

WIRELESS ONLINE CONDITION MONITORING SOLUTION

EAGLE is a smart wireless sensor that is easy to set up and allows you to continuously monitor the health status of rotating machinery. Any manufacturer can enhance the reliability of its production tools in the simplest way possible, freeing itself of the restrictions inherent in setting up standard wired solutions.

EAGLE guarantees a drastic reduction of installation costs in severe environments or where preliminary engineering phases are necessary.

With its unique measurement capabilities, **EAGLE** is the first wireless solution without compromise on diagnosis capabilities. All types of industrial rotating machines can be monitored, thereby enabling you to increase the overall reliability of your industrial installed base.



EAGLE DIAGNOSIS CAPABILITIES

Types of machines monitored		All: Utility, Low speed rotating machines, variable rotating speed machines...
Post-processing	On Time Waves	Filters: High Pass, Low Pass, Band Pass Shock Finder smart filter
		High Resolution Spectra (400 to 6400 lines), concatenation
		Automatic parameters : Statistic levels (RMS, peak, peak-peak, mean....), Kurtosis
	On spectra	Automatic parameters : Peak Extraction, Energy Narrow band Level, Energy broadband level Bearings frequencies, gear frequencies Cepstra (automatic or manual)
On parameters	Logic combination of parameters	
Advanced thresholds	Alarm thresholds levels	4 levels (pre Alarm, Alarm, Danger, Error)
	Standard thresholds types	HIGH level thresholds, LOW level threshold, IN RANGE thresholds, OUT OF RANGE thresholds,
	Advanced thresholds types	Evolution vs. previous control, Evolution vs. reference date, Statistic, Forecast
Data mining	Operating condition	Trend filtered per operating condition for variable operating condition machines
	History	Trends, waterfall
		Filter on controls history from parameter trend.
	Comparison	Superimposition of parameters, spectra, time waves
Quick access to results	Quick look matrix : the machine health in one view of all alarm status (4DG)	

EAGLE HARDWARE SPECIFICATIONS

Accelerometers (all axes)	Axis	1 or 3 axis
	Sensing element	Piezoelectric ceramic
	Amplitude Range	±40 g peak (dynamically adjusted)
	Frequency Range	Z: 1 Hz to 10k Hz ; X-Y: 4k Hz @ ±3dB
	Non-linearity (Typ.)	1%
	Transverse Sensitivity (Typ.)	5%
Data acquisition	Sampling frequency	128 Hz to 51.2k Hz (selectable)
	Time waveform number of points	256, 512, 1 024, 2 048, 4 096, 8 192, 16 384
	Vibration amplitude resolution	0.0004g (0.01mm/s at 50Hz)
	Maximum recording duration	From 0,3 to 128 s per axis according to the sampling frequency
	On-board memory capacity	1000 waveforms of 16384 points
	Acquisition between each axis	Sequential
	Period. dynamic signal acquisition	Configurable. Recommended: 1 to 6 / day
Temperature Sensor	Measurement range	-20°C to 120°C
	Accuracy	±1 °C
	Resolution	0.1°C
Wireless	Network standard	ISA100.11a
	Radio standard	IEEE 802.15.4
	Frequency	2.4 GHz ISM band
	Modulation	FHSS (Frequency-Hopping Spread Spectrum) provide immunity to interferences with other protocols (Wi-Fi, Bluetooth, Wireless HART ...)
	Security	128-bit AES encrypted packets - Time-synchronised communication
	Output power (peak)	< 10 mW
	Wireless range	Non-line of sight: 30 to 100 meters typical Line of sight: up to 400m
Operating requirements	Humidity limits	5 to 95% non-condensing
	Standard operating temperature	-20°C to 85°C
	Extended operating temperature	-30°C to 120°C (with high temperature battery)
	Vibration limit	500g peak
	Shock limit	5000g peak
	Solvent Resistance	High temperature solvents resistant
	Certifications	CE
	Explosive Area	ATEX zone 0 (Pending) ia I/IC T4 MASC certified
Battery and power	Standard Battery	Replaceable 3,6V - Lithium-Thionyl Chloride (-55°C to 85 °C)
	Autonomy	Up to 5 years. 2 to 4 years typical with several measurements / day
Physical	Dimensions	Height: 86 mm Diameter: 40 mm
	Weight	245 grams
	Case material	Stainless steel and reinforced, impact resistant polyphenyl. sulphide alloy
	Mounting	M8 x 1.25mm stud.
	Sealing	Case is IP67 sealed using Viton® O-ring - Hermetically sealed electronics
Gateway	Max. sensors per gateway	50
	Power over Ethernet (POE)	24VDC - 1A
	Power consumption	8W
	Dimensions	270 x 214 x 90 mm
	Enclosure/dust & water	IP65
	Temperature range	-40 to 60 °C
	Relative humidity	Maximum 95%
	Explosive Area	ATEX Zone 2 (option)
Antenna	Antenna Type Accepted	All antennas 2,45 GHz - 50W - N type (Omnidirectional, directional, sector...)
Specific Features	Variable Operating condition machines	Operating condition management by OPC, ensuring measurement repeatability
	Measurement on condition	Measurement triggered +/- 15s max after condition occurrence