

Accutech AI10 & AV10 Wireless Multi-Input Field Unit

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.

AI10 & AV10 Features:

- Dual analog inputs
- Milliamp and voltage analog input variants
- Dual contact-closure digital inputs

Ideal for adding wireless capabilities to existing or new wired measurement sensors such as radar tank gauges, flow meters and chemical analyzers, the Accutech AI10 and AV10 wireless multi-input field units provide dual analog inputs in either current (4-20mA) or voltage (0-10V) configurations. Each unit also includes two discrete contact closure inputs for simple apparatus use.

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 or NEMA4X) 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).



AI10 & AV10 Specifications

Functional	
Sensor Type	Multi-Input
Location	Field Unit
Frequency Range	902-928MHz
Power	Integrated battery
Features	
Inputs	<ul style="list-style-type: none"> ■ Two 4-20mA inputs sharing a common ground and two discrete contact closure inputs (AI10) ■ Two 0-10 V inputs sharing a common ground and two discrete contact closure inputs (AV10)
Input Characteristics	<ul style="list-style-type: none"> ■ 10Ω impedance, analog (AI) ■ 100kΩ impedance, analog (AV)
Accuracy	<p>± 0.1 % of Full-scale reading at reference conditions Ambient Temperature Effect = ± 0.01% of reading per °C</p>
Sampling and Transmission Characteristics	<p>The Multi-Input Field Unit samples analog signals (4-20mA or 0-10V) at regular intervals. The data may then be transmitted to the Base Radio for centralized monitoring and data acquisition.</p> <p>The user specifies how frequently the process is monitored and how often data is transmitted.</p> <ul style="list-style-type: none"> ■ Input 1 and Input 2 – user configured low rate and high rate Conditions ■ Sampling rate – user selectable from 1 to 60 seconds (low rate) and from 1 to 30 seconds (high rate) ■ Transmission rate – user selectable from 1 second to 60 seconds (low and high rate) <p>Accutech Manager can be used for real-time monitoring of the process information. The user can set thresholds to represent “alarm” or abnormal conditions.</p>
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 radio 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° to +185°F (-40° to +85°C) electronics ■ -4° to +158°F (-20° to +70°C) display (full visibility) ■ -40° to +185°F (-40° to +85°C) display (with reduced visibility) ■ Humidity: 0 to 95 %, non-condensing
Power:	<ul style="list-style-type: none"> ■ Self-contained power ■ One ‘C’ Cell ■ Up to ten (10) year battery life (depends on sample rate and RF-update rate)
Materials of Construction:	<ul style="list-style-type: none"> ■ Base Plate: 304 Stainless Steel ■ Junction box: Aluminum ■ Cover: GE Lexan®, V-0 rating and UV stable
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 immunity standard and EN 55011 compatibility emissions standard ■ Intrinsically Safe: <ul style="list-style-type: none"> 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 ■ CSA Temp Code T3, operating temp ≤ 185°F (85°C) ■ CSA Class I, Div 2 Temp Code T4, operating temp ≤ 185°F (85°C)

AI10

AC-AI10-TJ11N00-A represents a typical part number.

Model	Type
AC-AI10	Dual 4-20mA input and dual contact-closure digital input 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: Junction Box
A	No Junction Box (exposed lead wires)
B	NEMA 4 - Aluminum Rear Entry
C	NEMA 4X - Epoxy Coated Cast Steel Bottom Entry
D	NEMA 4X - Stainless Steel

AV10

AC-AV10-TJ11N00-A represents a typical part number.

Model	Type
AC-AV10	Dual 0-10 volt input and dual contact-closure digital input 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: Junction Box
A	No Junction Box (exposed lead wires)
B	NEMA 4 - Aluminum Rear Entry
C	NEMA 4X - Epoxy Coated Cast Steel Bottom Entry
D	NEMA 4X - Stainless Steel

