

INFORMATION LEAFLET

Features	Wireless Vibration Sensor	Wireless 24V Vibration Sensor	Wireless MAD Vibration Sensor
Function	Vibration Sensor	Vibration Sensor	Vibration Sensor
Type number	IVIB161010-ACC3-016	IVIB161410-24V-PWR	IVIB161510-MAD-008
Use	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	Wireless vibration monitoring on moving equipment in closed loop, moving parts (e.g. wheel bearing on carts from baggage carrousel)
Power supply	<ul style="list-style-type: none"> industrial quality 2 x CR2032 industrial quality 2 x CR123A (replaceable in battery holder) 	6VDC – 60VDC (M8 connector) + 1 x CR2032 failover battery	<ul style="list-style-type: none"> industrial quality 2 x CR2032 industrial quality 2 x CR123A (replaceable in battery holder)
Battery replacement types (SKU)	<ul style="list-style-type: none"> ACCS601010-2032-LOW (2pcs.) ACCS602010-2032-IP68 (2pcs.) ACCS604010-123A-MAX (2pcs.) 	(fail over battery) <ul style="list-style-type: none"> ACCS602010-2032-IP68 (1pcs.) 	<ul style="list-style-type: none"> ACCS601010-2032-LOW (2pcs.) ACCS602010-2032-IP68 (2pcs.) ACCS604010-123A-MAX (2pcs.)
Power cable type	-	ACCS616210-M8-5MTR (10m, 15m, 20m also available; other lengths on request)	-
Maximum external current draw	-	10 mA (peak)	-
Battery life time	@ 1 full measurement per day (depending on temperature and settings; industrial quality only): CR2032 based types: Up to 2 years CR123A based types: up to 10 years	Not applicable: always on, continuously cable powered with battery failover	@ 1 full measurement per day (depending on temperature and settings; industrial quality only): CR2032 based types: Up to 1 year CR123A based types: up to 6 years
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C

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Recommended storage temperature	+30°C maximum	+30°C maximum	+30°C maximum
Temperature sensor on board	yes	yes	yes
Amplitude range	2G, 4G, 8G or 16G	2G, 4G, 8G or 16G	2G, 4G or 8G
Measurement axis	X, Y and/or Z (3-axial) Measured in parallel with same time stamp (firmware dependent)	X, Y and/or Z (3-axial) Measured in parallel with same time stamp	X, Y and/or Z (3-axial) Measured consecutively with related time stamp
Sampling rate	12 to 3200Hz	12 to 3200Hz	12 to 400Hz
Number of samples	32 to 8192 samples	32 to 8192 samples	32 to 8192 samples
Measurement units	g or mm/s	g or mm/s	g or mm/s
High pass filter	0 to 800Hz	0 to 800Hz	0 to 200Hz
Sensor activity threshold	Graphical setup; 0 – 100% (steps of 10%)	Graphical setup; 0 – 100% (steps of 10%)	Set automatically based on sensor settings
Trend tracking statistics	RMS, kurtosis	RMS, kurtosis	MAD (Mean Absolute Deviation) , RMS, kurtosis
MAD watchdog set-up	no	no	yes
MAD watchdog settings	-	-	<ul style="list-style-type: none"> sampling rate: 12 to 400Hz number of samples: 32 to 8192 samples
Self-learning signal peak detector function on board	no	yes	no
“Always on” function (sensor is always actively measuring)	no	yes	Yes, only during equipment activity (with automatic wake-up)

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Start sensor data acquisition	<ul style="list-style-type: none"> • manually recorded measurements <ul style="list-style-type: none"> ○ manually start data acquisition and data download • automatic measurements <ul style="list-style-type: none"> ○ time interval in between 2 measurements is programmable ○ a measurement is acquired and downloaded at the end of every interval period 	<ul style="list-style-type: none"> • manually recorded measurements <ul style="list-style-type: none"> ○ manually set start and endpoint of the measurement ○ after the set measurement interval, the measurement with the highest peak power will be downloaded • automatic measurements <ul style="list-style-type: none"> ○ interval of the measurement is programmable ○ after the programmed measurement interval, the measurement with the highest peak power during the time interval will be downloaded at the end of every interval period. 	<ul style="list-style-type: none"> • manually recorded measurements <ul style="list-style-type: none"> ○ manually set start and endpoint of the measurement ○ after the set measurement interval, the measurement with the highest MAD value will be downloaded • automatic measurements <ul style="list-style-type: none"> ○ interval of the measurement is programmable ○ after the programmed measurement interval, the highest MAD values will be downloaded ○ Measurement related to highest MAD value will be downloaded
Wireless frequency	SubGHz (868 / 915 MHz center frequency)	SubGHz (868 / 915 MHz center frequency)	SubGHz (868 / 915 MHz center frequency)

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Data storage on sensor when outside wireless range	no	no	Yes
Data acquisition when outside range	-	-	New (higher) MAD values during approx. 8 hours with time stamp
Maximum broadcast power	10 mW EIRP	10 mW EIRP	10 mW EIRP
Wireless range (radius)	up to 25m in plant conditions * up to 50m in free area <small>*Real wireless reach depending on plant topology</small>	up to 25m in plant conditions * up to 50m in free area <small>*Real wireless reach depending on plant topology</small>	up to 25m in plant conditions * up to 50m in free area <small>*Real wireless reach depending on plant topology</small>
Maximum number of repeaters between sensor and base station	1 (topology: double start network)	1 (topology: double start network)	1 (topology: double start network)
Connectivity to local iQunet Server	via iQunet base station	via iQunet base station	via iQunet base station
Data storage	acquired sensor measurement data immediately transferred wireless to iQunet Edge Server, stored in data base locally	acquired sensor measurement data immediately transferred wireless to iQunet Edge Server, stored in data base locally	acquired sensor measurement data transferred wireless, when back in range to iQunet Edge Server, stored in data base locally
Communication protocols iQunet Server	OPC UA (embedded iQunet OPC UA Server)	OPC UA (embedded iQunet OPC UA Server)	OPC UA (embedded iQunet OPC UA Server)
API on iQunet Server	Yes, GraphQL Server embedded	Yes, GraphQL Server embedded	Yes, GraphQL Server embedded
Alternative data export options iQunet Server	<ul style="list-style-type: none"> GUI: Google Sheets / Excel GUI: Data Explorer (.CSV file) OPC UA: python scripts 	<ul style="list-style-type: none"> GUI: Google Sheets / Excel GUI: Data Explorer (.CSV file) OPC UA: python scripts 	<ul style="list-style-type: none"> GUI: Google Sheets / Excel GUI: Data Explorer (.CSV file) OPC UA: python scripts
Postprocessing in iQunet Sensor Dashboard (on iQunet Server)	<ul style="list-style-type: none"> 1/f flicker noise detrending (for velocity spectra) DFT averaging for noise reduction 	<ul style="list-style-type: none"> 1/f flicker noise detrending (for velocity spectra) DFT averaging for noise reduction 	<ul style="list-style-type: none"> 1/f flicker noise detrending (for velocity spectra) DFT averaging for noise reduction

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Graph options in iQunet Sensor Dashboard (on iQunet Server)	<p>In both g and mm/s:</p> <ul style="list-style-type: none"> • measurement graphs: <ul style="list-style-type: none"> ○ time series ○ FFT ○ 3D-waterfall plot • trend plots: <ul style="list-style-type: none"> ○ RMS ○ Kurtosis <p>Other measurement graphs:</p> <ul style="list-style-type: none"> ○ temperature ○ battery power 	<p>In both g and mm/s:</p> <ul style="list-style-type: none"> • measurement graphs: <ul style="list-style-type: none"> ○ time series ○ FFT ○ 3D-waterfall plot • trend plots: <ul style="list-style-type: none"> ○ RMS ○ Kurtosis <p>Other measurement graphs:</p> <ul style="list-style-type: none"> ○ temperature ○ battery power 	<p>In both g and mm/s:</p> <ul style="list-style-type: none"> • measurement graphs: <ul style="list-style-type: none"> ○ time series ○ FFT ○ 3D-waterfall plot • trend plots: <ul style="list-style-type: none"> ○ MAD (Mean Absolute Deviation) ○ RMS ○ Kurtosis <p>Other measurement graphs:</p> <ul style="list-style-type: none"> ○ temperature ○ battery power
Raw data available for Machine Learning processing	yes	yes	yes
AI Anomaly Detection Monitoring	yes (option)	yes (option)	yes (option)
Graph options in iQunet <u>Anomaly Monitor</u> Dashboard (on iQunet Server)	<ul style="list-style-type: none"> • Raw anomalies (predicted error) • Expectile trend graphs (5%,median, 95%) • Alarm level setup • Alarm status indicator 	<ul style="list-style-type: none"> • Raw anomalies (predicted error) • Expectile trend graphs (5%,median, 95%) • Alarm level setup • Alarm status indicator 	<ul style="list-style-type: none"> • Raw anomalies (predicted error) • Expectile trend graphs (5%,median, 95%) • Alarm level setup • Alarm status indicator