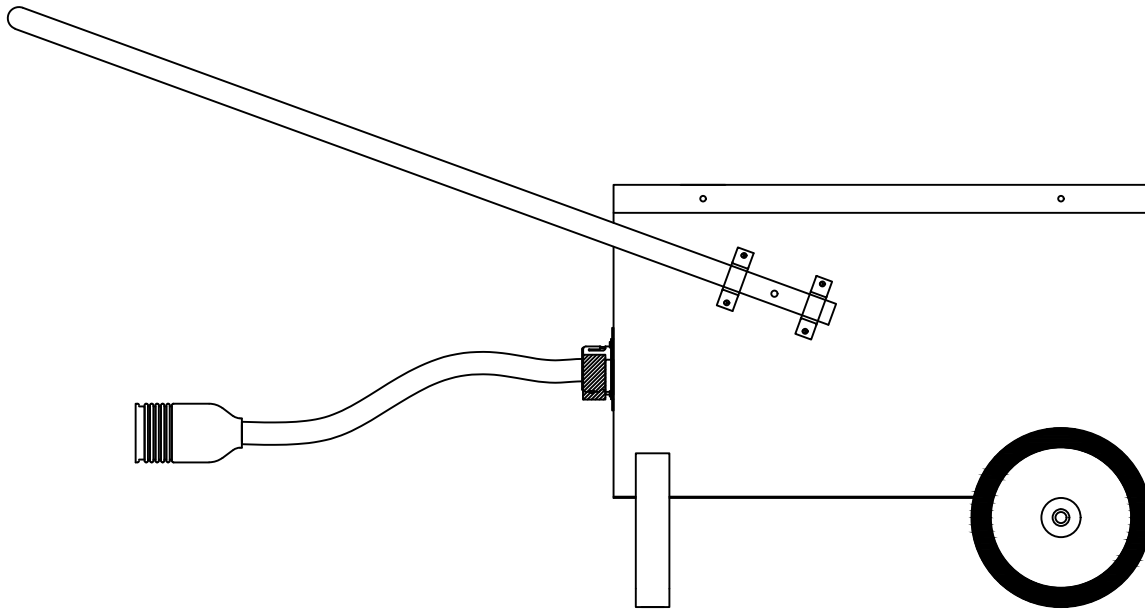




Isolating Vessel Ground Fault
Check Unit
Model VGFCU-ISO
Operation Manual



Patent Pending

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CONFORMS TO STD. ANSI/UL508A
CERT. TO CUL STAD UL508A

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Operation Manual

INTRODUCTION:

PRODUCT DESCRIPTION:

The Isolating Vessel Ground Fault Check Unit (VGFCU-ISO) assembly shall be listed and marked, tested and certified to conform to Standard ANSI/UL® UL508A entitled "Industrial Control Panels," Class B Standard ANSI/UL® 1053 entitled "Ground Fault Relay Sensing Equipment" and CUL Standard C22.2 No. 144 entitled "Standard Ground Fault Circuit Interrupter." It is designed for testing and locating ground faults on marine AC shore power electrical systems.

FUNCTION: the VGFCU-ISO is a portable testing device that plugs into a host power outlet panel and delivers power to the test vessel to measure ground fault leakage current within the vessel AC shore power system. The device electrically isolates the test vessel from the marina/dock AC shore power electrical system to eliminate nuisance-tripping issues in the marina's electrical system. Ground fault leakage current is displayed on the LCD screen, and an audible alarm with red LED signify when improper neutral-ground bonds are sensed.

WARNING: Marina Electrical Equipment, Inc. recommends that only qualified personnel or an electrician, familiar with the operation of this power outlet equipment, should use this equipment.

CAUTION: Marina Electrical Equipment, Inc. will not assume any responsibility for property damage or personal injury resulting from misuse of the information in this manual.

CAUTION: Isolation Vessel Ground Fault Check Units are designed for testing purposes only, not for full-load usage.

SPECIFICATIONS:

ENCLOSURE TYPE:	NEMA 1 (NOT WEATHERPROOF)
LISTING AGENCY:	UL
LISTING STANDARDS:	UL508A INDUSTRIAL CONTROL PANEL, UL1053 GROUND FAULT SENSING EQUIPMENT
RECEPTACLES:	20A 125V 5-20R, 30A 125V L5-30R, 50A 125/250V SS-2, 100A 125/250V 4100RA12W, 100A 208Y/120V 5100RA9W, 100A 480V 4100RA7W, 100A 480Y/277V 5100RA7W
kVA:	3-5 kVA, 1 PHASE or 3 PHASE (BASED ON RECEPTACLE CONFIGURATIONS)
PRIMARY VOLTS:	120VAC or 480V (BASED ON RECEPTACLE CONFIGURATIONS)
SECONDARY VOLTS:	120/240VAC, 208Y/120V, 480V or 480Y/277V (BASED ON RECEPTACLE CONFIGURATIONS)
POWER INPUT:	20A 125V 5-20P, 30A 125V L5-30P, 50A 125/250V SS-2P, 100A 125/250V 4100P7W, 100A 208Y/120V 5100P9W, 100A 480V 4100P7W, or 100A 480Y/277V 5100P7W (BASED ON RECEPTACLE CONFIGURATIONS) WITH 6 ft. SOOW CORD
CIRCUIT BREAKERS:	20A (Protects 30A Rec.), 50A, 100A (125/250V, 208Y/120V, 480V, or 480Y/277V (BASED ON RECEPTACLE CONFIGURATIONS)
AIC RATING:	10 kAIC
FREQUENCY:	60 Hz
SOUND LEVEL:	30 dB MAX
INSULATION CLASS:	180°C
WIRING:	FINE STRANDED, TIN PLATED COPPER
WEIGHT*:	115 LBS.* MAY VARY BASED ON RECEPTACLE CONFIGURATIONS

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OPERATING INSTRUCTIONS:

NOTE 1: THIS EQUIPMENT IS DESIGNED FOR DIAGNOSTIC TESTING ONLY AND IS NOT RATED FOR CONTINUOUS-DUTY OR FULL LOAD OPERATIONS.

NOTE 2: FOR VESSELS CONTAINING MULTIPLE SHORE POWER CORDS: THE FOLLOWING TESTS MUST BE PERFORMED FOR EACH CORD.

TEST 1: CHECK FOR ERRONEOUS NEUTRAL-GROUND BONDS

ALL CIRCUIT BREAKERS IN THE HOST POWER PEDESTAL, VGFCU-ISO, AND TEST VESSEL MUST BE OFF.

1. INSERT MALE CONNECTOR INTO HOST POWER PEDESTAL RECEPTACLE.
2. ENERGIZE THE APPROPRIATE CIRCUIT BREAKER IN HOST POWER PEDESTAL.
3. INSERT VESSEL SHORE POWER CORD INTO EITHER THE RECEPTACLE ON THE VGFCU-ISO. RED "NEU-GRD BOND" INDICATOR LIGHT WILL ILLUMINATE AND AUDIBLE ALARM WILL SOUND IF AN ERRONEOUS BOND IS PRESENT ON THE VESSEL. FURTHER TESTING IS UNNECESSARY AND THE VESSEL MUST NOT BE PERMITTED TO CONNECT TO THE MARINA AC SHORE POWER SYSTEM.

IF TEST 1 IS PASSED, CONTINUE WITH TEST 2 PROCEDURES:

TEST 2: CHECK FOR AC CURRENT LEAKAGE.

1. PERFORM A FUNCTIONAL TEST BY PRESSING AND HOLDING THE TEST/REST BUTTON ON THE GFR480 FOR 3 SECONDS. THE UNIT WILL GO INTO ALARM STATUS AND DISPLAY "PASSED" or "FAILED". IF THE TEST WAS PASSED, PRESS THE TEST/RESET BUTTON ONCE TO CLEAR AND BEGIN TESTING THE VESSEL.
2. ENERGIZE THE APPROPRIATE CIRCUIT BREAKER ON THE VGFCU-ISO CORRESPONDING TO THE RECEPTACLE THE TEST VESSEL IS CONNECTED.
3. ENERGIZE THE VESSEL MAIN AND MONITOR THE DIGITAL DISPLAY ON THE GFR480 WHICH DISPLAYS GROUND FAULT CURRENT. NOTE DISPLAYED READING.
4. ENERGIZE AND LOAD THE 1ST CIRCUIT ON THE VESSEL, NOTING THE GROUND FAULT CURRENT READING.
5. DE-ENERGIZE 1ST CIRCUIT ON THE VESSEL, ENERGIZE AND LOAD THE NEXT CIRCUIT AND NOTE THE GROUND FAULT CURRENT READING.
6. REPEAT STEPS 4 AND 5 UNTIL ALL CIRCUITS ARE TESTED.
7. ADD ALL GROUND FAULT CURRENT READINGS TO OBTAIN TOTAL GROUND FAULT CURRENT. IF TOTAL GROUND FAULT CURRENT IS GREATER THAN 30 mA (+/- 10%), THE VESSEL MUST NOT BE PERMITTED TO CONNECT TO THE MARINA AC SHORE POWER SYSTEM.

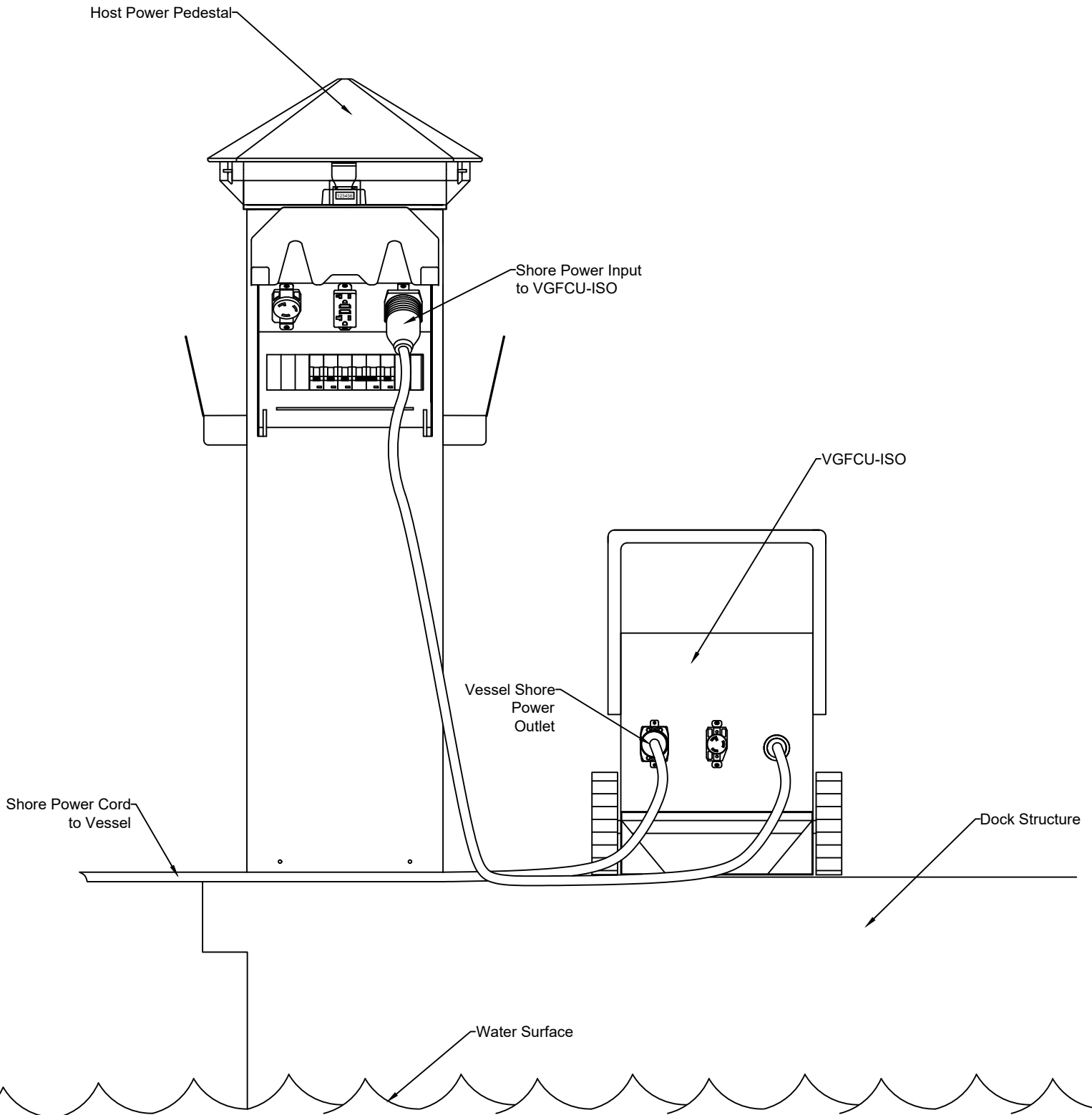
NOTE: THE GFR480 WILL TRIP AT 100 mA OF GROUND FAULT CURRENT DETECTION AND DISPLAY THE ELAPSED TIME SINCE THIS PRESET LIMIT WAS MET/EXCEEDED. VESSEL CANNOT BE PERMITTED TO CONNECT TO THE MARINA AC SHORE POWER SYSTEM. PRESS THE RESET BUTTON ONCE FAULTS ARE CLEARED TO RETEST.

SHUT-DOWN PROCEDURE:

1. DE-ENERGIZE VESSEL MAIN.
2. DE-ENERGIZE CIRCUIT BREAKERS ON THE VGFCU-ISO.
3. DE-ENERGIZE CIRCUIT BREAKER IN THE HOST POWER PEDESTAL.
4. DETACH THE VESSEL SHORE POWER CORD FROM THE VGFCU-ISO.
5. DETACH THE VGFCU-ISO FROM THE HOST POWER PEDESTAL.
6. STORE DEVICE INDOORS WHEN NOT IN USE.

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FIGURE 1 - TYPICAL CONNECTION

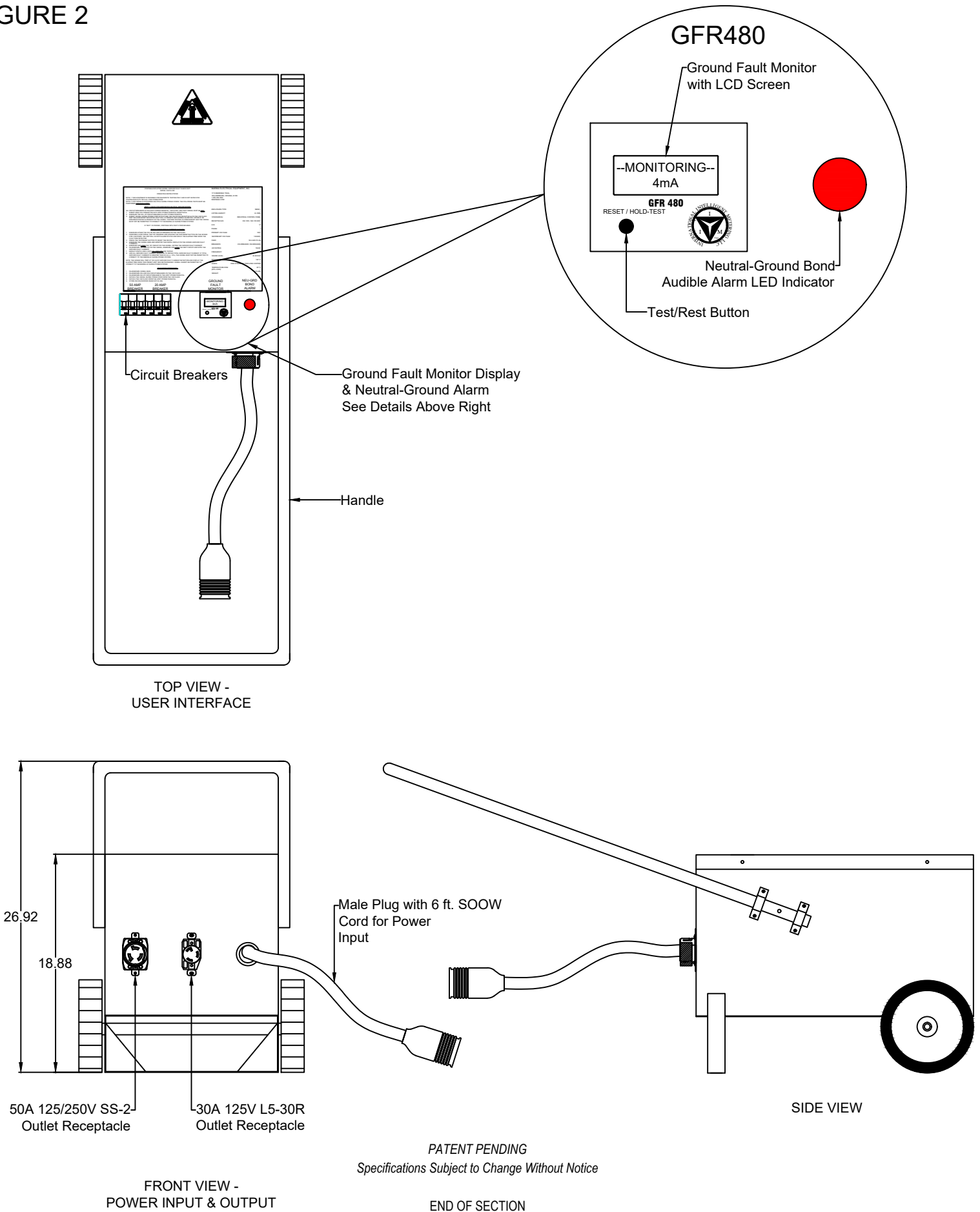


PATENT PENDING
Specifications Subject to Change Without Notice

END OF SECTION

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FIGURE 2



PATENT PENDING
Specifications Subject to Change Without Notice

END OF SECTION

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WARRANTY POLICY

Assembly:

Marina Electrical Equipment, Inc. (MEE) warrants that the equipment will be free from failure resulting from defects in material and/or workmanship, and are covered by a limited warranty of one (1) year. Should any of the associated parts fail to comply with the above-mentioned warranty, MEE will either repair or replace the defective part(s), or credit the purchaser for the purchase price of the part.

Ground Fault Monitor:

Although the GFR480 Ground Fault Monitor contains integrated surge protection, MEE and IIM will not warrant the product against severe over-voltage conditions such as lightning strikes or abnormal utility surges. Should a ground fault monitor fail to comply with the above-mentioned warranty, MEE will either repair or replace the defective part(s)/components, or credit the purchaser for the purchase price of the part. This warranty is voided if the damage to any or all of the components is the result of abuse, misuse, or Force Majeure. This warranty is voided if the factory seal is broken or manipulated.

This warranty policy does not cover damage or failure resulting from abuse, misuse, negligence or Force Majeure. All warranty claims must be made in writing and all defective products shall be returned to MEE for evaluation unless stated otherwise by MEE. MEE will not be responsible for reimbursing the purchaser for any sort of expense incurred by the purchaser as a result of the repair or replacement of a warranty claim.

Send all warranty claims to:

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