InfraTec.
Infrarotsensorik und Messtechnik

FIRE-SCAN for Li-Ion Batteries

Early Fire Detection in Warehouses and Assembly Halls

Advantages of the FIRE-SCAN Thermography System

- Automatic alarm triggering when critical temperature thresholds are exceeded
- Segmentation of image areas for alerting
- Documentation of alarm situations to analyse potential causes of fire
- Localisation of heat sources, even in dusty or smoke polluted environments
- Designed for continuous operation 24 h / 7 without supervision
- Camera feed can be routed to control room or other locations
- Single or multi-camera systems possible

Electromobility – A future-oriented topic that manufacturers of electric vehicles and their suppliers are addressing to the same extent. The same applies to producers of high-performance rechargeable batteries and high-voltage batteries for use in electric cars, electric buses, e-scooters, e-mopeds and e-bikes. The production and storage of these energy storage devices entails some risks. Especially lithium-ion based batteries constitute fire hazards because they can spontaneously ignite if overheated and release toxic gases when burning.

In order to avoid such a scenario, InfraTec offers a way to monitor assembly and storage halls completely automatically with the thermographic automation solution FIRE-SCAN. The system, consisting of a high-performance infrared camera and corresponding software, self-monitors the temperature development at workstations and storage areas 24 hours a day and reliably localises heat sources. If configurable temperature alarm set points are exceeded in selected areas of the thermal image, FIRE-SCAN triggers an automatic alarm before critical temperatures are reached and enables rapid intervention to prevent a fire.

Alarm Release

- Automatic alarm release when temperature values exceed critical thresholds
- Multi-stage alarming functionality for controlled escalation
- Selection of subareas (sectors) within the thermal image
- Logging and analysis of long-term temperature trends with adjustable time basis
- Documentation of alarm situations to analyse the potential causes of fire
- Modular design concept for tailored solutions

Monitoring of a storage hall

Customised System Concept

- Designed for continuous operation 24/7 without supervision
- Camera feed can be routed to control room or other locations
- Flexible wiring technology (copper or fibre optic cable)
- Uninterruptible power supply*
- System maintenance through integrated PC in the control cabinet (via remote control*)

High-performing Software

- Continuous display of the current thermal images of all sectors (mosaic-overview)
- Simultaneous display of thermographic and colour video live image*
- Camera and system status indication
- Merging of live images of thermography and video camera
- Recording of maximum, minimum and average temperature of each sector
- Single or multi-camera system available
- Graphic data display of temperature-time profiles of all sectors
- Logging of operations
- Filing of image data

High-resolution Infrared Cameras

- Uncooled FPA-Microbolometer detectors
- High geometrical resolution and thermal sensitivity
- High-contrast, brilliant thermal images
- Localisation of hot spots even in dusty or smoke polluted environments
- Spectral range (7.5 … 14) µm
- Real-time data acquisition (Gigabit Ethernet)
- Internal automatic calibration
- Rugged housing according to industrial standard IP65
- Pan/tilt systems to extend the detection areas*
- Extremely high level of system availability
- Digital colour video camera*

640 × 480 Detector

Detector Format
Large detector with highest geometric and thermal resolution

640 × 480 30 Hz

IR-Frame Rate
Analysis of temperature changes and gradients in full frame

GigE

GigE Vision Compatible
Standard interface for easy integration into existing process environments

IP65

Protection Degree
Camera operation under harsh environmental conditions

Protective Housing
Robust metal housing for wide range of environmental conditions and IP rating requirements

* Depending on model

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