK	11m		4-47-42-AB-01-6	4474244



Specifications

Temperature measurement on Aluminium Solid round Bar for temperature monitoring in the core of the bar, in order to avoid temperature over 580°C

Conductors: 20 AWG solid special limits thermocouple typ K per ASTM E 230

Insulation: Nominal .012" wall braided 703°C

Fiberglass with silicone

Impregnation color coded

Positive (KKP)-yellow

Negative (KK)-red

Construction: two conductors twisted

Covering : spirally wrapped half-oval galvanized steel nominal OD=.136"

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Cost-optimized Adjustable 2-wire Transmitter for Thermocouple Input
Analog, multirange 2-wire temperature transmitter for in-head mounting in DIN B or larger connection heads.

<u>Input</u>	<u>Adjustments</u>	<u>Temperature</u>	<u>Output</u>	<u>Mounting</u>	<u>Product Code</u>	<u>Article No</u>
Thermocouple Type J, L, T, K and N	0 to 50 mV	-40°C to +85°C	4-20 mA	DIN B-head or larger	3-94-12-02-04-0	70APHCF001



Thermo Speed



TSS Temperature Sensor Sector

Specifications

Input: Thermocouples selectable: type J, L, T, K and N with ranges within -5 to +55 mV

Input: impedance: >5 M Ω

Input: Max. sensor wire resistance: 500 Ω (total loop)

Monitoring: Sensor break detection, selectable: Upscale ~25 mA, downscale ~3 mA

Adjustments: Span, selectable: 10 to 50 mV

Adjustments: Span, fine adjustment: ± 10 %

Output: Current: 4 - 20 mA

Output: Current limitation: ~ 25 mA

Output: Permissible load: 700 Ω @ 24 VDC, 25 mA

Temperature: Ambient, operating: -40°C to +85°C

Response time 10-90%: ≤ 0.2 s

Power supply voltage: 6.5 to 32 VDC (polarity protected)

Permissible ripple: 4 Vp-p @ 50/60 Hz

Linearity (mA output to mV input) ± 0.1 % of mV span

Calibration ± 0.1 % of span

Material / Flammability(UL) Zinc alloy + ABS / V0

Mounting: DIN B-head or larger

Connection, single/stranded wires ≤ 2.5 mm², AWG 14

Protection, housing with cover/terminals IP 20 / IP 10



Head mounted transmitter d TRANS T01 universal input 4-20mA for systems where drain- or pressure- less installations / exchanging of thermocouples or resistance thermometers are required

Type	Product Code	Article No
d TRANS T01	3-20-12-00-01-0	707033/881-001-040/000
Fixing bracket for mounting	3-20-12-00-01-3	70/00352463



Specifications

Programmable 2-wire transmitter with isolation of the standard signal for installation in terminal head Form B

Input: Programmable: RTD or Thermocouple (default: Pt100 4-wire)

Output: Programmable (default: 4-20 mA)

Range: Programmable (default: 0 to +100°C)

Supply: 8-35V DC

Accessories

- PC setup program, multilingual
- PC interface with TTL/RS232 converter and adapter (socket) for Types 707010/..., 707012/... and 707015/...
- PC interface with USB/TTL converter, adapter (socket) and adapter (pins) for Types 707010/..., 707012/... and 707015/...
- Bracket for mounting on DIN rail, Sales No. 70/00352463
- HART® modem USB (for Types 707011/..., 707013/... and 707016/...), Sales No. 40/00443447
- Power supply units 1- and 4-way (Data Sheet 70.7500)
- Isolating amplifier and supply isolator (Data Sheet 70.7510)
- Ex supply unit with isolating transformer, HART® capable for Type 707016/... (Data Sheet 40.4757)



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Head mounted transmitter d TRANS T03 BU PT100 - from 0 to 10V 3-wire Temperature Transmitter for Head-Mounting

Type	Product Code	Article No
d TRANS T03 BU	3-20-12-00-01-1	707033/881-001-040/000
Fixing bracket for mounting	3-20-12-00-01-3	70/00352463



Specifications

Analog 3-wire transmitter with digital adjustment for installation in terminal head Form B

Input: Pt100, 3-wire

Output: 0-10V

Range: 0 to +100°C (adjustable)

Supply: 7.5-30V DC

Accessories

- PC setup program, multilingual
- PC interface (electrically isolated) with TTL/RS232 converter, power supply (230V AC) and adapter (socket)
- PC interface (electrically isolated) with TTL/RS232 converter, power supply (115V AC) and adapter (socket)
- supply units 1-way and 4-way (Data Sheet 70.7500)
- isolating amplifier and supply isolator (Data Sheet 70.7510)

supply unit for transmitters (Data Sheet 70.7520)



Head mounted transmitter d TRANS T03 BPT100 - 4-20mA

Analog 2-wire transmitter with digital adjustment

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Type	Product Code	Article No
d TRANS T03 B	3-20-12-00-00-6	707031/880-001-005/000
Fixing bracket for mounting	3-20-12-00-01-3	70/00352463



Specifications

Analog 2-wire transmitter with digital adjustment for installation in terminal head Form B

Input: Pt100, 3-wire

Output: 4-20 mA

Range: 0 to +100°C (programmable)

Supply: 7.5 - 30V DC

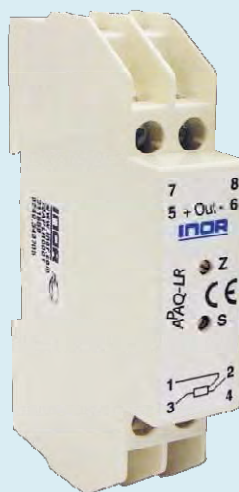
Accessories

- PC setup program, multilingual
- PC interface (electrically isolated) with TTL/RS232 converter, power supply (230V AC) and adapter (socket)
- PC interface (electrically isolated) with TTL/RS232 converter, power supply (115V AC) and adapter (socket)
- supply units 1-way and 4-way (Data Sheet 70.7500)
- isolating amplifier and supply isolator (Data Sheet 70.7510)
- supply unit for transmitters (Data Sheet 70.7520)



2-wire DIN Rail transmitter APAQ-LR Pt100 4-20mA Analog adjustable 2-wire transmitters

Product Code	Article No
3-94-12-00-00-0	APAQLR



Specifications

Input: Pt100 3-wire connection
Sensor Failure upscale, downscale
Fine adjustment: $\pm 10\%$
Zero from -50°C to $+50^{\circ}\text{C}$ (from -60°F to $+120^{\circ}\text{F}$)
Output: 4-20 MA
Operating temperature: from -20°C to $+70^{\circ}\text{C}$
Galvanic isolation NO
Power supply: from 6,5 to 32VDC
Typical accuracy: $\pm 0,15\%$ of temperature span



TSS Temperature Sensor Sector

2-wire DIN Rail transmitter APAQ-LC T/C 4-20mA for systems where drain- or pressure- less installations / exchanging of thermocouples or resistance thermometers are required

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Product Code	Article No
3-94-12-00-00-2	APAQ-LC



Specifications

Input: T/C J,L,T,K,N
Sensor Failure upscale, downscale
Span: from 10 to 50MV continuously
Fine adjustment: $\pm 10\%$
Output: 4-20 MA
Operating temperature: from -20°C to $+70^{\circ}\text{C}$
Galvanic isolation NO
Power supply: from 6,5 to 32VDC
Typical accuracy: $\pm 0,5\%$ to $\pm 1,0\%$ of temperature span



DIN Rail transmitter d trans T03T PT100 4-20mA Analog 2-wire transmitter for rail mounting

Product Code	Article No
1-20-01-02-30-1	707032



Specifications

Transmitters T03T are designed for industrial applications, used to measure temperatures through Pt100 resistance thermometers in 2-/3-wire circuit connections. Output 4-20mA is linear with temperature calibration / configuration of the transmitter from a PC using Jumo's setup program for adjustable / configurable parameters.

It features fine calibration / adjustment of the output signal of a transmitter.

Input: Pt100 (EN 60751) from -200°C to +850°C

Analogue output: 4-20mA

Supply voltage: 7,5 – 30 V DC

Calibration / configuration accuracy: $\leq \pm 0,2\%$ or $\leq \pm 0,2^\circ\text{C}$

Accessories

- PC setup program, multilingual
- PC interface (electrically isolated) with TTL/RS232 converter, power supply (230V AC) and adapter (socket)
- PC interface (electrically isolated) with TTL/RS232 converter, power supply (115V AC) and adapter (socket)



DIN Rail universal-programmable transmitter dTRANS T02 PCP Signal conditioner for rail-mounting

Product Code	Article No
1-20-01-02-28-0	707021



Specifications

The dTRANS T02 PCP is a digital 4-wire transmitter/signal conditioner with isolation of the standard signal, custom linearization, 2 alarms, 2 LEDs and fine adjustment with 2 push buttons or the setup program. Features **excellent long-term stability** and **probe break and short circuit detection**. Utilization of setup software allows true **online communication** with display of actual value.

Input: Pt100, 0-100°C

TC, RTD, voltage, current, resistance transmitter, potentiometer

Analog Output: 0-20mA or 4-20mA or 0-10V or 2-10V

Digital Output:

alarm: 2 open-collector outputs

switching capacity: 35V, 100mA

Supply: 20-53V AC/DC or 110-240V AC

Accessories

- Setup program, multilingual 70/00378730
- PC interface with TTL/RS232 converter and adapter (socket) 70/00350260
- PC interface with USB/TTL converter, adapter (socket) and adapter (pins) 70/00456352



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Screw-in pocket for systems where drain- or pressure- less installations / exchanging of thermocouples or resistance thermometers are required

Process Connection	Stem Diameter	Bore Diameter	Immersion Length	Material	Product Code	Article No
½ m. - ½ f. BSP	12mm	9mm	100mm	1.4571	4-60-OI-8B-40-2	4600001
½ m. - ½ f. BSP	10mm	7mm	100mm	1.4571	4-60-0H-8B-40-1	4600002
½ m. - ½ f. BSP	8mm	6mm	100mm	1.4571	4-60-0E-8B-40-1	4600003
¾ m. - ¾ f. BSP	15mm	12mm	100mm	1.4571	4-60-0M-8B-50-1	4600004



Specifications

pockets in different materials: steel 1.0305, stainless steel 1.4571, steel 1.7335 or to be specified

operating pressure : up to 450 bar

Immersion Length: 50mm,100mm,200mm,250mm or to be specified

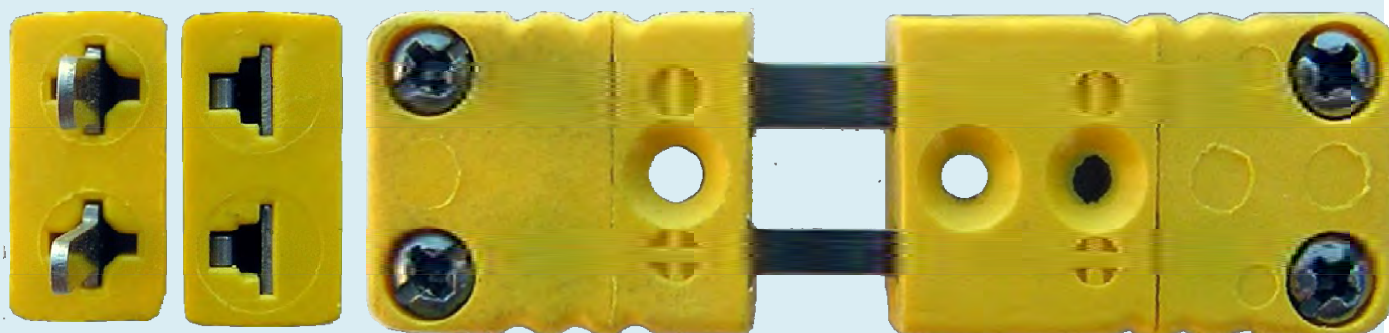
Outside diameter: 6mm,8mm,10mm,12mm,15mm or to be specified

Process Connection: R ½ BSP, ¾ BSP or NPT or to be specified

Temperature range: up to 800°C

Miniature Connector with thermocouple material contacts

Type	Contacts	Color	Product Code	Article No
Iron / Const.(J) Iron	Plug	Black	3-83-16-22-86-4	CNN-21100-JX
/ Const.(J) Chrome /	Jack	Black	3-83-16-22-86-5	CNN-22100JX
Alumer(K) Chrome /	Plug	Green	3-83-16-32-82-6	CNN-21200KX
Alumer(K) Copper /	Jack	Green	3-83-16-32-17-4	CNN-22200KX
Const.(T) Copper /	Plug	Blue	3-83-16-42-83-6	CNN-21300TX
Const.(T) PtRh /	Jack	Blue	3-83-16-42-13-7	CNN-22300TX
Pt(S,R)	Plug	Green	3-83-16-52-85-2	CNN-21400-SX/RX
PtRh / Pt(S,R)	Jack	Green	3-83-16-52-15-3	CNN-22400-S/RXX
Chrome / Const.(E)	Plug	Violet	3-83-16-72-16-9	CNN-21500-EX
Chrome / Const.(E)	Jack	Violet	3-83-16-72-87-0	CNN-22500-EX
Nicrosil / Nisil(N)	Plug	Orange	3-83-16-82-96-4	CNN-21700-NX
Nicrosil / Nisil(N)	jack	orange	3-83-16-82-96-5	CNN-22700-NX



Specifications

Body material: Tough, self-extinguishing thermoplastic compound with low moisture absorption rate and good dielectric strength

Maximum cable diameter: min. 0,12mm, max. 0,8mm

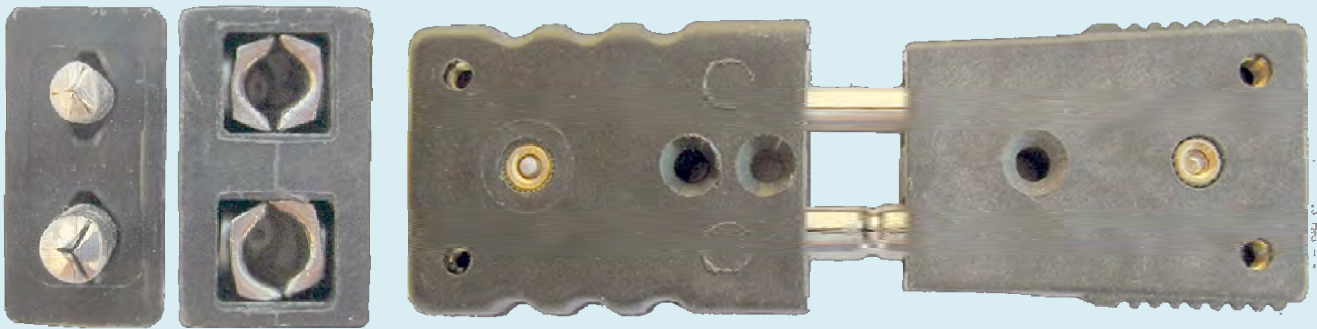
Wire terminals: screw type for quick wiring , 5mm

Maximum temperature rating: 200°C

Standard Connector with thermocouple material contacts

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Type	Contacts	Color	Product Code	Article No
Iron / Const. Iron	Plug	Black	3-83-16-12-92-0	CNN-11100-JX
/ Const. Chrome	Jack	Black	3-83-16-22-28-1	CNN-12100-JX
/ Alumer Chrome	Plug	Yellow	3-83-16-32-93-3	CNN-11200-KX
/ Alumer Copper	Jack	Yellow	3-83-16-32-23-5	CNN-12200 KX
/ Const. Copper /	Plug	Blue	3-83-16-52-00-0	CNN-11300-TX
Const. PtRh / Pt	Jack	Blue	3-83-16-52-00-1	CNN-12300-TX
PtRh / Pt	Plug	Green	3-83-16-52-94-1	CNN-11400-SX/RX
Nicrosil / Nisil	Jack	Green	3-83-16-52-25-0	CNN-12400-SX/RX
Nicrosil / Nisil	Plug	Orange	3-83-16-82-96-2	CNN-11700-NX
	Jack	Orange	3-83-16-82-96-3	CNN-12700-NX



Specifications

Body material: Tough, self-extinguishing thermoplastic compound with low moisture absorption rate and good dielectric strength

Maximum cable diameter: 1.6mm

Wire terminals: 6.4mm

Maximum temperature rating: 200°C

Standard panel with Thermocouple material contacts

Type	Color	Product Code	Article No
Iron / Constantan(J)	Black	3-83-16-22-36-8	PAN-13101-JX
Chrome1 / Alume1(K)	Black	3-83-16-32-38-2	PAN-13201-KX
PtRh / Pt(S,R)	Green	3-83-16-52-34-0	PAN-13401-SX/RX
NICROSIL / NiSil(N)	orange	3-83-16-82-36-1	PAN-13701-NX



Specifications

Front panel: anodized aluminum 2,4mm thick

Panel dimensions: 38x38mm

Panel cut out: square or round 30mm

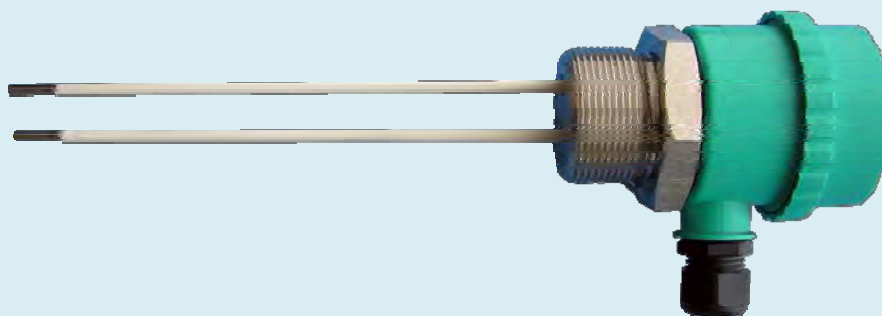
Depth behind panel: 20mm

Maximum temperature rating: 200°C

Maximum conductor dimension: 1.6mm

Level sensors for conductive limit value detection

Diam. rod	Length	Process Connection	Number rod electrode	Product Code	Article No
4mm	500mm	R ½ BSP	1	4-42-06-IB-40-2	4420001
4mm	1000mm	R 1 ½ BSP	2	4-42-06-PB-70-2	4420002
4mm	1000mm	R 1 ½ BSP	3	4-42-06-PB-70-1	4420003
4mm	1000mm	R 1 ½ BSP	4	4-42-06-PB-70-4	4420004



Specifications

Material: st. st. 14571

Diameter rod: 4mm

Process connection: R ½ or 1½ BSP

Insulation rod electrode: PFA

Temperature range: from 0° C to 200° C

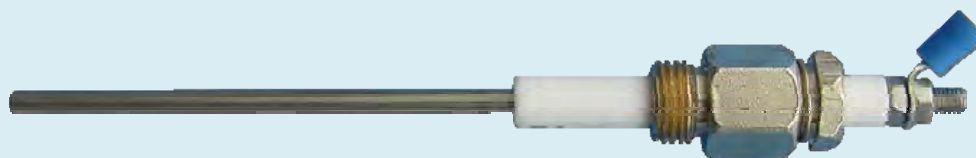
Length rod electrode: 500 – 1000mm or to be specified

Number of electrode: 1,2,3,4 or 5 electrode

Terminal box: Form B, IP65, aluminum die-casting or plastic IP65

Level sensors for conductive limit value detection without head

Diam. rod	Length	Process Connection	Number rod electrode	Product Code	Article No
4mm	1000mm	R ¼ BSP	1	4-42-06-PB-10-1	4420600
4mm	500mm	R ¼ BSP	1	4-42-06-IB-10-1	4420601



Specifications

Material: st. st. 14571

Diameter rod: 4 mm

Process connection: R ¼ BSP **Insulation**

rod electrode: PFA **Temperature range:**

from 0° C to 260° C






















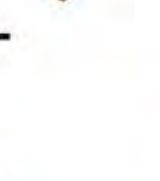







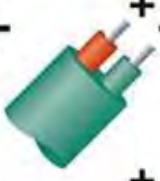













Length rod electrode: -

Number of electrode: -

Terminal box: -

International Color Code for Compensating & Extension Cables

49

	 ANSI	 DIN	 IEC/CEI	 BS	 NF
JX					
KX					
TX					
NX					
EX					
WX					
VX					
SX/RX					



TSS Temperature Sensor Sector

Ordering Form

Please print this form out and send it to 0038947203330

51

Company Name

Contact Name

Company Address

City

Area

Country

Company Phone

Company Fax

Product Code

Length

Other Characteristics

Signature