

GEH-6441 Installation Instructions

MicroVersaTrip Plus™ and MicroVersaTrip PM™ Remote Display and Harness

For Connection to Enhanced MicroVersaTrip Plus™ and MicroVersaTrip PM™ Trip Units in AKR Circuit Breakers and Conversion Kits

Introduction

The Enhanced MicroVersaTrip Plus™ and MicroVersaTrip PM™ Remote Display is a versatile accessory to MicroVersaTrip Plus and MicroVersaTrip PM Trip Units. When the Remote Display is connected to the Trip Unit through the Harness, its display and keyboard can be used to monitor and program the Trip Unit. With the Remote Display mounted on the outside of the compartment door, the trip unit information can be safely accessed without the need for opening the door on the live switchgear. With the standard Harness, the Remote Display can be mounted up to 6 feet from the Trip Unit.

This publication covers installing the Harness and mounting the Remote Display for an AKR low-voltage power circuit breaker or a MicroVersaTrip Plus or MicroVersaTrip PM Conversion Kit.



Section 1. General Information

Installing a Remote Display and Harness is straight forward, but requires careful attention to these instructions. The AKR low-voltage power circuit breaker must be opened and racked out to the disconnect position to access the trip unit.

All Enhanced MicroVersaTrip Plus™ and MicroVersa Trip PM™ Trip Units are equipped at the factory to work with the Remote Display and Harness. Before

Section 2. Before Installation

WARNING: Power circuit breakers contain high speed stored-energy spring operating mechanisms. The breakers and their enclosures contain interlocks and safety features intended to provide safe, proper operating sequences. For maximum personnel protection associated with installation, operation, and maintenance of these breakers, the following procedures must be followed. Failure to follow these procedures may result in personal injury or property damage.

WARNING: Before starting any work, turn off and lock out all power sources leading to the breaker (primary and secondary).

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The following rules must be observed during installation of these Trip Units:

- Only qualified persons, as defined in the National Electrical Code, who are familiar with the installation and maintenance of power circuit breakers should perform any work associated with these circuit breakers.

installing the Remote Display and Harness, verify that the Harness is the correct length. If the standard 6-foot-long Harness was ordered, verify that an additional female connector was supplied for shortening the cable. See the following sections for detailed instructions on installing the Remote Display and shortening the Harness.

- Turn off and lock out the power source feeding the breaker before attempting any installation, maintenance, or modification. Follow all the lockout and tagging rules of OSHA requirements and all applicable codes.
- Do not work on a closed breaker or a breaker with charged closing springs. Trip the breaker OPEN and be sure the stored-energy springs are discharged, to avoid the possibility that the breaker may trip OPEN or the charging springs discharge, which could cause injury.
- Do not perform any maintenance, including breaker charging, closing, tripping, or any other function that could cause significant movement of the breaker while it is on the draw-out extension rails.
- Do not leave the breaker in an intermediate position. Always leave it in the CONNECTED, TEST, or DISCONNECTED position. Failure to heed this rule could lead to improper positioning of the breaker and to flashback.

Section 3. Installing the Remote Display

The Installation of the Remote Display requires only minor modifications to the breaker and the switchgear cubicle. Carefully follow this instructions to easily install the Display.

Installing the Remote Display Harness

1. Disconnect all power to the circuit breaker (primary and secondary power feeds).

WARNING: Some internal metal parts of a low-voltage power circuit breaker are always live. The breaker must be disconnected from the power source before performing any maintenance.

2. Open the breaker by pushing the red **TRIP** button on the front of the breaker escutcheon. For a draw-out breaker, rack the breaker all the way out to the **DISCONNECT** position.
3. On the left or right side of the trip unit, pull the **PROGRAMMER RELEASE LEVER** out from the trip unit and lift the trip unit out, as shown in Figure 1.

CAUTION: If the trip unit is removed from a current-carrying breaker, the trip unit, current transformers, and wire harness may be damaged.

4. Remove the Remote Display connector cover on the top of the trip unit by carefully prying up the edges with a small, flat screwdriver.
5. Plug one end of the Remote Display Harness into the top of the trip unit, as illustrated in Figure 2. The harness is polarized and will only plug into the trip unit one way.
6. Reinstall the trip unit by aligning the holes in the back of the trip unit with the guide pins on the mounting plate, as illustrated in Figure 3 Push firmly down on the trip unit until the **PROGRAMMER RELEASE LEVER** snaps back under the trip unit.

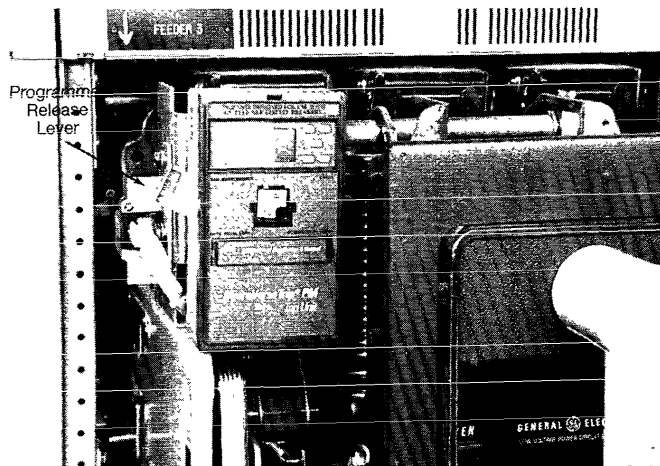


Figure 1. Removing a MicroVersaTrip Plus or MicroVersaTrip Pivi Trip Unit.

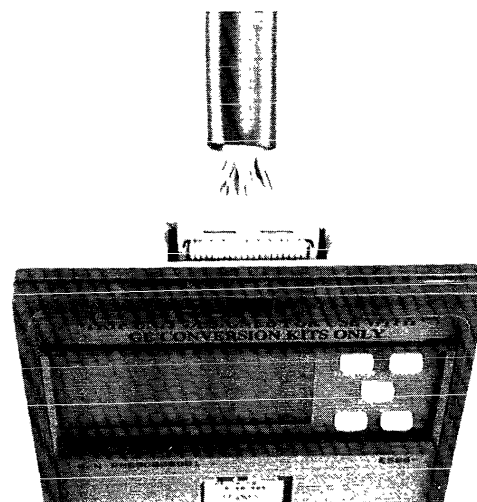


Figure 2. Connecting the Remote Display Harness to the trip unit.

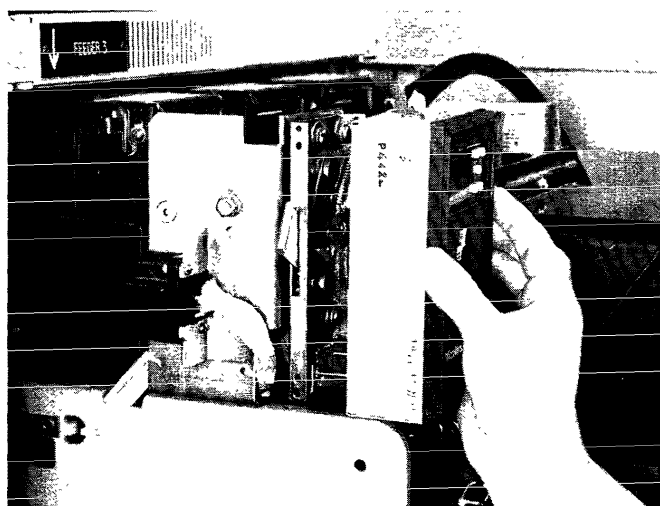


Figure 3. Installing the trip unit in the breaker.

7. Route the Remote Display Harness across the top front of the breaker frame, using the cable ties provided to secure the Harness to the breaker. Avoid placing the harness near any of the charging springs or mechanism parts. Route the Harness so that any extra cable is near the hinge on the door. A suggested cable route is shown in Figure 4.

Mounting the Remote Display

If the circuit breaker compartment door does not already have an opening for the Remote Display, it will need one. The section following this one contains instructions for installing a new AKD-8 compartment door with a predrilled mounting pattern.

The following instructions describe how to mount the Remote Display.

1. Determine the appropriate mounting location. The Display may be mounted anywhere on , the panel at which there is sufficient clearance to the rear for the Harness. The suggested location is the top hinge side corner of a lower compartment or the bottom hinge side corner of an upper compartment.

NOTE: If the circuit breaker is manually operated, ensure that the Remote Display will not interfere with the full motion of the handle.

2. Drill and knock out a 1 1/2-inch-diameter hole for the Harness connector in the center of the mounting location. Drill two 3/16-inch diameter holes for the Remote Display mounting studs, as illustrated in Figure 5. The compartment door may have to be removed first.
3. Install the Remote Display on the door so that the studs on its rear pass through the two smaller holes, ensuring that the keypad legends are right side up. Use the two nuts and lock washer provided to fasten the Display to the door.
4. Connect the remaining end of the harness to the Remote Display, as illustrated in Figure 6. To test the installation, press the Battery key on the Remote Display and verify that the information on the Remote Display matches the information on the main display. If it does not, recheck all the harness connections.

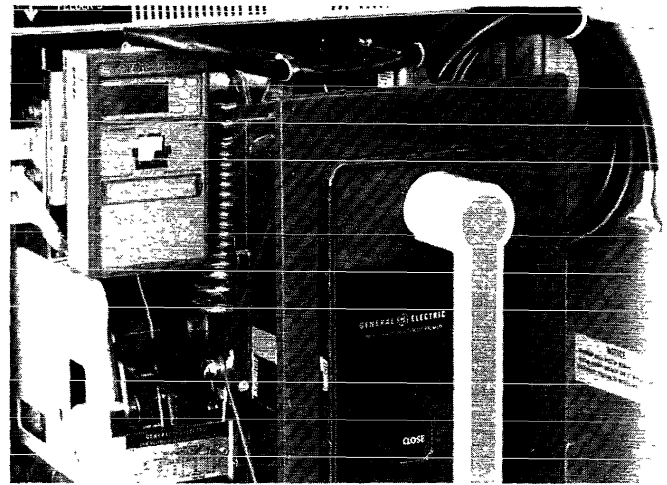


Figure 4. Routing the Remote Display Harness

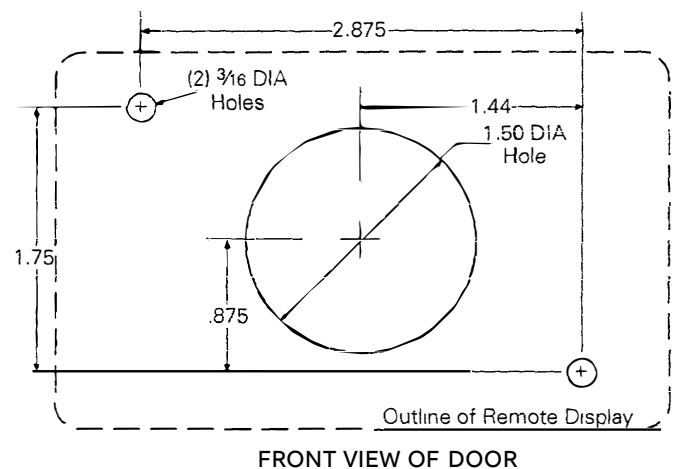


Figure 5. Remote Display mounting-hole pattern.



Figure 6. Connecting the Remote Display Harness.

These instructions do not cover all details or variations in equipment nor do they provide for every possible contingency that may be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser's purposes, the matter should be referred to the ABB Inc.

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