

Accutech TM10

Wireless Turbine Meter Totaliser Field Unit



Product at a glance

The Accutech™ TM10 wireless turbine meter field unit measures the volumetric flow rate of liquids or gases by detecting the frequency of pulses generated with a standard turbine meter (not included) and applying a user-configured proportional “K” factor. A 22-point correction curve is used as a final offset or for custom calibration of turbine meter as required. There are two principal outputs providing flow rate and totalised flow measurements.

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 and come.

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Specifications - Accutech TM10

General

| | |
|-----------------|--|
| Sensor Type | Turbine Meter Totaliser |
| Location | Field Unit |
| Frequency Range | 900 MHz and 2.4 GHz license-free bands |

Functional

Turbine Meter

| | |
|-----------------------------------|--|
| Frequency Range | 4 Hz...10 KHz |
| Electronic Accuracy and Stability | <ul style="list-style-type: none"> • Flow Rate accurate to $\pm 0.01\%$ of reading (not including turbine meter and pickup) • Applies to pulse frequencies above low cut-off of 4 Hz |
| Physical Connection | 1 in. female NPT connection to Turbine Meter Union for easy removal, pickup installation and replacement |
| Magnetic Pickup | Two-wire connector supplied. See supported model numbers in the Sensor Pickup section of the model code |
| Input Sensitivity (typical) | <ul style="list-style-type: none"> • 3.5 mV RMS @ 5 Hz • 3.5 mV RMS @ 50 Hz • 5 mV RMS @ 500 Hz • 45 mV RMS @ 5000 Hz |
| Operating Ambient Environment | <ul style="list-style-type: none"> • -40...+85 °C (-40...+185 °F) electronics • -40...+85 °C (-40...+185 °F) display (below -20 °C LCD visibility reduced) • Humidity: 0...95%, non-condensing |
| Materials of Construction | <ul style="list-style-type: none"> • Fittings: 316L Stainless Steel • Epoxy-coated Aluminum enclosure |
| Power | <ul style="list-style-type: none"> • Self-contained power with integrated battery • 1: D-cell Lithium Thionyl battery • Battery life up to ten years of service, depending on configuration |
| 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 1, Zone 0, AEx ia IIC, T3 • Class I, Div. 2, Groups A, B, C & D, 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: C-Tick |

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Common Accutech Field Unit Specifications

Features

| | |
|----------------------------------|--|
| Local Configuration Interface | <ul style="list-style-type: none"> • Integrated LCD with membrane-switch buttons • Display provides flow, total and detected error messages • 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 | <ul style="list-style-type: none"> • Max. 100 field units per base radio • Max. 256 base radios per network |
| Self-Diagnostics | <ul style="list-style-type: none"> • Low battery notification – indicates the need to replace the battery (approximately one month advance notification) • Contains software and hardware that continuously monitors operation. Any sensor or device parameter that is out of specification is identified and reported |
| RF Characteristics | <p>900 MHz:</p> <ul style="list-style-type: none"> • 902...928 MHz Frequency Hopping Spread Spectrum (FHSS), FCC certified ISM license-free band • 915...928 MHz (Australia) • Data Rates: 19.2 kbps, and 76.8 kbps • Typical Electrical Transmit Power: 0.4 W maximum <p>2.4 GHz:</p> <ul style="list-style-type: none"> • 2400...2483.5 MHz license-free band Frequency Hopping Spread Spectrum (FHSS) Radio • Data Rates: 50/100 kbps (FSK Modulation) • Typical Electrical Transmit Power: +10.6 dBm • Typical Receive Sensitivity (0.1 % BER): - 102 dBm @ 50 kbps • 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 EN 50082-1 General |
| Output Resolution | 24-bit analog-to-digital conversion |

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Model Code - Accutech TM10

TBUATMTJ1N00A00NA represents a typical part number.

| Model | Type |
|--------|---|
| TBUATM | Wireless Turbine Meter Totaliser 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 |
|------|---|
| A | Integral (direct connect of magnetic pick-up below, or customer-supplied – no Junction Box) |
| R | Remote Sensor (requires selection of a Junction Box below) |

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Model Code - Accutech TM10 (cont'd)

TBUATMTJ1N00A00NA represents a typical part number.

| Code | Select: Sensor Pickup |
|------|--|
| 00 | None (Intrinsic Safety rating "Option J" is available for customer-supplied pick-ups meeting specifications) |
| 01 | Magnetic pick-up, Electronic Data Devices model 4.303 - for turbine meters with an I.D. \geq 7/8 in. |
| 02 | Magnetic pick-up, Electronic Data Devices model 4.5050 - for turbine meters with an I.D. \leq 3/4 in. |

| Code | Select: Sensor Union |
|------|--|
| N | None (customer-supplied) |
| C | Stainless Steel Union, for Integral Sensor Mounting only (Shipped Assembled) |

| Code | Select: Junction Box |
|------|---|
| A | No Junction Box (exposed lead wires) |
| B | NEMA 4 - Aluminum Rear Entry, for Remote Sensor Mounting only |
| D | NEMA 4X - Stainless Steel Rear Entry, for Remote Sensor Mounting only |

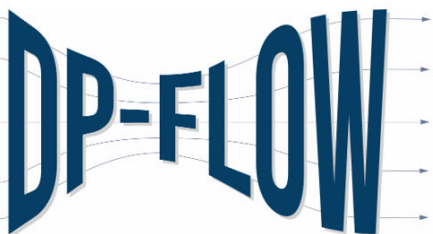
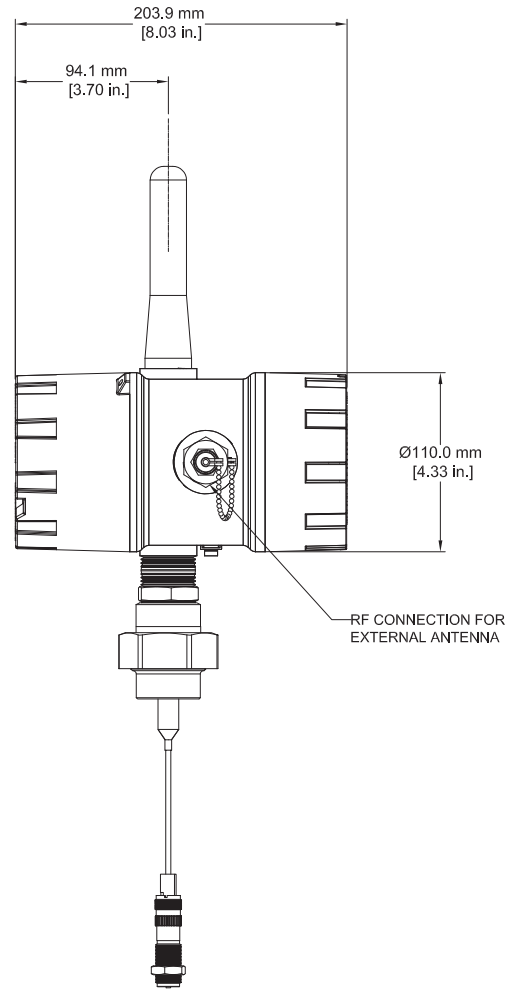
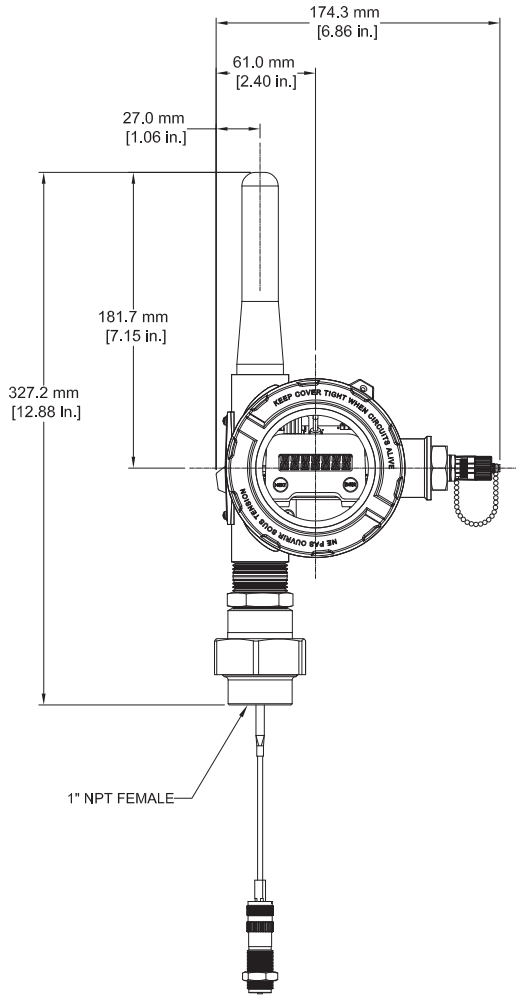
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Dimensions - Accutech TM10

FRONT VIEW

SIDE VIEW



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Life Is On

