



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

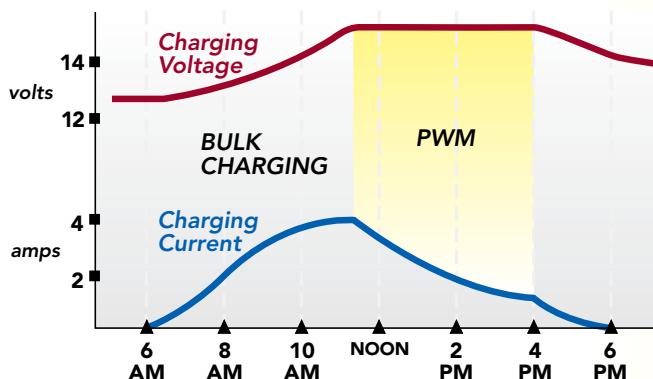
The SunGuard is able to match the quality and performance of the world-leading SunSaver controllers because:

- 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

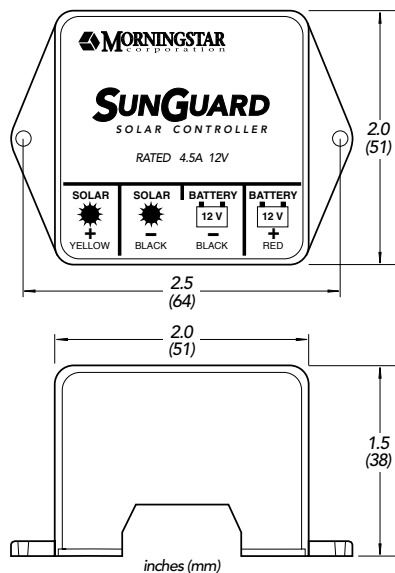
Advanced PWM Battery Charging



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

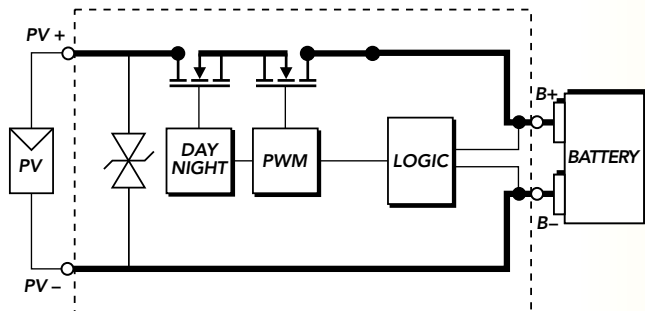


Mechanical Specifications

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:

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