DATASHEET

Thermistors

Thermistors provide accurate and reliable long-term temperature measurements and are used widely in the extremely harsh environments found within Geotechnical monitoring

GEOSENSE

Thermistors

Overview

Thermistors provide accurate and reliable long-term temperature measurements and are used widely in the extremely harsh environments found within Geotechnical monitoring.

They are available in two types:

Probe – A single point sensor mounted within a PVC or stainless steel housing which is attached to a cable length.

String – A series of sensors mounted along a multi-core cable which provide a temperature profile and is manufactured to customer requirements in terms of the number and spacing of each sensor.

The NTC (negative temperature coefficient) thermistor sensor has a resistance that decreases with increasing temperature and with a coefficient >4%/ºC allows it to detect very small changes in temperature. They have a non-linear output that is represented by the Steinhart–Hart equation.

$T = (1 / (A + B (LnR) + C(LnR) 3)) - 273.2$

Where: T = Temperature in degrees Centigrade
LnR= Natural log of Thermistor resistance in ohms

Readings can be made with a wide range of readout units including the VW2106 and the MP12 which display the reading directly in engineering units (degrees Celsius) or by an ohmmeter in combination with look-up tables. Readings can also be automated using an automatic data acquisition unit.

APPLICATIONS

For monitoring temperature in:

- Concrete (particularly RCC dams)
- Soil
- Rock
- Ice caps
- Glaciers
- Landfill

FEATURES

- Fast Response
- High accuracy
- Excellent long term stability
- Operating range -50 to 150 ºC
- Waterproof to IP68 (16 bar)

Thermistors

Specifications

PROBE

Model	TP-1	TP-2
Temperature range*	-50 to +150 ºC	-50 to +150 ºC
Accuracy	± 0.2 ºC	± 0.2 ºC
Resolution**	0.1 ºC	0.1 ºC
Housing	PVC	Stainless steel
Housing diameter (mm)	31	16
Housing length (mm)	85	85
Cable (mm)	4 core PUR	4 core PUR

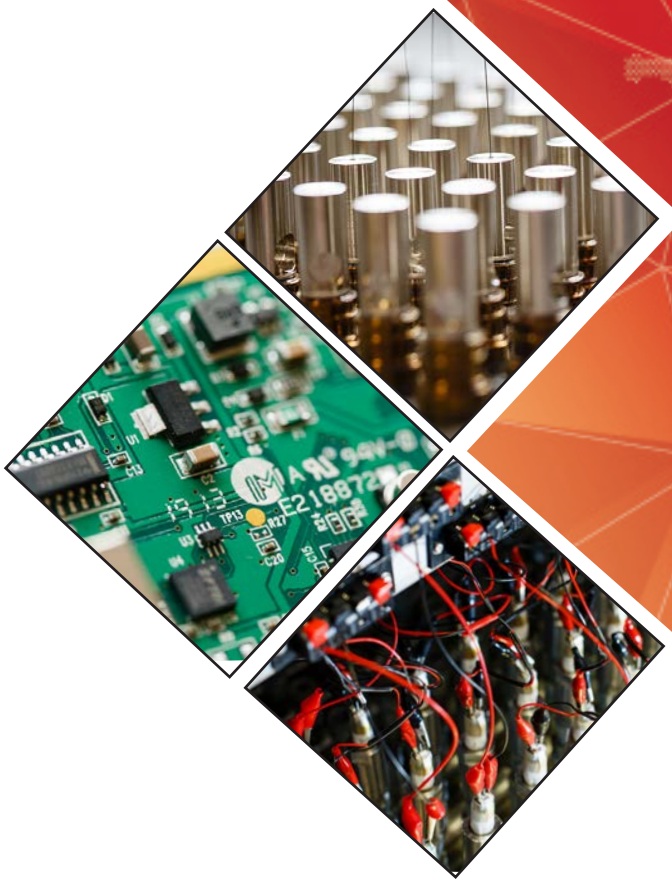
STRINGS

Model	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6
Temperature range*	-50 to +150 ºC	-50 to +150 ºC	-50 to +150 ºC	-50 to +150 ºC	-50 to +150 ºC	-50 to +150 ºC
Accuracy	± 0.2 ºC	± 0.2 ºC	± 0.2 ºC	± 0.2 ºC	± 0.2 ºC	± 0.2 ºC
Resolution**	0.1 ºC	0.1 ºC	0.1 ºC	0.1 ºC	0.1 ºC	0.1 ºC
Points	1-2	3-4	5-7	8-10	11-15	16-25
Cable diameter	7	8.9	9.8	11.4	12.5	14.8
Housing diameter (mm)	19, 31	19, 31	31	31	31	31
Housing length (mm)	85	85	85	85	85	85
Cable	Single: Type 900 - VW Sensor with Foil Screen & Drain Wire String: Type 910 - Multi-Core with Foil Screen & Drain Wire					

ORDERING INFORMATION

Number of points
Spacing of points
Cable length
Cable termination enclosures
Readout and data logger

* Other ranges available on request
** Readout dependent



Geosense Ltd, Nova House, Rougham Industrial Estate, Rougham, Bury St Edmunds, Suffolk IP30 9ND, England

www.geosense.co.uk e sales@geosense.co.uk t +44(0)1359 270457

V1.8 06/2023