Installation Instructions

Installation Instruction for Condition Monitoring with Battery Powered <u>Wireless</u> Vibration Sensors

Training Version rev.250212

Sequence of installation steps

1. **Install and power the iQunet Server**
2. **Connect to the iQunet Server web interface**
3. **Install the battery set**
4. **Install the sensor mechanically on the asset (in specified range)**
5. **Launch the sensor measurements in the web interface**

Installation steps (cont.)

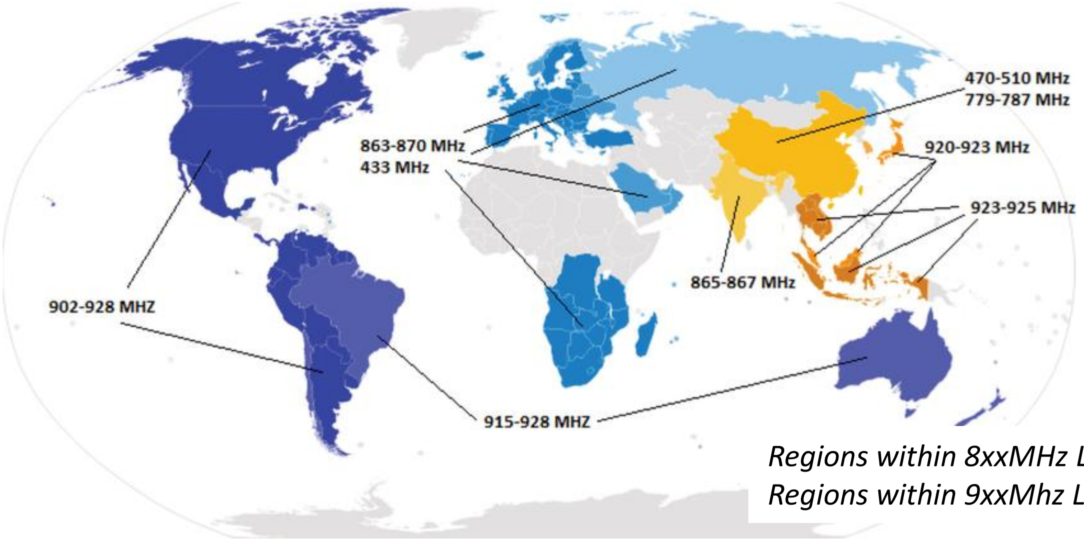
1. Install and power the iQunet Server

For full set up and installation instructions please visit https://iqunet.com/resources/user-manuals/

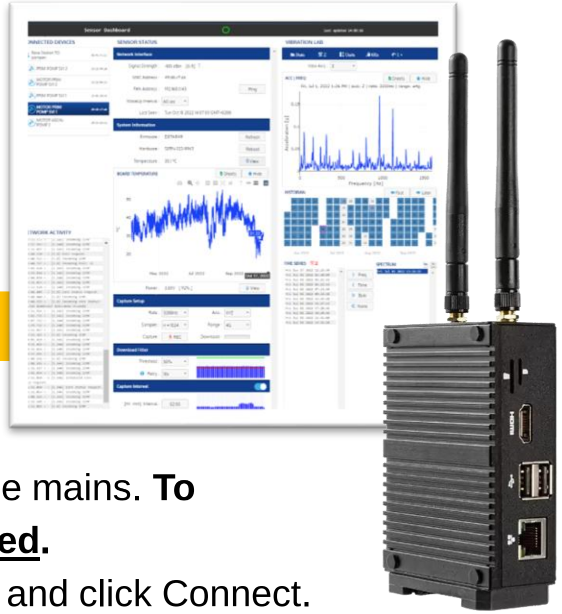
- Mount the iQunet Server on DIN rail (35mm). Mounting clips included.
- Install the External Dual Band **Wifi Antenna** hand tight only on the WiFi antenna connector.
- Install the External **LoRa antenna** hand tight **only** on the LORA antenna connector.
- Power with 8-28VDC / 18W max. power consumption
- Do NOT yet plug in a network cable or LTE dongle if ordered

iQunet Server:

SKU:
SERV199498-IPC-ED1432-8A
SERV199499-IPC-ED1432-9A



Regions within 8xxMHz LoRa band must use 8A version
Regions within 9xxMhz LoRa band must use 9A version



Installation steps (cont.)

2. Connect to the iQunet Server web interface (via hotspot or WebRTC)

<u>Hotspot:</u>

1. A WiFi hotspot is automatically created after 90 seconds once the iQunet Server is connected to the mains. **To activate the hotspot, the <u>ethernet cable must be unplugged</u> and any <u>USB LTE dongle removed</u>.**
2. Select the hotspot (SERN-xxxxxxxxxxxx) in the network center on your PC, mobile phone or tablet and click Connect. The hotspot's password is the Sensor Proxy ID (server-xxxxxxxx). The Sensor Proxy ID is provided by iQunet.
3. Open a new browser page. Browse to **192.168.42.1:8000/dashboard/app** to open the iQunet Sensor Dashboard.

<u>WebRTC:</u>

1. Install a network safely **connected to internet** by using the above Hotspot functionality in the "Wired" or "Wifi" tab of the dashboard.
2. **Alternatively** plug in the USB-LTE dongle into the USB port. LTE connection is made upon a steady green light is available on the LTE dongle.
3. Connect your PC to the internet. Surf to **connect.iqunet.com**. Log in with your Google account or create a new account using your email address.
4. Click on "Add Server Node". Enter the Sensor Proxy ID (server-xxxxxxxx) and provide an alias name for the Server. Click "Save". The Sensor Proxy ID is provided by iQunet.
5. Click on the created server node to open the iQunet Sensor Dashboard.

Installation steps (cont.)

3. Install the battery set

Long Life Time MAX Battery Set:

SKU: ACCS604010-123A-MAX

OR

Standard Battery Set (IP68):

SKU: ACCS602010-2032-IP68

iQunet® Battery Installation Instructions (Cont.):

Standard Battery Set (IP68): **SKU**: ACCS602010-2032-IP68

1

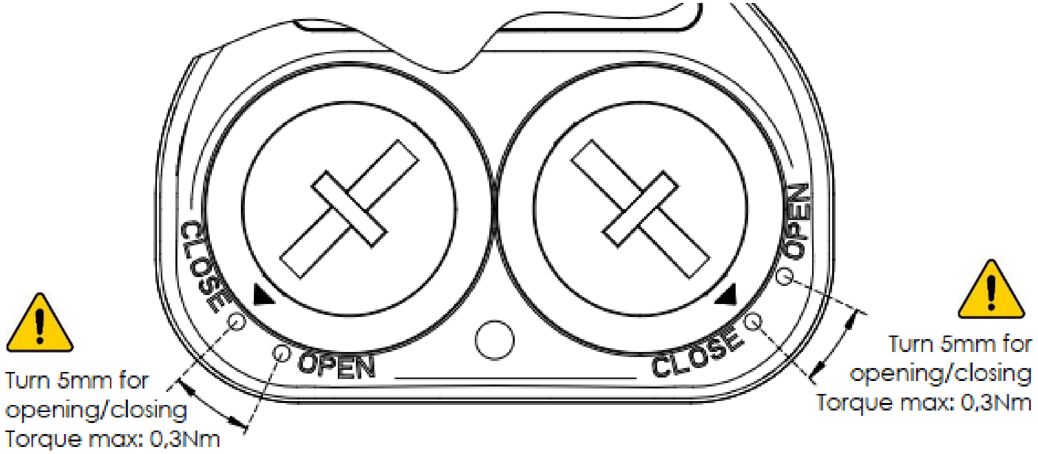
If not yet installed, put the CR2032 batteries in the right position in the (**magnetic**) holder.

2

Avoid touching the bare batteries surfaces inside the holders with bare fingers (leaving skin conductive residues over the battery poles)

3

Insert the battery holders **perpendicularly** into the sensor compartment with the **arrow** on the holder pointing to the **"open"** position. Gently push the holder down and carefully rotate the arrow on the holder from the open to the close position **(±5mm ; Torque max 0,3Nm).**



CAUTION: Carefully read the instruction manual before using the sensor.
When inserting the battery, point the arrow (►) on the battery holder to the “open”-position dot.
Inserting the battery in another position could harm the sensor and will void warranty of the sensor.
Do not touch the bare battery surfaces when inserting the battery into the battery holder to maximize battery lifetime.

- Battery lifetime > 1,5 years with **daily** triaxial full spectrum measurements *
- Easy Replaceable with 2x **standard CR2032** batteries (also known as ANSI / NEDA-5004LC or IEC-CR2032)
- Easy onsite battery **replacement in 60 sec**.

* temperature and settings dependent

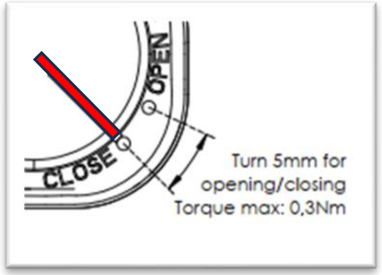
Battery Installation Instructions (Cont.):

Long Life Time MAX Battery Set: **SKU:** ACCS604010-123A-MAX

CAUTION: insert the batteries with the **narrow rib** located to the dot indicating the "open" position as marked on the outside of the sensor. **INSERTING THE BATTERY IN ANOTHER POSITION WILL HARM THE SENSOR AND WILL VOID WARRANTY.** The battery holder shall then, manually, be gently turned **clockwise** until the dot indicating the "close" position is reached. **Max. Torque: 0.3 Nm. (Hand tight only)** Gently slide the white clips over the **wide ribs** of the 2 battery holders to secure the batteries in the sensor. The white **clips must always be installed** when the sensor is in use.

1

2



3

- Battery lifetime > 8 years with daily triaxial full spectrum measurements *
- Replaceable with 2x **standard CR123A** batteries (also known as IEC-CR17345 or ANSI/NEDA-5018LC)
- Onsite battery replacement in 60 sec.

* temperature and settings dependent

iQunet® Battery Installation Instructions (Cont.):

Battery Holder Replacement: **Spare Part SKU**: ACCS604110-HOLDER-MAX

(battery holder set without battery / Li-MnO2 battery to be purchased locally)

1

Not included

2

3

4

Replacement battery:

Standard Type/IEC/ANSI: industrial CR123A / IEC-CR17345 / ANSI-NEDA-5018LC

Capacity: >1450mA

Non rechargeable type only !

System: Li-MnO$_2$

Recommended brand: VARTA

CAUTION: insert the battery holders with the **narrow rib** located to the dot indicating the "open" position as marked on the outside of the sensor. **INSERTING THE BATTERY HOLDER IN ANOTHER POSITION WILL HARM THE SENSOR AND WILL VOID WARRANTY**. The battery holder shall then, manually, be gently turned **clockwise** until the dot indicating the "close" position is reached. **Max. Torque: 0.3 Nm. (Hand tight only)** Gently slide the white clips over the **wide ribs** of the 2 battery holders to secure the batteries on the sensor. The white **clips must always be installed** when the sensor is in use.

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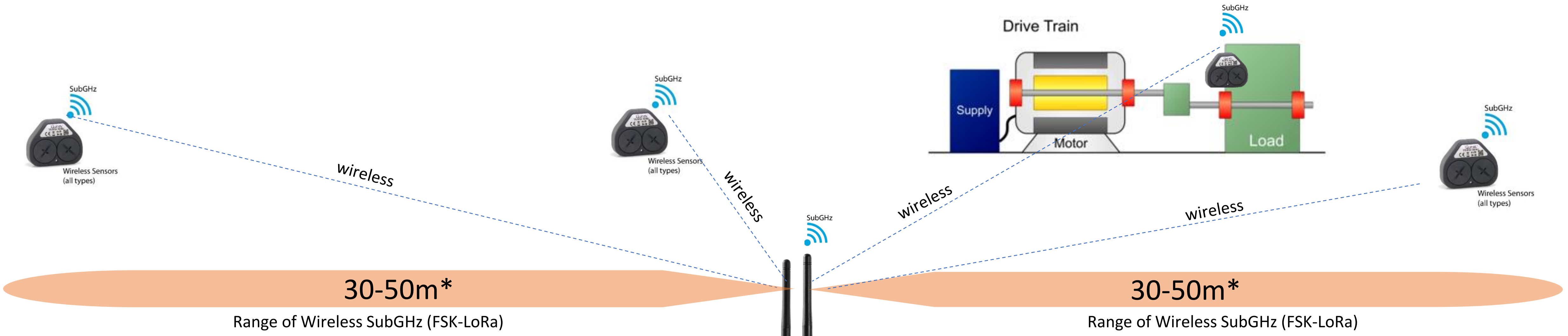
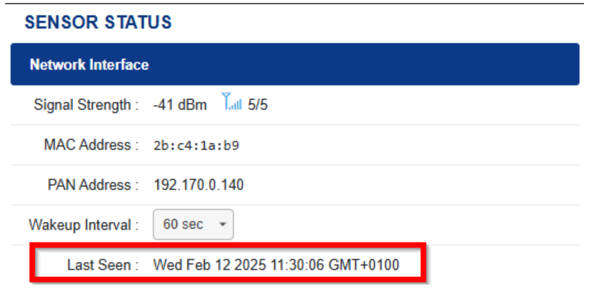
Installation steps (cont.)

4. Install the sensor mechanically on the asset (in specified range)



Before final sensor installation, the sensor wireless connectivity can be checked by using the web interface (see software manual.

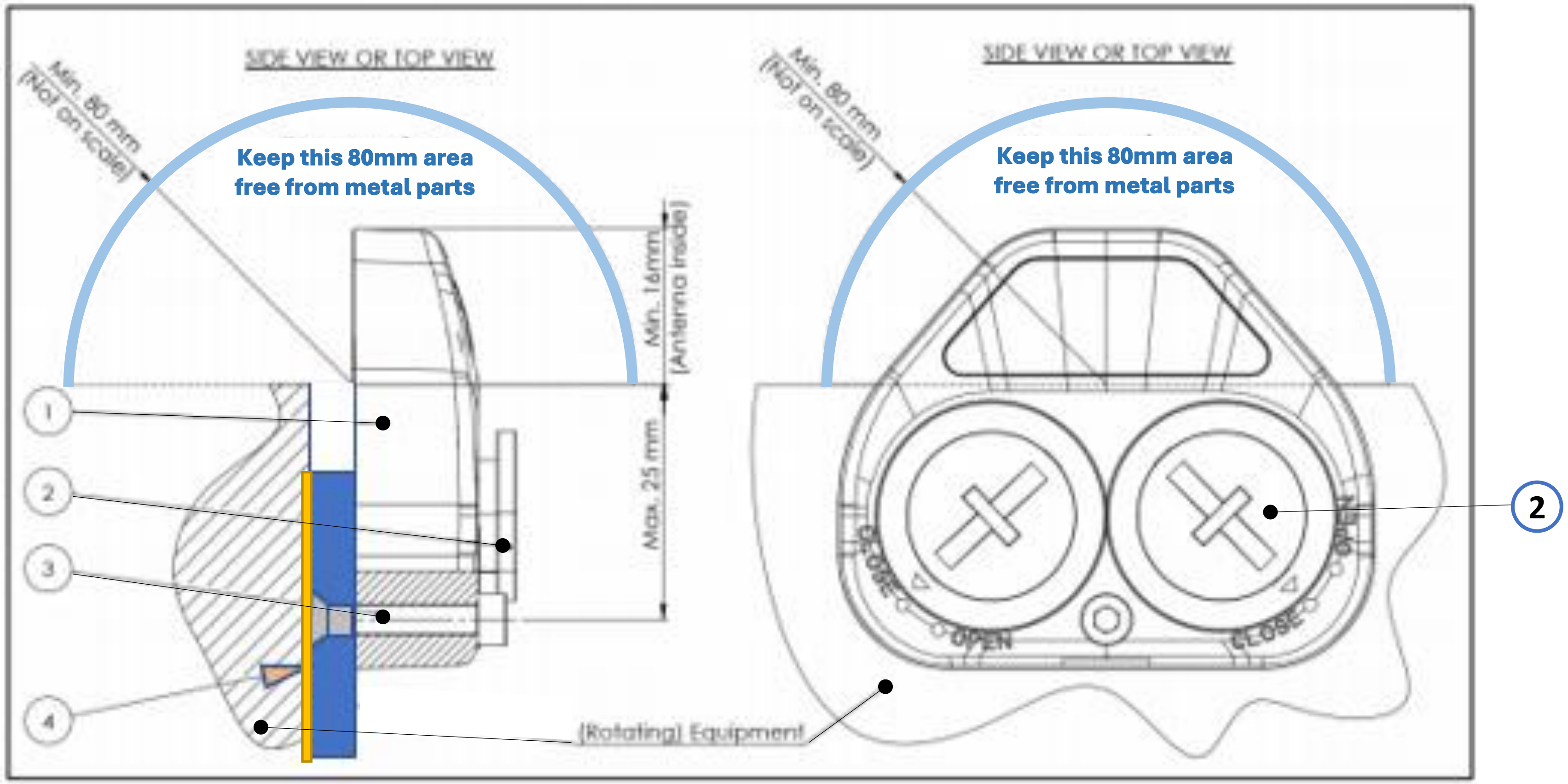
The sensor has good wireless connectivity if the "Last Seen“ sensor time stamp is **not older than 2-3 minutes** compared to the current time.

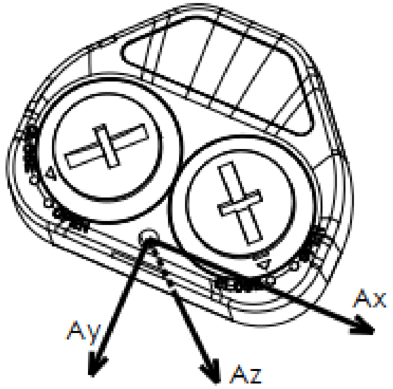


- Drawing not on scale
- * = Plant topology dependent
- * = sensor mount dependent (ref. mechanical installation)
- Line of Sight **not** required

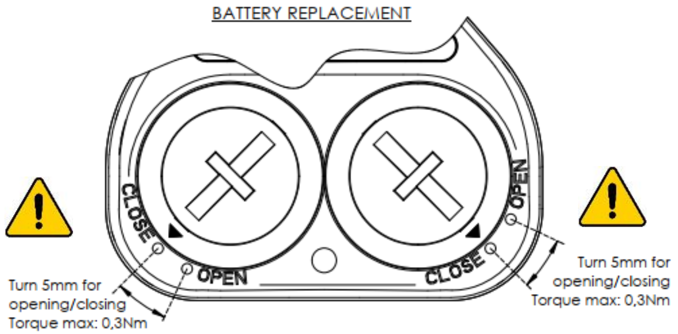
Sensor Mounting WITH Magnet

Mechanical installation instructions





It is recommended to mount the sensor aligned with vertical, horizontal and axial axis if possible.



1 **Wireless iQunet Sensor** (SKU: IVIB161010-ACC3-016)

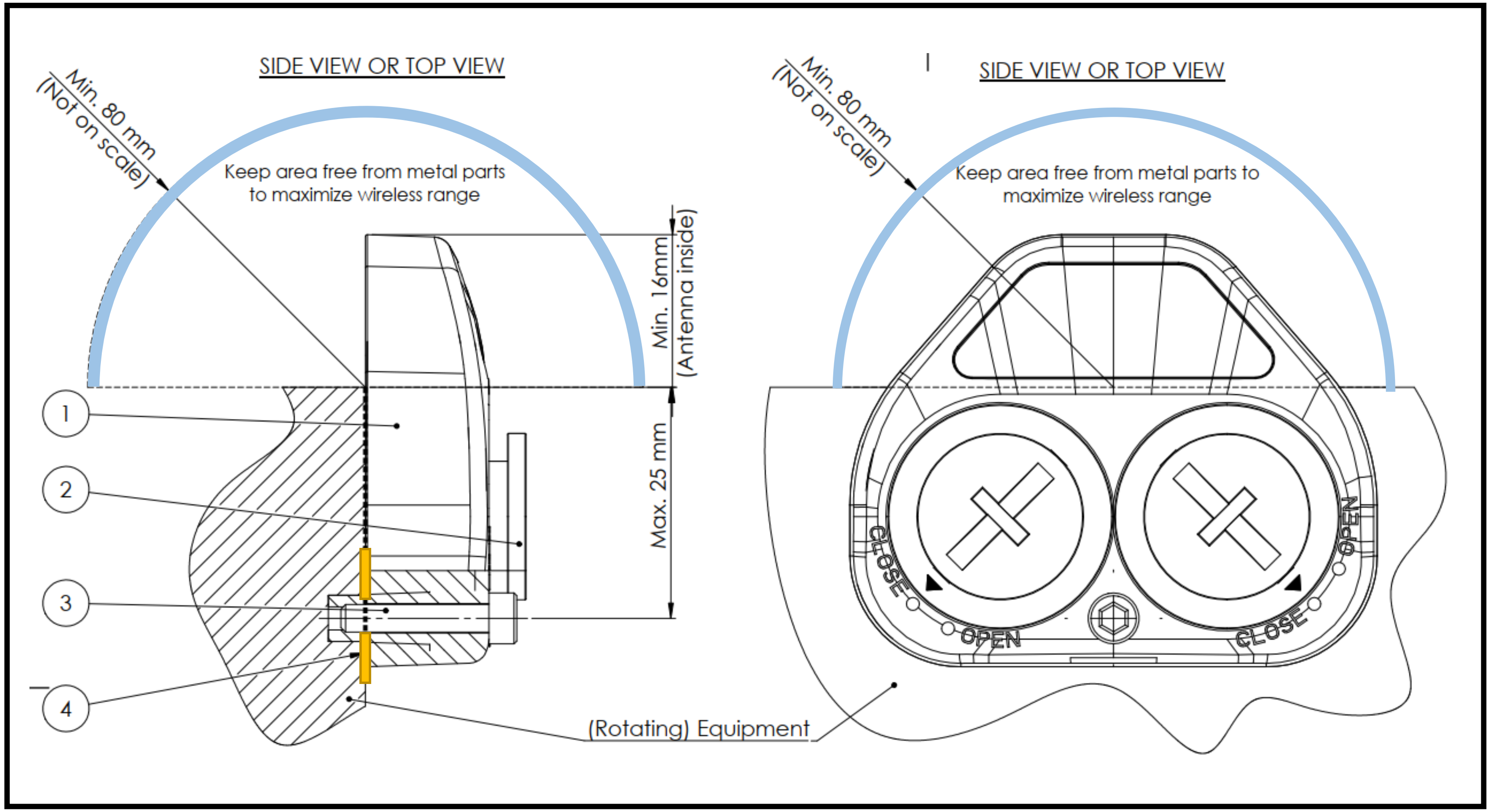
2 **Battery holder + battery** (SKU: ACCS602010-2032-IP68)

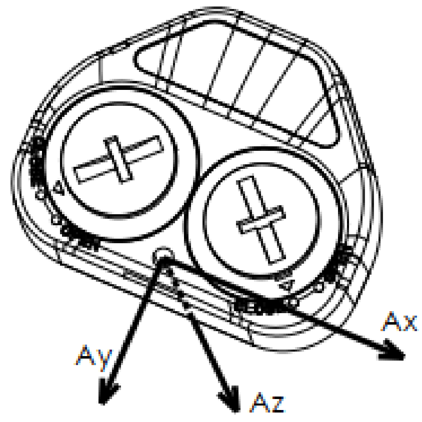
3 **Magnet incl. magnet mounting set** (SKU: ACCS622010-MAGN-3230)

4 **RECOMMENDED: Epoxy – 5 mm gap filling** (SKU: ACCS612010-50ML-EPXY)

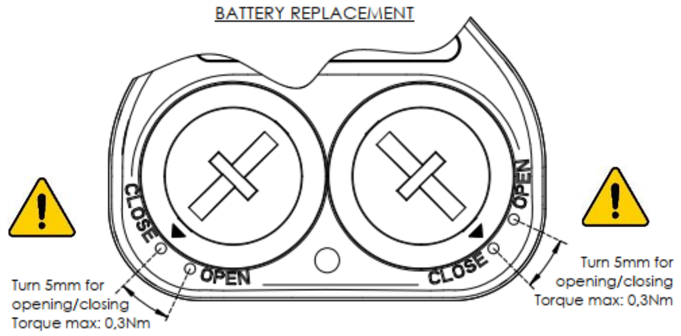
Sensor Mounting **WITHOUT** Magnet

Mechanical installation instructions





It is recommended to mount the sensor aligned with vertical, horizontal and axial axis if possible.



1. **Wireless iQunet Sensor** (SKU: IVIB161010-ACC3-016)
2. **Battery holder + battery** (SKU: ACCS602010-2032-IP68)
3. **Mounting Screw set** (SKU: ACCS611010-SSM3-X20)
4. **RECOMMENDED: Epoxy – 5 mm gap filling** (SKU: ACCS612010-50ML-EPXY)

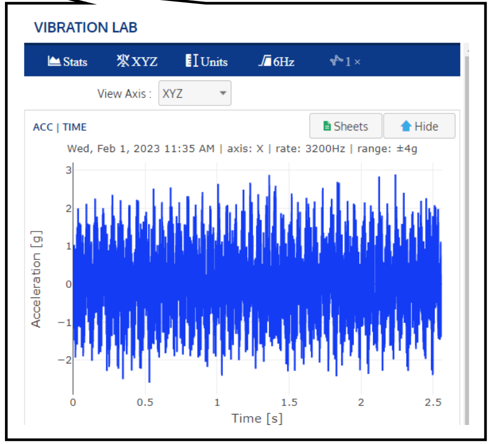
Installation steps (cont.)

5. Launch the automatic sensor measurements in the web interface - INSTANT MODE

iQunet® full Spectrum sensor

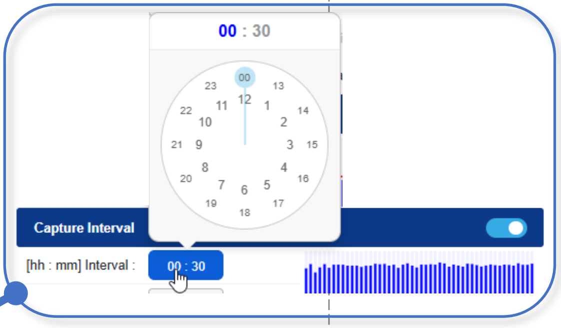
Sleeping

Send measurements



E.g. Measurement for 2.56sec
8192 points for each X,Y,Z
time triggered

Instant Measure Mode
(Time Based Capturing)



User selectable 1min-24h*

* Selection with direct impact on battery lifetime

9:00 9:30 10:00 10:30 11:00

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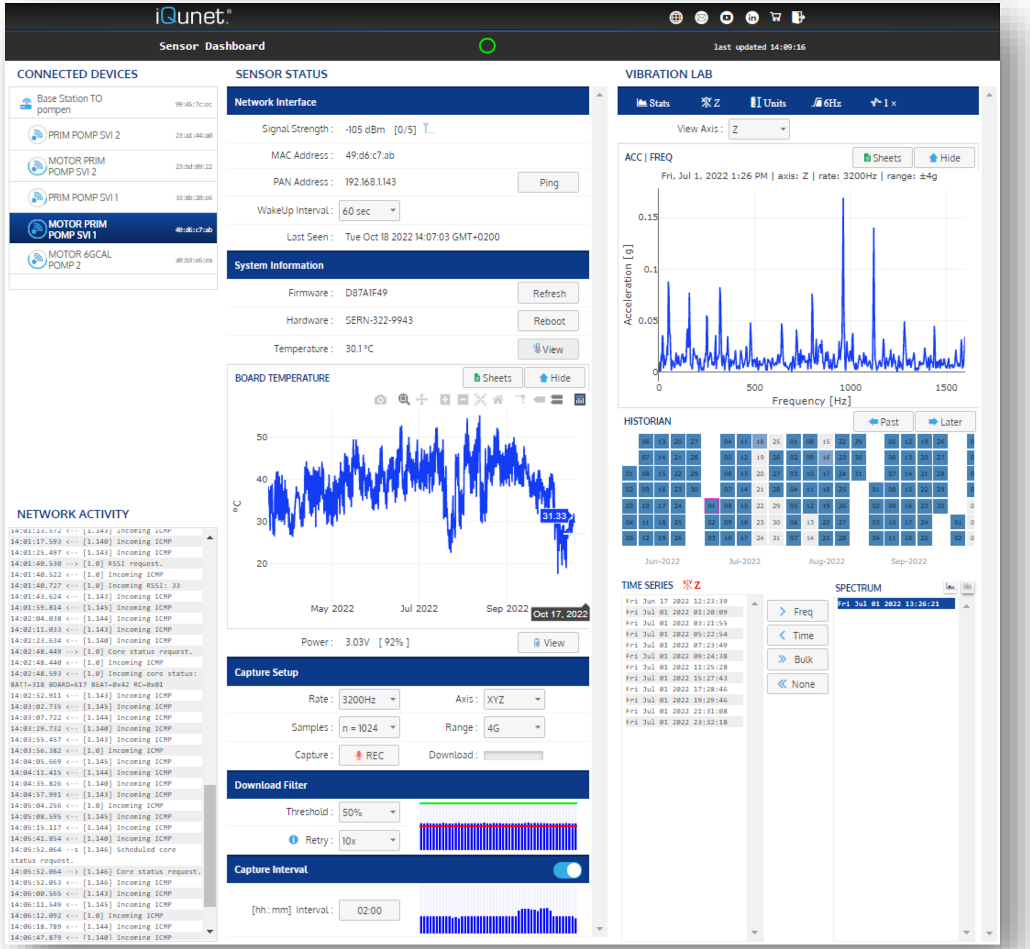
For Software Manuals, goto iQunet.com/resources/user-manuals/



Sensor management & Analytics Dashboards

- Standard included
- General sensor information and overview
- Sensor Status information
  - Connectivity
  - Historical temperature graph
  - Historical battery level graph
- Capture setup pane
- Capture interval setup pane
- Sensor download threshold setup pane
- Vibration / current waveform Analytics pane (incl. historical data)
  - Time Series Lab
    - velocity and acceleration selection
    - HP filter settings
    - Time series graph
    - FFT graph
    - 3D FFT plot
  - Statistics
    - velocity and acceleration selection
    - HP filter settings
    - RMS trend graph
    - Kurtosis trend graph

All above OPC UA (historical) node data is free accessible! OPC UA Embedded Server