DARTS | SERIES

TEMPERATURE SENSOR PROBES

Introduction

The DARTS series is a line of thin film platinum RTD based temperature sensors ideal for demanding air conditioning, refrigeration and industrial applications where long term reliability is a must. Each configuration is specifically designed to optimize cost, robustness, and high absolute accuracy.

Features

- Available Metric and English Mounting Threads
- Thin Film Platinum temperature sensors displaying high linearity
- Flexibility in insertion depth: 25mm, 35mm, 40mm, 50mm, 70mm
- Straight and bended configurations for rear housing, 0º to 120º to facilitate installation on the engine

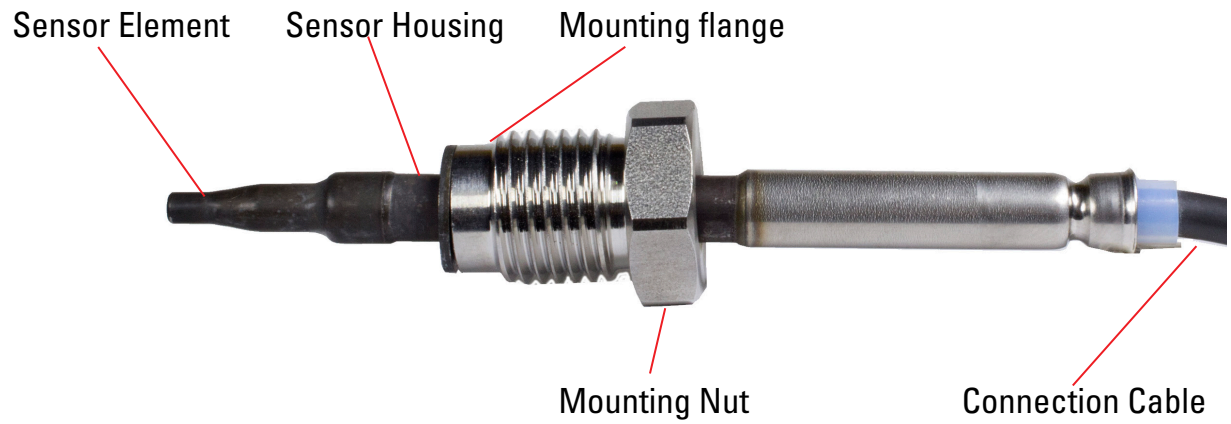
Applications

- Industrial Exhaust Gas
- HVAC
- Industrial
- Rugged immersion and air temperature sensing

SPECIFICATIONS

SENSOR FAMILY	DARTS1000-E	DARTS500-B	DARTS500-E	DARTS200-Aw	DARTS200-Ds
SENSOR ELEMENT	PT-1000 platinum RTD	PT-500 platinum RTD	PT-500 platinum RTD	PT-200 platinum RTD	PT-200 platinum RTD
NOMINAL RESISTANCE	1000Ω at 0°C	500Ω at 0°C	500Ω at 0°C	200Ω at 0°C	200Ω at 0°C
TEMPERATURE RANGE	Continuous -40°C to 150°C	Continuous: -40°C to 300°C Peak: 500°C	Continuous: -40°C to 550°C Peak: 600°C	Continuous: -40°C to 750°C Peak: 800°C	Continuous: -40°C to 850°C Peak: 900°C
ACCURACY	±1.0% from -40°C to 150°C	±2.5°C from -40°C to 160°C ±1.5% from 160°C to 300°C	Continuous: -40°C to 550°C Peak: 600°C	±2.5°C from -40°C to 280°C ±0.9% from 280°C to 750°C	±2.5°C from -40°C to 280°C ±0.9% from 280°C to 850°C
RESPONSE TIME T63		<12 seconds at 300°C, air velocity of 11m/s <6.5 seconds at 300°C, air velocity of 70m/s	<12 seconds at 300°C, air velocity of 11m/s <6.5 seconds at 300°C, air velocity of 70m/s	<12 seconds at 300°C, air velocity of 11m/s <6.5 seconds at 300°C, air velocity of 70m/s	<11 seconds at 300°C, air velocity of 11m/s <6.5 seconds at 300°C, air velocity of 70m/s
INSULATION RESISTANCE	>1MΩ at 20°C, VDC 500 Volt				
FASTENING	Mounting Nut				
CONNECTOR	Cable with connector chosen by customer	Integral MLK connector	Cable with connector chosen by customer	Cable with connector chosen by customer	Cable with connector chosen by customer

TYPICAL SENSOR CONSTRUCTION

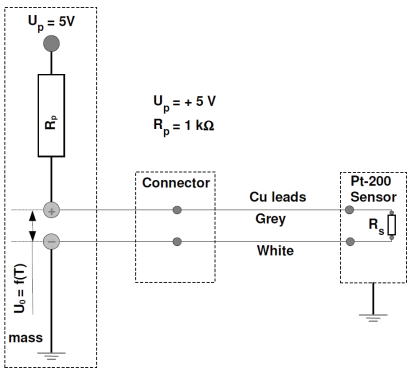


TYPICAL 5V MEASUREMENT CIRCUIT

Pull-Up Voltage	U_p = + 5V ± 0.1%
Pull-Up Resistance	R_p = 1kΩ ± 0.1%
A/D Converter Accuracy	10 bit
Polarity	Signal: Grey Ground: White
Operational Current	Between 2.7mA and 4.2mA
(Same methodology applies for other voltage systems (e.g. 3.3V), but operational current must be lower than 5mA)	

CONNECTION DIAGRAM

RTD circuit to MCU



WARNINGS

DANGER

RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.

CONTACT US

Americas
+1 (888) 438 2214
sensors@sensata.com
Europe, Middle East & Africa
+359 (2) 804 7165
temperature-info.eu@sensata.com
Asia Pacific
sales.isasia@list.sensata.com
China +86 (21) 2306 1500
Japan +81 (45) 277 7117
Korea +82-10-9218-1179
India +91 (80) 67920890
Rest of Asia +886 (2) 27602006 ext 2808

Rev:02/02/2018