HONEYWELL

VERSATILIS™ SIGNAL SCOUT™

Emission detector, Methane (CH4) Sensing

Honeywell Versatilis™ Signal Scout™ is a Methane Gas Detector that uses molecular property spectrometer technology, which delivers rapid, sensitive and continuous Methane detection across a variety of industries from oil and gas upstream to chemical plants and refineries. The smart Methane gas detector is poison resistant, robust and intrinsically safe. It has built-in environmental compensation and self-testing functionality. Honeywell Versatilis™ Signal Scout™ is based on the latest LoRaWAN® protocol communication technology for large-area coverage. Its compact and patented aerodynamically optimized design is coupled with quick and easy installation and commissioning (no cabling), which aids in quick deployment to the field.

Solving the following Industry Needs:

- Target methane emissions and the burden to execute periodic labor-intensive manual measurements to satisfy EPA audits.
- Providing early leak detection and enabling early leak repair.
- Rising health concerns related to air pollution and Global warming.
- Increasing emissions regulations.
- Increasing focus on utilizing empirical emissions data and analytics solutions to improve efficiency and process control.
- Commitment to address indirect emission in the value chain.
- Safety of the plant worker.

Figure 1: Honeywell Versatilis™ Signal Scout™

Global Warming

Plant Efficiency

Plant Worker Safety

FEATURES

PARAMETER	DESCRIPTION
Gas Sensor	Molecular property spectrometer Methane Sensor: 50ppm to 65535ppm concentration
Factory Calibrated	No Field Calibration is required.
Auto Calibration	Built-in environmental compensation and self-testing functionality.
Pressure Sensor	300 to 1100 hPa
Humidity Sensor	0 to 100 %RH
Temperature Sensor	-40°C to 70°C (-40°F to +158°F)
Communication	2.4 GHz, Bluetooth® Low Energy 5.0 Communication for Configuration and Monitoring.
	Long Range Communication (LoRaWAN®) Class-A supporting Regions: EU868, US915, IN865, and AS923.
LoRaWAN® Data Publish	Real-time Sensor parameters sent to the cloud for analytics: Methane gas concentration, Pressure, Humidity, Temperature.
LED Device Status	Green and Red LEDs. *For more information,* see *Honeywell Versatilis Signal Scout Installation and User's Guide, 34-VT-25-02.*
Battery	The Low power detector is energized by Primary D-size Battery; Li/SOCl2
Battery Life	18 months (with 25% duty cycled operation, and with minimum 5 minutes of ON time duration).
Measuring Parameters	Ambient Temperature, Ambient Pressure, Ambient Humidity, and Gas Sensor.
Operating Temperature	-40°C to +70°C (-40°F to +158°F)
Humidity Range	0 to 100 %RH
Physical Dimensions (without adapter)	H 153.8mm (6.06 Inches) x D 120mm (4.72 Inches)
Total Weight (including mounting adapter)	500gm
Ingress Protection	NEMA-Type 4X*, IP66
Mounting Options	Magnetic mount adapter, Screw mount adapter, and Adhesive mount adapter.
Data Security and Encryption	AES256 LoRa and BLE Encryption.

*NEMA-Type 4X certification is in progress.

SENSOR SPECIFICATIONS

GAS SENSOR			
PARAMETER	RANGE	UNITS	CONDITIONS
Gas Detected	50 to 65535	ppm	Methane Gas
	0.1 to 2000	% LEL	
	0.005 to 100	% V	
Resolution	1	ppm	
Response Time (T90)	20	sec	With PTFE Filter
Accuracy	+/- 50	ppm	50 to 300 ppm
	+/- 10	%	>300ppm
Sampling Rate	15	sec	
Operating Temperature	-40 to +70	^{O}C	
Operating Humidity	0 to 100	%RH	
Operating Pressure	300 to 1100	hPa	
	4.35 to 15.95	Psi	
	0.3 to 1.1	Bar	
Field life	>5	year	
TEMPERATURE SENSOR			
PARAMETER	RANGE	UNITS	CONDITIONS
Temperature	-40 to +70 (-40 to +158)	^{O}C (^{O}F)	Operational
Accuracy	+/- 2 (35.6)	^{O}C (^{O}F)	
Resolution	1 (33.8)	^{O}C (^{O}F)	
ELECTRICAL PARAMETERS			
PARAMETER	RANGE	UNITS	CONDITIONS
Supply Voltage	3.6 ±5% VDC	V	
Current Consumption	1.5	mA	Consumption is a function of sensor duty cycle.
Pulse Current	55	mA	MPS current + LoRa Com
Battery Capacity	19000	mAh	Li/SOCl2 Chemistry
Battery Life	18	Months	25% duty cycled operation, and with minimum 5 minutes of ON time duration.
PRESSURE SENSOR			
PARAMETER	RANGE	UNITS	CONDITIONS
Pressure	300 to 1100	hPa	Full Accuracy
	4.35 to 15.95	PSI	Full Accuracy
	0.3 to 1.1	Bar	Full Accuracy
Accuracy	0.5% of span		
Resolution	1	hPa	
HUMIDITY SENSOR			
PARAMETER	RANGE	UNITS	CONDITIONS
Humidity	0 to 100	%RH	Full Accuracy
Accuracy	+/- 3	%RH	
Resolution	1	%RH	

COMMUNICATIONS TECHNOLOGY SPECIFICATIONS

BLUETOOTH LOW ENERGY (BLE) TECHNOLOGY: BLUETOOTH® 5.0			
DESCRIPTION	RANGE	UNITS	CONDITIONS
Frequency	2360 to 2500	MHz	
RX Sensitivity	-96	dBm	0.25 Mbps
TX Power	-17 to 0	dBm	BLE
Range	Typical 50	Meters	LOS
LONG RANGE (LoRa) COMMUNICATION TECHNOLOGY: LoRaWAN® CLASS-A			
DESCRIPTION	RANGE	UNITS	CONDITIONS
Frequency	For more information, see LoRaWAN frequency and channel details.	MHz	
	-117.5 LoRa	dBm	SF = 6
RX Sensitivity (125 kHz BW)	-122.5	dBm	SF = 7
	-125.5	dBm	SF = 8
	-128.5	dBm	SF = 9
	-131.0	dBm	SF = 10
	-133.5	dBm	SF = 11
	-135.5	dBm	SF = 12
TX Power	14	dBm	LoRaWAN® Region Specification

LORAWAN® FREQUENCY AND CHANNEL DETAILS

CHANNEL PLAN (COMMON NAME)	FREQUENCY	COUNTRY AND REGIONS
AS923	915 – 921 MHz 915 - 918 MHz	Africa
EU868	863 - 870 MHz 862 – 870 MHz 862 – 876 MHz	
IN865	865 – 868 MHz	
EU868	863 – 870 MHz	Asia
AS923	922 - 925.0 MHz	
	915 – 921 MHz	
AS923	915 to 928 MHz	Australia
EU868	863 to 870 MHz 863 - 873 MHz 864.4 - 868.6 MHz 869 - 869.2 MHz 869.4 – 869.65 MHz 869.7 – 870 MHz	Europe
AS923	915 - 918 MHz	
IN865	865 - 867 MHz	India
EU868	863 - 876 MHz	Kuwait
AS923	915 - 918 MHz	
AS923	916 – 919 MHz	Malaysia
	919 – 924 MHz	
AS923	915 - 928 MHz	New-Zealand
IN865	864 - 868 MHz	
US915	902 to 928 MHz	North America

CHANNEL PLAN (COMMON NAME)	FREQUENCY	COUNTRY AND REGIONS
AS923	920.5 - 928 MHz	
	915 - 921 MHz	
EU868	863 - 870 MHz	Oman
EU868	863 - 870 MHz	Qatar
AS923	915 - 921 MHz	
AS923	920 - 925 MHz	South America
EU868	863 - 870 MHz	
AS923	920 - 925 MHz	Singapore, Thailand
EU868	863 – 875.8 MHz	Saudi Arabia (SA)
AS923	915 – 921 MHz	

CERTIFICATIONS

PARAMETER	DESCRIPTION
Global Regulatory Certifications & Markings	**CE (EEA & EFTA Countries)** **EMC Directive**: EN 61326-1, EN 61326-2-3 **Radio Equipment Directive**: ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 300 328, ETSI EN 301 489-1, ETSI EN 301 489-3 & ETSI EN 301 489-17 **Low Voltage Directive**: EN 61010-1 **RoHS directive**: EN 50581: 2012 **Radio Exposure Directive**: EN 50385: 2017 **Explosive Atmospheres Directive**: EN 60079-0: 2018 EN 60079-11: 2012
	UKCA (United Kingdom) **EMC Regulations**: EN 61326-1, EN 61326-2-3 **Radio Equipment Regulations**: ETSI EN 300 220-1, ETSI EN 300 220-2, ETSI EN 300 328, ETSI EN 301 489-1, ETSI EN 301 489-3 & ETSI EN 301 489-17 **Electrical Safety Regulations**: EN 61010-1 **RoHS Regulations**: EN 50581: 2012 **Radio Exposure Regulations**: EN 50385: 2017 **Explosive Atmospheres Regulations**: EN 60079-0: 2018 EN 60079-11: 2012
	FCC Approval (United States) 47 CFR Part 15 Subpart B & C
	ISED Approval (Canada) IC Regulation ICES-003 Issue 7:2020 and ICES-Gen Issue 1:2018+A1:2021
	LoRaWAN Alliance Certified
	Bluetooth SIG Listed
	Ingress Protection Class: IP66
Hazardous Location Certifications	**IECEx Intrinsic Safety** Ex ia IIB T4 Ga; Tamb: -40°C to +70°C
	ATEX Intrinsic Safety II 1G - Ex ia IIB T4 Ga; Tamb: -40°C to +70°C
	UKCA Intrinsic Safety II 1G - Ex ia IIB T4 Ga; Tamb: -40°C to +70°C
	North America & Canada - CSA Compliance Class I, Division 1, Groups C and D T4 (I.S.) Ex ia IIB T4 Ga Class I, Zone 0, AEx ia IIB T4 Ga Ambient Temperature: -40°C to +70°C
	CCoE Approval (India) Ex ia IIB T4 Ga; Tamb: -40°C to +70°C

PHYSICAL DIMENSIONS

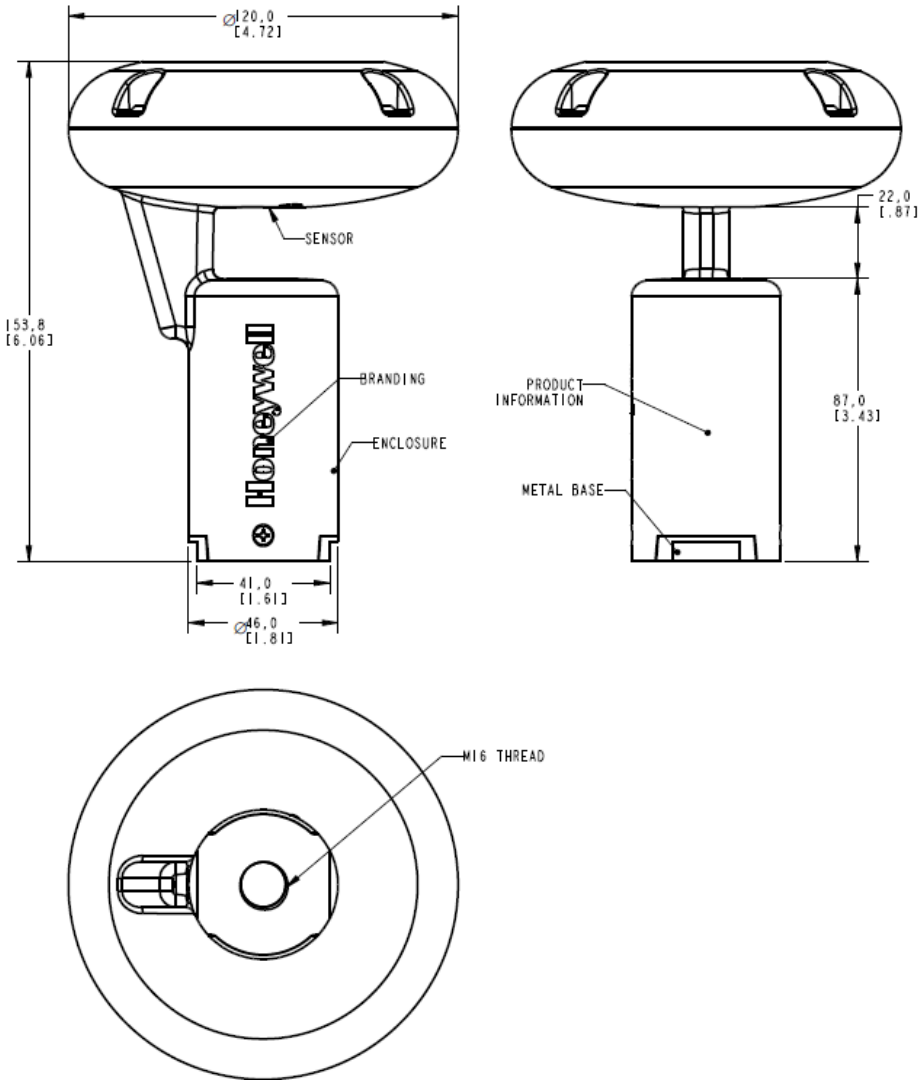
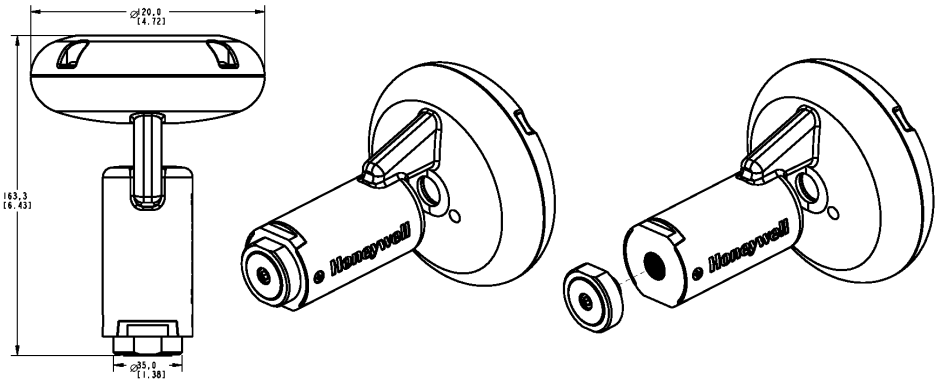
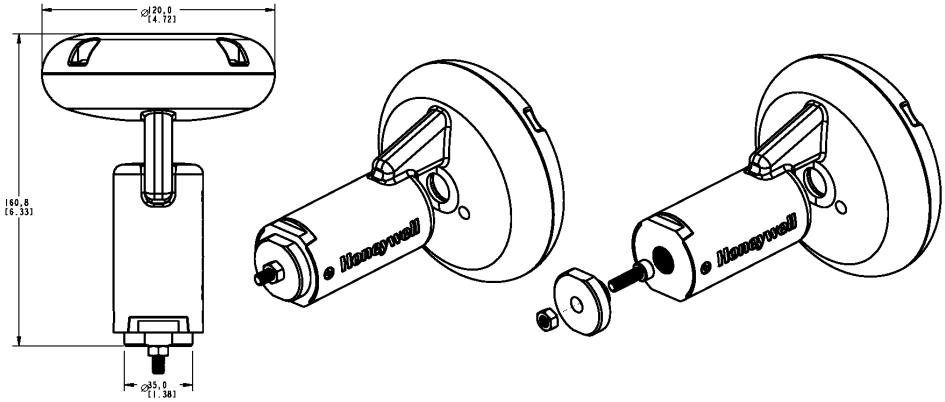
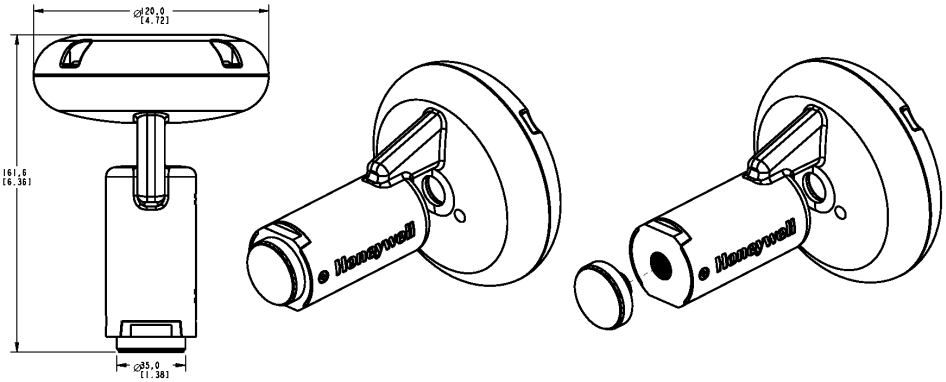


Figure 2: Physical Dimensions

MOUNTING AND ACCESSORIES

SENSOR MOUNTING OPTIONS	
MOUNTING TYPE	DRAWING
Magnetic Mount Adapter: Attach to the target structure with magnetic pull force.	 Figure 3: Signal Scout fitted with Magnetic Adapter
Screw Mount Adapter: M6 screw & nut arrangement to clamp on the target structure.	 Figure 4: Signal Scout fitted with Screw Mount Adapter
Adhesive Mount Adapter: Attach to the target structure with sticky adapter face.	 Figure 5: Signal Scout fitted with Adhesive Mount Adapter

Material Construction	
Housing	Polycarbonate housing
Bottom	Metal Base – Aluminum 6061, Adapters – Aluminum 6061

ACRONYMS

ACRONYMS	DEFINITION
°C	Degree Celsius
°F	Fahrenheit
ATEX	Appareils destinés à être utilisés en Atmosphères Explosives
BLE	Bluetooth® Low Energy
CCOE	Chief Controller of Explosives
CAPEX	Capital Expenditures
dBm	Decibel-Milliwatts
EMC	Electromagnetic Compatibility
EU	European Union
ETSI	European Telecommunications Standards Institute
FCC	The Federal Communications Commission
G	Acceleration (9.81 m/ s^2)
hPa	Hectopascal
Hz	Hertz
in	inch
iOS	iPhone Operating System
IIoT	Industrial Internet of Things
ISED	Innovation, Science and Economic Development
IECEx	International Electrotechnical Commission for Explosive Atmospheres
kHz	Kilohertz
km	Kilometre
kPa	Kilopascal
lb	Pound
LOS	Line of Sight
LoRaWAN®	Long Range Wide Area Network Protocol
LVD	Low Voltage Directive
MEMS	Micro-electromechanical systems
MHz	Megahertz
NPT	National Pipe Thread
OPEX	Operating Expenses
Pa	Pascal
RED	Radio Equipment Directive
RF	Radio frequency
RSSI	Received Signal Strength Indicator
RX	Receiver
TX	Transmitter
UKCA	UK Conformity Assessed

For more information
To learn more about Honeywell's products, visit https://process.honeywell.com or contact your Honeywell account manager.

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THE FUTURE IS WHAT WE MAKE IT

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