

APPLICATION NOTE



SAFETY

BATTERY MONITORING WITH IR TEMPERATURE MEASUREMENT

FIRE PROTECTION FOR EVERY STAGE OF USE



**Battery
monitoring**



**Fire
prevention**



**Electric
cars**

Application requests

It is no secret that e-cars and battery manufacturers are growing inexorably across all industries. Likewise, the **risk of a fire breaking out is increasing**. **Lithium-ion batteries** are the most effective batteries in the world, but also the most dangerous. Once a li-battery has ignited it is almost impossible to extinguish confirm fire stations worldwide.

Additionally high temperature occur while a li-battery burns. The most effective way is to react as fast as possible to identify hotspots of defect battery cells for removal.

Thermal monitoring of lithium-ion batteries is gaining importance during:

- **production**
- **transport**
- **and after fire-fighting operations**
- **storage**
- **disposal**
- **commissioning**



Electric car lithium battery pack and wiring

(image: stock.adobe.com)

Solution by Optris - Battery Monitoring System

Our solution: Early hotspot detection to avoid the **risk of a fire or explosion** and associated **health damage, expensive downtimes** and **resources**.

This system contains the **Optris infrared cameras (Xi series or PI series)** and the **license-free software** optris **PIX Connect**. Measurement of batteries on label or insulator on anode or cathode. The advantages of the system:

- Robust & compact design (IP67) allows quick and easy installation
- Up to 125 Hz measurement
- Stand alone System (Xi 410)
- Automatic hotspot detection with alarm output
- Multiple cameras visible on one software screen simultaneously
- direct Ethernet (Xi 410)
- Different optics available
- Self-monitoring system (fail-safe signal)
- Camera resolution up to 640 x 480 pixels
- Display infrared images on a standard PC or with IRmobile App on a mobile device



Lithium battery pack in an electric car

(image: stock.adobe.com)

Further advantages / Summary

The Optris cameras are **easy to install** and can be integrated in a network. The **additional PI NetBox** reduces the Ethernet data traffic to the final PC system and acts as an **extra safety instance (Watchdog-Function!)**.

Besides a **great price/performance ratio**, Optris has a worldwide network of highly qualified distributors and partners offering local technical support.



Optimal for use in the application field of battery monitoring