

Hubbell Control Solutions

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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, MINIMUM 75°C INSULATION.**
- 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 approved materials and components (i.e. twist on connectors, electrical box, etc.) as appropriate for installation.
- **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

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

Replacement Part #	Description
CX04081227XFMR	CX 04/08 Panel Transformer, 120/208/240/277VAC Input, 24VAC Output
LTXXFMR	LX/CX 04/08 Panel Transformer, 120/277/347VAC Input, 24VAC Output
CX1624UNVPWR	CX 16/24 Panel Power Supply, 120-277VAC Universal Input, 24VAC Output
CX1624347PWR	CX 16/24 Panel Power Supply, 347-480VAC Universal Input, 24VAC Output
CX04MTHRBD	CX04 Panel Replacement Motherboard
CX08MTHRBD	CX08 Panel Replacement Motherboard
CX1624MTHBD	CX16/24 Panel Replacement Motherboard (for 8 Relays)
CXMSTRCONTR	CX Stand Alone/Master Panel Controller

INSTALLING TRANSFORMERS IN 4 AND 8 RELAY PANELS

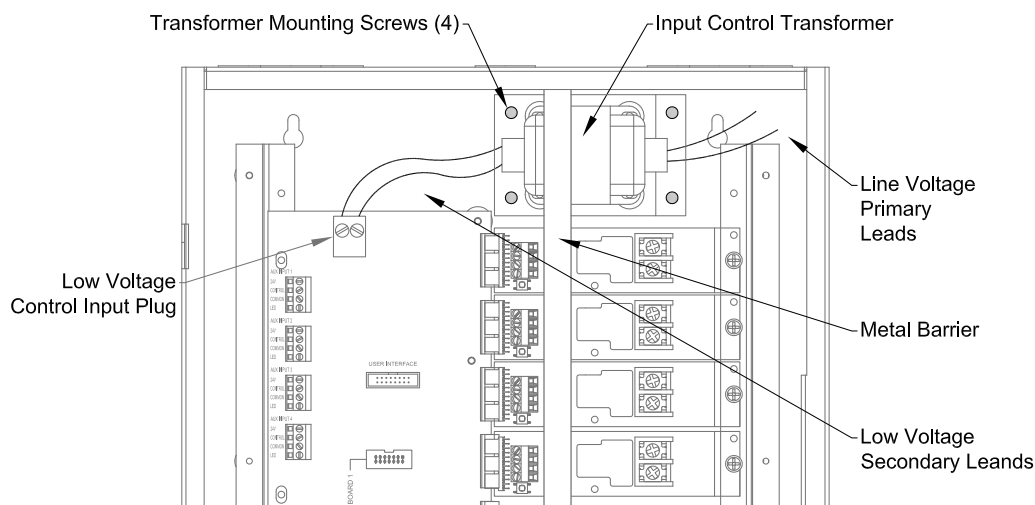
Caution: Prior to transformer replacement verify and lock-out panel feed circuit breaker in the OFF position. Failure to do so may result in personnel injury, damage to the panel, and void its warranty

Refer to Figure 1 below and install transformers in the CX 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 Panel Metal Barrier. Barrier is secured with two screws, one at the top and one at the bottom.
4. Disconnect Low Voltage Secondary Leads from the Low Voltage Control Input Plug located at the top of the Mother Board
5. Remove the four (4) transformer mounting screws.
6. Mount new 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 – CX04 and CX08 Panel Interior



INSTALLING POWER SUPPLIES IN 16 AND 24 RELAY PANELS

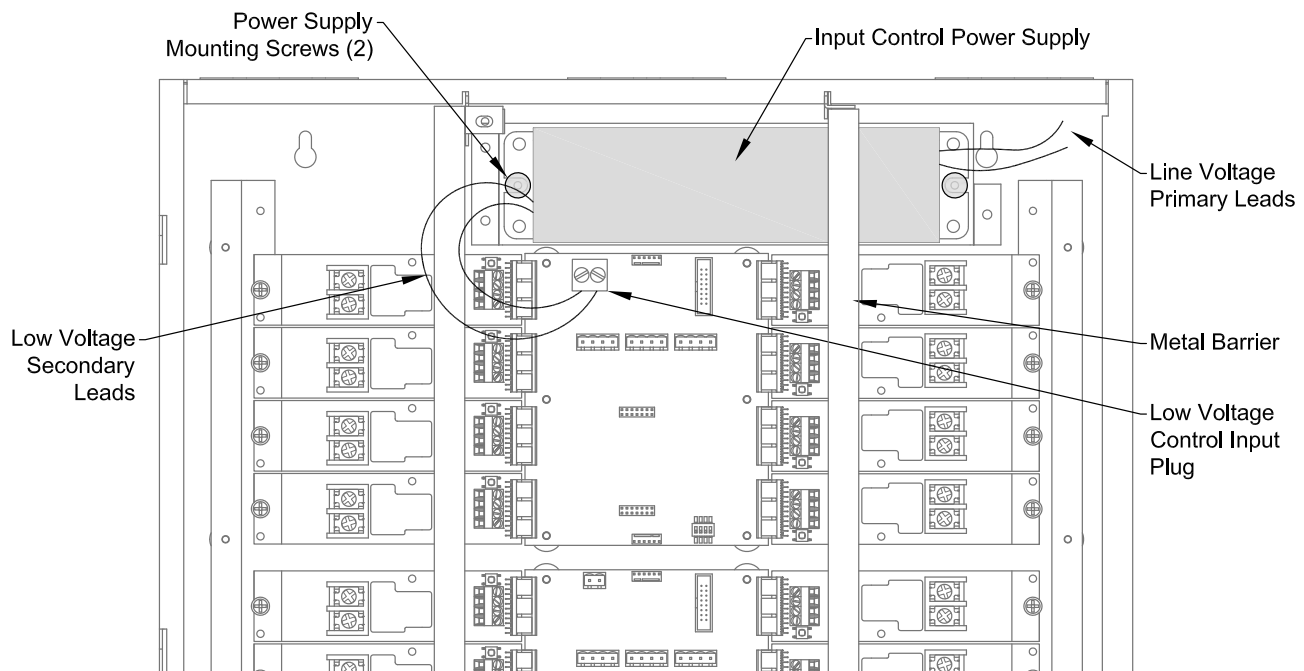
Caution: Prior to transformer replacement verify and lock-out panel feed circuit breaker in the OFF position. Failure to do so may result in personnel injury, damage to the panel, and void its warranty

Refer to Figure 2 below to install Power Supplies in the CX 16 and 24 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 power supply input leads. Replace wire splicing devices on incoming line voltage circuit wires for safety purposes.
3. Remove Panel Metal Barrier. Barrier is secured with two screws, one at the top and one at the bottom.
4. Disconnect Low Voltage Secondary Leads from the Low Voltage Control Input Plug located at the top of the Mother Board
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 Electrical Code (NEC) and/or local Electrical Codes

Figure 2 – CX16 and CX24 Panel Interior



INSTALLING MOTHERBOARDS

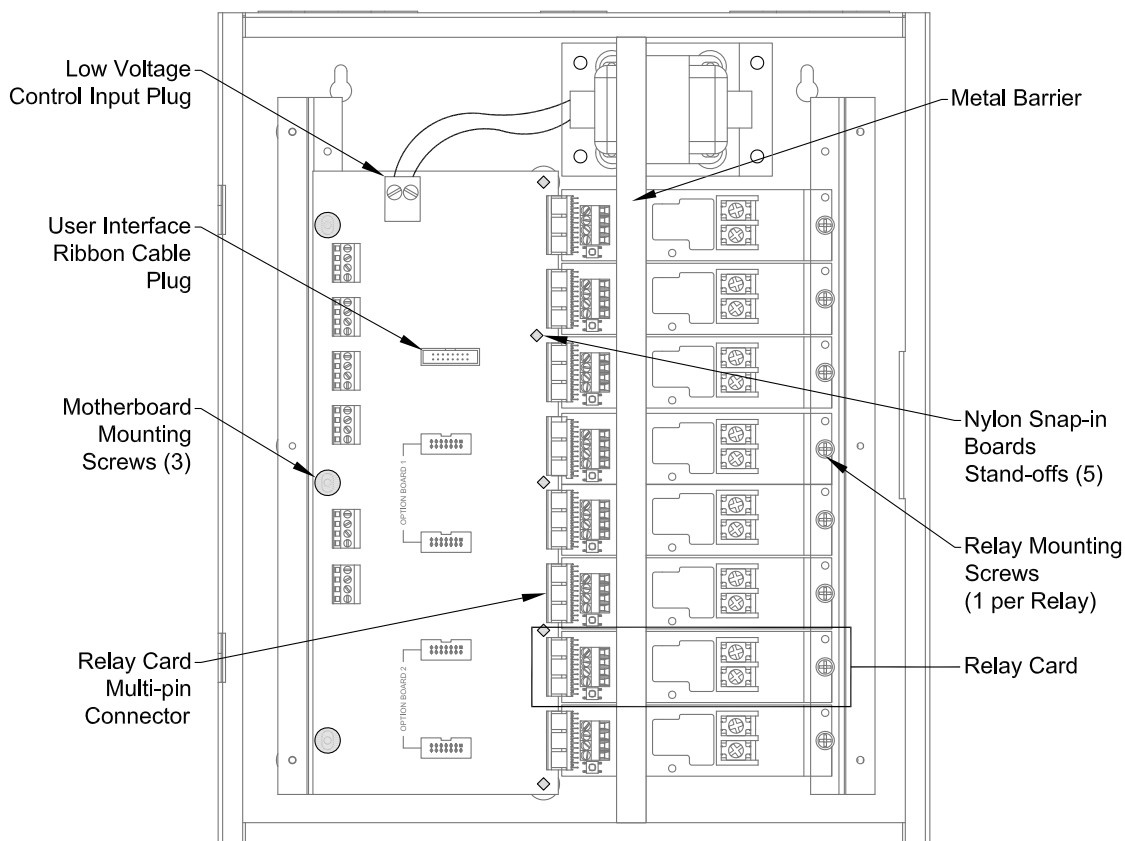
The CX Panel Series uses 3 styles of motherboards based on panel size. The CX04MTHRBD is used in all CX04 Series 4-Relay panels; The CX08MTHRBD is used in all CX08 Series panels and the CX1624MTHBD is used to control up to 8 relays in the CX16 and CX24 Series panels. The CX16 Series Panels require 2 motherboards and the CX24 Series Panels require 3 motherboards. Refer to Figure 3 and 4 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 lighting circuits that are fed through the relays in the panel. Once locked OFF use a multi-meter to verify that all input line voltage terminals on each relay are 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 – CX04 and CX08 Panels Motherboard Replacement

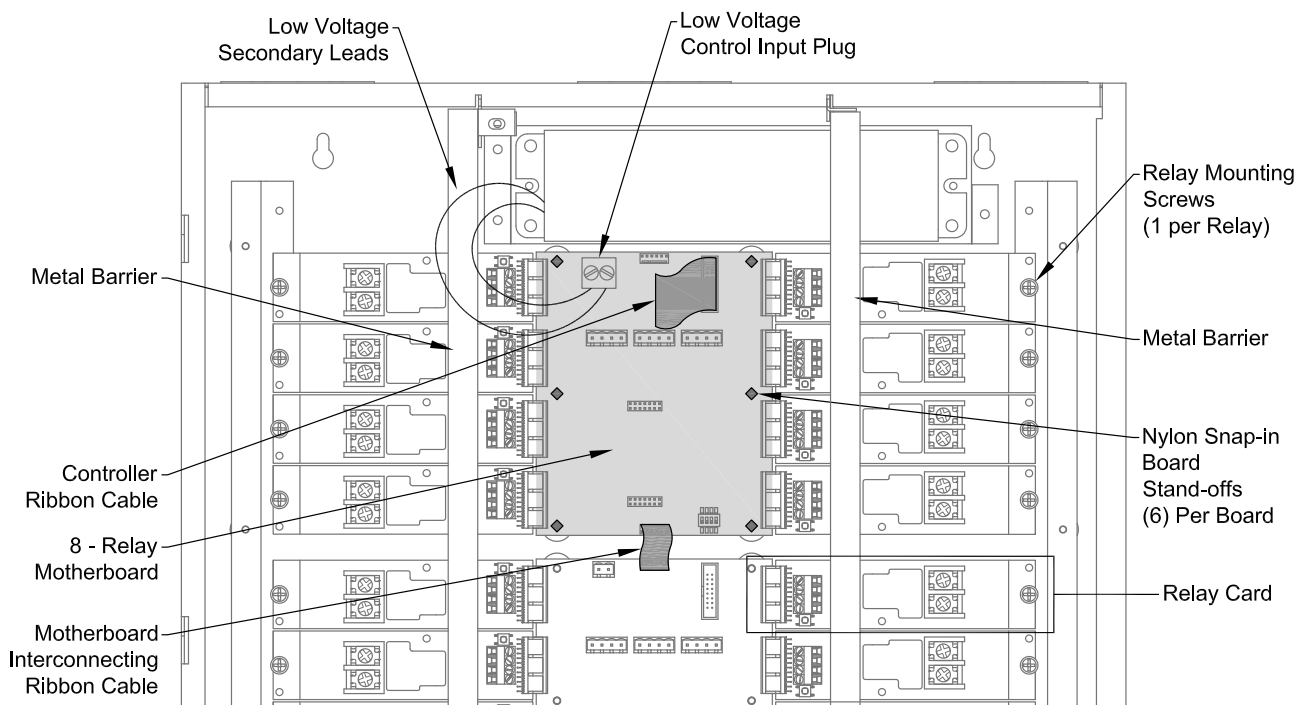


WARNING: The Low Voltage Control Input Power Plug at the top of the motherboard must be DISCONNECTED prior to disconnecting or connecting any of the interior low voltage panel components. Making any connections with power on the motherboard will damage the panel and VOID Equipment WARRANTY.

Procedure for replacement of Motherboard for 16 and 24 relay panels:

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 all input line voltage terminals on each relay are 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 – CX16 and CX24 Panels Motherboard Replacement

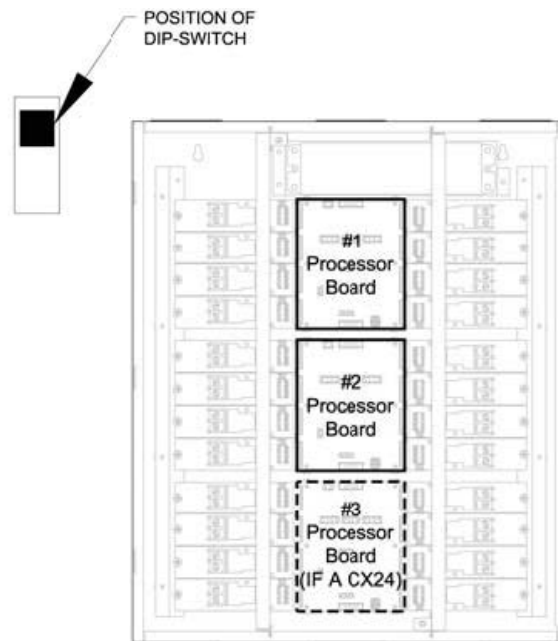


CX16 AND CX24 PROCESSOR BOARD TRANSFER

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, ie. 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



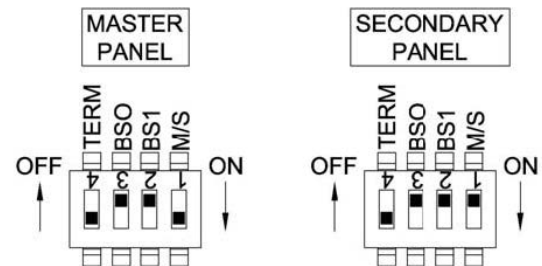
Dip Switch Settings

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.

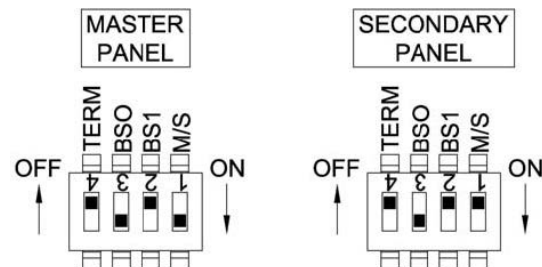


2. In Master Panels:

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.

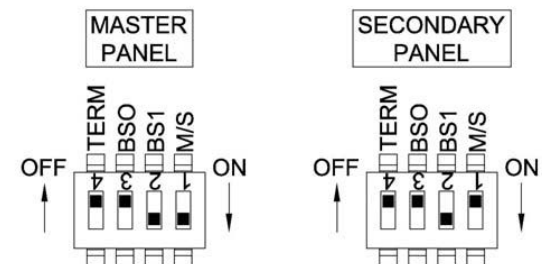


3. In Master Panels:

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 CX PANEL CONTROLLER

The CX04 Stand Alone Panels and CX08, CX16, and CX24 master panels have a CX Controller mounted on the face of the CX Panel Door. To replace the controller due to inoperability or damage follow the instructions below and see figure 5.

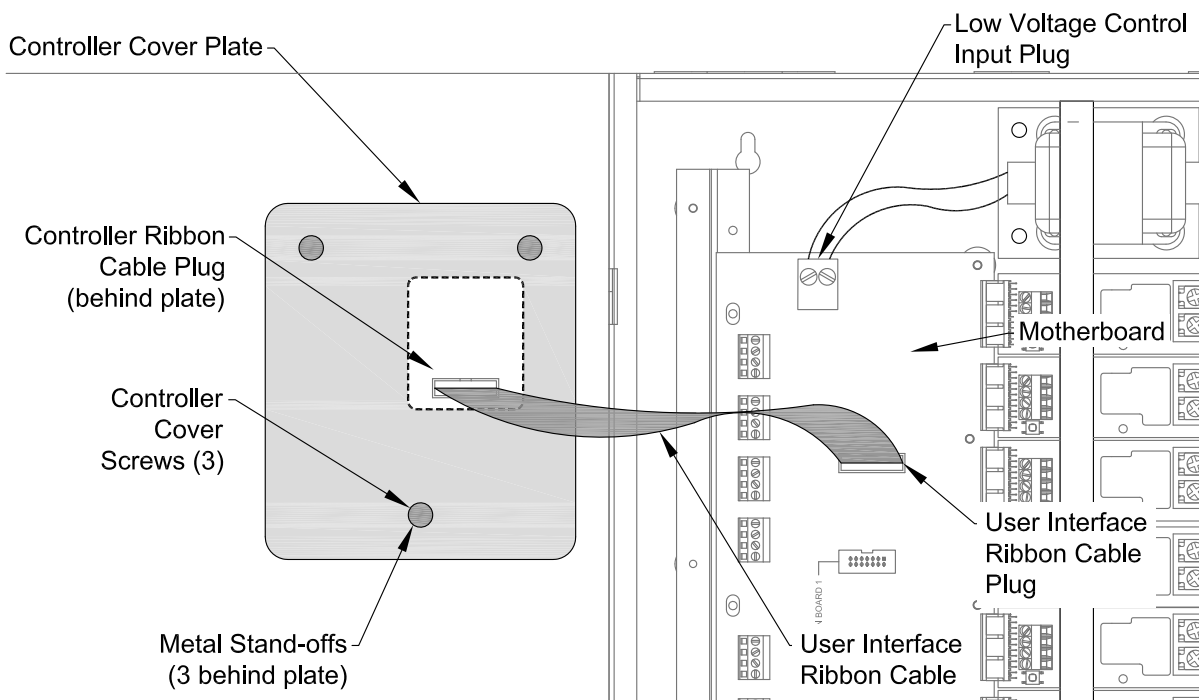
WARNING: The Low Voltage Control Input Power Plug at the top of the motherboard must be DISCONNECTED prior to disconnecting or connecting any of the interior low voltage panel components. Making any connections with power on the motherboard will damage the panel and VOID Equipment WARRANTY.

Procedure for replacement of CX Controller for 4 relay stand alone and 8, 16, or 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 – CX Panels Controller Replacement



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 Building Automation Technical Service at (888) 698-3242 for assistance as required. A complete Troubleshooting Guide is contained in the "CX Panel User Manual" provided as a downloadable document at www.hubbell-automation.com.