

Eagle

Wireless online condition monitoring solutions

Eagle 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.

TDS342 2025 12 A - Eagle Technical Datasheet EN
This is a separate technical datasheet specifically for ATEX

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

With its unique measurement capabilities, Engle is the first wireless solution with no compromise on diagnosis capabilities. All types of industrial rotating machines can be monitored, thereby enabling you to increase the overall reliability of your industrial facilities.

Eagle diagnosis capabilities.	
Post-processing	
On time waves	Filters: High Pass, Low Pass, Band Pass, Shock Finder smart filter High Resolution Spectra (400 to 3,200 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 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, Statistics, Forecast
Data mining	
Operating condition	Trends filtered per operating condition for variable operating condition machines
History	Trends, waterfall Filter on control history from parameter trend.
Comparison	Superimposition of parameters, spectra, time waves
Quick access to results	Matrix display for automatic fault detection: All machine parameters displayed in a single view

Acoem MCT™

Variable machine condition tracking

The Acoem MCT™ (Machine Condition Tracking) offers advanced smart monitoring that adjusts every minute based on up to six operating parameters (Modbus TCP*). This innovative system supports up to 20 distinct operating conditions, providing customized measurements and alarms tailored to specific operational needs. With its capability for repeatable measurements, the Acoem MCT™ significantly reduces false alarms in variable processes, ensuring greater reliability and efficiency in machine condition monitoring.

Eagle diagnosis capabilities.	
Number of axes	Uni-axial or Tri-axial
Sensing element	Piezoelectric ceramic, shear mode piezo
Amplitude Range	± 50 g peak, 24 bits
Frequency Response @ ±3 dB	1 Hz to 15 kHz for Z axis - 6 kHz for X and Y axes
Background noise	1.1 mg RMS
Transverse Sensitivity (Typ.)	6%
Temperature measurement range	±2°C accuracy, 0.1°C resolution, on operating temperature range
Sampling frequency	512 to 16,384 points - FFT resolution 800 to 3,200 lines
Time waveform	Superimposition of parameters, spectra, time waves
Maximum recording duration	0.3 to 64 s - For machine speeds ≥ 100 RPM
Smart sensor	Embedded FFT & Envelope FFT, Overall velocity and Overall Acceleration, temperature, peak-peak processing on time waveform
Acquisition modes	Smart interval, alarm-based
Vibration limit / Shock limit	500 g peak / 5,000 g peak

Eagle sensor & expander	
Models	
EGL1103000: tri-axial (X, Y, Z), EGL1102000: mono-axis (Z), EGL1104000: Expander	
Physical	
Size and weight	Ø48 mm, 113mm high, 403 grams
Case material	316L Stainless steel, Reinforced, UV-stabilized polyamide
Mounting	M6 x 1 thread
Sealing	IP67
Electrical	
Standard battery	TADIRAN SL-2780/S Li-SOCl2, D cell, 3.6 V, 19 Ah or TADIRAN TL-5930/S
Autonomy	5 years at typical usage with 1 expert measurement set per day (FFT, overalls...) in an environment of 20°C. *Note that the environment temperature may affect significantly the battery lifetime.*
Operating requirements	
Humidity limits	< 95% RH non-condensing
Solvent resistance	Common solvents resistant, contact us according to situation
Hazardous environments	I M1 Ex ia I Ma, LCIE 14 ATEX 3058 X II 1 G Ex ia IIC T3 Ga IECEx LCIE 14.0048 X IS Class I, Division 1, Groups A, B, C and D T3 Ex ia IIC T3 Ga
Operating ambient temperature	-20°C < Ta < +70°C (-4°F < Ta < +158°F) *Note that extreme temperatures reduce optimum battery life*
Compliances	CE

Revision not allowed without ATEX manager Approval
Révision interdite sans l'accord du responsable ATEX

Eagle standard gateway	
Technical	
Model	PGW1A for safe area
Power supply	48 V, 0.3 A, PoE injector (IEEE802.3.af)
Size	220 x 120 x 38 mm, 360 g (8.66 x 4.72 x 1.50 in)
Material	Polycarbonate RAL 7035
Enclosure / dust & water	IP67 case and IP68 gland, NEMA 4, 4X, UL 94-V0
Temperature range	-20°C to 60°C (-4°F to 140°F)
Relative humidity	< 95% RH non-condensing
Ethernet channel	10/100 Base-T Ethernet Channel, RJ45 connector, Industrial Ethernet class 5e cables (S/FTP)
IT and networks	TCP/IP, HTTPS, HTTP, DHCP
Mounting	Tough Ball joint mounting, fastening by screws or brackets
Features	
Variable operating condition	Modbus TCP
Sensors network configuration	Gateway Web Interface

Eagle wireless communication	
Physical layer (PHY)	IEEE 802.15.4
Frequency	2.4 GHz ISM band International license-free
Antenna	Sensors, Expander & Gateway : Embedded omnidirectional antenna
Output power (peak)	3 dBm Sensor / 14 dBm Expander and Gateway
Reception sensitivity	1-101 dBm
Wireless range point to point	100 m / Line of sight *Wireless range is highly dependent on the environment, height and orientation.*
Wireless range using expanders	Up to 7 Expanders can be added between the gateway and the sensor
	In typical industrial environments: 100 m for the 1st expander line of sight, 30m for the 7th expander line of sight
Nb. of sensor per gateway	Recommended setup with 30 sensors / Gateway
USA / Canada	FCC ID 2AC3Z-EGL1102 / IC 12336A-EGL1102

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