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 and inefficiencies with your equipment and processes.

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

Key Applications:

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

Product Highlights
10kHz Fmax (single axis, 5kHz related axes)
Small diameter mount (magnet/stud/Axy-Fix)
Long-life, replaceable battery

Product Variant	
VE01-m01	
m – Mounting Method	
0	No mount
1	Magnet mount (default)
2	Axy-Fix attachment
3	Stud mount (20mm M6)

Mechanical	
Physical	
Dimensions	See Dimensions
Base Dimensions	
Weight	
Lid Material	POM-GF20
Pull Force	26kg
Environmental	
Storage Temp	-40 to 85°C (-40 to 185°F)
Ingress Protection	IP 69K
Shock	1000g
Explosive Environments	ATEX Version Available

Power Supply	
Battery	
Type	Replaceable 3.6V 1/2AA
Chemistry	Lithium Thionyl Chloride
Life	5 years (based on Default Data Transmissions)
Battery Life Based On	Default profile as defined on the next page at ambient temperatures.

Communication	
Data Transmission (Defaults)	
Short Interval Rate (Awake)	45 secs
Short Interval Rate (Asleep)	10 mins
Long Interval Rate (Default)	45 secs
Machine 'Start' Detection Interval (Default)	15 mins
Effective Range	250m Line-of-Sight
Frequency	< 1GHz ISM Band
Sensoteq Channel	2
Sensor Configuration and Firmware Update	Via mobile device (iOS/Android)

Environmental	
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

Time Waveform & Spectrum	
Types of Measurement	
Measurement Option* (Default)	Primary Waveform (10kHz,6400LOR) Secondary Waveform (2.5kHz,3200LOR)
Acquisition Rate	One Primary and Secondary Waveform per 24-hour period
Common Settings (All Measurements)	
Range - Acceleration	±64g
Range - Sensitivity	Autoscaling (min ±8g)
Axes	X, Y, Z (Synchronised)

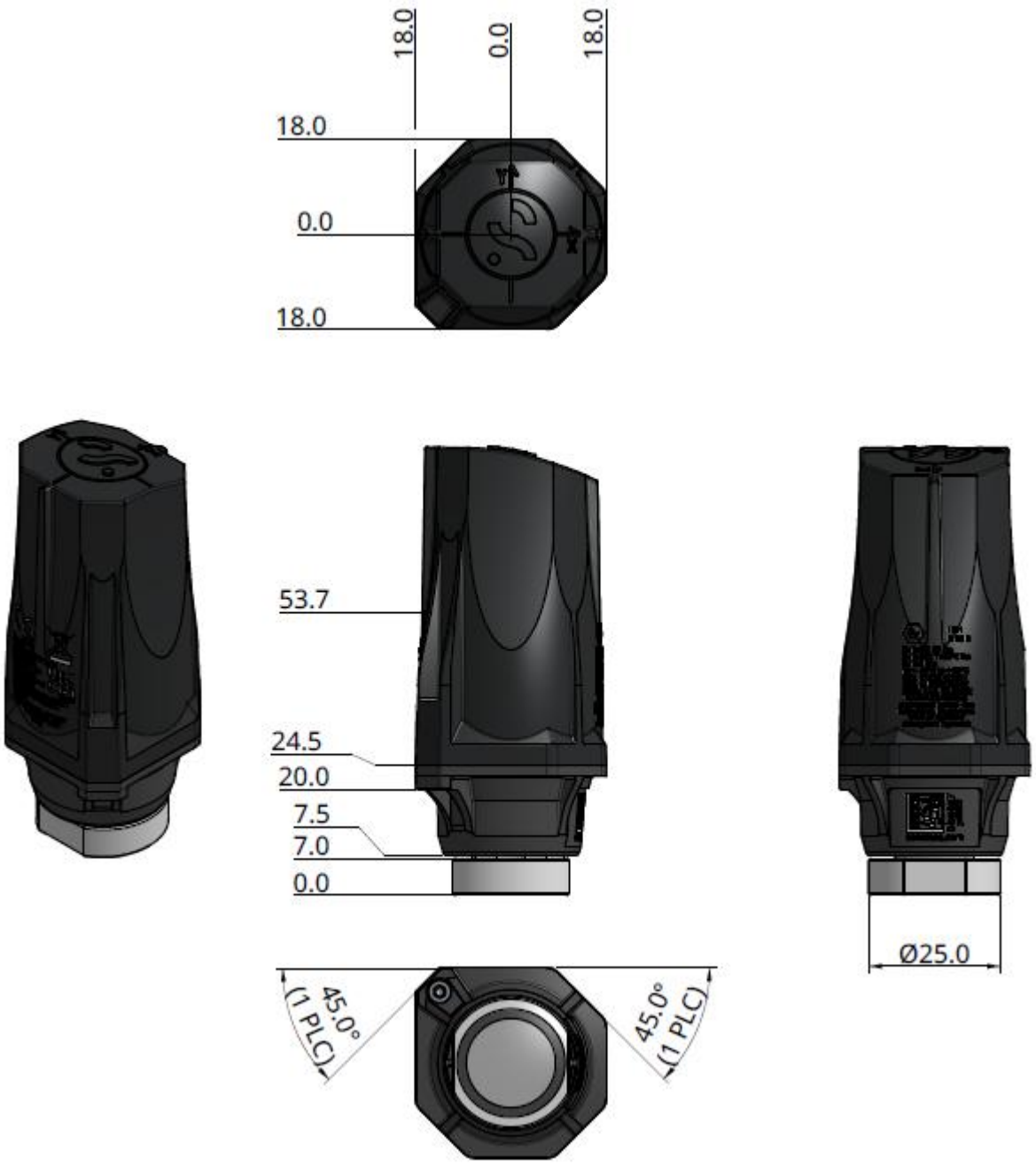
Overall Trend (OA)	
Sample Rate (Temperature)	45 secs
Sample Rate (Vibration)	3 minutes
Measurements	Temperature Acceleration RMS Acceleration Pk-Pk Velocity RMS
Overall Trend (OA) Measurement Specifics	
Max Frequency (Fmax)	2.5kHz
Sample Frequency	6.4kHz
Samples	1280 (Acceleration RMS and Pk-to-Pk) 1024 (Velocity RMS)
Range - Acceleration	±64g
Range - Sensitivity	Autoscaling (min ±8g)
Axes	X, Y, Z (Synchronised)

Primary Waveform and Spectrum	
Purpose	General Vibration Analysis
Configurable	Yes
Sample Time Window	640 ms
Sample Frequency	X – 12.8 kHz Y – 12.8 kHz Z – 12.8 kHz / 25.6 kHz
Max Frequency (Fmax)	X – 5kHz Y – 5kHz Z – 5kHz / 10kHz
Resolution (LoR)	X – 3200 Y – 3200 Z – 3200 / 6400
Resolution (Hz)	1.56 Hz

Secondary Waveform and Spectrum	
Purpose	Speed-specific monitoring
Configurable	Yes
Sample Time Window	High Speed – 640 ms Medium Speed – 1.28 secs 1.25kHz Fmax – 2.56 secs Slow Speed – 5.12 secs V. Slow Speed – 20.48 secs
Sample Frequency	High Speed – 12.8 kHz Medium Speed – 6.4 kHz 1.25kHz Fmax – 3.2 kHz Slow Speed – 1.6 kHz V. Slow Speed – 400 Hz
Max Frequency (Fmax)	High Speed – 5 kHz Medium Speed – 2.5 kHz 1.25kHz Fmax – 1.25 kHz Slow Speed – 250 Hz V. Slow Speed – 156 Hz
Resolution (LoR)	3200 (per axis)
Resolution (Hz)	1.56 Hz

Both Primary and Secondary Waveform(s) are customisable via the Kappa X Config App. Default configuration is detailed per the table(s) above, with the option to disable the sampling of either waveform.

Dimensions	
Standard – Magnetic mounting option	
Dimensions	85mm x 36mm x Ø 25mm
Weight (with magnet)	125g



Dimensions	
Stud Mount with Axy-Fix Attachment	
Dimensions	92.4 x 27mm x Ø 30mm
Weight	160g