POWER INNOVATIONS INTERNATIONAL

LITEON GROUP

Installation Instruction Manual

Models: IM-2332-01P1-XX and IM-2332-01P3-XX

IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

This manual contains important instructions for Models IM-2332-01P1-XX and IM-2332-01P3-XX (X = A-Z, 0-9, exclude "DC") that shall be followed during installation and maintenance of the inverter.

WARNING!
To reduce the risk of fire, do not connect to an AC load center (circuit breaker panel) having multwire branch circuits connected. For continued protection against risk of fire, replace only with same type and ratings of fuse.

WARNING!
Indicates that the area is hazardous. These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that specified in the operating instructions unless you are qualified to do so. Do not remove cover until 5 minutes after disconnecting all sources of supply.

DANGER!
High voltage risk of electric shock. Hot surfaces - To reduce the risk of burns - Do not touch.

This equipment is not rated for use in hazardous locations. Please adhere to the following guidelines prior to and during operation.

- The maximum output ratings as shown on the label shall not be exceeded.
- The equipment shall be used at maximum 65 °C ambient temperature.
- The equipment is assessed up to an operating altitude of 3000 meters.
- Do not open the equipment to reduce the risk of electrical shock.
- For safety reasons, the equipment is only allowed to be opened by qualified service personnel.
- During maintenance, please first disconnect all input power sources.
- Equipment has to be protected from objects falling through or liquids dripping through the openings. This could cause a fire or electrical shock.
- Disconnect equipment from power supply before cleaning. Do not use any liquid or aerosol cleaner. Use only a moisture cloth.
- Equipment should be placed on a reliable surface. A drop or fall could cause damages.
- The equipment is intended for installation in restricted access locations, where it can be accessed only through the use of a special tool, lock and key, or other means of security.
- The equipment is not suitable for use in locations where children are likely to be present.
- If one of the following situations arise, equipment has to be checked by qualified service personnel:
    - Input connector is damaged.
    - Liquid has penetrated into the equipment.
    - Equipment has been exposed to humidity.
    - Equipment has been dropped and/or is damaged.
    - Equipment has obvious sign of breakage.
    - Equipment does not work well or user cannot get it working according to user's manual.

11. Rack Mount Installation Precautions
    - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
    - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
    - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
    - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
    - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit.
12. FCC declaration of conformity
    This equipment has been tested and found to comply with the limits for a Class A 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 to which the receiver is connected.
    —Consult the dealer or an experienced radio/TV technician for help.
    Change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
13. CE declaration
    Warning: This equipment is compliant with Class A of CISPR 22. In a residential environment this equipment may cause radio interference.
14. Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available.
    If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.

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Specifications

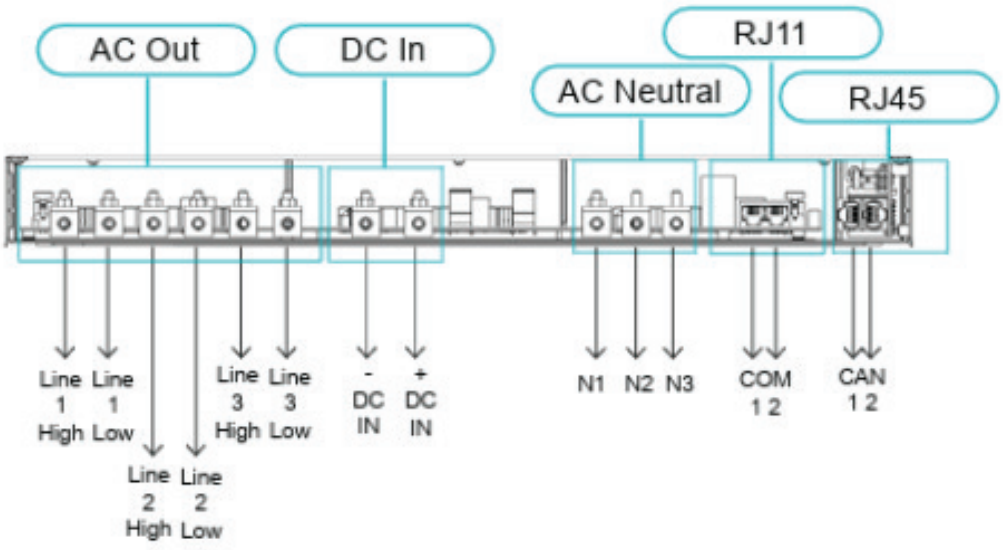
Electrical	IM-2332-01P1-XX 400 V	IM-2332-01P3-XX 400 V
Rated Input Voltage	400 Vdc	400 Vdc
Input Voltage	290 Vdc - 450 Vdc	290 Vdc - 450 Vdc
Input Current	12.2 A max	12.2 A max
Output Power	120 Vac / 3.0 KVa and 240 Vac /3.3 KVa with +/-0.8 to 1.0 PF	
Output Voltage	Low range: 120 Vac High range: 240 Vac	
Output Current	**120 Vac single-phase**: 25 A maximum **240 Vac split-phase**: 13.75 A maximum	
Operating Frequency	60 Hz +/- 1 Hz	
Maximum Output Fault Current and Duration	48.80 A peak with a duration of 132.07 ms	
Output Overcurrent Protection	20 A fuse in module	
Mechanical		
Dimensions (W x H x D)	5.18″ x 1.57″ x 12.71″ (131.5 mm x 40 mm x 322.8 mm)	
Cooling	Forced air cooling	
Weight	5.5 lbs (2.5 kg)	
Environmental		
Operating Temperature	-40 °C to +50 °C at full load; de-rated from +50 °C to +75 °C	
Storage Temperature	-40 °C to +85 °C	
Humidity	10% to 90% relative (non-condensing)	
Altitude	Operating: 0 m to 3000 m Storage: 0 m to 15000 m	
EMI	CISPR 22 Class A -6dB	
Enclosure Rating Type	Type 1	
Configurations		
Inverter Model Discrepancy	**Tab color**: Black **Airflow direction**: Front-to-back airflow	**Tab color**: White **Airflow direction**: Back-to-front airflow
General		
Safety Standards	UL 1741	

Inverter shelf overview

The PF-1103-P21N inverter shelf accepts three of Pii's hybrid inverters to create a single 10 kW-rated power unit in a 1RU-height, 19"-wide rack mount enclosure. This inverter shelf also holds Pii's shelf controller (SC) to provide the necessary communication for the modules within the shelf as well as the upstream rack controller.

The IM-2332-01P1-XX and IM-2332-01P3-XX inverters are both assembled in this shelf, and the grounding instructions below pertain to the shelf.

Backplane of PF-1103-P21N



Grounding instructions

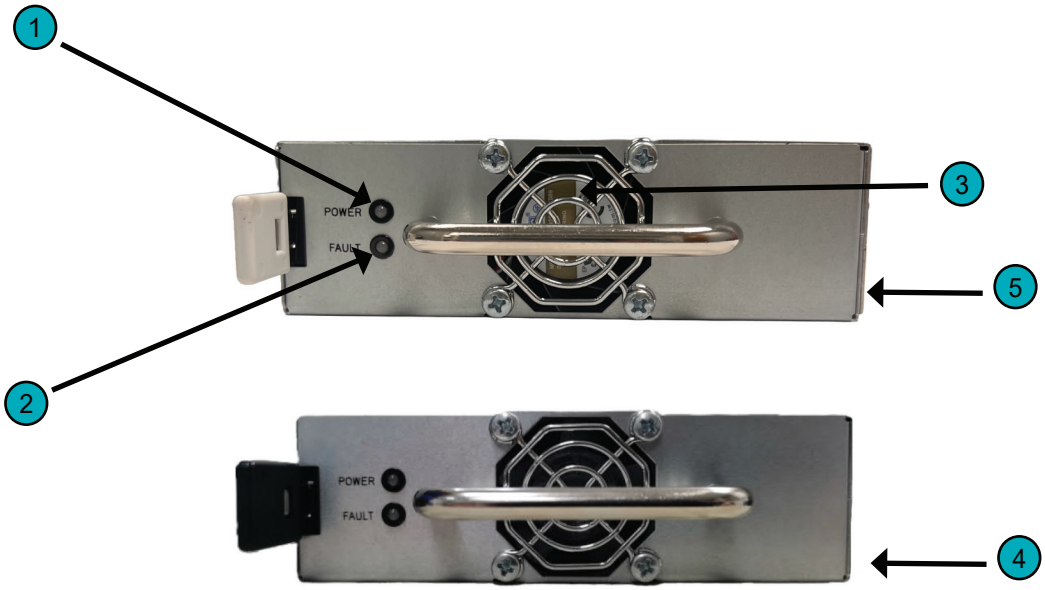
To conform to UL1741 system levels, this unit must be connected to either (a) a grounded, metal, permanent wiring system, or (b) to an equipment-grounding conductor with circuit conductors and connected to an equipment-grounding terminal. To do so, connect the power wires with cable lugs to the input terminal marked with "N1", "N2", and "N3" using 3x M6.0 screws. Connect the ground wire into the earth terminal with a ground symbol using 1x M6.0 screw.

Ventilation

IM-2332-01P1-XX pull air from environment through the module and out the back side.
IM-2332-01P3-XX pull air from the back of the module and push out the front.

*Cooling/ventiflation must be considered given these constraints.
*Front and back of modules must have 35 cm. clearance for optimal operation.

Front Panel



1	"POWER" LED	Output power indicator: green-colored LED
2	"FAULT" LED	PSU fault indicator: amber-colored LED
3	Fans	Cooling fans
4	Model Name	IM-2332-01P1-XX
5	Model Name	IM-2332-01P3-XX

Front Panel LED Status

Status	LED Green: Power	LED Amber: FAULT
Output Normal	**Solid Green**	Off
Storage Temperature	**Blinking Green @ 2 Hz**	Off
Output Disable/Fault	Off	**Solid Amber**
Output Disable/Firmware Update	Off	**Blinking Amber @ 2 Hz**