MTCC-EPB-A/MTCC-EPB-B
MRL Electric Brake Release Device
Instruction Manual

Thank you for using the MTCC-EPB series electric brake release device developed by Shenzhen Hpmont Technology Co., Ltd.

With the continuous development of modern elevator technology, energy-saving, environmental-friendly and space-saving permanent magnet synchronous elevators without machine room are more and more widely used.

This control panel is equipped with an elevator brake release device, when the electric supply fails, it will output brake voltage to open the brake of the permanent magnet synchronous motor, which enables the elevator to run in the direction of light load to the leveling position and to open the elevator door manually for rescue.

MTCC-EPB-A

MTCC-EPB-B

Version and Revision Records

Time: 2022/1

Version: V1.2

Revised Chapter	Revised Contents
	• Change the appearance of MTCC-EPB products

Characteristics

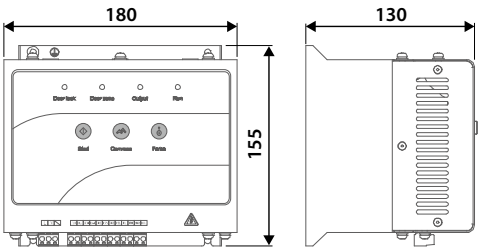
- When MTCC-EPB series connects to door zone signal and elevator is in leveling area, it will stop outputting brake voltage and press the **Force** and **Common** buttons at the same time to continue output.
- When MTCC-EPB series connects to door lock signal and door lock signal is disconnected, brake voltage output stops and the brake cannot be opened to ensure the passengers' safety.
- After 1s of brake voltage output, MTCC-EPB series will switch to output holding voltage.
- Door zone signal supports high or low voltage, selection of NO and NC.
- Anti-adhesion function: Brake voltage output, each output lasts up to 1 minute.
- Energy-saving function: If there is no button operation within 10s, it will turn off automatically to achieve energy saving.
- Charge/discharge protection: Protect against overvoltage and overcurrent during voltage output.
- Real-time monitoring: Real-time monitoring of the electric supply, which charges the battery when the electric supply is on, so that it can be used at any time when the power is out.

 **Warning**	• Be sure to charge it before using, with the first charge taking no less than 8 hours. • If not used for a long time, please charge and discharge at least once every 6 months. • Before starting, disconnect all power of the control panel. • Do not touch the PCB while the electric supply is on to prevent electric shock accidents.

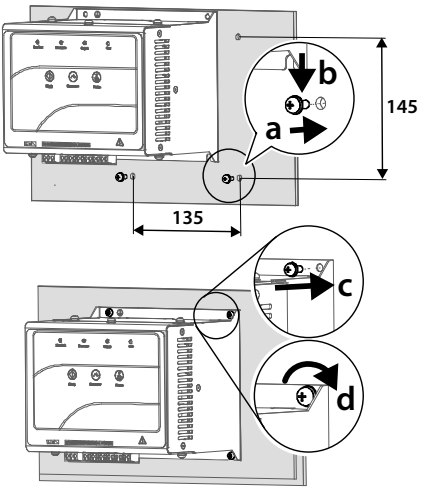
1. Mechanical Installation

MTCC-EPB series is installed in elevator control panel.

1. Planning installation space.
   The overall dimension is shown in the right figure, unit: mm.



2. Mark installation location on the wall and then drill (4-Φ5).
   The installation dimension is shown in the right figure, unit: mm.
   a. Fix the lower 2 M4 combination screws on the wall.
   b. Hang the MTCC-EPB on the screw.
   c. Fix the upper 2 M4 combination screws on the wall.
   d. Tighten the four screws.



2. Wiring

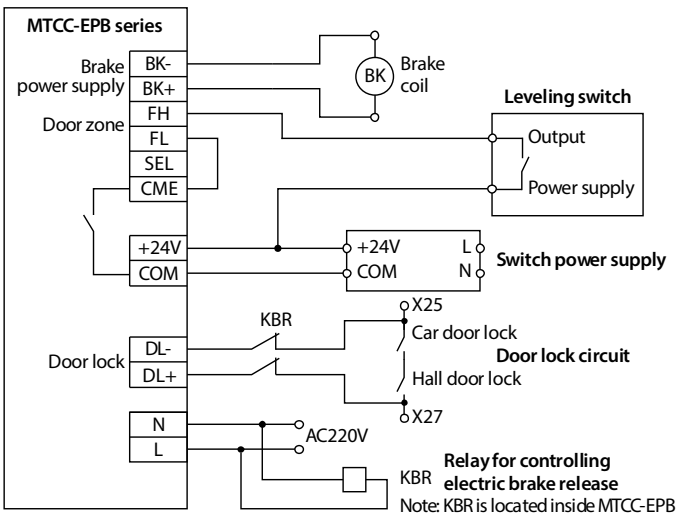
Terminal Description

Terminal		Description
L, N	AC power supply	Electric supply AC220V input
COM	Power ground	System 24V switch power supply to the ground
+24V, CME	Output power supply of brake release	DC24V, for leveling switch
DL+, DL-	Door lock signal	Dry contactor input
FL	Door zone signal	Low voltage input effective of NO type
FH	Door zone signal	High voltage input effective of NO type
SEL	Selection of door zone signal NO/NC	NC effective default, NO effective needs short circuit of SEL and CME
BK+, BK-	Brake power supply output	Brake voltage: DC110V (MTCC-EPB-A) DC220V (MTCC-EPB-B) Brake holding voltage: DC80V (MTCC-EPB-A) DC110V (MTCC-EPB-B)

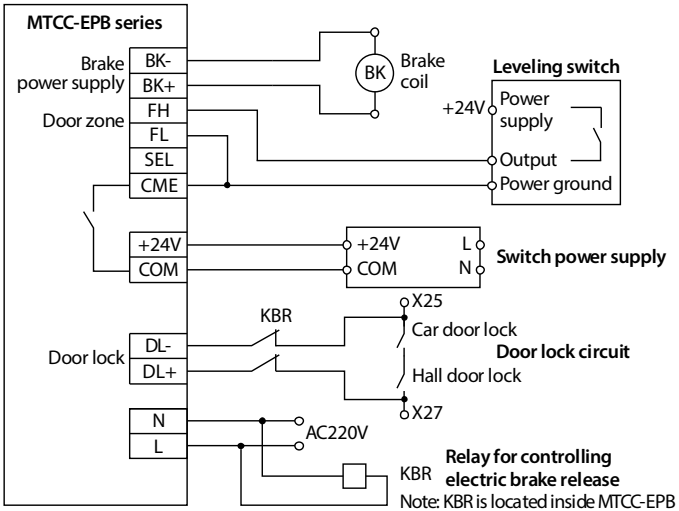
Terminal Wiring

Wiring as shown below.

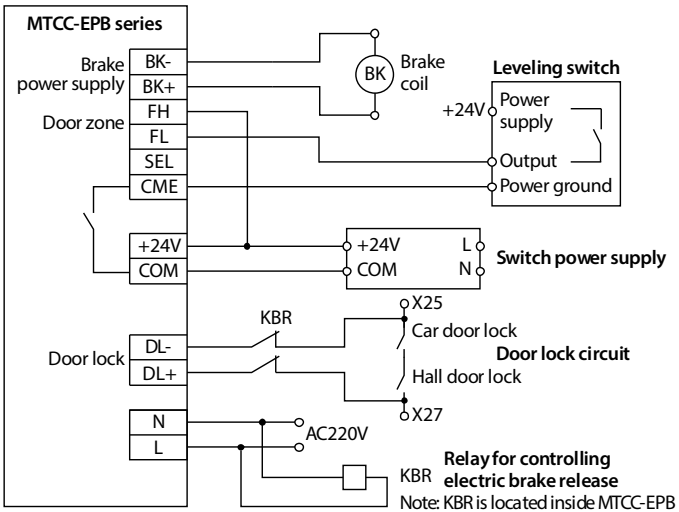
- FL: Door zone signal low voltage effective.
- FH: Door zone signal high voltage effective.



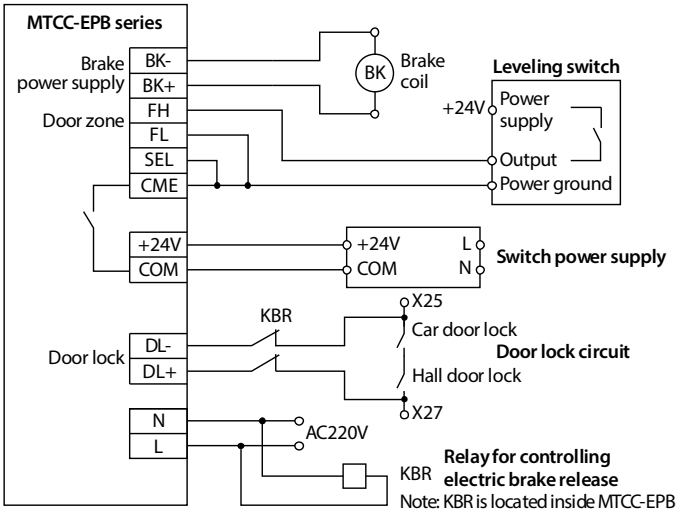
Magnetic switch type leveling switch wiring (High voltage)



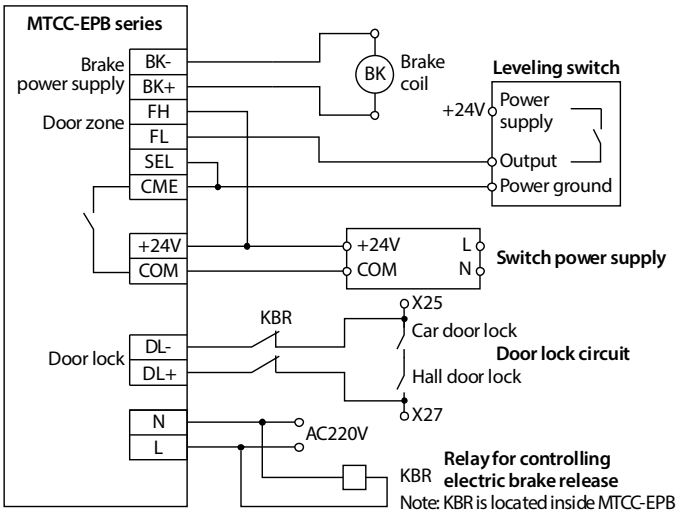
Photoelectric leveling switch wiring (High voltage, NC)



Photoelectric leveling switch wiring (Low voltage, NC)



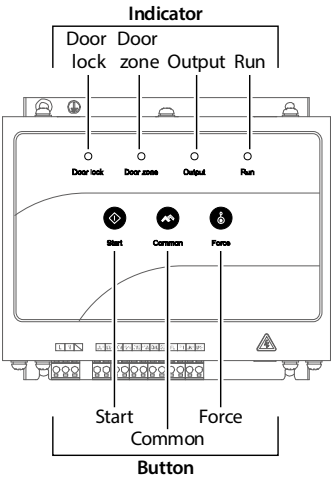
Photoelectric leveling switch wiring (High voltage, NO)



Photoelectric leveling switch wiring (Low voltage, NO)

3. Instructions

1. When the electric supply goes off, disconnect the power air-switch in control panel, please confirm that the door locks are closed and the elevator is not in the leveling area.
2. Start MTCC-EPB.
   - Press **Common** button, MTCC-EPB outputs 24V voltage, 4 indicators (**Door zone**, **Door lock**, **Output**, **Run**) flash at the same time.
   - After 5s, press **Common** button, **Run** and **Door lock** indicators will be on, other indicators will be off, MTCC-EPB will be standby.
   - If there is no follow-up operation, it will turn off automatically after 10s and the indicators will go off.
3. Make the elevator run to the door zone.
   - Press **Start** and **Common** buttons at the same time, MTCC-EPB outputs brake voltage and **Output** indicator is on. After 1s, it will switch to output brake holding voltage.
   - When elevator reaches the door zone, output will stop (even holding the button), **Output** indicator goes off, **Door zone** indicator goes on.
   - If elevator does not reach the door zone within 60s, the output will stop and the **Output** indicator goes off, which needs to press and hold the **Start** and **Common** buttons again at the same time until elevator reaches the door zone.
4. Maintenance personnel manually open elevator doors to free trapped passengers.
5. After reaching the leveling area, MTCC-EPB needs to keep outputting.
   - Press **Force** and **Common** buttons, MTCC-EPB outputs brake voltage and **Output** indicator is on. After 1s, it will switch to output brake holding voltage.
   - When the elevator reaches the target position, the button can be released, MTCC-EPB stops rescue, the **Output** indicator goes off.
   - If elevator does not reach the target position within 60s, the output stops and the **Output** indicator goes off, which needs to press and hold the **Force** and **Common** buttons again at the same time until elevator reaches the target position.



Indicator

- **Door lock** (green)
  - On when the door lock is valid
- **Door zone** (green)
  - On when the door zone is valid
- **Output** (green)
  - On when MTCC-EPB outputs brake voltage
  - Flash on fault
- **Run** (green)
  - ON when MTCC-EPB is waking up
  - Flash on fault

Button

- **Start**
- **Common**
- **Force**

4. Troubleshooting

Output Indicator (Green)	Run Indicator (Green)	Reason	Method	Reset
Slow flashing (lighting 1s, lightless 1s)	Off	Battery low voltage	• Charge the battery • Replace battery	Auto-reset
Off	Fast flashing (lighting 25ms, lightless 25ms)	DC output overcurrent	• Check the brake coil to make sure there is no short circuit • Confirm the electric brake release specification is correct • Call after-sales service	Restart
Off	Slow flashing (lighting 1s, lightless 1s)	Battery discharge overcurrent	• Check braking operation current to make sure specifications are not exceeded • Call after-sales service	Press the **Start**, **Common** and **Force** buttons at the same time

5. Technical Data

Environment

Installation Site	Well ventilated inside control panel
Running Temperature	0 - 40℃
Relative Humidity	5 - 95%, no water drops
Storage Place	Store in a dry, clean indoor place
Storage Temperature	-20 - +55℃, Max. 60℃ (no more than 24h)
Storage Time	Total time of shipment and storage does not exceed 6 months

Electrical

Type		**Unit**	**Typical Value**	**Min.**	**Max.**
AC input	Voltage range	VAC	110/220	85	264
	Voltage frequency	Hz	50/60		
DC24V output	Power	W	/	/	6
	Current	A	/	/	0.25
	Voltage range	VDC	24	21.6	26.4
DC110V output	Power	W	330	/	385
	Current	A	3	/	3.5
	Cumulative duration	Min	/	/	3
	Voltage range	VDC	110	99	121
	Brake holding voltage setting	VDC	80		
	Brake holding voltage delay	s	3	/	/
DC220V output	Power	W	220	/	330
	Current	A	1	0	1.5
	Cumulative duration	Min	1	/	3
	Voltage range	VDC	220	180	264
	Brake holding voltage setting	VDC	110		
	Brake holding voltage delay	s	3	/	/
Battery specifications		12V × 7Ah × 1			