

Safety cabinets for *storing* and *charging* of *lithium-ion* batteries



NEW TECHNICAL RECOMMENDATION

Chapter 2-2026



Technical Recommendation No. 362: Storing & charging of lithium batteries

General: Essential protection

Safety around lithium-ion batteries has become a top priority to protect operators and the working environment.

- **System definition:** Our cabinets are storage units designed to protect against fire originating from within, ensuring staff safety in the event of spontaneous combustion.
- **Thermal runaway control:** The system is designed to manage «thermal runaway», an uncontrollable state in which a battery overheats (temperature > 73 °C) following a failure or internal short circuit.
- **Safety objective:** The cabinet prevents risks associated with the spread of fire, as well as the ejection of projectiles and fragments during a critical event.

Scope of application and limitations

Our solutions adapt to your needs while complying with strict security requirements.

- **Scope of application:** The system applies to detachable and portable lithium-ion batteries (e.g. electric bicycles, portable power tools for workshops and landscapers, drones, scanners, autonomous forklifts).
- **Permissible capacities**
 - Battery weight: Less than or equal to 25 kg
 - Unit charging power: Maximum 4,000 Wh
 - Maximum internal volume of the cabinet: 3,000 litres.
- **Energy limits:** The maximum total stored energy is defined by the manufacturer and may not exceed the electrical installation rating of the cabinet.
- **Exclusions:** Non-fixed storage devices are not covered.
- **The risks associated with toxic gases** require the installation of an additional and mandatory air extraction system.

Safety cabinets for storing lithium-ion batteries

Each cabinet is classified according to its actual performance in thermal runaway tests:

Class P (Performance): Indicates the maximum energy (in Wh) of the most powerful battery that the cabinet can safely hold (e.g. P3500).

Class T (Surface temperature): Measures the temperature rise (K) on the external surface.

- T1: Elevation from 0 to 150 K.
- Q2: Increase from 150 to 250 K.
- T3: Elevation greater than 250 K.

Examples

The **P3500T1** class: A P3500 T1 cabinet can withstand the runaway of a 3500 Wh battery while maintaining a very low external surface temperature (< 150K increase).

Technical Construction Requirements

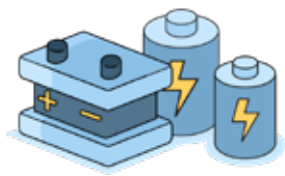
To guarantee this level of performance, our cabinets comply with rigorous construction criteria:

- **Door management:**
 - Automatic closure or alarm if the door remains open for more than 1 minute
 - Secure locking (minimum one point) and single-handed operation possible
- **Ventilation and Gas:** Mandatory installation of an air extraction system with a flow rate of at least 10 m³/h to remove flammable and toxic gases.
- **Shelves:** They are designed so as not to interfere with the closing of doors and to ensure the stability of the cabinet, even when storage levels are removed.
- **High-security equipment:**
 - Integrated automatic fire extinguishing system with smoke and/or heat detection
 - Automatic emergency shutdown of the load in the event of a critical situation (> 70°C or smoke)
- **Clear marking:** Each unit bears permanent markings indicating its P and T classes, energy limits, and safety warnings.



Lithium batteries pose a dangerous risk: Ecosafe simplifies your storage choice.

You have batteries to store and charge



They can be of different sizes.



For a variety of tools



And you are aware of the danger.

Why are they dangerous? For these three main reasons:

they flare up



They explode

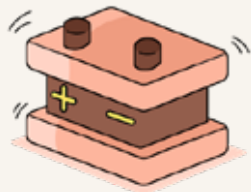


They emit fumes



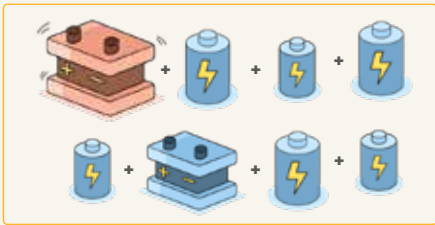
3 simple questions for your secure storage

STEP 1



in **Wh**
What is the value in Wh of the most powerful battery to store?
(it's often the biggest 😊)

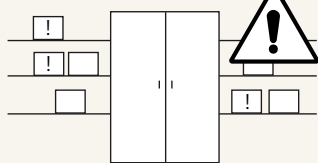
STEP 2



in **Wh**
What total power will be stored by all the batteries?

STEP 3

Define the risk associated with the storage environment



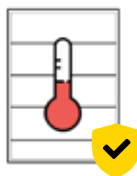
Is the storage environment dangerous?
(Flammable materials, personnel nearby)

Surface temperature of the cabinet
T1 : from 0 to 150 K | **T2** : from 150 to 250 K.

To address this risk, our cabinets are designed according to three fundamental rules:



Containing the explosion
in the cabinet

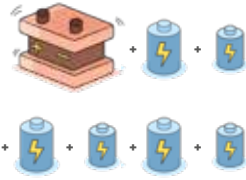
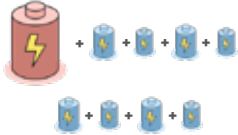


Controlling internal
thermal runaway



Protect against internal
& external fires

And now, how do you choose? With these **three figures**, you have the keys to choosing the **safety storage solution** that suits your battery fleet.

Power of your larger battery (Wh)	Total power stored in the cabinet (Wh)	Classification	Our storage solutions (examples for our tall cabinets - two doors)
 $\leq 3500 \text{ Wh}$	 $\leq 14000 \text{ Wh}$		 795+LI35
 $\leq 1000 \text{ Wh}$	 $\leq 4000 \text{ Wh}$		 G2006+LI10
 $\leq 400 \text{ Wh}$	 $\leq 1600 \text{ Wh}$		 AZ300+LI04

No need to choose. Everything is included for your safety:



Fire and smoke detector



Audible and visual alarm



Circuit breaker



Extinguisher



Alert issuance



Ballistic protection



Flameproof system

Find all our solutions by size and *protection classification.*

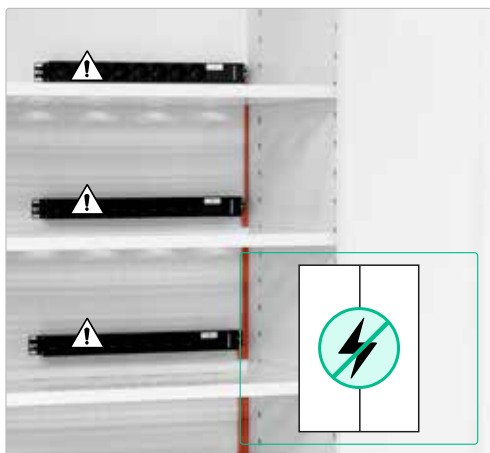


P/N	RT 362	Description	Classification	Maximum power of a battery (Wh)	Max. power per cabinet (Wh)	External dimensions H x W x D (mm)	Internal dimensions H x W x D (mm)	Weight (kg)
793+LI35 793+NLI35		2 doors counter cabinet	P3500T1	≤ 3500 Wh	≤ 7000 Wh	1220 x 1137 x 670	820 x 1000 x 410	302
795+LI35 795+NLI35		2 doors tall cabinet	P3500T1	≤ 3500 Wh	≤ 14000 Wh	2020 x 1137 x 620	1620 x 1000 x 410	457
790+1FLI35		2 doors deep counter cabinet	P3500T1	≤ 3500 Wh	≤ 14000 Wh	2120 x 905 x 903	1685x760x 695	442
790+2FLI35		2 doors counter cabinet Extra deep & wide	P3500T1	≤ 3500 Wh	≤ 14000 Wh	2120 x 1502 x 903	1685x1350x695	702
G804+LI10		2 doors counter cabinet to be equipped (depth 450)	P1000T1	≤ 1000 Wh	≤ 1000 Wh	935 x 1000 x 450	745 x 950 x 400	77
G806+LI10		2 doors counter cabinet to be equipped (prof. 600)	P1000T1	≤ 1000 Wh	≤ 1000 Wh	935 x 1000x 600	745 x 950 x 550	92
G2004+LI10		2 doors tall cabinet to be equipped (prof. 450)	P1000T1	≤ 1000 Wh	≤ 4000 Wh	2095 x 1000 x 450	1945 x 950 x 400	154
G2006+LI10		2 doors tall cabinet to be equipped (prof. 600)	P1000T1	≤ 1000 Wh	≤ 4000 Wh	2095 x 1000 x 600	1945 x 950 x 550	176
AZ110+LI04 AZ110+NLI04		2 doors counter cabinet	P400T1	≤ 400 Wh	≤ 800 Wh	1025 x 980 x 540	890 x 925 x 453	43
AZ300+LI04 AZ300+NLI04		2 doors tall cabinet	P400T1	≤ 400 Wh	≤ 1600 Wh	1990 x 980 x 500	1840 x 925 x 453	102

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Focus on *our high-security equipment*

The benefits of maximised protection.



Automatic circuit breaker

Our circuit breaker acts as a passive safety device which, by electrically isolating the batteries as soon as an anomaly is detected, neutralises the external energy supply in order to stop or limit potential thermal runaway.

Key stages

- **Detection of the anomaly:** Heat and smoke sensors detect a value exceeding the critical threshold of 70°C.
- **Immediate alert:** The system simultaneously triggers an audible alarm (97 dB) and a visual alarm to warn people nearby, as well as an alarm connected to a Wi-Fi network.
- **Electrical Insulation:** The power supply to the chargers is cut off instantly. The aim is to stop the energy supply in order to slow down thermal runaway and protect the rest of the cabinet.



Door open alarm

Our door opening detection alarm is a system designed to protect the environment, equipment and users alike, thanks to passive security that reacts to forgetfulness or negligence.

Key stages

- **Doors open:** The user opens the cabinet to perform an operation. The delay countdown begins.
- **1-minute threshold:** If the doors are not closed after 60 seconds, two automatic actions are triggered:
- **Audible and visual alert:** An alarm sounds to signal the breach of containment.
- **Power cut:** The battery power supply is interrupted to prevent any risk of thermal runaway during recharging.
- **Closing the doors:** As soon as the user closes the cabinet, the system resets itself.
- **Automatic reactivation:** The alarm stops and the power supply is restored without manual intervention.



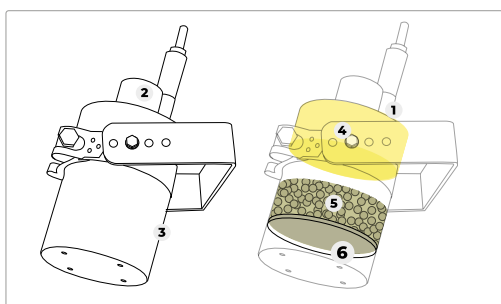
Our fire extinguisher – How does it work?

FPC agent is a new-generation extinguishing agent used in automatic condensed aerosol systems. Unlike conventional solutions, it acts not by cooling or smothering, but by **direct chemical** action on the flame.

When activated, the solid compound transforms into a **very fine aerosol** that neutralises the free radicals responsible for combustion. This action immediately interrupts the **chain reaction of the fire**. The aerosol remains suspended long enough to prevent any reignition.

In the case of lithium-ion batteries, FPC offers a major advantage: it penetrates the core of the equipment like a gas, does not deplete oxygen, does not damage electronics, and effectively limits the spread of thermal runaway in enclosed spaces.

The FPC is integrated into fixed systems or miniature stand-alone units installed directly in cabinets or technical compartments. It is therefore clearly distinct from portable fire extinguishers, **providing automatic, clean protection** that is particularly suited to electrical and lithium risks.



- 1 Automatic activation by thermal bulb
- 2 Electrical connection (depending on model)
- 3 Stainless steel structure (depending on model)
- 4 Solid component
- 5 Mineral resin
- 6 Watertight closure + filter



105-MINUTE SAFETY CABINETS, COMPLIANT WITH THE NEW RT362 TECHNICAL RECOMMENDATION



795+NLI35



795+LI35



P/N	Description	Classification	Maximum power of a battery (Wh)	Max. power per cabinet (Wh)	External dimensions H x W x D (mm)	Internal dimensions H x W x D (mm)	Weight (kg)
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Fundamental design principles

- **Compliance:** CE certified and compliant with low voltage directives 2014/35/EU. Compliant with French technical recommendation No. 362.
- **Fire protection:** Fire resistance tested at 105 minutes (approved for 90 minutes according to EN 14470-1 and EN 1363-1) and fire-rated construction certified EI 180 minutes (type AI, standard NF EN 13501-2).
- **Thermal insulation:** Double thermal insulation with triple walls, panels limiting thermal bridges, and thermo-expanding door seals.
- **Materials and finishes:** Steel structure (12/10th exterior walls) with white epoxy paint (RAL 9010) and melamine interior panels.
- **Security and features:** Self-closing doors with key lock, ventilation holes (diameter 100 mm), and grounding point. Door hold-open system with thermoregulated self-closing at 47°C.
- **Pictograms:** standardised in accordance with technical recommendation RT362
- **Ventilation :** Ventilation outlets enabling connection to a ventilation box (CDV-A).



The 8 advantages of RT362 for complete safety



PREVENTIVE SAFETY | DETECTION & SHUTDOWN

Equipment compliant with technical recommendations, included.



Connected alarm: This connected smoke/heat detector alerts you if there is smoke or excessive heat (> 54°C). It alerts you with an audible alarm for people nearby and an alert sent to each connected user.



Door open alarm: It is triggered if the doors remain open for more than 1 minute: audible and visual alert + automatic cut-off of the battery power supply. It is activated automatically each time the doors are closed.



Automatic circuit breaker: It activates automatically upon detection of an incident and reduces the risk of the reaction escalating. It resets itself once the danger has passed.

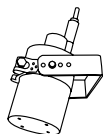


Dry contact: It enables connection to a security control centre/PC to alert them of the detected event.



ACTIVE SAFETY | EXTINGUISHING & CONTAINMENT

Equipment compliant with technical recommendations, included.



Fire extinguisher: Integrated system that automatically activates to extinguish a fire, protect the cabinet and prevent the fire from spreading.



Flame protection system: Comprising a fireproof shield, it prevents flames from forming around the cabinet by cooling the hot gases escaping from it.



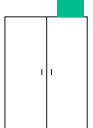
Anti-ballistic security system: Composed of a ballistic grid, it prevents any dangerous projectiles from escaping from the cabinet. A true sentinel against projections, sparks and all kinds of splashes.



MANUAL SECURITY CHECK

This device **allows manual testing of detectors** by activating a **test circuit** to check operation and perform maintenance.

Additional option



Ventilation box: Essential for improving the safety of your cabinet, it removes toxic fumes. Mandatory without external connection equipment.

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Fume hoods, filtering
cabinets - Ventilation

Lithium-ion
cabinets

Flammable
cabinets

Corrosive
cabinets

Toxic cabinets
and Multirisk

Containment
and cans

File cabinets
Anti-fire equipments

Showers and first-
aid equipments



SAFETY CABINETS, COMPLIANT WITH THE NEW TECHNICAL RECOMMENDATION RT362



G804+LI10



G2006+LI10

P/N	Description	Classification	Maximum power of a battery (Wh)	Max. power per cabinet (Wh)	External dimensions H x W x D (mm)	Internal dimensions H x W x D (mm)	Weight (kg)
G804+LI10	2 doors counter cabinet to be equipped (depth 450)		≤ 1000 Wh	≤ 1000 Wh	935 x 1000 x 450	745 x 950 x 400	77
G806+LI10	2 doors counter cabinet to be equipped (prof. 600)		≤ 1000 Wh	≤ 1000 Wh	935 x 1000x 600	745 x 950 x 550	92
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Fundamental design principles

- Compliance:** EU Regulation 2023/1542, Article 42-4: Storage and transport conditions ensure battery compliance. CE certification. Electrical assembly complies with the requirements of the Low Voltage Directive 2014/35/EU. Equipment complies with the requirements of standards IEC 61439-1 and IEC 61439-7. Complies with French technical recommendation No. 362.
 - Fire protection:** Fire-rated construction certified EI 15 min type A1, in accordance with standard NF EN 13501-1. Automatic fire extinguisher activated at 79°C by special lithium thermal bulb (ref. EX100LI, EX200LI or EX500LI).
 - Thermal insulation:** Non-flammable insulating panels, classified A1 according to standard NF EN ISO 1182, between the walls. 20 mm thick mineral fibre insulation, according to standard NF EN ISO 1182.
- Materials and finishes:** 12/10th steel construction, double walls. White epoxy paint RAL 9010.
 - Security and features:** Ventilation via internal side duct with openings at the top and bottom (Ø 100 mm). Hinged doors with reinforced hinges and automatic closing. Two-point key lock. Perforated shelves with a load capacity of 50 kg (ref. E04LI or E06LI). Electrical socket rack for battery charging (ref. PRISEL15). Ventilation box (ref. CDV-A) and connection kit (ref. KRC).
 - Pictogrammes :** Standardised pictograms compliant with ISO 3864, ISO 7010 and European Directive 92/58/EEC.



The 8 advantages of RT362 for complete safety



PREVENTIVE SAFETY | DETECTION & SHUTDOWN

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Connected alarm: This connected smoke/heat detector alerts you if there is smoke or excessive heat ($> 54^{\circ}\text{C}$). It alerts you with an audible alarm for people nearby and an alert sent to each connected user.



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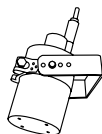


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ACTIVE SAFETY | EXTINGUISHING & CONTAINMENT

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Fume hoods, filtering cabinets - Ventilation

Lithium-ion cabinets

Flammable cabinets

Corrosive cabinets

Toxic cabinets and Multirisk

Containment and cans

File cabinets

Anti-fire equipments

Showers and first-aid equipments



SAFETY CABINETS, COMPLIANT WITH THE NEW TECHNICAL RECOMMENDATION RT362



AZ110+LI04



AZ300+LI04

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- Materials and finishes:** Worktop for counter cabinets (ref. AZ51LI and AZ111LI) covered with a rubber mat.
- Security and features:** Ventilation holes at the top and bottom of each door. Three-point lock and key closure. Hole for connection to a forced ventilation system (ref. AZVENT), supplied with a Ø 100 mm sleeve (included). Perforated shelves, height-adjustable on racks, in 15 mm increments. ALARMWI
- Pictograms:** Standardised pictograms compliant with ISO 3864, ISO 7010 and European Directive 92/58/EEC.



The 8 advantages of RT362 for complete safety

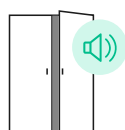


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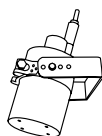


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Securing lithium-ion batteries: The major advantage of *FPC technology*

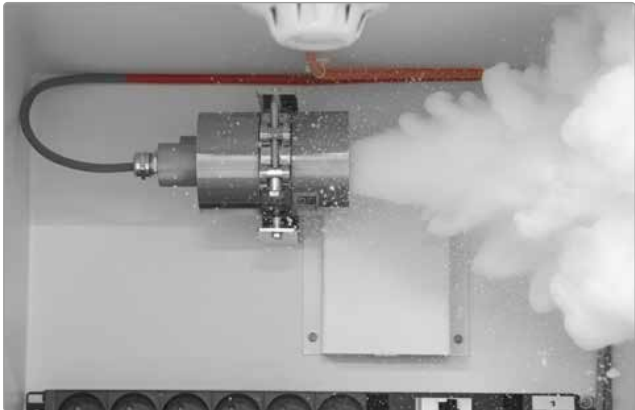
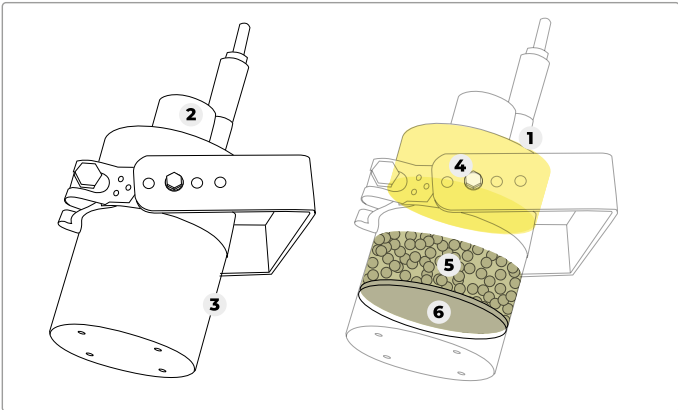
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- 6 Watertight closure + filter

Ventilation box: essential for *increasing the safety of your cabinet*



CDV-A



CDV-A + KRC option + KL100 option + CDS100 option

We strongly recommend adding a ventilation or filtration box to your safety cabinet. The box extracts stagnant vapours from your cabinet and renews the air, thereby reducing internal overheating. It is connected to the cabinet using a connection kit (ref. KRC); the fan included in this unit extracts toxic vapours from the cabinet and expels them outside the building via a wall outlet to be created.

Référence	Désignation	Dimensions (overall) H x W x D (mm)	Weight (kg)
CDV-A	Steel ventilation box	235 x 260 x 245	8
KRC	Connection kit for box	-	1
KL100	Flexible pipe, diameter 100 mm, per metre	-	0,2
CHJ	Steel connection sleeve, diameter 100 mm	-	0,1
CDS100	Clamp, diameter 100 mm	-	-