

Accutech TM10 Wireless Turbine Meter Totalizer

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.

TM10 Features:

- Highly accurate turbine meter totalizer
- Measures liquid and gas volumetric flow
- Totalizes accumulated flow volume
- Frequency range 1Hz to 10kHz

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 totalized flow measurements.

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 (license-free band), frequency hopping, spread-spectrum transceiver and antenna, and long-lasting battery for up to 10 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).



Stainless Steel union option illustrated. Turbine Meter not included.

TM10 Specifications

Functional	
Sensor Type	Turbine Meter Totalizer
Location	Field Unit
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	<ul style="list-style-type: none"> ■ Integrated LCD with membrane-switch buttons ■ Display provides flow, total and error messages ■ Configure sampling and RF parameters locally using membrane-switch buttons.
Turbine Meter	
Electronic Accuracy and Stability	Flow Rate accurate to $\pm 0.01\%$ of reading (not including turbine meter and pickup). Applies to all pulse frequencies above low cut-off of 1Hz.
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"> ■ 3.5mV RMS @ 5Hz. ■ 3.5mV RMS @ 50Hz. ■ 5mV RMS @ 500Hz. ■ 45mV RMS @ 5000Hz.
RF Characteristics	<ul style="list-style-type: none"> ■ 902MHz - 928MHz band (FCC/IC) ■ 915MHz - 928MHz band (Australia) ■ 915MHz - 921MHz band (New Zealand) ■ Up to 5000ft (~1500m) typical range with obstructions ■ The RF module in each field unit is individually tested and calibrated over the full temperature range to ensure reliable wireless operation. ■ Transmit Power: +13dBm ■ Receive Sensitivity: -113dBm ■ Adjacent Channel Rejection: 48dBc ■ Alternate Channel Rejection: 62dBc
Self-Diagnostics	<ul style="list-style-type: none"> ■ Low battery alarm – indicates the need to replace the battery (approximately one month warning). ■ 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°F to +185°F (-40°C to +85°C) electronics ■ -4°F to +158°F (-20°C to +70°C) display (full visibility) ■ -40°F to +185°F (-40°C to +85°C) display (with reduced visibility)
Humidity:	0 to 95 %, non-condensing
Materials of Construction:	<ul style="list-style-type: none"> ■ Base Plate: 304 Stainless Steel ■ Cover: GE Lexan®, V-0 rating and UV stable
Power:	<ul style="list-style-type: none"> ■ Self-contained power ■ One 'C' Cell, (standard) ■ Up to ten (10) year battery life (depends on sample rate and RF-update rate)
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:	<ul style="list-style-type: none"> ■ Operates within specification in fields from 80 to 1,000MHz with field strengths to 30V/m. Meets EN 50082-1 General ■ Intrinsically Safe: 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

TM10

AC-TM10-TJ11N00-A00BA represents a typical part number.

Model	Type
AC-TM10	Turbine Meter Totalizer 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)
	Intrinsically Safe
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
A	Integral
Code	Select: Sensor Pickup
00	None (Intrinsic Safety rating "Option J" is not available for Customer Supplied pick-ups)
01	Magnetic pick-up, Electronic Data Devices model 4.303 - for turbine meters with an I.D. >= 7/8"
02	Magnetic pick-up, Electronic Data Devices model 4.5050 - for turbine meters with an I.D. <= 3/4"
Code	Select: Sensor Union
N	None (customer-supplied)
A	PVC (Shipped Assembled)
B	Aluminum (Shipped Assembled)
C	Stainless Steel (Shipped Assembled)
Code	Select: Junction Box
A	No junction box (exposed lead wires)
B	NEMA 4 - Aluminum Rear Entry – CONTACT FACTORY FOR AVAILABILITY
C	NEMA 4 - Epoxy Coated Cast Aluminum Rear Entry – CONTACT FACTORY FOR AVAILABILITY
D	NEMA 4X - Stainless Steel – CONTACT FACTORY FOR AVAILABILITY

