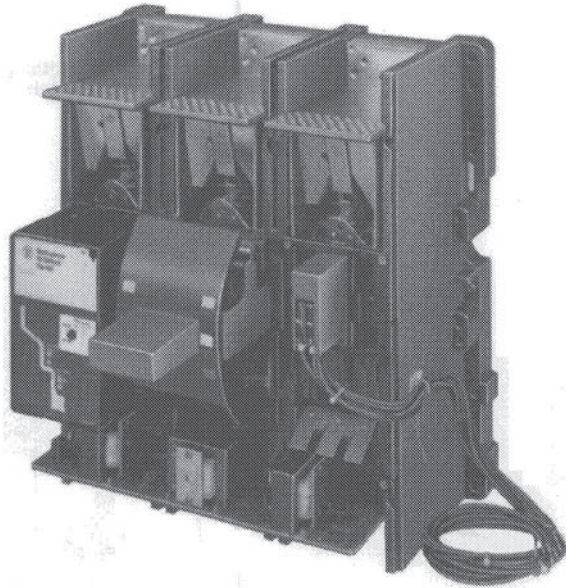


# Installation Instructions for Auxiliary Switch for R-Frame Series C Circuit Breakers and Molded Case Switches



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*Powering Business Worldwide*



## WARNING

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

**EATON 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 Eaton 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 Eaton for further information or instructions.

## 1. INTRODUCTION

### General Information

The auxiliary switch (Fig. 1-1) indicates circuit breaker contact status, and is used for remote signaling and system interlocking purposes. The switch consists of two or four single-pole double-throw (SPDT) switches assembled to a plug-in module. The plug-in module is mounted in slots in the accessory mounting deck in the right pole of the circuit breaker. The auxiliary switch is positioned so that the switch actuator is pushed by the right contact arm assembly. Each SPDT switch has one "a" and one "b" contact. When the contact arm assembly is in the contacts-closed position, the "a" contact of each SPDT switch is closed and the "b" contact is open. When the contact arm assembly is in the tripped or contacts-open position, the "a" contact is open and the "b" contact is closed.

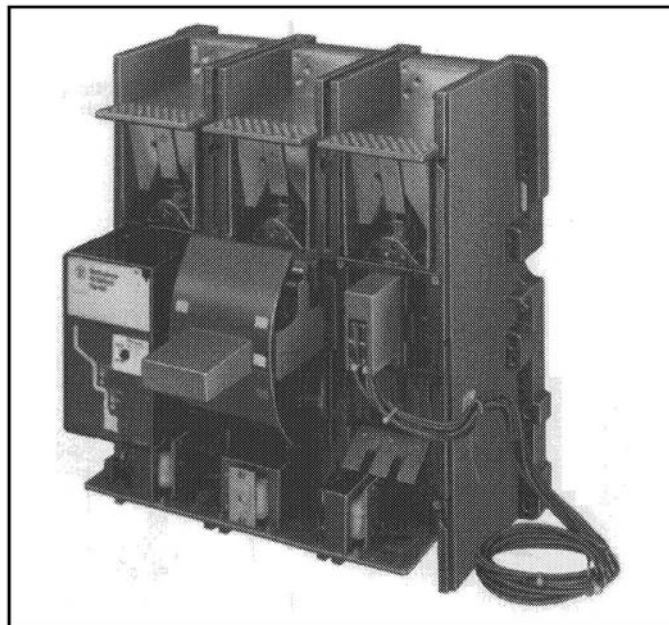


Fig. 1-1 Auxiliary Switch Installed in R-Frame Circuit Breaker.

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

**Table 1-1. Auxiliary Switch Electrical Ratings Data.**① ②

Maximum Voltage (V)	Frequency	Maximum Current (A)	Dielectric Withstand Voltage (V)
600	50/60 Hz	6	2500
125	DC	0.5③	
250	DC	0.250	

#### Notes:

- ① Endurance - 500 electrical operations plus 2500 mechanical operations.
- ② Pigtail wire size - No. 18 AWG (0.82 mm<sup>2</sup>).
- ③ Noninductive load.

The standard wiring configuration for the auxiliary switch is pigtail leads exiting the right side of the cover. An optional terminal block (Cat No. TBRD) may be mounted to the base on the right side of the circuit breaker to terminate attachment leads. The 18-inch (457.2 mm) long pigtail leads are color coded for identification; numbered identification labels are provided for pigtail leads.

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

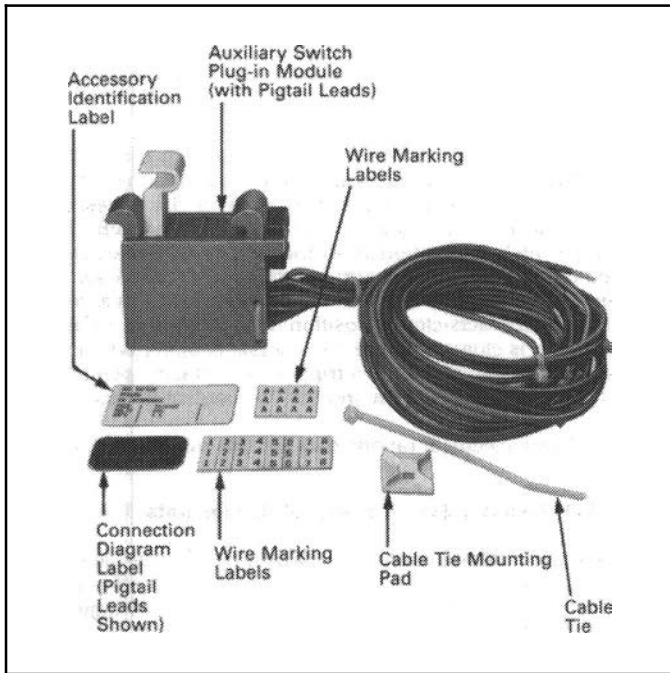


Fig. 2-1 Auxiliary Switch Kit.

## 2. INSTALLATION

Note: The auxiliary switch can be field-installed in RD and RDC circuit breakers under UL File **E64983**.

The auxiliary switch can be field-installed in RW and RWC circuit breakers.

The auxiliary switch is listed for factory installation under UL File **E7819**.

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

The auxiliary switch, shown in kit form in Fig. 2-1, is installed in the right pole of a 3-, or 4-pole circuit breaker. To install the auxiliary switch, perform the following procedures:



## WARNING

**THE VOLTAGES IN ENERGIZED EQUIPMENT CAN CAUSE DEATH OR SEVERE PERSONAL INJURY. SPECIAL ATTENTION SHOULD BE PAID TO REVERSE FEED APPLICATIONS TO ENSURE NO VOLTAGE IS PRESENT. BEFORE MOUNTING THE**

**AUXILIARY SWITCH IN 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.**

**Note:** Internal accessories are most easily installed in a circuit breaker before it is mounted in an electrical system. Although it is recommended that a circuit breaker mounted in an electrical system be removed to install accessories, it is possible to perform this task in a mounted circuit breaker provided no voltage is present and proper safety precautions are followed.

- 2-1. Switch circuit breaker to OFF position.
- 2-2. Press PUSH-TO-TRIP button to trip the operating mechanism.

**Note:** The cover holds the handle in position. Attention should be paid to the orientation of the handle on the handle arm when the cover is removed. The handle must be reinstalled in the same position.

- 2-3. Remove cover screws, cover, and handle.
- 2-4. Install auxiliary switch as described in following steps:

**Note:** For ease of installation, auxiliary switch accessories should be installed in the accessory mounting deck before other accessories (if used).

- a. Select position of auxiliary switch on accessory mounting deck (see Fig. 2-2).
  - b. Place legs of auxiliary switch mounting bracket into slots in accessory mounting deck (see Fig. 2-3).
  - c. Slide the auxiliary switch toward the line end of the circuit breaker until legs fully engage mounting deck.
  - d. Slide locking block into mounting deck until it snaps into position and prevents further movement of the auxiliary switch.
- 2-5. Attach an "A" wire marking label and a numbered wire marking label to the bundle of three leads for each switch. Numbered labels are used to differentiate one auxiliary switch from another. Labels marked "1" through "8" are provided to permit the installation of the maximum of two 4-switch assemblies. Labels marked "A" are used to show the difference between auxiliary switch leads and those for the alarm (signal)/ lockout switch (ASL). ASL switch leads (when used) use the same color code but are labeled "B".

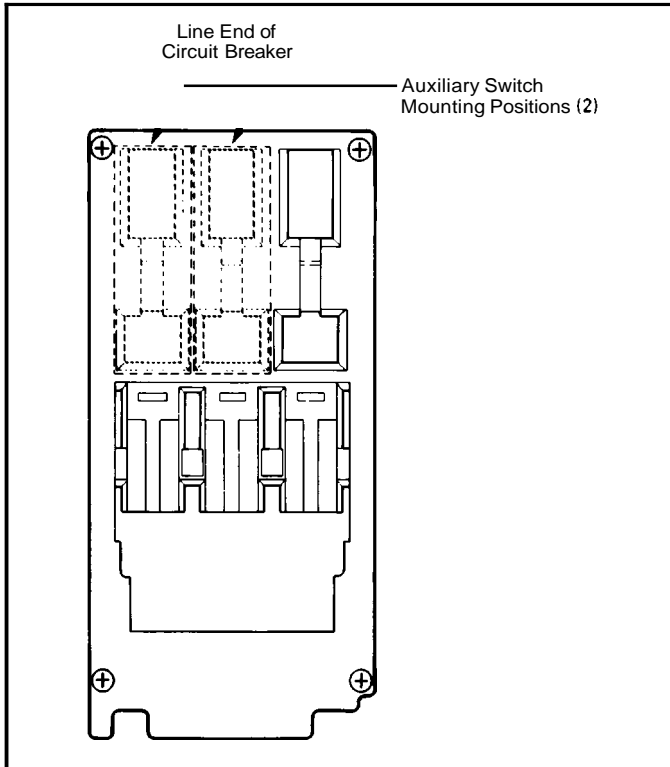


Fig. 2-2 Accessory Location Diagram.

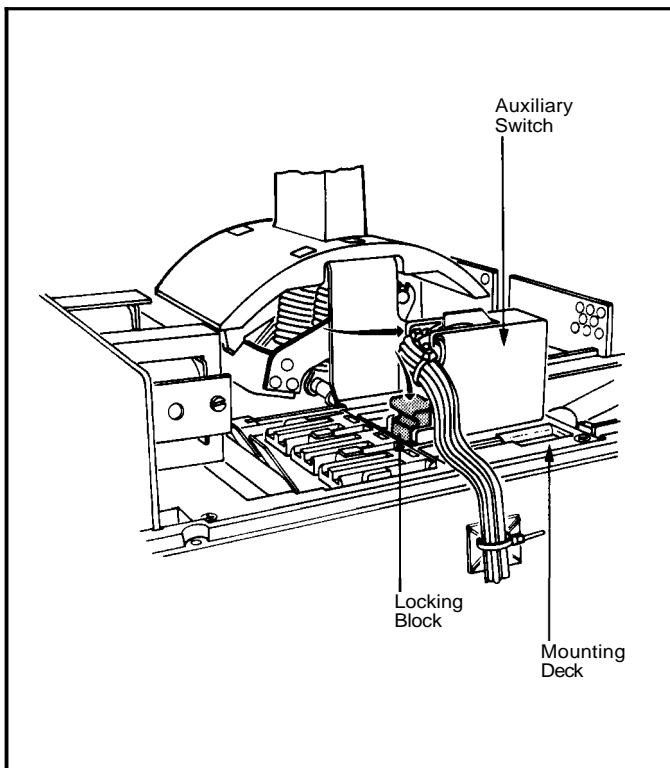


Fig. 2-3 Auxiliary Switch Positioned and Locked in Mounting Deck.



## CAUTION

**PIGTAIL LEADS COULD BE DAMAGED IF IN CONTACT WITH MOVING PARTS. PIGTAIL LEADS SHOULD BE FORMED AND ROUTED TO CLEAR ALL MOVING PARTS WHEN ACCESSORY IS PROPERLY INSTALLED.**

- 2-6. Attach cable tie mounting pad to side of circuit breaker (see Fig. 2-4 for location). Route leads to mounting pad. Ensure leads line up with slot in cover and are clear of all moving parts. Secure leads to mounting pad with cable tie. Leads from multiple accessories may be secured by a single cable tie and mounting pad (see Fig. 2-3).
- 2-7. Remove barrier indicated in Fig. 2-4 from cover accessory lead slot.



## CAUTION

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

- **HANDLE MUST BE HELD IN PLACE ON HANDLE ARM AS COVER IS BEING INSTALLED. LOCATE HANDLE SO THAT THE GREEN TABS ARE CLOSEST TO THE LINE-END OF THE CIRCUIT BREAKER.**
- **PIGTAIL LEADS ARE CLEAR OF THE COVER.**

- **PIGTAIL LEADS ARE CLEAR OF THE COVER.**

- 2-8. With circuit breaker handle in tripped position and accessory pigtail leads routed as required, install circuit breaker cover. Torque cover screws to 24 in-lbs (2.71 Nm).
- 2-9. Position accessory labels on circuit breaker as shown in Fig. 2-4.

**Note: Accessory labels show connection diagram for auxiliary switch. Pigtail leads are color coded red, black, and blue.**

- 2-10. Test auxiliary switch(es). Connect continuity tester or ohmmeter across pigtail leads or terminal block connections. Check continuity as follows:
  - a. Circuit breaker handle OFF -  
"a" contact(s) - open  
"b" contact(s) - closed.
  - b. Circuit breaker handle ON -  
"a" contact(s) - closed  
"b" contact(s) - open.

- c. Press PUSH-TO-TRIP button -  
"a" contact(s)- open  
"b" contact(s) - closed.
- d. If auxiliary switch(es) fails test, make sure  
that auxiliary switch(es) module is properly  
seated in accessory mounting deck slots. If  
auxiliary switch(es) appears to be correctly  
installed and the problem persists, contact  
Eaton.

2-11. Install circuit breaker.

2-12. Connect auxiliary switch as required (see  
Fig. 2-5).

Eaton assumes no responsibility for malfunctioning  
accessories installed improperly by the customer.

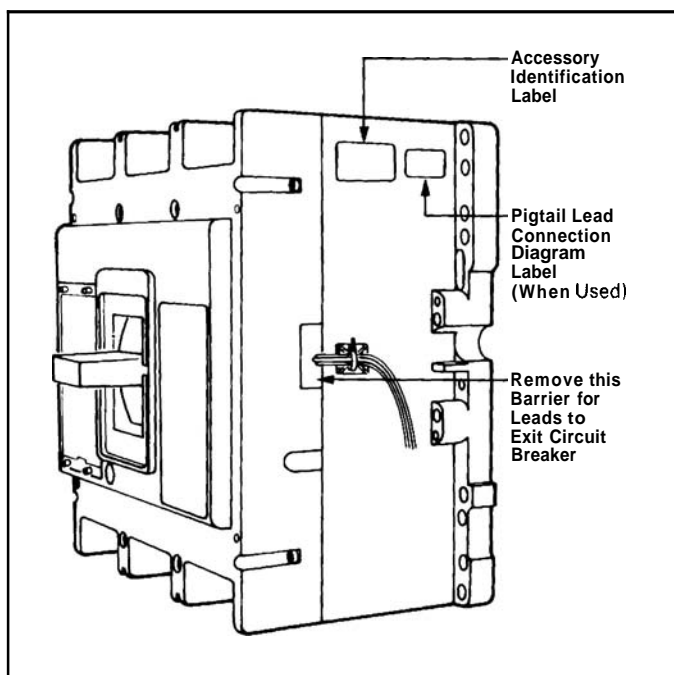


Fig. 2-4 Preferred Mounting Locations for Accessory  
Nameplate Labels.

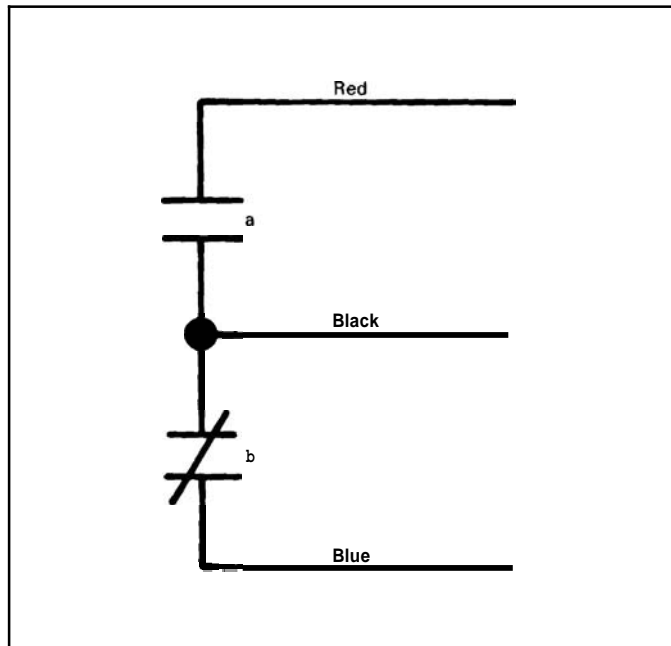


Fig. 2-5 Auxiliary Switch Connection Diagram.

**Notes:**

**Notes:**

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Printed in USA  
Publication No. IL29C125C / TBG000808  
Part No. 6645C94H03  
December 2011