



# USER'S MANUAL

## UPS FOR ELEVATOR SOJI SJ-S 60VDC

**Note:**

To properly use the product, read this manual thoroughly and retain for easy reference, inspection and maintenance.  
Ensure the end user receives this manual

SOJI TECHNOLOGY COMPANY LIMITED

[www.sojitech.com](http://www.sojitech.com)

## OVERVIEW

### BATTERY POWERED EMERGENCY, UPS FOR ELEVATOR SOJI SJ-S 60VDC

#### Main features:

- ✓ Digital signal control base technology using MOSTFET
- ✓ Automatic off when low-battery
- ✓ Great power saving
- ✓ Led indicate
- ✓ Light weight, easy to setup and connect with control system
- ✓ Pure sine wave output
- ✓ Smart charging three stages maximum battery service life
- ✓ Output 310VDC line (support YASKAWA inverter series)
- ✓ Have compatibility with many inverters runs ARD by DC voltage
- ✓ UPS extended to 60 – 72 – 96 VDC



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## I. Operation instructions

This device mainly supplied by 60V – 7AH or 48V – 7AH (for SJ-S 48VDC), this device can be used for emergency evacuation operation for all elevator's control panels with inverter of all power ratings.

### *What it work for?*

Devices are designed to return the elevator cabin to the one upper or lower floor and open the door in the event of a main power failure, use maintenance-free, dry batteries and operate automatically a few seconds after a power failure. SOJI SJ-S is a fully automatic system. When the main power is available, the batteries are charged optimally and the system is ready to perform a rescue operation in case of a main power failure. In case of a main power failure, SOJI SJ-S automatically takes over the control from the main system; the emergency lights of the cabin are immediately turned on. The elevator cabin starts moving towards a lower or upper floor within 10 seconds (in installations with a backup generator this duration is about 20 seconds). The cabin stops when it reaches a floor level and the door opens automatically. The lights of the cabin remain on for about 120 more seconds. The rescue operation is completed, and SOJI SJ-S goes to sleep-mode until the power comes back. During this time, it does not spend any energy from the battery. When the main power becomes available, the elevator resumes normal running mode.

Efficiency inverter : 80%

Inverter frequency : 50/60 Hz (optional)

Charging time : 6 hours for 90% of full battery capacity

Dimensions : 150 x 170 x 165mm

Weight : 7.0 Kg

II. Overview circuit

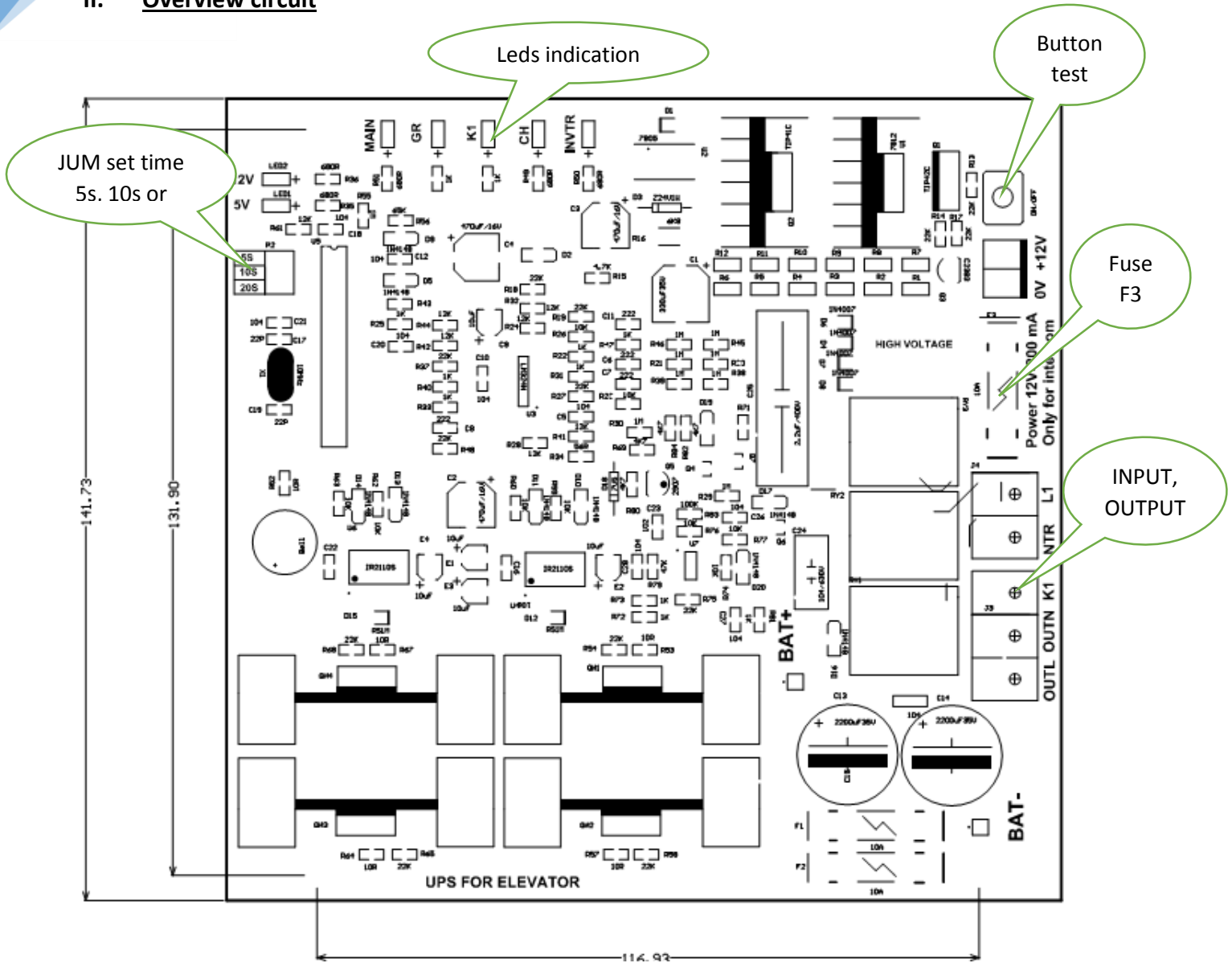


Figure 2.1

Mainboard control of SOJI SJ-S with digital signal control base technology using MOSTFET

### III. Diagram connect

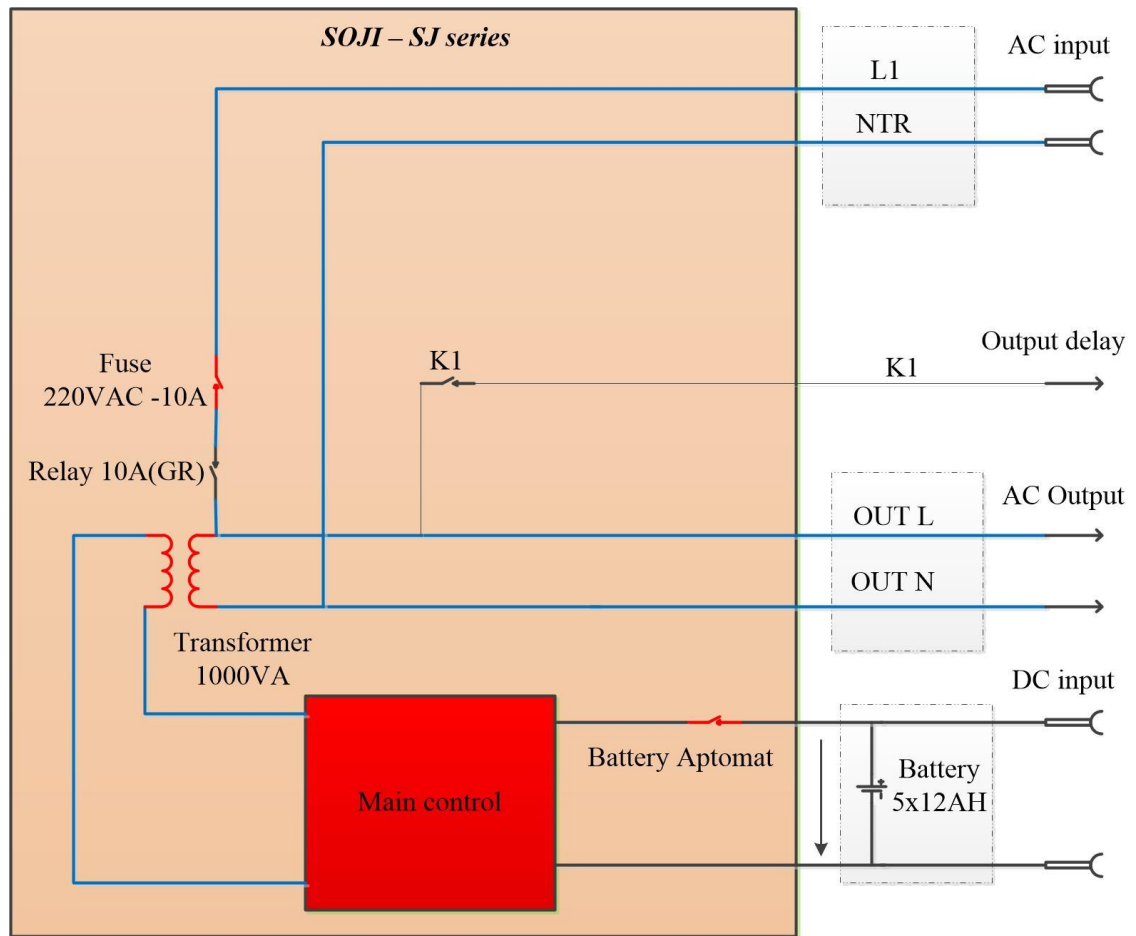


Figure 3.1

Diagram connect inside SOJI SJ-S series model

In this connection the SOJI SJ-S series is supplied by 60V battery as in our standard case.

### IV. Operation

1. When L1 and NTR becomes ON, the device start operation, GR relay become ON, L1 input voltage connect to output voltage OUT L <sup>(1)</sup>
2. When L1 phase is fail, GR relay becomes OFF, and if battery connected OUT L

**Note:**

- (1) This device can be run automatic without connect to battery, it ensure that elevator work normally when battery fails or disconnect.

Continuous supply to load without interrupt (times switching less than 10ms). After 5s, 10s or 20s (time can be select by JUM) seconds relay K1 becomes ON, OUT L connect to the delay output K1. If battery is not connected when L1 phase fails, OUT L1 fails also. When L1 come back the device starts from beginning again. During the inverter process if voltage of batteries less than 45V (36V for SOJI SJ-S 48VDC) device continuous buzz and shutdown after 10s to save battery life.

3. After 200s when evacuation landing finish, the device automatic OFF. Now, no current is drawn from batteries. Batteries are saved from discharging.
4. When AC phase L1 come back, the device automatic starts from beginning.
5. Led indication.

5.1. When AC main phase L1 is ON:

Led name	Status	Note
5V	ON	-
12V	ON	-
MAIN	ON	-
GR	OFF	-
CH	ON/OFF	When battery is charging CH led is ON, when completely charged it becomes OFF.
K1	OFF	-
INVRT	OFF	-

5.2. When AC main phase L1 is OFF:

Led name	Status	Note
5V	ON	-
12V	ON	-
MAIN	OFF	-
GR	ON	-
CH	OFF	-
K1	ON	After 5,10 or 20 it becomes ON
INVRT	ON	-

**V. Diagnoses and Corrections**

1. When AC phase L1 is ON, device do not automatic ON, please check fuse F3 220VAC – 10A.
2. When AC phase L1 fails, device do not automatic supplier output to OUT L, please check Circuit breaker (CB) battery.

## VI. **Warnings**

1. Turn off Circuit breaker (CB) battery before connect device to battery.
2. When device is running do not touch any part, it can be dangerous with high voltage.
3. For a long service life of the batteries the ambient temperature should be limited to maximum 50°C degree. Since the maximum temperature in the machine room is limited to 45°C degree, this condition may be satisfied.
4. Measure the terminal voltages of each battery during charging, they should be around 12-13 volt, do not use the batteries lower than 11.0 Volt.
5. When the total terminal voltage is around 68-69 Volts after the charging, and if it drops below 45V or lower at the beginning of the first evacuation operation, keep them for charging at least 20 hours. If they drops again below 45 Volt at the beginning of the operation, replace them by new batteries.
6. Keep the device running in a clean environment
7. ***Be careful! Do not connect the batteries in reverse polarity.***

## UPS FOR ELEVATOR SOJI SJ-S 60VDC

Easy to setup, High performance

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The purpose of this manual is to provide accurate information in the handling, setting up and operating of the SOJI SJ-S series of power emergency. Please feel free to send your comments regarding any errors or omissions you may have found, or any suggestions you may have for generally improving the manual. Data specification can change without notice.



### **SOJI TECHNOLOGY COMPANY LIMITED**

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