

# HONEYWELL

## VERSATILIS™ SIGNAL SCOUT™

### **| Emission detector, Methane (CH<sub>4</sub>) 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.
- 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™



## 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. <i>For more information, see Honeywell Versatilis Signal Scout Installation and User's Guide, 34-VT-25-02.</i>
Battery	The Low power detector is energized by Primary D-size Battery; Li/SOCl <sub>2</sub>
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; 20 °C (68 °F), 50%RH
Sampling Rate	15	sec	
Operating Temperature	-40 to +70	°C	

Operating Humidity	0 to 100	%RH	
Operating Pressure	800 to 1200	hPa	
Field life	>5	year	

TEMPERATURE SENSOR			
PARAMETER	RANGE	UNITS	CONDITIONS
Temperature	-40 to +70 (-40 to +158)	°C (°F)	Operational
Accuracy	+/- 0.5 (0.9)	°C (°F)	+25 °C (+77 °F)
	+/- 1.5 (2.7)	°C (°F)	-40°C to 70°C (-40°F to +158°F)
Resolution	0.01 (0.018)	°C (°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/SOCl <sub>2</sub> 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
Absolute Accuracy	+/- 2.5	hPa	-20 to +65 °C (-4 to +149 °F)
Resolution	0.18	Pa	

HUMIDITY SENSOR			
PARAMETER	RANGE	UNITS	CONDITIONS
Humidity	0 to 100	%RH	Full Accuracy
Absolute Accuracy	+/- 3	%RH	20 to 80 %RH
Hysteresis	+/- 1	%RH	+25 °C (+77 °F)
Resolution	0.008	%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 <a href="#">LoRaWAN frequency and channel details</a> .	MHz	
RX Sensitivity (125 kHz BW)	-117.5 LoRa	dBm	SF = 6
	-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	FREQUENCY	COUNTRY AND REGIONS
AS923-3	915 – 921 MHz 915 - 918 MHz	Africa
EU868	863 - 870 MHz 862 – 870 MHz 862 – 876 MHz	
IN865-867	865 – 868 MHz	
EU868	863 – 870 MHz	Asia
AS923-1	922 - 925.0 MHz	
AU915-928	915 - 928 MHz	
AS923-3	915 – 921 MHz	
AU915-928	915 to 928 MHz	Argentina
AS923-1	915 to 928 MHz	Australia
AU915-928		
AU915-928	915 to 928 MHz	Brazil
AU915-928	915 - 928 MHz	Chile
CN470-510*	430 - 510 MHz	China*
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
AS923-3	915 - 918 MHz	India
IN865-867	865 - 867 MHz	
EU433	433.05 - 434.79 MHz	Kuwait
EU868	863 - 876 MHz	
AS923-3	915 - 918 MHz	
AS923-1	916 – 919 MHz	Malaysia
AS923-1	919 – 924 MHz	
AS923-1	915 - 928 MHz	New-Zealand
AU915-928		

CHANNEL PLAN	FREQUENCY	COUNTRY AND REGIONS
IN865-867	864 - 868 MHz	
US915	902 to 928 MHz	North America
AU915-928	915 - 928 MHz 902 - 928 MHz	
AS923-1	920.5 - 928 MHz	
AS923-3	915 - 921 MHz	
EU433	433.05 - 434.79 MHz	
EU868	863 - 870 MHz	Oman
EU433	433.05 - 434.79 MHz	Qatar
EU868	863 - 870 MHz	
AS923-3	915 - 921 MHz	
AU915-928	915 - 928 MHz 915 - 930 MHz 902 - 928 MHz	South America
AS923-1	920 - 925 MHz	
EU868	863 - 870 MHz	
AS923-1	920 - 925 MHz	Singapore, Thailand
KR920-923	917 to 923.5 MHz	South Korea
EU868	863 - 875.8 MHz	Saudi Arabia (SA)
AS923-3	915 - 921 MHz	

\*This can be added in a future releases.

## CERTIFICATIONS

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

## PHYSICAL DIMENSIONS

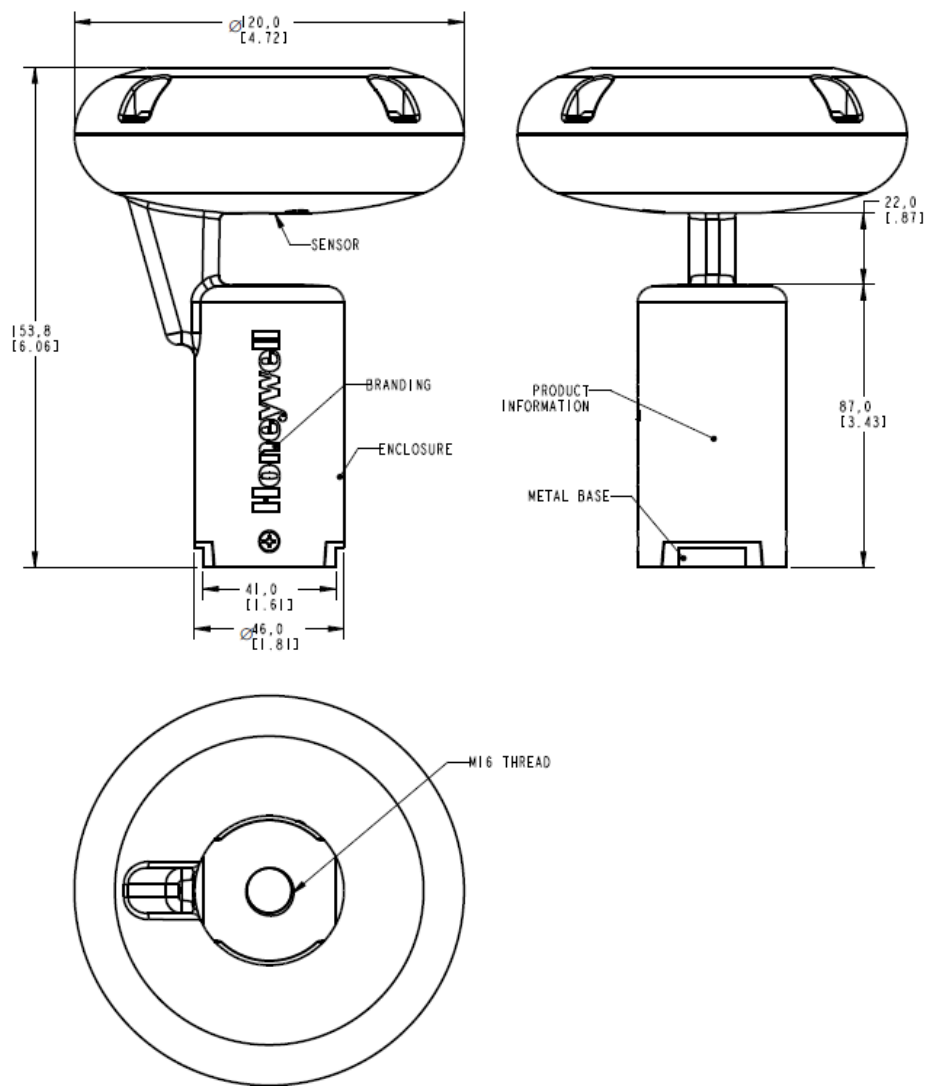


Figure 2: Physical Dimensions

## MOUNTING AND ACCESSORIES

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

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



# MODEL SELECTION GUIDE



Section XX  
Page: HVT100 & HVSS100  
Effective Date: Jan 27, 2023

## Model HVT100 & HVSS100 Honeywell Versatilis Family

## Model Selection Guide

Model Selection Guide: 34-VT-16-01 Issue 1, Rev 17

Honeywell Proprietary

**Instructions:** Make selections from all Tables: Key through XIII using column below the proper arrow. Asterisk indicates availability. Letter (a) refer to restrictions highlighted in the restrictions table. Tables delimited with dashes.  
**List Price:** Price equals the sum of prices for all selections made.

List Price equals the sum of prices for all selections made.

Key	I	II	III	IV	V	VI
HVT / HVSS	-	-	-	-	-	-

KEY NUMBER	Honeywell Versatilis Transmitter
	Honeywell Versatilis Transmitter - Equipment Health Monitor
	Honeywell Versatilis Signal Scout - Emissions Detector

Selection	HVT100
	HVSS100

TABLE I	Measuring Parameters
	Amb. PTH, Acoustics-Audio
	Valve Position
	Surface Temperature and Vibration
	External Temperature Sensor for process temp
	MultiGas Detection
	Emission Detection(Methane - Pallister)
	Emission Detection(Methane - Molecular Property Spectrometry), Amb. PTH
	Speed and Proximity
	Electro Magnetic Field
	IR Sensor / Camera
	Light and Color
	IAQ and Odour Detection
	Gyroscope
	Time of Flight (Ultrasonic)
	Electric Field Voltage Monitoring
	1 Axis Magnetic sesnor
	Vibration Monitoring Low Freq(3 Axis) 50g , max XXXKhz
	External Pressure Sensor for process pressure

A01	e	*
A02	d	
A03	e	
A04		
A05		
A06		*
A07		*
A08		
A09		
A10		
A11		
A12		
A13		
A14		
A15		
A16		
A17		
A18		

TABLE II	Energy Harvesting
b. Energy Harvesting method	No Energy harvesting Yes Solar Yes TEG

0	*	*
1	*	*
2	*	*

TABLE III	Housing and Mounting
a.Housing	Standard Housing (IP67,Poly carbonate) Emission Detection - Housing (IP66,Poly carbonate) Cabinet Monitoring
b.Mounting	Thread Magnetic Adapter Adhesive Others(Special)

S	*	
G		c
C		f
T	*	*
M	*	*
A	*	*
S	*	*

TABLE IV	Agency Approvals (see data sheet for Approval Code Details)
IS Approvals	CSA/ATEX/IECEX/UKCA Intrinsically Safe, Non-incendive, & Dustproof <sup>2</sup>
	CCoE Intrinsically Safe & Non-incendive
	NEPSI Intrinsically Safe & Non-incendive
	SAEx Intrinsically Safe & Non-incendive
	INMETRO Intrinsically Safe & Non-incendive
	KOSHA Intrinsically Safe & Non-incendive
	EAC Intrinsically Safe & Non-incendive

1	*	*
2	*	*
3	*	*
4	*	*
5	*	*
6	*	*
7	*	*

<sup>2</sup> Common Approval label for all Global agency approvals

TABLE V	Wireless Communication
LoRA Band	868MHz – Europe, India, Africa, Russia, UK, Parts of Middle East
	915MHz – North and South America, Canada
	914 to 928MHz – Australia, Japan, Malaysia, Indonesia, Korea
	470MHz to 510MHz – China

1	*	*
2	*	*
3	*	*
4	*	*

TABLE VI	Manufacturing Specials
Factory	Factory Identification

0000	*	*
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Restriction Letter	Available Only with		Not Available with	
	Table	Selection(s)	Table	Selection(s)
c	I	A06,A07		
d	III	S_	III	_M_ _A
	I	A02		
b	Select Only one option from this group			
e	I	A01 A03	I	A02,A04 to A19
f	I	A01,A03		

FIELD INSTALLABLE ACCESSORY KITS (HVT)	
Description	Kit Number
Honeywell Versatilis Tx Mounting Kit	51157048-500
Honeywell Versatilis Tx Filter Replacement Kit	51157048-501

FIELD INSTALLABLE ACCESSORY KITS (HVSS)	
Description	Kit Number
Honeywell Versatilis Tx Mounting Kit	51157048-500

## HONEYWELL VERSATILIS CONNECT APP – SIGNAL SCOUT’S CONFIGURATION APPLICATION

Honeywell Versatilis Connect App is an intuitive application that can be installed on mobile devices and tablets running on Android, Windows, and iOS (for future release) platforms. The application helps user to configure the Signal Scout with the required sensor parameters with an ease. The application is compatible to work with the Honeywell Versatilis Configurator tablet.

### Key Features:

- Secure log on
- Connects Via BLE scan or QR code
- Graphical user interface
- Configures the Signal Scout through online or offline template
- Read live data
- Locate Signal Scout’s location

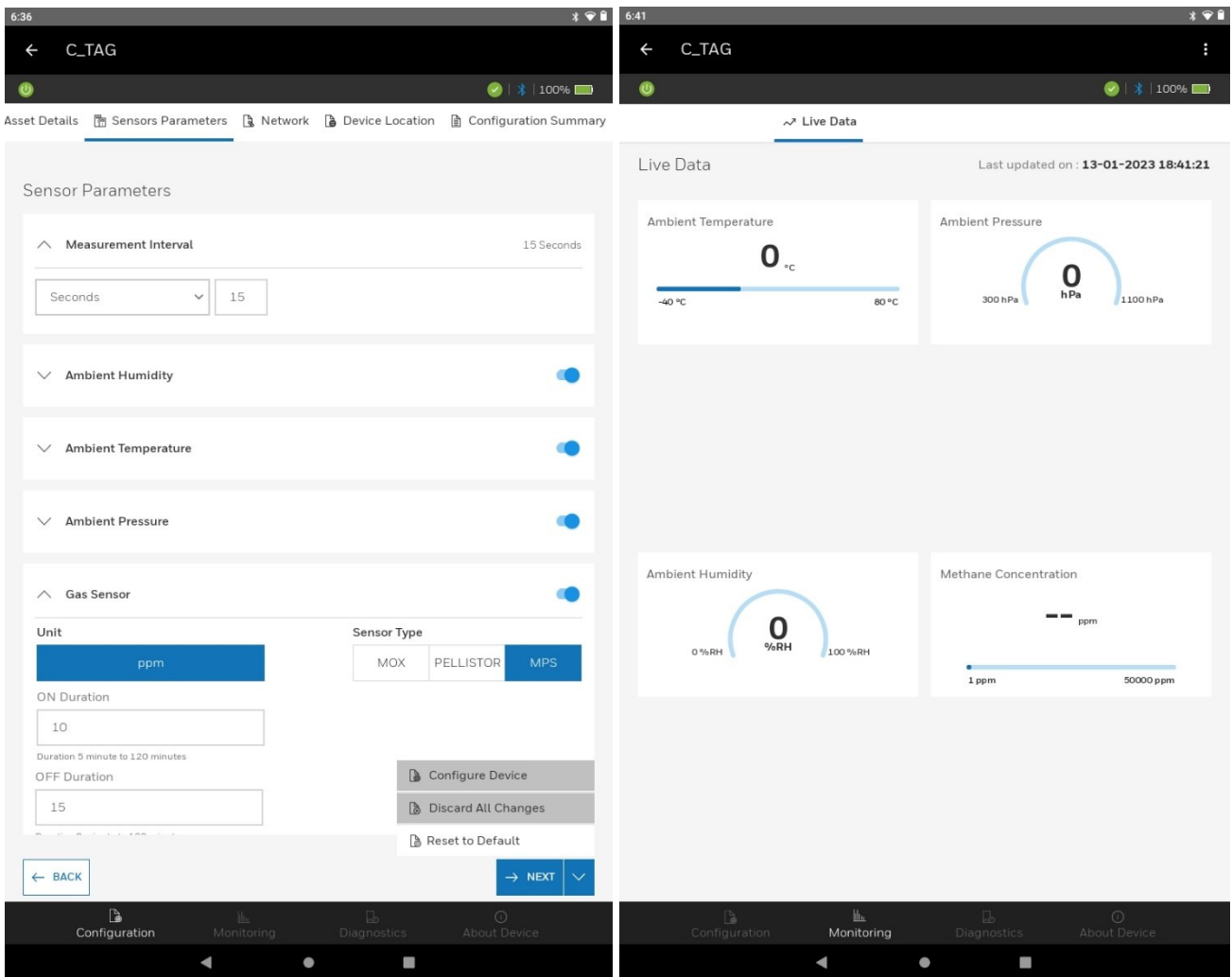


Figure 6: Sensor parameters and live data dashboards

## 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
FFT	Fast Fourier transform
G	Acceleration (9.81 m/ s <sup>2</sup> )
hPa	Hectopascal
Hz	Hertz
in	inch
iOS	iPhone Operating System
IIoT	Industrial Internet of Things
ISED	Innovation, Science and Economic Development
IECEEx	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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