

DEH-41418 Installation Instructions

EntelliGuard[®] G Circuit Breaker Accessories

Introduction

Command Closing Coil:

Command Close coil is used to switch ON the Power Circuit Breaker remotely. When commanded it releases the spring charged mechanism thus ensuring a rapid connection of the main contacts. The Command Close coil offers an extended functionality in addition to all the features of the standard closing coil. Additional connections allow it to be wired out through the trip unit to be commanded through the communications bus. An optional electrical close pushbutton that fits onto the breaker front fascia is available to command the accessory from the breaker directly.



Table 1.

Catalog No	DC Voltage	AC Voltage
GCCC024DR	24V	
GCCC030DR	30V	
GCCC048R	48V	48V
GCCC060DR	60-72V	
GCCC120R	110-130V	110-130V
GCCC208AR		208V
GCCC240R	220-240V	220-240V
GCCC277R	250V	250-277V

Command Closing Coil



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

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

Use the following procedure to install the Command Closing Coil accessory into the circuit breaker.

1. Verify that the rating on the Command Closing Coil 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.

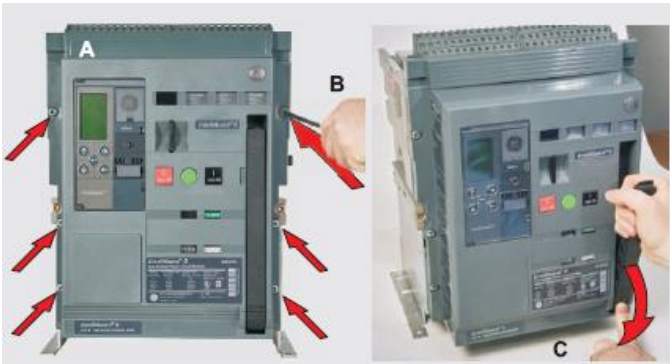


Figure 1. (A) Front Cover (B) Screw Removal (C) Handle Rotation

4. Place the coil on the mechanism top plate and assemble the connector marked as CCC from the Command closing coil to the connector marked as CCC in the Trip unit harness as shown in Fig. 2.

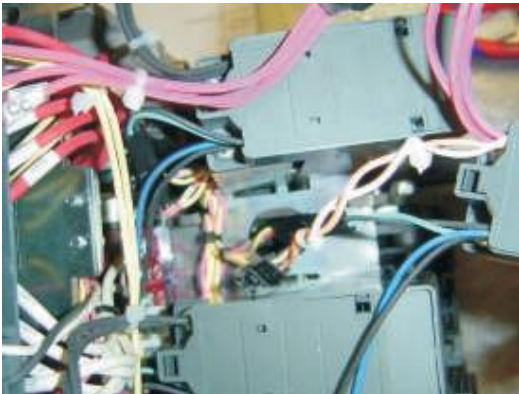


Figure 2. Plug Assembly

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



Figure 3. Coil Assembly

6. Tilt the device backwards until the rear hooks engage in the slots on the mechanism top support plate as shown in the Fig. 4.

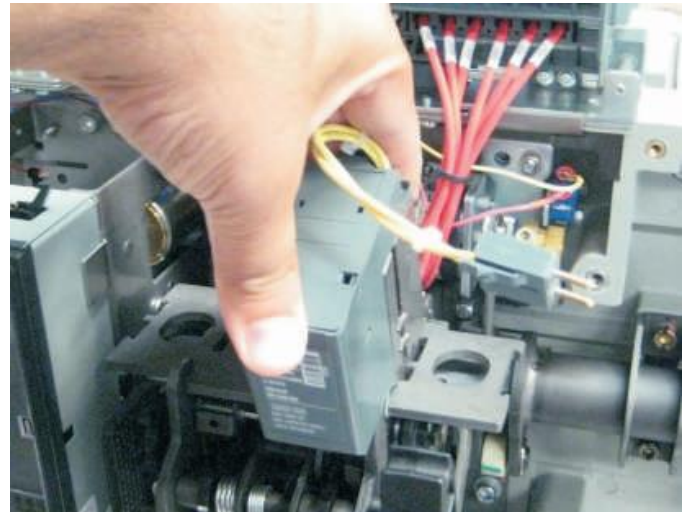


Figure 4. Coil Assembly

7. After installing the closing coil on the mechanism top plate, connect the input wire assembly plug to the A9- A10-A11 locations marked on the secondary disconnect as shown in Fig. 5.

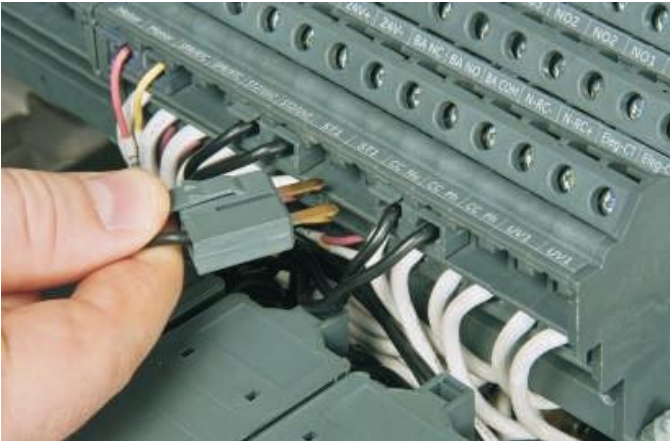


Figure 5. Close Coil Plug assembly

8. Ensure the plug is inserted properly by the snap in the secondary disconnect.

9. Place the ferrite from the coil assembly behind the coil. Route the wire from the close coil to the side of the PMU base for the connection with Electrical close switch as shown in fig.6.

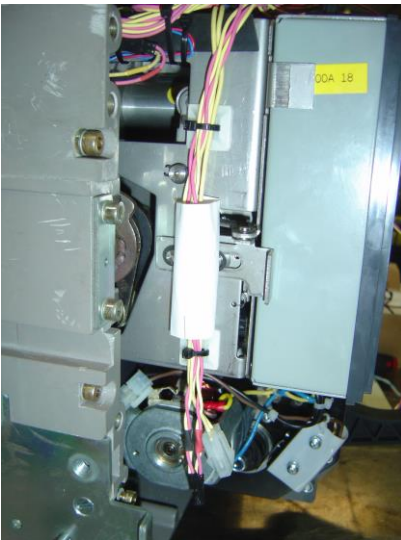


Figure 6. Close Coil wire routing

Installation of Electrical close switch:

10. Slide the switch assembly over the mechanism side sheet and locate in the two locating holes as shown in Fig. 7.



Figure 7. EC switch assembly

11. Assemble the screw with washer as shown in Fig. 8. Tighten the screw to torque 2Nm(1.47ft-lbs).



Figure 8. Screw assembly

12. Plug the connector from the EC switch assembly to the connector from the command closing coil beside the PMU base as shown in Fig 9.



Figure 9. Connector plug assembly

Installation of Push button on the fascia:

13. Remove the existing dummy button by removing the screw as shown in fig 10.



Figure 10. Connector plug assembly

14. Insert the push button and the spring from the front of the fascia. Assemble them to the fascia with the screw & washer as shown in fig 11.

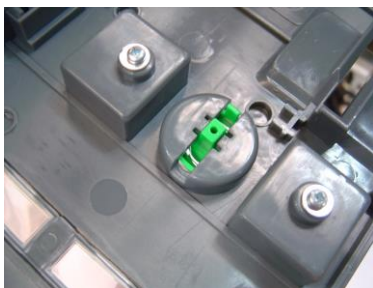


Fig 11. Push button assembly

15. Rotate the charging handle down and slide the front cover over the handle to assemble the front cover to housing as shown in Fig. 12.



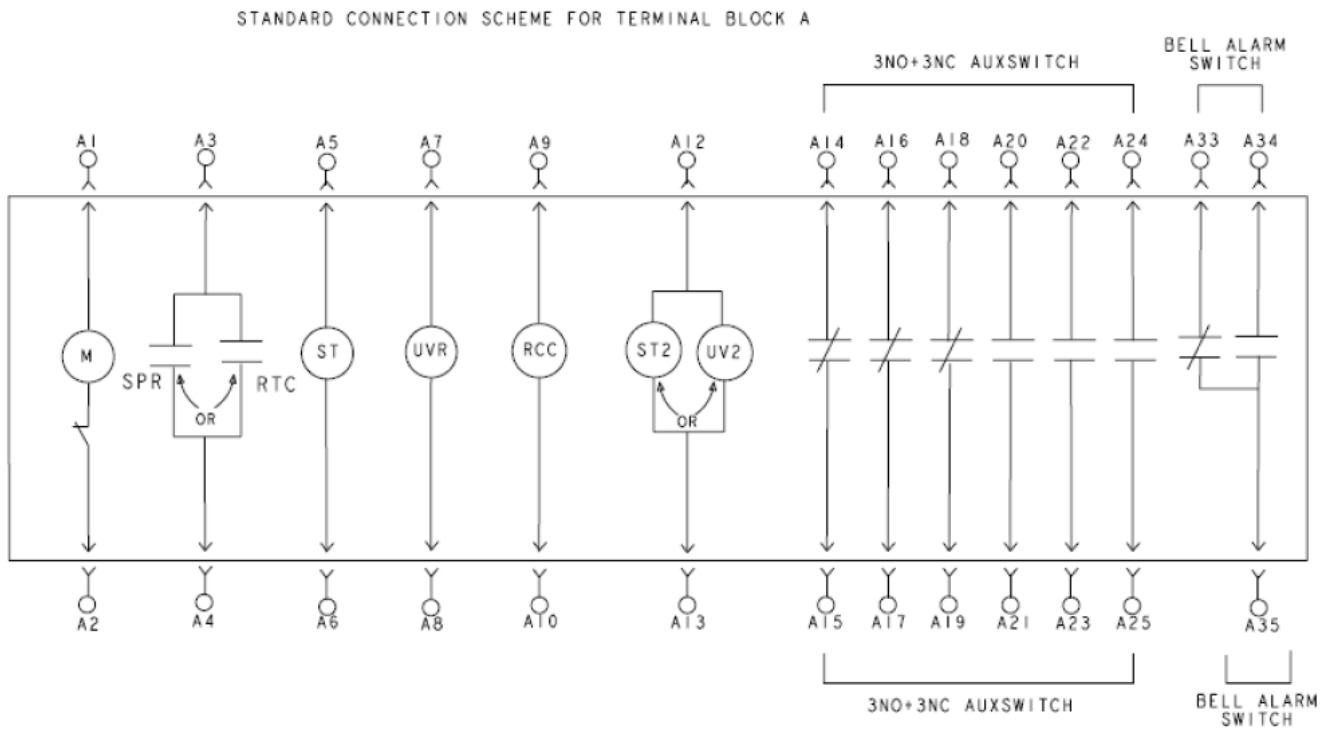
Figure 12.

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

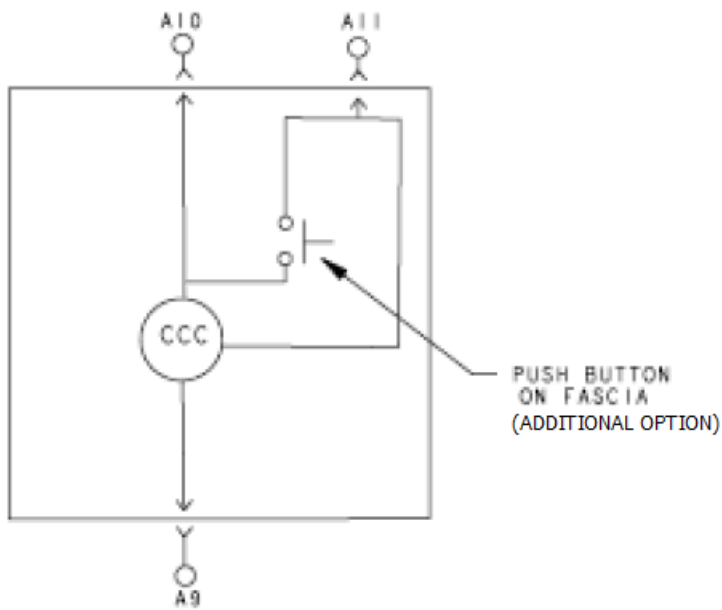
17. Fasten the 6 mounting screws of fascia with the housing using a pozidrive screwdriver. Apply torque of 6 Nm (4.42ft-lbs).

Reference:

Command Closing Coil Connection Scheme:



CONNECTION SCHEME FOR
COMMAND CLOSE COIL (BLOCK A)



A10 – provides constant control power to the Command Close Coil accessory.

A9 – control power return.

A11 – Separate local command input. Must be fed from the same source as A10.

Reference:

Command Close Coil Serial Communications

The Command Close Coil is actuated either by applying a signal voltage to the A11 terminal via external contact or optional breaker electrical close pushbutton, or it can be commanded through a properly configured EntelliGuard trip unit via serial communications. Note that the Command Close Coil must be continuously powered at A9/A10 to receive trip unit commands.

Figure 2 shows the electrical interconnection between the trip unit and the Command Close Coil accessory. The trip unit must have an auxiliary DC supply to use serial communications functions.

To command the close coil remotely using Modbus, send a Coil ON command (Modbus Function Code 05 ON) to register 111. The command will remain in effect until it is turned OFF.

To turn off the command, send a COIL OFF command (Modbus Function Code 05 OFF) to register 111.

Note that the remote command input must be set to OFF and the local command inputs must be OFF before the close coil can be retriggered with a new command.

Refer to DEH-4567 EntelliGuard Trip Unit Instruction for more details.

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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