

# XENOTRONIX Inc.

## Model HPX-10 Parallel Charger

### Supplemental Instructions

#### IMPORTANT PRECAUTIONS

Read the Operation & Safety Instructions in the main manual.

**CAUTION** Follow the battery manufacturers recommendations when selecting a battery for use with this unit. The battery should be able to accept the full rated output current of this unit or the battery may be damaged if the load is disconnected.

**CAUTION** When using a load which is greater than the maximum continuous load specification, the battery may not charge and may begin to discharge. The use of a low voltage cut off (LVCO) is recommended.

#### GENERAL DESCRIPTION

This unit is a Parallel Charger version of the model HPX-10 Battery Charger. It is designed to simultaneously float charge a battery while supporting or supplementing a parallel load

#### OPERATING INSTRUCTIONS

Refer to the instructions in the main manual for connecting the battery. Connect the load in parallel with the battery and charger (note the correct polarity if required by the load).

There is one indicator on the front panel. It will light yellow when the unit is operating in the constant current mode at about 75%, or more, of its maximum rated current. In the constant current mode the unit is not regulating voltage and the battery may not maintain its charge. This unit should not operate continuously in the constant current mode. This unit should only go into the constant current mode intermittently as the parallel load requires, or when charging a discharged battery. The indicator light will switch from yellow to green when the unit is operating in the constant voltage mode at about 75%, or less, of its maximum rated current. In the constant voltage mode the unit is regulating voltage and the battery is being properly charged. When the indicator first changes from yellow to green the battery should be between 80-90% charged, depending on battery size.

To insure a full charge and to help your battery keep its full capacity, we recommend the battery be left connected at all times. There is no danger of overcharging the battery if the above precautions are followed.

If AC power is lost, then the battery must fully support the load. To prevent battery damage from over-discharging, we recommend the use of a low voltage cut off (LVCO). A LVCO will cut off the load from the battery when the battery is discharged and, after AC power has been restored, the LVCO will automatically reconnect the load after the charger has begun recharging the battery.

This charger can support a continuous load up one half of its rated output current. For example: If the unit is rated for 1 amp it will support a continuous load of 500 mA. This will leave enough power to keep the battery properly charged and to recharge a discharged battery in the event of a power failure.

If the load is not continuous, it can be greater than the maximum continuous load specification. However, when operating with a higher current load the battery may not keep its charge and may begin to discharge. The load must be shut off intermittently to insure the battery is kept charged and to allow the charger to cool down. Allow for a 75% duty cycle when the load is greater than the maximum continuous load specification.

If the load is greater than the maximum rated output current of the charger, the battery will become discharged. Allow for adequate recharge time. Use the following formula to determine the minimum recharge time (with the load disconnected):  $Recharge\ hours = 2 C\ discharge\ hours\ C\ (discharge\ amps - charge\ amps) / charge\ amps.$   
 For Example: If you have a charger rated for 800 mA (.8 A) maximum output current hooked up in parallel with a battery and you apply a 5 amp load for 1.5 hours, the formula returns a minimum of 15 3/4 hours to recharge the battery.

$$\begin{aligned} \text{recharge hours} &= 2 C\ 1.5\ H\ C\ (5\ A - .8\ A) / .8\ A \\ \text{recharge hours} &= 3\ H\ C\ (4.2\ A) / .8\ A \\ \text{recharge hours} &= 12.6\ AH / .8A \\ \text{recharge hours} &= 15.75\ H \end{aligned}$$

Note: It may appear that the charger is returning 12.6 AH into the battery (.8 A C 15.75 H); However, because the battery draws less current as it charges, only about 7 7/8 AH is actually returned (~1.25 C AH removed).

## MODEL NUMBERING SYSTEM

Base #: **HPX10**  
 Voltage Code: Two digit number; Ex. **06** = 6 volts, **12** = 12 volts, etc.  
 Stage Code: **C** = dual stage charger (standard); **P** = single stage, parallel charger (float voltage only).  
 Current Code: Three digit number (with decimal point understood to be two numbers from the right);  
 Ex. **100** = 1.00 amp, **080** = 0.80 amps (800 mA), **005** = 0.05 amp (50 mA), etc.  
 Battery Mfg. Code: Letter code for battery manufacturer (optional)

Sequence: <Base #> - <Voltage Code><Stage Code><Current Code><Battery Mfg. Code>  
 Example: **HPX10-12P080** is a Model HPX10 single stage parallel charger, rated 12 volts, 800 mA

## BATTERY CHARGER SPECIFICATIONS

Operating temperature	0 to 40EC (32 to 104EF)
Storage temperature	-40 to 80EC (-40 to 176EF)
Dimensions	H 3.8" (9.65cm) x W 2.8" (7.1 cm) x D 2.8" (7.1 cm)
Weight	Less than 1.5 lbs. (0.68 kg) with standard output cable
Power Requirements	120 V~, 60 Hz, .2 A RMS

### OUTPUT RATINGS: @ 25EC

Unit	HPX10-06P100	HPX10-12P080
Charge Amps (Imax)	1000 mA ± 2%	800 mA ± 2%
Charge Voltage	6.84 ± 0.06	13.68 ± 0.12
Switch Amps (Isw)	750 mA ± 5%	600 mA ± 5%
Max. Continuous Load w/ Battery	500 mA	400 mA

Other Models:

Charge Amps (Imax)	see marking label
Charge Voltage	2.28 V/Cell
Switch Amps (Isw)	0.75 C Imax
Maximum Continuous Load w/ Battery	0.5 C Imax

Refer any questions to XENOTRONIX Inc.  
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