



# Sparrow

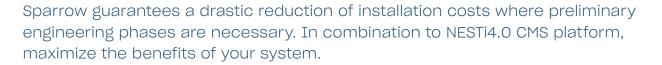
# Wireless condition monitoring solutions

Sparrow is a smart wireless sensor part of the Acoem ecosystem that is easy to set up and allows for the continuous monitoring of the health condition of rotating machinery. Manufacturers can enhance the reliability of their production tools in the simplest way possible, freeing themselves from the restrictions inherent to the set-up of standard wired solutions.



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With its optimized measurement capabilities, Sparrow is an affordable wireless solution allowing diagnosis capabilities and enabling you to increase the overall reliability of your industrial facilities.

# **Sparrow Diagnosis Capabilities**

	-
Post-processing	
On time waves	Filters: High Pass, Low Pass, Band Pass, Shock Finder smart filter
	High Resolution Spectra (up to 12,800 lines), concatenation
	Automatic parameters: Statistical levels
	(RMS, peak, peak-peak, mean), Kurtosis
On spectra	Automatic parameters: Peak Extraction, Energy Narrow band Level,
	Energy broadband Level
	Bearings frequencies, gear frequencies
On parameters	Logic combination of parameters
Advanced thresholds	
Absolute Alarm	4 levels (pre Alarm, Alarm, Danger, Error)
Absolute thresholds	HIGH level thresholds
Relative threshold	Short term deviation compared to previous measurement
	Long term deviation compared to baseline
Data mining	
History	Trends, waterfall
History	Filter on control history from parameter trend
Comparison	Superimposition of parameters, spectra, time waves
Quick access to results	Health Matrix display for automatic fault detection:
	All machine parameters displayed in a single view





# Specifications

Perfo	rmances

Number of axes:	3-axis (adjustable sensor orientation)
Dynamic range:	±8 / ±16 / ±32 g, (configurable)
Nominal frequency range (@ 25,600 Hz SF):	0.5 Hz - 8.5 kHz [x,y], 0.5 Hz - 5.1 kHz [z]
Fmax:	10kHz
Sensing resolution: (X, Y, Z)	240 µg
Spectral noise (10 Hz):	630 µg√Hz
<b>Resolution lines:</b>	12,800 (25,600 in single axis mode)
Sampling frequency:	200Hz to 25.6 kHz
Smart sensor:	Overall velocity, temperature, time waveform
Acquisition modes:	Smart interval, alarm-based
Physical	
Size and weight:	Ø47 mm, 33mm high, 186 grams
Case material:	Stainless steel, ABS
Mounting:	¼-28 UNF thread
Sealing:	IP69
Accessories	
Mounting (optional):	%-28 UNF cementing pad, %-28 UNF to M6 stud
Electrical	
Standard battery:	Lithium battery (CR2477)
Autonomy:	2 years*
	Standby mode if Gateway not detected.
	* Duration depends on user configuration. Battery life is directly affected by temperature, frequency of alarms, and other factors independent of user settings.
<b>Operating Requirements</b>	
Operating ambient:	-40 to 80 °C (40 to 176 °F)
temperature	Note that extreme temperatures reduce optimum battery life
Solvent resistance:	Common solvents resistant,
Compliances:	CE, RoHS, Reach, contains FCC ID: X8WBT840F







User adjustable sensor orientation



# **Sparrow Gateway**

Technical	
Power supply	5 VDC-2A in USB or 9-24 V-13W with 2-pin connector
Size	88x69x30 mm (without antennas), 214 grams
Material	ABS / Nylamid
Operating temperature	–7 to 60 °C (20 to 140 °F)
Protection grade	IP20
Storage	16GB
Network channel	100M/10M Ethernet RJ45 connector, Industrial Ethernet class 5e cables (S/FTP)
WiFi protocol	USB Based 2.4GHz/5GHz wifi
Antenna gain	2.4 GHz Antenna 3dBi
Antenna connector	Two RP-SMA Male Connections
Mounting	Standard DIN Rail (35 mm, 42 mm wide)
Enclosure (optional)	IP65 enclosure for outdoor installation with power supply

### Features

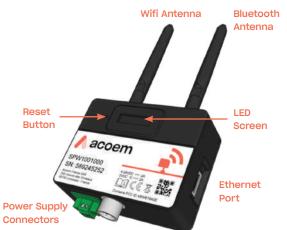
Outputs	Modbus TCP / IP, OPC UA
Sensors configuration	Gateway Web Interface
Software compatibility	NESTi4.0 through MQTT protocol

## **Sparrow Connectivity**

Nodes supported

Wireless protocol	Bluetooth Low B
Operating frequency	2.4 GHz ISM bar
Transmission power	±8 dBm
Signal strength range	-90 dBm to -30
Power output range	-4 dBm to +8 dI
Wireless range	100 m Line of si
	*Ideal environment.

Bluetooth Low Energy BLE 5.0 2.4 GHz ISM band International license-free ±8 dBm -90 dBm to -30 dBm -4 dBm to +8 dBm (Configurable) 100 m Line of sight \*Ideal environment. No competing signals or obstructions. Up to 100 nodes per gateway





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