ABB

Power Break® II Circuit Breaker Accessories
Bell Alarm–Alarm Only

Introduction

The Bell Alarm–Alarm Only module, shown in Figure 1, can be installed in 800–4000 ampere frame Power Break II circuit breakers. This module provides a switch to remotely indicate that the circuit breaker has tripped. It is reset either automatically when the circuit breaker is reclosed or manually when the reset button on the front of the Bell Alarm–Alarm Only module is pressed.

Figure 1. Bell Alarm–Alarm Only.

In addition to activation by protection trips, the Bell Alarm- Alarm Only accessory module can be set up to interact with other Power Break II accessories, when used with a Micro VersaTrip Plus™ or MicroVersaTrip PM™ Trip Unit. DIP switches on the rear of the MicroVersaTrip Plus or Micro VersaTrip PM Trip Unit can configure the Bell Alarm–Alarm Only accessory to activate when a Shunt Trip or Undervoltage Release trip occurs. The Accessory Configuration section below describes how this can be done

The Power+ Trip Unit activates the Bell Alarm–Alarm Only for protection trips only.

The catalog numbers for the Bell Alarm–Alarm Only are listed in Table 1.

Catalog No.	Contact Rating
SPBAA240	6 A at 240 Vac 0.25 A at 250 Vdc 0.50 A at 125 Vdc
SPBAA600 ①	6 A at 600 Vac 0.25 A at 250 Vdc 0.50 A at 125 Vdc

① 600 V version is not UL listed.

Table 1. Bell Alarm–Alarm Only catalog numbers.

Operation

The Bell Alarm–Alarm Only provides normally open (NO) and normally closed (NC) outputs available at the terminal block on the right side of the breaker, as illustrated in Figure 2. The outputs change state whenever a breaker trip occurs. This trip can be caused by an overcurrent condition detected by the Trip Unit. This trip can also be generated by the Shunt Trip, Shunt Trip with Lock out, or Undervoltage Release, if installed with a MicroVersaTrip Plus or MicroVersaTrip PM Trip Unit and if the appropriate DIP switches have been set on the back of the Trip Unit. Power+ Trip Units can only activa-te the Bell Alarm–Alarm Only for a protection trip.

The Bell Alarm–Alarm Only accessory resets automatic-ally, returning the outputs to their normal configuration, when the breaker is reclosed.

The Bell Alarm–Alarm Only can also be reset manually, before the breaker is reclosed, by pressing the reset button on the front of the module.
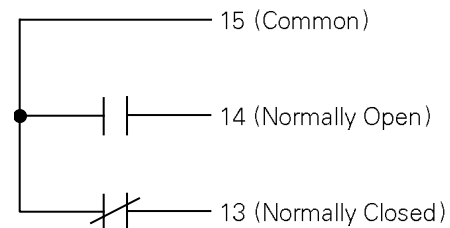

15 (Common)
14 (Normally Open)
13 (Normally Closed)

Figure 2. Bell Alarm–Alarm Only connections on the right terminal block. The contacts are shown in the reset state.

Installation

WARNING: Before installing any accessories, turn the breaker OFF, disconnect it from all voltage sources, and discharge the charging springs.

AVERTISSEMENT: Avant d'installer tout accessoire, mettre le disjoncteur en position OFF, le déconnecter de toute tension d'alimentation, et décharger les ressorts d'armement.

The Bell Alarm–Alarm Only is installed in the accessory compartment on the front of the circuit breaker in the position shown in Figure 3.

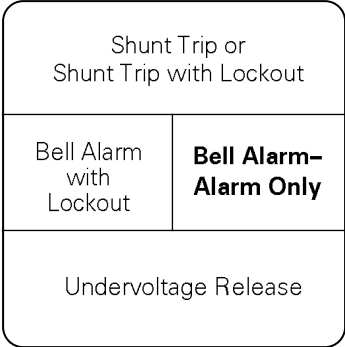| Shunt Trip or Shunt Trip with Lockout	
Bell Alarm with Lockout	**Bell Alarm– Alarm Only**
Undervoltage Release	

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Figure 3. Accessory compartment on front of circuit breaker, with Bell Alarm–Alarm Only slot indicated.

Use the following procedure to install the Bell Alarm–Alarm Only into the accessory compartment:

1. Open the hinged door over the accessory compartment and Trip Unit.

2. To remove an existing accessory module, loosen the accessory locking screw and pull the module out with the Rating Plug Removal Tool (catalog number TRTOOL).

3. Insert the Bell Alarm–Alarm Only module into the proper slot, as illustrated in Figure 4. The Bell Alarm–Alarm Only module is keyed for the correct slot in the accessory compartment. If the module cannot be fully seated in the compartment, check that the compartment position is correct.

4. Tighten the locking screw on the front of the accessory until it is snug (9 in-lbs).

CAUTION: Overtightening the locking screw may damage or distort the case of the accessory.

ATTENTION: Le serrage excessif de la vis de verrouillage peut déformer le boîtier d'accessoire.

5. If the breaker is equipped with a MicroVersa Trip Plus or MicroVersaTrip PM Trip Unit, the Bell Alarm–Alarm Only accessory can be configured to activate after trips due to installed Undervoltage Release or Shunt Trip accessories with the procedure described in the Accessory Configuration section.
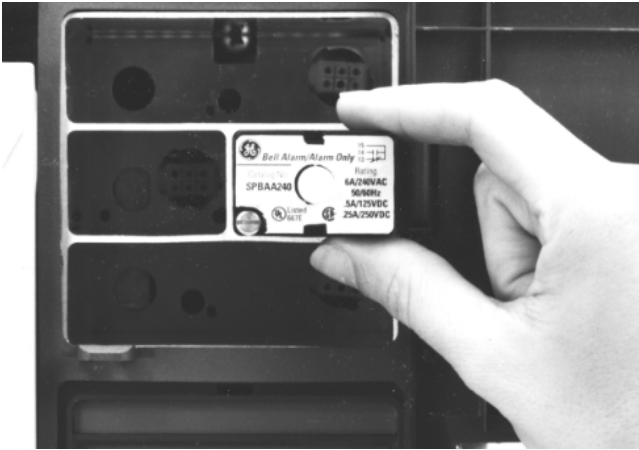

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Figure 4. Inserting the Bell Alarm-Alarm Only into the accessory compartment.

6. Connect the control wiring for the Bell Alarm–Alarm Only at the right terminal block, as illustrated in Figure 2.

7. Test the Bell Alarm–Alarm Only to ensure proper operation, according to the procedures below.

8. Reconnect power to the circuit breaker and any other accessories.

9. Close and lock or seal the door over the accessory compartment and Trip Unit to prevent unauthorized changes to Trip Unit settings and to keep contaminants out of empty accessory slots.

10. If the Bell Alarm–Alarm Only is rated at 600 V, remove the UL label from the breaker top cover.

Accessory Configuration

This section applies only if Shunt Trip or Undervoltage Release accessories are installed in the breaker, along with a MicroVersaTrip Plus or MicroVersaTrip PM Trip Unit. The Bell Alarm–Alarm Only accessory can be configured to activate if a Shunt Trip or Undervoltage Release trip occurs. The configuration can be changed by removing the Trip Unit from the breaker, setting the DIP switches on the rear of the Trip Unit, and reinstalling the Trip Unit. Figure 5 illustrates the Trip Unit rear DIP switches. Table 2 lists the switch functions and the factory settings for each.
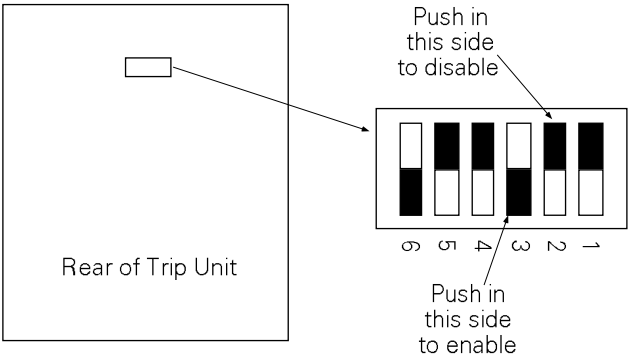

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Figure 5. Accessory switch on the rear of a MicroVersaTrip Plus™ or MicroVersaTrip PM™ Trip Unit, showing the factory settings (solid part indicates that switch is pushed in on that side).

Switch	Factory Setting	Function
1	Disabled	Shunt trip activates Bell Alarm–Alarm Only
2	Disabled	UVR trip activates Bell Alarm–Alarm Only
3	Enabled	Protection trip activates Bell Alarm–Alarm Only
4	Disabled	Shunt trip activates Bell Alarm with Lockout
5	Disabled	UVR trip activates Bell Alarm with Lockout
6	Enabled	Protection trip activates Bell Alarm with Lockout

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Table 2. Accessory switch settings, including factory defaults.

Description of Switch Settings

Following are descriptions of the effects of each accessory switch when it is *enabled:*

1. When a Shunt Trip accessory causes the breaker to trip, the contacts of the Bell Alarm–Alarm Only also change state. (The factory switch setting is *disabled.*)

2. When an Undervoltage Release accessory causes the breaker to trip, the contacts of the Bell Alarm–Alarm Only also change state. (The factory switch setting is *disabled.*)

3. When a protection trip (long-time, short-time, instantaneous, ground-fault, or protective-relay) occurs, the contacts of the Bell Alarm–Alarm Only also change state. (The factory switch setting is *enabled.*)

4. When a Shunt Trip accessory causes the breaker to trip, the contacts of the Bell Alarm with Lockout also change state. (The factory switch setting is *disabled.*)

5. When an Undervoltage Release accessory causes the breaker to trip, the contacts of the Bell Alarm with Lockout also change state. (The factory switch setting is *disabled.*)

6. When a protection trip (long-time, short-time, instantaneous, ground-fault, or protective-relay) occurs, the contacts of the Bell Alarm with Lockout also change state. (The factory switch setting is *enabled.*)

Procedure for Changing Switch Settings

Change the accessory switch settings with the following procedure:

> **WARNING:** Before beginning this procedure, turn the breaker off, disconnect it from all voltage sources, and discharge the closing springs.

> **AVERTISSEMENT:** Avant de commencer cette procédure, mettre le disjoncteur en position OFF, le déconnecter de toute tension d'alimentation, et désarmer les ressorts de fermeture.

1. Loosen the four #8-32 screws on the breaker trim-plate assembly and remove the trim plate.

2. Loosen the four #10-32 screws at the corner of the breaker cover. Remove the cover from the breaker face.

3. Pull the Trip Unit locking lever to the right, then hold the Trip Unit near the battery cover and lift it straight out of the breaker.

4. Refer to Figure 5 and Table 2 to determine the switches to be changed.

5. Push in the appropriate "Enable" or "Disable" side of the switch.

6. Confirm all switch settings before reinstalling the Trip Unit in the breaker.

7. Pull the Trip Unit locking lever to the right. While holding the lever, carefully align the connector on the rear of the Trip Unit with the connector in the breaker. Press down on the Trip Unit, while holding it near the battery cover. When the Trip Unit is fully seated, slide the locking lever back to the left.

8. Reinstall the breaker top cover and tighten the four #10-32 screws to 32 in-lbs.

9. Replace the trim plate and tighten the four #8-32 screws to 20 in-lbs.

10. Verify that the switch settings are correct by inducing breaker trips from the UVR and Shunt Trip and checking the responses of the Bell Alarm–Alarm Only and Bell Alarm with Lockout accessories.

Test Procedure

After the Bell Alarm–Alarm Only has been installed, test it for proper operation with the following procedure:

1. Firmly press in the reset button on the front of the Bell Alarm–Alarm Only until it latches.

2. With an ohmmeter, verify continuity between positions 13 and 15 at the terminal block on the right side of the breaker.

3. Verify that terminals 14 and 15 show an open circuit.

Trouble-Shooting

The following guide is provided for trouble-shooting and isolating common problems. It does not cover every possible situation. Contact the Customer Support Center at 800-843-3742 if any problem is not resolved by these procedures.

Symptom	Possible Cause	Corrective Action
1. The outputs do not change state on a trip or the normally closed terminals show no continuity.	The module is not fully seated in the compartment.	Push the Bell Alarm–Alarm Only module firmly into the compartment and tighten the hold-down screw to 9 in-lbs.
	The Bell Alarm–Alarm Only configuration switches on the rear of the MicroVersaTrip Plus or MicroVersaTrip PM Trip Unit are not properly set.	Follow the procedure to remove the Trip Unit and set the switches. Check that the switches have been set correctly.
2. The Bell Alarm–Alarm Only does not reset when the circuit breaker is reclosed or when the reset button is pressed.	The module is not fully seated in the compartment.	Push the Bell Alarm–Alarm Only module firmly into the compartment and tighten the hold-down screw to 9 in-lbs.