

Charles Universal Broadband Enclosure

CUBE-SS4B228PX2

General Description and Installation

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1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides additional information for the CUBE-SS4B228PX2 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 CUBE-SS4B228PX2 Charles Universal Broadband Enclosure will be referred to as the "CUBE."

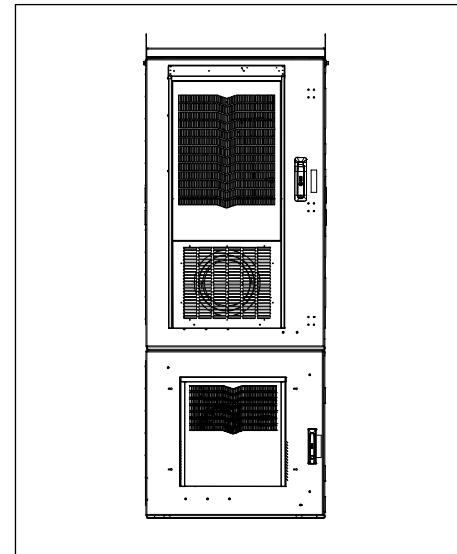


Figure 1 Front View of the CUBE

2. PRODUCT DESCRIPTION

The equipment compartment includes a 2250W 48VDC thermosiphon. The battery compartment supports two strings of -48VDC 200Ah VRLA batteries (customer supplied), and it is equipped with a -48VDC 1.7kBTU HVAC system. Figure 2 shows the components of the CUBE.

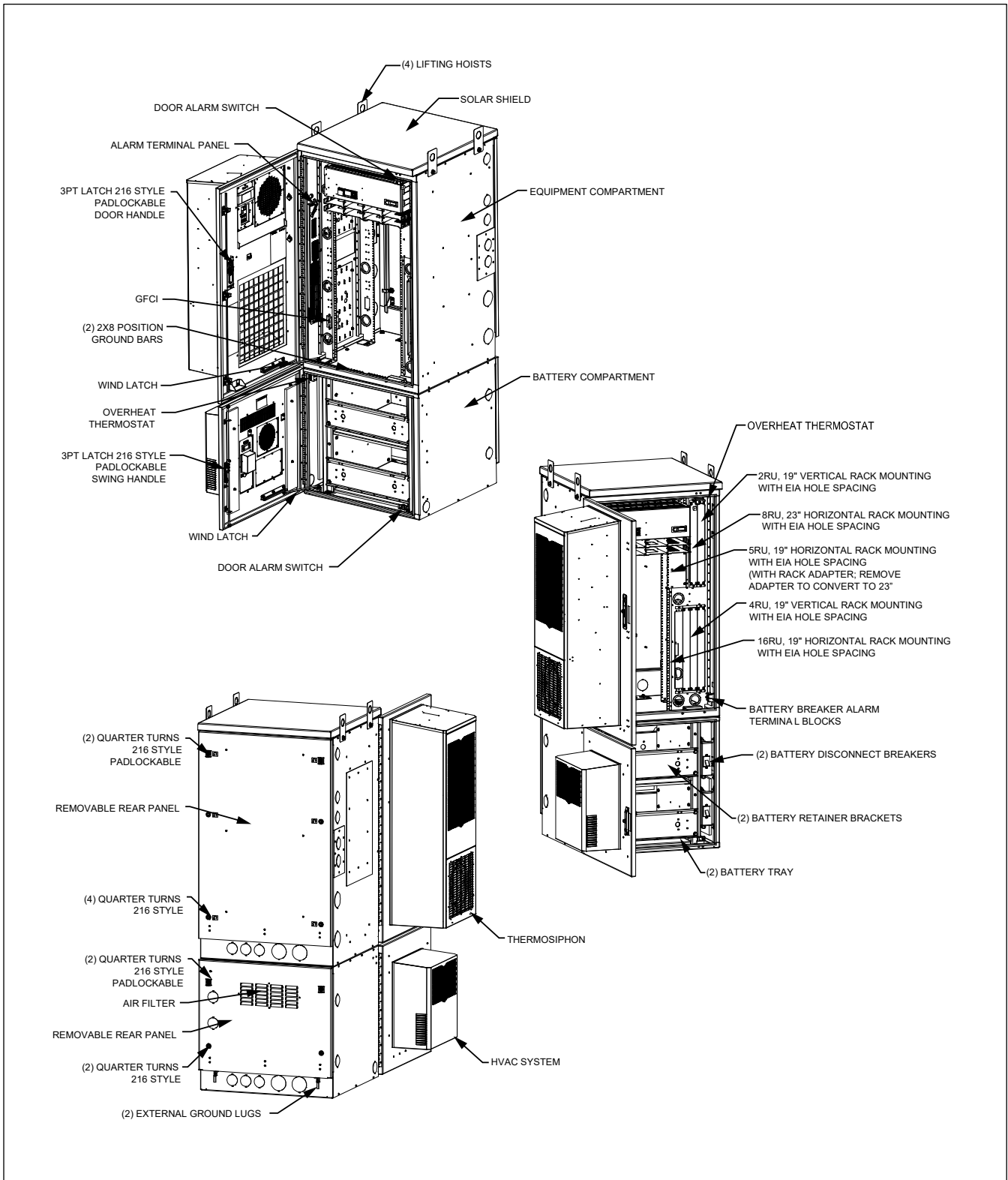


Figure 2 CUBE Components

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. A basic electrical diagram is shown in Figure 3.

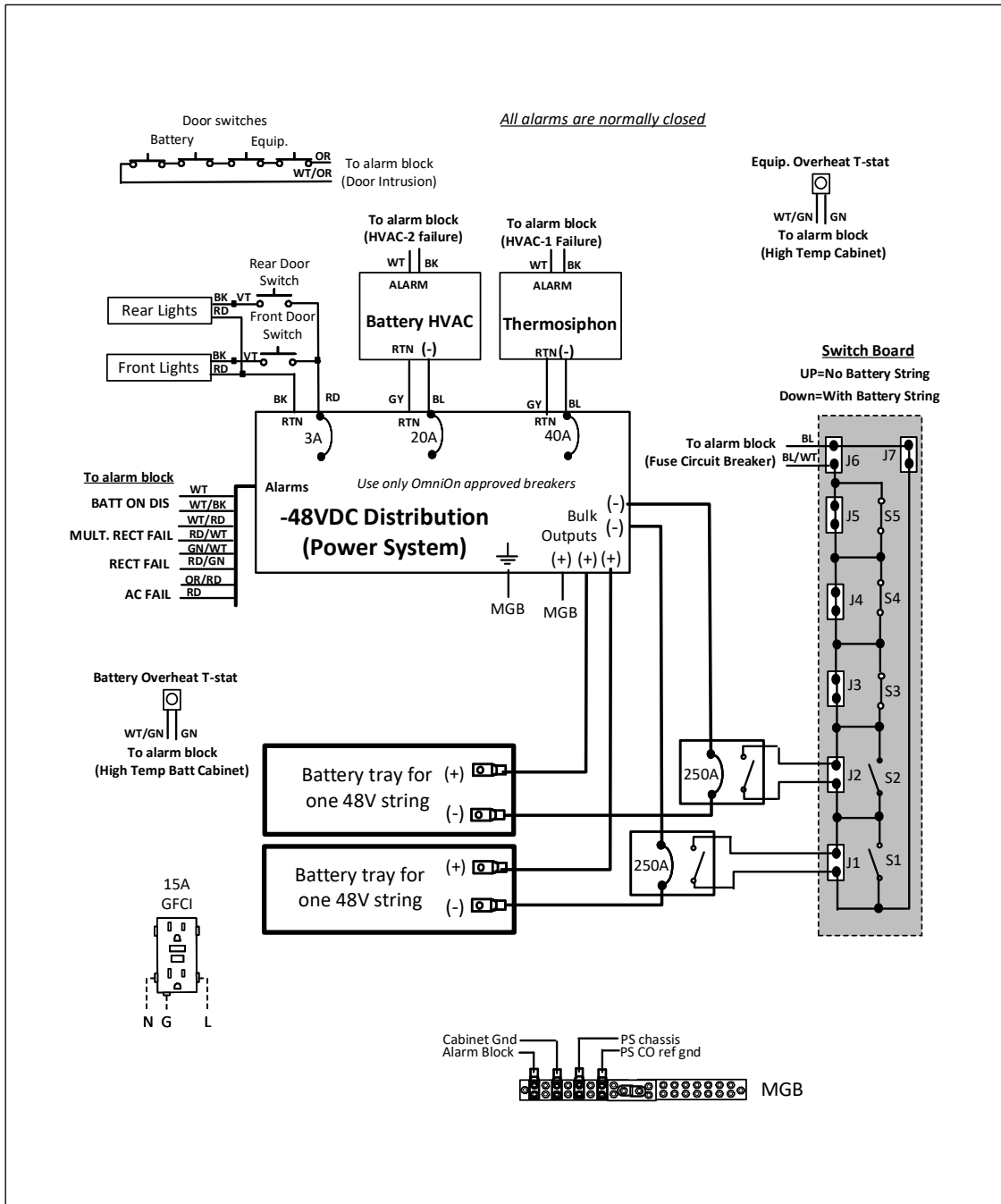


Figure 2 CUBE Electrical Diagram

3.1. Thermosiphon

The DC powered thermosiphon in the equipment compartment has a speed controller and includes an internal and an external fan. The fans' speed increases with increasing ambient temperature. Fan settings are defined below.

Fan Setting	Internal	External
Turn-on Setting	-40°C	35°C
Medium Temp Setting	35°C	35°C
High Temp Setting	45°C	45°C

For more information, refer to the thermosiphon 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 thermosiphon's return and supply vents. Maintain a minimum of 6" clearance to enable proper air flow.

3.2. HVAC Operation

The 1700BTU DC powered HVAC compressor and fans are PID (proportional integral derivative) controlled. The compressor turns on at 25°C at low speed and will increase speed as needed to maintain that temperature. The compressor turns off at 22°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. 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 6" clearance to enable proper air flow.

3.3. Alarm Terminal Panel

All alarm wiring is connected to the 40-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
Battery Discharge	WHT	CC1	WHT/BLK	RET1
Door Intrusion	ORG	CC3	WHT/ORG	RET3
High Temp – Eq. Comp.	GRN	CC8	WHT/GRN	RET8
Multiple Rectifier Failure	WHT/RED	CC10	RED/WHT	RET10
Rectifier Failure	GRN/WHT	CC11	RED/GRN	RET11
HVAC-1 Failure	BLK	CC24	WHT	RET24
HVAC-2 Failure	BLK	CC25	WHT	RET25
AC Power Failure	ORG/RED	CC27	ORG	RET27
High Temp – Batt. Comp.	GRN	CC33	WHT/GRN	RET33
Battery Breaker Alarm	BLU	CC34	BLU/WHT	RET34

4. SPECIFICATIONS

Physical	
Weight	Approx. 775 lbs. as shipped
Electrical	
Battery Breakers	18-908176-0
Thermal	
Thermosiphon	2250W, 48VDC, Vikinor VHT-225-DC
Maximum Heat Dissipation	2130W@19°C above ambient with solar
HVAC System	48VDC, Vikinor VAK-500-DC
Cooling Capacity	1700BTU

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