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- ▶ Digital Mobile Charge In-Transit Chargers
- ▶ Battery Maintainers
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 200 International Drive, STE 195
 Portsmouth, New Hampshire 03801
 TEL: 603-433-4440
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09/06 rev b

ProNautic Series

Automatic Digital Marine Battery Charger



Owner's Manual and Installation Guide



Microprocessor Controlled, Fully Automatic, Multi-Stage Battery Charger

Models	Part No.	Amperage	No. Of Banks	Volts
ProNautic1240 C3	63540	40 Amps	3 Banks	12
ProNautic1250 C3	63550	50 Amps	3 Banks	12
ProNautic1260 C3	63560	60 Amps	3 Banks	12
ProNautic2425 C3	63725	25 Amps	3 Banks	24
ProNautic2430 C3	63730	30 Amps	3 Banks	24

IMPORTANT NOTICE

This manual contains important safety and operating instructions for ProNautic models 1240, 1250, 1260, 2425 and 2430. Please save and read all safety, operating, and installation instructions before installing or applying AC power to your ProNautic series battery charger.

Your Satisfaction is Important to Us!

Do not return this product to retailer or dealer for any service or warranty requirements.

Call our Customer Care Department at 800-824-0524 from 8:30 am to 5 pm (EST) for warranty, service or installation assistance.

PLEASE RECORD YOUR:

model number: _____ serial number: _____ date of purchase: _____

Notes

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Please read entire manual before installation.

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Thank you from all of us at Professional Mariner, LLC and congratulations on the purchase of your ProNautic Series On-Board Marine Battery Charger. The ProNautic C³ (Charging, Control, Communication) battery charger is the latest in advanced cruiser, sail, yacht and commercial on-board marine chargers.

The ProNautic Battery Charger is designed to be used aboard a cruiser, sail, yacht or commercial vessel where the charger will not be exposed to water. Recommended installation is in an engine room or dry compartments where 6" of clearance on all sides is available.

The ProNautic Battery charger incorporates industry leading technology and is a fully automatic microprocessor controlled multi-step charger that provides your batteries with a fast charge compared to conventional charging methods.

- Universal AC input 95-250 VAC 50/60 Hz
- Battery Balance Control (BBC) monitors each battery independently while charging, conditioning and extending battery life, ensuring that no battery is ever overcharged.
- C³ Software calculates the required absorption time on each and every charge cycle always providing the perfect charge cycle for each battery in the system.
- 7 user selectable battery type settings are included.
- C³ Automatic 10 Day Re-Condition Mode for extended battery life.

Standard Features:

LED Indicators

Fast Charge, Absorption, Float, Flooded Batteries, AGM Batteries, GEL 1 Battery Setting, GEL 2 Battery Setting, Over Voltage, Under Voltage, Charger Over Temperature, Battery Temperature Status and Output Current Meter.

Multi-Stage Battery Charging (12 Volt Lead Acid Flooded Battery)

- 1) Fast Charge - Maximum current output until batteries reach 14.8 volts.
- 2) Absorption Charge - Software controlled charging user adjustable settings.
- 3) Float Charge - voltage reduced to 13.5 volts (Full current is available in float mode.)
- 4) Recycle - If a continuous load draws down the battery, the charger output returns to the high current Fast Charge mode.

World Wide Approvals and Certifications:

Certified to UL 1236 SA, ULc, Ignition Protected, CE, FCC Class B,
Meets ABYC A-31 requirements



► **Important Safety Instructions**

⚠ WARNING: HIGH VOLTAGE / ATTENTION : HAUTE TENSION
 AVOID SERIOUS INJURY OR DEATH FROM ELECTRICAL SHOCK. BEFORE OPENING TURN OFF AC SUPPLY POWER.
 CHOCS ELECTRIQUES PEUVENT PROVOQUER LA MORT OU DE SERIEUSE BLESSURES. AVANT D'OUVRIER LA BOITE,
 COUPER LE COURANT.

⚠ WARNING: LOW VOLTAGE / ATTENTION : BASSE TENSION
 ELECTRICAL BURN AND SPARK HAZARD. BEFORE OPENING DISCONNECT CHARGER CONNECTIONS AT BATTERIES.
 (DANGER DE BRULURES ELECTRIQUE ET ETINCELLES). AVANT D'OUVRIER LA BOITE DECONNECTER LES
 CONNECTIONS ENTRE CHARGEUR ET BATTERIE.

⚠ WARNING / AVERTISSEMENT :
 DO NOT EXPOSE TO RAIN OR SPRAY / NE PAS EXPOSER AUX INTEMPERIES

⚠ CAUTION:
 - HOT SURFACES - TO REDUCE THE RISK OF BURNS, DO NOT TOUCH.
 - CHARGE ONLY USER SELECTABLE TYPE BATTERIES (FLOODED, AGM, GEL OR CALCIUM) OTHER TYPES OF BATTERIES
 MAY BURST CAUSING PERSONAL INJURY AND DAMAGE
 - RISK OF ELECTRIC SHOCK. NO USER SERVICEABLE PARTS. RETURN TO MANUFACTURER FOR SERVICING
 - THIS CHARGER IS MEANT FOR CONTINUOUS DUTY
 - IGNITION PROTECTED
 - FOR MARINE USE

⚠ ATTENTION :
 - SURFACES CHAUDE-NE PAS TOUCHER, RISQUES DE BRULURES
 - UTILISER POUR ATTENTION: CHARGER UNIQUEMENT LES BATTERIES DU TYPE (PLOMB/ACIDE OU PLOMB/GEL/AGM
 ET BATTERIE AU CALCIUM), D'AUTRES TYPES DE BATTERIES POURRAIENT ECLATER ET CAUSER DES
 BLESSURES OU DOMMAGES
 - RISQUE DE CHOCS ELECTRIQUE-RETOURNER AU FABRIQUANT POUR SERVICE.
 - CE CHARGEUR EST FABRIQUE POUR LE DEVOIR CONTINU
 - PROTÉGÉ CONTRE L'EXPLOSION
 - POUR UTILIZATION MARINE

Before connecting to batteries or AC power, read all instructions and cautionary markings on the battery charger and batteries. Do not discard this manual, save it for future reference.

1. **SAVE THESE INSTRUCTIONS** - This manual contains important safety and operating instructions for battery charger Models 1240, 1250, 1260, 2425, and 2430 ProNautic Chargers.
2. Do not expose charger to rain or snow.
3. Use of attachments not recommended or sold by Professional Mariner, LLC will void warranty and may result in a risk of fire, electrical shock or personal injury.
4. Do not operate the charger if it has received a sharp blow, direct hit of force, been dropped or otherwise damaged in any way; take it to a qualified serviceman.
5. Do not disassemble the battery charger. If service or repair is required please contact customer service at 1-800-824-0524. Incorrect reassembly may result in a risk of electric shock or fire.
6. To reduce the risk of electrical shock, remove 120 volt or 240 volt AC shore power. Also remove DC battery connections prior to any maintenance or cleaning. Turning off controls will not reduce this risk.

⚠ WARNING AVOID SERIOUS INJURY OR DEATH FROM FIRE, EXPLOSION OR ELECTRICAL SHOCK
 - Make connection in an open atmosphere free of explosive fumes.
 - Make connection in a secure manner that will avoid contact with water.



► **Customer Service & Warranty**

We are committed to customer satisfaction and value your business. If at any time during the warranty period you experience a problem with your ProNautic Series On-Board Marine Battery Charger call us at 1-800-824-0524 or email info@promariner.com for technical support.

WARRANTY CARD CAN BE REGISTERED AT WWW.PROMARINER.COM

**PRONAUTIC SERIES ON-BOARD MARINE CHARGER
 FIVE YEAR WARRANTY WITH A LIMITED
 LIFETIME REPAIR OR REPLACEMENT POLICY**

Each ProMariner ProNautic Series Model is guaranteed against defects in material and workmanship for five full years after purchase.

Each serial numbered product has an additional repair adjustment provision after the 5 year limited warranty that limits the maximum charge for repair or replacement to 50% of the current list price, plus shipping and handling.

- Warranty and repair adjustment calculated from manufacture date if not registered or proof of purchase within two weeks of sale.
- Warranty void if unauthorized repairs attempted.
- Customer is responsible for shipping to ProMariner.
- Cosmetic repairs are done at the owner's request and expense.

Purchase or other acceptance of the product shall be on the condition and agreement that Professional Mariner, LLC SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.) This warranty is made in lieu of all other obligations or liabilities on the part of Professional Mariner. Professional Mariner neither assumes nor authorizes any person for any obligation or liability in connection with the sale of this product.

To make a claim under warranty, go to www.promariner.com and click on the support tab and follow the instructions making sure to identify the product and the problem. Professional Mariner will make its best effort to repair or replace the product, if found defective within the terms of the warranty, within 30 days after return of the product to the company. Professional Mariner will ship the repaired or replaced product back to the purchaser.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. This warranty is in lieu of all others expressed or implied.

Factory Service Center & Technical Support
 Professional Mariner, LLC
 200 International Drive, STE 195
 Portsmouth, NH 03801
 Tel: 1-800-824-0524

Professional Mariner, LLC
 Tel: (603) 433-4440 / Fax: (603) 433-4442

www.promariner.com

► **Accessories**

ProNautic Helm Control & Display Remote

The helm control display remote allows the user to control the charger and view the operation of the battery charger. Part# 63003



Corrosion Control & Monitoring

ProMariner makes a variety of corrosion control products that make isolating and monitoring AC power easier.



Corrosion Control Workbook

Educate yourself on the process of performing a galvanic survey. (Recommended with Corrosion Test Meter Part # 20006)



Test Meters

ProMariner makes a variety of test meters for use on testing battery and current.



model	part no.	cable size	volts	banks
ProNautic Helm Control & Display	63003	30'	n/a	n/a
Handheld DC System Tester	87710	n/a	n/a	n/a
Digital Multi-Meter	60016	3'	12	n/a
Clamp-It Multimeter	87015	n/a	n/a	n/a
ProSafe 1 Single Line Galvanic Isolation System	22086	n/a	120	n/a
ProSafe Isolation Transformers 3.6-12KVA	n/a	n/a	120/240	n/a
Adjustable Corrosion Monitoring System	22020	n/a	n/a	n/a
Corrosion Monitoring System	22030	n/a	n/a	n/a
Corrosion Workbook	20001	n/a	n/a	n/a

To Place an Order Please Contact Your Local Dealer or ProMariner at:
Tel: 603-433-4440 / Fax: 603-433-4442 / www.promariner.com

► **Important Safety Instructions Continued**

7. WARNING – RISK OF EXPLOSIVE GASES.

a) WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT EACH TIME BEFORE USING YOUR CHARGER, YOU READ THIS MANUAL AND FOLLOW THE INSTRUCTIONS EXACTLY.

b) To reduce risk of battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary marking on these products.

8. PERSONAL PRECAUTIONS

a) Someone should be within the range of your voice or close enough to come to your aid when working near a lead acid battery.

b) Have plenty of soap and water nearby in case battery acid comes in contact with skin, clothes or eyes.

c) Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

d) If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.

e) NEVER smoke or allow a spark or flame in vicinity of battery or engine.

CAUTION - To reduce the risk of injury, charge only lead acid type rechargeable batteries (Flooded, Sealed Flooded, GEL (Gelled Electrolyte Lead Acid) cell or AGM (Absorbed Glass Mat)). Other types of batteries may burst, causing personal injury. The ProNautic is factory set for Flooded Lead Acid batteries (Position selection 6). **Check the position of the battery type selector switch before applying power to insure the charger is in the correct setting for the battery type. This switch is located on the DC end of the charger see Page 7.**

Incorrect assembly may result in electrical shock or fire.

f) Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.

g) Remove all personal metal items such as rings, bracelets, necklaces, watches, and jewelry when working near a battery. A battery can produce a short circuit current high enough to weld a ring or any other metal, causing serious burns.

h) Do not use the battery charger to charge dry cell batteries that are commonly used with home appliances i.e. a cordless power drill battery. These batteries may burst and cause injury to persons and damage to property.

i) NEVER charge a frozen battery.

► **Important Safety Instructions Continued**

9. PREPARING TO CHARGE

- a) If necessary to remove the battery from the boat to charge, always remove grounded terminal from battery first. Make sure all accessories in the boat are off, so as not to cause an arc.
- b) Be sure the area around the charger and batteries is well ventilated while the batteries are being charged. Gases can be forcefully blown away using a piece of cardboard or other nonmetallic material as a fan.
- c) When cleaning battery terminals wear full eye protection to prevent corrosives from coming in contact with eyes.
- d) Add distilled water (*not tap or bottled water that contain minerals*) in each cell until electrolyte reaches the levels specified by the battery manufacturer. Do not overfill. For batteries without caps, carefully follow manufacturer's recharging instructions.
- e) Study all battery manufacturer's specific precautions such as removing cell caps while charging and recommended rates of charge.

- f) Determine voltage of battery by referring to boat owner's manual and make sure that output voltage selector switch is set at correct voltage. If charger has adjustable charge rate, charge battery initially at lowest rate.

10. CHARGER LOCATION

- a) Refer to the installation section of this manual for installation of your battery charger. Be sure all electrical connections and cables are in compliance with ABYC E-11 standards for proper fusing, bundling and strain relief.
- b) Never place the charger directly above the battery(s) being charged; gases from battery will corrode and damage charger.
- c) Never allow battery acid to drip on the charger when reading specific gravity or filling battery.
- d) Do not operate the charger in a closed-in area or restrict ventilation in any way.
- e) Do not set the battery(s) on top of charger.

AC GROUNDING INSTRUCTIONS - The "G" terminal of the AC input connector must be connected to the AC grounding system at the AC ground buss.

DC GROUNDING INSTRUCTIONS - The case grounding stud should be connected to the DC negative grounding buss (same location as the DC negative output terminal) with a cable one size smaller than the DC negative output cable.

This battery charger should be installed so that it is not likely to be contacted by people.

NOTE: The ProNautic Battery Charger is not intended to be mounted in an open cockpit or deck mounting where weather is a factor.

NOTE: ProMariner recommends that the ProNautic Battery Charger be mounted in the vertical position to help reduce potential exposure to water, moisture, etc.

► **Periodic Maintenance Continued**

Process:	Check charger for water damage
When:	Monthly
Process:	Visually inspect all wiring for cuts and/or abrasions. Contact ProMariner if charger needs to be serviced
When:	Monthly
Process:	Clean and tighten all battery connections. Follow battery manufacturer's instructions for cleaning a battery. Clean all battery terminals with a wire brush where required and tighten all battery connections.
When:	Monthly

► **Frequently Asked Questions**

Q: Do I have GEL Cell batteries?

A: Look at the battery housing and see if it is identified as a GEL battery. If you do not know what kind of battery you have contact the manufacturer.

Q: I am not having LEDs illuminate?

A: Check to make sure that an AC power connection is made. If still no LEDs you may have a blown fuse. *Contact ProMariner Customer Service 1-800-824-0524.*

Q: Will water hurt my charger?

A: Yes, these are dry compartment chargers and must be mounted in a dry location. Damage caused by water is not covered under the ProNautic warranty policy.

Q: How do I change my charger to GEL cell mode?

A: Please double check that you have GEL cell batteries. There is a misconception that AGM is GEL. This is not the case. AGM batteries charge at different levels. If you have confirmed that you have GEL batteries remove AC power. Then remove the access panel on the DC side of the unit and put the rotary switch in either position 1 or 4 depending on the battery manufacturer's recommendation. Reinstall access panel and power on.

Q: Do the chargers really need 6" clearance for ventilation?

A: We recommend this for cooling, more clearance is better.

Q: I think my charger is too hot. What should I do?

A: The charger will get to the point where it can be touched, but you would not want to carry it across a room. This is normal. *Note: the charger is thermally protected.*

Q: What are the voltage requirements & how can I change the voltage from 120v to 240v?

A: The ProNautic charger will automatically adjust for the correct AC voltage.

▶ **Troubleshooting**

Note: *When working with tools near electricity serious electrical shock can occur resulting in injury.*

- 1) Turn off all power to the charger and disconnect all the DC cables at the batteries making sure that no cables are in contact with equipment, other wiring, or one another.
- 2) Set the battery type rotary switch to position number 6
- 3) Apply AC power. Allow 30 seconds for the charger to produce the correct voltage. This is part of the soft start technology. The charger will be in Fast Charge Mode then Absorption Charge Mode. Use a multi meter to check the voltage between each positive and the negative lead. The meter should read a voltage of 14.7 -14.8 volts DC.



- 4) If the voltage is correct 14.7 -14.8 keep the charger AC power on but disconnected from the batteries. Leave the charger on for approximately one to two hours or until float mode is observed. The voltage should drop to 13.3 indicating float mode.
- 5) If you see all of the above voltages, your charger is working correctly.
- 6) If you don't see the initial 14+ volts, the charger either has a blown fuse or circuit board failure. Please contact ProMariner Customer Service 1-800-824-0524 or email: info@pmariner.com.

▶ **Periodic Maintenance**

Process:	For flooded batteries follow the instructions for monitoring and maintaining proper levels of distilled water. (not tap or bottled water that contains minerals) in each battery
When:	Monthly

▶ **Setup and Operation**

Install your ProMariner battery charger by referring to page 8 of this manual.

After installation is complete including AC and DC connections, please ensure proper fusing, strain relief and cable support has been performed.

When AC power is applied, you should see the following:

- a. No LEDs will be illuminated for approximately 6 seconds, this is part of the soft start feature.
- b. *Fast Charge, Battery Type and Under Voltage* LED will illuminate for 20 seconds, after that the *Under Voltage* LED will go out.
- c. If *Under Voltage* LED stays illuminated for longer than 20 seconds the batteries are heavily discharged.
- d. *Battery Type* LED indicates selection on rotary switch for the battery type selected.
- e. *Battery Over Temp* LED will illuminate green indicating ok if battery temperature sensor is connected and will not be illuminated if there is no temperature sensor connected. If the temperature sensor is connected, and the batteries are too hot to be charged, the over temperature LED will illuminate.
- f. *Output Current Level* will be displayed on the Output Current Meter on the front of the unit. Indicator level will vary due to different discharge levels of battery(s).
- g. After *Fast Charge* is complete the *Absorption Charge* LED will illuminate.
- h. Absorption time is calculated by the software for optimal charging time and recovery.
- i. When the Absorption cycle is complete the ProNautic will shift to the Float mode. In this mode the batteries are maintained at the optimal battery voltage and will supply power for house loads of any type up to the maximum output of the charger.
- j. Every 10 Days the ProNautic will cycle through a short Absorption cycle to condition the battery(s) and prolong the overall life of the battery(s).



Rotary switch shown left. Numbers on the switch correspond with the chart on page 6. For proper selection of battery types please refer to page 6.

Temperature sensor connection shown left. The ProNautic battery charger includes a temp sensor for proper charging during high temperature conditions. Batteries that are charged while their temperatures are elevated above 80° F (27C) can be damaged and their life shortened. By using the enclosed temp sensor and attaching it to the most used battery allows for better control of the charging voltages. The sensor should be attached to the negative battery

terminal. The negative battery terminal connection is recommended as it gives a better indication of actual internal battery temperatures.

Desulfation Mode Defined (Flooded Lead Acid Only) - battery switch position - 8

Sulfation may cause early battery failure; to reduce sulfation ProMariner has incorporated a desulfation mode to extend battery life. **The desulfation mode should not be used more than 4 times a year.** To use the desulfation mode turn off AC power, isolate the batteries from all equipment/electronics on board. If this mode is used without disconnecting accessories the potential for

› **Setup and Operation Continued**

accessory damage is high. Next remove the end cap located on the DC side of the charger. With the AC power off, change the rotary switch to position 8. After the adjustment replace the DC cover and turn the charger on. The charger will go into a Flooded Lead Acid charge cycle followed by the desulfation mode for 4 hours and then shut off. After this is complete turn off AC power. Remove the DC terminal end cap and reset the rotary switch back into the original setting, reinstall the DC cover and turn on the AC power. Charger will now be in normal operating mode.

Note: The charger is equipped with an internal temperature sensor that will shutdown the charger if internal temperature reaches unsafe levels.

Note: Your ProNautic charger is equipped with a fan, which is temperature controlled and will only run when cooling is necessary.

The charger is self limiting, reverse polarity and ignition protected. If at any time you have trouble configuring the charger or need technical information visit www.promariner.com, call ProMariner at 1-800-824-0524 or email info@promariner.com.

› **Selecting a Charging Profile and Understanding Battery Types**

Charging System Factory Charge Profile Setting

There are three primary types of batteries; Flooded (Lead Acid), AGM (Absorbed Glass Mat) and GEL Cell (Gelled Electrolyte Lead-Acid). Traditionally, the most common type of batteries used are Flooded (Lead Acid batteries).

Rotary Switch Settings			
Switch Setting	12 volt system	24 volt system	Battery Type
Position Number 1	14.0 Absorption & 13.7 Float	28 & 27.4	GEL 1
Position Number 2	14.3 Absorption & 13.3 Float	28.6 & 26.6	AGM
Position Number 3	14.4 Absorption & 13.6 Float	28.8 & 27.2	Sealed Lead Acid
Position Number 4	14.4 Absorption & 13.8 Float	28.8 & 27.6	GEL 2
Position Number 5	14.6 Absorption & 13.7 Float	29.2 & 27.4	AGM 2
Position Number 6	14.8 Absorption & 13.3 Float	29.6 & 26.6	Flooded
Position Number 7	15.1 Absorption & 13.6 Float	30.2 & 27.2	Calcium
Position Number 8	15.5 Volts for Desulfation Mode	31.0 Desulfation	Desulfation

Profiles shown above are only recommendations please contact Manufacturer of batteries if you have any questions.

NOTE: AGM (Absorbed Glass Mat) batteries are not GEL (Gelled Electrolyte Lead-Acid) batteries. AGM batteries are charged at different charging profiles and are not the same.

***If you are unsure as to what kind of battery you have, we recommend that you contact the manufacturer of the battery.

› **AC Connections Continued**

Recommended AC Breaker Size	Charger Model	110 volt breaker	220 volt breaker
	ProNautic 1240	13 Amp	7 Amp
	ProNautic 1250	16 Amp	8 Amp
	ProNautic 1260	18 Amp	9 Amp
	ProNautic 2425	15 Amp	8 Amp
	ProNautic 2430	20 Amp	10 Amp

› **DC Grounding Connection**

9) The case DC grounding connection should be connected to the boats DC engine negative buss terminal using a cable one size smaller than the negative battery cable.

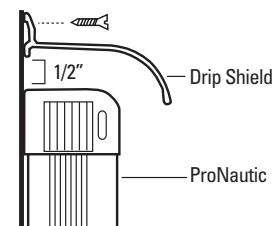
10) After all cables are in place recheck connections making sure all connections are tight, confirm the charger is in a dry location.



› **Drip Shield Installation**

11) Install the provided drip shield to prevent potential water damage. ProMariner recommends mounting the drip shield using #10 x 3/4" Stainless Steel sheet metal screws.

Please note water damage is not covered by warranty.



› **Applying AC Power**

12) Apply AC power, after approximately 6 seconds the LEDs will illuminate. Battery type LED will be lit to indicate battery type selected. The Fast Charge and Absorption Charge LEDs will both initially illuminate and after 5 minutes the Absorption LED will extinguish. This is a hold function to keep the charger from going to Absorption in the case of a totally dead high resistance battery. None of the Fault LEDs should illuminate, it is possible that the Under Voltage yellow LED will be on if the batteries are in a deeply discharged condition. This LED will extinguish as the batteries charge in up to 3 to 4 hours depending upon the capacity of the battery banks. The charger modes are as follows Fast Charge, Absorption, Float and Reconditioning.

Should you have any questions please visit www.promariner.com or call 1-800-824-0524.

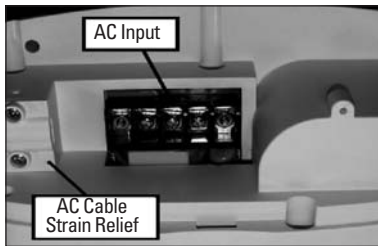
AC Connections

5) **AC power should not be present until step 12 is completed.** After connecting the AC and DC cables to the charger use cable support on the cables within 6" of the charger for both the AC and DC cables.

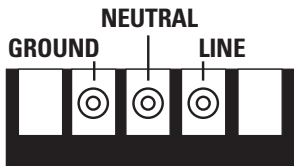
6) Be cautious when connecting battery cables to the ProNautic charger and check to make sure AC power is off. **Be careful when placing battery cables near one another to avoid possible shorting or arcing (sparking) that can occur when positive and negative wires touch.**

7) **US 120 Volt or European 230 Volt AC Connections:** (For US 240V AC please refer to step #8). A terminal strip is provided on the charger for AC input. Connect Black (Europe-Brown) to the connection marked Line. Connect White (Europe-Blue) to connection marked Neutral. Connect Green (Europe-Green/Yellow) to connection marked (Ground/ Earth). Install an appropriate circuit breaker dedicated to the charger at the boat's electrical panel. Please refer to page 11 for proper fusing ratings.

8) **US 240 Volt AC Connections:** (If using 120 volt AC or European 230 volt AC please refer to step #7 and ignore this step). A terminal strip is provided on the charger for AC input. Connect Black to the connection marked Line. Connect Red to connection marked Neutral. Connect Green to connection marked (Ground/ Earth). Install an appropriate circuit breaker dedicated to the charger at the boat's electrical panel. Please refer to page 11 for proper fusing ratings.



Shown left is the ProNautic AC power strip. Before removing cover make sure shore power is disconnected. All connections should be tight, check to make sure that no wires are severed or broken

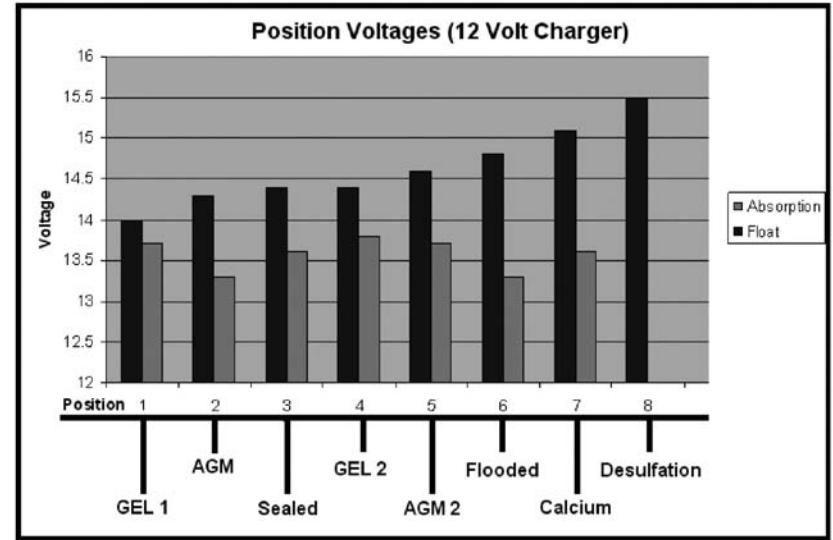


Shown left is the AC terminal block that is shown in the above photo. Please note the connections and wire appropriately. The circuit board is also labeled to indicate where connections go.

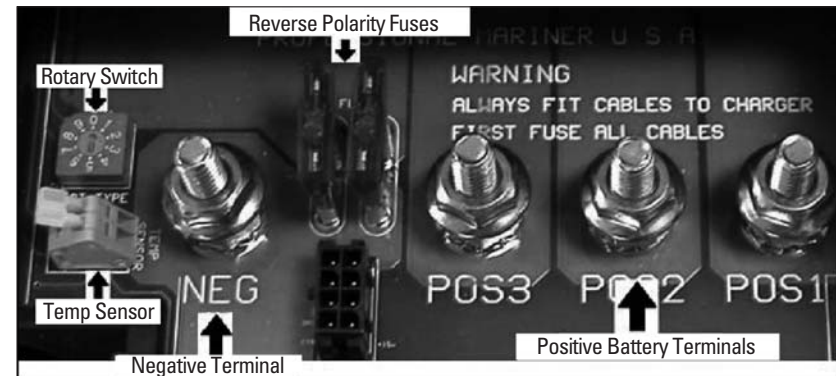
Please note: All AC wire connections and installations must be made in compliance with ABYC E-11.

Minimum AC wire size 105° C wire - #14 up to 15 amp - #12 up to 20 amp. See ABYC E-11 for exact wire sizes for length of run, ampacity, temperature, location and number of wires in bundles.

Charging Information



Note: Before energizing the charger, please select the appropriate battery type determined by the rotary switch position (shown below). You will find charging profiles and recommendations on page 6 of this manual. Should you have questions about which charging profile is right for your batteries please contact the battery manufacturer.



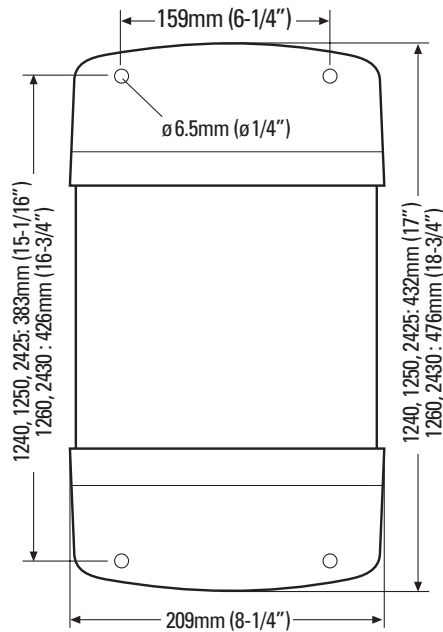
► Installation

1) Make sure to mount the charger in a **DRY** ventilated location with easy access. Remember to leave plenty of room for battery cables and AC wiring.

2) Six inches of clearance is required on all sides. (Including the front/ face)

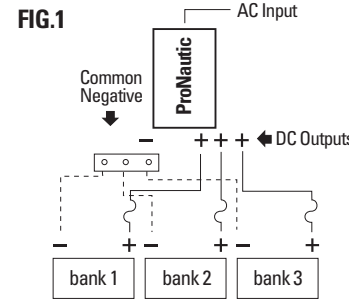
3) Use the ProNautic as a template for drilling four 1/8" pilot holes if using stainless steel sheet metal screws (1/4 x 1-1/4" is recommended) or drill four 1/4" through holes if using 1/4" through-bolts with washers, lock washers and lock nuts.

Note: Charger dimensions are in millimeters nominal measurement

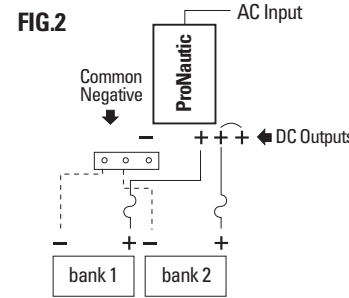


4) Battery cables, connections and installation must comply with ABYC E-11 standards. We recommend that each ungrounded DC conductor (Positive cable) be provided with an over current protection fuse within 7 inches of connection to the battery or battery connection point. The fuse rating should be at least 10 amps higher than the rated full output of the charger. See ABYC E-11 for specific requirements. Over current protection within 7 inches of the charger is not required as the ProNautic is self limiting and can not exceed its rated current output. The internal fuses protect the unit against reverse polarity.

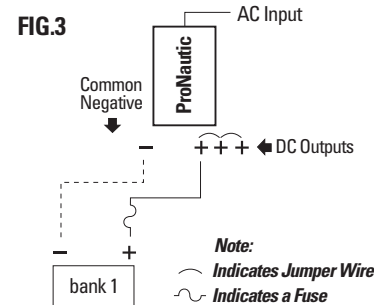
► DC Wiring Diagrams



Three Bank Installation (FIG.1)
Battery negative wires are run separately to the boat's DC buss bar (not provided). Then a single connection is made to the charger.



Two Bank Installation (FIG.2)
Same as three bank leaving one output post without a connection.



One Bank Installation (FIG.3)
Connect to one positive post and use two jumpers to tie all positives together.

Wiring Length is round trip

Note: Circuit Protection should be attached to each positive charger lead 7 inches from the battery or the battery connection point

	Length Out and Back				
12 Volt 40 Amp					
Wire length	10'	15'	20'	25'	30'
AWG	8	6	6	4	4
12 Volt 50 Amp					
Wire length	10'	15'	20'	25'	30'
AWG	6	6	4	4	2
12 Volt 60 Amp					
Wire length	10'	15'	20'	25'	30'
AWG	6	4	4	4	2
24 Volt 25 Amp					
Wire length	10'	15'	20'	25'	30'
AWG	12	12	10	10	8
24 Volt 30 Amp					
Wire length	10'	15'	20'	25'	30'
AWG	8	6	6	4	4

(ABOVE) It is recommended that a jumper(s) be used between unused positive output post(s) and a used post connected to a battery. Please note you can connect all three positive posts together to form a single bank connection.

All DC wire terminations and connections must be made in compliance with ABYC E-11 & A-31