



Temperature and Humidity Sensors

Thermoresistances

Thermocouples

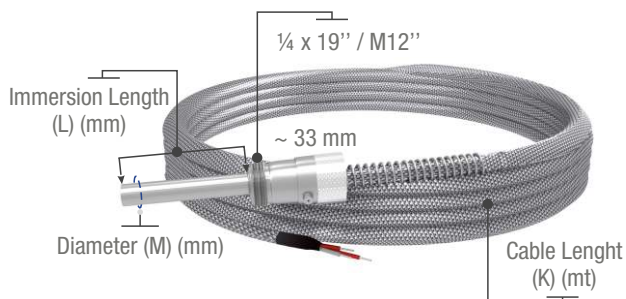
Relative Humidity Sensors

Compensation Cable

Temperature Sensors

Thermoresistances

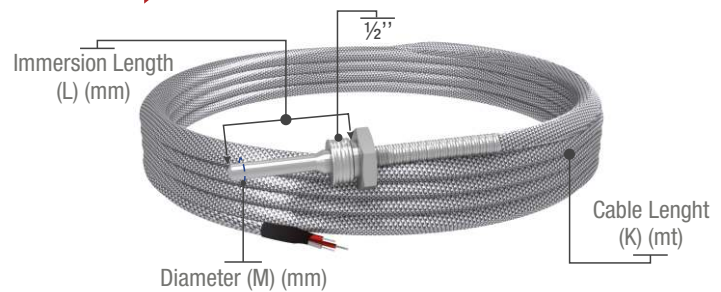
► (RT) Bayonet Type



RT - M [] [] - L [] [] [] - K [] []

Diameter : Min: 3mm Max: 8mm

► (RTR) Bayonet Record Type



RTR - M [] [] - L [] [] [] - K [] [] [] . E

Diameter : Min:4mm Max: 16mm

► (RTH) Bayonet Air Type



RTH - M [] [] - L [] [] [] - K [] []

Dimensions : Standard 6mm

► (RTH-PMD-D) Box Air Type ► (RTHT-PMD-D) Box Transmitter Air Type



RTH - PMD - D [] []
RTHT - PMD - D [] [] . F

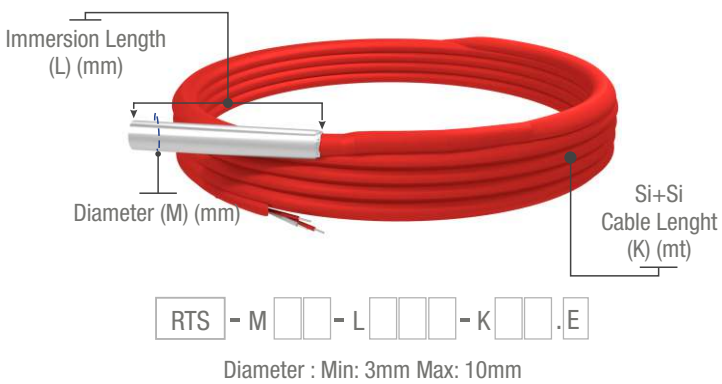
Dimensions : Standard D1: 59 mm
Dimensions : Standard D2: 159 mm

- Max. operating temperature** : **400°C** for Braided wire, **200°C** for Silicone, **260°C** for Teflon
- Standard cable types** : Fiber glass + Fiber glass + Braided wire, 3x0,22 mm² / Silicone + Silicone, 3x0,22 mm² / Teflon + Teflon, 3x0,22 mm²
("Si+Si" is added to order code) / ("T+T" is added to order code)
- Standard cable length (K)** : K01 = 1mt, K02 = 2mt, K03 = 3 mt, K04 = 4mt, K05 = 5 mt.
- Sensor type** : DIN/EN60751 Class "B" 1xPt-100 for **E=1** or 2xPt-100 for **E=2** (RTR)
- Protection tube material** : Nickel coated brass (RT) or AISI304 (DIN1.4301),
"316" is added to order code for AISI316 (RTR)
- Connector** : 1/4 x 19" (selectable as M12" or M12 x 1,5" on ordering)
- Fittingnut (RTR)** : 1/2" fittingnut is used for standard production

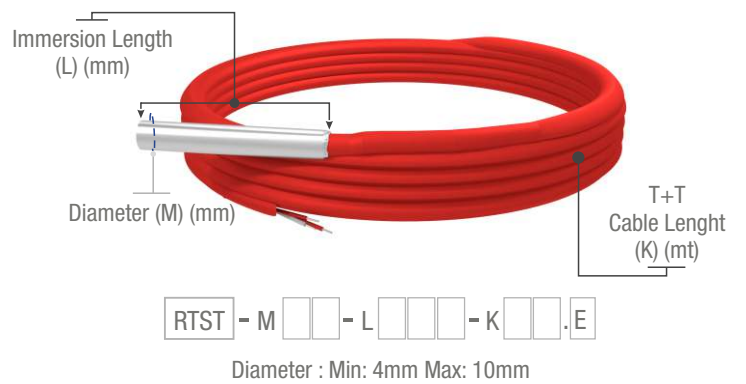
Temperature Sensors

Thermoresistances

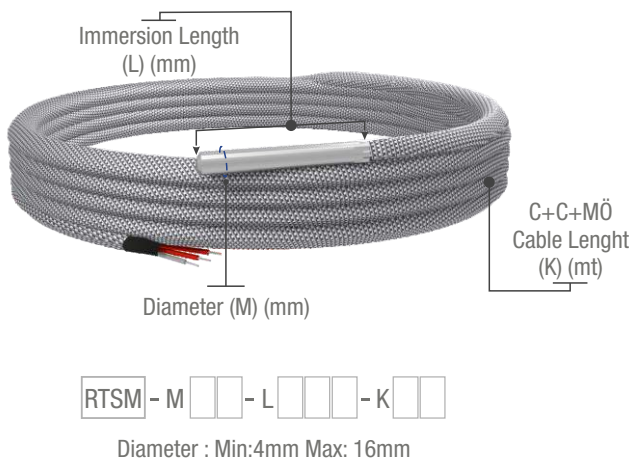
▶ (RTS) Bayonet Bore Type with Silicone Cable



▶ (RTST) Bayonet Bore Type with Teflon Cable



▶ (RTSM) Bayonet Bore Type with Braided Wire Cable



▶ (RTSKP5) Bayonet Type with Cable Lug

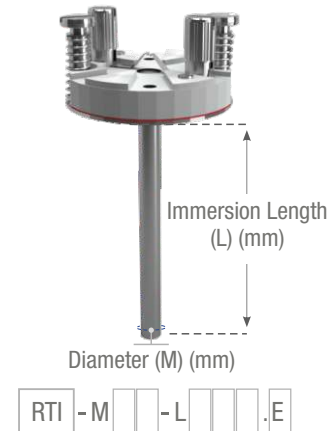


- Max. operating temperature : **400°C** for Braided wire, **200°C** for Silicone, **260°C** for Teflon
- Standard cable types : Fiber glass + Fiber glass + Braided wire, 3x0,22 mm² / Silicone + Silicone, 3x0,22 mm² / Teflon + Teflon, 3x0,22 mm²
- Standard cable length (K) : K01 = 1mt, K02 = 2mt, K03 = 3 mt, K04 = 4mt, K05 = 5 mt.
- Sensor type : DIN/EN60751 Class "B" 1xPt-100 for **E=1** or 2xPt-100 for **E=2**
- Protection tube material : AISI304 (DIN1.4301), AISI316 Order Code "316"

Temperature Sensors

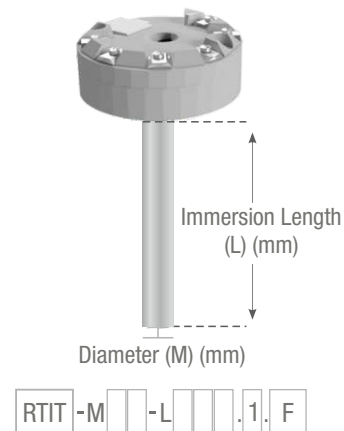
Thermoresistances

▶ (RTI) Inset Type



Diameter: Min: 5mm Max: 10 mm

▶ (RTIT) Inset Type with Transmitter



Diameter: Min: 5mm Max: 10 mm

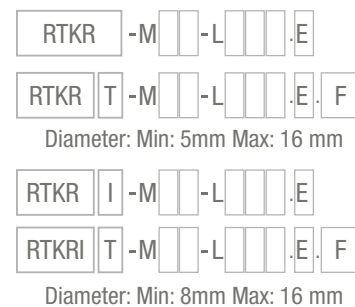
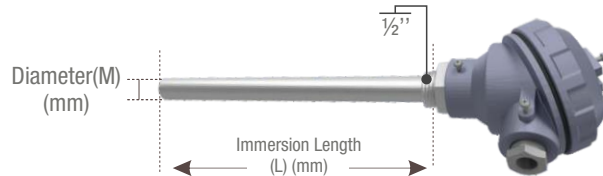
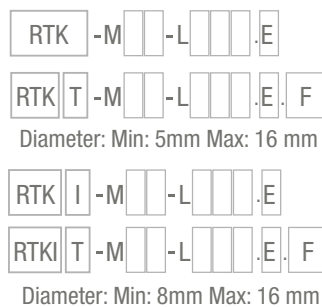
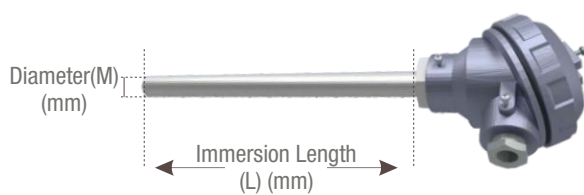
- Max. operating temperature : 500°C
- Protection tube material : AISI304 (DIN1.4301) "316" is added to order code for AISI316
- Sensor type : DIN/EN60751 Class "A" 1xPt-100 E=1 (RTI) DIN/EN60751 Class "B" 2xPt-100 E=2
- Transmitter (RTIT) : 4...20mA current output, serial connection (Loop Powered) transmitter.
F=Calibration scale must be described on ordering

▶ (RTK) Terminal Block Type ▶ (RTKT) Terminal Block with Fittingnut Type

▶ (RTKI) Terminal Block Inset Type ▶ (RTKIT) Terminal Block, Inset Transmitter Type

▶ (RTKR) Terminal Block, Fittingnut Type ▶ (RTKRT) Terminal Block, Fittingnut, Transmitter Type

▶ (RTKRI) Terminal Block, Fittingnut Inset Type ▶ (RTKRIT) Terminal Block, Fittingnut, Inset Transmitter Type

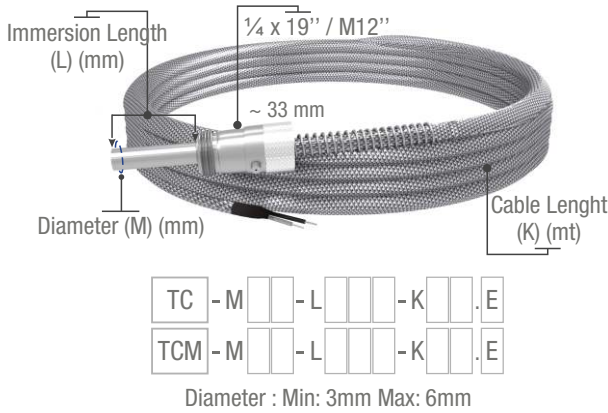


- Max. operating temperature : 500°C
- Protection tube material : AISI304 (DIN1.4301) "316" is added to order code for AISI316
- Sensor type : DIN/EN60751 Class "A" 1xPt-100 for E=1 (RTK, RTKRT) / DIN/EN60751 Class "B" 2xPt-100 for E=2
- Transmitter (RTIT) : 4...20mA current output, serial connection (Loop Powered) transmitter.
F=Calibration scale must be described on ordering

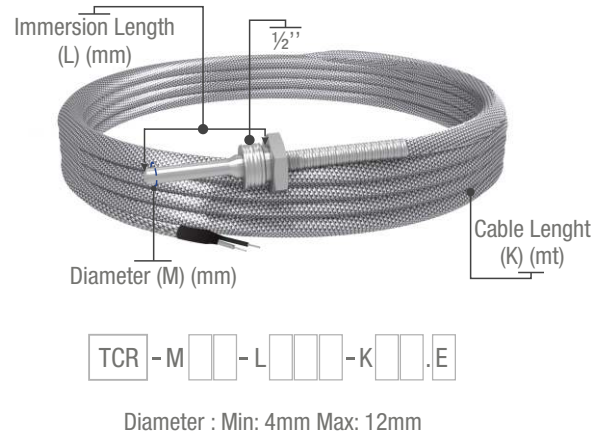
Temperature Sensors

Thermocouples

► (TC) Bayonet Type
 (TCM) Mineral Isolated Bayonet Type



► (TCR) Fittingnut Bayonet Type



Max. operating temperature : (TC)-(TCR) 400°C for Braided wire, 200°C for Silicone
 (TCM) " J " Type 800°C / " K " Type 1200°C

Standard cable types : Fiber glass + Fiber glass + Braided Wire, 2x0,22 mm²
 Silicone + Silicone, 2x0,22 mm² ("Si+Si" is added to order code)

Standard cable length (K) : K01 = 1mt, K02 = 2mt, K03 = 3 mt, K04 = 4mt, K05 = 5 mt.

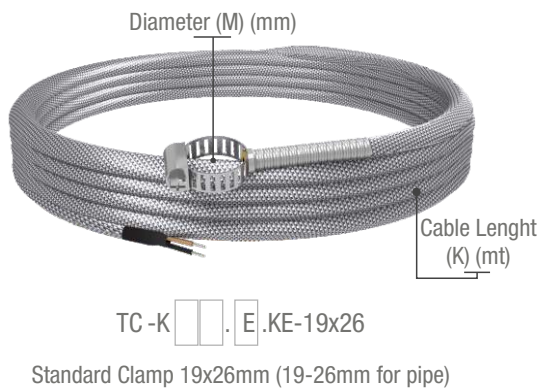
Sensor type : DIN/IEC-584 "J" FeCu-Ni E=J, DIN/IEC-584 "K" NiCr-Ni E=K

Protection tube material : Nickel coated brass (TC) or AISI304 (DIN1.4301)

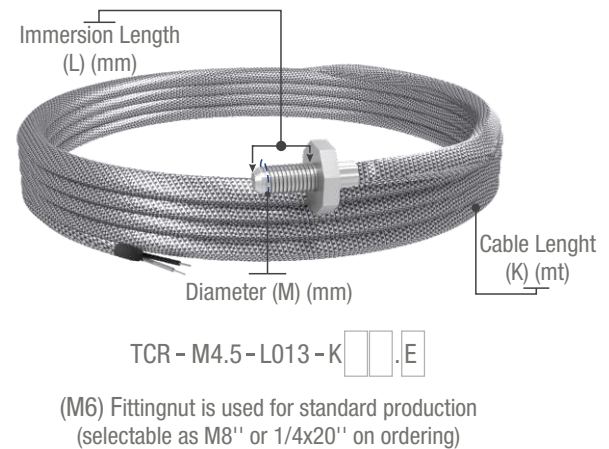
Connector : ¼ x 19" (selectable as M12")

Fittingnut (RTR) : ½" fittingnut is used for standard production

► (TC) Bayonet Type Clamp



► (TCR) Adjustable Fittingnut Type



Max. operating temperature : 400°C for Braided wire, 200°C for Silicone

Standard cable types : Fiber glass + Fiber glass + Braided wire, 2x0,22 mm²
 Silicone + Silicone, 2x0,22 mm² ("Si+Si" is added to order code)

Standard cable length (K) : K01 = 1mt, K02 = 2mt, K03 = 3 mt, K04 = 4mt, K05 = 5 mt.

Sensor type : DIN/IEC-584 "J" FeCu-Ni E=J, DIN/IEC-584 "K" NiCr-Ni E=K

Protection tube material : Nickel coated brass (TC) or AISI304 (DIN1.4301)

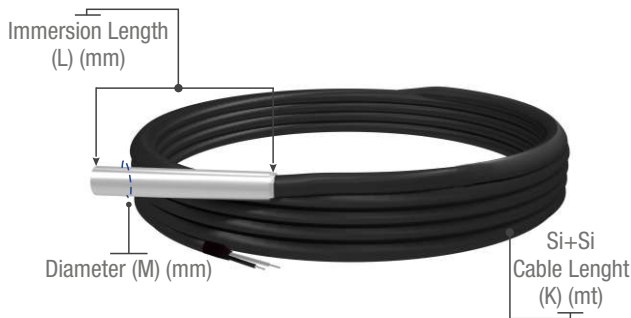
Connector : ¼ x 19" (selectable as M12" or M12 x 1,5" on ordering)

Fittingnut (RTR) : ½" fittingnut is used for standard production

Temperature Sensors

Thermocouples

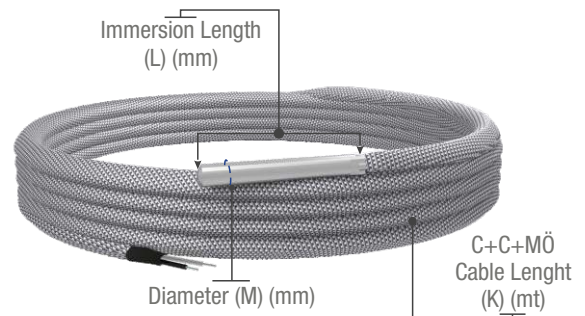
► (TCS) Bayonet Sonda Type



TCS - M [] [] - L [] [] [] - K [] [] [] . E

Diameter : Min: 5mm Max: 8mm

► (TCSM) Bayonet Sonda Type with Braided Wire

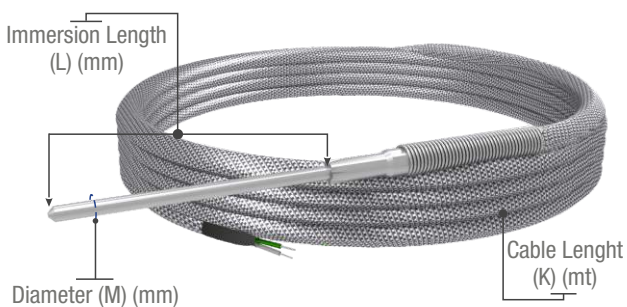


TCSM - M [] [] - L [] [] [] - K [] [] [] . E

Diameter : Min: 3mm Max: 12mm

- Max. operating temperature** : 400°C for Braided wire, 200°C for Silicone
- Standard cable types** : fiber glass + fiber glass + braided wire, 2x0,22 mm²
Silicone + Silicone, 2x0,22 mm²
- Standard cable length (K)** : K01 = 1 mt, K02 = 2 mt, K03 = 3 mt, K04 = 4 mt, K05 = 5 mt.
- Sensor type** : DIN/IEC-584 "J" FeCu-Ni E=J, DIN/IEC-584 "K" NiCr-Ni E=K
- Protection tube material** : AISI304 (DIN1.4301), AISI316 Order Code "316"

► (TCMS) Mineral Isolated Bayonet Sonda Type



TCMS - M [] [] - L [] [] [] . E . F

Diameter : Min: 1mm Max: 6mm

► (TC-SKP) Bayonet Type Cable Lug



TC-K [] [] . E.SKP5

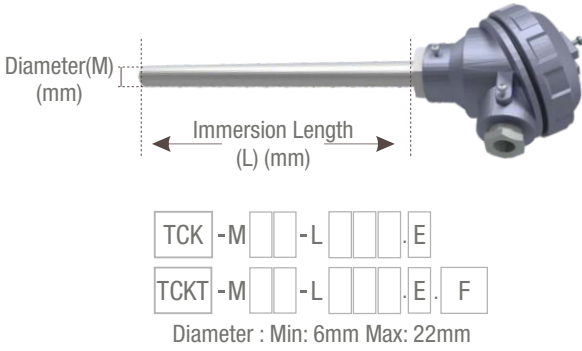
Standard SKP5 (M5 for Screw)
TC - SKP - 400°C

- Max. operating temperature** : TCMS "K" Type 1200 °C "J" Type 800 °C
- Protection tube material** : "K" Type AISI310 (DIN1.4845), "J" Type AISI316
- Sensor type** : DIN/IEC-584 "J" FeCu-Ni E=1.J,
DIN/IEC-584 "K" NiCr-Ni E=1.K,

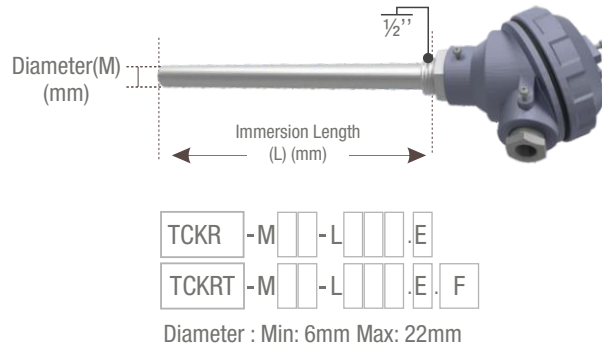
Temperature Sensors

Thermocouples

- ▶ **TCK (Terminal Block Type)**
- ▶ **TCKT (Terminal Block Type, Transmitter Type)**

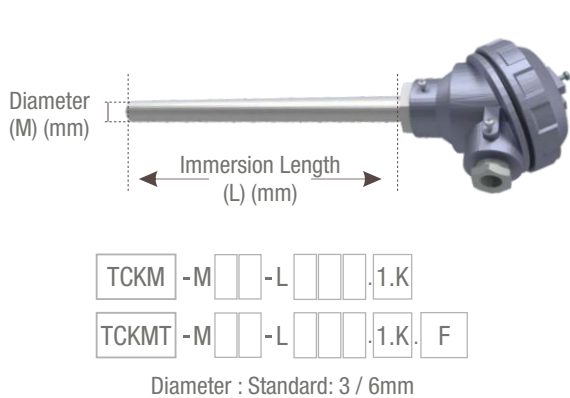


- ▶ **TCKR (Terminal Block, Fittingnut Type)**
- ▶ **TCKRT (Terminal Block with Fittingnut and Transmitter Type)**

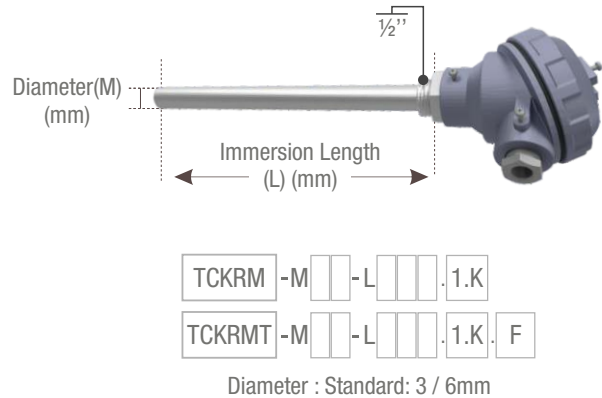


- Max. operating temperature :** “K” Type 1200°C (M22), 900°C (M16), 800°C (M10) “K” and J Type” 600°C (M06, M08.M10)
- Protection tube material :** (M22) AISI310 (DIN1.4845) AISI316 is added to order code for AISI316
(M16)-(M10) AISI304 (DIN1.4306)
- Sensor type :** DIN/IC-584 “J” FeCu-Ni **E=1.J**,
DIN/IC-584 “K” NiCr-Ni **E=1.K**,
DIN/IC-584 2x“J” FeCu-Ni **E=2.J**, (TCK, TCKR)
DIN/IC-584 2x“K” NiCr-Ni **E=2.K**, (TCK, TCKR)
- Transmitter (RTIT) :** 4...20mA current output, serial connection (Loop Powered) transmitter.
F=Calibration scale must be described on ordering

- ▶ **(TCKM) Terminal Block Type**
- ▶ **(TCKMT) Terminal Block with Transmitter Type**



- ▶ **(TCKRM) Terminal Block with Fittingnut Type**
- ▶ **(TCKRMT) Terminal Block with Fittingnut and Transmitter Type**

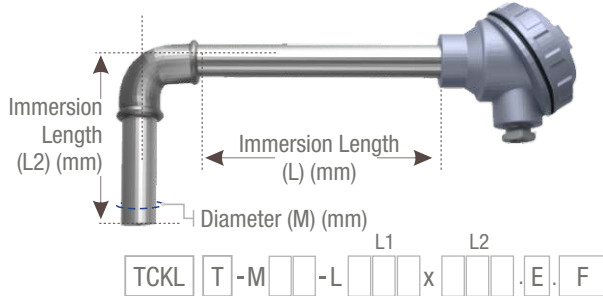


- Max. operating temperature :** 1200°C
- Protection tube material :** AISI310 (DIN1.4845) INCONEL600 “inconel” is added to order code for INCONEL600
- Sensor type :** DIN/IEC-584 “K” NiCr-Ni **E=1.K**,
- Transmitter :** 4...20mA current output, serial connection (Loop Powered) transmitter.
- (TCKMT ve TCKRMT) F=**Calibration scale must be described on ordering

Temperature Sensors

Thermocouples

- ▶ (TCKL) Terminal Block Type "L" Type
- ▶ (TCKLT) Terminal Block Type "L" Type Transmitter Type



Diameter : Min: 16mm Max: 22mm

Max. operating temperature : "K" type M16 for 900° / "J" type M16 for 600°
"K" type M22 for 1200° / "J" type M22 for 600°

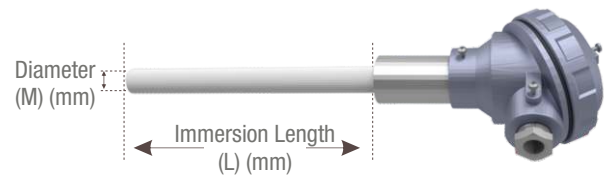
Protection tube material : AISI304 Stainless steel

Sensor type : DIN/IEC-584 "J" NiCr-Ni **E=1.J**,
DIN/IEC-584 "K" NiCr-Ni **E=1.K**,
2x "J" FeCu-Ni **E=2.J**
2x "K" NiCr-Ni **E=2.K**

Transmitter (TCKLT) : 4...20mA current output, serial connection
(Loop Powered) transmitter.

F=Calibration scale must be described on ordering

- ▶ (TCKK) Klemens Terminalli Tip,
- ▶ (TCKKT) Klemens Terminalli Tip



Diameter : Min: 15mm Max: 24mm

Max. operating temperature : 1200°C for "K" NiCr-Ni
1600°C for "S" Pt10%Rh-PT
1600°C for "R" Pt13%Rh-PT

Wire Diameter : 3,00mm for "K" type 0,35mm for
"S" and "R" type

Protection tube material : KER610 Ceramic

Sensor type : DIN/IEC-584 "K" NiCr-Ni **E=1.K**,
DIN/IEC-584 "S" Pt10%Rh-PT **E=1.S**,
DIN/IEC-584 "R" Pt13%Rh-PT **E=1.R**,
2x "K" NiCr-Ni **E=2.K** (TCKK),
2x "S" Pt10%Rh-PT **E=2.S** (TCKK),
2x "R" Pt10%Rh-PT **E=2.R** (TCKK)

Transmitter (TCKKT) : 4...20mA current output, serial connection
(Loop Powered) transmitter.

F=Calibration scale must be described on ordering

Compensation Cables



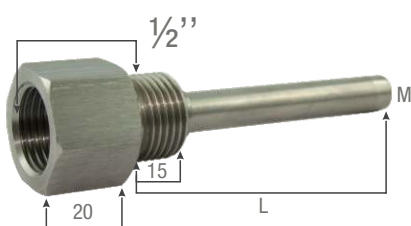
Silicone + fiber glass + braided wire, 2 x 0,75 mm² IEC584 "J" FeCu-Ni
Silicone + fiber glass + braided wire, 2 x 0,75 mm² IEC584 "K" NiCr-Ni
Silicone + fiber glass + braided wire, 2 x 1,50 mm² IEC584 "J" FeCu-Ni
Silicone + fiber glass + braided wire, 2 x 1,50 mm² IEC584 "K" NiCr-Ni
Silicone + fiber glass + braided wire, 2 x 1,50 mm² IEC584 "S" Pt10%Rh-Pt

Transmitter



Sensor Type	Measurement Range Scale	Minimum Measurement Range
Thermocouple K	-150 to 1370°C	100°C
Thermocouple J	-100 to 760°C	100°C
Thermocouple R	-50 to 1760°C	400°C
Thermocouple S	-50 to 1760°C	400°C
Thermocouple T	-160 to 400°C	100°C
Pt100	-220 to 650°C	40°C
Pt1000	-200 to 650°C	40°C

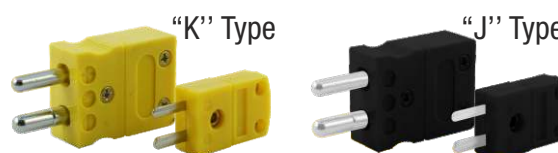
Termowell



Termowel-M [] [] -L [] [] 1/2

Standard Diameter: 10/12 mm Fittingnut 1/2

Connectors (K and J Type)



Fittingnut



Diameter 6, 8, 10 mm for pipe



Relative Humidity Sensors

Pronem
mini / midi / midi-LCD



Standard Features

2 analogue outputs for temperature and humidity
High output accuracy
Small and useful design

Long-term stability
Low thermal drift
Current or voltage output signal selection for temperature and humidity analogue output type

Technical Specifications

Measuring range (RH)	: %0...100
Measuring range (T) (°C)	: -20°C...+80°C
Measuring range (T) (°F)	: -4°F...+176°F (for Pronem Midi LCD type)
Accuracy (RH)	: ±2 %RH (Typ)@23°C %0...100
Accuracy (T)	: ±0,3°C (Typ)@23°C
Stability (RH)	: <0,5 %RH/year (Typ)
Stability (T)	: <0,04°C/year (Typ)
Analogue Out. Sign. Accuracy (Voltage)	: ±%0,1
Analogue Out. Sign. Accuracy (Current)	: ±%0,5

Working Conditions

Operating Temperature	: -40°C...+85°C
Height	: Up to 2000 m.

Pronem
midi-LCD



Pronem
midi-LCD



Relative Humidity Sensors

Standard Product Order Codes

Pronem

Pronem mini



Standard Product Order Codes

- PMI-P-0/0.1.2**
RS-485 Communication Humidity + Temperature Sensor
- PMI-P-H1/T1.1.0**
2 x Analog 0-10V, Humidity + Temperature Sensor
- PMI-P-H0/T0.1.0**
2 x Analog 4-20mA, Humidity + Temperature Sensor

Pronem midi



Standard Product Order Codes

- PMD-W-H2/T2.1.0.0**
Wall mount type, Analog 2-10Vdc, 16...32Vdc, Humidity + Temperature Sensor
- PMD-W-H1/T1.1.0.0**
Wall mount type, Analog 0-10Vdc, 16...32Vdc, Humidity + Temperature Sensor
- PMD-W-0/0.1.1.0**
Wall mount type, with digital signal RS-485 Communication, 16...32Vdc, Humidity + Temperature Sensor
- PMD-W-H0/T0.1.0.0**
Wall mount type, Analog 4-20mA, 16...32Vdc, Humidity + Temperature Sensor

Pronem midi-LCD



Standard Product Order Codes

- PMDL-W-H2/T2.1.0.0**
Wall mount, Analog 2-10Vdc, 16 ... 32Vdc, Humidity + Temperature Sensor
- PMDL-W-H1/T1.1.0.0**
Wall mount type, Analog 0-10Vdc, 16...32Vdc, Humidity + Temperature Sensor
- PMDL-W-0/0.1.1.0**
Wall mount type, with digital signal RS-485 Communication, 16...32Vdc, Humidity + Temperature Sensor
- PMDL-W-H0/T0.1.0.0**
Wall mount type, Analog 4-20mA, 16...32Vdc, Humidity + Temperature Sensor

Pronem midi-LCD backlight

- PMDLB-W-H2/T2.1.0.0**
Wall mount, Analog 2-10Vdc, 16 ... 32Vdc, Humidity + Temperature Sensor
- PMDLB-W-H1/T1.1.0.0**
Wall mount type, Analog 0-10Vdc, 16...32Vdc, Humidity + Temperature Sensor
- PMDLB-W-0/0.1.1.0**
Wall mount type, with digital signal RS-485 Communication, 16...32Vdc, Humidity + Temperature Sensor

Relative Humidity Sensors

Standard Product Order Codes

Pronem midi



Standard Product Order Codes

- PMD-D-H2/T2.1.0.1**
Duct mount type, Analog 2-10Vdc, 16...32Vdc, Immersion Length : 59mm, Humidity + Temperature Sensor
- PMD-D-H1/T1.1.0.1**
Duct mount type, Analog 0-10Vdc, 16...32Vdc, Immersion Length : 59mm, Humidity + Temperature Sensor
- PMD-D-0/0.1.1.1**
Duct mount type, with digital signal RS-485 comm., 16...32Vdc, Immersion Length : 59mm, Hum.+Temp. Sensor
- PMD-D-H0/T0.1.0.1**
Duct mount type, Analog 4-20mA, 16...32Vdc, Immersion Length : 59mm, Humidity + Temperature Sensor

- PMD-D-H2/T2.1.0.2**
Duct mount type, Analog 2-10Vdc, 16...32Vdc, Immersion Length : 159mm, Humidity + Temperature Sensor
- PMD-D-H1/T1.1.0.2**
Duct mount type, Analog 0-10Vdc, 16...32Vdc, Immersion Length : 159mm, Humidity + Temperature Sensor
- PMD-D-0/0.1.1.2**
Duct mount type, with digital signal RS-485 Comm., 16...32Vdc, Immersion Length : 159mm, Hum.+Temp. Sensor
- PMD-D-H0/T0.1.0.2**
Duct mount type, Analog 4-20mA, 16...32Vdc, Immersion Length : 159mm, Humidity + Temperature Sensor

Pronem midi-LCD



Standard Product Order Codes

- PMDL-D-H2/T2.1.0.1**
Analog 2-10Vdc, Immersion Length : 59 mm Humidity + Temperature Sensor
- PMDL-D-H1/T1.1.0.1**
Analog 0-10Vdc, Immersion Length : 59 mm Humidity + Temperature Sensor
- PMDL-D-0/0.1.1.1**
RS-485 Communication, Immersion Length : 59 mm Humidity + Temperature Sensor
- PMDL-D-H0/T0.1.0.1**
Analog 4-20Vdc, Immersion Length : 59 mm Humidity + Temperature Sensor

- PMDL-D-H2/T2.1.0.2**
Analog 2-10Vdc, Immersion Length : 159 mm Humidity + Temperature Sensor
- PMDL-D-H1/T1.1.0.2**
Analog 0-10Vdc, Immersion Length : 159 mm Humidity + Temperature Sensor
- PMDL-D-0/0.1.1.2**
RS-485 Communication, Immersion Length : 159 mm Humidity + Temperature Sensor
- PMDL-D-H0/T0.1.0.2**
Analog 4-20Vdc, Immersion Length : 159 mm Humidity + Temperature Sensor

Pronem midi-lcd backlight

- PMDLB-D-H2/T2.1.0.1**
Analog 2-10Vdc, Immersion Length : 59 mm Humidity + Temperature Sensor
- PMDLB-D-H1/T1.1.0.1**
Analog 0-10Vdc, Immersion Length : 59 mm Humidity + Temperature Sensor
- PMDLB-D-0/0.1.1.1**
RS-485 Communication, Immersion Length : 59 mm Humidity + Temperature Sensor

- PMDLB-D-H2/T2.1.0.2**
Analog 2-10Vdc, Immersion Length : 159 mm Humidity + Temperature Sensor
- PMDLB-D-H1/T1.1.0.2**
Analog 0-10Vdc, Immersion Length : 159 mm Humidity + Temperature Sensor
- PMDLB-D-0/0.1.1.2**
RS-485 Communication, Immersion Length : 159 mm Humidity + Temperature Sensor

