

## Accutech AM20 Wireless Acoustic Monitor 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.

### AM20 Features:

- Highly accurate acoustic (ultrasound) monitor
- Ideal for PRVs, steam traps etc.
- On/off conditions of compressors and pumps
- Operates in 40KHz range, optimal for vapor/gas vent determination

The Accutech AM20 wireless acoustic monitor field unit is ideal for monitoring pressure relief valves, steam traps, automatic tank cleaning (CIP) systems, and other applications that generate ultrasound. It can also monitor on/off conditions of compressors and pumps, and is optimal for vapor/gas vent determination. The Acoustic Field Unit is suitable for compressible fluid applications.

The effectiveness of the acoustic measurement varies under different industrial environments, but has been demonstrated to work under the following conditions:

- Leak detection, steam: 30PSIG min.
- Leak detection, other gas: 50PSIG min.
- Leak rate: 6 standard cubic feet per hour (SCFH) at 100 PSIG min.

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).



## AM20 Specifications

Functional	
Sensor Type	Acoustic Monitor
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"> <li>■ Integrated LCD with membrane-switch buttons</li> <li>■ Display provides pressure reading and error messages, if applicable</li> <li>■ Configure sampling and RF parameters locally using membrane-switch buttons.</li> </ul>
Acoustic Transducer Characteristic	<ul style="list-style-type: none"> <li>■ Center frequency: fc= 40 kHz</li> <li>■ Bandwidth (3 dB): 5 kHz ( fc +/- 2.5 kHz)</li> </ul>
Output Characteristics	<ul style="list-style-type: none"> <li>■ Amplitude is an 8-bit digital output with a scale from 0 to 255</li> <li>■ See the Base Radio, Accutech Manager and Output Module descriptions for various analog and digital output options</li> </ul>
Sampling and Transmission Characteristics	<ul style="list-style-type: none"> <li>■ The Acoustic Field Unit samples ultrasound and ambient temperature at regular intervals. The data may then be transmitted to the Base Radio for centralized monitoring and data acquisition. Frequency of process monitoring and data transmission may be set.</li> <li>■ Ultrasound and ambient temperature monitoring: user designates 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 rates: user selectable from 1 second to 60 seconds (low and high rate)</li> <li>■ The Wireless Instrumentation Manager may be used for real-time monitoring of the process information. Thresholds may be set to represent "alarm" or abnormal conditions.</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>■ Up to 5000ft (~1500m) 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°F to +185°F (-40°C to +85°C) electronics</li> <li>■ -4°F to +158°F (-20°C to +70°C) display (full visibility)</li> <li>■ -40°F to +185°F (-40°C to +85°C) 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>■ One 'C' Cell</li> <li>■ Up to ten (10) year battery life (depends on sample rate and RF-update rate)</li> </ul>
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	
Industrial Certification:	<ul style="list-style-type: none"> <li>■ 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.</li> <li>■ Intrinsically Safe: CSA - Exia IIC; AEx ia IIC: Class I, Div. 1, Groups A, B, C &amp; D; Class II, Div. 1, Groups E, F &amp; G; Class III, Div. 1</li> </ul>

## AM20

AC-AM20-TJ11N00 represents a typical part number.

<b>Model</b>	<b>Type</b>
AC-AM20	Acoustic Monitor 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)
<b>Code</b>	<b>Select: Safety Rating</b>
G	General Purpose (non-hazardous locations)
	<b>Intrinsically Safe</b>
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
<b>Code</b>	<b>Select: Housing</b>
1	NEMA 4 - Available with general purpose or intrinsically safe ratings
<b>Code</b>	<b>Select: Battery Pack</b>
1	One 'C' Cell
<b>Code</b>	<b>Future Option</b>
N	None
<b>Code</b>	<b>Select: Integral Antenna or Cable &amp; Connector Interface</b>
00	Integral Antenna with Explosion Proof Antenna Cover (Available for all Safety ratings)

