HONEYWELL VERSATILIS™ FOR CONDITION BASED MONITORING

Maximize Uptime, Reliability, and Efficiency
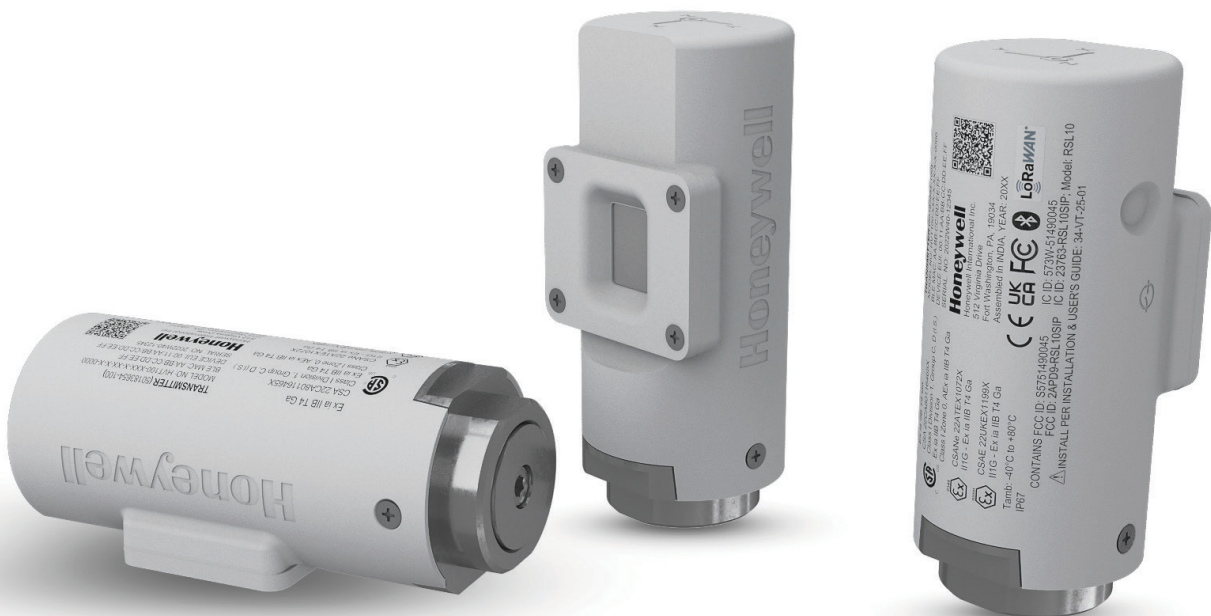
Honeywell

Honeywell Versatilis™ transmitters unlock the possibilities for condition-based monitoring of rotating equipment, including pumps, motors, compressors, fans, blowers, and gearboxes.

By 2030, condition-based maintenance in manufacturing industries could add $290-530M in value. To capture this, though, technology providers must raise their game to ease installation, enhance interoperability and cyber security and ensure the lowest possible wireless infrastructure costs.

Honeywell Versatilis transmitters help meet these needs for effective condition based monitoring:

- Measuring 3-axis Vibration, surface temperature, acoustics, ambient temperature, ambient pressure and ambient humidity

- Communicating measurements on LoRaWAN®

- Integrating with commercial off the shelf gateways (COTS) for interoperability and supporting COTS LoRA to MQTT gateways for integration with MQTT clients

- Offering configuration in minutes over Bluetooth application

- Supporting multiple/ flexible mounting options

- They also come with a built-in FFT algorithm, Provide IP67 protection, and are certified for intrinsic safety including Marine Application (DNV, ABS certified). Finally, they deliver low power consumption and a long battery life.

MAXIMIZE PLANT UPTIME:

Honeywell Versatilis transmitters help address the cost of rotating equipment failures, over half of which are mechanical. Asset imbalance, misalignment and bearing related issues are common issues, and when things go wrong, safety, productivity and efficiency all suffer. Combined with Honeywell or third-party analytics software, Honeywell Versatilis transmitters can help predict these potential failures before they happen and avoid unplanned downtime. They provide reliable measurements and have the capability to transmit time series and frequency spectrum data. While the time series root mean square of vibration measurements can indicate upcoming equipment trouble, frequency-amplitude changes can indicate a specific part of rotating equipment under stress and even the nature of the stress. It provides an early warning for vibration analysts and reliability personnel. Transmitter also extracts additional statistical parameters such as Kurtosis, Crest factor and skewness which help detect bearing faults. Equipment rotating speed can be estimated indirectly using vibration thus avoiding an external speed sensor. This data can be further used to provide information of Machine Availability. Honeywell Versatilis transmitter can be configured through mobile application tool through Bluetooth® in minutes. The tool can be used to connect, configure, set limits, view live as well as historical data. The configurator application is capable of running on mobile devices and tablets supporting IOS , Android and Windows operating systems.

Configuration using Honeywell Versatilis Connect application

REMOTE MONITORING

Honeywell offers the Experion Equipment Health Monitoring (EHM) suite for users who need remote monitoring capability with visualization, alarming and vibration analysis. The EHM suite offers many features that can be utilized in identifying anomalies and equipment faults.

The solution offers a site wide birds-eye view of all assets being monitored by the transmitters. This allows the user to see how many assets have issues, what the issues pertain to and even communication status of every Honeywell Versatilis™ Transmitter deployed.

Focus can be placed on assets with alarms only with filtering capabilities. Each asset can then be drilled down further to observe its specific readings by visualizing trends and alarm outputs. Experion EHM solution's analysis capabilities using vibration parameters such as acceleration, velocity, speed, FFT data with additional statistical methods to diagnose the asset. After analysis and corrective actions have been implemented an asset health report can be generated for future reference and asset management. These powerful capabilities help minimize unscheduled down time, worker fatigue, ensure maximum plant uptime therefore reduce capex and aiding in more sustainable operations.
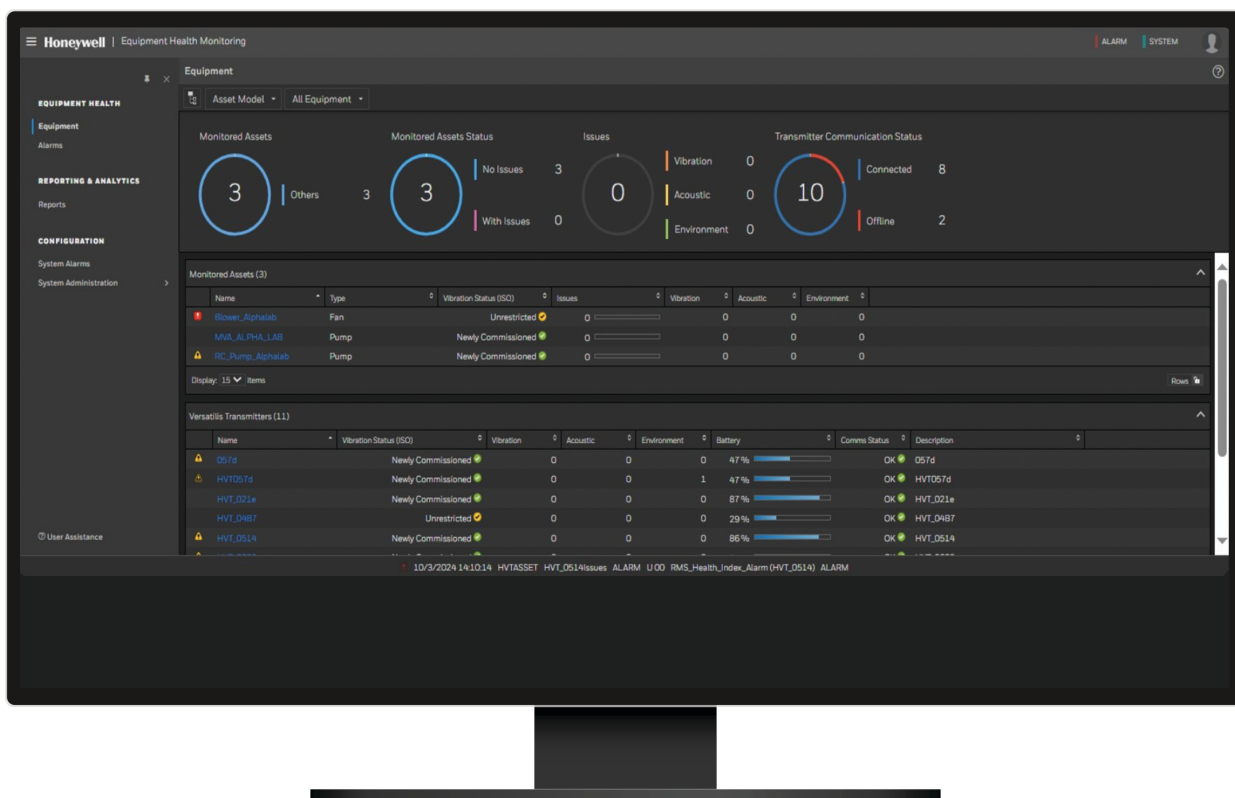

Fig1: Bird's eye view of plant assets

Each asset can then be individually focused on with an asset detail view like Fig 2.
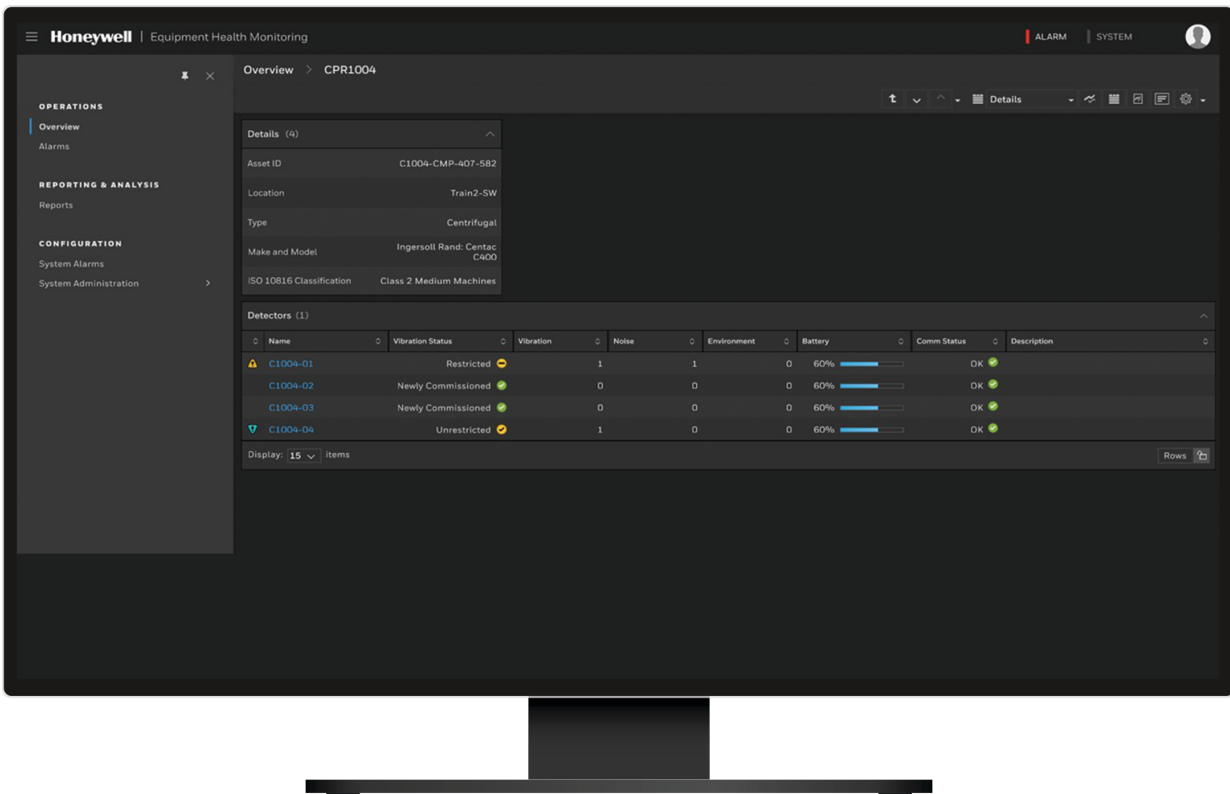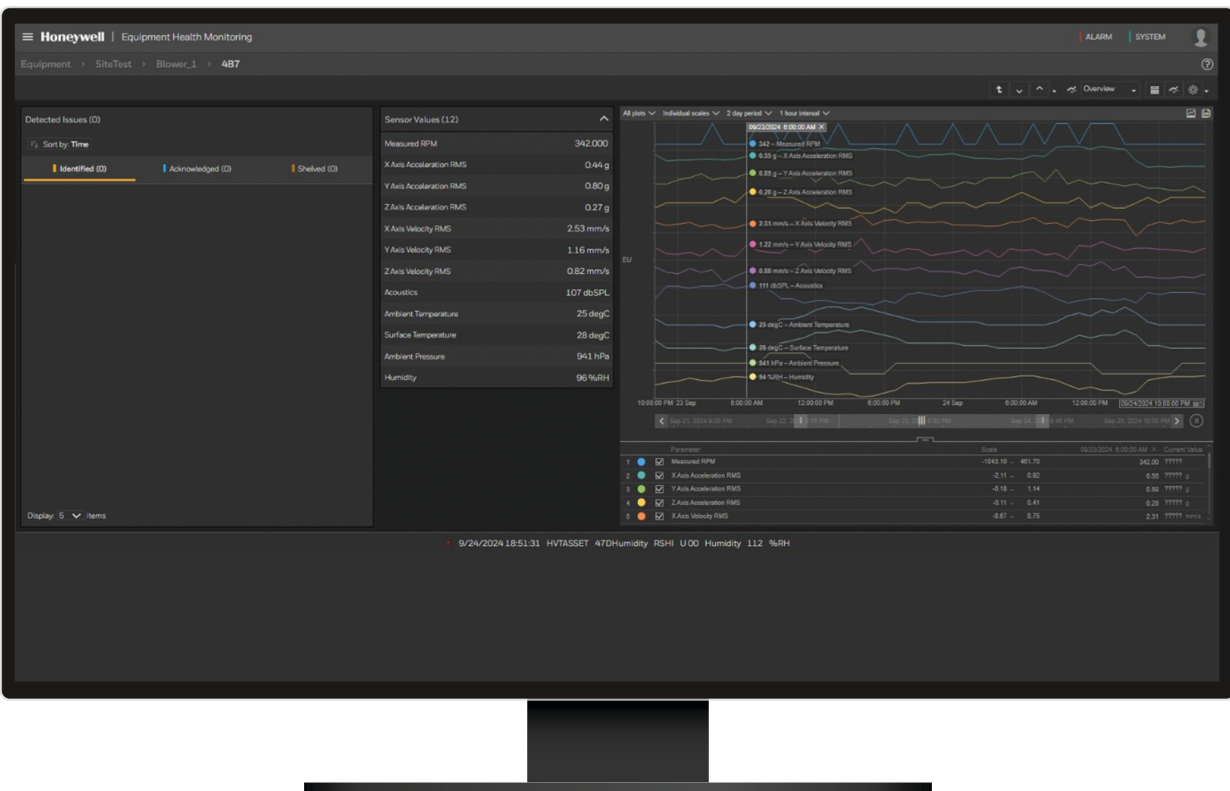

Fig 2: Equipment Level

Fig 3: Trend of Equipment Parameters

Each asset can be drilled down further to the transmitter detail and trend display. Frequency spectrum will also be available to diagnose any faults.
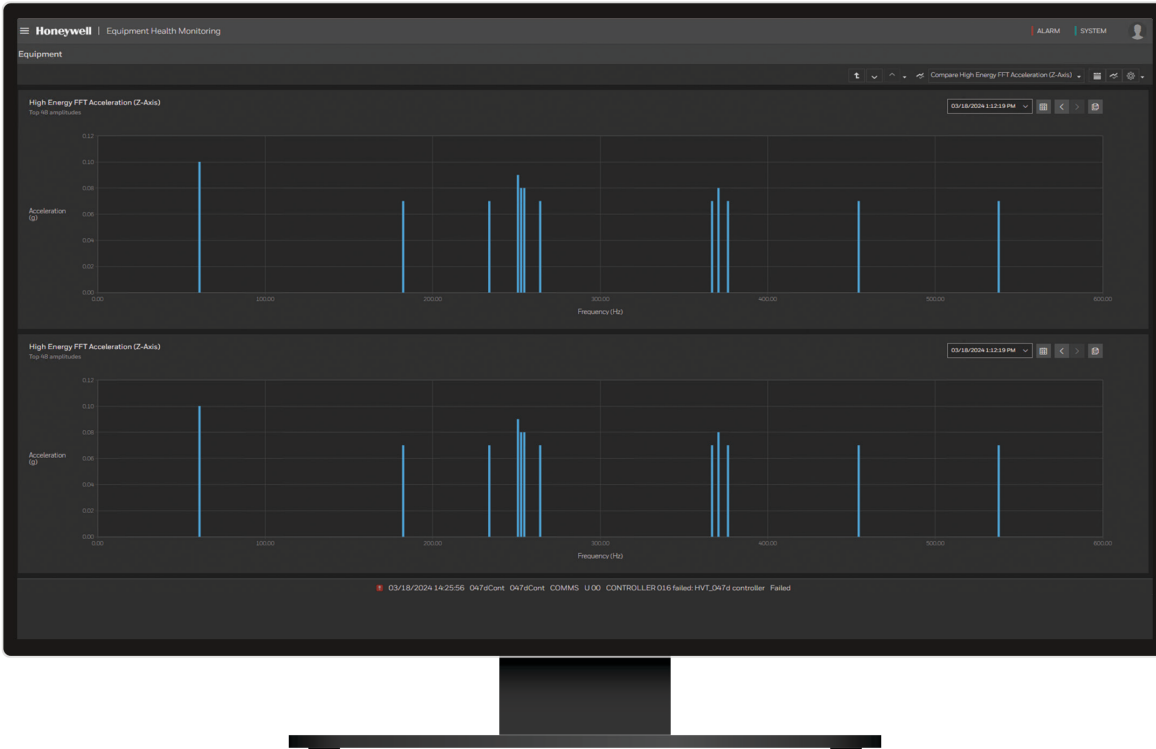

Fig 5: Frequency spectrum

After analysis and corrective action an asset health report can be generated for future reference and asset management. Health report will be available at different levels such as Plant level, Equipment and Alarm. This would enable plant managers to know which asset to plan for maintenance and relaibility engineer to deep dive into an issue.
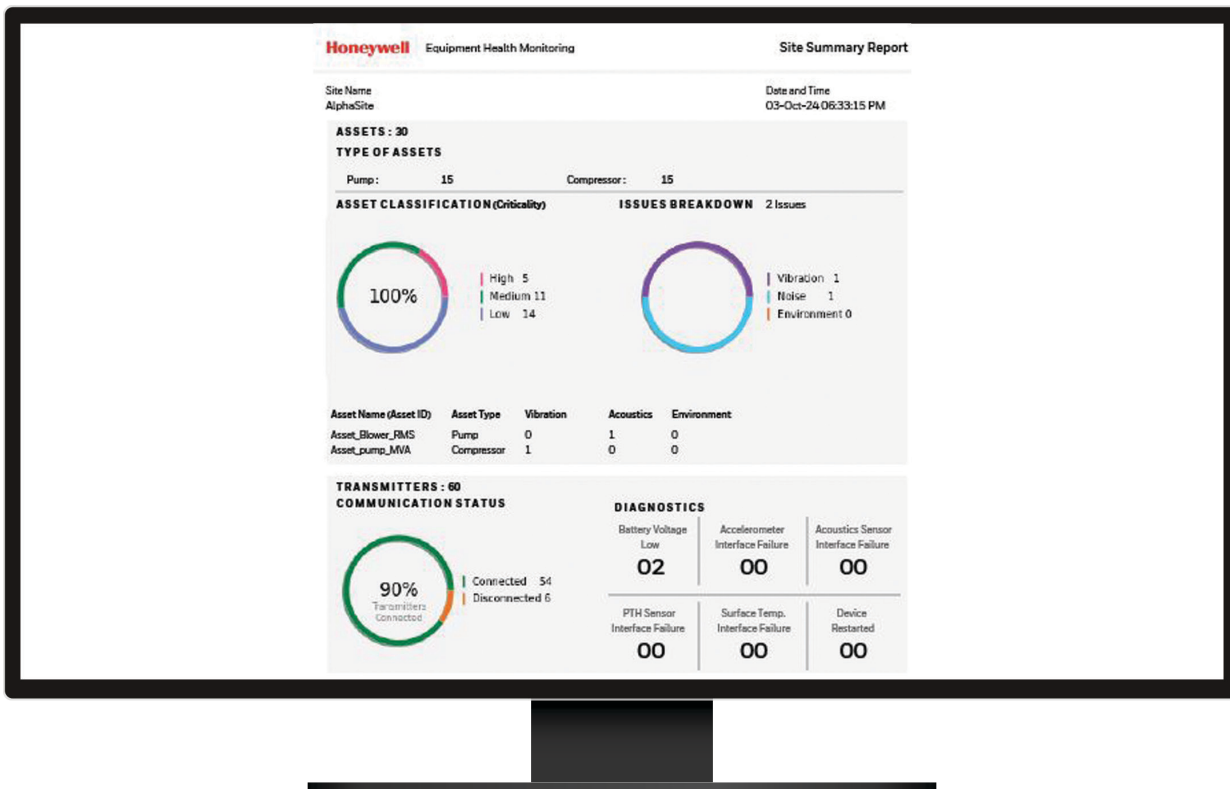

Fig 6: Equipment Health Report

A RANGE OF ISSUES: ONE SOLUTION

Honeywell Versatilis transmitters can help identify a variety of issues. They include higher vibration amplitudes in the horizontal plane, which indicates potential imbalance issues in the rotating equipment; and higher vibration levels in the axial plane compared with the horizontal plane, possibly indicating misalignment and bent shaft problems. Similarly, a trend showing increasing vibration amplitude can confirm the severity of the faults.

In the frequency spectrum data, meanwhile, if peak values occur at fundamental frequency as well as two, three or four times the fundamental frequency, that will confirm that the issue is real.

Finally, surface temperature trends can help identify potential issues with lubrication effectiveness and potential faults due to pipelines clogging in the case of air-cooling systems. Acoustic noise can be used to detect process related issue such as cavitation or any other machine faults which creates noise. Also, any changes in environmental conditions can also be tracked using Ambient (Pressure, Temperature, Humidity) measurements.

Honeywell Versatilis™ transmitters provide the data for new insights and visibility of rotating equipment: intelligence that can improve safety, reliability and efficiency, deliver new value for your business.

For more information

To learn more about Honeywell's products, visit process.honeywell.com or contact your Honeywell account manager.

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