

# OPTIMIZER

## THE EXTREME BATTERY CHARGER™

Designed to Charge Odyssey Batteries

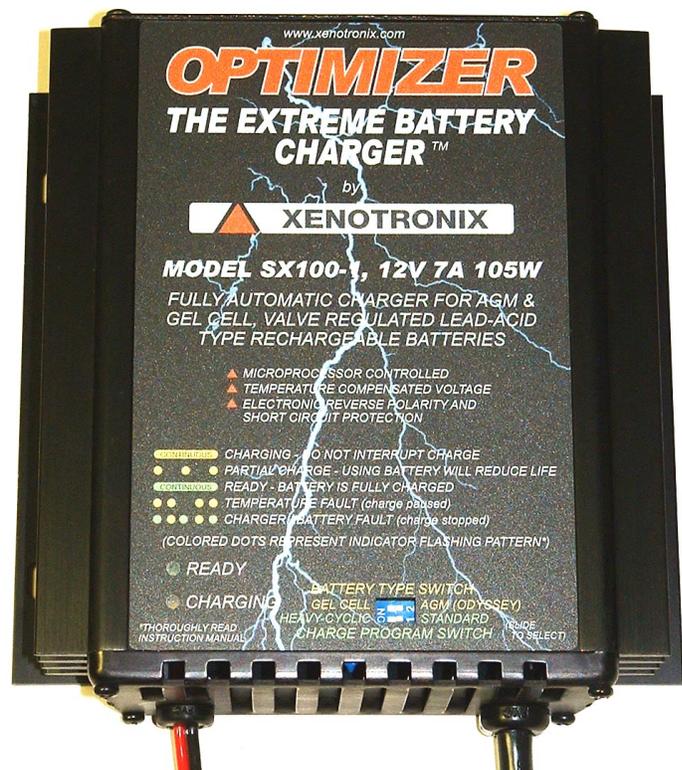
**Model SX100-1**  
**12 Volts, 7 Amps, 105 Watts**

Endorsed by EnerSys to charge and maintain their line of Odyssey® Drycell™ batteries – models PC310, PC535, PC545, PC625 and PC680 (and variants)

Appropriate for Cyclon® D, X, E & J cells & monoblocs (12-volt packs), and Genesis® models 13EP, 16EP, XE13 & XE16

An excellent choice for most AGM and Gel Cell, Valve Regulated Lead-Acid Batteries, from 17 to 70 AH in capacity\* (or more)

\*based on a manufacturer recommended charge current of 7A



- ▲ **RELIABLE**—State of the art design, runs clean & silent with no moving parts--no fan is required
- ▲ **RUGGED** – High quality, heavy-duty, corrosion resistant aluminum enclosure; perfect for sporting or marine environments
- ▲ **PRECISION** – Provides both cyclic and maintenance precision charging
- ▲ **FULLY AUTOMATIC** – Advanced microprocessor control will neither overcharge nor undercharge your batteries; just plug it in and forget it for worry-free use
- ▲ **ADJUSTABLE** – Switches for selecting between Odyssey®/AGM or Gel Cell battery types and 4-stage or 5-stage charge algorithms
- ▲ **MAXIMUM BATTERY LIFE** – Optimum charging techniques utilizing technology developed during 33 years experience with the care and feeding of batteries
- ▲ **3 YEARS LIMITED WARRANTY** –Historically we have less than 0.3% return rate on standard products; when quality counts – our chargers are built to last



## **FEATURES & OPTIONS – OPTIMIZER MODEL SX100-1**

### **CONDITION CHARGE**

A light conditioning charge, approximately 10% of the bulk charge current, is applied until the battery reaches 10.5 volts. This charge qualifies the battery by ensuring that it is in proper condition to accept the full rated charge current.

### **CONSTANT CURRENT BULK CHARGE**

Constant current charging is the fastest way to charge any battery; however, constant current can also overcharge a battery easily if it is not controlled properly. With the OPTIMIZER, constant current is only used until the battery is approximately 80% charged. Unlike most chargers, the full rated current is maintained in bulk mode until the battery reaches the absorption voltage.

### **CONSTANT ABSORPTION-VOLTAGE CHARGE**

This voltage is a precision high-rate voltage that allows the battery to safely reach a full charge in the quickest time. This voltage is held constant while the charge current decreases as the battery accepts less current. The time spent in the absorption mode is proportional to the time spent in the bulk mode and is limited to 8 hours. At this point the battery is 100% charged.

### **EQUALIZE CHARGE** (heavy-cyclic mode only)

A small constant current, approximately 10% of the bulk charge current, is applied for up to 1 hour to help ensure the battery gets fully recharged in demanding cyclic applications.

### **CONSTANT FLOAT-VOLTAGE CHARGE**

This voltage is a precision low-rate voltage. This voltage is low enough to prevent overcharging, but high enough to allow the battery to replace its standing losses and maintain a 100% charge. When not in use, we recommend the battery be left on the charger to receive this float charge.

### **TEMPERATURE COMPENSATION**

To maximize battery life, a negative charge temperature coefficient of approximately 3.5mV per cell per °C variation from 25°C is used during the float charge mode. A precision temperature sensor monitors the ambient temperature. As the ambient temperature increases the float voltage must be reduced, and vice-versa. The minimum charge voltage is limited to 13.2 volts. This helps offset the impact of high temperatures on the float life of the cell.

### **BATTERY TYPE SWITCH**

This switch selects between charge voltages for Odyssey and other branded AGM batteries or Gel Cell batteries.

### **CHARGE ALGORITHM SWITCH**

This switch selects between standard or heavy-cyclic charge algorithms.

### **REVERSE POLARITY & SHORT CIRCUIT PROTECTION**

The OPTIMIZER is electronically protected against reversed battery and short circuit conditions – there are no annoying fuses to replace. The output is not energized until a properly connected battery is detected.

### **INDICATORS**

The charge LED lights whenever a battery is properly attached and charging. It will light continuously when the charger is in bulk mode (constant current) and will flash when in absorption mode (constant voltage). When the charger enters float mode, the charge LED will darken and the ready LED will light. With no battery properly attached, both indicators will remain dark.

### **FAULTS**

Faults are displayed for incorrect battery voltage, damaged charger, and temperature. Battery and charger faults are indicated by quickly flashing the charge and ready LED's. Temperature faults are indicated by double flashing the charge LED.

### **STANDARD OUTPUT CABLE AND CONNECTOR**

The output cable is a parallel cable six feet long and has a fully-insulated, polarized, quick-disconnect plug. It is fixed to the enclosure using a strain relief. A quick-disconnect attachment harness with ring terminals is provided.

### **STANDARD INPUT CABLE AND CONNECTOR**

The input cable is six feet long and has a NEMA 5-15P grounding plug for use in North America. It is fixed to the enclosure using a strain relief. (For Schuko Plug and 230V operation add /E)

### **HEAT SINK ENCLOSURE AND MOUNTING**

The OPTIMIZER is provided with a heavy-duty, extruded aluminum heat sink enclosure with aluminum back and end plates. Mounting slots are provided for wall mounting the unit.

### **SPECIFICATIONS** (General Conditions: Ambient Temperature = 25°C / 77°F)

XENOTRONIX Model Number	SX100-1	
ODYSSEY® Drycell™ Batteries	PC310, PC535, PC545, PC625, PC680	
CYCLON® and GENESIS® Batteries	Cyclon® D, X, E & J Cells & Monoblocs (12-Volt Packs), and Genesis® Models 13EP, 16EP, XE13 & XE16	
Other AGM and Gel Cell Batteries	Most Applications using 12-Volt Batteries that can accept a 7 Amp Charge	
Charge Voltage	14.70 V for AGM Batteries	14.10 V for Gel Cell Batteries
Float Voltage (temp. compensated)	13.62 V for AGM Batteries	13.50 V for Gel Cell Batteries
Maximum Charge Current	7.0 A up to 14.70 V	
Reset Condition	12.6 V or Battery Disconnect	
AC Voltage and Frequency	110-127 VAC, 50-60 Hz	220-240 VAC, 50-60 Hz (optional - add /E)
AC Line Current	Approx. 1.3 A RMS @ 115 VAC	Approx. 0.7 A RMS @ 230 VAC
Operating Temperature Range	-20 to 50 °C (-4 to 122 °F)	
Output Cable Wire and Ring Sizes	16 AWG / 6 mm (1/4")	
Storage Temperature Range	-40 to 80 °C (-40 to 176 °F)	
Dimensions ( L x W x H )	6.60" (16.8 cm) x 6.40" (16.3 cm) x 2.00" (5.1 cm)	
Weight (including cables)	2.65 lbs (1.2 kg)	

