AIRQ SCOUT

Intrinsically Safe Wireless Gas Detection Sensor

900MHZ WIRELESS WITH 0.5 MILE (800M) RANGE

CONTINUOUS OR SCHEDULED MEASUREMENT

LOW MAINTENANCE MEMS GAS SENSOR

BATTERY POWERED

CLASS 1 DIVISION 1 CERTIFIED (PENDING)

PRODUCT DESCRIPTION

The AIRQ Scout is a modular wireless gas detection platform with integrated RF 900MHz wireless communications.

It monitors the presence of a gas and transmits the measurement wirelessly to a SignalFire Gateway or a RANGER900. The measurements are integrated in a supervisory system using Modbus communication at the gateway. When using the RANGER900, the measurement are transmitted to the SignalFire Cloud using LTE-M CAT M1 / NB-IoT cellular connectivity.

The smart gas sensor is powered from the built-in 72Ah battery. It 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.

FEATURES

- Integrated Methane gas sensor (See Table 1 for details)
- Integrated and protected antenna
- Continuous measurement or Scheduled
- Fast sensor sampling
- Reports sensor specific measurements (See Table 1)
- Measurements include: PPM, LEL, Ambient Temperature, Relative Humidity, Absolute Humidity

0.5 miles

SignalFire Gateway Stick

SCADA or RANGER900
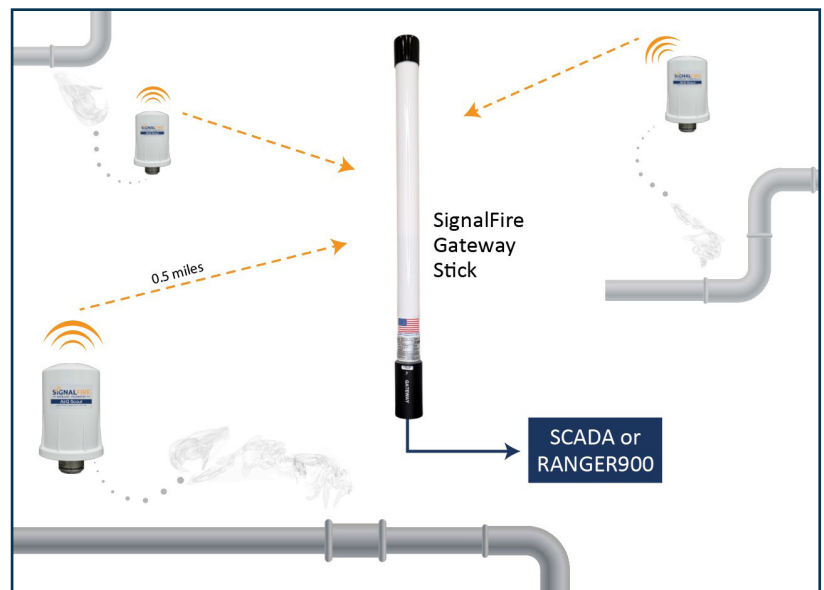
AIRQ SCOUT

Intrinsically Safe Wireless Gas Detection Sensor

GAS SENSOR SPECIFICATIONS

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
	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

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 Relative Humidity Absolute Humidity
	Emissions	Sensor powered for 5 min at a set report interval. Values reported at the end of the 5 min sensor measurement time.	

SIGNALFIRE
WIRELESS TELEMETRY

TECHNICAL SPECIFICATIONS

Table 3

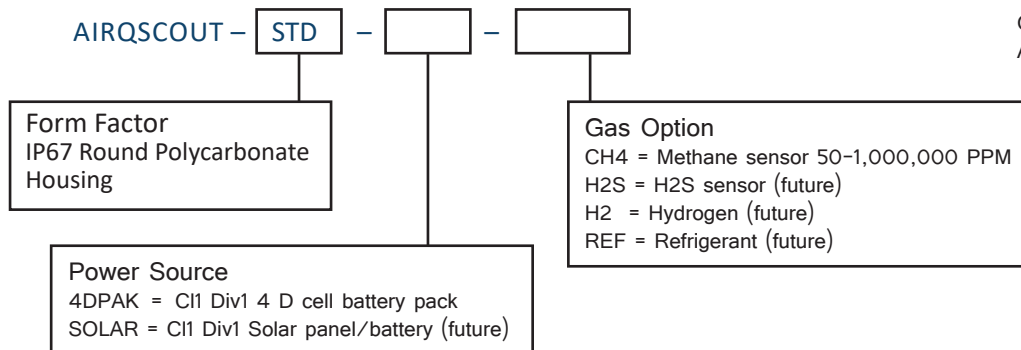| Physical Specifications	
Dimensions	7.5" x3" (19cm x 7.62cm) - Without L shaped bracket
Weight	2 Lbs (0.9Kg)
Housing Material	Industrial polycarbonate UV rated
Enclosure Protection	IP67
Mechanical installation	L-Shape bracket with u-bolt
Electrical Specifications	
Input Power	72Ah four (4) D cell lithium battery pack. Field replaceable.
Battery Life	15 months in Continuous Sampling Mode. 44 months in Emissions Mode (Sampling @ 15 min). 48 months in Emissions Mode (Sampling @ 30 min)
Local Configuration	4-Pin serial configuration port. Requires SignalFire USB-4pin cable
Environmental	
Ambient Operating Temperature	-40 to +167°F (-40°C to 75°C)
Humidity	0% - 99% non-condensing
Communications	
Data Transmission	Report interval 5 seconds to 2 hours. Configurable measurement threshold to report on exception. Configurable sampling as fast as every 5 seconds.
Data Interface	Requires SignalFire's Gateway. Output of Gateway supports Modbus RTU, TCP, Ethernet/ IP (Pending), MQTT/ Sparkplug (Pending)
RF Radio Power	40mW
RF Distance	0.5 mile (800 meters)
RF Band	902–928 MHz, FHSS, license-free ISM Band
Antenna	Internal Omni-directional Antenna
Gas Sensor	
CH4 (Methane)	See table for gas sensor specifications
Approvals	
Hazardous locations (pending)	Class 1 Division 1 Certified, Groups C, D. Temperature Code T4 Certified to CSA C22.2 No. 213:2017, Conforms to UL 121201:2017
ISM Band	Compliant with FCC Part 15, IC (Industry Canada)
Accessories	
USB-4 Pin Cable	USB cable with 4 pin adaptor. 3 feet long (1 meter)
4DPAK battery	72Ah battery pack with integrated fuse and super capacitor
Anti-Theft Locking Ring	Aluminum ring with security screws and bottom plate to lock cover on device
L-Shape bracket with U-Bolt (included when purchasing AirQScout)	Aluminum L-Shape bracket with U-bolt and mounting holes to install AirQScout

AIRQ SCOUT

Intrinsically Safe Wireless Gas Detection Sensor

DIMENSIONS

[102mm]
4.0in

[157mm]
6.2in

3 OR 4 INCH OFFSET

[76mm]
3.0in

[117mm]
⌀ 4.6in

[33mm]
1.3in

[47mm]
⌀ 1.9in

[8mm]
0.3in

[60mm]
⌀ 2.4in

[89mm]
3.5in

FITS CLAMPS FOR 1 TO 2 INCH PIPE
CLAMP FOR 2 INCH PIPE PROVIDED
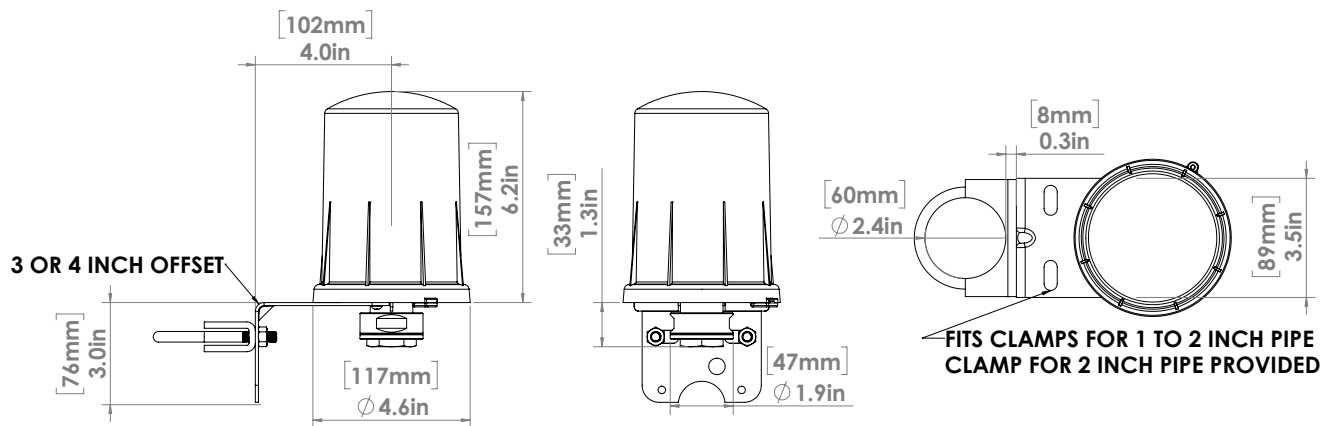
HOW TO ORDER

AIRQ SCOUT WITH SIGNALFIRE 900MHZ RADIO

AIRQSCOUT – | STD | – | | – | |

Order Code Example:
AIRQSCOUT-STD-4DPAK-CH4

Form Factor
IP67 Round Polycarbonate
Housing

Power Source
4DPAK = Cl1 Div1 4 D cell battery pack
SOLAR = Cl1 Div1 Solar panel/battery (future)

Gas Option
CH4 = Methane sensor 50-1,000,000 PPM
H2S = H2S sensor (future)
H2 = Hydrogen (future)
REF = Refrigerant (future)