

# Accutech SI10

Wireless switch-input field unit





The Accutech SI10 wireless switch input field unit determines the state of contact switches without running wiring in the field. Two switch contacts operate with a debounce filter or as a counter by counting contact state changes up to 5Hz. Two optional switch outputs\* may be added for switching external power sources up to 1A at 30V.

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 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 SI10

## Specifications



### Accutech SI10

#### Functional

Sensor Type	Switch-Input with optional Switch Outputs*
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>

#### Features

Inputs	Two contact closures. One or both inputs may be used in counter mode. (For installation in hazardous areas, the contacts must be simple devices with no energy storage capability).
Input Characteristics	<ul style="list-style-type: none"> <li>Max. switch impedance 1.0k<math>\Omega</math></li> <li>Input Isolation between Input 1 to Input 2 = 20k<math>\Omega</math></li> <li>The counter inputs support a maximum input frequency of 5Hz with a 50% duty cycle. The input must be in a state for 100ms for the state to be recognised. Detection of rising or falling edge or both edges.</li> </ul>
Outputs*	<ul style="list-style-type: none"> <li>2: optional switch outputs. Outputs are dry contact; external power is required for equipment being controlled.</li> <li>Max. switching up to 1A at 30V (Note Safety Certifications for SI10 with Outputs)</li> <li>Remotely controlled by writing data to base radio</li> <li>Configurable failsafe state and power-up state</li> </ul>
Remote Configuration Interface	Accutech Manager, Windows™-based GUI software, providing network-wide monitoring 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 cycles through Switch 1, 2 and error messages, if applicable</li> <li>Configure RF parameters locally using membrane-switch buttons</li> </ul>
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>

#### 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</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>
Physical Characteristics:	<ul style="list-style-type: none"> <li>Base Plate: 304 Stainless Steel</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	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
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> <li>Explosion Proof:</li> <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: 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>

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## Product Data Sheet Accutech SI10

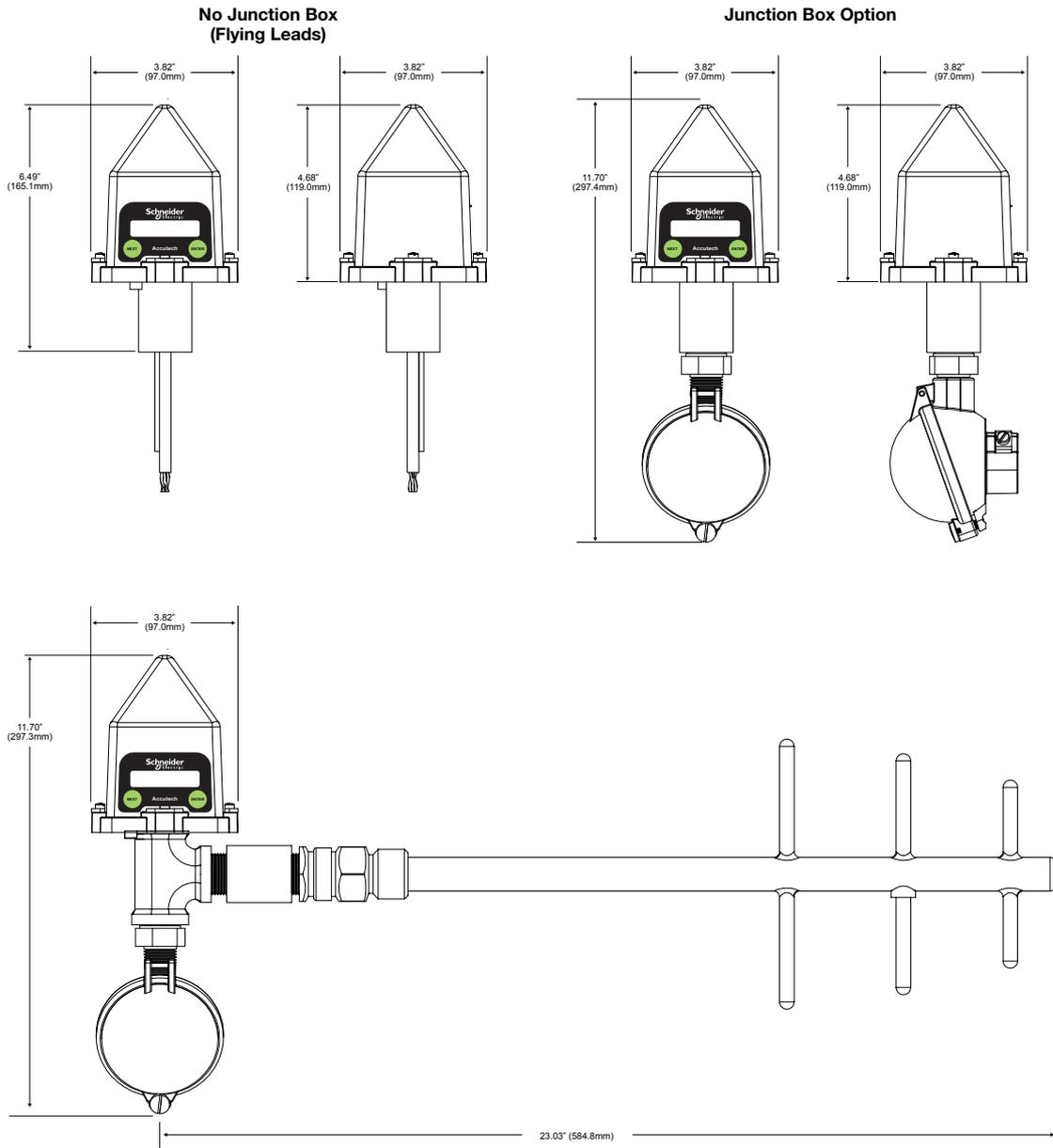
### Model Code

	AC-SI10-TJ11N00-A represents a typical part number.
<b>Model</b>	<b>Type</b>
TBUASI	Wireless Dual Contact Switch Input 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)
F	2.4GHz band
<b>Code</b>	<b>Select: Certifications</b>
A	Explosion Proof Protection – Div 1 CSA – see product data sheet for certification details
E	Non-Incendive Protection – Div 2 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	Flame Proof Protection 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: Digital Outputs*</b>
N	None
E	2 Digital outputs – supported by BR20 Base Radio only (suitable for Div2 rating only)
<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	For 900MHz RF Module Systems – or – the 2.4GHz in a NEMA4X Aluminum Housing External YAGI Antenna, 6db, attached to base of unit (not available with 2.4GHz RF NEMA4 unit)
10	10ft. (3.01m) 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

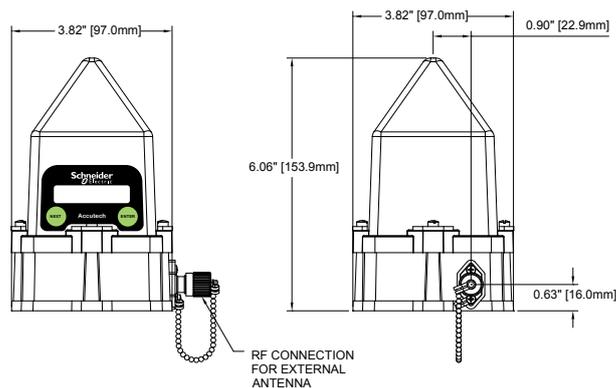
\* Requires BR20 as network base radio

# Product Data Sheet Accutech SI10 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)



# Product Data Sheet Accutech SI10 Dimensions

## NEMA4X Enclosure

