

Accutech TC10

Wireless thermocouple temperature field unit





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.

Accutech field units automatically report field data to a centralised Accutech base radio over distances of up to 3000ft (~1000m). Each field unit is self-contained, featuring an integrated 900MHz or 2.4GHz (license-free band), frequency hopping, spread-spectrum transceiver and antenna, and long-lasting battery that offers 3+ years of maintenance-free service (up to 10 years depending on data rates and battery options). Accutech networks are highly scalable with the possibility of 100 field units per base radio and 256 base radios per installation. Accutech field units are housed within a compact and weather-resistant NEMA4 enclosure with options for a remote sensor and remote antenna on select models. Field units are available in a wide range of certifications and come with a 3-Year warranty (parts and labor).

Product Data Sheet Accutech TC10

Specifications

> Accutech TC10	
Functional	
Sensor Type	Thermocouple Temperature
Location	Field Unit
Frequency Range	900MHz and 2.4GHz license-free bands
Power	Integrated battery
Network Capacity	<ul style="list-style-type: none"> Max. 100 field units per base radio Max. 256 base radios per network
Features	
Remote Configuration Interface	Accutech Manager, Windows™-based GUI software, providing network-wide monitoring 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	<p>Electronics accuracy:</p> <ul style="list-style-type: none"> ± 0.1 percent of full-scale reading plus 1°C (1.8 °F) for thermocouple cold-junction effect at reference conditions <p>Ambient temperature effect:</p> <ul style="list-style-type: none"> ± 0.01% of reading per °C (1.8 °F) ambient temperature difference from reference condition (20°C or 68°F). <p>Stability:</p> <ul style="list-style-type: none"> Deviation per year is less than 0.025% <p>Thermocouple accuracy:</p> <ul style="list-style-type: none"> J-Type: the greater of +/- 1.1°C (2°F) or 0.4% of reading K-Type: the greater of +/- 1.1°C (2°F) or 0.4% of reading S-Type: the greater of +/- 0.6°C (1.1°F) or 0.1% of reading T-Type: the greater of +/- 0.5°C (0.9°F) or 0.4% of reading For user-provided thermocouples see the manufacturer's data sheet.
Stability	Deviation per year is less than 0.025%
RF Characteristics	<p>900MHz:</p> <ul style="list-style-type: none"> 902 to 928MHz Frequency Hopping Spread Spectrum (FHSS), FCC certified ISM license-free band 915 to 928MHz (Australia) 921 to 928MHz (New Zealand) Data Rates: 4,800, 19,200 or 76,800bps 0.4W maximum <p>2.4GHz:</p> <ul style="list-style-type: none"> 2400 to 2483.5MHz ISM license-free band Frequency Hopping Spread Spectrum (FHSS) Radio Data Rates: 50/100kbps (FSK Modulation), 200kbps (GFSK Modulation) Typical Electrical Transmit Power: +10.6dBm Typical Receive Sensitivity (0.1% BER): -102dBm @ 50kbps, -99dBm @ 100kbps, -99dBm @ 200kbps Typical CW Receiver Blocking Rejection: 64dB for CW @ +/- 5MHz, 74dB for CW @ +/- 30MHz
Self-Diagnostics	<ul style="list-style-type: none"> Low battery notification – indicates the need to replace the battery (approximately one month advance notification). 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	<ul style="list-style-type: none"> -40 to +85°C (-40 to +185°F) electronics -20 to +70°C (-4 to +158°F) display -40 to +85°C (-40 to +185°F) display (extreme cold can reduce LCD visibility) Humidity: 0 to 95%, non-condensing
Thermocouple Types	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Standard Accutech field units include a single C-Cell (900MHz) or D-Cell (2.4GHz) lithium battery that offers battery life up to ten years of service, depending on data rates and battery options.
Physical Characteristics	<ul style="list-style-type: none"> Base Plate: 304 Stainless Steel Cover: GE Lexan®, V-0 rating and UV resistant Process Connection: 1/2" MNPT
Operating Shock and Vibration	Tested per IEC 60068-2-6 (vibration) and 2-27 (shock)
Random Vibration Characteristics	Tested to withstand 6 g's, 15 minutes per axis from 9 – 500Hz
Electromagnetic Compatibility	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.
Certifications	<p>North America HAZLOC:</p> <ul style="list-style-type: none"> cCSAus Intrinsically Safe: Exia IIC; AEx ia IIC Class I, Div. 1, Groups A, B, C & D, T3 Class II, Div. 1, Groups E, F and G, T3 Class III, T3 Class I, Zone 0, AEx ia IIC, T3 Class I, Div. 2, Groups A, B, C & D, T4 Class II, Div. 2, Groups F and G, T4 Class III, T4 <p>ATEX/IECEx HAZLOC:</p> <ul style="list-style-type: none"> LCIE Intrinsically Safe: Ex ia IIC T3 <p>EMC & Radio:</p> <ul style="list-style-type: none"> North America : FCC , IC Europe: CE Mark (R&TTE) Australia/New Zealand: C-Tick
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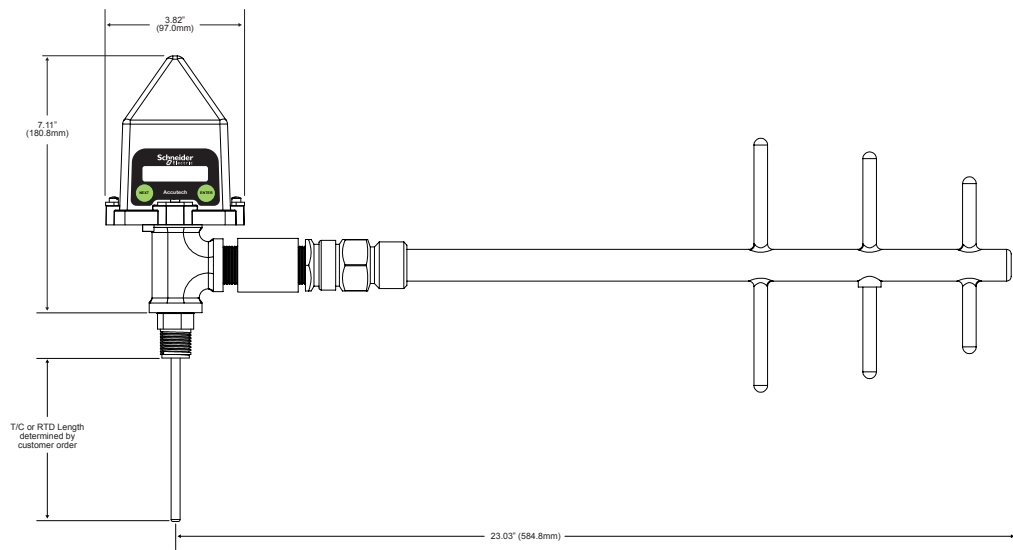
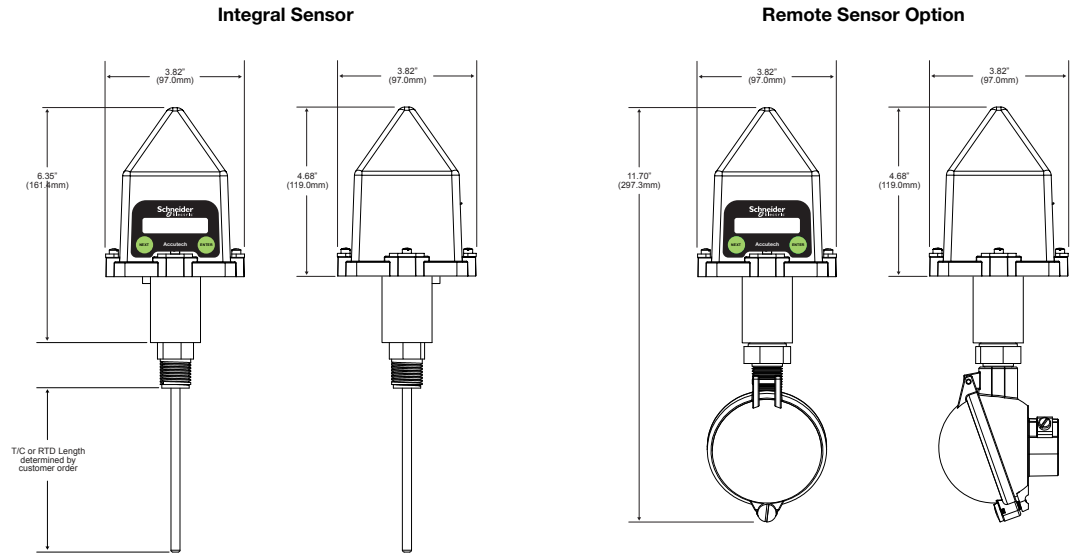
Product Data Sheet Accutech TC10 Model Code

	TBUATCTJPN00A0N000 represents a typical part number.
Model	Type
TBUATC	Wireless Thermocouple Field Unit
Code	Select: RF Module Type
T	902MHz - 928MHz band (FCC / IC)
D	915MHz - 928MHz band (Australia)
N	915MHz - 921MHz band (New Zealand)
F	2.4GHz band
Code	Select: Certifications
J	Intrinsically Safe Protection CSA – see product data sheet for certification details
Q	ATEX & IECEX - see product data sheet for certification details
Code	Select: Housing & Battery Pack
P	NEMA4 Polycarbonate Housing with 1 Cell (Available with Intrinsically Safe Rating)
Code	Select: Future Option
N	None
Code	Select: Integral Antenna or Cable & Connector Interface
00	Integral Antenna with Antenna Cover, the 2.4GHz NEMA4 unit also comes with an external antenna connector
01	<u>For 900MHz RF Module Systems - or - the 2.4GHz in a NEMA4X Aluminum Housing</u> External YAGI Antenna, 6db, attached to base of unit (not available with 2.4GHz RF NEMA4 unit)
10	10ft. (3.01m) cable with N-Male connector for remote antenna configurations (not available with 2.4GHz RF NEMA4 unit)
25	25ft. (7.62m) cable with N-Male connector for remote antenna configurations (not available with 2.4GHz RF NEMA4 unit)
Code	Select: Sensor Mounting (Remotely mounted T/C options provide connections for 2 T/C)
S	Integrated T/C (Requires selection of Type, Fitting and Probe length below)
A	Remotely mounted T/C - No junction box, exposed lead wires (T/C & Bracket not included)
B	Remotely mounted T/C - c/w NEMA4 Aluminum rear entry junction box (T/C & Bracket not included)
D	Remotely mounted T/C - c/w NEMA4X Stainless Steel rear entry junction box (T/C & Bracket not included)
Code	Select: Thermocouple Type
0	No Thermocouple (Purchased separately - TC10 supports Type B, C, E, J, K, L, N, R, S, T and U)
1	J Type
2	K Type
3	S Type
4	T Type
Code	Select: Fitting
N	No Thermocouple (Purchased separately – junction box provided for field termination)
B	Spring loaded fitting (Customer to install in thermowell)
D	Direct-insertion welded
Code	Select: Probe Length - 0.5 inch increments only
000	No Thermocouple (Purchased separately)
XXX	Enter Required Probe length XX . X inches as XXX (no decimal point) - contact factory for > 9 inches

Consult Accessories Section for mounting brackets

Product Data Sheet Accutech TC10 Dimensions

900MHz RF and Battery Unit (Sensor and external antenna option shown)



2.4GHz RF and Battery Unit (Sensor and external antenna not shown for clarity)

