



Exeltech XLGT Series Grid-Tie Inverters Installation and User's Guide



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FCC Class B compliance:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by Exeltech could void your authority to operate this equipment.





WARNING: To maintain proper FCC Compliance only use equipment and components for installation that are specified within this manual.

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS!

This manual contains important installation, maintenance, and user instructions for Exeltech XLGT Series Grid-Tie Inverters that shall be followed during installation and maintenance of the Inverter. Failure to follow these instructions could lead to serious injury or death, or damage to equipment or property.

SAFETY SYMBOLS USED IN THIS MANUAL

SYMBOL	ASSOCIATED TERM	WHAT IT MEANS
	WARNING!	Calls attention to a potentially hazardous situation, which if not avoided, could lead to death or serious injury, and/or damage to equipment and property.
	CAUTION!	Indicates a potentially dangerous situation that may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	WARNING!	References information pertaining to voltages in or around the unit that are capable of causing injury or death.
	NOTE!	Designates important information required for proper installation, maintenance, and/or operation of your Exeltech XLGT Series of Grid-Tie inverter.

IMPORTANT!









FAILURE TO HEED THESE SYMBOLS AND THE DOCUMENTATION THEY REFERENCE COULD RESULT IN DEATH OR SERIOUS INJURY, OR DAMAGE TO YOUR INVERTER OR OTHER PROPERTY.

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CAUTIONS and WARNINGS

Before installing or using your equipment, read all instructions, cautions, and warnings in this Manual and on the equipment, the PV array, and in this Installation Guide.

	<p>WARNING! Hazardous voltages are present inside this unit and within circuits that connect to this unit. Contact with high voltage may cause death or serious injury. To prevent electrical shock, always disconnect all power to unit prior to servicing, and NEVER operate this equipment with the covers removed.</p>
	<p>CAUTION! Risk of electrical shock. Do not remove inverter cover. No installer, user or operator serviceable parts exist inside. Refer all service to a factory service technician.</p>
	<p>CAUTION! This equipment must be bonded to Protective Earth (safety ground) prior to operating the unit. Safety ground connection must be made at the designated location within the enclosure. The ground wire should be #12 AWG or larger copper, or as appropriate within your local code jurisdiction.</p> <p>The Protective Earth symbol within the enclosure looks like this: </p>
	<p>NOTE! For domestic US installations, all electrical work must be done in compliance with local electrical codes and the NFPA 70 National Electrical Code.</p>
	<p>NOTE! Contact your electric utility company before connecting the device to the commercial electrical grid. Connections to the utility grid must be made only by qualified personnel.</p>
	<p>NOTE! Photovoltaic arrays generate electrical energy when exposed to sunlight and subsequently may create an electrical shock hazard.</p> <p>Photovoltaic array wiring should only be done by qualified personnel.</p>
	<p>Note! Contact your local power utility before installing this equipment.</p>

INTRODUCTION

Thank you for purchasing the XLGT grid-interactive inverter. Transformerless design is the revolutionary technology in the power conversion industry. EXELTECH's journey to excellence includes the first affordable sine wave inverter, first modular hot-swappable inverter system, first N+1 redundant inverter system, and the cleanest sine wave output in the industry. EXELTECH strives to manufacture cutting edge products of the highest possible quality, and is dedicated to 100% customer satisfaction. For over 15 years EXELTECH has served the telecommunications industry, utility companies, and other markets that require the highest reliability possible for their power systems. Now these ultra-reliable products are available to the Renewable solar energy market. Proudly built in the USA with American parts, EXELTECH is committed to TL9000 quality standards and beyond, adding people and procedures continually to further improve quality and customer service.

We welcome you as a customer to the EXELTECH family.

PRODUCT OVERVIEW

The XLGT Inverter is a transformerless, grid-interactive inverter designed to convert direct current derived from solar panels into alternating current that can be either consumed on the premise or backfed into the Utility companies power grid. When more power is generated than consumed, you will have what is referred to as a “net metering” effect where your electric meter will spin backwards.

PRODUCT ELECTRICAL SPECIFICATIONS

Maximum DC Input Voltage	600VDC
DC Voltage Operating Range	200-600VDC
Minimum PV Startup Voltage	230VDC
Peak Power Tracking Voltage	550VDC
Maximum DC Input Current	8A
Maximum DC Input Short Circuit Current	10A
Maximum Input Source Backfeed Current To Input Source	15A
Output Power Factor Rating	0.99
Operating Voltage Range (AC)	106-132V
AC Operating Frequency Range	59.3 Hz – 60.5 Hz
Nominal Output Voltage (AC)	120VAC
Normal Output Frequency	60 Hz
Maximum Continuous Output Current (AC)	15A
Maximum Continuous Output Power (AC)	1800 Watts
Current Total Harmonic Distortion (THD)	< 5%
Maximum Output Fault Current and Time	15A (times are breaker dependent)
Maximum Output Over current Protection	20 A
Utility Interconnection Voltage & Frequency Trip Limits & Trip Times	Meets UL 1741 (See Tables 1 and 2)
Trip Limit And Trip Time Accuracy	(See Tables 1 and 2)
Normal Operation Temperature Range (Full Output Rating)	-20°C to +40°C
Synchronization in-rush current	< 1 Amp
Inverter Efficiency (Peak) ¹	97.8%
Inverter Efficiency (California Energy Commission) ¹	96.5%
Power Consumption (PV DC input voltage = 0) ¹	0 watts

¹ Verified by independent laboratory testing authorized by the California Energy Commission.

Table 1. Voltage Trip Settings

Voltage Trip Settings			
Voltage at Point of Common Coupling		Maximum Trip Time⁽¹⁾	
<u>120VAC Nominal</u>	<u>% of Nominal Voltage</u>	<u># of Cycles⁽²⁾</u>	<u>Seconds</u>
Less than 60 Volts	Less than 50%	10 Cycles	0.16 Seconds
Greater than or equal to 60 Volts but less than 106 Volts	Greater than or equal to 50% but less than or equal to 88%	120 Cycles	2 Seconds
Greater than or equal to 106 Volts but less than or equal to 132 Volts	Greater than or equal to 88% but less than or equal to 110%	Normal Operation	
Greater than 132 Volts but less than or equal to 144 Volts	Greater than 110% but less than or equal to 120%	60 Cycles	1 Second
Greater than 144 Volts	Greater than 120%	10 Cycles	0.16 Seconds

¹ "Maximum Trip time" refers to the time between the onset of the abnormal condition and the time the Inverter ceases to generate power per UL1741, Section 46.2.2, Table 46.1. Also referred in IEEE 1547.1 Section 3.2.2 as "Clearing Time".

² Assuming 60 Hz Nominal.

Table 2. Frequency Trip Settings

Frequency Trip Settings		
Generating Facility Rating	Frequency Range⁽¹⁾ (Assuming 60 Hz Nominal)	Maximum Trip Time⁽²⁾ (Assuming 60 Hz)
Less than or equal to 30 kW	Less than 59.3 Hz	10 Cycles
	Greater than 60.5 Hz	10 Cycles

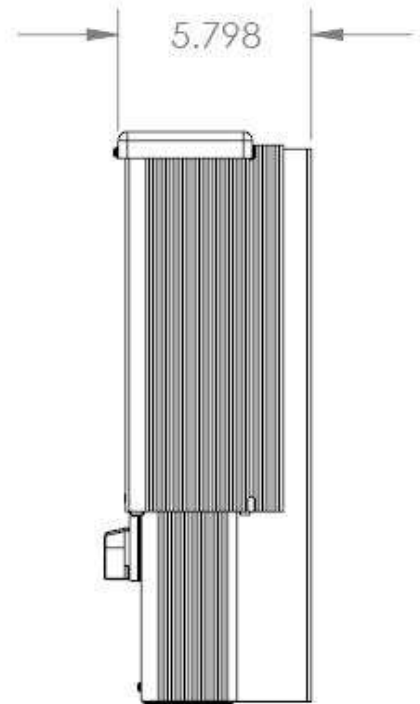
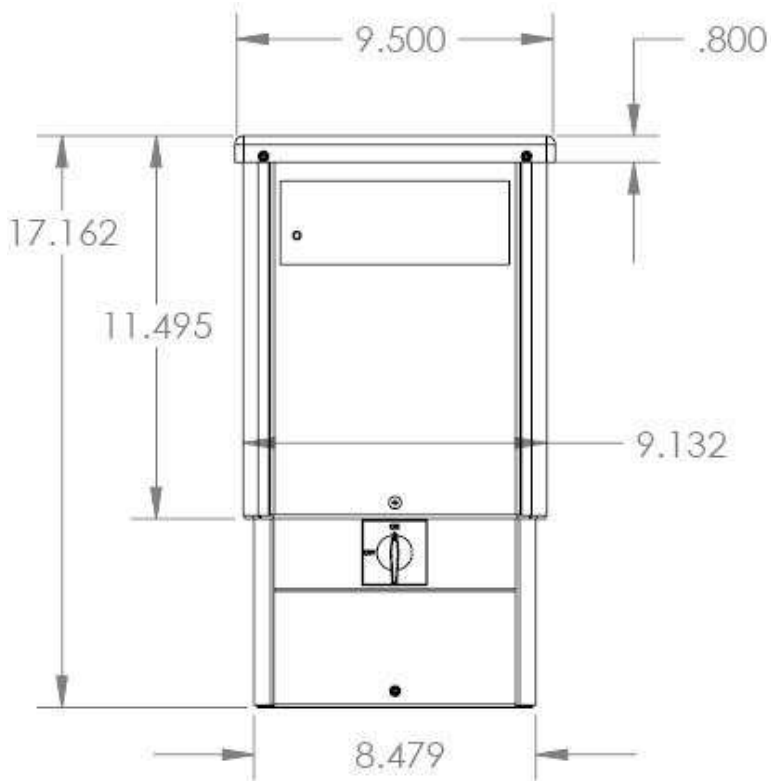
¹ Assuming 60 Hz Nominal.

² "Maximum Trip time" refers to the time between the onset of the abnormal condition and the time the Inverter ceases to generate power.

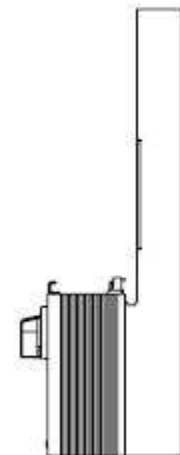
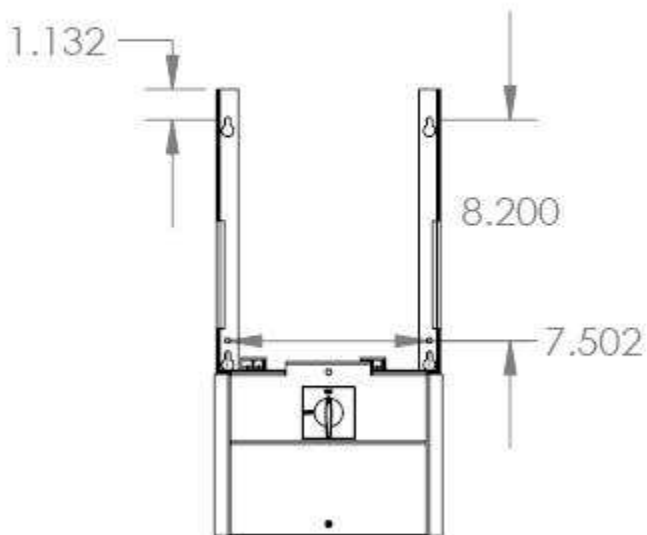
This unit is provided with fixed trip limits and shall not be aggregated above 30 kW on a single Point of Common Connection.

MECHANICAL SPECIFICATIONS

Weight 14 lbs (6.3 kg)
Cooling Natural Convection
Enclosure NEMA 3R (aluminum)



Wiring Bracket



AGENCY COMPLIANCES

Exeltech XLGT grid-tie inverters are certified by Nationally Recognized Testing Laboratories to comply with the following safety and related standards:

ANSI	ANSI C62.41 Class B IEEE Standards for Surge Protection.
CEC	California Energy Commission Efficiency Testing: 97.8% peak, 96.5% weighted.
CSA	CSA 22.2 No. 107.1-01, 3 rd Edition, Reaffirmed 2006.
FCC	Title 47 CFR, Part 15, Subparts A and B of the United States Federal Communications Commission Rules and Regulations.
IEEE	IEEE 519 International Standards for Harmonic Limits. IEEE 929 International Standards for safety of linemen, customers, and utility equipment. Also sets power quality ranges and anti-islanding requirements. IEEE 1547 and IEEE 1547.1 Standards for Interconnecting Distributed Resources with Electric Power Systems.
UL	UL 1741 Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources. UL 1703 Standards for Photovoltaic Modules.

WARRANTY

Exeltech is proud of the technology and workmanship of our products. Exeltech warrants all of its XLGT Series Grid-tie inverters to be free of defects in Material and Workmanship for a period of 5 years from date of installation. Exeltech will, at its option, replace or repair parts found defective and return equipment or parts to the purchaser.

The above stated warranty does not apply to products which have failed due to improper installation, misuse, alteration, unauthorized repair or modification.

The purchaser is responsible for transportation costs of the equipment to and from the distributor or dealer for warranty replacement or repair.

The above warranty does not include incidental or consequential damages and Exeltech disclaims any liability for any such damages. All implied warranties, if any, are limited in duration to the above stated five year warranty period. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages or a duration for an implied warranty, so the above limitations may not apply to you. All liability is limited to the original purchase price of the inverter.

UNPACKING and INSPECTION



Open the package and confirm that the product conforms to your order. Also, check each of the following points for any problems. If any problems or discrepancies are noted, contact your dealer or distributor immediately.

On receipt of your new XLGT inspect the outer package and the contents for signs of damage. If there is shipping damage, contact the carrier, and return the unit to the factory.

1. Check that the model number indicated on the nameplate conforms to the specifications of your order.
2. Check that all accessories that you ordered are included.
3. Check that the inverter body and any accessories have not been accidentally damaged or that any fasteners have not been loosened in transit.

The XLGT is shipped with the mounting bracket attached. This mounting bracket will be mounted first, then the inverter will be mounted to it, and wiring installed.

XLGT INSTALLATION INSTRUCTIONS

	<p>Caution! Installation of this unit must be performed by a licensed electrician or other qualified personnel. Read these instructions completely before proceeding with installation.</p>
	<p>WARNING Compliance to UL1741 Requires the following Statement: This unit is not provided with a GFDI device. This inverter or charge controller must be used with an external GFDI device as required by Article 690 of the National Electrical Code for the installation location.</p>

The XLGT Grid Interactive Inverter is a transformerless inverter, and as such, it is required to be used in an **Ungrounded Array Photovoltaic Power System** as referenced by Article 690.35 of the 2008 National Electric Code. Article 690.35 does not require a GFDI device, it does specify an updated list of requirements, and the XLGT Grid Interactive Inverter contains all the necessary components to meet this new NEC 2008 requirement.

Residual Current Detection (RCD)

The XLGT Grid Interactive Inverter employs a Residual Current Detection System used to detect AC and DC residual ground current, and immediately disconnect from the utility source. The RCD System is designed to comply with IEC62109-2, the International Standard for Safety of power converters for use in photovoltaic power systems.

RCD technology addresses the specific needs of transformerless ungrounded systems, in which an array grounding failure point could result in an AC ground current flow, a DC ground current flow, or a combination of the two, which is the more likely case. RCD technology is designed as a fire hazard protection system only, and is not intended to be used as a GFDI device in any form.

RCD General Operation

On initial power up the array is tested to ensure that Ground Impedance is greater than 1kOhm/volt, or a minimum of 500kOhms, the XLGT will NOT engage the utility connection breaker if this minimum value is not met. This test is indicated by the two green blinking lights, if successful, the unit will then click the relay closed, and then check the Utility conditions to attempt a grid connection. If this test is not passed, a red flashing light will indicate a failure to meet the minimum ground impedance, and service by a qualified service personnel may be required to fix this situation.

Upon successful start up, grid connection, and power generation, if a failure of array ground isolation, resulting in ground fault current either AC current or DC current is detected, the RCD will open the Utility relay and cause the system to cease power export. The RCD fault is indicated by an alternating green and red flash. Only qualified service personnel should clear any ground fault condition that exists. Only pressing the Reset button will clear the RCD Detection, and allow the XLGT to resume grid interaction operation.




The following instructions are intended to be used in conjunction with Figure 1 – “XLGT1800 Mounting Orientation and Wall Bracket”. To ensure a safe, reliable installation, please follow the instructions in the order presented.

These instructions are for a single-unit installation. Instructions for adding parallel units follow this section.

TOOLS AND MATERIALS REQUIRED FOR INSTALLATION

1. Wire stripper
2. Mounting screws #12 or # 14 size, 4 required, corrosion resistant
3. Drill of appropriate size for mounting screw holes
4. Flat bladed screwdriver
5. 3/16 inch flat blade screwdriver for wiring terminal blocks
6. Adjustable-jaw pliers
7. Utility knife
8. Pencil or other marking device

SELECTING A MOUNTING LOCATION

	WARNING! Do not install this unit in areas where flammable materials or explosive vapors may exist.
	CAUTION! Avoid environments that expose the XLGT to vibration, large amounts of dust, heavy icing, hail, water immersion, etc.. Although the XLGT is designed with a NEMA 3R enclosure, avoid locations with splashing water, bilge, battery acid, battery fumes, etc.
	Note! Follow all national local electrical codes when selecting a mounting location. Consult the NFPA 70 National Electrical Code for requirements.

The XLGT may be mounted indoors or outdoors. Plan the location of the mounting bracket to align with the wiring system to the photovoltaic modules and also to the utility AC system. The location selected must be **3 feet or more** above the floor or ground.

CONDUCTOR TYPE AND LENGTH

	DC Wiring Conductors Minimum Wire Size	AC Wiring Conductors Minimum Wire Size
Recommended Connector Wiring	16 AWG*	12 AWG**
Current and Voltage	<10A @ 225Vdc	15A @ 120Vac
Temperature and Type	90°C, copper only	90°C, copper only

* May be larger. Depends on total conductor length and best practices for minimum power loss.

** 20 amp over-current protection required.

ORIENTATION AND CLEARANCES



CAUTION! Failure to observe proper installation procedures could result in equipment damage not covered under the Exeltech XLGT warranty!

Indoor/Outdoor

The XLGT Inverter is manufactured with a NEMA 3R enclosure, meaning it's suitable for outdoors installation. It's advised to choose a location that's not in continuous direct sunlight in an effort to keep the unit operating as cool as possible.

The XLGT must be mounted 3 feet or more above the ground in a vertical orientation, with the conduit openings at the bottom. The mounting bracket provided with the XLGT **must** be used, as it creates the necessary space behind the unit for proper cooling, and provides the necessary AC/DC disconnect for proper electrical code requirements.



NOTE! This unit is convection cooled (no fan or other mechanical means is provided to move the air).

NOTE! Minimum clearance distances must be observed if your inverter is to operate at maximum rated output.

NOTE! Any mounting conditions that limit airflow may cause excessive heating in the XLGT, causing reduced output. Do not mount the inverter in a closed cabinet or similar space unless there is ample free airflow for the unit.

Distances from the XLGT to surrounding objects:

- Top and bottom: Minimum of 6 inches to allow free airflow.
- Sides: Minimum of 4 inches to other objects
- Front: 6 inches minimum.



CAUTION! To prevent equipment damage, the unit must be mounted in a vertical orientation, allowing free airflow above and below the rear heatsink.

Mounting Bracket Features

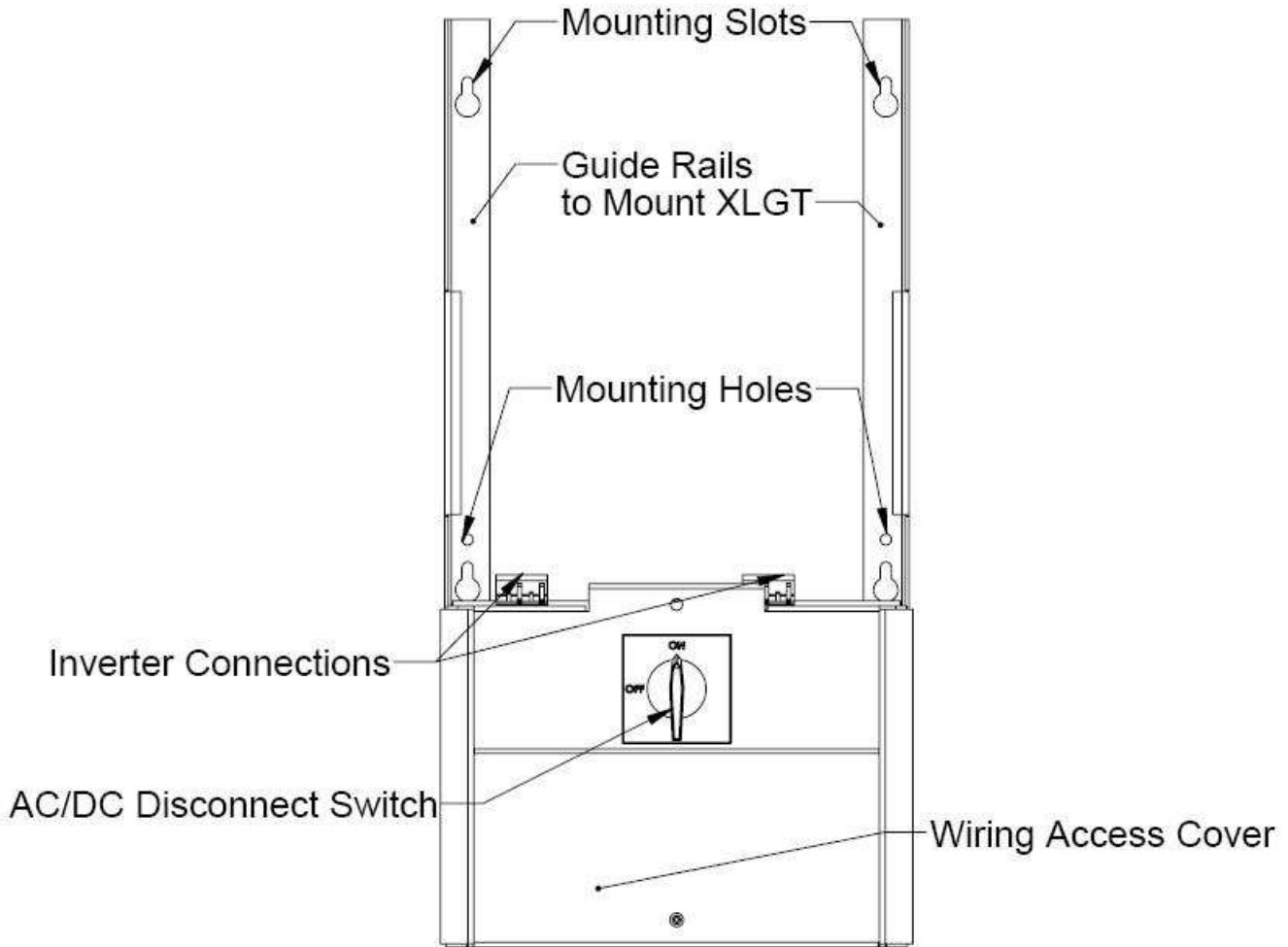




Figure 1 – XLGT1800 Mounting Orientation and Wall Bracket

The XLGT1800 mounting bracket comes with an integral AC/DC disconnect switch designed to completely disconnect all energized wiring from the inverter subassembly. No user serviceable components exist in the wiring access cover.

	<p>WARNING!</p>	<p>NEVER turn the AC/DC disconnect switch to the ON position when there is no inverter subassembly in place. Exposure to high voltage could occur.</p>
	<p>WARNING!</p>	<p>Dangerous voltages are present behind the Wiring Access Cover. Only qualified service personnel should remove this cover.</p>

MOUNTING

Refer to Figures 2 and 3 for mounting.

Orient the mounting bracket with the mounting hooks on the bottom as shown.

Using the supplied template, mark the four holes on the mounting surface with a pencil.

Drill four holes in the mounting surface.

Mount the bracket securely to the wall with four 10-32 or ¼-20 screws, or wall anchors of appropriate strength.



Note! Though the XLGT1800 weighs less than 14 lbs (6.3 kg) the fasteners used should be rated to support at least 28 pounds to provide an adequate margin of safety.

Remove the inverter from the shipping carton.

Remove the access cover from the inverter enclosure.



Note! Weather-tight conduit fittings that comply with the requirements in the Standard for Fittings for Conduit and Outlet Boxes, UL 514B, must be used.

Install DC and AC conduit couplings per the coupling manufacturer's instructions.

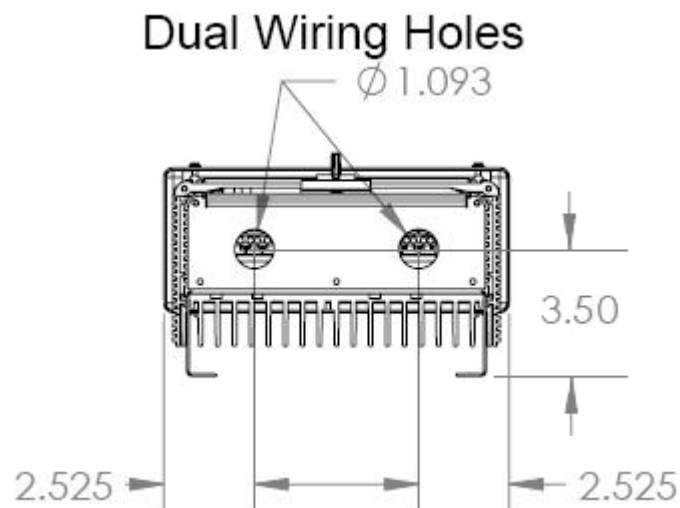


Figure 2 – XLGT1800 DC and AC Wiring Knockouts

As viewed from the bottom of the unit, DC wiring enters on the LEFT, AC wiring exits on the RIGHT. The holes are designed to accept standard ¾" conduit fittings. See Figure 4 for wiring detail. All measurements above are in inches.

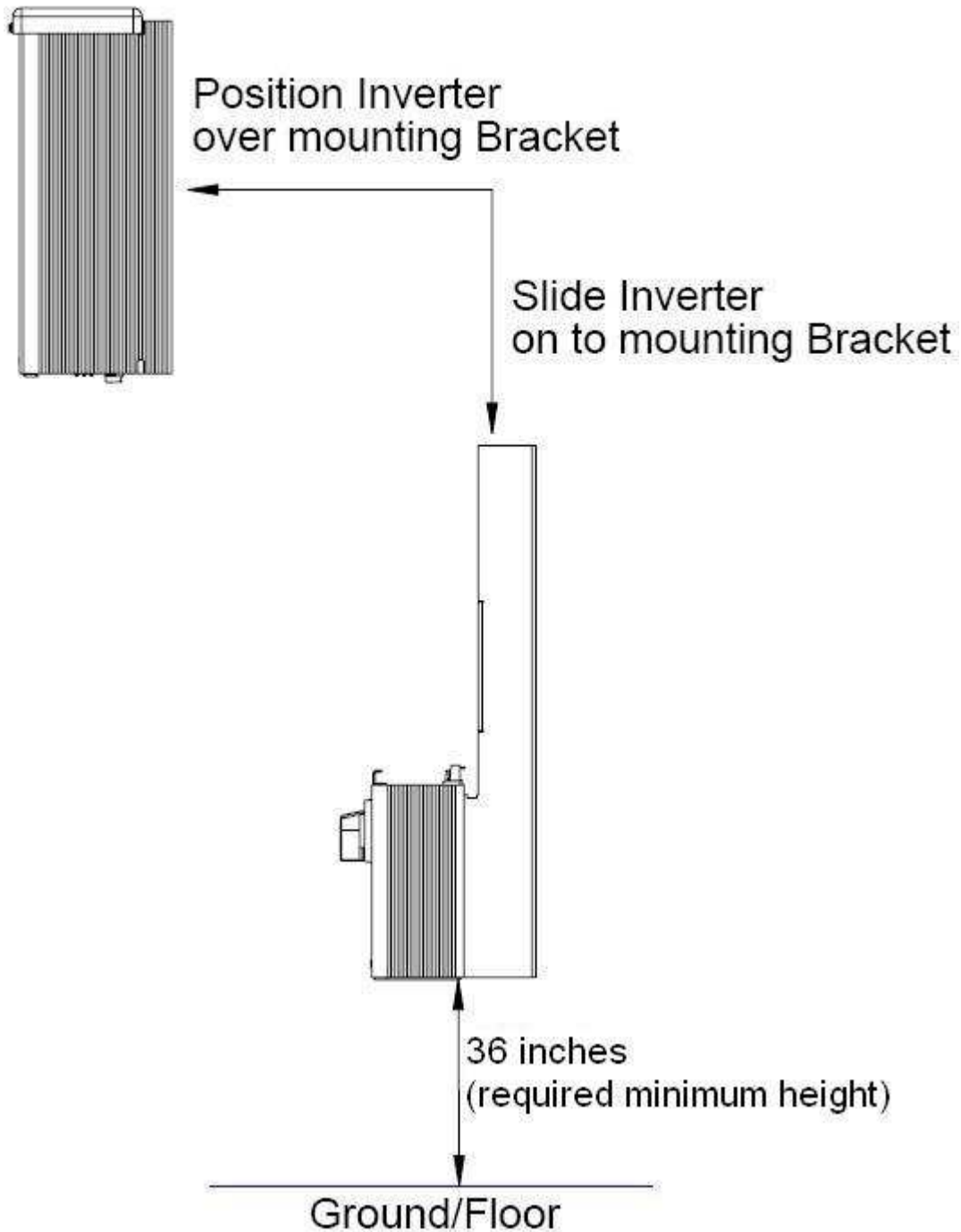





Figure 3 – XLGT Mounting and Bracket


When the inverter is ready for mounting, remove the subassembly connection screw and remove inverter subassembly from the mounting frame, and install the frame in place.


Once the frame is secured, reattach Inverter subassembly, and tighten connection screw to insure snug fit and good electrical contact with the mounting frame, this is to ensure a good grounding between the mounting frame and the Inverter subassembly case.

	WARNING!	To reduce the risk of electrical shock be sure to firmly tighten frame connection screw to the Inverter subassembly to maintain good subassembly grounding.
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	WARNING!	The XLGT wiring while straightforward, requires installer to be familiar with dangerous high voltages that could cause shock, severe burns, or fires. Wiring should only be performed by qualified service personnel.
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	WARNING!	Shock Hazard use caution when working with PV Array panels that are exposed to sunlight. Sunlight exposure to PV Array panels will cause a voltage to be present. When sizing array, ensure that PV Array open circuit voltage will never exceed 600V.
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	WARNING! Connecting either leg of the PV Array will cause the XLGT to become inoperative. Electric Shock Hazard. The direct current circuit conductors of this photovoltaic power system are ungrounded, but may be energized with respect to ground due to leakage paths and/or ground faults.	
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	WARNING!	To reduce the risk of fire, do not connect to an ac load center (circuit breaker panel) having multi-wire branch circuits connected.
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Note that the XLGT does NOT bond neutral to ground in any of its wiring.

All DC Wiring and AC wiring are indicated on the respective connectors in black lettering where – indicates negative + indicates positive on the DC wiring. L1 designates LINE and N designates Neutral. A label located in front of the grounding terminal says GROUND, and is an indication of the Earth grounding location.

Exeltech recommends all DC and AC wiring are to be made with copper conductors only. Rainproof or rain-tight conduit fittings acceptable for use on a NEMA3R type enclosure are to be used. Fittings that comply with UL 541B are also acceptable.

The Input and Output circuits of this device are isolated from the enclosure. System grounding, when required by NEC690, ANSI/NFPA 70, is the responsibility of the installer.

INSTALLING WIRING



CAUTION! To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch-circuit over current protection in accordance with the National Electrical Code, ANSI/NFPA 70.

Install conduit from the DC and AC disconnects as required by your local electrical code. DC and AC wiring must be run in separate conduit at all times or separated as required by the National Electric Code. DC wires enter through the right opening (marked “DC” in the wiring compartment) and the AC through the left opening (marked “AC” in the wiring compartment).



CAUTION! The National Electrical Code, ANSI/NFPA 70, prohibits DC and AC conductors in the same conduit. Use separate conduit for each circuit.

PV Array Wiring

Because of the transformerless design of this inverter, neither leg of the PV is connected to the ground terminal. PV array terminals accept a MAX of 12 AWG, and are marked as negative (-) or positive (+). Viewed from the front, negative is on the left; positive on the right.

Use 12 AWG wire to terminals Line (“L1”), and Neutral (“N”).

Grounding Connection

Connect 12 AWG or larger copper grounding conductor to the XLGT ground bus bar. Torque to 22in-lb (2.5 N-m). The bus bar will accept up to 4 AWG. Connect the ground conductor to a suitable grounding electrode or as prescribed by your local electrical code.

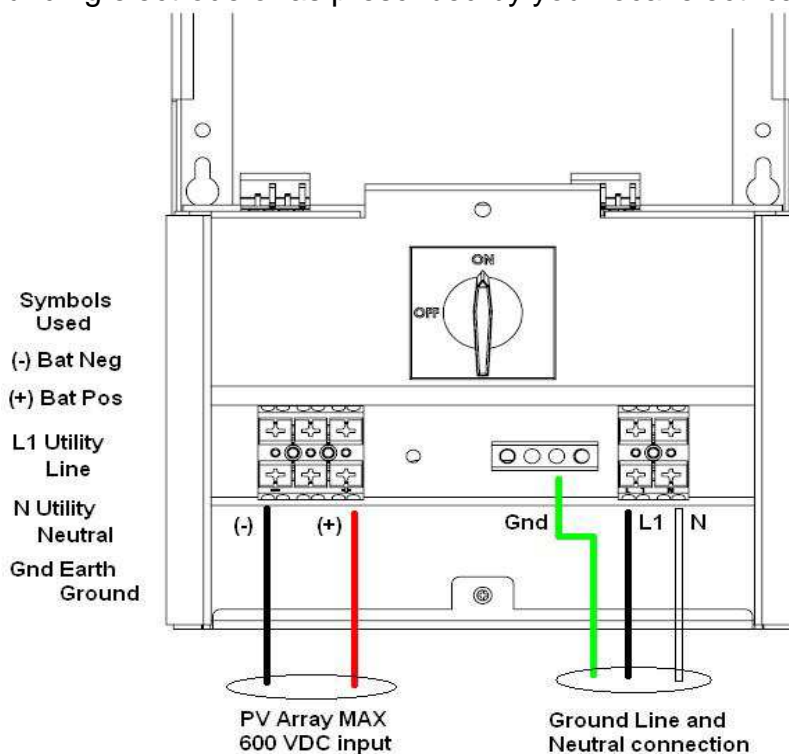


Figure 4 – XLGT1800 DC and AC Wiring



CAUTION! Do NOT ground the PV DC wiring. Connecting either leg of the PV Array DC to ground will cause the XLGT to become inoperative.

INSTALLATION OF MULTIPLE XLGT INVERTERS

Two or more XLGT inverters may be paralleled, but they must use separate conductors from each unit to the AC disconnect panel. At that point, each system's AC output must have its own AC disconnect breaker. The output from multiple inverters may be run with larger gauge conductors run to the main service entrance panel. Consult local codes and wire tables for required conductor size.

In systems with multiple XLGT inverters, it's strongly recommended to connect equal numbers of XLGT inverters from Line 1 to Neutral, and Line 2 to Neutral to keep the output as "balanced" as possible between the two phases.



Note! The combined output power of multiple inverters may not exceed the service rating of the circuits to which the inverters are connected. Consult ANSI/NFPA 70: The National Electrical Code, for detail.



WARNING! This unit is provided with fixed trip limits and shall not be aggregated above 30 kW on a single Point of Common Connection.

ACTIVATING THE INVERTER



WARNING! Obtain full inspection approval from your local electrical inspector or other authority having jurisdiction over electrical wiring inspections before activating the inverter.



CAUTION! Do not connect the XLGT1800 to generator-based power systems! To do so may cause serious damage to the generator, the inverter, or both.



NOTE! Safety standards applicable at the time of manufacture of the XLGT mandate a five-minute reconnection delay once an abnormal utility state has been cleared.

ACTIVATING THE INVERTER (continued)

XLGT Features

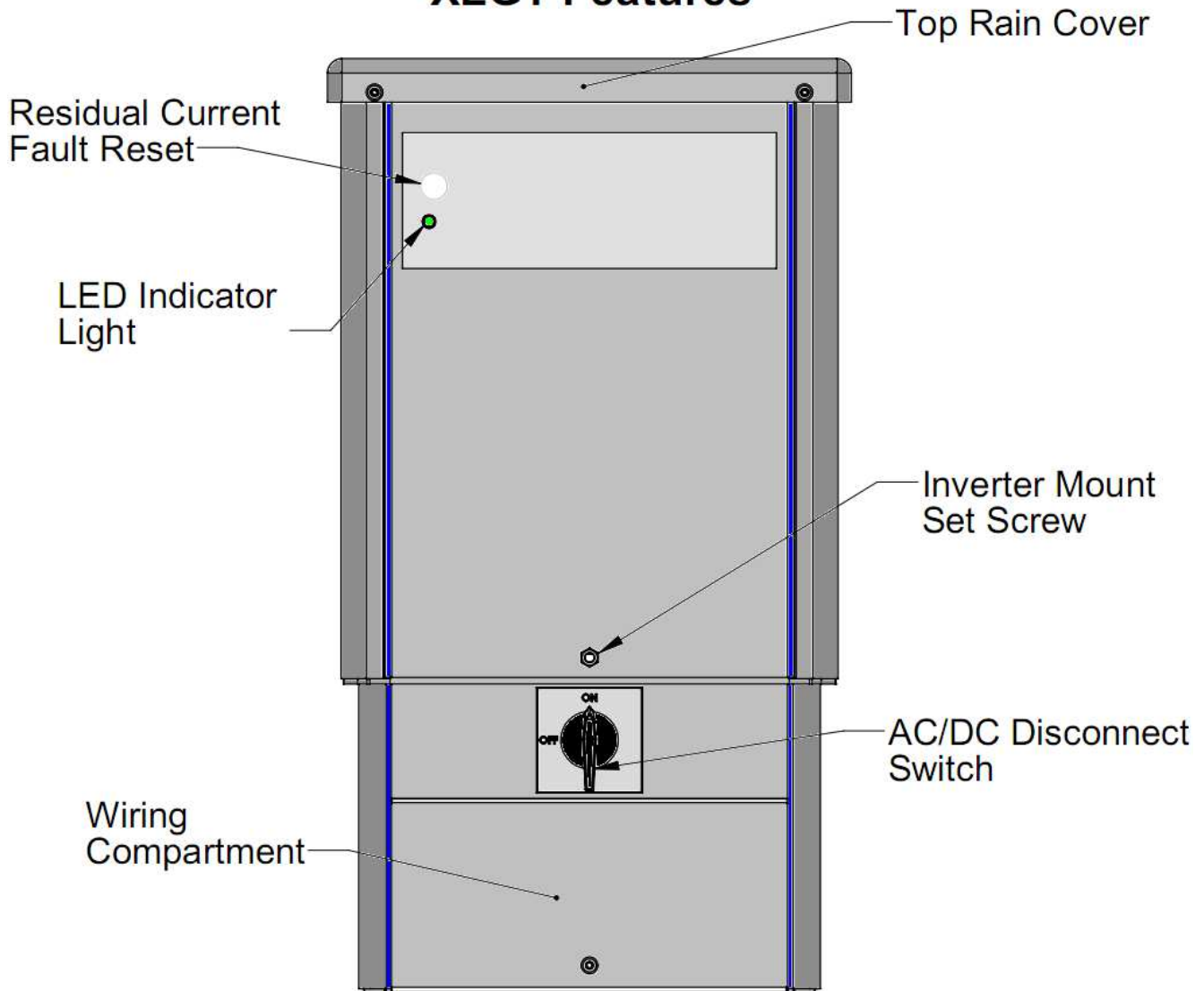


Figure 5 – XLGT Features

Start up Procedure

	<p>WARNING! Shock Hazard</p>	<p>Ensure all AC wiring and DC wiring is correct; the earth ground connection is properly torqued, and the Inverter Mount Set Screw is firmly in place before switching the AC/DC disconnect switch to the ON position. The Inverter Mount Set Screw provides the protective ground for the inverter.</p>
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Once all wiring is complete, the array is exposed to adequate sunlight, and the breaker in the utility breaker box is in the ON position, turn the AC/DC disconnect switch on the front of the XLGT to the “ON” position.

The XLGT start up procedure verifies adequate ground impedance before connecting the grid. If the system finds that excessive ground leakage is occurring, the unit will not make a connection to the grid, and the LED indicator will blink RED.

XLGT startup consists of two GREEN LED blinks, during which time the device is checking each leg of the PV for excessive ground leakage, and checking for adequate DC Voltage from the PV Array. If both items are in compliance, the system relay will close and attempt to grid connect. An ORANGE LED indicates a valid utility is present and the system has entered its countdown period to grid connection. Once the countdown has expired, the LED should change to GREEN indicating that your PV Array is producing power that is being generated by the XLGT and put back into your local grid connection.

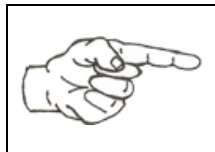
Learn the location of the Status Indicator LED. Observe this indicator for various operating condition codes.

Observe the Fault Status LED Indicator Light (see Figure 5). Within 5 minutes of connecting both DC and AC circuits, the LED will turn steady green, indicating normal operation. If other than a steady green is observed, consult Table 3 below.

Table 3: Operational Status LED Condition Codes

Color	State	Explanation	Service Action
Green	Steady	PV voltage good. Utility good. Inverter operating normally.	None required.
Green	Blink	PV voltage is low.	None required.
Red	Blink	PV voltage is too low and the utility has been disconnected.	None required.
Orange	Steady	Utility has resumed valid condition after an abnormal utility condition. Five-minute reconnect counter in process. Inverter should resume normal operation within 5 minutes.	Wait up to five minutes for inverter to resume Status Condition #1 (above).
Orange	Blink	Ground impedance fault.	Turn off inverter using the DC/AC disconnect on front of unit. Wait 1 minute after front panel LED goes dark. Restore power. If fault condition persists, contact your installer for assistance.
Red-Green	Slow Alternating Blink	Excessive Ground Current detected. ("Residual Current Fault").	Press "Reset" button on front of unit. If condition persists, disconnect inverter DC and AC. Correct the ground fault. Reactivate inverter. Note: Corrective action requires a qualified installer.

TROUBLESHOOTING

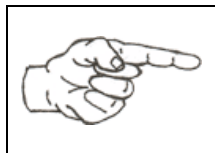


Note! The Exeltech XLGT contains no user serviceable parts. All troubleshooting must be performed by qualified service personnel only.

Refer to Figure 5 (page 20) and Table 3 (page 21).

Troubleshooting is performed by viewing the LED Status Indicator. If any condition other than a Red-Green blink is observed, no action is required on your part. A red-green blinking LED indicates excessive ground current has been detected, which if it persists, must be corrected by a qualified installer.

If the status LED does not illuminate when proper DC and AC are applied, a qualified installer must verify all connections are correct. If: 1) adequate DC is present ($>230\text{Vdc}$); 2) the inverter is connected to 120Vac 60 Hz; and 3) the status LED continues to remain dark, an internal failure may be indicated. Please contact Exeltech Customer Service for assistance.



Note! Correction of faults must be done only by qualified service personnel.

MOV BOARD REPLACEMENT

The MOV board helps to protect the XLGT Inverter from surges present on the utility power lines. MOVs are present across Line-to-Line, Line-to-Chassis, and Neutral-to-Chassis. If any MOV is damaged or destroyed due to lightning or other causes, a fuse will blow on the MOV circuit board. Neither the fuse or the MOVs are field-replaceable. They must be replaced as an entire assembly by Exeltech.

MOV board replacement is indicated by 3 orange blinking LED's at startup only. A board may require replacement after a lightning storm, a severe surge-induced power outage, or other circumstances that introduce large voltage spikes or surges on the utility or DC lines.



NOTE! The XLGT inverter will continue to operate in this unprotected mode, but is subject to being damaged if the MOV board is not replaced. Such damage may not be covered under the terms of the XLGT warranty.

User's Guide

Your Exeltech XLGT Grid-Tie Inverter has been designed for many years of trouble free service. Once installed, there are no user serviceable parts inside and no adjustments to make. Please do not remove the covers or attempt to perform any service unless you are fully qualified to do so. Aside from routine observation of the Status LED (see pages 20 and 21 in this Manual), there is no internal maintenance required.

Externally, it's a good idea to ensure your XLGT Grid-tie inverter is free of obstacles or objects that will reduce or block air flow, especially to the rear of the unit, as such blockage may reduce the output of your inverter if it should overheat.

If you purchased an XLGT with the optional Data Reporting Module, please consult that manual for information on the use of the Data Module and its software.

Your XLGT operates silently. If you suspect the XLGT is not operating properly, please contact your installing dealer or other qualified service personnel for assistance.

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Manufacturing Grid-Tie and Stand-Alone Inverters since 1990.
Offering models ranging from 125 watts single-phase up to 120 kW 3-phase systems.
More than 100,000 configurations available.