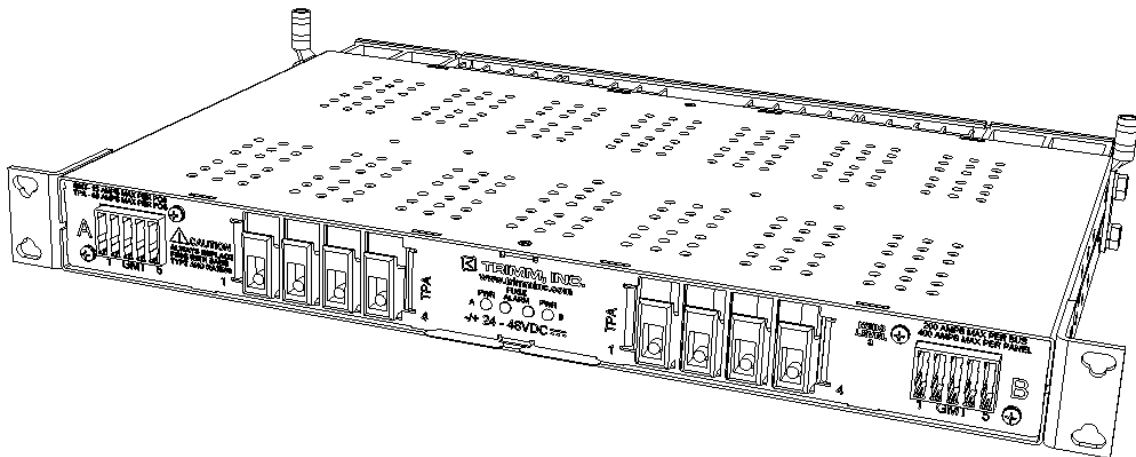




# GMT/TPA Fuse Panel Installation Guide

Document INS-827xxxxxx

This manual covers the following part numbers-  
Trimm **827xxxxxx** Family



# Table of Contents

<b>Section 1- General Information.....</b>	<b>3</b>
1.1 - Product Description .....	3
1.2 - Inspection.....	3
1.3 - What's Included .....	3
<b>Section 2 – Before You Begin.....</b>	<b>3</b>
2.1 - Tools Required For Installation.....	3
2.2 - Input Bus Amperage Rating.....	3
2.3 - Fuse Sizing Information .....	4
2.4 - Fuse Replacement Information.....	4
2.5 - Wiring Temperature Information.....	4
2.6 - General Notes on Terminal Connections .....	4
2.7 - Operating Voltage Ranges .....	4
2.8 - Battery Return Treatment .....	4
2.9 - Terminal Information.....	4
<b>Section 3 – Rack Mounting .....</b>	<b>5</b>
3.1 - Rack Mounting.....	5
3.2 - Additional Rack Mounting Instructions .....	5
<b>Section 4 – Input and Grounding Cabling .....</b>	<b>5</b>
4.1 - Chassis Grounding (Earthing) .....	5
4.2 - Input Wiring.....	5
4.3 - Power Verification Test.....	5
<b>Section 5 – Output and Alarm Cabling .....</b>	<b>6</b>
5.1 - Output Wiring (TPA Fuses).....	6
5.2 - Output Wiring Set Screw Connection (GMT Fuses).....	6
5.3 - Output Wiring Barrier Strip Connection (GMT Fuses).....	6
5.4 - Alarm Wiring .....	6
<b>Section 6 – Final Installation.....</b>	<b>6</b>
6.1 - Fuse Installation.....	6
6.2 - Energizing the Panel.....	6
<b>Section 7 – Accessories.....</b>	<b>7</b>

## Section 1- General Information

### **1.1 - Product Description**

Trimm, Inc.'s GMT/TPA series of power distribution panels offers two types of fusing for both higher and lower current equipment. GMT fuses offer protection from .18 to 15 Amps per position while TPA fuses offer protection from 3 to 50 Amps per position. Power and alarm status are displayed locally with relay contacts for remote fuse fail and power loss indication. This product is suitable for central office locations, network telecommunication facilities and data centers. This product may be used with CBN (Common bonding network) or IBN (Isolated bonding network) installations.

### **1.2 - Inspection**

Inspect the panel for any noticeable defects, missing parts (See "What's Included" below), or shipping damage. Please notify Trimm, Inc. if any problems are found at 1-800-298-7466. No products may be returned to Trimm, Inc. without the proper Return Material Authorization (RMA) number.

### **1.3 - What's Included**

This unit should be packaged with the following items. Please notify Trimm, Inc. if any of these items are not included so a replacement can be sent out right away.

- GMT/TPA fuse panel (verify part number from sticker on right side of unit.)
  - #12-24 x 1/2" self-tapping mounting screws for rack mounting
  - Compression lugs (For Earthing/grounding connection only.)
  - Installation instruction packet
- Other items in shipping box may include
- Extra fuses

## Section 2 – Before You Begin

### **WARNING**

This panel should be installed in a restricted access area by qualified service personnel only.

All connections/methods should meet all national/local electrical codes as well as company specific methods or procedures. Failure to do so may result in damage to the equipment, and or personal injury.

A readily accessible disconnect device must be incorporated into the supply wiring for this product. This disconnect device must be capable of interrupting the maximum available fault current determined by analysis for your system.

### **2.1 - Tools Required For Installation**

- Multi meter
- No. 2 Phillips head torque screw driver
- Torque wrench with 7/16 socket
- Torque wrench with 11/32 socket (for barrier strip output panels)
- Slotted torque screw driver (for set screw output panels)
- Suitable crimp tooling for the terminals
- Cable ties or lacing cord
- Writing utensil or label maker for circuit designation
- Wire wrap tools (for remote alarm wiring)

### **2.2 - Input Bus Amperage Rating**

Please use the chart below to determine the distribution panels suitable over current protective device rating and recommended input wire sizing based on the panels input bus rating.

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<b>827 Family Input Bus Amperage Rating</b>		
<b>Bus Rating*</b>	<b>Over Current Device Rating</b>	<b>Input Wire Size</b>
200 Amp	250 Amp	4/0 AWG
250 Amp	300 Amp	350 kcmil
300 Amp	350 Amp	500 kcmil
*Refer to panel marking for bus rating		

### **2.3 - Fuse Sizing Information**

The fuse manufacturer recommends that GMT fuses rated 8 to 15 Amps be continuously operated at no more than 70% of their nominal current rating. All fuse types/amperages may be continuously operated at 80% of their nominal current rating.

### **2.4 - Fuse Replacement Information**

The correct fuses may be ordered from the table at the end of this document. See section 7

### **2.5 - Wiring Temperature Information**

The wiring for this product should be rated 90° C or better. Wiring protected by GMT fuses shall be at least one size larger than the minimum required wire based on the National Electric Code, NFPA 70 ampacity tables.

### **2.6 - General Notes on Terminal Connections**

- Bare conductors should be coated with appropriate antioxidant compound before crimp connections are made.
- Use appropriate shrink tubing over un-insulated terminal barrels.
- Ensure that the mating surface of both the terminals and their connection point are clean and free of paint.
- Appropriate antioxidant should be applied to the mating surfaces of all connections.
- Use only listed terminals and crimp tooling when making connections.

### **2.7 - Operating Voltage Ranges**

The following table lists the minimum and maximum voltage that this product has been designed to operate in.

<b>Operating Voltage Information</b>		
<b>Nominal Voltage</b>	<b>Minimum Voltage</b>	<b>Maximum Voltage</b>
12 VDC	10.7 VDC	15.0 VDC
24 VDC	20 VDC	28.3 VDC
48 VDC	40 VDC	56.7 VDC

### **2.8 - Battery Return Treatment**

This product has been designed with the battery return connection isolated from the chassis ground (Earthing) connection. This product is suitable for use with either DC-I or DC-C (Isolated or Common) battery return connection applications.

### **2.9 - Terminal Information**

The following terminals or suitable equivalents may be used for connection to this product. Only listed terminals and their recommended crimping tooling should be used. These recommendations are based on the panel's bus amperage rating.

<b>827xxxxxxx Family Suggested Field Wiring Terminals</b>						
Connection	Trimm Part Number <sup>1</sup>		Wire Gauge	Stud Size	Hole Spacing	Max. Width
	Standard Conductor	Flex Conductor				
Input (200A Bus)	6504021221	6504021242	4/0 AWG	1/4"	5/8"	1"
Input (250A Bus)	6535043221	6535043242	350 kcmil	3/8"	1.000"	1.375"
Input (300A Bus)	6550043241	6550043242	500 kcmil	3/8"	1.000"	1.375"
Output Set Screw (GMT fuse type)	Set Screw (Non required)					
Output Barrier Strip (GMT fuse type)	Up to 10 AWG fork or ring terminal with a #6 stud (.325" max. tongue width)					
Output (TPA fuse type)	Up to 6 AWG fork or ring terminal with a #8 stud (.500" max. tongue width)					
Chassis Ground	Compression lugs included (1 per bus)					
Remote Alarm	Wire Wrap (Non required)					
<i>†The above list is only a suggestion. Equivalent terminals may be used provided they are listed and crimped with the appropriately listed crimp tooling.</i>						

## Section 3 – Rack Mounting

### **3.1 - Rack Mounting**

Secure the panel to the rack using the self tapping screws provided. For a 23" rack or offset mounting, remove the screws holding the brackets to the chassis, adjust the brackets to allow for optional mounting and torque the screws to 10 in-lbs. max.

### **3.2 - Additional Rack Mounting Instructions**

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the unit's maximum operating temperature. Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

## Section 4 – Input and Grounding Cabling

### **WARNING**

Before installation, verify that the input power disconnect device is turned "OFF"

### **4.1 - Chassis Grounding (Earthing)**

This product is suitable for use in either a Common or Isolated (CBN or IBN) Bonding Network. This panel includes compression lugs for grounding (size dependant on panel's bus amperage). Crimp the ground wire to the terminals provided. Attach the wires to the panel using the supplied bolts and lock washers. Torque fasteners to 24 in-lbs. Attach other end of ground pigtail to the rack or other suitable grounding location. Reliable Earthing of rack-mounted equipment should be maintained.

### **4.2 - Input Wiring**

Remove the input covers and locate and remove the flat washers and locking nuts supplied with this panel. Crimp the battery and return wires to the proper terminals. Attach the wires to the panel using the supplied flat washers and locking nuts. Torque the fasteners to 50 in-lbs (for 1/4" stud panels) or 190 in-lbs. for (3/8" stud panels).

### **4.3 - Power Verification Test**

This test is to verify proper function of the panel prior to the connection of loads. Turn on the over current protection/disconnect device supplying power to the A side bus. Use a multi meter to verify that voltage and

polarity are correct at the input connection. Verify that the PWR LED is illuminated “green” and FUSE ALARM LED is not illuminated. Verify that continuity is present between C and NC alarm contacts. Install a failed fuse if possible and verify that the FUSE ALARM LED changes to “red”. With the failed fuse in place verify that continuity is present between C and NO fuse alarm contacts. Repeat these steps for the B side bus if applicable.

## Section 5 – Output and Alarm Cabling

### **WARNING**

Before continuing installation, verify that the over current protection/disconnect device is turned “OFF”

### **ALERT**

Please note these connections or terminals have been designed with a floating contact as a design feature on the output battery connections. This floating feature should not be deemed as a loose connection during installation and maintenance so long as the connections were initially tightened to the recommended torque as noted in this installation guide provided with the product.

#### **5.1 - Output Wiring (TPA Fuses)**

This panel accepts up to #8 AWG wire to feed into the equipment and return connections. Crimp the terminals to the wiring. Remove the nuts for each position. Insert the wire onto the corresponding position for both equipment and return connections. Torque the nuts to 16 in-lbs.

#### **5.2 - Output Wiring Set Screw Connection (GMT Fuses)**

This panel accepts #12 to #22 AWG copper wire to feed into the equipment and return connections. Strip the wires approximately .275” and insert into the equipment and return connections for each fused position. Torque the screw to 3.5 in-lbs.

#### **5.3 - Output Wiring Barrier Strip Connection (GMT Fuses)**

This panel accepts up to #10 AWG wire to feed into the equipment and return connections. Crimp the terminals to the wiring. Remove the screws for each position. Insert the wire onto the corresponding position for both equipment and return connections. Torque the screw to 10 in-lbs.

#### **5.4 - Alarm Wiring**

The alarm connector is standard wire wrap pins. Attach the wire to the appropriate pins. Continuity is established at positions C and NC when there is no fuse failure. Continuity is established at positions C and NO when a fuse failure has occurred. The same functionality is provided for the power failure indication. One set of power fail and one set of fuse fail contacts is provided per bus.

## Section 6 – Final Installation

#### **6.1 - Fuse Installation**

Orientate and install the correct fuse into its position. Record the protected equipment identification and location on the supplied designation card.

#### **6.2 - Energizing the Panel**

Once all steps have been completed above, and a final inspection of the installation has been completed, you may energize the fuse panel by switching the corresponding interrupt device to its “ON” position.

