



Morningstar's **SunGuard** is the most advanced small, economical solar charge controller on the market today.

SunGuard's technology provides:

- Exceptional Reliability
- PWM Battery Charging
- Consistent High Quality
- Low Cost

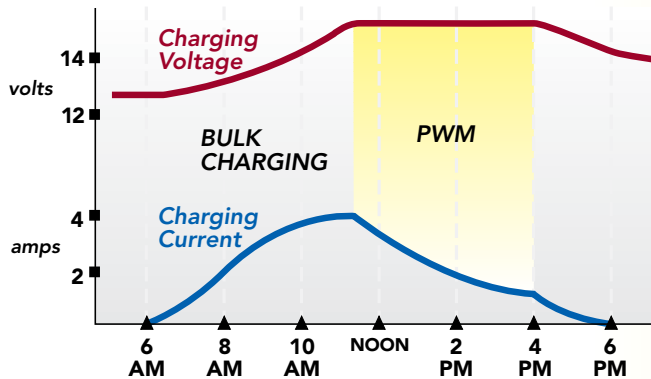
The SunGuard is able to match the quality and performance of the world-leading SunSaver controllers because:

- SunGuards are made on the same high speed, automated production lines
- SunGuards use the same charging circuit
- SunGuards use the same high quality components

Features:

- ISO 9002 quality programs
- Series design (not shunt)
- 100% solid state
- True 0 to 100% PWM duty cycle
- Setpoint accuracy to 60 mV
- Temperature compensation
- Rated for 25% overloads
- No need to derate
- Lightning protected with 1500 W transorbs
- Self-consumption is 6 mA
- Fully encapsulated in epoxy potting
- ABS plastic, impact-resistant case
- Outdoor rated, Hypalon connecting wires

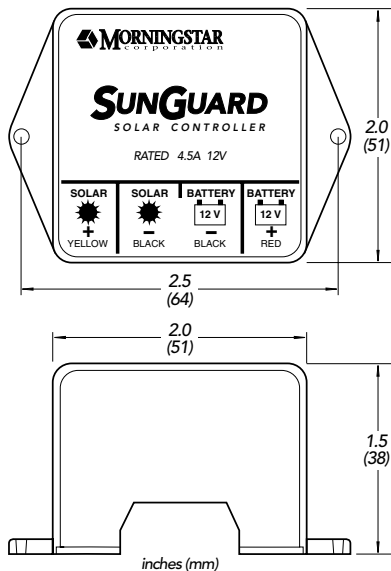
Advanced PWM Battery Charging



Advantages

SunGuard's PWM charging compared to On-Off solar regulators:

- Typically 30% more solar energy into the battery per day
- Average battery State-of-Charge is 90 – 95% compared to 55 – 60% for On-Off regulators



Mechanical Specifications

Wire size #16 AWG

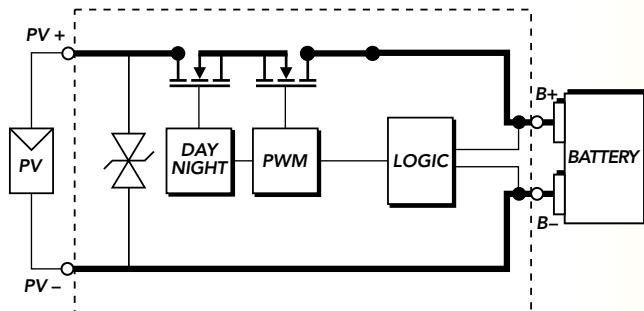
ABS plastic case

Epoxy encapsulated

Weight is 3 oz (0.09 kg)

Electrical Specifications

| | | |
|-------------------------|------------|-------|
| Rated Solar Input | 4.5 | Amps |
| Max. Input (5 min.) | 5.5 | Amps |
| System Voltage | 12 | Volts |
| Max. Solar Voltage | 30 | Volts |
| Regulation Voltage | 14.1 | Volts |
| Accuracy | 60 | mV |
| Self-consumption | 6 | mA |
| Temp. Compensation | -28 | mV/°C |
| Reverse Current Leakage | <10 | µA |
| Operating Temperature | -40 to +85 | °C |



WARRANTY: Five year warranty period. Contact Morningstar or your authorized distributor for complete terms.

AUTHORIZED MORNINGSTAR DISTRIBUTOR:



1098 Washington Crossing Road
 Washington Crossing, PA 18977 USA
 Tel: 215-321-4457 Fax: 215-321-4458
 E-mail: info@morningstarcorp.com
 Website: www.morningstarcorp.com