MIDNITE SOLAR INC.

THE BRAT

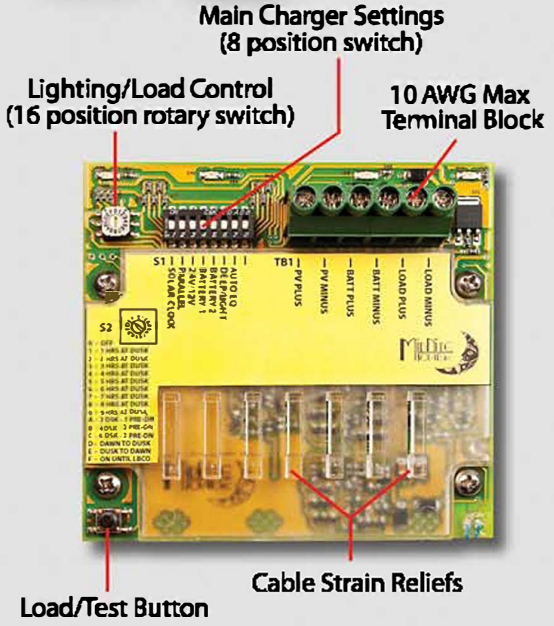
MIDNITE CHARGE CONTROLLER

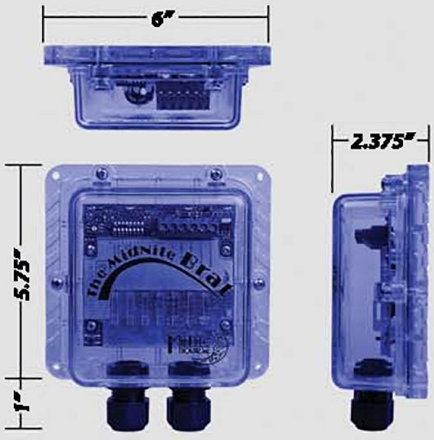
The Brat, a PWM battery charger and load controller that doesn't skimp on features!

The Brat is the most versatile charge controller in its class. Ideal for RVs, marine applications and renewable energy systems such as lighting and water pumping.

PRODUCT FEATURES

- Selectable charging modes
  - 20A charger with 10A load control
  - 30A charger without load control
- Bulk, Absorb, Float, and Equalize (user adjustable)
- 0 to 100% PWM, no relays, no fans, no external heat-sink
- Clear UV stabilized polycarbonate housing; rain and bug proof
- 12V/24V Flooded, GEL, AGM battery supported
- Reverse polarity protected
- Short Circuit Protection
- Auto resetting over temperature protection
- 8 position switch for main charger settings
- 16 position rotary switch for lighting controller
- Four LEDs for Bulk, Float, Load On and Low Battery
- Patterned blinking LEDs provide feedback about fault conditions
- Highly customizable lighting controller (dusk-dawn, hourly, day, night, etc.)
- Load/Test Button
  - 10 second test of the load circuit
  - Requests a manual EQ
  - Resets LED fault notification
- Field repairable printed circuit board (by a qualified technician)
- Built in Arlington, WA USA





Dimensional View

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PRODUCT SPECIFICATIONS

Input Voltage	Up to 60VDC
Nominal Battery Voltage	12 or 24V - Selectable
Maximum Charger Current	30A as charger only, reduced to 20A if the load controller is used
Charging Regulation	Bulk, Absorb, Float as well as Equalization
Equalization Charging	Automatic, 15/30V, two hours every 30 days or no EQ
Battery Temp Compensation	Automatic - ambient temperature detected through built-in sensor
Status Display	Four LEDs for Bulk, Float, Load On and Low Battery/Low-Voltage-Disconnect
Load Circuit Rating	10A max
Main Charger Settings (8 position switch)	• Supports four battery profiles: GEL, AGM and two Flooded profiles • Selectable 12 or 24V • Selectable 11 or 11.7V Low Voltage Disconnect (doubles on a 24V system) • Low-EMI Mode for sensitive loads • Load Control/Charge Control selection switch • Auto-Equalize ON/OFF Control • Solar Clock Mode: User selectable mode in which lighting run-time automatically adjusts for seasonal daylight. Example: A two hour setting in summer will automatically extend in the winter
Lighting/Load Control (16 position rotary switch) *All modes subject to low voltage disconnect (LVD)*	• Nine Modes for lighting starting at dusk (1-9 hours), selectable in one hour increments • Three modes for combination early-night and early-morning lighting. o Lights ON for 3 hours after dusk, OFF then ON again for 1 hour before dawn o Lights ON for 4 hours after dusk, OFF then ON again for 2 hours before dawn o Lights ON for 6 hours after dusk, OFF then ON again for 2 hours before dawn • Dawn-To-Dusk Mode (Load ON only during daylight hours) • Dusk-To-Dawn Mode (Load ON only at night) • 24 Hour Mode (Load ON always) except for LVD event
Operating Temperature	-40C to 60C (Controller will auto derate as temperature rises above 25C)
Environmental Rating	Outdoor - weather proof, type 3R/IP55
Weight	1 Lb.
Dimensions	6.75"L x 6"W x 2.375"D
Shipping Dimensions	7"L x 7"W x 3"D
Shipping Weight	2 Lbs.
Warranty	2 Year