

# Accutech DP20

## Wireless Differential Pressure 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.

### DP20 Features:

- Highly accurate differential pressure sensor
- Traditional and Low Profile process connection options
- Non Incendive: Class I, Div 2, Groups A, B, C and D
- Intrinsically Safe: CSA - Exia IIC; AEx ia IIC: Class I, Div 1, Groups A, B, C and D

The Accutech DP20 differential pressure field unit is a durable, high-performance, wireless pressure transmitter, providing differential pressure data in a variety of ranges up to +/-300in H2O. Both traditional (side-mount) and low profile (bottom-mount) connections are available to enhance installation options. The DP20 may be operated in any one of four modes: Differential Pressure, Orifice Flow, Open Channel Flow and Level, and may be configured with a 22-point custom curve capability.

The DP20 is ideally suited for level applications, especially in pressurized tanks (e.g. propane & butane). The product also has a square root function for use with orifice plates, v-cones, and pitot tubes, providing volumetric flow measurement in general industrial processes.

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 transmitter 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. Field units are available in a wide range of certifications and are protected by an industry-leading 3-Year warranty (parts and labor).



Side-mount process connection illustrated

## DP2O Specifications

Functional	
Sensor Type	Differential Pressure
Location	Field Unit
Frequency Range	902-928MHz
Power	Integrated battery
Features	
Operational Modes	Differential Pressure Orifice Flow Open Channel Flow Level
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>
Sensor	<p>Accuracy: ■ ± 0.1 % of sensor URL including the combined effects of linearity, hysteresis, repeatability and temperature (applies to standard unit without isolating seals).</p> <p>Field Spanning: ■ Zero offset (to correct for positioning changes) and two-point (zero and span) calibration</p> <p>Stability: ■ Combined zero and span stability: less than ± 0.1% of sensor URL per year at 70°F (21°C)</p> <p>Maximum Static Pressure: ■ 3000psi</p> <p>Differential Pressure Ranges: ■ +/- 100in H<sub>2</sub>O, +/- 300in H<sub>2</sub>O, +/- 25psi, -25 to +100psi, -25 to +300psi</p>
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 +220° F (-40° C to +104° C) process connection temperature, steady state</li> <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> <li>■ Sensor Diaphragm: 316L Stainless Steel (Hastelloy C available upon special request)</li> <li>■ Flange: 316L Stainless Steel</li> <li>■ Bolts and Nuts: High Strength Alloy Steel</li> </ul>
Power:	<ul style="list-style-type: none"> <li>■ Sensor Filling Fluid: DC 200 silicone (Florolube available upon special request)</li> <li>■ Self-contained power</li> <li>■ One 'C' Cell</li> </ul>
Operating Shock and Vibration:	<ul style="list-style-type: none"> <li>■ Up to ten (10) year battery life (depends on sample rate and RF-update rate)</li> </ul>
Random Vibration Characteristics:	Certified per IEC EN00068 2-6 (vibration) and 2-27 (shock)
Electromagnetic Compatibility Safety Certifications:	Certified to withstand 6 g's, 15 minutes per axis from 9 – 500Hz
	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.
	<ul style="list-style-type: none"> <li>■ Rated for industrial use -40 to 185°F (-40 to 85°C)</li> <li>■ Non Incendive: Class I, Div 2, Groups A, B, C and D</li> <li>■ Intrinsically Safe: CSA - Exia IIC; AEx ia IIC: Class I, Div 1, Groups A, B, C and D</li> </ul>

## DP20

AC-DP20-TJ11N00-S100N represents a typical part number.

Model	Type	
AC-DP20	Differential Pressure 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)	
	<b>Intrinsically Safe and Div 2</b>	
J	Non Incendive: Class I, Div 2, Groups A, B, C and D; Intrinsically Safe: CSA - Exia IIC; AEx ia IIC: Class I, Div 1, Groups A, B, C and D:	
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 Explosion Proof Antenna Cover (meets explosion-proof Div 1/ Div 2 & intrinsically safe rating)	
Code	Select: Sensor Mounting	
S	Integral	
Code	Select: Sensor Range	
	<b>Upper (URL) and Lower Range Limit</b>	<b>Overload Limit</b>
100N	+/- 100in H <sub>2</sub> O	3000psi
300N	+/- 300in H <sub>2</sub> O	3000psi
025P	+/- 25psi	3000psi
100P	+100, -25psi	3000psi
300P	+300, -25psi	3000psi
Code	Select: Sensor Type	
S	Standard Sensor - Horizontal Process Connections with Vertical Mounting	
L	Low-Profile Sensor - Vertical Process Connections with Vertical Mounting	

