RADAR RANGER

Cellular Radar Level Transmitter

INTEGRATED NON-CONTACT RADAR AND CELLULAR TRANSMITTER WITH AN 8 M (26.2 FT) MEASURING RANGE

DIRECT LTE-M/NB-IOT CONNECTIVITY WITH REMOTE CONFIGURATION, MONITORING, AND ALARMING THROUGH SIGNALFIRE CLOUD

BATTERY LIFE OF 2 YEARS AT ONE-MINUTE UPDATES OR 5 YEARS AT FIVE-MINUTE UPDATES

MQTT/SPARKPLUG INTEGRATION WITH COMPATIBLE THIRD-PARTY HOSTS, INCLUDING IGNITION SCADA



FEATURES

- Integrated non-contact radar with an 8 m (26.2 ft) rated range
- Reports distance, level, percent full, radar echo strength, and wireless signal strength
- Estimated battery life of 2 years at one-minute updates or 5 years at five-minute updates
- Built-in GPS and a configurable strapping table with up to 128 points

Ignition! READY

PRODUCT OVERVIEW

The SignalFire Radar RANGER combines a non-contact radar level sensor and wireless transmitter in one battery-powered device. Its integrated design simplifies installation by eliminating the connection between a separate level sensor and transmitter. An 8 m (26.2 ft) rated measuring distance supports water, wastewater, chemical tank, and river or lake level monitoring applications.

Radar RANGER transmits measurements directly over LTE-M/NB-IoT cellular networks to SignalFire Cloud or a compatible third-party host. SignalFire Cloud provides remote monitoring and alarming, while MQTT with Sparkplug supports host integration.

The 1½-inch male NPT process fitting is made entirely from PEEK for chemical compatibility. An optional L-bracket provides an alternative mounting method. The IP67 enclosure and field-replaceable 4DPAK battery support outdoor installations without external power wiring.

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TECHNICAL SPECIFICATIONS

Physical Specifications	
Dimensions	7.7” x 4.6” (19.55cm x 11.68cm)
Weight	1.94 Lbs (0.88Kg)
Housing Material	Industrial polycarbonate UV rated
Enclosure Protection	IP67
Mounting	Threaded process fitting or optional L-bracket
Electrical Specifications	
Power Supply	4DPAK field-replaceable four D-cell lithium battery pack
Estimated Battery Life	2 years at one-minute sampling/reporting; 5 years at five-minute sampling/reporting *Battery life is an estimate and depends on temperature, cellular coverage, configuration, and exception reports.*
Environmental	
Ambient Operating Temperature	-40 to +85°C (-40 to +185°F)
Process Temperature	-40 to +85°C (-40 to +185°F)
Process Specifications	
Process Connection	1½-inch male NPT
Process Fitting Material	PEEK
Pressure Rating	Not pressure rated
Communications	
Sampling Interval	Configurable; as fast as every 5 seconds
Reporting Interval	Configurable up to 12 hours; minimum interval determined by option: STD (60 sec), FAST (15 sec), ULTRA (5 sec)
Report-on-exception	Configurable measurement threshold
Wireless Interface	LTE CAT M1 / NB-IoT
Radio Transmit Power	23 dBm
Antenna	Internal LTE and GPS; external antenna connector option
Data Integration	MQTT with Sparkplug; SignalFire Cloud or compatible third-party host
Local configuration	Micro-USB configuration port
Approvals	
Hazardous Locations *(pending)*	Class 1 Division 2 Groups A, B, C, D. Temperature Code T5

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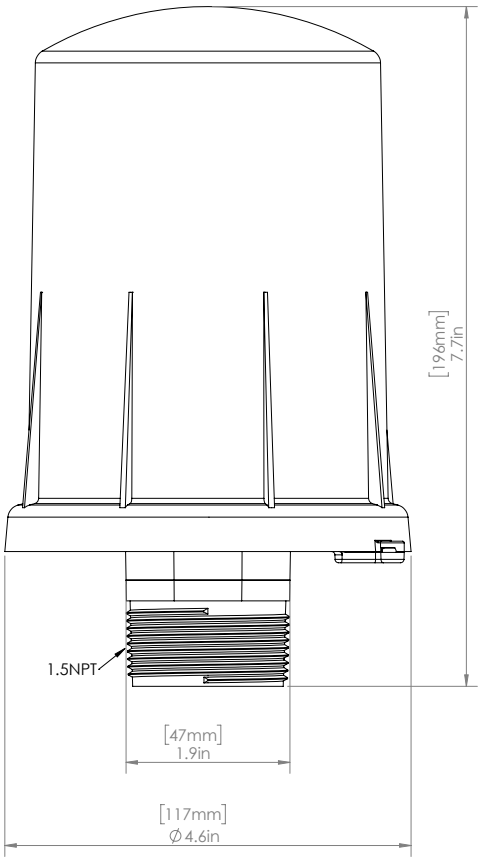
www.signal-fire.com | 140 Locke Drive, Suite B, Marlborough, MA 01752 USA | 978.212.2868

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Radar Measurement Specifications	
Measurement Technology	60 GHz pulsed coherent radar
Maximum Measuring Distance	8 m (26.2 ft)
Minimum Measuring Distance	7 cm (2.8 in)
Blocking Distance	Configurable
Measurement Accuracy	±7 mm (±0.28 in) at 25°C (77°F)
Reported Resolution	2.5 mm (0.10 in)
Beam Width	12°
Reported Values	Distance, level, percent full, radar echo strength, and wireless signal strength
Strapping Table	Up to 128 points

DIMENSIONS



SIGNALFIRE
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HOW TO ORDER

RANGER-RADAR – [ ] – [ ] – [ ] – [ ] – N – [ ] – N

Power Source

4DPak = "D" Cell Lithium battery pack (Class 1, Div. 2)
NONE = No battery

Antenna Type

Int = Internal LTE & GPS
Ext = External LTE SMA connector

Measurement Range/Process Connection

8m-1.5NPT = 8 meter range, 1.5" NPT Fitting

Report Interval

STD = 60 seconds minimum
Fast = 15 seconds minimum
Ultra = 5 seconds minimum

* "N" must be selected when choosing the option NoSIM

SignalFire Cloud/SIM Card Subscription Plan

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
ATTSIM1 = AT&T LTE CAT M1 SIM - 1 Year Data Plan, SignalFire Cloud Connectivity
ATTSIM3 = AT&T LTE CAT M1 SIM - 3 Year Data Plan, SignalFire Cloud Connectivity
BellSIM1 = Bell Canada LTE CAT M1 SIM - 1 Year Data Plan, SignalFire Cloud Connectivity
BellSIM3 = Bell Canada 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

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