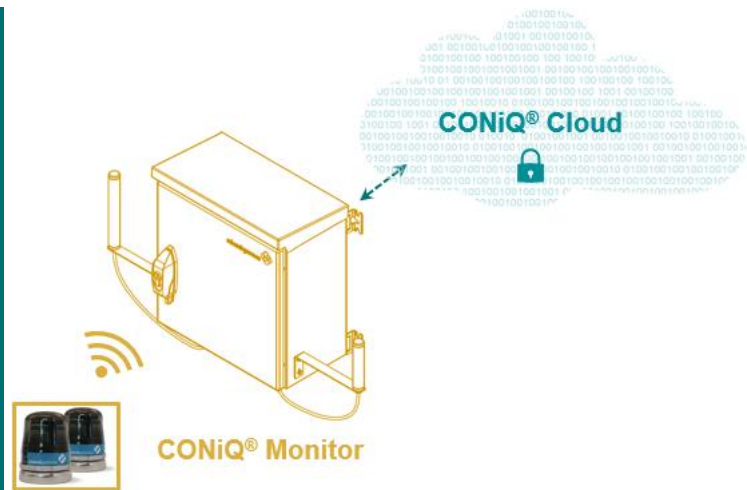


# CONiQ<sup>®</sup> Monitor

## IIoT Edge System for CONiQ<sup>®</sup> Cloud

- Internet access via mobile network, Wi-Fi or Ethernet.
- Flexible integration of various sensors and data sources
- Flexible configuration of edge data processing
- Fieldbus communication available
- Secure Remote Access



### Application

CONiQ<sup>®</sup> Monitor is the standard IIoT edge solution by Schenck Process. It provides data and information for CONiQ Cloud and includes communication interfaces for integration into local networks and control systems. Configuration of CONiQ Monitor is done remotely via CONiQ Cloud.

CONiQ Monitor is the digital add-on hardware for various Schenck Process machinery and equipment. Amongst others, CONiQ Monitor can monitor the condition and process performance of vibrating machines.

### Monitoring of Vibrating Machines

For vibrating machine monitoring, an exemplary sensor setup is as follows:

- Distribute multiple 3D Motion Sensors around the machine body.
- Mount one 3D Motion Sensor on each unbalance exciter for bearing and gear wheel monitoring.

Key features of the 3D Motion Sensors: Wireless, magnet mounting (optional bolted mounting), corrosion-resistant, synchronized.

The 3D Motion Sensors are powered by primary batteries and CONiQ Cloud informs the user about the remaining battery lifetime.

The battery lifetime is dependent on measurement cycle times and radio connection quality. Typically the batteries last between four months and up to more than one year.

Due to magnet mounting and self-levelling software algorithms, sensor installation and maintenance (e. g. battery replacement) can be done during machine operation avoiding unnecessary process downtime.

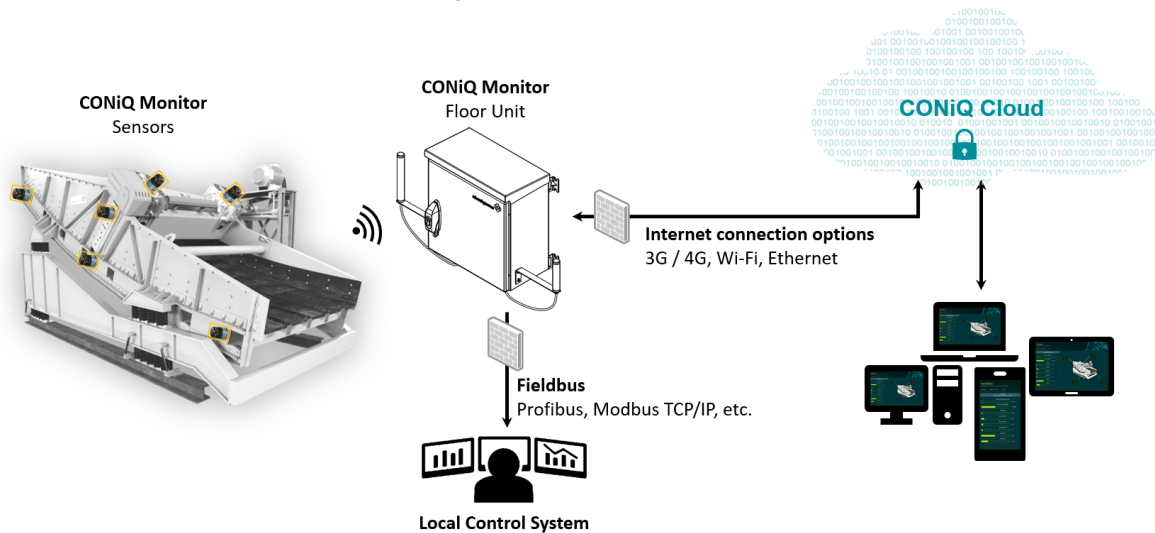
### Equipment

CONiQ Monitor consists of various sensors in combination with an industrial cabinet ("Floor Unit"). The Floor Unit includes separate communication interfaces to both CONiQ Cloud and local customer networks.

CONiQ Monitor mandates an internet connection to be fully functional. The Floor Unit includes an internet router which establishes internet connection either via 3G/4G mobile communication, Wi-Fi or Ethernet.

## System Overview

An exemplary setup of CONiQ Monitor attached to a Schenck Process vibrating machine is illustrated in the picture below (3D Motion Sensors are enlarged for illustrative purpose).

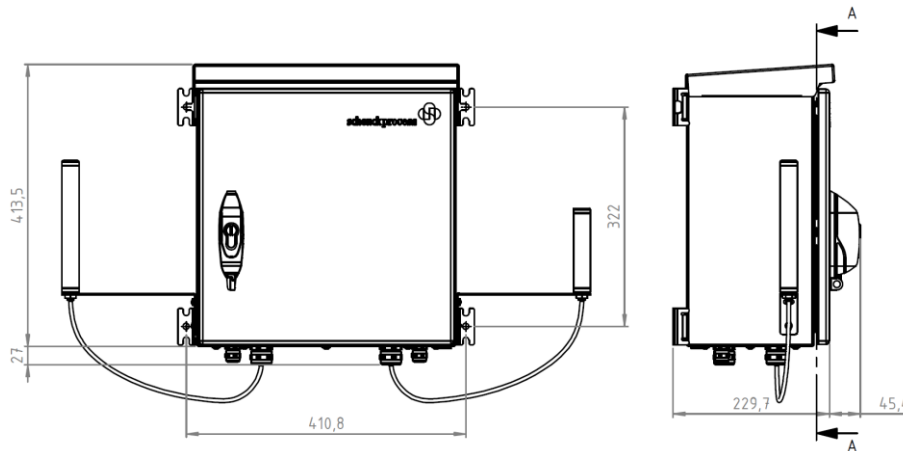


## Security

- Internet and fieldbus links are separate networks
- Data-push communication from CONiQ Monitor to CONiQ Cloud
- AES 256bit data encryption for communication between CONiQ Monitor and CONiQ Cloud
- Maintenance access to CONiQ Monitor:
  - Is protected by two-factor authentication
  - Is restricted to Schenck Process service experts.
  - Audited security standards: NIST SP800-115 & ISECOM OSSTMM, ISA 99 / IEC 62443 & BSI and Industry 4.0 (RAMI4.0) ref. IEC/PAS 62443-3

## Technical Data – Floor Unit

<b>Power supply</b>	115 ... 230 V AC (50 ... 60 Hz)
<b>Temperature range</b>	Operating temperature: -20 °C .. +50 °C Storage temperature: -40 °C .. +80 °C
<b>Weight</b>	15 kg
<b>Cabinet</b>	IP65; 380 x 380 x 236 mm; steel; powder-coated <i>The cabinet can be customized for customer requirements</i>
<b>Fieldbus protocols</b>	PROFIBUS Profinet Modbus RTU Modbus TCP/IP CANopen DeviceNet EtherCAT EtherNet/IP



Unit: mm

### Technical Data – 3D Motion Sensors

<b>Power supply</b>	Primary batteries (3 x 3.6 V, ½ AA) SAFT LS14250 with specified height of 24.8 mm
<b>Temperature range</b>	Operating temperature: -40 °C .. 85 °C
<b>Weight</b>	200 g
<b>Enclosure</b>	IP67 300 series stainless steel with polycarbonate cover
<b>Dimensions</b>	Diameter: 44 mm Height: 56.6 mm
<b>Radio frequency (RF) transceiver carrier</b>	2.405 GHz .. 2.480 GHz

3D Motion Sensor mounted on an unbalance exciter to monitor bearing and gear wheel conditions

3D Motion Sensor mounted on a vibrating machine side plate to monitor the motion of the machine



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