

# FCI Aerospace Division

## Temperature Transmitter Series: Model AS-TT

### *Aerospace and Military Applications*



#### FCI's Temperature Transmitter

FCI Aerospace Division provides a complete line of temperature transmitters that feature an analog output as a function of process temperature. The sensors use a Resistance Temperature Detector (RTD) and FCI's electronic package to provide a 4 to 20 milliamp or 0 to 5 Volt output at customer specified temperature ranges. As an added benefit, the same sensor can also optionally serve as a temperature switch that provides a discrete high or low output at two different temperature set points. The lightweight, small package design can be used in a variety of aerospace and military applications.

The sensors are typically packaged in AISI 300 series stainless steel bodies and can be designed to support a variety of installation techniques. Custom designs can provide sensors made from aluminum, titanium, and other thermally conductive materials. Transmitters can be provided with a flange or threaded mounting connection. The threaded mounting connection includes straight military or aerospace style fittings that seal with O-rings or gaskets, or National Pipe Thread (NPT) that seal with pipe sealant or tape. The flanged mounting is available in a number of arrangements that will mate with virtually any customer's process connection.

#### FCI's Temperature Transmitter Features

- » No moving parts
- » High reliability
- » Wide temperature range
- » Two different analog output choices
- » Can serve as a two set point temperature switch
- » Simple Installation
- » Light weight, compact design
- » Exceptional corrosion and abrasion resistance

#### Wide Variety of Mounting Options

The Temperature Transmitter can be tailored to meet a variety of applications. The insertion length of the thermowell may be specified with a flush mounted configuration that does not penetrate the sensing environment or with an extended length element up to 40 inches. The customer specifies the length that best meets their requirements.

FCI will supply its Temperature Transmitter product line with variable length flying leads (pigtail cable) or with a wide variety of commercial or military connectors. The design will even allow the sensor and electronics to be integrally or remotely mounted.

FCI Aerospace Division Temperature Transmitters are designed to meet the demanding requirements of our aerospace and military customers. FCI has sensors that have been fully qualified to meet the high vibration, severe shock, high acceleration, and EMI environments that our customers expose them to. They have been fully qualified to RTCA/DO-160C environmental, power, and electronic interference requirements. They have been designed to perform after exposure to temperatures from -40°F to over 300°F, and can survive temperatures of -85°F to over 400°F. High temperature transmitters are available to 650+°F.

FCI's Aerospace design team uses the latest in computer aided engineering technology and has access to FCI's extensive test and calibration facilities to fully analyze and test sensor under a variety of conditions. Custom designs are available for any application. FCI fully tests each sensor to your requirements before shipping them to you. After all, we strive to continually meet and exceed our customer expectations and requirements for products and services.

#### FCI's Temperature Switches Applications

- » Environmental Cooling Systems
- » Bleed Air
- » Fluid Temperature Control
- » Coolant/Refrigerant
- » Hydraulic Oil
- » Fuel

Visit FCI Aerospace Division on the Web: [www.fluidcomponents.com](http://www.fluidcomponents.com)

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## Temperature Transmitter Series: Model AS-TT

### Specifications

**Service:** Temperature transmitter for liquid or gas.

**Material of Construction:** All-welded, 300 series stainless steel; aluminum, 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 connections  
 AS930 .250 – 18 Dryseal NPTF  
 AS4395 .375 – 18 Dryseal NPTF  
 MS33656

**Insertion Length:** 0.160 to 4.0 inches.

**Temperature Performance Properties:**  
 Typical electrical properties.

Transmitter Output	With a 28 VDC input
No. 1 <sup>a, b</sup>	0.5 to 4.5 volts; or 4 - 20 mA

Switch Output	Open-leakage	Close-sink
	< 40µA	400µA - 800mA
No. 2 <sup>b</sup>	On temperature rise (Temp 1) °C + 3 °C/-0 °C	On temperature decline (Temp 2) °C + 0 °C/-3 °C
No. 3 <sup>b</sup>	On temperature rise (Temp 3) °C + 3 °C/-0 °C	On temperature decline (Temp 4) °C + 0 °C/-3 °C
Nos. 1,2 and 3	At no power	N/A

### Sensor Parameters:

Weight	0.23 lbs.
Temperature Range	-40°C to +100°C
Operating	-55°C to +212°C
Survival	-30°C to +90°C
Switch Point Range	up to 2
Number of Points	± 1°C
Switch Point Accuracy	<10°C
Switch Point Hysteresis	±.5°C
Repeatability	

### Electrical Parameters:

Input Current	<10 mA
I.R. Test Voltage	<500 VDC
D.R. Test Voltage °	<500 VDC
Bonding	<2.5milliohms

### Notes:

- a. With Analog output only.
- b. With 2 switch points and an Analog output.
- c. Without EMI filters

### Environmental Parameters:

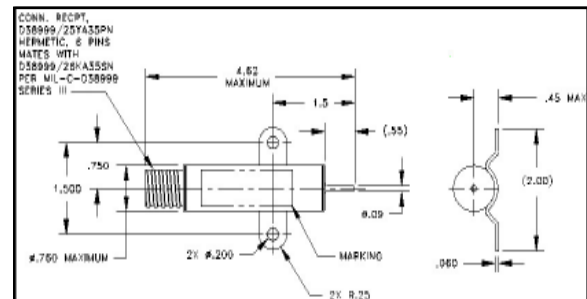
Proof Pressure:	12,500 PSIG
Operating Pressure:	7,500 PSIG
Altitude:	100,000 ft
Humidity:	100%
Thermal Shock:	10°C/min.
Vibration:	Rotary/Fixed Wing
Acceleration:	10 gs

### Qualifications:

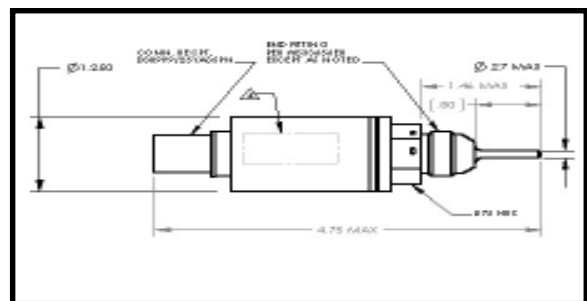
MIL-STD-130	Marking
MIL-STD-810	Environmental Testing
MIL-STD-889	Dissimilar Metals
MIL-STD-461/462	EM

### Quality Systems Approval:

ISO 9001  
 AS 9000



**Temperature Switch  
 With Bracket Mounting**



**Temperature Switch With Threaded  
 Mounting Connection**



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