

RANGER AIRQ

Gas Detection When and Where You Need It

- MODULAR PLATFORM WITH REPLACEABLE GAS SENSOR
- CONTINUOUS OR SCHEDULED GAS MEASUREMENT
- LOW MAINTENANCE
- DIRECT CLOUD CONNECTIVITY
- MQTT/SPARKPLUG PLUG-AND-PLAY



FEATURES

- LTE CAT M1/NB-IoT with MQTT/SparkPlug connectivity
- Integrated gas sensor (See Table 1 for details)
- Data location from built-in GPS
- SignalFire cloud monitoring/alarming service
- Fast sensor sampling
- Reports sensor specific measurements (See Table 1)

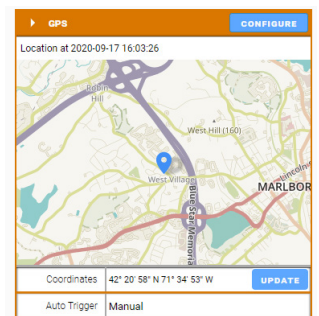
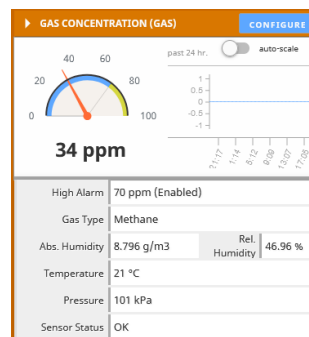


PRODUCT DESCRIPTION

The RANGER AirQ is a modular wireless gas detection platform with integrated cellular communications. It monitors the presence of a gas and transmits the measurement wirelessly over LTE-M/NB-IoT cellular networks. The data is transmitted to the SignalFire Cloud and can be sent using MQTT/SparkPlug to a private cloud platform supporting this messaging standard. The gas detection sensor is powered from the built-in 72Ah battery. The measurements are also pin pointed geographically by the GPS module inside the RANGER AirQ.

The smart gas sensor uses the latest in smart gas sensor technology providing for low power demand, stable and accurate measurement as well as long term stability with little to no calibration required. It automatically compensates for temperature and humidity when sampling a measurement and therefore delivers accurate measurements with low drift. It's low power requirements allow for long battery life.

SIGNALFIRE CLOUD MONITORING



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GAS SENSOR SPECIFICATION

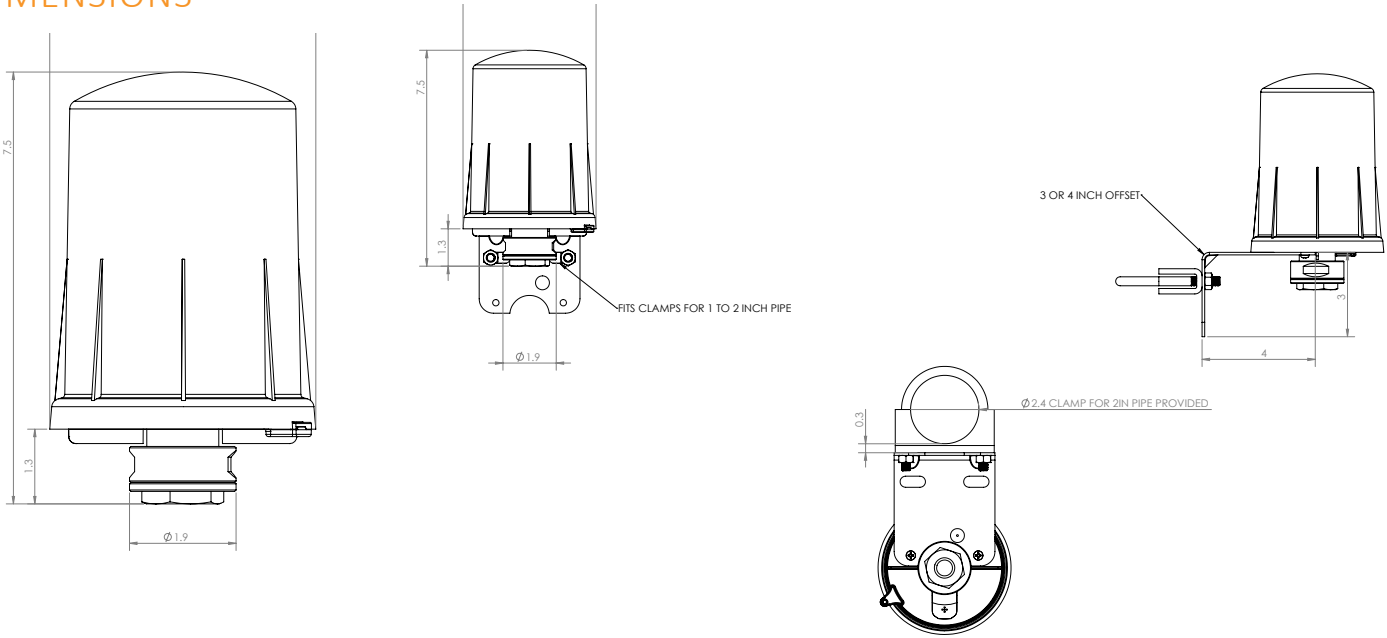
Table 1

Gas Sensor	Specifications	Details
CH4 Methane	Technology:	MEMS transducer
	Detection Range:	50 - 1,000,000 PPM 2 SCFH @ 30' (10m) distance
	Resolution:	1 PPM
	Calibration:	Factory Calibrated
	Accuracy:	+/-10% > 300PPM (typical @ 20DegC / 50% RH)
	Temperature:	-40DegC to +75DegC
	Atmospheric:	80kPa – 120kPa
	Measurements Provided:	PPM, Temperature, Atmospheric Pressure, Absolute Humidity, Relative Humidity
	Damp Heat-Steady State:	500 hours @ 40°C/93% RH
	Temperature Cycling:	From -40°C to 85°C for 200 cycles
Sand/Dust:	Sand: 150-850 µm SiO2 particle size, 23 m/s nom. velocity, 1.5 hrs @ 70°C per axis, 3 axes	
	Dust: Red China Clay, 1.5 m/s nom. velocity, 6 hrs @ 20°C and 6 hrs @ 70°C	
Battery Life:	15 Months in Continuous Sampling Mode	
	36 Months in Emissions Mode (Sampling @ 15 min)	
	48 Months in Emissions Mode (Sampling @ 30 min)	
Key Features	Built-in environmental compensation · Inherently poison resistant · No calibration required · Supports 15+ year lifetimes	
H2S Hydrogen Sulfide	Future	Future
Refrigerants	Future	Future
Hydrogen	Future	Future
Flammables	Future	Future

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DIMENSIONS



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TECHNICAL SPECIFICATIONS

Operating Temp:

-40 to +167°F (-40°C to 75°C)

Humidity: 0% - 100% condensing

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

Battery Life: Gas sensor specific (See table 1)

CH4 Sensor: 15 months in Continuous Sampling Mode. 36 months in Emissions Mode (Sampling @ 15 min). 48 months in Emissions Mode (Sampling @ 30 min)

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

Data Transmission:

- Report interval 1 min to 12 hrs

- 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



MEASUREMENT MODES

Table 2

Sensor	Measurement Mode	Sensor Power & Measurement Frequency	Values Reported
CH4	Continuous	Sensor continuously powered. Values reported every 5 min or by exception.	PPM Atmospheric Pressure Ambient Temperature
	Emissions	Sensor powered for 5 minutes at a set report interval. Values reported at the end of the 5 min sensor measurement time.	Relative Humidity Absolute Humidity

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HOW TO ORDER

