

## 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/monitoring infrastructure. They are intended for use in extreme environments where typical wired installation 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 (~1500m). 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 remote sensor and remote antenna on select models. Field units are available in a wide range of certifications and are 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:	<ul style="list-style-type: none"> <li>■ ± 0.1% of full-scale reading plus 1.8°F (1°C) for thermocouple cold-junction effect at reference conditions</li> <li>■ ± 0.01 % of reading per °C for ambient temperature effect</li> </ul>
Stability:	Deviation per year is less than 0.025 %
RF Characteristics	<ul style="list-style-type: none"> <li>■ 902MHz - 928MHz band (FCC/IC)</li> <li>■ 915MHz - 928MHz band (Australia)</li> <li>■ 915MHz - 921MHz band (New Zealand)</li> <li>■ Up to 5000ft (~1500m) typical range with obstructions</li> <li>■ The RF module in each field unit is individually tested and calibrated over the full temperature range to ensure reliable wireless operation</li> <li>■ Transmit Power: +13dBm</li> <li>■ Receive Sensitivity: -113dBm</li> <li>■ Adjacent Channel Rejection: 48dBc</li> <li>■ Alternate Channel Rejection: 62dBc</li> </ul>
Self-Diagnostics	<ul style="list-style-type: none"> <li>■ Low battery alarm – indicates the need to replace the battery (approximately one month warning).</li> <li>■ 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.</li> </ul>
General	
Operating Ambient Environment:	<ul style="list-style-type: none"> <li>■ -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</li> <li>■ Humidity: 0 to 95 %, non-condensing</li> </ul>
Thermocouple Types:	<ul style="list-style-type: none"> <li>J 0° to 760°C (32° to 1400°F)</li> <li>K 0° to 1260°C (32° to 2300°F)</li> <li>S 0° to 1480°C (32° to 2700°F)</li> <li>T 0° to 370°C (32° to 700°F)</li> </ul>
Power:	<ul style="list-style-type: none"> <li>■ One 'C' Cell</li> <li>■ Up to ten (10) year battery life (depends on sample rate and RF-update rate), field replaceable</li> </ul>
Materials of Construction:	<ul style="list-style-type: none"> <li>■ Base Plate: 304 Stainless Steel</li> </ul>
Physical Characteristics:	<ul style="list-style-type: none"> <li>■ Cover: GE Lexan®, V-0 rating and UV stable</li> <li>■ Process Connection: 1/2" MNPT</li> </ul>
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. <ul style="list-style-type: none"> <li>■ Intrinsically Safe: <ul style="list-style-type: none"> <li>CSA - Exia IIC; AEx ia IIC: Class I, Div. 1, Groups A, B, C &amp; D; Class II, Div. 1, Groups E, F &amp; G; Class III, Div. 1</li> </ul> </li> </ul>

## TC10

AC-TC10-TJ11N00-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)
	<b>Intrinsically Safe</b>
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
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 Antenna Cover
01	External YAGI Antenna, 6db, attached to base of unit
10	10ft. Cable with N-Male connector for remote antenna configurations
25	25ft. Cable with N-Male connector for remote antenna configurations
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 & Bracket not included)
C	Remotely mounted T/C - c/w NEMA 4X Epoxy coated cast steel bottom entry j-box (T/C & Bracket not incl.)
D	Remotely mounted T/C - c/w NEMA 4X Stainless Steel rear entry junction box (T/C & Bracket not included)
Code	Select: Thermocouple Type
0	None (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	Enter Required Probe length XX . X inches as XXX (no decimal point) - contact factory for > 9 inches

Note: Consult Accessories Datasheet for mounting brackets

