8481–12 Fuse and Alarm Panel

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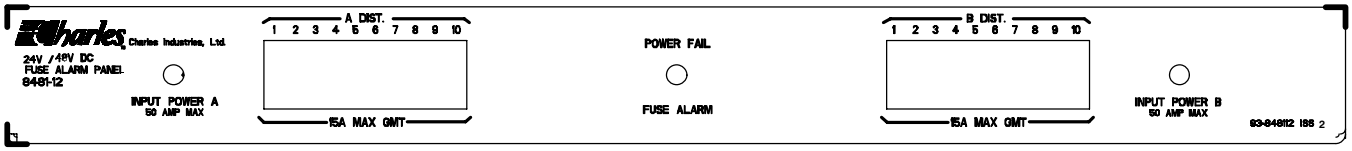
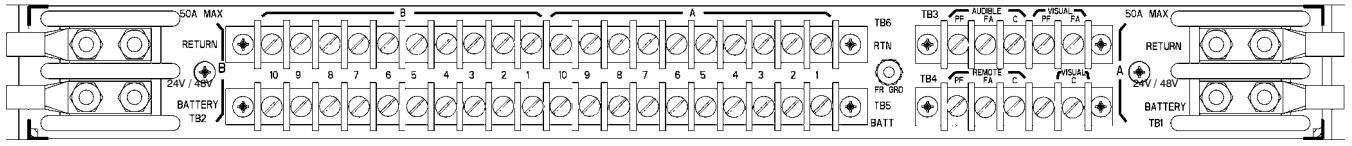


Front



Rear

Figure 1. 8481–12 Fuse and Alarm Panel

1. GENERAL

1.1 Document Purpose

This document provides information for the 8481–12 Fuse and Alarm Panel (+/– 24 or +/– 48 volt), shown in Figure 1.

1.2 Equipment Function

The fuse and alarm panel provides distributed fusing via two separate power feeds. Each of the two isolated power feeder inputs is capable of distributing battery voltage to ten circuits. Both power feeds must be the same polarity and voltage.

1.3 Equipment Mounting

The fuse and alarm panel can be rack-mounted in either a 19-inch or a 23-inch relay rack. The unit is shipped with dual-position mounting ears. It requires one RU (1.75) for mounting.

1.4 Equipment Features

The fuse and alarm panel provides the following features:

- Voltage and ground terminations for two input power feeders
- Positive or Negative 24/48V operation
- A and B power feeder LEDs
- Twenty 15 amp power feeder distribution fuse holders for GMT type fuses (fuses not included)
- Power fail (A or B)/fuse alarm indicators on front panel
- Frame ground lug
- Audible, visual, and remote alarm screw contacts
- Maximum input current 50 amps per feed

CAUTION

Field repairs/modifications may void warranty. Compliance is restricted to inside plant wiring.

2. APPLICATION GUIDELINES

The fuse and alarm panel may also be used for powering bays of +/– 24 volt or +/– 48 volt central office equipment. Both power feeds must be the same polarity and voltage.

3. CIRCUIT DESCRIPTION

Refer to the schematic diagram in Figure 2 while reading the following circuit description.

The fuse and alarm panel has two isolated power feeder inputs, each of which is capable of distributing battery voltage to ten circuits. This fuse panel is designed to work at 24V or 48V with either positive or negative battery.

Voltage is applied to two power feeder inputs, A and B power. The voltage is then distributed to ten 15 amp (max) GMT-type indicating fuses which provide output battery distribution and fuse alarm indication if failure occurs.

If either the A or B power input is not present, the following events occur:

(a) Contact closure on PWR FAIL LOCAL AUDIBLE alarm

(b) Contact closure on PWR FAIL LOCAL VISUAL alarm

(c) Contact closure on PWR FAIL REMOTE alarm

(d) PWR FAIL/FUSE ALARM LED

If only one input is being used, the alarm circuit will indicate a false alarm. Should a fuse open in any of the twenty battery distribution outputs, the fuse alarm relay is activated and the following occurs:

(a) Contact closure on FUSE ALARM LOCAL AUDIBLE alarm

(b) Contact closure on FUSE ALARM LOCAL VISUAL alarm

(c) Contact closure on FUSE ALARM REMOTE alarm

(d) PWR FAIL/FUSE ALARM LED on

Diodes provide isolation between power feeders should simultaneous blown fuses occur.

Table 1. Front Panel Indicators

Label	Description	Function
INPUT POWER	Green LED	Indicates that power is supplied to distribution fuse bus. One for each group.
POWER FAIL/FUSE ALARM	Red LED	Indicates power failure or fuse alarm.
Distribution	GMT type fuse slots	Insert fuses in these slots

4. INSPECTION

4.1 Inspect for Damages

Inspect the equipment thoroughly upon delivery. If the equipment has been damaged in transit, immediately report the extent of damage to the transportation company.

4.2 Equipment Identification

Charles Industries equipment is identified by a model and issue number imprinted on the front panel or located elsewhere on the equipment. Each time a major engineering design change is made on the equipment, the issue number is advanced by one number on any subsequent models that are manufactured. Therefore, be sure to include both the model number and its issue number when making inquiries about the equipment.

5. INSTALLER CONNECTIONS

5.1 Input Power Feeder Connections

Note: If using stranded wire, wire should be tinned before connecting to TB1, TB2, TB3, TB4, TB5 and TB6.

Step	Action
1.	Connect the input power feeders (TB1 and TB2) located on the rear of the panel via the two hole (5/8 inch center) crimp lugs. Both power feeds must be the same polarity and voltage
2.	Crimp #6 AWG wire to the lugs per manufacturer's instructions.
3.	Assemble lock washers and #10 nuts.

Note: Two sets of +/–24V and +/–48V labels are provided for identifying voltage and polarity. These can be placed on the front and rear of the fuse panel.

CAUTION

A readily accessible disconnect device should be incorporated into the fixed wiring to disconnect the input power feeders.

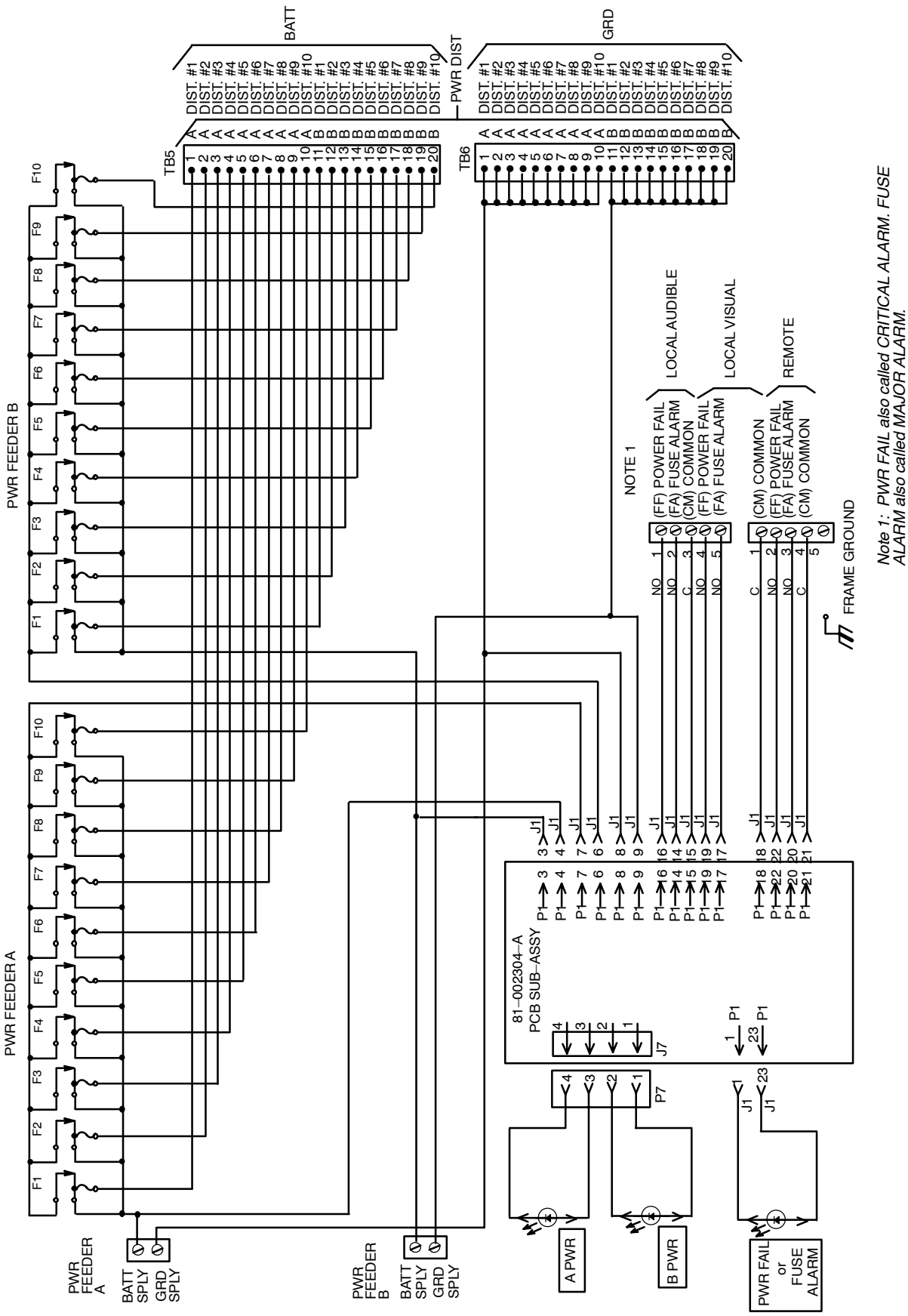


Figure 2. 8481–12 Fuse and Alarm Panel Schematic Diagram

5.2 External Alarm Circuit and Output Terminal Connections

Connect to the external alarm circuits and output terminals via the rear terminal blocks (TB3, TB4, TB5, and TB6) on the rear of the panel (see Figure 1). Screw terminals for #6 screws are provided for spade lug or closed ring loop lugs.

5.3 Installing Fuses

Install GMT-type fuses (fuses ordered separately). The maximum fuse rating is 15 amps per position.

Note: Do not install 15 amp fuses in adjacent positions. An empty fuse position between 15 amp fuses allows proper cooling.

CAUTION

The total current per feed of installed fuses must not exceed 50 amps maximum.

6. TESTING

If trouble is encountered with the operation of the fuse and alarm panel, verify that all the installer connections have been properly made in accordance with Part 5. Check and replace open fuses if necessary.

7. TECHNICAL ASSISTANCE

7.1 Technical Assistance — U.S.

If technical assistance is required, contact Charles Industries' Technical Services Center at:

847–806–8500
847–806–8556 (FAX)
800–607–8500
techserv@charlesindustries.com (e-mail)

8. WARRANTY & CUSTOMER SERVICE

8.1 Warranty

Charles Industries, Ltd. offers an industry-leading, 5-year warranty on products manufactured by Charles Industries. Contact your local Sales Representative at the address or telephone numbers below for warranty details. The warranty provisions are subject to change without notice. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract.

Charles Industries, Ltd.
5600 Apollo Drive
Rolling Meadows, Illinois 60008–4049

Telephone: 847-806-6300 (Main Office)
847-806-6231 (FAX)

8.2 Field Repairs (In-Warranty Units)

Field repairs involving the replacement of components within a unit are not recommended and may void the warranty and compatibility with any applicable regulatory or agency requirements. If a unit needs repair, contact CI-Charles Industries, Ltd. for replacement or repair instructions, or follow the *Repair Service Procedure* below.

8.3 Advanced Replacement Service (In-Warranty Units)

Charles Industries, Ltd. offers an "advanced replacement" service if a replacement unit is required as soon as possible. With this service, the unit will be shipped in the fastest manner consistent with the urgency of the situation. In most cases, there are no charges for in-warranty repairs, except for the transportation charges of the unit and for a testing and handling charge for units returned with no trouble found. Upon receipt of the advanced re-

placement unit, return the out-of-service unit in the carton in which the replacement was shipped, using the pre-addressed shipping label provided. Call your customer service representative at the telephone number above for more details.

8.4 Standard Repair and Replacement Service (Both In-Warranty and Out-Of-Warranty Units)

Charles Industries, Ltd. offers a standard repair or exchange service for units either in- or out-of-warranty. With this service, units may be shipped to Charles Industries, Ltd. for either repair and quality testing or exchanged for a replacement unit, as determined by Charles Industries, Ltd. Follow the *Repair Service Procedure* below to return units and to secure a repair or replacement. A handling charge applies for equipment returned with no trouble found. To obtain more details of this service and a schedule of prices, contact the CI Service Center at 217–932–5288 (FAX 217–932–2943).

Repair Service Procedure

1. Prepare, complete, and enclose a purchase order in the box with the equipment to be returned.

2. Include the following information:

   – Company name and address
   – Contact name and phone number
   – Inventory of equipment being shipped
   – Particulars as to the nature of the failure
   – Return shipping address

3. Ship the equipment, purchase order, and above-listed information, transportation prepaid, to the service center address shown below.

   CI Service Center
   Route 40 East
   Casey, IL 62420–2054

4. Most repaired or replaced units will be returned within 30 or 45 days, depending on the product type and availability of repair parts. Repaired units are warranted for either 90 days from the date of repair or for the remaining unexpired portion of the original warranty, whichever is longer.

9. SPECIFICATIONS

9.1 Electrical

The electrical characteristics of the fuse and alarm panel are as follows:

(a) INPUT VOLTAGE: 24 or 48 Vdc.

(b) INPUT POLARITY: Negative or Positive Battery.

(c) INPUT CURRENT RATING: 50 amp maximum on each of the two input power feeders, A and B power.

(d) OUTPUT CURRENT RATING: Up to 15 amp maximum per fuse; total current of each group of ten battery distribution fuses shall not exceed 50 amps.

(e) ALARM RELAY CONTACTS: 2 amp maximum; normally open contacts, contacts close during alarm conditions.

(f) POWER INPUT CONNECTORS: #6 AWG, stranded

9.2 Physical

The physical characteristics of the fuse and alarm panel are shown in Table 2:

Table 2. Physical Specifications

Feature	U.S.	Metric
Height	1.75 inches	4.45 cm.
Width	19 inches	48.26 cm.
Depth	12 inches	30.48 cm.
Weight	2 lbs.	0.9 kg
Temperature	32 to 120° F	0 to 49° C
Recommended wire size for battery feed	#6 AWG, stranded	
Humidity	to 95% at 100° F (no condensation)	

10. REGULATORY APPROVALS

The following regulatory approvals apply to the fuse and alarm panel:

Listed under Underwriters Laboratories (UL) Standard 1950. Field repairs may void compliance.