



GMT/TPA Fuse Panel Installation Guide

Document INS-827xxxxxx

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

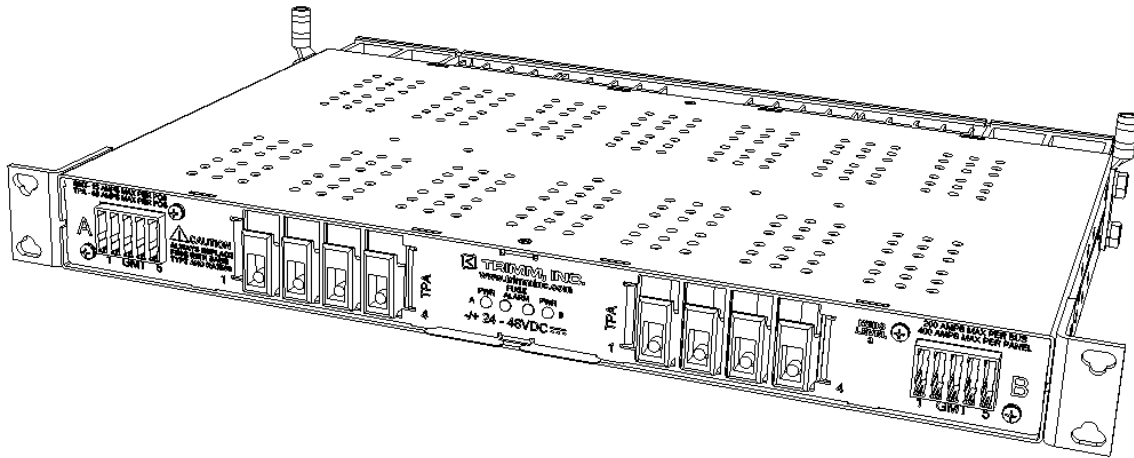


Table of Contents

Section 1- General Information	4
1.1 - Product Description	4
1.2 - Inspection	4
1.3 - What's Included.....	4
Section 2 – Before You Begin	4
2.1 - Tools Required For Installation	5
2.2 - Input Bus Amperage Rating	5
2.3 - Fuse Sizing Information.....	6
2.4 - Fuse Replacement Information	6
2.5 - Wiring Temperature Information.....	6
2.6 - General Notes on Terminal Connections	6
2.7 - Operating Voltage Ranges	6
2.8 - Battery Return Treatment.....	6
2.9 - Terminal Information	7
Section 3 – Rack Mounting	7
3.1 - Rack Mounting	7
3.2 - Additional Rack Mounting Instructions	7
Section 4 – Input and Grounding Cabling	8
4.1 - Chassis Grounding (Earthing)	8
4.2 - Input Wiring	8
4.3 - Power Verification Test	8
Section 5 – Output and Alarm Cabling	9
5.1 - Output Wiring (TPA Fuses)	9
5.2 - Output Wiring Set Screw Connection (GMT Fuses).....	9
5.3 - Output Wiring Barrier Strip Connection (GMT Fuses).....	9

5.4 - Alarm Wiring..... 10

Section 6 – Final Installation..... 10

6.1 - Fuse Installation 10

6.2 - Energizing the Panel 10

Section 7 – Accessories..... 11

Section 8 - Revision Record 11

Section 1- General Information

1.1 - Product Description

Trimm, Inc.'s GMT/TPA series of power distribution fuse panels offers two types of fuses for both high and low current requirements. 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.

1.2 - Inspection

Inspect the panel for any noticeable defects, missing parts (See "What's Included" below), or shipping damage. Please retain the original packaging in case you need to return the product to Trimm, Inc. 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 lug/fasteners (For Earthing/grounding connection only.)
- Installation instruction packet

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.

Avertissement

Ce produit doit être installé dans une zone à accès restreint par un personnel d'entretien qualifié.

Toutes les connexions / méthodes doivent répondre à tous les codes nationaux / locaux électriques ainsi que des méthodes spécifiques de l'entreprise ou des procédures . Ne pas le faire peut entraîner des dommages à l'équipement , et ou des blessures.

Un dispositif de déconnexion facilement accessible doit être incorporé dans le câblage d'alimentation pour ce produit . Ce dispositif de déconnexion doit être capable d' interrompre le courant de défaut maximal disponible déterminé par l'analyse de votre système .



Dieses Produkt darf nur in einem eingeschränkten Zugangsbereich von qualifiziertem Fachpersonal installiert werden.

Alle Anschlüsse / Methoden sollten alle nationalen / lokalen elektrischen Vorschriften sowie unternehmensspezifischen Methoden oder Verfahren entsprechen. Geschieht dies nicht, kann es zu Schäden an der Ausrüstung, und oder zu Verletzungen führen.

Eine leicht zugängliche Trennvorrichtung muss für dieses Produkt in die Versorgungsleitung eingebaut werden. Diese Trennvorrichtung muss für Ihr System durch Analyse bestimmt werden, um den maximal auftretenden Fehlerstrom zu unterbrechen.

2.1 - Tools Required For Installation

Depending on the part number ordered the following tools may be needed to install this product.

- Multi meter
- No. 2 Phillips head torque screw driver
- Torque wrench with 7/16 socket
- Torque wrench with 9/16 socket
- 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 tool for alarm connections (.045" square pins)

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.

827 Family Input Bus Amperage Rating		
Bus Rating*	Over Current Device Rating	Input Wire Size
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.

Operating Voltage Information		
Nominal Voltage	Minimum Voltage	Maximum Voltage
5 VDC	4 VDC	7.5 VDC
12 VDC	10 VDC	15.0 VDC
24 VDC	19 VDC	28.3 VDC
48 VDC	40 VDC	60 VDC

2.8 - Battery Return Treatment

Copyright © Trimm, Inc. All rights reserved.

INS-827xxxxxx Rev E. 06/10/2016 GMT/TPA Fuse Panel Installation Instructions

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.

827xxxxxx Family Suggested Field Wiring Terminals						
Connection	Trimm Part Number ¹		Wire Gauge	Stud Size	Hole Spacing	Max. Width
	Standard Conductor	Flex Conductor				
Input (200A Bus)	6704021242	6704021241	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

Copyright © Trimm, Inc. All rights reserved.

INS-827xxxxxx Rev E. 06/10/2016 GMT/TPA Fuse Panel Installation 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”

Avertissement

Avant l'installation, vérifier que le dispositif d'entrée de débranchement est éteint.

Warnung

Vor der Installation sicher stellen, dass die Trennvorrichtung in der Versorgungsleitung ausgeschaltet ist.

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 a compression lug for grounding (size dependant on panel's bus amperage). Crimp the ground wire to the terminal provided. Attach the wire to the grounding location on either side of 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. (First On, Last Off)

4.2 - Input Wiring

Remove the input covers and locate 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-7/16" socket) or 190 in-lbs. for (3/8" stud panels-9/16" socket).

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”

Copyright © Trimm, Inc. All rights reserved.

INS-827xxxxxx Rev E. 06/10/2016 GMT/TPA Fuse Panel Installation Instructions

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”

Avertissement

Avant l'installation, vérifier que le dispositif d'entrée de débranchement est éteint.

Warnung

Vor der Installation sicher stellen, dass die Trennvorrichtung in der Versorgungsleitung ausgeschaltet ist.

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 screws to 16 in-lbs.

5.2 - Output Wiring Set Screw Connection (GMT Fuses)

This panel accepts #12 to #22 AWG copper wires to feed into the battery and return connections. Strip the wires approximately .260” (6.5mm) and insert into the battery and return connections for each fused position. Torque the screw to 5 in-lbs. (.5 Nm).

5.3 - Output Wiring Barrier Strip Connection (GMT Fuses)

Copyright © Trimm, Inc. All rights reserved.

INS-827xxxxxx Rev E. 06/10/2016 GMT/TPA Fuse Panel Installation Instructions

This panel accepts #10 to #22 AWG wire to feed into the battery and return connections. Strip the wires to the appropriate length and crimp to the terminals. Remove or loosen (for fork terminals) the screws for each fused position. Attach the terminal onto the corresponding position for both battery and return connections. Torque the screw to 10 in-lbs. (1.1 Nm).

5.4 - Alarm Wiring

The alarm connections use standard wire wrap pins or set screw connectors depending on the part number ordered. To connect the panel to an alarm system, attach the alarm wires to the appropriate pins (C-NC or C-NO) as outlined below.

Continuity at the fuse fail alarm connector is established at positions C and NC when all the fuses are good (not failed). Continuity is established at positions C and NO when any fuse has blown (failed).

If equipped with a power fail alarm, continuity is established at positions C and NC when the panel is energized or at C and NO when the panel is not energized or a loss of power for that bus has occurred.

If equipped with Major/Minor alarming for external monitoring, the C,NC,NO contacts function as above when you provide a battery (B pin) and return (R pin) signal to the alarm circuitry. This voltage will enable the panels appropriate LED indicator and switches continuity on the alarm pins. The pin labeled X is not used. The voltage supplied to the B and R connections shall be the same as the input voltage to the panel. (I.e. if your input voltage is -48VDC then you shall supply -48VDC signal to the B and R Major pins to enable a Major alarm). When voltage is not present at the B and R pins the associated LED is not illuminated and the remote alarm contacts show continuity between C and NC.

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.

