Theory of Operation

The charger has an "IE" profile which is (1) a constant-current bulk/start phase followed by (b) a constant voltage float phase. When the charger is first started, if the battery pack voltage is below the charger float voltage value, it will output a constant current in the bulk phase. The constant current value is controlled by the “Max DC Output Current” setting available via the charger web server using the Ethernet port.

When the battery pack nears the charger float voltage value, the charger will transition from the bulk phase into the float phase. The output current will decrease in order to maintain a constant float voltage. The charger float voltage value is controlled by either (1) the “NUMBER OF CELLS” and “VOLTS PER CELL” rotary switches on the UIM or (2), if the “NUMBER OF CELLS” rotary switches are set to “00”, the “Number of Cells” and “Float Voltage Per Cell” settings available via the charger web server control the float voltage value (see Section 11.3 for value ranges). The constant float voltage will be maintained indefinitely to keep the battery pack fully charged.

The charger web server, which is detailed in Section 11, includes other settings, such as battery temperature compensation, that can be adjusted per the requirements of the battery pack and overall system. *(see Manual pg. 6)*

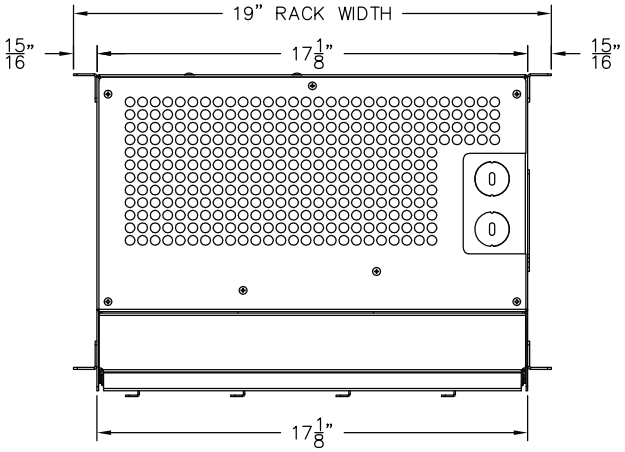
Operating Overview

Alarms with Time Delay and Trigger Values, Enable/Disable
- AC Input Power Lost
- AC Input Voltage High
- Battery Voltage Low
- Battery Voltage High
- Battery Temperature Low
- Battery Temperature High
- Min DC Output Current
- iPM Fault
- iPM Communication Lost
- iPM Incorrect DC Voltage
- UIM Fault
- High Voltage Shutdown
- Battery Temp Sensor Fault
- Remote DC Voltage Sensing Fault
- Ground Fault Detection
- Continuity Failed

Telecordia MTBF
- iPM 779,000
- UIM 834,400

SCADA Interface Options
- SNMPV2
- Dry Contacts

Programable Battery Care
- Equalization
- Temperature Compensation
- Cable Drop Compensation
- Soft Start
- Current Limit
- Continuity Test
- Load Test



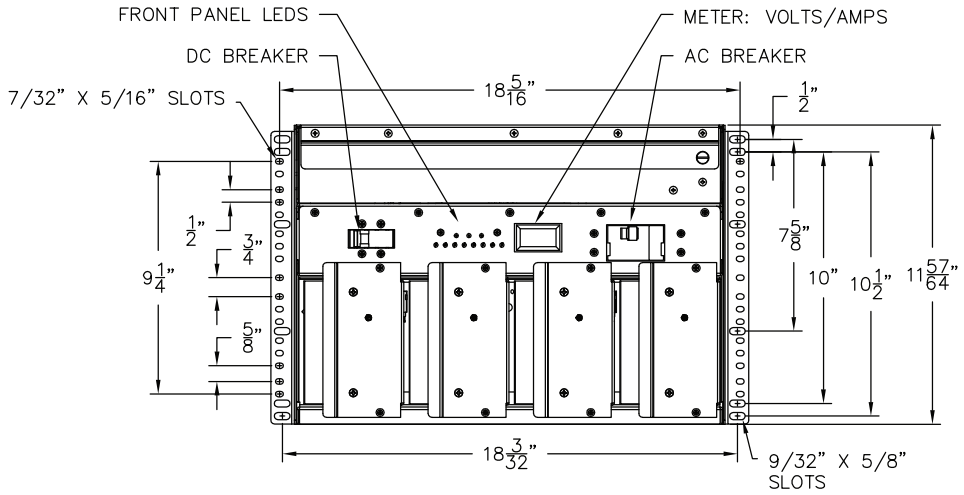
DOGHOUSE When Size Matters

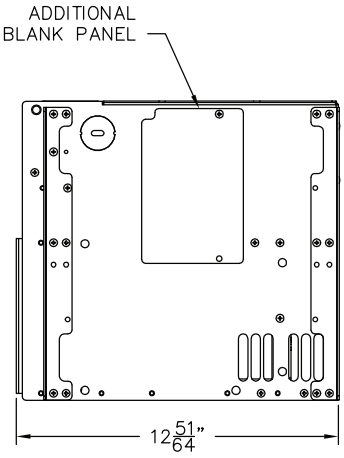
Book a DOGHOUSE Virtual Demo

Schedule a one-hour virtual demo with our resident charger expert – Product Specialist, Lucas Berndt and see for yourself how the BC-2500 industrial charger meets NERC TPL-001-5 compliance.

Need the Drawings?

If would like electronic files to import the mechanical drawings into your engineering planning system please contact info@eepowersolutions.com





Ratings & Technical Certification

UL Listed 1012 and cUL IEEE 2405-2022 NERC/TPL Compliant NEMA PE 5
FCC Part 15, Class A CEC Appliance Efficiency Regulations, Title 20

AC Input

All 4-slot and 8-slot chargers have an AC input rating of 100-240 volts, 50-200 hertz, single-phase with an AC operating range of 90-264 volts, 45-205 hertz. Below 100 volts, the charger may reduce output power.

The 16-slot charger (130V only) has an AC input rating of 208-240 volts, 50-200 hertz, single-phase with an AC operating range from 190-264 volts, 45-205 hertz.

Use an appropriate size wire for the AC input and strip back the insulation 13/32 inches (0.406). Maximum wire size is 4AWG for the AC and DC terminal block located behind the access panel. Open the access door cover on the front of the charger. The charger has several knockouts that can be used to route the AC wires to the terminal block. Per your application, remove the selected knockout and route the AC wires and/or conduit in accordance with the National Electrical Code and all local codes and ordinances. Dress field installed Class 2 or Class 3 circuits at least 1/4 inch (6.3 mm) away from power, light, or Class 1 circuits. Connect the AC ground to the terminal lug provided, as marked on the inside of the access panel and torque to 35 in-lbs (3.95 N-m). Connect the AC input wires to the two top connection points of the terminal block as marked on the terminal block decal. Torque the AC terminal block connections to 20 in-lbs.

Environmental Durability

Operating Temperature:
-40 – 70 °C (-40 – 158 °F)

Storage Temperature:
-55 – 85 °C (-67 – 185 °F)

Over Temperature:
Shutdown: 115 °C (239 °F)
Restart: 100 °C (212 °F)

Configurations:
Hard coded and not impacted by storage time

Convection Cooled

Circuit Breakers:
Magnetic, not thermal to prevent premature trip conditions

Circuit Boards:
All boards are conformally coated for protection

Maximum DC Cord Length per Wire Gauge

Wire Size (AWG)	Rated Voltage / Chassis Size	Max Output Current Amps	Max Length in Feet (Charger to Battery)
14	130V / 4-slot	16	1
12	130V / 8-slot	32	19
	130V / 4-slot	16	18
10	130V / 8-slot	32	13
	130V / 4-slot	16	26
	48V / 4-slot, 24 / 4-slot	40	10
8	130V / 16-slot	64	11
	130V / 8-slot	32	22
	130V / 4-slot	16	44
	48V / 4-slot, 24 / 4-slot	40	18
6	130V / 16-slot	64	18
	130V / 8-slot	32	36
	130V / 4-slot	16	72
	48V / 8-slot, 24 / 8-slot	80	15
	48V / 4-slot, 24 / 4-slot	40	30
4	130V / 16-slot	64	29
	130V / 8-slot	32	58
	130V / 4-slot	16	116*
	48V / 8-slot, 24 / 8-slot	80	23
	48V / 4-slot, 24 / 4-slot	40	46

*Over DC Cable Length settings limit

(see Manual pg. 14)

DC Output Performance

Operating Range and Battery Types

24V (10.00-40.00Vdc)
Lead-Acid:
10 cells: 1.00-3.00
11 cells: 1.00-3.00
12 cells: 1.00-3.00
Ni-Cd:
18 cells: 1.00-2.22
19 cells: 1.00-2.10
20 cells: 1.00-2.00

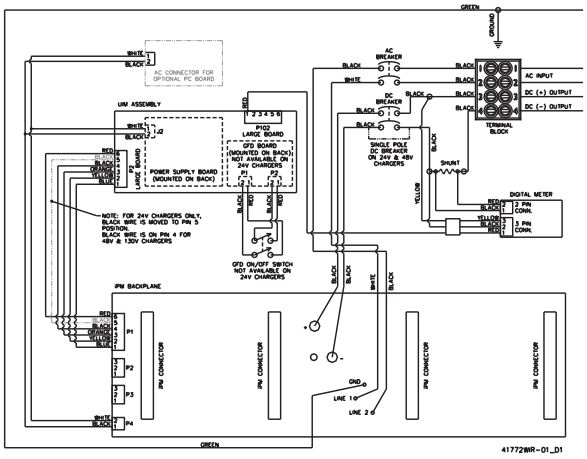
48V (30.00-61.00Vdc)
Lead-Acid:
20 cells: 1.50-3.00
21 cells: 1.43-2.90
22 cells: 1.37-2.77
23 cells: 1.31-2.65
24 cells: 1.25-2.54
Ni-Cd:
36 cells: 1.00-1.69
37 cells: 1.00-1.64
38 cells: 1.00-1.60
39 cells: 1.00-1.56
40 cells: 1.00-1.52

130V (100.00-150.00Vdc)
Lead-Acid:
54 cells: 1.86-2.77
55 cells: 1.82-2.72
56 cells: 1.79-2.67
57 cells: 1.76-2.63
58 cells: 1.73-2.58
59 cells: 1.70-2.54
60 cells: 1.67-2.50
Ni-Cd:
92 cells: 1.09-1.63
93 cells: 1.08-1.61
94 cells: 1.07-1.59
95 cells: 1.06-1.57
96 cells: 1.05-1.56
97 cells: 1.04-1.54
98 cells: 1.03-1.53

*Contact an Eagle Eye representative regarding other configurations.

(see Manual pg. 33)

(For a larger image see Manual pg. 59)



(For a larger image see Manual pg. 16)