

Dual-Feed 200A 4/5 TPA/GMT Fuse Alarm Panel

Power :: 009-8005-0404J

Installation Guide



Applies to : 009-8005-0404J

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Telect's dual 200A fuse alarm panel provides power protection for a variety of telecommunications equipment. Panel includes 8 TPA output fuse holders (4 per side) and 10 GMT fuse holders (5 per side). Sides A and B are electrically independent except for the replaceable alarm card, which contains power and alarm LEDs for both feeds. Also included are fuse alarm and power-fail relay terminals for external indicators.



Figure 1 - Model 009-8005-0404J

1.1 Specifications

Inputs:	Specifications:
Voltage & range	$\pm 24\text{Vdc}$, $\pm 20\text{V TO } \pm 30\text{V}$ -48Vdc, -40V TO -60V
Max. input load rating	200A per side, 160A continuous
Nominal power loss at full load	70W per side @ 9600W full load per side (200Ax48V)
Percentage of full load power dissipation at nominal voltage	Less than 1%
Max. input interrupt device	250A
Input terminal studs (with split ring lock washers & nuts) for dual-hole compression lugs	Dual 1/4-20 studs on 3/4 in. centers. (Torque nut [using 7/16 in. or 12 mm socket] to ~45 in.-Lb [$\sim 5 \text{ N}\cdot\text{m}$]). 1" lug width
Input wire size	#8 To #4/0 AWG (depends on input interrupt device)

TPA Outputs:	Specifications:
Max. TPA Output Fuse (ea.)	50A.
Max. TPA Output Load (ea.) - continuous	40A.
Max. Total TPA Output Load	160A per side
TPA Output Terminal Studs with nuts	16, single, #10 - 32 studs (max. lug width of 0.46 in. [1.17 cm]). Torque nut (using 3/8 in. or 10 mm socket) to ~20 in.-lb ($\sim 2.3 \text{ N}\cdot\text{m}$)
TPA Output Wire Size	#18 to #6 AWG (depends on output fuse rating)

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GMT Outputs:	Specifications:
Max. GMT Output Fuse (ea.)	20A
Max. GMT Output Load (ea.) - continuous	14A
Max. Total GMT Output Load	65A per side
GMT Output Terminal (Wire Binding)	20, #6 panhead screws (max lug width of .32 in. [.81 cm]).
GMT Output Wire Size	#20 to #12 AWG (depends on output fuse rating)
Grounding:	Specifications:
Earth GND Terminal Studs (With Split Ring Lock Washers & Hex Nuts) for Dual-Hole Compression Lug	Dual 1/4-20 threaded holes on 5/8 in. (1.59 cm) centers. Torque supplied bolt (using 7/16 in. or 12 mm socket) to 45 in.-lb (5 N•m).
Ground Wire Size	Up to #4 AWG (depends on input interrupt device)

Alarms:	Specifications:
Alarm Relay Contacts	2A @ 30 Vdc 0.6A @ 60 Vdc
Max. Alarm Card Power Rating	@20V: 85 mA (1.70W) @24V: 103 mA (2.47W) @27V: 109 mA (2.94W) @30V: 112 mA (3.36W) @42V: 123 mA (5.17W) @48V: 128 mA (6.14W) @56V: 135 mA (7.56W) @60V: 139 mA (8.34W)
Alarm Wire Size	#24 AWG, typ (#26 to #20 AWG)
Indicators:	Specifications:
INPUT POWER LEDs (Green)	Lights when power is applied to that feed
FUSE ALARM LED ((Red)	Lights if any GMT fuse blows
Dimensions:	Specifications:
Nominal, without brackets:*	Width 17.25 in. (43.82 cm) Height 1.75 in. (4.44 cm) Depth 10 in. (25.40 cm)
*See Page 14 for exact dimensions.	
Weight:	Specifications:
Weight, Without Packaging	~14 lb (~6 kg)
Weight, Shipping	~15 lb (~7 kg)

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Environment:	Specifications:
Operating Temperature Range	-10°C (14°F) to 50°C (122°F)

Hardware is included for flush or extended mounting in 19" or 23" relay racks. Visit our website to order Telect accessories and replaceable parts: output fuses (3A-50A TPA; 1/4A-20A GMT), dummy fuses, and lugs.

ALERT

ALERT! Only qualified personnel may install and maintain this product. Verify that all connections meet requirements specified in local electric codes or operating company guidelines before supplying power. Protect this equipment with a fuse or breaker sufficient to interrupt power levels specified on preceding page.

Install this product in locations accessible only by qualified personnel.

1.2 Inspection

Please read and understand all instructions before starting installation. If you have questions, contact Telect Technical Support at support@telect.com or call 1.509.926.6000.

When you receive the equipment, carefully unpack it and compare it to the packaging list. Please report any defective or missing parts to Telect Quality at quality@telect.com or call 1.509.926.6000.

Telect is not liable for transit damaged. If the product is damaged, please report it to the carrier and contact Telect Quality.

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1.3 Installation

Panel brackets provide flush or extended EIA or WECO mounting in a 19 or 23 in. rack. The panel is configured at the factory for 1-in. extended mounting in a 19-in. rack.

1. If necessary, remove three screws and reposition/re-align the brackets on the sides of the distribution panel, as shown in Figure 2.
2. Locate an unused rack position and mount the panel using four screws and lock washers provided, as shown in Figure 3. (Place the mounting panel as high as possible on the rack.)
3. Tighten the screws to 35 in.-lb. (4.29 N•m).
4. Loosen (you need not remove) two screws securing the rear terminal cover on the back of the panel.
5. Remove the cover.
6. Use a listed (approved) crimping tool to attach a listed (approved), dual-hole compression lug onto suitable ground wire. (Size of the ground depends on input interruption device.)
7. If required, lightly coat anti-oxidant on the lug and grounding surface on the side of the panel.
8. Connect the lug using the 1/4-20 bolt, split ring washer and flat washer provided, as shown in Figure 4.
9. Tighten the bolt to 45 in.-lb. (5 N•m).
10. Make sure the input power is off (openbreaker, dummy fuse, or open fuse holder at power



WARNING

WARNING! Failure to properly ground this equipment can create hazardous conditions to installation personnel and to the equipment.



ALERT

ALERT! Only use components and crimping tools approved by agencies or certifying bodies recognized in your country or region, such as Underwriter's Laboratories (UL), TUV, etc.

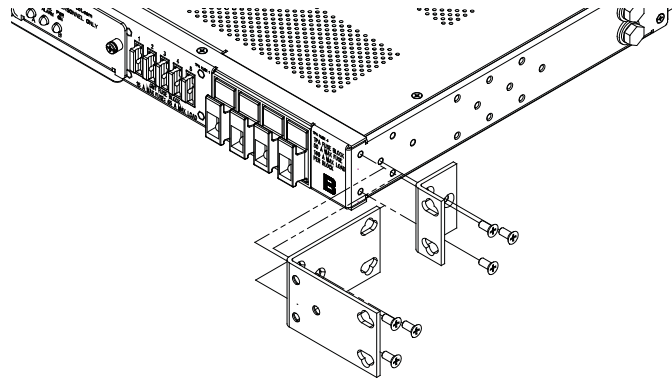


Figure 2 - Bracket Orientation

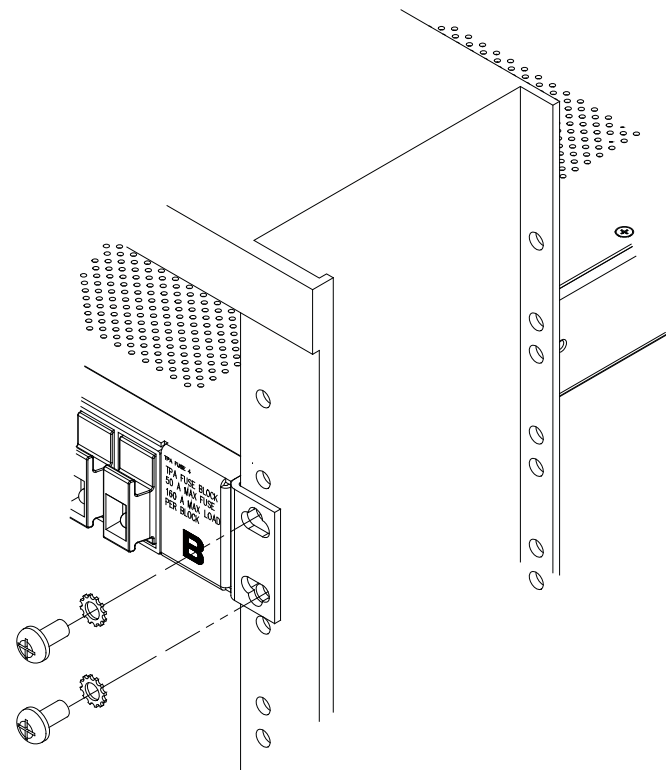


Figure 3 - Rack Mounting

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distribution unit [PDU]) before connecting this panel's input cables to the PDU.

11. For input wiring — wiring used as inputs to this distribution panel — crimp dual-hole compression lugs onto #8 AWG to #4/0 AWG copper wires. Insulate lug barrels with UL94 V-0 rated heat-shrink tubing.



WARNING

WARNING! Before connecting the input power cables, make sure the input power to the panel is turned off.

12. Clean the terminals and lugs with a nonabrasive, nonmetallic pad.
13. If required, lightly coat anti-oxidant on lugs and input **BATTERY** and **RETURN** terminals.
14. Connect the lugs to input terminals on back of panel, as shown in Figure 5.
15. Tighten the lugs to 45 in.-lb. (5 N•m).
16. Make sure TPA and GMT fuse positions are either empty or contain dummy fuses (phony, inoperative all-plastic slugs). If necessary, pull out the TPA carrier about an inch from its holder to disengage the TPA fuse, as shown in Figure 6.

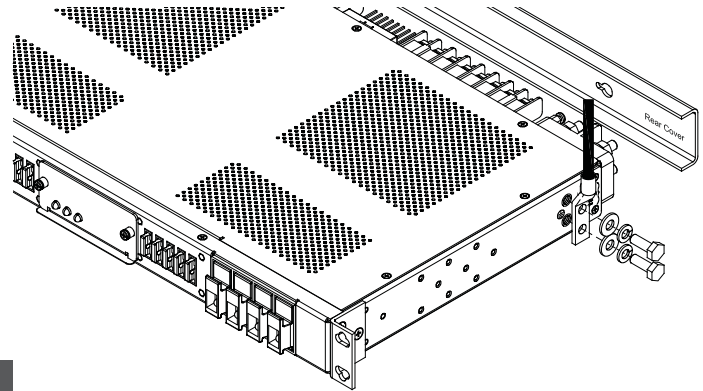


Figure 4 - Ground Lug Connection

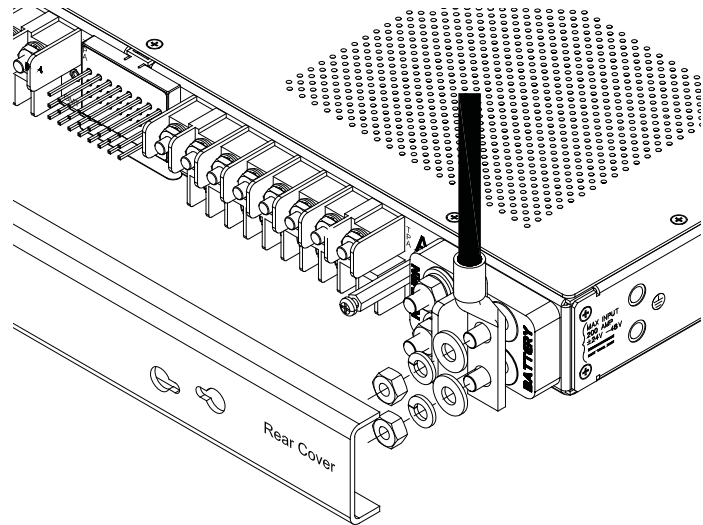


Figure 5 - Input Lugs

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17. Enable the fuse or breaker at PDU (250A max.) to turn on Feed A to Side A and then check voltage and polarity at input connectors of panel. Also, check that

PWR ON A LED on front of panel turns on (green). (See Figure 7 for location.)

- **PWR ON B, FUSE ALARM,** and TPA Fuse LEDs must be off.

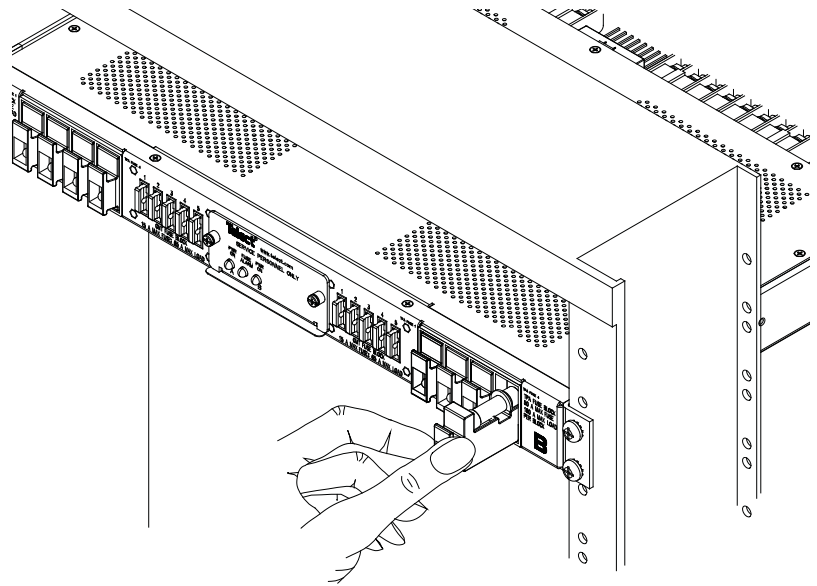


Figure 6 - Disengaging a TPA Fuse Holder

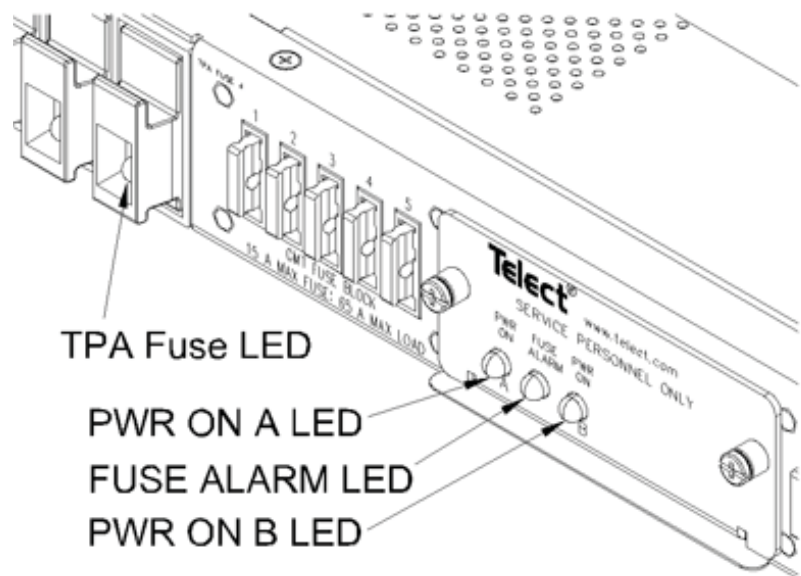


Figure 7 - Alarm Indicators

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18. At the rear of the panel, pull to extend plastic reference card below alarm terminals.
(See Figure 8.)With **PWR ON A** lit (normal operation) — but with **PWR ON B LED** off (failure operation) — test power-fail relay and contacts at **PWR ALM** terminals on the rear of the panel:
 - Expect an open circuit ($\infty\Omega$) between Terminals C and NC.
 - Expect continuity (0Ω) between Terminals C and NO.
19. Also, test the fuse alarm relay contacts at the **FUSE ALARM** terminals on the rear of the panel. For both the VIS (visual) and AUD (audible) indicator contacts,
 - Expect continuity (0Ω) between Terminals C and NC.
 - Expect an open circuit ($\infty\Omega$) between Terminals C and NO.
20. Repeat Steps 17 through 20 to power up Side B.
21. With **PWR ON A** and **B** lit (normal operation), test power-fail relay and contacts at **PWR ALM** terminals on the rear of the panel:
 - Expect continuity (0Ω) between Terminals C and NC.
 - Expect an open circuit ($\infty\Omega$) between Terminals C and NO.
22. Make sure none of the fuse positions contain operable fuses.
23. For TPA output wiring, crimp single-hole lugs onto one end of #18 to #6 AWG copper output wires.
(Work with one output wire at a time.)
24. Clean the panel terminals and lugs with a nonabrasive, nonmetallic pad.
25. If required, lightly coat anti-oxidant on lugs and output **BATTERY** and **RETURN** terminals, and then connect lug to terminals, as shown in Figure 9.
26. Tighten the nuts to 20 in.-lb. (~2.3 N•m).
27. Tighten the nuts to 20 in.-lb. (~2.3 N•m).
28. Connect the other end of the output wire to load.

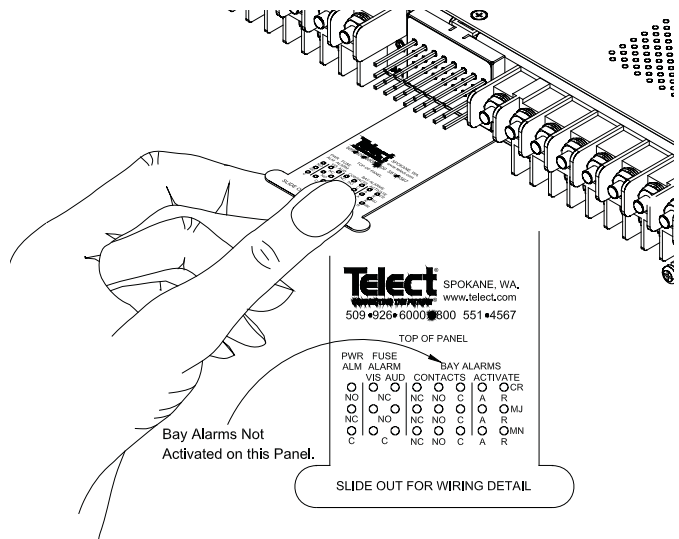


Figure 8 - Alarm Terminals

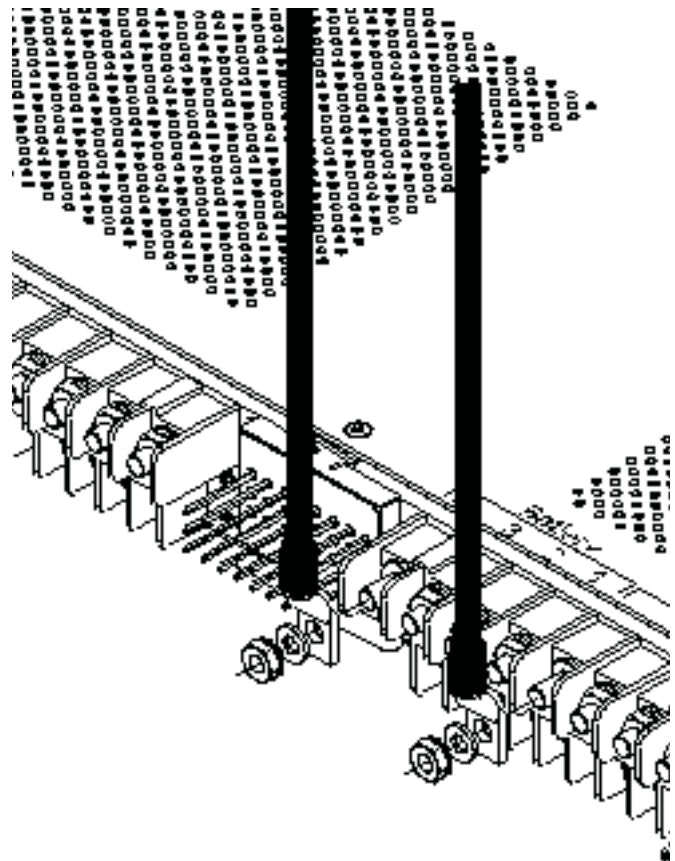


Figure 9 - TPA Output Lug Connections

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29. For GMT output wiring, use #20 to #12 AWG copper wire. (Work with one wire at a time.) At the panel end of the wire, either
 - Crimp a single-hole ring or fork lug, or
 - Strip 3/8 in. (1 cm) of insulation for a bare wire connection.
30. Clean the panel terminals and lug (if applicable) with a nonabrasive, nonmetallic pad.
31. If required, lightly coat anti-oxidant on the lug/wire and output **BATTERY** and **RETURN** terminals.
32. Connect to the terminals, as shown in Figure 10.
33. Tighten the panhead screws to no more than 8 in.-lb. (~1 N•m).
34. Connect the other end of the output wire to load.

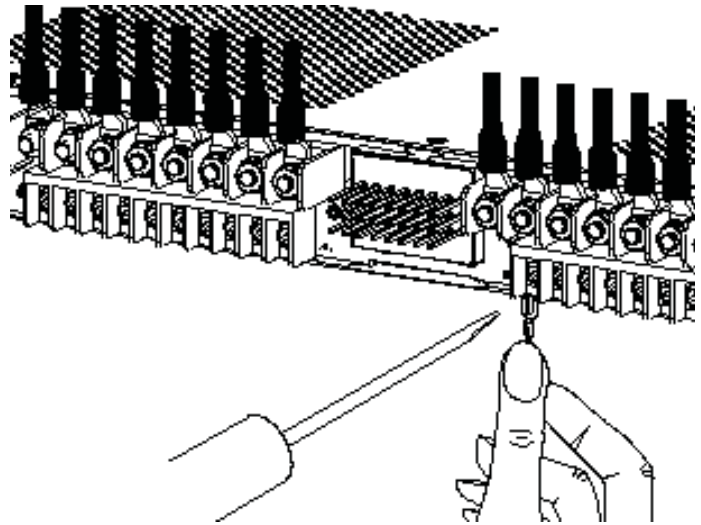


Figure 10 - GMT Output Lug Connections

! ALERT

ALERT! GMT fuses have a small inherent electrical resistance resulting in a small inherent power loss. For this reason, the GMT fuse manufacturer recommends that the load for GMT fuses up to and including 7.5A not exceed 80% of the fuse rating and that the load for GMT fuse sizes between 10A and 20A not exceed 70% of the fuse rating. For example, the load for a 15A GMT fuse should not exceed 10.5A (15A x .70 = 10.5A).

35. Make sure the load devices are switched off and then install the fuses:

NOTE: Under load, TPA modules are disconnect devices only and must not be used to reconnect power to enabled equipment loads. Reconnecting a TPA module under power with an enabled load may damage the TPA module.

- For a TPA fuse, pull out the TPA fuse carrier and insert the operable fuse, as shown in Figure 11.
- For a GMT fuse, pull out the dummy fuse and insert the operable fuse, as shown in Figure 12.
- Test the power and polarity at the input of each equipment load.

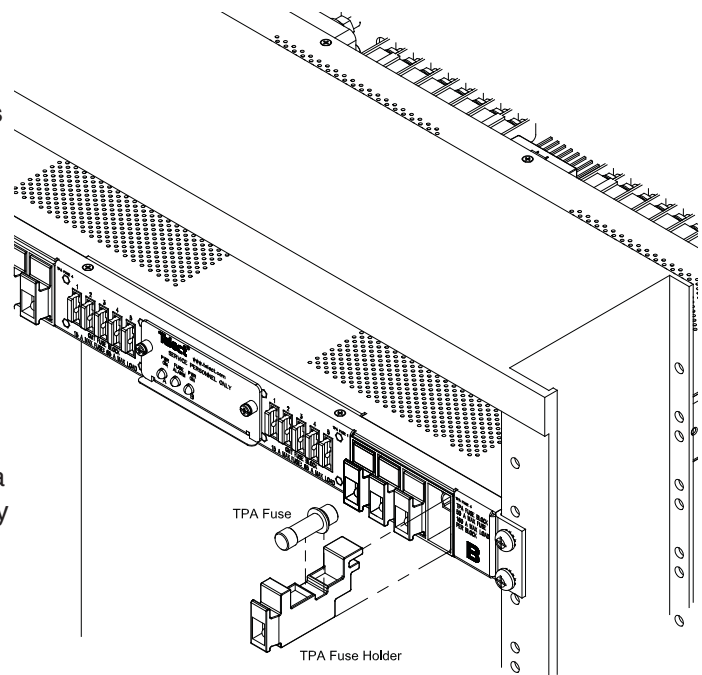


Figure 11 - Installing TPA Fuses

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36. If possible,
- Temporarily replace one of the operable TPA fuses with a blown fuse to check that the **FUSE ALARM** and the TPA Fuse LEDs light red. Also, check the **FUSE ALARM** terminals on the rear of the panel:

- Expect an open circuit ($\infty\Omega$) between Terminals **C** and **NC**.
- Expect continuity (0Ω) between Terminals **C** and **NO**.

Re-install operable TPA fuse before proceeding.

- Likewise, replace one of the operable **GMT** fuses with a blown fuse to verify that the **FUSE ALARM** LED and **FUSE ALARM** terminals are also as specified above. Then, also, re-install the operable GMT fuse before proceeding.

37. If desired, connect the remote external audio/visual alarm indicator wires (solid or tinned wires, #26 to #20 AWG) to the **PWR ALARM** and **FUSE ALARM** terminals.
38. Carefully re-install the rear cover.
39. Record TPA and GMT output destinations on the pull-out designation card below the front panel LEDs, as shown in Figure 13.
40. Turn on equipment loads one at a time to verify proper operation of loads.

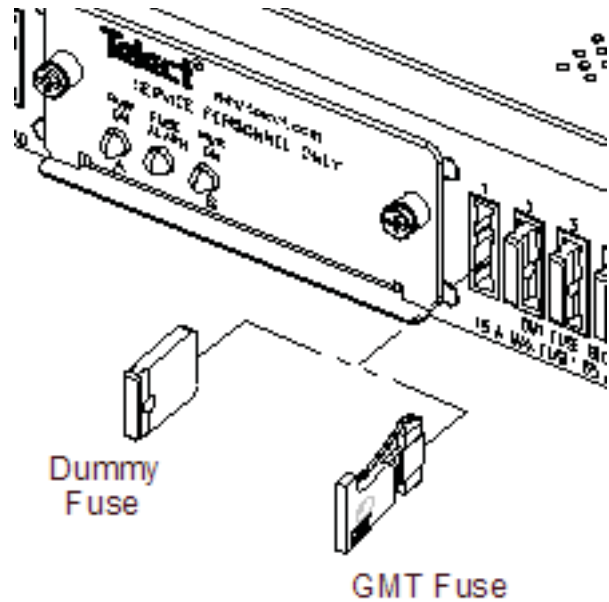


Figure 12 - Installing GMT Fuses

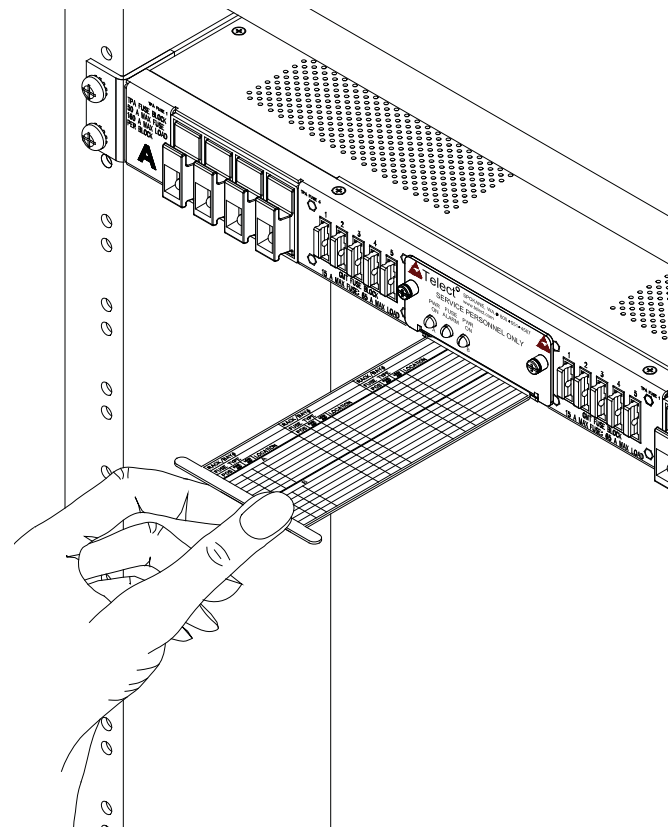


Figure 13 - Designation Card

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1.4 Accessories



WARNING

WARNING! Use only UL-listed fuses or UL-recognized component secondary protection devices.

The following lists optional and replacement items for the panel. For selecting conductors, please refer to Wire Sizing & Label Convention Chart (Telect Part No. 117995) included with your panel.

Item	Description	Part Number
TPA Fuses	5A	124818
	10A	124819
	15A	124820
	20A	124821
	30A	122734
	40A	122738
	50A	122739
GMT Fuses	1/4A Violet (VIO)	100151
	1/2A Red (RED)	004001
	3/4A Brown (BRN)	004008
	1A Gray (GRY)	100991
	11/3A White (WHT)	004006
	11/2A White/Yellow (WHT/YEL)	004011
	2A Orange (ORN)	004002
	3A Blue (BLU)	004012
	4A White/Brown (WHT/BRN)	004013
	5A Green (GRN)	004014
	7 1/2A Black/White (BLK/WHT)	004010
	10A Red/White (RED/WHT)	004015
	12A Yellow/Green (YEL/GRN)	102287
	15A Red/Blue (RED/BLU)	102288
	20A Green/White (GRN/WHT)	127240RC
	Dummy, Phoney, Plastic Slug	132748
	Safety Covers	116915
Replacement Alarm Card	400497+15	

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1.4.1 Compression Lugs

Table 1 - Input Power Lugs (1/4 in. Dual Holes on 3/4 in. Centers, Uninsulated)

	2 AWG	1 AWG	1/0 AWG	2/0 AWG	3/0 AWG
T&B		54208-0416 (Die Code 37)	54255-0416 (Die Code 42)	54210-0416 (Die Code 45)	54211UB-0416 (Die Code 50)
Burndy	YA2CL2TC14 E2 (Die Code 10)	YA1CL2TC14E 2 (Die Code 11)	YA25L2TC14E2 (Die Code 12)	YA26L2TC14E2 (Die Code 13)	YA27L2TC14E2 (Die Code 13)
Panduit	LCD2-14B-Q (Die Code 33)	LCD1-12B-E (Die Code 37)	LCD1/0-14B-X (Die Code 42)	LCD2/0-14B-X (Die Code 45)	LCD3/0-14B-X (Die Code 50)

Table 2 - Ground Lugs (1/4 in. Dual Holes on 5/8-in. Centers, Uninsulated)

	6 AWG	4 AWG
T & B	54205 (Die Code 24)	54206 (Die Code 29)
Burndy	YA6CL2TC14 (Die Code 7)	YA4CL2TC14 (Die Code 8)
Panduit	LCD6-14A-L (Die Code 24)	LCD4-14A-L (Die Code 29)

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**Table 3 - TPA Output Ring Lugs
(#10 Screw Terminals, Nylon Insulated Except Where Noted)**

	14 AWG	12 AWG	10 AWG	8 AWG
AMP	36160	35109	35109	324043
Burndy	YAE12NBOX	YAE12NBOX	YAV10BOX	YA8CLBOX (Uninsulated) (Die Code 21)
Panduit	LCA10-10-L	LCA10-10-L	LCA10-10-L	LCA8-10-L (Uninsulated) (Die Code 21)

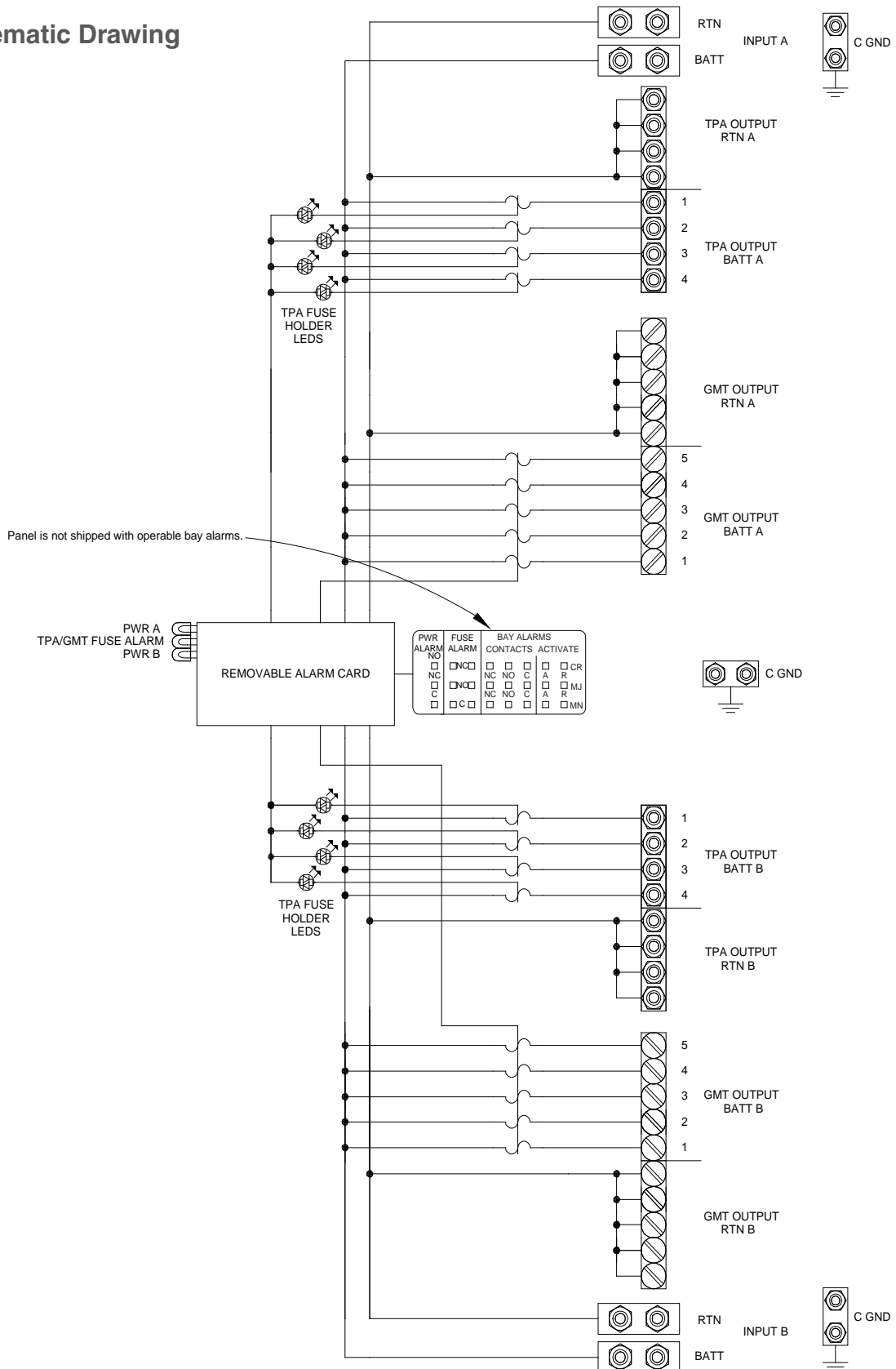
Table 4 - GMT Output Ring Lugs (#6 Screw Terminals, Nylon Insulated)

	26 AWG	22 AWG	20 AWG	16 AWG	14 AWG
AMP			152658		
Burndy	YAE22N66FBOX	YAE18N25BOX		YAE14N76FBOX	YAE12N1BOX

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1.5 Schematic Drawing



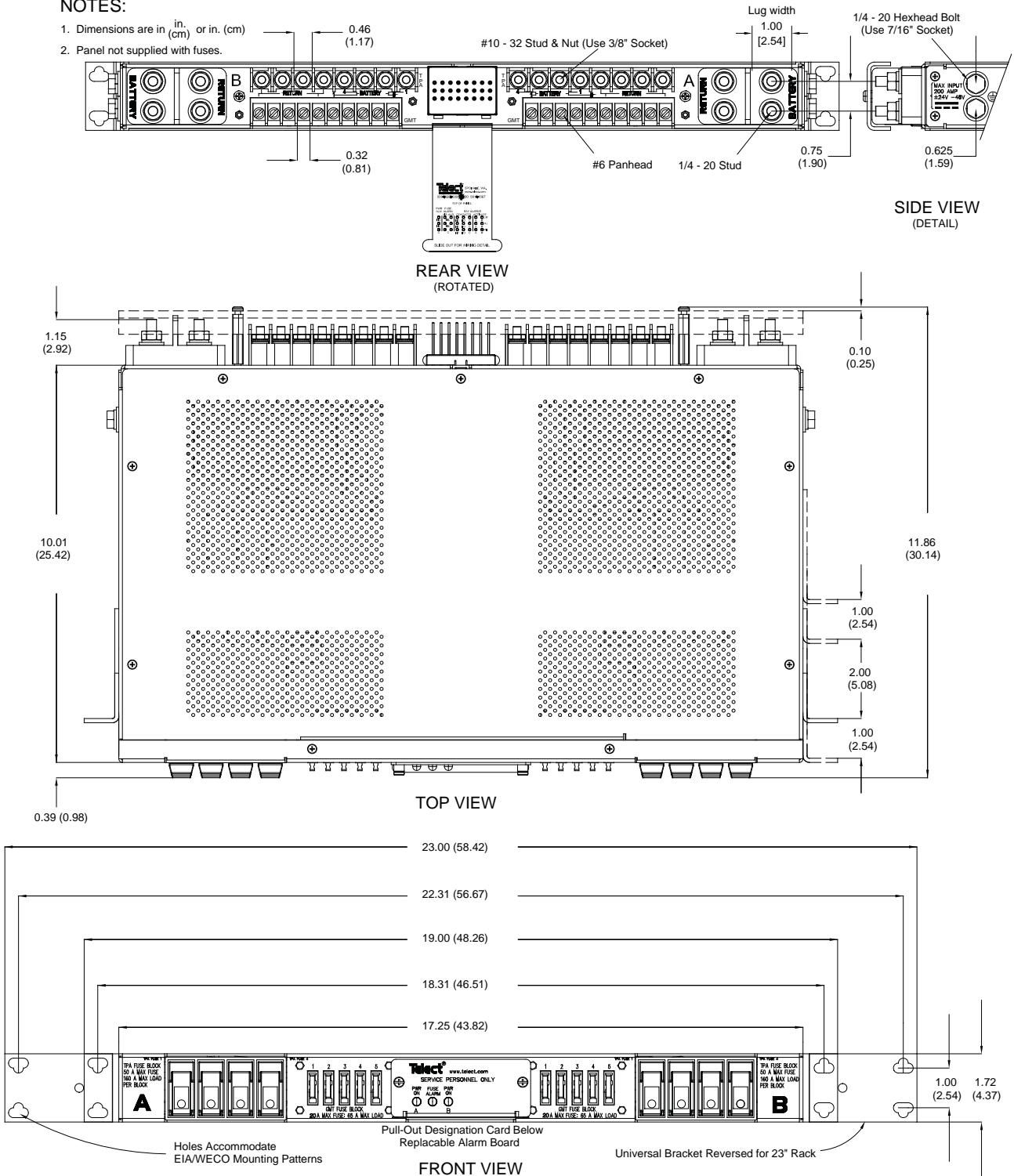
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1.6 Assembly Drawing

NOTES:

1. Dimensions are in in. or in. (cm)
2. Panel not supplied with fuses.



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