



The Sensotek Tau® sensor range is used to continuously monitor your vibratory equipment. 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.

The Sensotek Tau E Structure sensor is a digital stroke card.

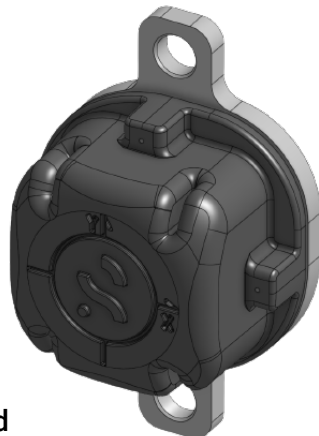
Tau E is an 'Extended' variant of Tau that provides a larger battery, stronger magnet and additional waveform and spectrum data.

### Key Applications

- Vibrating Screens
- Feeders
- Crushers
- Any machine with a given motion:
  - Elliptical
  - Circular
  - Linear



Magnetic



Bolted

Mechanical	
<b>Physical</b>	
Dimensions	See dimension section
Weight (Magnet)	260g
Weight (Bolted)	240g
Lid Material – Lid	POM-GF20
Material – Magnetic Base	Anodised Aluminium
Material – Bolted Base	Stainless Steel
Mounting Options ( <i>m</i> )	0 = Magnetic 1 = Bolted 2 = Stud (on request)
<b>Environmental</b>	
Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Sealing	IP69K
Shock	1000g

Power Source	
<b>Battery</b>	
Type	Non-Replaceable 3.6V
Energy	1700mAh (New)
Chemistry	Lithium Thionyl Chloride
Life (Standard)	5+ years
Impact to Life	Temperature, Transmission Rate Sampling Rate Synchronisation

Part Numbering (Options must be specified)	
<b>TS-<u>m</u>01</b>	
Mounting Options ( <i>m</i> )	0 = Magnetic 1 = Bolted

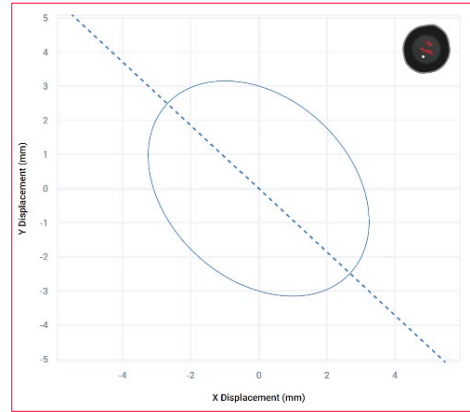
Communication	
<b>Stroke Data Sampling</b>	
Time	10 seconds
Rate	5 minutes
<b>Waveform Data Sampling (New)</b>	
Time	4 seconds
Rate	8 hours
<b>Data Transmission</b>	
Effective Range	250 meters Line-of-Sight
Frequency	<1GHz ISM Band
Sensotek Channel	Channel 2

Measurements	
<b>Temperature</b>	
Temperature Range	-40 to 85°C (-40 to 185°F)
Temperature Accuracy	±2°C
<b>Vibration</b>	
Axes	X, Y, Z
Sampling Frequency	See sampling section
Vibration Measurements	Stroke Raw Waveform Spectrum



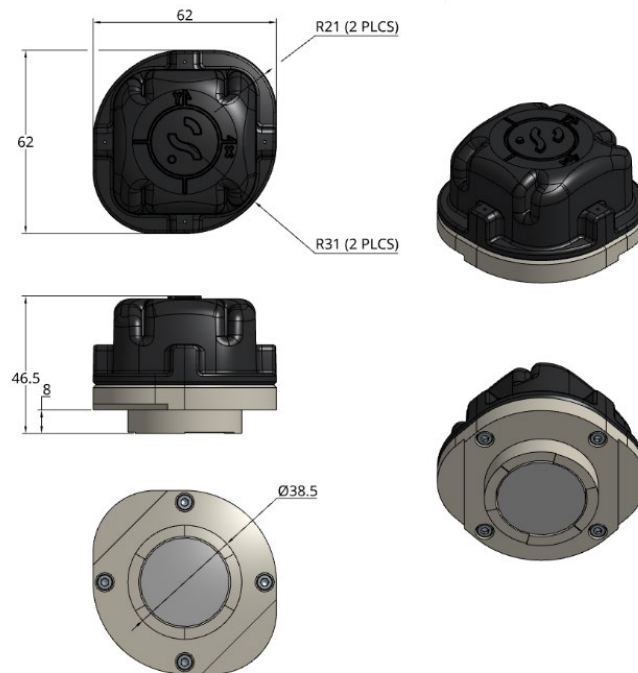
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Calculated Parameters	
Parameter	Unit
Stroke Length	mm
Stroke Angle	degrees
Phase Angle	degrees
Running Speed	RPM or Hz
Deflection (Velocity)	mm/s
Deflection (Displacement)	mm
Peak Displacement (X/Y)	mm
Screen Uptime	5 minute resolution



## Dimensions

### Magnetic (New Shape, Stronger Magnet)



\* Bolted dimensions available on request



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## Accuracy and Sampling Information

### Stroke Sampling Details

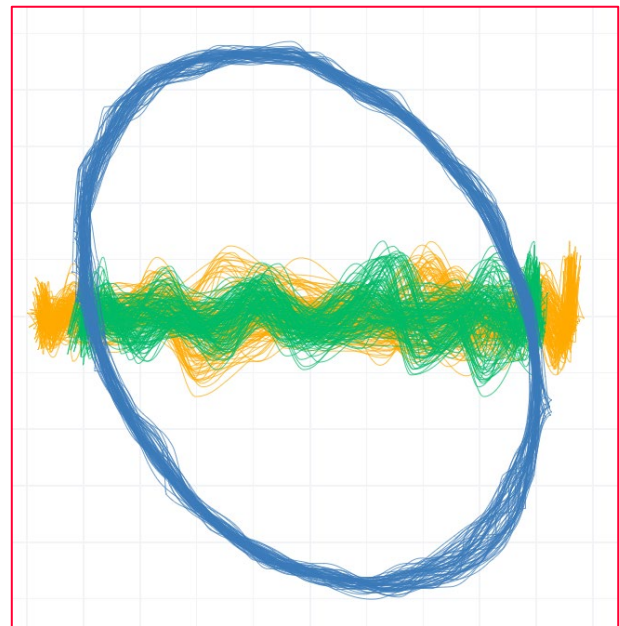
Parameter	Unit
Range (Acceleration)	-16 to +16g
Sample Time	10 seconds
Sample Rate	409.6 Hz
Sample Count	4096
Bin Resolution	0.1 Hz
Stroke data is calculated on the sensor and transmitted to the cloud platform.	

### Waveform Sampling Details

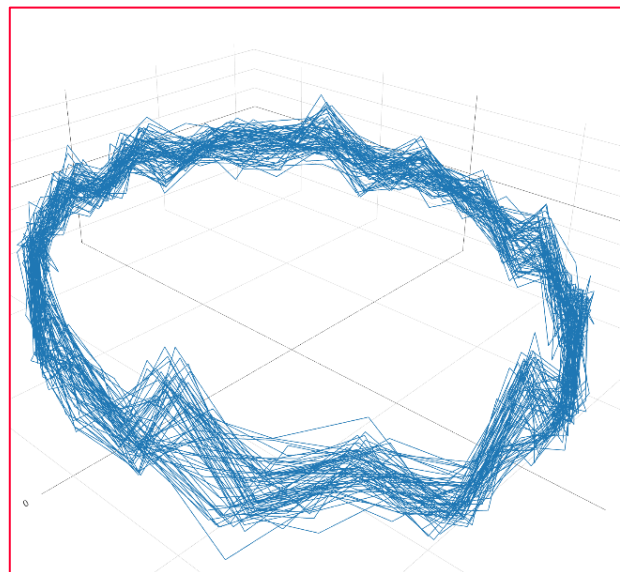
Parameter	Unit
Range (Acceleration)	Autoscaling up to ±16G
Sample Time	4 seconds
Sample Rate	1024 Hz
Sample Count	4096
Spectrum FMax	400 Hz
Spectrum LOR	1600
Bin Resolution	0.25 Hz
Waveform data is transmitted to the cloud platform and many additional data views are available, including spectrum, 2D time plot, 3D time plot	

### Accuracy

Parameter	Unit
<b>Raw Accelerometer</b>	
Acceleration (Peak)	±0.05 g
<b>Resultant Values</b>	
Stroke Length	± 0.14 mm
Stroke Angle*	± 2 deg
RPM	± 6 RPM
Z Velocity	± 1 mm/s
* Stroke accuracy is dependent on RPM reading. Accuracy is defined at 18Hz (1080RPM)	

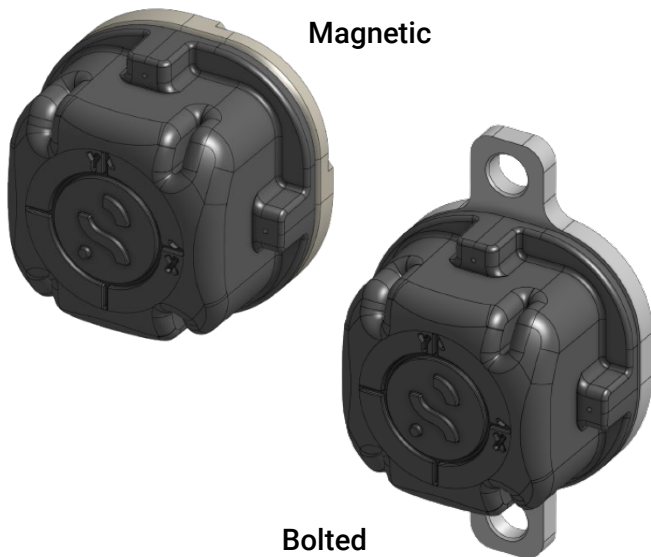


2D Time Plot (Axes Comparison)



3D Time Plot

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The Sensotek Tau E Bearing is a triaxial vibration and temperature sensor for rotating equipment monitoring. A ruggedised design with a low profile to withstand harsh environments.

Tau E is an 'Extended' variant of Tau that provides a larger battery and stronger magnet.

### Key Applications

- Mining and mineral processing
- Aggregate processing
- Any machine with a rotating element:
  - Pumps
  - Fans
  - Motors

Mechanical	
<b>Physical</b>	
Dimensions	<i>See dimension section</i>
Weight (Magnet)	260g
Weight (Bolted)	240g
Lid Material – Lid	POM-GF20
Material – Magnetic Base	Anodised Aluminium
Material – Bolted Base	Stainless Steel
<b>Environmental</b>	
Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Sealing	IP69K
Shock	1000g

Power Source	
<b>Battery</b>	
Type	Non-Replaceable 3.6V
Energy	1700mAh (New)
Chemistry	Lithium Thionyl Chloride
Life (Standard)	5+ years
Impact to Life	Temperature Humidity Transmission Rate Sampling Rate Synchronisation

Part Numbering (Options must be specified)	
<b>TB-<u>m</u>01</b>	
Mounting Options ( <u>m</u> )	0 = Magnetic 1 = Bolted

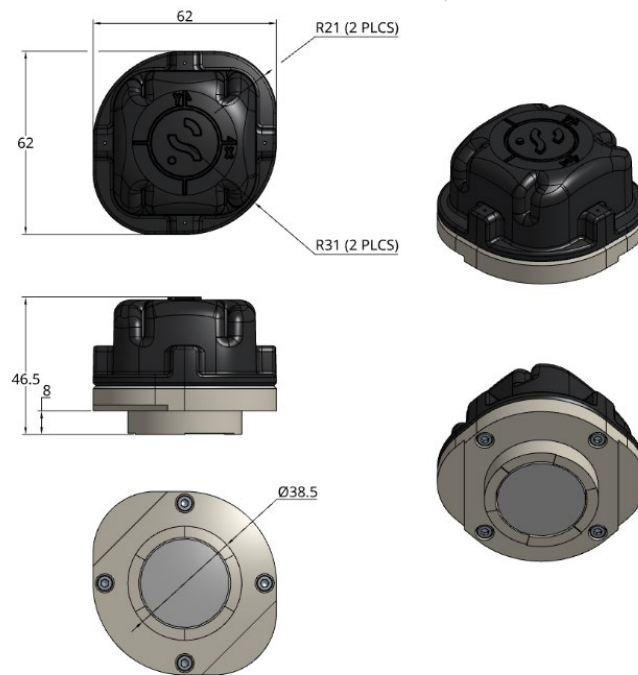
Communication	
<b>Data Sampling</b>	
Rate (Short Interval)	1 minute
Rate (Long Interval)	12 hours
<b>Data Transmission</b>	
Effective Range	250 meters Line-of-Sight
Frequency	<1GHz ISM Band
Sensotek Channel	Channel 2

Measurements	
<b>Temperature</b>	
Temperature Range	-40 to 85°C (-40 to 185°F)
Temperature Accuracy	±2°C
<b>Vibration</b>	
Axes	X, Y, Z
Sampling Frequency	<i>See sampling section</i>
Range – Acceleration	± 16g Autoscaling

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## Accuracy and Sampling Information

Short Interval Data – Overall Values	
Parameter	Unit
Sample Rate (Temperature)	1 minute
Sample Rate (Vibration)	3 minutes
Measurements	Temperature Velocity RMS Acceleration RMS Acceleration Pk-Pk
Sample Window	200ms
Sample Frequency	6.4 kHz

Long Interval Data – Time Waveform & Spectrum		
Parameter	Unit	
Sample Rate	12 hours	
Type of Measurement	<b>High</b>	<b>Full</b>
Purpose	Speed Ident.	Vib. Analysis
Sample Window	2938ms	625ms
Sample Frequency	1.4kHz	6.4kHz
Number of Samples	4096	
Max Freq (Fmax)	550Hz	2500Hz
Lines of Resolution (LOR)	1600	
Bin Resolution	0.34Hz	1.56Hz
FFT Windowing	None or Hann	
Calculated Values	Pk-Pk, Crest Factor, Spectrum Bands	