

Temperature Sensors for

MARINE



URTH

Temperature Sensors and Special Cables

A FEW WORDS ABOUT THIS CATALOGUE 4

2012 UTECO..... 4

Series BMRM - Exhaust gas temperature sensors with solid drilled protection tube. For measuring and regulation exhaust gas, temperature in stationary and marine. Suitable for measuring diesel engines, turbines and compressors.	5
Series MS - Exhaust gas temperature sensors insert type with miniature socket for measuring and regulation exhaust gas, temperature in stationary and marine diesel engines, turbines and compressors.....	5
Series BMR - Resistance thermometer head type suitable for measuring temperatures of liquids and gases with adjustable screw in compression fitting	6
Series TWT - Temperature sensors with screwed bar stock thermowell for process technology (chemical and petrochemical plant, pressure vessels, etc.), are preferably used for measuring temperatures in liquids and gasses.....	6
Series MS - Exhaust gas temperature sensors insert type with miniature socket for measuring and regulation exhaust gas, temperature in stationary and marine diesel engines, turbines and compressors.....	7
.....	7
Series BK – Incinerator thermocouple with Terminal Head Form KNE. Preferred choice for measuring temperatures of primary and secondary combustion chambers. Application includes Ovens and Furnaces.	7
Other technical characteristics (length, diameter, connector, etc.), available upon request.	7
Series RM - Resistance thermometer for refrigerated warehouses & outdoors.....	8
.....	8
Series SUR - Surface resistance thermometer with silicon extension cable is used for measuring temperatures on closed pipe work and/ or other round surfaces.....	8
Series CBW - Thermocouple temperature sensor with cable and single protection tube. Preferred for measuring temperature exhaust system. Excellent vibration proof and shock proof.	9
.....	9
Series CBWR - Angle thermocouple temperature sensor with cable and single protection tube.	9
Preferred for measuring temperature, mainly on ships in connection with diesel engines in exhaust system	9
Series CBR - Resistance thermometer with connection cable and single protection tube excellent vibration proof and shockproof performances at high temperature, preferred for measuring temperature exhaust system.	10
Series MIC – Flexible 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.....	10
Series BMR - Resistance thermometer head type suitable for measuring temperatures of liquids and gases with adjustable screw in compression fitting	11
Series JG - Resistance thermometer with mini terminal head form J suitable for measuring temperatures of liquids and gases	11
Series CON – CON 37 Temperature sensors are heavy duty that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry and Marine Application.....	12
.....	12
Series RM - Outdoor resistance thermometer for HVAC applications mainly used for measuring temperatures outdoors	12
.....	13
Series CB - Resistance thermometer with fiber glass – braided extension cable. Preferred for temperature measurement in dry environments at temperature range between 0°C and +400°C	13
Series PRT - Portable temperature sensor type K (NIR-NI) Suitable for measurement in gases, fluids and liquids.	14
Head mounted 2-wire transmitter d TRANS T03 B PT100 - 4-20mA.	14
Head mounted transmitter d TRANS T03 BU PT100 - from 0 to 10V 3-wire Temperature Transmitter for Head-Mounting	15

Temperature Sensors and Special Cables

DIN Rail transmitter d trans T03T PT100, 4-20mA output	16
DIN Rail transmitter d trans T03T PT100, 4-20mA output	16
DIN Rail 2-wire transmitter APAQ-LC T/C for thermocouples, 4-20mA output.....	17
Series TWT - Screw-in pocket for systems where drain- or pressure- less installations / exchanging of thermocouples or resistance thermometers are required.....	18
Series TWF - Flanged bar stock thermowells with tapered stem	18
Miniature Connector with thermocouple material contacts	19
.....	19
Standard Connector with thermocouple material contacts	19
Standard panel with Thermocouple material contacts	19
Series Conductive - Level sensors for conductive limit value detection	20
.....	20
Series Conductive - Level sensors for conductive limit value detection	20
INSTRUMENTATION & BUS CABLES	21
DATA & CONTROL CABLES	22
COMPENSATING & EXTENSION CABLES	23
HIGH TEMPERATURE CABLES	24
INTERNATIONAL COLOR CODE FOR COMPENSATING & EXTENSION CABLES	25
REPRESENTED FIRMS	27
ORDERING FORM	30

Temperature Sensors and Special Cables

Temperature Sensors and Special Cables

A few words about this catalogue

Dear Customers,

You will find below a standardized list of —Temperature sensors & 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.

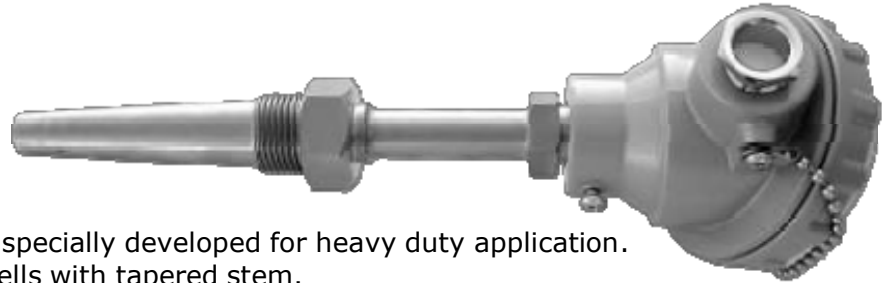
Those are indicative list:

Temperature sensors with different measuring range, length, construction material, process connection etc. are also available.

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

Temperature Sensors and Special Cables

Series BMRM - Exhaust gas temperature sensors with solid drilled protection tube. For measuring and regulation exhaust gas, temperature in stationary and marine. Suitable for measuring diesel engines, turbines and compressors.



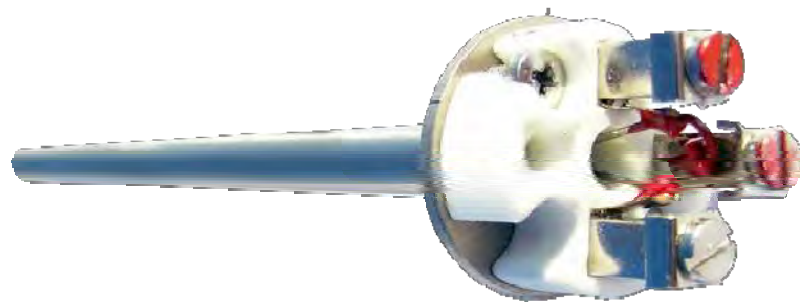
Specifications

PT100 Thin film Technology specially developed for heavy duty application. Screwed bar stock thermowells with tapered stem.

Resistance type and tolerance:	Resistance thermometer PT100, CLASS B, IEC 751, 2 wire or 3 wire system.
Stem diameter under thread:	18mm or 23mm
Tip diameter:	14mm
Tip thickness:	4mm
Extension length:	50mm
Immersion length:	80mm, 100mm, 150mm, 200mm, 250mm
Connection head:	weather proof , heavy duty head with screw on cover IP65
Temperature range:	from 0 to +650° C
Material:	AISI 316
Bore:	9mm

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Series MS - Exhaust gas temperature sensors insert type with miniature socket for measuring and regulation exhaust gas, temperature in stationary and marine diesel engines, turbines and compressors.



Specifications

Resistance type and tolerance:	Resistance thermometer PT100, CLASS B, IEC 751, 2 wire or 3 wire system.
Probe outer diameter:	8.0mm
Probe immersion length:	150mm, 170mm, 190mm, 250mm
Terminal blocks:	form J ceramic Ø25.1mm (miniature socket)
Temperature range:	from 0 to +650° C

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Temperature Sensors and Special Cables

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



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:	R 3/4 BSP
Probe length:	80mm - 300mm
Temperature range:	from -50° C to +650° C
Terminal head:	Cast Aluminum IP65

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Series TWT- Temperature sensors with screwed bar stock thermowell for process technology (chemical and petrochemical plant, pressure vessels, etc.), are preferably used for measuring temperatures in liquids and gasses.



Specifications

The measuring insert is fitted with resistance thermometer PT100 to EN 60751, CLASS A with 2,3 or 4 wire system. With replaceable measuring insert D6mm (mineral insulated cable).

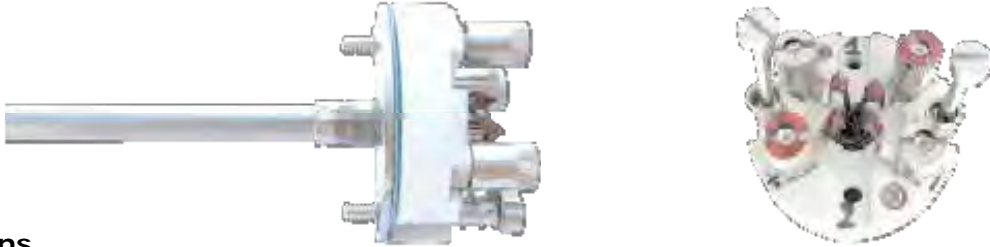
Stem diameter under thread:	18mm
Tip diameter:	14mm
Tip thickness:	4mm
Immersion length:	100mm
Extension length:	100mm
Connection head:	weather proof , cast-aluminum IP65, Form EExd
Ambient temperature:	from -20° C to +130° C
Process connection:	R 1/2 NPT
Material:	AISI 316L
Bore:	7mm

Available with 2-wire transmitter (4-20mA/HART/In Ex version)

Temperature Sensors and Special Cables

Other technical characteristics (length, diameter, process connection, etc.), available upon request.

Series MS - Exhaust gas temperature sensors insert type with miniature socket for measuring and regulation exhaust gas, temperature in stationary and marine diesel engines, turbines and compressors.



Specifications

The measuring inserts are normally fitted with a temperature sensor PT100 to IEC 751, CLASS B with 2, 3 or 4 wire system. The measuring insert with thermocouple is according to Class 2 of IEC 584, versions with Fe-konst, or NI CROSIL-NISIL can also be supplied.

Tube diameter:	3mm, 4,5mm, 6mm , 8mm
Probe length:	170mm, 220mm, 315mm, 385mm, 405mm
Terminal block:	form B Diameter 42mm
Temperature range:	from -200 to +1150°C

Available with transmitter output 4-20 mA or 0-10 V
Version with PT500 or PT1000 can also be supplied. Also as single or twin insert.

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Series BK – Incinerator thermocouple with Terminal Head Form KNE. Preferred choice for measuring temperatures of primary and secondary combustion chambers. Application includes Ovens and Furnaces.



Specifications

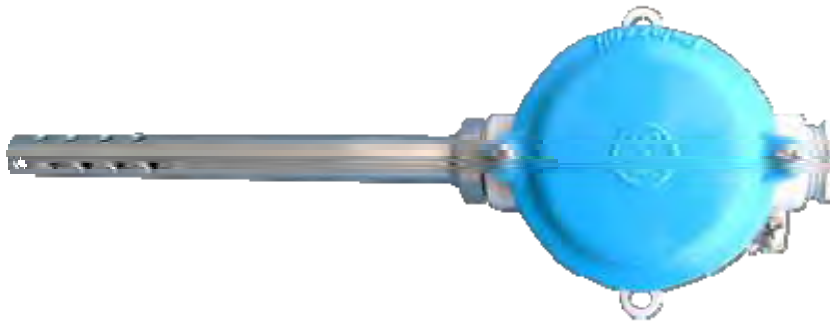
The measuring insert is fitted with thermocouple according to Class 2 of IEC 584

Ceramic probe outer diameter:	10x2mm, 15x2mm
Metallic support tube:	15mm (for ceramic tube 10mm) 22mm (for ceramic tube 15mm)
Process connection:	Screwed pipe point ¾ BSP
Probe immersion length:	250mm, 300mm, 450mm
Temp. range:	from 0 to +1600° C
Terminal head:	weather proof with screw on cover and chain
Material:	C799 cast- Aluminum
Conduit entry thread:	M20x1,5

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Temperature Sensors and Special Cables

Series RM - Resistance thermometer for refrigerated warehouses & outdoors

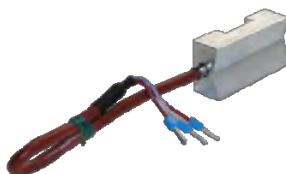


Specifications

The measuring insert is normally fitted with a Pt100 Temp. Sensor to IEC 751 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

Series SUR- Surface resistance thermometer with silicon extension cable is used for measuring temperatures on closed pipe work and/ or other round surfaces.



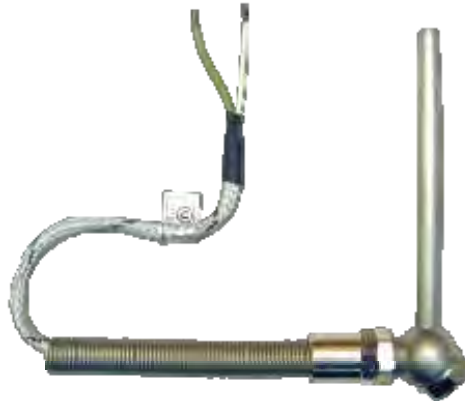
Resistance thermometer PT100 to IEC 751, CLASS A or B Available with 2, 3 or 4 wire circuit

Probe length:	50mm
Protection:	IP67
Cable insulation :	Silicon- Teflon (3 x 0,5mm ²)

Other technical characteristics (PT1000, PT500, Ni1000, cable length, insulation cable temperature etc.) available upon request

Temperature Sensors and Special Cables

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



Specifications

The measuring insert is fitted with thermocouple to type K IEC 584

Tube Diameter:	9.5mm
Probe Length:	186mm, 236 mm, 286 mm, 316 mm
Protection:	IP67
Temperature:	from 0 to -800°C
Compensating cable:	Silicone-Fiberglass-Braiding

Other technical characteristics (length, diameter, connector etc.) available upon request

Series CBWR- Angle thermocouple temperature sensor with cable and single protection tube.

Preferred for measuring temperature, mainly on ships in connection with diesel engines in exhaust system



Specifications

The measuring insert is fitted with Thermocouple (mineral insulated cable) to type K (double)IEC 584-2 Class 2 .

Temperature Sensors and Special Cables

Tube diameter :	12/10mm
Probe Length :	110mm
Process Connection:	1/2 BSP
Process connection:	M24x1.5Fem
Material :	AISI 316L made from solid bar stock
Compensating cable:	Fiberglass-Fiberglass-Braiding with covered eith stainless steel flexible armour
Termination:	6 pole female connector (jaeger)
Temperature range:	0-800°C

Other technical characteristics (length, diameter, connectors , etc.) available upon request

Temperature Sensors and Special Cables

Series CBR- Resistance thermometer with connection cable and single protection tube excellent vibration proof and shockproof performances at high temperature, preferred for measuring temperature exhaust system.



Specifications

The measuring insert is fitted with resistance thermometer PT100 to EN 60751, Class B to IEC 751, with 3 wire system .

Tube diameter :	12mm
Probe Length :	105mm
Process Connection:	½ BSP
Protection tube:	stainless steel 1.4571
Protection :	IP67
Cable insulation:	Teflon-braiding- Teflon (4x0.5mm ²)

Other technical characteristics (length, diameter, connector etc.) available upon request

Series MIC – Flexible 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.



Specifications

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

Probe Diameter:	3mm, 4.5mm
Process Connection :	1/8 BSP (male) adjustable
Response Time:	(main values) measured at velocities in water 0.4m/s t 0.5=11sec
Sheath Material:	AISI 316
Connecting Cable:	Teflon: ambient temp. -50°C to +260°C

Other technical characteristics (length, diameter, connector etc.) available upon request

Temperature Sensors and Special Cables

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

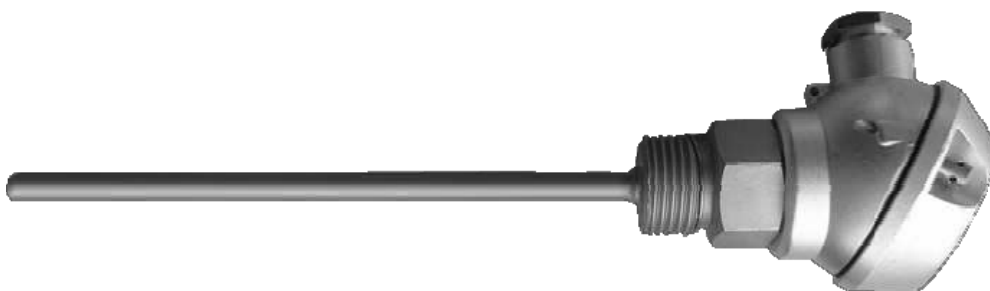


Specifications

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 (adjustable)
Probe length:	300mm
Temperature range:	from -50° C to +400° C
Terminal head:	TYPE BUZ IP 65

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Series JG - Resistance thermometer with mini terminal head form J suitable for measuring temperatures of liquids and gases



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
Temperature range:	from -50° C to +260° C
Terminal head:	mini terminal head form J Pg9, IP54

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Temperature Sensors and Special Cables

Series CON – CON 37 Temperature sensors are heavy duty that can be used for controlling cooling water, lubrication oil, hydraulic oil and refrigeration plants within general industry and Marine Application



Specifications

The measuring insert is fitted with resistance thermometer PT100 to IEC 751, CLASS B with 2 or 3 wire systems. Version with PT100 or PT1000 Resistance element.
Gold plated male and female connector CON 37 with interchangeable measuring insert.

Probe outer diameter:	8mm
Probe length:	50mm, 150mm, 200mm
Process connection:	thread G1/2, G3/4A or 1/2-14 NPT
Temperature range:	from -50 to +260° C
Connector:	DIN 43650/PG 13.5mm

Other technical characteristics (length, diameter, connector, etc.), available upon request.

Series RM - Outdoor resistance thermometer for HVAC applications mainly used for measuring temperatures outdoors



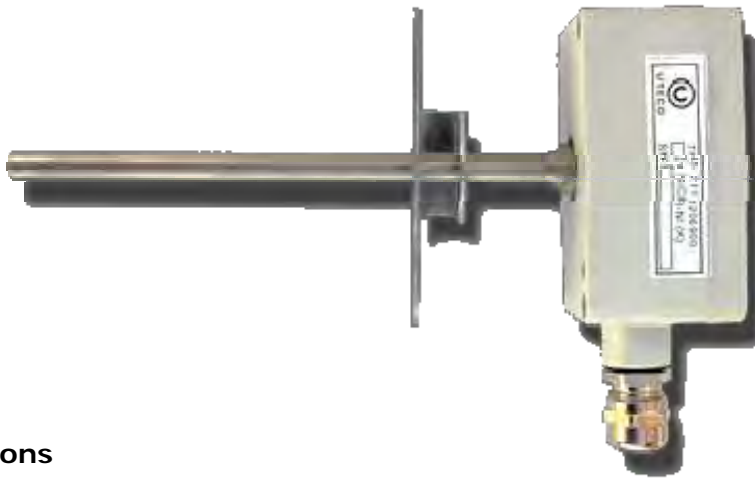
Specifications

The measuring insert is normally fitted with a Pt100 or Pt1000 Temperature Sensor to IEC 951 Class A in 2-wire, 3-wire and 4-wire circuit.

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

Temperature Sensors and Special Cables

Series BMF - Duct Resistance thermometer for HVAC



Specifications

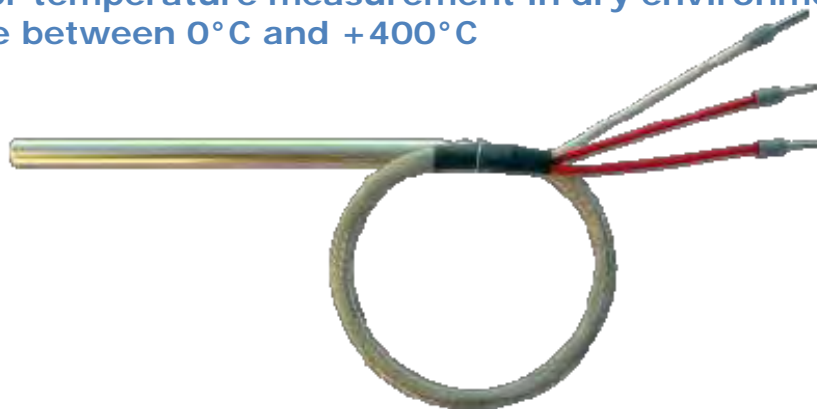
The measuring insert is normally fitted with a Pt100 or Pt1000 Temperature Sensor to IEC 951 Class A in 2-wire, 3-wire and 4-wire circuit.

Terminal Box:	Plastic PVC housing IP65
Protection Tube:	Stainless steel 1-4571 diameter 8mm
Immersion length:	200mm
Transmitter:	analog transmitter, output 4 – 20 mA or 0-10V

Other versions available with Pt500, Ni 1000, Ni 120, NTC 10 K Ω , KTx 11-6 can also be supplied.

Other technical characteristics (length, diameter, connector, etc.), available upon request.

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



Specifications

Resistance type and tolerances:	resistance thermometer PT100 or 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
Sheath material:	St.St. 1.4571
Probe Length:	50mm, 150mm
Temperature range:	from 0 to +400°C
Cable insulation:	Fiber Glass – Fiber Glass - Braided (3 x 0,5mm ²)

Temperature Sensors and Special Cables

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



Specifications

Measuring temperature:	from -200°C up to +1150°C
Thermocouple type:	(NIR-NI) type K
Accuracy:	class1
Hand ; grip material:	PVC suitable up to 90°C
Length:	100mm
Pocket material:	inconel 11600
Mini thermocouple plug:	(NIR-NI)
Length:	300mm,400mm,600mm
Diameter:	3mm

Suitable for connection with UTECO's portable thermometers.

Other technical characteristics (length, diameter, connector etc.) available upon request

Head mounted 2-wire transmitter d TRANS T03 B PT100 - 4-20mA.



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)

Temperature Sensors and Special Cables

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



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 APAQ-HCF T/C for thermocouple input, 4-20mA output.



Specifications

Input:	Thermocouples selectable: type J, L, T, K and N with ranges within -5 to +55 mV, impedance: >5 MΩ, 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, Current limitation: ~ 25 mA, Permissible load: 700 Ω @ 24 VDC, 25 mA
Response time 10-90%:	≤ 0.2 s
Permissible ripple:	4 Vp-p @ 50/60 Hz
Linearity (mA output to mV input):	±0.1 % of mV span
Calibration	±0.1 % of span
Protection, housing with cover/terminals:	IP 20 / IP 10

Temperature Sensors and Special Cables

DIN Rail transmitter d trans T03T PT100, 4-20mA output



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 transmitter d trans T03T PT100, 4-20mA output



Specifications

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

Temperature Sensors and Special Cables

DIN Rail 2-wire transmitter APAQ-LC T/C for thermocouples, 4-20mA output



Specifications

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

IN Rail universal-programmable transmitter d TRANS T02 PCP



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:	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

Temperature Sensors and Special Cables

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

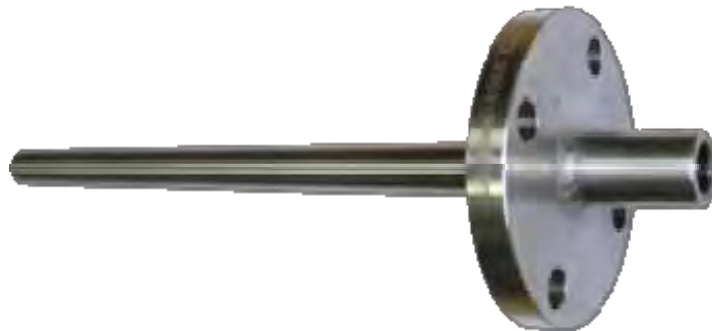


Specifications

pockets in different materials:	steel 1.0305, stainless steel 1.4571, steel 1.7335
operating pressure :	up to 450 bar
Immersion Length:	100mm
Outside diameter:	8mm,10mm,12mm,15mm
Process Connection:	R 1/2 BSP, 3/4 BSP or NPT
Temperature range:	up to 800°C

Other technical characteristics (length, diameter, connector etc.) available upon request

Series TWF- Flanged bar stock thermowells with tapered stem



Specifications

Thermowells are used for installing thermocouples resistance thermometers, whenever replacement without draining the system and/or pressure resistance are required

Type:	tapered, from bar stock, flanged welded on both sides to thermowell (un-machined)
Material:	SS 316 or 304
Bar stock diameter:	32mm
Surface finish:	1µm(40RU)
Eccentricity:	10% of wall thickness max
Tip thickness:	4mm
Flange Size / Internal Thread	1-1/2" 300 RF / 1/2 NPT

Test wells can be supplied with st.st plug and chain. Please specify when ordering

- Documentation and test
- Construction drawing
- Hydrostatic test Pressure
- Dye penetrant test
- Inspection and material certificate according to EN10204 3.1.B,3.1C
- Welding procedure specification (WP.5)
- Procedure Qualification Record (PQR)
- Certificate according to NACE MR.01.75
- Tensile test, impact test
- Heat treatment certificate
- HUEY test to ASTM A 262-C
- Performance test to ASME PTC 19.3-1974

Other technical characteristics (length, diameter, Process connection, material etc.) available upon request

Tel.: 0038947 203330 | Fax: 0038947 203900 | web: www.uteco.mk | e-mail: elek-palenzo@t-home.mk

Temperature Sensors and Special Cables

Miniature Connector with thermocouple material contacts



Specifications

Thermowells are used for installing thermocouples resistance thermometers, whenever replacement without draining the system and/or pressure resistance are required

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

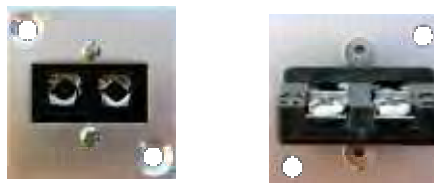


Specifications

Thermowells are used for installing thermocouples resistance thermometers, whenever replacement without draining the system and/or pressure resistance are required

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



Specifications

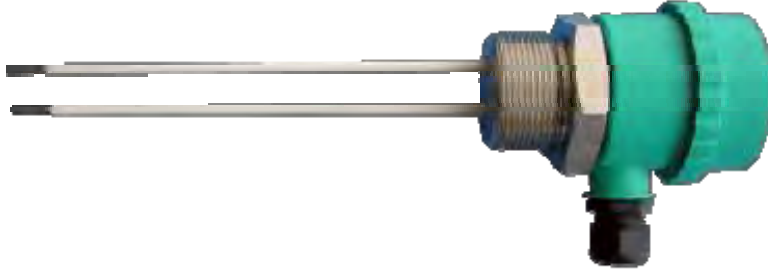
Thermowells are used for installing thermocouples resistance thermometers, whenever replacement without draining the system and/or pressure resistance are required

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

Temperature Sensors and Special Cables

Level Switches

Series Conductive - Level sensors for conductive limit value detection



Specifications

Material:	st. st. 14571
Diameter rod:	4mm
Process connection:	R ½ or 1½ BSP
Insulation rod electrode:	PFA or PVC
Temperature range:	from 0° C to 200° C
Length rod electrode:	500 – 1000mm
Number of electrode:	1,2,3,4 or 5 electrode
Terminal box:	Form B, IP65, aluminum die-casting or plastic IP65

Other technical characteristics (length, number of electrodes, connections etc.) available upon request

Electronic units – amplifiers available upon request

Series Conductive - Level sensors for conductive limit value detection



Specifications

Material:	stainless steel 14571
Diameter rod:	4 mm
Process connection:	R ¼ BSP
Insulation rod electrode:	PFA
Temperature range:	from 0° C to 260° C

Electronic units – amplifiers available upon request

Temperature Sensors and Special Cables

Instrumentation & Bus Cables

Code: 1-52-50-01-00-5

Type: RE-2Y(St)Y-fl 300 V 2x2x1,0 mm² Black

Insulation: PVC/OS/PVC

Resistance to temperature: up to 70°C

External diameter: 8,2 mm



Code: 1-52-50-02-00-9

Type: RE-Y(St)YSWAY-fl 300V 2X2X1,0 mm² Grey

Insulation: PVC/OS/PVC/SWA/PVC

Resistance to temperature: up to 70°C

External diameter: 15,00 mm



Code: 1-52-50-06-01-1

Type: RE-Yw(St)YwSWAYw-fl 300V 1X2X1,5 mm²

Insulation: PVC/OS/PVC/SWA/PVC

Resistance to temperature: up to 105°C

External diameter: 12,4 mm



Code: 1-51-50-02-00-0

Type: RE-2Y(ST)Y-PIMF 2x2x0,5 mm² Blue

Insulation: PVC/OS/IS/PVC

Resistance to temperature: up to 70°C

External diameter: 11,2 mm



Code: 1-51-50-08-02-6

Type: RE-2G(St)HSWAY-fl CI 500V 5x2x0,75 mm²

Insulation: Silicon Rubber/OS/LSZH/SWA/PVC

Resistance to temperature: up to 90°C

External diameter: 18,1 mm

Standard: IEC 60331 Fire Resisting (CI)



Code: 1-51-50-06-00-0

Type: PROFIBUS FMS/DP 1x2xAWG 22/1

Conductor: solid conductors

Resistance to temperature: up to 70°C

External diameter: 7,9 mm



Code: 1-00-50-06-00-1

Type: Profibus L2 7-wire 1x2x0,64

Conductor: 7 strand

Resistance to temperature: up to 70°C

External diameter: 7,3 mm



Code: 1-98-50-21-00-9

Type: CC-LINK BU 3x0,5 (AWG20/7)

Conductor: 7 strand

Resistance to temperature: up to 70°C

External diameter: 7,9 mm



Temperature Sensors and Special Cables

Data & Control Cables

Code: 1-50-50-09-51-0
Type: OZ-J 4X1,5 mm²
Insulation: PVC - PVC
Resistance to temperature: up to 70°C
External diameter: 7,1 mm



Code: 1-50-50-15-98-4
Type: LIYCY 7X1,0 mm²
Insulation: PVC - Braid - PVC
Resistance to temperature: up to 70°C
External diameter: 7,9 mm



Code: 1-50-50-13-15-0
Type: OZCuY-J 7X1,0 mm²
Insulation: PVC - PVC - Braid - PVC
Resistance to temperature: up to 70°C
External diameter : 11,6mm



Code: 1-50-50-17-09-0
Type: NYMH11YO-J (YPUR) 3X1,5 mm²
Insulation : Polyurethane - Polyurethane
Resistance to temperature: up to 70°C
External diameter: 7,9 mm
Very good chemical resistance



Code: 1-50-50-18-12-0
Type: S 200 3x0,75
Insulation: TPE-E - PUR
Resistance to temperature: up to 70°C
External diameter: 7,9 mm
Very good chemical resistance
Highly flexible for continues bending motions



Code: 1-50-50-22-05-0
Type: S 90 C 4x1,5 mm²
Insulation: PVC - braid - PUR
Resistance to temperature: up to 70°C
External diameter: 11,8 mm
Very good chemical resistance
Highly flexible for continues bending motions + braid



Code: 1-50-50-22-01-0
Type: ZKBi 1,0 mm² Y.T. 20 KV
Insulation: Silicone - Fiber glass- Silicone
Resistance to temperature: up to 180°C
External diameter: 8,0 mm
20 KV High Voltage cable



Temperature Sensors and Special Cables

Compensating & extension cables

Code: 1-50-50-23-01-0

Type: AN 11 LR 2X1,5 mm²

For thermocouple : Type K NiCr-Ni

Color code: Acc to IEC 584

Insulation: Silicone – Fiberglass-Braid

Resistance to temperature: up to 180°C

External diameter: 6,2 mm



Code: 1-50-50-23-02-0

Type: AN 11-4LR 4x1,50

For thermocouple: Type K NiCr-Ni

Color code: Acc to IEC 584

Insulation: Silicone – Silicone - Braid

Resistance to temperature: up to 180°C

External diameter: 9,3 mm



Code: 1-00-50-23-03-4

Type: 2X1,3 mm² PVC-PVC (flat)

For thermocouple: Type K NiCr-Ni

Color code: Acc to DIN 43710

Insulation : PVC - PVC

Resistance to temperature : up to 70°C

External diameter : 6,7 mm



Code: 1-00-50-23-08-0

Type: 2X0,22 mm PVC-PVC (Round)

For thermocouple: Type K NiCr-Ni

Color code: Acc to IEC 584

Insulation: PVC - PVC

Resistance to temperature: up to 70°C

External diameter: 4,0 mm



Code: 1-00-50-25-01-0

Type: JX 2X0,5 Fiber-Fiber-Braid

For thermocouple: Type J Fe-CuNi

Color code: Acc to IEC 584

Insulation: Fiber – Fiber - Braid

Resistance to temperature: up to 400°C

External diameter: 4,0 mm



Code: 1-83-50-23-09-0

Type: G/G-24-KK (G3 NICR-NI) 2x0,5

For thermocouple: Type K NiCr-Ni

Color code: Acc to ANSI MC 96.1

Insulation: Fiber - Fiber

Resistance to temperature: up to 400°C

External diameter: 2,0 mm



Code: 1-00-50-03-04-6

Type: RT-Y(St)YSWAY-fl 1x2x1,29 mm NiCr-Ni

For thermocouple: Type K NiCr-Ni

Color code: Acc to ANSI MC 96.1

Insulation: PVC–Aluminum foil -Steel Wire Armor-PVC

Resistance to temperature : up to 70°C

External diameter: 13,1mm



Code: 1-00-50-24-04-0

Type: SX PVC-SCH-PVC 16x2x0,50 mm²

For thermocouple: Type S PtRh10-Pt

Color code: Acc to DIN 43710

Insulation: PVC – Aluminum foil - PVC

Resistance to temperature : up to 70°C

External diameter : 19,2 mm



Temperature Sensors and Special Cables

High Temperature Cables

Code: 1-52-50-02-13-1
Type: SIHF-GLS(GLP) 3X1,5 mm²
Insulation: Silicone-Silicone-Fiberglass-Braid
Resistance to temperature: up to 180°C
External diameter: 8,9 mm
Form: Round



Code: 1-00-50-02-13-0
Type: PFA-SS-PFA 3X1,5 mm²
Insulation: Teflon-Braid-Teflon
Resistance to temperature: up to 260°C
External diameter: 6,0 mm
Form: Round



Code: 1-98-50-02-13-7
Type: Teflon- Fiber-Braid 3XAWG16
Insulation: Teflon- Fiberglass-Braid
Resistance to temperature: up to 260°C
External diameter: 5,0 mm
Form: Round



Code: 1-00-50-00-00-0
Type: VIBRA RV 1.00 STV02 2X1,0 mm
Insulation: Vibraflame – Braid- Vibraflame
Resistance to temperature: -196°C ...+1565°C
External diameter: 7,0 mm
Form: Round



Code: 1-00-50-00-00-5
Type: PT100 3X0,5 FIBER-FIBER-BRAID
Insulation: Fiber – Fiber - Braid
Resistance to temperature: up to 400°C
External diameter: 3,0 mm
Form: Round











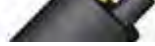
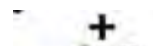
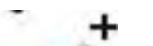







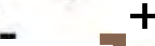

























Code: 1-00-50-02-14-1
Type: Hyflon-Silicon 4X0,22 mm²
Insulation: Hyflon - Silicone
Resistance to temperature: up to 180°C
External diameter: 4,3 mm
Form: Round



Code: 1-20-50-00-00-4
Type: 62849 4X0,14mm²
Insulation: Teflon – Braid - Teflon
Resistance to temperature : up to 260°C
External diameter: 3,5 mm
Form: Round



International Color Code for Compensating & Extension Cables

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

Temperature Sensors and Special Cables

Zener Barriers



PLC



Inverter



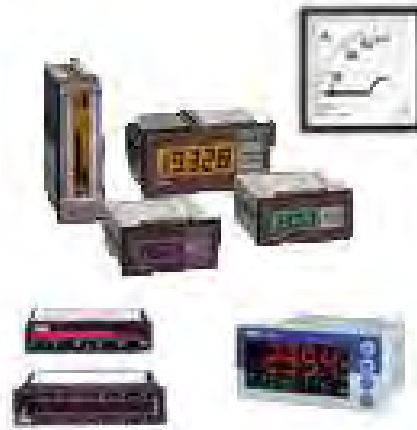
Level Switch



Calibrator



Ex Indicators



Positioners



Proximity Switches-Sensors



Temperature Sensors and Special Cables

Ordering

Form

Please print this form out and send it to 0038947203330

Company Name:	
Contact Name:	
Company Address:	
City:	
Area:	
Country:	
Company Phone:	
Company Fax:	

Quantity	Ordering Nr.	Type	Other Characteristics

Signature