Manuals+ — User Manuals Simplified.

MOTECK CM43 Control Box User Guide

Contents

MOTECK CM43 Control Box

Specifications

- **Control Box Model:** CM43
- **Battery Options:** BT43 Battery Box (with built-in charger or standard without built-in charger)
- **Battery Capacity Options:** 2.9Ah, 5.0Ah
- **Mounting Bracket** Included

Product Usage Instructions

Installation

1. **Preparation for Mounting:** Prepare two M6 screw holes on the hoist with proper distance for the mounting bracket.
2. **Installation of Mounting Bracket:**
   1. Choose ISO mechanical thread M6 screws with a length of at least 20mm.
   2. Tighten the screws securely to support the product weight.
3. **Installation of Cable Winding Hook:**
   1. For CM43 with a built-in charger, use M3x10 tapping screws to lock the hook on the control box.
   2. Ensure the screws are tightened properly.
4. **Fixing CM43 on the Hoist:**
   1. Hang the CM43 on the mounting bracket using the hook-shaped groove on the back.
   2. Secure CM43 to the hoist with the provided M3x12 screw.
   3. Press the Emergency Stop Button and place the BT43 battery box as shown.
5. **Connect Actuator and Handset:**
   1. Connect actuators and hand-control plugs to the correct sockets on CM43.
   2. Manage and fix cables properly.
   3. Release the Emergency Stop Button to start operation.

SET Mode

- **Entering SET Mode:** Press and hold the SET button for 2 seconds.
- **Exiting SET Mode:** Press and hold the SET button for 2 seconds or wait for automatic exit after 10 seconds of inactivity.
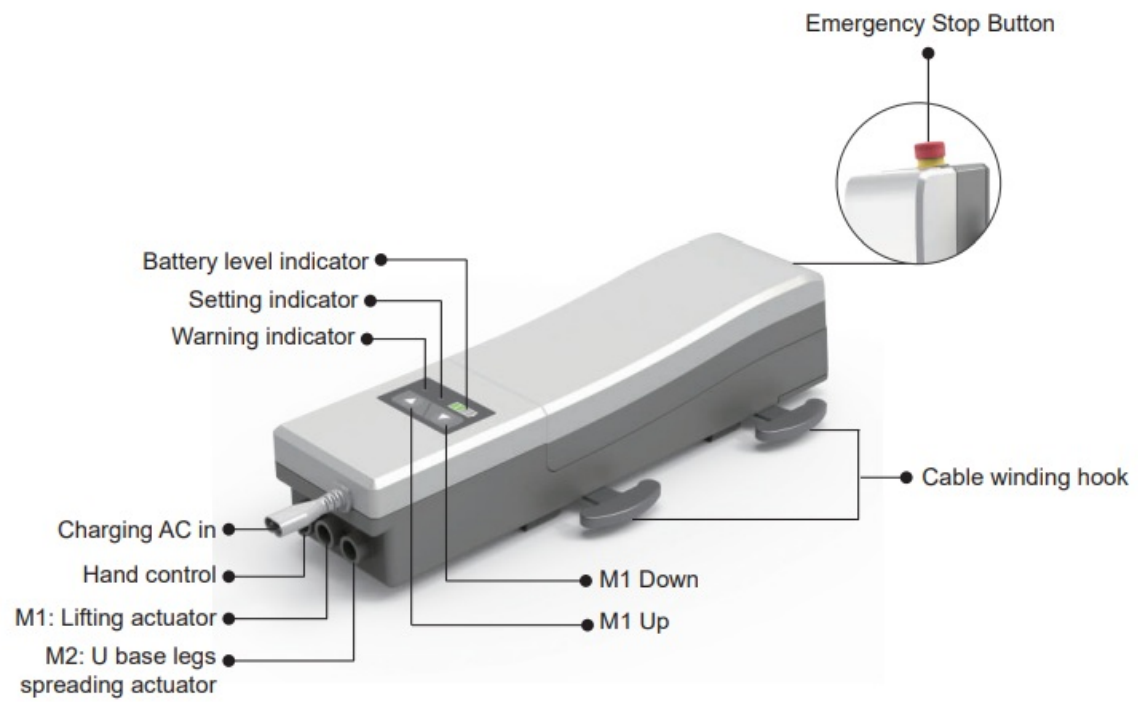
FAQ

Q: What should I do if the actuator's current consumption exceeds the limit?

A: In the SET mode, you can set the protection limit for the actuator. Refer to the user manual for detailed instructions on how to adjust this setting.
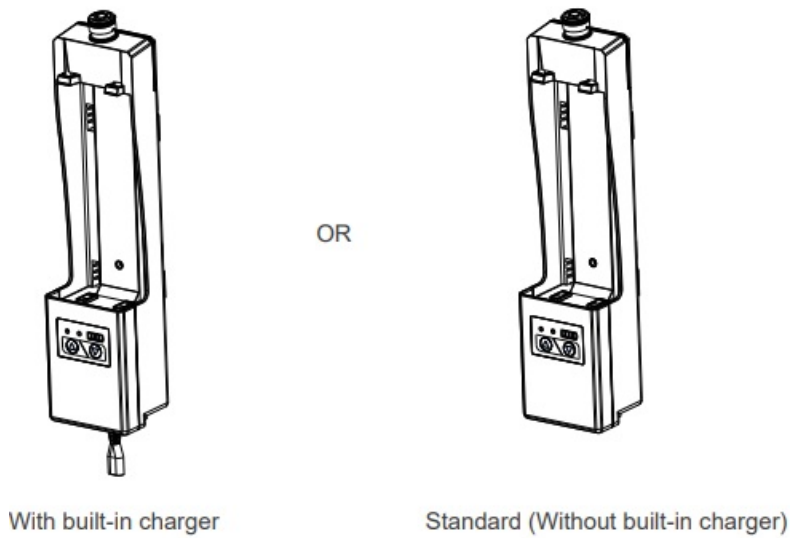
Notice

- Please do not expose the product to places where there is concern about overheating, fires, or direct sunlight.
- Please keep the product away from places suspected of static electricity or water leakage to avoid electric shock or short circuits.
- The weight of the control box and battery is not light. To prevent falling damage or personal injury, please ensure that there is enough working space when installing the product, and install it firmly in an appropriate way.
- If you find that the product is overheating, smoking, or smelling, please stop operating immediately and press the emergency stop button on the top of the control box. If abnormalities occur during charging, immediately unplug the power cord to stop charging. Do not ignore this situation, it may cause the danger of fire or electric shock.
- Do not damage or modify the power cord, or forcefully bend, pull, twist, or squeeze it.
- Do not touch the plug of the charging cable with wet hands, otherwise it may cause an electric shock.
- Please press the emergency stop button before performing maintenance. Do not perform cleaning and maintenance during charging to avoid electric shock or injury.
- Use a soft and clean damp cloth to wipe the surface dirt. Do not use strong solvents or rinse directly with large amounts of water.
- The functions and parameters described in this user guide are based on the design of the CM43 standard version firmware. If it is a customized firmware, some content may be different.
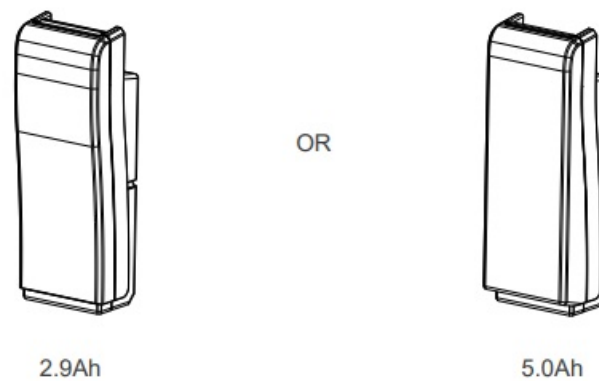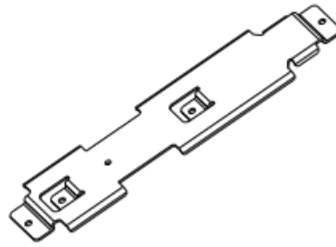
I/O Introduction

Emergency Stop Button

Battery level indicator

Setting indicator

Warning indicator

Charging AC in

Hand control

M1: Lifting actuator

M2: U base legs spreading actuator

M1 Down

M1 Up

Cable winding hook

Part name

1. CM43 Control Box

OR

With built-in charger

Standard (Without built-in charger)

2. BT43 Battery Box

OR

2.9Ah

5.0Ah

3. Mounting Bracket

4. Charging power cord

5. Cable winding hooks

6. Screws (ISO M3x12 mechanical screw*1, M3x10 self-tapping screws*2)

- The included accessories will vary depending on the product options. Only CM43 with an internal
- **Remarks** charger comes with a charging power cord, winding hooks, and M3x10 screws.

Installation

Preparation for Mounting

- Before installation, you must prepare two M6 screw holes with proper distance on the hoist to install the mounting bracket.
- Please make sure you have enough working space and proceed carefully. Please refer to the figure below for the hole distance of the mounting bracket.
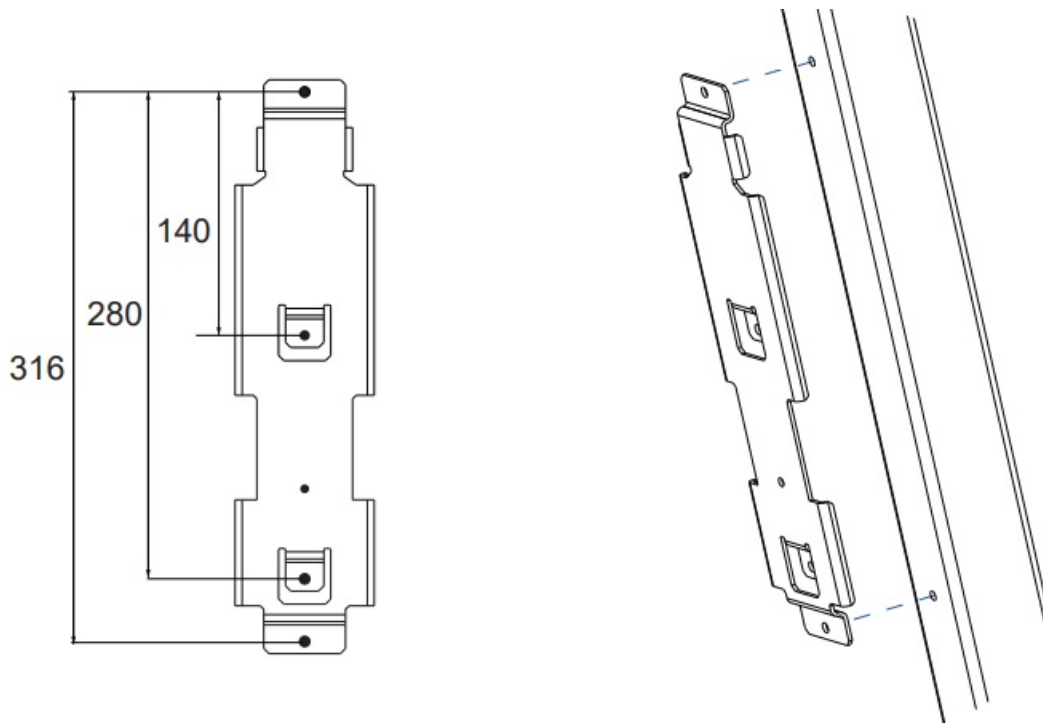
Installation of Mounting Bracket

- Choose ISO mechanical thread M6 screws with a length of at least 20mm, which is sufficient to support the hanging weight of the product.
- Please ensure the screws are tightened.
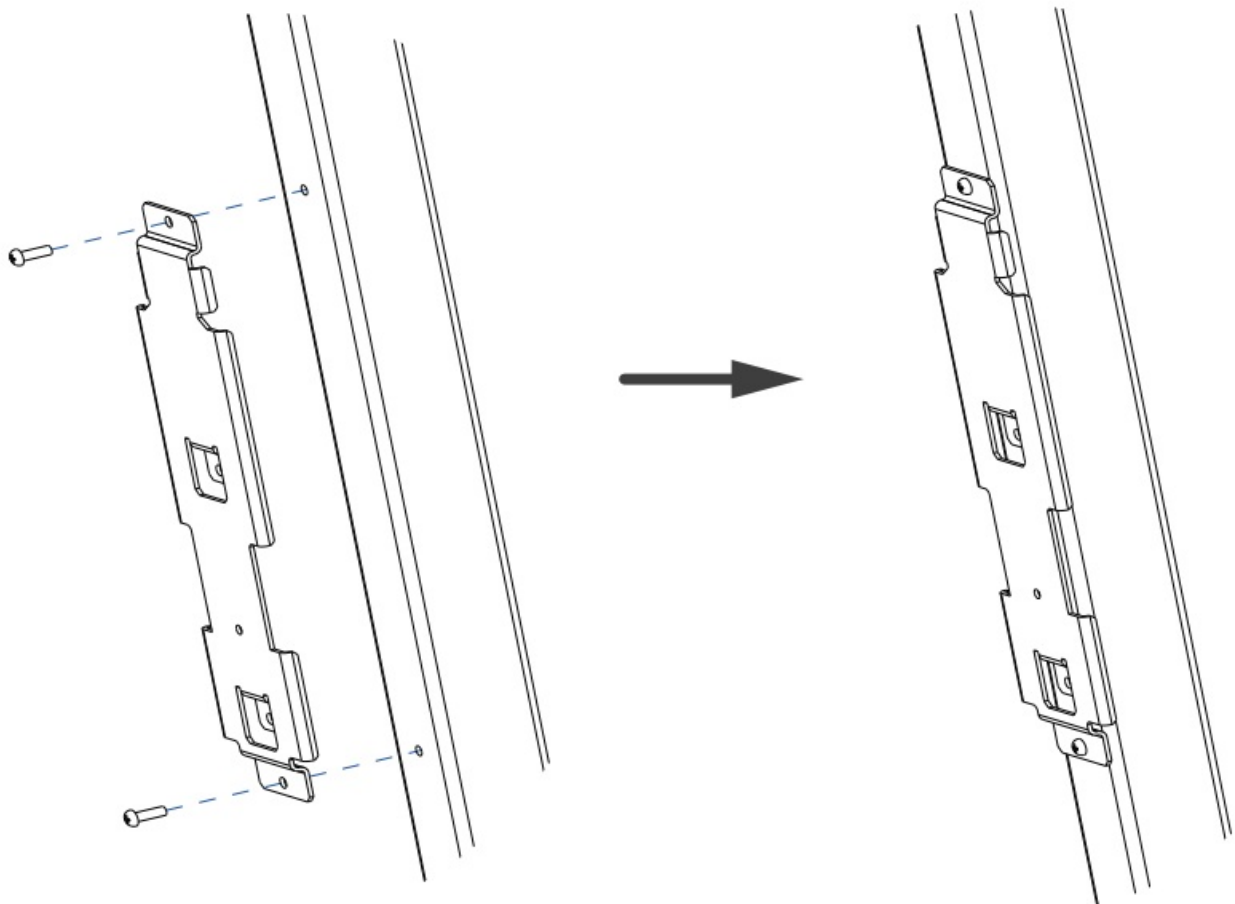
- **Notice** The figure above takes the longest fixed hole distance as an example. Please take the top mounting hole as the origin according to actual application requirements, and choose one of the remaining three holes as the appropriate second fixing hole.

Installation of Cable winding hook

1. If it is a CM43 with a built-in charger, use the supplied M3x10 (2) tapping screws to lock the hook on the control box; For the model without an internal charger, please skip this step and continue.
2. Please ensure the screws are tightened.
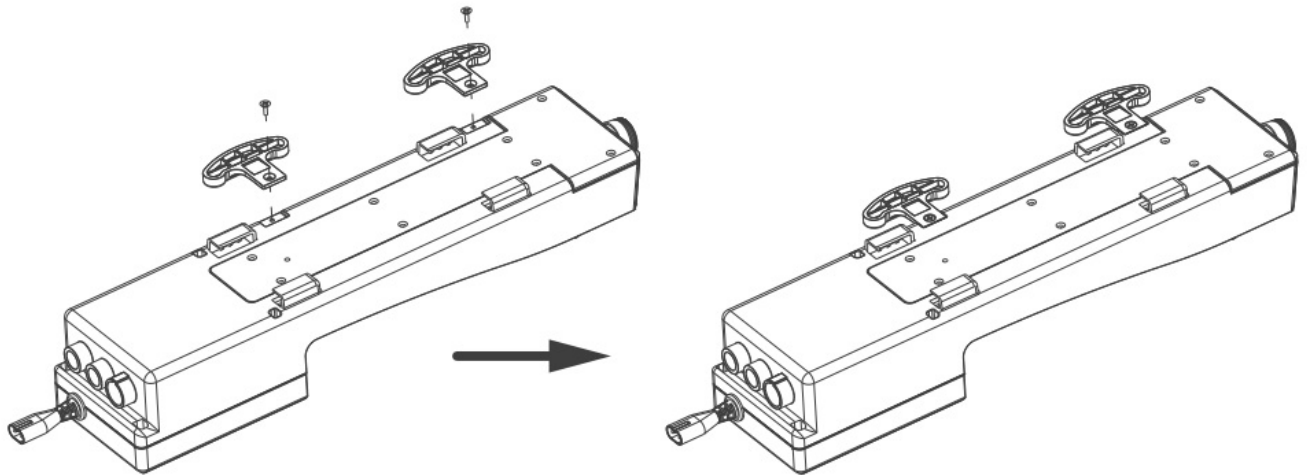
Fix CM43 on the hoist

1. Use the hook-shaped groove on the back of CM43 to hang on the mounting bracket
2. Lock the CM43 to the hoist with the attached M3x12 (1 pcs) screw
3. Press the Emergency Stop Button on the top of the CM43, and then place the BT43 battery box as shown in the figure below.
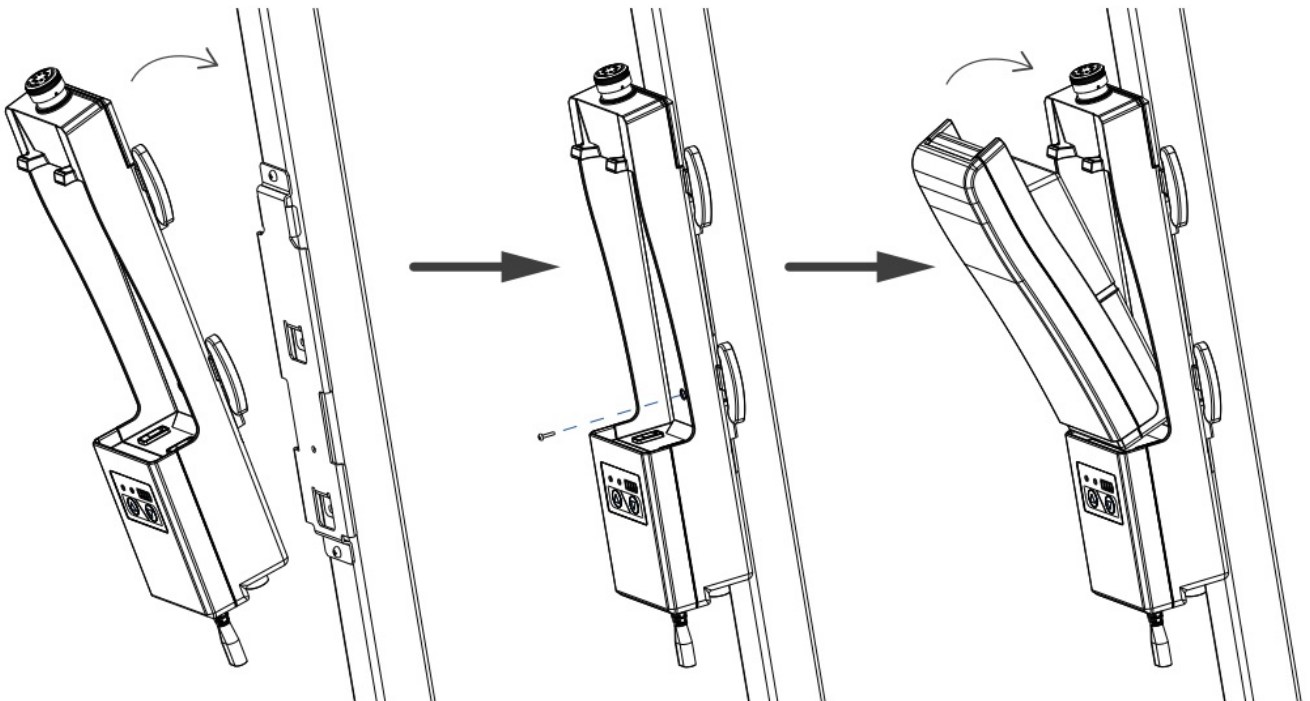
Connect the actuator and handset

1. After the actuator is installed, connect the plugs of the actuators and hand-control to the correct sockets of the CM43.
2. Manage and fix the cables to complete the installation.

3. Release the Emergency Stop Button to start the first operation (refer to Remarks)

Remarks The battery should be fully charged before using it for the first time. Refer to the "Battery Charging" section for charging instructions.
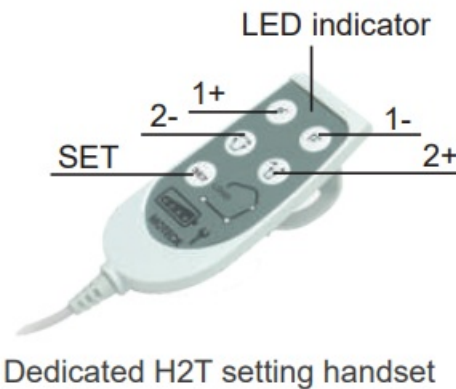
SET mode

(Dedicated setting handset is needed)

Enter SET mode

- To enter the SET mode, press and hold the SET button for 2 seconds.

Exit SET mode

- Press and hold the SET button for 2 seconds, or if no button is pressed for more than 10 seconds, the set data will be saved automatically, and then exit the setting mode

Dedicated H2T setting handset

- **Notice** If you press the emergency stop button or unplug the handset in SET mode, all newly set data will be deleted without saving.

Over-current for lifting actuator

If the current consumption of the actuator exceeds the limit, CM43 will stop immediately. Therefore, in the SET mode, there are two methods to set the protection limit of the M1 actuator.

Method 1: Self detect and learning

1. The current consumption value of the actuator has a high correlation with the load weight. Therefore, before starting this detection learning function, please put the maximum weight that is required for normal use on the hoist.
2. Enter SET mode first, then press "1+" for 1 second to start detection learning.
3. The lifting actuator (M1) will extend automatically for 2.5 seconds. The indicator light on H2T will turn on for 2.5 seconds.
4. During self-learning, the LED indicator on the CM43 will turn on in orange for 2.5 seconds.

Method 2: Manual setting

1. If you know the normal current consumption value of the actuator used with it, you can directly set it in this way.
2. Enter the setting mode, then press "2+" on the hand control to increase the overload current value.
3. Press "2-" on the hand control to reduce the overload current value.
4. The adjustable range is 6~11A. The current value will be displayed on the battery level bar on H2T and CM43.

Value	6A	7A	8.5A	9.5A	11A
Level bar on H2T					
Level bar on CM43					

Over-duty protection for lifting actuator (On/OFF)

1. The actuator and the control box need to rest properly to dissipate heat to avoid damage caused by continuous and excessive operation. The control box has a protection function.
   - When the continuous operation is too long or the operation frequency is too high, it will perform protection and temporarily turn off the operation.
2. The factory setting is active, and the LED indicator **LOAD** on H2T will light up. Under SET mode, you can press the 2+ and 2- buttons of the H2T hand control at the same time to turn off/on this protection function.

Reset

1. Press "1+" & "1-" at the same time and hold for 2.5 seconds in SET mode, the system will return to all default settings, and there will be a long beep.
2. Default overload current: 8.5A for M1 actuator, 3A for M2 actuator.
3. Default value settings: Key tone off, over-duty protection, is active, and the current limit is 8.5A.

Operation

Emergency Stop


Emergency Stop Button

1. **Stop:** Firmly press the red button until you hear a "click" sound, then the button locks and cuts off power.
   - It stops the actuator immediately.
2. **Release:** Turn the red button in the clockwise direction to release the button, and the power will be restored.

General Control

1. **Hold** the 1+ button, M1 actuator extends. Release the button to stop the movement.
2. **Hold** 1- button, M1 actuator retracts. Release the button to stop the movement.
3. **Hold** the 2+ button, M2 actuator extends. Release the button to stop the movement.

4. **Hold** the 2- button, M2 actuator retracts. Release the button to stop the movement.

5. When an actuator is operated under the normal situation, the LED indicator on CM43 (and battery level indication on HS12L) is continuously lit green.

6. The control box is automatically powered off if it is not operated for 1 minute.

HS12L
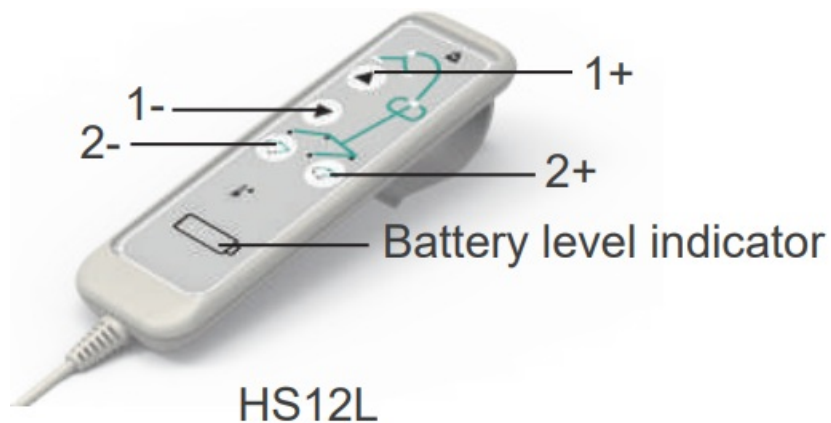
Spare control keys

1. Keep pressing the M1 Up button and the lift actuator extends. Release the button to stop the movement.

2. Keep pressing the M1 Down button, and the lift actuator retracts. Release the button to stop the movement.
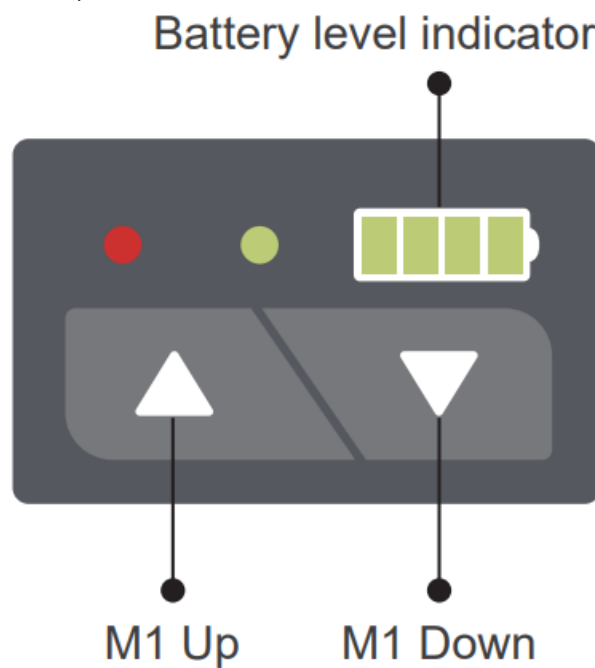
Battery level indication

- When the button on the handset is pressed to control the movement of the lift actuator, the LED will blink.

The battery level is indicated as below:

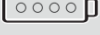| Indication on HS12L	Indication on CM43	Status
●●●●	▮▮▮▮	Full battery level
●●●○	▮▮▮▯	About 75% battery level
●●○○	▮▮▯▯	About 50% battery level
●○○○	▮▯▯▯	Can barely use, but charge it when there is a chance.
○○○○	▯▯▯▯	Need to charge immediately

Battery Charging

1. **Charge with a built-in charger**
   - After connecting the charging power cord, the charging function will be automatically activated, and the battery indicator of CM43 will blink.
   - If the CM43 is connected to HS12L or H2T at this time, the battery indicator of tHis hand control will also blink.
   - CM43 will automatically stop charging when fully charged. Before unplugging the charging power cord, the battery indicator lights of CM43 and HS12L will be continuously lit green.
   - When fully charged, after unplugging the charging power cord or unplugging the AC plug, the CM43 control program will automatically optimize the settings, and the indicator will flash for about 15 seconds. During this period, the control box cannot be operated. Normal operation can be performed after the indicator stops flashing.

AC in

HS12L

2. **Charging with CH43 charging dock**
   - Remove the BT43 Battery Box from the control box and place it on the CH43 Charging Dock. After connecting the charging power cord, it will automatically start charging.
   - The indicator on the CH43 lights up in orange when charging, and the indicator lights up in green when it is fully charged.

Charging indicator — AC in

Notice

- Please fully charge the battery before using it for the first time, so that the battery can perform normally.
- The batteries must be charged at least every 3 months. Otherwise, batteries may be damaged due to self-discharge.

Switch ON/OFF for keystone

Function	Operation	Indication	
Key Tone	Press the 2+, and 2- buttons on the handset for 3 seconds at the same time.	ON	The LED indicator blinks in green twice and beeps once.
		OFF	The LED indicator blinks in green twice.

Remarks When the set is a 1-motor model, the hand control does not have the buttons to change the key tone setting, and the default is mute.

Status and Disposal

Item	Status	Reason	Disposal
1	● During operation, the warning indicator blinks red **(Fig. 1)**	Low battery alert	Charging battery
2	● Beeps 4 times every 4 seconds. If it is not operated for 1 minute, the system will automatically power off and pause the buzzer sound. After pressing any key to wake up, the buzzer will continue to sound a low voltage alert.	The battery voltage is low and it is still operable, but it needs to be charged immediately.	Charge the battery immediately.
3	● The lifting actuator (M1) can only move down, not up, the warning indicator blinks red **(Fig. 1)**	The battery voltage is too low, and protection has been activated to limit actuator operation	Charging the battery at once
4	● The LED indicator on CM43 blinks for 4 sec **(Fig. 1)** ● At this time, the indicator of usage warning on HS12L flashes for 2 seconds **(Fig. 2)**	**The lifting** actuator (M1) is overused (more than 4 minutes of continuous operation)	Please stop the operation first, after a period of inactivity, the indicator of usage warning will be automatically turned off.
5	● Press any key, the control box will make a short beep, and the actuator cannot be operated ● At the same time, the indicator of overload warning on HS12L keeps on **(Fig. 2)**	**A linear** actuator is over-overload	Check the operating status, please remove obstructions or avoid improper operation. If this warning continues to occur, please call the agent for assistance.

Fig. 1

Fig. 2

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Documents / Resources

MOTECK CM43 Control Box [pdf] User Guide
CM43, CM43 Control Box, Control Box, Box

References

- ⛰ **Electric Linear Actuators | Moteck Professional Linear Actuator Company**
- **User Manual**