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, triaxial 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.

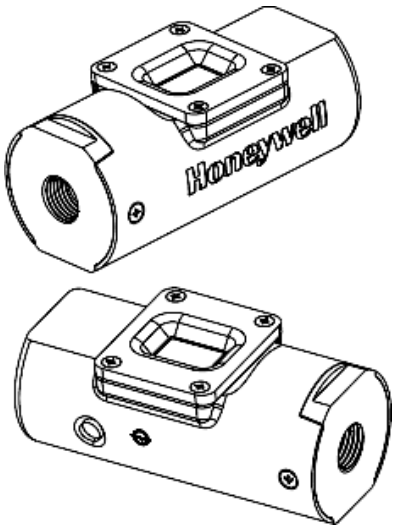

Figure 2– Assembly

Honeywell

FEATURES

PARAMETER	DESCRIPTION
Pressure Sensor	300 to 1100 hPa
Humidity	0 to 100 %RH
Triaxial Accelerometer	+/- 16G, 2500Hz Bandwidth
Temperature Sensor	-40°C to +80°C
Velocity Measurement	Available as per ISO 10816-3
Speed Measurement*	0 to 60,000 RPM
Operating Temperature	-40°C to +80°C (-40 °F to +176 °F)
Acoustic Sensor	Bandwidth 20 to 20kHz, maximum 120 dB SPL
Vibration and Acoustics data in FFT format for further analysis to predict equipment failure and anomaly detection.	
Raw data capture and FFT data for further analysis by the users.	
Communication	2.4 GHz Bluetooth Low Energy
	LoRaWAN Class-A. For information, see “Honeywell Versatilis Transmitter LoRaWAN® Frequency and channel details” on PageNo.8
LED Device Status	Green & Red LEDs (for more information, see Honeywell Versatilis Transmitter User Guide,34-VT-25-01
Device Diagnostics	Battery status, Sensor Health
Battery life	5[1] years (with 5min sensor measurement interval & 30min LoRa update)
Measuring Parameters	Ambient Temperature, Ambient Pressure, Surface Temperature, Humidity, Vibration, and Acoustics
Derived Parameters	Velocity, Speed* and Displacement*
Physical Dimensions	W: 46 mm (1.81 Inches) x H: 100 mm (3.93 Inches)
Weight	180 grams (0.39 lb)
Mounting options	Adhesive adapter. Magnetic adapter Screw mount adapter (M6 screw)
Data Logging	Capable to record 20days of data with default configuration.
Data Security and Encryption	AES256 LoRa and BLE Encryption.

*Supported for future releases.
[1]Change in default parameters will effect the battery life accordingly.

MEASUREMENT PARAMETERS – RANGE AND PERFORMANCE SPECIFICATIONS

SENSOR	RANGE	UNITS	ACCURACY
Pressure	300 to 1100 hPa	hPa	0.5% of span
Temperature	-40 to +80 °C (-40 to +176 °F)	°C (°F)	+/-3 °C
Humidity	0 to 100	%RH	+/- 3%
Ambient Temperature	-40 to +80 °C (-40 to +176 °F)	°C (°F)	+/-2 °C
Audio Acoustics	20 to 20,000	Hz	
	Upto 120	dBSPL	+/-3 dBSPL@1KHz
Triaxial Vibration/Acceleration	20 to 2500 (+/-16G)	Hz	+/- 1dB(*)
* With Screw Mount Adapter.			

COMMUNICATIONS TECHNOLOGY SPECIFICATIONS		
BLUETOOTH LOW ENERGY (BLE) TECHNOLOGY: BLUETOOTH® 5.0		
DESCRIPTION	RANGE	UNITS
Frequency	2360 to 2500	MHz
RX Sensitivity	-96	dBm
TX Power	-17 to 0	dBm
Range	Typical 50	Meters

LONG RANGE COMMUNICATION TECHNOLOGY: LORAWAN® CLASS-A			
DESCRIPTION	RANGE	UNITS	PERFORMANCE CONDITIONS
Frequency	For more information, see LoRaWAN frequency and channel details	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 (Max)	SF = 12
TX Power	14	dBm	LoRaWAN® Region Specification

COMPLIANCE STANDARDS	
Ingress Protection	IP66 & IP67

MATERIAL CONSRTUCTION	
Housing	Polycarbonate housing
Base	Metal Base – Aluminum ; 6061, NPT/Magnetic Adapter – 6061

CERTIFICATIONS

PARAMETER	DESCRIPTION
Global Regulatory Certifications	**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 & IP67
Hazardous Location Certifications	I**ECEx Intrinsic Safety** Ex ia IIB T4 Ga; Tamb: -40°C to +80°C
	ATEX Intrinsic Safety II 1G - Ex ia IIB T4 Ga; Tamb: -40°C to +80°C
	UKCA Intrinsic Safety II 1G - Ex ia IIB T4 Ga; Tamb: -40°C to +80°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 +80°C
	CCoE Approval (India) Ex ia IIB T4 Ga; Tamb: -40°C to +80°C

PHYSICAL DIMENSIONS

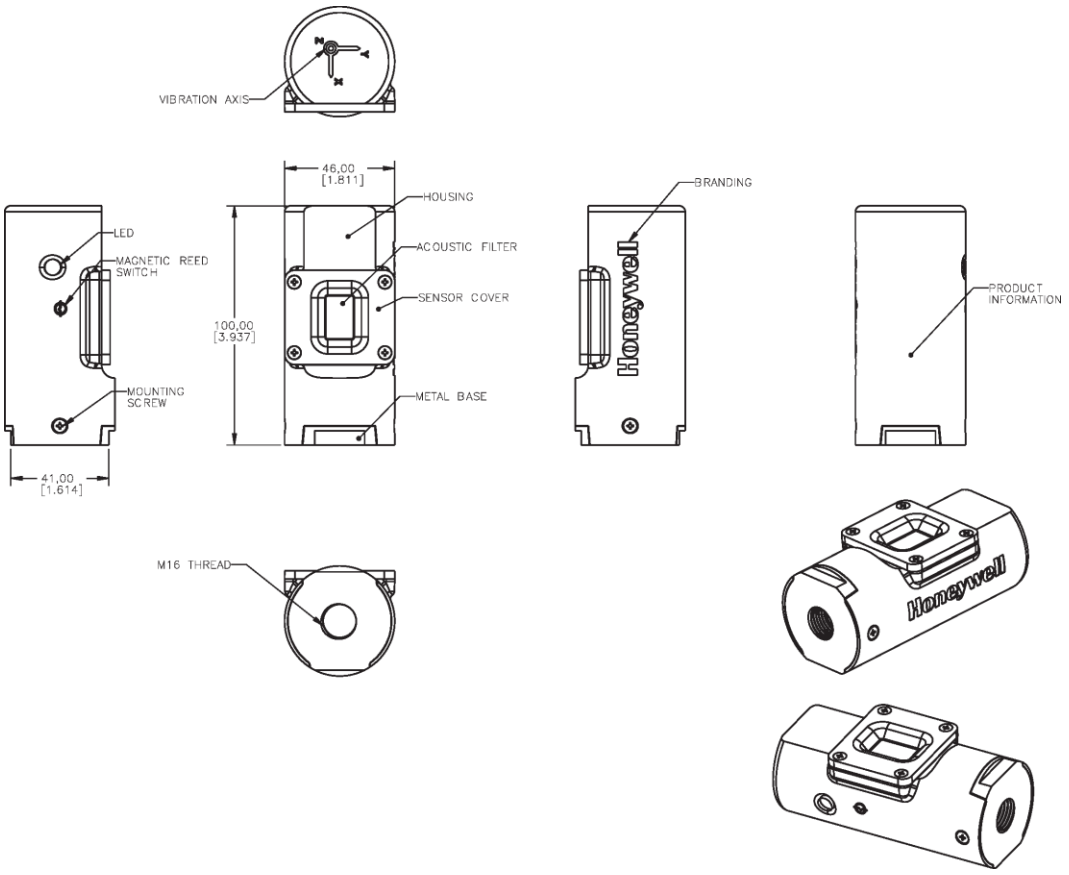

Figure 3– Physical Dimensions

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.

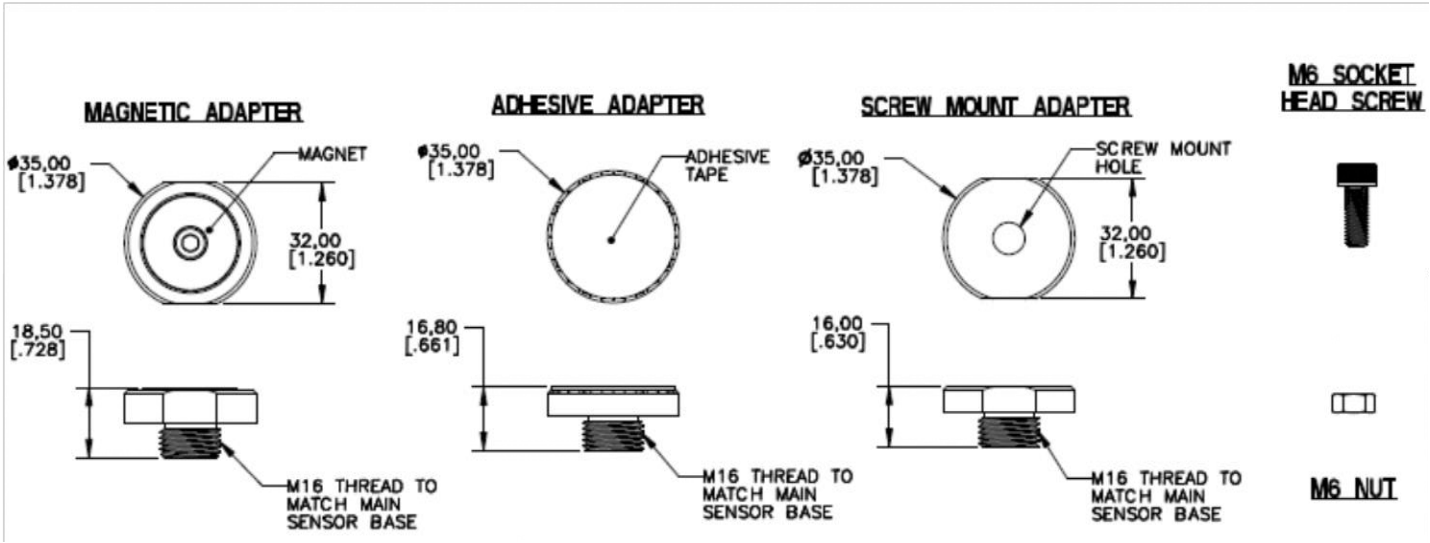

Figure 4– Adapters

Adhesive Adapter

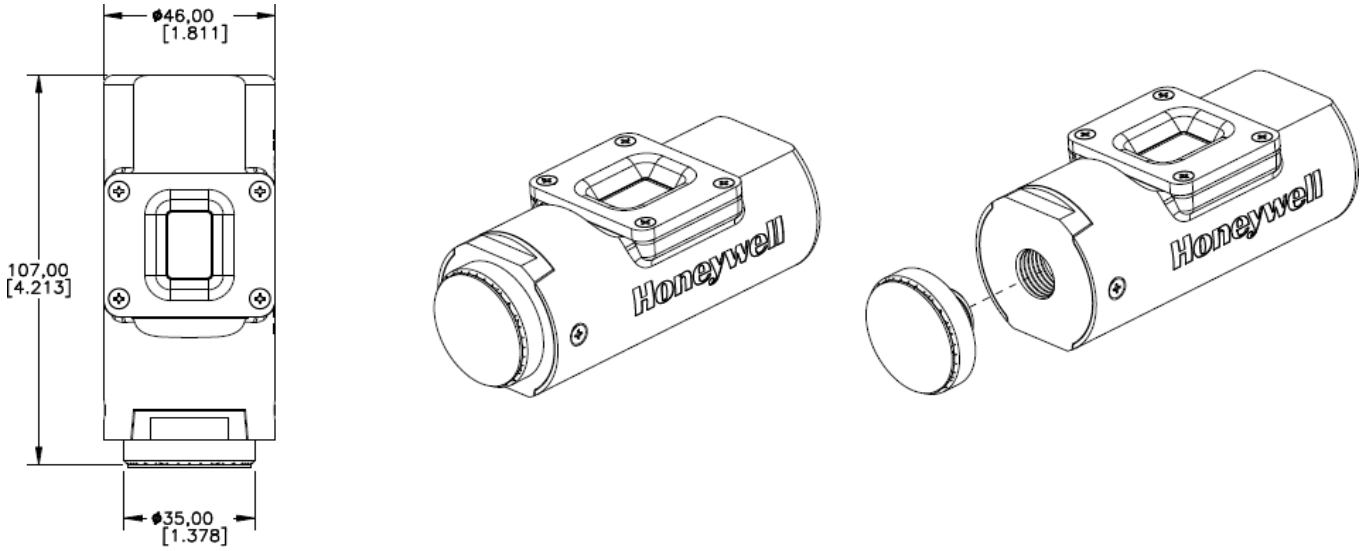

Figure 5– Adhesive mount

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

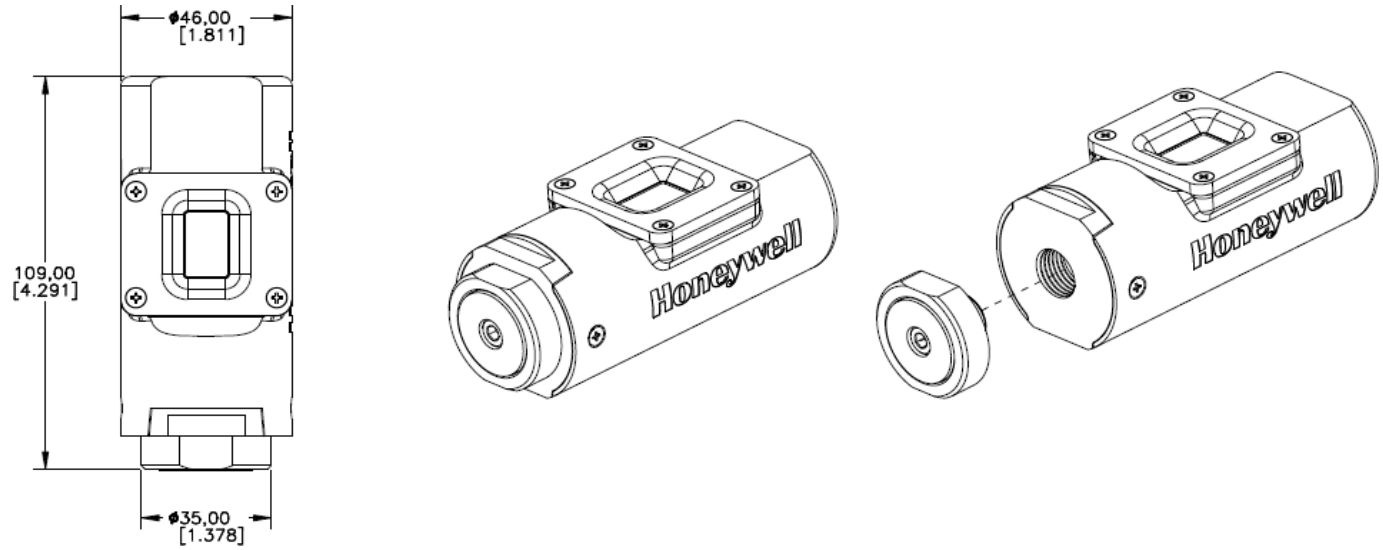

Figure 6– Magnetic mount

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

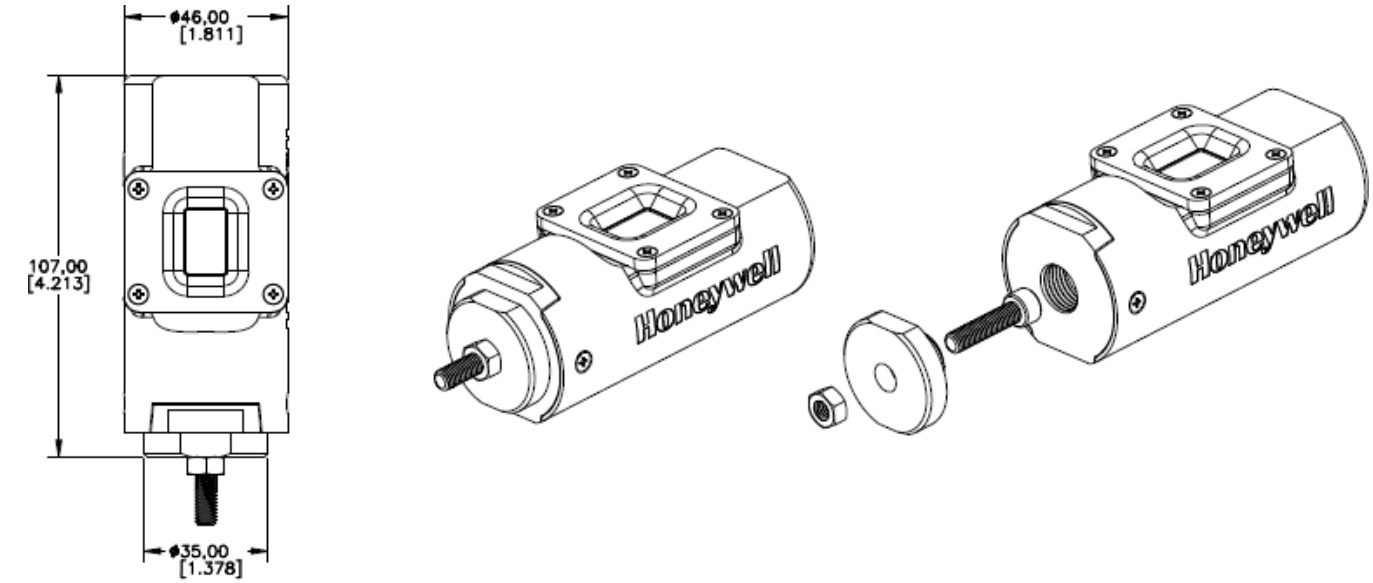

Figure 7 – Screw mount

Other Custom Mounting Adapter - Available based on request.

HONEYWELL VERSATILIS CONNECT – DEVICE CONFIGURATION APPLICATION

Honeywell Versatilis Transmitter is an intuitive application that can be installed on mobile devices and tablets running Android, Windows and iOS(*future release) 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

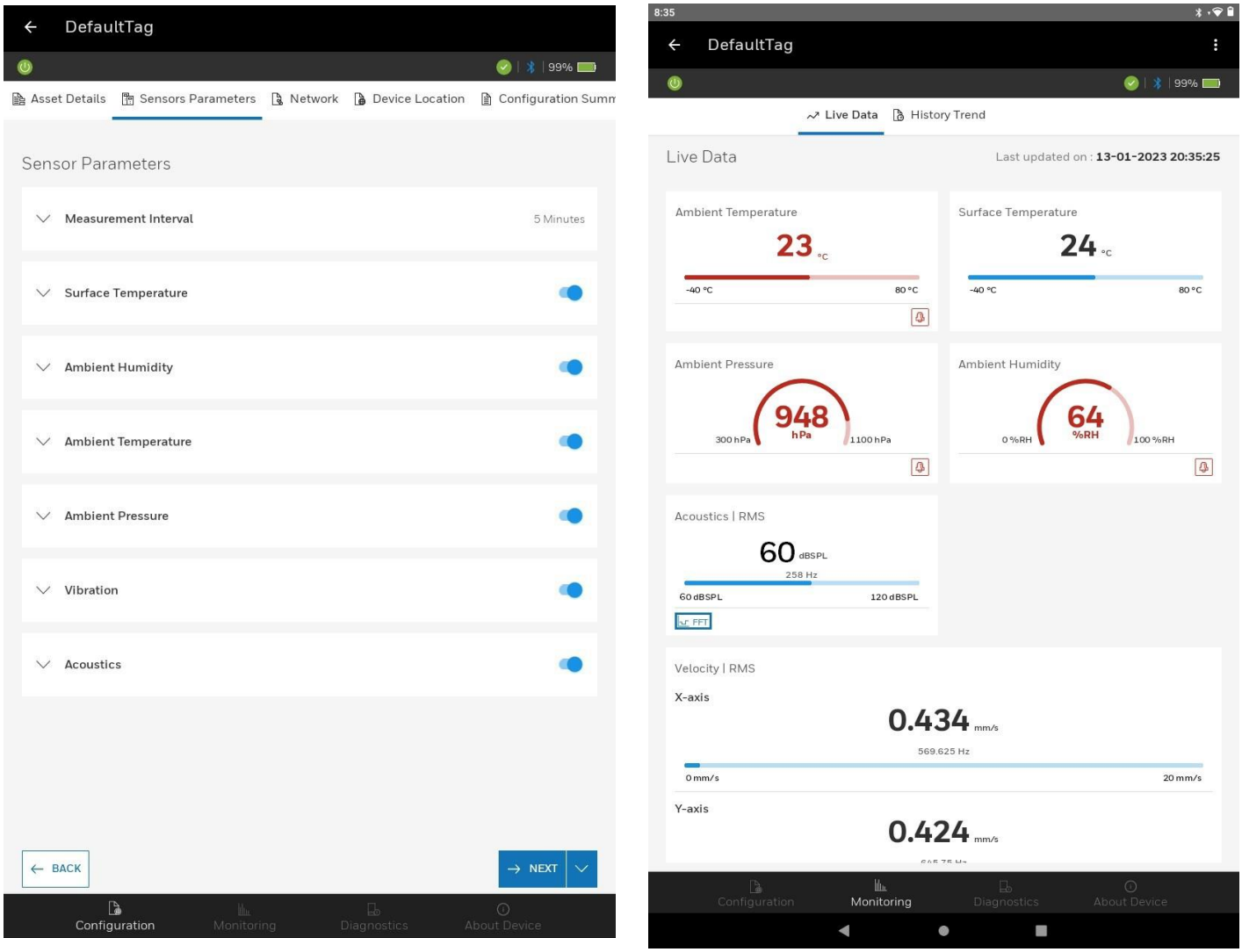

Figure 8–Sensor parameters and Live Data dashboards

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
EU433	433.05 - 434.79 MHz	Kuwait
EU863-870	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		
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	Oman
EU863-870	863 - 870 MHz	
EU433	433.05 - 434.79 MHz	Qatar
EU863-870	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	
EU863-870	863 - 870 MHz	
AS923-1	920 - 925 MHz	Singapore, Thailand
KR920-923	917 to 923.5 MHz	South Korea
EU863-870	863 – 875.8 MHz	Saudi Arabia (SA)
AS923-3	915 – 921 MHz	

* This can be added in future releases.

Honeywell

Model HVT100 & HVSS100

Honeywell Versatilis Family

Model Selection Guide: 34-VT-16-01 Issue 1, Rev 20

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.

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Key	I	II	III	IV	V	VI
HVT / HVSS ____ -	____ -	___ -	__ __ -	___ -	___ -	_____

KEY NUMBER	Honeywell Versatilis Transmitter	Selection
	Honeywell Versatilis Transmitter - Equipment Health Monitor	HVT100 ▼

TABLE I	Measuring Parameters		
	Amb. PTH, Acoustics–Audio	A01	e
	Surface Temperature and Vibration	A03	e

TABLE II	Energy Harvesting		
b. Energy Harvesting method	No Energy harvesting	0	*

TABLE III	Housing and Mounting		
a.Housing	Standard Housing (IP67,Poly carbonate)	S _	*
b.Mounting	Thread	_ T	*
	Magnetic Adapter	_ M	*
	Adhesive	_ A	*

TABLE IV	Agency Approvals (see data sheet for Approval Code Details)		
IS Approvals	CSA/ATEX/IECEX/UKCA Intrinsically Safe, Non-incendive/CCoE Intrinsically Safe[2]	1	*

[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	2	*
	914 to 928MHz – Australia, Japan, Malaysia, Indonesia, Korea	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	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

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 for Explosive Atmospheres
kHz	Kilohertz
km	Kilometre
kPa	Kilopascal
lb	Pound
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

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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34-VT-03-01 | Rev 6| June 2023

THE FUTURE IS WHAT WE MAKE IT

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