DATASHEET

Product information
IVIB161010-ACC3-016

Name	IVIB161010-ACC3-016
	
	Industrial Wireless Battery-Powered Vibration Sensor
Product description	
Types	IVIB161010-ACC3-016-8A : for deployment in areas supporting the 868 MHz ISM frequency band IVIB161010-ACC3-016-9A : for deployment in areas supporting the 915 MHz ISM frequency band
Description	Industrial Wireless Vibration Sensor, battery-powered (powered by 2 standard CR2032 coin cells), measures both vibration and temperature data, collects triple axis time series vibration data, EMC compliant, RoHS compliant.
Note	Used for condition monitoring of bearings, misalignment, unbalance, ... on (mainly) continuously running rotating equipment (e.g. fan-motor combination) with limited number of discrete speeds
Product specifications	
Dimensions	57 x 47 x 14 mm, with standard battery set, excl. magnet mount
Case material	Thermoplastic, casted polyurethane resin
Weight	35 g
Sealing	IP68
Installation	• Magnet Neodymium (NdFeB) – holding power 30kg – indoor use (SKU: ACCS622010-MAGN-3230) • Magnet Samarium Cobalt (SmCo) – holding power 20kg – outdoor use (SKU ACCS622015-SMCOFZB-32) • Mechanical mount with M3 screws – (SKU ACCS611010-SSM3-X20) • Selected epoxy adhesive for permanent mount - (SKU ACCS612010-50ML-EPXY)
Operating ambient temperature	-20° to +70°C (intermittent +80°C)
Recommended storage temp.	+30°C maximum
Certifications	CE, FCC, KC Non-ATEX version (for certified ATEX version see: SKU IVIB-161610-ACC3-EX)
Wireless communications range	Up to 50 m typically in plant (actual range depends on specific site topology and device placement)
Wireless frequency - protocol	SubGhz (868/915 MHz ISM) LoRa-FSK, robust wireless star topology
Max. transmission power	<10 dBm EIRP (<10mW)
Transmitted data	• 100% full raw time domain waveform data (essential for computed spectrum for all measurements) • Temperature
Power supply	2 x 3V standard $LiMnO_2$ cells **Standard set included:** replaceable $LiMnO_2$ **CR2032** battery in holder - SKU: ACCS602010-2032-IP68 *Battery replacement: CR2032 / IEC CR2032 / ANSI 5004LC **generic** – Industrial quality* **Optional set:** long lasting replaceable $LiMnO_2$ **CR123A** battery in holder - SKU: ACCS604010-123A-MAX *Battery replacement: CR123A / IEC CR17345 / ANSI 5018LC **generic** – Industrial quality*
Battery lifetime	@ 1 full measurement per day (depending on temperature and settings*; **industrial** battery quality only): • CR2032 based types: Up to 2y* (with battery-friendly settings at room temperature) • CR123A based types: up to 10y* (with battery-friendly settings at room temperature)

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Amplitude range	2g, 4g, 8g or 16g – user selectable via sensor management software
Measurement axes	X, Y and/or Z (3 axes) – user selectable via sensor management software
Sampling rate	12 to 3200 Hz – user selectable via sensor management software
Number of samples	32 to 8192 samples – user selectable via sensor management software
Units	g or mm/s – user selectable via sensor management software
High-Pass filter	0 to 800 Hz – user selectable via sensor management software
Activity threshold	Auto or 0-100% (steps of 10%) – user selectable via sensor management software
Data storage	Upon connection, Triaxial full time-series acceleration data and temperature data are instantly transmitted to and stored in the iQunet Edge IPC server's SQL database. Transmitted sensor measurement data is overwritten with next new measurement.
Sensor Management	Sensor Management software is embedded in iQunet Edge (IPC) Server's web interface
Start data acquisition	Via iQunet Edge (IPC) Server software • Manual trigger (REC button in Sensor Dashboard) • Automatic measurements (user selectable time interval) • Conditional automatic measurements (user selectable threshold level)
Postprocessing	Via iQunet Edge (IPC) Server software • Time series, frequency or waterfall plots • 1/f flicker noise detrending (for velocity spectra) • DFT averaging for noise reduction • Trend tracking: RMS or kurtosis • Configurable high pass cut off filter
Communication protocols	Via iQunet Edge (IPC) Server software Subscribe to sensor parameters and data AND control sensors over: ○ Embedded OPC UA Server ○ Embedded MQTT client ○ Embedded GraphQL API
Raw data available for Machine Learning processing	Yes (freely available), over OPC UA or MQTT communication; via sensor management software
AI Anomaly Detection Monitoring	Yes (optional service, via sensor management software)
Graph options in iQunet (Edge) Anomaly Monitor Dashboard	• Raw anomalies (predicted error) • five expectile moving-window alarm trends: 5%, 25%, 50% (median), 75%, 95% ○ Graphical UI: 5%, median 50%, 95%; ○ OPC UA: 25%, 75% • Alarm level setup • Alarm status indicator
Compliance	• RoHS: 2011/65/EU and 2015/863 • EMC: EN 301 489-1 / EN 301 489-3 • SPECTRUM: EN 300 220-2 • FCC ID: OA3MRF89XAM9A Model: MRF89XAM9A IC: 7693A-89XAM9A *This device complies with Part 15 of the FCC Rules.* *Operation is subject to the following two conditions:* *(1) this device may not cause harmful interference, and* *(2) this device must accept any interference received, including interference that may cause undesired operation*
Picture & Drawing	
Battery placement	

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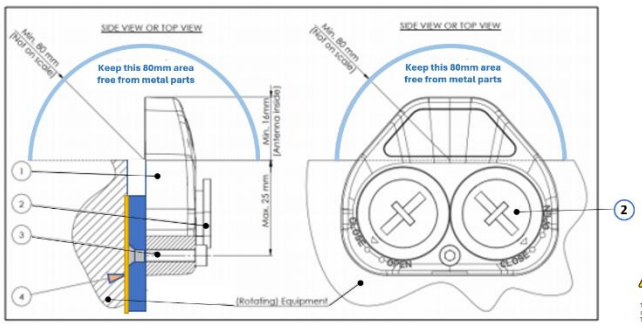
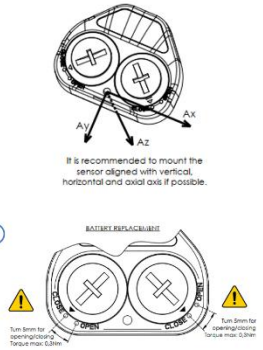
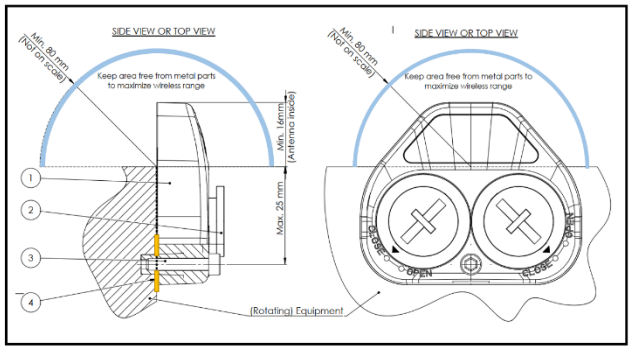
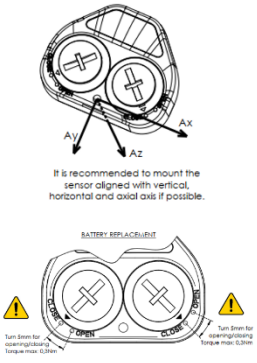
	The batteries must be inserted with the arrow on the battery holder pointing to the dot indicating the "open" position (as marked on the outside of the sensor with an open lock icon). CAUTION: Inserting the batteries in another position will damage the sensor and **will void the warranty**! After insertion, gently turn each holder clockwise until the arrow aligns with the 'closed' dot (closed-lock icon). Use a **1.2 × 6 mm** flat screwdriver or a **€0.05** coin. **Maximum torque: 0.3 N·m.**  CAUTION: the battery surface should not be touched when installing the batteries into the sensor.
Sensor mounting	iQunet® Sensor Mounting **WITH** Magnet Mechanical installation instructions   (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) iQunet® Sensor Mounting **WITHOUT** Magnet Mechanical installation instructions   (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)
Shipping information	UN 38.3 Test Summary of the Li-primary cell: Varta-ag.com/Supplier-Test-Summary-STS-STS_CR2032_09.pdf