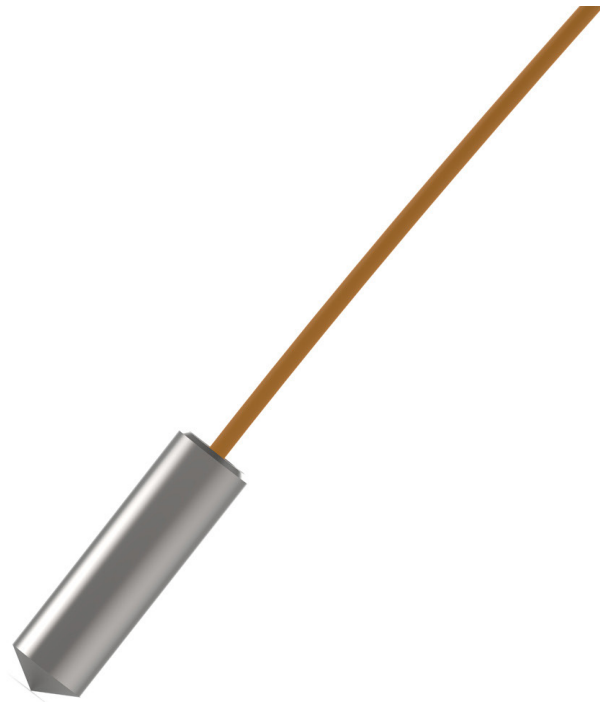


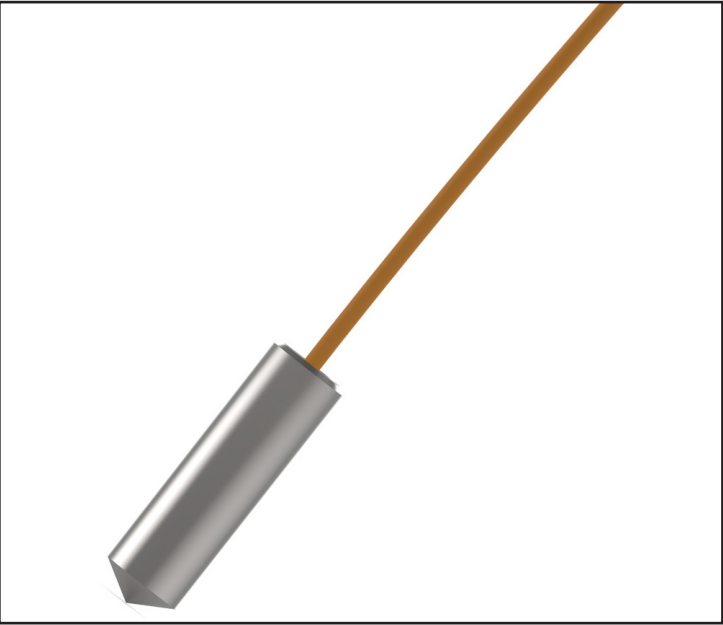
Resistance Temperature Detector (RTD) Pr100

Temperature sensor contains a platinum resistance thermometer that changes resistance value as its temperature changes and provides accurate and reliable long-term temperature measurements



Resistance Temperature Detector (RTD) Pt100

Overview



The Geosense® Pt100 temperature sensor contains a platinum resistance thermometer that changes resistance value as its temperature changes and provides accurate and reliable long-term temperature measurements. These sensors are often used in the extremely harsh environments found within Geotechnical monitoring.

The platinum element is housed inside a rugged enclosure and sealed with a special sealing material to ensure efficient thermal distribution and has IP68 waterproofing.

The principle of operation is to measure the resistance of a platinum element and in accordance with BS EN/IEC 60751:2008.

The basic values for Pt 100 temperature sensors can be calculated using the following formula:

For range 0°C to +600°C use: $R_t = R_0 (1 + At + Bt^2)$

For range -200°C to 0°C use: $R_t = R_0 (1 + At + Bt^2 + Ct^3 (t - 100))$

Where: R_t = resistance in Ohms at temperature t
 R_0 = 100 ohms at 0°C

$A = 3.9083 \times 10^{-3}$
 $B = -5.775 \times 10^{-7}$ t = temperature in °C
 $C = -4.183 \times 10^{-12}$

APPLICATIONS

For monitoring temperature in:
Concrete
Soil
Rock

FEATURES

Complies to class A BS EN/IEC 60751:2008
IP68 (10 bar)
Fast Response
High accuracy
Excellent long-term stability
Operating range -20 to +80 °C

Resistance Temperature Detector (RTD) Pt100

Specifications

GENERAL

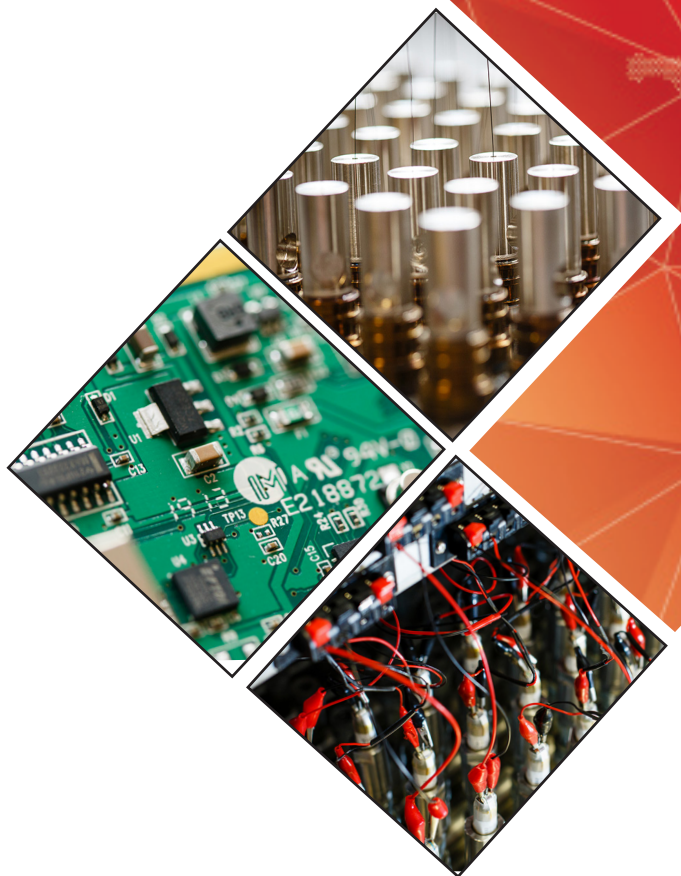
Model	PT100-1	PT100-2
Temperature range	-20 to +80 °C	-20 to +80 °C*
Temperature coefficient of resistance (TCR) ¹	0.00385 O/O/°C, 0 - 100°C	0.00385 O/O/°C, 0 - 100°C
Accuracy ²	±0.15°C at 0°C, ±0.35°C at 100°C	±0.15°C at 0°C, ±0.35°C at 100°C
Resolution	0.1 °C	0.1 °C
Housing	PVC	Stainless steel
Housing diameter (mm)	16	16
Housing length (mm)	65	65
Cable diameter (mm)	5	5
Cable construction	2 pair x AWG 24 with shield	2 pair x AWG 24 with shield
Cable sheath	PUR	PUR
Cable	Type 900 - VW Sensor with Foil Screen & Drain Wire	

ORDERING INFORMATION

Model
Cable length
Readout and datalogger

¹ In accordance with BS EN/IEC 60751:2008
² Accuracies quoted are for the element and may not be the actual accuracy of the completed assembly.





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