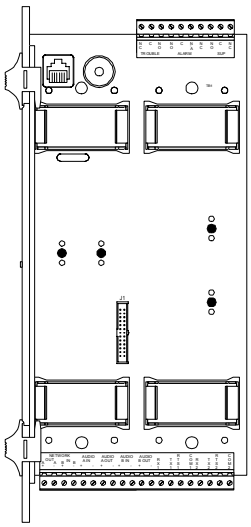
3-CPU3
Central Processor Module

Product description



The 3-CPU3 Central Processor Module is the control element for all rail modules and control/display modules installed within an enclosure. The 3-CPU3 processes all information from modules installed within the cabinet as well as data received from other panels over the network data riser.

Note: 3-CPU3 is a replacement for the 3-CPU1 and 3-CPU.

The 3-CPU3 has an internal calendar/clock with leap year function provides date/time event stamping and initiates timed events. The 3-CPU3 automatically identifies and supervises all modules installed on the rail chassis and has an integral watchdog to identify both hardware and software faults. The module has Form-C common alarm, trouble, and supervisory relay contacts that operate whenever any alarm, supervisory, or fault condition is detected in the network.

The 3-CPU3 communicates with other 3-CPUs on the network over an RS-485 or fiber optic network data circuit. Class A or B wiring configuration can be used for the network data circuit and digital audio circuits. An optically isolated RS-232 port is provided for data upload/download and system maintenance. An optional optically isolated RS-232 port card is available to support a printer or an external command system. The 3-CPU3 also provides the command and control functions for the 8-channel digital audio subsystem installed on the rail.

The 3-CPU3 occupies the two leftmost positions on the rail chassis assembly (logical address 0). In this position it functions as the local bus master and supervises all traffic on the rail bus and implements ground fault detection.

The controller is secured to the rail chassis using snap rivet fasteners. All field wiring connections to the 3-CPU3 module are made via plug-in connectors. All external connections are power-limited and transient protected. The plug-in connectors and snap rivet mounting also facilitate rapid remove-and-replace troubleshooting. The 3-CPU3 module provides support brackets for mounting the 3-LCD display or a protective cover plate.

Specifications

Installation: Occupies first 2 spaces on rail chassis
Internal RS-232 serial port
- Type: Isolated, Class B
- Connector: RJ-11

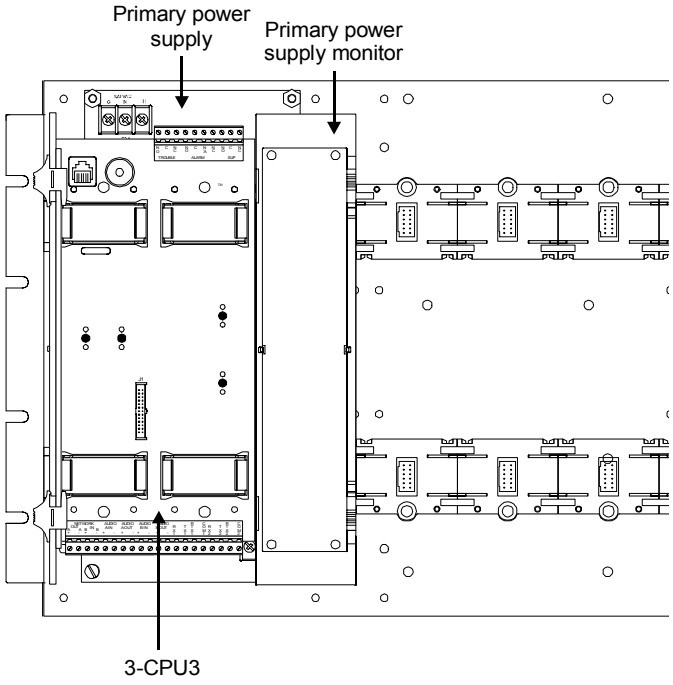
Common control relays: 3 Form C relays rated at 30 Vdc @ 1A for alarm, supervisory, and trouble
Operating environment
- Temperature: 32 to 120 °F (0 to 49 °C)
- Humidity: 93% RH, noncondensing

Power requirements
- Voltage: 24 Vdc
- Standby current: 145 mA
- Alarm current: 155 mA
- **Note:** For battery calculations, these currents include all listed primary power supplies.

Required software: 3-CPU3 Boot and Application code must be version 1.33 or later

Installation instructions

1. Install any 3-CPU3 option cards required. Refer to the respective installation sheets for the option card being installed.
2. Slide the 3-CPU3 into the first two rail slots on the rail chassis assembly. Be careful to align the option cards into the card guides.
3. Gently push the 3-CPU3 until it is firmly seated into the rail connectors.
4. Secure the module to the rail by pushing the top and bottom snap rivet fasteners until they lock in place.
5. Connect the field wiring.



Field wiring connections

Network data riser connections

A 3-CPU3 equipped with a 3-RS485A or 3-RS485B card can communicate with other similarly equipped CPU modules by way of the network data riser. TB2 on the 3-CPU3 provides the terminal connections for connecting to the network data riser (Figure 1). Connect the network data riser to the 3-CPU3 as shown in Figure 2 for class B wiring and Figure 3 for class A wiring. The NETWORK B terminals provide an isolated connection. The NETWORK A terminals are not isolated.

Notes

- All network data riser wiring is supervised and power-limited.
- When connecting the network wiring, always wire the isolated terminals on one CPU module to the non-isolated terminals of another.
- On Class B network data risers, the panel that does not have wires connected to the Network A terminals should be designated as the service panel and located accordingly.

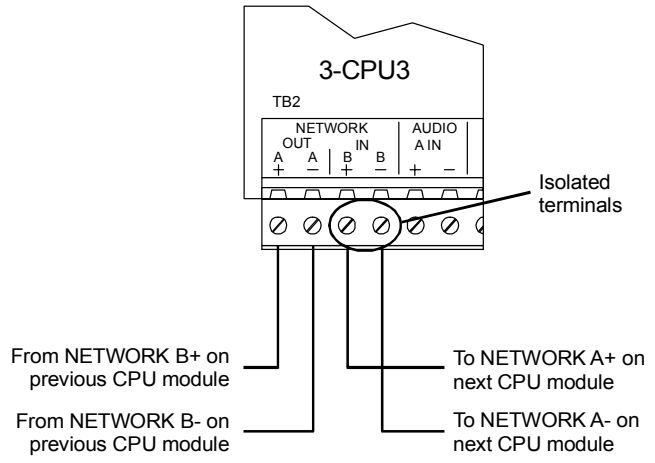


Figure 1: The NETWORK IN terminals are isolated from ground faults

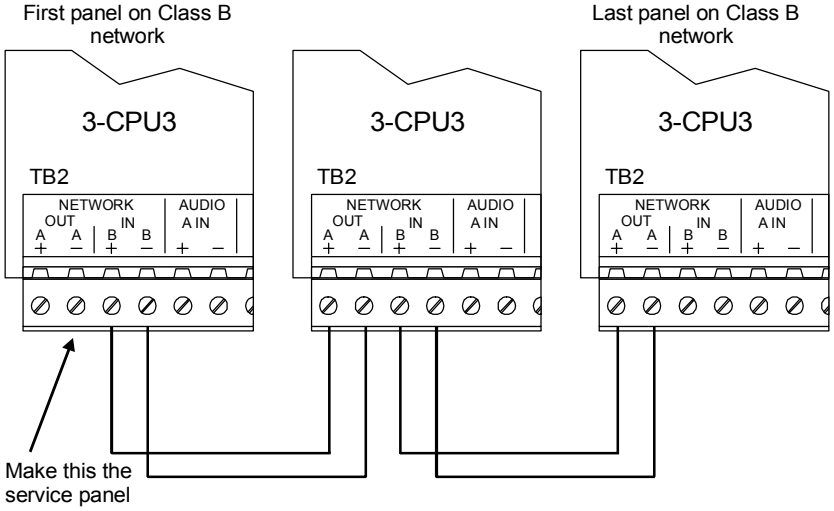


Figure 2: Class B network data riser wiring (requires 3-RS485A or 3-RS485B)

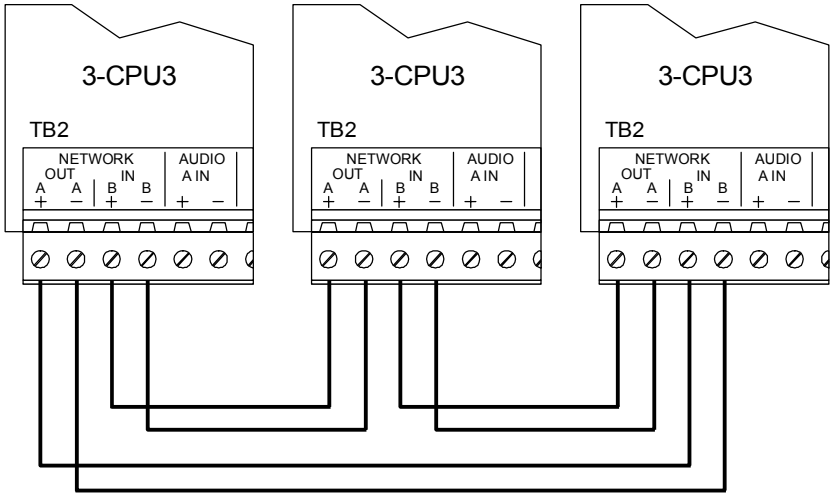


Figure 3: Class A network data riser wiring (requires 3-RS485A or 3-RS485B)

Field wiring connections

Network audio riser connections

A 3-CPU3 equipped with a 3-RS485A or 3-RS485B card can distribute audio messages to other similarly equipped 3-CPU3 modules by way of the network audio riser. TB2 on the 3-CPU3 provides the terminal connections for connecting to the network audio riser (Figure 4).

Connect the network audio riser to the 3-CPU3 as shown in Figures 5 and 6. The AUDIO IN terminals provide an isolated connection. The AUDIO OUT terminals are not isolated.

Notes

- All network audio riser wiring is supervised and power-limited.
- When connecting the network wiring, always wire the isolated terminals on one CPU module to the non-isolated terminals of another.

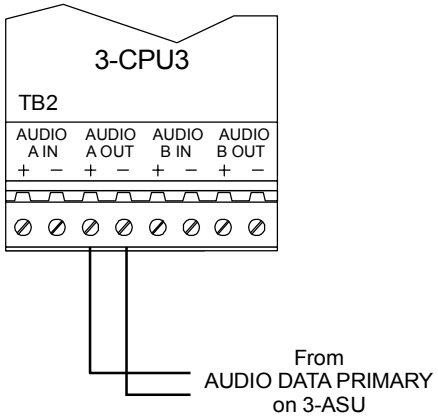


Figure 4: 3-CPU3 to 3-ASU wiring for single panel audio applications (no RS-485 card required)

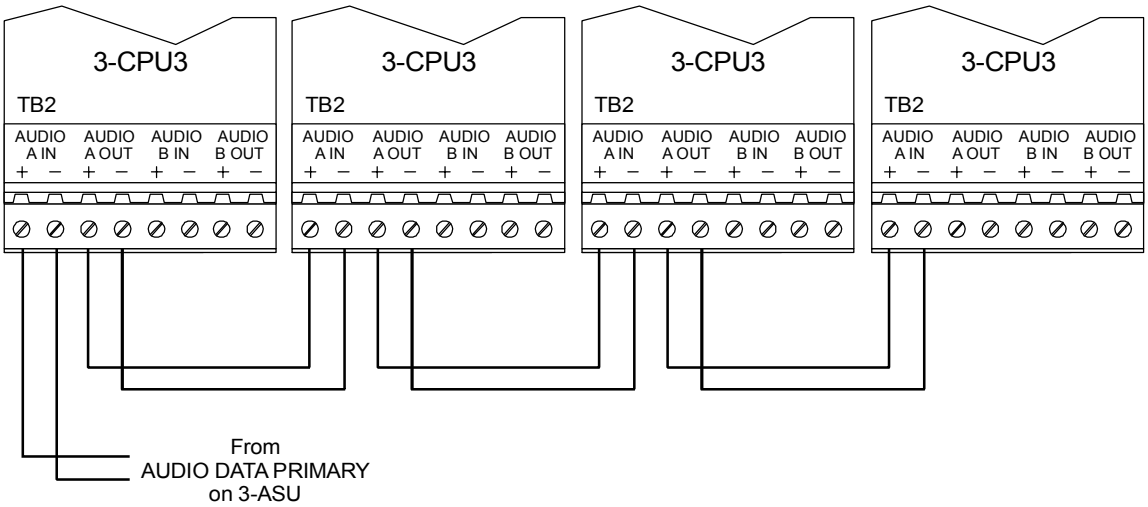


Figure 5: Typical Class B network audio riser wiring (requires a 3-RS485A or 3-RS485B card)

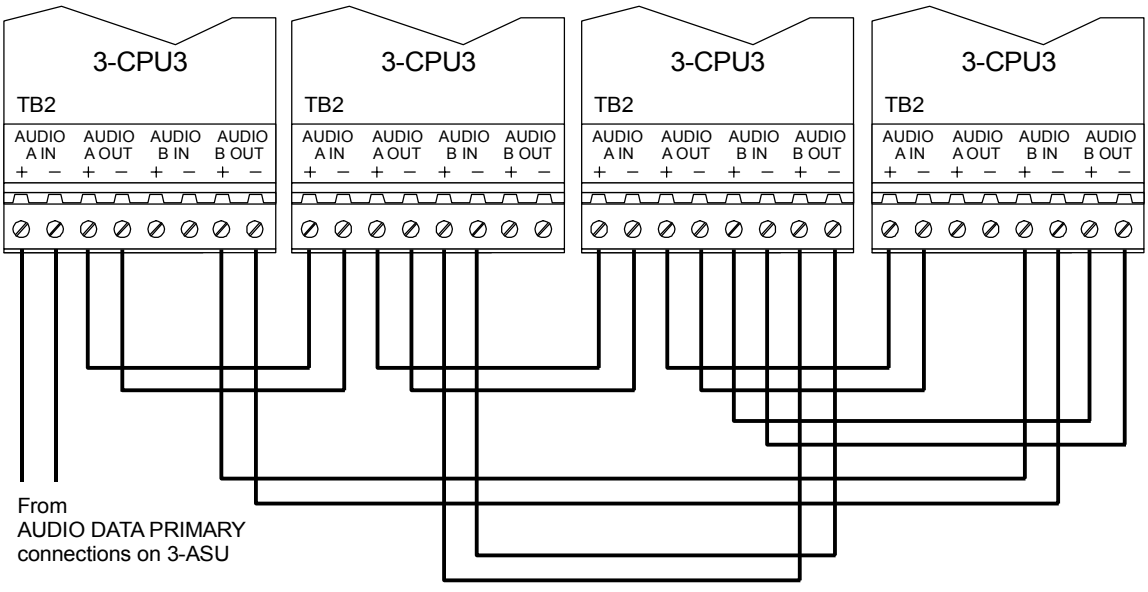


Figure 6: Typical Class A network audio riser wiring (requires a 3-RS485A card)

Field wiring connections

Common relay connections

The 3-CPU3 provides three Form C relays (Figure 7) that can be used to activate a circuit when any alarm, trouble, or supervisory point in the system activates. The connector pin designations reflect the state of the relay contacts while the panel is operating in its steady mode (all conditions normal). The trouble relay contacts also switch on loss of power.

Note: All common relay wiring is power-limited when connected to a power-limited source.

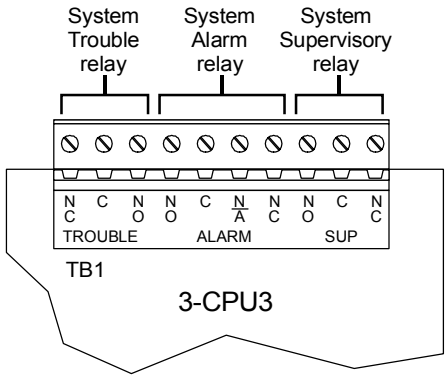


Figure 7: Common relay wiring

RS-232 serial port connections

A 3-CPU3 equipped with a 3-RS232 card can connect to ancillary devices that use RS-232 data communication (Figure 9). TB2 on the 3-CPU3 provides the terminal connections for connecting to the 3-RS232 devices (Figure 8).

The 3-RS232 card provides two independent ports for connecting serial devices.

Note: All serial port wiring is power-limited.

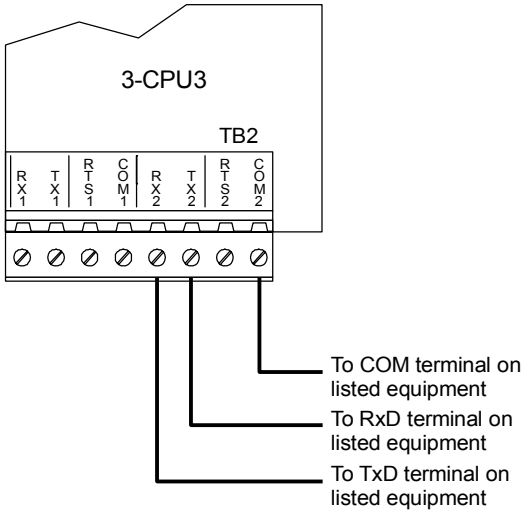


Figure 8: Serial port connections

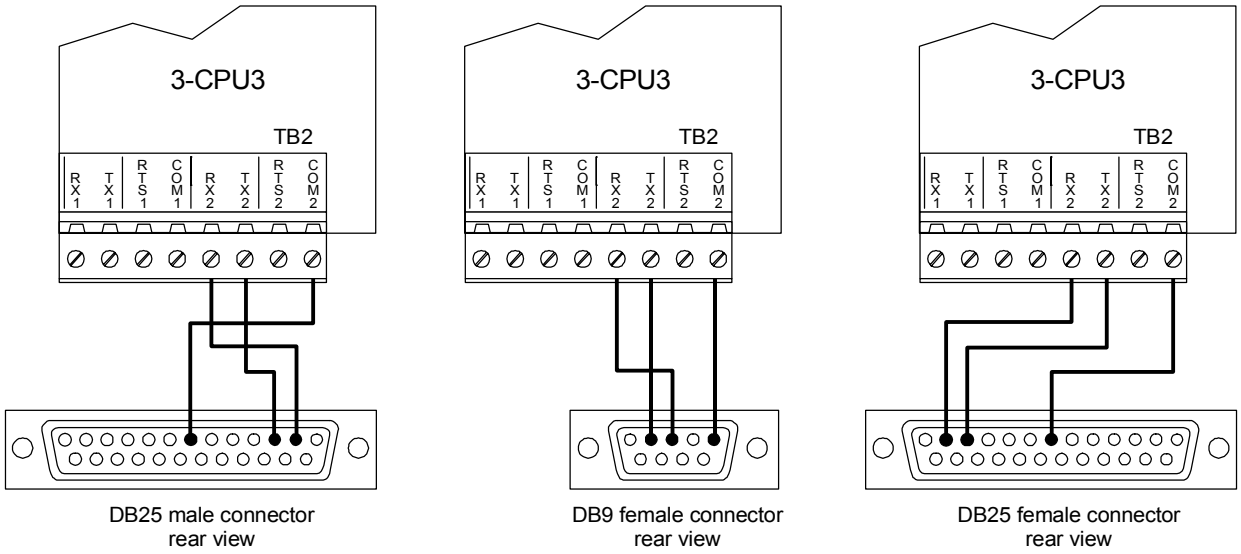


Figure 9: Serial port wiring (requires a 3-RS232 card)