



## ME-Automation Projects

*Performance. Precision. Partnership.*

A Group Company of



**PMSX<sub>cm</sub>**

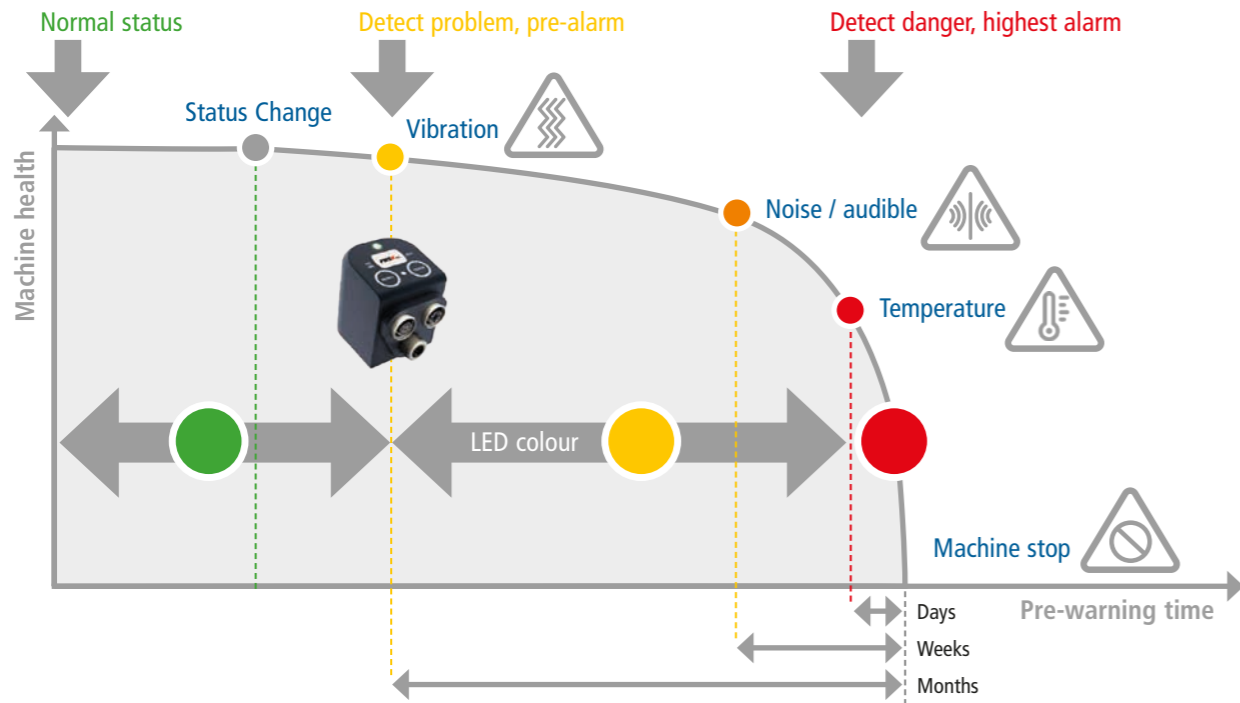
**PMSX<sub>cm</sub>** Condition-based  
Maintenance for rotating  
equipment

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**PMSX<sub>cm</sub> CONDITION-BASED MAINTENANCE**

**PMSX<sub>cm</sub> VALUE FOR OUR CUSTOMERS**



**THE PMSX<sub>cm</sub> ADD-ON FOR PMSX<sub>pro</sub> –  
NEXT GENERATION OF  
CONDITION-BASED MAINTENANCE!**

Our PMSX<sub>cm</sub> system utilizes AI-equipped smart sensors to provide predictive insights into the health of your rotating equipment, allowing for more efficient and cost-effective maintenance practices. Our system builds upon the benefits

of traditional condition-based maintenance (CM), and takes it to the next level by using advanced analytics and real-time monitoring to provide maximum accuracy and precision in equipment maintenance.

**Real-Time Monitoring**

Our PMSX<sub>cm</sub> system provides real-time monitoring, enabling you to detect potential equipment issues before they become significant problems. This feature allows you to schedule maintenance proactively, thereby reducing unplanned downtime and increasing overall equipment effectiveness (OEE).

**Predictive Analytics**

Our PMSX<sub>cm</sub> system incorporates advanced predictive analytics to anticipate equipment failures and indicate the best course of action. This feature can help you reduce maintenance costs, optimize spare parts inventory, and minimize equipment downtime.

**Remote Monitoring**

Our PMSX<sub>cm</sub> system enables remote monitoring of equipment health, allowing you to manage your equipment from anywhere in the world. This feature can help you reduce travel costs, optimize resources, and increase safety.

**Smart Sensors**

PMSX<sub>cm</sub> smart sensors monitor equipment performance and identify any deviations from normal operations. This feature allows you to detect changes in vibration, temperature, and other critical parameters, and quickly diagnose any issues.

**AI-Powered Maintenance**

The PMSX<sub>cm</sub> system uses self-learning maintenance algorithms to predict equipment failures and prescribe maintenance activities. This feature can help you reduce downtime, increase equipment lifespan, and optimize maintenance schedules.

**Small outlay for big gains**

PMSX<sub>cm</sub> is an effortless add-on module to your PMSX<sub>pro</sub> DCS system – no need to buy expensive central vibration monitoring systems. Simply install the needed number of sensors on the target equipment, network\* them – using PoE – into the PMSX<sub>pro</sub> DCS, and you are ready to go. Once setup, PMSX<sub>cm</sub> provides alerts to both field and control-room operators via simple-to-understand red-amber-green equipment health status information, directly in the DCS' alarm and event system. Regular reports showing which, if any, sensors indicate an impending need for inspection or maintenance of the monitored equipment.

\* Using standard Ethernet ports on your System-Q, iQ-F or iQ-R automation stations

**PMSX<sub>cm</sub>**

**PMSX<sub>cm</sub> – HOW IT WORKS**

## SELF-LEARNING AND PRE-PACKAGED CONDITION SURVEILLANCE PROFILES BUILT-IN ...

Setting up and commissioning a **PMSX<sub>cm</sub>** smart sensor is made substantially easier through its built-in “Teach” function, working in conjunction with its pre-packaged vibration surveillance modes that tune the learning to the type of equipment being monitored – and the possible damage profiles.

Equipment type	Expert detection of
General rotational equipment	<input type="checkbox"/> Roller bearing damage <input type="checkbox"/> Machine imbalance <input type="checkbox"/> Shaft misalignment <input type="checkbox"/> Material impacts
Electric and geared motors	Winding damage and loose rotor bars
Vacuum and fluid pumps	Wear and cavitation
Blowers and fans	Blade and vane rotational frequencies
Compressors	Operation outside specification
Gearboxes	Tooth set damage
Separators and decanters	Cavitation, floating unbalance between screw and drum
Vibrating screens	Settling of screen mats, loose springs, spring breakage

## PMSX<sub>cm</sub>'s SMART AI-BASED CONDITION MONITORING BENEFITS

Once installed on well-running, healthy equipment, simply launch the sensor’s „Teach” function. This observes the equipment’s normal vibration signature and baselines\* it, so that any future deterioration can be detected immediately, with the appropriate impact severity prediction – red, amber, or green.  
\* for applications with variable speed drives, the equipment RPM is required (from the DCS or via an optional sensor)

**Source of Benefit**

**Cost-Effectiveness** Typically much lower installation and maintenance costs than centralised sensor system, since PMSX<sub>cm</sub> sensors are designed as standalone units that can be easily deployed on individual machines. This affordability makes them more accessible, especially for organizations or specific applications where monitoring a limited number of machines is sufficient.

**Flexibility and Adaptability** **PMSX<sub>cm</sub>** sensors are easily installed on different types of equipment and integrated into the existing **PMSX<sub>pro</sub>** infrastructure. The sensors’ compact size and networking capabilities enable easy deployment, even in remote or challenging environments. The smart AI algorithms can be updated and refined over time without significant hardware or software modifications, allowing for continuous improvement and customization.

**Real-Time Insights** **PMSX<sub>cm</sub>** sensors provide real-time insights directly from the machine they are monitoring to both its local and **PMSX<sub>pro</sub>** users. This immediate feedback enables quick response to emerging issues, minimizing downtime and optimizing maintenance schedules. Additionally, **PMSX<sub>cm</sub>**’s SmartWeb allows engineers to analyse machine data at the source, our AI-based sensors provide instant visibility into equipment health without centralized processing.

**Ease of Implementation** **PMSX<sub>cm</sub>** AI-based sensors are designed with user-friendliness in mind and are equipped with intuitive interfaces and easy-to-interpret dashboards, allowing operators and maintenance personnel to quickly understand the equipment’s condition and take appropriate actions. The simplicity of implementation reduces the need for specialized training or extensive expertise.



**PMSX<sub>cm</sub> SMART SENSOR TECHNICAL SPECIFICATIONS**

**PMSX<sub>cm</sub> – HOW TO BUY**

Item	Value
Size (W H D)	44 x 57 x 55mm
Mass	210g
Housing material	Glass fibre reinforced plastic
Mounting foot material	High alloy steel 1.4301
Location Screw	M6
Min Contact surface on the machine	25mm
Protection class	IP67
MTBF	78.9 years (EN/IEC 61709)
Power supply	PoE IEEE 802.3af, Mode A (or external 16-32Vdc)
Communications	100Mbps Ethernet TCP/IP (protocol SLMP)
Maximum power consumption:	4.8W
Ambient temperature	-20°C - 70°C
Sensor / Piezoelectric accelerometer	
- Frequency range	0.8Hz -10kHz
- Measurement range	±50g
Measurement functions	Acceleration, velocity and displacement by integration System temperature and process parameters such as speed, load, pressure via external signals or sensors
Diagnostic methods	Time signal, envelope curve Speed and frequency tracking Spectrum and trend analysis
Characteristic values in time and frequency range	Defined characteristic values: DIN ISO 10816 Calculated characteristic values: RMS, frequency-selective RMS, DC, peak, peak-to-peak, crest factor, condition guard
Special features	Other user-defined characteristic values are possible
Low pass filter	50Hz to 10kHz Stages: 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 2kHz, 5kHz, 10kHz
High pass filter, envelope curve only	750Hz, 1kHz, 2kHz

Simply contact your **PMSX<sub>pro</sub>** representative and order the needed quantity of **PMSX<sub>cm</sub>** licenses and sensors – they are available in packs of 2, 6, 10, 25, 50, 75 or unlimited **PMSX<sub>cm</sub>** endpoints.

A pack includes:

- The required **PMSX<sub>cm</sub>** sensors
- PoE switch and Ethernet cables to suit (special order if >20m length)
- **PMSX<sub>cm</sub>** SmartWeb browser based real-time analytical tool
- **PMSX<sub>cm</sub>** SmartUtility Light (Windows 10 / -11 App)
- Integration into **PMSX<sub>pro</sub>** and commissioning by our experts

**UNIQUE, AFFORDABLE  
CONDITION-BASED MAINTENANCE**

By choosing our next-generation **PMSX<sub>cm</sub>** system, you can be confident that you are getting the most advanced technology available for equipment maintenance. Our system is easy to

use, and our team of experts is always available to provide support and guidance. Contact us today to learn more about how our **PMSX<sub>cm</sub>** system can benefit your operation!





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