

# Replacement Parts for CP Relay Panel Installation Instructions



## Installation Overview

The installation instructions contained in this document are provided as a guide for proper and reliable installation. The mounting location should be selected and prepared based on the application. All electrical wiring and mounting hardware (i.e. electrical mounting box, conduit, etc.) should be prepared with consideration of the requirements outlined in the wiring and mounting diagrams contained in these instructions.

These instructions include information as follows:

Precautions

Description

Installing Transformers in 4 and 8 Relay Panels

Installing Power Supplies in 16 and 24 Relay Panels

Installing Motherboards

Installing Panel Controller

Troubleshooting

## Precautions

- **READ AND FOLLOW ALL SAFETY INSTRUCTIONS.**
- **CAUTION - RISK OF ELECTRICAL SHOCK.** To prevent electrical shock, turn OFF power at the circuit breaker before installing or servicing unit. Never wire energized electrical components.
- **NOTICE:** For installation by a licensed electrician in accordance with National and/or local electrical codes and the following instructions.
- **CAUTION: USE COPPER CONDUCTOR ONLY.**
- Be sure to read and understand all instructions before installing or servicing unit.
- For Indoor use only. Do not use outdoors.
- Do not mount near gas or electric heaters.
- Disconnect switch or a circuit breaker must be provided and marked as the disconnecting device.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Confirm that device ratings are suitable for application prior to installation.
- No user serviceable parts contained inside unit. Refer all service related questions to the factory.
- All servicing shall be performed by qualified service personnel.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- Use only materials and components approved for electrical installations.
- **NOTICE:** Do not install if product appears to be damaged.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Do not use this equipment for other than intended use.

**SAVE THESE INSTRUCTIONS!**



## Description

Panels have replacement parts available including transformers, power supplies, motherboards, and the master controller that can be replaced in the field by qualified electricians:

## Product Configuration

Replacement Part	Description
CPTFMR27	Transformer, 120/208/240/277V AC to 24VAC, 4-8 Relay Panel
CPTFMR12	Transformer, 120-277V AC to 24VAC, 16 Relay Panel
CPTFMR48	Transformer, 347-480V AC to 24VAC, 16 Relay Panel
CPMBRD4	Panel Replacement Motherboard for 4 Relay Panel
CPMBRD8	Panel Replacement Motherboard for 8 Relay Panel
CPMBRD16	Panel Replacement Motherboard for 16/24 Relay Panel (8 Relays)
CPMCTRRKT	Master controller, replacement kit

## Installing Transformers in 4 and 8 relay panels

*Caution: Prior to transformer replacement verify and lock-out panel feed circuit breaker in the OFF position. Failure to do so may result in personnel injury, damage to the panel, and void its warranty.*

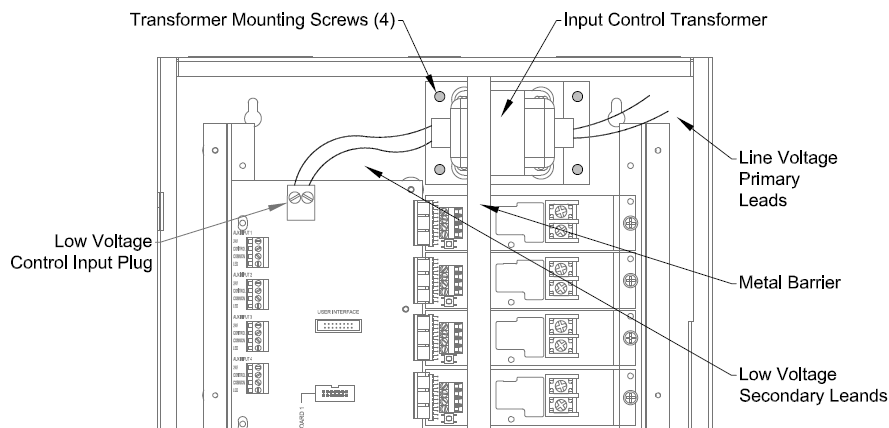
Refer to **Figure 1** below and install transformers in the 4 and 8 relay panels as follows:

1. Locate and lock-out the line voltage panel feed circuit breaker in the OFF position.
2. Disconnect the line voltage transformer input leads. Replace wire splicing devices on incoming voltage circuit wires for safety purposes.
3. Remove the panel metal barrier. Barrier is secured with two screws, one at the top and one at the bottom.
4. Disconnect the low voltage secondary leads from the low voltage control input plug located at the top of the motherboard.
5. Remove the four (4) transformer mounting screws.
6. Mount new the transformer with four (4) mounting screws and reconnect in the reverse order of the removal. Use caution to assure that the line voltage primary leads are connected to the appropriate supply voltage tap wires. Supply twist-on wire connectors individually on the unused tap leads.
7. Check for ground continuity and for circuit shorts prior to re-energizing line voltage supply circuit.

All terminations within the panel enclosure require installation by a licensed electrician in accordance with national and/or local electrical codes.

## Figure 1 – Transformer Replacement

### CP04 and CP08 Relay Panel Interior



## Installing Power Supply in 16/24 Relay Panels

*Caution: Prior to transformer replacement verify and lock-out panel feed circuit breaker in the OFF position. Failure to do so may result in personnel injury, damage to the panel, and void its warranty*

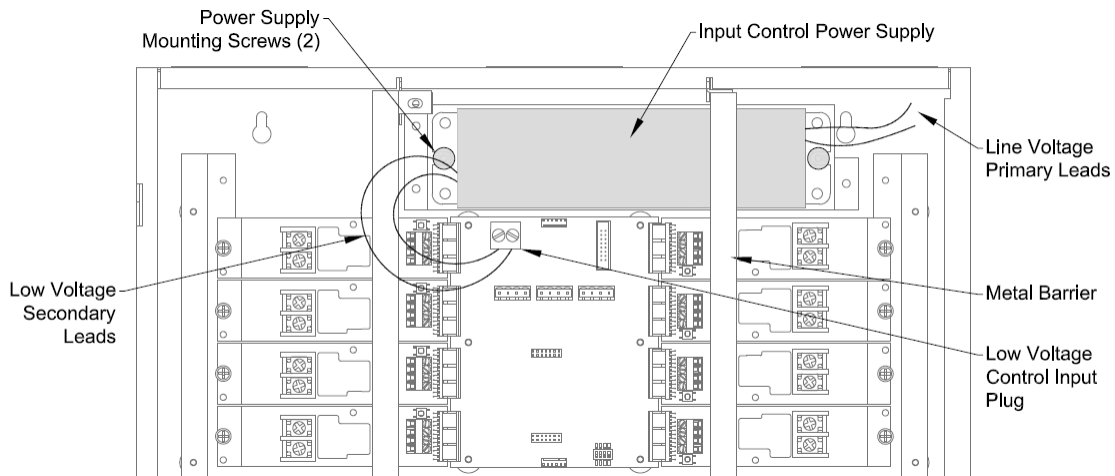
Refer to **Figure 2** below to install power supplies in the 16/24 Relays Panel as follows:

1. Locate and lock-out the line voltage panel feed circuit breaker in the OFF position.
2. Disconnect the line voltage power supply input leads. Replace wire splicing devices on incoming line voltage circuit wires for safety purposes.
3. Remove the panel metal barrier. Barrier is secured with two screws, one at the top and one at the bottom.
4. Disconnect the low voltage secondary leads from the low voltage control input plug located at the top of the motherboard.
5. Remove the two (2) power supply mounting screws.
6. Mount new power supply with two (2) mounting screws and reconnect in the reverse order of the removal.
7. Check for ground continuity and for circuit shorts prior to re-energizing line voltage supply circuit.

All terminations within the panel enclosure require installation by a licensed electrician in accordance with national and/or local electrical codes.

### Figure 2 – Power Supply Replacement

#### CP16 and CP24 Relay Panel Interior



## Installing Motherboards

The Load:Logic® Control Panel Series uses 3 styles of motherboards based on panel size. The **CPMBRD04** is used in all CP04 Series 4-Relay panels; The **CPMBRD08** is used in all CP08 Series panels and the **CPMBRD16** is used to control up to 8 relays in the CP16 and CP24 Series panels. The CP16 Series Panels require 2 motherboards and the CP24 Series Panels require 3 motherboards. Refer to **Figure 3** to install replacement motherboards as follows:

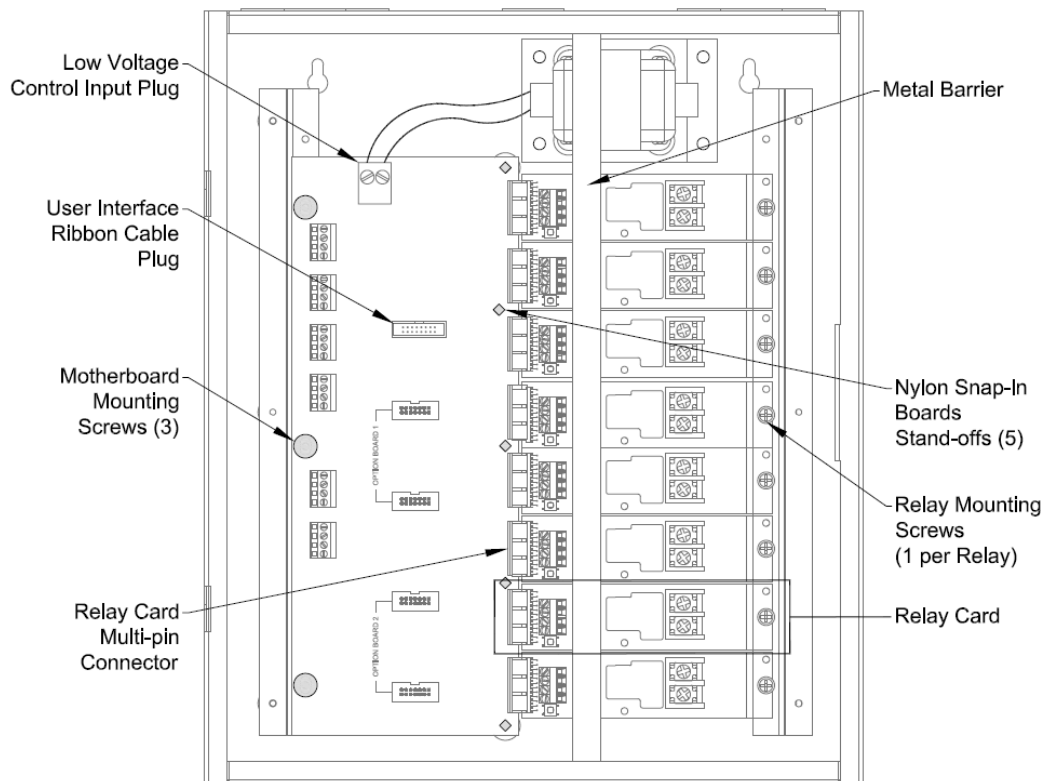
**WARNING:** The low voltage control input power plug at the top of the motherboard must be **DISCONNECTED** prior to disconnecting or connecting any of the interior low voltage panel components. Making any connections with power on the motherboard will damage the panel and **VOID Equipment WARRANTY.**

### Procedure for replacement of motherboard for 4 and 8 relay panels:

1. Locate and lock-out the line voltage feed circuit breaker(s) in the OFF position for all circuits that are fed through the relays in the panel. Once locked OFF use a multi-meter to verify that each input line voltage terminals on each relay is unpowered.
2. Disconnect the low voltage control input power plug located at the top of the motherboard.
3. Disconnect the user interface ribbon cable if this is a Master Panel. Disconnect any input or output plugs.
4. Remove Panel Metal Barrier. Barrier is secured with two screws, one at the top and one at the bottom.
5. Remove all relay mounting screws (Up to a total of 8) and disconnect each Relay Card Multi-pin connector.
6. Remove motherboard mounting screws (3).
7. One at a time, depress the locking tabs with needle nose pliers on the nylon snap-in board stand-offs (5) that retain the motherboard while applying lifting pressure from behind the board.
8. To install the new motherboard follow the instructions in reverse order. Be sure that all low voltage connections are in place before reconnecting power to the motherboard.

**Figure 3 – Motherboard Replacement**

**CP04 and CP08 Relay Panel Interior**



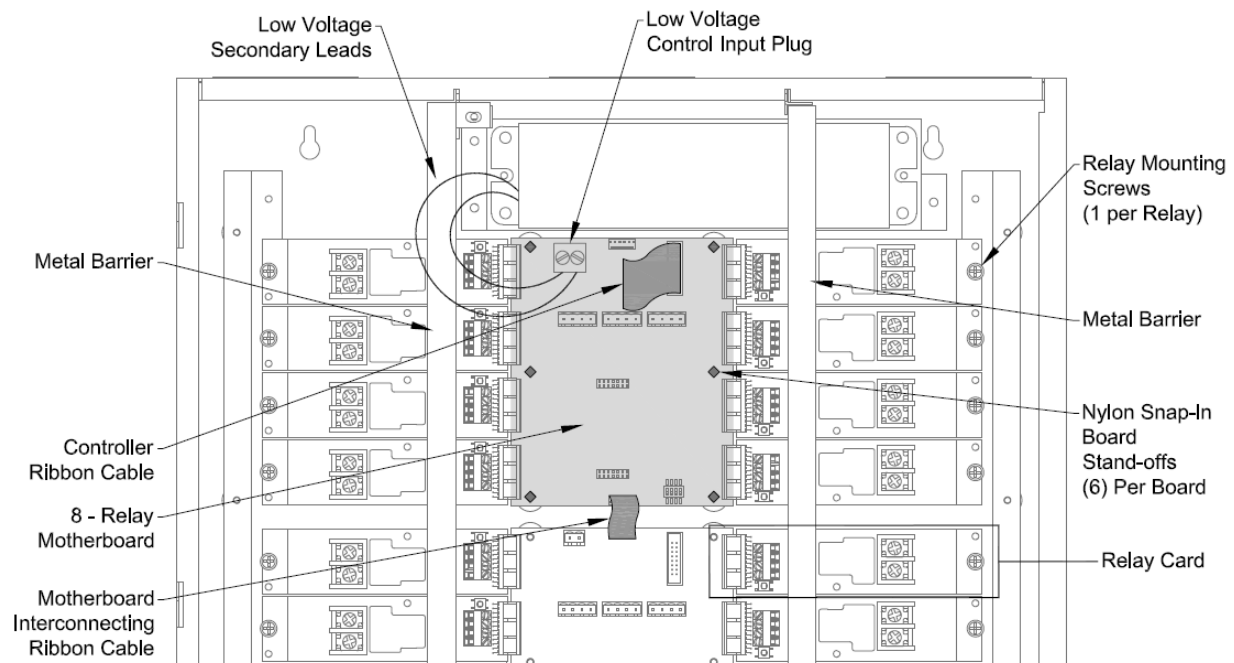
**WARNING:** The low voltage control input power plug at the top of the motherboard must be **DISCONNECTED** prior to disconnecting or connecting any of the interior low voltage panel components. Making any connections with power on the motherboard will damage the panel and **VOID Equipment WARRANTY**.

**Procedure for replacement of Motherboard for 16/24 relay panels (Figure 4):**

1. Locate and lock-out the line voltage feed circuit breaker(s) in the OFF position for all lighting circuits that are fed through the relays in the panel. Once locked OFF use a multi-meter to verify that each input line voltage terminals on each relay is unpowered.
2. Disconnect the low voltage control input power plug located at the top of the motherboard.
3. Disconnect the user interface controller ribbon cable if this is a Master Panel and the top relay card is being replaced. Disconnect any input or output plugs.
4. Disconnect the motherboard interconnecting ribbon cable.
5. Remove panel metal barrier(s) on each side of the panel. Each barrier is secured with two screws, one at the top and one at the bottom.
6. Remove all relay mounting screws (Up to a total of 8 per motherboard) and disconnect each Relay Card multi-pin connector.
7. One at a time, depress the locking tabs with needle nose pliers on the nylon snap-in board stand-offs (6) that retain the motherboard while applying lifting pressure from behind the board.
8. To install the new motherboard follow the instructions in reverse order. Be sure that all low voltage connections are in place before reconnecting power to the motherboard.

**Figure 4 – Motherboard Replacement**

**CP16 Relay Panel Interior**

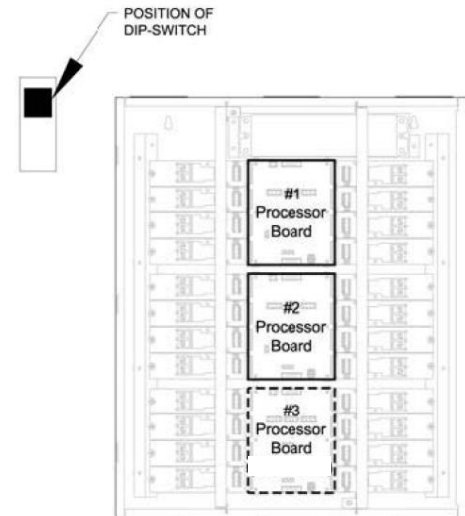


## Processor Board Transfer for Master and Secondary Panels

**Power must be OFF to the panel prior to ALL hardware changes.** Failure to follow this instruction **VOIDS ALL WARRANTIES.**

When adding the processor boards (I/O) cards to an existing panel or changing the function, i.e. Master Panel to a Secondary Panel, or a Secondary Panel to a Master Panel, it is important that all connections are snug and that the DIP switches are configured correctly. The DIP switches referred to in this document are located on the bottom right hand corner of the Processor Boards.

Master Panels will all have the no.1 (M/S) DIP switch ON. Secondary Panels will all have the no.1 (M/S) DIP switch OFF.



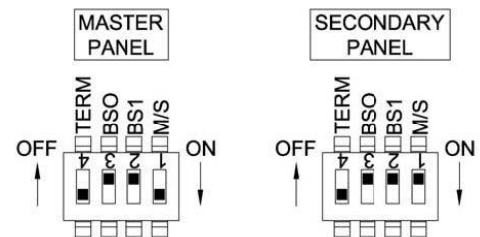
### Dip Switch Settings

#### 1. In Master Panels:

The number one processor board (the top board) will have the number 4 (TERM) and the number 1 (M/S) DIP switch ON. DIP switches 2 (BS1) and 3 (BSO) will need to be in the OFF position.

#### In Secondary Panels:

The number 4 (TERM) will be the only dip-switch ON. All other DIP switches will be in the OFF position.

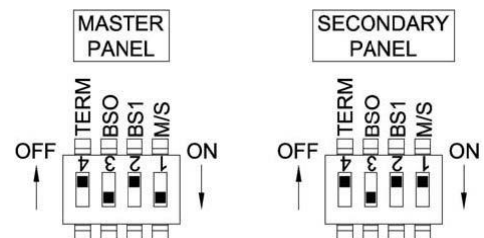


#### 2. In Master Panels:

The number two processor board (the middle board) will have the number 3 (BSO) and the number 1 (M/S) DIP switch ON. DIP switches 2 (BS1) and 4 (TERM) will need to be in the OFF position.

#### In Secondary Panels:

The number 3 (BSO) will be the only DIP switch ON. All other DIP switches will be in the OFF position.

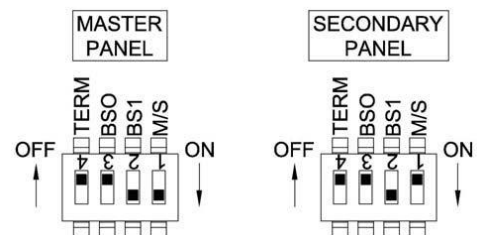


#### 3. In Master Panels:

The number three processor board (the bottom board) will have the number 2 (BS1) and the number 1 (M/S) DIP switch ON. DIP switches 3 (BSO) and 4 (TERM) will need to be in the OFF position.

#### In Secondary Panels:

The number 2 (BS1) will be the only DIP switch ON. All other DIP switches will be in the OFF position.



## Installing the Panel Master Controller

The CP04 Stand Alone Panels and CP08, CP16 and CP24 master panels have a Controller mounted on the face of the panel door. To replace the controller due to inoperability or damage follow the instructions below and see **Figure 5**.

**WARNING:** The low voltage control input power plug at the top of the motherboard must be DISCONNECTED prior to disconnecting or connecting any of the interior low voltage panel components. Making any connections with power on the motherboard will damage the panel and VOID Equipment WARRANTY.

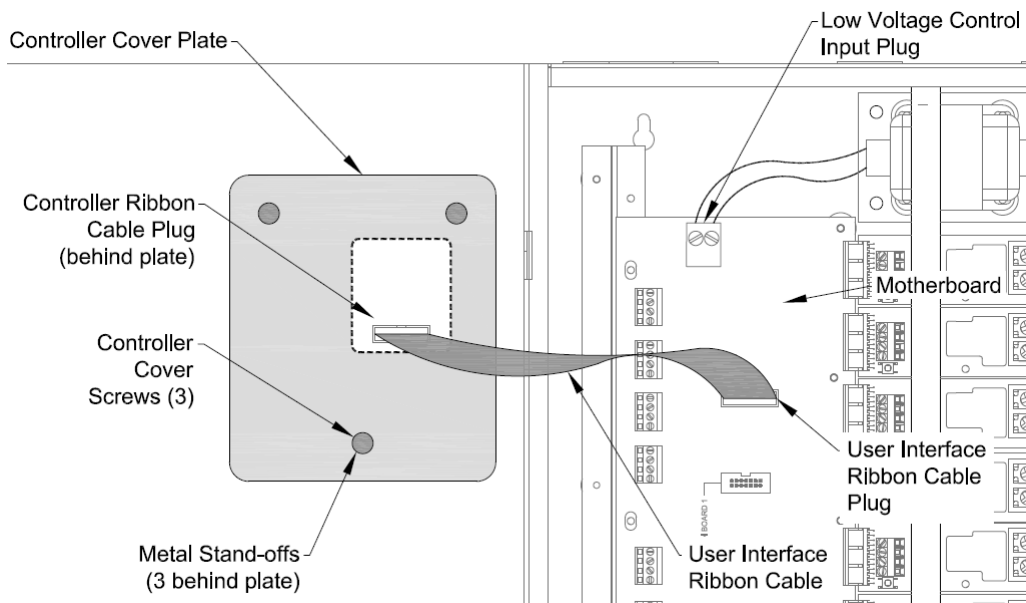
### Procedure for replacement of the Master Controller for 4 relay stand alone and 8, 16 and 24 relay master panels:

1. Disconnect the Low Voltage Control Input Power Plug located at the top of the motherboard.
2. Disconnect the User Interface Controller Ribbon Cable from the motherboard. NOTE the location of the PIN 1 red stripe on the cable for reconnection after the new controller is installed.
3. Remove the three screws and controller cover plate on the inside of the panel door behind the controller.
4. Disconnect the User Interface Controller Ribbon Cable from the controller. NOTE the location of the PIN 1 red stripe on the cable for reconnection after the new controller is installed.
5. Remove the three metal standoffs that hold the controller to the door. And remove the controller.
6. Keep and re-use Controller Ribbon Cable.
7. To install the new controller follow the instructions in reverse order. Be sure that all low voltage connections are in place before reconnecting power to the motherboard.

**NOTE:** Since the controller holds all panel programming, the panel will require re-programming once the new controller is operational. If the current program had been saved to an SD card the program can be restored by using the SAVE/RESTORE Program function in the System Tools menu.

**Figure 5 – Master Controller Replacement**

### CP04, 08, 16 and 24 Relay Panel Door Interior



## Troubleshooting

If the Master or Secondary panel relays, inputs, and outputs are not available in the user interface menus, or any of the functions present prior to parts replacement occurs, contact Hubbell Wiring Device-Kellems Technical Service at (800) 288-6000 for assistance and replacement as required. A complete Troubleshooting Guide is contained in the "Load Control Panel User Manual" provided as a downloadable document at [www.hubbell-wiring.com](http://www.hubbell-wiring.com).