MACHINE SENTRY®

MSM-1 - Mobile

Experience What's Possible

- Flexible condition monitoring system with vibration analysis, process parameters, visual inspection, thermography and oil analysis capabilities

- Turn any Android™ tablet or smartphone into a powerful condition monitoring data collector

- ADA™ Automated Diagnostic Assistant can predict stage 2, 3 and 4 bearing failures and detect a wide range of other common fault conditions

- Bluetooth® 3-axis vibration and temperature sensor

- Available with ATEX and IECEx certification

www.machinesentry.com

Machine Sentry®

Machine Sentry®, a unique cost effective Condition Based Maintenance (CBM) solution that integrates all CM techniques and data, to enable effective maintenance planning and management reporting.

Benefits

- Suits the needs of both expert and novice users
- Up to 5 times faster than other condition monitoring systems
- Can be used either as a standalone tool or alongside an existing enterprise system (e.g. SAP, Maximo, PEMAC, etc.)
- Access to world leading condition monitoring engineers – providing detailed diagnosis and advice
- Easily configurable and scalable solution for future expansion
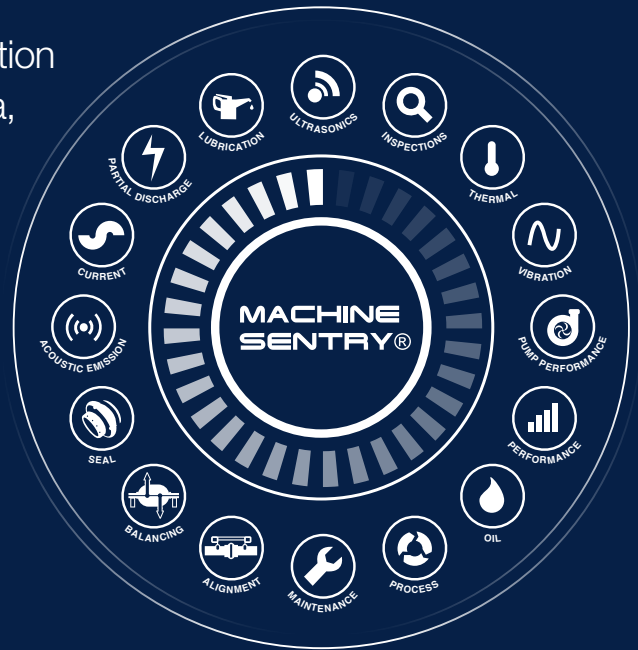
Typical applications

- Routine predictive maintenance
- Bad actor identification
- Critical asset management
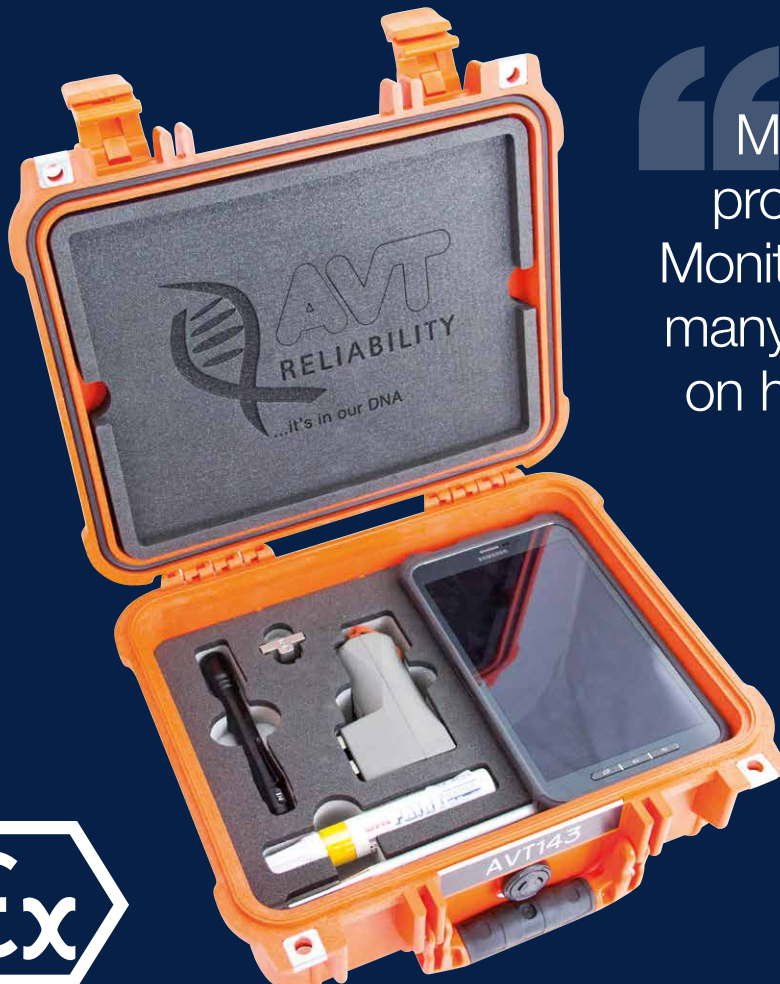
> "Machine Sentry® provides Condition Monitoring solutions for many blue chip clients, on hundreds of sites."

Machine Sentry® Vibration and Temperature Sensor Type: MSM-1

The Machine Sentry® MSM-1 is a wireless intelligent tri-axial vibration and temperature sensor (patent pending) which connects via a Bluetooth® enabled hand held device to the Machine Sentry® software.

The sensor incorporates a four channel multiplexed data acquisition system which utilizes three internal accelerometers to give full 3-axis support. An additional sensor or fixed protection panel can be connected to the fourth channel.

The Machine Sentry® MSM-1 sensor can be paired to any Android™ tablet or smartphone using standard Bluetooth® communications. This provides safe and efficient data collection from up to 10m away. Assets which would normally be difficult to monitor using a traditional wired accelerometer can now be measured with ease (e.g. collection points behind guards, or large, moving assets such as gearboxes on agitators).

The integral rechargeable battery offers 60 hours of continual operation between recharges, allowing a full week's data collection between charges.

The sensor is available with ATEX or IECEx certification for use in Zone 1 or Zone 2 classified areas. The sensor has an inbuilt magnet which allows correct and repeatable orientation when performing multi-axis data collection.

> "Machine Sentry® is the CBM and reliability tool of choice for many international blue-chip organizations."

Machine Sentry® Features

Modular cloud based Machine Sentry® software – Features include: action tracking, watchkeeping, process measurements, thermal imaging integration, inspections, lubrication management, intuitive dashboard and reporting.

Vibration analysis – With intelligent tri-axial vibration measurement capability and temperature sensor (patent pending).

IP67 rated and ATEX certified – Certified for use in hazardous areas (Zone 1 and Zone 2).

Oil Analysis – Laboratory oil analysis data is automatically* mapped and integrated into the Machine Sentry® database for easy access by all users, enabling better trending and analysis.

ADA™ Automated Diagnosis Assistant – Can predict stage 2, 3 and 4 bearing failure and detect a wide range of other common fault conditions.

Suitable for both fixed assets and rotating machinery – The pipework vibration compliance feature allows a plant operator to quickly screen all process pipework and small bore connections in order to identify lines that have the greatest risk of failure.

Key Performance Indicators (KPIs) – To systematically measure the effectiveness of the condition-based maintenance program from schedule compliance to asset health and bad actor management.

Lubrication management – Plan, track and manage lubrication activities and usage.

* Supported Labs only

Specification

Tri-axial Vibration and Temperature Sensor	
Measurements	
Vibration	1Hz to 4kHz overall velocity, -18 to 18g amplitude range. Maximum samples 131072. Maximum lines of resolution 51200. Sampling frequency 10 to 20k samples per second
Temperature	-40 to 115ºC Accuracy +/-0.5ºC (0-60ºC), +/-1.5ºC (-40-115ºC)
Resolution	Up to 51,200 lines
AUX input	ICP powered or unpowered 0 to +/- 18v
Outputs	Wireless Bluetooth® connection to mobile device connected to Machine Sentry® software via Android v 5.0.1+
Wireless range	~10m
Battery type	Li-Ion 3.7v 2000mAh
Battery life	60 hours (continuous operation) @ 25ºC (taking readings every 15s)
Battery recharge time	~20hrs
Power	6v (for battery recharge only)
Environmental	
Ambient temperature range	-10ºC to 40ºC operating, -20ºC to 70ºC storage
Sealing	IP67
Weight	450g
Dimensions	65mm (h) x 43mm (w) x 118mm (l)
Approvals	CE
	ATEX certification II 2G Ex ib IIB T4 Gb Baseefa 17ATEX0066x and II 3G Ex ic IIC T4 Gc Baseefa 17ATEX0067x (certified to EN 60079-0: 2012 + A11: 2013 and EN60079-11: 2012)
	IECEx Ex ib IIB T4 Gb, Ex ic IIC T4 Gc, IECEx BAS 17.0052x (certified to IEC 60079-0:2011 Ed. 6, & IEC 60079-11:2011 Ed. 6)

AES RELIABILITY