# Accutech RT10

## Wireless RTD Temperature Field Unit

## Product at a glance

The Accutech™ RT10 wireless RTD temperature field unit provides temperature data using standard and non-standard RTDs (Resistance Temperature Detectors), including 4-wire DIN 100 platinum, SAMA 100 Ω platinum and DIN 1000 Ω platinum. Probes are available with either spring-loaded or direct-insertion fitting in a variety of probe lengths.

Accutech field units automatically report field data to a centralized Accutech base radio over distances of up to 3000 ft. (~1000 m). Each field unit is self-contained, featuring an integrated 900 MHz or 2.4 GHz (license-free band), frequency-hopping, spread-spectrum transceiver and antenna, and long-lasting battery that offers 5+ 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 weather-resistant NEMA 4X enclosure with options for a remote sensor and remote antenna on select models. Field units are available in a wide range of certifications.

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## Specifications - Accutech RT10

### General

| | |
|---|---|
| Sensor Type | RTD Temperature |
| Location | Field Unit |
| Frequency Range | 900 MHz and 2.4 GHz license-free bands |

### Functional

#### RTD Temperature Sensor

| | |
|---|---|
| Temperature Range | –200...800 °C (-330...1470 °F) |
| Accuracy | Electronics accuracy:<br>• ± 0.1% of full scale reading<br><br>Ambient temperature effect:<br>• ± 0.002% of reading per °C (1.8 °F) ambient temperature difference from reference condition (20 °C or 68 °F).<br><br>Stability:<br>• Deviation per year is less than 0.025%<br><br>RTD accuracy:<br>• 100 ohm platinum RTD: ± (0.15+0.002*\|T\|) for temperatures in the range -100 °C < T < 450 °C<br>• For user-provided thermocouples see the manufacturer's data sheet. |
| Linearisation | RTD linearization to ± .05 °C (0.09 °F), custom linearisation with 22-point curve |
| Operating Ambient Environment | • –40...85 °C (–40...185 °F) electronics<br>• –40...–20 °C (–40...–4 °F) display (below -20 °C LCD visibility reduced)<br>• Humidity: 0...95%, non-condensing |
| Materials of Construction | • Fittings: 316L Stainless Steel<br>• Epoxy-coated Aluminum enclosure |
| Power | • Self-contained power with integrated battery<br>• 1: D-cell Lithium Thionyl battery<br>• Battery life up to ten years of service, depending on configuration |
| Certifications | North America HAZLOC:<br>• cCSAus<br>• Intrinsically Safe:<br>• Ex ia IIC. T3; Class I, Zone 0, AEx ia IIC. T3<br>• Class I, Div. 1, Groups A, B, C & D, T3<br>• Class II, Div. 1, Groups E, F and G, T3<br>• Class III, T3<br>• Class I, Div. 2, Groups A, B, C & D, T4<br>• Class II, Div. 2, Groups F and G, T4<br>• Class III, T4<br><br>ATEX/IECEx HAZLOC:<br>• Intrinsically Safe<br>• Ex ia IIC T3<br>• LCIE 10 ATEX 3109 X<br>• IECEx LCI 10.0045X<br><br>EMC & Radio:<br>• North America: FCC , IC<br>• Europe: CE Mark<br>• Australia: C-Tick |

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## Common Accutech Field Unit Specifications

### Features

| | |
|---|---|
| Local Configuration Interface | • Integrated LCD with membrane-switch buttons<br>• Display provides pressure reading and error messages, if applicable<br>• Configure sampling and RF parameters locally using membrane-switch buttons |
| Remote Configuration Interface | Accutech Manager, Windows®-based GUI software, providing network-wide monitoring and performance-management features and field unit configuration capabilities |
| Network Capacity | • Max. 100 field units per base radio<br>• Max. 256 base radios per network |
| Self-Diagnostics | • Low battery notification – indicates the need to replace the battery (approximately one month advance notification)<br>• Contains software and hardware that continuously monitors operation. Any sensor or device parameter that is out of specification is identified and reported |
| RF Characteristics | 900 MHz:<br>• 902...928 MHz Frequency Hopping Spread Spectrum (FHSS), FCC certified ISM license-free band<br>• 915...928 MHz (Australia)<br>• Data Rates: 19.2 kbps, and 76.8 kbps<br>• Typical Electrical Transmit Power: 0.4 W maximum<br><br>2.4 GHz:<br>• 2400...2483.5 MHz license-free band Frequency Hopping Spread Spectrum (FHSS) Radio<br>• Data Rates: 50/100 kbps (FSK Modulation)<br>• Typical Electrical Transmit Power: +10.6 dBm<br>• Typical Receive Sensitivity (0.1 % BER): - 102 dBm @ 50 kbps<br>• Typical CW Receiver Blocking Rejection: 64 dB for CW @ +/- 5 MHz, 74 dB for CW @ +/- 30 MHz |
| Operating Shock and Vibration | Tested per IEC 60068-2-6 (vibration) and IEC 60068-2-27 (shock) |
| Random Vibration Characteristics | Tested to withstand 6 G, 15 minutes per axis from 9...500 Hz |
| Electromagnetic Compatibility | Operates within specification in fields from 80...1,000 MHz with field strengths to 30 V/m. Meets IEC 61000-6-2 General Immunity Standard and IEC 6100-6-4 compatibility emissions standard |
| Output Resolution | 24-bit analog-to-digital conversion |

# Accutech RT10
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## Model Code - Accutech RT10

**TBUARTTJ1N00B0N000** represents a typical part number.

| Model | Type |
|---|---|
| TBUART | Wireless RTD Temperature Field Unit |

| Code | Select: RF Module Type |
|---|---|
| T | 902...928 MHz band (FCC / IC) |
| D | 915...928 MHz band (Australia) |
| F | 2.4 GHz band |

| Code | Select: Certifications |
|---|---|
| | Intrinsically Safe Protection |
| J | CSA - see certification details on previous page |
| Q | ATEX & IECEx - see certification details on previous page |

| Code | Select: Housing & Battery Pack |
|---|---|
| 1 | NEMA 4X Housing with 1 D-cell |

| Code | Select: Future Option |
|---|---|
| N | None |

| Code | Select: Antenna |
|---|---|
| 00 | Integral Antenna (2.4 GHz unit comes default with integral antenna and external antenna connector) |
| 04 | External Antenna connector (900 MHz only, antenna and cables purchased separately) |

| Code | Select: Sensor Mounting |
|---|---|
| S | Integrated RTD (Requires selection of Type, Fitting and Probe length below) |
| B | Remotely mounted RTD - c/w NEMA 4 Aluminum rear-entry junction box (RTD & Bracket not included) |
| D | Remotely mounted RTD - c/w NEMA 4X Stainless Steel rear-entry junction box (RTD & Bracket not included) |

# Accutech RT10
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## Model Code - Accutech RT10 (cont'd)

**TBUARTTJ1N00B0N000** represents a typical part number.

| Code | Select: RTD Type |
|---|---|
| 0 | No RTD (purchased separately) |
| 1 | 4-wire DIN curve 100 ohm platinum RTD |

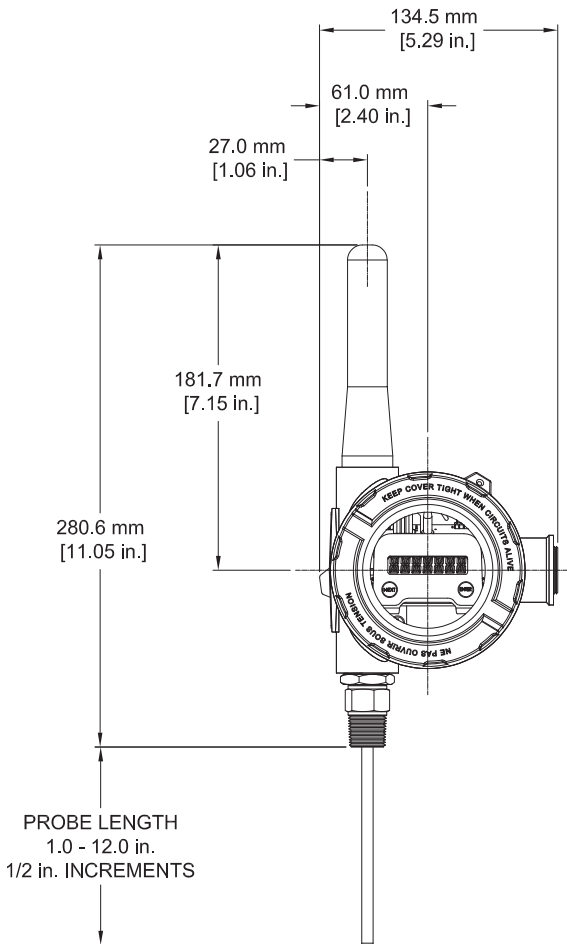| Code | Select: Fitting |
|---|---|
| N | No RTD (purchased separately - junction box provided for field termination) |
| B | Spring-loaded fitting (customer to install in thermowell) |
| D | Direct-insertion, welded |

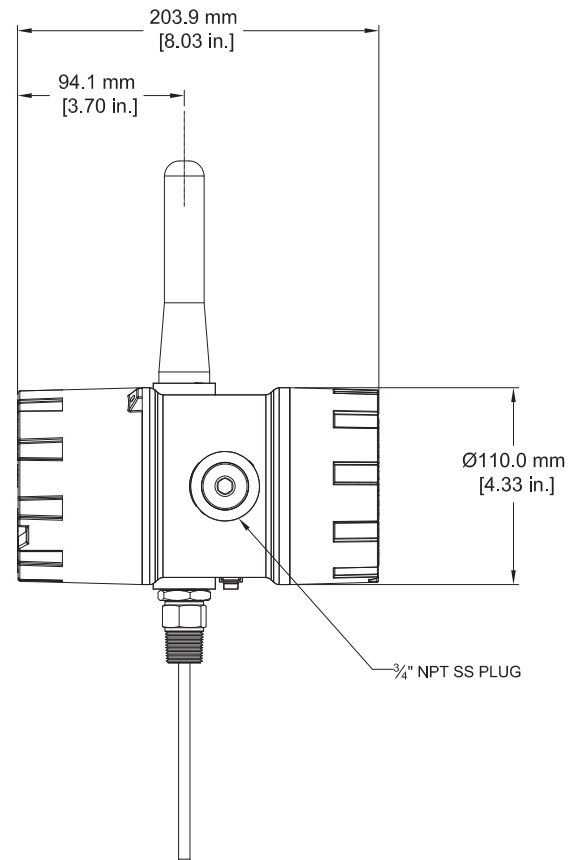| Code | Select: Probe Length – 0.5 in. increments only |
|---|---|
| 000 | No RTD (Purchased separately) |
| XXX | Enter Required Probe length XX . X in. as XXX (no decimal point) - contact factory for > 9 in. |

# Accutech RT10
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Dimensions - Accutech RT10

## FRONT VIEW



134.5 mm
[5.29 in.]

61.0 mm
[2.40 in.]

27.0 mm
[1.06 in.]

181.7 mm
[7.15 in.]

280.6 mm
[11.05 in.]

KEEP COVER TIGHT WHEN CIRCUITS ALIVE

NE PAS OUVRIR SOUS TENSION

PROBE LENGTH
1.0 - 12.0 in.
1/2 in. INCREMENTS

## SIDE VIEW



203.9 mm
[8.03 in.]

94.1 mm
[3.70 in.]

Ø110.0 mm
[4.33 in.]

¾" NPT SS PLUG

**Note**: This product is RoHS-compliant.

**Disclaimer**: Schneider Electric reserves the right to change product specifications. For ordering information call direct worldwide: +1 (613) 591-1943; Toll Free within North America: +1 (888) 267-2232 or Email: orderstrss@se.com. For more information visit www.se.com.

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