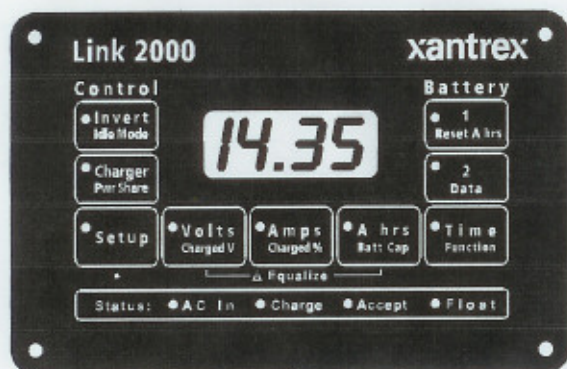


Smart choice for power

xantrex



Link 2000

Owner's Manual

Xantrex
Link 2000
Inverter Controller
and Dual Battery Monitor

www.xantrex.com

BASIC BATTERY FACTS

- 1) One amp-hour (Ah) is 1 amp for one hour, or 2 amps for 1/2 hour, or 4 amps for 1/4 hour, and so on.
- 2) A liquid battery is generally considered completely discharged when the battery voltage reaches 10.5 volts for a 12 volt battery.
- 3) Batteries for cycling service are normally rated with a) a 20-hour discharge rate which means, for example, a 100 Ah battery will sustain 5 amps for 20 hours, and b) a reserve capacity stated in minutes for a 25-amp discharge rate.
- 4) Our Mid-Capacity Rule says that discharge below 50% shortens battery life and charging more than 85% takes too long with an engine-driven charging system. So, 35% of the battery capacity is all that is normally available.

3

STATUS LINE

There are four LED status indicators to show the presence of AC power and the charger's cycle state.

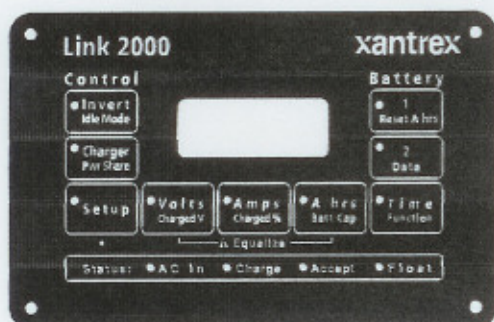
STATUS: ○ AC IN ○ CHARGE ○ ACCEPT ○ FLOAT

AC IN:	Green LED on when AC is present.
CHARGE:	Red LED on when charger is in Charge mode. Flashes Red when charger is in Equalize mode.
ACCEPT:	Orange LED on when charger is in Acceptance mode.
FLOAT:	Green LED on when charger is in Float mode.

MONITOR FUNCTIONS

Please also refer to the one-page summary of features in center of this manual.

The small blue legends indicate Setup functions described later.



BATTERY SELECT

The battery to be monitored is selected by pressing the #1 or #2 switch. A Green LED indicates which battery is selected. ("Battery" may be a "bank" of batteries.)

VOLTS

When the **VOLTS** switch is pressed, the voltage of the selected battery is displayed. The measurement range is from 8.5 V to 50 V. The resolution is 0.05 volts. See page 39 for power supply specification.

AMPS

When the **AMPS** switch is pressed, the current flowing into or out of the selected battery is displayed. Amps being consumed are displayed as a negative number. Charging amps are displayed as a positive number (no sign). The resolution below 42 amps is 0.1 amps. Above 42 amps the resolution is 1 amp. The range is from -500 A to 500 A. Over-range is indicated by OL.

Ahrs

When the **A hrs** switch is pressed, the amp hours (Ah) consumed from the battery is displayed as a negative number. During discharge the negative number will grow as amp hours are consumed and the meter counts down. During charging, the number of amp hours consumed will decrease as the meter counts back up toward zero. The range is +9,999Ah.


If the battery continues to be charged after the meter counts back up to zero, overcharge amp hours are accumulated and displayed as a positive number. If there is an accumulated positive number in the display when discharging begins, the meter automatically resets to zero and begins counting down. See Overcharge Amp Hours on page 16.

The meter also automatically resets to zero after a discharge/charge cycle that satisfies the conditions for a recalculation of the Charge Efficiency Factor (CEF). In other words, if the battery is discharged 10% and then recharged until the charged parameters have been met, the amp hours consumed display is reset to zero.

TIME

When the **TIME** switch is pressed, the time which the load can continue to be run is displayed. The display is in hours with 0.1 hours resolution. The unit may be set up to calculate the time remaining based on the instantaneous current, or a rolling average of the last 4, 16, or 32 minutes. The time remaining function also takes into account the magnitude of the discharge current (see pages 24–27). The maximum time remaining is 255 hours. If you see this display, it means that the current being consumed could be supplied for more than 255 hours. During charging, current is a positive (unsigned) number and the

Time remaining display reads C C C.

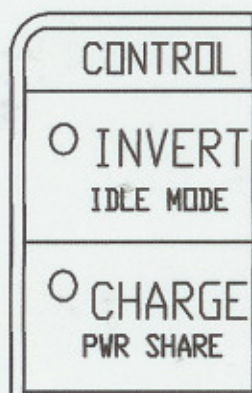
 For the **TIME** function to operate correctly you must enter your **BATTERY CAPACITY** through the **SETUP** routine (see page 9). You must also set up the correct **PEUKERT'S EXPONENT** (see page 13). It is also affected by your selection of **DISCHARGE FLOOR** (see page 14).

Caution: The **TIME** display is an estimate of how long your battery can sustain a load. Wild variations in battery current, battery condition, erroneously declared battery capacity, Peukert's exponent, temperature, or discharge floor, and prior charge and discharge history may affect the accuracy of this estimate. Please use this display only as a guide. The **LINK 2000** provides you with several important battery parameters. Using all of them, including voltage, current, amp hours consumed, and time remaining, allows you to know about the state-of-charge of your battery. Do not rely on a single value to determine battery status or performance.

LO BAT

When 50% of the declared capacity of either Battery #1 or #2 is consumed, **LO BAT** flashes in the upper left hand corner of the display. (This indicator is affected by both the declared battery capacity and the discharge floor setting.)

INVERTER/CHARGER FUNCTIONS



INVERT

When the **INVERT** switch is pressed, the inverter is enabled and the Green LED is lit. The inverter will only provide output if it is hooked up to the battery and there is no external AC power available. The inverter ON indicator does not indicate actual operation, only that the inverter is enabled. The initial power-up condition is with the inverter turned OFF.

CHARGE

When the **CHARGE** switch is pressed, the charging function of the Freedom Inverter/Charger is enabled. The Green LED is lit when the charger is enabled. The initial power-up condition is with the charger enabled. The charger will only provide output if it is hooked up to a battery and an external source of AC power is present (shorepower or generator).

MARINE AND RV OPERATING TIP

When utility power is available, any loads normally supplied by the inverter are automatically transferred to utility power through the internal transfer switch. When utility power is not available the loads run on stored energy in the battery. If you have a load such as an electric space heater running on a circuit that is automatically transferred, you run the risk of deeply discharging your battery if there is a utility blackout. To avoid this, turn the inverter function OFF when leaving the boat or RV unattended. Leaving the charger function ON will ensure a full battery when you return.