

“Manually measuring temperatures in halls is obsolete and inefficient.”

Třinecké železářny, a.s. – Moravia Steel



TŘINECKÉ ŽELEZÁŘNY

Třinecké železářny, a.s. (Třinec Iron and Steel Works) is the largest steel producer in Czech Republic. Long rolled products are among its primary products. More than 60% of its production is for export.

Description of the problem:

Třinecké železářny, a.s. needed to resolve an issue they were having with inefficient condition monitoring data acquisition, specifically measuring temperatures in production halls.

Plant electricians were previously assigned this task, measuring current temperatures in pre-defined locations and the continuing along their specified rounds. Once all measurements were collected from every location, they were then manually entered into an Excel table. Measurements took around a half hour and were conducted three times a day (once per shift) and took time away from specialists that could have been devoted to other work.

Třinecké železářny, a.s. management called for a reduction in these inefficient work activities and contacted **FOXON** to help them with their data acquisition needs.

Proposed solution:

After considering several options, we agreed with the customer to deploy a solution based around Monnit wireless sensors. Our efforts were focused on identifying primary solutions that were independent of an Internet connection and for which range would not be an issue. The production hall also had a metal structure and other equipment installed that could have interfered with the range of the sensors.

We combined wireless sensors with a CloudGate IoT gateway, which facilitates data processing in a dedicated cloud system, in third-party applications or via the SDK library in the customer's software. This allowed the data to remain exclusively inside the company, which was one of the conditions of the project. This gateway provided a simply way to pair new sensors and the solution may be easily expanded in the future if the Třinecké železářny, a.s. decides to measure more values.

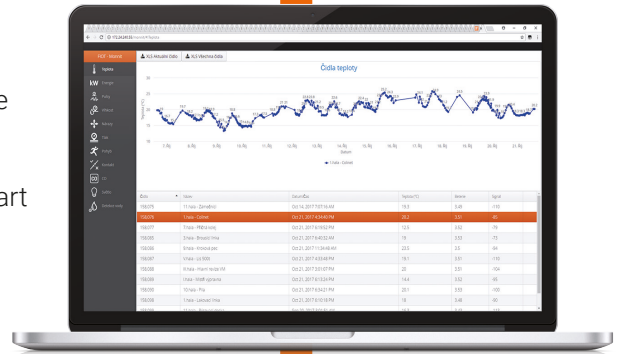
FIOT software provides the customer with transparent visualisation of current and historical measured values and permits the configuration of alarm limits, variable identification and grouping of individual sensors as well as exporting data to Excel.

Implementation:

Sensor installation took place over two days once the sensors were delivered, one day was spent at the customer's site identifying measurement points and the electricians installed the sensors. FOXON's in-house technicians arrived the next day to install and start the software and initiate communication with the gateway.

The entire system was on-line and functional in a single afternoon. There are currently ten temperature sensors deployed in the plant to collect the specified values. We also installed sensors for measuring pressure, humidity and vibrations, three sensors with current coils for measuring electricity usage and two sensors for counting motor hours and lubrication cycles in the manufacturing facility as part of a trial program.

The return on investment for the entire project, given the hours saved by site electricians, is projected in just under a year and a half.



Advantages of the solution:

- user self-sufficiency when installing elements
- modular system that can be modified, expanded and moved whenever needed
- ability to test a future comprehensive solution for condition monitoring using a smaller, pilot project



"We received warm thanks from our electricians in appreciation of this solution. Manual temperature measurements were inefficient and took time away from other professional activities."

Ing. Ondřej Slováček,
Head of the Control Systems Service Department



18
wireless sensors



1
gateway



42
saved working hours per month

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