



Cutler-Hammer

Instructions for Installation and Operation Of the AMPGARD Remote Operator Classic

Instruction Bulletin - 48067



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⚠ DANGER

READ AND UNDERSTAND THIS AND OTHER SUPPLIED INSTRUCTIONS AND DRAWINGS IN THEIR ENTIRETY BEFORE INSTALLING OR OPERATING DEVICE. ADJUSTMENT, REPAIR AND MAINTENANCE OF THESE CONTROLLERS MUST BE PERFORMED BY QUALIFIED PERSONNEL. A QUALIFIED PERSON IS ONE WHO IS FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THIS EQUIPMENT AND THE HAZARDS INVOLVED.

Section 1: Introduction

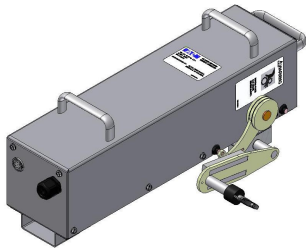

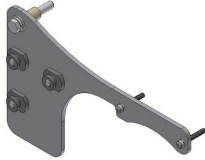
1.1 Overview

The AMPGARD Remote Operator (ARO) Classic is a device which can open or close the isolation switch of an AMPGARD starter, through the use of a Pendant Pushbutton Station at a distance of up to 30 feet away from the equipment being operated. The medium voltage doors of the AMPGARD starters must be equipped with the appropriate mounting kit before the ARO can be used. If this mounting kit was not factory installed, it can be added through the use of the mounting kit assembly as described in section 1.3 below.

1.2 Included Items

The ARO Classic assembly group consists of three main components, the ARO, the Pendant Pushbutton Station and the Mounting Kit.

Table 1. ARO Classic Assembly Group Components

Part #	Description	Qty	Image
87C1120G01	AMPGARD Remote Operator (ARO) Classic (includes 6' power cord)	1	
87C1120G02	Pendant Pushbutton Station (includes 30' cord)	1	
87C1120G03	Mounting Kit	1	

1.3 Mounting Kit (87C1120G03)

If your starters do not include the mounting kit then a kit is required. Each kit includes the following:

Table 2. Mounting Kit Components

Part #	Description	Qty	Image
87C1120G03	Mounting Kit	1	
70100EG04W	5/16-18 X 2 in Hex Bolt	1	-
70500BD30G	5/16 Flat Washer	1	-
70510CV10P	5/16 Lock Washer	1	-
70001BU28U	#10-32 X 1 Machine Screw	2	-
70510CV10K	#10 Lock Washer	2	-

1.4 The AMPGARD Remote Operator (ARO) Classic

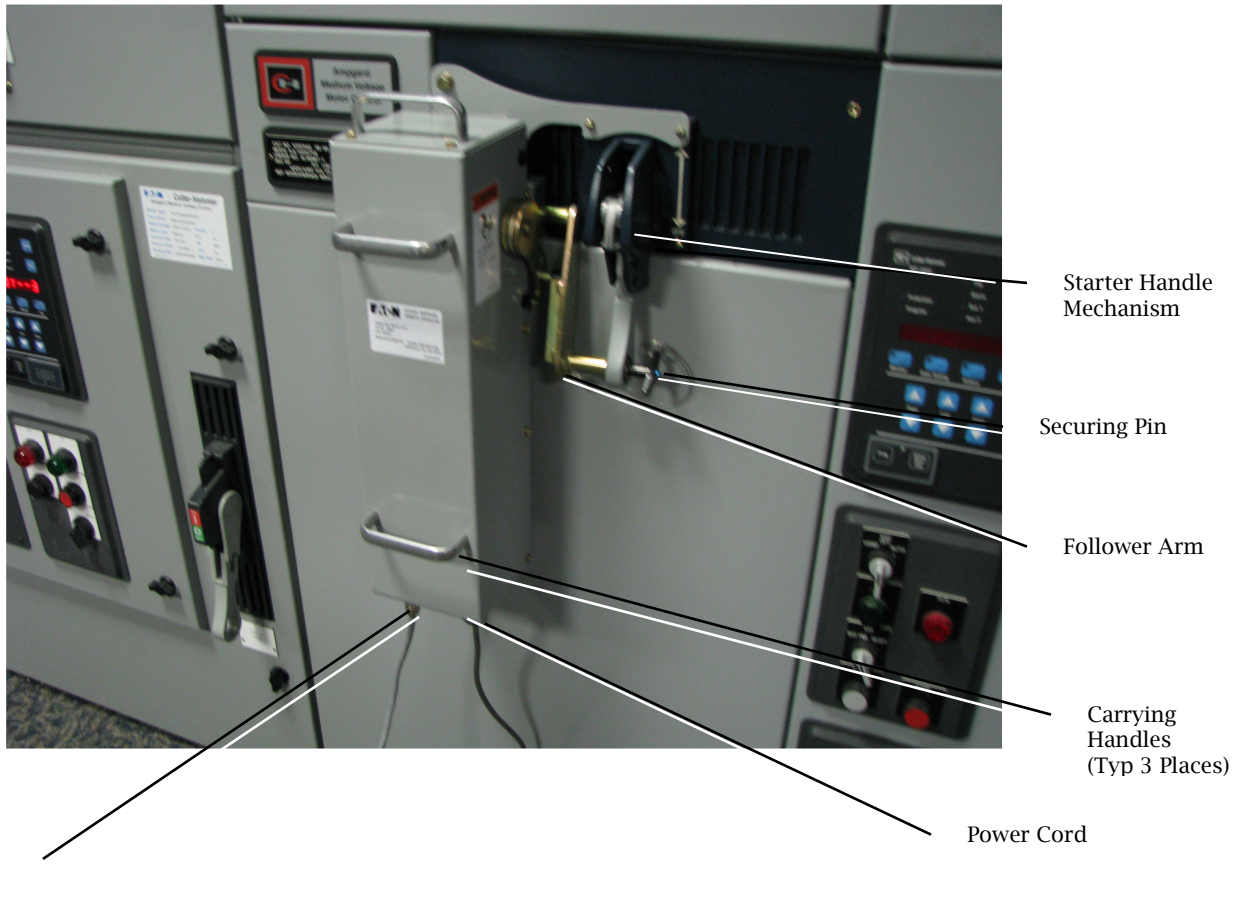


Figure 1 - AMPGARD Remote Operator (ARO) Classic

1.5 The Pendant Pushbutton Station

The Pendant Pushbutton Station can be removed from the ARO for ease of transportation or storage and attached in order to operate the device.

- READY (yellow light) - Indicates if the device is ready to be operated.
- RUN (red light) - Indicates the operator is in motion.
- OPEN (green button) - Gives the operator the command to Open the isolation switch.
- CLOSE (red button) - Gives the operator the command to Close the isolation switch.

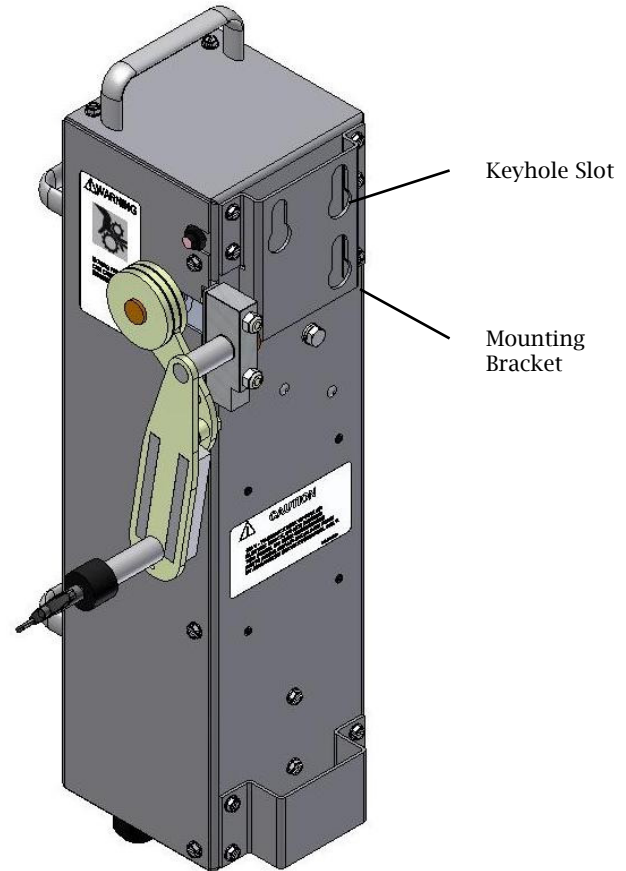


Figure 2 - Pendant Pushbutton Station

Section 2: Installation and Removal

2.1 Installation

1. Check that the follower arm of the ARO Classic is in either the “open” or “closed” position to match the isolation switch handle on which it is to be mounted. If it is not in the correct position, follow the operation instructions below to reposition it.
2. Ensure the ARO Classic is not plugged in.
3. Remove the securing pin from the follower arm of the ARO by depressing the blue button on the pin.
4. Check that the hole in the isolation switch handle is clear and the securing pin will fit easily.
5. Using the grab handles, lift the ARO into position, with the mounting bracket facing the door. When positioning the ARO, take care to avoid interference between the end of the follower arm and the isolation switch handle.
6. Fit the large part of the keyhole slots over the studs, then slide the ARO down so the studs are engaged in the slots. Ensure all three studs are engaged with the bracket and the ARO is seated fully down. The pivot of the follower arm should align with the pivot of the isolation switch handle.
7. Depressing the button at the center of the T-handle, install the securing pin through the isolation switch handle and into the follower arm.
8. If the Pendant Pushbutton Station is not already attached, install it by screwing its connector into the receptacle on the ARO.
9. Plug the ARO into a standard 120 Vac electrical outlet.
10. After a short delay, the READY light should illuminate. If not, see the Troubleshooting section.



2.2 Removal

1. Unplug the ARO’s power cord.
2. Remove the securing pin from the isolation switch handle and ensure that the follower arm is not bound to the handle.
3. If desired, detach the Pendant Pushbutton Station.
4. Grasping the handles, lift the ARO straight up to disengage the mounting bracket from the studs. It may be useful to press directly upwards on the bottom of the operator.
5. Pull the ARO away from the door to remove.

Figure 3 - Installation and Removal

2.3 Installing the Mounting Kit

(Skip this section if your equipment is already equipped with the Mounting Kit.)

In order to use the ARO with equipment that lacks mounting provisions, the mounting kit must be installed in the correct location on the starter. Follow these instructions for installing the mounting kit.

On 400A starters, the medium voltage door does not have to be opened. On the 800A starters, the medium voltage door must be opened to access the required bolt replacement.

⚠CAUTION

BECAUSE THE STARTER MEDIUM VOLTAGE DOOR MUST BE OPENED TO INSTALL THE STUDS, INSTALLATION SHOULD ONLY BE PERFORMED BY QUALIFIED PERSONNEL. A QUALIFIED PERSON IS ONE WHO IS FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THIS EQUIPMENT AND THE HAZARDS INVOLVED.

1. Review the starter operating instructions supplied with the starter.
2. Insure the starter's main contactor is open.
3. Open the starter isolation switch.
4. On 400A starter, remove the top left Hex socket head bolt as shown. On 800A starters open the starter medium voltage door. Remove the hex nut on the back of the top left carriage bolt. Remove the carriage bolt. This will be replaced with the new bolt in the mounting kit.
5. Remove #10 Screws (Quantity 2) from handle mechanism assembly.
6. Place mounting plate so that the top left corner with the spacer lines up with the bolt that was removed from step 4.
7. On 400A starters, place new bolt with flat washer and lock washer into the mounting plate - finger tighten. On 800A starters, place new bolt with flat washer and lock washer into the mounting plate. Place hex nut in same location as the one that came out with the carriage bolt. Finger tighten this bolt.
8. Place new, longer #10 screws with lock washers into handle mechanism assembly where step 5 removed.
9. Tighten the #10 screws with a flat head screwdriver and tighten the 5/16" bolt.
10. On the 800A starter, close the medium voltage door and latch.

The starter isolation switch can now be closed using the remote operator as described in Section 3 of these instructions.

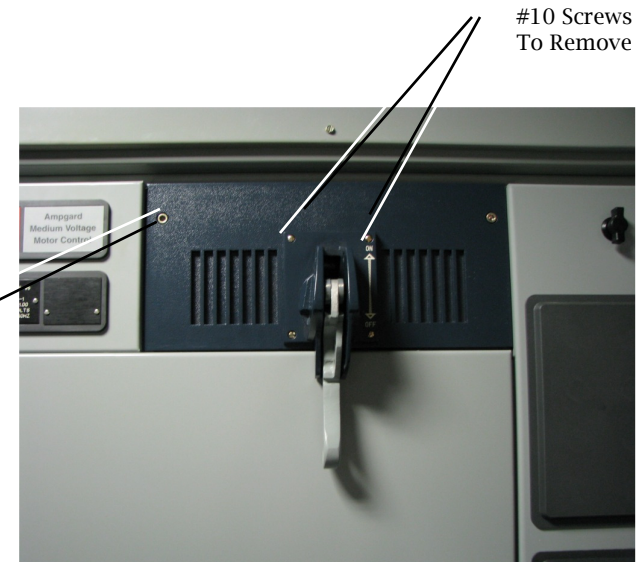
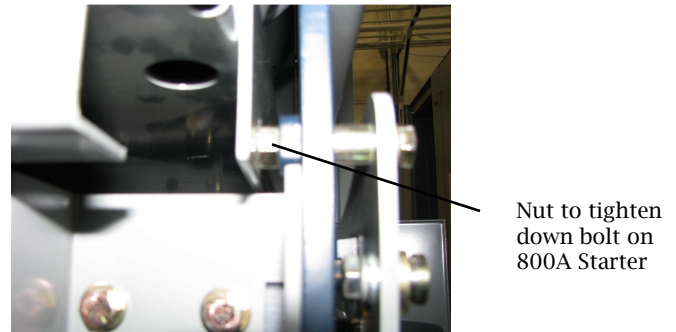
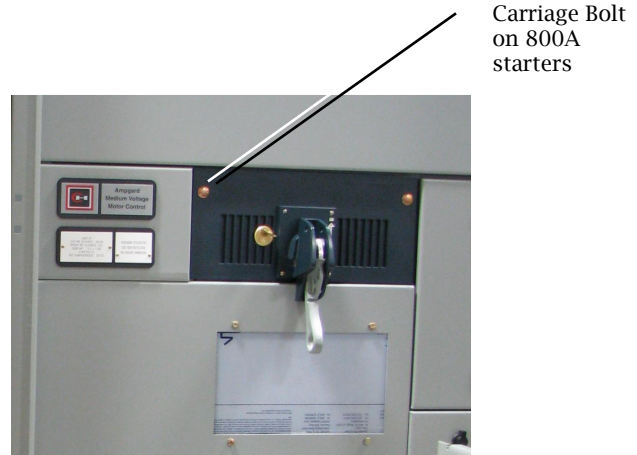


Figure 4 - Mounting

Section 3: Operation

3.1 Operation

1. Install the ARO with Pendant Pushbutton Station per Installation Instructions above.
2. Take the Pendant Pushbutton Station to a safe location or distance from the equipment. The pendant cord is 30 feet long.
3. Ensure that no mechanical interlocks will interfere with the operation of the isolation switch handle, and that no personnel are in the vicinity of the equipment.
4. Press OPEN or CLOSE button on the Pendant Pushbutton Station to initiate operation. The RUN light will illuminate and the READY light will go out. The ARO will run until it fully reaches the opposite position unless it encounters a problem. It is not designed to be stopped once it has been given an OPEN or CLOSE command, so do not push the open or closed button again until the ready light is illuminated.
5. When the ARO has finished its operation, the RUN light will go out and the READY light will illuminate.

3.2 Troubleshooting

⚠ CAUTION

THE ARO DOES NOT HAVE THE ABILITY TO PROTECT AGAINST INJURY IF BODY PARTS BECOME ENTRAPPED IN THE OPERATING LINKAGES! FOLLOW THE SAFETY LABELS ON THE UNIT AND KEEP CLEAR OF IT WHILE IT IS RUNNING.

The ARO is designed to avoid damage to the isolation switch caused by a mechanical obstruction, such as an engaged safety interlock.

- **Overload protection:** When the motor encounters greater resistance than expected in the isolation switch mechanism, it will stop running. The READY light will flash, indicating as error condition. The unit will not be usable until it is reset (see below).
- **Friction clutch:** If the overload protection circuit should somehow fail or be bypassed, the ARO is constructed so that it will begin slipping when it encounters substantial resistance. In the event that the clutch begins slipping, the unit will continue to run until it is stopped by performing a RESET. The occurrence of this condition indicates a possible problem with the ARO. If this condition occurs, discontinue use of the unit and contact your EATON representative for assistance.

Resetting the ARO:

To perform a manual reset, press and hold down both OPEN and CLOSE buttons until the READY light starts blinking. The unit does not reset until both buttons are released. Depress either the OPEN or CLOSE push button to return the ARO to its original open or closed position.

Table 3 - Troubleshooting

		RUN Light		
		Continuously Illuminated	Blinking	Not Illuminated
READY Light	Continuously Illuminated	ARO has power and is currently opening or closing. Light will remain lit until stops running. If this condition persists for more than 10 seconds, the friction clutch may be slipping. To stop the unit, perform a RESET operation.	N/A	ARO has power and is ready to operate
	Blinking	RESET command has been given. Release buttons to complete reset.	RESET command has been given. Release buttons to complete reset.	RESET command has been given. Release buttons to complete reset.
	Not Illuminated	N/A	ARO has stopped due to overload error. Clear overload by performing RESET. Check equipment for the cause of the overload before continuing.	ARO has inadequate power. Check that it is plugged into an appropriate power supply.

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