

Demarcation Fuse Alarm Panel

Model 009-7001-0104

Installation Guide



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Installation Guide, Part number 129346-4

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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

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1.1 Overview

Telect's Demarcation Fuse Panel With Alarms provides TPC or TPS/TLS fuse protection at the equipment interface. The low-profile, white panel supports four TPC or TFD fuse holders, a replaceable alarm card containing power and alarm cut-off LEDs, alarm contact relays, and rear-access terminals and wire-wrap alarm relay contacts. Each fuse holder has separate BATT/RTN inputs and outputs rated up to 100A for either 24 Vdc or 48 Vdc applications.

Hardware is included for either flush or extended mounting in a 19-in. or 23-in relay rack. Visit our website (www.telect.com) for ordering accessories and replaceable parts: fuses (up to 100A, each), TPC or TFD fuse holder, ETSI mounting brackets, and more.

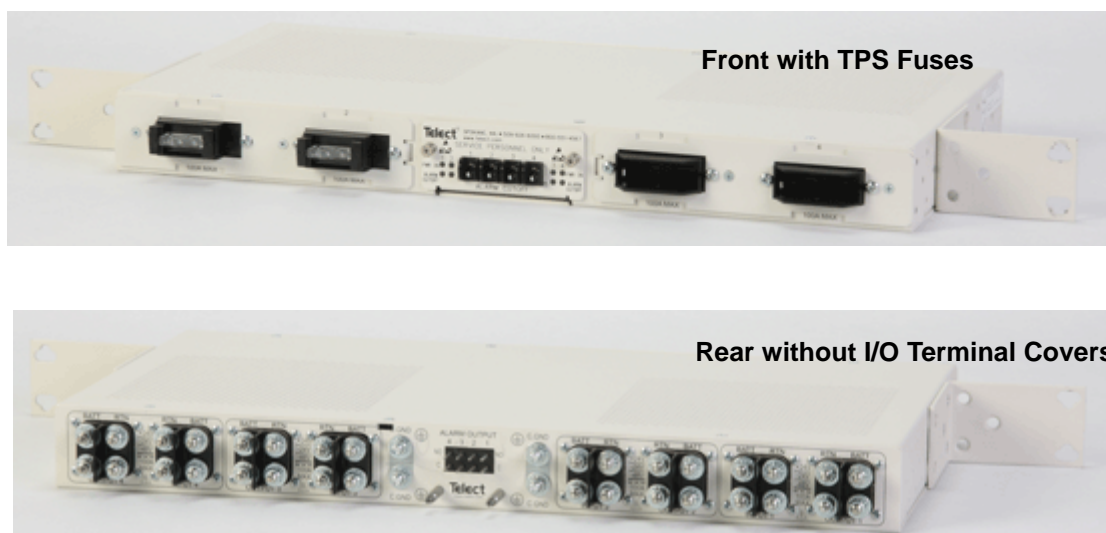


Figure 1 - Model 009-7001-0104 (UL Listed, File E139903)

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 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.

(!) 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.

1.3 Specifications

Inputs/Outputs:		Specification:
Max. Fuse Rating (each)		100A.
Max. Total Load Rating of Panel		320A continuous
Voltage Range		±20 to ±28 Vdc -40 to -60 Vdc
BATT & RTN Wire Size		#8 to #2 AWG
Ground Wire Size		#10 to #2 AWG (depends on input fuse)
Terminal Stud Sizes (Input, Output, and Earth Ground)		M5 dual studs on $\frac{5}{8}$ " centers
Power Dissipation		17W per channel
Short-Circuit Withstand Rating		5000A
Alarms:		Specification:
Alarm Relay Contacts		0.6A @ 60 Vdc
Alarm Card Power Rating		1W
Alarm Wire Size		Solid: #26 to #22 AWG
Dimensions:		Specification:
Nominal, without brackets:*		
		Width 17.25 in (43.8 cm)
		Height 1.75 in (44.4 cm)
		Depth 9 in. (22.9 cm)
* See Page 13 for exact dimensions		
Weight:		Specification:
Weight, Shipping		~10 lb (~4.5 kg)
Environment:		Specification:
Operating Temperature		-10°C (14°F) to 55°C (131°F)

1.4 Installation

NOTES:

- Telect ships panels without installed fuse holders or fuses. Telect includes blank covers over the empty fuse holder positions.
- Fuse holders without fuses are sold separately. Order fuses and fuse holder on-line at **telect.com**.
- Telect includes four identical fuse holder bezels. The bezel(s) are to be used in place of the blank covers to secure the fuse holders.
- For safety, install blank covers over all unused fuse positions.
- Telect recommends that fuse holders — without fuses — be installed prior to mounting the panel on the rack. Telect further recommends not mixing TPC and TFD fuse holders in the same panel. (TFD fuse holders are for TPS or TLS fuses. TPS and TLS fuses are compatible, but are made by different manufacturers.)

1.4.1 Important Installation Guidelines

- **Elevated Operating Ambient** - If you install this product in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- **Reduced Air Flow** - When you install this equipment in a rack, make sure you do not compromise the amount of air flow required for safe operation of the equipment.
- **Mechanical Loading** - When you mount the equipment in the rack, make sure to keep the mechanical load balanced to prevent a hazardous condition.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - Maintain reliable earthing of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (e.g., use of power strips)
- **Disconnect Device** - Incorporate a readily available disconnect device into the building installation wiring.

1.4.2 Installation Procedure

1. As shown in Figure 2, remove the blank cover(s) over the intended fuse holder position(s). The unit can operate with one, two, three, or four fuse positions occupied.

Notice that “LINE” and “LOAD” appear above the fuse positions. Remember: the LOAD end of the fuses holders are always outboard—farthest away—from the LED and alarm ACO switch display. Meaning that fuse holders will be installed “right” side up on one side of the display and right side down on the other.

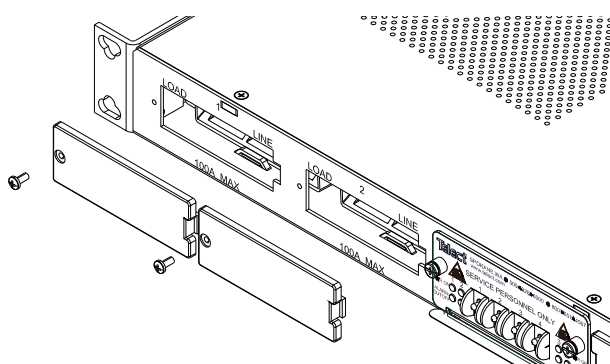


Figure 2 - Removing Blank Covers

ALERT

ALERT! You can install fuse holders backwards. Observe the LINE and LOAD designations on the panel vs the designations on the fuse holders.

2. As shown in Figure 3, install the TPC or TFD fuse holders and bezel(s):
 - a. As directed in the illustration, make sure alarm connector on fuse holder is straight prior to installation; then install the fuse holder.
 - b. Use the two screws supplied with each fuse holder to secure the holders to the bezel.
 - c. Attach the bezel to the chassis with a blank cover screw.

WARNING

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

WARNING

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

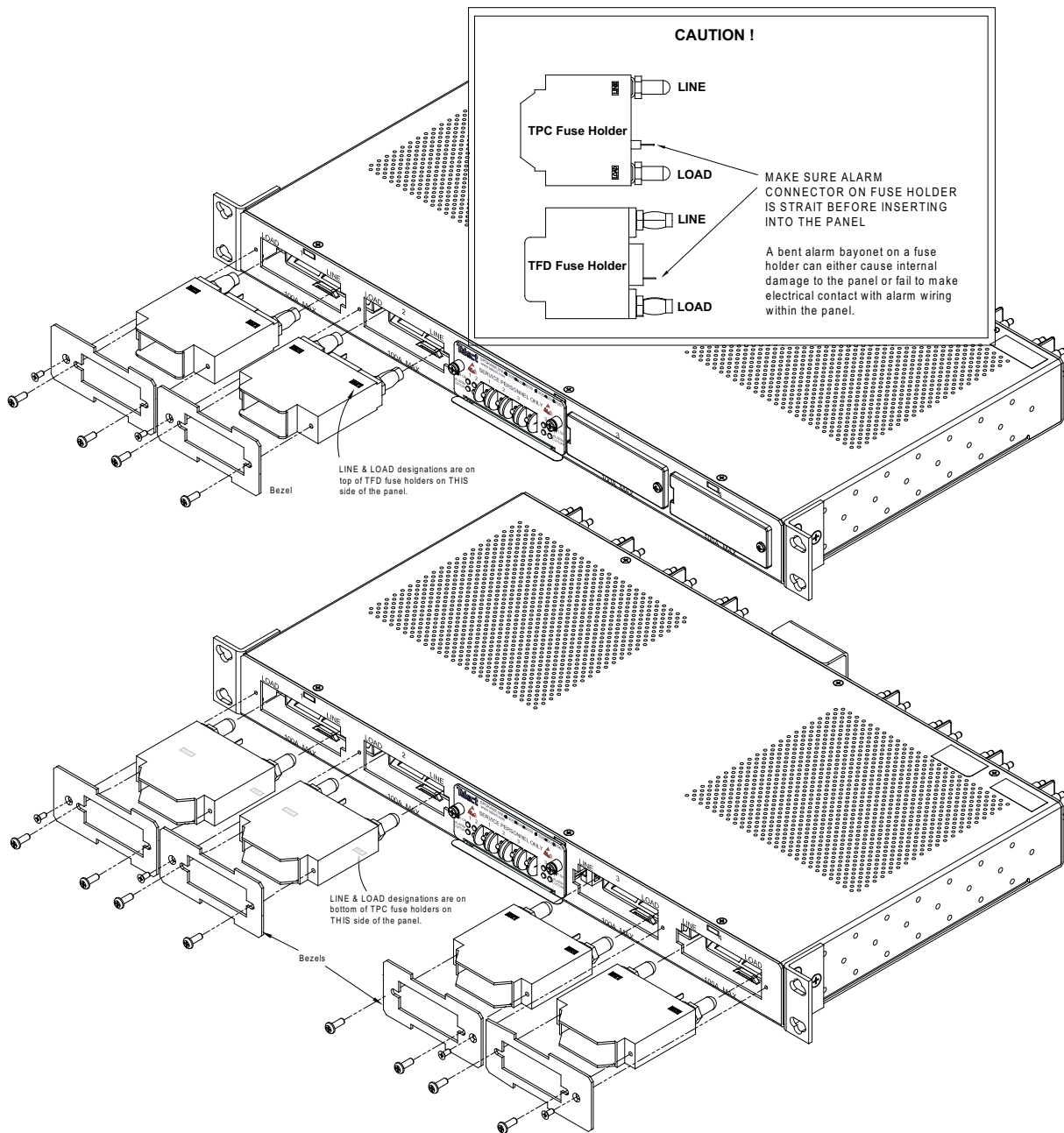


Figure 3 - Installing TPC & TFD Fuse Holders

NOTE: Panel brackets are installed at the factory for flush mounting in a 19-in. rack. A pair of 23-in. rack brackets are also included. Either pair of brackets can be moved or installed to extend front of panel beyond the face of the rack in 1-in. (2.54 cm) increments.

3. If necessary, to move or replace the 19-in. brackets, remove 3 screws on sides of breaker panel, as shown in Figure 4.
4. Install 19-in. or 23-in. brackets for flush or extended panel presentation on rack.

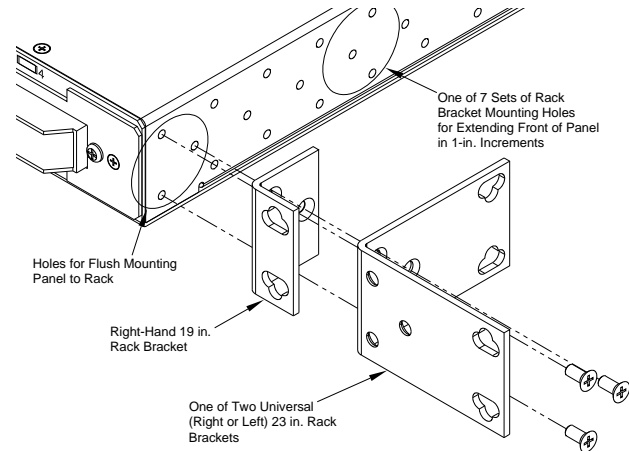


Figure 4 - Bracket Orientation

5. Locate an unused rack position and mount panel using the four thread-cutting screws provided, as shown in Figure 5. Tighten the screws to 35 in.-lb (4.29 N•m).
6. Use a UL/NRTL-approved crimping tool to attach a UL/NRTL-approved, 2-hole compression lug (fit M5 dual studs on $\frac{5}{8}$ in. centers) onto a #10 to #2 AWG ground wire. (The size of the ground wire depends on size of input BATT wires.)
7. Attach the opposite end of the ground wire to the relay rack, per local practices.
8. If required, lightly coat antioxidant on lug, grounding terminal, and contacting surface.
9. Connect the lug to the terminal using the nuts and washers (supplied), as shown in Figure 6.
10. Tighten the nut to 20 in.-lb (2.27 N•m).

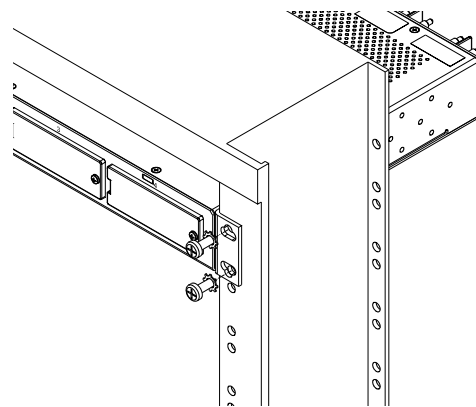


Figure 5 - Rack Mounting

NOTE: Input and output wire size for this panel must be rated for the corresponding breaker/fuse size at the power distribution unit (PDU). The input wiring to this panel may be a greater size to accommodate a voltage drop from the primary power source.

NOTE: Always follow operating company guidelines when connecting input wiring to the primary power source.

11. Make sure the input power is OFF.

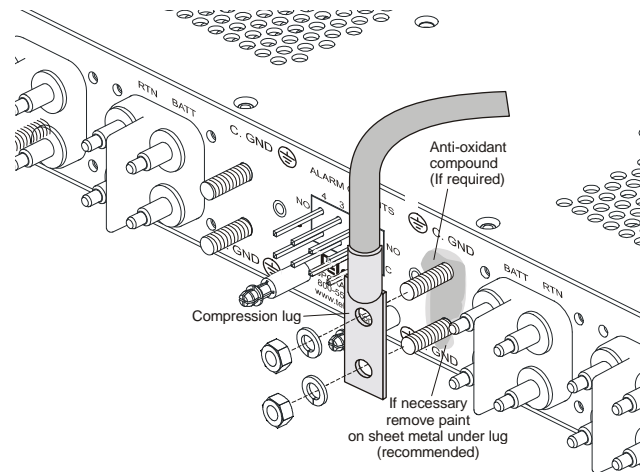


Figure 6 - Ground Lug Connection

12. For input wiring — wiring used as inputs to this demarcation panel — crimp straight or angled, 2-hole compression lugs (fit M5 dual studs on $\frac{5}{8}$ in. centers) onto #8 to #2 copper wires. Insulate lug barrels with UL94 V-0 rated heat shrink tubing.

13. Clean the terminals with a nonabrasive, nonmetallic pad.

14. If required, lightly coat anti-oxidant on lugs and input terminals, and then connect lugs to input terminals on back of panel, as shown in Figure 7. Tighten lugs to 20 in.-lb (2.27 N•m).

15. Before installing breakers and output wiring, turn power on to verify input power and indicators:

- Verify input voltage and polarity.
- Whenever power is supplied, expect the corresponding PWR ON LED to light.

16. Attach the plastic covers (supplied) over *input* terminals.

Press the plastic covers over the terminal studs. If using angled lugs, break out the scored lip of the corresponding cover with pliers, as shown in Figure 9. Remove any sharp edges around the break-away.

17. For output wiring, repeat Steps 8 through 12 for **BATT** and **RTN** *outputs* (crimp output wires to lugs, clean output terminals, and attach lugs to output terminals). Heat shrink the insulation onto the lug barrels.

18. Record the circuit assignments on the pull-out designation card below the alarm display.

19. Attach the plastic covers over **all** *output* terminals.

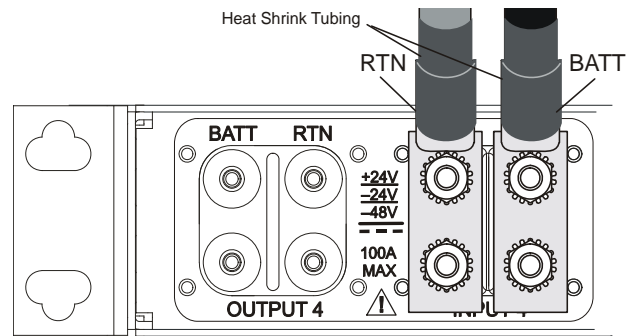


Figure 7 - Input Lug Connections

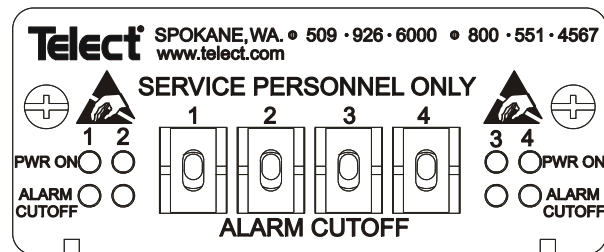


Figure 8 - LEDs & ALARM CUTOFF Switches on Front Panel

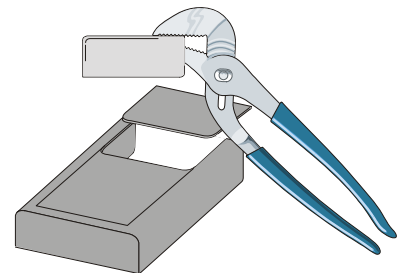


Figure 9 - Removing the Break-Away on Lug Cover

CAUTION

CAUTION! Telect recommends that the individual circuit load not exceed 80% of fuse capacity (for example, 100A fuse x .80 = 80A max. load).

20. Make sure output devices — devices fed from the outputs of this demarcation panel — are disabled.

21. With input power on, firmly install each fuse in panel, as shown in Figure 11.

Fuses are designed so that the fuses can be installed in one way only.

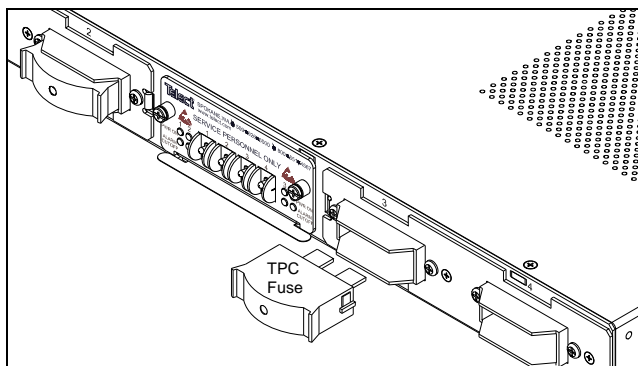


Figure 11 - Installing Fuses

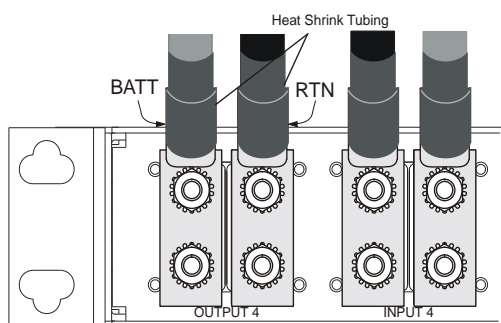
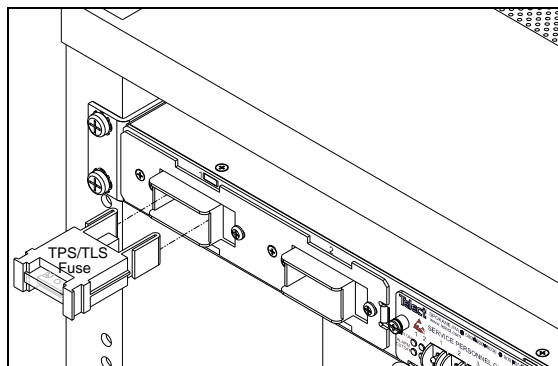


Figure 10 - Output Lug Connections



22. Check voltage and polarity at output terminals and equipment ends.

23. Test the Alarm Card:

- a. Set all **ALARM CUTOFF** switches on the front to the **SERVICE** (down) position. Check all pairs of alarm terminals. (Refer to Figure 12.)

Expect an open circuit ($\infty\Omega$) between Terminals C and NO. The ALARM CUTOFF LEDs should be lit. (An ALARM CUTOFF LED will be on whenever the corresponding ACO switch is in the **SERVICE** position.)

- b. Set all **ALARM CUTOFF** switches on the front of the demarcation panel to the **NORMAL** (up) position.

Expect an open circuit ($\infty\Omega$) between Terminals C and NO for any position with or without a fuse. Also, the ALARM CUTOFF LEDs will go off.

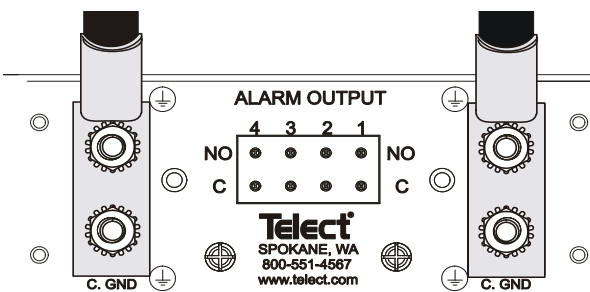


Figure 12 - Alarm Relay Terminals on Rear of Panel

NOTE: Under normal conditions, that is, with power on, fuse installed, and with **ALARM CUTOFF** in **NORMAL (up)** or **SERVICE (down)** position, expect an open circuit ($\infty\Omega$) between Terminals C and NO on the rear of the demarcation panel.

NOTE: If a fuse blows with its corresponding **ALARM CUTOFF** switch in **NORMAL (up)** position, expect continuity (0Ω) between Terminals C and NO. Thereafter, if the corresponding **ALARM CUTOFF** is switched to **SERVICE (down)**, expect the corresponding ALARM CUTOFF LED to light with an open circuit ($\infty\Omega$) again between corresponding Terminals C and NO.

24. Wire-wrap alarm pins with solid #26 to #22 AWG.

25. Enable loads and verify the normal operating conditions outlined in the preceding Notes.

1.5 Replacing Alarm Cards

The alarm card is held in place by two captive thumbscrews on the front of the alarm card panel.

To remove and replace an alarm card, unscrew the thumbscrews and pull out the card.

When replacing an alarm card, make sure the edge connector on the far end of the assembly docks securely into the connector inside the panel.

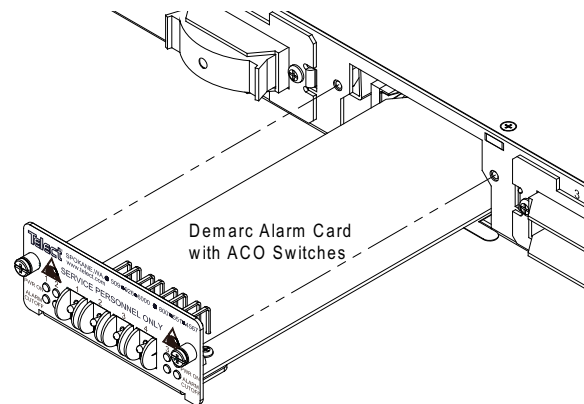


Figure 13 - Replacing the Alarm Card

1.6 Accessories

Item	Description	Part Number
ETSI Mounting Brackets, 1 Pair	White	090-0041-0031
Alarm Card, Demarc ACO	PWR ON / ACO LEDs & Contacts, White	400637
TPC Fuse Holder	25-125A with Bullet-Style Connectors	129347
TPC Fuses	25A	125441
	30A	125442
	40A	125443
	50A	125444
	60A	125445
	75A	125446
	90A	125447
	100A	125448
TFD Fuse Holder	25-125A with Bullet-Style Connectors for TPS/TLS fuses	129816
Item	Description	Part Number
TPS Fuses	5A	130481
	10A	130485
	15A	130487
	20A	130489
	25A	130476
	30A	130478
	40A	130482
	50A	130484
	60A	130486
	70A	130488

1.7 Compression Lugs

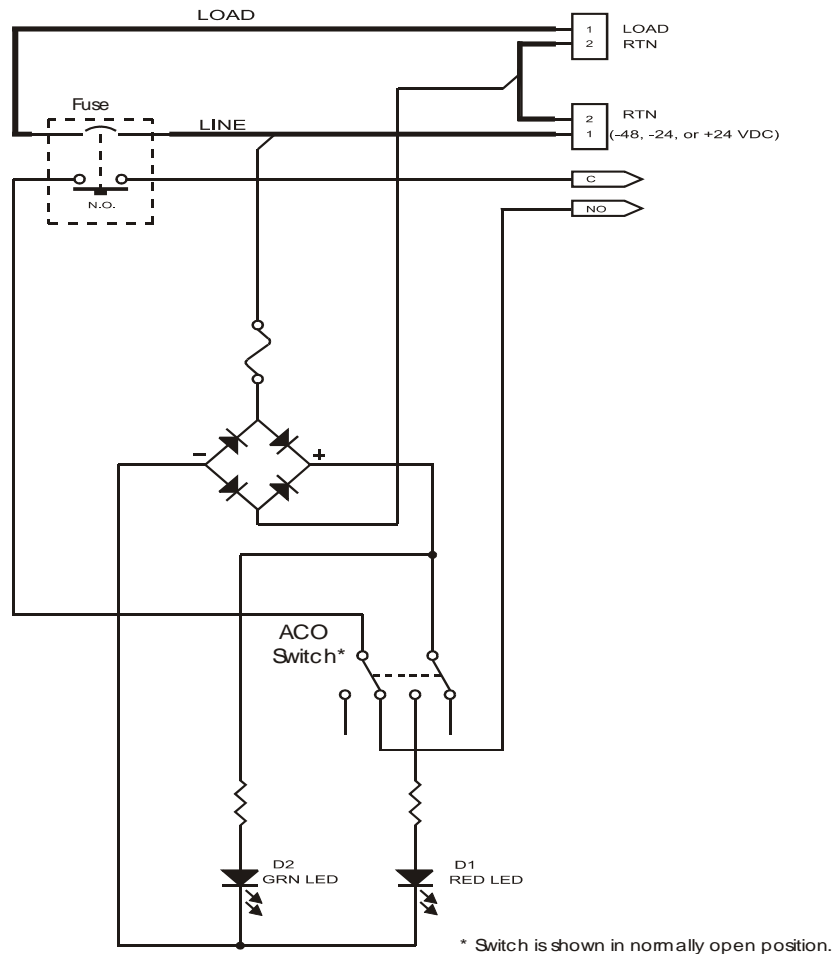
ALERT

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.

Table 1 - Ground & Input/Output Straight Lugs (M5 Dual Studs on $\frac{5}{8}$ in. Centers)

	#8 AWG	#6 AWG	#4 AWG	#2 AWG
T & B	54204040 (T&B Die Code 21)	54205 (T&B Die Code 24)	54206 (T&B Die Code 29)	—
Burndy	YA8CL-2TC14 (Burndy Die Code 49)	YA6CL-2L (Burndy Die Code 7)	YA4C-2L (Burndy Die Code 8)	YA2CL-2NT14 (Burndy Die Code 10)
Panduit	LCD8-14A-L (Panduit/T&B Die Code 21) (Burndy Die Code 49)	LCD6-14A-L (Panduit/T&B Die Code 24) (Burndy Die Code 7)	—	LCDN2-14A-Q (Panduit/T&B Die Code 33) (Burndy Die Code 10)

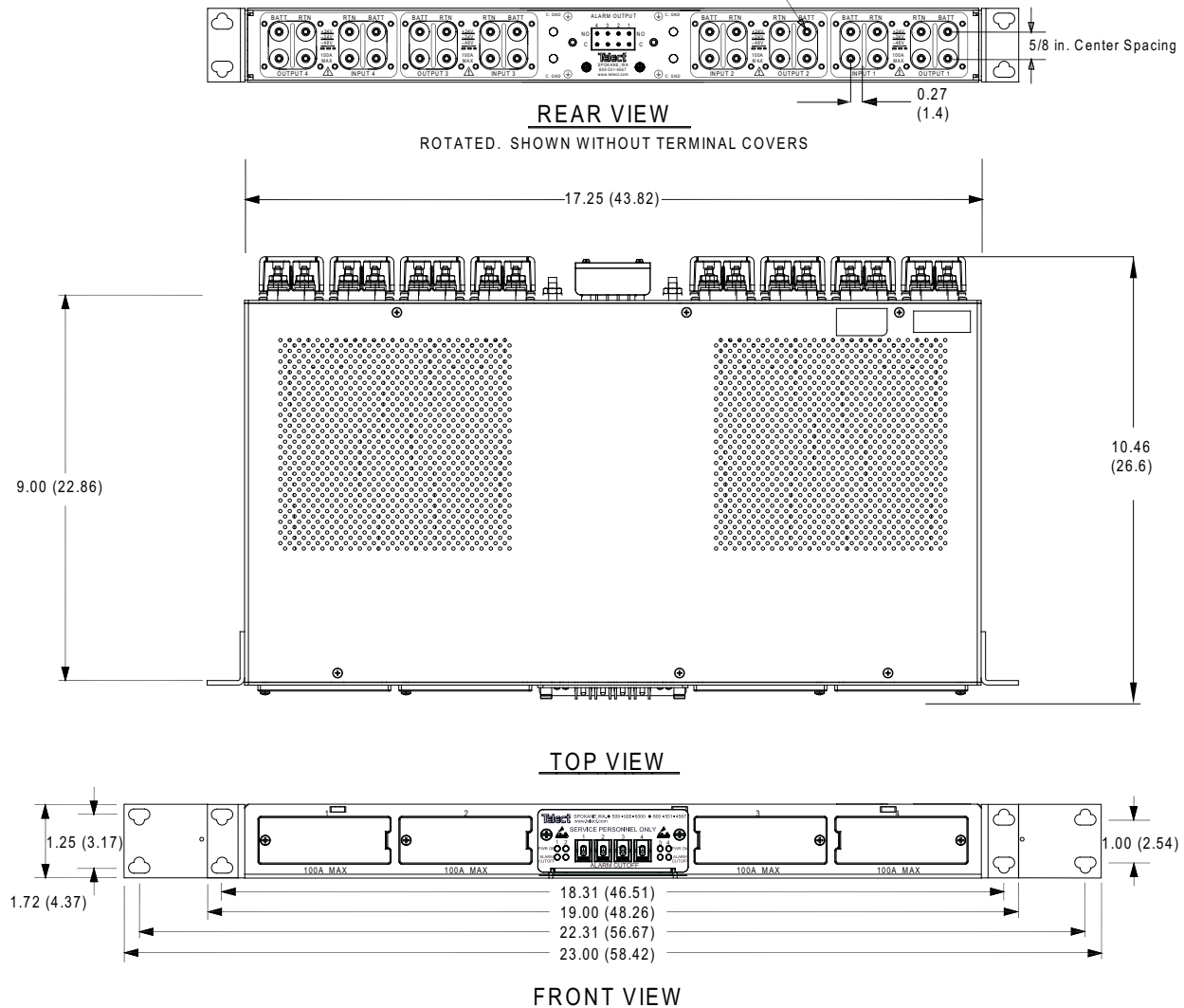
1.8 Reference Schematic (1 of 4 Circuits)



1.9 Dimensions

Notes: 1. Dimensions are in inches (centimeters)
2. Fuse holders and fuses are not supplied.

M5 Ground & Input Posts
With 5/8 in. Center Spacing



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