

Reference name:

Battery temperature monitoring system

Supplier: Customer: Market segment: Year of implementation: ELVAC a.s. Mobis Automotive Czech s.r.o. Electrical engineering - measurement 2024

Introductory text:

The battery temperature monitoring system is intended for Mobis Automotive Czech s.r.o. with headquarters in Mošnov. Its main function is to measure, visualize and signal the temperature of batteries that are placed in static or moving racks. This is a pilot installation of this system.

Application description:

The device is intended for continuous non-contact temperature monitoring of batteries with a total number of 1,452 pcs. Specifically, there are 3 types of batteries – SX2E, PHEV, HEV.

The temperature sensors are connected to the merging units, while both the sensors and the merging units are located directly on the racking system.

Measured data from the merging units are processed in a Siemens S1500 series PLC using the Profinet network and subsequently visualized using IPC on a 55" touchscreen TV. The operator can view a view of individual storage racks as well as a view of individual batteries. Temperature trends and graphs presenting current and past values are also visible.

The system backs up data on temperature development over time for a period of up to one year, with the option of exporting to various formats such as xls. csv.

An electric fire alarm system (EPS) is connected to the system, when in the event of exceeding the temperature of the battery, it announces an alarm using SMS, acoustic signaling and a technical alarm in the EPS. In this case, a trained operator will arrive at the site and see the exact position of the critical battery on the visualization. After the security confirmation that no one is in the battery storage area, the movable shelves are moved apart based on the information from the temperature monitoring system. Thanks to this, it is possible to immediately remove the critical battery from the space. The spacing of the racks is also visualized.

Used products and technologies:

- Combining analog units 8x IO-LINK TURCK
- Merging master unit TURCK
- Sources 24 VDC IP68 TURCK
- Non-contact temperature sensors TURCK
- PLC Siemens series S7-1515
- IPC IEC Stabil PRO

Benefits for the customer:

The main benefit is the increase in fire safety of stored batteries. Clear visualization is also a benefit, as is the collection of temperature data with the possibility of exporting it.



Photo:









