

Technical Information

Experion EHM Specification



EP03-070-520, Rev 1.0

Release 100

February 2023

Revision History

Revision	Date	Description
1.0	February 2023	Release version for Experion EHM

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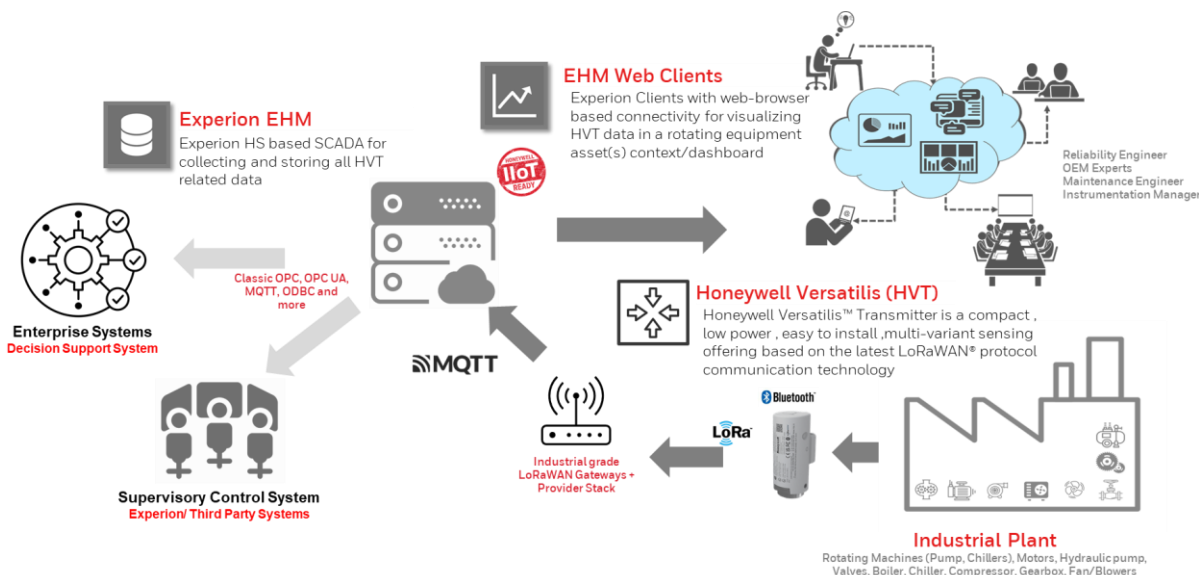
1. Experion EHM Overview

Experion® Equipment Health Monitoring (EHM) solution is based on proven Experion HS platform and can be used by plant managers and reliability engineers in process manufacturing facilities to monitor the health of rotating equipment. This enables maximizing equipment availability and reliability. Built on the proven Experion HS platform, it is reliable, flexible, easy to use, and scalable for any plant setup. Honeywell EHM solution enables collection, contextualization, and visualization of health-related parameters of industrial equipment.

Key features of Experion EHM solution include-

- Secure connectivity to Honeywell Versatilis Transmitters over MQTT.
- Supports LoRaWAN® communication technology through Industrial standard Gateways.
- Configure sensor devices with corresponding Assets in a Plant hierarchy.
- Sensor parameters data visualization using Birds Eye view and Drilldown device dashboards.
- Live and historical trends of Sensor parameters to troubleshoot issues.
- Displays equipment health alarms/ events when an alert payload is received.
- Quick deployment and requires minimal engineering efforts.
- ISO 10816 standard based Vibration alarm indications.
- Secure solution including User and Asset based Security.

2. Architecture Overview



Experion EHM solution uses proven Experion HS SCADA functionality to store and organize the data received from Honeywell Versatilis™ Transmitters. Experion EHM connects to the LoRaWAN provider's application server using secure MQTT interface. EHM uses web-clients for visualization of health data where the collected data is represented in the context of industrial equipment it is connected to. Web-clients ensure zero client deployment cost where any existing nodes within the network on customer's enterprise or OEM system can be used to access data on the go.

The collected Equipment health data can also be shared with existing supervisory control system and other enterprise level Management Information System (MIS) for improved decision making, thanks to open yet secure interfaces supported by Experion platform.

3. Solution Components

The Experion EHM solution has three major solution components-

1. Honeywell Versatilis Transmitter measures Surface temperature, Humidity, Ambient Pressure, Ambient Temperature, 3 Axis Vibration, and Acoustics of the equipment.
2. Secure communication gateway and provider supporting LoRa wireless technology & LoRaWAN stack, connecting Versatilis Transmitters to Honeywell EHM SCADA
3. Experion EHM SCADA for visualization, web-based clients with intuitive visualization of equipment health parameters, live and historical health trends

3.1. Honeywell Versatilis™ Transmitter (HVT)

Honeywell Versatilis™ Transmitter is a multi-variant sensing offering based on the latest LoRaWAN® protocol communication technology. Its inherently low power compact design coupled with quick and easy installation and commissioning help manufacturers to deploy them at scale with the lowest CAPEX and negligible OPEX.

The Honeywell Versatilis Transmitter offers multiple mounting options such as Screw, Magnetic, and Adhesive mount to suit the mounting surface of the target machine to ensure good bonding and accurate measurement. Following measurement types are supported in the current R100 HVT release:

- Equipment – Vibration 3 axis, Audio Acoustics and Surface Temperature
- Environment – Environment Humidity, Ambient Pressure and Ambient Temperature



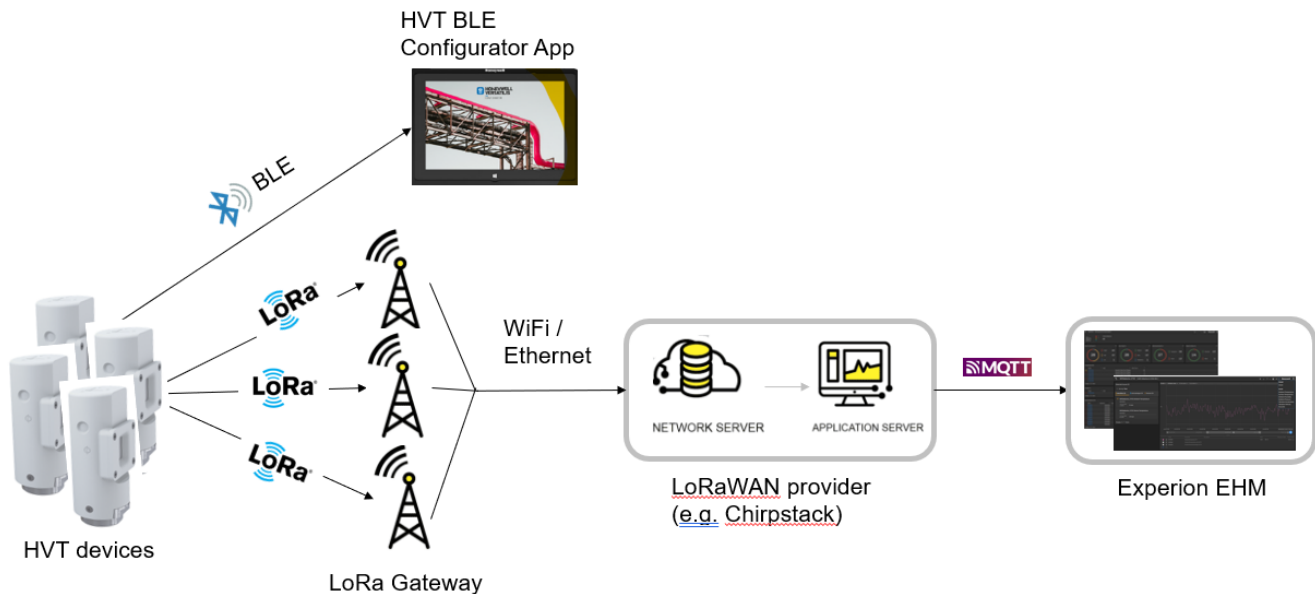
Find more details of Honeywell Versatilis™ Transmitter in the HVT Specification document, 34-VT-03-01.

3.2. Industrial LoRaWAN Gateways & Provider

Honeywell EHM solution uses certified LoRaWAN gateways which wirelessly receive data from the battery-operated Honeywell Versatilis Transmitters. The gateways support both OTAA and ABP activation modes for connecting with devices providing the required security and flexibility of project deployments. The gateways manage the device communications, aggregate the device data and provide data to LoRaWAN provider.

Alongside the LoRaWAN certified gateways, Experion EHM solution requires LoRaWAN provider that includes LoRaWAN Network and Application Server, enabling management for gateways, applications, devices, users, and then providing the HVT device data to Experion EHM SCADA platform for visualization over MQTT protocol. The provider can be provided as Virtual machine running in VMWare virtualization environment or installed directly in a PC on the network.

Use of LoRaWAN and MQTT protocols greatly enhance the communication security and data integrity.



3.3. Experion EHM SCADA

Experion EHM SCADA solution uses proven Experion HS platform to store and organize the data received from HVT devices through LoRaWAN provider using secure MQTT interface. The collected Equipment health data is arranged and presented using EHM web-clients for visualization and represented in the context of the connected industrial equipment. Web-clients ensure zero client deployment cost where any existing nodes on customer's enterprise or OEM system can be used to access data on the go.

4. Model Numbers

4.1. Honeywell Versatilis™ Transmitter (HVT)

Honeywell

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

A01	e	*
A02	d	
A03	e	

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 ²
	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	*	*

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
	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

4.2. LoRaWAN Gateway & Provider

Experion EHM uses industrial grade LoRaWAN Gateway & Provider that are commercially available. Below specification covers the minimum specification. End users can procure commercially off the shelf (COTS) available certified LoRaWAN Gateway & Provider and deploy.

System Configuration	LoRaWAN Gateway
Purpose	Bridge between HVT devices and LoRaWAN provider
Example Hardware	Multitech MTCDTIP-L4G1, Cisco Wireless Gateway for LoRaWAN

System Configuration	LoRaWAN Provider
Purpose	Enabling management for gateways, applications, devices, users, and then providing the HVT device data to Experion EHM SCADA Supports LoRaWAN Network server and Application server
Supported Interface with Experion EHM SCADA	MQTT
Example Software	ChirpStack
Example Virtual Machine resource requirements when deployed in VMWare Workstation Pro	2 CPU cores 4GB RAM 20GB Hard disk

4.3. Experion EHM SCADA

Experion EHM SCADA R100 is provided as a Virtual Machine and can be easily deployed on VMWare hypervisor platform. Below details cover the procedure to order Experion EHM.

4.3.1. Select Experion EHM Bundle

One of the below EHM bundles can be selected depending on the quantity of Honeywell Versatilis Transmitters (HVTs). Approximately 70 Experion SCADA points are required per HVT device.

Model Number	Description
EXPEHMLIC0040	Experion EHM that supports 40 HVT devices
EXPEHMLIC0100	Experion EHM that supports 100 HVT devices
EXPEHMLIC0250	Experion EHM that supports 250 HVT devices

Below table summarizes key Experion EHM SCADA capacity and features offered in R100 release.

Feature/Capacity	EXPEHMLIC0040	EXPEHMLIC0100	EXPEHMLIC0250
Maximum number of HVT devices supported	40	100	250
Maximum number of EHM SCADA Points	3,000	8,000	16,000
Maximum number of EHM Web Clients	2	2	2

Experion EHM is delivered as a Virtual Machine in USB Flash drive.

*More HVT devices and SCADA points can be added to Experion EHM solution based on project requirement. Please connect with your Honeywell contact for more details.

4.4. Experion EHM Server Machine Requirements

Experion EHM SCADA server node is distributed as ready to deploy virtual machine compatible with VMWare Workstation Pro. Below are the key resource requirements for the Experion EHM SCADA server machine.

System Configuration	Experion EHM SCADA Server (Virtual Machine)
Purpose	Experion EHM Server in Virtualization environment
Operating System	Windows Server 2019 Datacenter
Memory	16GB RAM for small-mid size configurations
CPU	4 cores
Disk Space	220GB or higher hard disk
Virtualization Hypervisor	VMWare Workstation 17 Pro or higher

Below are the key requirements for the Experion EHM Host Physical PC:

System Configuration	Experion EHM Host Machine Specs (Physical)
Purpose	To host Experion EHM Server VM and optionally LoRaWAN provider stack VM in Virtualization environment
Operating System	Windows 10 Enterprise LTSC 2019 Edition, or equivalent Windows 10 OS
Memory	32GB RAM for small-mid size configurations
CPU	Single or multiple Intel 2.5GHz, Octa Core processor or greater
Network Interface	Single or dual 1 Gbps or 100 Mbps Ethernet
Disk Space	500GB or higher hard disk or SSD
Virtualization Hypervisor	VMWare Workstation 17 Pro or higher

Below are the key requirements for the Experion EHM Web Client:

System Configuration	Experion EHM Web Client Specs
Purpose	To visualize the Experion EHM displays connecting to Experion EHM Server
Web browsers supported	Google Chrome and Microsoft Edge, November 22 update or later
Minimum Recommended Display resolution	1280 x 1024

4.5. Experion EHM Sample BOM

4.5.1. Sample 1

Requirement:

- 110 qty of Honeywell Versatilis Transmitters (HVTs)
- 2 Experion EHM web client users

Selected EHM bundle:

- In this scenario, the user selects *EXPEHMLIC0250* Experion EHM bundle.

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For More Information

Learn more about how Honeywell's Experion HS can improve your HMI and SCADA experience, visit process.honeywell.com > [Products](#) > [Field Instruments](#) > [Honeywell Versatilis Transmitter](#) or contact your Honeywell Account Manager, Distributor or System Integrator.

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