VSX

3-IN-1 CONDITION MONITORING SENSOR
FOR VARIABLE SPEED ROTATING EQUIPMENT

THREE SENSORS IN ONE

TEMPERATURE   TRI-AXIAL VIBRATION   MAGNETIC FIELD
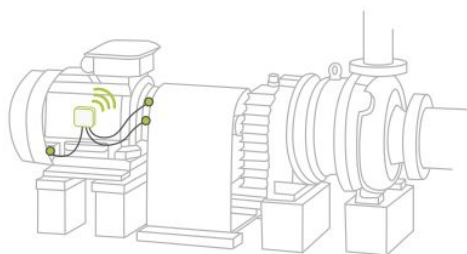
Petasense

CONTINUOUS CONDITION MONITORING
for variable speed rotating equipment

The VSX is the first 3-in-1, wired sensor that measures triaxial vibration, surface temperature and running speed, providing a holistic approach to condition monitoring of variable speed, spared or batch assets.

Plug the VSX sensor into the Petasense Transmitter (Tx), connect to WiFi and start monitoring the health of your assets from anywhere.

The Petasense **ARO Cloud** uses machine learning algorithms, coupled with a comprehensive library of assets and failure modes, to continuously assess asset health. **Web and Mobile Apps** allow you to monitor your assets remotely and receive actionable insights through real-time notifications.
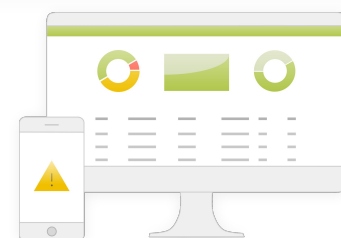
VSX + TRANSMITTER
Mount the VSX and plug into the Transmitter to send asset condition data over WiFi*

ARO CLOUD
Predict asset health and optimize performance using machine learning

WEB + MOBILE APPS
Visualize asset health data receive actionable insights with real-time notifications

*VSX plugs into the Petasense Transmitter and requires an active subscription to the Petasense ARO Cloud.

PERFORMANCE MEETS SIMPLICITY

MONITOR VARIABLE SPEED, SPARED AND BATCH EQUIPMENT

Integrated magnetometer provides simultaneous measurements to collect running speed, vibration and temperature. This solves a challenging problem of trending readings for variable speed or intermittently operating assets.

COLLECT MEANINGFUL AND FREQUENT DATA

Collect data on flexible intervals, from every 10 minutes to once per day. Speed detection enables smart measurements such as:

- **Event-based measurements**
  Taken only when asset is on and/or operating at a specific running speed, enabling consistent trending
- **Coordinated measurements**
  All sensors on asset train to take synchronous measurement

DETECT ISSUES EARLIER

High bandwidth, triaxial vibration sensor with 5,500 Hz frequency response in all 3 axes and up to 8000 lines of resolution. Detect:

- Misalignment
- Imbalance
- Gearbox defects
- Looseness
- Cavitation
- Early stage bearing wear

NO BATTERY CHANGE OUTS

Powered by the Petasense Transmitter, the VSX sensor provides easy deployment without worrying about battery replacement.

FLEXIBLE DEPLOYMENT

Data is transmitted over standard WiFi, with no additional hardware or proprietary network required. Mix-and-match with other Petasense sensors to monitor any asset from a single software.

NEVER LOSE YOUR DATA

If the wireless network goes down, onboard storage prevents data loss. Data gets automatically transmitted once the connection is re-established.

VIBRATION SENSOR

Number of Axes	Tri-axial
Frequency Response	2 to 5,500 Hz (+/- 3 dB)
Measurement Range	+/- 25g
Sensitivity	50 mV/g
Output Interface	IEPE (Analog)
Transverse Sensitivity	< 10%
Sensing Element	Ceramic
Operating Temperature	-40°C to 85°C (-40°F to 185°F)

TEMPERATURE SENSOR

Measurement Range	-40°C to 150°C
Accuracy	+/- 1°C between 0-70°C
Output	PWM digital

MAGNETIC FIELD SENSOR

RPM Range	60 RPM to 9000 RPM
Accuracy	+/- 1 RPM
Magnetic Field Range	+/- 8 Gauss
Frequency	32 KHz
Output	IEPE (Analog)
Axis	Uniaxial

POWER

Accel. + Temperature	IEPE 0.5 mA to 8 mA only
Magneto	IEPE 0.5 mA to 8 mA for signal + DC power (9-24V)

PHYSICAL

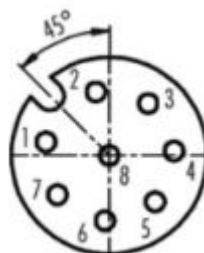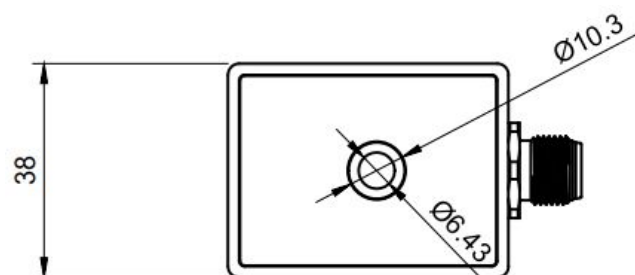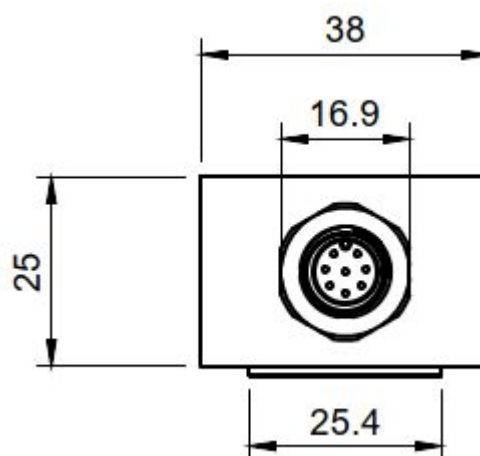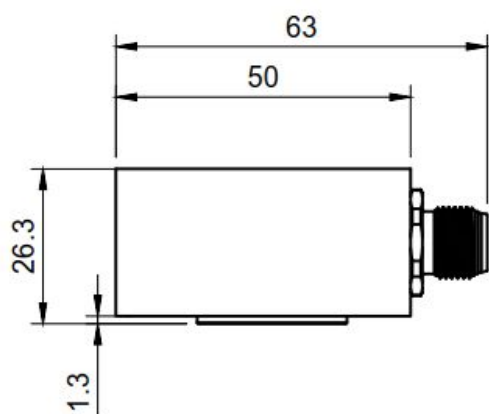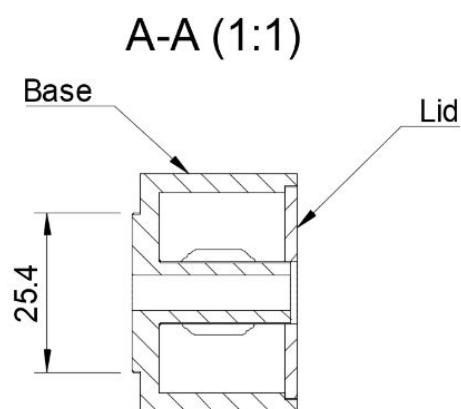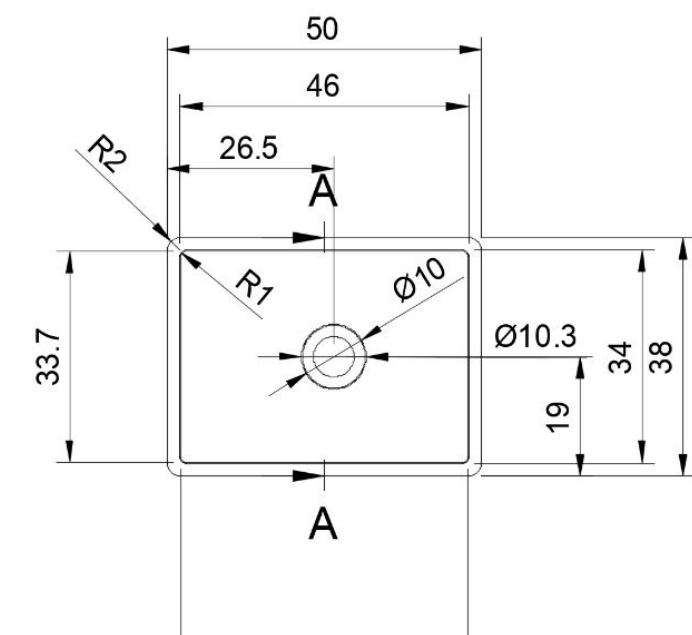|	
Dimensions	Side exit connector Height 26.3 mm Width 38 mm Length 50 mm (63 mm including connector)
Weight	200 g
Mounting	*Captive Screw:* ¼" - 28 UNF Mounting torque: 8 Nm (5.9 ft. lbs.)
Construction	Stainless Steel 304
Connector	8 pin M12
Mating Cable	CMCP608M Series Cable

ENVIRONMENTAL

Operating Temperature Range	-40°C to 85°C (-40°F to 185°F)
Storage Temperature	< 85°C (185°F) without battery
Shock Resistance	2 meter fall, 16 g continuous vibration
Certifications	IP68, CE, RoHS compliant

ORDERING INFORMATION

PETA-SNSR-VSX	VSx triaxial accelerometer with temperature and speed measurement
Recommended mounting accessories	CMCP200E Mounting Pad (epoxy mounted)

Extension Cable	CMCP608M -XX Specify Cable Length
	               -05 5 Meter Cable
	               -10 10 Meter Cable
	               -20 20 Meter Cable
	               -XX Specify Length

VSX DIMENSIONS

A-A (1:1)

Base

Lid

25.4

50
46
26.5
R2
R1
Ø10
Ø10.3
33.7
34
38
19

A

A

63
50
26.3
1.3

38
16.9
25
25.4

Ø10.3
38
Ø6.43

45°

Pin 1: Ch 1 Signal (X)
Pin 2: Ch 2 Signal (Y)
Pin 3: Ch 3 Singal (Z)
Pin 4: Magnetometer Signal
Pin 5: Temperature Signal
Pin 6: Magnetometer Power
Pin 7: Common
Pin 8: Future Use