

DEH-13240 Installation Instructions

EntelliGuard® G Circuit Breaker Accessories

Command Shunt Trip

Introduction


Command Shunt Trip:


A device designed to switch the Power Circuit Breaker OFF remotely. When commanded through the trip unit, a Shunt release instantaneously activates the circuit breaker mechanism ensuring a rapid disconnection of the main contacts. The device is available as factory mounted component or as a field mountable device. It is an easy-to-fit, clip-on unit, with simple plug-in connectors to the Secondary Disconnect Block and breaker harness. The device is commanded only through the trip unit through serial communications.



Table 1. Catalog Numbers and Ratings

Catalog No.	DC Voltage	AC Voltage
GCST024DR	24V DC	-
GCST030DR	30V DC	-
GCST048R	48V DC	48V (50-60Hz)
GCST120R	110-130V DC	110-130V (50-60Hz)
GCST240R	220-240V DC	220-240V (50-60Hz)
GCST277R	250V DC	250-277V (50-60Hz)

 **WARNING:** Before installing any accessories, turn the breaker OFF, disconnect it from all voltage sources,

 **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

- **Inrush Power: 350VA**
- **Steady state : 50VA**

Use the following procedure to install the Shunt Trip accessory into the circuit breaker.

1. Verify that the rating on the Shunt Trip Mechanism identification plate matches the voltage rating required for the application, as listed in Table 1.

2. Turn the breaker off and discharge the closing springs by depressing the OFF and ON buttons in the sequence OFF-ON-OFF. Verify that the breaker OFF-ON indicator shows OFF on a green background and that the charge indicator shows DISCHARGE on a white background. If installing in a draw-out type breaker remove breaker from adaptor (cassette) before continuing.

3. Loosen the 6 screws on front cover (fascia) using a posidrive screw driver as shown in Fig 1.B Rotate the charging handle down and slide the front cover over the handle to remove the front cover as shown in Fig. 1.C

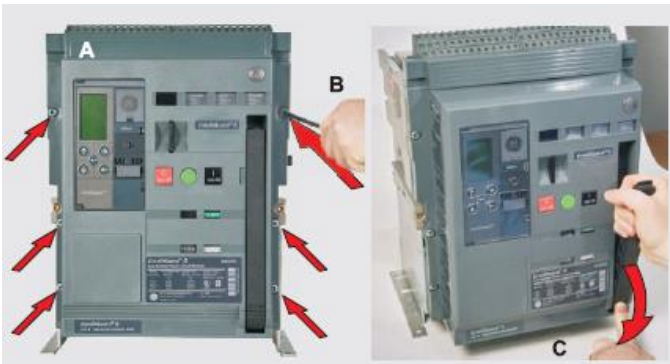


Figure 1. (A) Front Cover (B) Screw Removal (C) Handle Rotation

4. This accessory is mounted on the mechanism top plate at 1st location as shown in Fig.2.



Figure 2.

5. Tilt the coil forward and engage the front hooks into the mechanism top support plate as shown in the Fig. 3. Tilt the device backwards until the rear

hooks engage in the slots on the mechanism top support plate as shown in the Fig. 4



Figure 3. Shunt Trip inserting.



Figure 4. Shunt Trip assembly

6. After installing the Command shunt release on the mechanism top plate, connect the input wire assembly plug to the A5/A6 locations marked on the secondary disconnect as shown in Fig. 5.



Figure 5. Wiring.

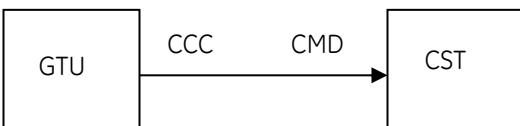
7. Ensure that the plug-in connection is firm and that the plug is inserted into the correct terminals.

8. Place the ferrite behind the coil assembly. Then connect the remaining wires to the mating "CCC" connector on the breaker wiring harness, shown in Figure 6.



Figure 6.

If there is no Command Close Coil accessory on the circuit breaker the Command Shunt Trip is connected directly to the mating "CCC" connector on the breaker harness, as shown here:



If the Command Shunt Trip & Command Close Coil accessories are both installed on the breaker use the provided "Y" or "splitting harness" to permit both devices to share the "CCC" connector on the breaker harness. Please see Figure 7 for the schematic illustration of this connection.

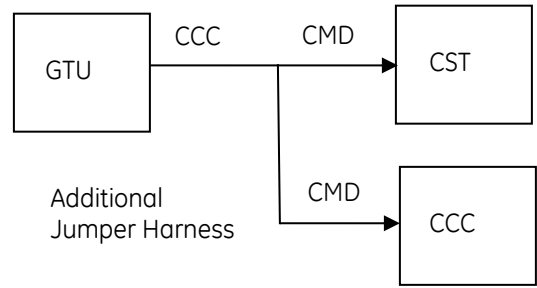


Figure 7.

9. To reinstall the cover, rotate the charging handle down slide the front cover over the handle to assemble the front cover to housing as shown in Fig. 8.

10. Ensure the fascia is aligned properly with the trip unit and the pad lock features of the breaker.



Figure 8.

11. Fasten the 6 mounting screws of fascia with the housing using a pozidrive screwdriver. Apply torque of 6 Nm (4.42ft-lbs).

12. This accessory must be used with EntelliGuard G trip unit firmware revision 8.00.30 and higher only. The firmware version can be found on the trip unit side label as shown in fig 9 below. Alternatively, it can be found from the trip unit STATUS menu. (Refer to DEH 4567 for more details on trip unit operation).

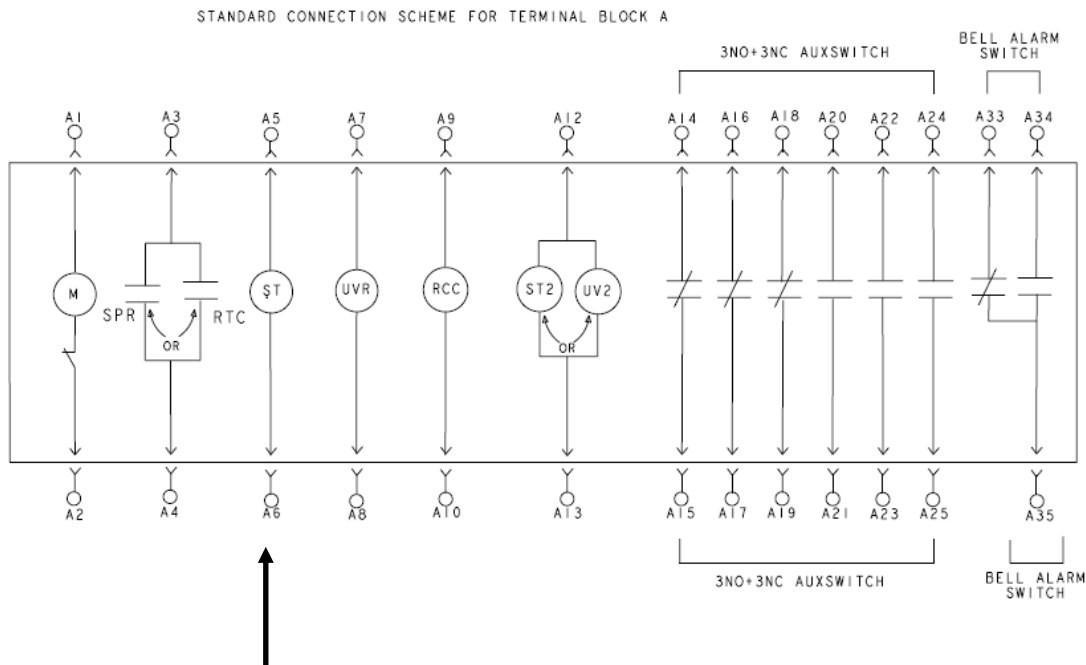


Figure 9.

Reference:

Command Shunt Trip Connection Scheme.

The accessory must be continuously powered from an external control power source. Unlike standard shunt trip accessories, the Command Shunt Trip does not actuate when power is applied. Actuation is achieved by sending a serial communications command to the trip unit. The trip unit will send the required signal to the powered accessory to actuate it. Please see the next section for Serial Communication detail.



Reference:

Command Shunt Trip Serial Communications

The Command Shunt Trip is commanded through a properly configured EntelliGuard trip unit via serial communications. Note that the Command Shunt Trip must be continuously powered to receive trip unit commands.

The trip unit firmware revision must be 08.00.30 or higher. Earlier revisions do not support the Command Shunt Trip accessory.

Figures 6 & 7 show the electrical interconnection between the trip unit and the Command Shunt Trip accessory. The Command Shunt Trip accessory must be continuously powered.

The trip unit must have an auxiliary DC supply to use serial communications functions.

To command the shunt trip remotely using Modbus, send a Coil ON command (Modbus Function Code 05 ON) to register 200. The command will remain in effect in the trip unit until it is commanded OFF. The Shunt Trip will actuate for approximately 200 milliseconds, then retract. It will not actuate again until the trip unit command is turned off for at least 100 milliseconds, or power is interrupted.

To turn off the trip unit Shunt Trip output command, send a COIL OFF command (Modbus Function Code 05 OFF) to register 200. This will permit the Shunt Trip to be actuated again by Modbus command.

Note that the remote command input must be set to OFF before the shunt trip can be retriggered with a new command.

Refer to DEH-4567 EntelliGuard Trip Unit Instruction for more details on serial communication configuration and use.

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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