



# HID Industrial Monitoring





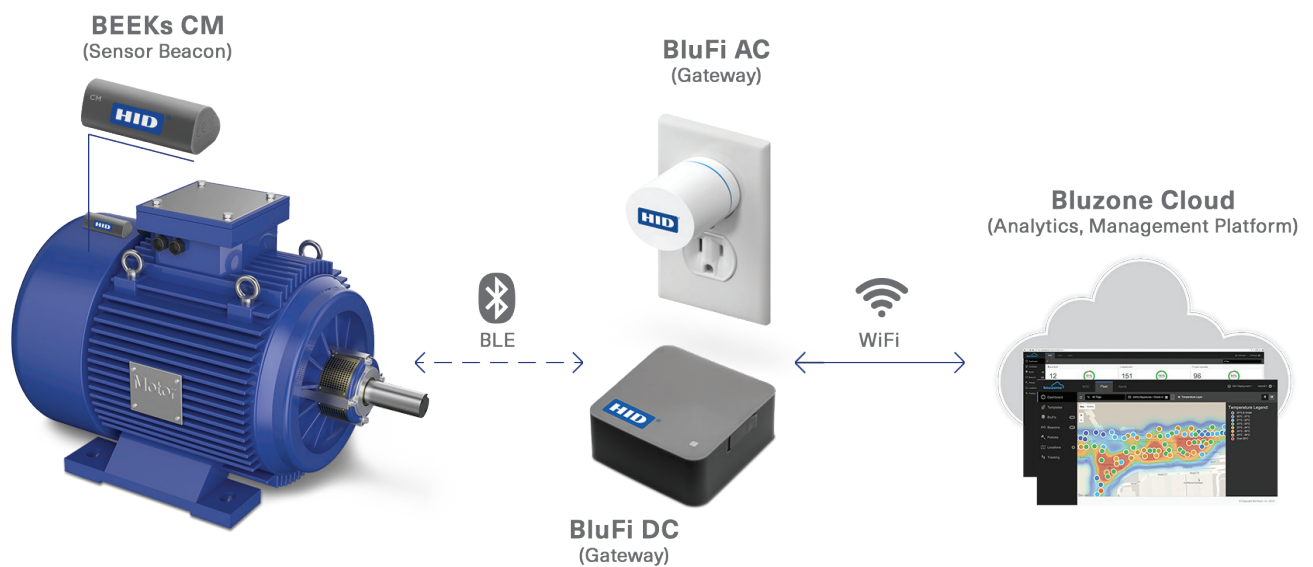
# Reduce Unplanned Downtime and Increase Productivity

HID is at the forefront of data-driven decision making in the industrial sector. When machines break unexpectedly, unplanned plant downtime leads to costly losses beyond lost production. Idle labor, work-in-progress scrap and expensive machine repairs all impact the bottom line. HID Industrial Monitoring is an end-to-end solution with two modular options, that enable wireless Status Monitoring or Advanced Condition Monitoring, including AI vibration analytics to support a predictive maintenance strategy.

Intelligent decisions are made using real-time data based on the known health and operating behavior of an asset, allowing organizations to monitor and react quickly before situations reach a critical level. Furthermore, the solution's remote distance monitoring enables operation comparison across global fleets without being physically present at the machine site.

# One Seamless Experience

Implementation costs are minimized when the entire facility is outfitted leveraging existing wireless infrastructure. The HID Condition Monitoring platform combines the power of Bluetooth Low Energy (BLE) beacons, BLE to Wi-Fi gateways and cloud service portal. Together the system delivers a seamless experience.



# System Components

## BEEKs™ BLE BEACON



- BEEKs Condition Monitoring
- New data every 2 minutes
- Remote fleet management via Bluzone and BluFi
- Retrofits any motorized equipment
- Senses vibration and temperature

## BluFi™ Gateways



- Connects BLE Beacons in the vicinity via WiFi to the Cloud
- Fast, easy implementation in standard AC, DC or USB power outlet
- Reliable signal even in densely populated WiFi environments

## HID Bluzone™ Cloud Services



- Cloud capabilities for beacon management, workflows and analytics – alerts and/or message notification
- Portal-based advanced condition monitoring dashboard or integrate to third party applications via RESTful APIs
- OAuth2 support for single sign-on



The system combines the power of Bluetooth Smart (BLE) beacons, BLE to Wi-Fi gateways and cloud service portal.

## Realizing the Benefits:

- Predictive Maintenance – Implementing a preventive maintenance schedule, such as planning regular upkeep, reduces machine downtime. HID supports a true predictive maintenance solution to avoid unnecessary inspections and costly routine maintenance.
- Simple Deployment – Bluzone™ cloud easily integrates into existing business applications using REST APIs to customize data streams, dashboards and reports. Alternatively, HID Advanced Bluzone cloud analytics can be utilized, the compact system requires minimal infrastructure and is quick to install.
- Cost Effective – HID Condition Monitoring is the lowest cost-per-asset vibration-based solution available. Traditional condition monitoring systems are sold at a price premium leaving managers to monitor only the most expensive equipment. In reality, all equipment is mission critical, regardless of price. Monitoring the majority of machines in real-time gives you the power to maximize your plant run time.
- Highly Secure – Bluzone cloud is built using the industry's best security practices, such as ISO/IEC 27001 Information Security Management System and ISO 9001:2015 Quality Management System. Beacons are encrypted using AES128-CBC. Keys are securely stored in Bluzone vault located within Amazon S3. Keys can only be activated during provisioning and are only accessible through strong authentication using Bluzone or Google via OAuth2. BluFi gateways connect to Bluzone using SSL or https via port 443.

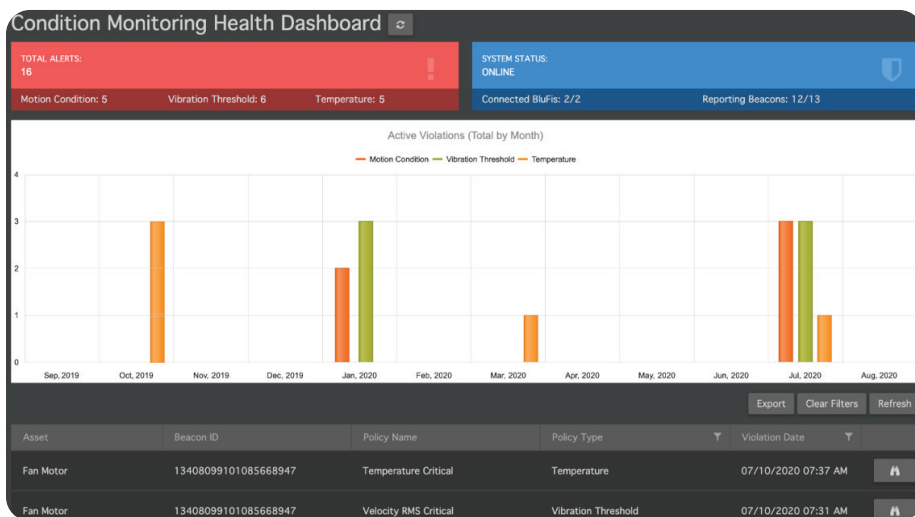




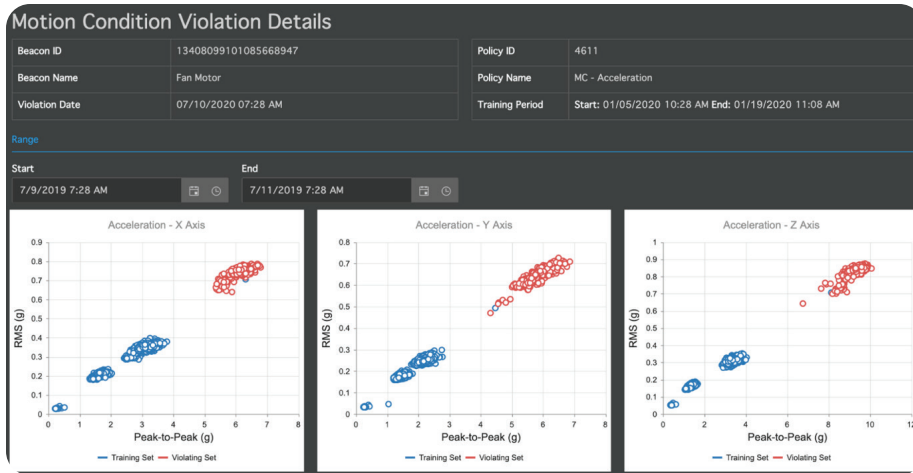
# Real-Time Trend Visualization and Alerts

HID Bluzone's Advanced Dashboard provides flexible setup of vibration and temperature data monitoring. After set-up, Bluzone uses AI (Artificial Intelligence) algorithms to learn the unique baseline operating behavior of each monitored asset. The intelligent anomaly detection algorithm generates an alert when the machine's vibration behavior deviates significantly from the baseline over time, allowing users to immediately address changes in the operating or health state of the asset.

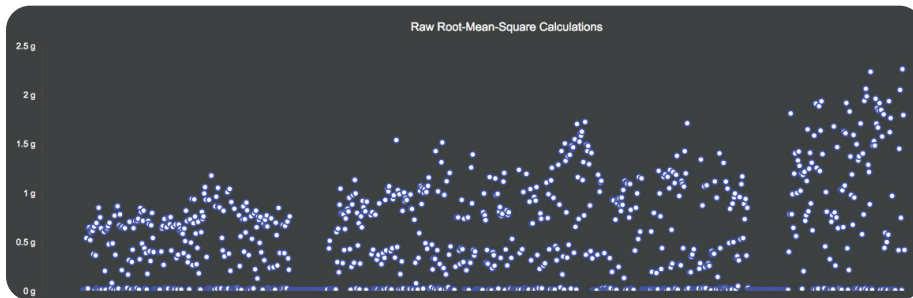
HID Condition Monitoring solution also supports standardized approaches, such as setting velocity RMS threshold levels. The beacon's intelligent software processes the data according to ISO 2954 requirements to compare vibration levels directly with published standards, such as ISO 10816/20816. This enables operators to quickly detect and receive alerts on out-of-limit vibration levels across various machine classes. Additionally, threshold policies and alerts can be applied to temperature data on critically high values.



Overview of Active Vibration and Temperature Alerts Across the Fleet



**Details of Each Alert: Observe the Change from Normal to Alert State**



**Visualize Increases in Temperature and Vibration Over Time**



## HID Condition Monitoring

- Easy to install end-to-end platform
- Highly flexible, scalable and equipment agnostic
- Simple, powerful architecture
- Increased visibility to actionable data



# Summary

## IMPROVE UP-TIME

Affordability and ease of deployment make it possible to monitor all rotating assets and improve overall plant performance.

## REAL-TIME DATA FOR DECISION MAKING

Base maintenance decisions on machine health, not guesswork. Using AI (Artificial Intelligence) the system learns the unique baseline of each monitored machine and sends an alert when a deviation is detected.

## HIGH SECURITY

Communication between BEEKs, BluFi and Bluzone Cloud is encrypted with strong AES 128-bit SSL/TLS encryption.

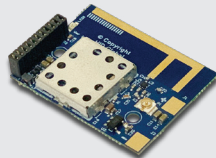
### Status Monitoring

#### TEMPERATURE AND STATUS MONITORING OF INDUSTRIAL EQUIPMENT

Wide variety of applications, telemetry data and simple analytics



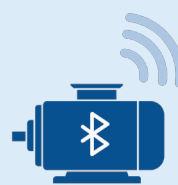
STATUS MONITORING



### Condition Monitoring

#### HEALTH MONITORING OF ROTATING AND RECIPROCATING MACHINERY AS AN ENABLEMENT TOOL FOR PREDICTIVE MAINTENANCE

High-bandwidth vibration data, application-specific advanced analytics



CONDITION MONITORING







hidglobal.com

North America: +1 512 776 9000

Toll Free: 1 800 237 7769

Europe, Middle East, Africa: +44 1440 714 850

Asia Pacific: +852 3160 9800

Latin America: +52 (55) 9171-1108

**For more global phone numbers click here**

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