



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	I M1 II 1 G D
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	
<b>Types of Measurement</b>	
<b>Measurement Option* (Default Setting)</b>	A Waveform (10kHz,6400LOR) B Waveform (2.5kHz,3200LOR)
<b>Transmit Rate</b>	Once per 24-hour period
<b>Common Settings (For all Measurements)</b>	
<b>Range - Acceleration</b>	±64g
<b>Range - Sensitivity</b>	Autoscaling (min ±8g)
<b>Axes</b>	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		
<b>Purpose</b>	General Vibration Analysis	
	Customisable*	
<b>Sample Time Window</b>	640ms	
<b>Sample Frequency</b>	X	12.8kHz
	Y	12.8kHz
	Z	25.6kHz
<b>Max Frequency (Fmax)</b>	X	5.0kHz
	Y	5.0kHz
	Z	10.0kHz
<b>Resolution (LOR)</b>	X	3200 LOR
	Y	3200 LOR
	Z	6400 LOR
<b>Resolution (Hz)</b>	1.56Hz	

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

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

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



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### Sensor Dimensions

