Predictive Maintenance

Remote condition monitoring to prevent unplanned downtime for critical equipment

What is Predictive Maintenance?

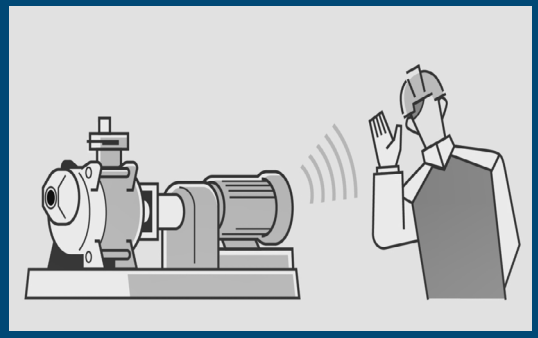
Predictive maintenance (PdM) is a condition-based maintenance strategy that remotely monitors the condition of equipment using IoT sensor devices. The IoT sensors supply real-time data of equipment and analytics are performed to predict when the equipment requires maintenance.

From

Reactive Maintenance

(Run to failure)

- Low maintenance costs
- Higher probability of unplanned downtime
- Cost of repairs can be much higher than the cost of preventive maintenance

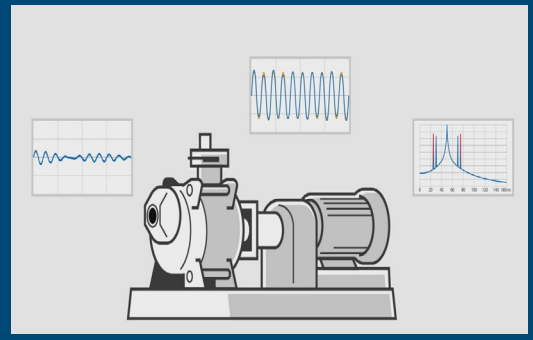


Preventive Maintenance

(Time based)

- Most common maintenance strategy
- Scheduled maintenance
- Labor intensive
- Time consuming
- Limited monitoring

To



Predictive Maintenance

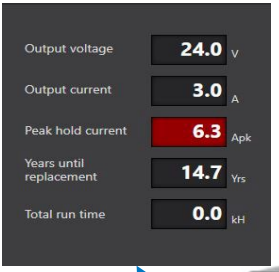
(Condition based)

- Continuous monitoring and analyzing of machine conditions
- ***Predicts*** when equipment needs maintenance and perform maintenance accordingly
- Reduces the need for frequent inspections
- Lower maintenance costs $$ over preventive

Predictive Maintenance

Omron Predictive Maintenance Solutions

- Power Supply Condition
  - 
  - S8VK-X
- Motor Condition Vibration & Temperature
  - 
  - K6PM-VB
- Motor Condition 3-Phase Current
  - 
  - K6CM-CI
- Motor Condition 3-Phase Insulation Resistance
  - 
  - K6CM-IS
- Thermal Condition Camera
  - 
  - K6CM-IS
- Motor Condition Insulation Resistance All Motors (Megger)
  - 
  - K7GE

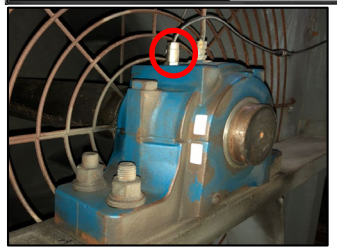


Click on picture to link to datasheet

EIP version of our most popular power supply w live status

S8VK-X: Ethernet Connected Power Supply with condition status

- Power supply supporting Ethernet/IP & Modbus TCP communication for remote monitoring
- Monitors output voltage, current, peak current, run time, and life expectancy through onboard display or Ethernet connected free software
- Customize alerts for low/high voltage & current conditions for up to 18 power supplies with the Omron monitoring software
- Coated/sealed internal electronics for use in less than ideal environments
- Available with and without display
- Can interfaces with Omron's Sysmac Studio
- 5 year warranty

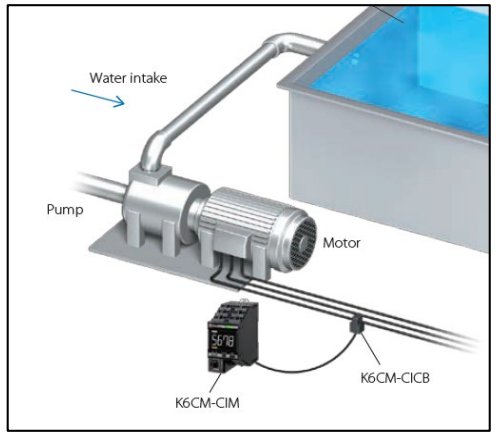


Click on picture to link to K6CM datasheet

Vibration and temperature monitoring of 3 phase motors

K6CM-VBM: Motor Temperature and Vibration Monitor with Ethernet communication

- Vibration and temperature monitoring of 3 phase motors to detect bearing wear or excessive heat conditions
- Measures velocity, acceleration, temperature, Δ temperature of a motor through a mounted sensor
- Easy to retrofit: Sensor uses an M6 x 8mm thread which can install into motor casing. Optional magnetic mount is offered for additional mounting flexibility
- Free software allows for threshold condition alarms in both temperature and vibration along with historical trend lines in condition
- Monitor up to 10 motors/controllers with software
- Interfaces with Omron's Sysmac Studio
- Rated for 3-phase constant speed induction motors



Click on picture to link to K6CM datasheet

Current Monitoring for

3-phase motors for

abnormality detection

K6CM-CI: 3-Phase Motor Current Monitor with Ethernet communication

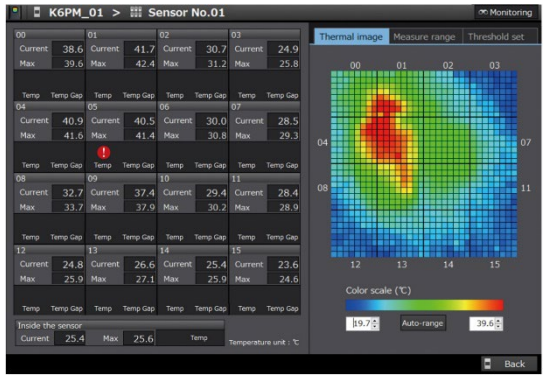
- Monitor current draw sine wave abnormalities on 3 phase motors indicating debris, cavitation, misalignment, blockage or electrical
- The “comprehensive current diagnosis” can monitor not only for motor problems, but also abnormal load-side conditions and notify the user
- Simple retrofit of a current transformer clamp on the control panel enables monitoring
- Software tool monitoring tool for all K6CM products also provided
- K6CM-CI2M is suitable for use in an excessive noise environment such as using an inverter. Supports Modbus TCP and EtherNet/IP
- Monitor up to 10 motors/controllers with software
- Interfaces with Omron’s Sysmac Studio

Click on picture to link to K6CM datasheet

Insulation resistance monitoring for operating/on condition 3-phase motors

K6CM-ISM: 3-Phase Motor Insulation Resistance Monitor with Ethernet communication

- Able to detect motor insulation breakdown on from heat and foreign debris
- Easy to retrofit: Monitor 3-phase motors up to 300A 7.5 kw while motor is in operation using zero current transformer (ZCT) clamp
- EthernetIP/Modbus communication remotely communicates live thermal feed along with alerts when using free software
- Software allows for threshold condition alarms in insulation resistance with historical trend lines in condition
- Monitor up to 10 motors/controllers with software
- Interfaces with Omron Sysmac Studio



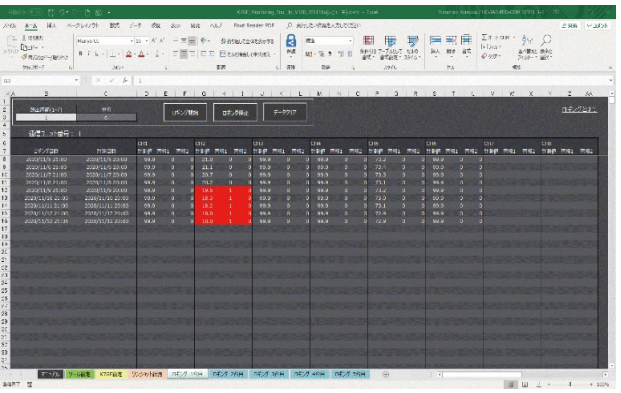
Click on picture to link to K6PM datasheet

EIP Thermal imaging camera system with

K6PM: Thermal Vision Condition Monitor with Remote Monitoring

Specifications:

- Monitor temperature conditions of multiple devices with thermal camera sensors
- Up to 31 cameras per controller
- Predictive algorithms detect if current temperature trend will trigger alarms up to an hour before they happen
- Connect controller to a PC and monitor live thermal conditions with included Thermal Condition Monitoring Software
- User defined alarm thresholds when used with software
- DIN-rail mount controller with built-in temperature display and alarms
- Reduce setup and analysis time with built-in temperature algorithms
- Interfaces with Omron's Sysmac Studio



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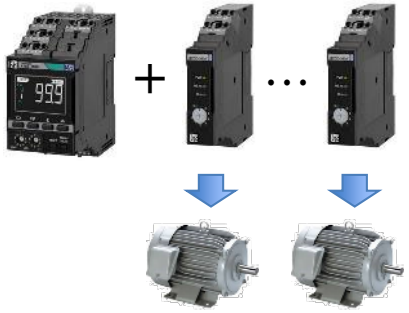
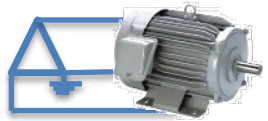
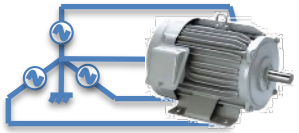
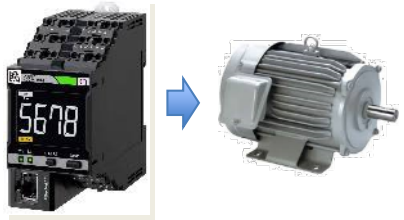
Automated resistance monitoring of equipment

K7GE: Servo Motor Insulation Resistance Monitor

- Monitor insulation of 1, 3-phase or servo motors; monitor any motor any size through the megger method
- Programmable automatic insulation resistance testing using 50V Megger/IR test when a trigger signal is input
- Identifies trend in insulation deterioration from the measurement data collected via monitoring probes
- Clear multi-function LCD display w alarm bar
- RS-485 Modbus RTU serial connection for remote monitoring
- Up to 8 modular probes per controller
- Free PC monitoring software supporting up to 5 sets of monitoring devices (8 probes=1 set) triggering alarm at programmable value.
- 0.1- 99 M Ω measurement range
- Interfaces with Omron’s Sysmac Studio

Difference Between K7GE and K6CM-ISM

	Interface	Sensor	Target Application	Measurement range & condition	Number of motor
K7GE 	**RS-485** Modbus (RTU)	No sensor (But need to connect some wiring between K7GE and motor)	Any motor any size > Servo motor > 1&3 phase induction motor  	Insulation resistance 0.1 M to 99.9 MΩ Measure during motor power off	One unit for up to 8 motors 
K6CM-ISM[] 	EtherNet/IP Modbus (TCP) 	ZCT (Clamp type)	3 phase induction motor up 7.5kW  3 phase 3 wires S-grounding  3 phase 4 wires N-grounding	Insulation resistance 0.000 M to 1.000 MΩ & Leakage current 0.0 mA to 200.0 mA Measure during motor running	One unit for one motor 

Complete Line of options for your Predictive Maintenance needs