

Professional Mariner

FLYBACK 10-3, 20-3
PROMATIC 30-3, 50-3,
PROMATIC 21-3 (24V), 16-3 (32V),
14-3 (36V)

ALLTECH SERIES
HIGH FREQUENCY AUTOMATIC FAST CHARGERS

OWNERS MANUAL & INSTALLATION GUIDE

READ SAFETY INSTRUCTIONS BEFORE INSTALLING ANY A.C. DEVICE.

The Professional Mariner Flyback/Promatic units are all fully automatic marine battery chargers that charge quickly, drop to float and maintain, condition, and desulfate at full charge. Units will operate from 90 to 270 VAC, 50/60 Hz single phase.

They are designed specifically for the marine environment with a water resistant aluminum case with drip shield for effective heat dissipation and corrosion resistance. These units should be permanently installed in your boat and hardwired directly to your batteries. They are designed with three isolated outputs that can sense and charge three heavy duty battery banks as needed.

INSTALLATION:

These units should be mounted vertically on a bulkhead for maximum heat dissipation. Units should be securely fastened with screws or thru bolts. The units are designed to operate in high ambient temperatures. 4 - 6 inches should be allowed on all sides of unit. This allows the unit to maintain its own circulation and cooling system for increased efficiency.

DC CONNECTIONS:

The units come standard with three isolated positive posts and one common negative. Boots are included to cover D.C. connections. Consult wire chart for correct D.C. wire size (ABYC 3% wire chart available for longer runs). If negatives are common on the batteries, only one negative is required from the charger to the batteries. Loose connections will damage your charger and / or your boat.

- 1) Connect positive #1 to battery bank #1 positive.
- 2) Connect positive #2 to battery bank #2 positive.
- 3) Connect positive #3 to battery bank #3 positive.
- 4) Connect common negative to battery.

* see diagram

Length of conductor is from charger to battery then back to charger.

Length of conductor in feet for 10-3, 14-3, 16-3

	10'	15'	20'	25'	30'
AWG	14	12	10	10	10
Metric	2	3	5	5	5

Length of conductor in feet for 20-3, 21-3

	10'	15'	20'	25'	30'
AWG	10	8	6	6	6
Metric	5	8	13	13	13

Length of conductor in feet for 30-3,

	10'	15'	20'	25'	30'
AWG	10	8	6	6	4
Metric	5	8	13	13	19

Length of conductor in feet for 50-3

	10'	15'	20'	25'	30'
AWG	6	6	4	4	2
Metric	13	13	19	19	21

* 1 foot equals .3048 meters

NOTE: If unit is used for single or dual battery bank applications, connect unused posts to a used post. If unused post is left unconnected it can reduce charger performance.

Any unit used to its maximum potential, and always the 50-3, should be installed in the upright position.

A.C. CONNECTIONS

Install a circuit breaker or fuse at boat's panel. A three (3) position terminal strip is provided for A.C. input. Connect hot (L) and neutral (N) to connections marked **N** and **L**. Connect A.C. ground (green) to connection marked:



Recommended A.C. fuse or breaker for boat panel:

	120 VAC	240 VAC
Flyback 10-3	5A	3
Flyback 20-3	10A	5
Promatic 30-3	15A	8
Promatic 50-3	20A	10

OPERATING INSTRUCTIONS:

These units are powerful 3 step battery chargers. They have the capability to deliver full voltage and current over a full range of A.C. input voltages, (90-270 VAC .) and hertz 45 to 440

These units incorporate 3 separate outputs for individual bank recharge and control. The built-in overvoltage protection shuts down the unit if the voltage goes too high. (16.5 VDC)

These units feature a built-in amperage indicator and a dual color power on LED. When the charger is activated, the LED will be RED, indicating charger is in fast charge mode. After the absorption cycle is complete (approx 3 hours after battery reaches .1 volt under high setting), the light will change to GREEN, indicating the charger is in float mode.

* The fan is temperature controlled and will only come on when needed.

NOTE: Open voltages at the charger on fast charge will be 14.6 to 14.8 on Lead/Acid batteries to compensate for voltage drop in wires. Read voltage at batteries, adjust for longer runs.

OVP - Runaway alternators, other equipment or loose connections could cause system to exceed the 16.5 VDC Overvoltage Protection setting. (Fast charge light will be on with no voltage rise at battery and no amperage on indicator.) If the charger shuts down, unplug charger and remove the D.C. negative wire. Leave disconnected for 3 minutes then reconnect the negative wire. This will reset the charger.

The charger also has an overtemperature shut down. Temperatures over 140°F will shut down unit. Unit will automatically reset when load or ambient temperature decreases.

A D.C. output fuse is on the D.C. negative. It is normally blown only when a battery is installed backwards. This fuse should not blow under normal operation. To check the fuse, turn off the A.C. to charger and disconnect the D.C. negative output from charger. Remove dripshield (4 screws) & upper six (6) screws on end plate (with A.C. terminal strip and output studs). Be careful not to pull out LED plug and meter leads on front of charger. The fuse is located on the circuit board near the D.C. output (fuse is ignition protected, automotive type).

Units are set up for Lead/Acid operation. To switch to Gel Cell see diagram at right of page.

Dip switch and two potentiometers are located on the circuit board at the dripshield end above the transformer. Remove 4 screws to remove drip shield

NOTE: The 50-3 has two (2) separate boards. Pull AC fuses on opposite board to adjust voltage, or send to factory for no charge adjustment. Switch both dip switches for gel batteries.

Overvoltage protection
Overtemperature protection
Quick recharge - 3 step

Each output capable of carrying the full current load
Dripshield design

Reverse polarity protected

Operates at full voltage and current over a wide range of AC voltages 90-270

Electronic current limited

Finned anodized aluminum extrusion cage for corrosion resistance and efficient heat dissipation

High frequency topology

AC terminal strip

FEATURES

Dimentions: H x W x D - weight

Flyback 10-3: 6.75"x8.5"x4" (17.1x21.6x10.1cm) - 5 lbs.

Flyback 20-3, 21-3: 8" x 8.5" x 4" (20.3x21.6x10.1 cm)- 8 lbs.

Promatic 30-3, 14-3, 16-3: 8.75" x 8.5" x 4" (22.2x21.6x10.2 cm)-8 lbs.

Promatic 50-3: 15.5" x 8.5" x 4" (39.4x21.6x10.1 cm)-14 lbs.

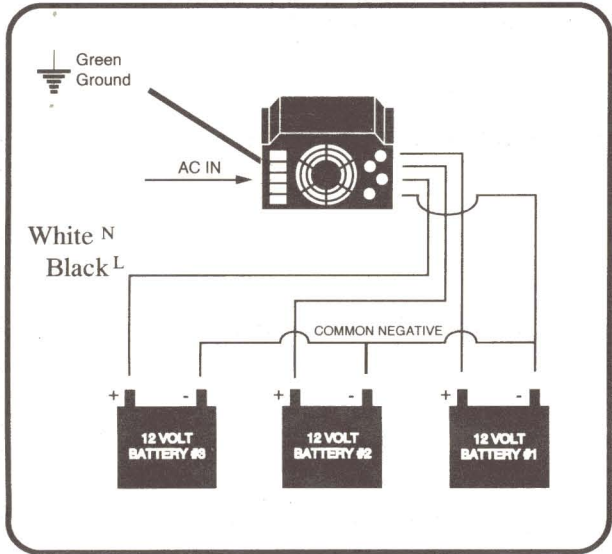
Conditions while it charges

Electronic voltage limited

Short circuit "Block wall" protected

Auto ranging AC 90-270

D-Sulfate-R circuit included



WARNING: HIGH VOLTAGE: DO NOT TOUCH ANYTHING INSIDE CHARGER WITH A.C. 'ON'.

**Remote panels available
Amps, Volts, Expanded Scale,
Digital Volts and Amps**

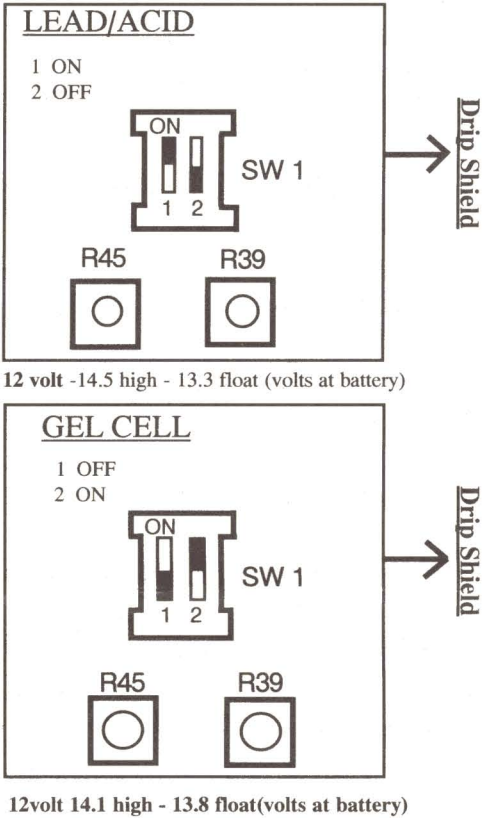
TO CHECK CHARGER:

- 1) Check battery voltage with charger off.
- 2) Activate charger.
- 3) If voltage goes up, charger works perfectly.
- 4) If voltage does not go up, check your battery and connections.
- 5) Check red light operation if light does not come on.
- 6) Check A.C. in voltage, if A.C. is okay and LED light is flashing.
- 7) Turn off A.C. and disconnect common negative for 3 minutes then reactivate.
- 8) No activation - contact factory.
- 9) If voltage exceeds 14.4 for over 12 hours, turn off charger, call service (805) 644-1886.
- 10) Any rapid boiling under 14.2 while charging means your battery is probably defective.

TROUBLESHOOTING GUIDE AVAILABLE.

Check battery water level every month or so. Fill with distilled water.

FOR SERVICE, UPGRADES, ELECTRICAL SYSTEM MONITORS, CONVERTERS AND POWER SUPPLIES CALL: (805) 644-1886



Switch is factory set for Lead/Acid batteries

12 volt - 14.5 high - 13.3 float (volts at battery)

24 volt - 29 high - 26.6 float (volts at battery)

32 volt - 38.67 high - 35.5 float (volts at battery)

36 volt - 43.5 high - 39.9 float (volts at battery)

Switch set for Gel Cell batteries

12 volt - 14.1 high - 13.8 float (volts at battery)

24 volt - 28.2 high - 27.6 float (volts at battery)

32 volt - 37.6 high - 36.8 float (volts at battery)

36 volt - 42.3 high - 41.1 float (volts at battery)

OVP Settings

12V System - 16.5 VDC

24V System - 33 VDC

32V System - 44.7 VDC

36V System - 49.5 VDC

**PROFESSIONAL MARINER ONE-YEAR LIMITED
WARRANTY & LIFETIME REPAIR POLICY**

Each product is guaranteed against defects in material and workmanship to the original consumer in normal use for one full year after purchase at no charge except shipping.

Each serial numbered product has an additional repair adjustment provision after the full year limited warranty that limits the maximum charge for a factory repair to the original consumer to 1/60th of the retail price times the number of months after purchase or up to a maximum of 50% of current retail price, after 30 months of service, plus shipping.

*Warranty and repair adjustment calculated from manufacture date if not registered within 2 weeks of sale.

*Warranty void if unauthorized repairs attempted.

*Customer responsible for return shipping damage and shipping costs must be prepaid both ways.

*Cosmetic repairs done at owner's request and expense.

Purchase or other acceptance of the product shall be on the condition and agreement that Professional Mariner 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 limitation or exclusion 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 it or any other obligation or liability in connection with the sale of this product.

To make a claim under warranty, write directly to Professional Mariner, 2970 Seaborg Ave., Ventura, CA 93003, identifying the product and giving its location and follow the company's return instructions which will then be provided by the company. Professional Mariner will make its best efforts to repair or replace the product, if found to be defective within the terms of this warranty within thirty (30) days after return of the product to the company. Professional Mariner will ship the repaired, or replaced product back to the purchaser at owner's expense.

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 other expressed or implied.

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