



TPM Fuse Panel Installation Guide

Document INS-727XXXXXX

This manual covers the following part numbers-
Trimm **727XXXXXX** Family

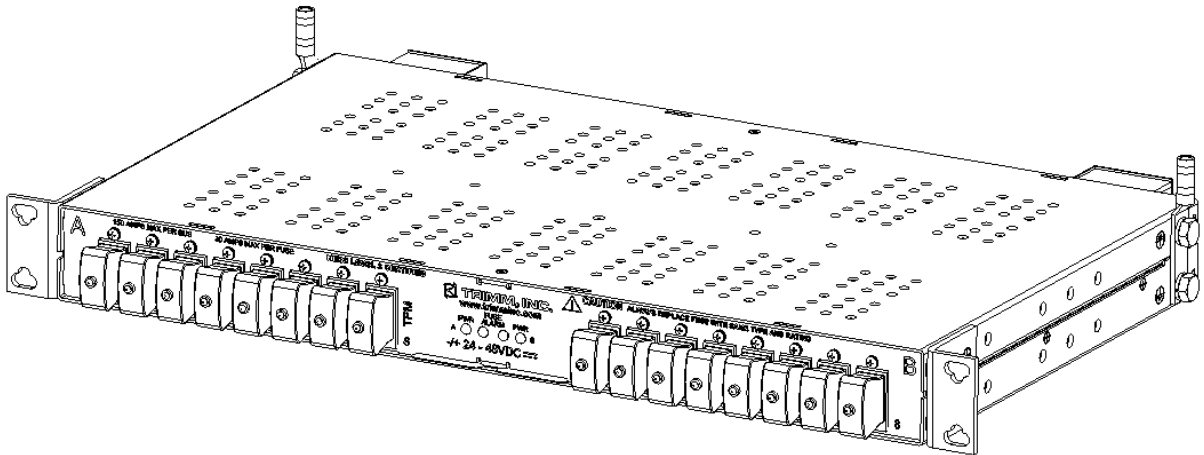


Table of Contents

Section 1- General Information	3
1.1 - Product Description	3
1.2 - Inspection	3
1.3 - What's Included.....	3
Section 2 – Before You Begin	3
2.1 - Tools Required For Installation	3
2.2 - Input Bus Amperage Rating	4
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
Section 3 – Rack Mounting	5
3.1 - Rack Mounting	5
3.2 - Additional Rack Mounting Instructions.....	5
Section 4 – Input and Grounding Cabling	5
4.1 - Chassis Grounding (Earthing).....	5
4.2 - Input Wiring	5
4.3 - Power Verification Test	5
Section 5 – Output and Alarm Cabling	6
5.1 - Output Wiring	6
5.2 - Alarm Wiring.....	6
Section 6 – Final Installation	6
6.1 - Fuse Installation	6
6.2 - Energizing the Panel	6
Section 7 – Accessories	7
Section 8 - Revision Record	7

Section 1- General Information

1.1 - Product Description

Trimm, Inc.'s TPM series of power distribution panels offer fuse protection from 3 to 30 Amps per position with up to 16 fused positions per panel (8 per bus max.). 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. Products shall not 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.

- TPM fuse panel (verify part number from sticker on right side of unit.)
- 4 x #12-24 x 1/2" self-tapping mounting screws
- 6 x 1/4" flat washers and locking nuts (per bus)
- A single compression lug and associated fasteners (For earthing/grounding connection only.)
- Installation instruction packet
-

Section 2 – Before You Begin

WARNING

This panel shall be installed in a restricted access location by qualified service personnel only.

No field servicing is required on this unit.

All connections/methods shall meet all national/local electrical codes as well as any company specific methods and 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. The disconnect device must be capable of interrupting the maximum available fault current determined by analysis for your system.

2.1 - Tools Required For Installation

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

- Multimeter
- Wire cutter/stripper
- No. 2 Phillips head torque screw driver
- 1/8" wide slotted torque screw driver
- Torque wrench with 7/16" socket
- Suitable listed crimp tooling for the field wiring terminals
- Cable ties or lacing cord
- Writing utensil or label maker for circuit designation
- Wire-Wrap tool for alarming connections (.045" square pins)

2.2 - Input Bus Amperage Rating

This product was designed to be used at its input bus amperage rating of 150 Amps, fed by 2/0 AWG wire and protected by a 187.5 Amp maximum overcurrent device.

2.3 - Fuse Sizing Information

TPM may be continuously operated at no more than 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.

2.6 - General Notes on Terminal Connections

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

2.7 - Operating Voltage Ranges

The following table lists the minimum and maximum voltages 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

This product has been designed with the input return connections 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. These recommendations are based on the panel's bus rating.

727XXXXXXX Family Suggested Field Wiring Terminal Specifications¹							
Connection	Panel Bus Rating	Wire Gauge	Trimm Part Number ¹		Stud Size	Hole Spacing	Max. Width
			Standard Conductor	Flex Conductor			
Input (Compression Lug Type)	150 Amps	2/0 AWG	6502021241	6502021242	1/4"	5/8"	5/8"
Output (Barrier Strip Type)	Up to 10 AWG fork or ring terminal with a #6 stud (.325 max. tongue width)						
Chassis Ground	Terminal included with panel (compression lug)						
Remote Alarm	Set Screw or Wire Wrap (Non required)						
<small>¹The above list is only a suggestion. Equivalent terminals may be used provided they are listed and crimped with the appropriately listed crimp tooling. Wire gauge is based on the maximum over current device rating</small>							

Section 3 – Rack Mounting

3.1 - Rack Mounting

Secure the panel to the rack using the self tapping screws provided. For 23" rack or offset mounting applications, remove the screws securing the brackets to the chassis, orient the brackets to allow for optional mounting and re-torque the screws to 10 in-lbs. (1.1 Nm) max.

3.2 - Additional Rack Mounting Instructions

If this product is 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. Wiring shall be secured in a manner that does not impose additional stress on the mounting brackets.

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 a compression lug for grounding. Crimp a ground wire to the terminal provided. Attach the wire to the panel using the supplied fasteners. Torque the fasteners to 24 in-lbs. (2.7 Nm). Attach other end of ground wire to the rack or other suitable grounding location. Reliable grounding of rack-mounted equipment should always be maintained (First On, Last Off).

4.2 - Input Wiring

Remove the input covers and locate the flat washers and #1/4-20 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 40 in-lbs. (4.5 Nm).

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 that the FUSE ALARM LED is not illuminated. Verify that continuity is present between C and NC power alarm contacts. Install a failed fuse if possible and verify that the FUSE ALARM LED changes to "red". With the failed fuse still 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 barrier strip connections 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

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)

5.2 - 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.

