

SFMS

SENSORS AND FLUID MANAGEMENT SYSTEMS

AMETEK®

TEMPERATURE

Fluid Temperature Sensors

Reliable Sensor Design

AMETEK Aerospace & Defense offers a highly reliable and cost effective method of sensing the temperature of aircraft fluids, including fuel, engine oil, and hydraulic fluid. The TJ107 family of Temperature Sensors is in service on numerous commercial and military aircraft around the globe. AMETEK utilizes proven sensing technologies including Resistance Temperature Devices (RTD) and Type-K Thermocouples for measuring fluid temperature depending on system interface or accuracy considerations.

Flexibility in Mechanical Package

AMETEK's experience with the unique environmental requirements of aircraft fluid systems provides the customer with the assurance of a low-risk solution. AMETEK offers a standard, all-stainless steel, hermetic package for value and schedule considerations, but can also tailor the design to your unique requirements also. Mechanical interface options include an industry standard, threaded fluid fitting, or a flange mount for connector keying and error-proof installations.

Variety of Electrical Interfaces

Electrical connections can be accomplished with either a receptacle connector or integral cable assembly with a remote termination. Time response requirements are weighed against the structural requirements for the design. Additionally, AMETEK can offer dual elements for redundancy. Multiple RTD Resistance vs. Temperature curves are available within the same package. Typical elements used include platinum thin film for 100 and 1000 applications. Platinum wire wound elements can be packaged for 100, 200 and 500 applications. In addition, nickel wire wound elements per MIL-T-7990 standards are offered.

Extensive Aircraft Sensor Experience

AMETEK's experienced engineers provide applications and sensor know-how to optimize your system design. AMETEK Aerospace & Defense has built a reputation for supplying innovative products for the most demanding aerospace applications.



Features

- Hermetic construction threaded fitting or mount options
- Time response less than 5 seconds
- RTD availability in 2 or 3 wire configurations
- Single or dual element packaging
- Various R vs. T curves available
- Accuracy +/- 1 °C (typical)

Fluid Temperature Sensors

Specifications

Fluid and Ambient Temperature Range:

-65° to 392°F (-54° to 200°C)

Normal Resistance Available:

100 at 0°C / 200 at 0°C / 500 at 0°C / 1000 at 0°C

RTD Alpha (α): 0.00385 / °C (Pt DIN)

RTD Alpha (α): 0.00375 / °C (Pt 1000 ohm)

Mil-T-7990 (Nickel) (90.38 at 0°C)

Element Accuracy:

DIN EN 60751 typical +1.8°F at 212°F (+1°C at 100°C)

Response Time:

5 seconds maximum typical Input Current: 1 mA maximum recommended for low self-heating error

Vibrations:

30 G at 3000 Hz, 85 G Shock Proof

Pressure: 1000 psi Insulation Resistance: 100 megohms minimum at 500 VDC

Dielectric Strength:

1000 VAC Hermeticity: 1 × 10⁽⁻⁶⁾ std cc/sec helium

Estimated MTBF:

500,000 hours

Weight:

As low as 0.08 lb (36 g)

Threaded Fitting per AS4395E04

Connector per D38999/25YA98PN

Dimensions (typical)

