

Multilin™ 8 Series 489 to 889 Retrofit Kit



Instruction Manual

8 Series version: 2.3x

GE publication code: 1601-0337-A3 (GEK-131016B)



imagination at work



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Multilin 489 to 889 Retrofit Kit Instruction Manual.

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Part numbers contained in this manual are subject to change without notice, and should therefore be verified by GE Multilin Inc. before ordering.

Part number: 1601-0337-A3 (November 2018)

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Safety words and definitions

The following symbols used in this document indicate the following conditions:



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Indicates practices not related to personal injury.



Indicates general information and practices, including operational information and practices, that are not related to personal injury.

General Cautions and Warnings

The following general safety precautions and warnings apply.



Disassembly of this unit will void the warranty. Do not attempt to open or repair the retrofit enclosure. All repairs are to be conducted by the factory.



Before attempting to use the equipment, it is important that all danger and caution indicators are reviewed.

If the equipment is used in a manner not specified by the manufacturer or functions abnormally, proceed with caution. Otherwise, the protection provided by the equipment may be impaired and can result in impaired operation and injury.



Hazardous voltages can cause shock, burns or death.



Installation/service personnel must be familiar with general device test practices, electrical awareness and safety precautions must be followed.

Before performing visual inspections, tests, or periodic maintenance on this device or associated circuits, isolate or disconnect all hazardous live circuits and sources of electric power.

Failure to shut equipment off prior to removing the power connections could expose you to dangerous voltages causing injury or death.

Ensure that all connections to the product are correct so as to avoid accidental risk of shock and/or fire, for example from high voltage connected to low voltage terminals.

Follow the requirements of this manual, including adequate wiring size and type, terminal torque settings, voltage, current magnitudes applied, and adequate isolation/clearance in external wiring from high to low voltage circuits.

Use the device only for its intended purpose and application.

Ensure that all ground paths are un-compromised for safety purposes during device operation and service.

All recommended equipment that should be grounded and must have a reliable and un-compromised grounding path for safety purposes, protection against electromagnetic interference and proper device operation.

Equipment grounds should be bonded together and connected to the facility's main ground system for primary power.

Keep all ground leads as short as possible.

In addition to the safety precautions mentioned all electrical connections made must respect the applicable local jurisdiction electrical code.

It is recommended that a field external switch, circuit breaker be connected near the equipment as a means of power disconnect. The external switch or circuit breaker is selected in accordance with the power rating.

Ensure that the control power applied to the device, the AC current, and voltage input match the ratings specified on the relay nameplate. Do not apply current or voltage in excess of the specified limits.

Only qualified personnel are to operate the device. Such personnel must be thoroughly familiar with all safety cautions and warnings in this manual and with applicable country, regional, utility, and plant safety regulations.

Hazardous voltages can exist in the power supply and at the device connection to current transformers, voltage transformers, control, and test circuit terminals. Make sure all sources of such voltages are isolated prior to attempting work on the device.

Hazardous voltages can exist when opening the secondary circuits of live current transformers. Make sure that current transformer secondary circuits are shorted out before making or removing any connection to the current transformer (CT) input terminals of the device.

For tests with secondary test equipment, ensure that no other sources of voltages or currents are connected to such equipment and that trip and close commands to the circuit breakers or other switching apparatus are isolated, unless this is required by the test procedure and is specified by appropriate utility/plant procedure.

When the device is used to control primary equipment, such as circuit breakers, isolators, and other switching apparatus, all control circuits from the device to the primary equipment must be isolated while personnel are working on or around this primary equipment to prevent any inadvertent command from this device.

Use an external disconnect to isolate the mains voltage supply.

NOTICE

To ensure the settings file inside the relay is updated, wait 30 seconds after a setpoint change before cycling power.

NOTICE

This product is rated to Class A emissions levels and is to be used in Utility, Substation Industrial environments. Not to be used near electronic devices rated for Class B levels.

Table of Contents

1: OVERVIEW	INTRODUCTION 1
	ORDERING 2
2: CONVERTING SETTINGS FILES	DOWNLOADING & SAVING A 489 SETPOINT FILE 3
	CONVERTING A SAVED 489 SETPOINT FILE 4
	CONVERSION REPORT 5
	LOADING SETPOINTS FROM A FILE 6
3: REMOVING THE EXISTING RELAY	UNINSTALL THE 489 RELAY 7
4: INSTALLING THE 8 SERIES RELAY	DIMENSIONS 10
	MOUNTING THE 889 RETROFIT KIT 15
5: ELECTRICAL INSTALLATION	489 TO 889 EQUIVALENT TERMINAL BLOCK MAPPINGS 21
	489 TO 889 SLOTS J&K: CT/VT CONNECTIONS 22
	489 TO 889 SLOT A: CONTROL POWER AND GROUNDING 24
	489 TO 889 SLOT F, H 25
	489 TO 889 COMMS AND LOW VOLTAGE ANALOG I/O 28
	RTDS 30
A: WARRANTY AND REVISION HISTORY	WARRANTY 33
	REVISION HISTORY 33

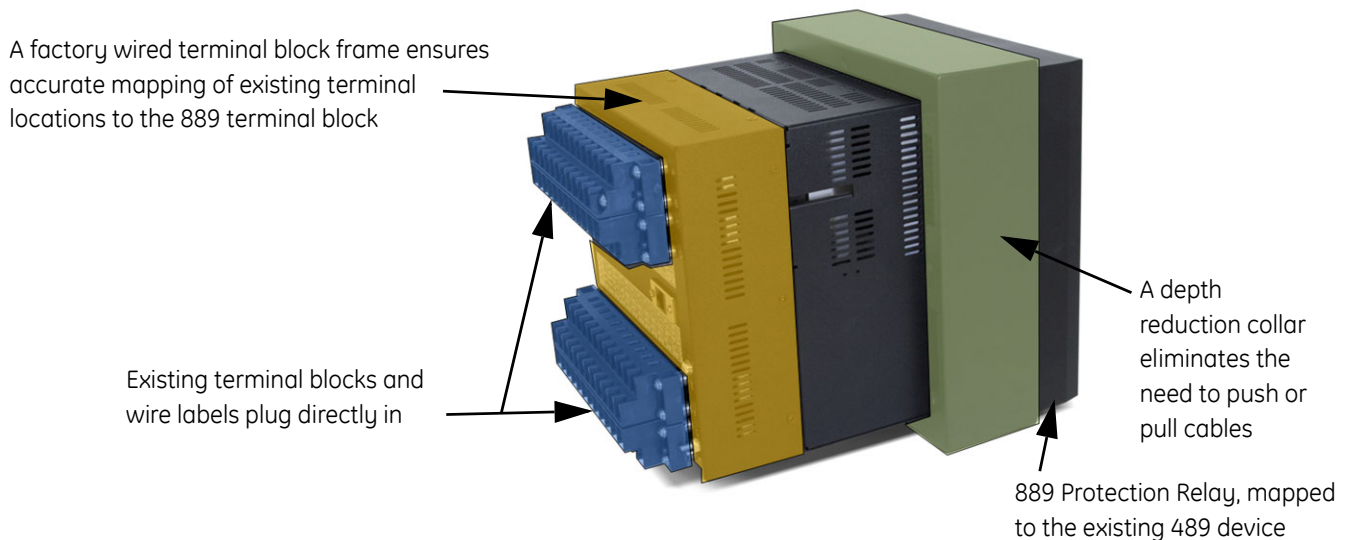
Multilin 489 to 889 Retrofit Kit

Chapter 1: Overview

1.1 Introduction

Traditionally, retrofitting or upgrading an existing relay has been a challenging and time consuming task, often requiring re-engineering, panel modifications, and re-wiring. The Multilin™ 489 to 889 Retrofit Kit provides a quick 3-step solution to upgrade previously installed Multilin relays, reducing upgrade costs and minimizing effort.

The Retrofit Kit comes factory assembled and tested as a complete unit with the 889 protection relay. Optional replacement hardware is available (terminal blocks and screws) for use if the existing hardware is significantly aged or damaged. A collar is provided to ensure the depth of the existing and replacement relays match, eliminating the need to push or pull cables.



This is an 850 Retrofit model. The 889 Retrofit upper terminal blocks differ somewhat from what is shown.

The Multilin™ 489 to 889 Retrofit Kit can be installed in three general steps, as follows.

1. Convert the existing settings file - see Chapter 2 *Converting Settings Files*.
2. Uninstall the existing relay - see Chapter 3 *Removing the Existing Relay*.
3. Install the new Retrofit Kit - see Chapter 4 *Installing the 8 Series Relay*.



Detailed wiring equivalencies between the existing Multilin 489 relay and new Multilin 889 relay are shown in Chapter 5 *Electrical Installation*.

1.2 Ordering

Compatible 889 order codes for existing 489 relays can be obtained online from the Multilin 489 product page.

1. Navigate to: www.gegridsolutions.com/multilin/catalog/889.htm
2. On the relay product page, click **Buy 489 to 889 Retrofit Kit**.

On the upgrade page, indicate whether you need a Wye or Delta configuration.

Check through the list of questions regarding feature availability carefully. 489 features not fully supported in the Multilin 489 to 889 Retrofit Kit are clearly identified. Specifically, the following are not fully supported:

- Two-RS485 ports
- RS485 with a baud rate of 4800bps or lower
- Distance element (ANSI 21)
- A HI-voltage AC Power Supply with less than 88 V AC
- A LO-voltage AC Power Supply
- Any 489 Mods

If you require any of the features listed above, contact GE Grid Solution directly to discuss your options. www.gegridsolutions.com/multilin/contact.htm?loc=3

3. Enter your existing SR 489 order code, and click **Order Upgrade**.

Order codes and available features for the Multilin 489 to 889 Retrofit Kit are shown.



NOTE

Not all features are available in 8 Series Retrofit Kits. For a complete list of available 889 features, look online at: www.gegridsolutions.com/multilin/catalog/889.htm

Multilin 489 to 889 Retrofit Kit

Chapter 2: Converting Settings Files

Before any mechanical or electrical changes are made, the settings file from the Multilin 489 relay must be backed up. The existing settings file can then be converted to an 8 Series settings file. All converted settings and new settings (set to default values) must be carefully reviewed before the file is uploaded to the new 889 relay.

2.1 Downloading & Saving a 489 Setpoint File

In the EnerVista 489 Setup window, setpoint files are accessed in the Settings List control bar window or the Files Window. Use the following procedure to download and save setpoint files to a local PC.

1. Start version 4.0 of the EnerVista 489 Setup software.



NOTE

Only 489 setpoint files from EnerVista 489 Setup version 4.0 are supported for conversion. Older file versions must be converted to version 4.0 using the latest EnerVista 489 setup software. To download the latest 489 setup software, see:

<http://www.gegridsolutions.com/app/ViewFiles.aspx?prod=489&type=7>

2. Ensure that the site and corresponding device(s) have been properly defined and configured. (Refer to the *489 Instruction Manual* for more information on the EnerVista 489 Setup software.)
3. Select the desired device from the site list.
4. Select **File > Read Device Settings** from the online menu item, or right-click on the device and select **Read Device Settings** to obtain settings information from the device.
5. After a few seconds of data retrieval, the software requests the name and destination path of the setpoint file. The corresponding file extension is automatically assigned. Press **Receive** to complete the process. A new entry is added to the tree, in the **File** pane, showing path and file name for the setpoint file.
6. Note the location of the 489 setpoint file.

2.2 Converting a Saved 489 Setpoint File

The EnerVista 8 Series Setup software creates new setpoint files based on an existing SR 489 setpoint file. The new file can be uploaded to a relay at a later date. The following procedure illustrates how to convert existing 489 setpoint files.



Only 489 setpoint files from EnerVista 489 Setup version 4.0 are supported for conversion.

1. Install and start the latest version of the EnerVista 8 Series Setup software (available from the GE EnerVista CD or Website). (See the 889 *Instruction Manual* for more information.)
2. In the **Offline** pane, right click and select the **New Settings File** item. The following box appears, allowing for the configuration of the setpoint file for the correct firmware version and relay order code.

It is important to define the correct firmware version and order code to ensure that only available setpoints are downloaded into the relay.

3. Select the firmware **Version**, and **Ordercode Options** for the new setpoint file.
4. For future reference, enter some useful information in the **Description** box to facilitate the identification of the device and the purpose of the file.
5. To select a file name and path for the new file, click the button beside the **File Name** box.
6. Select the file name and path to store the file, or select any displayed file name to replace an existing file. All 889 setpoint files should have the extension '.cid' (for example, '889 1.cid').



File names for setting files cannot have a decimal point other than the one that is added in front of CID.

7. Click the box beside **Initialize Settings from SR Settings File**.

8. To select an existing 489 file, click the button beside the **Initialize Settings from SR Settings File** box and navigate to the file.
9. Click **OK** to complete the process. Once this step is completed, the new file, with a complete path, is added to the 889 software environment. In addition a Conversion Report is generated, as described in the following section.

For more information on the EnerVista 8 Series Setup software, refer to the *Multilin 889 Instruction Manual* at:

<http://www.gegridsolutions.com/app/ViewFiles.aspx?prod=889&type=3>

2.3 Conversion Report

Once the file conversion process is complete, the conversion results are summarized in a Conversion Report. The report is found under **Device Definition** in the **Offline** pane of the EnerVista 8 Series Setup software.

Setting	Value	Original Setting	Original Value
Protection			
Group 1			
Group 2			
Phase TOC			
Function	Disabled	Phase Time Overcurrent 1 Function	Trip & AutoReclose
Input	Phasor		
Pickup	5.010 x CT	Phase Time Overcurrent 1 Pickup(Setpoints)	5.01 x CT
Curve	IEEE Very Inverse	Phase Time Overcurrent 1 Curve	Very Inverse

The Conversion Report can be printed using the **File/Print** command in the EnerVista taskbar or can be printed from the "GUI" print button.

- Save a copy of the Conversion Report immediately after the conversion, to use for future reference. All Conversion Reports are removed and become inaccessible if the user removes or modifies the converted file from the EnerVista 8 Series Setup Software.
- Only settings converted from the original 489 setpoint file are shown in the Conversion Report. All other settings available in the new 889 setpoint file are set to the default value, and must be verified by the user before putting the relay into service.



The settings file conversion process is provisioned to reduce the effort of manually converting settings. This conversion process does not guarantee settings accuracy. Each successfully converted setting must be reviewed before putting the relay in service.

Settings in the Conversion Report window are linked to the appropriate settings screens. Use the Conversion report window to navigate to the corresponding 889 settings window to review converted settings.

2.4 Loading Setpoints from a File

Once the converted settings file has been thoroughly reviewed, and the new 889 Relay installed, the settings file can be uploaded to the 889 Relay.

CAUTION

An error message occurs when attempting to upload a setpoint file with a revision number that does not match the relay firmware. If the firmware has been upgraded since saving the setpoint file, see the 889 Instruction Manual for instructions on changing the revision number of a setpoint file.

The following procedure illustrates how to load setpoints from a file.

1. Start the latest version of the EnerVista 8 Series Setup software.
2. Select the previously saved setpoints file from the **File** pane of the 889 software main window.
3. Select the **Offline > Edit Settings File Properties** menu item and verify that the corresponding file is fully compatible with the hardware and firmware version of the target relay. If the versions are not identical, see Upgrading Setpoint Files to a New Revision for details on changing the setpoints file version.
4. Right-click on the selected file and select the **Write Settings File to Device** item.
5. Select the target relay from the list of devices shown and click **Send**.

If there are no incompatibilities between the target device and the settings file, the data is transferred to the relay. An indication of the percentage completed is shown in the bottom of the main window.

Multilin 489 to 889 Retrofit Kit

Chapter 3: Removing the Existing Relay

3.1 Uninstall the 489 Relay



Always be sure to follow your company's safety policies and procedures during the retrofit process.

NOTICE

Wear appropriate personal protective equipment for hand and eye protection.

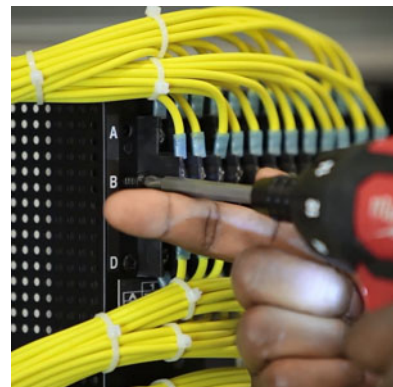
WARNING

Turn off control power before drawing out or re-inserting the relay to prevent maloperation.

1. Disconnect the Ethernet cable from the back of the 489 relay, and remove the relay from its case.
2. From the back of the relay case, remove the terminal block screws. Do not remove any wires.



Step 1



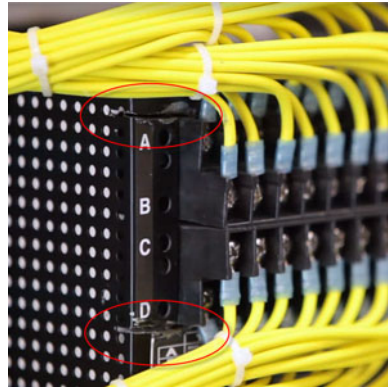
Step 2



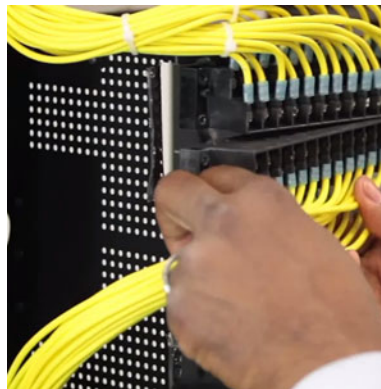
A Multilin 750 relay is shown in some pictures. The Multilin 489 upper terminal blocks are somewhat different, however the same removal steps apply.

3. Use a Phillips screwdriver or a sharp prying tool to pry open the metal sides of the case around the terminal blocks. Use pliers to further pry open the case. This will loosen the terminal blocks from the case.

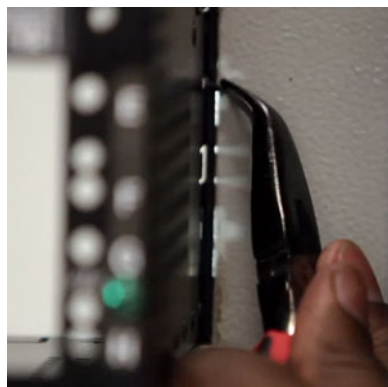
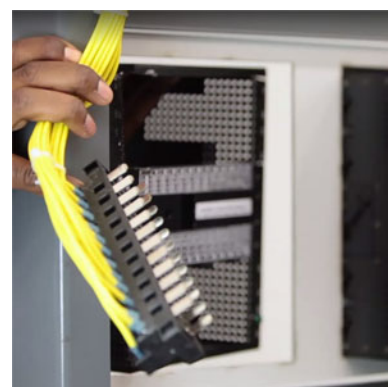
A horizontal cutting tool may be used to cut slots on both sides of the terminal blocks in the positions indicated, if required. Ensure not to damage any wires during this process.

**Step 3**

4. Remove terminal blocks by pushing inwards, twisting sideways, and then pulling outwards.

**Step 4**

5. Undo the tabs on the case around the cutout from the back.
6. Remove the empty 489 case.

**Step 5****Step 6**

Multilin 489 to 889 Retrofit Kit

Chapter 4: Installing the 8 Series Relay

The following sections show the mechanical installation of the Multilin 489 to 889 Retrofit Kit.

4.1 Dimensions

The dimensions (in inches) of the Multilin 489 to 889 Retrofit Kit are shown, followed by additional dimensions for mounting and panel cutouts.

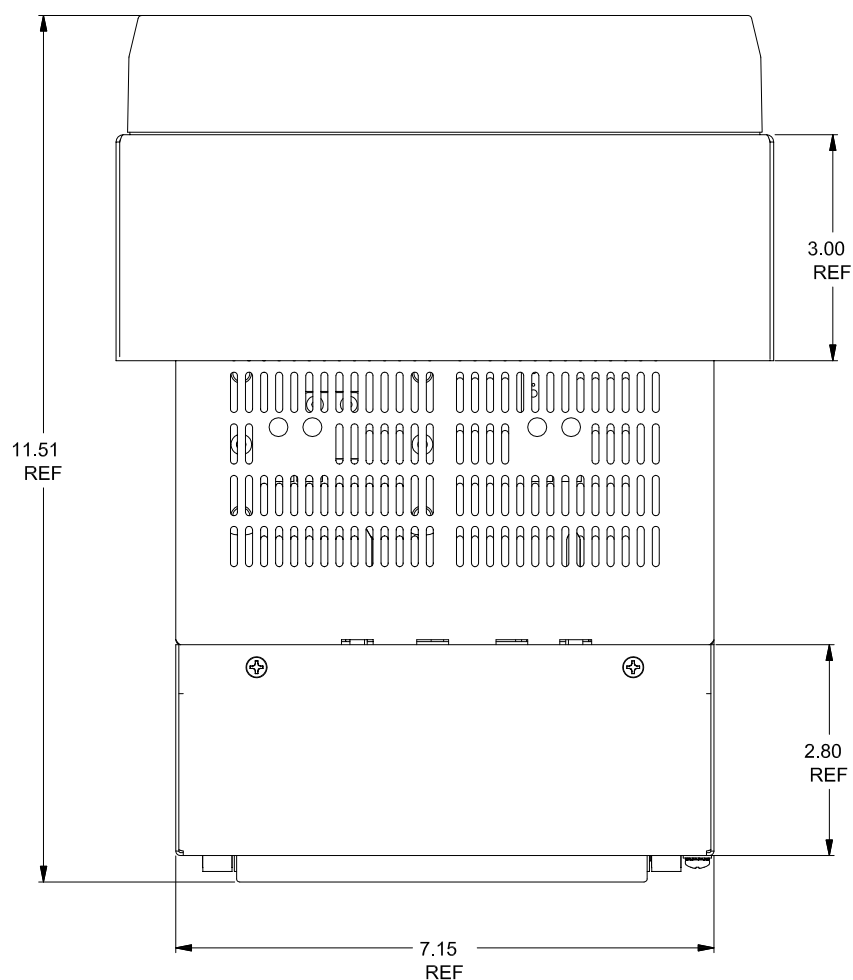


Figure 4-1: Overall Dimensions - Top View

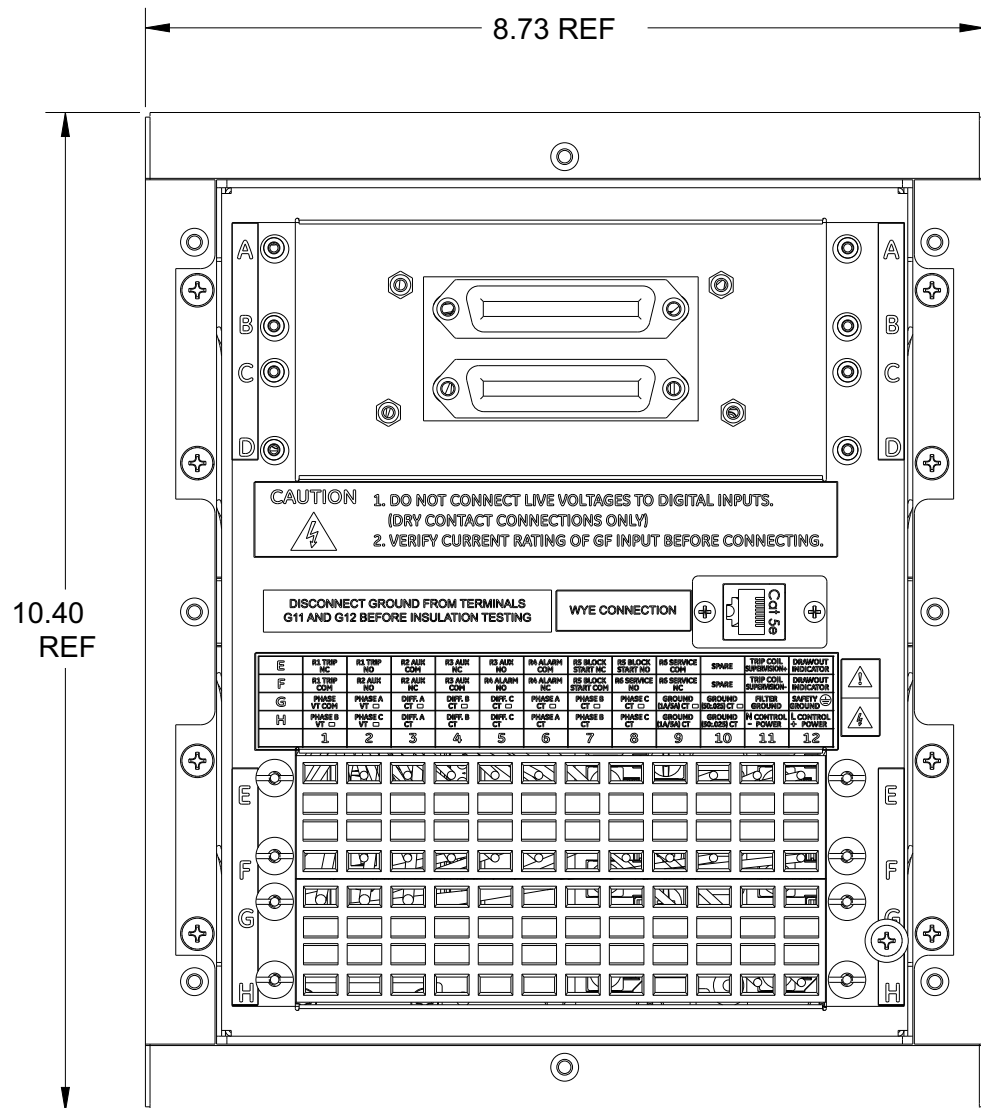


Figure 4-2: Overall Dimensions - Back View

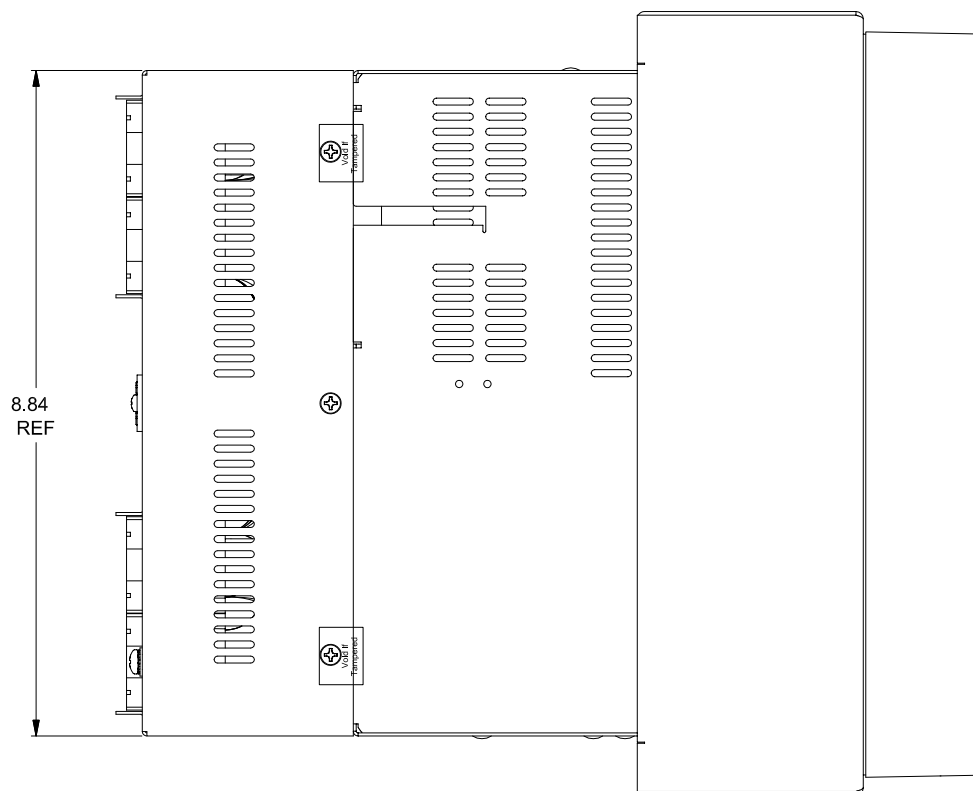


Figure 4-3: Overall Dimensions - Side View

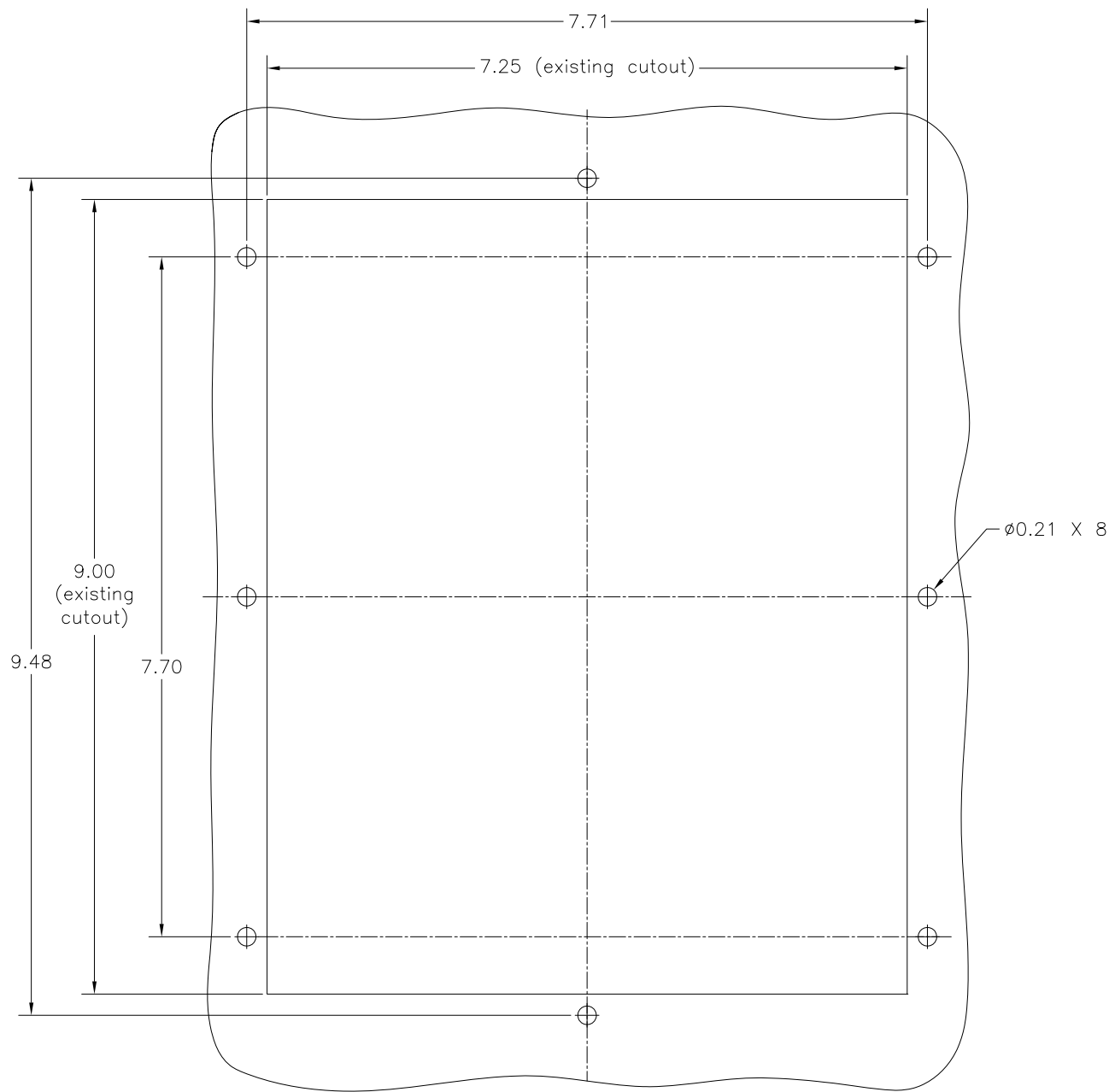


Figure 4-4: Cutout Dimensions

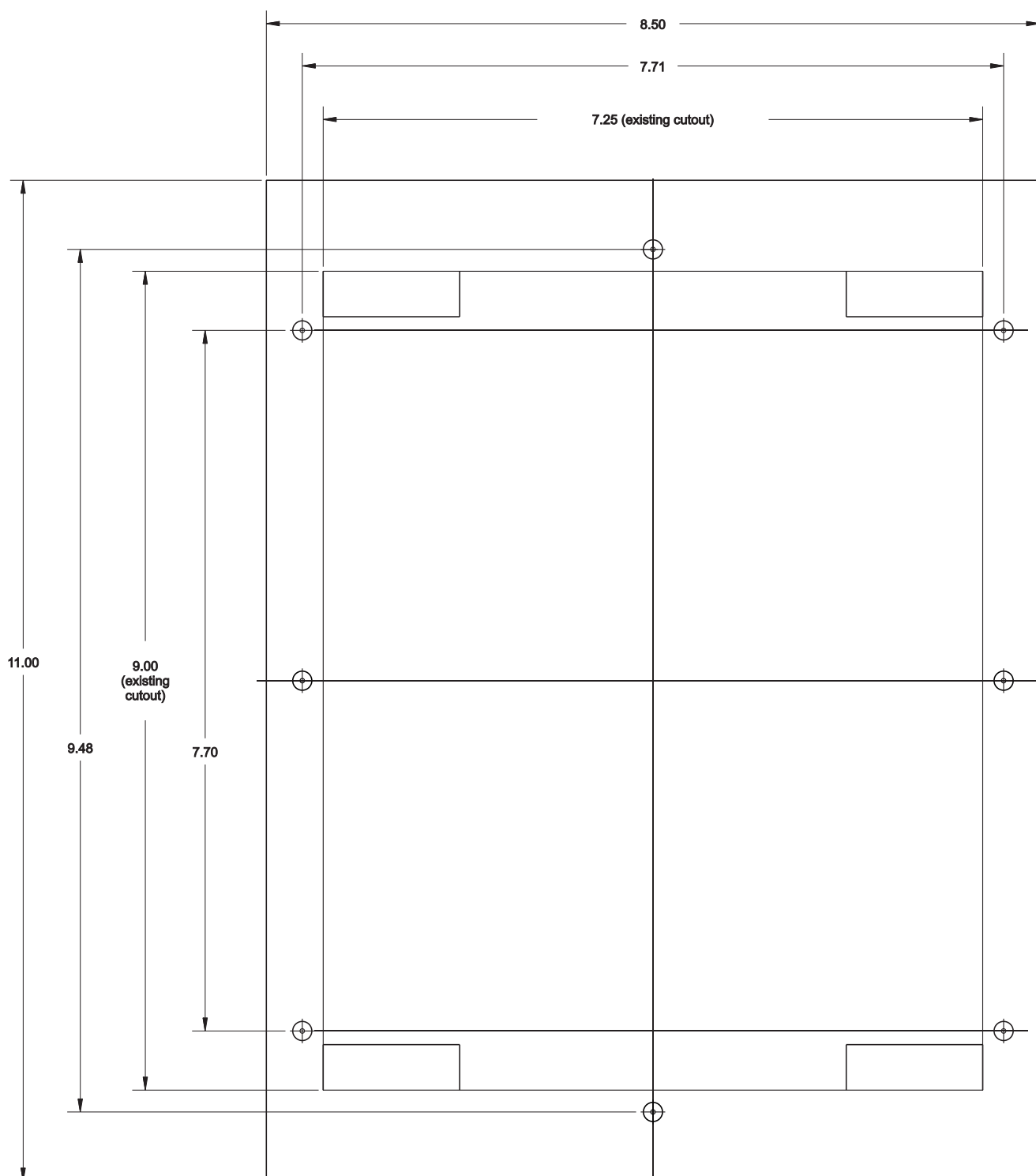


Figure 4-5: Drill Guide Template

4.2 Mounting the 889 Retrofit Kit

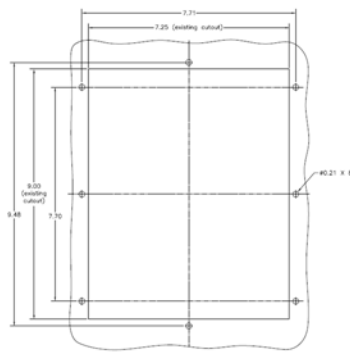
With the retrofit kit, the draw-out and insertion mechanism remains the same. The depth of the new terminal blocks is a close match to the depth of the 489 terminal blocks due to the depth reduction collar included in the Retrofit Kit. There is no need to push or pull wires.



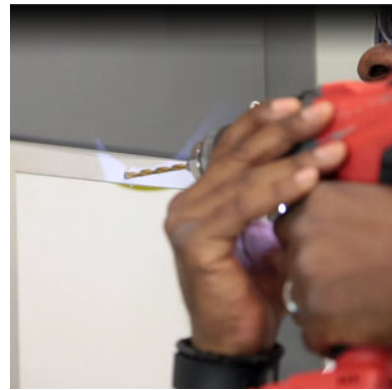
The 8 Series Retrofit kit model shown may differ slightly from the Multilin 489 to 889 Retrofit Kit. The installation steps remain the same.

The 889 Retrofit Kit can be mounted using the following steps.

1. Use the template to mark holes for mounting the retrofit kit.
2. Drill or punch eight 0.21" diameter holes around the cutout border as shown in the drill guide template.



Step 1

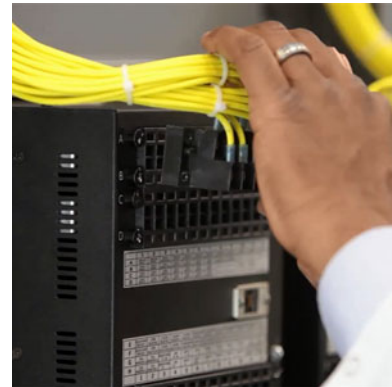


Step 2

3. Insert the retrofit kit in the cutout and secure it with the screws provided.
4. Insert the wired existing terminal blocks of 489 back on to the female terminal blocks at the back of the retrofit kit case.



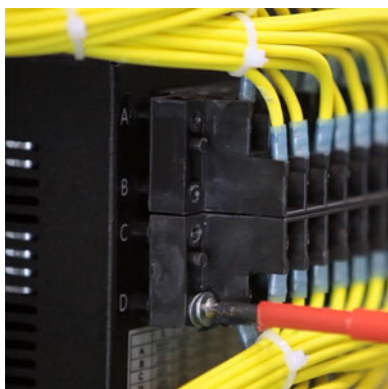
Step 3



Step 4

5. Secure the terminal blocks by screwing into place.

6. Insert the new 889 relay inside the newly mounted Retrofit Kit case.



Step 5



Step 6

Multilin 489 to 889 Retrofit Kit

Chapter 5: Electrical Installation

This chapter shows the electrical wiring diagram translations from Multilin 489 relays to Multilin 889 relays.

For complete wiring diagrams for each relay, refer to the appropriate product Instruction Manual available on our website: www.gegridsolutions.com/multilin

N/R = Not Required

N/A = Not Applicable

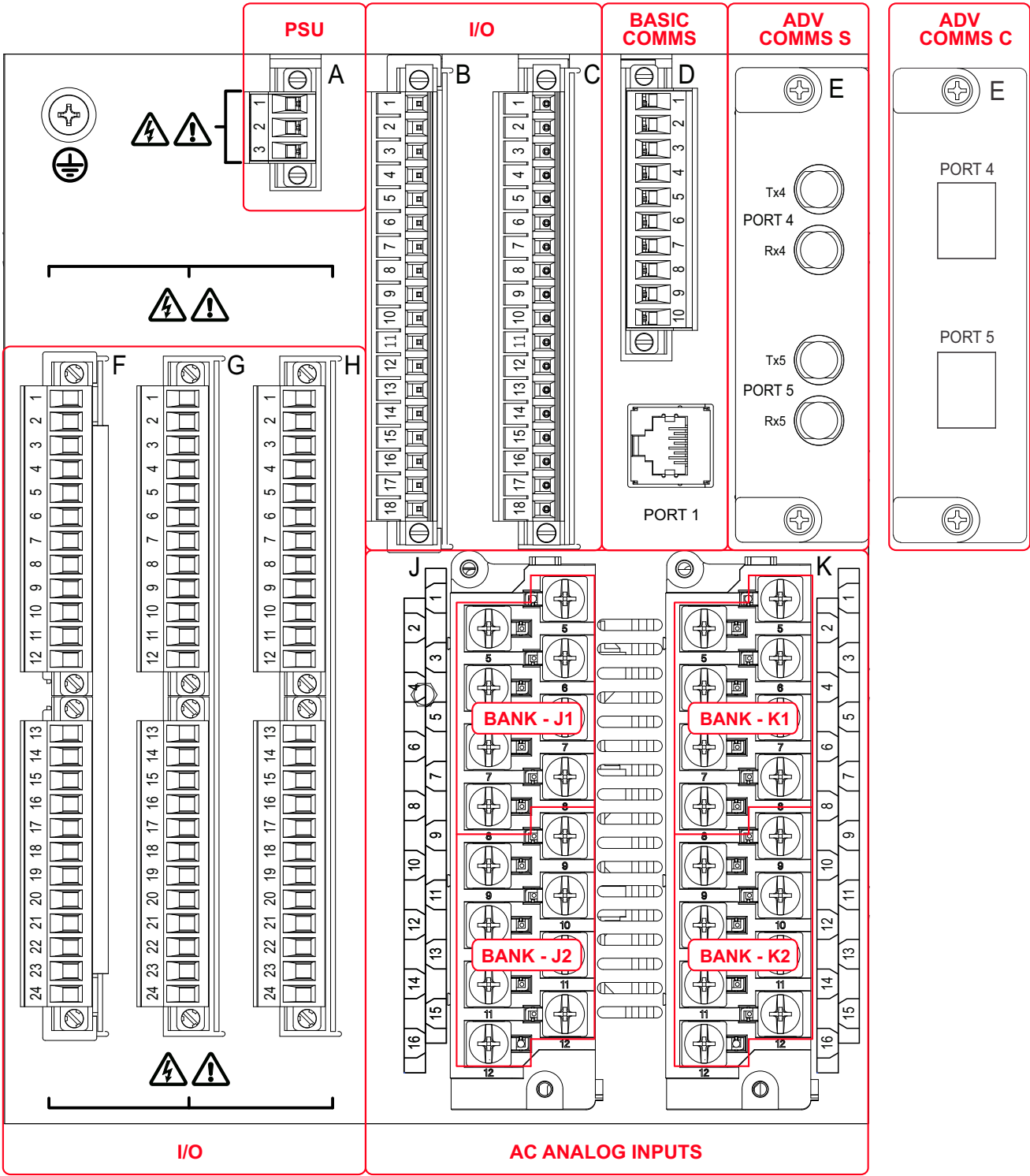


Figure 5-1: Rear Terminal Layout of the 8 Series Platform

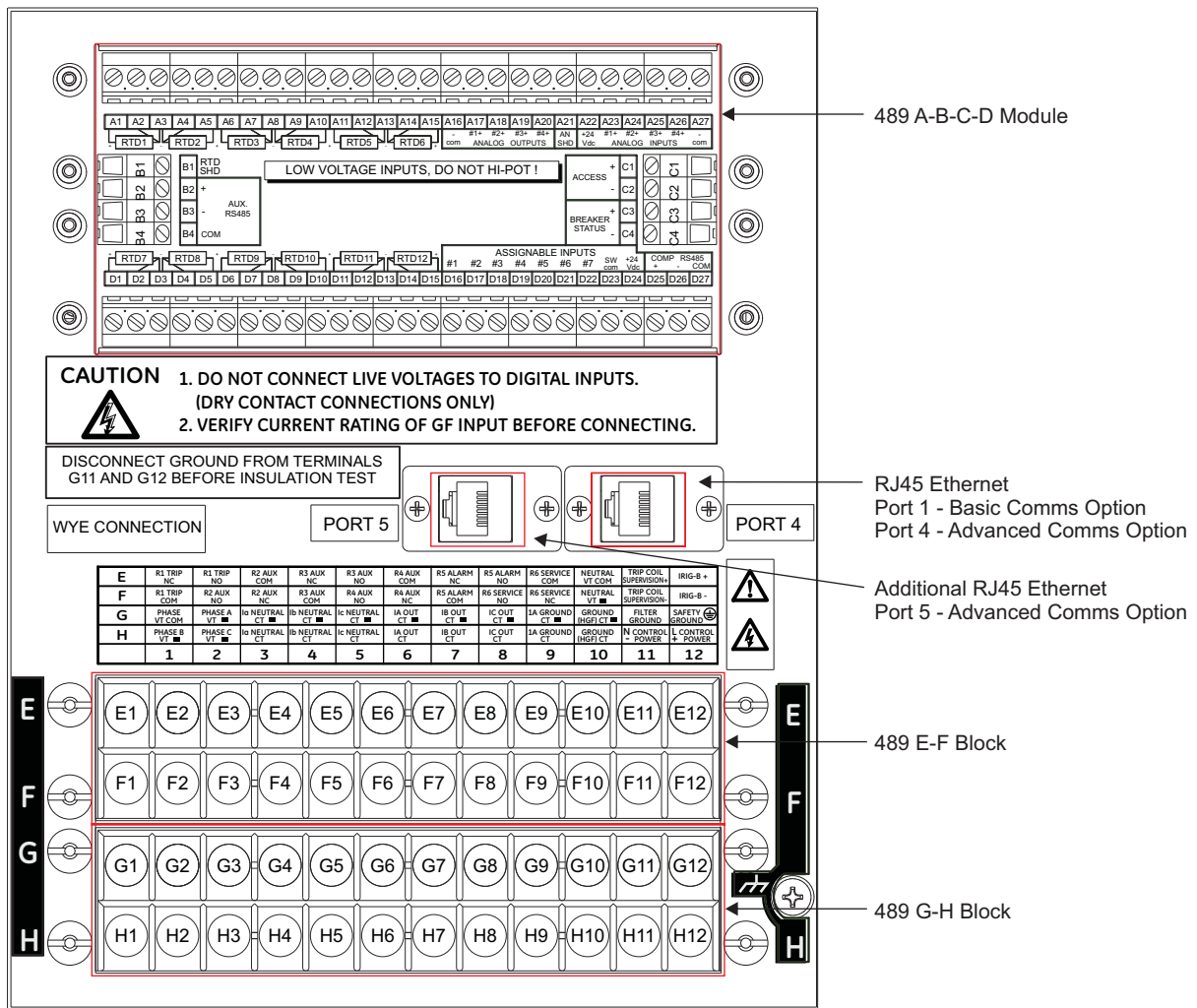


Figure 5-2: Rear Terminal Layout of the 489-889 Retrofit Kit, after 489 Terminal Block Installation

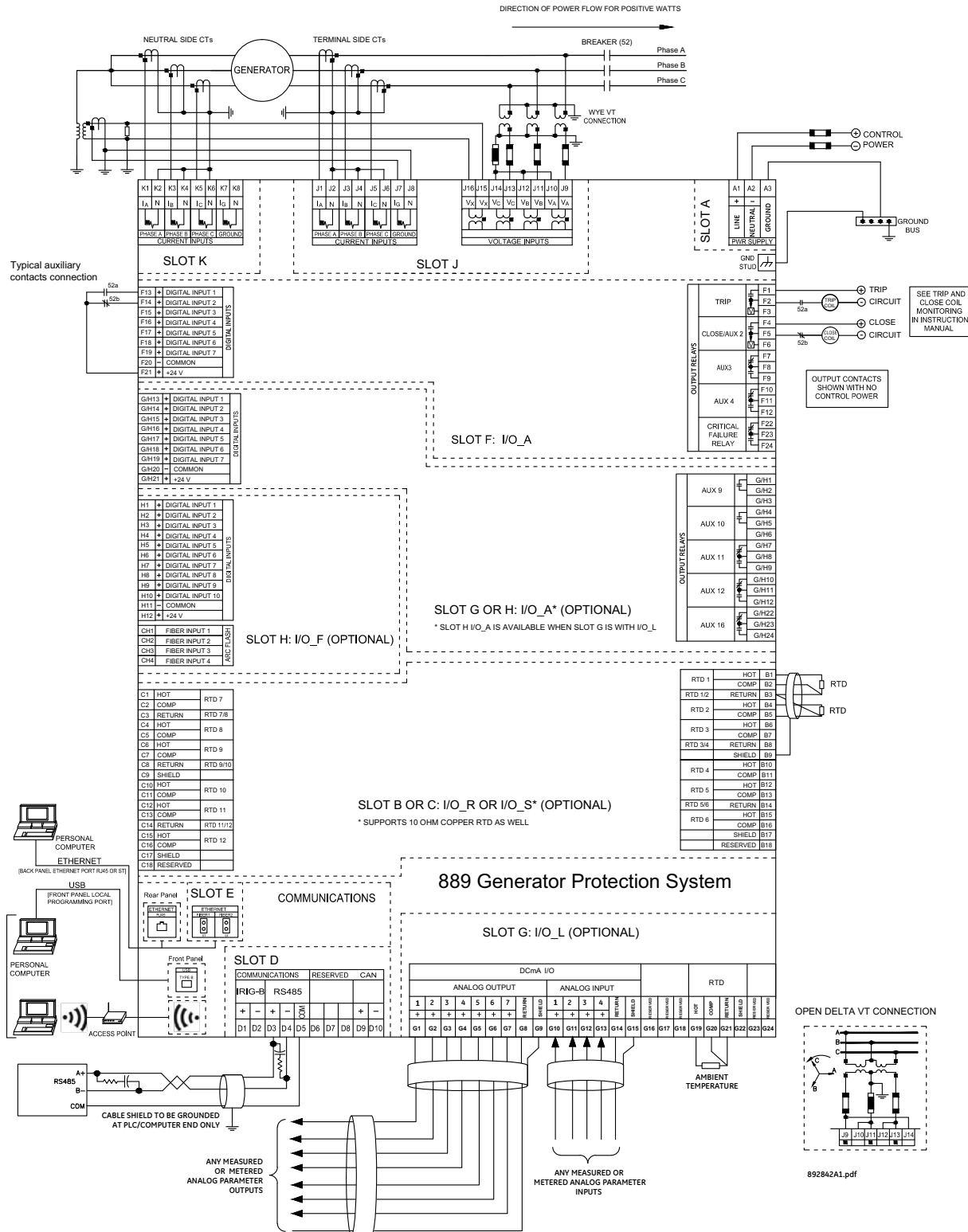


Figure 5-3: Typical 889 Wiring Diagram

5.1 489 to 889 Equivalent Terminal Block Mappings

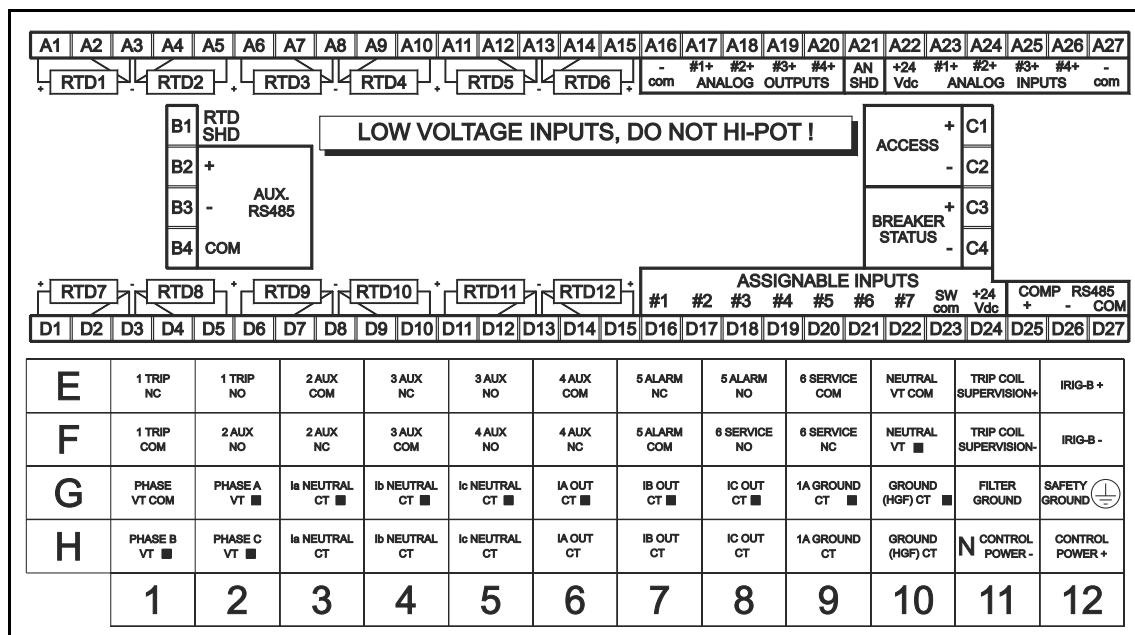


Figure 5-4: 489 Terminal Blocks

Table 5-1: 889 to 489 Terminal Block Mapping

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A24	A25	A26	A27
B1	B2	B3	B5	B4	B6	B7	B8	B11	B10	B12	B13	B14	B16	B15	G8, G14	G1	G2	G3	G4	G9, G15	N/A	G10	G11	G12	G13	G8, G14

B1	B9, B17, C9, C17, Chassis Gnd
B2	D3
B3	D4
B4	D5

H13	C1
F21, H21	C2
H14	C3
F21, H21	C4

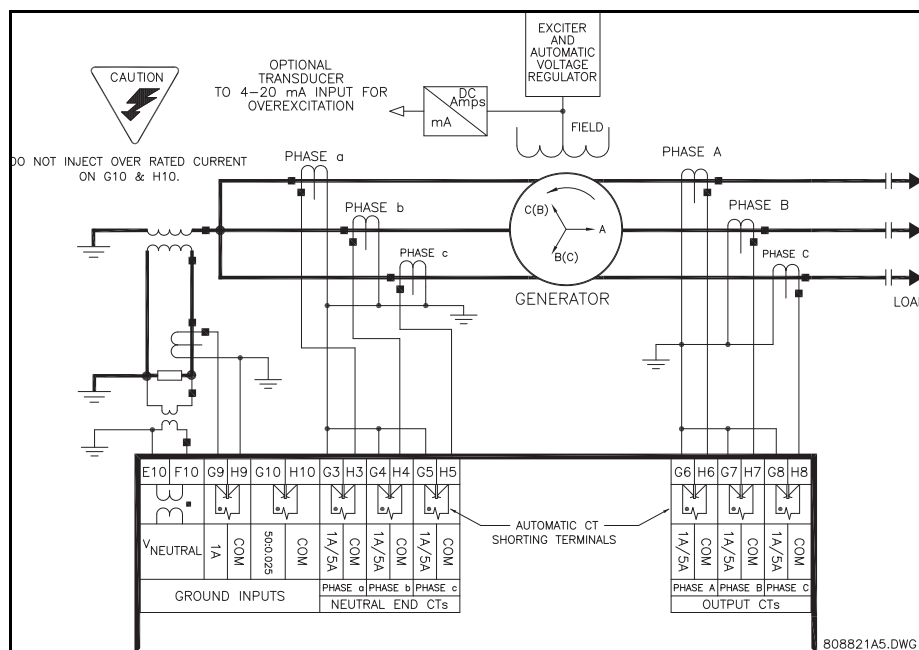
C1	C2	C3	C5	C4	C6	C7	C8	C11	C10	C12	C13	C14	C16	C15	F13	F14	F15	F16	F17	F18	F19	F21, H21	N/A	N/A	N/A	N/A
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24	D25	D26	D27

Table 5-2: 889 to 489 Terminal Block Mapping

	1	2	3	4	5	6	7	8	9	10	11	12
E	H22	F1	F8	F10	F12	H8	H10	H12	F23	J16	N/A	D1
F	F2, H23	F9	F7	F11	H9	H7	H11	F24	F22	J15	N/A	D2
G	Wye: J10, J12, J14 Delta: N/A	J9	K2	K4	K6	J1	J3	J5	J7	K7	A3	A3
H	J11	J13	K1	K3	K5	J2	J4	J6	J8	K8	A2	A1
	1	2	3	4	5	6	7	8	9	10	11	12

5.2 489 to 889 SLOTS J&K: CT/VT Connections

489



889

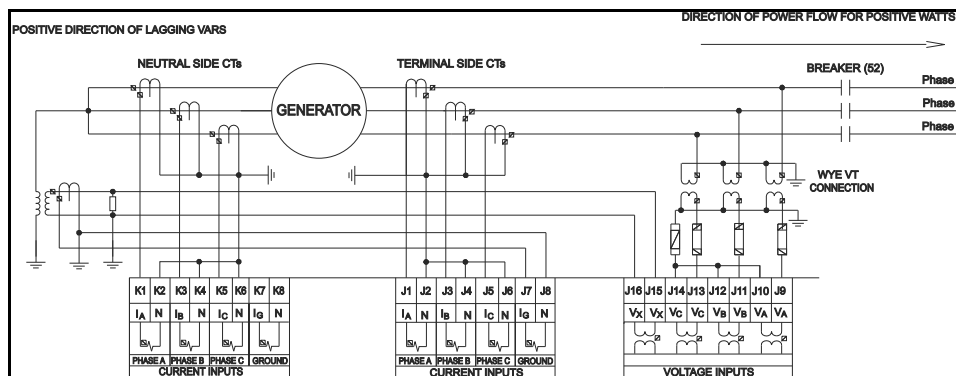


Figure 5-5: 489 and 889 CT/VT Wiring

Table 5-3: VT Connections

Type	Function	489	889	
			Wye	Delta
Voltages	Va polarity	G2	J9	J9
Voltages	Va non-polarity	N/A	J10	J10, J11
Voltages	Vb polarity	H1	J11	J11
Voltages	Vb non-polarity	N/A	J12	J12, J13
Voltages	Vc polarity	H2	J13	J13
Voltages	Vc non-polarity	N/A	J14	J9, J14
Voltages	V common	G1	J10, J12, J14	N/R
Voltages	V Neutral / Vx polarity	F10	J15	J15
Voltages	V Neutral / Vx non-polarity	E10	J16	J16

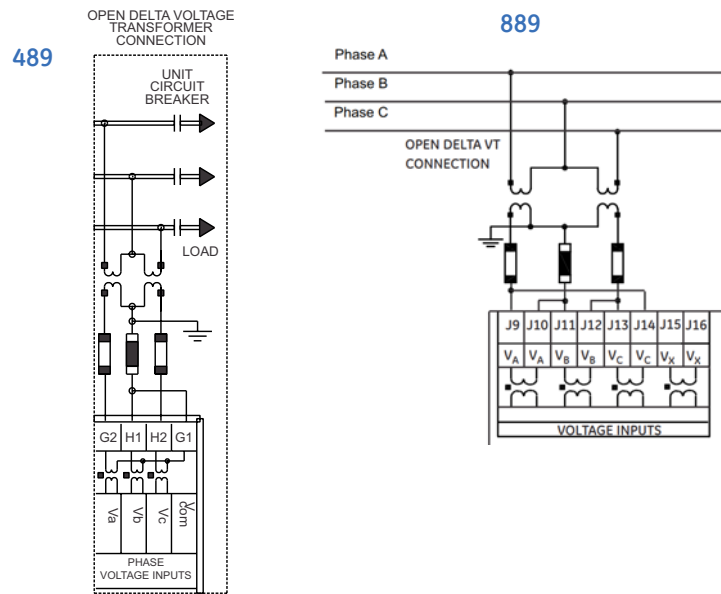


Figure 5-6: 489 and 889 Open Delta VT Connections

Table 5-4: CT Connections

Type	System Connection	489	889
Terminal Side Current Inputs	Ia polarity	G6	J1
	Ia non-polarity	H6	J2
	Ib polarity	G7	J3
	Ib non-polarity	H7	J4
	Ic polarity	G8	J5
	Ic non-polarity	H8	J6
	Ig polarity	G9	J7
	Ig non-polarity	H9	J8
	Ig CBCT (50:0.025) polarity	G10	K7
	Ig CBCT (50:0.025) non-polarity	H10	K8
Neutral Side Current Inputs	Ia polarity	H3	K1
	Ia non-polarity	G3	K2
	Ib polarity	H4	K3
	Ib non-polarity	G4	K4
	Ic polarity	H5	K5
	Ic non-polarity	G5	K6

5.3 489 to 889 Slot A: Control Power and Grounding

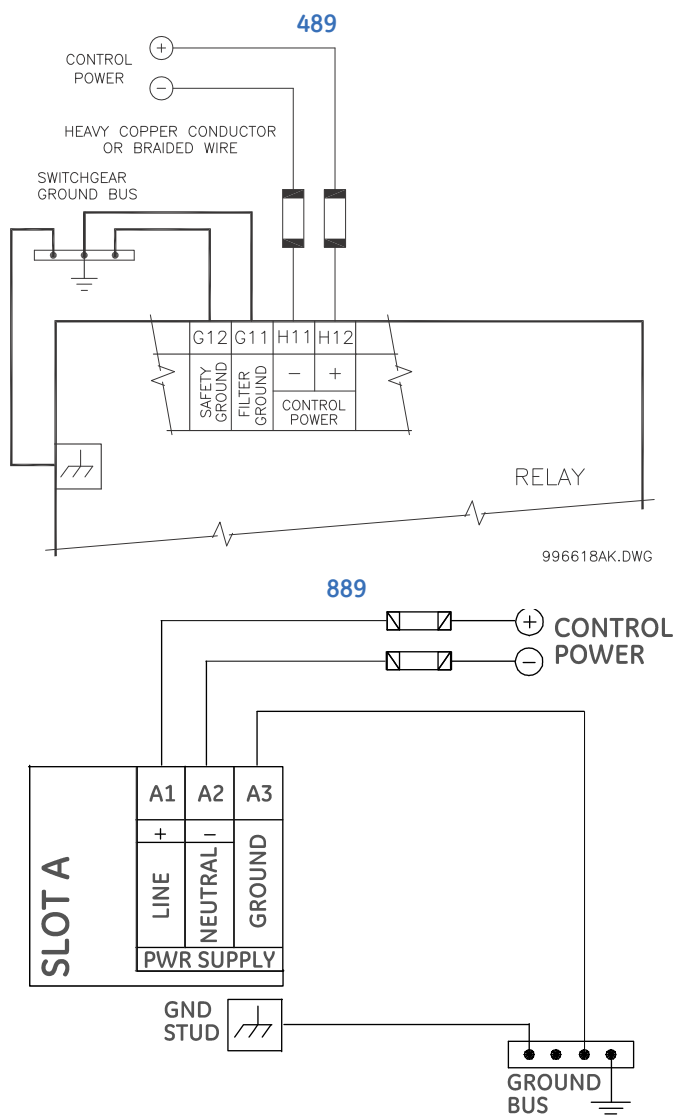


Figure 5-7: Control Power and Grounding

Table 5-5: Control Power and Grounding

Type	Function	489	889
Power Supply	Plus	H12	A1
Power Supply	Negative	H11	A2
Power Supply	Ground	G11/G12	A3

5.4 489 to 889 Slot F, H

5.4.1 HV I/O - Contact Outputs

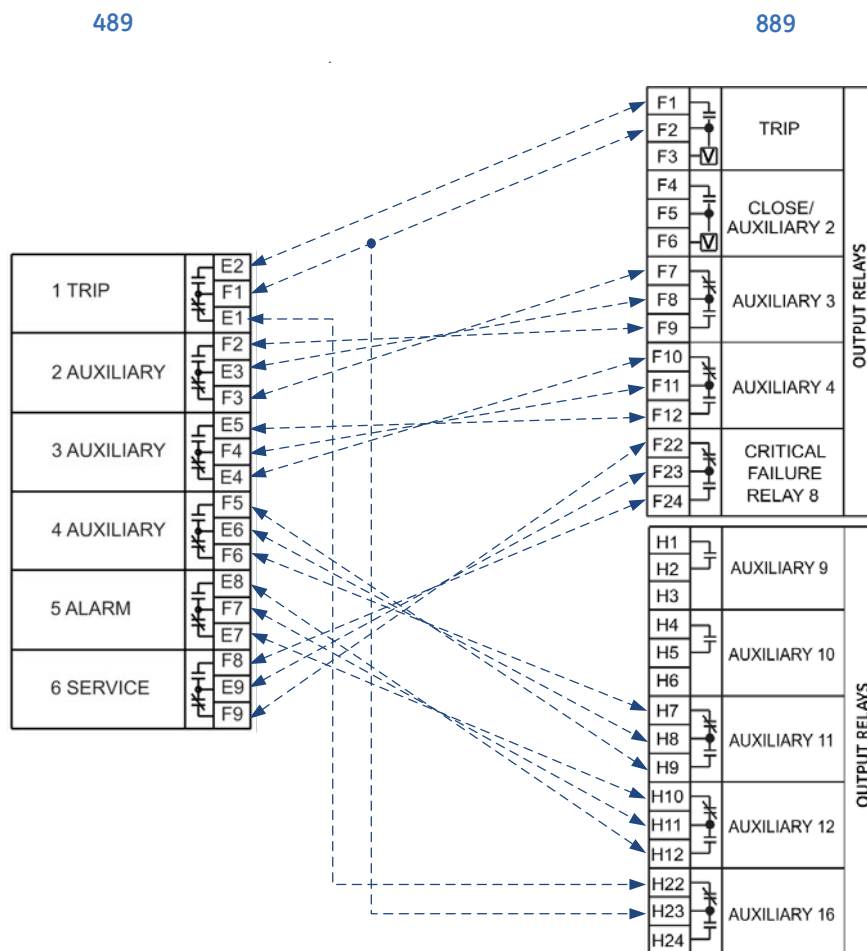


Figure 5-8: 489-889 Contact output Mapping



Trip and close coil supervision is not available.



To enable the Trip relay Normally Closed contact, program the 889 Aux relay 16 operation to follow the Trip relay On operand.

Table 5-6: Contact Outputs

489 Function	889 Function	489	889
1 Trip NO	Trip 1 NO	E2	F1
1 Trip Common	Trip 1 Common	F1	F2, H23
1 Trip NC	Auxiliary 16 NC	E1	H22
2 Auxiliary NO	Auxiliary 3 NO	F2	F9
2 Auxiliary Common	Auxiliary 3 Common	E3	F8
2 Auxiliary NC	Auxiliary 3 NC	F3	F7
3 Auxiliary NO	Auxiliary 4 NO	E5	F12
3 Auxiliary Common	Auxiliary 4 Common	F4	F11
3 Auxiliary NC	Auxiliary 4 NC	E4	F10
4 Auxiliary NO	Auxiliary 11 NO	F5	H9
4 Auxiliary Common	Auxiliary 11 Common	E6	H8
4 Auxiliary NC	Auxiliary 11 NC	F6	H7
5 Alarm NO	Auxiliary 12 NO	E8	H12
5 Alarm Common	Auxiliary 12 Common	F7	H11
5 Alarm NC	Auxiliary 12 NC	E7	H10
6 Service NO	Critical Failure 8 NO	F8	F24
6 Service Common	Critical Failure 8 Common	E9	F23
6 Service NC	Critical Failure 8 NC	F9	F22

5.4.2 HV I/O - Contact Inputs

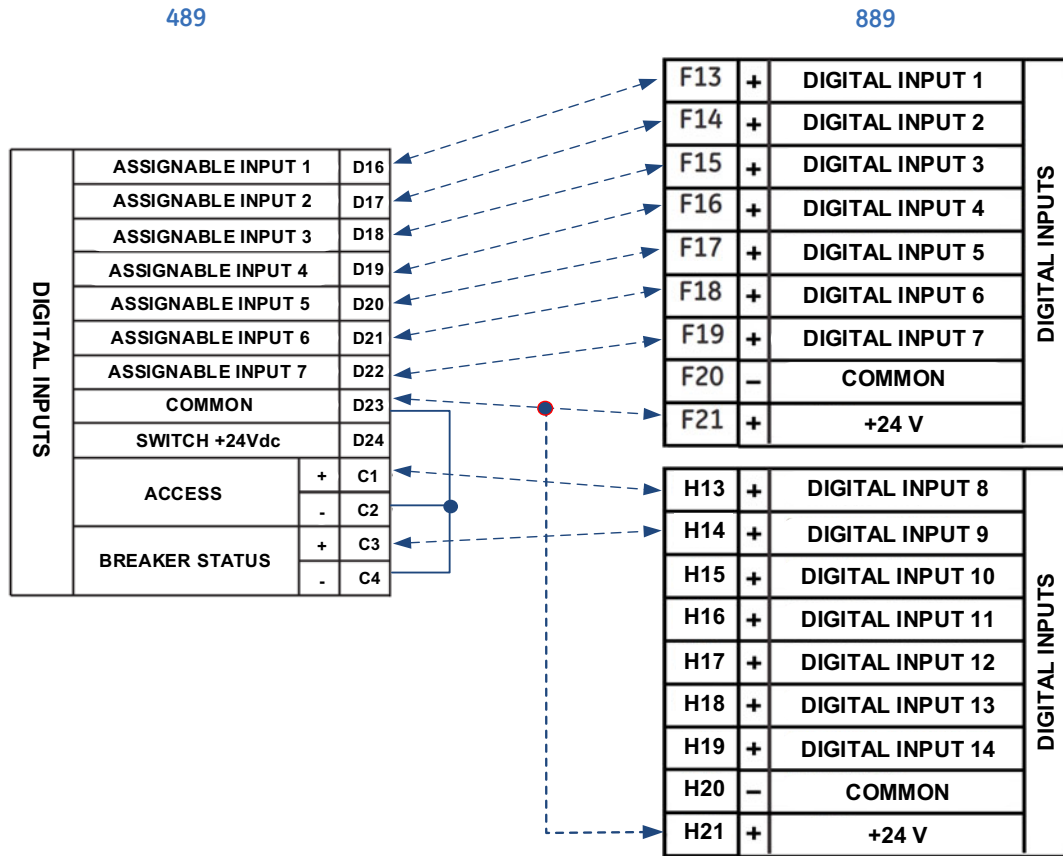


Figure 5-9: 489-889 Contact Input Mapping

Table 5-7: Contact Inputs

System Connection	489	889
Assignable Input 1	D16	F13 (Contact Input 1)
Assignable Input 2	D17	F14 (Contact Input 2)
Assignable Input 3	D18	F15 (Contact Input 3)
Assignable Input 4	D19	F16 (Contact Input 4)
Assignable Input 5	D20	F17 (Contact Input 5)
Assignable Input 6	D21	F18 (Contact Input 6)
Assignable Input 7	D22	F19 (Contact Input 7)
Setpoint Access +	C1	H13 (Contact Input 8)
Breaker Status +	C3	H14 (Contact Input 9)
Dry Contact Input Common	D23, C2, C4	F21, H21
Switch +24Vdc	D24	Not supported



NOTE

- Setpoint Access can be configured to Contact Input 8 On.
- Breaker Status can be configured to Contact Input 9 On.
- Set contact input voltage threshold to 17 Vdc for slots F and H.



NOTE

The 489 Switch +24 Vdc terminal D24 is not supported by the 8 Series Retrofit Kit.

5.5 489 to 889 Comms and Low Voltage Analog I/O

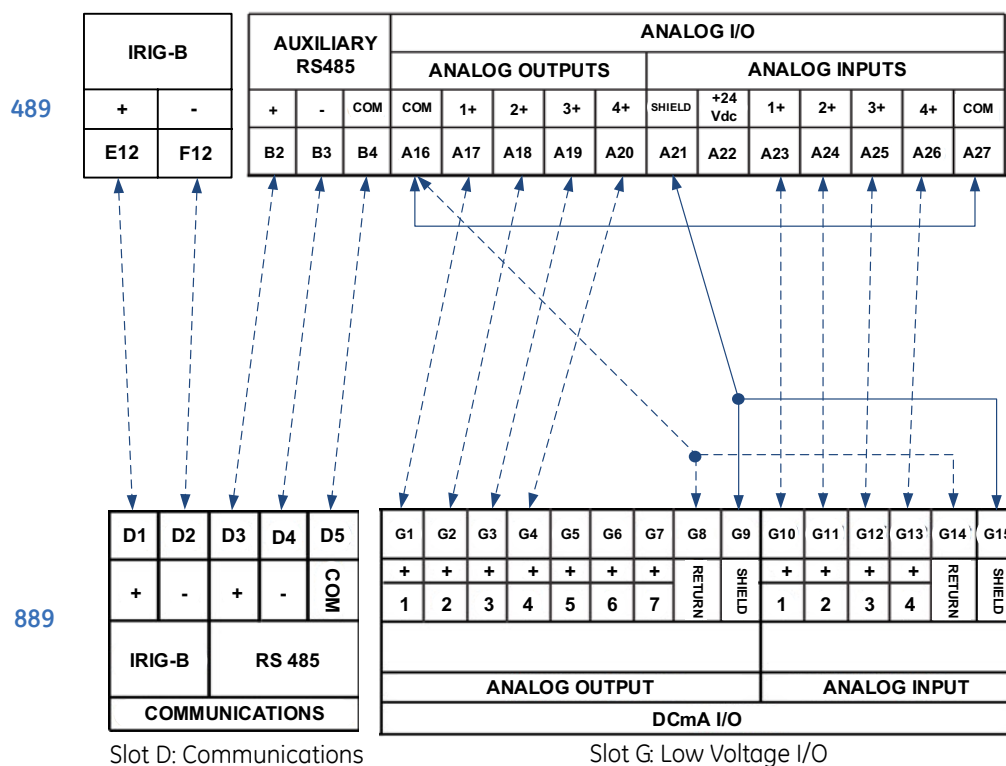


Figure 5-10: 489-889 Communications and Low Voltage Analog I/O Mapping

Table 5-8: Analog Inputs and Outputs

Type	System Connection	489	889
Analog Input	Input 1+	A23	G10
Analog Input	Input 2+	A24	G11
Analog Input	Input 3+	A25	G12
Analog Input	Input 4+	A26	G13
Analog Input	Input Common -	A27	G8, G14
Analog Input	Input Shield	A21	G9, G15
Analog Input	Input +24 VDC	A22	Not supported
Analog Output	Output 1+	A17	G1
Analog Output	Output 2+	A18	G2
Analog Output	Output 3+	A19	G3
Analog Output	Output 4+	A20	G4
Analog Output	Output 5+	N/A	G5
Analog Output	Output 6+	N/A	G6
Analog Output	Output 7+	N/A	G7
Analog Output	Output Common -	A16	G8, G14
Analog Output	Output Shield	A21	G9, G15



Ground the analog I/O on PLC side

Table 5–9: Communications

Type	Function	489	889
Auxiliary RS485	+	B2	D3
Auxiliary RS485	-	B3	D4
Auxiliary RS485	common	B4	D5
Computer RS485	+	D25	N/A
Computer RS485	-	D26	N/A
Computer RS485	common	D27	N/A
IRIG-B	+	E12	D1
IRIG-B	-	F12	D2



Converting the Computer RS485 channel to Ethernet using Multinet is recommended.

5.6 RTDs

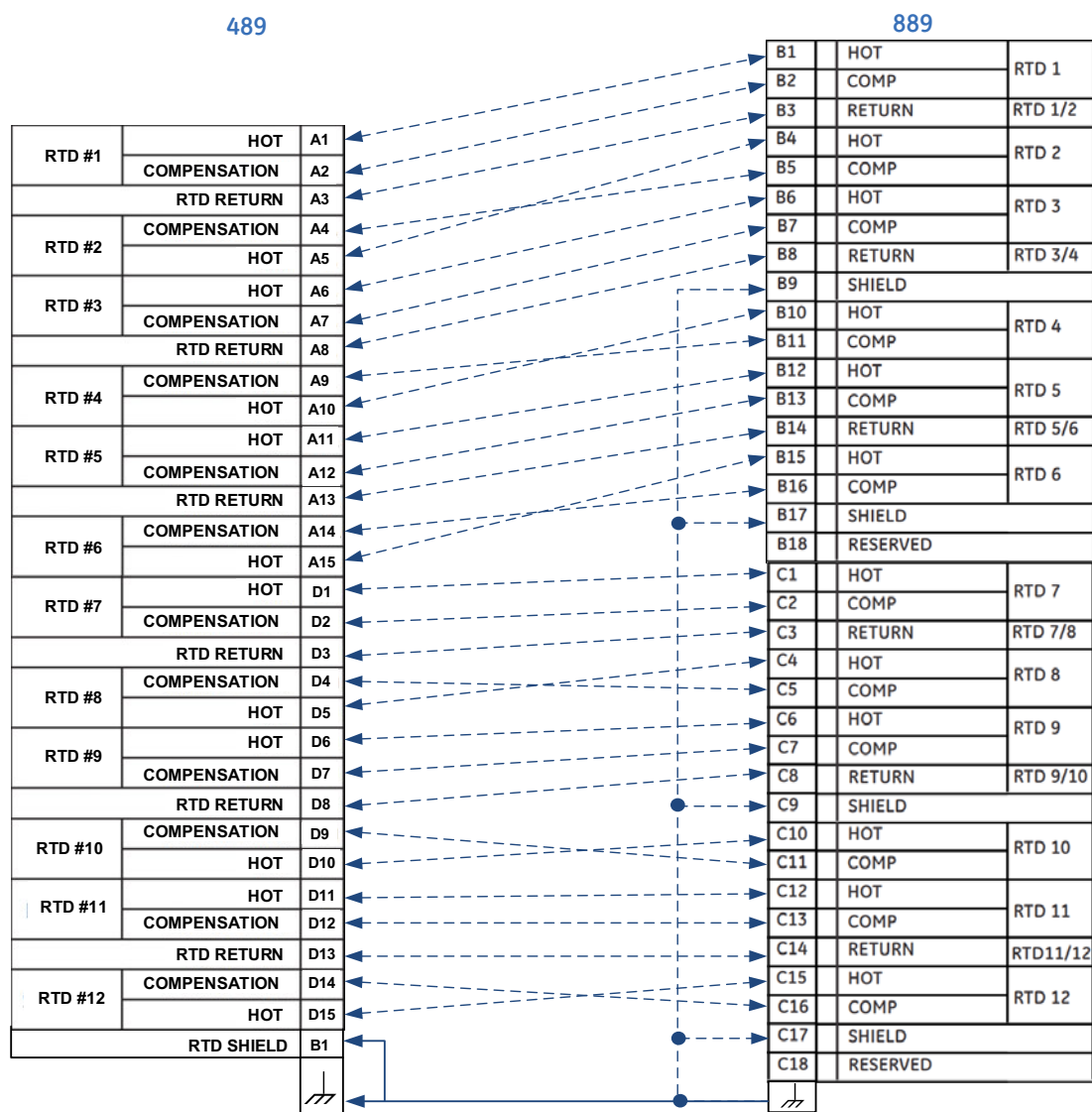


Figure 5-11: 489-889 RTD Input Mapping

Table 5-10: RTDs

RTDs	489	889
RTD1 Hot	A1	B1
RTD1 Compensation	A2	B2
RTD1/2 Return	A3	B3
RTD2 Compensation	A4	B5
RTD2 Hot	A5	B4
RTD3 Hot	A6	B6
RTD3 Compensation	A7	B7
RTD3/4 Return	A8	B8
RTD4 Compensation	A9	B11
RTD4 Hot	A10	B10
RTD5 Hot	A11	B12
RTD5 Compensation	A12	B13
RTD5/6 Return	A13	B14
RTD6 Compensation	A14	B16
RTD6 Hot	A15	B15
RTD7 Hot	D1	C1
RTD7 Compensation	D2	C2
RTD7/8 Return	D3	C3
RTD8 Compensation	D4	C5
RTD8 Hot	D5	C4
RTD9 Hot	D6	C6
RTD9 Compensation	D7	C7
RTD9/10 Return	D8	C8
RTD10 Compensation	D9	C11
RTD10 Hot	D10	C10
RTD11 Hot	D11	C12
RTD11 Compensation	D12	C13
RTD11/12 Return	D13	C14
RTD12 Compensation	D14	C16
RTD12 Hot	D15	C15
RTD Shield	B1	B9, B17, C9, C17, Chassis Ground

Multilin 489 to 889 Retrofit Kit

Appendix A: Warranty and Revision History

This Appendix includes the warranty and revision history.

Warranty

For products shipped as of 1 October 2013, GE warrants most of its GE manufactured products for 10 years. For warranty details including any limitations and disclaimers, see our Terms and Conditions at <https://www.gegridsolutions.com/multilin/warranty.htm>. For products shipped before 1 October 2013, the standard 24-month warranty applies.

Revision history

Table A-1: Revision History

MANUAL P/N	RELEASE DATE
1601-0337-A1	February 2017
1601-0337-A2	August 2018
1601-0337-A3	November 2018

Major updates

Table A-2: Major updates for 489 to 889 Retrofit Kit A3

SECTION	CHANGES
General	Changed revision to A3. Minor corrections throughout.
Ch1	Updated section 1.1.
Ch5	Updated terminal mapping tables, note, and figures throughout. Updated Figure 5-1 to include Comms-C module. Added Figure 5-2: Rear Terminal Layout of the 489-889 Retrofit Kit, after 489 Terminal Block Installation.

Table A-3: Major updates for 489 to 889 Retrofit Kit A2

SECTION	CHANGES
General	Changed revision to A2. Renumbered chapters. Updated web links throughout. Minor corrections.
Ch1	Clarified that the depth-reducing collar is included (not optional).
Ch5	Updated Table 5-2: 889 to 489 Terminal Block Mapping. Updated Table 5-4: CT Connections. Updated section 5.4.1 HV I/O Contact Outputs.