SCAN ME

Sensoteq

Smart Sensing Solutions

Sensoteq Kappa X™

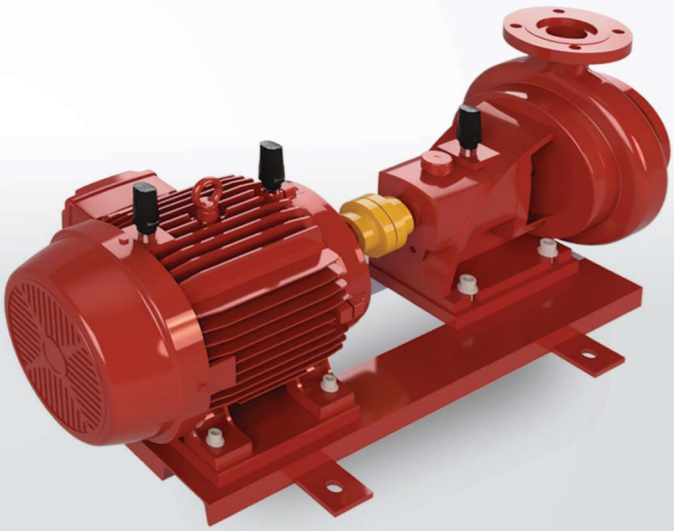
Plant Maintenance System

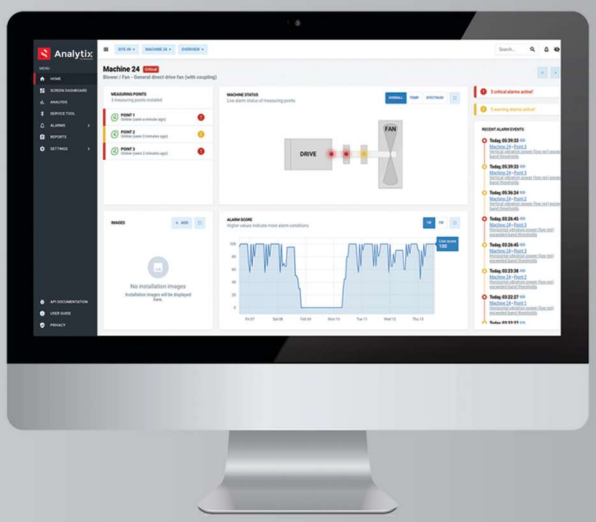
Sensoteq Kappa X™ provides innovative machine health monitoring for industrial applications. Kappa X combines a proprietary means of transmitting data with professional software and robust wireless hardware for condition monitoring analysis.

PUMPS MOTORS FANS

Sensoteq Kappa X™ wireless sensors measure and transmit data every minute to ensure an accurate diagnosis can be performed on your machinery for predictive maintenance purposes. Condition monitoring reduces downtime, costs, and increases efficiency, extending your machines' life.

Kappa X is an evolution of wireless continuous health monitoring for a wide range of machinery. Built in partnership with vibration experts, Kappa X introduces a market leading 10kHz FMax, enabling earlier warning and increased diagnostic capability. Designed to monitor almost any application, Kappa X features a small footprint, waterproof housing, and a user-replaceable battery.





Sensoteq Analytix®

Sensoteq Analytix® pioneers the user interface world when it comes to condition monitoring. Sleek design meets powerful analysis and reporting tools to give you one of the most advanced platforms available.

View high level data and an overall health rating. Delve deeper with full spectrum analysis, tracking harmonic peaks, bearing fault frequencies and side band amplitudes. Generate and share graphs at the click of a button.

With new features and updates added regularly, Analytix ensures you remain ahead of the game.

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Kappa X Wireless Sensor

Kappa X's comprehensive feature set exceeds all expectations of a wireless sensor:

Smart Wake technology enables the sensor to enter ultra-low power mode, preserving battery life

Auto-Ranging allows the sensor to automatically scale up to +/-64G to cope with peak energy exerted by the machine

User configuration adapts the system to suit all applications

With upgradable firmware and a replaceable battery, Kappa X features one of the best wireless sensor lifespans on the market.

Kappa X Gateway

The Kappa X Gateway provides an uplink from the sensors in your plant to the Sensoteq Analytix® cloud platform via Wi-Fi, ethernet or cellular connection. It also monitors ambient temperature to account for daily and seasonal fluctuations.

The Gateway receives data from the sensors, collates it into internet protocol and communicates this information for viewing and analysis.

Kappa X's proprietary sub 1GHz ISM band protocol relays data over long-range, high noise environments to accomodate large-scale industrial installations.

Sensor Specifications

Detects

- Bearing Failure
- Imbalance
- Shaft and Bearing Wear
- Mechanical Looseness
- Misalignment
- Electrical Noise and Resonance

Key Measurements

RMS Velocity/Acceleration, Peak to Peak (Every minute/Configuarable)
Acceleration Time Waveform (Configurable time period)
Spectrum (Acceleration, Velocity, Displacement)

10 kHz Fmax (X, Y, Z)	**64G** Vibration Limt (+/-)
IP69K (ATEX Zone 0 Available) Environmental Protection	**5 Years*** Replaceable Battery

*With standard configuration and normal operating conditions

Gateway Specifications

Key Benefits

Proprietary RF Link Ensures Robust Data Connection
Easy Install
Small Form Factor

Compatibility

Sensoteq Kappa, Kappa X and Tau Sensors
Sensoteq Analytix Platform
Sensoteq Install App

250m Wireless Range (Line of Sight)	**Wi-Fi, Ethernet** Connection to LAN
IP64 (ATEX Zone 2 Available) Environmental Protection	**Cellular** Optional Connection

Sensoteq®

Kappa X **Datasheet**

The Sensoteq Kappa® sensor range is used to continuously monitor your rotating equipment and critical assets. Reporting key parameters to our cloud based Analytix® platform, these values can be trended over time and used to identify faults or inefficiencies with your equipment and processes.

The Kappa® X sensor KPX1001, has been specifically developed in identify faults for plant machinery in a wide variety of applications.

Key Applications

- Motor, Pumps, Fans
- Gearboxes, Conveyors
- Compressors, Chillers
- Grinders
- Wind Turbines
- Bearings on high & low speed assets.

Highlights
10kHz Fmax
Small diameter mount, magnetic or stud
Long life replaceable battery

Part Numbering
VE01-*m*01

Mechanical	
Physical	
Dimensions	See Sensor Dimensions
Weight (Magnet)	125g
Lid Material – Lid	POM-GF20
Base Material	Stainless Steel
Mounting Option (*m*)	0-Internal M6 Thread 1-Magnetic mount (std) 2-Stud mount with Axy-fix threaded attachment
Pull Force	Pull Force (26kg)
Base dimensions	Ø25mm
Environmental	
Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ingress Protection (IP)	IP69K
Shock	50g
Explosive Environments	ATEX Version Available

Power Source	
Battery	
Type	Replaceable 3.6V 1/2AA
Chemistry	Lithium Thionyl Chloride
Life	5 years*
Battery Life Based On	Default profile as defined on the next page at ambient temperatures.

*Battery saver modes available to increase life.

Communication	
Data Transmission (Defaults)	
Rate (Awake)	45 seconds
Rate (Sleep)	10 minutes
Effective Range	250 meters Line-of-Sight
Frequency	<1GHz ISM Band
Sensoteq Channel	Channel 2
Firmware Update	Via mobile device (sensor interaction required)

Environmental Measurements	
Temperature	
Measurements	Sensor (Machine) Ambient (Gateway) Delta (Sensor-Ambient)
Ambient Capability	
Temperature Range	-40 to 85°C (-40 to 185°F)
Temperature Accuracy	±2°C
Surface Capability	
Temperature Range	-40 to 110°C (-40 to 230°F)
Temperature Accuracy	±2°C

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Time Waveform & Spectrum	
Types of Measurement	
Measurement Option* (Default Setting)	A Waveform (10kHz,6400LOR) B Waveform (2.5kHz,3200LOR)
Transmit Rate	Once per 24-hour period
Common Settings (For all Measurements)	
Range - Acceleration	±64g
Range - Sensitivity	Autoscaling (min ±8g)
Axes	X, Y, Z (Synchronised)

*All waveforms are customisable via the Sensoteq Config App and can be disabled, but by default, both are transmitted as per the table below.

Waveform & Spectrum A		
Purpose	General Vibration Analysis	
	Customisable*	
Sample Time Window	640ms	
Sample Frequency	X Y Z	12.8kHz 12.8kHz 25.6kHz
Max Frequency (Fmax)	X Y Z	5.0kHz 5.0kHz 10.0kHz
Resolution (LOR)	X Y Z	3200 LOR 3200 LOR 6400 LOR
Resolution (Hz)	1.56Hz	

Waveform & Spectrum B		
Purpose	Speed detection Machine Profiling	
	Customisable*	
Sample Time Window	1250ms	
Sample Frequency	X Y Z	6.4kHz 6.4kHz 6.4kHz
Max Frequency (Fmax)	X Y Z	2.5kHz 2.5kHz 2.5kHz
Resolution (LOR)	X Y Z	3200 LOR 3200 LOR 3200 LOR
Resolution (Hz)	0.8Hz	

Overall Trend (OA)	
Parameter	**Unit**
Sample Rate (Temperature)	1 minute
Sample Rate (Vibration)	3 minutes
Measurements	Temperature Acceleration RMS Acceleration Pk-Pk Velocity RMS
Overall Trend (OA) Measurement Specifics	
Max Frequency (Fmax)	2.5kHz
Sample Frequency	6.4kHz
Samples	1280 (Acceleration RMS and Pk-to-Pk) 1024 (Velocity RMS)
Range - Acceleration	±64g
Range - Sensitivity	Autoscaling (min ±8g)
Axes	X, Y, Z (Synchronised)

Analytix Platform – Vibration Analysis	
Parameter	**Unit**
Calculated Values Spectrum	Spectral Bands
Calculated Values Waveform	Acceleration RMS Velocity RMS Crest Factor
Windowing	Hann (Default) or None
Tools	Bearing Fault Frequencies Enveloping (Demodulation) Circular Plots Harmonic Cursors Sideband Cursors Difference Cursors Waveform Audio Playback
Units	Metric or Imperial User Selectable

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Sensor Dimensions