IVS-1500 SINEWAVE INVERTER SERIES

(Chassis-mount version)

OPERATING MANUAL

Ver 1.0

Warranty

RIPEnergy is not manufacturer of these units . All technical information's, data's and dimension's rely on information's given by the manufacturer. Therefore RIPEnergy AG is not responsible for the data's provided in this manual. Should work take place, which is not in accordance with guidelines, local rules, instruction's or specification's, damage may occur. All of these matters will lead to loss of warranty. RIPEnergy AG can not accept any liability for damages or costs arising due to the use of these inverters.

Distributor's address

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System Description

The **IVS1500** chassis mount inverter series was designed electrically and mechanically to achieve optimal ruggedness required for industrial, telecommunications, military and airborne applications.

Electrical Connections

The input can be grounded either on the positive or negative, or may be left floating.
The standard output is normally grounded, although it can be specified as floating (set at the factory).
Mount the unit as close to the battery as possible to avoid voltage drop and losses on the wires. The input connections are made via a 3-pole terminal block. GND, POS and NEG are clearly labeled. Although the unit is reverse polarity protected, ensure that input is connected correctly. (On some models, the internal fuse blows when reverse polarity occurs).
If operating the inverter from a power supply (instead of a battery), ensure that this source is capable of supplying a significantly higher current than is actually required. It is preferable to turn on the inverter first, and connect the load after the inverter is already running.

Location

The unit should be mounted securely to a 19" rack with a minimum of one inch clearance to provide ample air flow and to achieve maximum continuous power. Cooling is enhanced if the unit is installed on a metal surface to allow for additional conduction cooling.

Electronic Protection

The inverter has a number of protection circuits designed to provide full electronic protection:
Grounding - The input can be either positively or negatively grounded, or may be left floating. The output is normally grounded, although it can be floating (to be specified at time of ordering if floating input/output is required).
Thermal shut-down - In the event of overheating due to high ambient temperature, blocked air flow or overload conditions, the internal thermal protection circuit will shut the unit down. Operation will automatically resume when the temperature reaches the specified operating level.
Overload and short-circuit protection - In case of an overload or short circuit, the inverter will go into "hiccup" mode. This means that the unit will automatically shut down and will periodically test whether or not the overload condition still exists.
Reversed Input Polarity Protection – The **IVS 1500** inverter series has sophisticated protection to ensure that no damage occurs whilst reverse polarizing the input. (On some models, the internal input fuse may blow when reverse polarity occurs).

Input and output filtering
All **IVS1500** series inverters have a double stage input filter to restrict EMI emissions. Filtering also provides immunity against voltage spikes and other disturbances on the input power line. The inverters meet FCC 20780 Class B and EN 55022 Class B conducted emission requirements.

Operating
Before plugging any appliance into the inverter, please refer to its power requirements. Power requirements are indicated in watts (W), volt-amps (VA) or amps(A). Ensure that the rating does not exceed the inverter's capacity.

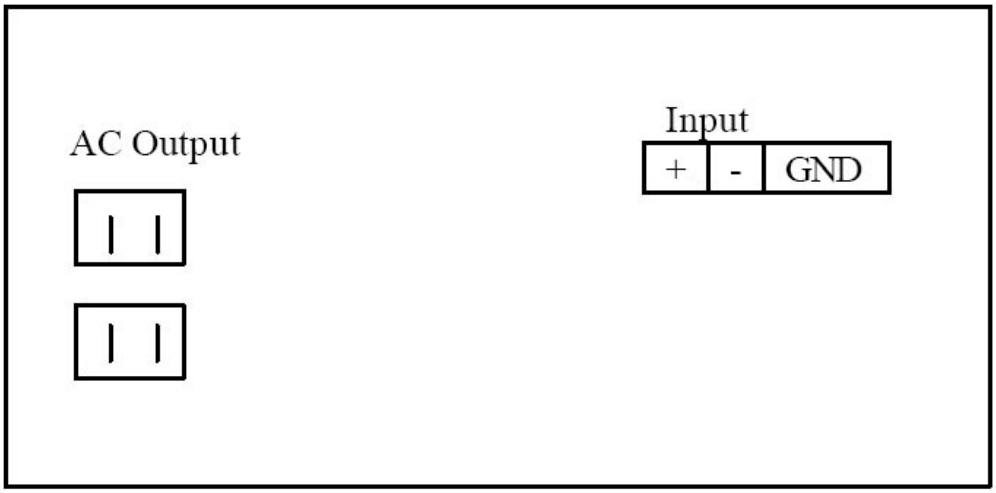
Warranty
Manufacturers warranty applies for a period of twelve months, subject to application within good engineering practice.

Safety Considerations
WARNING: The **IVS1500** inverter series generates 115 or 230VAC power – the same voltage coming out of a standard wall outlet. This voltage can be hazardous and has to be treated with the same caution as a regular electrical outlet.
As with any other electrical equipment, the inverter unit must be protected from water and moisture at all times.

Specifications (Specifications Subject to Change Without Notice)

Input Voltage	24VDC, 36VDC, 48VDC, 125VDC, 250VDC +/-20% are standard Other inputs available, please consult factory
Input Protection	Thermal fuse, Inrush current limiting, Reverse polarity protection
Isolation	Input to chassis 500VDC for < 60V input, 1500VDC for > 60V input Input to output 2250VDC, Output to chassis 2250VDC
Output Voltage	115VAC / 50Hz or 60Hz or 400Hz / 13A or 230VAC / 50Hz or 60Hz or 400Hz / 6.5A with grounded neutral. Isolated floating output optional (Consult factory for other voltages and frequencies)
Wave Form	Sinusoidal
Total Harmonic Distortion	Less than 5% at full load
Efficiency	Min 78% at full load
Line Regulation	Maximum 0.5%
Load Regulation	Maximum ± 2% from no load to full load
Output Protection	Current limiting with short circuit protection, thermal shutdown with automatic recovery in case of continuous overload or insufficient airflow
EMI	EN 55022 Class B for versions where input current <70A Class B filtering is an option where input current >70A
Load Crest Factor	Maximum 3.0 at 90% load
Operating Temperature Range	0^{o} C to $+50^{o}$ C Extended range available, consult factory
Humidity	5 - 95% non-condensing
Temperature Drift	0.05% per ^{o} C over operating temperature range
Dimensions	42.6 x 13.5 x 35.1 cm enclosed case (W x H x D)
Connections	Input: Compression-type terminal Output: Standard AC receptacle or IEC connector
Weight	13 pounds (11.4 Kg)
Safety	Designed to meet C22.2 No. 107.1 - 01, UL 458 and EN60950
Options	Output Fail Alarm (Form C) Remote Inhibit: By closing external contacts on the inhibit terminals
Warranty	1 year

CONNECTIONS:
The input is via a three pole Phoenix connector on the right hand side, the output is a standard AC receptacle located on the left hand side.
Input wire size is crucial for maximum efficiency and safety. For best results, the shortest length and largest gauge wire should be used. Marine type battery terminals are recommended for attaching connectors to the battery. Keep all connectors clean and free of corrosion. Refer to the table below for proper sizing.
Front View



RECOMMENDED WIRE SIZES
The following values are to be used for guidelines only. The actual application must be considered for selecting wire gauge, insulation, as well as EMI considerations for wire routing and shielding where necessary. For longer wire lengths, larger gauge may be needed to minimize line losses.

CURRENT (AMPS)	WIRE SIZE (AWG)
0 to 0.5 AMPS	22
0.5 to 2 AMPS	20
2 to 3 AMPS	18
3 to 6 AMPS	16
6 to 12 AMPS	12
12 to 20 AMPS	10
20 to 30 AMPS	8
30 to 40 AMPS	6