

Charles Universal Broadband Enclosure

CUBE-RL21221AH8

General Description and Installation

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1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the CUBE-RL21221AH8 that is not covered in the RL212 family document LT-RL21221XXX. Figure 1 shows a closed front view of the enclosure.

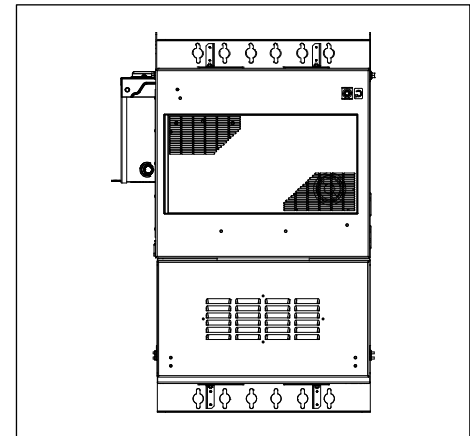


Figure 1 Front View of the CUBE

-NOTE-

Hereafter, the Charles Universal Broadband Enclosure CUBE-RL21621DB1 and CUBE-RL21621DB2 will be referred to as the "RL21621DB1," "RL21621DB2," or the "CUBE."

2. PRODUCT DESCRIPTION

The battery tray is designed to accommodate one 48VDC NiCd battery strings for up to 100Ah. The CUBE includes a -48VDC ABB Infinity D power shelf, AC breakers for the power shelf, and a DC surge suppressor. It also has a 750W heat exchanger and an 8-position load center.

Figure 2 shows the main components of the CUBE.

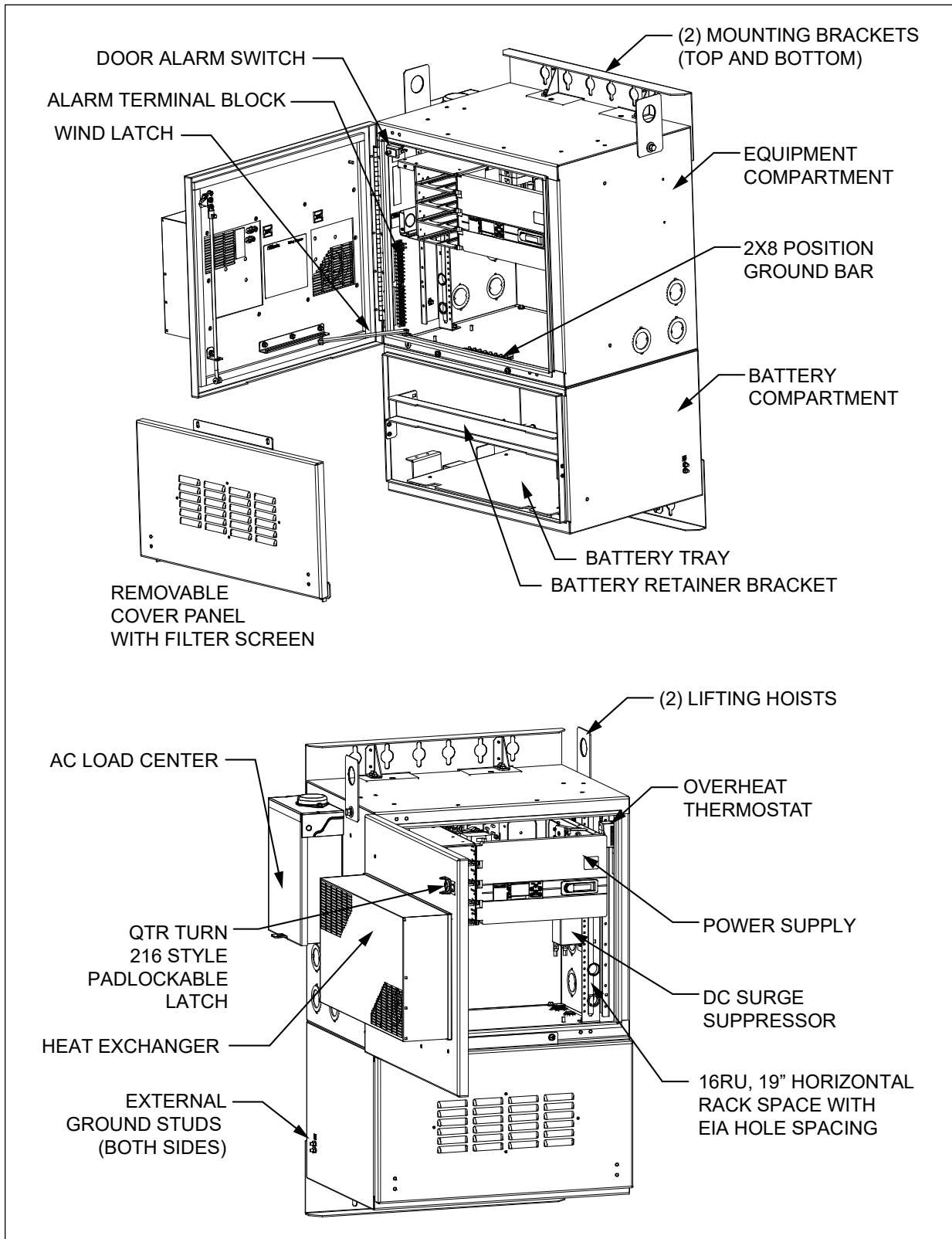


Figure 2 CUBE Components

3. CUBE WIRING AND EQUIPMENT

After the CUBE is properly mounted in the desired location, apply No-Ox where bus bar and other 2-hole lug connections will be made. Install ground and power connections. Always ground the equipment first, before making any other connections.

	WARNING	Perform all bonding and grounding connections prior to any electrical and communications connections.
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In order to prevent condensation prior to being placed in service, do not remove the desiccant until the CUBE is sealed and power is applied. A basic electrical diagram is shown in Figure 3.

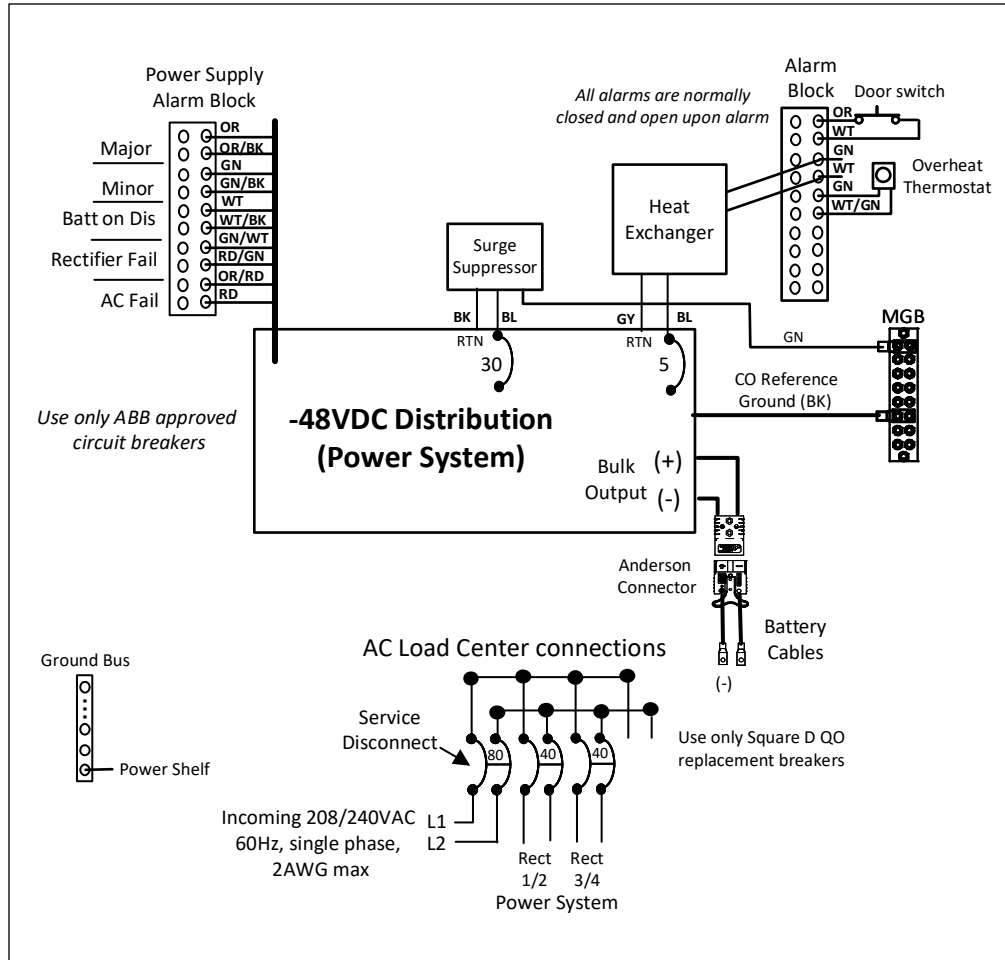


Figure 3 CUBE Electrical Diagram

3.1. AC Voltage Connection

The installer connects the utility’s incoming 208/240VAC (60Hz) to the 80A service disconnect in the AC load center. The two 40A breakers control the power to the rectifier slots in the GE power shelf.

3.2. Heat Exchanger Operation

The 750W DC powered heat exchanger in the equipment compartment has a fan speed controller and includes an internal and an external fan. Both fans’ speed increases with increasing internal cabinet temperature. Fans and heat exchanger settings are defined below, and are based off of the cabinet interior temperature. The maximum airflow amount supplied to the equipment by the heat exchanger is 147CFM.

Setting	Internal	External
Turn-on Setting (5°C Differential)	0°C	30°C
Medium Temp Setting	30°C	35°C
High Temp Setting	45°C	50°C
High Temp Alarm Setting	70°C	N/A
Low Temp Alarm Setting	-40°C	N/A

For more information, refer to the heat exchanger documentation found inside the CUBE.

-NOTE-

Changing the speed controller default factory set points can lead to system performance issues, such as equipment failures, increased power use, unnecessary alarms, noise, condensation build up, fan failure caused by excessive runtimes and vibration. Avoid placing items in front of the heat exchanger’s return and supply vents. Maintain a minimum of 6” clearance to enable proper air flow.

3.3. -48VDC Power System

The CUBE is equipped with a 200A, -48VDC ABB power system that has a controller, and an alarm cable. Rectifiers are customer supplied. DC distribution includes a 5A breaker in the top position for the heat exchanger and a 10A breaker in the second position for the 60kA surge suppressor. The battery cables are connected to the bulk output on the shelf.

Refer to the ABB documentation located inside the CUBE for information regarding the power supply operations and configuration.

Note: unlike most other members of this product family, this model has no GFCI.

3.4. Overheat Thermostat

The CUBE is equipped with an overheat (high temperature) alarm thermostat in the equipment compartment that provides a normally closed connection. The overheat alarm is factory set at 60°C and will open the connection when this temperature is exceeded.

-NOTE-

Changing the overheat (high-temp) thermostat default factory set points can lead to unnecessary alarms or system performance issues, such as equipment failures as a result of unreported alarms.

4. SPECIFICATIONS

4.1. Product Specifications

Physical	
Weight	Approx. 167 lbs. as shipped
Electrical	
-48VDC Power System	GE Infinity D CC109151288
Surge Suppressor	Raycap DC1-60
AC Load Center	8-position Square D QO816L100RB
Thermal	
Heat Exchanger	48VDC, 750W, Vikinor VHC-030-DC
Maximum Heat Dissipation	710W@19°C above ambient with solar

Table 1 CUBE Specifications