

MCM devices are used for condition monitoring at Renault

Artesis2 condition monitoring product, MCM (Motor Condition Monitor), is used for early detection of developing faults at compressors, pumps and fans are used at the automobile manufacturing plant of Renault in Turkey in addition to thermal camera and vibration analysis. Using only voltage and current signals, MCM devices continuously monitor critical equipment driven by electrical motors and provide advanced warnings up to three months before the failure of equipment. The diagnostic features of MCM provides the user with maintenance decision information that can be used by low or semi-skilled personnel

The maintenance team at this Renault plant has a notorious reputation for excellence in predictive maintenance. The use of MCM provides them with added capability of monitoring more equipment without increasing their manpower. They use MCM especially for difficult to reach places and for equipment used in processes which are not desirable to interrupt. The team use MCM for monitoring and detection of developing faults and use the diagnostic features of MCM, visual inspection, thermal camera and vibration analysis to determine the cause of faults.

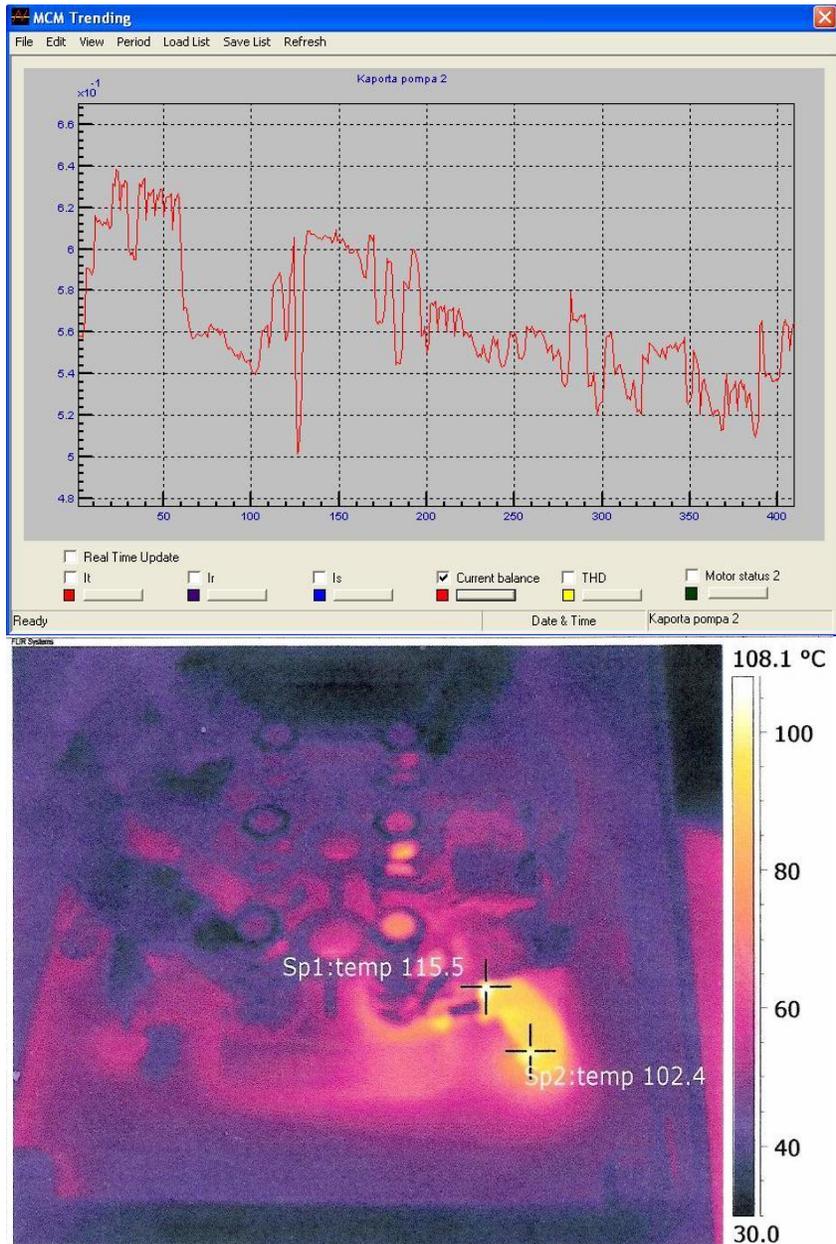
MCM devices so far has given warnings for the developing faults in five different equipment. All the warnings and diagnostics were verified by the team as true warnings and no faults were missed. MCM devices have detected an imbalance problem with a tower fan, a developing isolation fault of the stator winding in a pump motor, a valve problem with another motor and two cases of dirty filters with two compressors. Two of these cases are further described below:

## **CASE STUDIES AT RENAULT**



<b>INDUSTRY</b>	: AUTOMOBILE MANUFACTURER
<b>COMPANY</b>	: RENAULT
<b>APPLICATION</b>	: PUMPS, COMPRESSOR, FANS
<b>MCM SYSTEM</b>	: PIECES MCM-LV
<b>REMOTE MONITORING SYSTEM</b>	: MCMSCADA, LAN
<b>APPLICATION PURPOSE</b>	: EARLY FAULT DETECTION PROCESS MONITORING
<b>CASES</b>	: ISOLATION PROBLEM IN STATOR WINDINGS AND FAN IMBALANCE
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One of the MCM used with a pump at Renault gave warning. MCMSCADA, the diagnostic graphical user interface of MCM, indicated that the developing fault is an internal electrical fault. An examination of current imbalance showed that its value was changing over time. A change in current balance together with an internal electrical problem indicated to the isolation in stator windings. The team took a thermal camera picture of the motor and verified the detection and diagnostics of MCM. The maintenance crew replaced the motor with a spare one to prevent unexpected down time.



The second case was a tower fan monitored by one of the MCM. In this case MCM started giving early warning of a developing fault. The parameters associated with loose foundation and imbalance showed a continuous and sustained increase. Two months after the early warning and on a regular maintenance stop, the maintenance team examined the fan. They observed visually that the bolt tightening MCM to the foundation was loose as shown in the picture.. They fixed the bolt to remedy the problem.

