

Hardware At-A-Glance:

The IoT HUB

The SMARTdiagnostics® IoT HUB is the next generation of full asset health solutions designed to handle the most complex asset monitoring needs.



IoT HUB Features:

7 input channels per HUB system.

Battery power OR permanent wiring to a power source.

Take in several channels of vibration data from different key monitoring points on a large asset, along with a trigger input port to a particular moment in the machine's operating cycle. With analog adapters and IEPE sensors, the remaining ports can be used to collect data from other sensor types, such as pressure, current, or oil humidity.



Key Applications:

High-Temperature

Power is supplied to the IoT HUB, so it can be positioned away from extreme environments. This allows sensors to be placed on high temperature machines without compromising battery power.

Triggered Machines

In triggered machines, such as robots, the IoT HUB can be configured to activate sensors in response to unique movement patterns. This allows for more focused data collection as opposed to more traditional continuous monitoring.

Shielded Machines

Assets in shielded areas, such as those covered by metal or screening, pose an issue where wireless sensors struggle to connect to the network. The IoT HUB provides a wired solution for monitoring these machines.

IoT HUB ctd.

Designed to Handle Your Most Complex Monitoring Needs.

Signal Propagation: To instrument a large asset we might have many vibration sensors that have weak wireless signal strength. With the HUB however, the sensor is decoupled from the wireless module, so you can put many sensors exactly where you want them, and then put the single HUB in a better place for wireless connectivity. This also opens the door for submerged applications.

Mix of Sensor Types: Often the right monitoring solution for an asset is a mix of sensor types—vibration, temperature, pressure, current, etc. The IoT HUB makes managing multiple sensor types easy for you and your team.

Intermittent Operation: If the machine is intermittently operated, or has a complex cycle that changes, and we want to collect data at a particular moment in that cycle where damage may occur, using a HUB is critical. The HUB is continuously looking for this trigger signal, and once it sees it, it collects a measurement. That way, you're always collecting data at the same moment in the operating cycle.

Synchronous Data Collection: The IoT HUB features triggered data collection, and because it has multiple input ports, this means we can accurately time-synchronize samples from multiple monitoring points. With the HUB, we can take them all at the same time, or at delayed times of our choosing. This opens the door for things like phase analysis and orbital plots.

High-Temperature: The IoT HUB's vibration sensors are built to withstand hotter temperatures than vibration sensors, primarily because they do not have a battery onboard, so they aren't limited by a battery's temperature rating.

The HUB can be battery-powered or permanently powered by 24VDC or 110 VAC or 220VAC. The permanently-powered options can be enablers in applications where battery replacements are a hurdle.



Achieve 3.6x More Asset Coverage with the only comprehensive platform to ingest Oil, MCSA, Pressure, Vibration, Legacy IEPE sensors, and Ultrasound into one software platform.



The IoT HUB Monitors:

**adapters necessary for monitoring*

- Oil Humidity
- Current Signature
- PLC Trigger
- Tachometer
- Pressure Signature
- Ultrasonic Sensing
- Voltage
- Motor Current Signature Analysis (MCSA)