


# FEATURES OF THE NEW PD2100 SERIES MARINE BATTERY CHARGERS




**INTELI-POWER MARINE**  
SERIES

**ELECTRONIC MARINE CONVERTER/CHARGER**  
CONTINUOUS DUTY, IGNITION PROTECTED

Charging Mode

Display Mode



Meter Display

Fuse Status

**Boost Mode:**  
Provides rapid recharge of batteries.

**Normal Mode:**  
Optimum charge level during normal use.

<b>Charging Mode</b>	<b>Display Mode</b>	<b>Display Select</b>
Press to select Boost Mode. Press & hold to select a manual charging mode	Press to select Auto or Manual display modes	Press to cycle through voltage or current displays

**Storage Mode:**  
Reduce water usage during periods of non-use.

**Desulfation Mode:**  
While in the Storage Mode the unit will switch to the Boost Mode to help prevent battery sulfation as needed.

**Microprocessor Controlled 4 Mode Charging**

**CAUTION:**  
To reduce the risk of electric shock, do not expose to rain or spray.  
To prevent fire, do not cover or obstruct ventilation openings.  
Do not mount in zero clearance compartment. Overheating may result.  
Provided with integral protection against overloads.


Manufactured by  
Progressive Dynamics, INC.  
Marshall, MI 49068 269-781-4241

109965RA

U.S. Patent No's  
5,600,550 - 5,687,066  
5,982,643 - 6,184,649  
Additional patent pending.

**MODEL PD2160**

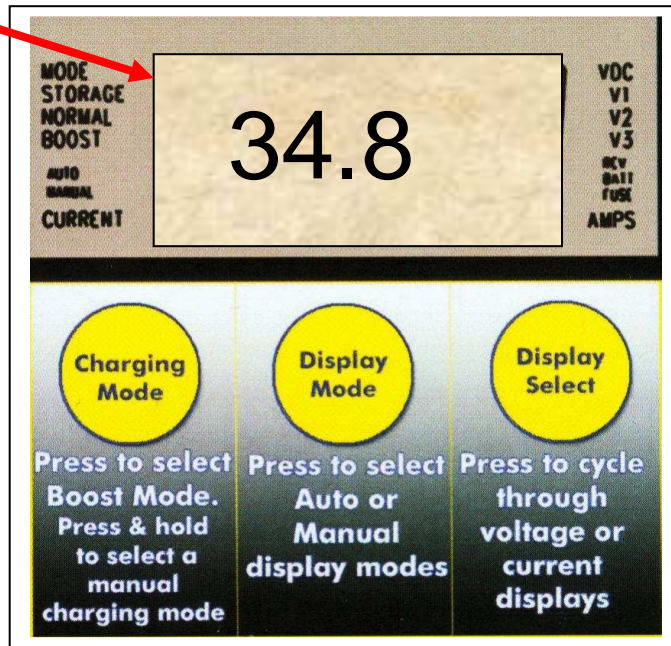
**Input:** Volts: 105-135 VAC Hz: 50/60 Watts: 1000  
**Outputs:** 3 Volts: 13.6 VDC Amps: 60 Total  
**Cell Type:** Lead Acid **Number of Cells:** 6



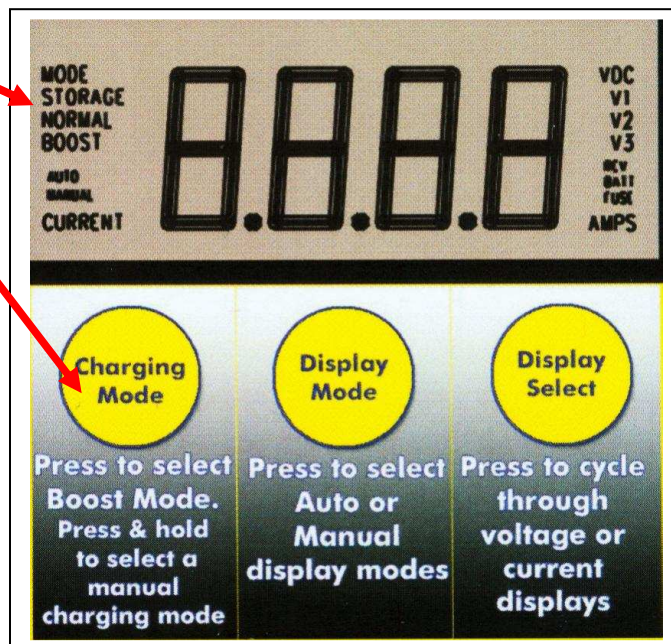
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The new 2100 Series of Marine Battery Chargers incorporate a digital meter and a new microprocessor that will provide many new features. The rest of the unit will maintain our proven charging system that has been perfected over the past eight years. All models will maintain the same physical size and weight as the present 2000 Series.

**FEATURE #1** – The digital meter will display current readings to .1 amps, with +/- 5% accuracy and voltage readings to .01 with +/- 2% accuracy. This will allow your engineering associates to accurately determine the total DC load, as well as the amp draw from individual components.



**FEATURE #2** – The meter will display in words the actual Mode that the unit is operating in (BOOST, NORMAL, STORAGE) rather than trying to determine the mode from a blinking light, as is now the case in our 2000 Series chargers. All modes are automatically selected based on voltage readings that are constantly fed to the microprocessor from the batteries. The customer will still be able to manually select individual modes if they wish. In the event of severely discharged battery, the dealer or customer can select the BOOST MODE, which will engage for 4-hours to recharge the battery. After this 4-hour period the charger will automatically return to the NORMAL MODE of operation to prevent battery damage.



**FEATURE #3** – Normally the meter display is in the AUTOMATIC MODE and the meter reading will continuously cycle through Battery Type (meter will display LA, GEL or AG), V1, V2, V3 voltages and Total Current Output readings. To determine if the charger is operating properly and aid in trouble shooting, the operator can switch the display to the MANUAL MODE by pressing then releasing the DISPLAY MODE button. In the MANUAL MODE, the meter will first display Battery Type, now each time the operator presses and releases the DISPLAY SELECT button the meter will first display VDC (the internal voltage of the charger, which should read approximately 14.3-volts), then V1, V2 and V3 voltages which should read approximately 13.9-volts, then Total Output Current and then back to Battery Type.

Indicates if the meter is in the AUTOMATIC or MANUAL MODE

Indicates the meter is reading Total Output Current.

Press and release this button to change from AUTOMATIC to MANUAL DISPLAY MODE.

Indicates what voltage the meter reading V1, V2, V3 or VDC. V1, V2 and V3 should read approximately 13.9-volts. VDC should read approximately 14.3-volts

In the AUTOMATIC MODE, the meter displays Battery Type, V1, V2, V3 and then Total Output Current sequentially.

In the MANUAL MODE you must press and release the DISPLAY SELECT BUTTON to scroll through the various readings.

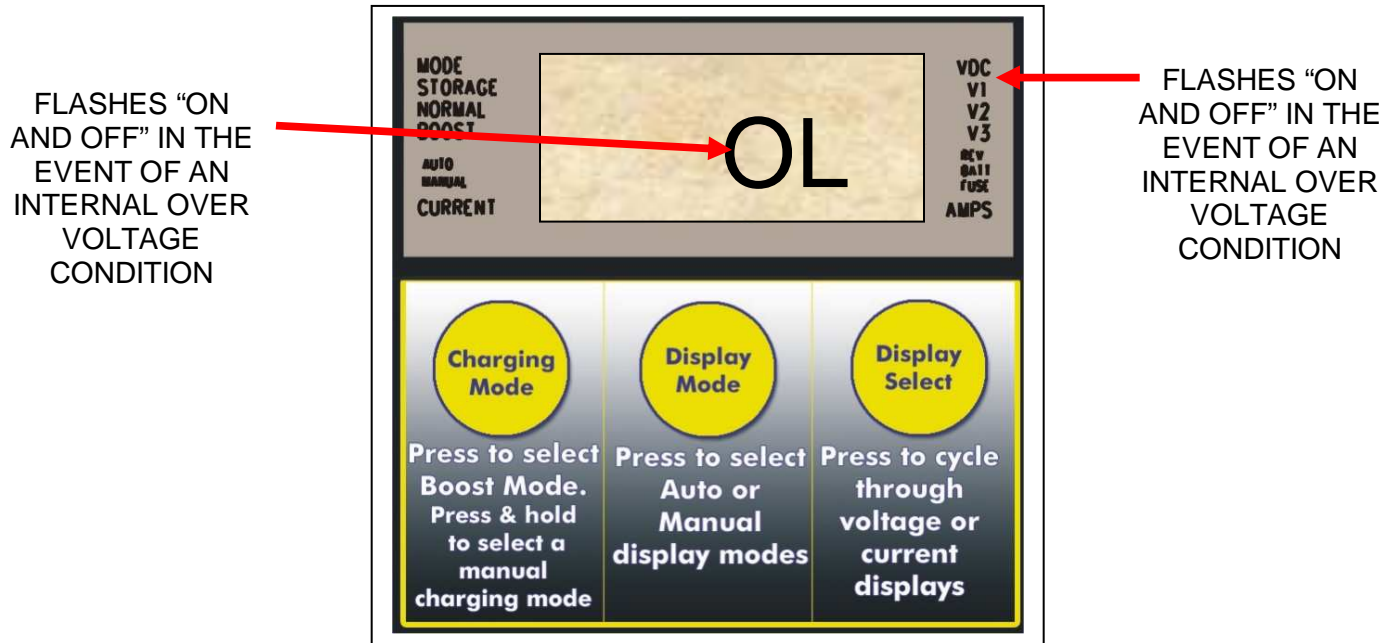
**FEATURE #4** – The meter will display the status of the REVERSE BATTERY PROTECTION FUSES. This eliminates the need to physically remove the wiring compartment cover and remove the fuses to see if they are blown. If the fuses are blown, the digital display will flash ERR, while the Storage Indicator and the Fuse Status Indicator will flash “On and OFF” at ½ second intervals. This new feature will provide a clear indication that the fuses are blown and that one or more of the batteries are connected in reverse. Note: This feature only operates when AC power is applied to the charger.

STORAGE INDICATOR FLASHES “ON AND OFF AT ½ SECOND INTERVALS

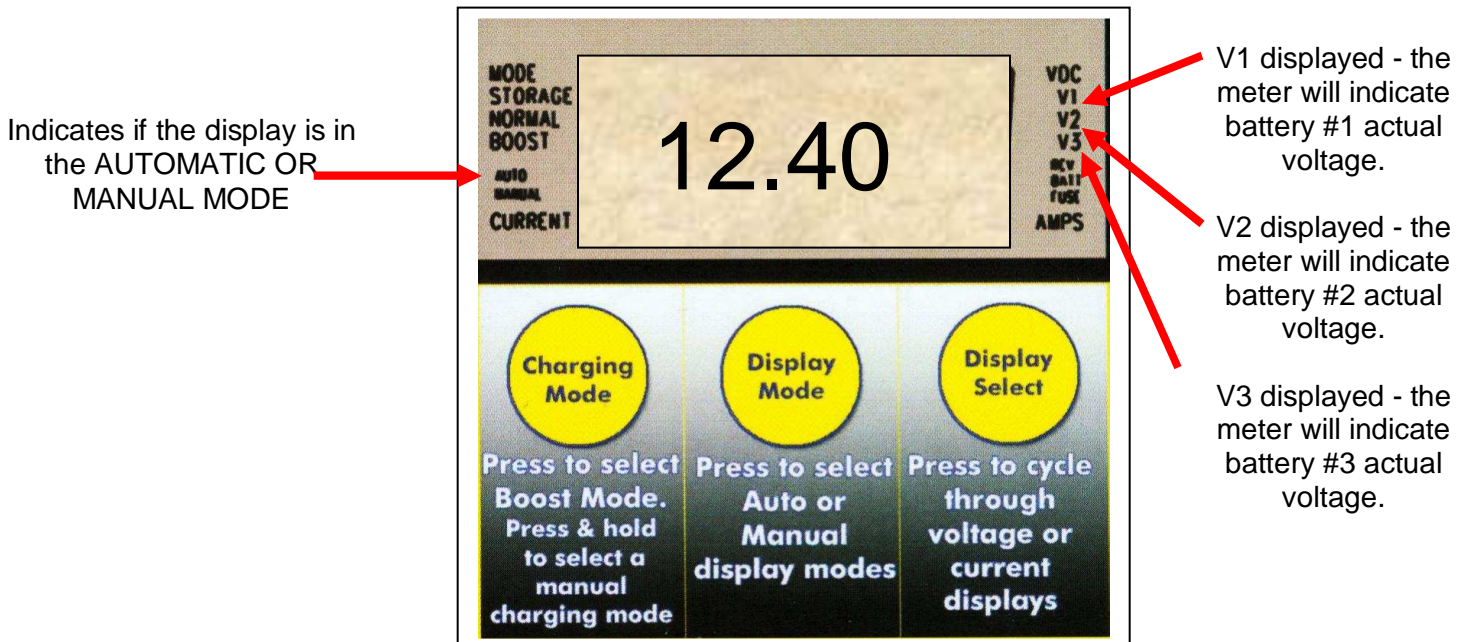
Err FLASHES “ON AND OFF AT ½ SECOND INTERVALS

FUSE INDICATOR FLASHES “ON AND OFF AT ½ SECOND INTERVALS

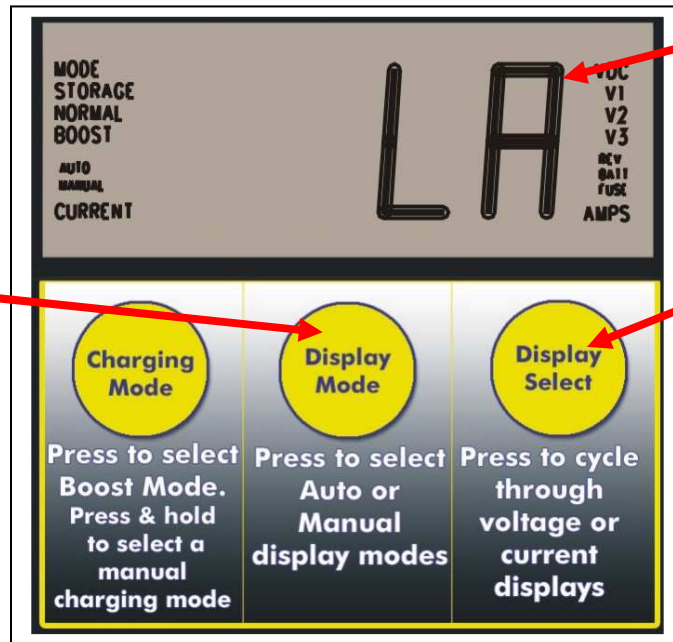
**FEATURE #5** – The system has a self-test feature that is automatically activated each time the charger is powered up. The display will go through a special power-up sequence so the operator can determine if all the display elements are functional and all voltage levels can be activated. The microprocessor also continuously monitors VDC (the internal voltage of the charger), and if it is too high (meaning the voltage control circuit has failed), the display will show OL and VDC and both will be flashing “ON and OFF”. These features will allow for a quick diagnosis of field failures.



**FEATURE #6** – When AC power is removed from the charger, the digital meter will display actual battery voltages. In the normal AUTOMATIC MODE, it will cycle through all functions and display readings. To check out individual battery voltages, press and release the DISPLAY MODE button to select MANUAL MODE. Now press the DISPLAY SELECT button until V1, V2 or V3 is displayed and the meter will read the actual voltage of that battery.



**FEATURE #7** – The new 2100 Series Chargers will allow field selection of the proper charging profiles for Lead Acid, Gel Cell or AGM batteries. All units shipped from the factory will be preset for Lead Acid Batteries. To change the selected charging profile, press and hold the DISPLAY MODE button. After 5-seconds the display will indicate the battery type: LA for Lead Acid Batteries, GEL for Gel Cell Batteries, or AG for AGM Batteries. Continue to hold the DISPLAY MODE button. Then press and release the DISPLAY SELECT button once and the system will change to the next profile. Once the proper Battery Type is displayed, release the DISPLAY MODE button and the new battery profile will be saved.



INDICATES THE CHARGE PROFILE FOR LEAD ACID BATTERIES HAS BEEN SELECTED

PRESS AND HOLD THE DISPLAY MODE BUTTON. AFTER 5-SECONDS A NEW CHARGE PROFILE CAN BE SELECTED.

PRESS AND RELEASE THE DISPLAY SELECT BUTTON ONCE TO SELECT THE NEXT BATTERY CHARGING PROFILE.

INDICATES THAT THE CHARGER PROFILE IS SET-UP FOR GEL CELL BATTERIES

INDICATES THAT THE CHARGER PROFILE IS SET-UP FOR AGM BATTERIES

