

# NRG Series Battery Chargers



Blue Star Power Systems, Inc.'s NRG series chargers are the most advanced and feature-rich battery chargers available. NRG battery chargers maximize starting system reliability by utilizing a 10 or 20 amp output, microprocessor controlled power and an array of other features.

## Highlights

- ▶ Fully automated battery charging
- ▶ Easy to understand interface with state-of-the-art system status display
- ▶ Battery-fault alarm
- ▶ Watertight, shock and corrosion proof
- ▶ Increases battery life and watering intervals by 400% or more
- ▶ cULus listed



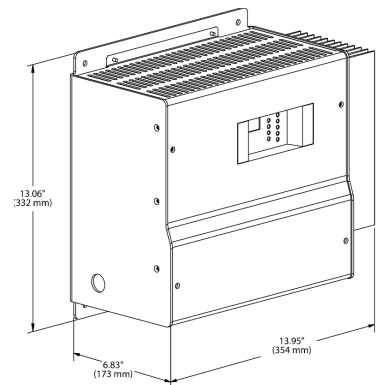
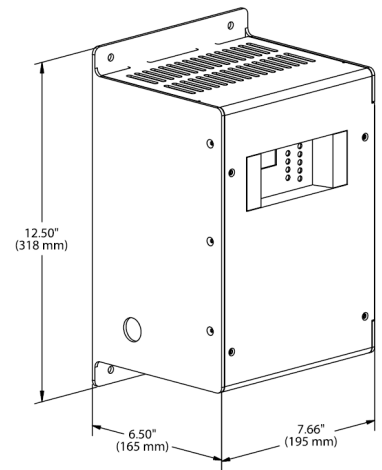
## Specifications

### AC Input

- ▶ Voltage: 110-120/208-240 VAC, +/-10%, single phase, field selectable
- ▶ Input current: 10A charger: 6.6/3.3 amps maximum | 20A charger: 12.6/6.3 amps maximum
- ▶ Frequency: 60 Hz +/-5% standard; 50/60 Hz +/-5% optional
- ▶ Input protection: 1-pole fuse, soft-start, transient suppression

### Charger Output

- ▶ Nominal voltage ratings: 12/24 volt nominal
- ▶ Optional voltage rating: 12/24 volt, field selectable
- ▶ Battery settings: Six discrete battery voltage programs
  - Low or high S.G. Flooded
  - Low or high S.G. VRLA (sealed)
  - Nickel cadmium 9, 10, 18, 19 or 20 cells
- ▶ Regulation: +/-0.5% line and load regulation
- ▶ Current: 10 or 20 amps nominal
- ▶ Electronic current limit: 105% rated output typical – no engine cranking disconnect required
- ▶ Charge characteristic: Constant voltage, current limited, 4-rate automatic equalization
- ▶ Temperature compensation: Enable or disable anytime, remote sensor optional
- ▶ Output protection: Current limit, 1-pole fuse, transient suppression



### Housing Dimensions

Amps	Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)
10	7.66	6.5	12.5	23
20	13.95	6.83	13.06	42

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## User Interface, Indication and Alarms

- ▶ Digital Meter: Automatic meter alternately displays output volts, amps<sup>4</sup>
- ▶ Accuracy +/-2% volts, +/-5% amps
- ▶ Alarms LED and Form C contact(s) per table

## Alarms Systems Functions

Alarm	Alarm Code "1" <sup>1</sup>	Alarm Code "C" NFPA 110
AC Good	LED	LED
Float Mode	LED	LED
Fast Charge	LED	LED
Temp Comp Active	LED	LED
AC Fail	LED <sup>2</sup>	LED and Form C contact
Low Battery Volts		LED and Form C contact
High Battery Volts		LED and Form C contact
Charger Fail	LED <sup>2</sup>	LED and Form C contact
Battery Fault	LED <sup>2</sup>	LED and Form C contact



Alarms "1" available only on 10A charger

Form C contact provides summary alarm of these conditions. BBHH chargers include this alarm configuration. Contacts rated 2A @ 30VDC resistive

Battery fault alarm indicates these fault conditions: Battery disconnected - Battery polarity reversed - Mismatched charger and battery voltage - Open or high resistance charger to battery connection- Open battery cell or excessive internal resistance

Three-position jumper allows user to select from three display settings: alternating volts / amps (normal), constant volts, or constant amps

## Controls

- ▶ AC Input Voltage Select: Field-selectable switch
- ▶ Optional 12/24-volt Output Select: Field-selectable two-position jumper
- ▶ Battery Program Select: Field-selectable six-position jumper
- ▶ Meter Display Select: Field-selectable three-position jumper
- ▶ Fast Charger Enable/Disable: Field-selectable two-position jumper
- ▶ Temp Compensation Enable: Standard. Can be disabled or re-enabled in the field
- ▶ Remote Temp Comp Enable: Connect optional remote sensor to temp comp port

## Environmental

- ▶ Operating Temperature: -4°F - 140°F (-20°C - 60°C), meets full specification to 113°F (45°C)
- ▶ Over Temperature Protection: maintains safe power device temperature
- ▶ Humidity: 5% to 95%, non-condensing
- ▶ Vibration (10A unit): UL 991 Class B (2G sinusoidal)
- ▶ Transient Immunity: ANSI/IEEE C62.41, Cat. B, EN50082-2 heavy industrial, EN 61000-6-2
- ▶ Seismic Certification: IBC 2000, 2003, 2006 Maximum Sds of 2.28G

## Construction

- ▶ Housing/configuration Material: Non-corroding aluminum. Configuration options:
  - Fully enclosed: cUL listed enclosure
  - Open frame: cUL recognized
- ▶ Dimensions: See drawings and dimensions for details
- ▶ Printed Circuit Card: Surface mount technology, conformal coated
- ▶ Cooling: Natural convection
- ▶ Protection Degree: Listed housing: NEMA-1 (IP20). Optional IP21 drip shield. Optional NEMA 3R
- ▶ Damage Prevention: Fully recessed display and controls
- ▶ Electrical connections: Compression terminal blocks

## Agency Standards

- ▶ Safety:
  - cUL listed to UL 1236 (required for UL 2200 gensets)
  - CSA standard 22.2 no. 107.2-M89
  - CE: 50/60 Hz units DOC to EN 60335
- ▶ Agency Marking:
  - 60 Hz: cULus listed
  - 50/60 Hz: cULus listed plus CE marked
- ▶ EMC:
  - Emissions: FCC Part 15, Class B; EN 50081-2
  - Immunity: EN 61000-6-2
- ▶ NFPA standards: NFPA 70, NFPA 110. (NFPA 110 requires Alarms "C")
- ▶ Optional Agency Compliance: Units with Alarms "1" configuration available with additional compliance to UL category BBHH and NFPA 20