

# 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:**  $\pm 0.25\%$  BFSL

$\leq \pm 0.5\%$  BFSL ( $>10,000$  PSI)

**Stability (1 year):**  $\pm 0.25\%$  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

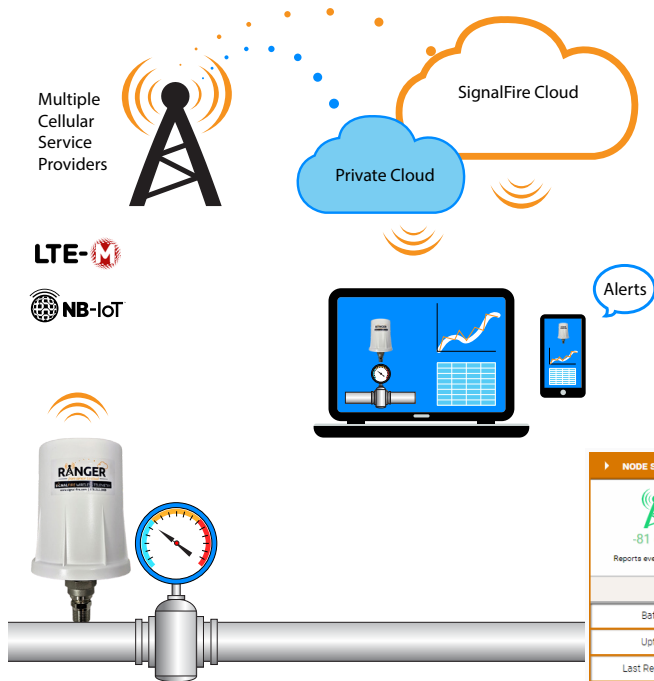
### THERMAL LIMITS

**Operating Range:**  $-40$  to  $+176^\circ\text{F}$  ( $-40$  to  $+80^\circ\text{C}$ )

**Compensated Range:**  $5^\circ\text{F}$  to  $150^\circ\text{F}$  ( $-15^\circ\text{C}$  to  $+65^\circ\text{C}$ )

**TC Zero:**  $<\pm 1\%$  of FS

**TC Span:**  $<\pm 1\%$  of FS



Multiple Cellular Service Providers

SignalFire Cloud

Private Cloud

LTE-M

NB-IoT

Alerts

NODE STATUS		CONFIGURE
	<b>ONLINE</b>	FORCE REPORT
-81 dBm	Reports every 5 minutes	
Pressure Ranger		
Battery	3.62 V	Temp: 79 °F
Uptime	1 hour 1 minute 8 seconds	
Last Report	2020-09-17 04:02:33 PM	
Online Since	2020-09-17 03:04:44 PM	
Carrier Info	VzW (3B02)	SW Ver: v0.1.9-25-gd781be6-3v
Expiration	2021-08-05 (321 days)	

PRESSURE SENSOR 1 (PRESS1)		CONFIGURE
	Reading: -19.41 psi	Sample Interval: 5 ms
Avg: -19.88 psi	Max: -18.83 psi	Min: -20.92 psi
Scale Units: psi	Scale: 0-1,000 psi	
Low Alarm	< 0 psi (Disabled)	
High Alarm	> 15 psi (Disabled)	

GPS		CONFIGURE
Location at 2020-09-17 16:03:26		
Coordinates	42° 20' 58" N 71° 34' 53" W	
Auto Trigger	Manual	

**SIGNALFIRE**  
— WIRELESS TELEMETRY —

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## 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)

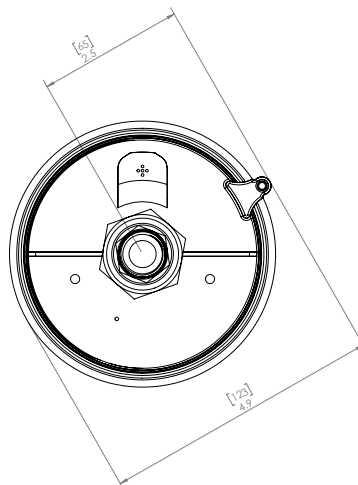
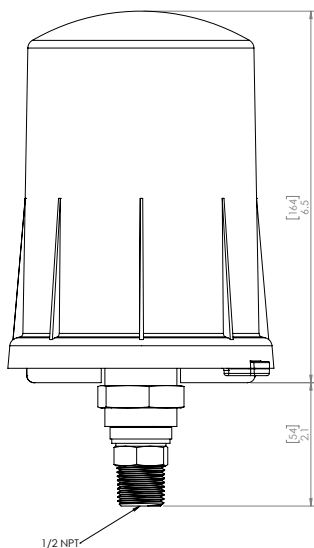
**Estimated Monthly Data Usage:**

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



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## HOW TO ORDER

