



LITHIUM  
BATTERY  
STORAGE



## THE LOXK11000 HOW DOES THE CABINET WORK?

The LOXXER battery safety cabinet is designed to identify early signs of battery failure and respond automatically to reduce fire, smoke and explosion risks. With integrated detection, ventilation control, structural fire resistance and multiple alarm channels, it provides a complete safety system for both storage and charging of lithium-ion batteries.

### SAFETY FEATURES

#### ACTIVE VENTILATION

To prevent heat build-up during the charging process, the cabinet uses active ventilation. Warm air is extracted at the top, while fresh air is drawn in at the bottom. This ensures a stable internal climate. When connected, the cabinet can exhaust air safely into an external ventilation system.

#### FIRE-RESISTANT SHELVES

The cabinet contains height-adjustable fire-resistant shelves. These shelves act as fire barriers and help prevent vertical fire spread between levels.

#### CABINET SELF-CLOSING DOOR

The cabinet has a self-closing door, and is equipped with a sensor. If the door is not fully closed, the status LED turns blue. After 60 seconds, the system automatically stops charging and ventilation until the door is closed again.

#### MONITORING

A built-in controller continuously monitors all critical components: smoke & temperature detectors, ventilation fan, siren & status LED, door contacts, optional aerosol unit, optional wireless module (M2M). If any component fails, the system triggers a fault notification.



## WHAT HAPPENS DURING A BATTERY FIRE?

### HOW DOES THE CABINET DETECT?

To avoid false alarms, the cabinet uses 2 different types of detection:

- Smoke detection
- Temperature detection

### WHY 2 TYPES OF DETECTION?

A standard optical smoke detector can sometimes react to things that are not a fire, such as cigarette smoke, dust or vapour. That is why the cabinet does not rely on a single signal. Only when smoke and an abnormal temperature increase are detected together, the system considers this a real fire risk. This ensures reliable detection and prevents unnecessary interruptions.

### WHAT HAPPENS WHEN THERE IS TEMPERATURE OR SMOKE DETECTION?

#### ALARM

A pre-alarm is triggered when one of the two detections occurs, smoke or temperature (>60°C)

The system immediately:

- Stops all charging
- Shuts down ventilation

Gives notification by

- ... a pulsing siren
- turning the status LED purple

Sends a signal that can be forwarded to:

- fire alarm panel
- or via M2M communication (optional)

This is an early warning, allowing quick action before the situation escalates.



#### PRE-ALARM

An alarm is triggered when both detections occurs, smoke and temperature.

The cabinet will take maximum safety actions:

- Charging stops instantly
- Ventilation remains shut down
- The status LED turns red
- The siren sounds continuously
- The aerosol fire suppression unit activates (if the option is installed)

Gives notification by

- ... a pulsing siren

- turning the status LED purple

Sends a signal that can be forwarded to:

- fire alarm panel
- or via M2M communication (optional)

Door must not be opened, except by trained emergency personnel.



## HOW DO YOU GET NOTIFIED?

Every cabinet includes:

- a high-intensity siren
- a flashing indicator
- RGB status LED

These alerts ensure immediate recognition by nearby personnel.

## HOW DO YOU GET NOTIFIED IF THERE IS A FIRE UNATTENDED OR AT NIGHT?

The cabinet is supplied with a **connection that allows the cabinet to be linked to the building's fire alarm** control panel. This enables fire or fault signals to be transmitted directly to the existing fire alarm system.

If you also wish to receive **notifications on your smartphone**, an M2M module can be selected as an optional feature. This module allows push notifications to be sent in the event of alarms or relevant status changes, independent of the building system.

### M2M



The LOXK1100 VDMA can be equipped with a smart M2M module, ensuring you are always aware of what is happening inside the cabinet. Thanks to the connection with multiple networks, you receive reliable notifications and can easily monitor the status.



## AEROSOL FIRE SUPPRESSION SYSTEM

The cabinet can optionally be equipped with an integrated aerosol fire suppression unit.

This technology is specifically designed to control and suppress battery fires and provides an additional layer of protection.

The cabinet itself has been tested and VDMA-certified without the use of aerosol fire suppression, meaning that compliance with safety requirements is achieved by the cabinet's design alone. The aerosol system therefore serves as an extra safeguard.

### WHAT IS AEROSOL FIRE SUPPRESSION?

When activated, the unit releases a fine aerosol inside the cabinet.

This aerosol:

- Interrupts the fire process
- Suppresses the chemical reaction of combustion
- Helps prevent further escalation
- The aerosol will fill up the cabinet

This happens without water, avoiding additional damage to batteries and electronic components.

### WHEN IS THE AEROSOL ACTIVATED?

- Only during a full alarm
- When both smoke and rising temperature are detected
- Fully automatic, without human intervention

Aerosol fire suppression provides a critical extra safety layer, on top of detection, alarms and containment.





## THE CABINET IS VDMA 24994 CERTIFIED

The cabinet is VDMA-certified, in accordance with VDMA 24994, a recognized German standard for fire-protected storage solutions for lithium-ion batteries.

### WHY THE VDMA MATTERS?

Lithium-ion batteries pose a significant fire risk due to the possibility of thermal runaway, which can result in fire, explosions, and the release of toxic gases.

The VDMA test protocol verifies whether a storage cabinet can safely contain such events, providing an essential additional layer of protection for people, buildings, and operations.

### WHAT THE CERTIFICATION MEANS?

The cabinet has been independently tested under realistic and extreme conditions, including induced thermal runaway and fire exposure.

The evaluation confirms that:

- Door remain closed during and after the test
- No flames or projectiles escape the cabinet
- External temperature limits are respected
- Fire propagation between storage levels is prevented

The test was conducted by GRYFITLAB, one of the few ECB-S-approved test institutes in Europe authorized to perform VDMA 24994 testing.

LOXXER is proud that its cabinet successfully met all VDMA requirements on the first test, confirming its high level of safety, reliability, and build quality.

Aerosol fire suppression provides a critical extra safety layer, on top of detection, alarms and containment.