PRESSURE RANGER
LTE-M/NB-IoT Cellular Pressure Transmitter

CLASS 1 DIVISION 2 CERTIFIED

PLUG-&-PLAY, INSTANT CONNECTIVITY OF PRESSURE SENSOR TO THE CLOUD OVER CELLULAR NETWORKS

OPTIMIZED FOR BATTERY LIFE USING LATEST CELL MODEM TECHNOLOGY LTE CAT M1/NB-IoT

UTILIZES MQTT/SPARKPLUG-B COMMUNICATION FOR EASY INTEGRATION INTO THIRD-PARTY HOSTS

FEATURES
• LTE CAT M1/NB-IoT connectivity to cloud services
• Integrated pressure sensor
• Data location from built-in GPS
• SignalFire cloud monitoring/alarming service
• Integrated sensor allows rapid data collection and report on exception
• Reports max, min, average and instantaneous pressure

PRESSURE SENSOR

PERFORMANCE AT 77°F / 25°C
Accuracy: ±0.25% BFSL
≤ ± 0.5% BFSL (>10,000 PSI)
Stability (1 year): ±0.25% FS, typical
Over Range Protection: 2X Rated Pressure, Minimum
 Burst Pressure: 5X or 40,000 PSI (whichever is less)
Pressure Cycles: >100 Million
Process Connection: 1/2” NPTM 316L Stainless Steel Standard, F250C Autoclave for pressure >10,000 psi
Other process connections/material available
Standard Pressure Ranges: 0-100 psi, 0-500 psi, 0-1000 psi, 0-3000 psi, 0-5000 psi, 0-10,000 psi, 0-15,000 psi, 20,000 psi
Low Pressure Ranges: 0-2 psi, 0-20 psi

THERMAL LIMITS
Operating Range: -40 to +176°F (-40 to +80°C)
Compensated Range: 5°F to 150°F (-15°C to +65°C)
TC Zero: <±1% of FS
TC Span: <±1% of FS
TECHNICAL SPECIFICATIONS

**Operating Temp:**
-40 to +176°F (-40°C to 80°C)

**Humidity:** 0% - 100% condensing

**Power:** Four D Cell Lithium battery pack. Field replaceable.

**Battery Life:** 5+ years with a 5 minute report interval

**Data Interface:** LTE CAT M1/NB-IoT MQTT with SparkPlug B

**Data Transmission:**
- Report interval 1 min to 12 hrs (min, max, avg, actual)
- Configurable report on exception threshold.
- Configurable sampling as fast as every 5 seconds.

**Cellular Radio Power:** 23dBm

**Antenna Type:** LTE w/ Internal GPS

**Enclosure:** Industrial polycarbonate UV Rated; IP67

**Safety Rating:** Class 1 Division 2 Certified, Groups A, B, C, D. Temperature Code T5. Certified to CSA C22.2 No. 213:2017, Conforms to UL 121201:2017, CE Approved

**Local Micro-USB Configuration Port**

**Weight:** 2 lbs (910 g)

**Estimated Monthly Data Usage:**
- Check-in interval dependent
  - 30 sec = 54 MB
  - 1 min = 27 MB
  - 5 min = 5.4 MB
  - 15 min = 1.08 MB
  - 60 min = 0.27 MB

DIMENSIONS
## How to Order

**RANGER – PRESSURE**

<table>
<thead>
<tr>
<th>HW Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI2</td>
<td>2 PSI (138 mbar) Low Pressure Sensor</td>
</tr>
<tr>
<td>PSI20</td>
<td>20 PSI (1.38 bar) Low Pressure Sensor</td>
</tr>
<tr>
<td>PSI100</td>
<td>100 PSI (6.9 bar) Sensor, 1/2NPT Male connection, 316SST diaphragm</td>
</tr>
<tr>
<td>PSI500</td>
<td>500 PSI (34.5 bar) Sensor, 1/2NPT Male connection, 316SST diaphragm</td>
</tr>
<tr>
<td>PSI1000</td>
<td>1000 PSI (69 bar) Sensor, 1/2NPT Male connection, 316SST diaphragm</td>
</tr>
<tr>
<td>PSI3000</td>
<td>3000 PSI (207 bar) Sensor, 1/2NPT Male connection, 316SST diaphragm</td>
</tr>
<tr>
<td>PSI5000</td>
<td>5000 PSI (345 bar) Sensor, 1/2NPT Male connection, 316SST diaphragm</td>
</tr>
<tr>
<td>PSI10000</td>
<td>10000 PSI (690 bar) Sensor, 1/2NPT Male connection, 316SST diaphragm</td>
</tr>
<tr>
<td>PSI15000</td>
<td>15000 PSI (1034 bar) Sensor, 1/2NPT Male connection, 17-4PH diaphragm</td>
</tr>
<tr>
<td>PSI15000-AC</td>
<td>15000 PSI (1034 bar) Sensor, F250C Autoclave, 17-4PH diaphragm</td>
</tr>
<tr>
<td>PSI20000-AC</td>
<td>20000 PSI (1379 bar) Sensor, F250C Autoclave, 17-4PH diaphragm</td>
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</tbody>
</table>

**Power Source**

- 4DPAK = 4 D cell battery pack

**Antenna**

- Int = Internal LTE & GPS
- Ext = External LTE & GPS SMA Connector

**Customer Configuration**

- N = None

*Consult factory to discuss if custom configuration is needed.

**Subscription Type**

- N = No Subscription

**SIM Card**

- NoSIM = No SIM Card. No SignalFire Cloud. User provides LTE CAT M1 SIM Card
- VZSIM1 = VERIZON LTE CAT M1 SIM - 1 Year Data Plan, SignalFire Cloud Connectivity
- VZSIM3 = VERIZON LTE CAT M1 SIM - 3 Year Data Plan, SignalFire Cloud Connectivity
- SFCloud1 = No SIM Card. 1 year SignalFire Cloud. User provides LTE CAT M1 SIM Card
- SFCloud3 = No SIM Card. 3 year SignalFire Cloud. User provides LTE CAT M1 SIM Card

**Report Interval**

- N = n/a
- STD = 60 seconds minimum
- Fast = 15 seconds minimum
- Ultra = 5 seconds minimum