

Charles Modular Cabinet Conversion Kit

97-002496-A

General Description and Installation

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1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the 97-002496-A conversion kit for Charles Industries' Modular Cabinet multi-bay enclosures. Figure 1 shows the kit components. Mounting hardware is not shown.

-NOTE-

Hereafter, the Charles 97-002496-A conversion kit will be referred to as the "kit." The multi-bay MC Series Modular Cabinet will be referred to as the "MC."

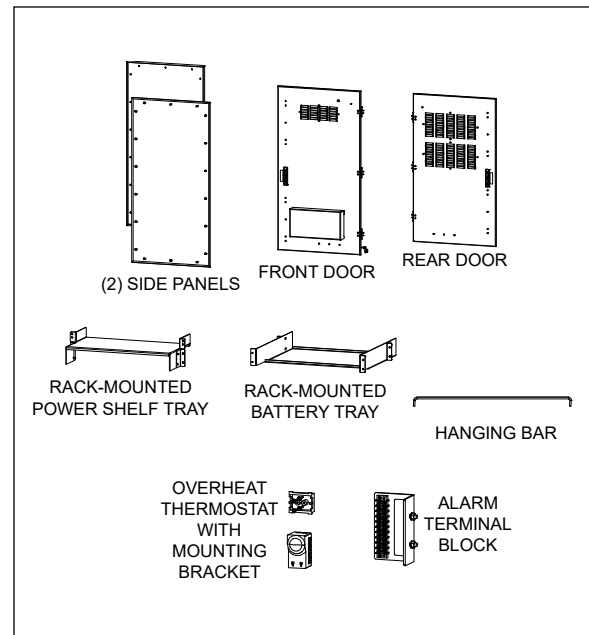


Figure 1 Kit Components

1.2. Product Purpose

The kit is designed to retrofit a four-bay MC enclosure into four single-bay cabinets. Three kits are needed to fully convert the four-bay cabinet. The kit includes new vented front and rear doors, with a direct air cooling system (DAC) on the new front door. The kit also includes a power shelf tray, a battery tray, side panels, a hanging installation bar for a customer supplied OLT, an overheat thermostat, an insulation gasket, and an alarm terminal block. Mounting hardware is included.

2. INSTALLATION

2.1. Inspecting the Product

The kit components are shrink wrapped and shipped upright on a pallet. Unpack the unit and dispose of the packaging material.

-INSPECTION NOTE-

Visually inspect the unit for damages prior to installation. If the equipment was damaged in transit, immediately report the extent of the damage to the transportation company.

2.2. Following and Using Safety Precautions

Read the following site and safety tips, cautions, and warnings, then proceed with the paragraphs that follow.

- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Do not place this product on weak or unstable surfaces which may allow the product to fall, resulting in potentially serious damage(s) to persons or product.
- Only authorized trained personnel shall install the kit.

2.3. Obtaining Tools and Equipment

Obtain the following recommended or needed items for installing the kit.

- Protective and/or insulated work gloves
- Safety glasses
- Tape measure
- Marking utensil
- Any exterior cable strain relief, per company practice
- Slotted, hex, and Phillips screwdrivers
- Torque wrench
- Saw for cutting aluminum
- Drill with 5/16” and 7/16” bits
- Level
- Can wrench (216 tool)

2.4. Mounting the Kit

Use three kits to convert the four-bay MC. Images in this document show the bays in the 4-bay MC-12CHFNFNENM1. Installing the kit on bays from other configurations is performed in the same manner.

2.4.1. Torque Requirements

Torque all hardware as shown below (unless otherwise noted). These values apply to SAE Grade 1 & 2 Low Carbon Steel, ASTM A307 Low Carbon Steel, and Stainless Steel Grade 18-8.

Thread Size	In-lbs	Ft-lbs
4-40	4±10%	
6-32	8±10%	
8-32	16±10%	
10-32	26±10%	
12-24	50±10%	
1/4-20/M6	60±5%	5±5%
5/16-18	125±5%	10.4±5%
3/8-16	180±5%	15.0±5%
1/2-13	500±2%	41.7±2%
5/8-11	1000±1%	83.3±1%

2.4.2. Prepare the Multi-Bay Cabinet for Conversion

Before installing the kit, disassemble the multi-bay MC into its individual bays. Then remove all internal components from Bays 2 through 4 to make room for the new trays. In this installation, the internal components in Bay 1 are left in place.

1. Locate the points on the lifting bars above the points where the Bays 1 and 2 and Bays 3 and 4 are joined (Figure 2). Make vertical cuts through the lifting bars. Also, remove the joining brackets between Bays 2 and 3. This ensures that once the bays are separated, all cabinets will have lifting bars. Take care not to cut through the bays' solar shields.
2. Remove the internal cross braces in between each bay by removing the nuts that hold the braces in place (Figure 3).

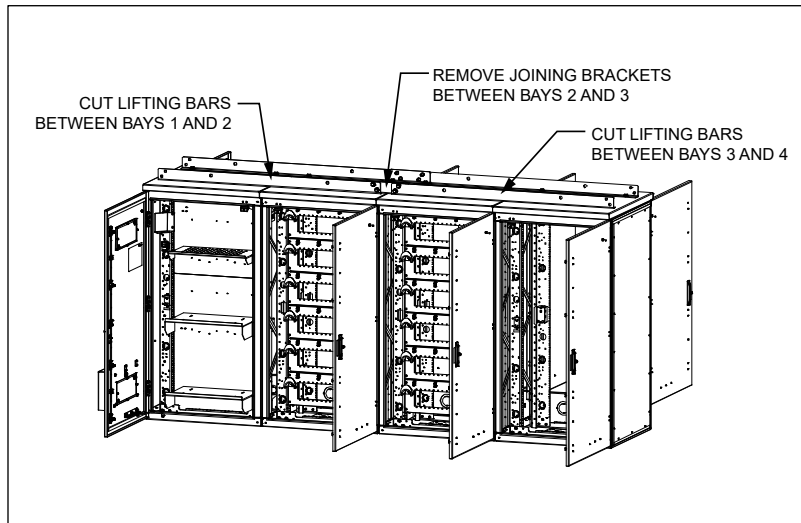


Figure 2 Cut Lifting Bars

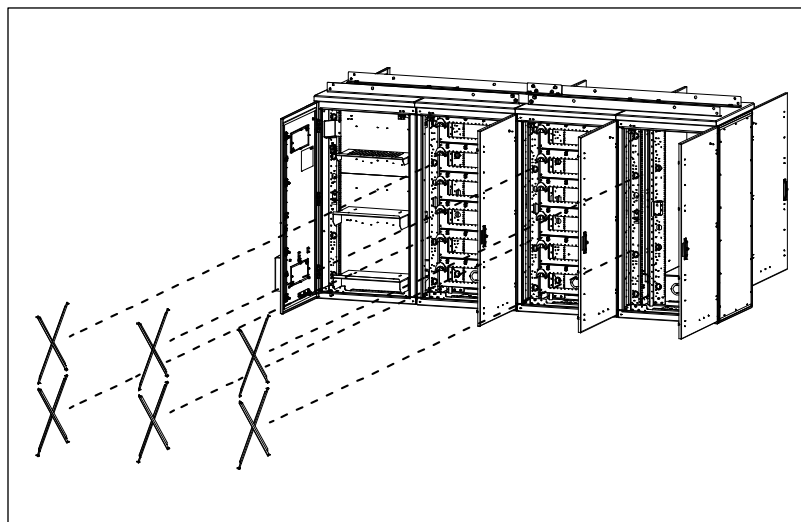


Figure 3 Remove Cross Braces

3. Locate the bolts that secure the bays together at the corners (Figure 4). Remove this hardware.
4. Separate the bays (Figure 5).
5. For Bays 2, 3, and 4, remove all the LGX panels from the front and rear rack rails (Figure 6).

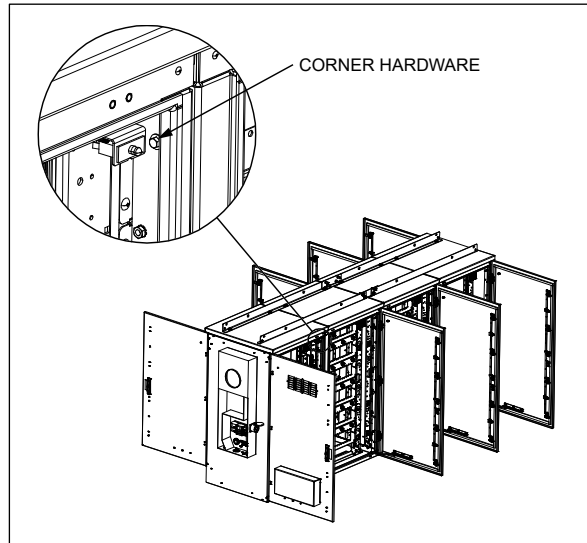


Figure 4 Remove Hardware at Bay Corners

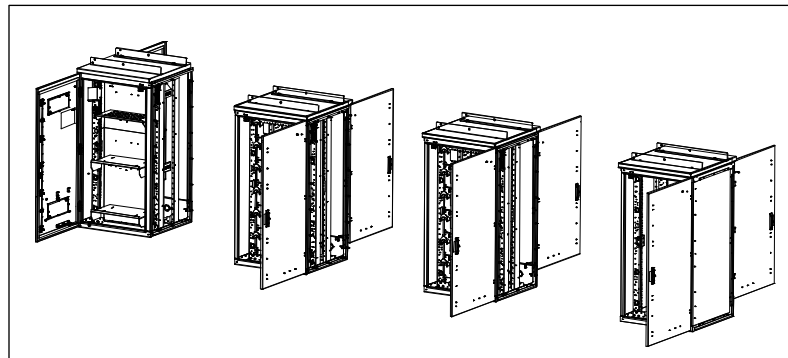


Figure 5 Separate Bays

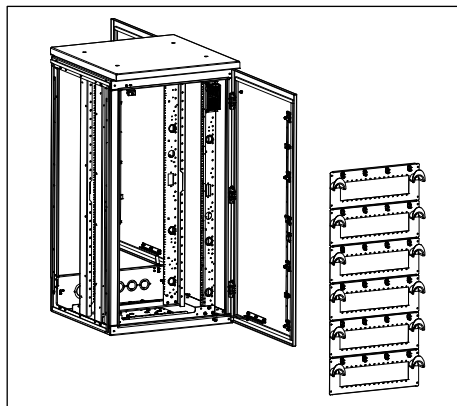


Figure 6 Remove Rack Components

6. Remove the doors.
 - a. Remove the nuts that hold the wind latches in place.
 - b. Disconnect the ground and alarm wires between the doors and the MC body.
 - c. Move the hinge pin upward (Figure 7, hinge pin shaded in gray). A hammer or mallet may be needed to move the pin. The red hinge clip will pop out when the pin is raised. Save the clip.
7. Remove the doors.

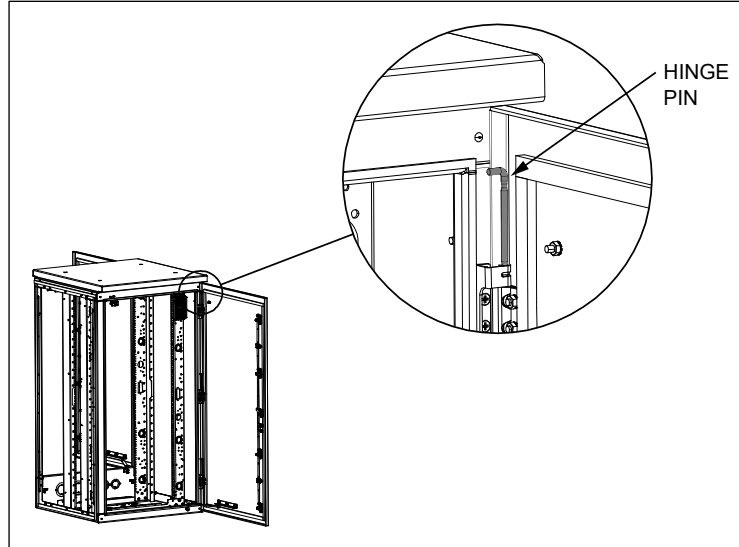


Figure 7 Remove Hinge Pins

2.4.3. Install the Kit on the MC Bay

1. Install the two trays on the front rack rails (Figure 8). Use the 12-24, 1/2" long screws included with the kit. Install the battery tray at RU position 1 using four screws. Install the power shelf tray at RU position 6 using eight screws.

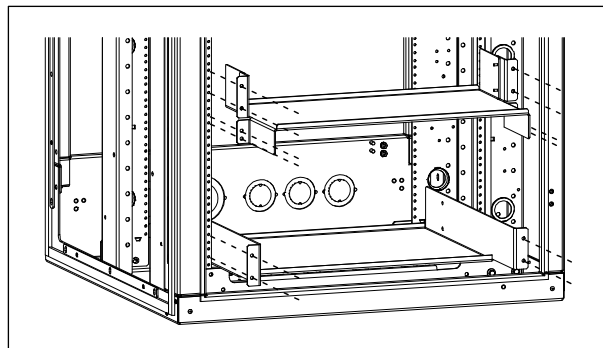


Figure 8 Install Trays

2. Install the alarm terminal block onto the rack rail using the studs on the terminal block bracket (Figure 9, shaded in gray). Secure the bracket from behind the rack rail using the 1/4-20 Keps nuts provided with the kit.

Note: The rack rail has multiple mounting holes available. If no available holes align with the studs on the alarm block bracket, then drill holes for the bracket. Use touch-up paint on the newly drilled holes to prevent corrosion.

3. Install the thermostat mounting bracket onto the rack rail using available holes (Figure 10, bracket shaded in gray). If no available holes align with the holes on the thermostat bracket, then drill holes for the bracket. Use touch-up paint on the newly drilled holes to prevent corrosion. Secure the bracket using the two 4-40 screws and nuts included with the kit.
4. Mount the thermostat onto the thermostat bracket by resting the upper hooks on the back of the thermostat onto the bracket, then press the bottom of the thermostat into place until it clicks.

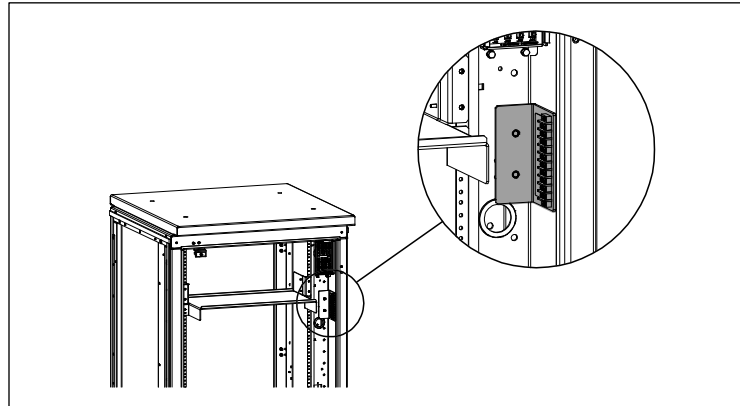


Figure 9 Install Alarm Block

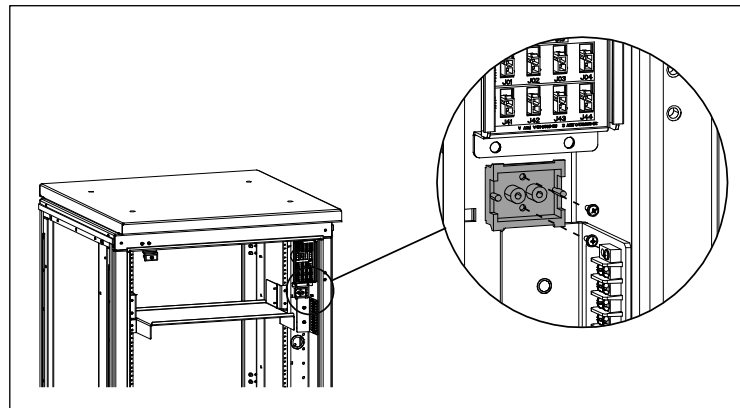


Figure 10 Install Thermostat Bracket

5. Install the side panels onto the sides of the bay. The side panels have studs on the inside that align with holes on the sides of the bay. Secure in place using the 1/4-20 nuts included with the kit (Figure 11).

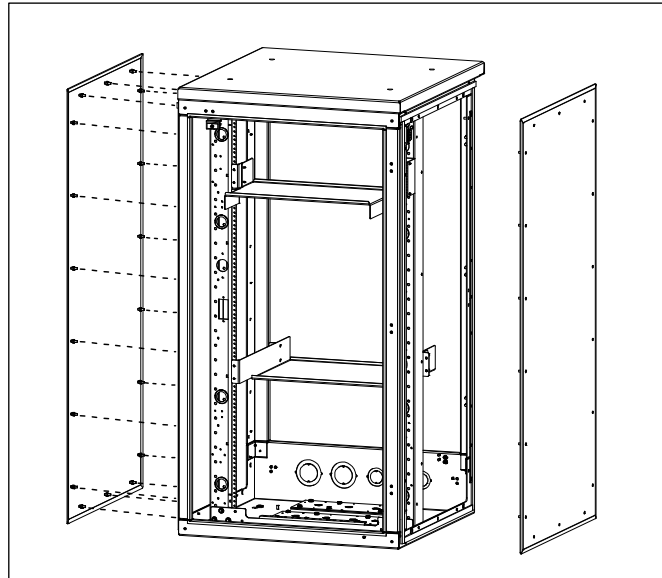


Figure 11 Install Side Panels

6. Install the front and rear doors (Figure 12).
 - a. Remove the hinge pins from the doors included with the kit. Remove the hinge base from the kit doors. The hinge bases left on the MC door frames will be re-used.
 - b. Lift the door into position so that the hinge plates on the door align with the hinge bases on the MC. Use at least two people to hold the door in position while a third person aligns the hinges.
 - c. Lower the hinge pins into the hinges. Secure the pin by placing the hinge clip into the lower position on the hinge. Charles recommends positioning the center pin first, then the top and bottom pins.
 - d. Secure the wind latch to the MC doorway using two 1/4-20 Keps nuts.
 - e. Connect the ground cable.

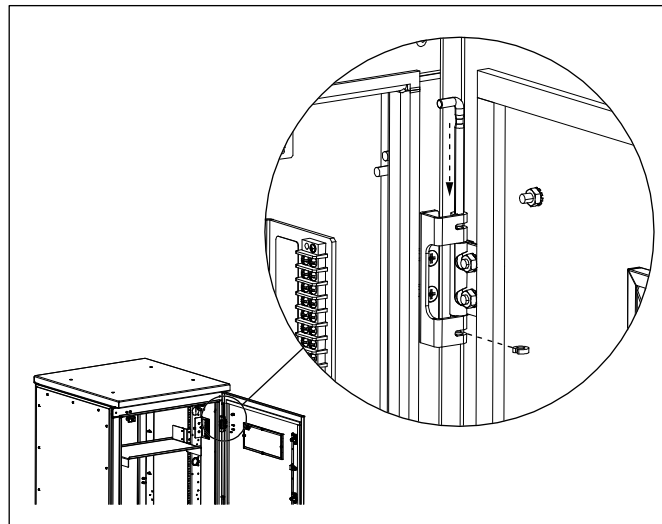


Figure 12 Install Doors

- The kit includes a hanging bar for mounting hanging equipment. Secure the bar to any desired position on the rear rack rails using the two mounting brackets (Figure 13). Make sure the bar sits across the top of the brackets, and that the brackets are horizontally level.

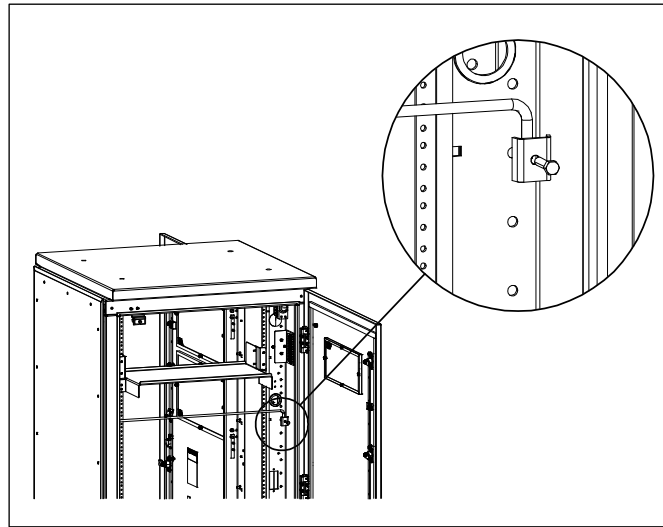


Figure 13 Install Hanging Bar

2.4.4. Wiring Connections

Figure 14 shows the wiring connections for the kit. The jumper and the wires for the fans and alarms are supplied with the kit.

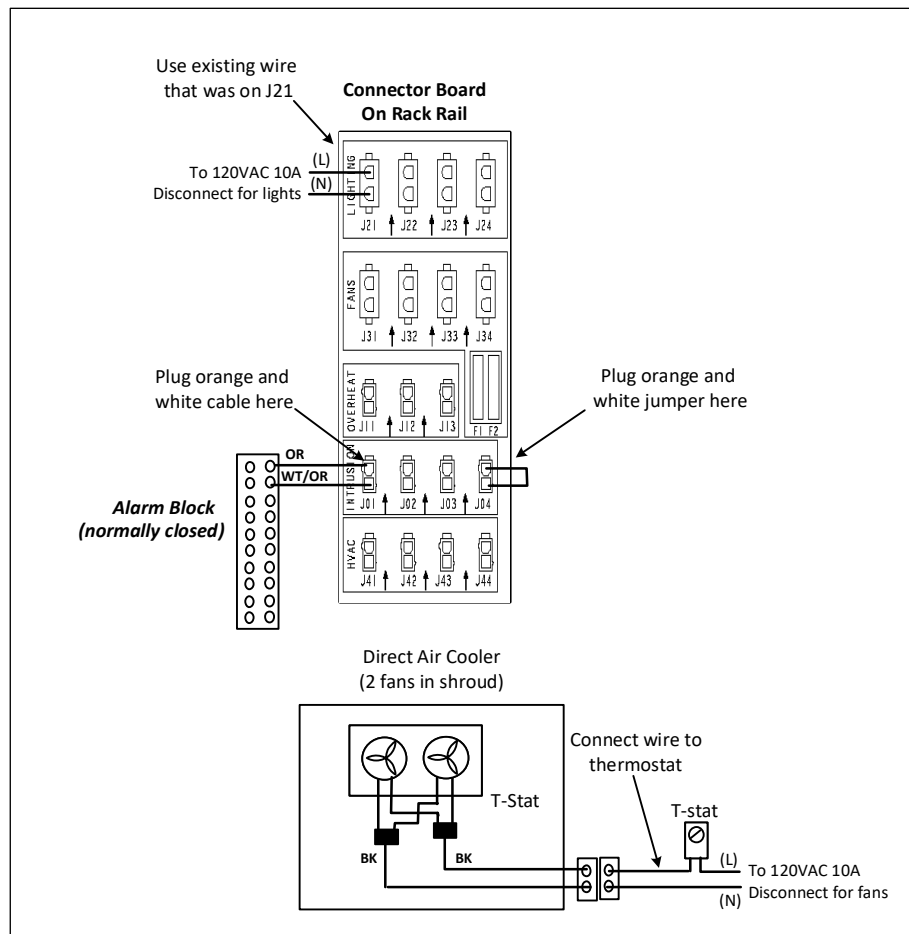


Figure 14 Kit Wiring

3. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500
techserv@charlesindustries.com (email)
<http://www.charlesindustries.com/techserv.htm>

4. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the kit product. The Charles warranty is limited to the operation of the kit hardware as described in this documentation and does not cover equipment that may be integrated by a third party. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300
mktserv@charlesindustries.com (email)
http://www.charlesindustries.com/main/telecom_sales_support.htm

5. SPECIFICATIONS

Physical	
Materials	Doors, side panels: 0.125" aluminum Rack mounted trays: steel
Color	Off-white
Thermal	
DAC Fans	106CFM, 110-230VAC, Orion OA109EC-UR-1WBIP68A (18-950500-0)
Thermostat	99-004234-0

Table 1 Kit Specifications