



The Sensotek 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.

Part Numbering

VExx-m1x

Highlights

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

Mechanical

Physical

Dimensions	See Sensor Dimensions
Weight (Magnet)	125g
Lid Material – Lid	POM-GF20
Base Material	Stainless Steel
Mounting Option (<i>m</i>)	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	500g
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.

Communication

Data Transmission (Defaults)

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

Environmental Measurements

Temperature

Measurements	Sensor (Machine) Ambient (Gateway) Delta (Sensor-Ambient)
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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

ATEX Certification

Approval Details

ATEX Marking	
Code	Ex ia IIC T4 Ga Ex ia IIIC T135°C Da Ex ia I Ma
Ambient	Ta = -40°C to +85°C

*Battery saver modes available to increase life.



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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 Sensotek 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	12.8kHz
	Y	12.8kHz
	Z	25.6kHz
Max Frequency (Fmax)	X	5.0kHz
	Y	5.0kHz
	Z	10.0kHz
Resolution (LOR)	X	3200 LOR
	Y	3200 LOR
	Z	6400 LOR
Resolution (Hz)	1.56Hz	

Waveform & Spectrum B		
Purpose	Speed detection Machine Profiling	
	Customisable*	
Sample Time Window	1250ms	
Sample Frequency	X	6.4kHz
	Y	6.4kHz
	Z	6.4kHz
Max Frequency (Fmax)	X	2.5kHz
	Y	2.5kHz
	Z	2.5kHz
Resolution (LOR)	X	3200 LOR
	Y	3200 LOR
	Z	3200 LOR
Resolution (Hz)	1.56Hz	

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

