

Using the SAFETIS EV thermal sensor in battery warehouses



PROBLEM

Warehouses storing automotive batteries face unique and complex safety and monitoring challenges. Automotive batteries, particularly high-capacity ones, are particularly sensitive to temperature fluctuations, physical damage, and other risk factors that can trigger dangerous situations like fires or explosions.

Firstly, the warehouse environment's temperature variability is a significant concern. **Batteries need to be stored and handled under controlled temperature conditions** to minimize the risk of damage of spontaneous ignition. Any uncontrolled temperature rise can quickly initiate a chain reaction, **resulting in severe damage to not only the batteries but also the surrounding infrastructure.**

Secondly, continuous and reliable monitoring is essential. Conventional monitoring methods, such as temperature sensors or regular cameras, may be **inadequate due to their limited capability to detect and swiftly respond to anomalies.** More sophisticated technologies are needed for real-time, highly accurate, and reliable monitoring.

SOLUTION

SAFETIS EV is an innovative solution designed **to effectively tackle the challenges of monitoring automotive battery warehouses.** The device is equipped with advanced features that allow real-time detection and quick response to any temperature anomalies or potential battery-related risks.

Real-time detection abilities: The SAFETIS EV is fitted with 19,200 active temperature sensors, providing quick and accurate detection of temperature variations within the warehouse environment. These sensors operate in **real-time, allowing for immediate identification** and response to potential risks like dangerous temperature spikes that may signal battery issues.

Onboard SMART assessment: SAFETIS EV comes with an integrated intelligent system that autonomously evaluates sensor data, eliminating the need for additional external hardware or computers, thus increasing system efficiency and reliability.

Thirdly, **integration with existing safety and monitoring systems is crucial.** Any new device or system implemented must effectively communicate with existing system components to ensure coordinated and rapid responses to hazardous situations.

Finally, the implemented solution **must be flexible and adaptable.** This includes the ability to generate detailed and useful reports for risk assessment and safety trend analysis within the warehouse.

Dual alarm detection: The system features **dual-level temperature alarms—warning and critical.** If the temperature in a specific area reaches a set threshold, the system automatically triggers an alarm, enabling a rapid response to minimize potential risks.

Control protocol - Modbus RTU: SAFETIS EV uses the **Modbus RTU protocol**, a universal protocol that allows for effective communication with other systems and devices. This communication can be executed through RS485 or Ethernet, adding flexibility and simplifying integration into existing systems.

Automatic area scanning: SAFETIS EV continuously and automatically **scans areas under surveillance up to 9 times per second, increasing the chance of quick detection** and response to any anomalies or hazardous conditions.

HOW TO INTEGRATE SAFETIS EV INTO EXISTING SYSTEMS

Integration of SAFETIS EV into current warehouse monitoring systems has been optimized for ease and efficiency. Given the flexibility and universal communication protocols that SAFETIS EV offers, the device can be quickly and seamlessly integrated into various system configurations.

Communication Protocol

SAFETIS EV utilizes the Modbus RTU communication protocol, allowing for simple and reliable communication with various systems and devices. Communication can be executed either through RS485 or Ethernet.

Software and Configuration

SAFETIS EV package includes desktop software for simple and intuitive device configuration. Users are not limited to this software and can use any other software compatible with Modbus RTU for device management.

Placement and Installation

Optimal detection efficiency requires strategically placing SAFETIS EV to best cover the area monitored. Given its compact dimensions and weight under 300 grams, the device is flexible and can be easily installed on various wall and ceiling types. The camera's location and orientation can be customized to meet specific environmental requirements.

Automatic Scanning and Alarms

Once installed and configured, SAFETIS EV begins automatic real-time monitoring, scanning, and sensor data evaluation. Users can set two alarm levels—warning and critical—to automatically generate alarms for quick responses when anomalies or risks are detected.

Adaptability and Flexibility

With its universal and flexible features, SAFETIS EV can adapt to different system configurations and requirements, making it broadly applicable in diverse settings for temperature and safety monitoring in warehouses storing electric batteries.



In summary, **SAFETIS EV** represents a solution for monitoring **temperature** in areas where electric vehicle batteries are stored, significantly contributing to the safety of these facilities.

The system utilizes an **advanced network of 19,200 sensors** that **continuously collect temperature data in real time**, allowing for the immediate detection of hotspots, which is crucial for fire prevention. SAFETIS EV includes intelligent evaluation algorithms located directly on the device, increasing the speed and efficiency of response to temperature fluctuations.

Moreover, a **dual alarm system** enables the definition of **different levels of temperature warnings**, providing users with flexibility in setting their safety protocols. Thanks to compatibility with the Modbus RTU protocol, SAFETIS EV allows for seamless integration into existing building management systems. Its capability to automatically scan the area up to nine times per second ensures continuous and thorough monitoring, essential for identifying and addressing potential risks associated with battery components.

This combination of innovative technology and high user-friendliness makes SAFETIS EV **an ideal solution for ensuring the safety** of storage spaces with electric vehicle batteries.

