Mil-Spec Temperature Sensor

0-5V Temperature Sensor and Transmitter

CE-050-03 is a robust temperature sensor with built in transmitter covering a wide measurement range from -50°C to +170°C in standard form*. The sensor ensures a precise measurement using advanced electronics and high accuracy Class B 1/3 DIN PT-1000, continually providing a ratiometric voltage output over a range of 0.25 to 4.75VDC.

Being fully configurable, the transmitter allows you to modify the output voltage to any probe temperature across its measurement range. The sensors are supplied factory calibrated to customer requirements.

The temperature probe and electronics can be packaged within limitless design configurations offering a range of metric/imperial threads, temperature probe diameters, custom electronic housings and connector/flying wire interfaces to cover your exact requirements.

* High temperature variants up to 250°C available.

Stainless steel probe for extreme conditions

Sealed semi-remote electronics fitted to connector

Key Features

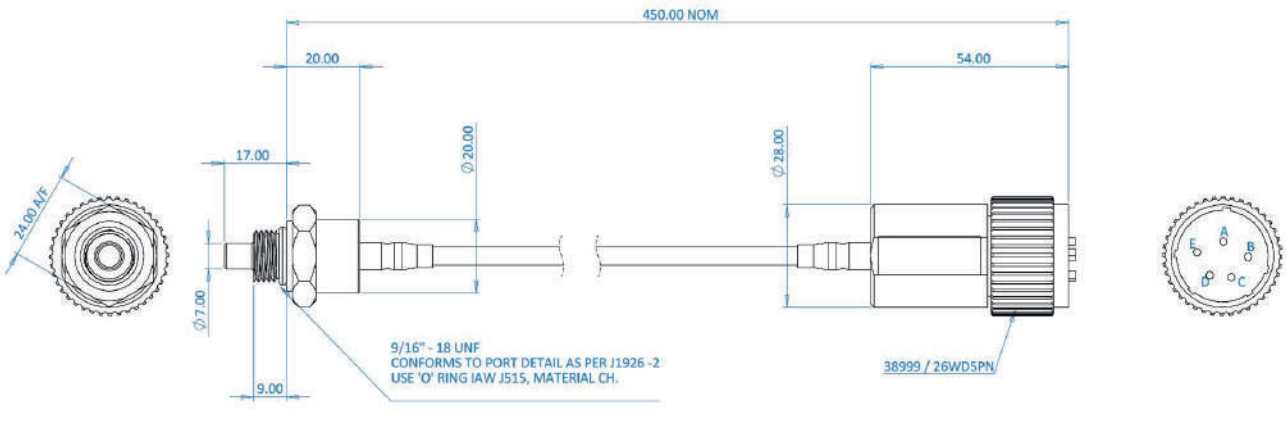
- Solid-state, continuous temperature sensing across a wide range from -50°C to +170°C (high temperature variants up to 250°C available)
- High Accuracy PT-1000 (Class B 1/3 DIN) sensing element
- Designed for long-term reliability in harsh environments
- 1000bar fluid pressure designs available
- Rapid turn-around (2-3 weeks typical)
- Ratiometric output
- Factory calibrated (UKAS calibration certificate available)
- Integrated military specification D38999 connector

Benefits

- No moving parts for increased reliability of sensor measurements.
- Rigorously tested and designed to meet Mil-Std EMC certifications.
- Accurate factory calibration for easy plug and play installation.
- Multiple output formats available (CAN, 0-5V).

Example Temperature Sensor Dimensions

(Example shown fitted with MIL connector)
Flying lead options also available.



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Temperature Measurement

Accuracy	±0.5% of reading at 20ºC ±2% of reading across temperature range
Sensing Element	PT1000 Duplex
Measurement Rate	10kHz
Calibration	UKAS or traceable calibration available on request

Electrical

Supply Voltage	+5 VDC ±0.5 VDC
Typical Operating Current	<10mA at +5 VDC

Output

Type	Voltage
Typical Output Range	0.25 VDC: -50ºC 4.75 VDC: +170ºC Fully Configurable across 0-5 VDC
Resolution	12 bit

Environmental

Environmental Protection	IP69 when mated with connector
Probe Pressure Rating	Dependant on design (1000 bar fluid pressure ratings available)
Vibration	Designed to meet: 10Hz to 2000Hz sine sweep @10G (6hrs per each axis)
Shock	Designed to meet: 50G half sine wave for 11ms,10 times each axis
EMC	Designed to meet: EN61000-6-2:2005 EN61000-6-3:2007/A1:2011
Electronics Operating Temperature	-40ºC to +125ºC
Probe Operating Temperature	-50ºC to +170ºC (High temperature variants up to 250ºC available)

Mechanical

Construction Material	Stainless Steel 316L (Sensor), Anodised Allloy (Connector & Backshell)
Mass	146g
Sealing Elastomers	Fluorocarbon
Sealing Gasket	Supplied per sensor (Fluorocarbon)

Wiring Specification

Connector Options	Flying lead MIL-DTL-38999 / 26WD5PN Custom (Contact Us)
Jacket Elastomer	PFA
Wire Type	4 core, 7/0.2mm, silver plated copper, PFA twisted cores, silver plated copper braid screen, PFA jacket

Wiring Definition

Description	Wire Colour	PIN Out
Supply (+)	● Red	A
Ground (GND)	● Black	B
Signal	● Yellow	C
Tx Comms (Transmit)	○ White	D
Rx Comms (Receive)	● Green	E

Accessories

Calibration cable	P/N: 07-003-01

Configuration Interface

Type	Serial Interface
GUI	Available on request

Specifications may be subject to change without prior notice.

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