

Charles Universal Broadband Enclosure

CUBE-SS4B2288X1

General Description and Installation

1. GENERAL INTRODUCTION	1
1.1. Document Purpose	1
2. PRODUCT DESCRIPTION.....	1
3. CUBE WIRING AND EQUIPMENT	3
3.1. HVAC Operation	4
3.2. Overheat Thermostats	4
3.3. Alarm Terminal Panel.....	4
4. SPECIFICATIONS.....	4

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides additional information for the CUBE-SS4B2288X1 of the Charles Industries' Universal Broadband Enclosure (CUBE) product line that is not included in the family document, LT-SSXX228XXX. Figure 1 shows a closed front view of the enclosure.

-NOTE-

Hereafter, the Charles Universal Broadband Enclosure CUBE-SS4B2288X1 will be referred to as the "CUBE."

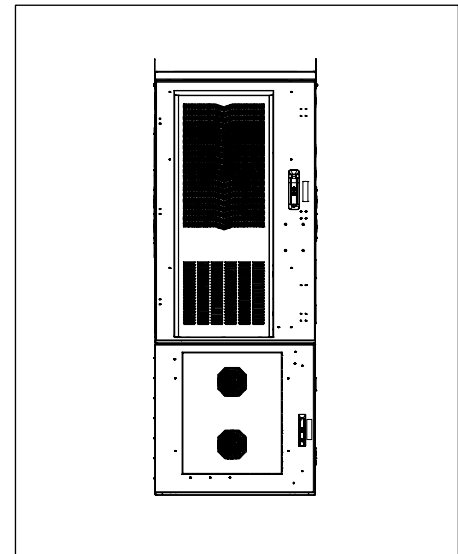


Figure 1 Front View of the CUBE

2. PRODUCT DESCRIPTION

The equipment compartment includes a 12000BTU DC powered HVAC system. The battery compartment supports two strings of -48VDC VRLA batteries (customer supplied), and it is equipped with a -48VDC thermoelectric cooling system (TEC). Figure 2 shows the components of the CUBE.

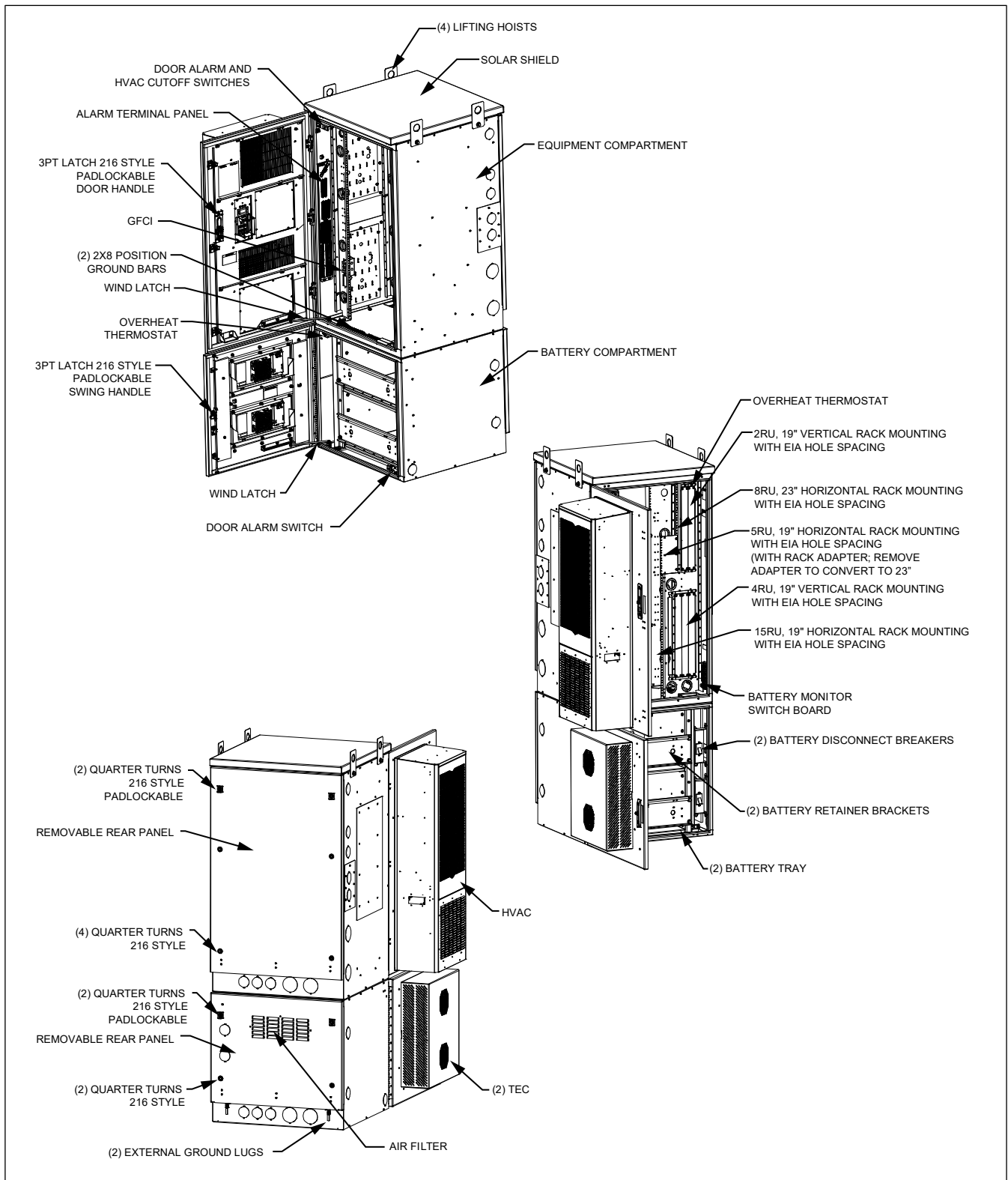


Figure 2 CUBE Components

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 power is applied to the CUBE. Refer to supplemental documents for electrical diagrams for each CUBE. A basic electrical diagram is shown in Figure 3.

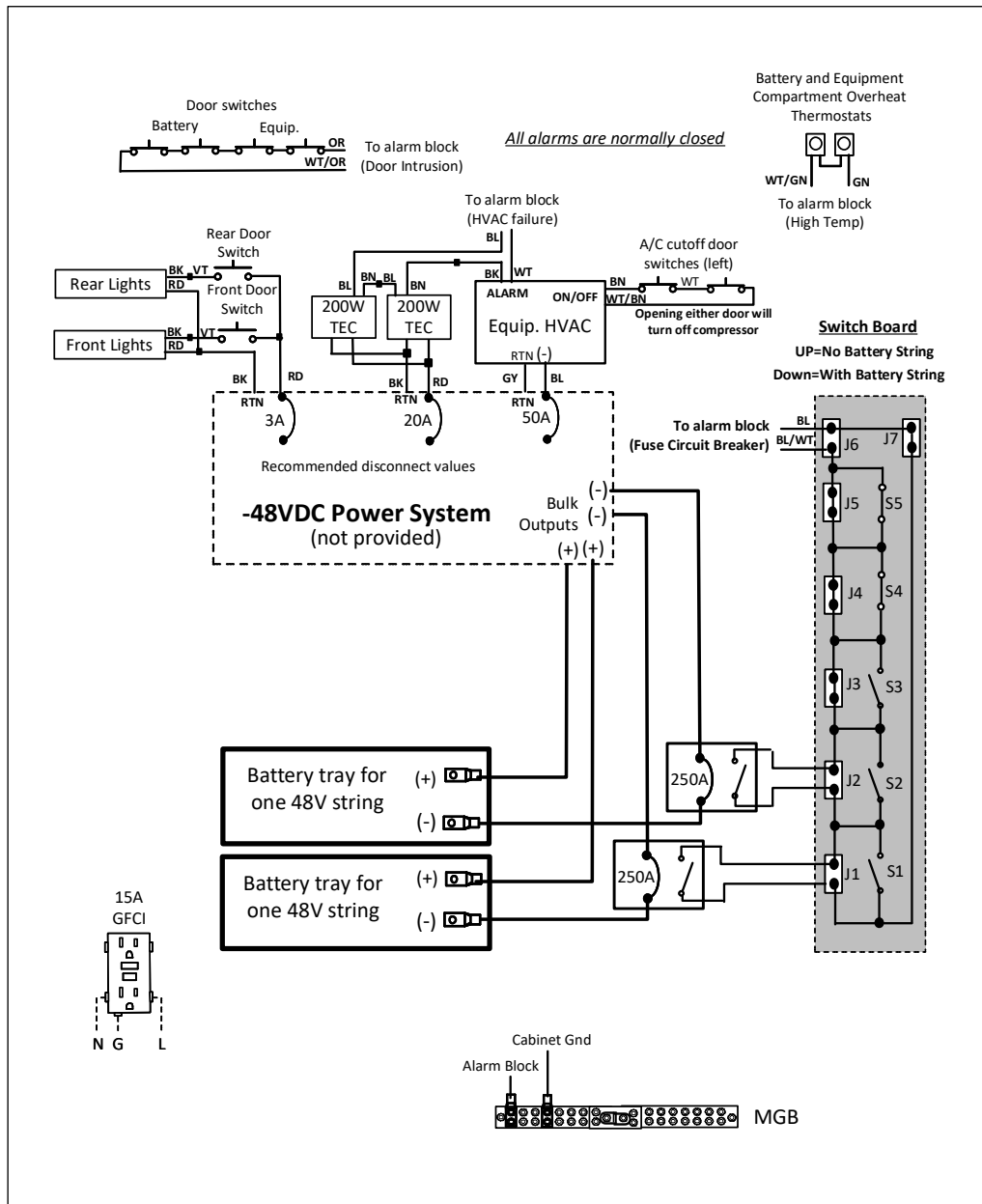


Figure 3 CUBE Electrical Diagram

3.1. HVAC Operation

The 12000BTU DC powered HVAC compressor and fans are PID (proportional integral derivative) controlled. The compressor turns on at 33°C at low speed and will increase speed as needed to maintain that temperature. The compressor turns off at 28°C. The internal fan is always on at low speed to continually circulate heat within the cabinet. The heating cycle turns on at 8°C and off at 13°C. The CUBE is equipped with a cutoff switch that shuts off the HVAC compressor when a door is opened to minimize condensation buildup on the coils. See the label on the HVAC for firmware information. For further information, refer to the HVAC documentation that ships with the CUBE.

-NOTE-

Changing the cooling or heating cycles' default factory set points can lead to system performance issues, such as equipment failures, increased power use, unnecessary alarms, noise, condensation build up, compressor or fan failure caused by excessive runtimes and vibration.

Avoid placing items in front of the HVAC's return and supply vents. Maintain a minimum of 2" clearance to enable proper air flow.

3.2. Overheat Thermostats

The CUBE is equipped with overheat (high temperature) alarm thermostats in the equipment and in the battery compartments. These overheat thermostats are wired in series and provide a normally closed connection. The equipment compartment overheat alarm is set for 50°C and the battery compartment overheat alarm is set for 35°C. Either alarm opens the connection if its temperature set point 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.

3.3. Alarm Terminal Panel

All alarm wiring is connected to the 32-position alarm panel. Refer to the family practice LT-SSxx228xxx for more information about the panel. The following table shows the macro alarm block wiring for this unit.

Alarm ID	Color	POS	Color	POS2
Door Intrusion	ORG	CC1	WHT/ORG	RET1
HVAC Failure	BLU	CC12	WHT	RET12
High Temp	GRN	CC13	WHT/GRN	RET13
Battery Breaker Alarm	BLU	CC23	BLU/WHT	RET23

4. SPECIFICATIONS

Physical	
Weight	Approx. 560 lbs. as shipped
Electrical	
Battery Disconnect Breakers	18-908176-0
Thermal	
Equipment Compartment HVAC	12000BTU, 48VDC, Vikinor 1830066
Cooling Capacity	12000BTU
Battery Compartment TEC	200W, 48VDC, Delta HET200PB-007

Table 1 CUBE Specifications (see family documentation for full list)