Eagle Edge LoRa

Long range wireless accelerometer & temperature sensor

Technical datasheet TDS3278 – September 2024

Wireless online condition monitoring solutions

Eagle Edge LoRa sensor is a smart wireless sensor 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.

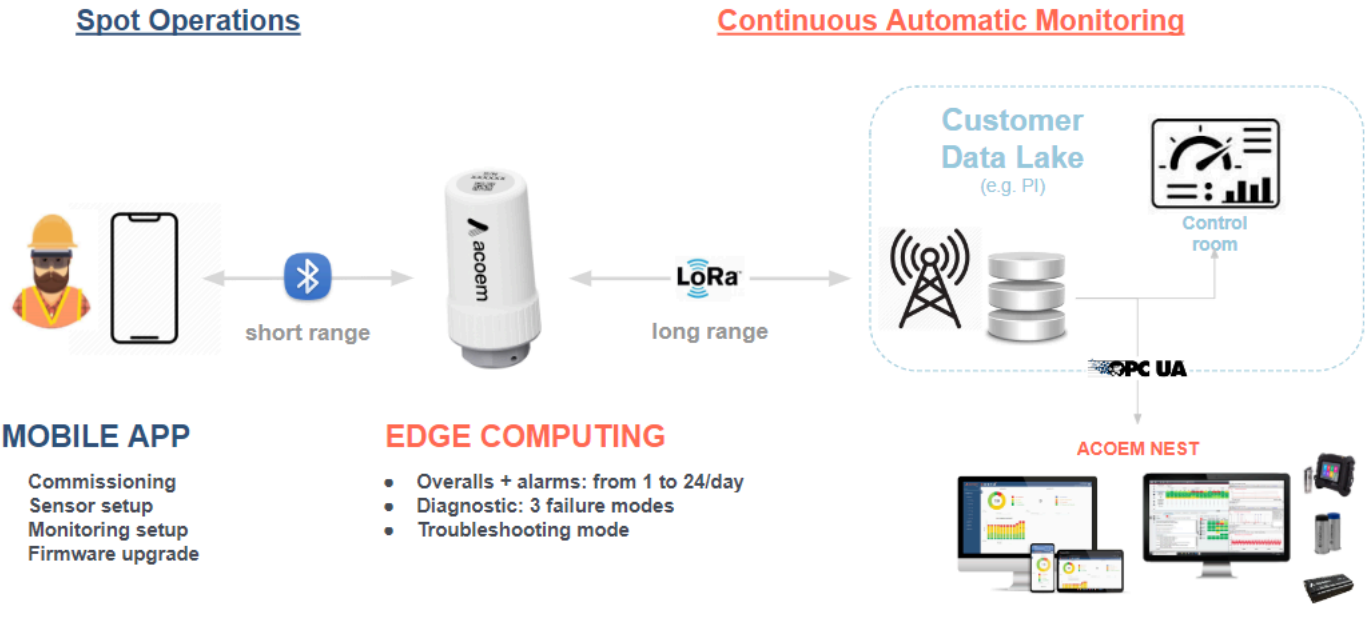
Eagle Edge LoRa sensor offers a reliable plug and play wireless solution that easily connects a large number of assets to a LoRaWan infrastructure, automating health monitoring. It is a perfect complement to reliability strategies where data collection has proven inefficient or for assets that were previously not monitored.

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

Diagnosis Capabilities

Edge computing	Embedded diagnostic	All sensors are equipped with on-board computing power, enabling automatic diagnostics that can identify three failure modes: bearing issues, imbalance/misalignment, and miscellaneous anomalies.
	Alarm	Visual alerting (red LED) on aggravating status
Long Range Data output (LoRaWan)	Failure modes	Actionable data of Automatic diagnostics providing Health status and defects identification
	Overalls and sensor information	ISO10816 RMS Velocity, Full range RMS acceleration, Acoem Defect factor DEF >3kHz, Peak-peak (ACC, DIS), temperature, battery level

Solution concept



Hardware specifications

Performances	Model	Eagle Edge LoRa
	Number of axes	3-axis
	Amplitude Range	± 16 g peak
	Frequency Response @ ±3 dB	1 Hz to 7,5 kHz
	Temperature measurement	YES
	Sampling frequency	Automatically adjusted
	Embedded processing	RMS Velocity, RMS Acceleration, Peak-Peak Acceleration, Peak-Peak displacement, Acoem Bearing Defect Factor
	Acquisition modes	User configurable, typical 24/day, troubleshooting mode 5, 10, 15 or 30 min configurable via downlink
Physical	Size and weight	Ø51 mm, 105mm high, 350 grams
	Case material	304L Stainless steel, PA12
	Mounting	M6 x 1 thread
	Sealing	IP67
Electrical	Standard battery	2 Replaceable TADIRAN SL-760 size AA 3.6V
	Autonomy	2 years at typical usage. *Note: environment temperature and acquisition modes may significantly affect the battery lifetime.*
Operating requirements	Humidity limits	< 95% RH non-condensing
	Solvent resistance	Common solvents resistant,
	Operating ambient temperature	-20°C < Ta < +70°C (-4°F < Ta < +158°F)
	Compliances	CE, RoHS, Reach, CSA/UL
	Settings	User configurable through dedicated Android mobile application

Long-range radio communications

Radio protocol	**LoRaWAN** v1.0.4
Frequency	EU868 MHz ISM band (AU915, US915, AS923 upon request)
Applications	Transfer Automatic diagnostic and overalls on long distances
Antenna	Embedded omnidirectional antenna
Wireless range	up to 1km in urban area, up to 15km in rural area, on average

Short-range radio communications

Radio protocol	**Bluetooth** BLE 4.0
Frequency	2,4GHz ISM Band
Applications	Sensor commissioning, monitoring setup, kinematic setup, firmware update.
Antenna	Embedded omnidirectional antenna
Wireless range	10 m

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