

Filed 15551



Installation Instructions for Auxiliary Switch for GB/GHB, GC/GHC Circuit Breakers



WARNING

DO NOT ATTEMPT TO INSTALL OR PERFORM MAINTENANCE ON EQUIPMENT WHILE IT IS ENERGIZED. DEATH, SEVERE PERSONAL INJURY, OR SUBSTANTIAL PROPERTY DAMAGE CAN RESULT FROM CONTACT WITH ENERGIZED EQUIPMENT. ALWAYS VERIFY THAT NO VOLTAGE IS PRESENT BEFORE PROCEEDING WITH THE TASK, AND ALWAYS FOLLOW GENERALLY ACCEPTED SAFETY PROCEDURES.

CUTLER-HAMMER IS NOT LIABLE FOR THE MISAPPLICATION OR MISINSTALLATION OF ITS PRODUCTS.

The user is cautioned to observe all recommendations, warnings, and cautions relating to the safety of personnel and equipment as well as all general and local health and safety laws, codes, and procedures.

The recommendations and information contained herein are based on Cutler-Hammer experience and judgement, but should not be considered to be all-inclusive or covering every application or circumstance which may arise. If any questions arise, contact Cutler-Hammer for further information or instructions.

1. INTRODUCTION

General Information

The auxiliary switch (Fig. 1-1) provides circuit breaker contact status and is used for remote identification and system interlock verification. The switch consists of one or two single-pole double-throw (SPDT) switches housed in a plug-in module. Each SPDT switch has one "a" and one "b" contact.

Note: The number of auxiliary switches provided and/or wired is specified in the customers order. For typical color coded wiring, see Fig. 2-5.

Auxiliary switch modules are mounted so that the operating arm rests against the accessory operating projection on the molded crossbar. When the molded crossbar is in the contacts-closed position, the "a" contact of each SPDT switch is closed and the "b" contact is open. When the molded crossbar is in the tripped or contacts-open position, the "a" contact is open and the "b" contact is closed.

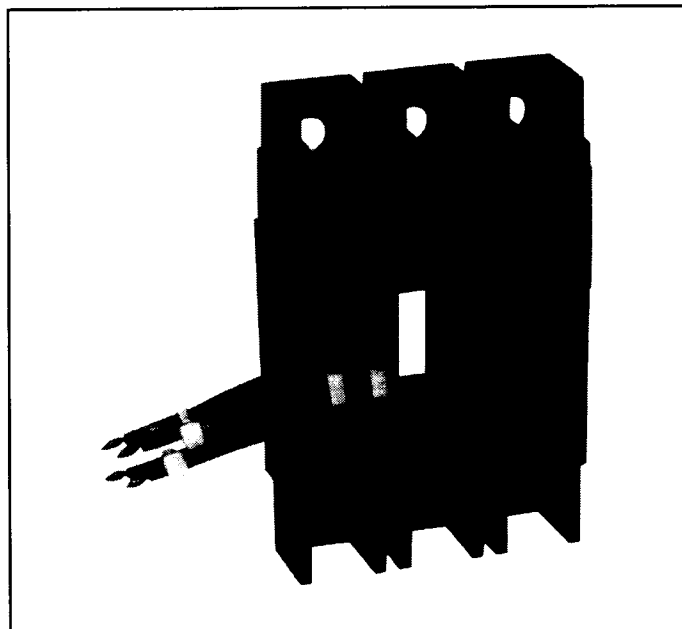


Fig. 1-1 Auxiliary Switch Installed in GHC Circuit Breaker

Table 1-1 lists electrical rating data for the auxiliary switch.

Table 1-1. Auxiliary Switch Electrical Rating Data ①②

Maximum Voltage (V)	Freq. (Hz)	Maximum Current (A)	Dielectric Withstand Voltage (V)
240	50/60	6	1500

- ① Endurance - 6000 electrical operations of the auxiliary switch plus 4000 mechanical operations of the circuit breaker
- ② Pigtail wire size - No. 18 AWG (0.82 mm²)

This instruction leaflet (IL) gives detailed procedures to install the auxiliary switch.

2. INSTALLATION

Note: For sealed circuit breakers, Underwriters Laboratories, Inc. UL489 requires that internal accessories be installed at the factory. The auxiliary switch is listed only for factory installation under UL File E7819.

Where local codes and standards permit and UL listing is not required, internal accessories can be field-installed.

Before attempting to install the auxiliary switch, check that the style number is correct and the rating of the accessory satisfies job requirements.

The auxiliary switch, shown in kit form in Fig. 2-1, can be installed in the right-hand accessory mounting cavity in the cover of a 2-pole or 3-pole circuit breaker. An auxiliary switch must be installed before the circuit breaker is mounted in an electrical system. To install the auxiliary switch, perform the following procedures:

Note: A circuit breaker that is mounted in an electrical system must be removed to install the accessory. To ensure correct accessory installation, the circuit breaker must be placed on a horizontal surface.

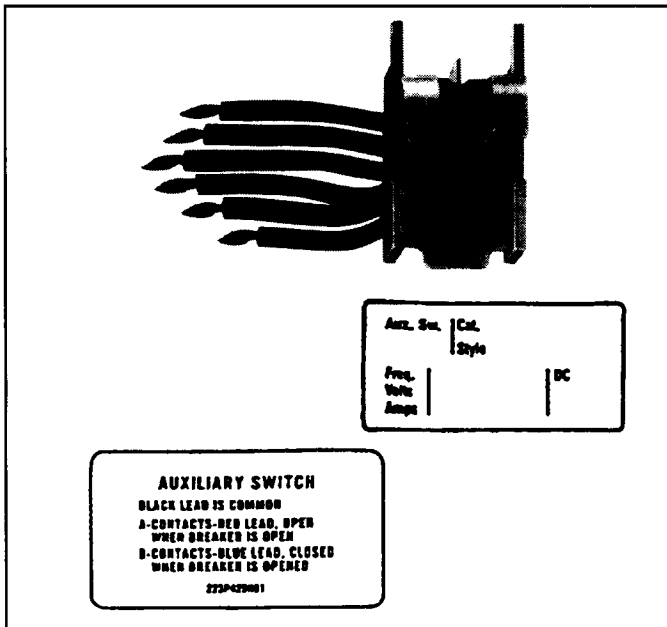


Fig. 2-1 Auxiliary Switch Kit



WARNING

BEFORE REMOVING A CIRCUIT BREAKER INSTALLED IN AN ELECTRICAL SYSTEM, MAKE SURE THE CIRCUIT BREAKER IS SWITCHED TO THE OFF POSITION AND THERE IS NO VOLTAGE PRESENT WHERE WORK IS TO BE PERFORMED. SPECIAL ATTENTION SHOULD BE PAID TO REVERSE FEED APPLICATIONS TO ENSURE NO VOLTAGE IS PRESENT. THE VOLTAGES IN ENER-

GIZED EQUIPMENT CAN CAUSE DEATH OR SEVERE PERSONAL INJURY.

- 2-1. Switch circuit breaker to the OFF position.
- 2-2. Disconnect and remove circuit breaker from installation and terminal connections.
- 2-3. Remove cover screws and cover.



CAUTION

DURING INSTALLATION OF THE AUXILIARY SWITCH, DO NOT TOUCH THE CIRCUIT BREAKER CALIBRATED TRIP MECHANISM. CONTACT WITH THE CALIBRATED TRIP MECHANISM COULD CHANGE TRIP CHARACTERISTICS.

- 2-4. Locate knockout (Fig. 2-2) provided in right side of cover for accessory wiring. Remove knockout and file rough edges smooth.
- 2-5. With cover in inverted position (Fig. 2-3), position auxiliary switch plug-in module as shown and slide into mounting cavity in circuit breaker cover.

Note: Right-hand mounting cavity will be on the left when inside of cover is facing upwards.

Make sure that leads are properly nested and fit into notch provided in cover.

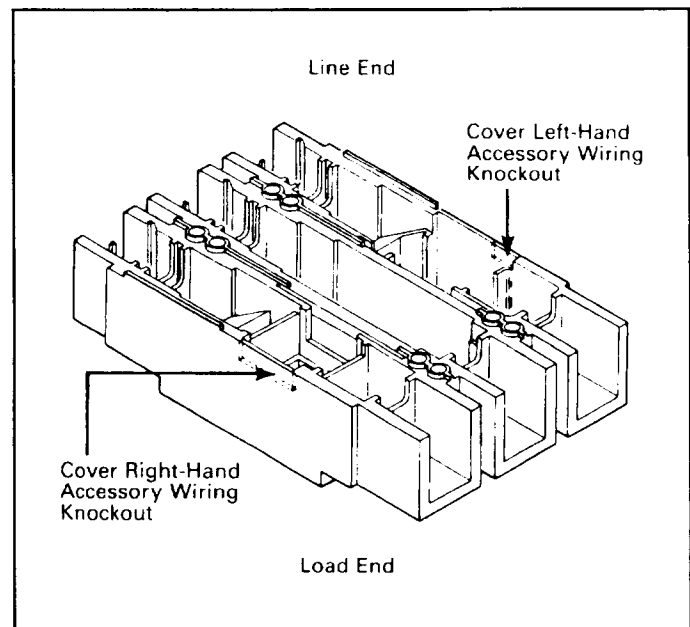


Fig. 2-2 Location of Accessory Wiring Knockout in Cover

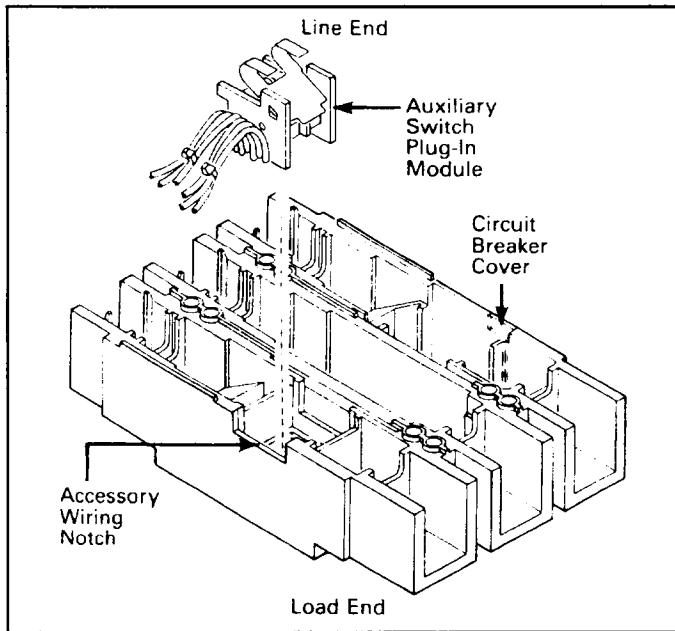


Fig. 2-3 Auxiliary Switch Installation



CAUTION

WHEN INSTALLING THE CIRCUIT BREAKER COVER, MAKE SURE THAT ALL INTERNAL PARTS ARE IN PLACE:

- **ARC EXTINGUISHERS ARE IN THE ARC EXTINGUISHER CAVITIES.**
- **INTERPHASE BARRIER IS FULLY INSERTED IN BASE.**
- **PIGTAIL LEADS ARE NOT PINCHED BY THE COVER.**

- 2-6. With circuit breaker handle in the OFF position, install cover and cover screws.
- 2-7. When auxiliary switch is installed at a non-UL approved location, remove and discard UL listing label.
- 2-8. Place labels supplied with kit on circuit breaker. (See Fig. 2-4.)

Note: Label on circuit breaker shows connection diagram for auxiliary switch contacts. Pigtail leads are color coded red, black, and blue. (See Fig 2-5.)

- 2-9. Test auxiliary switch(es). Connect continuity tester or ohmmeter across pigtail leads. Check continuity as follows:
 - a. Circuit breaker handle OFF - "a" contact(s) (red lead) - open "b" contact(s) (blue lead) - closed.
 - b. Circuit breaker handle ON - "a" contact(s) (red lead) - closed "b" contact(s) (blue lead) - open.

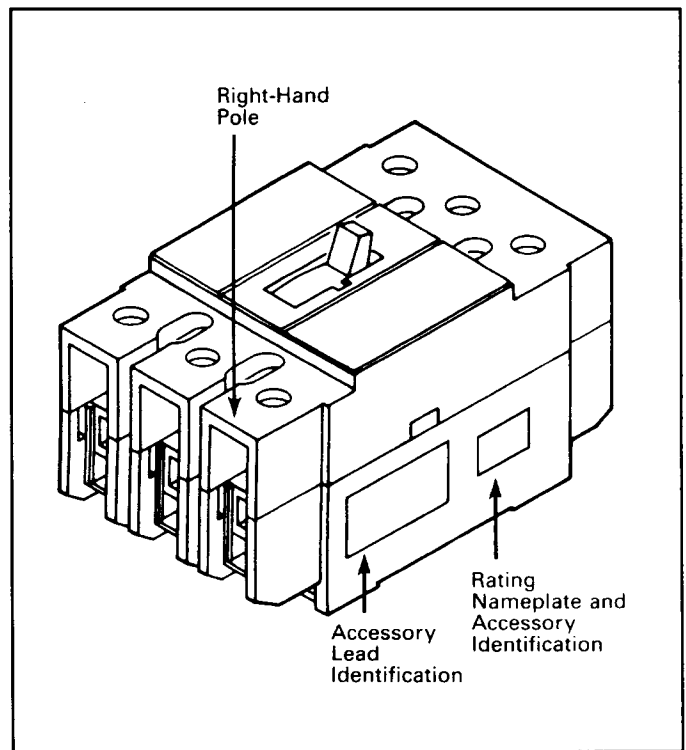


Fig. 2-4 Preferred Mounting Locations for accessory Nameplate Labels

- 2-10. Install circuit breaker.
- 2-11. Connect auxiliary switch as required (see Fig. 2-5).

Note: Fig. 2-5 shows one SPDT auxiliary switch with one "a" contact and one "b" contact. Quantity/type of leads and contacts supplied will depend on style of switch specified, refer to TD 29-120.

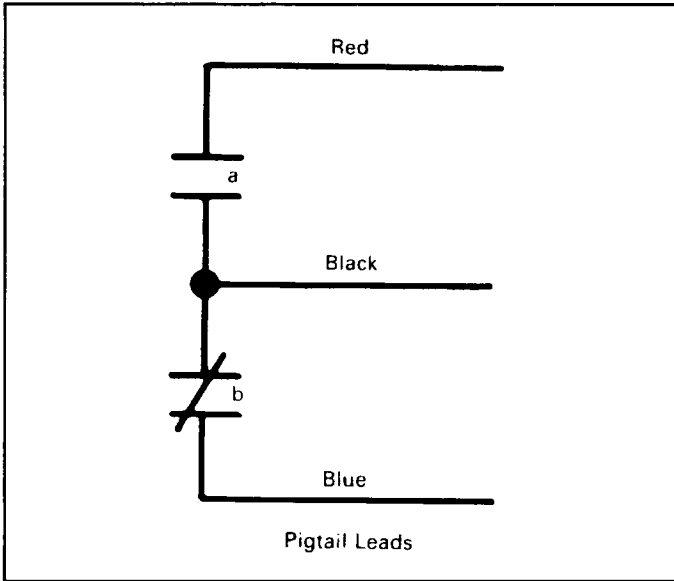


Fig. 2-5 Auxiliary Switch Connection Diagram

Cutler-Hammer

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