HONEYWELL
VERSATILIS TRANSMITTER

Multi-Variant Sensing

Honeywell Versatilis™ Transmitter is a multi-variant sensing platform based on the latest LoRaWAN® protocol communication technology. Its inherently low-power compact design coupled with quick & easy installation, and commission helps manufacturers to deploy them at scale with the lowest CAPEX and negligible OPEX. These sensors are designed to monitor and predict the health of rotating equipment like motors, pumps, blowers, fans, compressors, and gearboxes. In addition, they can be deployed to remotely monitor the position of manual valves, the health of steam traps, and the surface temperature of static process equipment. They can also be deployed to monitor environmental conditions in life science facilities.

Figure 1– Honeywell Versatilis Transmitter

MEASUREMENT PARAMETERS:

Surface Temperature	Ambient Humidity	Ambient Pressure
Vibration	Audio Acoustics	Ambient Temperature

SENSORS AND COMMUNICATIONS:

The Honeywell Versatilis platform contains a suite of sensors encompassing versatile sensing parameters such as pressure, temperature, humidity, 3-axis accelerometer, and audio acoustics MEMS to provide insightful measurements. Sensors on-the platform are selected to cover a broad frequency spectrum enabling adequate sensing coverage of process and physical phenomena. Sensor fusion analysis on the acquired measurements can be performed. Any specific parameter is customizable in either software or hardware according to the requirement of a specific application. Each measured parameter contributes a unique dimension thereby augmenting the system into a multi-dimension sensing platform. Sensor data can be transferred over the LoRaWAN® network which is protected through secure key authentication. The Honeywell Versatilis Transmitter can be configured to notify the application through Event Triggers and FFT (Fast Fourier Transform) Triggers.

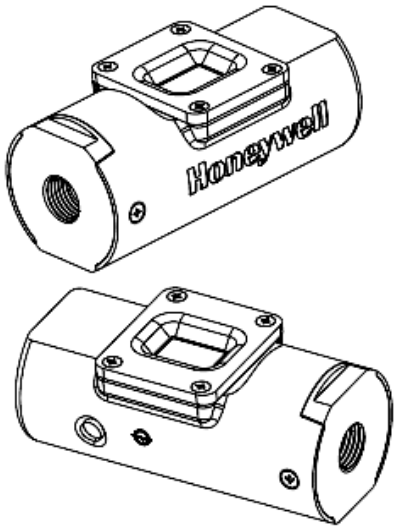

Figure 2– Assembly

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FEATURES

PARAMETER	DESCRIPTION
Pressure Sensor	900 to 1100 hPa (361.33 to 441.62 in WC)
Humidity	0 to 100 %RH
3-axis Accelerometer	+/- 16G, 2500Hz Bandwidth
Temperature Sensor	-40°C to +80°C
Velocity Measurement	Available as per ISO 20816-3
Speed Measurement	0 to 60,000 RPM
Acoustic Sensor	Bandwidth 20 to 20kHz, maximum 100 dB SPL
Vibration and Acoustics data in FFT format for further analysis to predict equipment failure and anomaly detection.	
Raw data capture and .CSV file generation for further analysis by the users.	
2.4 GHz, Bluetooth Low Energy 5.0 Communication.	
LoRaWAN® Class-A	For information, see "Honeywell Versatilis Transmitter LORAWAN® Frequency and channel details" on PageNo.8
LED Device Status	Green and Red LEDs (for more information, see Honeywell Versatilis Transmitter User manual)
Device Diagnostics	Battery status, Sensor Health, Range Alarm.
Battery life	5 years with 30 minute update rate
Operating Temperature	-40°C to 80°C (-40 °F to +176 °F)
Measuring Parameters	Ambient Temperature, Ambient Pressure, Surface Temperature, Humidity, Vibration, and Acoustics
Derived Parameters	Speed and Velocity
Physical Dimensions	W: 46 mm (1.81 Inches) x H: 100 mm (3.93 Inches)
Weight	180 grams (0.39 lb)
Multiple mounting options	Adhesive adapter. Magnetic adapter for ease of installation. Screw mount adapter with M6 screw and nut arrangement.
Data Security and Encrytion	LoRaWAN industry standard security AES256 LoRa Encryption.

MEASUREMENT PARAMETERS - RANGE AND PERFORMANCE SPECIFICATIONS

PRESSURE SENSOR			
PARAMETER	RANGE	UNITS	ACCURACY
Pressure	0.3 to 1.1	Bar	0.1% of span

AUDIO ACOUSTICS SENSOR		
PARAMETER	RANGE	UNITS
Acoustic	20 to 20,000	Hz (FFT)

AMBIENT TEMPERATURE SENSOR			
PARAMETER	RANGE	UNITS	ACCURACY
Ambient Temperature	-40 to -80 °C (-40 to -112 °F)	°C (°F)	0.5/1 °C

SURFACE TEMPERATURE SENSOR			
PARAMETER	RANGE	UNITS	ACCURACY
Temperature	-40 to +80	°C (°F)	0.5/1 °C
HUMIDITY SENSOR			
PARAMETER	RANGE	UNITS	ACCURACY
Humidity	0 to 100	%RH	+/- 3%
3D VIBRATION SENSOR			
PARAMETER	RANGE	UNITS	ACCURACY
3D Vibration/ Acceleration	25 to 2500Hz (+/- 16G)	FFT	+/- 1dB

COMMUNICATIONS TECHNOLOGY SPECIFICATIONS		
BLUETOOTH LOW ENERGY (BLE) TECHNOLOGY: BLUETOOTH® 5.0		
DESCRIPTION	RANGE	UNITS
Frequency	2360 to 2500	MHz
RF Impedance	50	Ohms
RX Sensitivity	-96	dBm
RSSI Step Size	2.4	dB
TX Power	-17 to 0	dBm
TX Power Step Size	2	dB
Range	<50	Meters

CERTIFICATIONS

PARAMETER	DESCRIPTION
Global Regulatory Certifications	CE (EEA & EFTA Countries) EMC: EN 61326-1, EN 61326-2-3, ETSI EN 301 489-1, ETSI EN 301 489-3 & ETSI EN 301 489-17 RED: ETSI EN 300 220, ETSI EN 300 328 LVD: IEC/EN 61010-1 EU RoHS directive
	FCC Approval (United States), FCC Part 15
	ISED Approval (Canada)
	UKCA Approval (United Kingdom)
	LoRaWAN Certified
	Bluetooth Qualified
	IECEx Intrinsic Safety Approval (Zone 0)
	ATEX Intrinsic Safety Approval (Zone 0)
	NAMODEL HAZLOC Approval (Class I/Division 1)
	UKCA Intrinsic Safety Approval (Zone 0)
	CCOE Approval (India)

LONG RANGE (LORA®) COMMUNICATION TECHNOLOGY: LORAWAN® CLASS-A			
DESCRIPTION	RANGE	UNITS	PERFORMANCE CONDITIONS
Frequency	868 - Europe 915 - North America	MHz	
RX Sensitivity (125 kHz BW)	-117.5	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 (Max)	SF = 12
TX Power	14	dBm	LoRaWAN® Region Specification

PHYSICAL DIMENSIONS

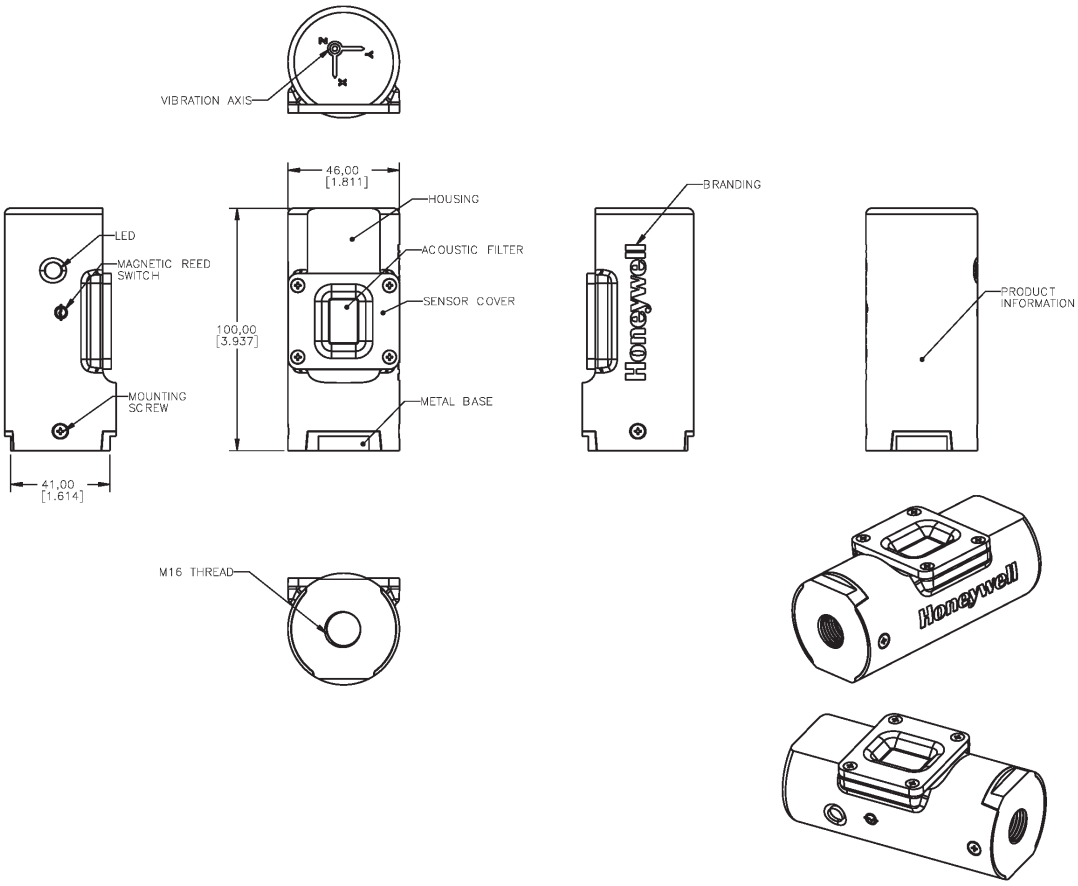

Figure 3– Physical Dimensions

MOUNTING CONSIDERATIONS

Adapters: The Honeywell Versatilis Transmitter comes with a variety of mounting options. The mounting options are magnetic adapter, adhesive adapter, and screw mount adapter.

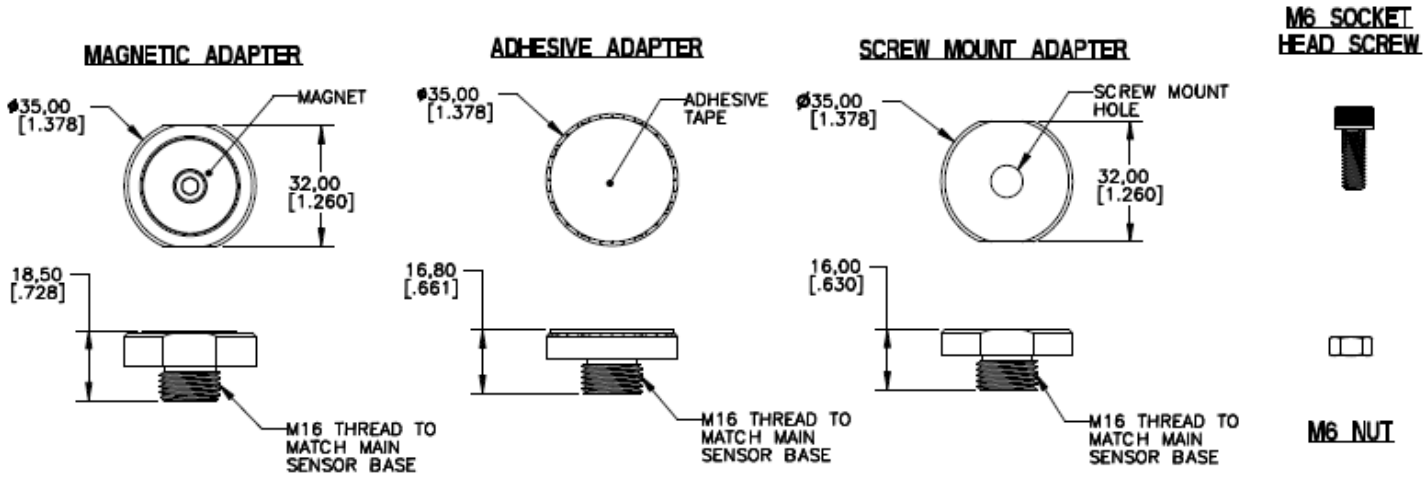

Figure 4– Adapters

Adhesive Adapter

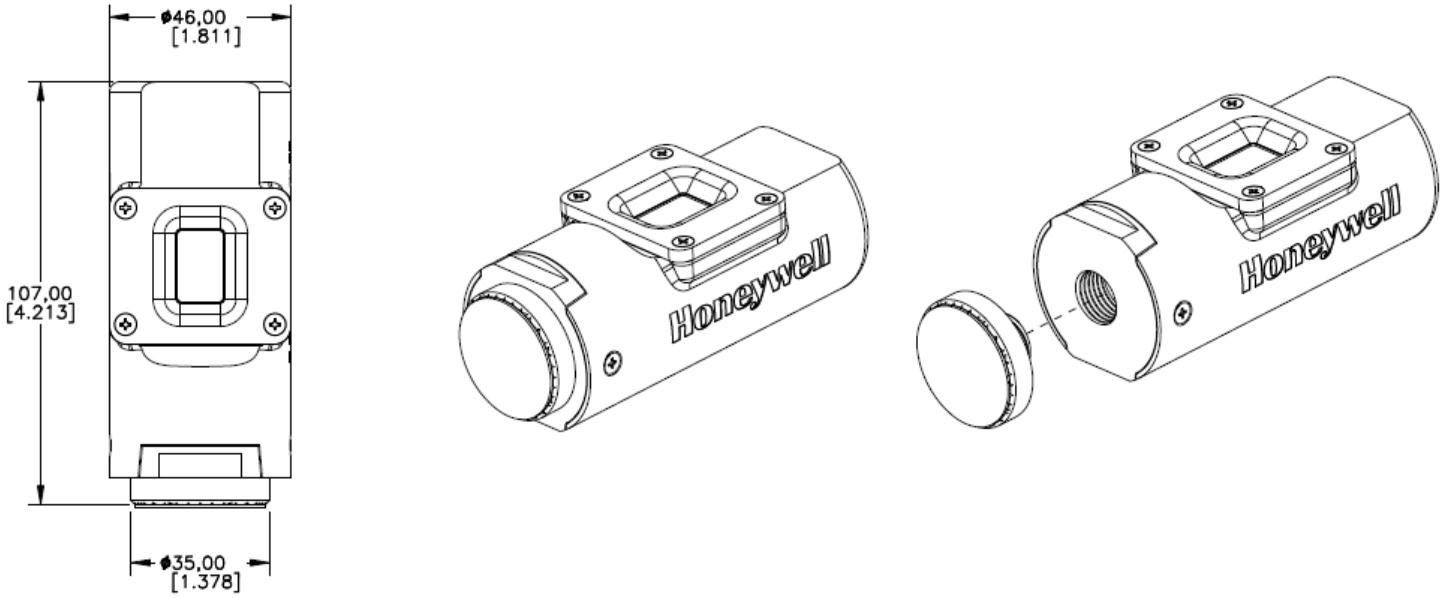

Figure 5– Adhesive mount

Magnetic Adapter (Attach to the machine with magnetic pull force).

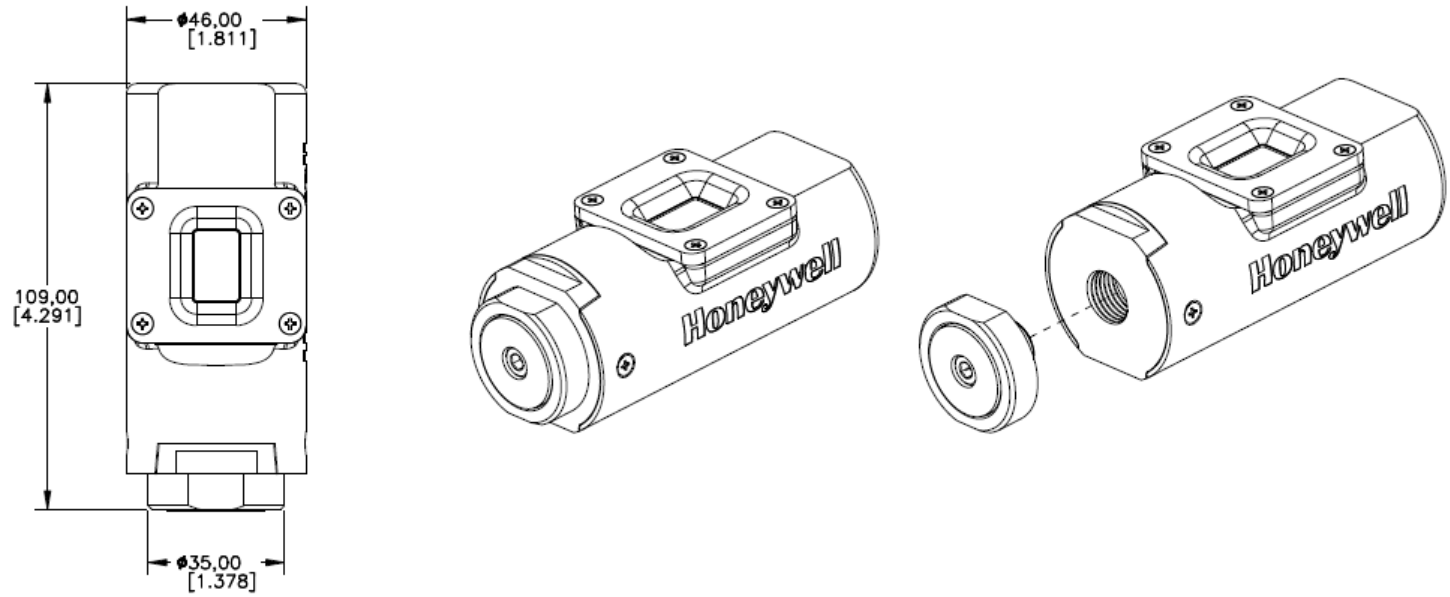

Figure 6– Magnetic mount

Screw mount Adapter - Preferred mounting for vibration and Surface Temperature applications. (M7 screw & nut arrangement to clamp on machine).

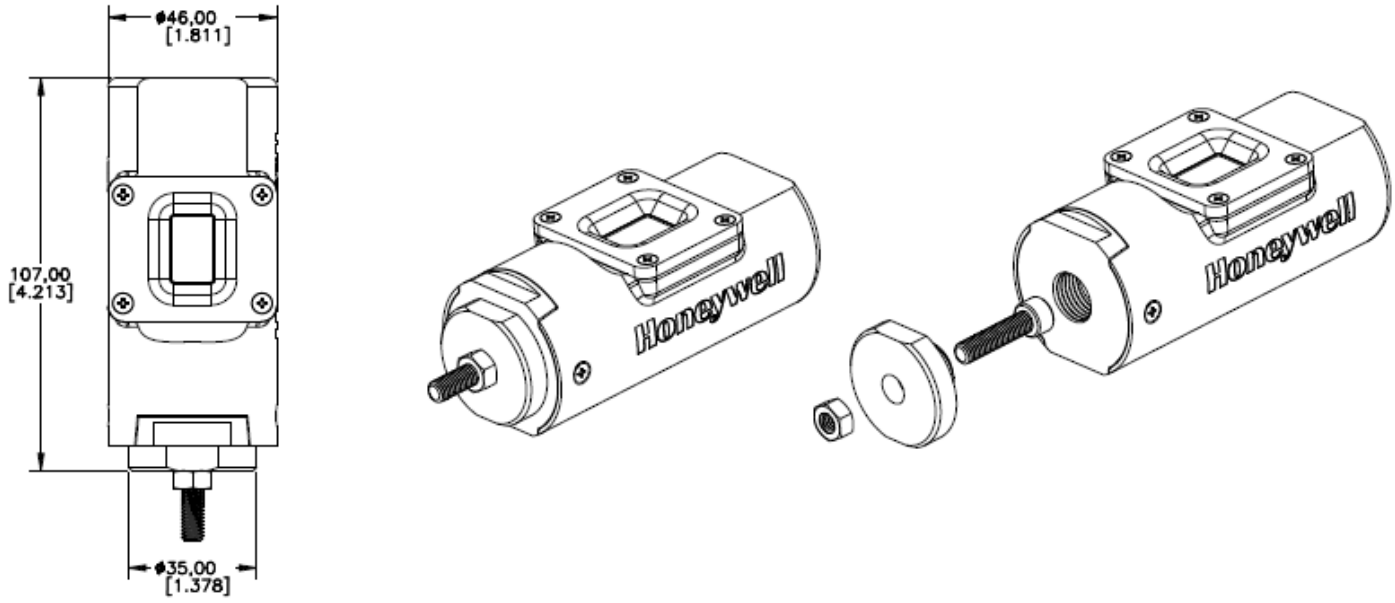

Figure 7– Screw mount

Other Custom Mounting Adapter - Available based on request.

COMPLIANCE STANDARDS	
Ingress Protection	IP67

MATERIAL CONSRTUCTION	
Top housing	Polycarbonate housing
Bottom housing	Metal Base – Aluminum ; 6061, NPT/Magnetic Adapter – SS304

HONEYWELL VERSATILIS CONNECT - DEVICE CONFIGURATION APPLICATION

Honeywell Versatilis Transmitter is an intuitive application that can be installed on mobile devices and tablets running iOS, Android, and Windows platforms. The application is compatible to work with the Honeywell Versatilis tablet.

Key Features:

- Secure log on
- Connects Via BLE
- Read real time as well as historical data
- Graphical user interface
- Identify Device as well as Asset
- Connect and Configure Honeywell Versatilis Transmitters in minutes

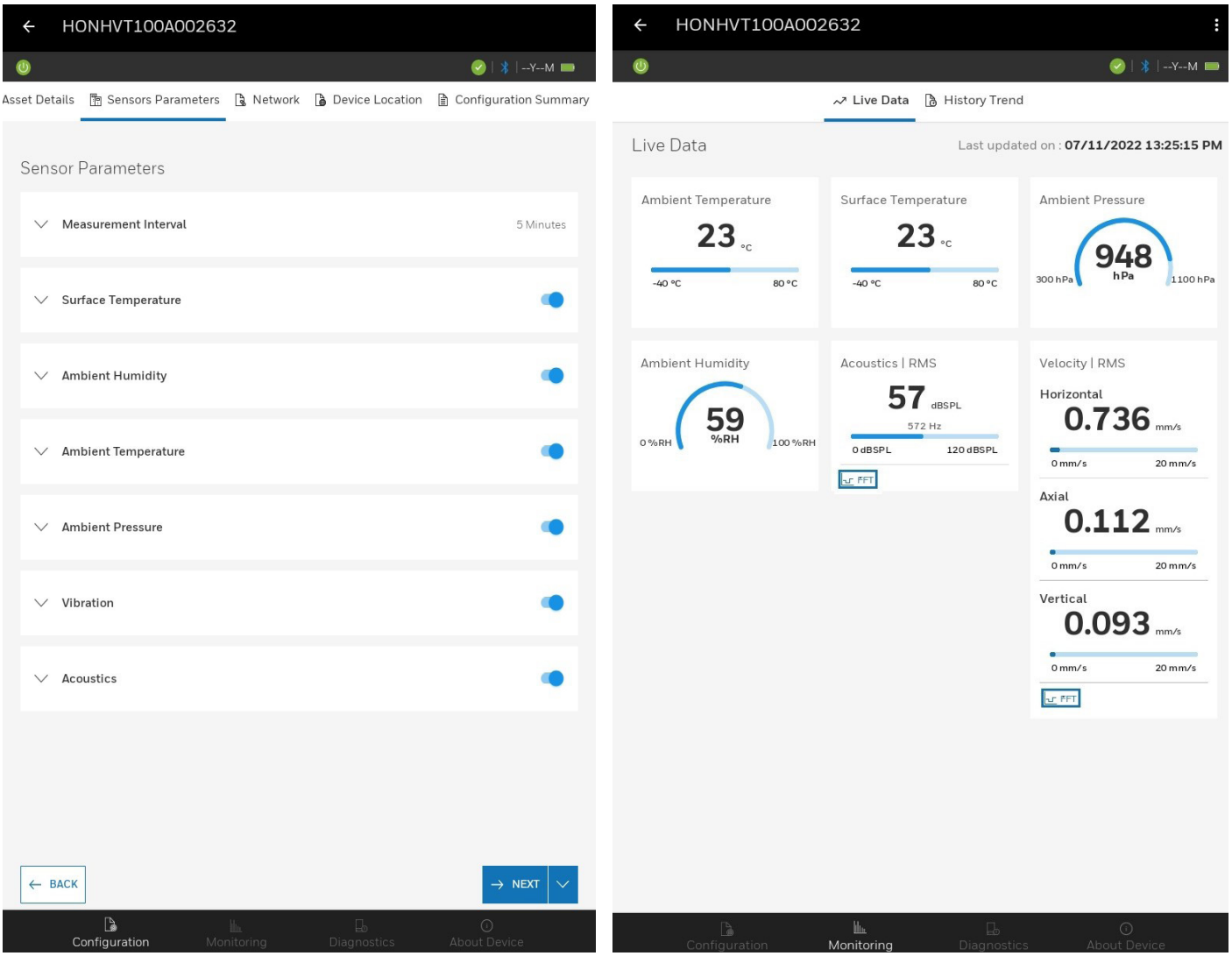

Figure 8–Sensor parameters and Live Data dashboards

HONEYWELL VERSATILIS TRANSMITTER LORAWAN® FREQUENCY AND CHANNEL DETAILS

CHANNEL PLAN	FREQUENCY	COUNTRY AND REGIONS
AS923-3	915 – 921 MHz 915 - 918 MHz	Africa
EU863-870	863 - 870 MHz 862 – 870 MHz 862 – 876 MHz	
IN865-867	865 – 868 MHz	
EU863-870	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*
EU863-870	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	
IN865-867	865 - 867 MHz	India
AS923-1	915 - 928 MHz	New-Zealand
AU915-928		
IN865-867	864 - 868 MHz	
AS923-1	916 – 919 MHz	Malaysia
AS923-1	919 – 924 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	
AU915-928	915 - 928 MHz 915 - 930 MHz 902 - 928 MHz	South America
AS923-1	920 - 925 MHz	
EU863-870	863 - 870 MHz	
AS923-1	920 - 925 MHz	Singapore, Thailand
KR920	920.9 to 923.3 MHz	South Korea
EU863-870	863 – 875.8 MHz	Saudi Arabia (SA)
AS923-3	915 – 921 MHz	

* This can be added in a future releases.

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Section XX
Page: HVT100 & HVSS100
Effective Date: Nov 23, 2022

Model HVT100 & HVSS100 Honeywell Versatilis Family

Model Selection Guide with Price Data

Model Selection Guide: 34-VT-16-01, Issue 1, Rev 13

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.

Key	I	II	III	IV	V	VI	VII	VIII	IX
HVT\HVSS	_ _ _ _ _ _	_	_ _	_ _ _	_ _ _	_	_ _ _ _	_ _ _ _ _ _	0 0 0 0

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

KEY NUMBER	Honeywell Versatilis Transmitter	Selection
	Honeywell Versatilis Transmitter - Equipment Health Monitor	HVT100 ▼
	Honeywell Versatilis Signal Scout - Emissions Detector	HVSS100 ▼

TABLE I	Measuring Parameters		
	Amb. PTH, Acoustics–Audio	A01	e *
	Valve Position	A02	d
	Surface Temperature and Vibration	A03	e

TABLE II	Energy Harvesting		
b. Energy Harvesting method	No Energy harvesting	0	* *
	Yes Solar	1	* *
	Yes TEG	2	* *

TABLE III	Housing and Mounting		
a.Housing	Standard Housing (Poly carbonate)	S _	*
	Emssion Detection - Housing (Poly carbonate)	G _	c
	Cabinet Monitoring	C _	f
b.Mounting	Thread	_ T	* *
	Magnetic Adapter	_ M	* *
	Adhesive	_ A	* *
	Others(Special)	_ S	* *

TABLE IV	Agency Approvals (see data sheet for Approval Code Details)		
IS Approvals	CSA/ATEX/IECEX/UKCA Intrinsically Safe, Non-incendive, & Dustproof[2]	1	* *
	CCoE Intrinsically Safe & Non-incendive	2	* *
	NEPSI Intrinsically Safe & Non-incendive	3	* *
	SAEx Intrinsically Safe & Non-incendive	4	* *
	INMETRO Intrinsically Safe & Non-incendive	5	* *
	KOSHA Intrinsically Safe & Non-incendive	6	* *
	EAC Intrinsically Safe & Non-incendive	7	* *

[2] Common Approval label for all Global agency approvals

TABLE V	Wireless Communication		
LoRA Band	868MHz – Europe, India, Africa, Russia, UK, Parts of Middle East	1	* *
	915MHz – North and South America, Canada, Australia, Japan	2	* *
	914 to 928MHz – Australia, Japan, Malaysia, Indonesia	3	* *
	470MHz to 510MHz – China	4	* *

TABLE VI	Manufacturing Specials		
Factory	Factory Identification	0000	* *

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	A02,A04 to A19
f	I	A01,A03		

FIELD INSTALLABLE ACCESSORY KITS

Description	Kit Number
Honeywell Versatilis Tx Mounting Kit	51157048-500

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^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 System for Certification
kHz	Kilohertz
km	Kilometre
kPa	Kilopascal
lb	Pound
LoRaWAN®	Low Range Wide Area Network Protocol
LVD	Low Voltage Directive
MEMS	Micro-electromechanical systems
MHz	Megahertz
NPT	National Pipe Thread
OPEX	Operating Expenses
Pa	Pascal

ACRONYMS	DEFINITION
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 www.process.honeywell.com or contact your Honeywell account manager.

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