

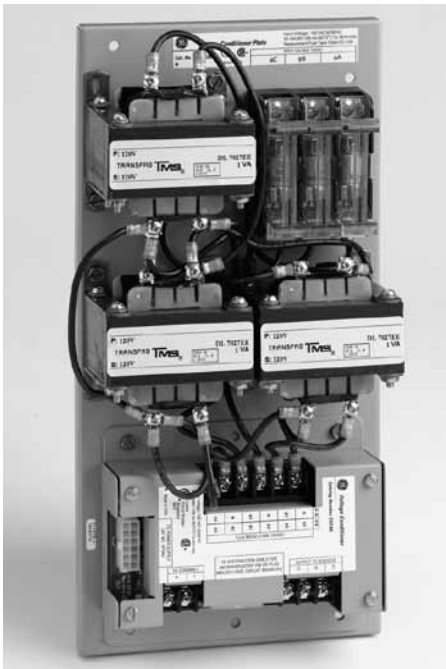
GEH-6252 Installation Instructions

Voltage Conditioner Plate

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

For Catalog Numbers SVCA120Y, SVCA208Y, SVCA240Y, SVCA277Y, SVCA480Y,
SVCA480D, SVCA600D

UL LISTED Circuit Breaker Accessory



Overview

The General Electric Voltage Conditioner Plate is used to provide voltage-sensing signals to Spectra® RMS Molded-Case Circuit Breakers with *microEntelliGuard*™ or *MicroVersaTrip*® PM/Plus Trip Units via the Distribution Cable System. The Voltage Conditioner Plate includes the Voltage Conditioner Assembly (catalog number SVCAA) as an integral component and also includes fuse protection for the AC source input terminals and three 1-VA @ 60 Hz high accuracy potential transformers. The plate has the maximum capacity to provide voltage-sensing signals to a Distribution Cable System consisting of 20 Spectra® RMS Molded-Case Circuit Breakers with *microEntelliGuard*™ or *MicroVersaTrip*® PM/Plus Trip Units with a maximum system cable length of 40 feet.

The Voltage Conditioner Plate requires a power supply source of +24Vdc to operate properly. The Power Supply Assembly (catalog number SPSAA) or Power Supply Plate (catalog number SPSA120, SPSA208, SPSA240, SPSA480 or SPSA600) can provide this required input. The unit also requires direct AC voltage inputs from the AC source (ratings of 120Vac, 208Vac, 240Vac, 277Vac, 480Vac or 600Vac are available). The Voltage Conditioner Plate is designed to operate in temperatures between 0°C and 70°C.

Figure 1 shows how the Voltage Conditioner Plate is used in a typical MicroVersaTrip® PM system. Figure 2 shows how the Voltage Conditioner Plate is used in a typical MicroVersaTrip® Plus system. The *microEntelliGuard*™ Trip Unit can be used with either configuration, i.e. Figure 1 or Figure 2. The connection diagram shown in Figure 2 applies to *microEntelliGuard*™ Trip Units with Basic Metering.

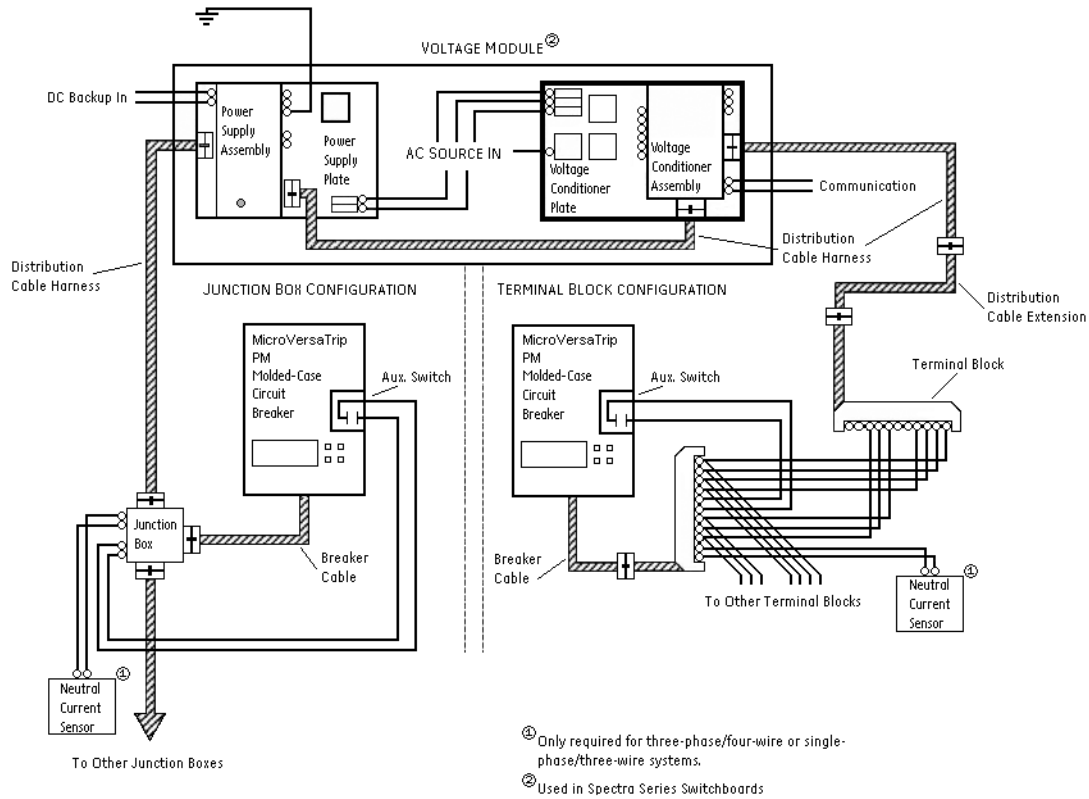


Figure 1. Typical MicroVersaTrip® PM Trip Unit System detailing the Voltage Conditioner Plate.

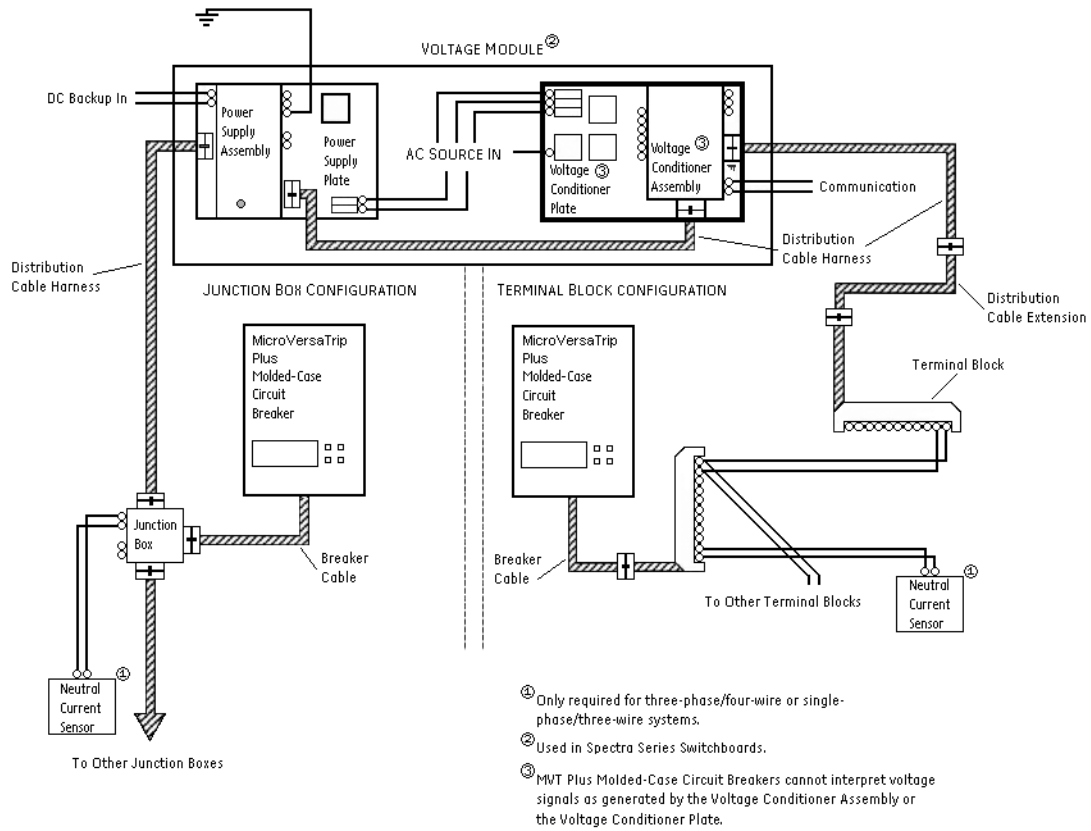


Figure 2. Typical MicroVersaTrip® Plus Trip Unit System detailing the Voltage Conditioner Plate.

The Voltage Conditioner Plate is available in seven ratings. Table 1 contains a listing of all GE Voltage Conditioner Plates.

Table 1. GE Voltage Conditioner Plates

Catalog Number	Source Voltage Rating	Comments
SVCA120Y	120Vac Wye connection	ϕ to N potential
SVCA208Y	208Vac Wye connection	ϕ to ϕ potential
SVCA240D	240Vac Delta connection	ϕ to ϕ potential
SVCA277Y	277Vac Wye connection	ϕ to N potential
SVCA480Y	480Vac Wye connection	ϕ to ϕ potential
SVCA480D	480Vac Delta connection	ϕ to ϕ potential
SVCA600D	600Vac Delta connection	ϕ to ϕ potential

A communications connection is provided for applications where data is transmitted to an external intelligent device (See Table 2).

Table 2. Associated Software and Protocol for the different Spectra® Series Breakers.

Trip Unit Type	Protocol	Software
MicroVersaTrip® PM	Commnet	GE POWER LEADER™
microEntelliGuard™	Modbus	EnerVista Viewpoint

An additional voltage output connection is available for applications where a voltage signal is needed on an Air Circuit Breaker or Insulated Case Circuit Breaker with an EntelliGuard™ TU or a MicroVersaTrip® PM Trip Unit (Do not connect this voltage signal to a Spectra® Trip Unit. The voltage signal structure is different between the MCCB and ACB/ICCB Trip Unit platforms).

NOTE: THE VOLTAGE CONDITIONER ASSEMBLY IS SIZED FOR A MAXIMUM OF 20 BREAKERS. Use of the Voltage Conditioner Plate to provide voltage sensing signals and/or +24Vdc control power to a main Air Circuit Breaker or a main Insulated Case Breaker with a MicroVersaTrip® PM/Plus or EntelliGuard™ TU Trip Unit reduces the total quantity of 20 Spectra® RMS Molded-Case Circuit Breakers with *microEntelliGuard™* or MicroVersaTrip® PM/Plus Trip Units by one. The overall maximum cabling length of the system remains 40 feet.

The Voltage Conditioner Plate contains five connection points. The following list contains a description and type of connection points.

- “To Distribution Cable”
 - 12-pin plug connector that mates with the 12-pin receptacle of a Distribution Cable Harness (catalog number SDCHA11, SDCHA30 or SDCHA60).
- “To Power Supply”
 - 12-pin plug connector that mates with the 12-pin receptacle of the Distribution Cable Harness (catalog number SDCHA11, SDCHA30 or SDCHA60). The other end of the harness MUST mate to either a Power Supply Assembly (catalog number SPSAA) or a Power Supply Plate (catalog number SPSA120, SPSA208, SPSA240, SPSA480 OR SPSA600). Failure to do so will result in the absence of a voltage-sensing signal and inaccuracies in voltage dependent information / metering at Spectra® RMS Molded-Case Circuit Breakers with MicroVersaTrip® PM Trip Units and/or MicroVersaTrip® PM Programmers in Air Circuit Breakers or Insulated Case Circuit Breakers.
- “Input Voltage”
 - Three-screw terminals on the fuse block for connection of the primary AC source. For Power Supply Plates (Catalog Numbers SPSA120 and SPSA277), an additional AC neutral connection must be made at one of the potential transformers.
- “Communications”
 - Two-screw terminal block for connection to communications network.
- “Output to ACB/ICCB”
 - Three-screw terminal block for optional voltage-sensing signal output to MicroVersaTrip® PM or EntelliGuard™ TU Trip Units in Air Circuit Breakers and/or Insulated Case Circuit Breakers.

The distribution cable system is used to interconnect the voltage signal on the Voltage Conditioner Plate and the Spectra® RMS Molded-Case Circuit Breakers.

By plugging the Voltage Conditioner Plate into the Distribution Cable System you create system wide signals that are available to all breakers connected to the system; a list of those functions appears in Table 3.

Table 3. Signals available on the Distribution Cable System by connection of the Voltage Conditioner Plate.

Spectra® RMS™ Breaker with <i>microEntelliGuard™</i> or MicroVersaTrip® PM Trip Unit	Spectra® RMS Breaker with MicroVersaTrip® Plus or <i>microEntelliGuard™</i> with Basic Metering Trip Unit
System communications (Comm. +)	no signals available
System communications (Comm. -)	
Voltage 1 (defined as potential between A & N or between A & C)	
Voltage 2 (defined as potential between B & N or between C & B)	
Voltage 3 (defined as potential between C & N or between B & A)	

Dimensions, Weights and Wiring Diagrams

A Voltage Conditioner Plate dimensioned drawing is provided in Figure 3 to assist in mounting the accessory. The maximum unit weight is 13 pounds.

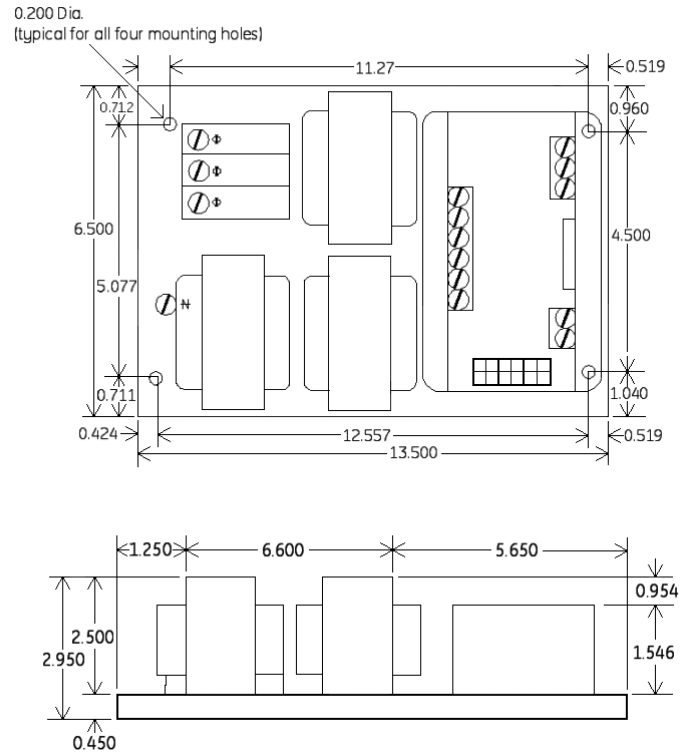


Figure 3. Dimensioned drawing of the Voltage Conditioner Plate (dimensions shown in inches).

Figure 4 contains a point-to-point wiring diagram for a Voltage Conditioner Plate as it integrates into a typical *microEntelliGuard™* or *MicroVersaTrip®* PM system.

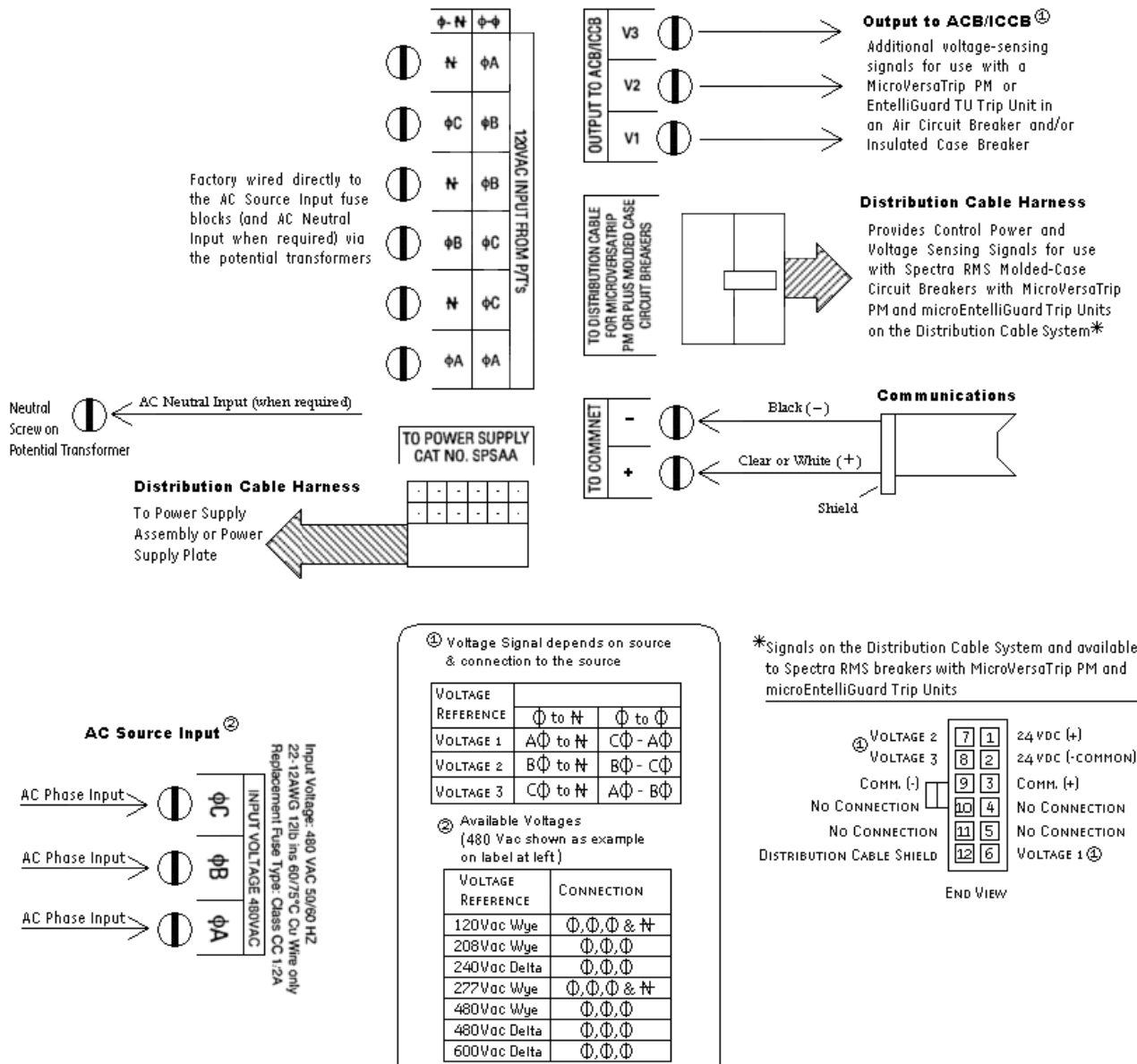


Figure 4. Wiring Connections to the Voltage Conditioner Plate for a typical *microEntelliGuard™* or *MicroVersaTrip®* PM System.

Connections

The screw terminals on the Voltage Conditioner Plate are labeled by function for clarity. The terminal strip pockets on the AC INPUT fuse block will accommodate a spade lug or ring terminal with a tongue width up to 0.45 inches. The terminal screw size is 10-32. The terminal strip pockets on the Voltage Conditioner Assembly 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 Voltage Conditioner Plate also contains two 12-pin plug connectors. The connectors are keyed so they cannot be inserted incorrectly into a mating 12-pin receptacle connector. To connect to the Voltage Conditioner Plate plug(s), align the receptacle interlock connector of a Distribution Cable Harness with the plug hook connector of the Voltage Conditioner Plate. Insert the receptacle until the interlock and hook catch (see Figure 5). To disconnect from the Voltage Conditioner Plate, press down at the rear of the receptacle interlock until the interlock clears the plug hook, and withdraw the receptacle interlock (see Figure 6).

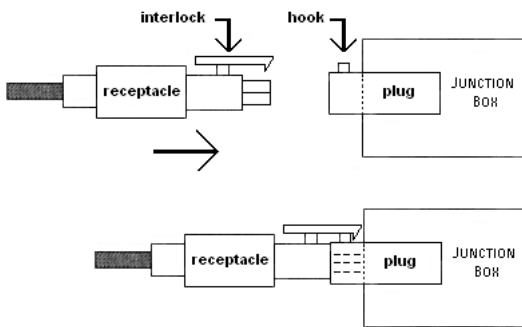


Figure 5. Slide view of receptacle-plug insertion into the Voltage Conditioner Plate.

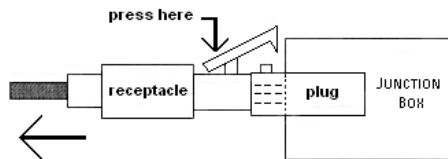


Figure 6. Side view of receptacle-plug removal from the Voltage Conditioner Plate.

PARTS AND OPTIONS

The only user-serviceable components or parts on the Voltage Conditioner Plate are the fuses in the AC INPUT fuse block. The fuses listed in Table 4 are recommended as replacements for use with the Voltage Conditioner Plate. Failure to use the proper type of fuses can result in damage to the accessory. Three fuses per Voltage Conditioner Plate are required.

If you prefer to purchase a voltage-sensing source without the factory mounted AC line fuses and high accuracy potential transformers, a Voltage Conditioner Assembly is available. This assembly *still requires* AC line fuse protection and the high accuracy potential transformers to work properly. Table 5 lists the details on the GE Voltage Conditioner Assembly.

Table 4. Recommended Replacement Fuses for use with the Voltage Conditioner Plate.

Ampere Rating	Catalog Manufacturer	Number	Comments
2 amp	Gould-Shawmut	ATMR 2	Class CC current limiting fuse

Table 5. Available GE Voltage Conditioner Assembly.

Catalog Number	Description	AC Line Fuses Requirement	Voltage Rating of Assembly via High Accuracy I-VA P/T's
SVCAA	Voltage Conditioner Assembly	2 amp class CC	120Vac @ 60 Hz

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	DEH-006	Distribution Cable Junction Box
GEH-700	Spectra® G Breaker w/ <i>microEntelliGuard</i> ™ Trip Unit	GEH-705	MET Distribution Cable Extension (20-pin)
GEH-701	Spectra® K Breaker w/ <i>microEntelliGuard</i> ™ Trip Unit	GEH-6256	Distribution Cable Extension (12-pin)
GEH-702	<i>microEntelliGuard</i> ™ Trip Unit Users Manual	GEH-6255	Distribution Cable Harness (12-pin)
DEH-41318	Universal Rating Plug	GEH-706	MET Distribution Cable Terminal Blocks (11 point & 22 point)
GEH-6250	Voltage Module	GEH-6257	Distribution Cable Terminal Block (11 point)
GEH-6251	Power Supply Plate	GEH-6491	POWER LEADER™ Modbus Concentrator
GEH-6253	Power Supply Assembly	GEH-6502	POWER LEADER™ PMCS 5.0 Network Architecture Guide
GEH-6254	Voltage Conditioner Assembly	GEH-707	MET Sealable Cover kits
GEH-703	MET Battery Pack Adapter	DEH-4568	GTU digital test kit (GTUTK20)
GEH-704	MET Advanced Distribution Cable Junction Box	GEH-5551	Shunt Trip and UVR instructions
		GEH-5593	Aux switch and bell alarm
		GEK-64467	TIM-1 Zone Selective Interlock Module

Spectra and MicroVersaTrip are registered trademarks and EntelliGuard and *microEntelliGuard* are trademarks of the General Electric Company.

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 GE Company.

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