Accutech TC10

Wireless Thermocouple Field Unit

Accutech field units eliminate costly hard wired installations by providing an easy-to-install and secure wireless link between field-based process instrumentation and control infrastructure. They are intended for use in extreme environments where typical wired communication is not feasible or economical. Field units are configured locally through a LCD/keypad or remotely with Accutech Manager, which also provides a user-friendly environment for wireless network diagnostics and management. A wide range of process types are supported with a maximum of 100 field units possible per base radio network.

TC10 Features:

- Thermocouple temperature sensor
- Common Thermocouple curves embedded in microprocessor
- 22-point offset function for non-standard curve programming and precision trimming

The Accutech TC10 wireless thermocouple temperature field unit provides temperature data using standard J, K, S and T-type thermocouples. Probes are available with either spring-loaded or direct insertion fitting in a variety of with probe lengths.

All Accutech field units automatically report field data to a centralized Accutech base radio over distances of up to 5000ft (1524m). Each field unit is self contained, featuring an integrated 900MHz (unlicensed band), frequency hopping, spread-spectrum transmitter and antenna, and long-lasting battery for up to 5 years of maintenance-free operation. Accutech field units are housed within a compact and weather-proof NEMA 4 enclosure with options for a NEMA 4X or explosion-proof enclosure, remote sensor and remote antenna on select models. All field units are rated CSA Class I, Div 1 and Div 2, and protected by an industry-leading 3-Year Warranty (parts and labor).

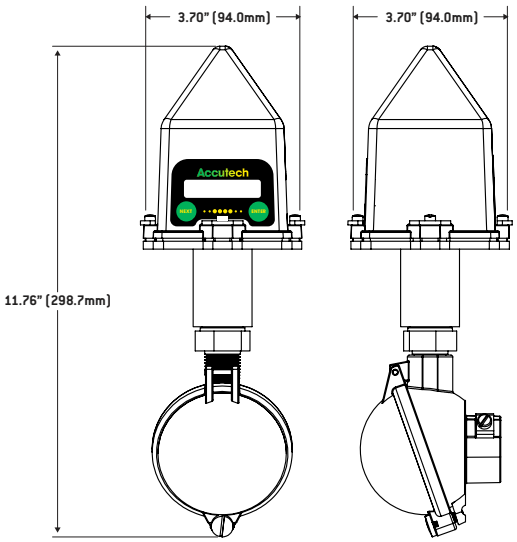
TC10 Specifications

Functional	
Sensor Type	Thermocouple Temperature
Location	Field Unit
Unlicensed Radio Frequency Range	902-928MHz
Power	Integrated battery
Features	
Remote Configuration Interface	Accutech Manager, Windows™-based GUI software, providing network-wide fault and performance-management features and field unit configuration capabilities.
Local Configuration Interface	Integrated LCD with membrane-switch buttons; display rotates through tag number, temperature and RF status
Sensor Accuracy:	■ ± 0.1% of full-scale reading plus 1.8°F (1°C) for thermocouple cold-junction effect at reference conditions ■ ± 0.01 % of reading per °C for ambient temperature effect
Stability:	Deviation per year is less than 0.025 %
RF Characteristics	■ 902MHz - 928MHz band (FCC/IC) ■ 915MHz - 928MHz band (Australia) ■ 915MHz - 921MHz band (New Zealand) ■ The RF module in each field unit is individually tested and calibrated over the full temperature range to ensure reliable wireless operation
Self-Diagnostics	■ Low battery alarm – indicates the need to replace the battery (approximately one month warning). ■ Contains extensive self-checking software and hardware that continuously monitors operation. Any sensor or device parameter that is out of spec is identified and reported.
General	
Operating Ambient Environment:	■ -40 to +185°F (-40 to +85°C) electronics, -4 to +158°F (-20 to +70°C) display with full visibility, -40 to +185°F (-40 to +85°C) display with reduced visibility ■ Humidity: 0 to 95 %, non-condensing
Thermocouple Types:	**J** 0° to 760°C (32° to 1400°F) **K** 0° to 1260°C (32° to 2300°F) **S** 0° to 1480°C (32° to 2700°F) **T** 0° to 370°C (32° to 700°F)
Power:	■ One 'C' Cell ■ Up to ten (10) year battery life (depends on sample rate and RF-update rate), field replaceable
Materials of Construction:	■ Type 316 stainless steel base and thermocouple sheath, GE Lexan® cover. V-0 rating and UV stable
Physical Characteristics:	■ Standard process connection 1/2" MNPT (other options available) ■ Thermowells available on request
Operating Shock and Vibration:	Certified per IEC EN00068 2-6 (vibration) and 2-27 (shock)
Random Vibration Characteristics:	Certified to withstand 6 g's, 15 minutes per axis from 9 – 500Hz
Electromagnetic Compatibility Safety Certifications:	Operates within specification in fields from 80 to 1,000MHz with field strengths to 30V/m. Meets EN 50082-1 General Immunity Standard and EN 55011 compatibility emissions standard. ■ Explosion Proof: Div 1: CSA - Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1, Groups E, F and G; Class III, Div. 1 Div 2: CSA - Class I, Div. 2, Groups A, B, C and D; Class II, Div. 2, Groups F and G; Class III ■ Intrinsically Safe: CSA - Exia IIC; AEx ia IIC: Class I, Div. 1, Groups A, B, C & D; Class II, Div. 1, Groups E, F & G; Class III, Div. 1

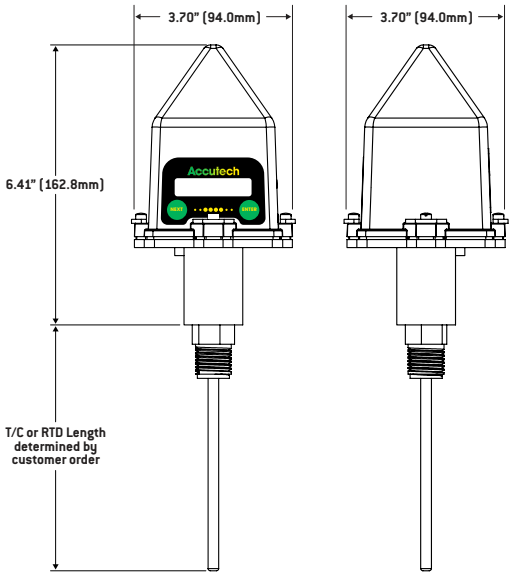
TC10

AC-TC10-TG11N00-S0N000 represents a typical part number.

Model	Type
AC-TC10	Thermocouple Temperature Field Unit
Code	**Select: RF Module Type**
T	902MHz - 928MHz band (FCC/IC)
D	915MHz - 928MHz band (Australia)
N	915MHz - 921MHz band (New Zealand)
Code	**Select: Safety Rating**
G	General Purpose (non-hazardous locations)
	Explosion Proof Div 1
A	Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1, Groups E, F and G; Class III, Div. 1
	Explosion Proof Div 2
E	Class I, Div. 2, Groups A, B, C and D; Class II, Div. 2, Groups F and G; Class III
	Intrinsically Safe
J	CSA - Exia IIC; AEx ia IIC: Class I, Div. 1, Groups A, B, C & D; Class II, Div. 1, Groups E, F & G; Class III, Div. 1
Code	**Select: Housing**
1	NEMA 4 - Available with general purpose or intrinsically safe ratings
2	Aluminum - Available with all ratings. Required for explosion-proof safety rating
Code	**Select: Battery Pack**
1	One 'C' Cell
Code	**Future Option**
N	None
Code	**Select: Integral Antenna or Cable & Connector Interface**
00	Integral Antenna with Explosion Proof Antenna Cover (meets explosion-proof Div 1/ Div 2 & intrinsically safe rating)
01	Integral N-Male connector for Remote Antenna (meets explosion-proof Div 2 & intrinsically safe rating)
10	10ft. Cable with N-Male connector for remote antenna configurations (meets explosion-proof Div 2 & intrinsically safe rating)
25	25ft. Cable with N-Male connector for remote antenna configurations (meets explosion-proof Div 2 & intrinsically safe rating)
Code	**Select: Sensor Mounting**
S	Integrated T/C (Requires selection of Type, Fitting and Probe length below)
B	Remotely mounted T/C - c/w NEMA 4 aluminum rear entry junction box (T/C not included)
C	Remotely mounted T/C - c/w NEMA 4 epoxy-coated aluminum rear entry junction box (T/C not included)
D	Remotely mounted T/C - c/w NEMA 4X stainless steel junction box (T/C not included)
E	Remotely mounted T/C - c/w explosion-proof junction box (T/C not included)
Code	**Select: Thermocouple Type**
0	No Thermocouple (purchased separately)
1	J-Type
2	K-Type
3	S-Type
4	T-Type
Code	**Select: Fitting**
N	No Thermocouple (purchased separately)
B	Spring-loaded fitting
D	Direct-insertion welded
Code	**Select: Probe Length**
000	No Thermocouple (customer-supplied)
XXX	Required probe length, XX.X inches as XXX (no decimal point)



Remote Sensor Option



Integral Sensor

Printed in Canada ■ V029 ■ M01011-73