

User Guide

Control Box CM42



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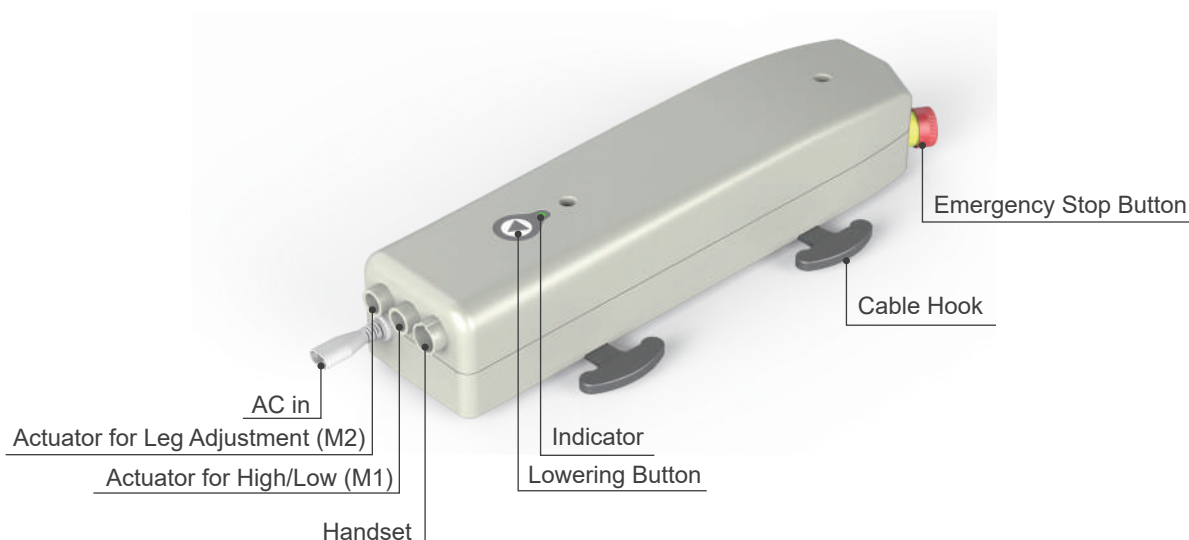
Technical changes may be made to improve the product without notice!



Notice

- Please do not expose the product to places where there is concern about overheating, fires, or direct sunlight.
- Please keep product away from places suspected of static electricity or water leakage to avoid electric shock or short circuit.
- The weight of the control box is not light. In order 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 electric shock.
- Please press the emergency stop button before performing maintenance. And 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 CM42 standard version firmware. If it is a customized firmware, some content may be different.

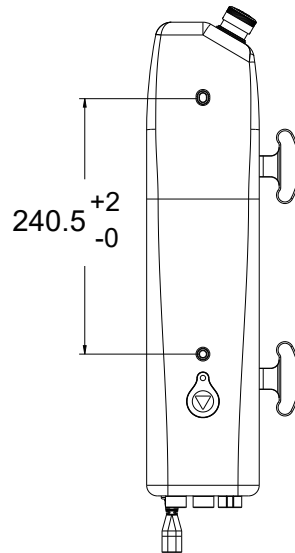
I/O Introduction



Installation

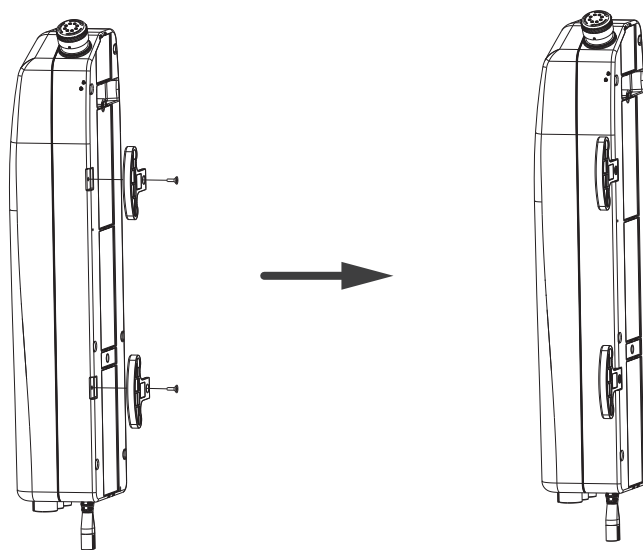
• Preparation for Mounting

Prior to installation, please ensure that you have sufficient space to safely install the CM42 and to avoid the risk of falling. At the mounting position on the hoist, two M6 screw holes with a distance of 240.5~242.5 mm must be prepared in advance. When you install and operate, pay attention to safety. Do not place the product near explosive, flammable, corrosive materials or under humid environments.



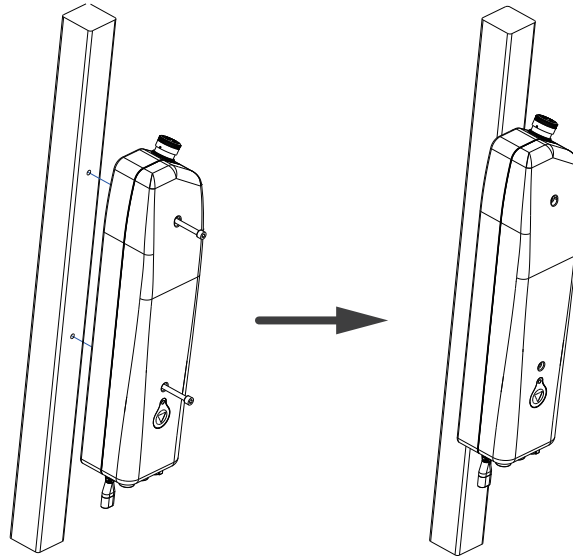
• Installation of Cable Hook

1. Fasten the cable hook to the main body with two screws.
2. Please ensure the screws are tightened.



• **Mount CM42 on the hoist**

1. Mount CM42 on the hoist frame with 2 fixing screws.
2. Please ensure the screws are tightened securely.
3. Connect the handset and actuators to the control box.



Notice

- The battery should be fully charged before using. Refer to the “Battery Charging” for proper charging instructions.

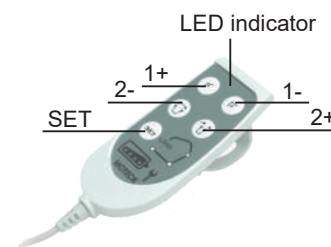
SET mode (Dedicated setting handset is needed)

• Enter SET mode

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

• Exit SET mode

Hold down the SET button for 2 seconds, or if the user does not press any button for more than 10 seconds, the set data will be saved automatically.



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.

• Actuator current limit setting






There are 2 ways to set the protection limit for M1 actuator in SET mode. CM42 will stop immediately if actuator's consumption current exceeds the set limit.

Method 1: Self detect and learning


1. The current consumption value of the actuator has a great relationship with the load weight. Therefore, please put the weight that is required for future use on the hoist before starting this detection learning function.
2. Press "1+" for 1 second to start detection learning in SET mode.
3. Actuator for High/Low (M1) extends automatically for 2.5 seconds. The indicator light  on H2T will turn on for 2.5 seconds.
4. During self-learning mode, the LED indicator on the CM42 will turn 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 function.
2. Press "2+" to increase the current limit on handset in SET mode.
3. Press "2-" to decrease the current limit on handset
4. The available range is from 5~9A, 1A per step. The actuator current will display on the battery level bar on H2T.

Value	5A	6A	7A	8A	9A
Level bar					

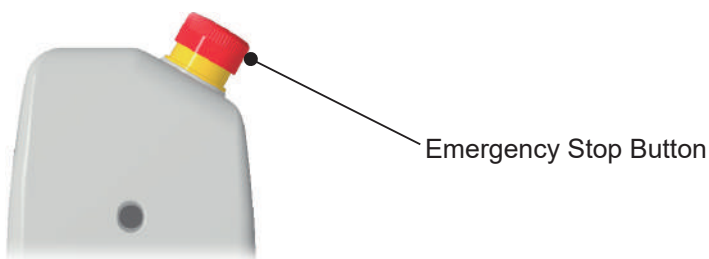
● **Over duty protection on M1(On/OFF)**

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 continuous operation is too long or the operation frequency is too high, it will perform protection and temporarily turn off operation.
2. Active / inactive the "Over duty Protection on M1".
Press "2+" & "2-" at the same time in SET mode. "Over duty protection on M1" is ON by default and the  indicator will be on.

● **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. There will be a long beep.
2. Default value settings: Key tone and soft start are off, over duty protection is active, current limit is 7A.

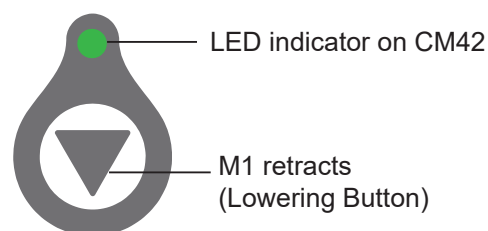
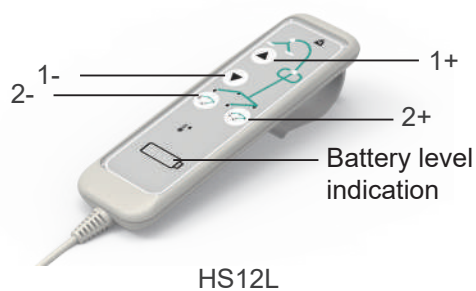
Operation



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 restore.

● **General Control**

1. Hold 1+ button, M1 extends, release the button to stop the movement.
2. Hold 1- button, M1 retracts, release the button to stop the movement.
3. Hold 2+ button, M2 extends, release the button to stop the movement.
4. Hold 2- button, M2 retracts, release the button to stop the movement.
5. During operation, the LED indicator of CM42 and the battery level indicator of HS12L will be on, and the indicators will turn off when operation stops.
6. If it is not used for about 1 minute, the control box will turn into sleeping state and automatically power off. Press any button to wake up.











● **Lowering Button**

Hold lowering Button, M1 retracts, release the button to stop the movement.

● **Battery level indication**

When the "1+" or "1-" 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 CM42	Indication on HS12L	Status
		The battery is fully charged
		About 75% battery power
		About 50% battery power
		The battery should be charged as soon as possible
		The battery must be charged immediately

● **Battery Charging**

1. After connecting the charging cable, charging will start automatically, and the LED indicator on CM42 will flash red. The battery indicator on the HS12L hand controller will also flash at the same time.
2. When charging is completed, it will stop automatically, and the LED indicator of CM42 is continuously lit green. The battery indicator on HS12L handset is continuously lit green as shown below.
3. After unplugging the charging cable or the AC plug, the CM42 system will process for optimization automatically. During this time, the CM42 is still temporarily unable to operate for about 15 seconds, and the LED indicator and HS12L battery indicator will flash continuously until it goes out to return to the normal standby state.



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 month. Otherwise, batteries may be damaged due to over self-discharge.

● **Switch ON/OFF for Soft start & key tone**

Function	Operation	Indication		
Soft Start	Hold 1+, 1- button simultaneously for 3 seconds in order to switch on and off.	ON	The LED indicator blinks in red 4 times	
		OFF	The LED indicator blinks in red twice	
Key Tone (For 2-motor model)	Press 2+, 2- buttons on handset for 3 seconds at the same time.	ON	The LED indicator blinks in green twice, beep once.	
		OFF	The LED indicator blinks in green twice, no sound.	

Status and Disposal

Item	Phenomena	Information	Disposal
1	<ul style="list-style-type: none"> The LED indicator on CM42 blinks in red (Fig. 1) 	Low battery alert	Charging battery
2	<ul style="list-style-type: none"> 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 as soon as possible.	Charge the battery as soon as possible.
3	<ul style="list-style-type: none"> M1 actuator can only move down, not up, the LED indicator on CM42 blinks in red (Fig. 1) 	The battery voltage is too low and protection has been activated to limit actuator operation	Charging battery at once
4	<ul style="list-style-type: none"> The LED indicator on CM42 blinks in orange (Fig. 2) Indicator of usage warning on HS12L blinks for 2 sec (Fig. 3) 	M1 actuator is over duty (after 4mins continuous operating)	Stop operation for a while. The error message will be gone automatically after sufficient rest.
5	<ul style="list-style-type: none"> 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. 3) 	M1 actuator is over load	Look for and remove obstruction or improper load. Please call the agency if the situation continues.



Fig. 1



Fig. 2

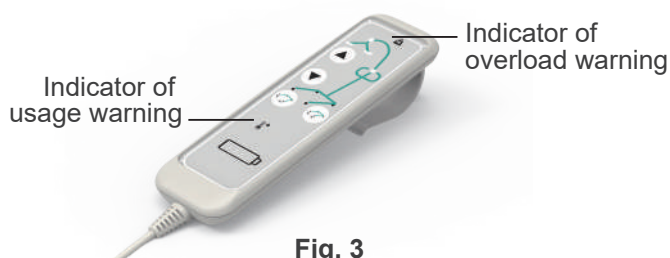


Fig. 3

Battery Replacement

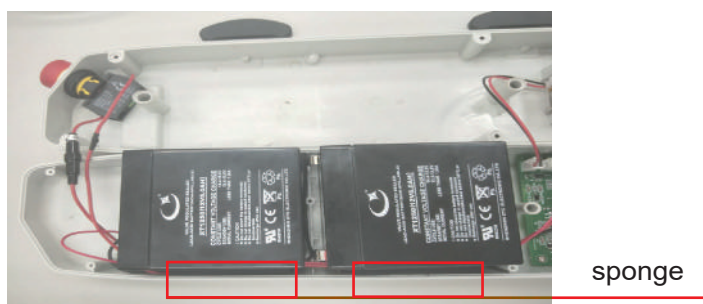
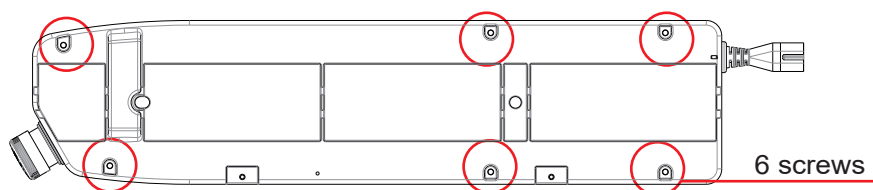


Notice

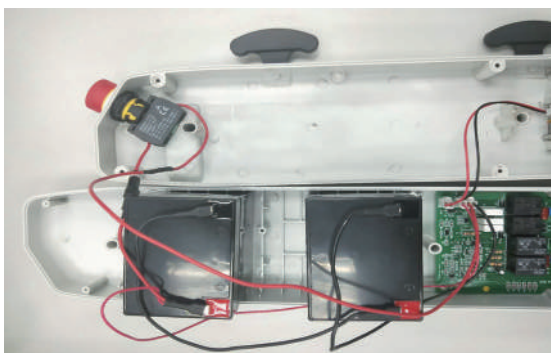
- End users please contact your dealer to arrange batteries replacement.
- If the battery replacement method is incorrect, electric shock or short circuit may occur. Therefore, before replacing the battery, please read the following safety instructions and follow the replacement steps.
 1. Verify that the Charging Power Supply to the battery is off and that all power is disconnected from the power source.
 2. Remove watches, rings or other metal objects.
 3. Use tools with insulated handles to prevent inadvertent shorts.
 4. Do not lay tools or metal parts on top of batteries.
 5. Verify circuit polarities before making connections.

● Steps of Replacement

1. Push down the emergency button.
2. Unplug all external cables from the control box.
3. Dismount the CM42 from the lift frame, and place it on a flat table.
4. Remove 6 screws at back side. Then, open the back cover, place as shown below.



5. Take the sponges out, and keep them aside.
6. Place the batteries upright.



7. Disconnect the wires from each terminal of the batteries. Please be careful not to damage the wire and plugs.
8. Then, replace batteries of the same type and size.

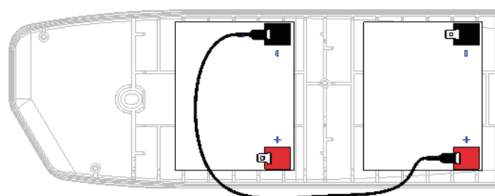
Specifications	Nominal Voltage	12 V	12 V
	Rated Capacity	2.9 Ah	5.0 Ah
Dimensions	Total Height (mm/inch)	104 / 4.09	107 / 4.21
	Shell Height (mm/inch)	98.5 / 3.88	101 / 3.98
	Length (mm/inch)	79 / 3.11	90 / 3.54
	Width (mm/inch)	55.5 / 2.19	70 / 2.76



Notice

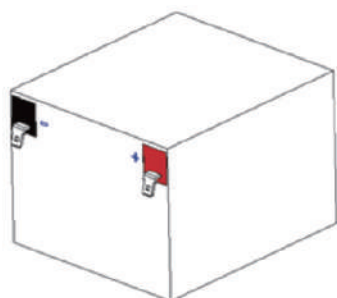
- There are two options for CM42 batteries: 2.9Ah and 5Ah. For new batteries, always follow the same specifications.
- To avoid abnormally shortening the service life of the batteries, please do not mix old and new batteries or different brands.

9. The batteries must towards the same direction as shown below, then connect the positive and negative poles between the two batteries with black wires.

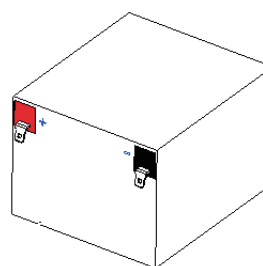


Notice

- Please note that red is positive(+) pole and black is negative(-) pole.
- The battery replacement instructions in this user guide are based on the 5Ah battery as an example, and the 2.9Ah battery polarity is opposite to the 5Ah battery (as shown in the figure below). Please be careful to identify the battery polarity when replacing.

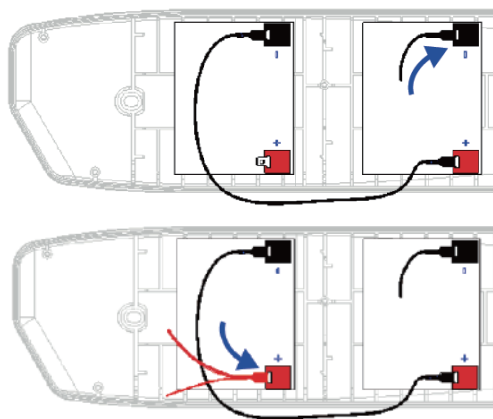


5Ah



2.9Ah

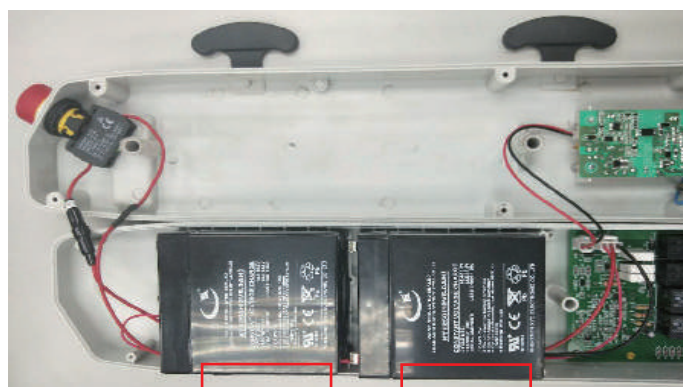
10. Connect another black wire to the negative pole, and the last red wire connects to the positive pole.



Notice

- Never connect positive and negative poles of the same battery.

11. After connecting all the wires, place the batteries as shown in the photo below. Organize all the wires and put them into the groove on the side, then put back the sponges.



sponge

12. When closing the back cover, make sure that no wires are pinched.



Notice

- When screwing the six screws back to the back cover, to avoid damaging the original tapping, insert the screw into the hole, and then turn counterclockwise until your finger feels a slight but clear "thread engagement".
- After the thread is "engaged", turn the screw clockwise to the end with an appropriate force, but avoid over tightening.
- For protecting earth and environment, please recycle used batteries through authorized channel.