

Charles Universal Broadband Enclosure

CUBE-PM63922KE3

General Description and Installation

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1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides additional information for the CUBE-PM63922KE3 of the Charles Industries' Universal Broadband Enclosure (CUBE) product line that is not included in the family document, LT-PM63922xxx. Figure 1 shows a closed front view of the enclosure.

-NOTE-

Hereafter, the Charles Universal Broadband Enclosure CUBE-PM63922KE3 will be referred to as the "CUBE."

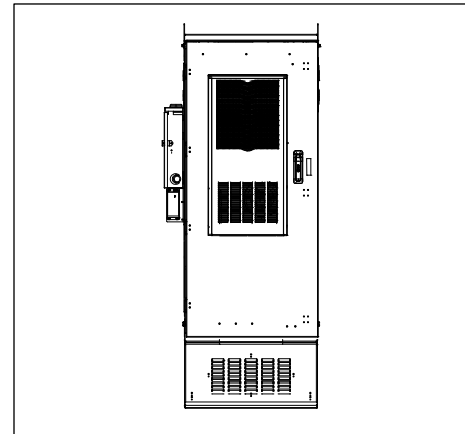


Figure 1 Front View of the CUBE

2. PRODUCT DESCRIPTION

The CUBE has two compartments. The equipment compartment includes a 5000BTU DC powered HVAC system, a 12-position AC load center, and 39RU of 19" horizontal rack spacing. The battery compartment supports one string of customer supplied batteries.

Figure 2 shows the main components of the CUBE.

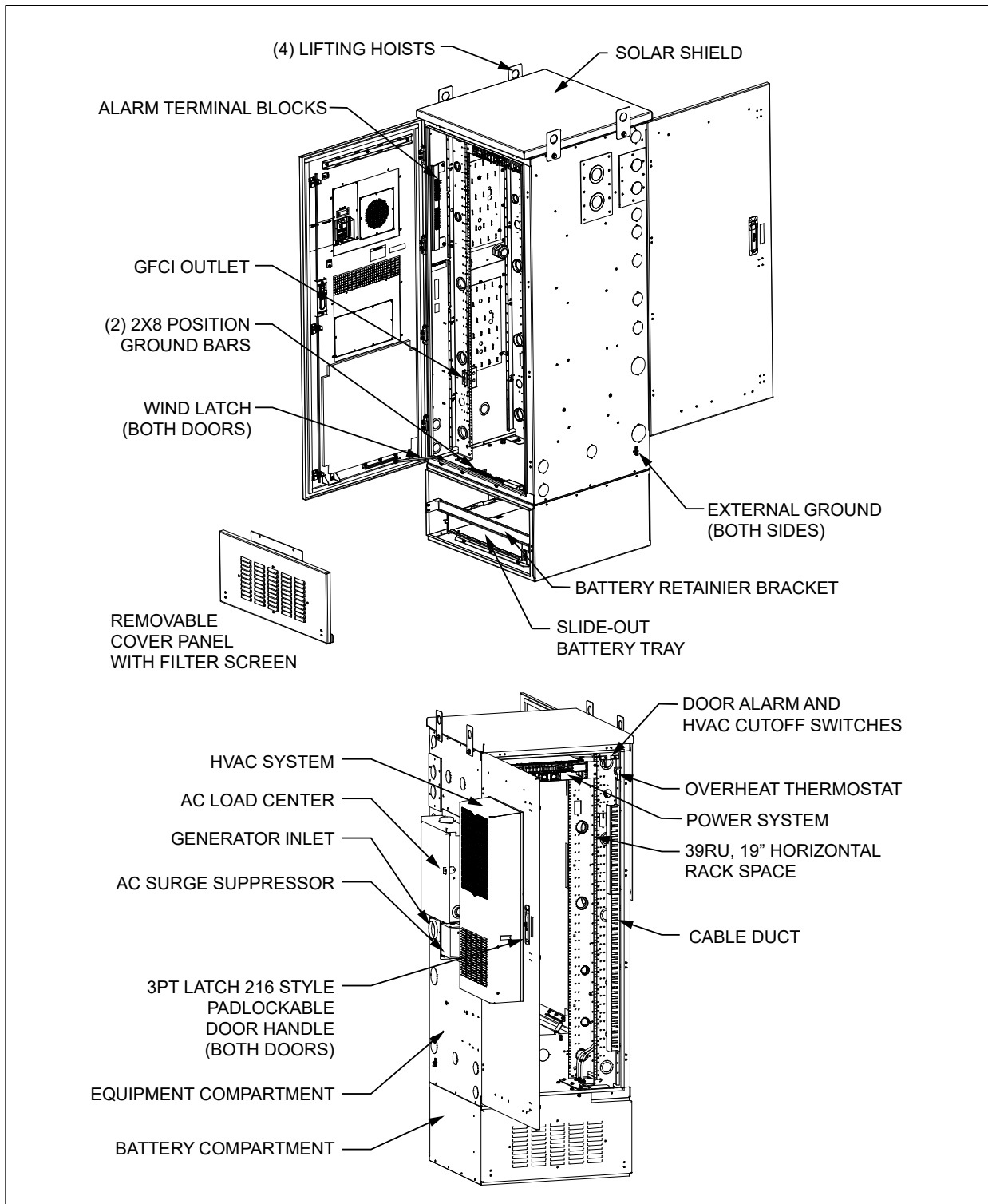


Figure 2 CUBE Components

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.

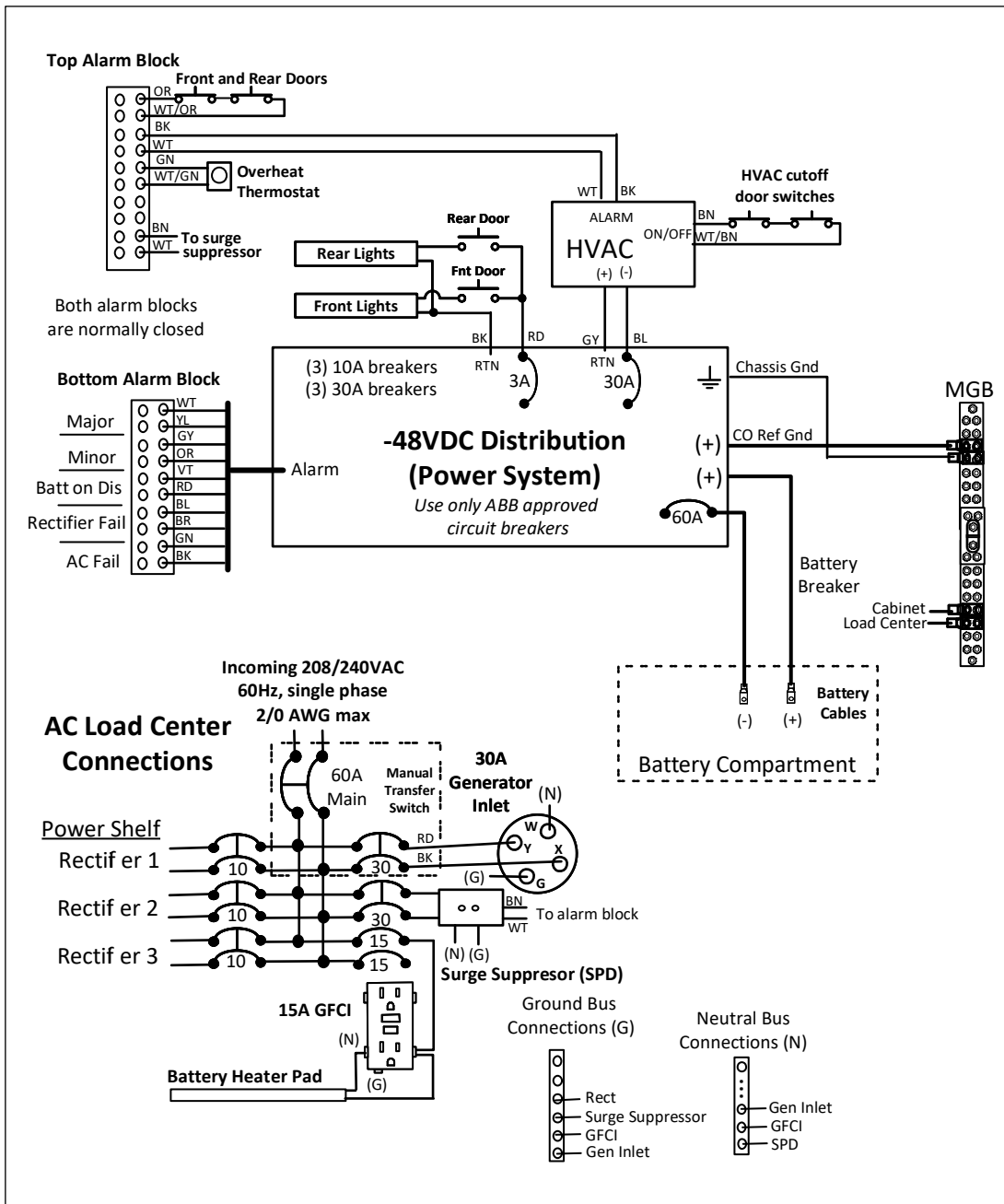


Figure 3 Electrical Diagram

3.1. AC Voltage Connection

The incoming AC voltage is a single phase 208/240V at 60Hz and is connected to the 125A main circuit breaker in the AC load center. The maximum wire size is 250 kcmil. The installer connects the two hot (line) wires to the breaker, the neutral wire to the neutral bus and the ground wire to the ground bus. Use wire that is sized per National Electrical Code NFPA70 table 310.16.

The CUBE is normally powered from the 208/240VAC from the utility. In the event of a power outage, an external 100A generator can be connected to the generator inlet. The generator inlet uses the 2-pole 100A breaker in the load center. When power from the main utility is off, slide the main breaker to the “OFF” position. If necessary, reposition the manual transfer switch in the load center into the generator position, and turn on the generator breaker. When power from the main utility is restored, slide the generator breaker into the “OFF” position, slide the manual transfer switch back to the normal position, and turn the main breaker back on.

3.2. HVAC Operation

The 5100BTU (5kBTU) 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/decrease speed as needed to maintain this temperature. The compressor turns off when the internal temperature reaches 28°C. The internal fan is always on at low speed (30%) to continually circulate heat within the cabinet. The external fan turns on/off with the compressor. Both fans’ speed increase as needed with increasing internal cabinet temperature. In addition, the HVAC includes a built-in 1000W heater for cold temperature operation. HVAC settings for the compressor, fans, heater, and temperature alarms are defined below and are based off the cabinet’s interior temperature. 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.

The maximum airflow amount supplied to the equipment by the HVAC is 306CFM. 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.

HVAC Compressor/Fans/Heater/Alarms Setting	Internal	External
Compressor Turn-on Setting	33°C	N/A
Compressor Turn-off Setting	28°C	N/A
Fan Turn-on Setting	-40°C	33°C
Heater ON Setting (70% Fan Speed)	8°C	N/A
Heater OFF Setting	13°C	N/A
High Temp Alarm Setting	65°C	N/A
Low Temp Alarm Setting	0°C	N/A

4. SPECIFICATIONS

Physical	
Weight	Approx. 646 lbs. as shipped
Electrical	
AC Load Center	Square D QO112L125PGRB
Thermal	
HVAC System	48VDC, Vikinor VAK-1500
Cooling Capacity	5000BTU

Table 1 CUBE Specifications