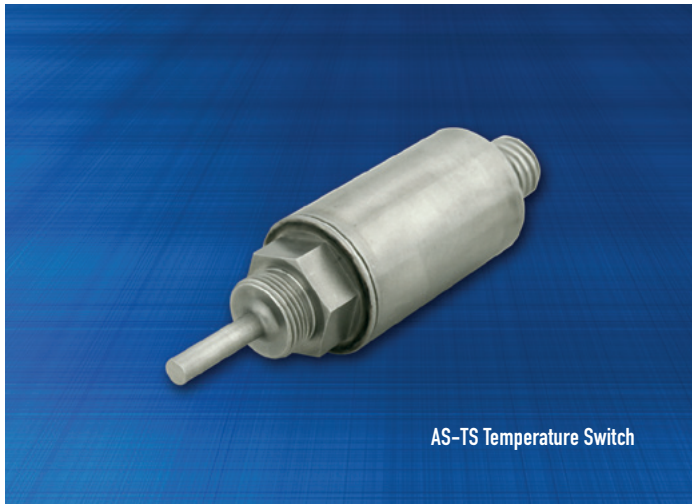


Model AS-TS

Temperature Switches



AS-TS Temperature Switch

FCI Temperature Measurement Solutions

FCI Aerospace provides a complete line of temperature measurement solutions for on-board aircraft applications. The products include temperature sensors and elements (AS-TE models), temperature switches (AS-TS models) and temperature transmitters (AS-TT models).

FCI temperature measuring products utilize precision resistance temperature detectors (RTDs). RTDs provide superior accuracy, repeatability and long-life making them the ideal choice for demanding aerospace applications. FCI sensors typically use Platinum RTD or MIL-T-7990 Nickel RTD sensors. The Platinum RTDs are available in several R_0 (ice point resistance) values and in either 2, 3, or 4 wire configurations to ensure optimal performance and system compatibility.

Temperature Switch Applications

- Environmental cooling systems
- Power management systems
- Fluid temperature control
- Cabin air temperature management
- Temperature limit alarms

FCI's Temperature Switch Features

- High reliability
- Wide temperature range
- Up to three (3) different switch points
- Simple installation
- Rugged, durable packaging
- Military standard connectors and connections
- Exceptional corrosion and abrasion resistance

Model AS-TS Temperature Switches

AS-TS temperature switches are designed to meet the demanding, high reliability requirements of commercial and military aircraft. They are fully qualified to meet the high vibrations, severe shock, high acceleration, and EMI environments conditions in both fixed wing and rotary aircraft applications. They have been fully qualified to RTCA/DO-160C environmental, power, and electronic interference requirements. They are both compact and light weight.

Utilizing precision RTD (resistance temperature detectors) sensors, AS-TS provide a highly accurate and repeatable temperature trip/alarm points over ranges from -40°F to $+350^{\circ}\text{F}$ [-40°C to 177°C]. The AS-TS can be provided with up to three trip points, settable in any combination as a high or low trip value. If only two trip points are needed, a 0-5Vdc analog output can be optionally added.

The AS-TS sensor can be provided in virtually any length to accommodate the insertion depth required by the specific application. The electrical connection can be a flying lead (pigtail cable) to your specified length or your choice of commercial or military connectors. While most often specified as a unified, single piece, the AS-TS can be optionally supplied as a two-piece, where the electronics can be remotely mounted from the sensor element.

The standard sensor and electronics are packaged in 300 Series stainless steel to ensure compatibility with a broad variety of fluids and long service life. Upon request, FCI can also supply the wetted sensor and/or electronics housing in alternative materials such as aluminum and titanium. The AS-TS is provided with a threaded mounting connection. The threaded connection includes straight military or aerospace style fittings that seal with an O-ring.

World Class Design and Quality Assurance

FCI Aerospace's design team utilizes the latest tools in computer aided engineering technology and has access to FCI's extensive test and calibration facilities to fully analyze, validate, and optimize sensors under a variety of conditions. FCI Aerospace manufacturing and quality systems are ISO-9001 and AS-9100 certified.

Model AS-TS Temperature Switch General Specifications

- **Service:** Temperature measurement switch for liquid or gas
- **Material of Construction:** All welded, 300 series stainless steel; titanium or other alloys optional
- **Electrical Connection:** Military or commercial electrical connector, pigtail cable of customer specified type and length
- **Process Connection:** Threaded or flanged
Typical threaded process connection:
MS33656
Consult factory for other connections
- **Insertion Length:** 0.5 inches to 1.0 inches [12,7 mm to 25,4 mm]
- **Temperature Performance Properties**

Typical electrical properties

Output with 28 Vdc input	Open-leakage < 40µA	Close-sink 400µA - 800mA
No. 1	On temperature rise (Temp 1) °C + 3 °C/-0 °C	On temperature decline (Temp 2) °C + 0 °C/-3 °C
No. 2	On temperature rise (Temp 3) °C + 3 °C/-0 °C	On temperature decline (Temp 4) °C + 0 °C/-3 °C
No. 3 ^a	On temperature rise (Temp 5) °C + 3 °C/-0 °C	On temperature decline (Temp 6) °C + 0 °C/-3 °C
No. 3 ^b	0.5 to 4.5 volts	
Nos. 1, 2 and 3	At no power	N/A

Sensor Parameters

Weight	0.23 lbs to 0.5 lbs
Temperature Range	
Storage	-60 °F to +300 °F [-51 °C to 149 °C]
Operating	
Media	-40 °F to +350 °F [-40 °C to 177 °C]
Ambient	-40 °F to +185 °F [-40 °C to 85 °C]
Switch Point Range	-40 °F to +350 °F [-40 °C to 177 °C]
Number of Points	Up to 3
Switch Point Hysteresis	< 18 °F [10 °C]
Repeatability	± 0.9 °F [± 0.5 °C]

Electrical Parameters

Input Current	< 15 mA
I.R. Test Voltage	< 200 Vdc
D.R. Test Voltage	< 200 Vdc
Bonding	< 2.5 milliohms

Notes

- In a three set point configuration
- With two (2) switch points and an analog output

Environmental Parameters

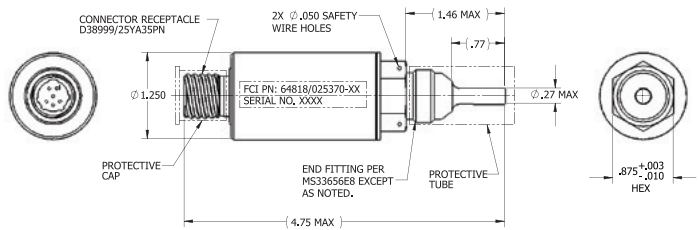
Proof Pressure:	1,000 psig [69 bar(g)]
Operating Pressure:	1,500 psig [103 bar(g)]
Altitude:	100,000 ft [30,480 m]
Humidity:	100%
Thermal Shock:	18 °F/min [10 °C/min]
Vibration:	MIL-STD-810
Acceleration:	10 gs

Qualifications

MIL-STD-130	Markings
MIL-STD-810	Environmental testing
MIL-STD-704E	Electric power
RTCA/DO-160C	Environmental testing

Quality Systems Approval: ISO 9001, AS 9100

Temperature Switch With Threaded Mounting Connection



Visit FCI online at www.FCIAerospace.com | FCI is ISO 9001:2000 and AS9100 Certified

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