

# Accutech TM10

Wireless turbine meter totaliser





The 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.

All 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 869MHz (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-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).

# Product Data Sheet Accutech TM10

## Specifications



### Accutech TM10

#### Functional

Sensor Type	Turbine Meter Totaliser
Location	Field Unit
Frequency Range	900MHz and 869MHz (Europe) license-free bands
Power	Integrated battery
Network Capacity	<ul style="list-style-type: none"> <li>• Max. 100 field units per base radio</li> <li>• Max. 256 base radios per network</li> </ul>

#### 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	<ul style="list-style-type: none"> <li>• Integrated LCD with membrane-switch buttons</li> <li>• Display provides flow, total and error messages</li> <li>• Configure sampling and RF parameters locally using membrane-switch buttons</li> </ul>

#### Turbine Meter

Electronic Accuracy and Stability	<ul style="list-style-type: none"> <li>• Flow Rate accurate to <math>\pm 0.01\%</math> of reading (not including turbine meter and pickup)</li> <li>• Applies to all pulse frequencies above low cut-off of 1Hz</li> </ul>
Physical Connection	1in. 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
Frequency Range	1Hz. to 10KHz
Input Sensitivity (typical)	<ul style="list-style-type: none"> <li>• 3.5mV RMS @ 5Hz</li> <li>• 3.5mV RMS @ 50Hz</li> <li>• 5mV RMS @ 500Hz</li> <li>• 45mV RMS @ 5000Hz</li> </ul>
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>• 869MHz (Europe)</li> <li>• Up to 3000ft (~1000m) 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 +85°C (-40 to +185°F) electronics</li> <li>• -20 to +70°C (-4 to +158°F) display with full visibility</li> <li>• -40 to +85°C (-40 to +185°F) display with reduced visibility</li> <li>• Humidity: 0 to 95%, non-condensing</li> </ul>
Materials of Construction	<ul style="list-style-type: none"> <li>• Base Plate: 304 Stainless Steel</li> <li>• Cover: GE Lexan®, V-0 rating and UV stable</li> </ul>
Power	<ul style="list-style-type: none"> <li>• Self-contained power</li> <li>• 1: 'C' Cell, (standard)</li> <li>• Standard Accutech field units include a single C-Cell lithium battery that offers 3+ years of maintenance-free service (up to 10 years depending on data rates and battery options).</li> </ul>
Operating Shock and Vibration	Certified per IEC 60068-2-6 (vibration) and 2-27 (shock)
Random Vibration Characteristics	Certified to withstand 6 g's, 15 minutes per axis from 9 – 500Hz
Electromagnetic Compatibility	Operates within specification in fields from 80 to 1,000MHz with field strengths to 30V/m. Meets EN 50082-1 General
Electromagnetic	<p>North America HAZLOC:</p> <ul style="list-style-type: none"> <li>• cCSAus</li> <li>• Intrinsically Safe: Exia IIC; AEx ia IIC</li> <li>• Class I, Div. 1, Groups A, B, C &amp; D, T3</li> <li>• Class 1, Zone 0, AEx ia IIC, T3</li> <li>• Class I, Div. 2, Groups A, B, C &amp; D, T4</li> </ul> <p>ATEX/IECEX HAZLOC:</p> <ul style="list-style-type: none"> <li>• LCIE</li> <li>• Intrinsically Safe: Ex ia IIC T3</li> </ul> <p>EMC &amp; Radio:</p> <ul style="list-style-type: none"> <li>• North America : FCC , IC</li> <li>• Europe: CE Mark (R&amp;TTE)</li> <li>• Australia/New Zealand: C-Tick</li> </ul>

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## Product Data Sheet Accutech TM10

### Model Code

	TBUATMTJPN00A00NA represents a typical part number.
<b>Model</b>	<b>Type</b>
TBUATM	Wireless Turbine Meter Totaliser Field Unit
<b>Code</b>	<b>Select: RF Module Type</b>
T	902MHz - 928MHz band (FCC / IC)
D	915MHz - 928MHz band (Australia)
N	915MHz - 921MHz band (New Zealand)
E	869MHz (Europe)
<b>Code</b>	<b>Select: Safety Certifications</b>
J	CSA: Intrinsically safe protection: see specifications page
Q	ATEX/IECEx: Intrinsically safe protection: see specifications page
<b>Code</b>	<b>Select: Housing &amp; Battery Pack</b>
P	NEMA 4 Polycarbonate Housing with 1 Cell (Available with Intrinsically Safe Rating)
<b>Code</b>	<b>Select: Future Option</b>
N	None
<b>Code</b>	<b>Select: Integral Antenna or Cable &amp; Connector Interface</b>
00	Integral Antenna with Antenna Cover
01	External YAGI Antenna, 6db, attached to base of unit
10	10ft. (3.05m) cable with N-Male connector for remote antenna configurations
25	25ft. (7.62m) cable with N-Male connector for remote antenna configurations
<b>Code</b>	<b>Select: Sensor Mounting</b>
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)
<b>Code</b>	<b>Select: Sensor Pickup</b>
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. $\geq 7/8"$
02	Magnetic pick-up, Electronic Data Devices model 4.5050 - for turbine meters with an I.D. $\leq 3/4"$
<b>Code</b>	<b>Select: Sensor Union</b>
N	None (customer-supplied)
A	PVC Union, for Integral Sensor Mounting only (Shipped Assembled)
B	Aluminum Union, for Integral Sensor Mounting only (Shipped Assembled)
C	Stainless Steel Union, for Integral Sensor Mounting only (Shipped Assembled)
<b>Code</b>	<b>Select: Junction Box</b>
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

# Product Data Sheet Accutech TM10 Dimensions

