

## PRODUCT DATASHEET

Features	Wireless Battery Powered Vibration Sensor (non-Ex)	Wireless Battery Powered Vibration Sensor – (Ex-version)	Wireless Cable Powered Vibration Sensor (non-Ex)
<b>Function</b>	Vibration Sensor	Vibration Sensor – ATEX certified	Vibration Sensor
<b>Type number</b>	IVIB161010-ACC3-016	IVIB-161610-ACC3-EX	IVIB161410-24V-PWR
<b>Ex certified</b>	No	Yes ATEX : II 2G Ex ib IIB T4 Gb	No
<b>Use</b>	Wireless vibration monitoring on (mainly) continuously running equipment (e.g. fan-motor combination) with limited number of discrete speeds	Wireless vibration monitoring on (mainly) continuously running equipment (e.g. fan-motor combination) with limited number of discrete speeds	Wireless vibration monitoring on dis-continuously running equipment (e.g. conveyor motor) and/or with variable speeds
<b>MOQ – Minimum Order Quantity</b>	1 pc	100 pcs	1 pc
<b>Power supply</b>	<ul style="list-style-type: none"> <li>industrial quality 2 x CR2032 (replaceable in battery holder)</li> <li>industrial quality 2 x CR123A (replaceable in battery holder)</li> </ul>	<ul style="list-style-type: none"> <li>industrial quality 2 x CR2032 (Varta) (replaceable in battery holder)</li> <li>industrial quality 2 x LS17330 (Saft)(**) (replaceable in battery holder)</li> </ul>	6VDC – 60VDC (M8 connector) + 1 x CR2032 failover battery
<b>Battery replacement types incl. battery holder (SKU)</b>	<ul style="list-style-type: none"> <li>ACCS601010-2032-LOW (2pcs.)</li> <li>ACCS602010-2032-IP68 (2pcs.)</li> <li>ACCS604010-123A-MAX (2pcs.)</li> </ul>	<ul style="list-style-type: none"> <li>ACCS602010-2032-IP68 (2pcs.) (Varta)</li> <li>ACCS604510-23EX-MAX (2pcs.) (Saft)(**)</li> <li><i>(**MAX version available on project base only)</i></li> </ul>	(fail over battery) <ul style="list-style-type: none"> <li>ACCS602010-2032-IP68 (1pcs.)</li> </ul>
<b>Battery replacement type (battery only)</b>	<ul style="list-style-type: none"> <li>CR2032 <b>generic</b> – Industrial quality (IEC CR2032 / ANSI 5004LC)</li> <li>CR123A <b>generic</b> – industrial quality (IEC CR17345 / ANSI 5018LC)</li> </ul>	Replacement with certified type only <ul style="list-style-type: none"> <li>IEC CR2032 <b>Varta</b> Type 6032 BATTERY</li> <li><b>Saft</b> LS17330 Li-SOCI2 2/3 A-size bobbin cell</li> </ul>	<ul style="list-style-type: none"> <li>CR2032 <b>generic</b> – Industrial quality (IEC CR2032 / ANSI 5004LC)</li> </ul>
<b>Power cable type (SKU)</b>	-	-	ACCS616210-M8-5MTR (10m, 15m, 20m also available; other lengths on request)
<b>Maximum external current draw</b>	-	-	10 mA (peak)
<b>Battery life time</b>	@ 1 full measurement per day (depending on temperature and settings; industrial battery quality only): CR2032 based types: Up to 2y. CR123A based types: up to 10y.	@ 1 full measurement per day (depending on temperature and settings; industrial battery quality only): CR2032 Varta based type: Up to 2y. LS17330 Saft based type: up to 10y.	Not applicable: always on, continuously cable powered with battery failover
<b>Operating temperature</b>	-20°C to +70°C	-20 °C ≤ Ta ≤ +60 °C	-20°C to +85°C
<b>Recommended storage temperature</b>	+10 ~ 30°C	+10 ~ 30°C	+10 ~ 30°C
<b>Temperature sensor on board</b>	yes	yes	yes
<b>Amplitude range</b>	2G, 4G, 8G or 16G	2G, 4G, 8G or 16G	2G, 4G, 8G or 16G

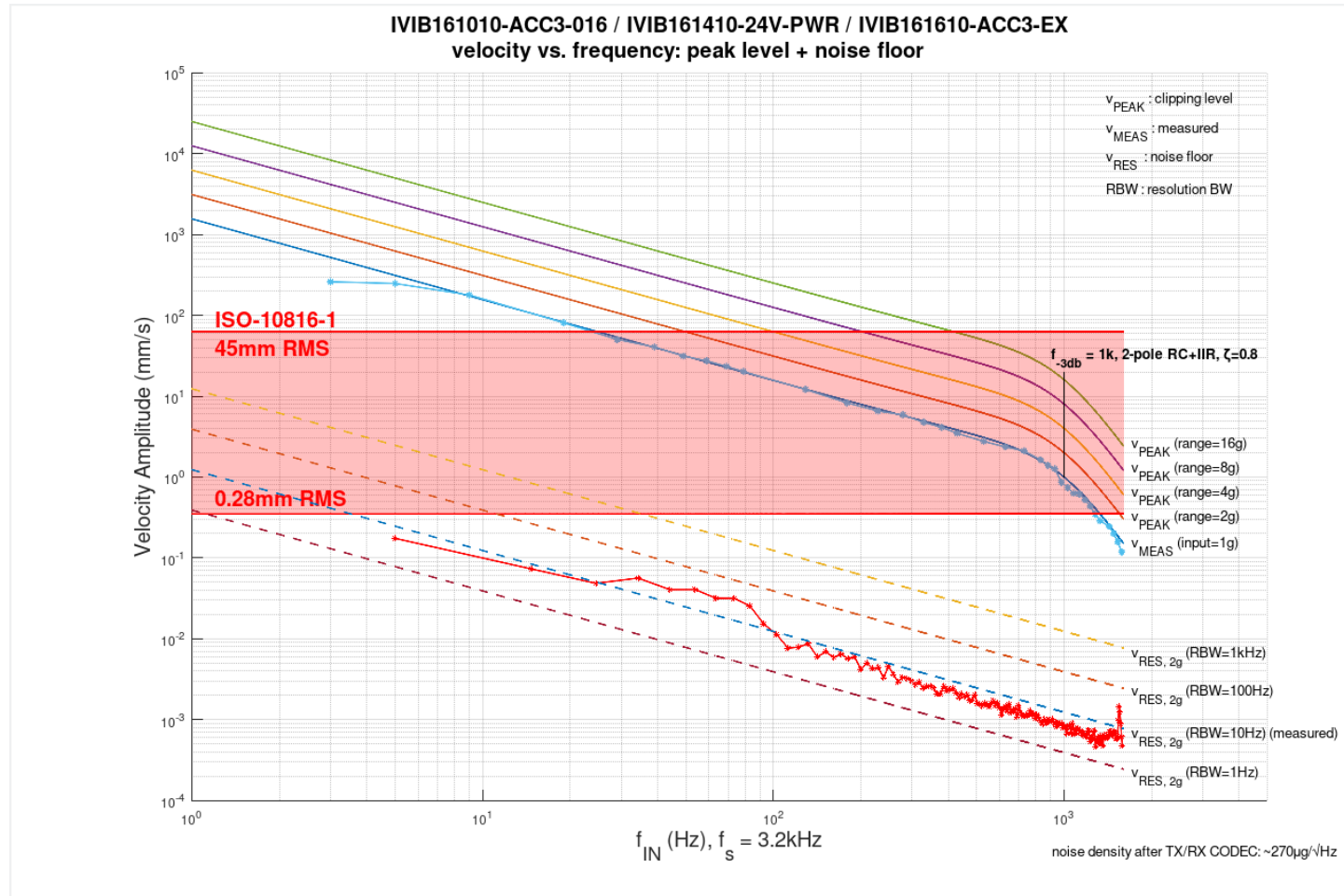
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<b>Measurement axis</b>	X, Y and/or Z (3-axial) Measured <b>in parallel</b> with same time stamp (firmware dependent)	X, Y and/or Z (3-axial) Measured <b>in parallel</b> with same time stamp (firmware dependent)	X, Y and/or Z (3-axial) Measured <b>in parallel</b> with same time stamp
<b>Sampling rate</b>	12 to 3200Hz selectable	12 to 3200Hz selectable	12 to 3200Hz selectable
<b>Number of samples</b>	32 to 8192 samples	32 to 8192 samples	32 to 8192 samples
<b>Measurement units</b>	g or mm/s	g or mm/s	g or mm/s
<b>High pass filter</b>	0 to 800Hz	0 to 800Hz	0 to 800Hz
<b>Sensor activity threshold</b>	Automatic or user selectable 0 – 100% (steps of 10%)	Automatic or user selectable 0 – 100% (steps of 10%)	Automatic or user selectable 0 – 100% (steps of 10%)
<b>Trend tracking statistics</b>	RMS, kurtosis	RMS, kurtosis	RMS, kurtosis
<b>Self-learning signal peak detector function on board</b>	no	no	yes
<b>“Always on” function (sensor is always actively measuring)</b>	no	no	yes
<b>Start sensor data acquisition</b>	<ul style="list-style-type: none"> <li>• manually recorded measurements               <ul style="list-style-type: none"> <li>○ manually start data acquisition and data download</li> </ul> </li> <li>• automatic measurements               <ul style="list-style-type: none"> <li>○ time interval in between 2 measurements is programmable</li> <li>○ a measurement is acquired and downloaded <b>at the end of</b> every interval period</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• manually recorded measurements               <ul style="list-style-type: none"> <li>○ manually start data acquisition and data download</li> </ul> </li> <li>• automatic measurements               <ul style="list-style-type: none"> <li>○ time interval in between 2 measurements is programmable</li> <li>○ a measurement is acquired and downloaded <b>at the end of</b> every interval period</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• manually recorded measurements               <ul style="list-style-type: none"> <li>○ manually set start and endpoint of the measurement</li> <li>○ after the set measurement interval, the measurement with the highest <b>peak power</b> will be downloaded</li> </ul> </li> <li>• automatic measurements               <ul style="list-style-type: none"> <li>○ interval of the measurement is programmable</li> <li>○ after the programmed measurement interval, the <b>measurement with the highest peak power during the time interval</b> will be downloaded <b>at the end of</b> every interval period.</li> </ul> </li> </ul>
<b>Wireless frequency</b>	SubGHz (868 / 915 MHz center frequency – HW dependent)	SubGHz (868 / 915 MHz center frequency – HW dependent)	SubGHz (868 / 915 MHz center frequency – HW dependent)
<b>Maximum broadcast power</b>	10 mW EIRP	10 mW EIRP	10 mW EIRP
<b>Wireless range (radius)</b>	up to 50m in plant conditions	up to 50m in plant conditions	up to 50m in plant conditions
<b>Wireless topology</b>	robust star network	robust star network	robust star network

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Features	Wireless Battery Powered Vibration Sensor (non-Ex)	Wireless Battery Powered Vibration Sensor – (Ex-version)	Wireless Cable Powered Vibration Sensor (non-Ex)
<b>Connectivity to local iQunet Edge Server</b>	via iQunet PAN coordinator	via iQunet PAN coordinator	via iQunet PAN coordinator
<b>Data storage</b>	acquired sensor measurement data immediately transferred wireless to, and stored in <b>on-premises</b> iQunet Edge IPC Server data base	acquired sensor measurement data immediately transferred wireless to, and stored in <b>on-premises</b> iQunet Edge IPC Server data base	acquired sensor measurement data immediately transferred wireless to, and stored in <b>on-premises</b> iQunet Edge IPC Server data base
<b>External communication protocols iQunet Edge Server</b>	<ul style="list-style-type: none"> <li>• embedded OPC UA server</li> <li>• embedded MQTT client</li> </ul>	<ul style="list-style-type: none"> <li>• embedded OPC UA server</li> <li>• embedded MQTT client</li> </ul>	<ul style="list-style-type: none"> <li>• embedded OPC UA server</li> <li>• embedded MQTT client</li> </ul>
<b>API on iQunet Server</b>	Yes, GraphQL Server embedded	Yes, GraphQL Server embedded	Yes, GraphQL Server embedded
<b>Alternative data export options iQunet Server</b>	<ul style="list-style-type: none"> <li>• GUI: Google Sheets / Excel</li> <li>• GUI: Data Explorer (.CSV file)</li> <li>• OPC UA: python scripts</li> </ul>	<ul style="list-style-type: none"> <li>• GUI: Google Sheets / Excel</li> <li>• GUI: Data Explorer (.CSV file)</li> <li>• OPC UA: python scripts</li> </ul>	<ul style="list-style-type: none"> <li>• GUI: Google Sheets / Excel</li> <li>• GUI: Data Explorer (.CSV file)</li> <li>• OPC UA: python scripts</li> </ul>
<b>Postprocessing in iQunet Sensor Dashboard (on iQunet Edge Server)</b>	<ul style="list-style-type: none"> <li>• 1/f flicker noise detrending (for velocity spectra)</li> <li>• DFT averaging for noise reduction</li> </ul>	<ul style="list-style-type: none"> <li>• 1/f flicker noise detrending (for velocity spectra)</li> <li>• DFT averaging for noise reduction</li> </ul>	<ul style="list-style-type: none"> <li>• 1/f flicker noise detrending (for velocity spectra)</li> <li>• DFT averaging for noise reduction</li> </ul>
<b>Graph options in iQunet Sensor Dashboard (on iQunet Edge Server)</b>	In both g and mm/s: <ul style="list-style-type: none"> <li>• measurement graphs:               <ul style="list-style-type: none"> <li>○ time series</li> <li>○ FFT</li> <li>○ 3D-waterfall plot</li> </ul> </li> <li>• trend plots:               <ul style="list-style-type: none"> <li>○ RMS</li> <li>○ Kurtosis</li> </ul> </li> </ul> Other measurement graphs: <ul style="list-style-type: none"> <li>○ temperature</li> <li>○ battery power</li> </ul>	In both g and mm/s: <ul style="list-style-type: none"> <li>• measurement graphs:               <ul style="list-style-type: none"> <li>○ time series</li> <li>○ FFT</li> <li>○ 3D-waterfall plot</li> </ul> </li> <li>• trend plots:               <ul style="list-style-type: none"> <li>○ RMS</li> <li>○ Kurtosis</li> </ul> </li> </ul> Other measurement graphs: <ul style="list-style-type: none"> <li>○ temperature</li> <li>○ battery power</li> </ul>	In both g and mm/s: <ul style="list-style-type: none"> <li>• measurement graphs:               <ul style="list-style-type: none"> <li>○ time series</li> <li>○ FFT</li> <li>○ 3D-waterfall plot</li> </ul> </li> <li>• trend plots:               <ul style="list-style-type: none"> <li>○ RMS</li> <li>○ Kurtosis</li> </ul> </li> </ul> Other measurement graphs: <ul style="list-style-type: none"> <li>○ temperature</li> <li>○ battery power</li> </ul>
<b>Raw data available for Machine Learning processing</b>	Yes (free available), over OPC UA or MQTT communication	Yes (free available), over OPC UA or MQTT communication	Yes (free available), over OPC UA or MQTT communication
<b>AI Anomaly Detection Monitoring</b>	Yes (optional service)	Yes (optional service)	Yes (optional service)
<b>Graph options in iQunet Anomaly Monitor Dashboard (on iQunet Server)</b>	<ul style="list-style-type: none"> <li>• Raw anomalies (predicted error)</li> <li>• five Expectile moving window trend graphs (5%, median 50%, 95% / 25%,75% via OPC UA)</li> <li>• Alarm level setup</li> <li>• Alarm status indicator</li> </ul>	<ul style="list-style-type: none"> <li>• Raw anomalies (predicted error)</li> <li>• five Expectile moving window trend graphs (5%, median 50%, 95% / 25%,75% via OPC UA)</li> <li>• Alarm level setup</li> <li>• Alarm status indicator</li> </ul>	<ul style="list-style-type: none"> <li>• Raw anomalies (predicted error)</li> <li>• five Expectile moving window trend graphs (5%, median 50%, 95% / 25%,75% via OPC UA)</li> <li>• Alarm level setup</li> <li>• Alarm status indicator</li> </ul>

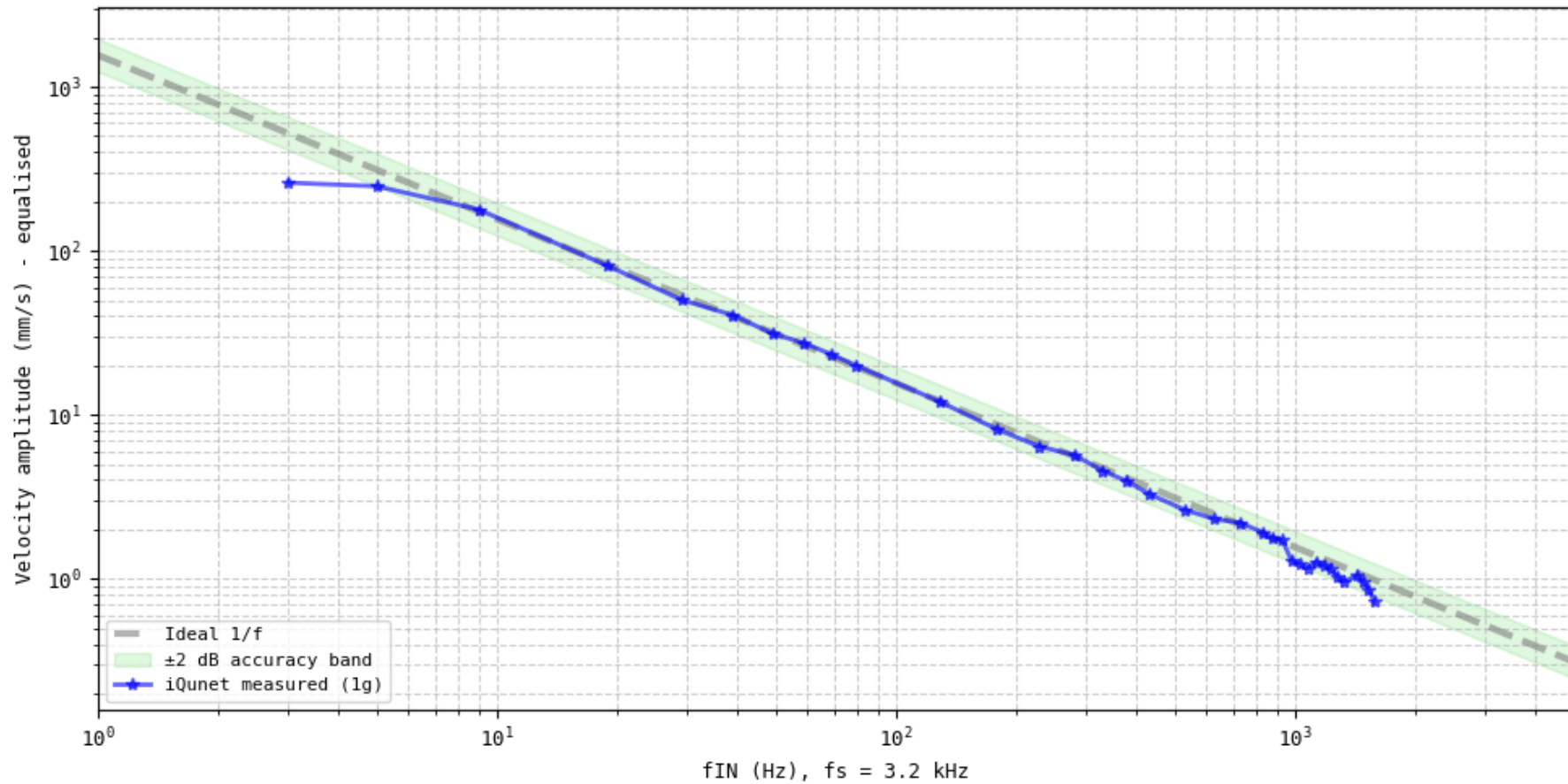
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(IMPORTANT: ALL AXES ON LOGARITHMIC SCALE)

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Velocity – After equalization of Nyquist filter



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## Key performance highlights – all sensors

Parameter	iQunet Specification	Practical Implication
Selectable dynamic range	±2 g / 4 g / 8 g / 16 g	Optimise SNR from slow-speed gearboxes to high-energy pumps
Bandwidth	DC-1 kHz flat response, 3.2 kHz sample rate; (DC-1.5kHz flat response after equalizing*)	Captures the harmonics and sidebands that expose bearing, lube and alignment issues
Velocity resolution	<0.03 mm/s (RBW 1 Hz @ 10 Hz)	Sees problems weeks before they cross ISO limits.
Peak velocity	>1000 mm/s at 1 Hz (16 g range)	Plenty of headroom for heavy-duty assets and impact events.
Noise density <b>after radio link</b>	~270 µg/√Hz (all axes)	Maintains lab-grade fidelity all the way to your historian.

(\*: on demand feature)