

Monitoring of parking garages and spaces for electric vehicles with a thermal camera



PROBLEM

In garages and locations with installed charging stations for electric vehicles, there is a significant concentration of electrical systems and equipment, **which increases the risk of fires and other safety incidents**. These areas are constantly exposed to dynamic changes in temperature and electrical loads, which can result in potentially dangerous situations if they are not properly and continuously monitored and controlled.

The primary problem is the risk of overheating of electrical components such as chargers, batteries of electric cars, and other related infrastructure. Overheating can be caused by a technical fault, system overload, or insufficient maintenance and control of equipment. Such **overheating can quickly escalate into more serious incidents, including fires, which can have devastating consequences for property and can endanger human lives**.

Another issue is the potential risk of electrical shorts and other malfunctions that can occur due to incorrect installation, wear, or damage to electrical components and wiring. Electrical shorts not only increase the risk of fire but can also cause damage to electronic systems and equipment, resulting in costly repairs and operational outages.

The absence of an effective and reliable system for monitoring and detecting temperature anomalies significantly increases the aforementioned risks.

Without continuous, **real-time monitoring, potential problems and dangerous conditions may be detected too late, making it difficult to respond quickly and effectively to prevent more serious incidents and damage**. In the context of all these problems, it is clear that it is essential to have reliable, efficient, and intelligent solutions that can ensure the safety and integrity of garages and charging stations for electric vehicles.

HOW DOES THE SAFETIS EV THERMAL CAMERA/SENSOR REDUCE RISKS?

SAFETIS EV, a smart thermal camera/sensor, comes as an ideal solution for real-time monitoring and control of places such as garages and charging stations for electric vehicles. Thanks to the cutting-edge features and technology that SAFETIS EV offers, it is possible to significantly improve the safety and efficiency of **monitoring temperature conditions and risks associated with overheating and potential fires**.

REAL-TIME DETECTION

SAFETIS EV is equipped with **19,200 active temperature sensors**, which allow quick and accurate detection of temperature anomalies in real time. This feature increases the ability to quickly identify and respond to overheating-related problems, which is crucial for preventing more serious incidents.

SMART EVALUATION

Thanks to advanced **onboard SMART evaluation**, there

is no need for any additional hardware or software. SAFETIS EV automatically and intelligently evaluates data from sensors, allowing for quick and reliable identification of potential risks and dangerous temperature deviations.

DOUBLE ALARM

SAFETIS EV offers a **two-stage alarm detection** where the user can define two levels of alarms: warning alarm and critical alarm. These alarms enable quick response depending on the severity of the detected problem.

COMMUNICATION

Communication protocols thanks to the support of the Modbus RTU protocol **via RS485 or Ethernet**, SAFETIS EV is into existing systems and infrastructure, enabling easy and efficient connection to monitoring and control systems, thereby increasing the overall efficiency and functionality of safety monitoring.

AUTOMATIC SCANNING OF THE AREA

Automatic real-time scanning of areas up to 9 times per second increases the reactivity and reliability of the system in identifying and responding to temperature anomalies and potential threats.

ADAPTABILITY AND CONFIGURATION

SAFETIS EV allows the user to set and configure the thermal camera/sensor according to the specific needs and requirements of the given environment. This allows the system to adapt to specific conditions and risks associated with garages and charging stations for electric vehicles.

Using these features and technologies, SAFETIS EV significantly contributes to optimizing safety in garages and charging stations for electric vehicles, increasing the ability to prevent fires and other incidents associated with overheating of electrical systems and equipment.



INTEGRATION TO THE SYSTEM

Use of Modbus RTU Protocol SAFETIS EV communicates through the universal Modbus RTU communication protocol, which is **widely accepted and recognized in the industry**. This protocol allows SAFETIS EV to „talk“ to existing systems and devices in the garage or charging station efficiently and without problems.

Communication via RS485, Ethernet, and D.O SAFETIS EV can be connected to the system via RS485 or Ethernet, allowing **flexible connection options depending on the specifications and requirements of the given device or system**.

Similarly, SAFETIS EV can be connected using 3 digital outputs (D.O) to higher-level Fire alarm system or PLC protection systems.

Configuration via supplied desktop software **SAFETIS EV comes with software that allows users to configure and customize the device** according to their specific needs and requirements.

This software is one of the configuration options and is not the only option, allowing users to use other compatible software according to their preferences. Two-level alarm setting incl. digital outputs (D.O)

The SAFETIS EV thermal camera/sensor has the option of two-stage alarms and allows the definition and configuration of different levels of alarms incl. connection of digital outputs (DO) to other fire alarm system, PLC protection systems, etc., and can be connected to various inputs and systems to maximize response and functionality in case of detection of temperature anomalies or other risks.

Automatic real-time temperature monitoring incl. heartbeat signal. Thanks to **automatic scanning in real-time**, SAFETIS EV allows continuous and thorough monitoring of temperatures and possible risks in the monitored area, ensuring the highest possible level of safety and minimizing the risk of fires or other incidents associated with overheating of electrical systems and equipment.

By integrating SAFETIS EV into the existing system of the garage or charging station for electric vehicles, it is possible to achieve a highly effective, low-cost, adaptable, and reliable solution for monitoring and preventing risks associated with overheating and potential fires.