



PRODUCT DESCRIPTION

3-PPS/M-230-E Primary power supply

The 3-PPS/M-230-E primary power supply provides the required power and related supervision functions for the panel. The supply is comprised of three major components: the power supply monitor module, model 3-PSMON, which mounts on the rail chassis, and the heat sink assembly, model 3-PPS, which mounts on the rear of the rail chassis, and the ac power distribution assembly. The primary power supply provides filtered, regulated power to power all modules connected to the rail chassis as well as 24 Vdc for auxiliary applications. The primary power supply is rated at 24 Vdc @ 7.0A for all outputs. Two independent, power-limited, supervised 24 Vdc, 3.5 A auxiliary power outputs are provided on the power supply monitor module. AC power and battery connections are made to fixed terminals on the heat sink assembly, remote from the panel's power limited wiring.

The primary power supply supervises the standby batteries and provides a dual rate constant current battery charger featuring automatic temperature compensation. The charger is capable of charging batteries up to 17 Ah. A battery monitor circuit disconnects the batteries from the system when battery voltage drops below acceptable limits, which prevents memory problems and a total discharge of the batteries.

The power supply checks the ac input source and initiates the automatic transfer to batteries in the event of a brownout or loss of ac power. In the event of a failure of one or more booster power supplies, the primary power supply determines its ability, along with the surviving booster supplies, to supply the load. Should the load ever exceed the ability of the primary and surviving booster supplies to meet the demand, the standby batteries are automatically switched in. The supply will transfer to battery should an overload cause its heat sink temperature to reach a high level.

The primary power supply monitor module provides the interface between the power supply and the panel making the required data and power connections to and from the rail chassis. The monitor module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.

3-BPS/M-230-E Booster power supply

The 3-BPS/M-230-E booster power supply is used to provide additional power over and above the primary power supply. Up to three additional 24 Vdc, 7.0 A power boosters may be added in each enclosure, making a total of 28A available for both internal and external applications. The power supply booster is comprised of two major components: the booster monitor module which mounts on the rail chassis, and the heat sink assembly, which mounts on the rear of the rail chassis. Each booster provides filtered, regulated power to power all modules connected to the rail chassis as well as 24 Vdc for auxiliary applications. Each booster is rated at 24 Vdc @ 7.0 A for all outputs. Two independent, power limited, supervised 24 Vdc, 3.5 A auxiliary power outputs are provided on the booster. The power boosters share a common standby battery with the primary power supply. Each booster supervises its own connection to the battery, however, all battery charging and monitoring is done by the primary power supply. The power supply boosters share the panel's 24 Vdc electrical load with the primary power supply. In the event of a failure of a booster power supply, a trouble is annunciated, and the panel load is distributed among the operational power sources. Should the load ever exceed the ability of the operable power sources to supply the power, as in the event of an alarm, the system will automatically transfer to standby batteries.

The power supply booster monitor module provides the interface between a power supply booster and the panel, making the required data and power connections to and from the rail chassis. The booster monitor module requires one connection on the rail chassis and is secured to the assembly using snap rivet fasteners. The module features a hinged front panel for mounting displays or a blank protective faceplate.



SPECIFICATIONS

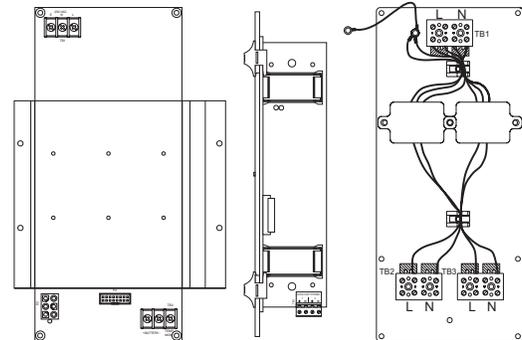
3-PPS/M-230-E and 3-BPS/M-230-E

Installation	Power distribution assembly mounts behind chassis rail (3-PPS/M-230-E only) Heat sink assembly mounts behind chassis rail Monitor module requires one module space
Power Input	230 Vac, +10%, -15%, 2.0 A, 50 Hz
Brownout Level	≤ 188 Vac
Outputs	
Total	24 Vdc @ 7.0 A, internal and auxiliary outputs
Internal DC	24 Vdc @ 7.0 A max.
Auxiliary DC	Two 24 Vdc @ 3.5 A max. ground fault and short supervised, power limited outputs
Termination	
AC Input	Terminals on heat sink assembly
Batteries	Terminals on heat sink assembly
Internal DC Output	LRM chassis rails via monitor module
Auxiliary DC Output	Removable plug-in terminal strips on monitor module
Operating Environment	
Temperature	23 to 104 °F (-5 to 40 °C)
Rel. Humidity	93% RH non-condensing
3-PPS/M-230-E only	
Battery Charging	
Capacity	10 - 17 Ah
Type	Temperature compensated dual rate, 1.5 A/3.0 A
Supervision	
Low AC	
Low Battery (≤ 22.5 Vdc)	
High Battery	
Discharged Battery (≤ 18 Vdc)	
Ground Fault (≤ 10 kΩ)	

3-BPS/M-230-E only

Supervision	
Low AC	
Low Battery (≤ 22.5 Vdc)	
Ground Fault (≤ 10 kΩ)	

3-PPS/M-230-E and 3-BPS/M-230-E



INSTALLATION SHEET:

3-PPS/M-230-E Primary power supplies 3-BPS/M-230-E Booster power supplies

INSTALLATION SHEET P/N: 387555

FILE NAME: 387555.CDR

REVISION LEVEL: 1.0

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A UNIT OF GENERAL SIGNAL

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INSTALLATION INSTRUCTIONS

Step I. Mount the power distribution assembly.

1. Screw the power distribution assembly to the threaded stand-offs on the rail chassis assembly (see Figure-1).
2. Attach the Earth ground braid to the back box ground stud located just above the power distribution assembly (see detail A).

Note: The power distribution assembly must always be mounted in the rail chassis at the top of the equipment enclosure in the location shown.

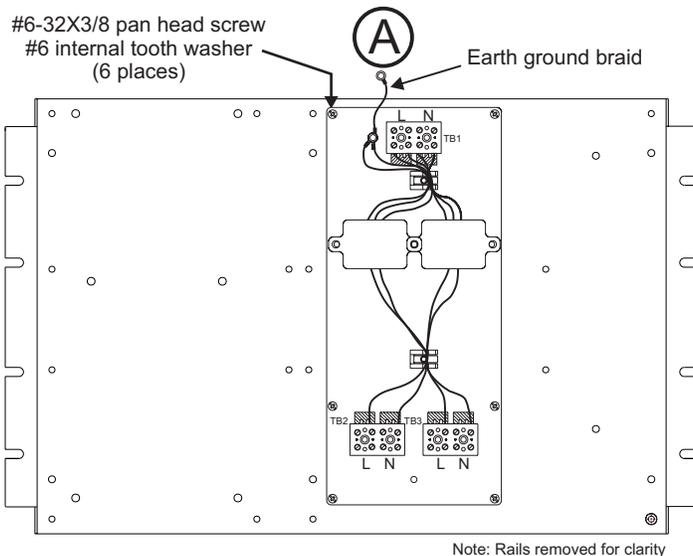
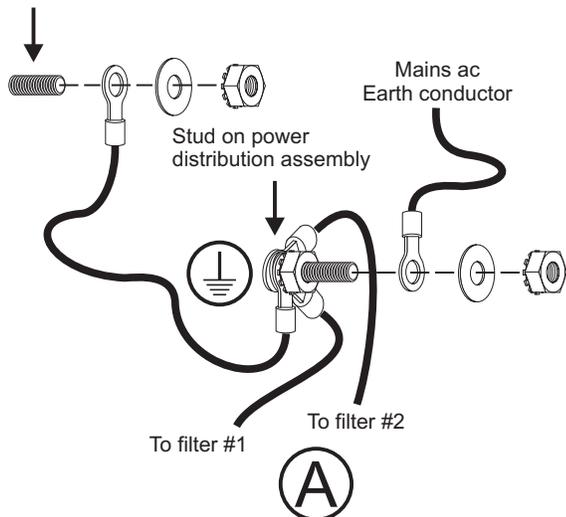


Figure-1: Power distribution assembly mounting

Stud on equipment enclosure back box



Step 2. Mount the power supply assembly.

1. Attach the power supply assembly to the 4 threaded mounting studs on the rail chassis assembly (see Figure-2).
2. Screw the bottom edge of the power supply assembly to the threaded standoffs on the rail chassis assembly.
3. Secure the top edge of the power supply assembly to the rail chassis assembly using the threaded studs and standoffs provided in the hardware kit.

Notes:

1. The primary power supply must always be mounted in the left mounting position of the chassis containing the panel controller.
2. Booster supplies, if required, may be mounted in any rail chassis, but no more than three booster supplies may exist in any one cabinet.

#6-32 threaded standoff (2 places)

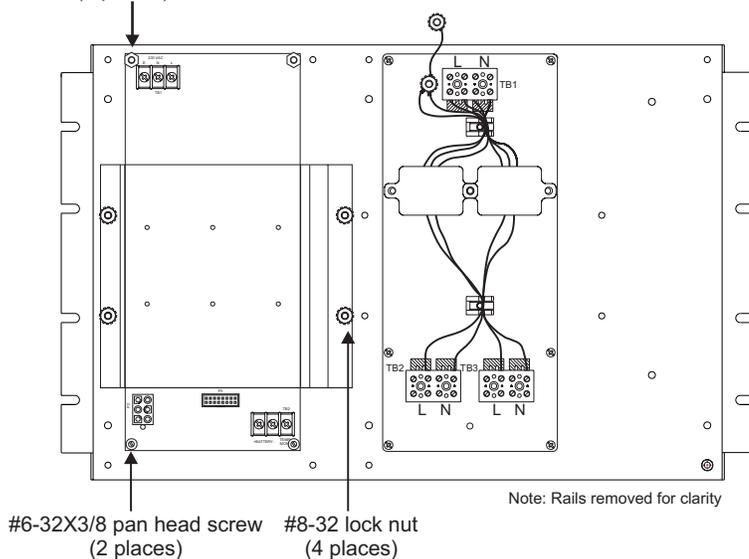


Figure-2: Power supply assembly mounting



INSTALLATION INSTRUCTIONS

Step 3. Connect filtered ac power to the supplies.

- Using double-insulated wire, connect the filtered ac Line and Neutral conductors to the power supplies as follows (see Figure-3):

From	To
Power distribution	Power supply
assembly	assemblies 1 and 2

TB2-L	TB1-L
TB2-N	TB1-N

From	To
Power distribution	Power supply
assembly	assemblies 3 and 4

TB3-L	TB1-L
TB3-N	TB1-N

- Using double-insulated wire, connect a separate earth conductor from the Earth ground lug on the power distribution assembly to TB1-E on each of the power supplies installed in the cabinet (see detail B).
- Place flat washer on conductors then tighten with lock nut to ensure a secure mechanical connection to earth ground.
- Secure the power supply cover to the standoffs on the top edge of the power supply.

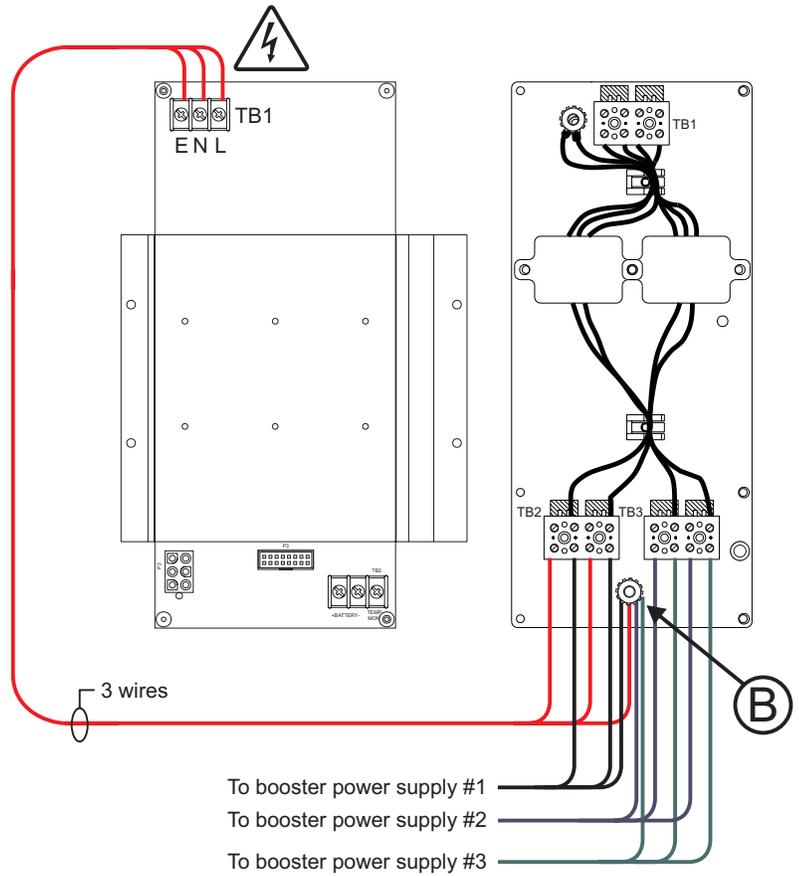
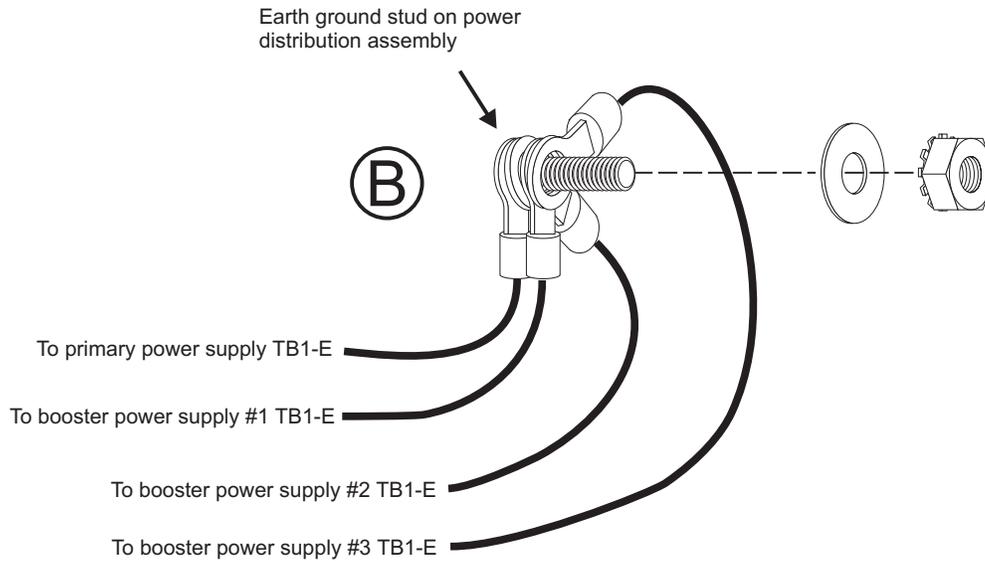


Figure-3: Filtered ac power distribution





INSTALLATION INSTRUCTIONS

Step 4. Install the power supply monitor module.

Caution: This product contains components that are sensitive to static electricity. Failure to follow proper handling procedures will result in equipment damage.

1. Connect the 6-wire cable harness to P6 on the power supply monitor (see Figure-6). Push in until the connector clicks.
2. Connect the ribbon cable to J4 on the power supply monitor.
3. Align the power supply monitor to the guide posts on slot 3 of the rail chassis assembly.
4. Route the 6-wire cable harness over and behind the bottom rail and connect to P2 on the primary power supply. Push in until the connector clicks.
5. Route the ribbon cable under the bottom rail and connect to P3 on the primary power supply.
6. Slide the module into the slot 3 rail connectors and lock into place using the snap rivet fasteners.
7. Apply a Kapton label over the rail communication LEDs.

Note: Kapton labels are included in the hardware kit and are required for every rail module installed in the cabinet. Save labels for future use.

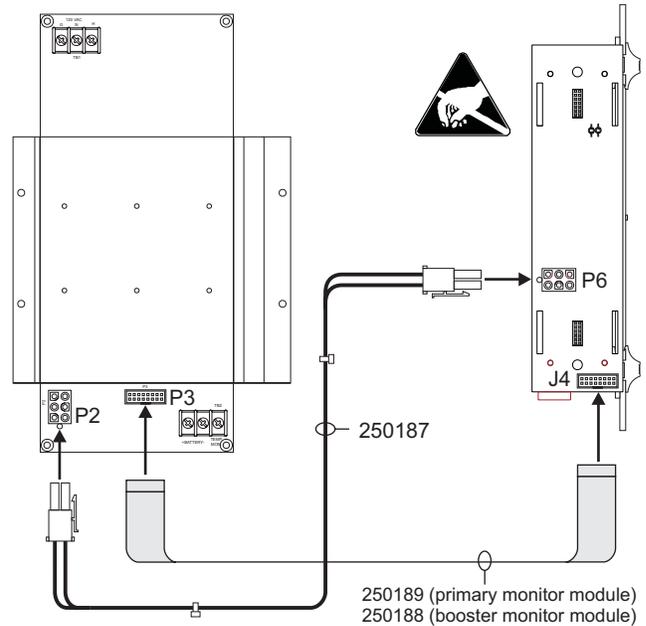
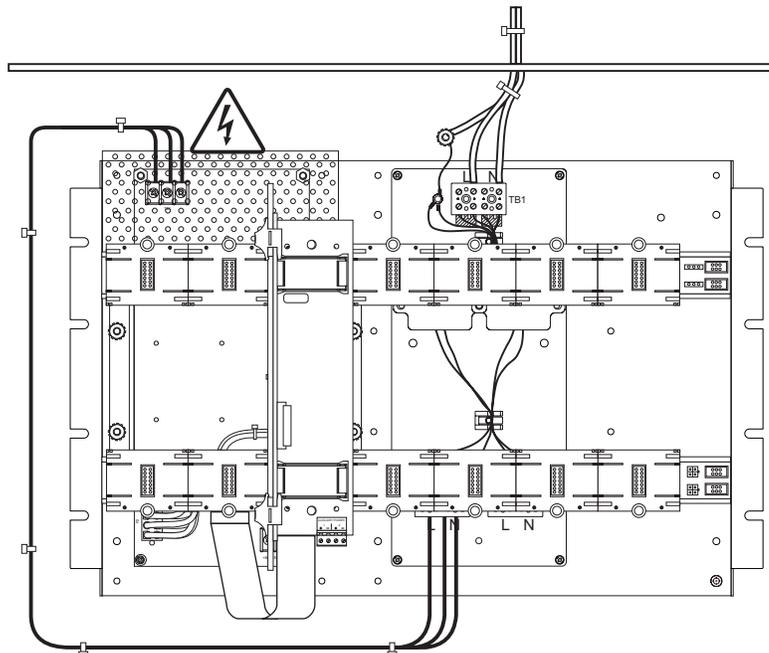


Figure-6: Cable connections

Step 5. Wire the power supply.

1. Ensure that the mains ac circuit is deenergized. Connect the mains ac conductors to TB1 on the power distribution assembly. Refer to Figure-7 on page 5.
2. Connect the standby battery conductors to TB2 on the power supply assembly. Refer to Figure-8 on page 5.
3. If a remote battery cabinet is used, connect the temperature sensor conductor to TB2 on the primary power supply assembly. Refer to Figure-8 on page 5.
4. Connect the 24 Vdc auxiliary power riser conductors to TB1 on the power supply monitor module. Refer to Figure-9 on page 6.





FIELD WIRING CONNECTIONS

WARNING: High voltage levels capable of causing injury or death may be present. Precautionary measures must be taken to ensure that the mains ac circuit is deenergized and prevented from being switched on inadvertently.

Notes:

1. Install wiring in accordance with the Electrical Code and all other local requirements.
2. Up to 4 primary or booster supplies may be connected to a single mains ac source circuit.

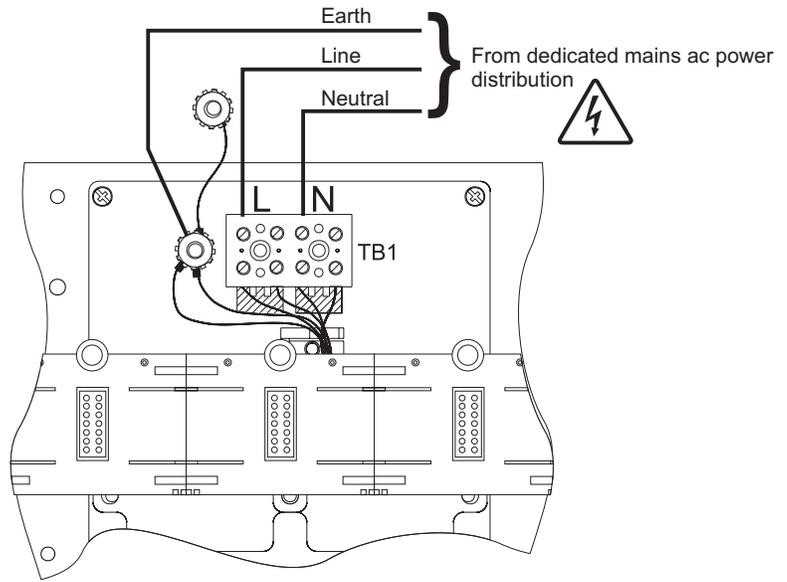


Figure-7: Mains ac wire connections

Caution: Disconnecting the battery from the power supply while the mains ac is deenergized may damage the battery.

Notes:

1. Each power supply shall have its own separate pair of conductors going to the battery.
2. The batteries must already be connected to the primary power supply when the cabinet is energized in order to activate the battery charging circuit.

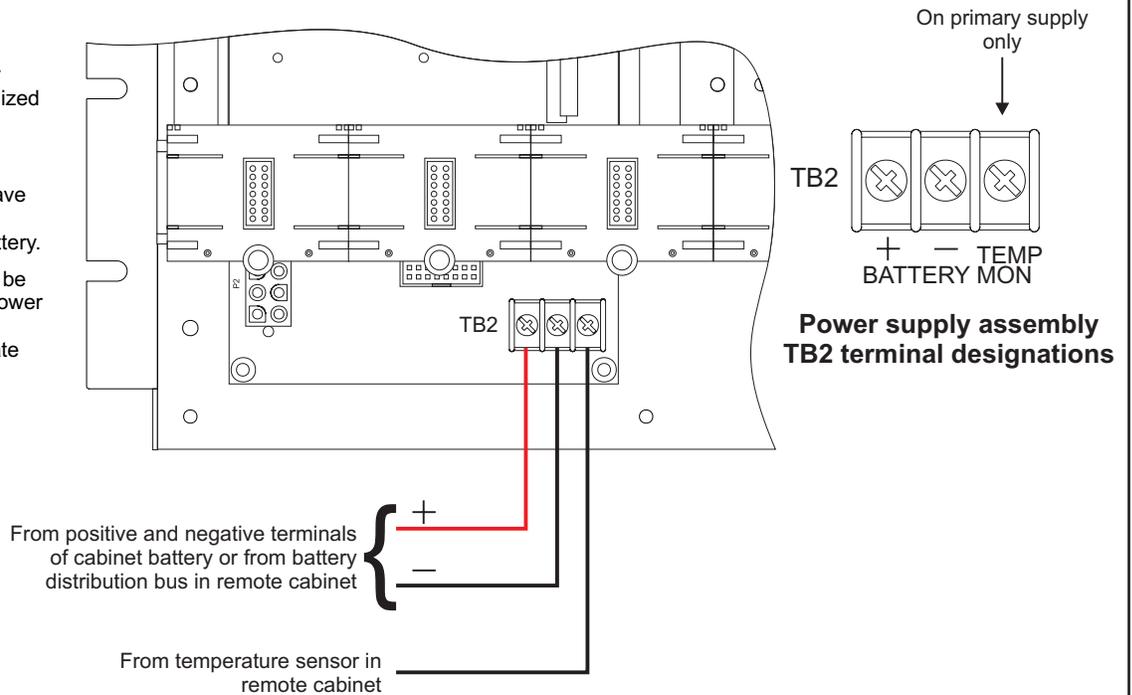


Figure-8: Standby battery wire connections



FIELD WIRING CONNECTIONS

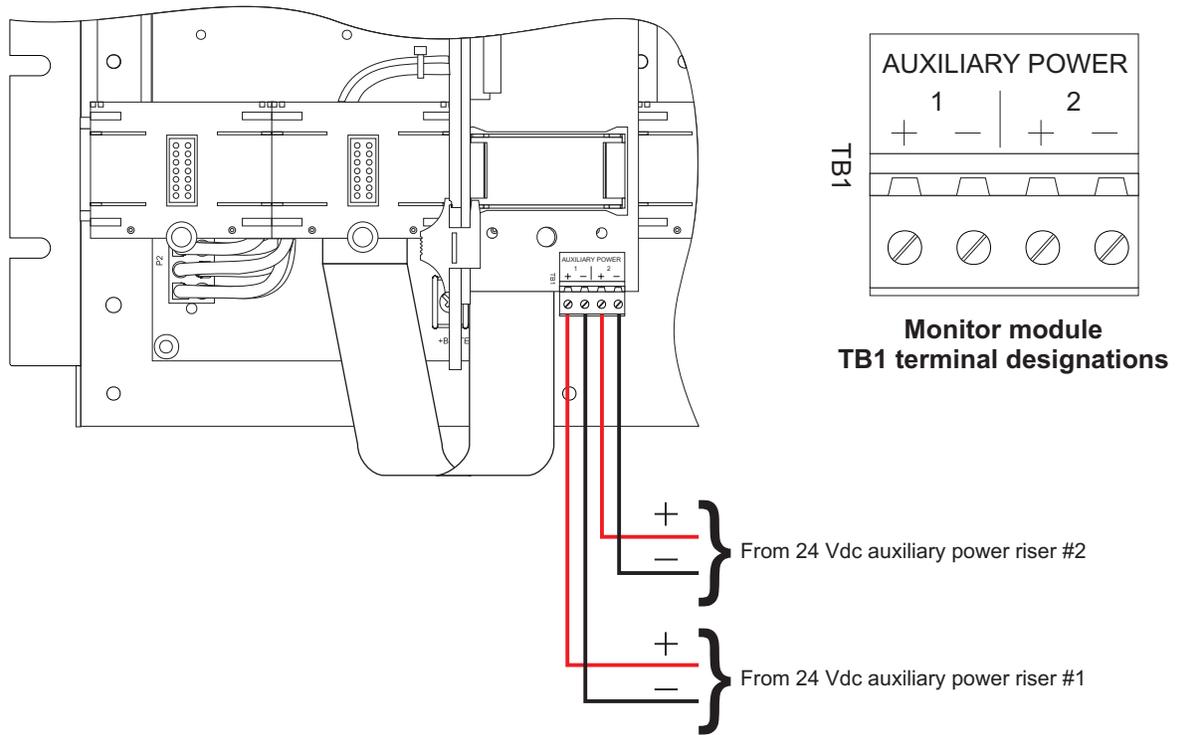


Figure-9: 24 Vdc auxiliary power riser wire connections