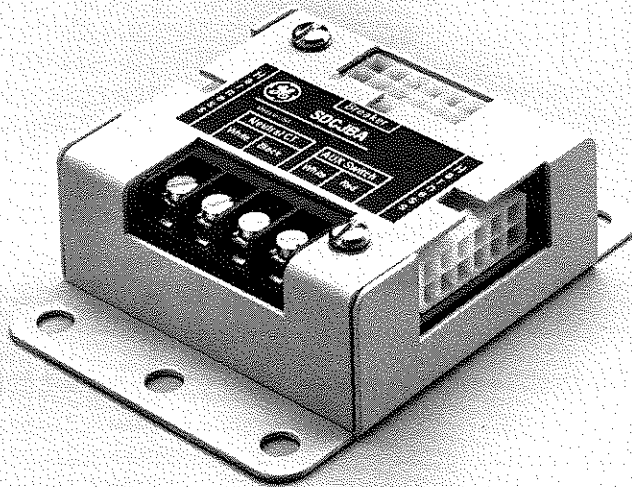




## Distribution Cable Junction Box

For Spectra RMS™ Molded-Case Circuit Breakers with MicroVersaTrip® PM Trip Units or MicroVersaTrip Plus Trip Units

For Catalog Number SDCJBA



UL Listed  
Circuit Breaker Accessory

### OVERVIEW

The General Electric Distribution Cable Junction Box is a modular connector used to provide quick, easy and reliable attachment of Spectra RMS Molded-Case Circuit Breakers with MicroVersaTrip PM or Plus Trip Units to the Distribution Cable System. The electronic signals supported by the Distribution Cable Junction Box vary depending on the type of Molded-Case Circuit Breaker used; a list of supported functions appears below.

#### Input signals to Spectra RMS Breaker with MicroVersaTrip PM Trip Unit

- control power (+24vdc)
- control power (common)
- system communications (commnet +)
- system communications (commnet -)
- breaker position (via installed aux. switch - red wire)
- breaker position (via installed aux. switch - white wire)
- voltage A  $\phi$  (must be from Voltage Module or Voltage Conditioner Plate or Voltage Conditioner Assembly)

- voltage B  $\phi$  (must be from Voltage Module or Voltage Conditioner Plate or Voltage Conditioner Assembly)
- voltage C  $\phi$  (must be from Voltage Module or Voltage Conditioner Plate or Voltage Conditioner Assembly)
- neutral current sensor - black (for equipment ground fault)①
- neutral current sensor - white (for equipment ground fault)①

#### Input signals to Spectra RMS Breaker with MicroVersaTrip Plus Trip Unit

- control power (+24vdc)
- control power (common)
- neutral current sensor - black (for equipment ground fault)①
- neutral current sensor - white (for equipment ground fault)①

Figure 1 shows how the Distribution Cable Junction Box is used in a typical MicroVersaTrip PM system. Figure 2 shows how the Distribution Cable Junction Box is used in a typical MicroVersaTrip Plus system.

① Neutral current sensor input is required for 3 $\phi$ /4W or 1 $\phi$ /3W systems. For 3 $\phi$ /3W systems do not make any connections.

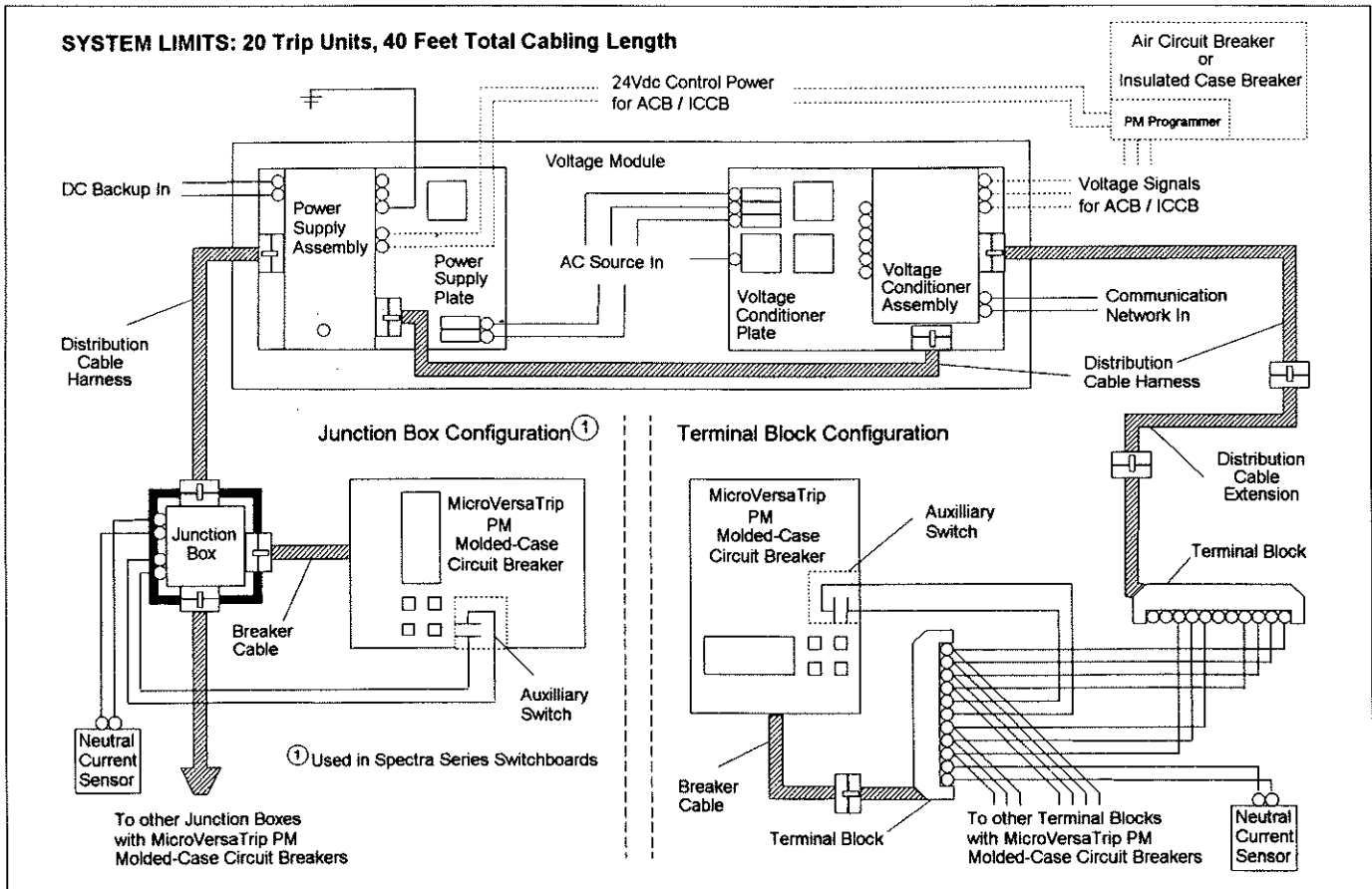


Figure 1. Typical MicroVersaTrip® PM Trip Unit System detailing the Distribution Cable Junction Box.

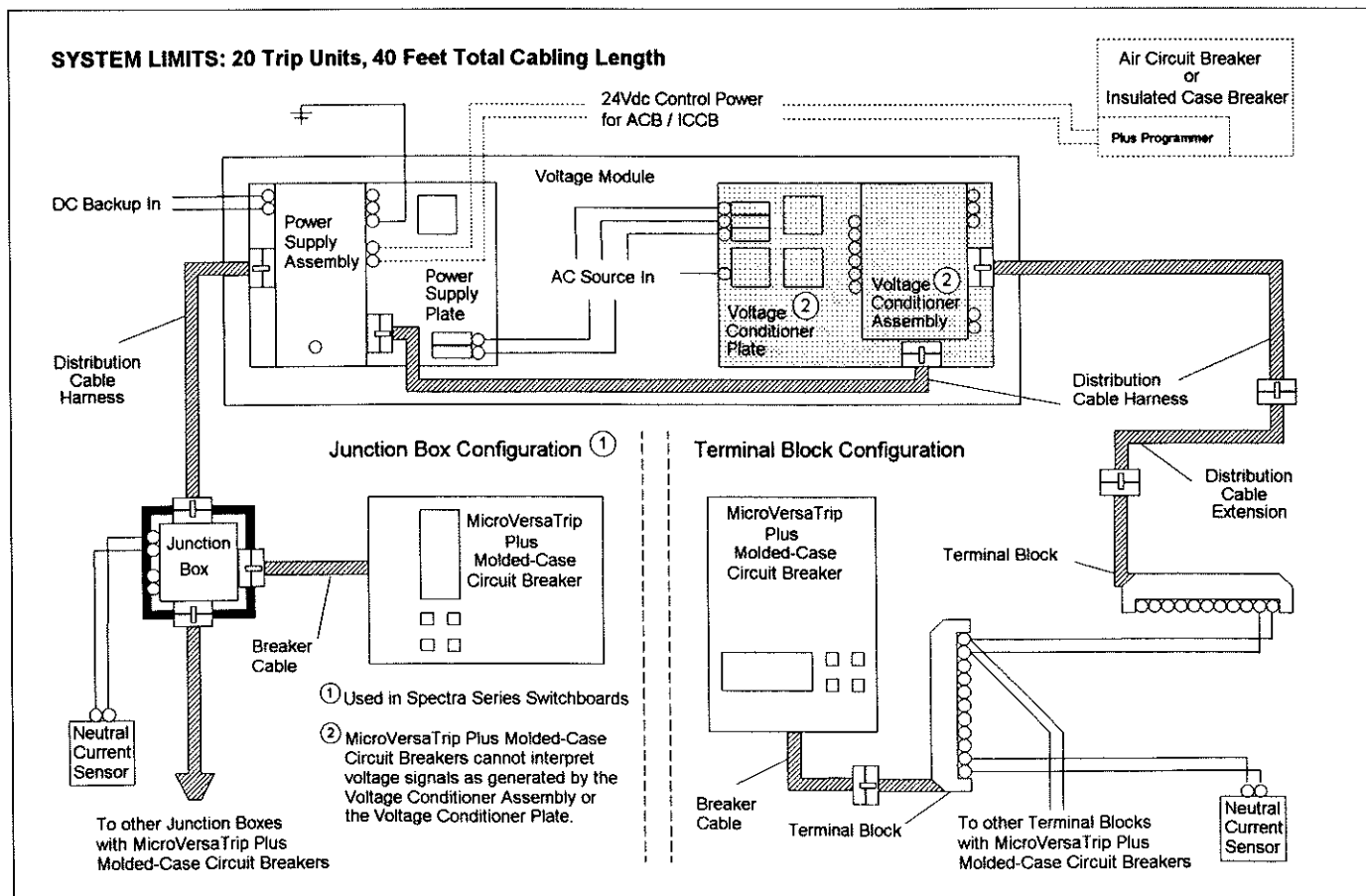


Figure 2. Typical MicroVersaTrip Plus Trip Unit System detailing the Distribution Cable Junction Box.

The Distribution Cable Junction Box has a 12-pin plug connector on the front face labeled "BREAKER". This connector mates to the 12-pin receptacle connector of the Spectra RMS™ Molded-Case Circuit Breaker with a MicroVersaTrip® PM or a MicroVersaTrip Plus Trip Unit. Figure 3 shows this "BREAKER" input connector pinout for the Distribution Cable Junction Box for each type of trip unit.

The Distribution Cable Junction Box also has two 12-pin plug connectors on each side labeled "HARNESS". These connectors mate with the 12-pin receptacle connectors of a Distribution Cable Harness (cat. nos. SDCHA11, SDCHA30 or SDCHA60). By connecting to these plugs, the Distribution Cable Junction Box provides a connection into or out of the Distribution Cable System.

The system is used to carry a variety of electronic signals between Spectra RMS Molded-Case Circuit Breakers with MicroVersaTrip PM Trip Units or MicroVersaTrip Plus Trip Units and Distribution Cable accessories. The electronic signals supported by the Distribution Cable System vary depending on the type of molded-case circuit breaker used; a list of supported signals follows.

### Spectra RMS Breaker with MicroVersaTrip PM Trip Unit

- control power (+24vdc)
- control power (common)
- system communications (commnet +)
- system communications (commnet -)
- voltage A  $\phi$  (must be from Voltage Module or Voltage Conditioner Plate or Voltage Conditioner Assembly)
- voltage B  $\phi$  (must be from Voltage Module or Voltage Conditioner Plate or Voltage Conditioner Assembly)
- voltage C  $\phi$  (must be from Voltage Module or Voltage Conditioner Plate or Voltage Conditioner Assembly)

### Spectra RMS Breaker with MicroVersaTrip Plus Trip Unit

- control power (+24vdc)
- control power (common)

Figure 4 shows the "HARNESS" connector pinout for the Distribution Cable Junction Box for each type of trip unit.

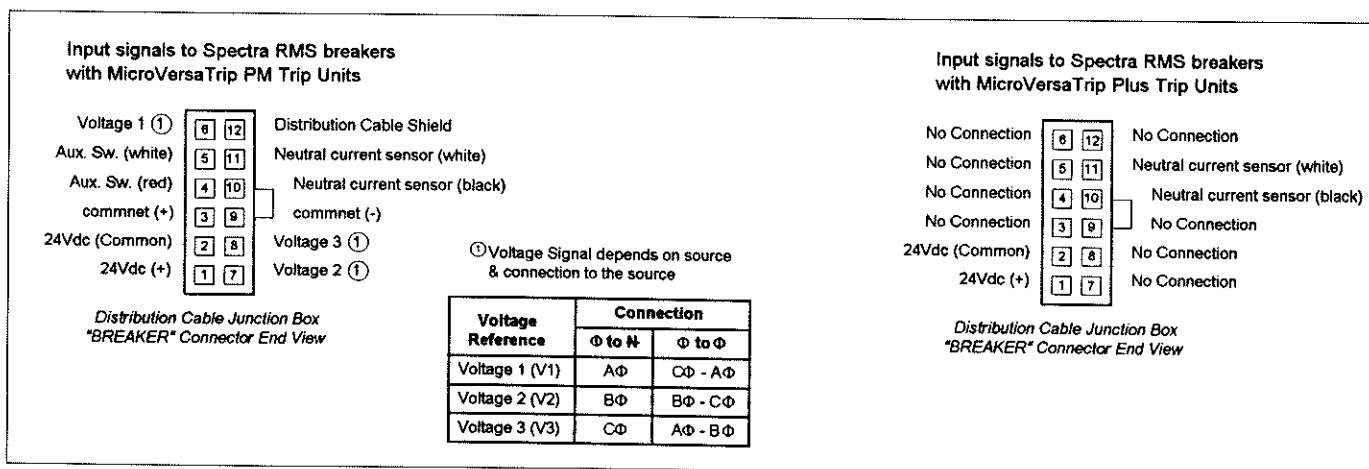


Figure 3. End view of Distribution Cable Junction Box detailing available "BREAKER" input pinout connections.

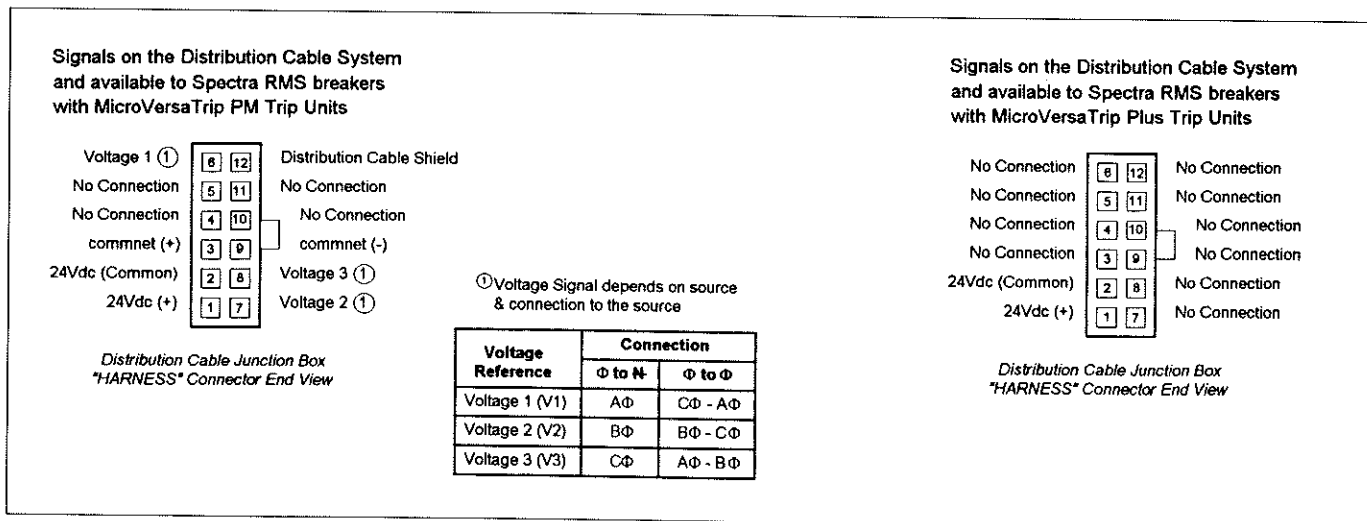


Figure 4. End view of Distribution Cable Junction Box detailing available "HARNESS" input pinout connections.

The Distribution Cable Junction Box has two sets of terminal screws used for the connection of a neutral current sensor signal and an auxiliary switch signal into the breaker.

If the Spectra RMS™ Molded-Case Circuit Breaker with a MicroVersaTrip PM or Plus Trip Unit has the ground fault option AND is connected to either a three phase / four wire system or single phase / three wire system, then a neutral input is required for the circuit breaker to function properly (a Spectra RMS Molded-Case Circuit Breaker with a MicroVersaTrip PM or a Plus Trip Unit that has the ground fault option and is connected to a three phase / three wire system requires no neutral input to function properly). This neutral input is accomplished by connecting a neutral current sensor between the system neutral (line) and breaker neutral (load), then wiring the BLACK and WHITE neutral current sensor screw terminals to the two screw terminals on the front face of the Distribution Cable Junction Box labeled "NEUTRAL CT" - "BLACK", "WHITE".

All Spectra RMS Molded-Case Circuit Breakers with a MicroVersaTrip PM Trip Unit require an auxiliary switch mounted in the right side accessory pouch. The switch is a form C contact and is used to determine breaker position (closed or open). This position input signal is accomplished by connecting the red and white auxiliary switch leads to the two screw terminals on the front face of the Distribution Cable Junction Box labeled "AUX SWITCH" - "RED", "WHITE". The brown auxiliary switch lead is not connected.

## DIMENSIONS AND WIRING DIAGRAMS

A Distribution Cable Junction Box dimensioned drawing is provided in Figure 5 to assist in mounting the accessory .

Figure 6 contains a point-to-point wiring diagram for a Distribution Cable Junction Box connected to a Spectra RMS Molded-Case Circuit Breaker with a MicroVersaTrip

PM Trip Unit. Figure 7 contains a point-to-point wiring diagram for a Distribution Cable Junction Box connected to a Spectra RMS Molded-Case Circuit Breaker with a MicroVersaTrip Plus Trip Unit.

## CONNECTIONS

The screw terminals on the Distribution Cable Junction Box are labeled by function for clarity. The terminal strip pocket will accommodate a spade lug or ring terminal with a tongue width up to 0.320 inches. The terminal screw size is 10-32.

To make the connection, attach an appropriate spade lug or ring terminal to the wire, then slip the fastener beneath the terminal screw and tighten.

The Distribution Cable Junction Box also contains three 12-pin plug connectors. The connectors are keyed so they cannot be inserted incorrectly into a mating 12-pin receptacle connector.

To connect a Spectra RMS™ Molded-Case Circuit Breaker with a MicroVersaTrip® PM or Plus Trip Unit to the Distribution Cable Junction Box, align the breaker receptacle interlock connector with the mating "BREAKER" plug hook connector of the Distribution Cable Junction Box and insert the receptacle into the plug until the interlock and hook catch (see Figure 8). To connect a Distribution Cable Harness to the Distribution Cable Junction Box, follow the same procedure but connect to the "HARNESS" plug hook connector of the Distribution Cable Junction Box.

To disconnect from the Distribution Cable Junction Box, press down at the rear of the receptacle interlock until the interlock clears the plug hook and withdraw the receptacle interlock (see Figure 9).

① Only a Spectra RMS Molded-Case Circuit Breaker with a MicroVersaTrip Plus Trip Unit that has the ground fault and/or the control power option has a breaker cable with a receptacle connector.

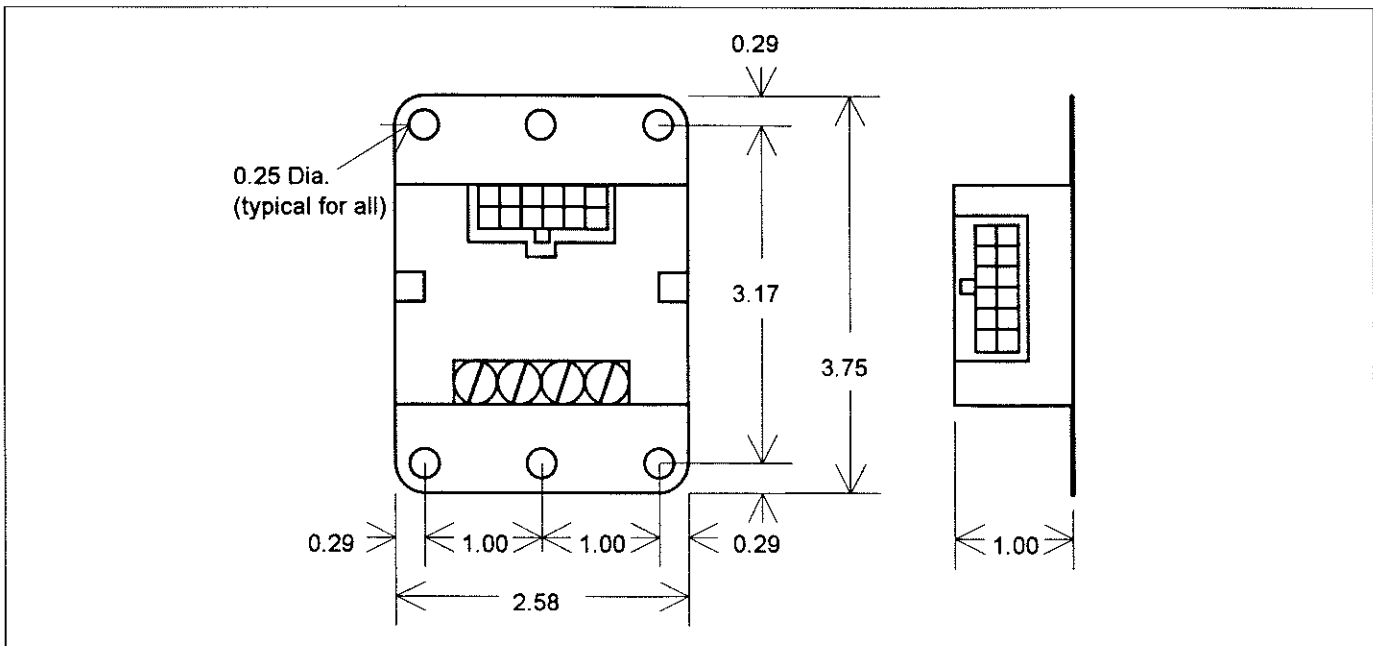


Figure 5. Dimensioned drawing of the Distribution Cable Junction Box (dimensions shown in inches).

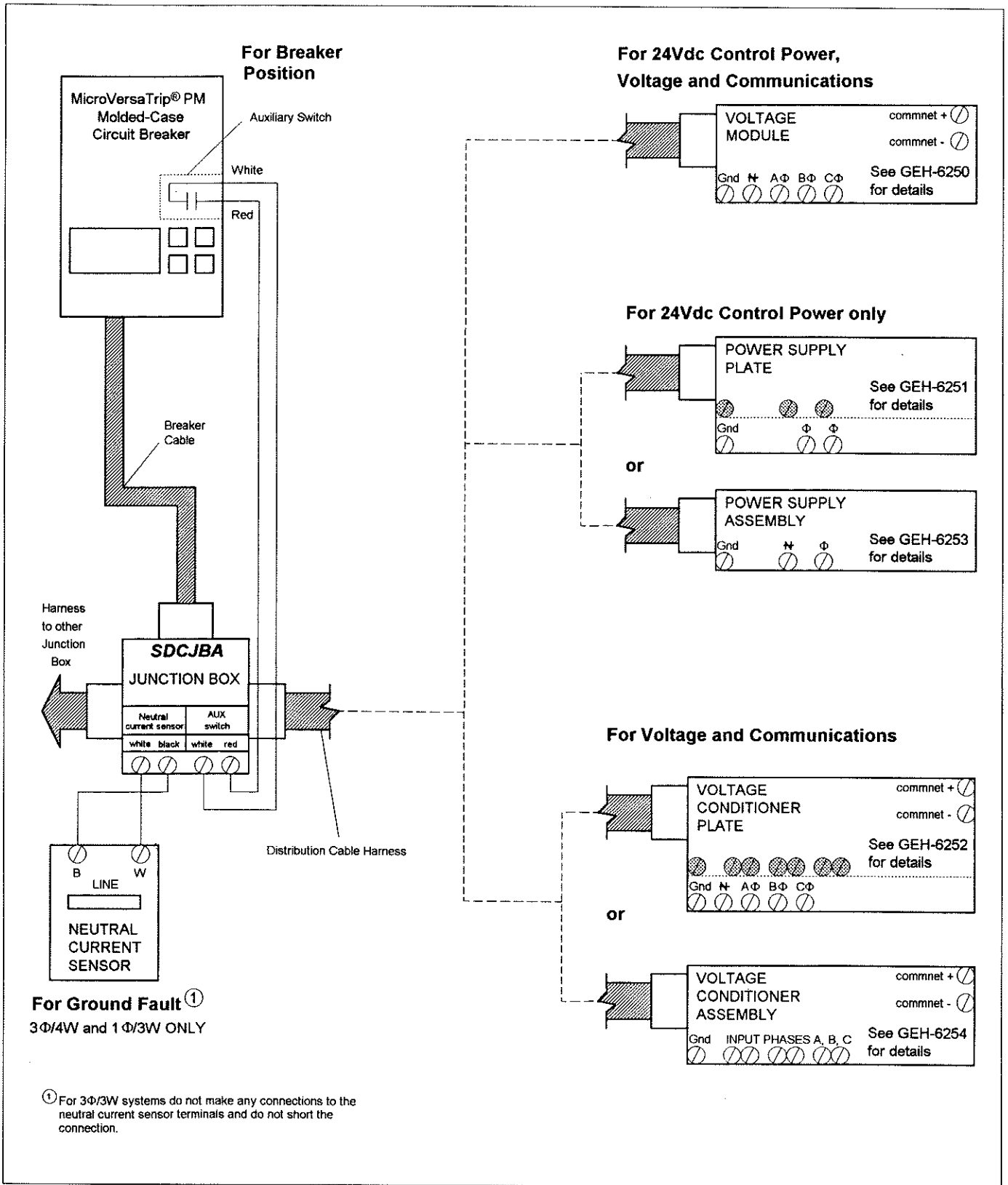


Figure 6. Wiring connections to the Distribution Cable Junction Box for a Spectra RMS™ breaker with a MicroVersaTrip PM Trip Unit.

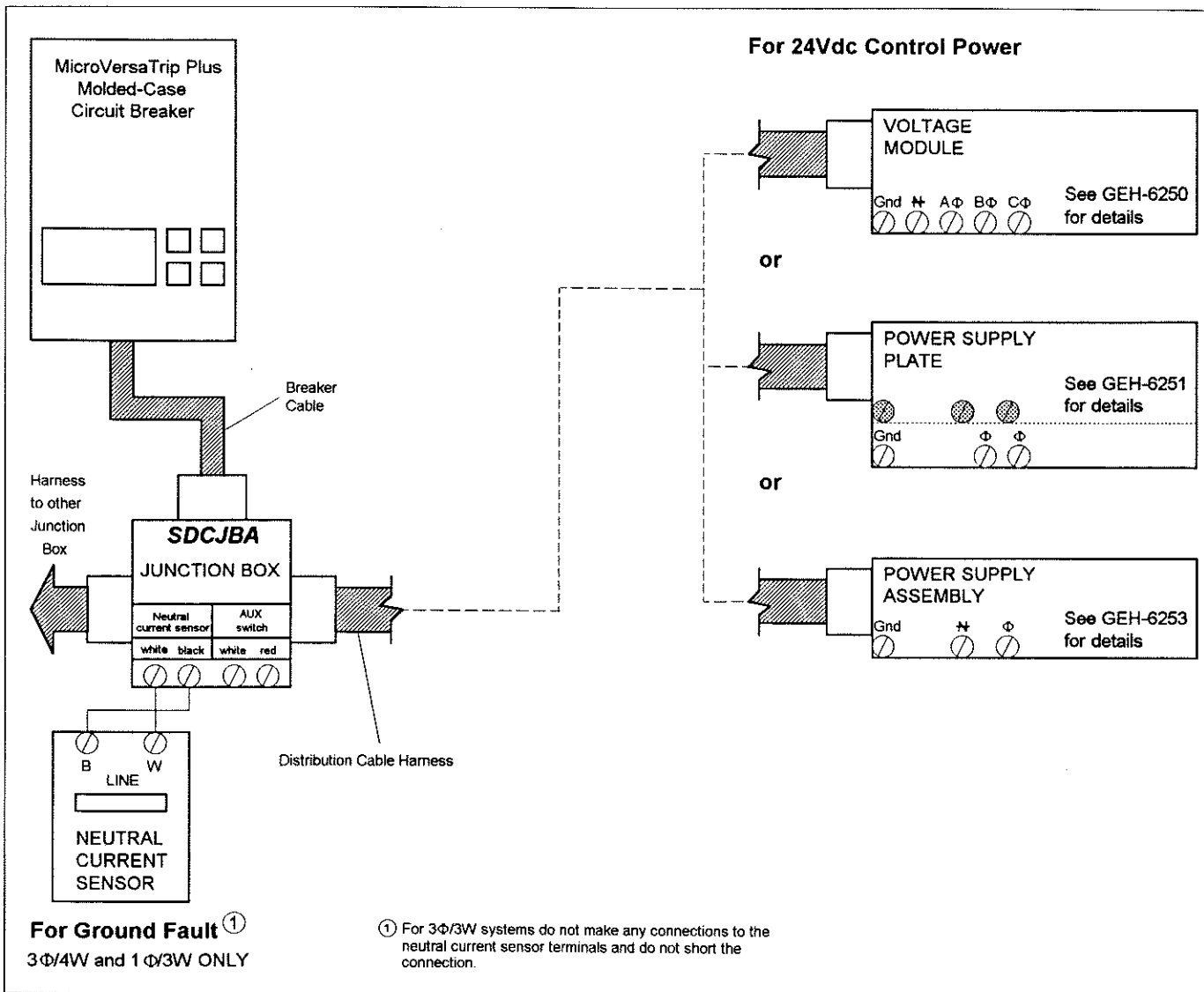


Figure 7. Wiring connections to the Distribution Cable Junction Box for a Spectra RMS™ breaker with a MicroVersaTrip® Plus Trip Unit.

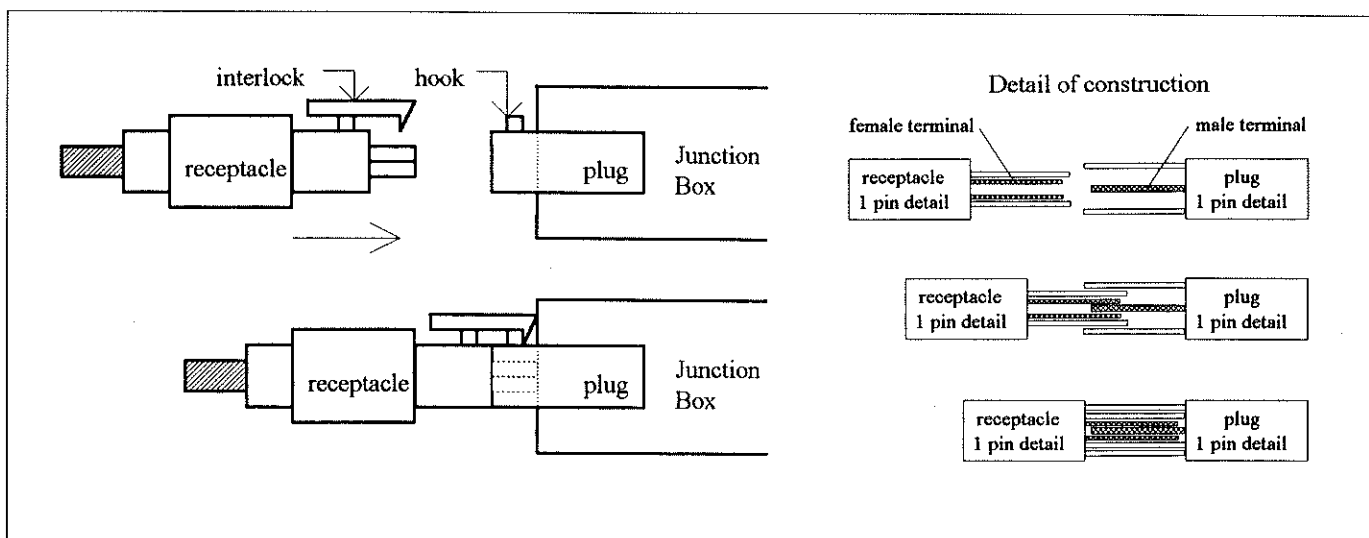


Figure 8. Side view of receptacle-plug connection insertion.

Contact the GE POWER LEADER™ Customer Support Center at 800-843-3742 for specific information concerning product questions, system application, or trouble-shooting assistance.

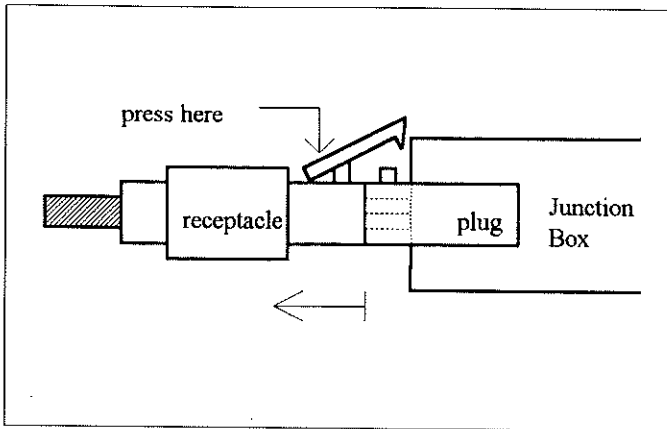


Figure 9. Side view of receptacle-plug connection removal.

## ADDITIONAL INFORMATION

Refer to these other user's manuals for more details:

GEH-5934	MicroVersaTrip Plus and MicroVersaTrip PM Trip Units in Spectra RMS Molded-Case Circuit Breakers
GEH-6250	Voltage Module
GEH-6251	Power Supply Plate
GEH-6252	Voltage Conditioner Plate
GEH-6253	Power Supply Assembly
GEH-6254	Voltage Conditioner Assembly
GEH-6255	Distribution Cable Harness
GEH-6256	Distribution Cable Extension
GEH-6257	Distribution Cable Terminal Block

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



**GE Electrical Distribution & Control**

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