

GTX™ SUPER YACHT UNIT SUBSTATION

General Specifications



THE INFORMATION CONTAINED IN THE FOLLOWING DOCUMENT REPRESENTS THE STANDARD CAPABILITIES OF THE GTX™ SUPER YACHT UNIT SUBSTATION. EACH UNIT IS MANUFACTURED TO PROJECT SPECIFICATIONS AND WILL BE MODIFIED ACCORDINGLY.

Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
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Intertek
4005786

CONFORMS TO STD. ANSI/UL1062

General Specifications - GTX™ Super Yacht Unit Substation

ALL GTX SUPER YACHT UNIT SUBSTATIONS SHALL MEET THE FOLLOWING SPECIFICATIONS:

SECTION A: ACCEPTABLE MANUFACTURERS:

Marina Electrical Equipment, Inc.
1715 Merrimac Trail
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Web: www.marinaelectricequipment.com

SECTION B: GENERAL REQUIREMENTS

1. Unit substations shall be listed and marked, tested and certified to conform to Standard ANSI/UL® 1062 (Unit Substations) and CAN/CSA Standard C22.2 No. 31-10.
2. Shall be compliant with all sections of the latest edition of NFPA® 303, "Fire Protection Standards for Marinas and Boatyards."
3. Shall be compliant with NEC, and NFPA 70 555.5, which states: "Transformers and enclosures shall be specifically approved for the intended location. The bottom of transformers shall not be located below the electrical datum plane."

SECTION C: CONSTRUCTION REQUIREMENTS

1. All materials and components used in the construction of the unit substation shall be listed.
2. **Main Housing:** Shall be "take-apart" construction utilizing 316L stainless steel and shall be powder coated with polyester resin and processed to withstand a salt spray without peeling or separating. The housing be listed as a NEMA® Type 3RX weatherproof enclosure and contain removable "lift-off panels" to provide 360-degree access to the interior components.
3. **Access Panels:** Shall be constructed of 316L stainless steel and be flush-mounted with minimal external mounting hardware.
4. **Top / Lifting:** Shall be constructed with a removable solar shield that conceals engineered lifting shackles that swivel and are designed / tested to lift four (4) times the static weight of the unit substation.
5. **Mounting Base:** Shall be compliant with NEC and NFPA 70 555, and meet the datum plane requirement without the addition of curbing to meet the 12" height requirement. The housing shall also have isolation pads to insure the housing does not have contact with the mounting substrate (concrete or wood).
6. **Mounting Requirements:** Mounting bolts (provided by others) for the Unit Substation shall be easy to use and consealed behind removable louvered access panels after mounting.
7. **Doors:** The housing shall have lockable doors.
8. **Fans:** Shall be equipped with thermo-statically controlled axial fans to maintain efficient operating temperature. The fans shall also be controlled by an electromechanical photocell to limit condensation accumulation created by temperature variations during evening hours.
9. **Lighting Lenses:** Shall be constructed of 3/16" thick listed polycarbonate.
10. **Hardware:** Shall be minimal and be 316 stainless steel, Phillips® drive.

SECTION D: TRANSFORMER(S)

1. Transformer(s) shall meet the requirements of NEMA TP.1/DOE2016 as described in the Code of Federal Regulations Section 451.196 Energy Conservation Standards.
2. Construction shall be dry-type isolation transformers with copper windings and thermo-statically controlled axial fans to maintain efficient operating temperatures.

SECTION E: PANELBOARD(S)

1. The distribution panelboard(s) shall be main circuit breaker or main lug only and manufactured by GE, Square-D or equivalent.
2. The distribution panelboard(s) shall include surge protection device designed to contain a 130kA/phase surge incident (optional, other ratings available by request).
3. The distribution panelboard(s) shall include ground fault monitor relay(s) to monitor and/or interrupt the main circuit breaker and/or branch circuit breakers to comply with NEC 555.3 requirements (optional).
4. Standard panelboard(s) bussing shall be 1000A PSI copper, unless otherwise noted/requested.
5. The standard panelboard(s) short-circuit current rating (SCCR) shall be 10 kAIC and be fully-rated unless otherwise noted/requested (SCCR are available from 10 kAIC - 200 kAIC, fully or series-rated).

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SECTION F: LIGHTING

1. Each GTX Super Yacht Unit Substation shall contain (6) non-metered lighting assemblies.
2. Lamps shall be readily available, commercially manufactured LED and controlled by an electromechanical photocell.
3. Lighting assemblies shall be protected by a fuse or circuit breaker.

SECTION G: RECEPTACLES, CAM-LOCKS, & CIRCUIT BREAKERS

1. Receptacles rated for 100 amperes shall be tin or nickel-plated pin-and-sleeve and conform to IEC and CEE standards.
2. IEC/CEE pin-and-sleeve receptacles shall be Globetron®, Hubbell® or equivalent.
3. Ground Fault Circuit Interrupting (GFCI) receptacles shall conform to NEMA® 5-20R requirements.
4. GFCI Receptacles shall be Leviton® SmartLockPro® Weather Resistant, corrosion-resistant or equivalent.
5. Receptacles shall be mounted at a minimum height of 30" above the deck surface and at a minimum angle of 35° from horizontal for ship-to-shore power cord strain relief.
6. Each receptacle shall be individually protected by a thermal-magnetic type circuit breaker with 10 kAIC interrupting rating.
7. Circuit breakers shall be GE®, Square-D®, or equivalent.
8. Cam-lock hardwire connections shall be equipped with inter-locking mechanisms via microswitches to prevent energizing the connections without proper connectivity.

SECTION H: SOLID-STATE ELECTRIC KWH MONITORING

1. Each GTX Super Yacht Unit Substation shall be equipped with (optional) solid-state electric monitors which output kilowatt-hours (kWh) consumption at each slip via an electromechanical counter and (optional) wireless remote transmission. Wireless transmission shall be integral to the solid state electric monitor.
2. Each solid-state electric monitor shall be rated for 200 amperes (other rating available by request), listed, marked and tested to conform to Standard ANSI-C12.1 and NTEP standards with $\pm 1\%$ accuracy.
3. Each solid-state electric monitor shall be capable of monitoring ground faults at each slip.
4. Each solid-state electric monitor shall measure the analog pulse output (optional) of the (optional) water meters at each slip and wirelessly transmit (optional) the usage via the internally built wireless remote transmission.

SECTION I: WIRING & TERMINAL BLOCK

1. GTX Super Yacht Unit Substations shall be completely factory pre-wired to the load side of the primary and secondary section panelboards, or copper 3/8" stud lug compression terminal block assembly.
2. Electrical wiring shall be high-stranding tin-plated copper THHW/MTW VW-1 Boat Cable rated for 105°C.
3. All electrical components shall be located above the electrical datum plane set forth by the NEC.
4. All exposed metallic parts shall be grounded as part of the integral equipment ground.

SECTION J: PLUMBING

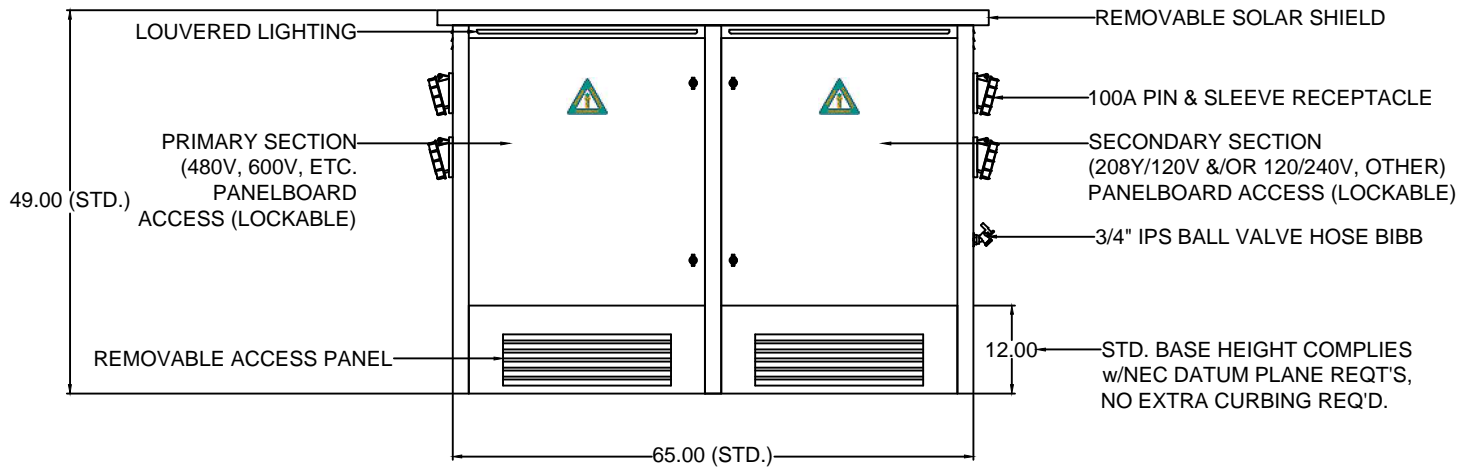
1. Each pedestal shall be capable of providing single or dual 3/4" IPS chrome-plated brass ball valve hose bib (stainless steel ball valves).
2. Plumbing connections shall be partitioned from all electrical wiring/components by an integral partition box.
3. Each ball valve hose bib shall be metered (optional) (with or without analog display at the unit substation) and have the gallon per slip usage wirelessly transmitted via an internally built wireless remote transmitter that is integral to the monitor (optional).

END OF SECTION

Specifications Subject to Change Without Prior Notice

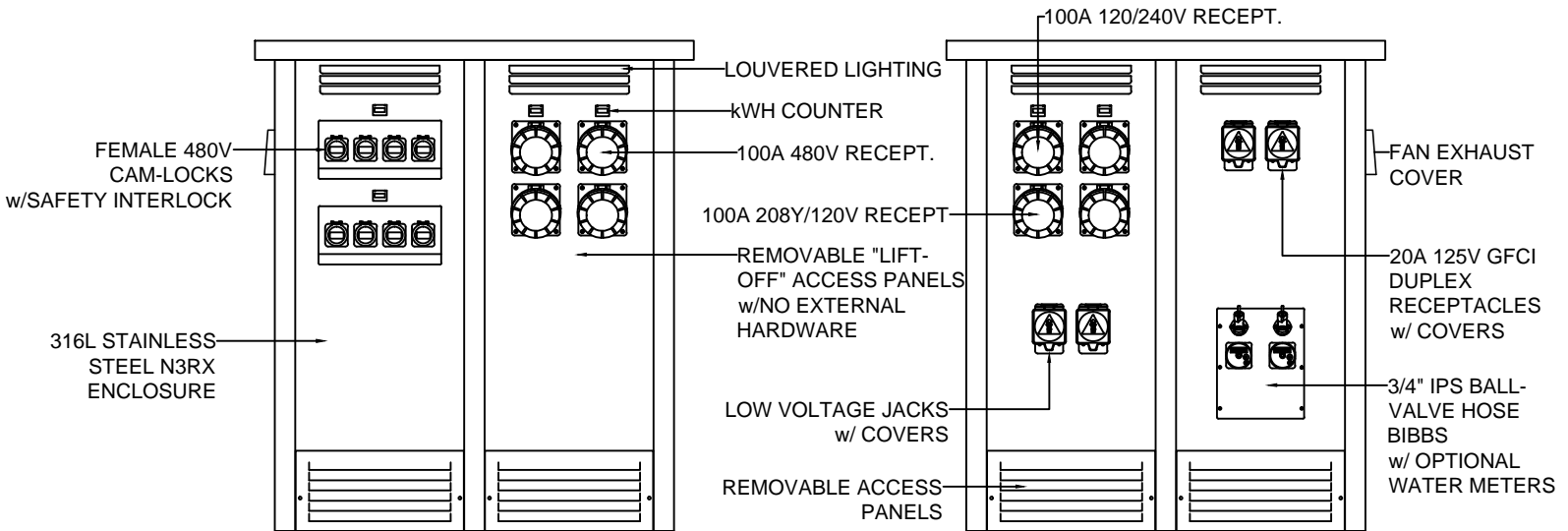
General Specifications - GTX™ Super Yacht Unit Substation

TYPICAL FRONT VIEW
(DOORS CLOSED)



TYPICAL PRIMARY SECTION
LEFT SIDE VIEW

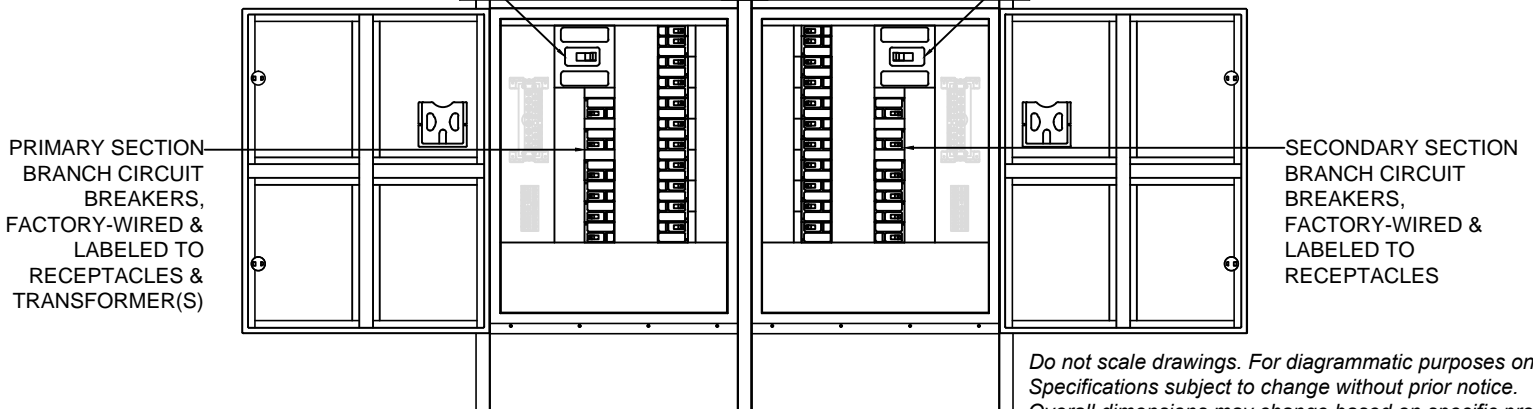
TYPICAL SECONDARY SECTION
RIGHT SIDE VIEW



PRIMARY SECTION MAIN
(MCB or MLO)
FIELD-TERMINATION POINT

TYPICAL FRONT VIEW
(DOORS OPEN)

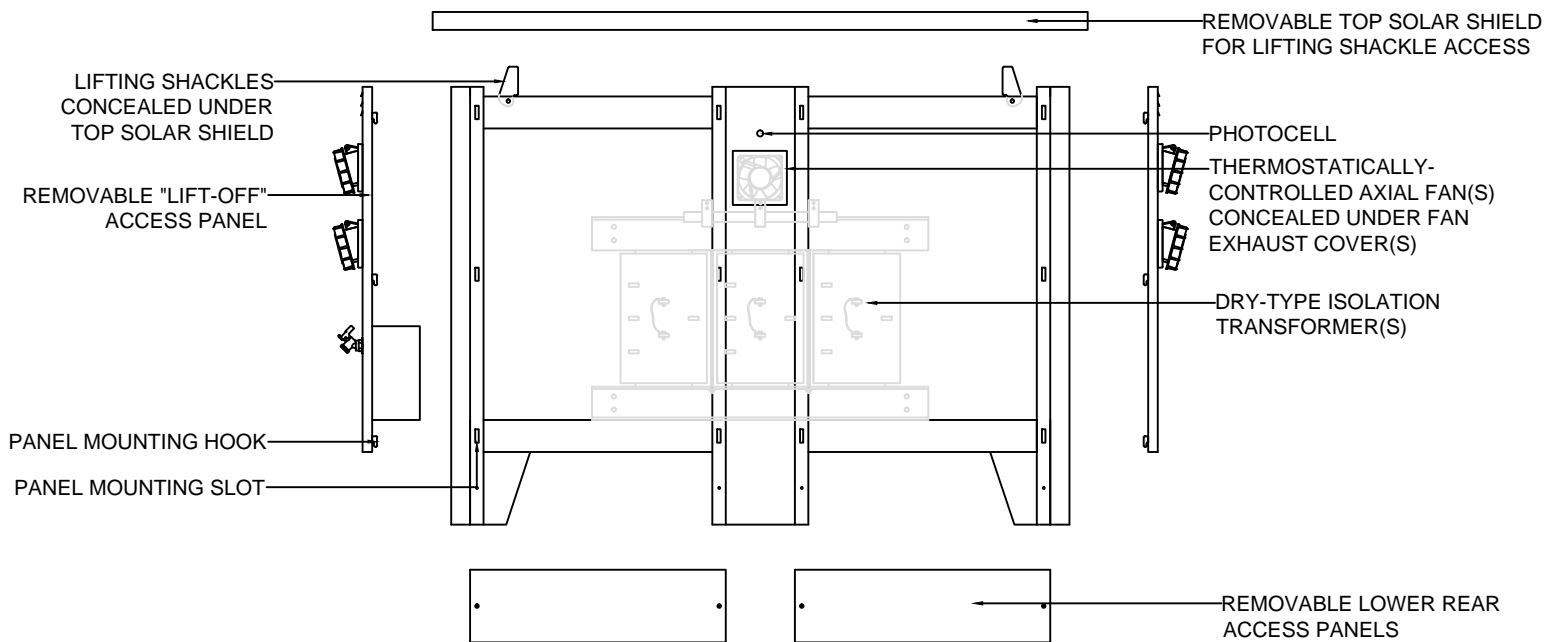
SECONDARY SECTION MAIN
(MCB or MLO)
FACTORY-WIRED



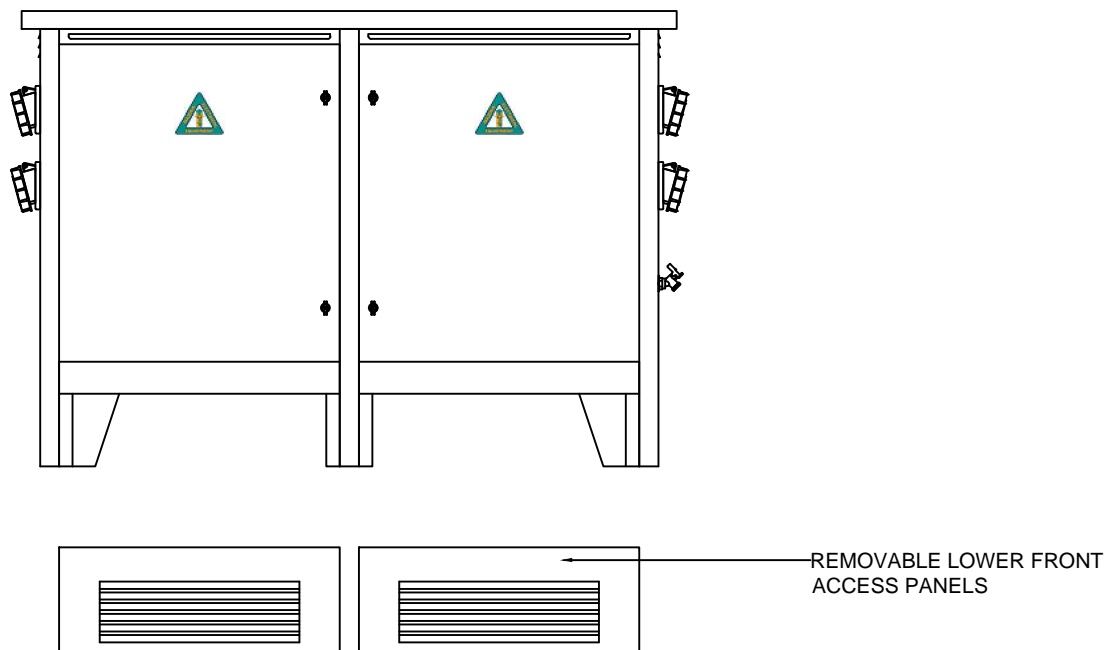
Do not scale drawings. For diagrammatic purposes only. Specifications subject to change without prior notice. Overall dimensions may change based on specific project requirements.

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TYPICAL REAR VIEW SHOWING REMOVED ACCESS PANELS



TYPICAL FRONT VIEW SHOWING REMOVED ACCESS PANELS



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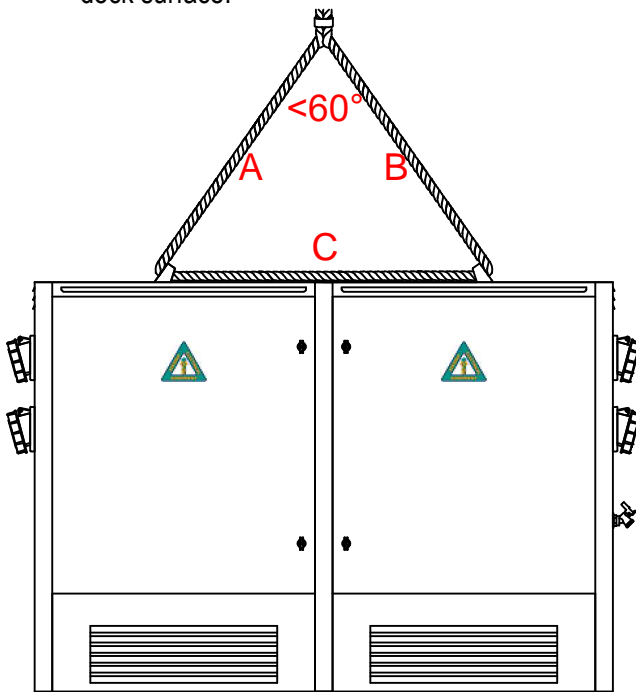
General Specifications - GTX™ Super Yacht Unit Substation

IMPORTANT: HANDLING / LIFTING

- LIFTING SHACKLE METHOD:** This lifting assembly has been tested at a load of four times the static weight of the GTX Super Yacht Unit Substation. The lifting shackles are located under the top solar shield. The solar shield can be removed by removing the screws located around the lower edge of the shield.
- FORKLIFT METHOD:** Lifting slots are provided on each end and side of the unit substation (front/back or side/side). Remove the access panels on each side of the unit. Use fork extensions so that the forks are spread to the outside of the slots, making sure that the forks extend past the end of the substation. Forks that do not extend through the complete substation could damage internal components. Forklift access can also be accomplished from the front or rear of the unit with the removal of the louvered access panels.

MOUNTING

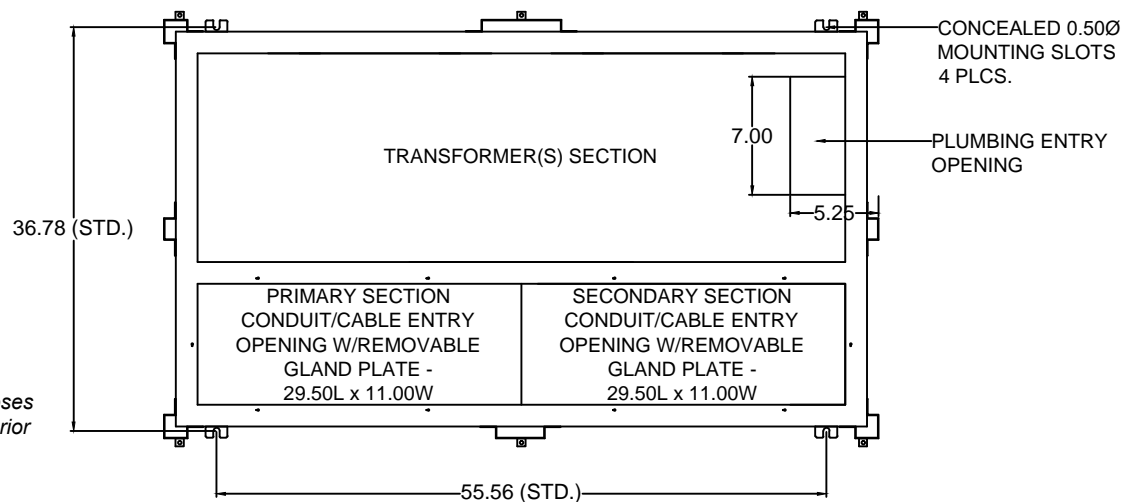
- Remove the front and rear access panels on the bottom of the substation. This will expose the mounting holes at the bottom of the substation. Do not remove the neoprene pad from the bottom of the substation. The neoprene pads provide isolation from the dock surface.



IMPORTANT:

WHEN LIFTING THE GTX SUPER YACHT UNIT SUBSTATION, THE SPREADER ANGLE MUST BE LESS THAN 60° (LEGS A & B MUST BE LONGER THAN LEG C).

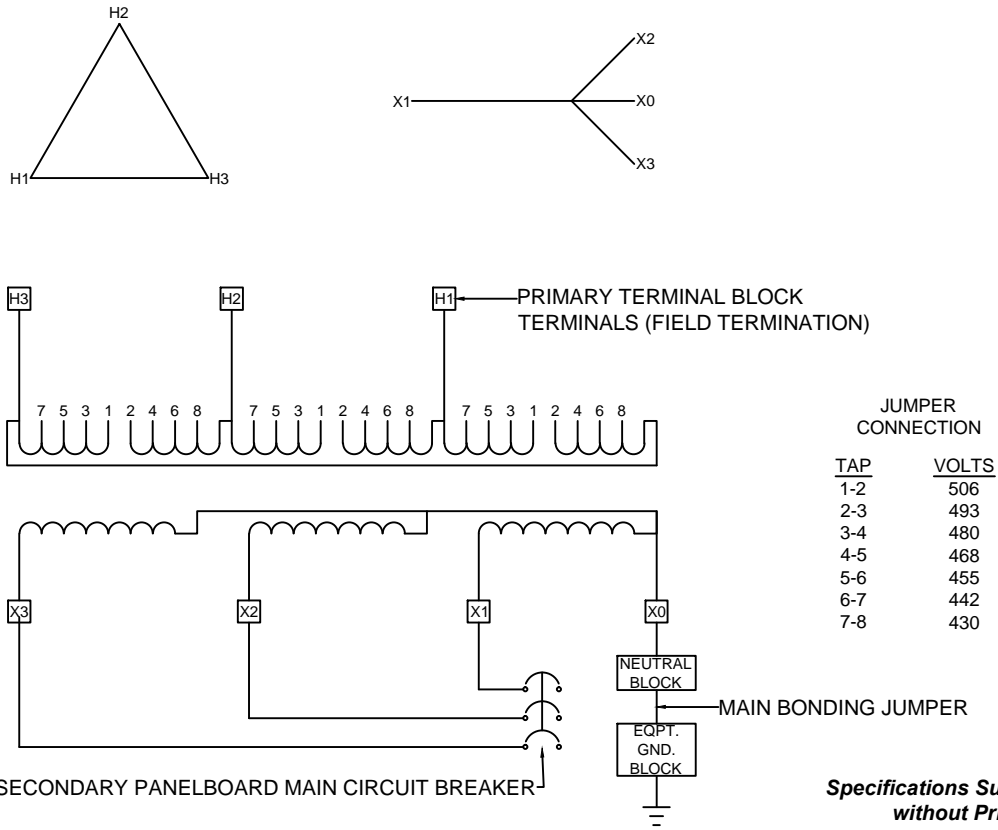
TYPICAL TOP VIEW SHOWING MOUNTING FOOTPRINT



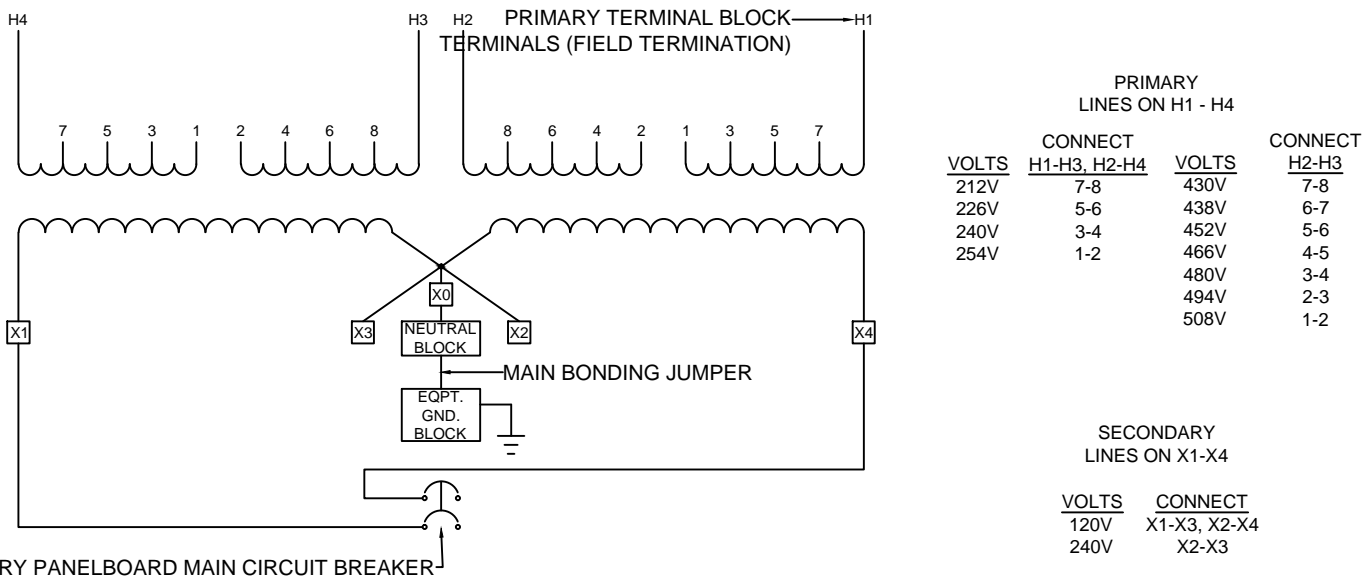
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TYPICAL THREE PHASE WIRING DIAGRAM



TYPICAL SINGLE PHASE WIRING DIAGRAM



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WARRANTY POLICY

Housings:

Marina Electrical Equipment, Inc. (MEE) warrants that the main housing and attached parts (top, lens, doors, receptacle faceplates, circuit breaker plates, and mounting base plate) 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 above 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. This warranty is voided if any petroleum-based solvent is used anywhere on or near any of the polycarbonate parts. These parts include, but may not be limited to: the top, lens, doors, receptacle faceplates, circuit breaker plates, terminal blocks, and the mounting base plate.

Internal Components:

MEE warrants that all internal electrical components shall be covered by a limited warranty of one (1) year. Items covered include but are not limited to: transformers, panelboards, ground fault monitor relays, surge protective devices, receptacles, circuit breakers, photocells, lamp holders, coil transformers, counters and wiring harnesses. Should any of the above parts fail to comply with this warranty policy, MEE will coordinate the repair or replacement of the defective part(s) with the respective supplier.

Solid-State Electric kWh Monitors:

MEE warrants that the International Intelligent Meter (IIM) solid-state electric kWh monitors will be free from failure resulting from defects in material and/or workmanship, and are covered for one (1) year. Although the IIM meters contain 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 an electric 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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END OF SECTION