

Instruction Manual

Long Arm[®] CHL1 MCC Switch Actuator



Model: CHL1

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Use and Operation Instructions

CHL1 MCC Switch Actuator

1.0 Introduction

The CHL1 is designed to remotely operate the disconnect switch, up to 400amps, on most Series 2100/ 5 Star, Advantage, and F2100 Motor Control Center units manufactured by Cutler-Hammer (also sold under the Eaton and Westinghouse names).

The CHL1 installs on the MCC unit with magnets, so there is no modification required to your MCC to mount it. The CHL1 is designed to work in most installations. However, MCC's are sometimes provided with auxiliary devices or nameplates in the MCC unit door that could interfere with mounting. See Section 4.1 for additional information on the required mounting footprint. Due to space constraints, it will not operate the right-side breaker on a double breaker MCC unit.



2.0 General Safety Information

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- This equipment must only be installed by qualified personnel.
- Only use this equipment after reading and understanding all of the instructions contained in this manual.
- Follow electrical safe work practices. See NFPA 70E or CSA Z462

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN DEATH OR SERIOUS INJURY

2.1 Arc-blast Hazards

The hazards associated with electrical arc-blasts are well documented. Studies conducted by numerous industries and professional organizations have sought to quantify the intensity of arc blast, the risks to personnel, and various methodologies for mitigating the risks.

Without a doubt, increasing the distance between the arc and a human is the single greatest favorable factor in reducing injuries. Remote operation of electrical equipment is not a cure-all, but rather one more tool available for protecting workers while they are performing electrical switching.

Using the CHL1 remote operating device may not negate the need for additional personal protective measures. The user is ultimately responsible for evaluating each situation to determine if additional protective measures are needed.

2.2 Battery Hazards

⚠ WARNING

THIS EQUIPMENT CONTAINS ALKALINE BATTERIES

- **All Federal and State regulations must be followed for disposal, transport, and shipment of the batteries and equipment.**
- **Do NOT attempt to recharge the batteries.**

The CHL1 is battery powered by standard AA batteries contained in the hand-held controller. The total maximum voltage nominally 24VDC. Although this is below the recognized threshold for a shock hazard, there can be significant energy stored in the battery pack. Care must be taken to properly handle the battery pack.

The batteries provided with the CHL1 are of the alkaline type. Care must be taken when handling the batteries and federal regulations must be followed when disposing of the batteries.

2.3 Magnet Hazards

⚠ DANGER

THIS EQUIPMENT UTILIZES A POWERFUL MAGNET TO HOLD IT ON THE CUSTOMER'S EQUIPMENT

Care must be taken to prevent injury when handling the equipment

The magnet that is used on the CHL1 to attach it to the customer's equipment produces a strong magnetic field. Care must be taken when handling the CHL1. The following steps should be followed to assure safe handling:

- The magnet needs to be kept at a safe distance from all magnetic storage devices, electronics, credit cards, etc.

- The CHL1 should be stored with the magnets in the “OFF” position. If left in the “ON” position and brought close to ferromagnetic materials, there will be a sudden and powerful attraction that could present a pinch hazard or equipment damage.
- Do not use the CHL1 if a magnet has been damaged.
- Do not attempt to service the magnet. There are no user serviceable parts inside the device.
- The magnet contains PTFE lubricant. Contact MarTek Limited for MSDS information. Always keep the bottom of the magnet free of debris and rust. If needed, wipe with WD40 or light oil.

2.4 Pinch Point Hazards

⚠ DANGER

THIS EQUIPMENT HAS MOVING PARTS AND A MAGNET THAT PRESENT PINCH POINT HAZARDS

Care must be taken to prevent injury when handling the equipment.

The CHL1 is a motorized device with moving parts and a strong magnet that will produce the opportunity for pinch point hazards. In order to prevent a pinch point injury, the following procedures should be followed:

- Be sure that the magnets are ALWAYS in the OFF position unless it is being held against a ferrous surface. The magnet is very strong and will be attracted to any nearby ferrous material and could unexpectedly cause a pinch point hazard.
- Turn the magnets to the OFF position before removing the actuator from ferrous material.
- Store the CHL1 actuator with the magnets in the “OFF” position.

3.0 Battery Information

⚠ WARNING

THIS EQUIPMENT USES ‘AA’ ALKALINE BATTERIES.

DO NOT attempt to utilize batteries other than the type AA.

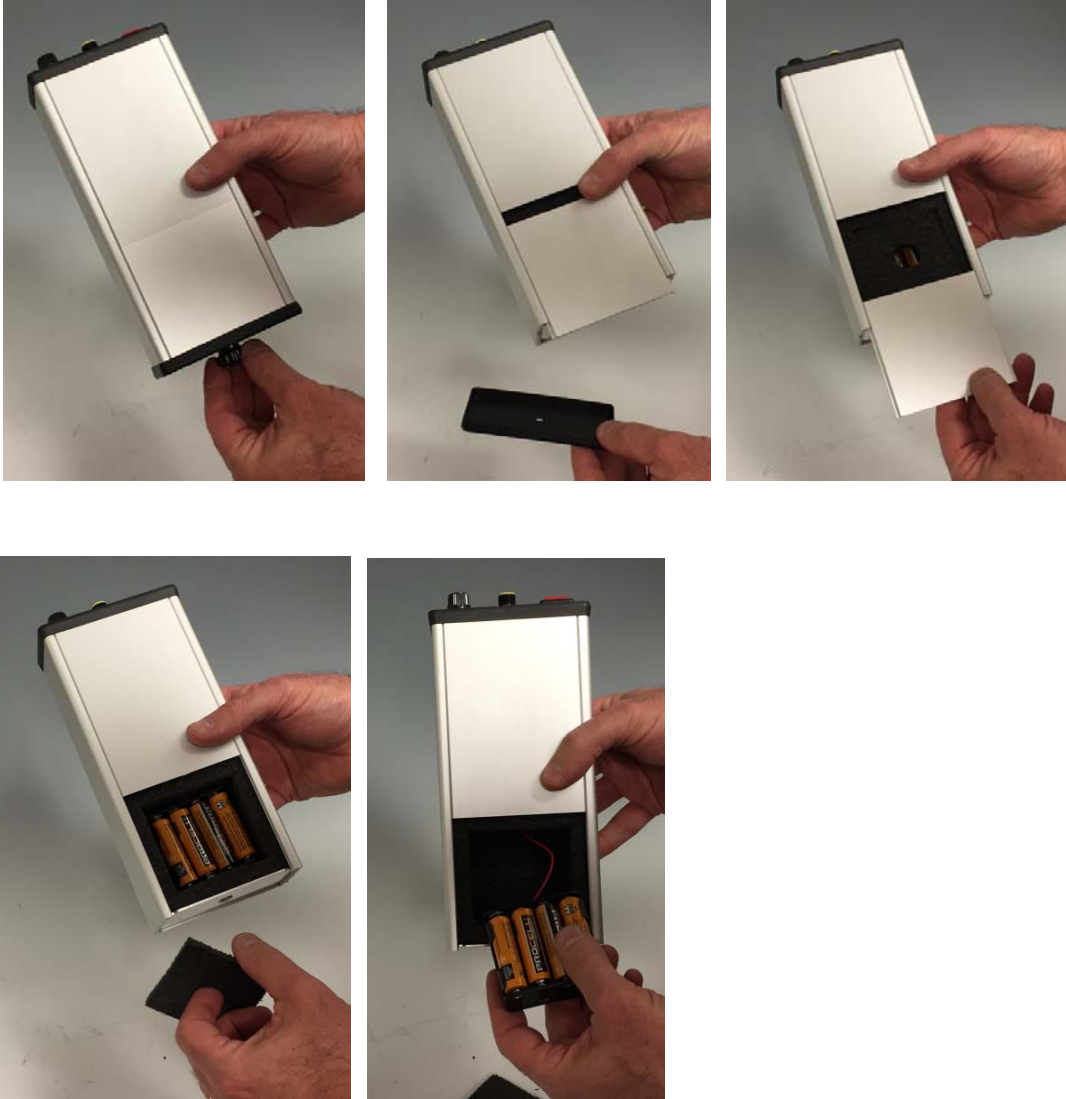
The CHL1 uses common alkaline AA batteries. Rechargeable AA batteries will also work as will Energizer Lithium AA batteries. Do not attempt to use batteries other than AA.

When the actuator is powered up by pressing the WAKE button, the microprocessor checks the battery voltage. If the battery voltage is not at least 17 volts, the LED on the WAKE button will flash several times and then the unit will shut down. The batteries must be replaced.

3.1 Removing and Replacing the Batteries

Remove the thumbscrew on the bottom of the hand-held controller and remove the battery cover to access the batteries. Install 16 – AA batteries.

Replace the battery cover and thumbscrew.



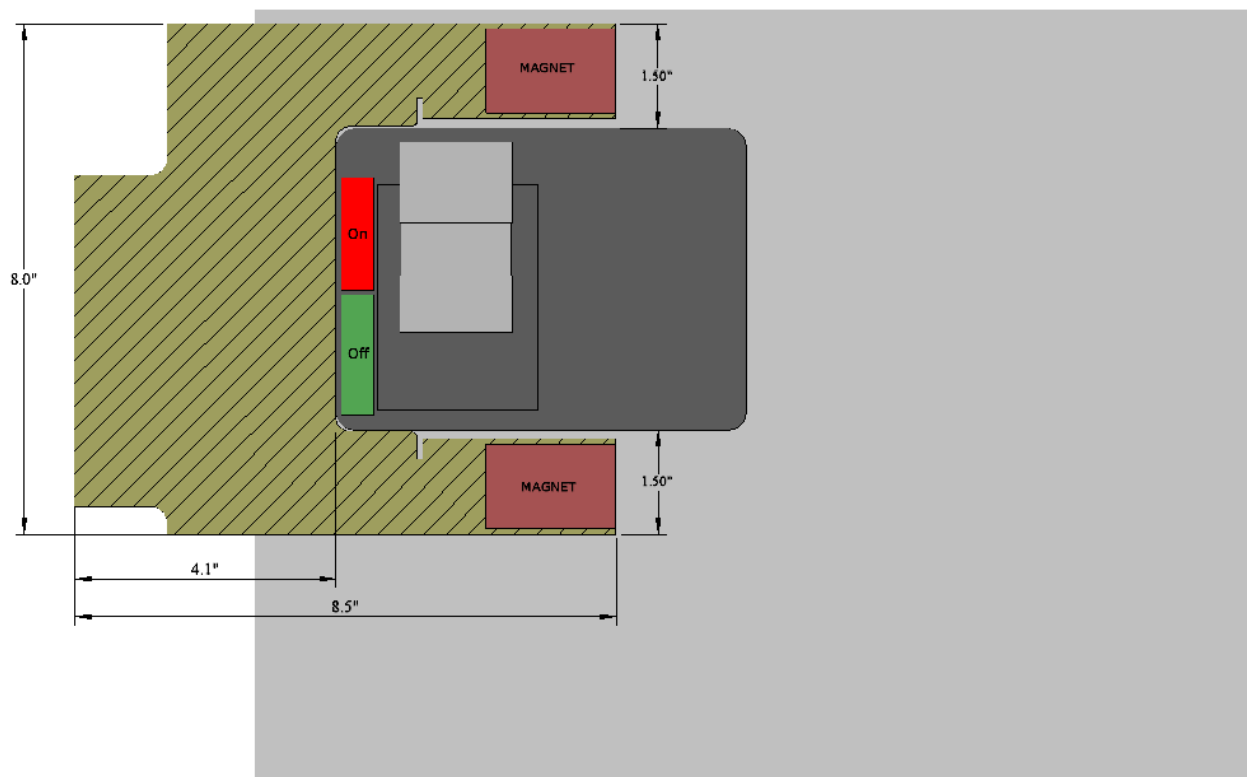
4.0 Use and Operation of the CHL1

One of the unique features of the CHL1 is that the actuating arms are not required to be pre-positioned to match the present position of your MCC operating handle. The CHL1 can be simply installed over your MCC operating handle regardless of whether your handle is in the ON or OFF position.

The only consideration is making sure that there are no obstructions in the way of mounting the CHL1. Section 4.1 shows detailed information on the footprint required. This footprint area must be clear of nameplates, auxiliary devices, and must be clean for the magnets to firmly attach.

4.1 Mounting Footprint

The following picture shows the footprint of the CHL1 when mounted to an MCC bucket. This footprint shows the area that touches your equipment which is the area on your equipment that must be clear for mounting the CHL1.



4.2 Installing and Operating the CHL1 Actuator

STEP 1 – Be sure the magnets are in the OFF position.

STEP 2 – Connect the cable to the hand-held controller and the CHL1 actuator. Do not turn the CHL1 ON until it is securely mounted on the MCC.

STEP 3 – Carefully place the CHL1 actuator over the MCC operating handle as shown.



STEP 4 – While holding the CHL1 against the MCC, turn both magnets to the “ON” position.



STEP 5 – Turn the CHL1 ON by pressing the WAKE button. The light on the button should illuminate and stay lit. If light flashes and turns off, it is an indication that the batteries need to be replaced. You will need to replace the batteries in the hand-held controller and then repeat this step.



STEP 6 – When ready to operate the disconnect handle on the MCC, stand at a safe distance from the MCC, press and hold the ENABLE button on the hand-held controller, and rotate the control switch to the desired position - ON or OFF. Hold the ENABLE button and the control switch until the CHL1 moves the MCC operating handle the full distance required. Release the ENABLE button and control switch once the MCC operating handle has reached full stroke.



4.2 Removing the CHL1 Actuator

STEP 1 – Firmly hold onto the CHL1 actuator.

STEP 2 – Turn the magnet levers counter-clockwise to the OFF position.

STEP 3 – The actuator can now be moved away from the door.

Do not attempt to remove the actuator without turning the magnets OFF. Doing so can be difficult and dangerous.

5.0 Storage

The CHL1 is provided with a heavy duty carrying case that can be used to conveniently store the actuator and its necessary components. The carrying case and complete unit should be stored in a clean and cool environment.

If it is stored for longer than 30 days without being used, the batteries should be removed.

6.0 Troubleshooting

SYMPTOM	SOLUTION
As soon as the actuator is powered by pressing the WAKE button, the WAKE button LED flashes and the actuator shuts down.	The batteries in the CHL1 are low and must be replaced.
The CHL1 won't stay on the switchgear door.	<ul style="list-style-type: none">• Magnets are not set to the ON position• Magnets are not clean• Magnet mounting surface is not clean or clear of obstructions• The door you are mounting it to is not ferrous• The door you are mounting it to is made from metal too thin for the magnet to firmly hold.

7.0 Specifications

Voltage	24VDC, (16) AA Alkaline Batteries (located in the hand-held controller)
Magnets	Two magnets, 150lbs/68kg magnet strength each, 18.5lbs/8.4kg sheer load.
Projected Life	10,000+ operations
Carrying case	Manufactured by Pelican with the following features: Two Press & Pull Latches Double-layered, Soft-grip Handle Two Padlockable Hasps Vortex® Valve Flush Powerful Hinges Lightweight Strong HPX® Resin Watertight Meets airline regulations for carry-on luggage Exterior Dimensions 20" x 16" x 7.5" (50.8 x 40.6 x 19.1cm)
Weight	CHL1 Actuator – 7.4 lbs / 3.4kg Complete Kit with carrying case – 19lbs / 8.6kg

8.0 Contacting the Manufacturer

For any questions, repairs, or parts replacement please contact the manufacturer using any of the methods below.

MarTek Limited
 4782 Chimney Drive
 Charleston, WV 25302

Phone: 304-965-9220
 Toll Free: 800-248-4958
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email: sales@marteklimited.com