Charles Universal Broadband Enclosure
CUBE-MP24206U28
General Description and Installation

1. GENERAL INTRODUCTION 1
1.1. Document Purpose 1
1.2. Product Purpose 1
1.3. Product Mounting and Location 1
2. PRODUCT DESCRIPTION 1
3. INSTALLATION 3
3.1. Inspecting the Product 3
3.2. Following and Using Safety Precautions 3
3.3. Obtaining Tools and Equipment 3
3.4. Preparing the Installation Site 3
3.5. Lifting the CUBE 4
3.6. Mounting the CUBE 4
3.7. Verifying the Installation 4
4. PERIODIC MAINTENANCE 4
5. TECHNICAL ASSISTANCE AND REPAIR SERVICE 5
6. WARRANTY & CUSTOMER SERVICE 5
7. SPECIFICATIONS 5

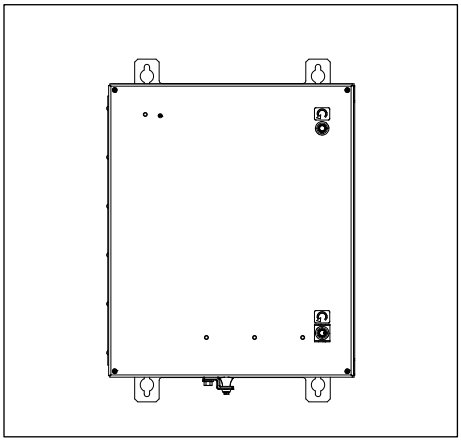

Figure 1 Front View of the CUBE

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the CUBE-MP24206U28 of the Charles Industries' Universal Broadband Enclosure (CUBE) product line. Figure 1 shows a closed front view of the enclosure.

-NOTE-
Hereafter, the Charles Universal Broadband Enclosure CUBE-MP24206U28 will be referred to as the "CUBE."

1.2. Product Purpose

This CUBE consists of a protective enclosure for an integrated system of electronic components and equipment that can serve fiber and copper interfaces.

1.3. Product Mounting and Location

This enclosure is suitable for outside plant-type (OSP) locations and those that may require NEC compliance. The outdoor, weather-resistant CUBE is to be mounted on a wall. The installer connects the power, fiber and copper connections. Detailed mounting and installation information is covered in Section 3.

2. PRODUCT DESCRIPTION

The CUBE includes six 3-pole fuse holders, with positions for 30A fuses. It also includes a 9-position terminal block.

Figure 2 shows the CUBE dimensions. Figure 3 shows the main components of the CUBE.

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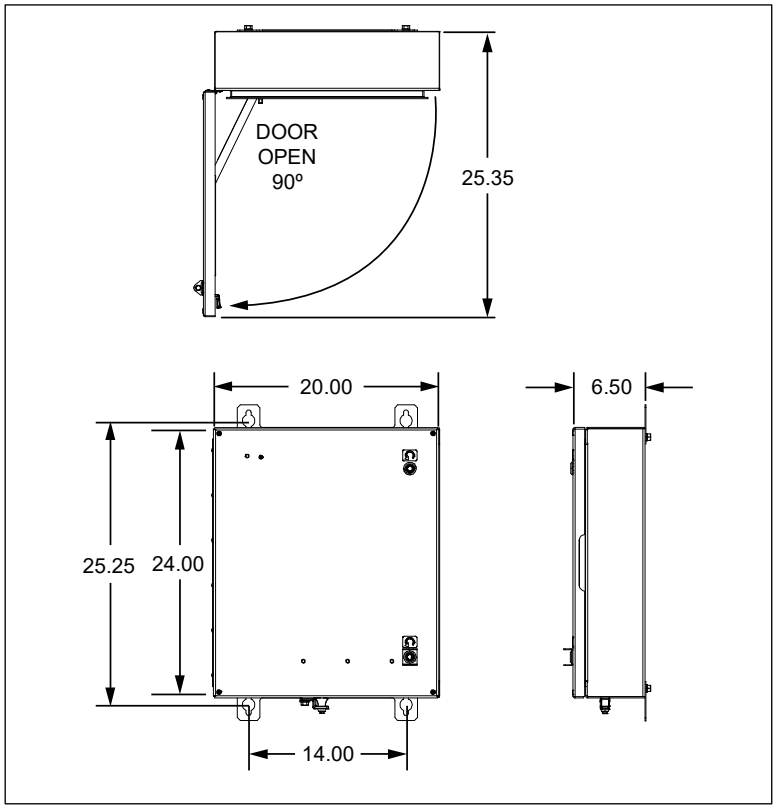

Figure 2 CUBE Dimensions (in inches)

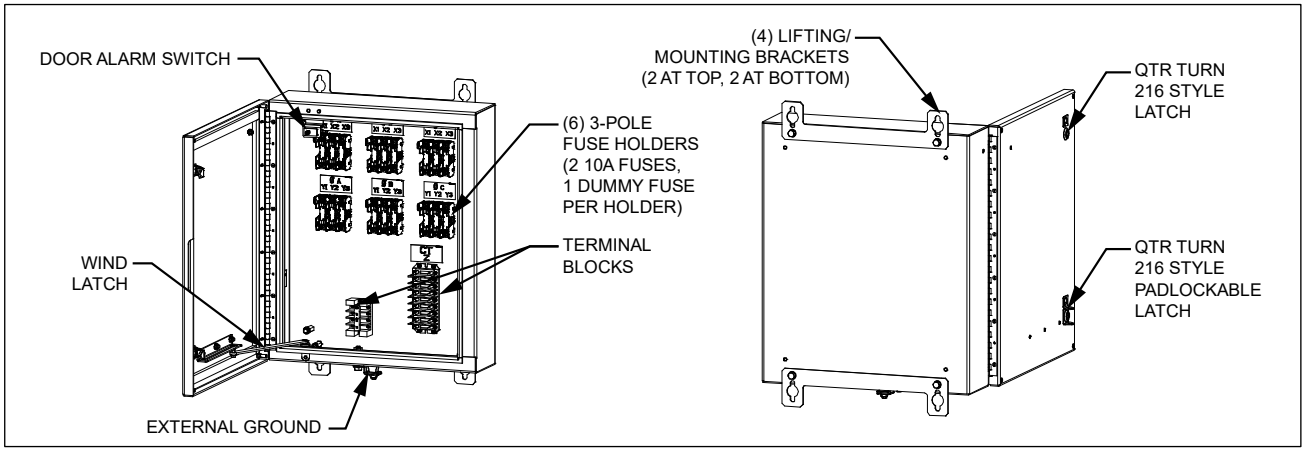

Figure 3 CUBE Components

3. INSTALLATION

3.1. Inspecting the Product

The CUBE is shipped in a carton. 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.

3.2. Following and Using Safety Precautions

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

- For installation, follow all National Electrical Codes (NEC) ANSI/NFPA 70, local, environmental, workplace, and company codes, safety procedures, and practices.
- Minimum spacing between the accessories and components and the housing for ITE equipment shall be maintained for safe operation of the equipment when installed in accordance with NEC ANSI/NFPA 70.
- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Always connect ground connections first.
- 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 CUBE.
- In windy conditions, be sure to engage the wind latch to secure the door in a stationary position.

3.3. Obtaining Tools and Equipment

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

- Sufficient length and quantities of fiber cable (or pigtails)
- Cable scoring, opening, and cutting tools for cable sheathing, shields, wrappings, strength members and buffer tubes
- Wire strippers
- Crimpers
- Cable, tube, wire, and fiber cleaning materials
- Protective and/or insulated work gloves
- Safety glasses
- Tape measure
- Marking utensil
- #6 ground wire or rod and earth ground materials
- Bond strap (optional, from cable bond clamp to bond post)
- Any exterior cable strain relief, per company practice
- Slotted, hex, and Phillips screwdrivers
- Torque wrench
- Assorted cable ties, clips, or fasteners (optional)
- Can wrench (216 type tool)
- Level

3.4. Preparing the Installation Site

Observe the following site preparation recommendations.

- Leave adequate horizontal and vertical space between multiple installations to allow for proper cable access, as well as enough room around the enclosure to open the door(s).
- The site must meet minimal personnel and equipment safety requirements.
- The distance from the cable entry point should be consistent with local installation practices.
- The wall must be able to support the weight of the CUBE.
- Run all fiber and copper facilities to the site.

3.5. Lifting the CUBE

See Table 1 for CUBE weight. Use local practice and appropriate lifting and transport equipment to move the CUBE into its mounting position.

3.5.1. Warnings and Specific Safety Precautions

⚠	**WARNING**	**Improper hoisting equipment and unsafe lifting procedures can result in serious injury or death**

Observe the following local safety procedures when performing the tasks in this section.

- Keep the CUBE away from any power lines.
- Keep bystanders away from the work operations at all times.
- All persons working with hoisting equipment shall wear standard safety gear according to local practices including safety helmets and steel-toed shoes.

3.6. Mounting the CUBE

Enclosures can be mounted on a wall. See Figure 2 for mounting dimensions. Charles recommends using a minimum SAE Grade 2, 3/8" diameter, corrosion-resistant bolts, washers and nuts for all mounting applications. Bolts need to be of sufficient length depending on the wall used. A minimum of 3/4" thick plywood or similar surface is required for wall mounting.

3.6.1. 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%

3.7. Verifying the Installation

Verify that earth ground and all grounding and bonding is complete and functional. After verifying that all installer connections are secure and complete, apply voltage.

4. PERIODIC MAINTENANCE

In the event that the enclosure must be opened in freezing conditions, use a narrow, pointed metallic object such as a screwdriver or chisel, along with a non-metallic device like a rubber mallet, to remove excessive ice buildup around the door and locking mechanism. A commercial aerosol de-icer spray can be used to free up locks and latches if needed. Use protective gloves and safety glasses when applying de-icer sprays.

5. 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

6. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the CUBE product. The Charles warranty is limited to the operation of the CUBE 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

7. SPECIFICATIONS

Physical	
Dimensions	24”Hx20”Wx7”D
Weight	Approx. 50 lbs. as shipped
Materials	0.125” aluminum
Color	Texture Gray
Electrical	
Fuse Holders	3-pole, 250V, Cooper Bussmann HM25030-3SR
Fuses	30A, 250VAC, 125VDC, Cooper Bussmann NON30
Bonding and Grounding	(1) external ground on bottom panel
Environmental	
Operating Temp. Range, Outside Enclosure	-40° to +115°F, -40° to 46°C
Operating Temp Range, Inside Enclosure	-40° to +149°F, -40° to 65°C
Humidity	0 to 95% (non-condensing)
Altitude	Up to 2,000 meters (6560 feet)
Kits and Replacement Parts	
Touch-up Paint	02-000629-0
216 Type Security Tool	07-002070-0
1/4 Turn Latch	39-000142-0
1/4 Turn Latch with Padlock Hasp	39-000311-0

Table 1 CUBE Specifications