Dual 100A 4/4-KLM & 4/4-GMT Fuse Panel

Model 009-8004-0100N Installation Guide

Telect

CONNECTING THE FUTURE®

Dual 100A 4/4-KLM & 4/4-GMT Fuse Panel

Model 009-8004-0100N

Installation Guide, Part Number 123759-3

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About Telect

Telect offers complete solutions for physical layer connectivity, power, equipment housing and other network infrastructure equipment. From outside plant and central office to inside the home, Telect draws on more than 25 years of experience to deliver leading edge product and service solutions. Telect is committed to providing superior customer service and is capable of meeting the dynamic demands of customer and industry requirements. This commitment to customer and industry excellence has positioned Telect as a leading connectivity and power solution provider for the global communications industry.

Technical Support

E-mail: getinfo@telect.com

Phone: 888.821.4856 or 509.921.6161

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1.1 Overview

Figure 1 - Model 009-8004-0100N

Telect's dual-feed, 100A fuse panel with alarms provides intermediate-fuse-level power protection for a variety of telecommunication equipment. This panel includes eight KLM output fuse holders (four per side), eight GMT fuse holders (four per side), and an alarm card. (Sides A and B of the panel are electrically independent.)

On the front of the alarm card are

- a power fail LED
- five alarm LEDs (one for each KLM, and one for all GMT fuses) for each feed
- a **RESET** button for resetting KLM alarm conditions

On the rear of the alarm card are breaker alarm and power-fail relay terminals for wiring to external indicators.

1.2 Inspection

Please read these instructions carefully before beginning installation. If you need assistance, call Technical Support at 1.888.821.4856 (domestic calls), or 509.921.6161 (Option 2), or email us at getinfo@telect.com.

Inspect equipment after unpacking and compare it to the packing list.

Immediately report any shipping damage, defects, or missing parts to Telect at 1.800.551.4567. Keep all documentation that comes with your shipment.

Telect is not liable for shipping damage. If the product is damaged, notify the carrier and call Telect's Customer Service Department at 1.800.551.4567 (domestic only) or 1.509.926.6000 for further recourse.

NOTE: For service or warranty information, please visit the telect.com website, or email inquiries to getinfo@Telect.com and click on the "Support" tab, or phone us at 800.551.4567 (domestic only) or 509.926.6000.

1.2 Specifications

Inputs	Specifications:
Voltage & Range	-48VDC, -40V to -60V
Max. Input Load Rating	100A per side
Max. Total Load Rating	100A per side
Max. Power Dissipation at Full Load	40W per side @ 4800W full load per side (100Ax48V)
Percentage of Full Load Power Dissipation	less than .5%
Max. Input Interrupt Device	125A.
Input Terminal Studs (With Flat Washers & KEPS Nuts)	Two pairs of #10-32 studs on $^{5}/_{8}$ in. centers. ($^{3}/_{8}$" socket). Torque nut to 20 in.-lb (2.26 N•m)
Input Wire Size	#4 to #2 AWG (depends on input interrupt device)

KLM Outputs:	Specifications:
Max. KLM Output Fuse (ea.)	30A.
Max. KLM Output Load (ea.) - continuous	24A.
Max. Total KLM Output	100A per side
KLM Output Terminal	Wire binding under #8-32 panhead screw
KLM Output Wire Size	#18 to #10 AWG (depends on output fuse rating)

Dimensions:	Specifications:
Nominal, without brackets: Width Height Depth	 17.25 in (~438 mm) 1.75 in (~44 mm) 8 in. (~203 mm)

GMT Outputs:	Specifications:
Max. GMT Output Fuse (ea.)	10A.
Max. GMT Output Load (ea.) - continuous	8A
Max. Total GMT Output	32A per side
GMT Output Terminal	Wire binding under #6-32 panhead screw
GMT Output Wire Size	#24 to #12 AWG (depends on output fuse rating

Grounding:	Specifications:
Earth GND terminal studs (With flatwashers & KEPS nuts)	One pair of #10-24 studs on 5/8" centers. (3/8" socket). Torque nut to 16 in.lb (1.81 N•m)
Ground Wire Size	Up to 1 AWG (depends on input interrupt device)

Alarms:	Specifications:
Alarm Relay Contacts	2A. @ 30 Vdc 0.6A @ 60 Vdc
Max. Alarm Card Power Rating	@42V: 59 mA (2.48 W) @48V: 64 mA (3.07 W) @56V: 69 mA (3.86 W) @60V: 73 mA (4.38 W)
Alarm Wire Size	#22 to #18 AWG
Alarm Terminals	Wire binding

Weight:	Specifications:
Weight, Without Packaging	8.7 lb (~4 kg)
Weight, Shipping	~11 lb (~5 kg)

Environment:	Specifications:
Operating Temperature Range	-10°C (14°F) to 55°C (131°F)
Ground Wire Size	Up to 1 AWG (depends on input interrupt device)

Hardware is included for flush or 4-in. extended mounting in 19-in. or 23-in. relay racks. Visit *telect.com* for ordering accessories and replaceable parts: KLM fuses (10A-30A), GMT fuses (¼A-15A), dummy fuses, lugs, ETSI mounting kit, and more.

! ALERT

ALERT! Install this equipment in locations only accessible to qualified personnel.

! ALERT

ALERT! Only qualified personnel may install and maintain this product. Make sure 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.

ALERT

ALERT! These instructions presume you have verified that the Telect equipment being installed is compatible with the rest of the system, including power, ground, circuit protection, signal characteristics, equipment from other vendors, and local codes or ordinances.

DANGER

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

1.3 Installation

Panel brackets provide either flush or 4-in. extended EIA or WECO mounting in a 19" or 23" rack. The panel is configured at the factory for mounting in a 23-in. rack.

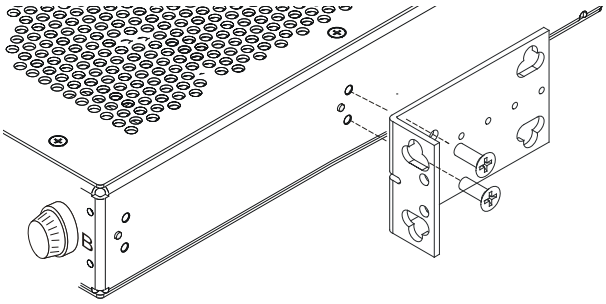


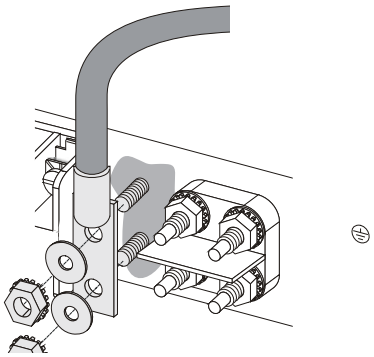
Figure 2 - Bracket Orientation

1. If necessary, remove two screws and reposition/re-align brackets on the sides of the fuse panel, as shown in Figure 2.
2. Locate an unused rack position and mount the panel using the four screws and lock washers provided. (It's best to mount the panel as high as possible on the rack.)
3. Tighten the screws to 35 in-lb (4.29 N-m).

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.

4. Use a listed (approved) crimping tool to attach a listed (approved), 2-hole compression lug onto suitable ground wire. (Size of the ground depends on the input interruption device.)
5. If required, lightly coat anti-oxidant on the lug, grounding terminal, and surrounding contacting surface.
6. Connect the lug to the terminal using the washers and KEPS nuts from the terminal. (See Figure 3.)
7. Tighten the nut to 16 in.-lb (1.81 N•m).



DANGER

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

8. Pull off the plastic covers on the input connectors.
9. For input wiring — wiring used as inputs to this distribution panel — crimp 2-hole compression lugs onto #4 to #2 AWG copper wires. (See Figure 4.)
10. Insulate the lug barrels with UL94 V-0 rated heat-shrink tubing.
11. Clean the terminals and lugs with a nonabrasive, nonmetallic pad.
12. If required, lightly coat anti-oxidant on lugs and input **BATT** and **RTN** terminals.
13. Connect the lugs to input terminals on the back of the panel using flatwashers and KEPS nuts from the studs.

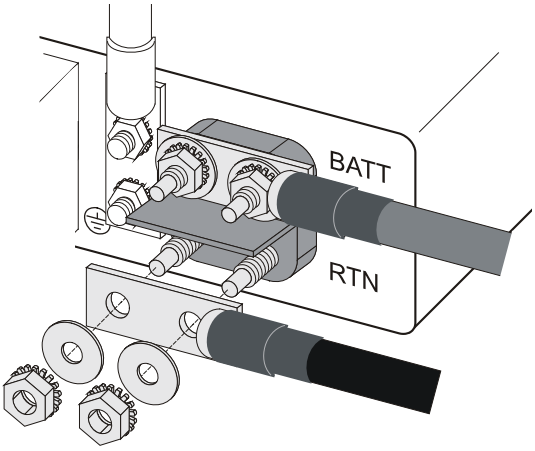


Figure 4 - Input Lug Connections

14. Tighten the lugs to 20 in.-lb (2.26 N•m).
15. Make sure the KLM and GMT fuse positions are either empty or contain dummy fuses (phoney, inoperative all-plastic slugs).
16. Supply input power to Side A. (See Section "1.2 Specifications" on page 2.)
    - **PWR A** LED on the front panel must light up (green). (See Figure 5 for location.)
    - **PWR B**, **FUSE ALARM** and **KLM** Fuse LEDs must be *off*.

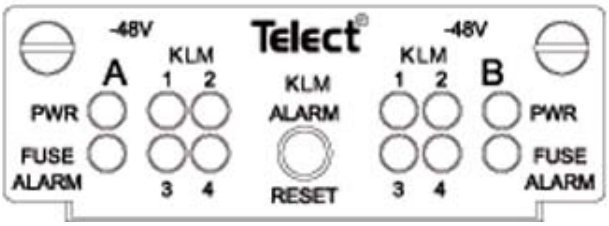


Figure 5 - Alarm Indicators

17. Use a voltmeter to test the power and polarity at the input terminals of the panel.
18. With **PWR A** lit (normal operation) — but with **PWR B** LED off (failure operation) — test the power-fail relay and contacts at **PWR FAIL ALARM** terminals on the rear of the panel. (See Figure 6.)
    - Expect an open circuit (∞Ω) between Terminals **C** and **NC**.
    - Expect continuity (0Ω) between Terminals **C** and **NO**.
19. Also, test the fuse alarm relay contacts at **FUSE ALARM** terminals on the rear of the panel:
    - Expect continuity (0Ω) between Terminals **C** and **NC**.
    - Expect an open circuit (∞Ω) between Terminals **C** and **NO**.
20. Repeat Steps 16 through 19 for Side B.
21. Re-install the plastic covers on the input terminals.
22. Make sure *none* of the fuse positions contain real, operable fuses.

Figure 6 - Alarm Terminals

23. If possible, check out the KLM alarm circuit, as follows:
    a. Temporarily replace a dummy KLM fuses with a blown fuse by
        i. unscrewing a KLM cap,
        ii. pulling out the KLM fuse carrier,
        iii. removing the dummy fuse (phoney, inoperative all-plastic slug), and then
        iv. inserting the blown fuse.

        The appropriate LED (**KLM 1**, **KLM 2**, **KLM 3**, or **KLM 4**) must light (red).
    b. 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**.
    c. Press the **RESET** button on the front of the panel to confirm that the **KLM** LED goes out.
    d. Now re-install the dummy KLM fuse.

        The alarm LED light should go out.
24. If possible, check out the GMT alarm circuit, as follows:
    a. Temporarily replace one of the dummy GMT fuses with a blown fuse by pulling out a dummy fuse and inserting the blown fuse.

        The **FUSE ALARM** LED should light up (red).
    b. Press the **RESET** button on the front of the panel.

        The **FUSE ALARM** LED should remain lit.
    c. Now re-install the dummy GMT fuse.

        The Alarm LED should go out.

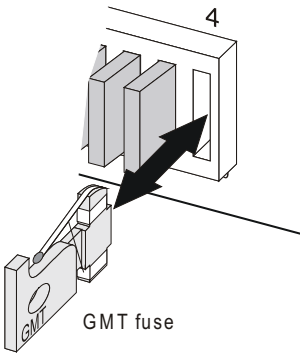


Figure 7 - Installing GMT Fuses

25. Remove the covers on the output connector blocks.
26. For KLM output wiring, strip approximately ½ in. (~15 mm) from the #18 to #10 AWG copper output wires, as required by NEC.
27. Connect the other end of the output wires to the load.

28. Back off panhead screws on the KLM output terminal blocks and then insert output **BATT** and **RTN** wires (with or without lugs) into access below binding plates. (NEC specifies only one wire and load at each output terminal.)
29. Tighten the panhead screws to cinch the wires.
30. Similarly, for GMT output wiring, strip approximately ½ in. (~15 mm) from #24 to #12 AWG copper output wires, as required by NEC.
31. Connect the other end of the output wires to *load*.
32. Back off the panhead screws on the GMT output terminal blocks and then insert **BATT** and **RTN** wires (with or without lugs) into access below binding plates. (NEC specifies only one wire and load at each output terminal.)
33. Tighten the panhead screws to cinch the wires.

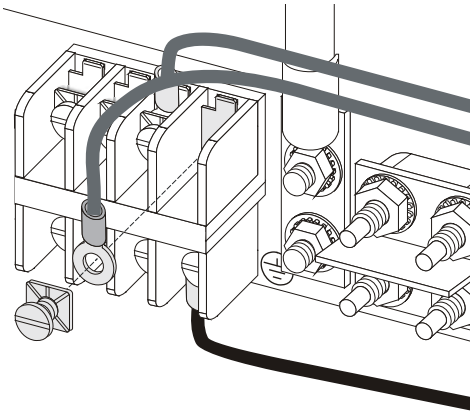


Figure 8 - KLM Load Wiring (Using Compression Lugs In Place of Bare Wire)

ALERT

ALERT! Local electrical and operating company guidelines recommend that the individual load not exceed 80% of fuse capacity (for example, 10A fuse x .80 = 8A max. load). *Total load for all KLM & GMT outputs on each side* must not exceed 100A.

34. *Make sure load devices are switched off* and then install the first fuse:
    - For KLM fuses, unscrew the cap, pull out the KLM fuse carrier. If necessary, remove the dummy fuses (phoney, inoperative all-plastic slugs). Insert operable fuses.
    - For GMT fuses, pull out the dummy fuses, and insert operable fuses.
35. Test the power and polarity *at* the *input of the first load*.
36. Turn on the first load to check for proper equipment operation.
37. Repeat steps 34 to 36 *one at a time* for each fuse and load.
38. If desired, connect the remote external audio/visual alarm indicator wires (solid wires, #26 to #22 AWG) to the **PWR FAIL** and **FUSE ALARM** wire-binding terminals.
39. Re-install the output terminal block covers.

40. Record the KLM and GMT output destinations on the supplied designation label.

GMT Amp Size	Color Code
¼	Violet (VIO)
½	Red (RED)
¾	Brown (BRN)
1	Gray (GRY)
1 1/3	White (WHT)
1 ½	White/Yellow (WHT/YEL)
2	Orange (ORN)
3	Blue (BLU)
4	White/Brown (WHT/BRN)
5	Green (GRN)
7 ½	Black/White (BLK/WHT
10	Red/White (RED/WHT)
12	Yellow/Green (YEL/GRN)
15	Red/Blue (RED/BLU)

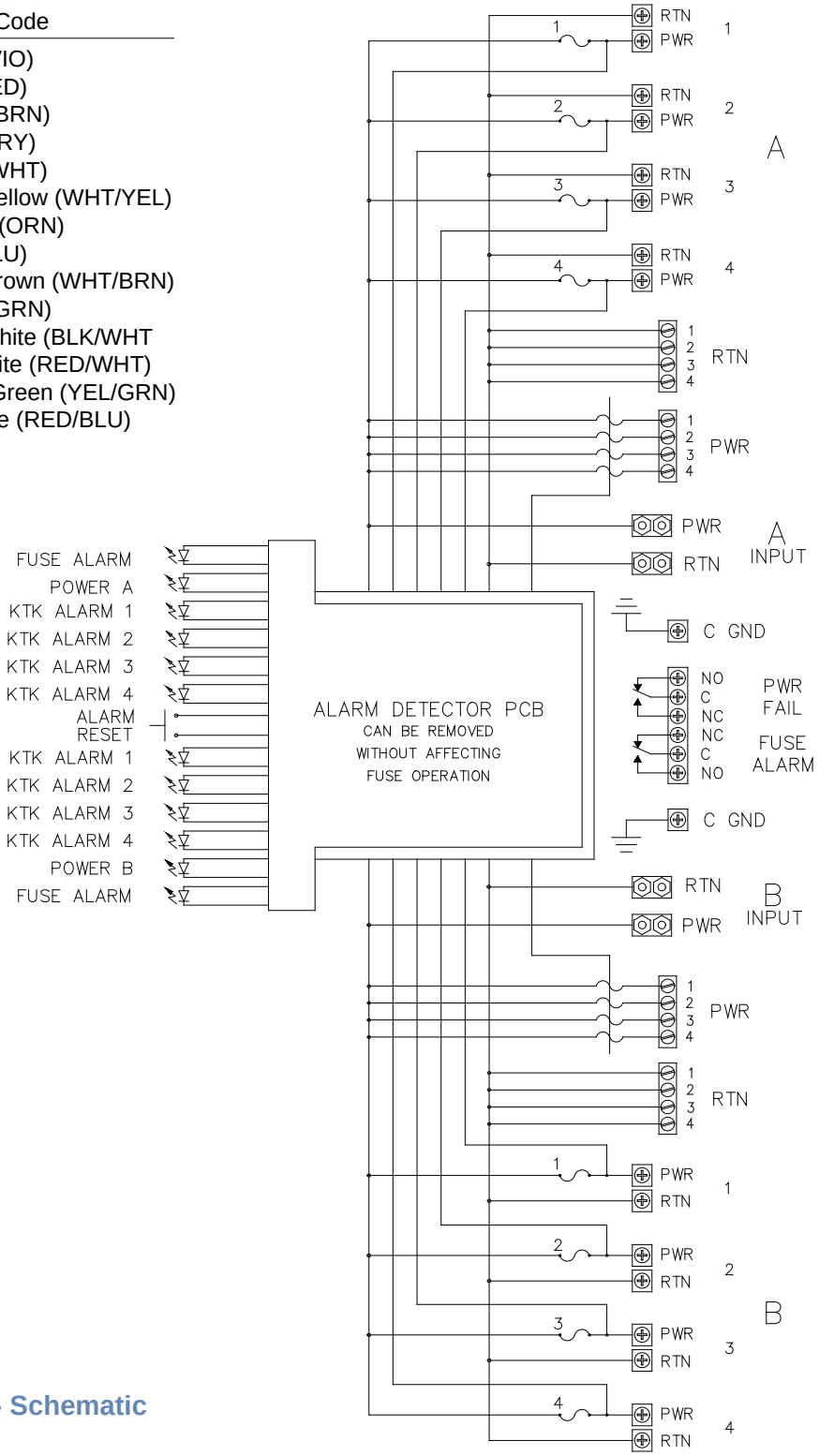


Figure 9 - Schematic

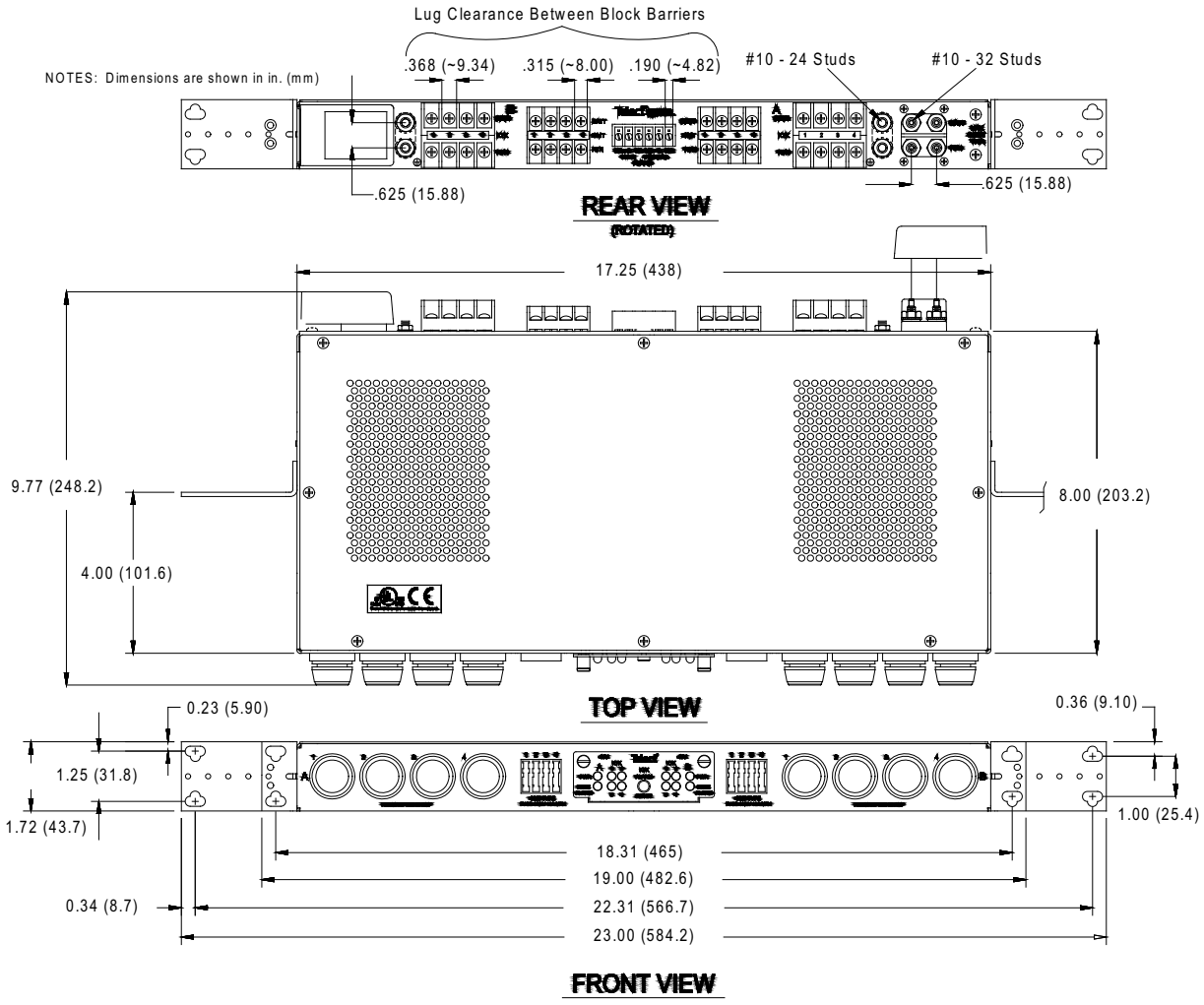


Figure 10 - Dimensions

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