



- I. **LIMITED WARRANTY:** Progressive Dynamics warrants its power inverters to be free from defects in material or workmanship under normal use and service; and limits the remedies to repair or replacement.
- II. **DURATION:** This warranty shall extend for a period of two years from the original date of purchase, and is valid only within the continental limits of the United States and Canada.
- III. **WARRANTY EXCLUSIONS:** This warranty does not apply to:
 - A. Any product which has been repaired or altered in any way by an unauthorized person or service station
 - B. Damage caused by excessive input voltage, misuse, negligence, or accident; or an external force
 - C. Any product which has been connected, installed, or adjusted or used other than in accordance with the instructions furnished, or has had the serial number altered, defaced, or removed
 - D. Cost of all services performed in removing and reinstalling the power inverter
 - E. ANY LOST PROFITS, LOST SAVINGS, LOSS OF USE OF ENJOYMENT OR OTHER INCIDENTAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, THE PRODUCT. THIS INCLUDES DAMAGES TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IN LIEU OF ALL OTHER WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- IV. **PROOF OF PURCHASE:** A warranty claim must be accompanied by proof of the date of purchase.
- V. **CLAIM PROCEDURE:** Upon discovery of a defect, Progressive Dynamics shall be supplied the following information and the address listed below:
 - A. Name and address of claimant
 - B. Name, model, and serial number of the product
 - C. Application in which product was installed. (Included manufacturer, model, and model year where applicable)
 - D. Date of purchase
 - E. Complete description of the claimed defect

Upon determination that a warranty claim exists (a defect in material or workmanship occurring under normal use and service) the inverter shall be shipped postage prepaid to Progressive Dynamics together with proof of purchase. The product will be repaired or replaced and returned postage prepaid.

Mail Returns to: Progressive Dynamics
507 Industrial Road
Marshall, MI 49068

For Warranty Service service@progressivedyn.com

For Full User's Manual Please Visit:

<https://www.progressivedyn.com/service/installation-guides/>

Record the unit's model and serial number in case you need provide this information in the future. It is much easier to record this information now, instead of trying to gather it after the unit has been installed.

Model:	Serial Number:
PD1610_ (1000 Watt)	
PD1618_ (1800 Watt)	
PD1620_ (2000 Watt)	

Mounting Instructions

Mounting Instructions

- Inverter may be installed horizontally or vertically. Vertical installations should be sure to protect the inverter from foreign debris falling inside the unit through the fan openings.
- External strain relief should be used for DC input wires.
- Inverter can be secured to a flat surface using the side mounting slots. See Figure 3 and Figure 4 for mounting hole pattern.
- Inverter should be located in a well ventilated compartment. Minimum compartment dimensions provide 2" of space above the inverter display and open on the electrical connection side. Operation in high ambient temperatures require additional ventilation space.

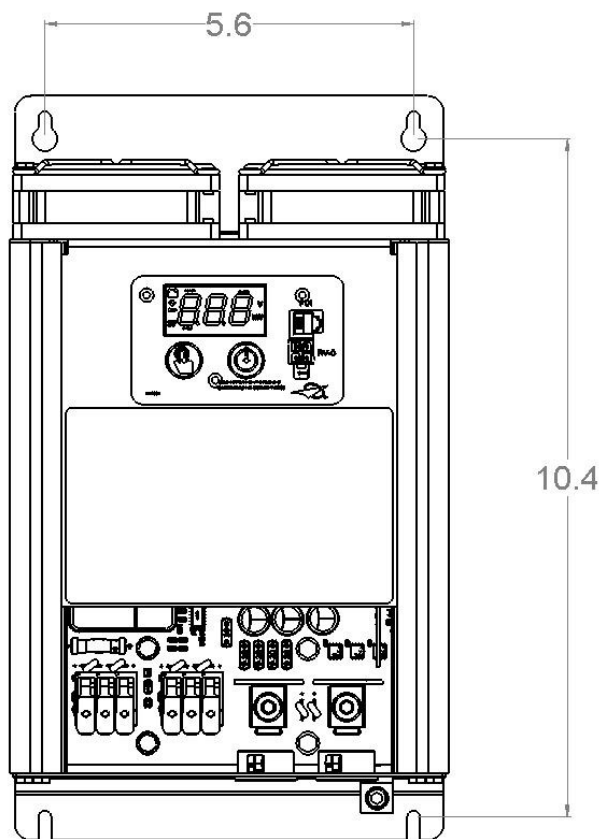


Figure 3: PD1610 Mounting Hole Pattern

⚠ WARNING: FIRE, SHOCK, AND ENERGY HAZARD

Inverter should only be installed by an electrician or a certified RV technician.

Inverter is NOT ignition protected. Do not mount in the LP gas or battery compartments.

Inverter should be mounted in a dry, well ventilated space with adequate air flow.

Failure to follow these instructions may result in serious injury or death. Failure to follow these instructions may also damage the unit and/or equipment.

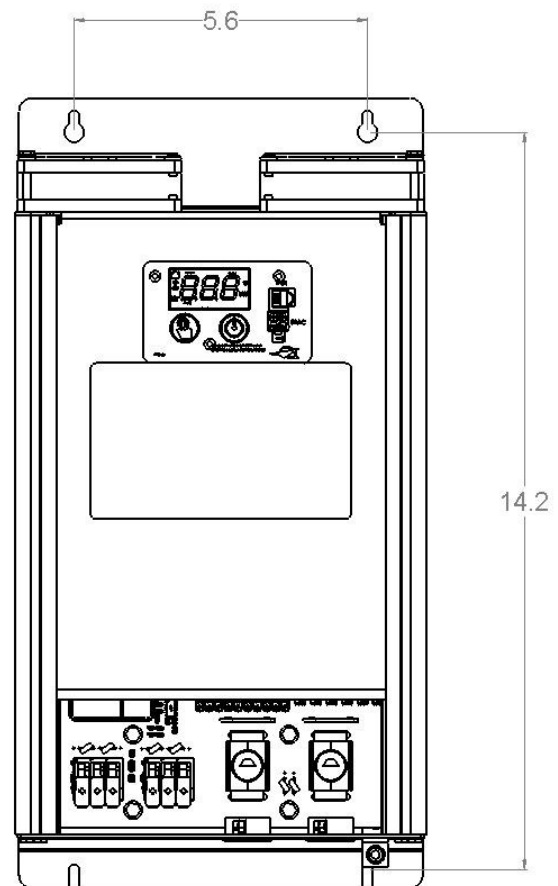


Figure 4: PD1618/PD1620 Mounting Hole Pattern

⚠ WARNING: FIRE HAZARD

DC Input wiring must be protected with properly sized circuit protection (fuses or circuit breakers).

Never operate the inverter without properly connecting the equipment ground.

Tighten the nuts on terminals properly. Loose connections cause excessive voltage drop and may cause overheated wires and melted insulation. DO NOT under tighten the screw on the terminal lugs. This will cause the wires to lose connection.

Failure to follow these instructions may result in serious injury or death. Failure to follow these instructions may also damage the unit and/or equipment.

⚠ NOTICE: EQUIPMENT DAMAGE

Do not connect any AC source (such as generator or utility power) to the AC output wiring of the inverter. Connecting an AC source to the AC Output of the inverter will result in hazardous conditions.

DO NOT disassemble the inverter. It does not contain any user serviceable parts. Attempting to service the unit yourself could result in an electrical shock or burn.

Failure to follow these instructions may damage the unit and/or equipment.

Electrical Connection Instructions

PD1600 series inverters are compatible with **BOTH** lithium and lead acid batteries.

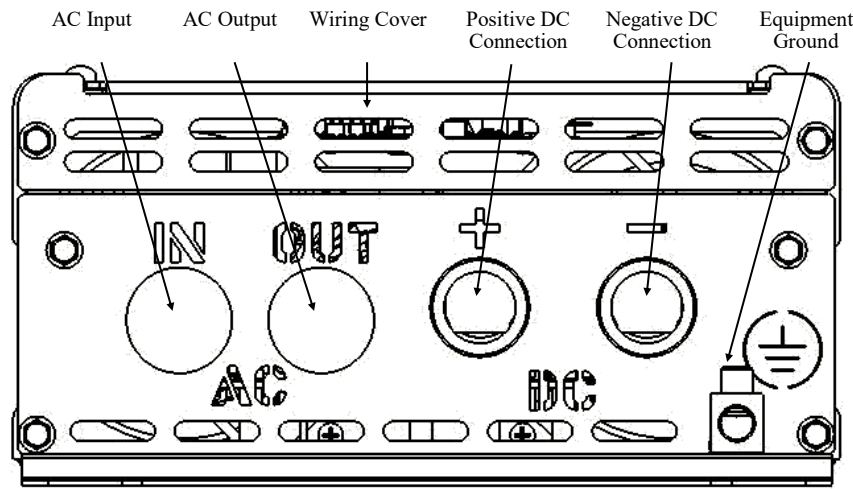


Figure 5 Electrical Connections Side View

NOTE:
For PD1600J series, use pre-installed power cord to connect AC-IN when connecting AC power.

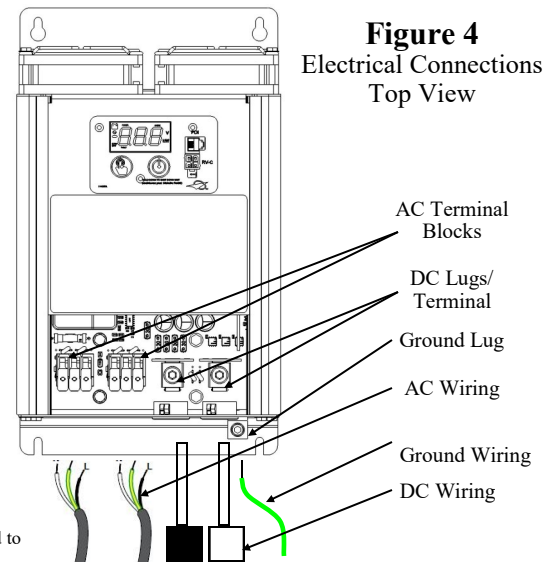


Figure 4
Electrical Connections
Top View

ELECTRICAL CONNECTION INFORMATION

		WIRE LENGTH	MIN. WIRE SIZE	STRIP LENGTH	CONNECTION INFO
DC WIRING	PD1610(1kW)	0-5 ft.	#2 AWG	Lug: Strip 3/4" (19 mm) insulation from each cable prior to installation. Do not leave excess copper exposed. Terminal: N/a	Lug: Tighten lugs to a torque of 100 in-lbs (11.3 N-m). Terminal: Tighten M8 nut to a torque of 79.5 in-lbs (9 N-m). Do not over tighten. Fuse: min. 100A for full load (See NEC for safety codes)
		5-10 ft.	#1 AWG		
		10-15 ft.	#1/0 AWG		
	PD1618(1.8kW)	0-15 ft.	#2/0 AWG	Lug: Strip 3/4" (19 mm) insulation from each cable prior to installation. Do not leave excess copper exposed. Terminal: N/a	Lug: Tighten lugs to a torque of 100 in-lbs (11.3 N-m). Terminal: Tighten M8 nut to a torque of 79.5 in-lbs (9 N-m). Do not over tighten. Fuse: min. 250A for full load (See NEC for safety codes)
PD1620(2kW)	0-15 ft.	#2/0 AWG			
AC WIRING	PD1610(1kW)	0-100 ft.	Per Applicable Code	Strip 0.6" (15 mm) insulation from each wire prior to installation. Do not leave excess copper exposed.	Standard 3/8" trade strain relief. No torque wrench required
	PD1618(1.8kW)	0-100 ft.	Per Applicable Code		
	PD1620(2kW)	0-100 ft.	Per Applicable Code		
GND WIRING	PD1600 Series	Any	#8 AWG	Strip 0.5" (13 mm) insulation from each wire prior to installation. Do not leave excess copper exposed.	Torque ground lug to 30-50 in-lbs.

NOTE: To ensure optimum performance all input wires should be as short as possible. Failure to meet minimum recommended wire size will result in reduced performance

Electrical Connection Instructions

1. Ensure all power sources are disconnected from the inverter
2. Remove the wiring cover
3. Remove AC Input and AC Output knockout plugs
4. Install 3/8" strain relief in AC Input and AC Output ports
5. Connect AC Out terminal block (Ground, Neutral, and Line)
6. Connect AC In terminal block (Ground, Neutral, and Line)
7. Tighten strain relief (if applicable)
8. Connect DC terminals (positive and negative) to battery with properly sized wires, 5/32" hex (PD1610); 1/4" hex (PD1618/20); 13mm M8 nut (PD1620RT)
9. When connecting DC wires a small spark may occur. This is normal charging of the inverter's internal capacitors
10. Provide external strain relief for DC wires
11. Connect equipment ground stud to a grounding point (typically the vehicle's chassis) using a 5/32" hex key
12. Re-install the wiring cover

⚠ WARNING: FIRE, SHOCK, AND ENERGY HAZARD

Make sure wiring is disconnected from all electrical sources before handling. All wiring must be done in accordance with local and national electrical wiring codes.

Failure to follow these instructions may result in serious injury or death.

INVERTER INSTALLATION TESTING PROCEDURES

This step-by-step procedure is designed to ensure proper installation of the Progressive Dynamics PD1600 series inverter has been achieved. **All steps must be performed in the order presented. Any failures must be corrected before repeating the test and continuing. Failure to pass each test in the order presented may cause severe damage to the inverter.**

Pre-test setup:

Turn off ALL circuit breakers in the AC Distribution Panel and apply Shore Power to the RV. Connect power to the Inverter.

Inverter Testing Procedure:

1. From the inverter display or the remote, turn on the inverter. Verify AC power at the inverter designated receptacles and/or appliances. The display should indicate the inverter is operating and provides voltage and power readings. Turn off the inverter. This test confirms operation of the inverter and power to the designated circuits.
2. From the AC breaker panel, activate the MAIN breaker and the inverter branch breaker. Verify AC power at the designated receptacles and/or appliances. This confirms the AC pass-thru function of the inverter.
3. At the inverter display or remote, turn on the inverter. The panel will indicate the inverter is on with voltage, but there will be no power reading. Confirm AC power at the inverter designated receptacles and/or appliances. This confirms the inverter recognizes shore power and passes thru to the branch.
4. Turn off the inverter branch breaker in the AC panel. The inverter display will show the inverter is on and will show the voltage and power. Confirm AC power at the inverter designated receptacles and/or appliances. This confirms inverter takeover at the loss of shore power.
5. Turn on the inverter branch breaker. The inverter will revert to pass thru. The display will still read voltage but not power.

This confirms full inverter operation with and without shore power.

NOTE: When replacing the inverter, also replace the existing remote to ensure proper operation.

Included Items & Connecting the Remote

The PD1600 series inverter comes with a remote display and a 50 ft long connection cable included. The Remote Display is designed for use with only PD1600 series inverters. The remote will allow complete monitoring of your inverter. This guide will help you install and use the inverter and the remote control, to monitor the functions.

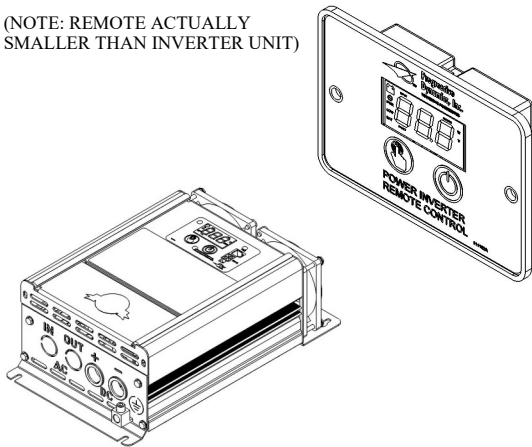
⚠ NOTICE: EQUIPMENT DAMAGE

This Quick Reference Guide is in addition to, and incorporated by reference, the relevant product information for each product in the PD1600 series inverter. Before reviewing this guide, you must read the relevant product manual. Unless specified, information on safety, specifications, installation, and operation is as shown in the primary documentation. Ensure you are familiar with that information before proceeding.

PD1600 series remote displays are compatible **ONLY** with PD1600 series inverters. Attempting to use a remote display not designated for that specific inverter could cause damage to the unit and the remote display.

Failure to follow these instructions will result in your inverter to not function properly.

(NOTE: REMOTE ACTUALLY
SMALLER THAN INVERTER UNIT)



Materials List

The inverter unit package includes the following items:

- (1) PD1600 series inverter. Remote optional
- (1) Owner's guide & mounting template
- (1) Connection cable - (50 ft long connection cable included with inverter) optional

NOTE:

- If any of the items are missing, contact Progressive Dynamics for replacement.
- Use only a cable provided by PDI. **DO NOT** use a cable that is not designated for that specific unit.

Figure 1 Inverter Remote (Communication cable not shown. 50 ft long cable included standard)

Connecting the remote to the inverter

Plug the connector plug into the port on the top of the inverter and the back of the remote control using the supplied communication cable (see Figure 2). Failure to use a communication cable provided by PDI may result in damage to the remote display.

It is recommended that you install the remote into the designated location prior to connecting the cable to the remote and the inverter. Please refer to the installation portion of this guide for those instructions.

Verifying connection

Once the remote display is securely connected to the inverter and the inverter is turned on, it will begin displaying readouts immediately. If your remote control display does not begin to display information, confirm that the communication cable is securely connected into both ports on the inverter and the remote control.

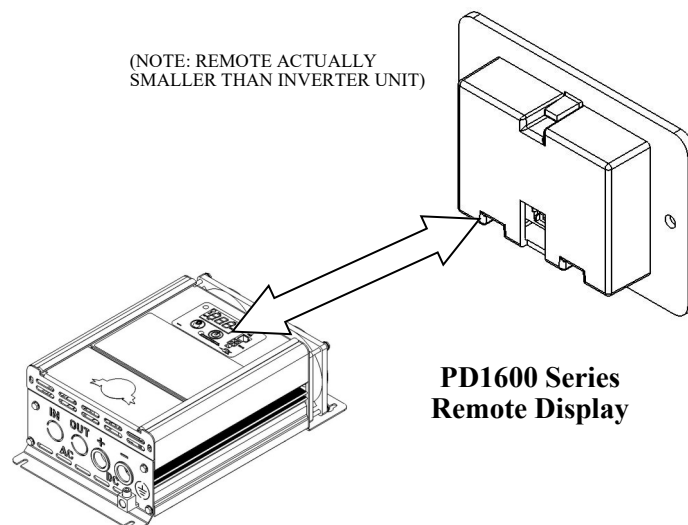


Figure 2 Connecting communication cable

Inverter Display Panel

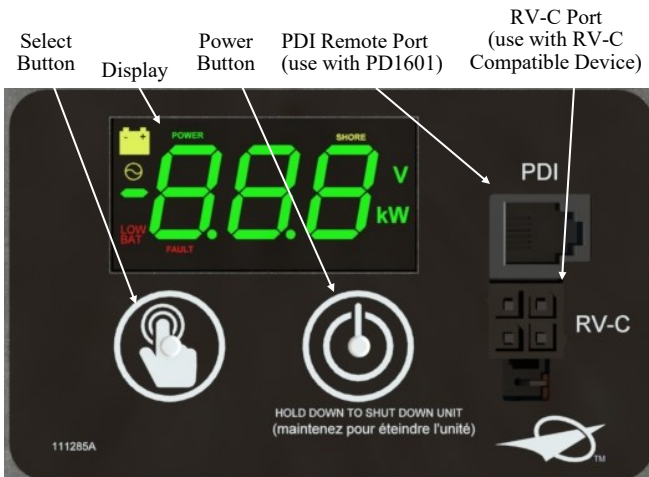


Figure 6 Inverter on-board Display Panel

Display Features

- Power Button: Press to turn on; hold to turn off
- Select Button: Cycles between display states: Input Voltage, Output Voltage, Output Power, Standby, Error Code (if applicable)
- Power Indicator: Lights up green when the inverter is on
- Shore Indicator: Lights up green when AC input is detected
- Low Bat Warning Indicator: Lights up red when the battery is nearing the end of its charge
- PDI Remote Port for externally mounted display
- RV-C Port for communication with a RV-C compatible hub

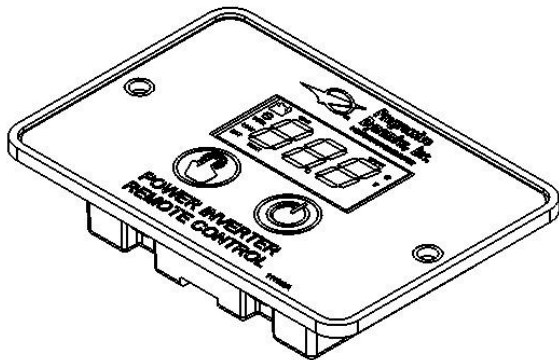


Figure 7 Inverter Remote Display

Low Bat Warning Indicator Power Indicator Fault Indicator Shore Power Indicator



Figure 8 Display Indicator (Inverter on-board and remote control)

ERROR CODES		
Error Code	Condition	Action
E-1	Low battery voltage detected	<ul style="list-style-type: none"> • Re-charge the battery • Check DC cable size • Tighten DC connections
E-2	High battery voltage shutdown	<ul style="list-style-type: none"> • Disconnect external sources (alternator or charger)
E-3	AC output overload shutdown	<ul style="list-style-type: none"> • Evaluate the loads connected to the AC outlet of the unit. Loads may need to be reduced.
E-4	Over-temperature shutdown	<ul style="list-style-type: none"> • Reduce load to the AC output • Ensure that the inverter is in a dry, well ventilated space with adequate air flow • Ambient temperature may be too high
E-5	Internal Error	<ul style="list-style-type: none"> • Ensure all connections are tightened • Contact the PDI Service Department
E-6	Short Circuit	<ul style="list-style-type: none"> • Look for damaged AC loads • Look for faulty AC wiring • Evaluate peak power requirements for all loads
E-7	DC Voltage Failure	<ul style="list-style-type: none"> • Ensure DC connections are tightened • Ensure battery has sufficient capacity • Review minimum wire length and size requirements

Inverter Specifications

Installing the remote display on the wall

1. Place the template on the wall (See Figure 10).
2. Measure and mark the wall for the opening to be cut for remote control.
3. Mark the corners of the recess outline on the wall.
4. Measure and mark the two mounting holes for the two screws on the wall.
5. Cut along the recess outlines on the wall to make a hole for the remote control.
6. Pre-drill the mounting holes appropriate for mount screws (not provided) that will be used.
7. Connect the communication cable to the RJ9 port on the inverter and the remote control (see Figure 2).
8. Mount the remote panel unit on the wall.

Note:

Ensure that there are no
Obstructions present, such as:

- Pipes
- Insulation
- Electrical Wiring

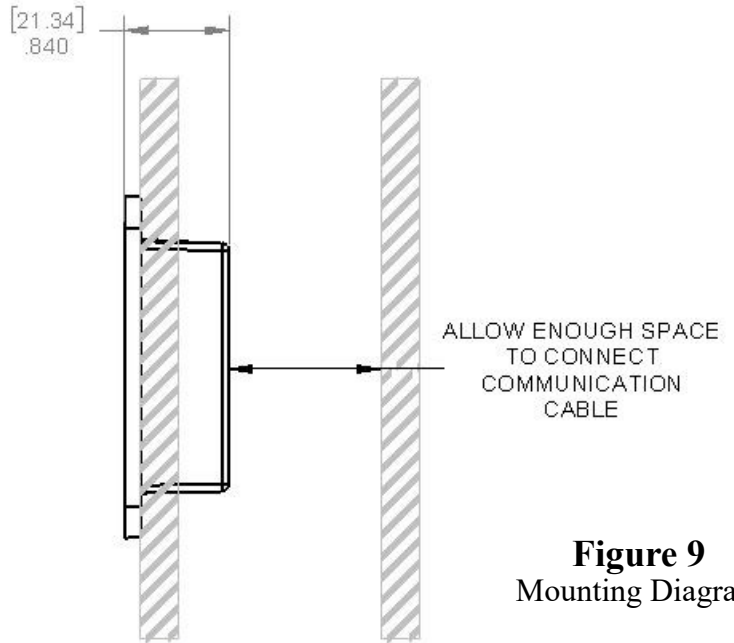


Figure 9
Mounting Diagram

Ensure that there is at least 1" (25.4 mm) of space for communication cable.

SPECIFICATIONS							
PHYSICAL SPECIFICATIONS				TRANSFER SWITCH			
	PD1610	PD1618	PD1620		PD1610	PD1618	PD1620
Dimensions	L:11.2"(284mm) W:6.7"(170mm) H:4.0"(101mm)	L:15.0"(381mm) W:7.9"(200mm) H:4.0"(101mm)	L:15.0"(381mm) W:7.9"(200mm) H:4.0"(101mm)	Transfer Voltage	95 - 135 VAC		
				Transfer Time	< 50 msec		
Net Weight	7 lbs (3.2 kg)	11 lbs (5.0 kg)	11 lbs (5.0 kg)	Pass Through Ampacity	20 AAC	30 AAC	
AC OUTPUT				DC INPUT			
	PD1610	PD1618	PD1620		PD1610	PD1618	PD1620
Waveform	Pure Sine Wave			Nominal Voltage	12.0 VDC		
Output Voltage	120 VAC			Under-Voltage Shutdown	10.5 VDC		
Max Power (Cont)	1000W	1800W	2000W	Under-Voltage Restart	12.0 VDC		
Max Power (Peak)	2000W	3600W	4000W	Over-Voltage Shutdown	15.5 VDC		
Frequency	60 Hz			Over-Voltage Restart	15.0 VDC		
Peak Efficiency	90%			Max Current @ max load	100 ADC	180 ADC	200 ADC

Recommended GFCI for use with PD1610 Inverter:

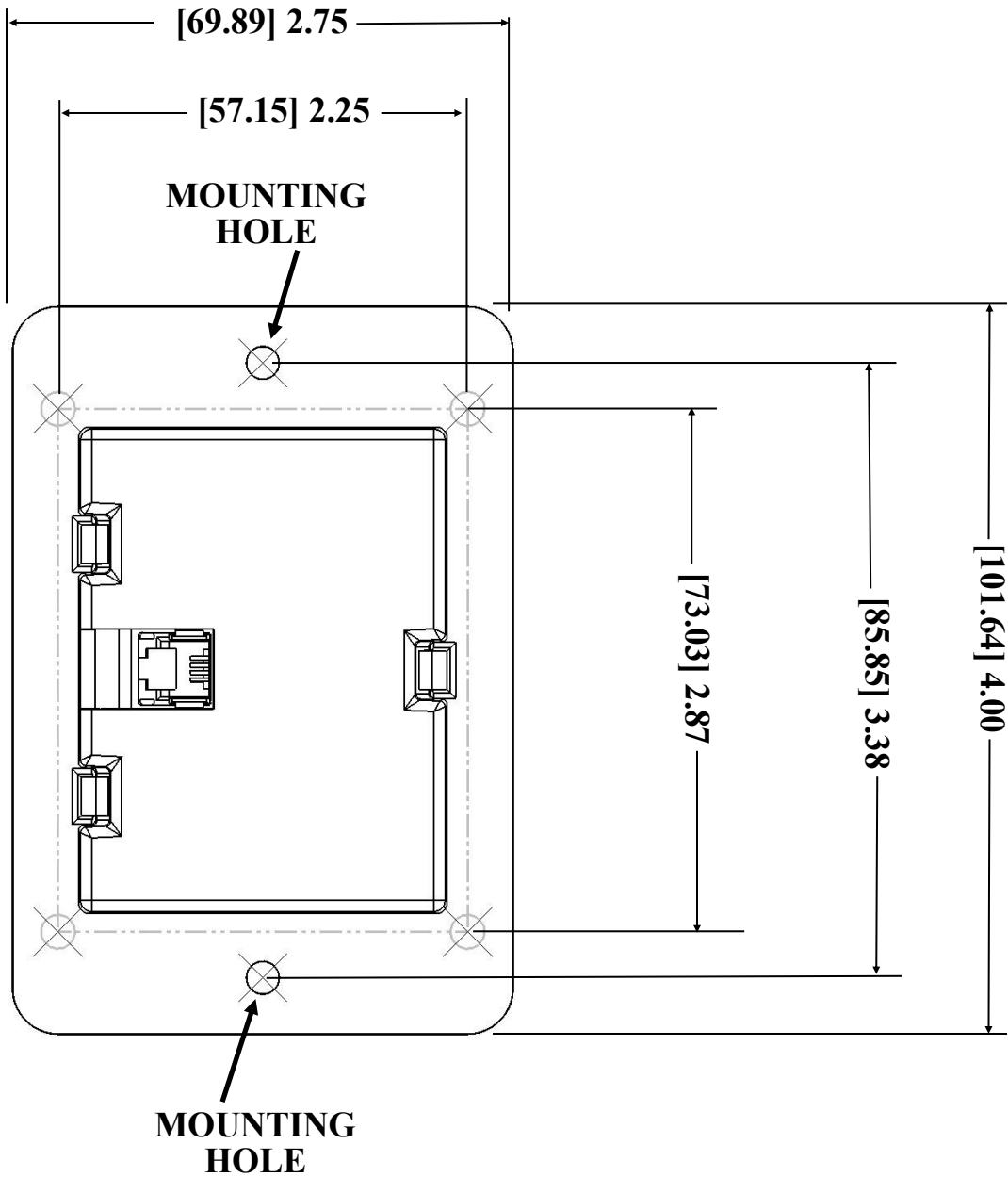
Leviton GFTR2 (20A), Eaton SGF20 (20A), Bestten USP-20A-20-PKB (20A), Hongki TST20 (20A), Zhangjiagang City Barep Technology Co. YGH-094 (20A),

Recommended GFCI for use with PD1618/20 Inverter:

Siemens QF130A (30A), Eaton GF20BK(20A), Eaton GF15BK-WP(15A), Leviton GFNT1-E(15A), Radiant 5800BK (20A), ELEgrip E309686(15A)

*All ratings at 25 °C unless otherwise listed

Installation Template



(Full Scale)

Figure 10 Remote Display Mounting Template