



## **BS1940 SERIES**

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## INSTRUCTION MANUAL

*Manufacturers of safes since 1799*

**PHOENIX SAFE COMPANY WHERE PEACE OF MIND IS GUARANTEED**

## 1. PRODUCT OVERVIEW

This lithium-ion battery storage safe (hereinafter referred to as the "safe") is designed for the storage of lithium-ion batteries. It is constructed to minimize fire damage by preventing the direct transfer of heat and flames to the outside of the safe in the event of thermal runaway or battery explosion during charging.

## 2. INSTALLATION & VENTILATION

### i) Installation Location

- Install the safe in a well-ventilated area with good airflow.
- Place it on a level and firm surface to avoid vibration or shaking.
- Remove any surrounding flammable materials and do not install the unit near flammable substances.
- Avoid areas with high humidity or extreme temperature changes.

### ii) Space Clearance

- Ensure there is enough space for the door to open fully.
- Do not place heavy objects on top of the safe.
- Ensure the top ventilation outlet is not blocked.

### ii) Dedicated Ventilation Connection

- Lithium-ion batteries pose a high risk of generating toxic gases. Therefore, a dedicated ventilation system is highly recommended used to effectively discharge smoke and pressure from inside the safe. (Airflow capacity: 30m<sup>3</sup>/h or more) The ventilation outlet must be directly connected to a sturdy duct leading outside the building.
- If the user does not connect the product to an extract air system the user should perform a risk assessment that no gases leak into active work areas.
- It is highly recommended to connect the safe to it's own independent ventilation extraction, direct to outside. If connecting into the existing building ventilation system, first check with the installers that this is safe to do so. During a thermal runaway large pressure waves and heat can be generated.

### 3. OPERATION AND PRECAUTIONS

#### i) How to Use the Safe Lock

Refer to the separate instruction manual included for usage of the electronic lock system.

#### ii) Battery Storage Capacity Compliance

- Each safe model has a defined maximum number of shelves and allowable battery capacity per shelf.
- Do not exceed these limits when storing or charging batteries.
- Refer to the table below for the maximum allowable capacity per shelf and per safe.

MODEL	BS1941	BS1942	BS1943	BS1944	BS1945	BS1946
Max Number of Shelves (pcs)	0	1	2	3	4	3
Capacity per Shelf (Wh)	2,500	2,500	2,500	2,500	2,500	2,500
Total Capacity per Safe (Wh)	2,500	5,000	7,500	10,000	12,500	19,000

#### iii) Safe Door Operation

- Ensure there is enough space for the door to open fully.
- Do not place heavy objects on top of the safe.
- Ensure the top ventilation outlet is not blocked.

#### iv) During Battery Charging

- Only use certified chargers and recommended batteries. The safe is only approved for lithium-ion batteries with a chemical composition of 9-0.5-0.5 less critical. Be sure to check and follow the manufacturer's instructions for battery use, storage, and charging.
- Avoid fast charging, as it may cause overheating, performance degradation, or reduced battery life. Use standard charging.
- Do not use extension cords or other power sources inside the safe aside from the installed PDU. Do not exceed the PDU's rated power.
- Do not stack batteries for charging or storage.
- If you detect an unusual smell, excessive heat, or battery deformation during charging, immediately cut the power, close the door, and contact a certified technician.

**Note:** If a battery fire or overheating occurs, all PDU power will be shut o .

**Caution:** Do not arbitrarily remove any internal/external cables.  
Cable removal must be performed by certified professionals.

## 4. FIRE AND EMERGENCY RESPONSE

### i) When Smoke or High Temperature Alarm Sounds

- Do not open the safe door.
- Immediately contact emergency services (e.g., fire brigade).

### ii) After Fire Suppression

- Unlocking the safe must be performed only by an authorized professional with proper personal protective equipment.
- Perform these actions only in a safe and secure location.
- Have the safe and its internal systems inspected by the manufacturer or a certified technician to ensure no damage.

## 5. INSPECTION & MAINTENANCE

### i) Regular Inspection (Every 6 Months)

- Check the condition and cleanliness of gas sealing, detectors (smoke, heat, etc.), and fire extinguishers.
- Ensure ventilation ducts and piping are not clogged and all connections are secure and intact.

### ii) Replacement & Repair of Parts

- Only to be carried out by a qualified technician.
- Always shut off the main power before performing part replacement or repairs.
- Failure to do so may result in electric shock, malfunction, or serious accidents.
- If any sensor or switch malfunctions, replace or repair it immediately. Periodically inspect external alarm systems (if connected) to ensure proper operation.

### iii) Exterior and Interior Condition Check

- Regularly check for any deformation or impact on the safe, and whether the door seal is damaged.
- Ensure that the inside remains dry and properly ventilated to prevent moisture accumulation.

### iv) Unused Cable Openings

- Seal any unused cable openings with heat-resistant silicone, and secure a metal plate over them from the outside using screws.

## 6. ADDITIONAL RECOMMENDATIONS

### i) Safety Training

- Ensure all personnel handling the safe are thoroughly informed on proper operation and emergency procedures.

### ii) Proper Battery Management

- Have aged or damaged batteries inspected for safety before storage.
- For long-term storage, maintain the battery at an appropriate charge level (recommended: 40-60%).

### iii) Risk Assessment

- To minimize the risk of gas leaks or explosion, it is recommended to conduct a risk assessment for additional safety measures.

## 7. ADDITIONAL INFORMATION

- Please check the warranty period, after-sales service (A/S) procedure, and contact details provided at the time of purchase.
- When using the internal PDU (Power Distribution Unit), ensure that the total and per-shelf power capacities are not exceeded.
- Verify and comply with local fire safety and electrical installation standards. additional safety measures.

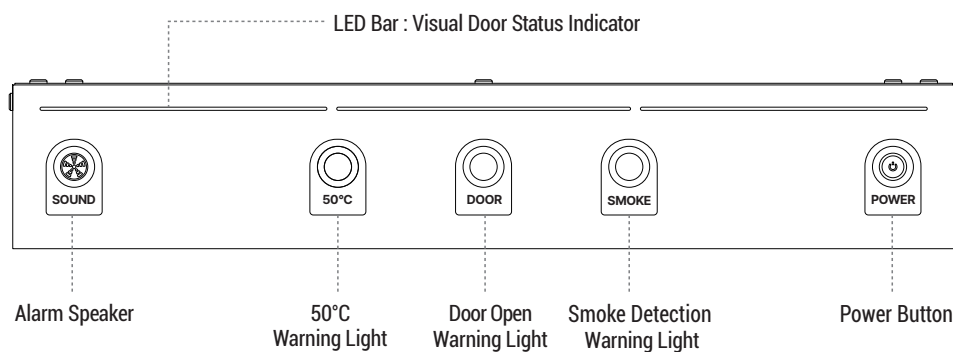
## 8. PRODUCT WARRANTY & DISCLAIMER

- The warranty period for this product is 2 years from the date of manufacture for the safe body, and 2 year for the control system.
- This product must be installed and used in strict accordance with the manufacturer's official usage guidelines.
- The manufacturer assumes no responsibility for any installation method not approved or any usage outside the designated purpose.
- The user is responsible for conducting regular inspection and maintenance.
- The manufacturer does not provide warranty or liability for accidents or malfunctions caused by poor maintenance.
- This product must be used in the environment recommended by the manufacturer (e.g., temperature, humidity, ventilation conditions). Use in high-temperature, high-humidity, enclosed, or poorly ventilated environments may result in performance degradation or hazards.
- The manufacturer is not liable for issues caused by usage in such environments.
- Modifying the product, replacing or adding parts without manufacturer approval is strictly prohibited. Any unauthorized modification voids the warranty, and the manufacturer does not guarantee proper operation or take responsibility for resulting accidents.
- The manufacturer does not guarantee safety through the use of this product. The manufacturer is not responsible for any fire, injury, or property damage that may occur during product use.
- Although this product is designed to comply with all legally required safety standards, accidents may still occur due to unexpected environmental factors or user negligence.
- We recommend you DO NOT connect this product to the building's existing ventilation system. Pressure from an explosion may damage the system, and the manufacturer is not responsible for such issues. Check with your installer. We recommend that the safe has it's own dedicated extraction system, direct to outside.
- Users are responsible for thoroughly understanding and following all safety guidelines before use. The manufacturer does not accept liability for any damage, malfunction, or accident resulting from improper use.

## 9. HOW TO USE THE STATUS DISPLAY CONTROL SYSTEM

This safe can be equipped with a status display and control system that detects smoke, high temperature, and door open/close status. It can also be linked to an internal fire suppression system and building alarm systems.

### i) Labeling of Each Component

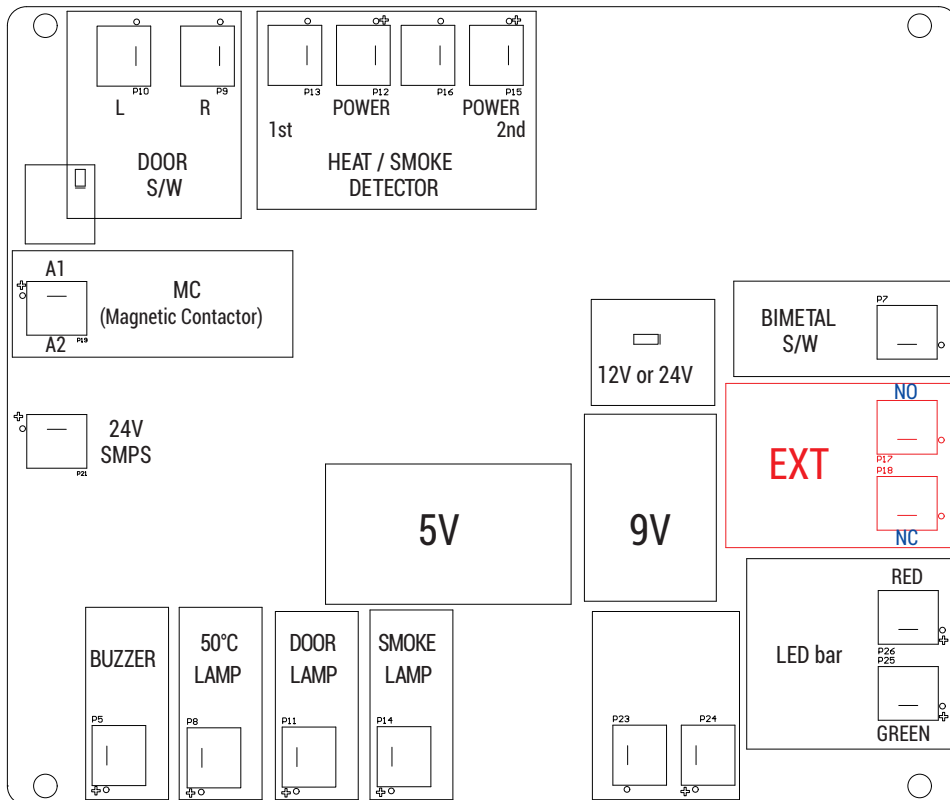


### ii) Status Indicator Reference Guide

ALERT	STATUS
<b>50°C, SMOKE</b> warning light ON (Long Beep)	Fire hazard (PDU shut off)
<b>50°C</b> warning light blinking (Short Beep)	Internal temperature over 50°C
<b>DOOR</b> warning light blinking (Short Beep)	Safe door has been open for over 1min
<b>LED bar</b> green light ON	Door is closed
<b>LED bar</b> red light ON	Door is open
<b>(When power button is pressed) All lamps</b> blink twice (Short Beep)	Normal operation
<b>(When power button is pressed) 50°C, SMOKE</b> lights alternate blinking (Short Beep)	Heat or smoke sensor malfunction

## 10. FIRE SUPPRESSION AND ALARM SYSTEM INTEGRATION

- An internal fire suppression system that automatically activates in the event of a fire can be installed.
- Please refer to the separate instruction manual provided for details on the fire extinguisher.
- When connecting to the building's fire alarm system, open the control panel and connect the internal terminal labeled **EXT NO** or **NC** to the fire alarm wiring.

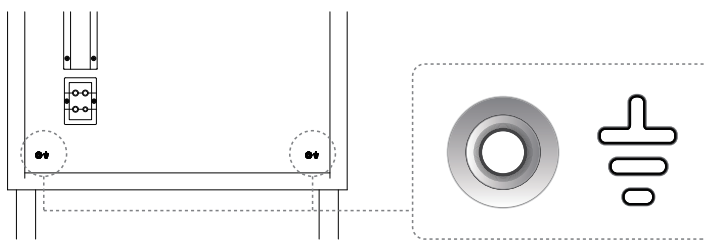


## 11. GROUNDING

If grounding is required, consult with a certified electrical safety expert.

Use the grounding terminal located on the back of the safe for proper connection.

**(Bolt Specification: M5-10)**



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