

DATAEAGLE Condition Monitoring System Successful with Schildknecht technology

Murrelektronik connects motors and machines worldwide

Application: Automation technology is one of the industries that are driving digitization and the corresponding business models with suitable devices and systems. Applications that often appear quite simple suddenly become projects with far-reaching and usually very positive solutions such as the Condition Monitoring Systems (CMS). These require various components such as sensors as well as modules for data communication and data evaluation and for displaying results. Schildknecht AG is very well positioned in this respect and is able to offer interested users complete packages in which only the sensor and of course the data evaluation and dashboard display are specifically designed for the respective application. Such a case was realized in 2019 between Schildknecht AG and Murrelektronik GmbH. The task was to secure the daily deliveries from the company's central warehouse by monitoring the functional reliability of the conveyor belt used for this purpose and its drive motor. The background to this project was Murrelektronik's endeavour to meet promised delivery dates and to secure a regular daily turnover.

Challenge: The challenge in this application - from a technical point of view - was (1) to design the CMS or its sensor system in such a way that all critical motor data could be retrieved and at the same time assembly work on the motor could be carried out without prolonged downtime. A further challenge was (2) to ensure the acceptance and use of the system by employees who have been familiar with the drive motor for many years! Without the willingness of these experienced employees to entrust the „preventive maintenance“ of their motor to a sensor and, in a broader sense, to a digitalization concept including a cloud, the project would have been difficult to implement or would only have been implemented on a long-term basis. The opportunity was promising, because an unplanned shutdown leads to considerable manual overtime for deliveries and increased stress levels among employees.



Central Warehouse



DATAEAGLE gateway inside the cabinet



DATAEAGLE Condition Monitoring System (CMS) sensor mounted on motor



The sensor values are shown in the Online-Dashboard DATAEAGLE Portal

Solution: The solution turned out to be successful because the CMS from Schildknecht is well prepared to meet the challenges mentioned above! For example, (1) the Bosch sensor used is capable, despite its small size, of recording up to 8 measured variables, including the values of vibration, magnetic flux density and ambient temperature typically required for a reliable motor operation or an imminent bearing damage; from these changes over time, a foreseeable bearing damage and thus a failure of the motor with a standstill of the conveyor belt can be reasonably predicted. The requirement for (2) simple and quick installation of the DATAEAGLE CMS was also met, as it is a complete system that saves the user the tedious and occasionally risky purchase and interconnection of individual components; the system could be installed and commissioned within one hour. The last challenge involved the (3) acceptance of the solution by the employees. Contrary to the expectations of the very committed company management, this challenge was also successfully met, although only over a longer period of time. The dashboard displays were certainly helpful here, which seemed plausible to the older employees and matched their experiences; among the younger employees, the acceptance of digitally transmitted data evaluated in cloud computing was faster for understandable reasons. The decision of the company management to make the relevant information available to the warehouse staff on tablets or smartphones and thus integrating them into the new concept was also helpful. This quickly led to the realization that the new system would make a significant contribution to customer satisfaction – a company goal that Murrelektronik values very highly.

Result: The project has been implemented successfully and in a short period of time. This is in itself gratifying and motivating! More important, however, is the impression this solution has made on Murrelektronik, both in the warehouse and at management level: with the CMS, a constant concern about sudden and unprepared delivery stops and their negative consequences were „defused“ in a short period of time and with limited effort. This is a confirmation that we, the Schildknecht AG, have developed a system with our CMS that meets current market requirements and can be installed and commissioned in a short period of time. The acceptance by the management and employees of Murrelektronik also shows the „persuasive power“ of the system to bring real benefits to the respective company.

[Watch the installations video here](#)