

# Accutech AI10 & AV10

## Wireless multi-input field unit





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.

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 2.4GHz (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-resistant (NEMA4 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 come with a 3-Year warranty (parts and labor).

# Product Data Sheet Accutech AI10 & AV10 Specifications

> Accutech AI10 & AV10	
<b>Functional</b>	
Sensor Type	Multi-Input
Location	Field Unit
Frequency Range	900MHz and 2.4GHz 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>
<b>Features</b>	
Inputs	<ul style="list-style-type: none"> <li>• 2: 4-20mA inputs sharing a common ground and two discrete contact closure inputs (AI10)</li> <li>• 2: 0-10V inputs sharing a common ground and two discrete contact closure inputs (AV10)</li> </ul>
Input Characteristics	<ul style="list-style-type: none"> <li>• 10Ω impedance, analog (AI)</li> <li>• 100kΩ impedance, analog (AV)</li> </ul>
Accuracy	<ul style="list-style-type: none"> <li>• ± 0.1% of Full-scale reading at reference conditions</li> </ul>
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 centralised monitoring and data acquisition. The user specifies how frequently the process is monitored and how often data is transmitted.</p> <ul style="list-style-type: none"> <li>• Input 1 and Input 2 – user-configured low rate and high rate conditions</li> <li>• Sampling rate – user-selectable from 1 to 60 seconds (low rate) and from 1 to 30 seconds (high rate)</li> <li>• Transmission rate – user-selectable from 1 second to 60 seconds (low and high rate)</li> </ul> <p>Accutech Manager can be used for real-time monitoring of the process information. The user can set thresholds to represent non-standard conditions.</p>
RF Characteristics	<p>900MHz:</p> <ul style="list-style-type: none"> <li>• 902 to 928MHz Frequency Hopping Spread Spectrum (FHSS), FCC certified ISM license-free band</li> <li>• 915 to 928MHz (Australia)</li> <li>• 921 to 928MHz (New Zealand)</li> <li>• Data Rates: 4,800, 19,200 or 76,800bps</li> <li>• 0.4W maximum</li> </ul> <p>2.4GHz:</p> <ul style="list-style-type: none"> <li>• 2400 to 2483.5MHz ISM license-free band Frequency Hopping Spread Spectrum (FHSS) Radio</li> <li>• Data Rates: 50/100kbps (FSK Modulation), 200kbps (GFSK Modulation)</li> <li>• Typical Electrical Transmit Power: +10.6dBm</li> <li>• Typical Receive Sensitivity (0.1% BER): - 102dBm @ 50kbps, - 99dBm @ 100kbps, - 99dBm @ 200kbps</li> <li>• Typical CW Receiver Blocking Rejection: 64dB for CW @ +/- 5MHz, 74dB for CW @ +/- 30MHz</li> </ul>
Self-Diagnostics	<ul style="list-style-type: none"> <li>• Low battery notification – indicates the need to replace the battery (approximately one month advance notification)</li> <li>• Contains software and hardware that continuously monitors operation. Any sensor or device parameter that is out of spec is identified and reported</li> </ul>
<b>General</b>	
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</li> <li>• -40° to +85°C (-40° to +185°F) display (extreme cold can reduce LCD visibility)</li> <li>• Humidity: 0 to 95%, non-condensing</li> </ul>
Power	<ul style="list-style-type: none"> <li>• Self-contained power</li> <li>• Standard Accutech field units include a single C-Cell (900MHz) or D-Cell (2.4GHz) lithium battery that offers battery life up to ten years of service, depending on data rates and battery options.</li> </ul>
Materials of Construction	<ul style="list-style-type: none"> <li>• Base Plate: 304 Stainless Steel</li> <li>• Junction box: Aluminum</li> <li>• Cover: GE Lexan®, V-0 rating and UV resistant</li> </ul>
Operating Shock and Vibration	Tested per IEC 60068-2-6 (vibration) and 2-27 (shock)
Random Vibration Characteristics	Tested to withstand 6 g's, 15 minutes per Axis from 9 – 500Hz
Electromagnetic Compatibility	<ul style="list-style-type: none"> <li>• Operates within specification in fields from 80 to 1,000MHz with field strengths to 30V/m</li> <li>• Meets EN 50082-1 general immunity standard and EN 55011 compatibility emissions standard</li> </ul>
Certifications	<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, T4</li> <li>• Class II, Div. 1, Groups E, F and G, T3</li> <li>• Class III, 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> <li>• Class II, Div. 2, Groups F and G, T4</li> <li>• Class III, T4</li> </ul> <p>Explosion Proof:</p> <ul style="list-style-type: none"> <li>• Class I, Div. 1, Groups A, B, C &amp; D; T4</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</li> <li>• Ex ia IIC T3</li> <li>• Flame Proof: Ex d IIC T4.</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>
Disclaimer: Schneider Electric reserves the right to change product specifications. For more information visit <a href="http://www.schneider-electric.com">www.schneider-electric.com</a> .	

## Product Data Sheet Accutech AI10

### Model Code

	TBUAAITJPN00A represents a typical part number.
<b>Model</b>	<b>Type</b>
TBUAAI	(2) 4-20 milliamp & (2) contact closure inputs
<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)
F	2.4GHz
<b>Code</b>	<b>Select: Certifications</b>
A	<u>Explosion Proof Protection – Div 1</u> CSA – see product data sheet for certification details
E	<u>Non-Incendive Protection – Div 2</u> CSA – see product data sheet for certification details
J	CSA – see product data sheet for certification details
Q	ATEX & IECEx – see product data sheet for certification details
N	<u>Flame Proof Protection</u> ATEX & IECEx – see product data sheet for certification details
<b>Code</b>	<b>Select: Housing &amp; Battery Pack</b>
P	NEMA4 Polycarbonate Housing with 1 Cell (available with Intrinsically Safe Rating)
1	NEMA4X Aluminum Housing with 1 Cell
2	NEMA4X Aluminum Housing with 2 Cells (not available for ATEX/IECEx)
4	NEMA4X Aluminum Housing with 4 Cells (not available for ATEX/IECEx)
<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. The 2.4GHz NEMA4 unit also comes with an external antenna connector
01	<u>For 900MHz RF Module Systems – or – the 2.4GHz in a NEMA4X Aluminum Housing</u> External YAGI Antenna, 6db, attached to base of unit (not available with 2.4GHz RF NEMA4 unit)
10	10ft. (3.05m) cable with N-Male connector for remote antenna configurations (not available with 2.4GHz RF NEMA4 unit)
25	25ft. (7.62m) cable with N-Male connector for remote antenna configurations (not available with 2.4GHz RF NEMA4 unit)
<b>Code</b>	<b>Select: Junction Box</b>
A	No Junction Box (exposed lead wires)
B	NEMA4 - Aluminum Rear Entry
D	NEMA4X - Stainless Steel Rear Entry

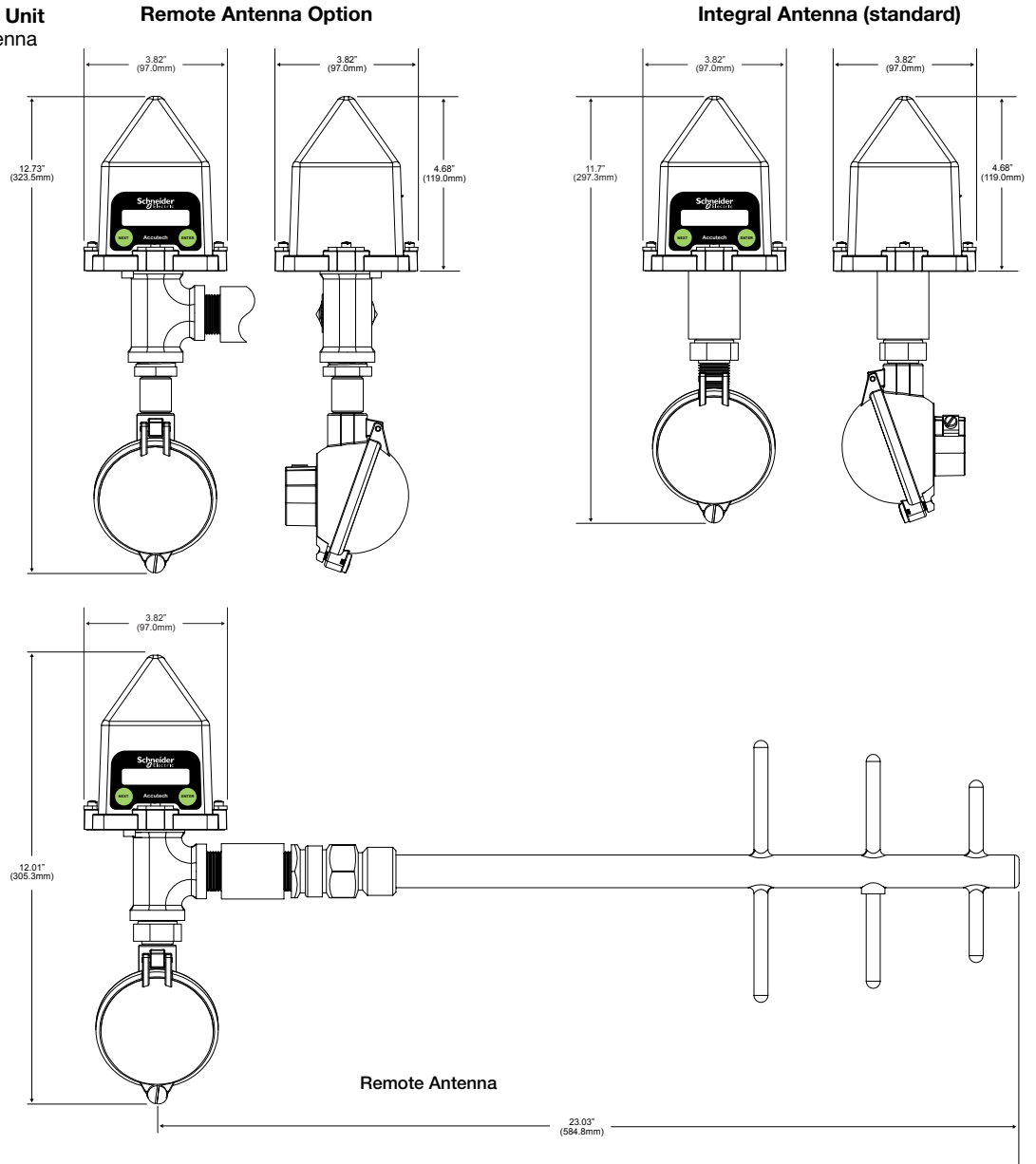
## Product Data Sheet Accutech AV10

### Model Code

	TBUAAVTJPN00A represents a typical part number.
<b>Model</b>	<b>Type</b>
TBUAAV	(2) 0-10 volt & (2) contact closure inputs
<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)
F	2.4GHz
<b>Code</b>	<b>Select: Certifications</b>
A	<u>Explosion Proof Protection – Div 1</u> CSA – see product data sheet for certification details
E	<u>Non-Incendive Protection – Div 2</u> CSA – see product data sheet for certification details
J	CSA – see product data sheet for certification details
Q	ATEX & IECEx – see product data sheet for certification details
N	<u>Flame Proof Protection</u> ATEX & IECEx – see product data sheet for certification details
<b>Code</b>	<b>Select: Housing &amp; Battery Pack</b>
P	NEMA4 Polycarbonate Housing with 1 Cell (available with Intrinsically Safe Rating)
1	NEMA4X Aluminum Housing with 1 Cell
2	NEMA4X Aluminum Housing with 2 Cells (not available for ATEX/IECex)
4	NEMA 4X Aluminum Housing with 4 Cells (not available for ATEX/IECex)
<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. The 2.4GHz NEMA4X unit also comes with an external antenna connector
01	<u>For 900MHz RF Module Systems – or – the 2.4GHz in a NEMA4X Aluminum Housing</u> External YAGI Antenna, 6db, attached to base of unit (not available with 2.4GHz RF NEMA4 unit)
10	10ft. (3.05m) cable with N-Male connector for remote antenna configurations (not available with 2.4GHz RF NEMA4 unit)
25	25ft. (7.62m) cable with N-Male connector for remote antenna configurations (not available with 2.4GHz RF NEMA4 unit)
<b>Code</b>	<b>Select: Junction Box</b>
A	No Junction Box (exposed lead wires)
B	NEMA4 - Aluminum Rear Entry
D	NEMA4X - Stainless Steel Rear Entry

# Product Data Sheet Accutech AI10 & AV10 Dimensions

## 900MHz RF and Battery Unit (Sensor and external antenna option shown)



## 2.4GHz RF and Battery Unit (Sensor and external antenna not shown for clarity)

