

1300VA THREE-PHASE DC/AC SINE INVERTER

24Vdc, 110Vdc, 115Vdc, 127Vdc to 400Vac

GENERAL FEATURES:

Sine wave output voltage
Suitable for motors control
High input-output isolation
3000Vrms

Alarm by isolated relay contacts

Remote ON/OFF opto-coupled



AVAILABLE MODELS

Model	Input voltage DC [V]	Input voltage range [V]	Output voltage AC [V]	Output current [A]	Active output power [W]	Appar. output power [VA]	Output Peak current 10ms (Iopk) [A]	Efficien. [%]	No load input current [A]	Size
WRHD-DC-AC-1300 24-400-3PH	24	16.8 - 30	400	1.88	1100	1300	3.4	89	<1.58	2
WRHD-DC-AC-1300 110-400-3PH	110	77 - 138	400	1.88	1100	1300	3.4	91	< 0.34	1

Version and order code:

WRHD-DC/AC in - 400 - 1300 - 3PH: DC-AC Three-phase sine converter

in : Input DC voltage (24Vdc, 110Vdc, 115Vdc, 127Vdc) +/-20%

Output AC voltage 400Vac

Output power 1300W

Mounting : **-WM** Wall mounting (standard)

[Request a quote](#)

INPUT

Input voltage range	-30, +25% Vin nom
Maximum input ripple	5% Vin nom (Vrms, 100Hz)
Inrush current	<25A
Polarity protection	By diode

OUTPUT

Nominal output voltage (Von)	See table (ordering codes)
Output voltage range	200 ... 400V via RS-232
Output frequency range	5...60Hz via RS-232
Load regulation	< 4%
Line regulation	< 2% Vin -25% ... +25%, < 10% Vin -30% ... +30%
Output wave distortion THD	< 3% (average of 16 samples)
Output HF ripple	< 2.5%

ENVIRONMENTAL

Storage temperature	-25 ... 85°C
Operating temperature:	
Full load	-25 ... 55°C (EN50155 OT1)
62.5% load	-25 ... 70°C (EN50155 OT3)
25% load	-25 ... 85°C (EN50155 OT5)
Relative humidity without condensation	5 ... 95%
Cooling	Controlled internal fan
MTBF (MIL-HDBK-217-E; G _b , 25°C)	100.000 h

EMC

Immunity according	EN61000-6-2, EN50121-3-2
Emissions according	EN61000-6-4, EN50121-3-2

SAFETY

Dielectric strength: Input /output	3000 Vrms / 50Hz / 1min
Dielectric strength: Output / Earth	1500 Vrms / 50Hz / 1min
Dielectric strength: Input / Earth	1500 Vrms / 50Hz / 1min
Dielectric strength: Remote ON/OFF / Input	500 Vrms / 50Hz / 1min
Safety according to	EN60950-1, EN62368-1
Fire and smoke	EN45545-2

MECHANICAL

Weight	<3200 g
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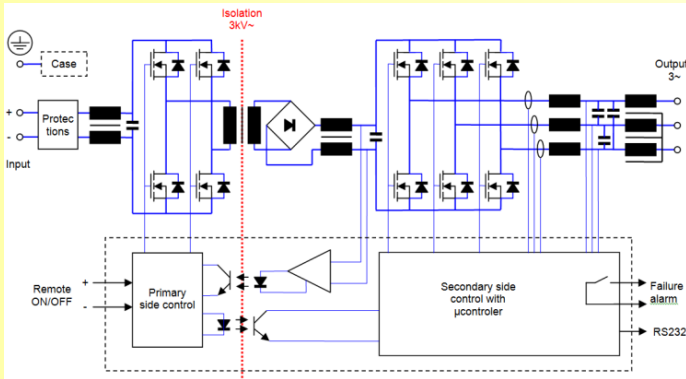
PROTECTIONS

Against overloads and short-circuits	Shutdown with auto-recovery (see working parameters)
Against over-temperature	Shutdown with auto-recovery

CONTROL

Output alarm	Open when alarm. Maximum rating: 0.16A at 160Vdc
Remote ON/OFF input	ON applying a voltage within the input voltage range OFF open circuit or < 5V

BLOCKS DIAGRAM

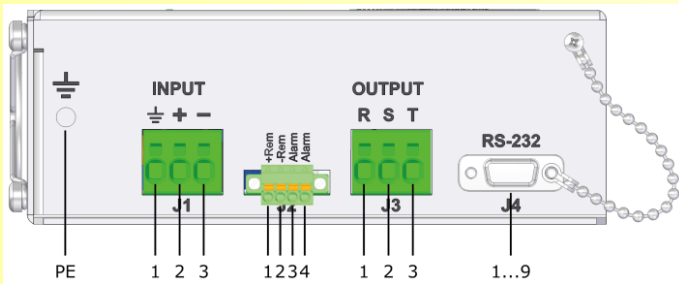


DESCRIPTION

The WRHD-1300 consists of three phase sine-wave DC-AC inverters with galvanic isolation between input and output.

The WRHD-1300 has a maximum output current protection. This protects the semiconductors even when an output short-circuit occurs. It also features a disable function for input under-voltage.

CONNECTIONS



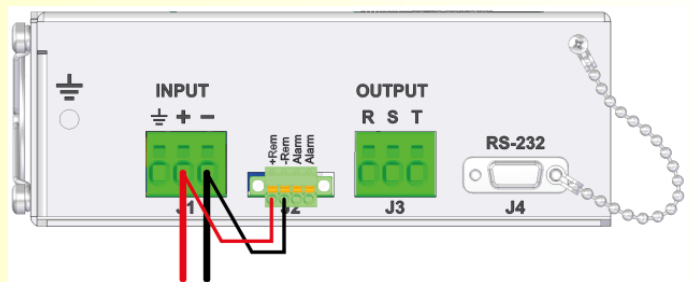
J0	Case PE	Threaded shank M6 (Rec. torque 3.8 Nm)
J1-1	Protective Earth	Cable 1.5...16mm ²
J1-2	+Input	
J1-3	-Input	
J2-1	+Remote off	Phoenix Contact MC1.5/4-GF-3.81 Mating connector included
J2-2	-Remote off	
J2-3	Alarm	
J2-4	Alarm	
J3-1	R Output	Cable 0.75...4mm ²
J3-2	S Output	
J3-3	T Output	

POWER DERATING vs AMBIENT TEMP.



INSTALLATION

- The unit has 4 threaded holes for the fixation on a mounting surface.
- The unit has internal fans. For an appropriate cooling, the air input and output should be free of elements that cause and an air flow reduction (minimum recommended distance to other objects 50mm).
- To start up the unit without a remote ON/OFF signal, make the following connection



For safety reasons, the following requirements must be met:

- Provide the equipment with some kind of protective enclosure that complies with the electrical safety directives in effect within the country where the equipment is installed.
- Include an input fuse with a rating immediately higher than the maximum input current.
- Use cables of adequate cross-section to connect inputs and outputs. The following table lists the maximum currents and the minimum cross-sections for the cables used for each power connection.

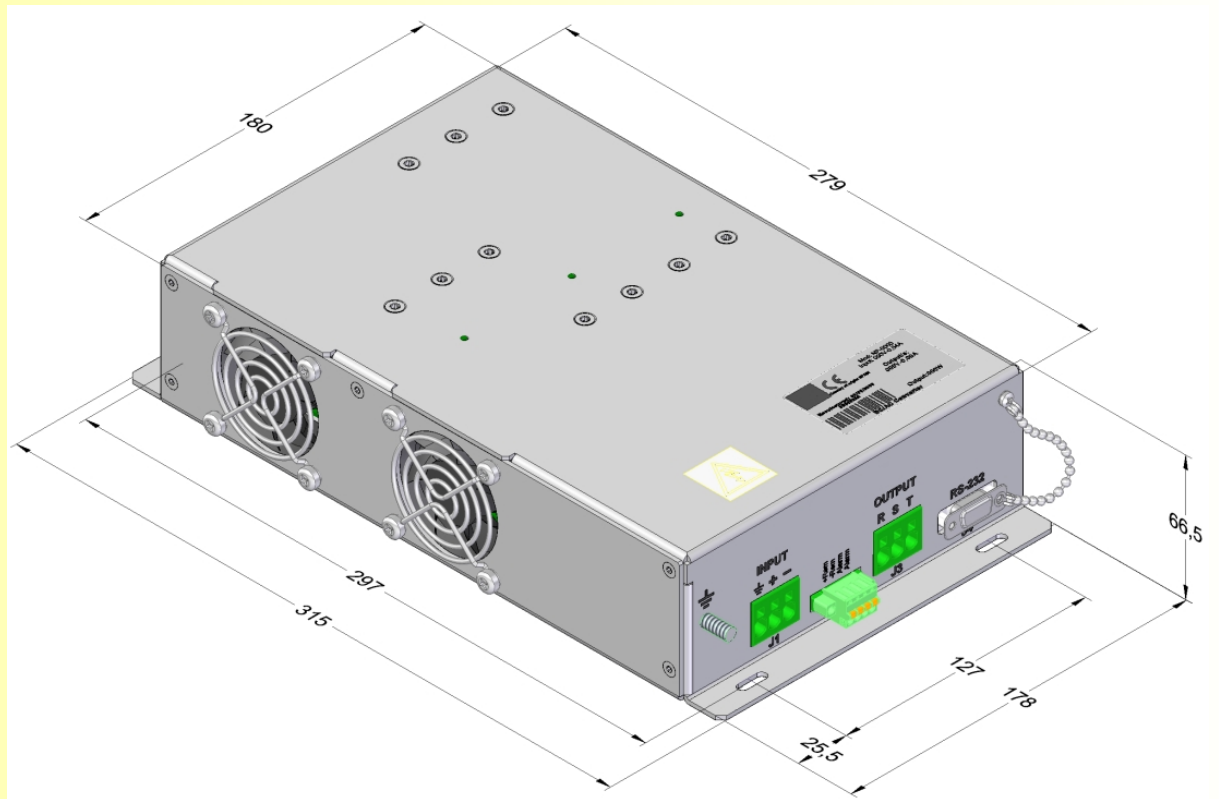
	Input 24V	Input 110V	Output 400V
Current	70A	16 A	1.88A
Cable cross section	16 m ²	1.5 mm ²	0.75 mm ²

WRHD-DC-AC-1300-3PH



DIMENSIONS

SIZE-1



SIZE-2



ANNEXE

4.3.1	Working altitude	Up to 2000m																																																																	
4.3.2	Ambient temperature	Class OT1 (-25 to 55°C): load < 100% Class OT3 (-25 to 70°C): load <62.5% Class OT5 (-25 to 85°C): load <25%																																																																	
4.3.3	Switch-on extended operating temp.	ST1																																																																	
4.3.4	Rapid temperature variations	H1																																																																	
4.3.5	Shocks and vibrations	According EN61373:2010 Category 1 class B																																																																	
4.3.6	EMC Electromagnetic Compatibility EN50121-3-2:2016	<table border="1"> <thead> <tr> <th>Test</th> <th>Norm</th> <th>Port</th> <th>Frequency</th> <th>Limits</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Radiated emissions</td> <td rowspan="3">IEC55016</td> <td rowspan="3">Case</td> <td>30MHz...230MHz</td> <td>40dB(µV/m) Qpk at 10m</td> </tr> <tr> <td>230MHz...1GHz</td> <td>47dB(µV/m) Qpk at 10m</td> </tr> <tr> <td>1...3GHz</td> <td>Do not apply</td> </tr> <tr> <td rowspan="3">Conducted emissions</td> <td rowspan="3">IEC55016</td> <td rowspan="3">Input</td> <td>3...6GHz</td> <td>Internal freq. < 108MHz</td> </tr> <tr> <td>150kHz...500kHz</td> <td>99dB(µV) Qpk</td> </tr> <tr> <td>500kHz...30MHz</td> <td>93dB(µV) Qpk</td> </tr> </tbody> </table>		Test	Norm	Port	Frequency	Limits	Radiated emissions	IEC55016	Case	30MHz...230MHz	40dB(µV/m) Qpk at 10m	230MHz...1GHz	47dB(µV/m) Qpk at 10m	1...3GHz	Do not apply	Conducted emissions	IEC55016	Input	3...6GHz	Internal freq. < 108MHz	150kHz...500kHz	99dB(µV) Qpk	500kHz...30MHz	93dB(µV) Qpk																																									
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4.3.7	Relative humidity	Up to 95%																																																																	
5.1.1.2	DC power supply range	From 0.70 to 1.25 Un continuous																																																																	
5.1.1.3	Temporary DC power supply fluctuation	From 0.60 to 1.40 Un 0.1s From 1.25 to 1.40 Un 1s without damage																																																																	
5.1.1.4	Interruptions of voltage supply	Class S1 (without interruptions)																																																																	
5.1.1.6	Input ripple factor	10% peak to peak with a DC Ripple Factor of 5 %																																																																	
5.1.3	Supply change-over	0.6 Un duration 100 ms (without interruptions). Performance criterion A																																																																	
7.2.7	Input reverse polarity protection	By external fuse																																																																	
10.7	Protective coating for PCB assemblies	Class PC2																																																																	
13.3	Tests list	1 Visual Inspection 2 Performance test 3 Power supply test 4 Insulation test 5 Low temperature storage test 6 Low temperature start-up test 7 Dry heat test 8 Cyclic damp heat test 9 Salt mist test 10 Enclosure protection test (IP code) 11 EMC test 12 Shocks and vibrations test 13 Equipment stress screening test 14 Rapid Temperature variation test	Routine Routine Routine Routine - Type Type Type - - Type Type Routine: 24h at 40°C and load 100% -																																																																