BALLUFF

CMTK – CONDITION MONITORING TOOLKIT

The plug-and-play system for monitoring the condition of your equipment

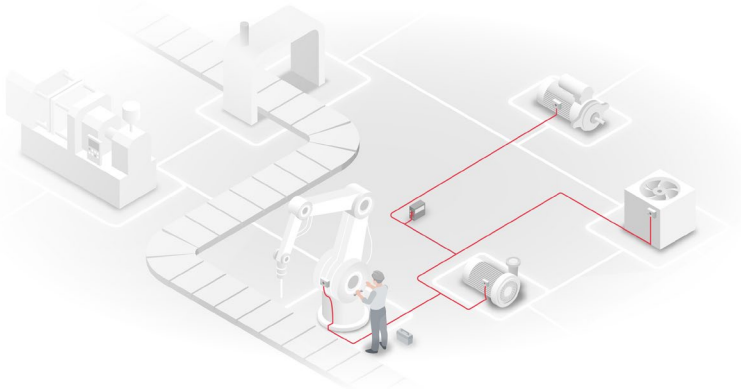
An alarm that promises good things

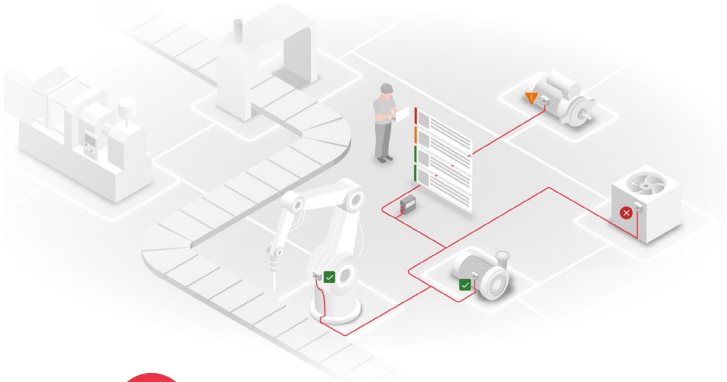
Less unplanned downtime
and more productivity

CMTK
The basis for your condition monitoring system

Plug-and-play commissioning

The CMTK is ready to use right out of the box. The sensor data is automatically interpreted, loaded into the integrated database, and then visualized. The system can be optimally adapted to your needs in just a few simple steps.





Keep informed

Easily set up notifications when sensor data indicates a specific machine behavior. Use the interactive BCM Assistant to define monitoring tasks for different machine types.

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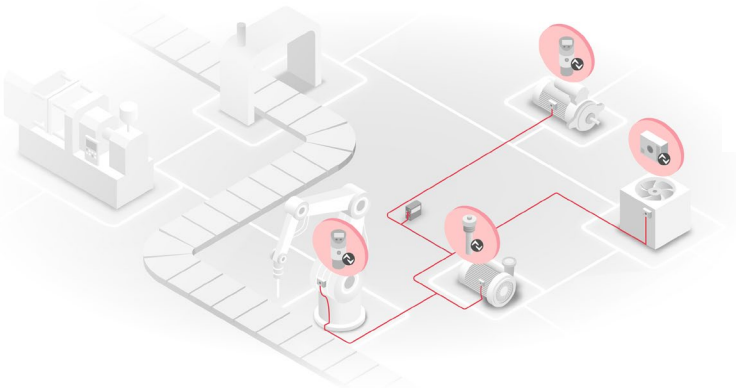
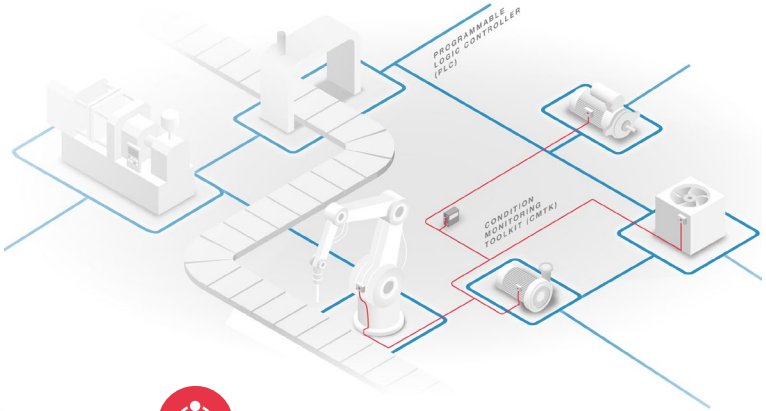
The basis for your condition monitoring system

High compatibility with many sensors

Combine the CMTK with all IO-Link sensors available on the market. For example, our all-rounder, the BCM sensor, offers functions such as vibration analysis in the time and frequency domains as well as temperature monitoring.

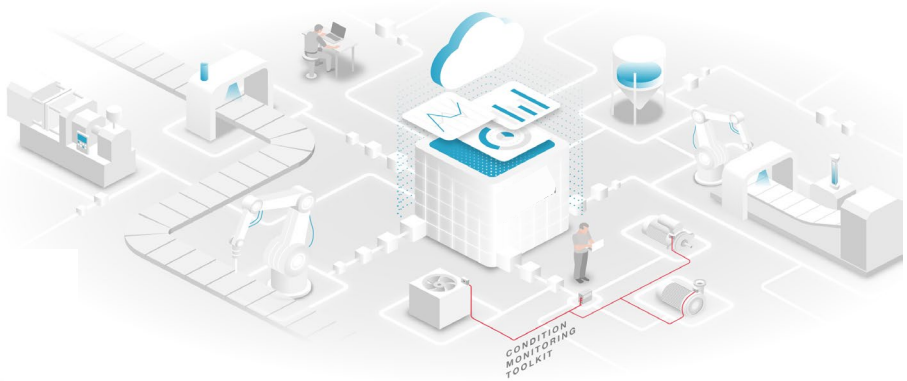




Standalone system

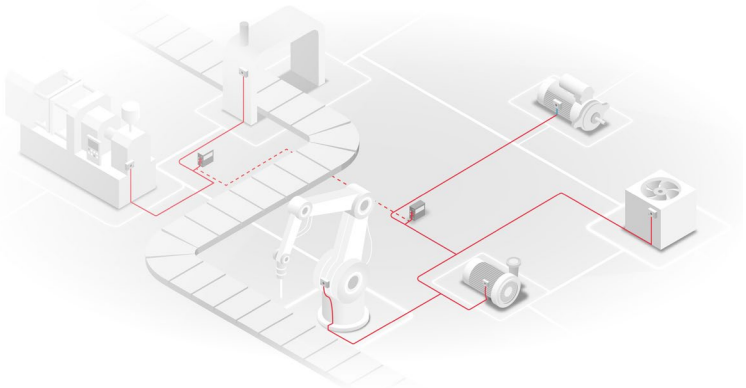
The CMTK can operate completely independently of your plants' existing IT and automation networks. This way, you avoid additional data traffic and minimize disruption to your existing systems.

CMTK
The basis for your condition monitoring system



Unlimited expandability

Expand the CMTK with up to five IO-Link masters to integrate up to 44 IO-Link sensors. If that's not enough, you can modularly expand additional CMTK devices with the connected IO-Link masters, allowing you to scale up your condition monitoring system as needed.



Connected upwards

The CMTK provides its data via OPC/UA and MQTT so that you can further process it in local networks or cloud systems.

Product Highlights

Beyond a network module

CMTK

The basis for your condition monitoring system

User-friendly software

- Easy system setup and customization thanks to our plug-and-play approach.
- The software runs locally on the hardware and can be accessed via a web browser.
- One-time payment, no hidden license or subscription fees.
- Modular expansion thanks to the new app concept.
- Continuous development, e.g., through new apps.

Powerful hardware

- ARM 64-bit quad-core processor, 1.8 GHz
- 4 GB RAM
- Internal memory: 32 GB eMMC
- SD card support
- Ports for connecting four IO-Link devices
- 2 LAN ports
- IP20

Modular extensions

- Up to five IO-Link masters for integrating as many as 40 additional IO-Link devices
- Analog-to-digital converter for integrating analog sensors and PT100 or PT1000 temperature sensors

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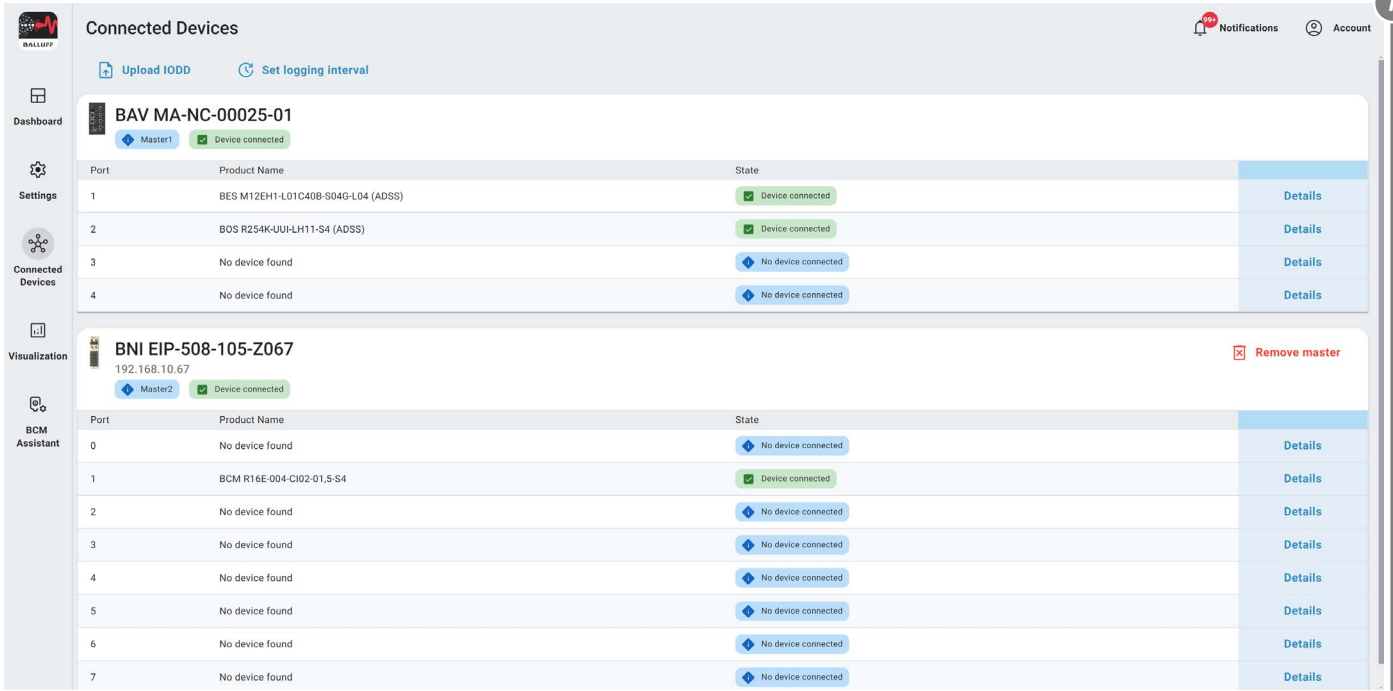
Sensor data is automatically interpreted, stored and visualized



- **Plug-and-play**
  Automatic detection of IO-Link devices, option to easily upload IODDs.
- **Easy configuration**
  Change sensor profiles and parameters using a simple interface.
- **All information at hand**
  Access to additional sensor information such as operating hours, firmware version and much more.

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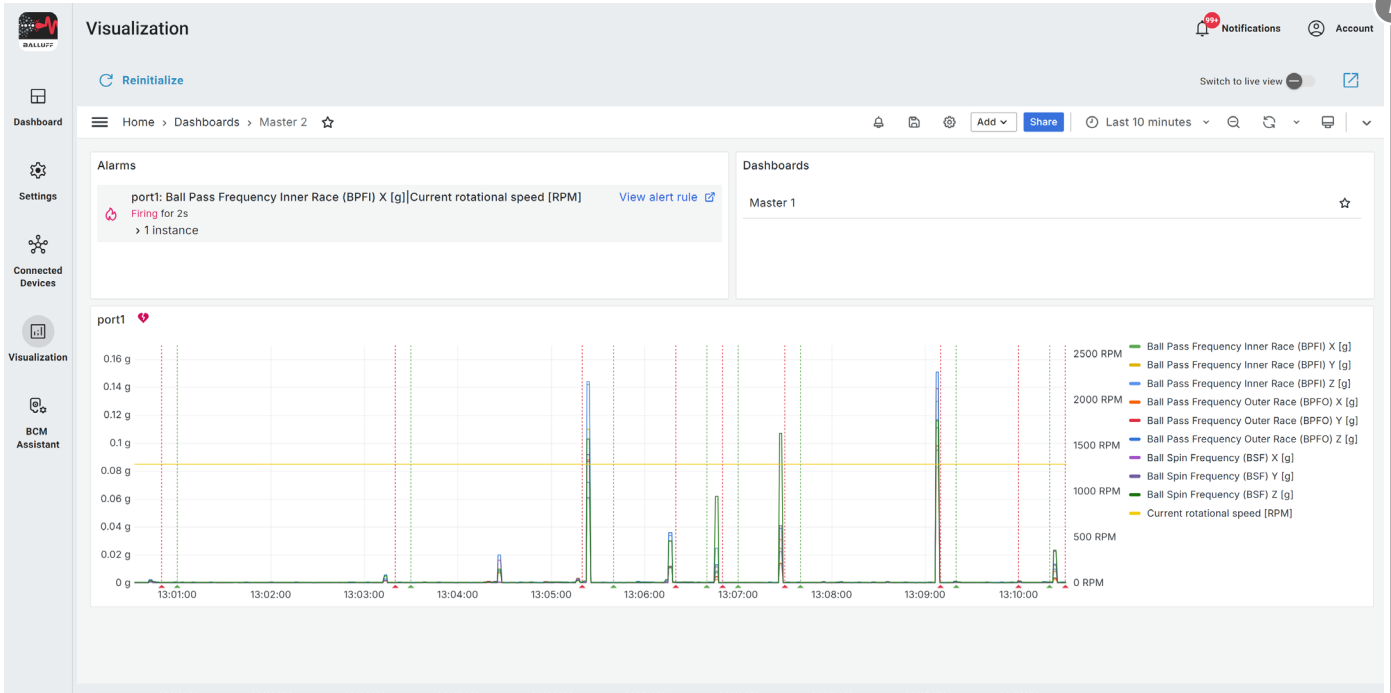
Visualize sensor data, monitor thresholds and identify trends



- **Easy to set up**
  Generate visualization automatically based on the connected sensors.
- **All information in one dashboard**
  Monitor current sensor values and thresholds or identify trends.
- **Highly customizable**
  Customize charts, alarms, and more to suit your needs.

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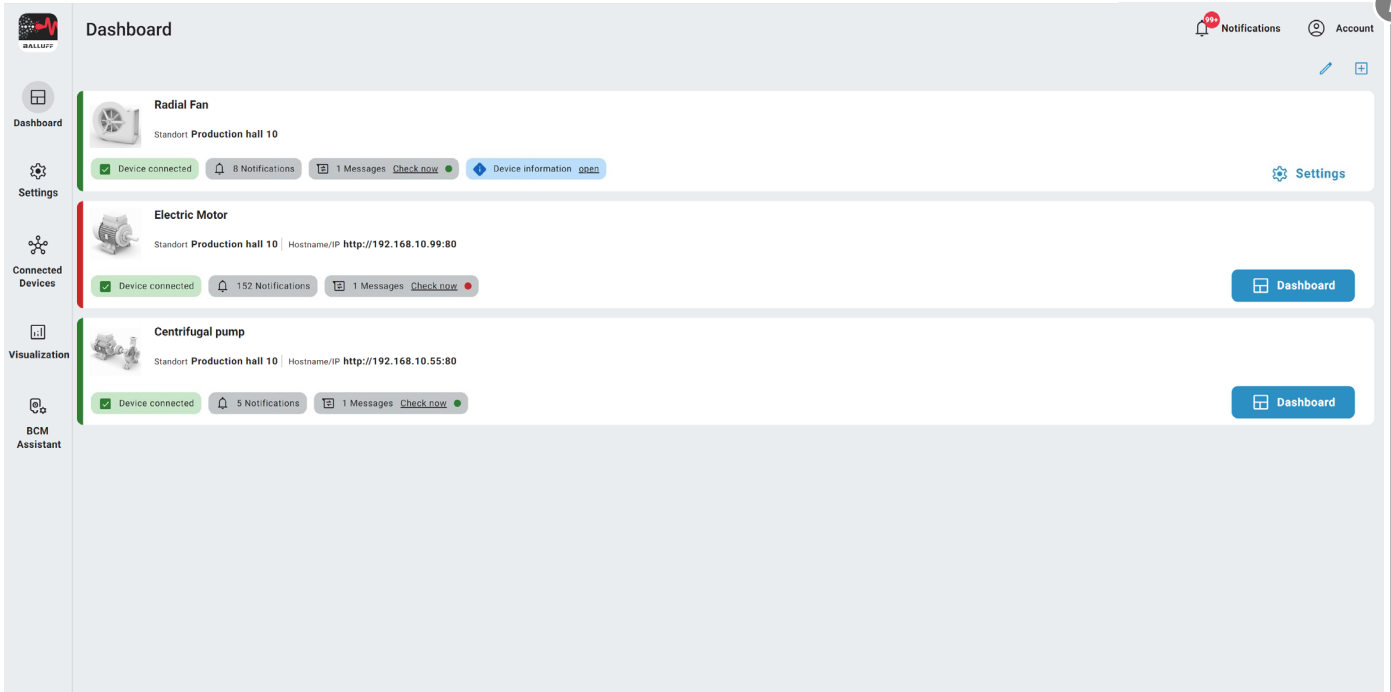
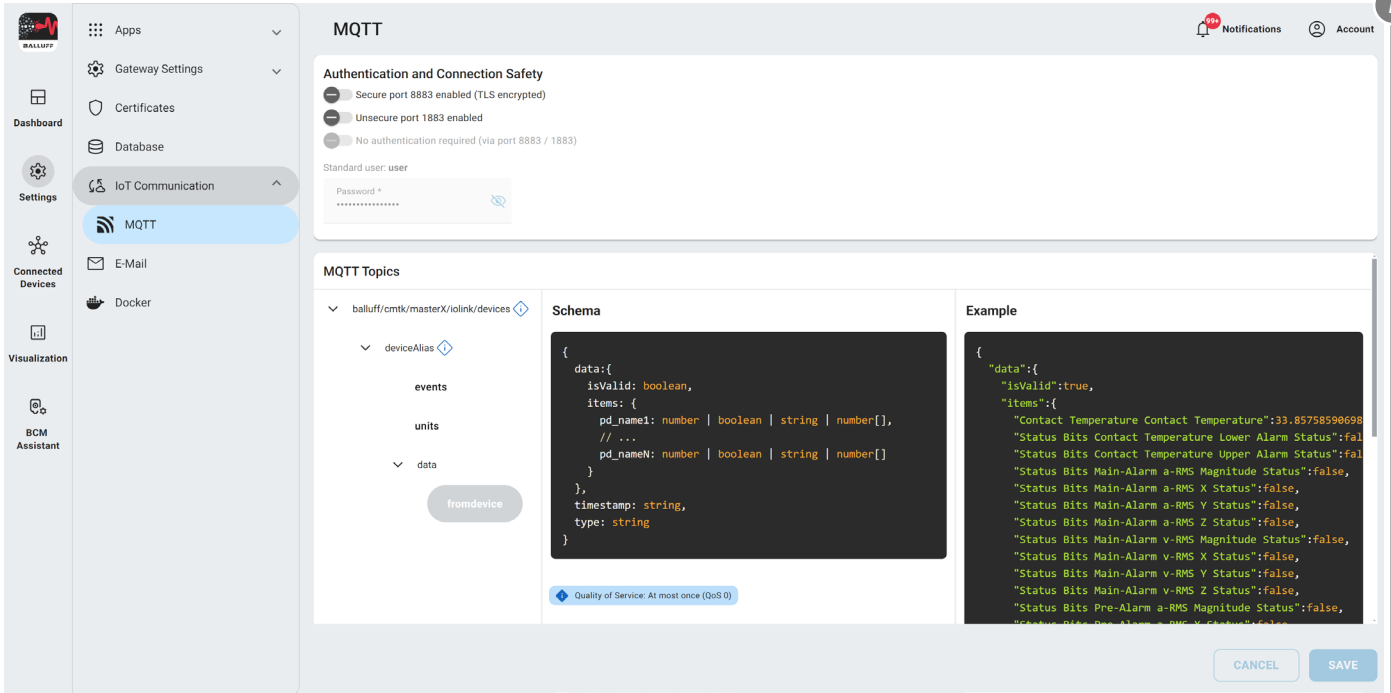
Customize your system according to your needs – simple, fast and modularly expandable



- **Expandable IO-Link ports**
  Expand the number of IO-Link ports with up to five additional IO-Link masters, each with 8 ports.
- **Multi-CMTK**
  Display and access multiple CMTKs via a central dashboard.
- **Daisy-Chain**
  For easy cabling, you can daisy-chain multiple CMTK modules and IO-Link masters in a row.

CMTK
Quick and easy integration – perfect data source for your IT systems



- **Communication with IT systems**
  Send data easily and conveniently to your host systems (e.g., cloud applications, local databases) via MQTT or OPC-UA.
- **Communication with the PLC**
  Capture additional machine data directly from the PLC via OPC UA. Conversely, you can also provide data to the PLC.
- **Versatile data**
  Subscribe to process data, status information and alarms

Ordering Information

Network technology, power supply
and sensors

CMTK
Ordering information & accessories

CMTK – Condition Monitoring Toolkit

BNI00L2

1 IO-Link masters for expanding the IO-Link ports

- **BNI00L1**: 8x IO-Link, entry-level version with outstanding cost-benefit ratio
- **BNI00K6:** 8x IO-Link, with display, robust metal housing for extreme conditions

2 IO-Link hubs for the integration of analog sensors

- **BNI00AJ:** 8x analog, Voltage: 0...10 V/-10...10 V/0...5 V/-5...5 V/5...10 V, Current: 4...20 mA/ 0...20 mA, Temperature: Pt100/Pt1000/ Thermocouple Type J & K

3 Power supplies and switches

- **BAE0111**: Power supply unit for the control cabinet (3.12 A)
- **BNI0067**: Unmanaged switch with 8x Ethernet TCP 10Base-T/100Base-TX

4 Smart BCM Condition Monitoring Sensors

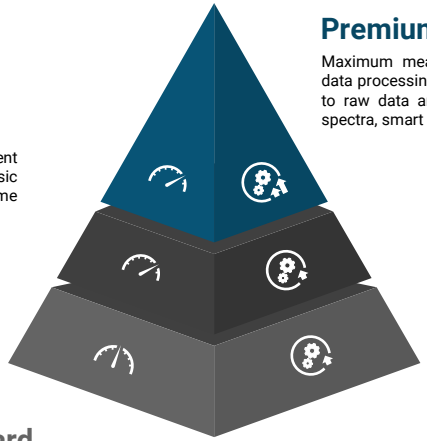
- **BCM0001**: Standard version with vibration and temperature
- **BCM0004**: Advanced version with vibration and temperature
- **BCM0003**: Premium version with frequency analysis

BCM Family

Always find the right solution

Advanced

Maximum measurement performance and basic data processing: time domain analysis



Premium

Maximum measurement performance and data processing: frequency analysis, access to raw data and high-resolution frequency spectra, smart RPM input

Standard

Basic measurement performance and basic data processing: Time domain analysis

Standard	Advanced	Premium
$420	$480	$530
		
2…1,800 Hz (±10 %) 2…2,500 Hz (3 dB)	2…4,500 Hz (±10 %) 2…6,000 Hz (3 dB)	2…4,500 Hz (±10 %) 2…6,000 Hz (3 dB)
-25…70 °C	-40…80 °C	-40…80 °C
Vibration analysis in time domain	Vibration analysis in time domain	Vibration analysis in time domain
		Vibration analysis in frequency domain
		Smart RPM input
		Access to raw acceleration data and frequency spectra
Get BCM0001	Get BCM0004	Get BCM0003

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Continuous enhancement

Through new app concept

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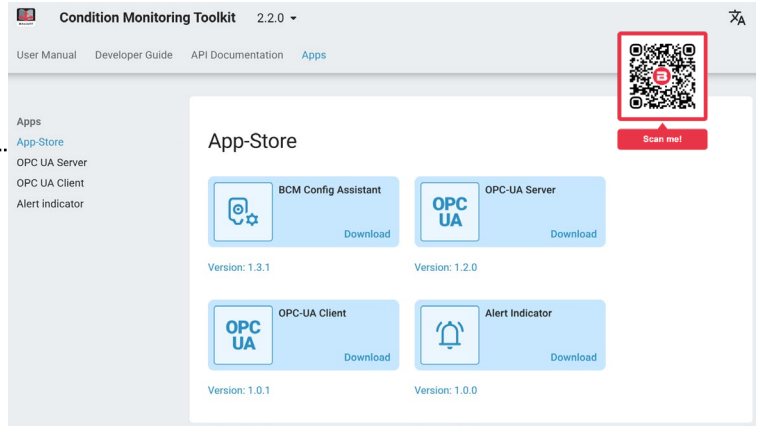
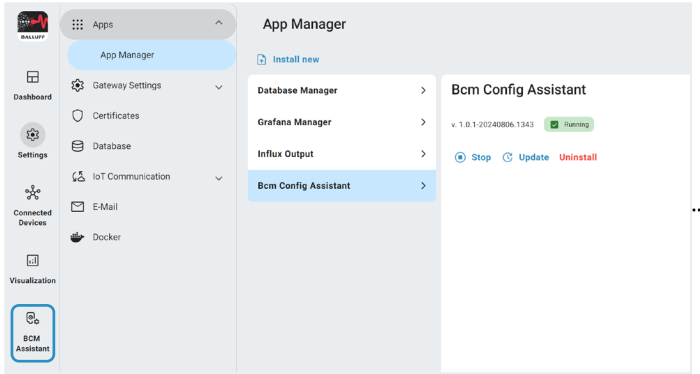
CMTK
Continuous enhancement through new app concept



1 Online App Store

Download the required app free of charge from our online platform.

Visit our App Store



2 CMTK App Manager

Install the app on your CMTK and get started straight away.

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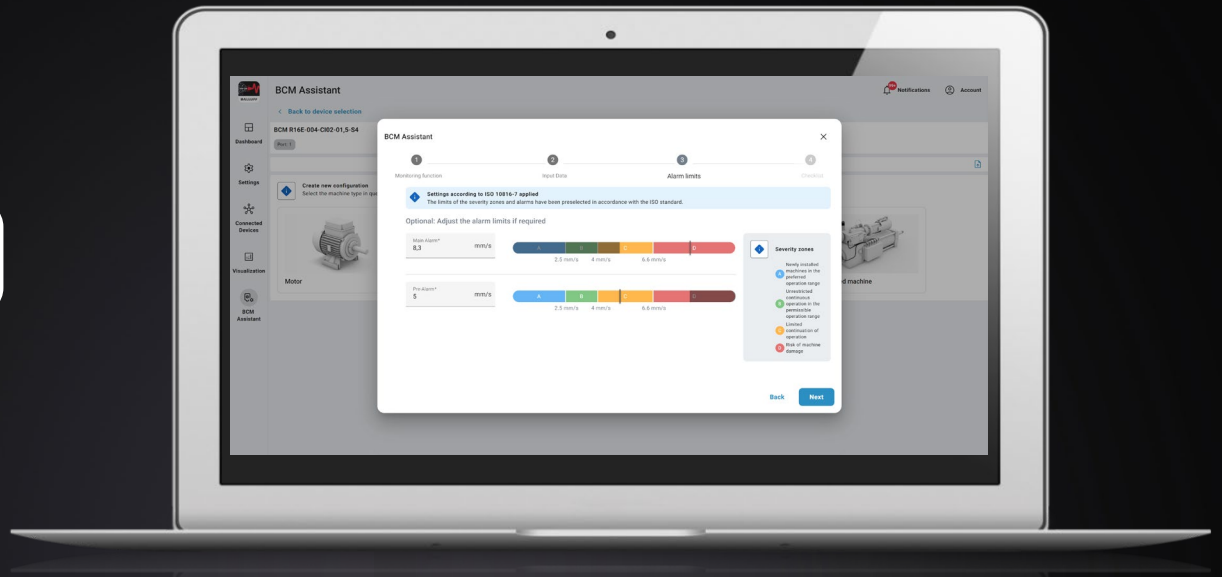
BCM ASSISTANT

Always perfectly configured



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BCM Assistant

Configure precisely for your needs with minimal effort

Perfectly configured
Customize your BCM sensors perfectly to your individual application.

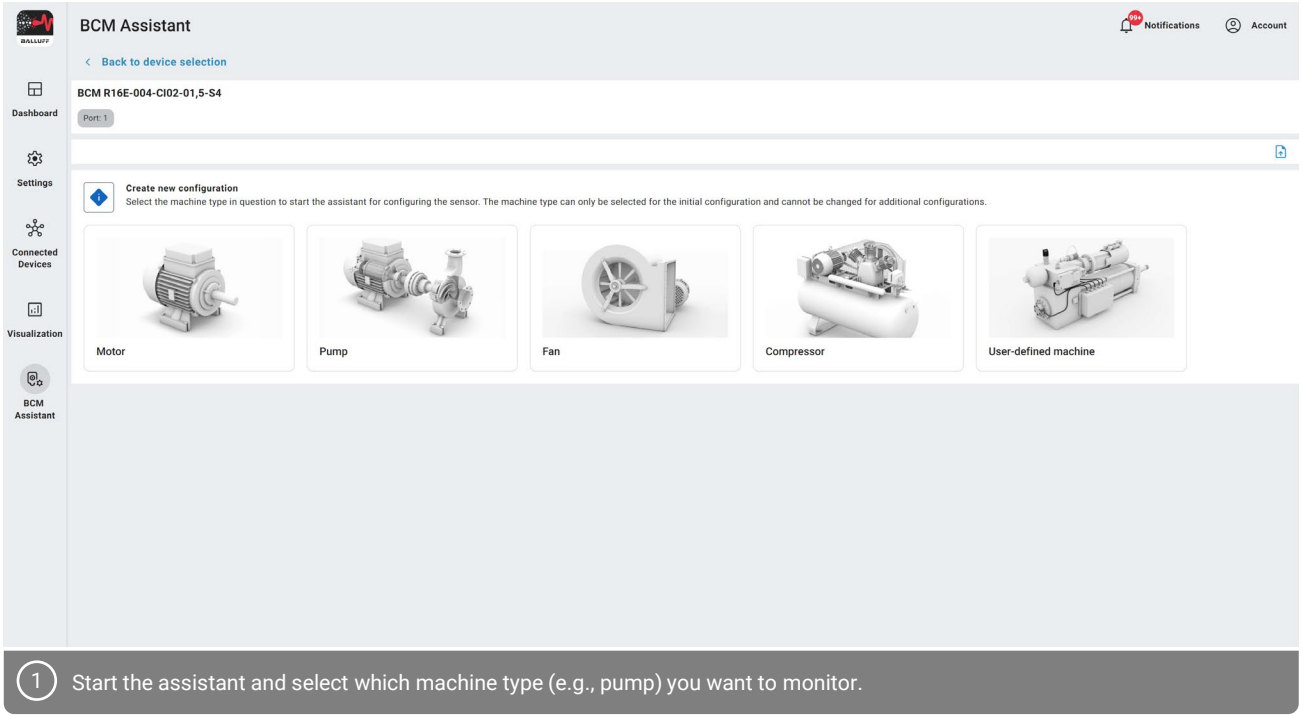
Convenient to use
The intuitive user interface allows you to achieve your set-up quickly and conveniently.

Quick to implement
Complete the configuration of your BCM sensors in just a few minutes.

Versatile in use
In addition to various ISO standards for a wide range of machine types, you also have access to an extensive bearing database with more than 160,000 types.

BCM Assistant

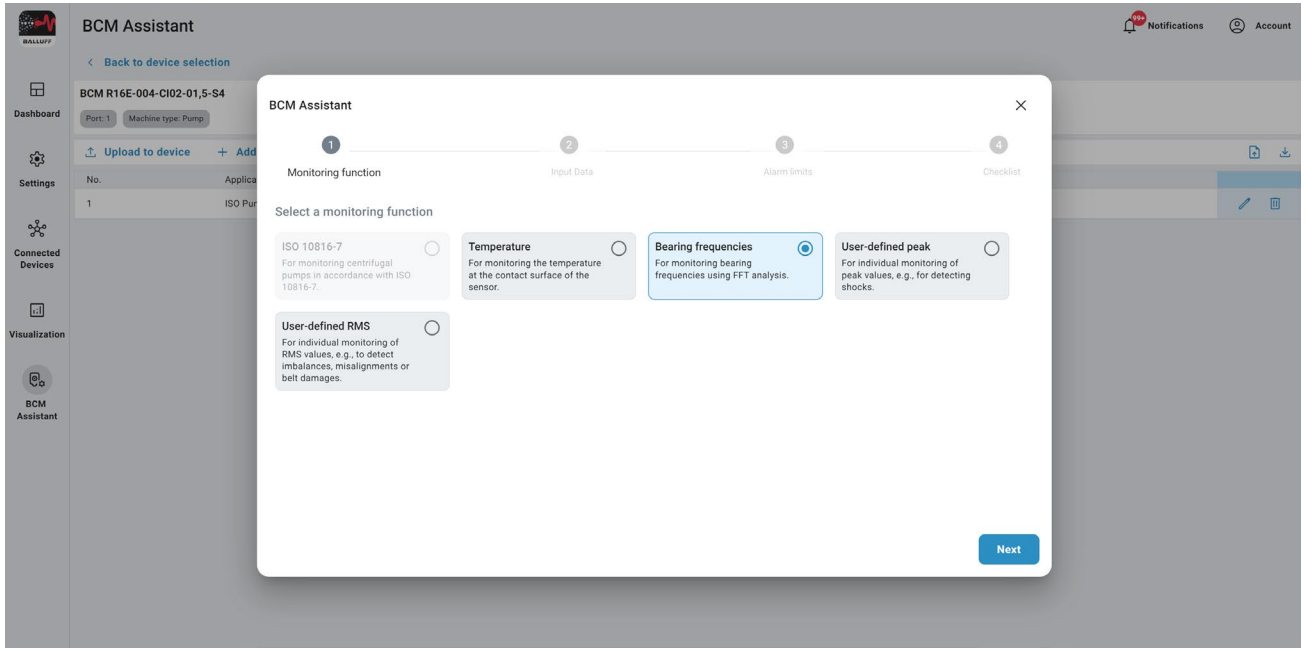
Configure precisely for your needs with minimal effort



1 Start the assistant and select which machine type (e.g., pump) you want to monitor.

BCM Assistant

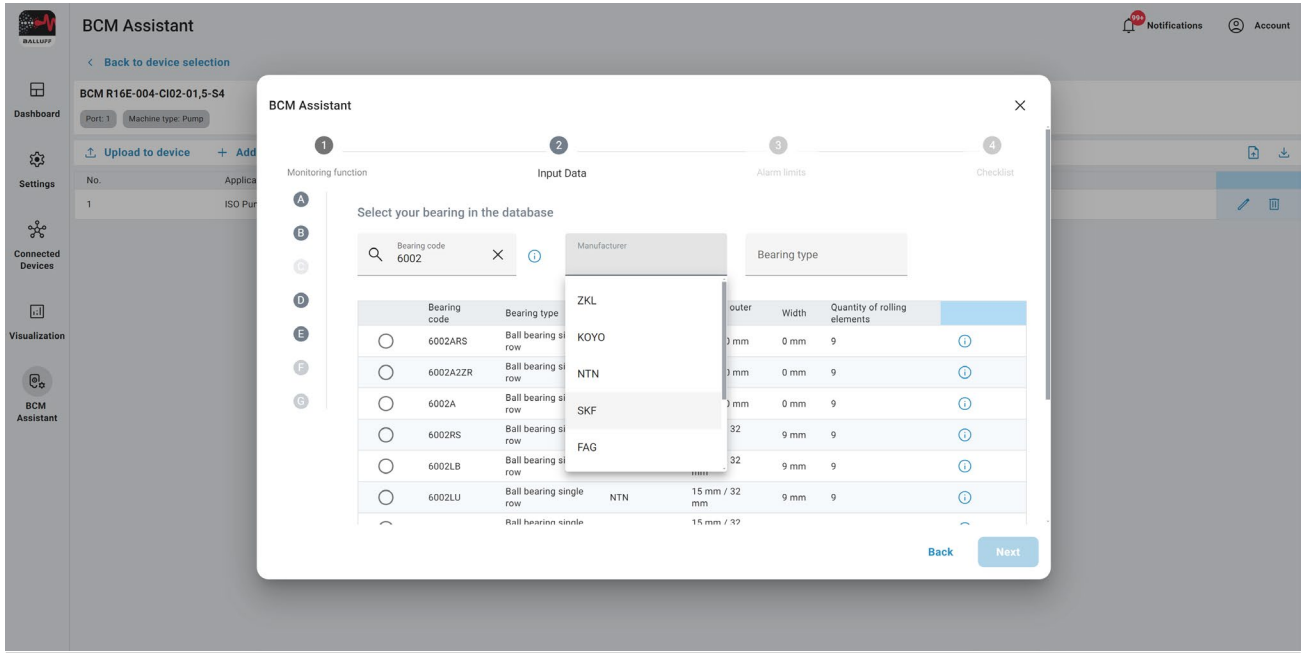
Configure precisely for your needs with minimal effort



2 Select a monitoring function (e.g., bearing frequencies) that the sensor should perform.

BCM Assistant

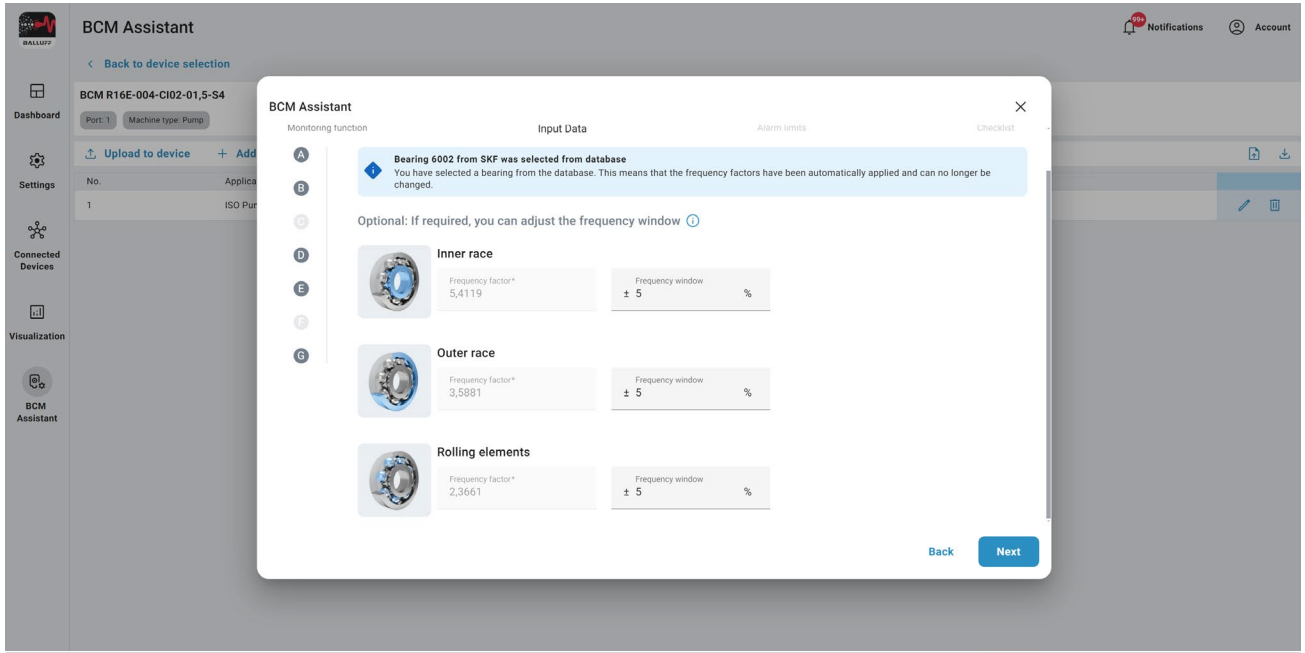
Configure precisely for your needs with minimal effort



3 Select a bearing from our extensive database. With more than 160,000 types, you are sure to find the right one.

BCM Assistant

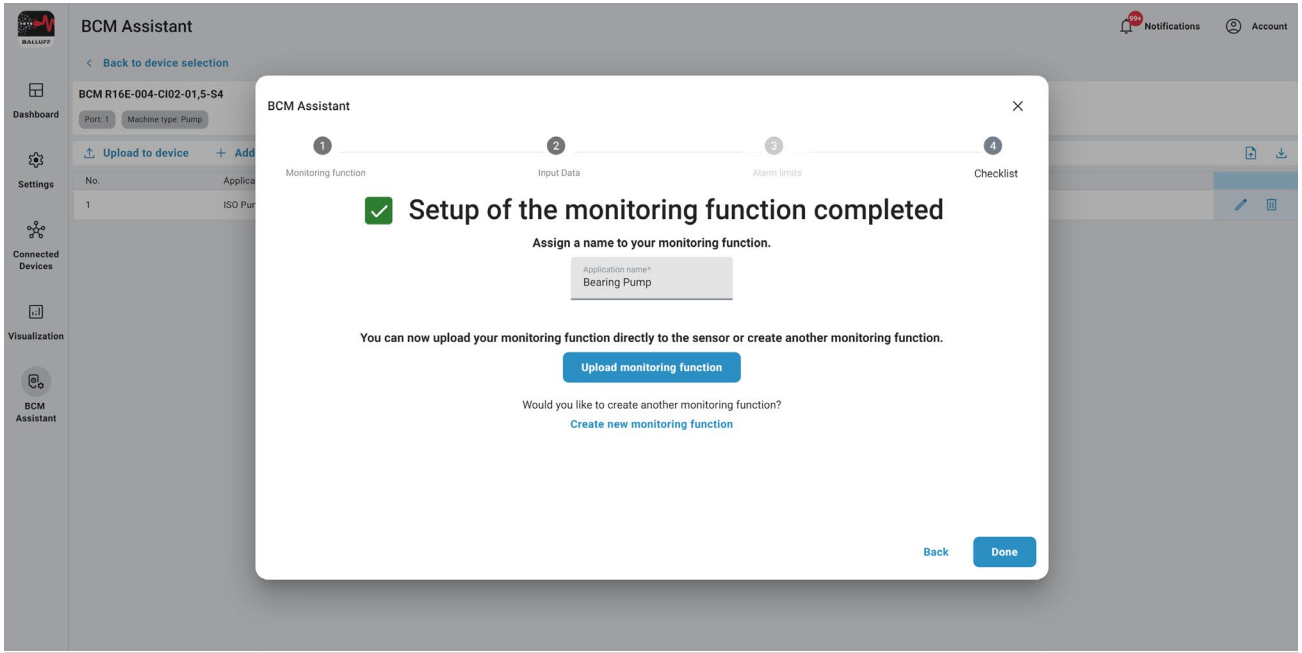
Configure precisely for your needs with minimal effort



4 You will receive an overview of the automatically set bearing frequencies (BPFI, BPFO, BSF).

BCM Assistant

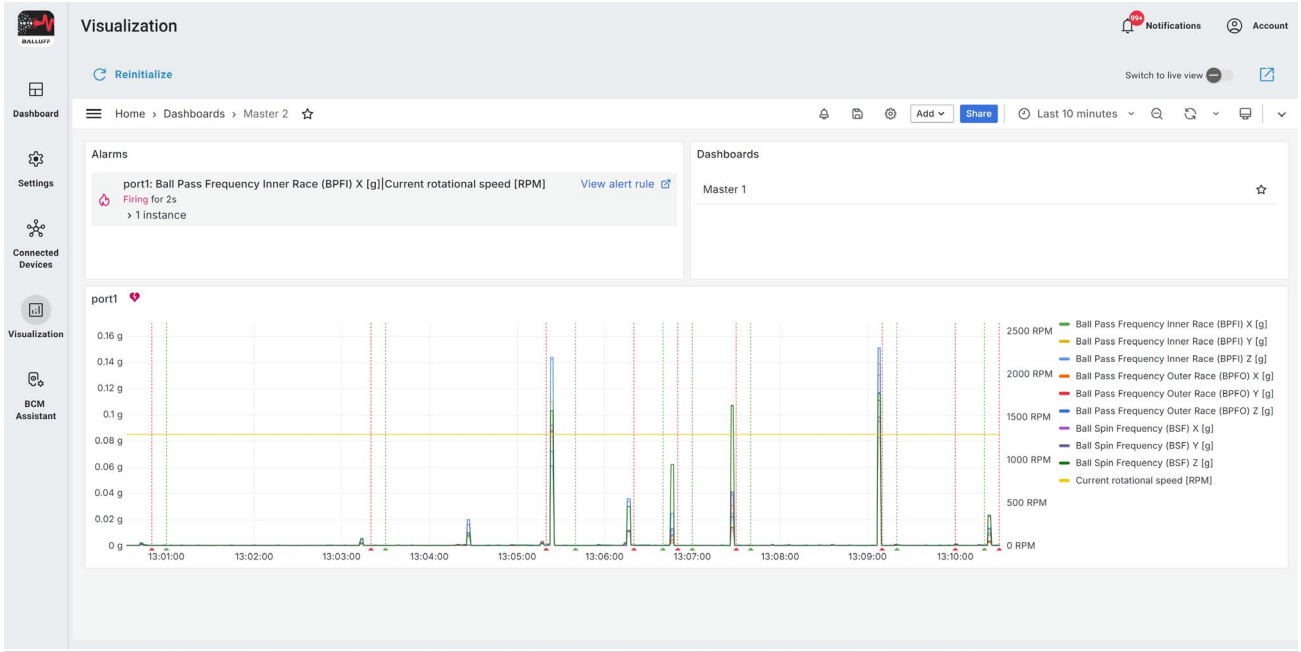
Configure precisely for your needs with minimal effort



5 The configuration of your monitoring function is complete and can be uploaded to the sensor with one click.

BCM Assistant

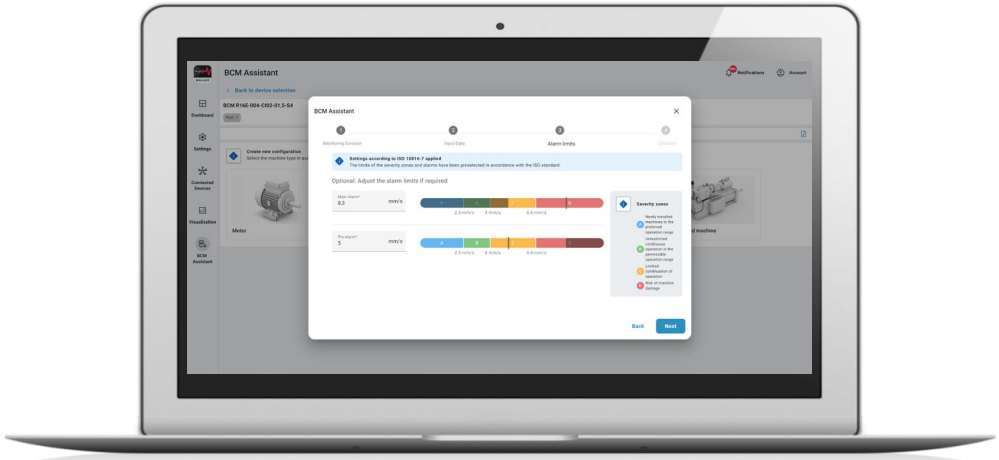
Configure precisely for your needs with minimal effort



6 The sensor is perfectly configured for your application. Monitor the relevant vibration parameters.

BCM Assistant

Configure precisely for your needs with minimal effort



BCM Assistant now available!

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BET – Balluff Engineering Tool

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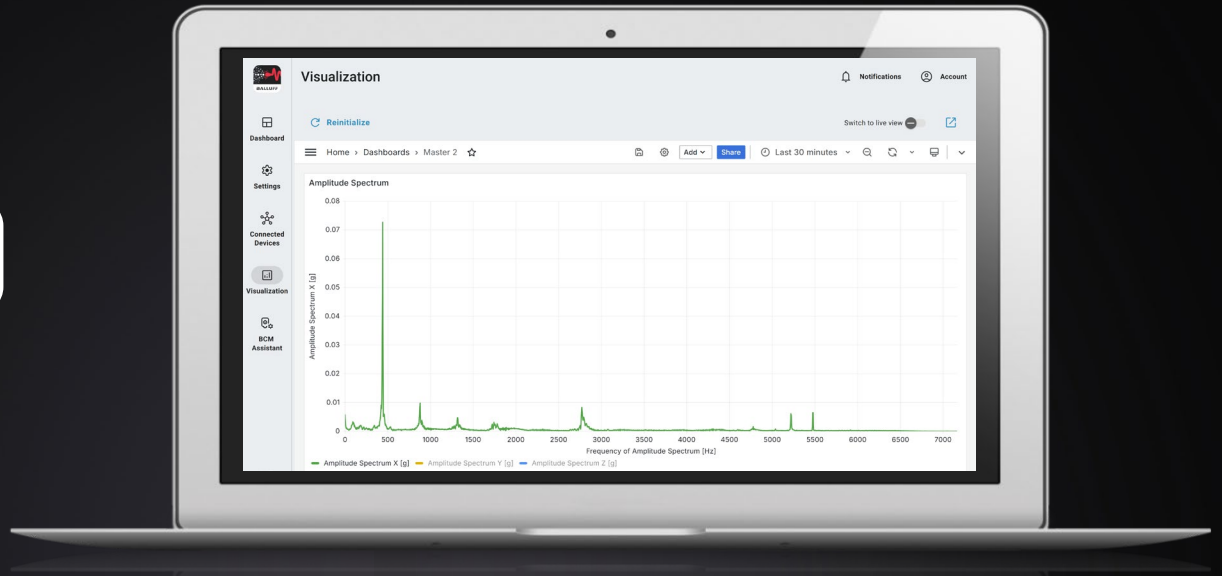
BCM VibExtract

VibExtract – Access to raw data and frequency spectra



BCM VibExtract

For full access to raw acceleration data and frequency spectra

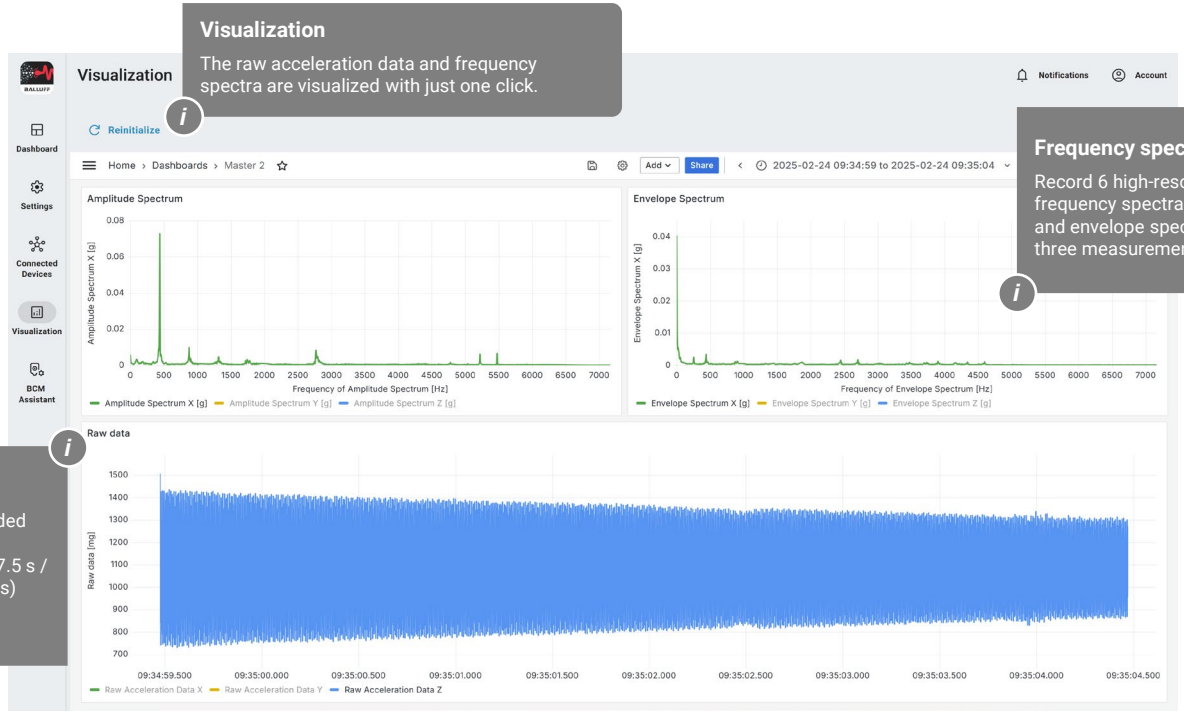
Maximized data access
Decide for yourself which additional data should be recorded and provided by BCM Premium. Gain access to raw acceleration data and high-resolution frequency spectra.

Flexible data request
Retrieve the data packets at regular intervals (e.g., every hour) or link this to specific events.

Versatile in use
Analyze the data directly on the device or make the data packets available for downstream analyses, e.g., in the cloud.

BCM VibExtract

For full access to raw acceleration data and frequency spectra



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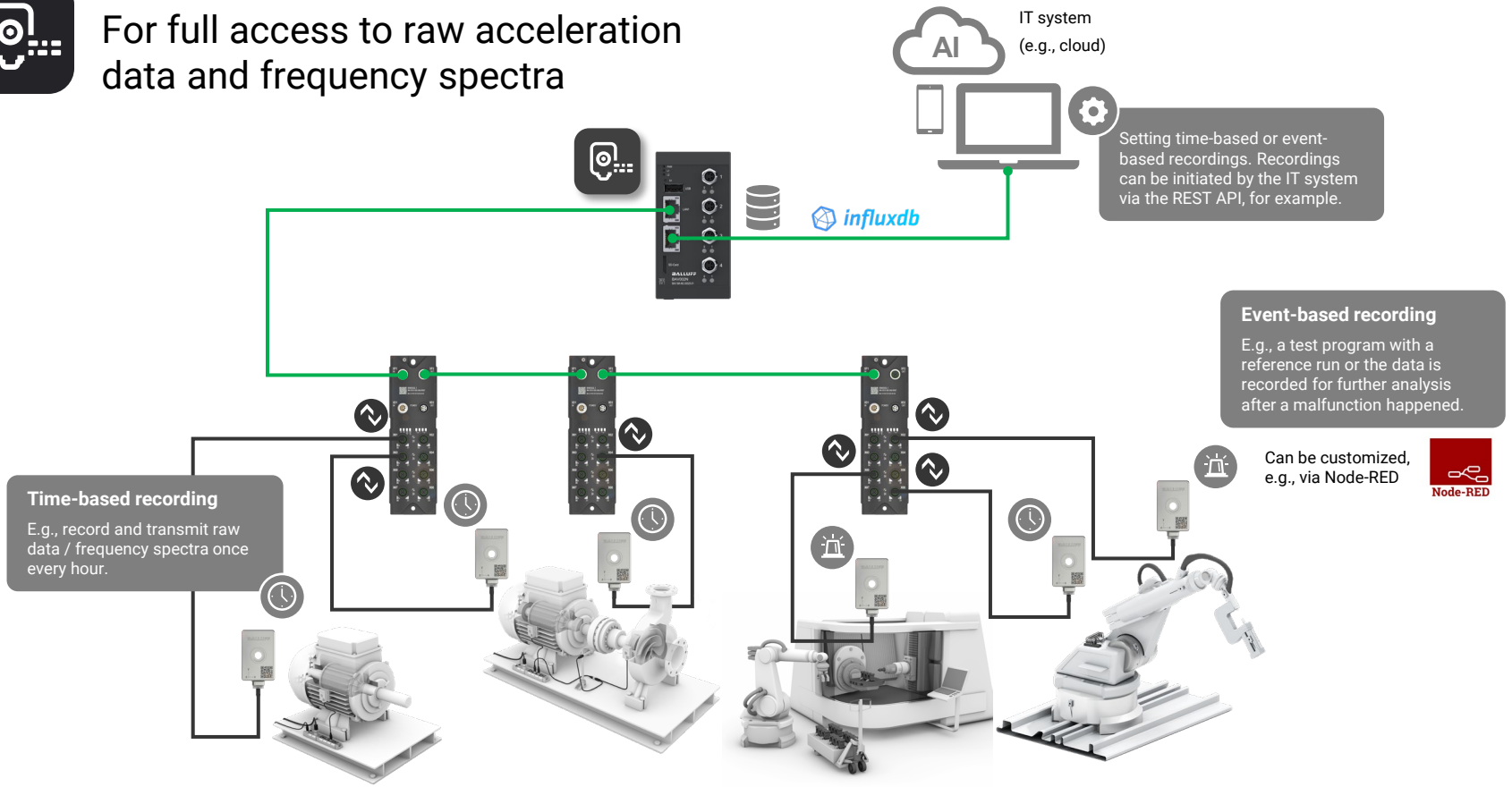

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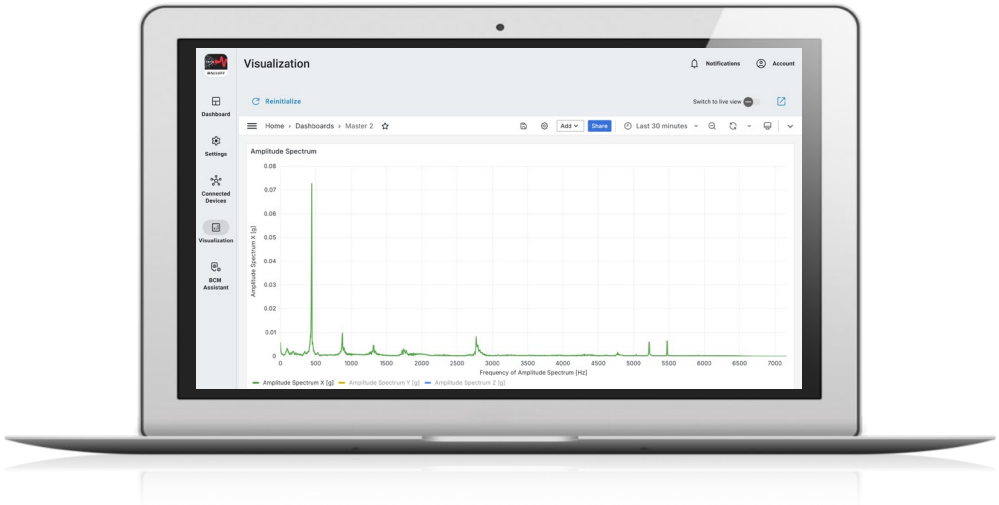

BCM VibExtract now available!

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A GLOBAL PROMISE.

innovating automation