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PROFESSIONAL MARINER, LLC
PO.BOX 968
RYE, NEW HAMPSHIRE 03870

fold here and tape closed

WARRANTY REGISTRATION CARD

NOTE: REGISTRATION CARD MUST BE COMPLETELY FILLED OUT AND MUST BE RECEIVED WITHIN TWO WEEKS OF PRODUCT PURCHASE OR YOU MAY COMPLETE AN ONLINE REGISTRATION FORM AT WWW.PROMARINER.COM UNDER THE SUPPORT TAB.

DATE OF PURCHASE: _____

FIRST AND LAST NAME: _____

ADDRESS: _____

CITY _____ STATE: _____ ZIP: _____

E-MAIL ADDRESS: _____ PHONE: _____

PRODUCT PURCHASED: _____ SERIAL NUMBER: _____

TYPE OF BOAT INSTALLED ON: _____

PURCHASED FROM : _____

INSTALLED BY : (CHECK ONE) FACTORY DEALER SELF

SEND ME A FULL COLOR BROCHURE: YES NO

COMMENTS: _____

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ProMariner®

ProSafe One Monitoring System

Owner's Manual and Installation Guide



AC Ground Wire and Galvanic Isolator

IMPORTANT NOTICE

Please save and read all safety, operating and installation instructions before installing or operating this device

For all product, installation or service questions call ProMariner directly at: 1-800-824-0524 8:30 am to 5pm (Eastern Time).

► Notes

► Table Of Contents

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► Introduction

Congratulations on your purchase of the ProSafe Ground Wire and Galvanic Isolator Monitor.

The Professional Mariner ProSafe One Ground Wire and Galvanic Isolator Monitor has been engineered to meet and exceed the requirements of ABYC A-28 for status monitoring.

Please do not discard this manual. Carefully read this manual and fully understand the installation instructions within the manual.

It is essential for the safety of your boating family and other boating families around you that this product be properly installed.

► Why You Need a ProSafe Monitor

It is very important that while your vessel is at dock, plugged into shore power, that it's bonding system be electrically connected to earth. Without this connection the chance is increased, through accident or failure in the electrical distribution system, that the bonding system could become electrically "HOT" (presence of 110 or 220 VAC). An occurrence of this type could quickly become deadly both to anyone in the water, boarding, or even aboard the vessel.

Also of importance to note is the presence of a device called the "Galvanic Isolator". This device is installed in the ground wire circuit between shore ground (earth) and the vessel's bonding system. The purpose of the galvanic isolator is to allow the bonding system to be isolated electrically from the dock and other vessels at low voltages (below 1.4 volts) but to keep it connected to the shore ground at high voltage potentials. This is so the vessel's zincs protect only the vessel they are on. You may have heard the term "zinc saver", a term used often to describe a galvanic isolator.

The intent of ABYC A-28 was to create a device which would test for continuity of the shore power ground wire and to test the integrity of the galvanic isolator. By doing these two tests at a regular interval you are assured that the vessel's galvanic isolator is functioning properly and that the shore power system is electrically connected to the "Shore Ground" (earth).

► 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 new ProSafe One Ground Wire and Galvanic Isolator Monitor, simply call us at 1-800-824-0524 for technical support.

If a replacement unit is needed during warranty period, ProMariner will ship a replacement ProSafe Ground Wire and Galvanic Isolator Monitor at no cost with a prepaid UPS shipping label for the original unit to be returned.

PROSAFE ONE-YEAR LIMITED WARRANTY

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.

- Warranty and repair adjustment calculated from manufacture date if not registered within two weeks of sale.
- Warranty void if unauthorized repairs attempted.

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 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, call Professional Mariner, LLC at 1-800-824-0524. Follow the company's return instructions. 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 Offices
Professional Mariner, LLC
200 International Drive STE 195
Portsmouth, NH 03801
Tel: 1-800-824-0524 www.promariner.com

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

▶ **Trouble Shooting Guide Continued**

CAUTION - Because of the presence of deadly high voltages troubleshooting should be done by a qualified service person only.

“FAIL” indication of the ground wire

 **WARNING!**

DO NOT PERFORM THIS TEST IF THE PROSAFE ONE IS INDICATING A “REVERSE POLARITY FAIL”. INSTALLING THE JUMPER WIRE IN STEP 2 BELOW DURING A REVERSE POLARITY CONDITION WILL PUT HIGH VOLTAGE ONTO THE BONDING SYSTEM. THIS IS A LIFE THREATENING CONDITION.

1. Be sure the shore power cable is disconnected at the dock post.
2. Using a length of jumper wire (18 ga. or larger) connect one end to the neutral wire (connection location of the ProSafe One blue wire) and the other end to the shore ground wire (“AC Shore Ground” stud on the Galvanic Isolator). With the boat’s AC main breaker in the “off” position, reconnect the AC shore cord to the dock post and turn on the dock post breaker. After the five second test, the display should show a “NORMAL” condition on the ground wire indicator. With the display showing a “NORMAL”, the problem could be a defective shore cable, a shore cable connector or faulty ground/neutral connection dockside.

In the event you are new at this dock and the ProSafe One has not given you a “FAIL” indication previously, it has been found that a bad ground/neutral connection at the dock is a likely occurrence.

If the ProSafe One shows a “FAIL” during this test of the system, the ProSafe One has failed and needs replacement.

UPON COMPLETION it is imperative that you disconnect the shore cord from the dock post and then remove the jumper wire. Not removing this jumper is in violation of ABYC standards.

▶ **Theory of Operation**

The engineers at Professional Mariner have designed the ProSafe One Monitor in such a way that it connects to your electrical/bonding system for only a very short amount of time over the period of a day, less than 20 seconds in a 24 hour period. We have done this because we feel that any type of voltage, AC or DC, left on the bonding system for extended periods of time can be detrimental to the integrity of the bonding system’s fittings and struts in contact with seawater.

Each time the vessel is connected to AC shore power, or the ProSafe One Monitor is activated by the push to test button, or every 3 hours after that, the ProSafe One Monitor does a series of tests. First it performs a reverse polarity test. Then it performs the tests required in ABYC A-28: a test of the ground wire continuity and then the integrity of the Galvanic Isolator. The actual test results are displayed on the remotely mounted display panel.



► Installation

Mechanical and electrical installation consists of the following units:

ProSafe One Galvanic Isolator 30 amp or 50/60 amp

[ABYC A28.6.1 - The Galvanic Isolator shall be connected in series with the AC grounding conductor (green or green w/yellow stripe) in a manner that no other ground conductor will bypass the isolator back to the shore power ground.]

Professional Mariner would also recommend that you place the galvanic isolator in a dry location that has ventilation and is as close to the point of cable entry as physically possible. Using 4 screws, secure the galvanic isolator in a vertical position with the text on the label right side up, high current studs to the sides. Please note that the electrical posts are marked "AC Shore Ground" and "Bonding System" and must be connected as marked or the monitoring of the shore ground wire will not function properly.

Galvanic Isolator Sense Cable

The standard sense cable is 4 meters (13 feet) long. Optional lengths are 1 meter, 7 meters and 10 meters. The cable is plugged into the control module at one end and the galvanic isolator at the other end.

ProSafe One Monitor Control Module

The Control Module should be in a location that allows access to the AC mains and within reach of the display unit cable. Using the diagrams on the following pages, the AC HOT (brown), NEUTRAL (blue) and GROUND (green/yellow) wires should be connected to shore power on the **inlet side of the main breaker**. This location gives the boat owner the ability to check the integrity of the ground circuit and the Galvanic Isolator before turning on the main panel breaker supplying power to the vessel. Placing the AC leads on the inlet side of the main breaker also isolates it from operation while under generator power when it is not necessary to detect the ground wire continuity. Use the four screws provided to mount the control module. The control module should be mounted in a dry location and can be mounted either flat or on a bulkhead.

ProSafe One Monitor Remote Display

The display should be mounted in an area that is readily accessible while operating the AC main breaker or selector switch. The preferred mounting location is next to or within the main AC breaker panel. The display unit is 2.55" in width by 1.75" in height. It is made to be flush mounted by drilling a 1 3/8" diameter hole, then slipping the display body into the hole. Fasten with (2) #4 screws.

► Trouble Shooting Guide

CAUTION - Because of the presence of deadly high voltages troubleshooting should be done by a qualified service person only.

If your ProSafe One does not operate, check for AC power and check the blue wire fuse and the brown wire fuse and make sure they are in good working order.

"FAIL" indication of the reverse polarity

1. Turn off the AC panel "main breaker".
2. Using a volt meter, check the voltage between the green wire and white/blue wire at the main breaker input side. If the reading is not less than 6 volts (typical) and is instead close to or over 100 volts, this is an indication of reverse polarity.
3. If there has been no recent electrical work on the boat and/or you have moved to a different dock, it is probable that the reverse polarity is caused by an improperly wired electrical outlet in the dock post. This can be tested by checking the voltage between the ground and neutral slots in the connector of the dock post using the same process as above.
4. When using dual inlet shore system (ProSafe One dual shore cord part #22080) it is possible to isolate the mis-wired shore cord by connecting one shore cord at a time and noting its displayed polarity test results.

It is important to rectify this problem as it is the first of two mistakes that in conjunction will cause high voltage on the bonding system of the boat.

"FAIL" indication of the Galvanic Isolator

1. Be sure the shore power cable is disconnected at the dock post.
2. Check the connection point of the four wire connectors to the Galvanic Isolator. Look for corroded pins or broken wires. If no problems are found replace the Galvanic Isolator with a new Galvanic Isolator and retest.

► Using The ProSafe One Monitor Continued

Note: With any of the above faults present, and because of the possibility of high AC voltage on the bonding system, it is highly recommended that the vessel's shore cord be disconnected until a marine technician can determine and repair the fault.

To Silence the Audible Alarm:

In the event of a "FAIL" condition, if it is preferred to be able to use your 110/220 volt systems without the presence of the audible alarm it can be silenced by holding the "TEST" button until the alarm silences. The alarm will stay silent while leaving the "FAIL" LED illuminated. This does not rectify the "FAIL" condition, and it is imperative that the reverse polarity condition, ground wire or isolator be checked for a fault and the fault be repaired.

► Maintenance

The ProSafe One Ground Wire and Galvanic Isolator Monitor is self contained and should need no service. Periodically check all connections are tight, clean and free of moisture.

► Optional Accessories

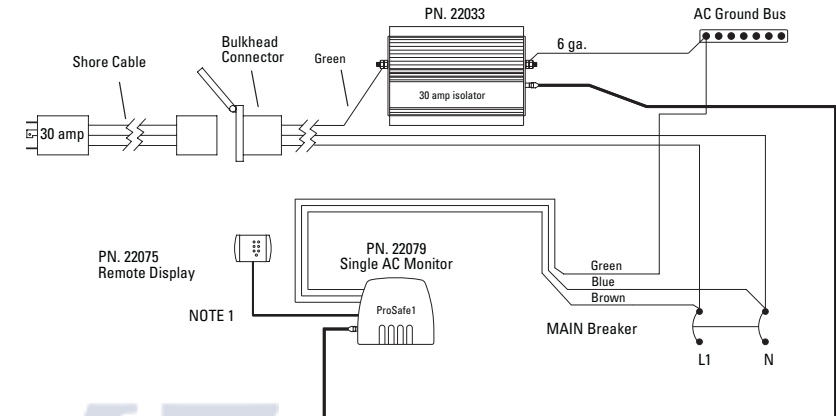
| Part No. | ProSafe One System Components |
|----------|---|
| 22079 | ProSafe One main unit - single shore cord |
| 22080 | ProSafe One main unit - dual shore cord |
| 22075 | ProSafe One remote display |
| 22110 | 1 meter isolator sense cable |
| 22111 | 4 meter isolator sense cable |
| 22112 | 7 meter isolator sense cable |
| 22113 | 10 meter isolator sense cable |
| 22115 | 3 meter remote extension cable |
| 22033 | 30 amp ProSafe galvanic isolator |
| 22066 | 60 amp ProSafe galvanic isolator |

Call your Professional Mariner Dealer or representative for the monitor best suited for your application.

We are committed to customer satisfaction and value your business. If at any time during the warranty period you experience a problem with your new ProSafe One Ground Wire and Galvanic Isolator Monitor, call us at 1-800-824-0524 for technical support.

If a replacement unit is needed, during warranty period ProMariner will ship a replacement at no cost with a prepaid UPS shipping label for the original unit to be returned.

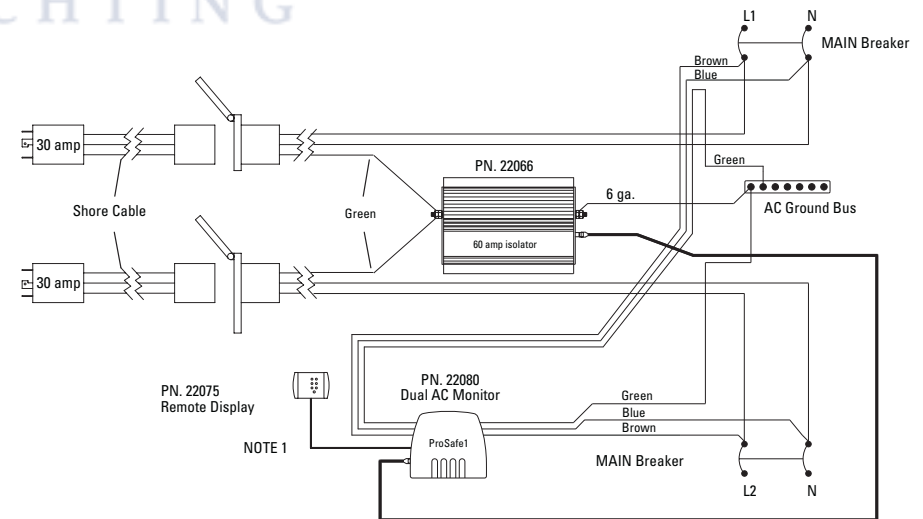
► Typical Hookup for Single 30 Amp/120 Volt Inlet



NOTES:
1. PN. 22115 Remote Monitor Extension Cable - 3 meters

PN. 22110 - 1 meter Isolator Cable
PN. 22111 - 4 meter
PN. 22112 - 7 meter
PN. 22113 - 10 meter

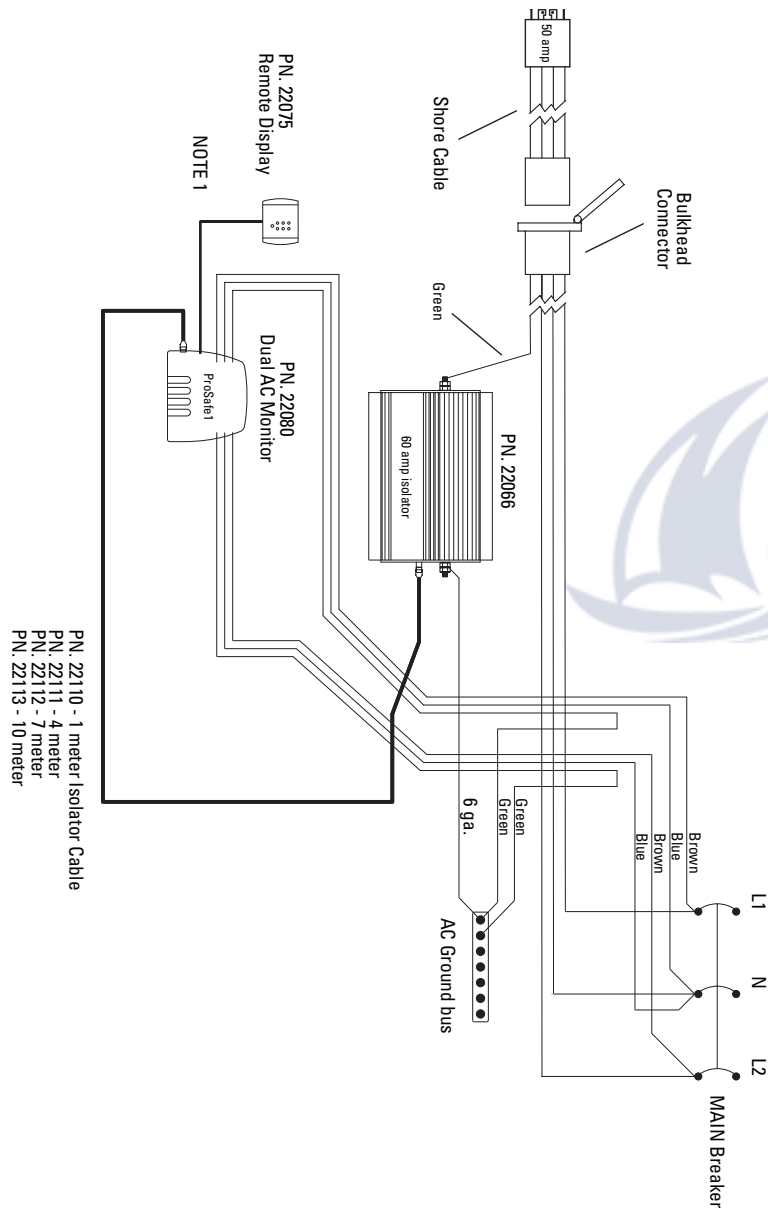
► Typical Hookup for Dual 30 Amp/120 Volt Inlets



NOTES:
1. PN. 22115 Remote Monitor Extension Cable - 3 meters

PN. 22110 - 1 meter Isolator Cable
PN. 22111 - 4 meter
PN. 22112 - 7 meter
PN. 22113 - 10 meter

► Typical Hookup for Single 50 Amp/220-250 Volt Inlet



► Using The ProSafe One Monitor

Note: In the event of an indication of a reverse polarity, an isolator failure or groundwire failure, disconnect the AC shore cord immediately (see troubleshooting guide)

Automatic Operation:

Be sure your main AC panel breaker is in the off position. Also be sure your dock post AC breaker is in the off position. Attach both ends of the vessel shore cord, one end to the dock post receptacle, the other to the power inlet on your vessel. Turn on the dock post breaker. The presence of AC on the input side of the main panel breaker will activate the ProSafe One Monitor. After the ProSafe Monitor cycles through its self test, it will display the condition of polarity, the shore ground wire and of the Galvanic Isolator. The test sequence takes about 20 seconds. The ProSafe One Monitor will repeat this test automatically every 3 hours. A "FAIL" indication on the remote display of either the ground wire or the Galvanic Isolator is an indication of an ungrounded bonding system and should be considered a very dangerous situation. Because of the possibility of high AC voltages on the bonding system it is **highly recommended that the vessel's shore cord be disconnected until a marine technician can determine and repair the fault.**

Manual Operation:

To operate the ProSafe One Monitor manually simply press the "TEST" button on the display panel, wait for the test to complete (about 5 seconds) and read the displayed test results.

Interpretation of Test Results:

The display consists of six LEDs, three green and three red. The three green LEDs should be lit to show proper polarity, good ground wire continuity and a functioning galvanic isolator. A reverse polarity red LED indicates that the line and neutral wires are reversed. Unless you have had recent electrical work done on your AC electrical system or shore cords, this is typically a fault of the receptacle which your shore cord is plugged into. This needs to be corrected as it enhances the chance of accidentally having 110VAC (220 VAC in Europe) on the vessels bonding system.

Note: Because of how the ground wire testing is done, a reverse polarity hook-up will also show a "FAIL" to the ground wire. By rectifying the reverse polarity, the ground wire problem will most likely be rectified.

Ground Wire RED:

Indicates that the ground wire (green wire) is not connected to the shore properly. The fault can be caused by the green wire being open or disconnected, by a bad connection at the galvanic isolator, shore cord plug, dock plug or even the metal tip of the plug itself not making good contact. It can also be caused by the ground wire not being connected to the neutral back on the dock {a requirement under the N.E.C. (National Electrical Code)}

Galvanic Isolator RED:

Indicates that there has been a failure of the galvanic isolator. The galvanic isolator can fail as a short or an open circuit. A short it will no longer isolate the boat in a low level DC manner and will increase erosion of your zincs. An open circuit eliminates AC ground protection to your bonding system. Both situations are cause for concern, the later being a life threatening situation. If the galvanic isolator shows a "FAIL", it should be replaced without hesitation due to this danger.