

TS-XX-I-YY Immersion Temperature Sensor

Features

- Temperature measurement for water,oil,glycol.
- Thermistor, PT or NI sensing elements to fit your system
- Simple and secure installation
- Wide range of temperature probes

Applications

- Measure water temperature in return and supply water pipes.
- Measure oil or glycol temperature

Temperature Sensor

The sensor measures the temperature by use of a NTC, PT or NI sensing element. The sensing element is either a glass packed thermistor with a negative temperature coefficient or a platinum film sensor or a thin nickel layer on a ceramic substrate. Its resistance changes according to the temperature. The change follows a specified curve. Below is a list of available sensor elements, curves and accuracies:



Item name	Sensing element	Curve	Compatible with
N18	Thermistor 1.8k at 25 °C	Curve 5	TAC, CSI
N3	Thermistor 3k at 25 °C	Curve 6	Alerton
N10	Thermistor 10k at 25 °C	Curve 24	Hysine, Alerton,ALC, Delta,Trane, CSI
N11	Thermistor 10k at 25 °C	Curve 7	Andover, Invensys, Carrier, KMC
N20	Thermistor 20k at 25 °C	Curve 20	Honeywell
N100	Thermistor 100k at 25 °C	Curve 9	Siemens SBT
Tp1	PT100	0.3851ohm/K	Honeywell
Tp2	PT1000	3.851ohm/K	Johnson Control
TK5	NI1000	5000ppm/k	Siemens SBT

Ordering

Ordering number:TS-XX-I-YY

XX indicates the sensor element optional, see table above.

YY indicates the probe length. YY=5cm,10cm,15cm,20cm.Standard probe length is 10 cm.

For example:TS-N10-I-10

-N10 indicates the sensor element is Thermistor 10k .

-10 indicates the probe length is 10 cm.

Construction


This sensor is constructed to high quality standards, borrowing materials and assembling techniques from the industrial sector. The probe material is stainless steel with a welded and ground tip. The probe is baked and then epoxy sealed to eliminate long term moisture problems.

Installation

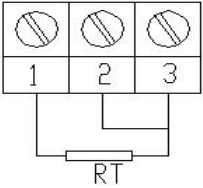
Pipe probes should be installed directly on the water pipe

- To install weld the M27x2 nut on to the water pipe apply sealant as required by pressure and media temperature and screw probe, by turning it clockwise into the welded on nut.
- The pipe sensor is able to withstand pressures up to PN40. Welding will have to be done according to pressure requirements and following to local rules and regulations.
- Connect the wires according to the wiring diagram to the measuring circuit in the cover:
 - The Thermistors require two conductors; normally 18ga unshielded twisted pair.
 - The PT100, PT1000 and NI1000 sensors come with each two terminal connectors in order to connect up to four conductors for compensating conductor resistance.

Technical Specification

Sensing Probe	Thermistor: Range Accuracy	NTC 0----100°C ±0.5k
	Platinum-Film: Range Accuracy	PT, 0.3851ohm/k 0----200°C ±0.3k
	Nickel Thin Layer Range Accuracy	NI, 5000 ppm/k 0----100°C ±1k
Connection	Connection Terminals	2.5 mm ²
Environment	Operation Climatic Conditions Temperature Humidity	To IEC 721-3-3 class 3 K5 -40...70°C <95% r.h.
	Transport & Storage Climatic Conditions Temperature Humidity Mechanical Conditions	To IEC 721-3-2 and IEC 721-3-1 class 3 K3 and class 1 K3 -40...80°C <95% r.h. class 2M2
Standards	 conform according to EMC Standard 89/336/EEC EMEI Standard 73/23/EEC	EN 61 000-6-1/ EN 61 000-6-3
	Thread	M27 x 2
	Pressure Rating	4 MPa, PN40
	Degree of Protection	IP56 to EN 60 529
	Safety Class	III (IEC 60536)
Materials	Cover Immersion Probe	Aluminum: ADC12 Stainless Steel
General	Dimensions [mm]	75 x 60 x 170+YY (H x W x L) Probe: Ø12 x YY
	Weight (including package)	670g

Wiring Diagram



Terminal Connections:

- 1, 2 and 3 terminal connection is connected on the PCB board.
- 2, If sensing elements is Thermistor:
Only use 1 and 2 terminal connection
- 3, If sensing elements is Platinum film sensors:
use double contacts in order to compensate wire resistance.

TS-N10-I-10

Dimension [mm]

