



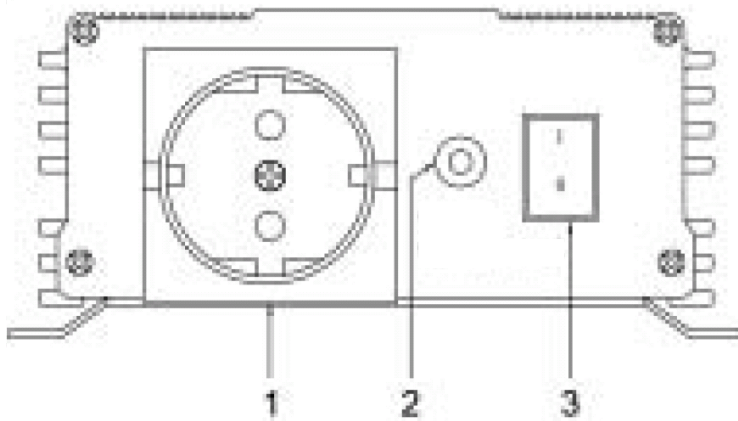
HQ-PURE150-12
HQ-PURE300-12
HQ-PURE600-12
HQ-PURE600-24
HQ-PURE1KW-12
HQ-PURE2KW-12
PURE SINE INVERTERS



**This manual contains the English language only,
you can find the multi language version on the CD-ROM**

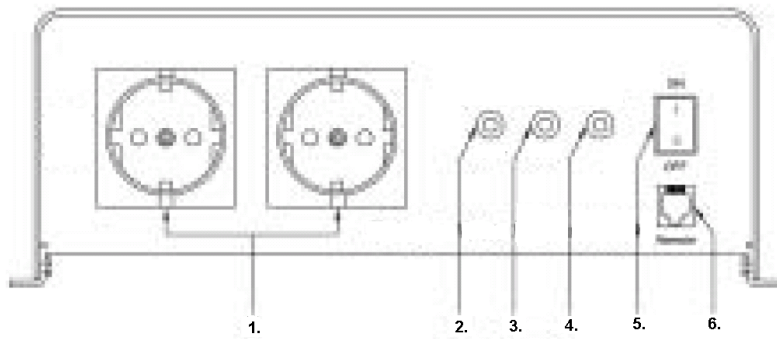
Inverter layout

Frontside 150/300W



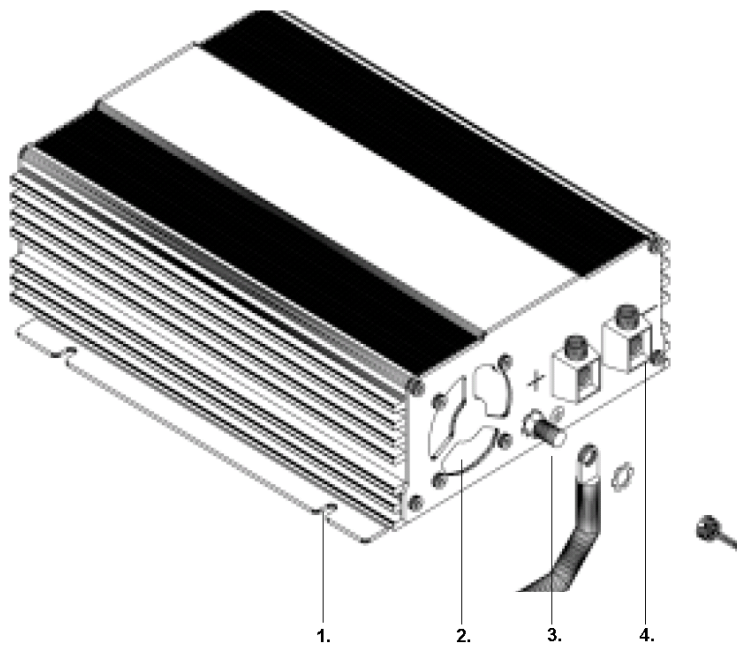
- 1. = AC 230V outputs
- 2. = LED (green = power on)
(orange = abnormal)
- 3. = Power switch

Frontside 600/1000/2000W



- 1. = AC 230V output(s)
- 2. = LED (over temperature)
- 3. = LED (over load)
- 4. = LED (power output)
- 5. = Power switch
- 6. = Jack for remote controller

Backside (except 150W)



- 1. = Mounting hole
- 2. = Cooling fan
- 3. = Ground terminal
- 4. = DC input terminals

Notes on using the instruction manual

Caution!

Safety instruction, failure to observe this instruction can cause material damage and impair the function of the device. Supplementary information for operating the device.

Caution!

Safety instruction relating to danger from electrical current or voltage. Failure to observe this instruction can cause material damage and personal injury and impair the function of the device.

General safety instructions

- Use the device only as intended.
- Do not operate the device in a damp or wet environment.
- Do not operate the device in areas that are potentially explosive.
- Maintenance and repair work must only be carried out by qualified personnel who are familiar with the risks involved and the relevant regulations

Safety when installing the device

- Ensure that the device has a firm foundation. The device must be set up and fastened in such a way that it cannot tip over or fall down.

- Take the precautions necessary to ensure that children cannot interfere with operation.
Dangerous situations may occur which cannot be recognized by children!
- Do not expose the device to a heat source (such as direct sunlight or heating). Avoid additional heating of the device in this way.

For installation on boats

- If electrical devices are incorrectly installed on boats, corrosion damage might occur. Have the inverter installed by an electrician specialist.

Electrical cables

- If cables have to be fed through metal walls or other walls with sharp edges, use ducts or wire bushings to prevent damage.
- Do not lay cables which are loose or bent next to electrically conductive material (metal).
- Do not pull on the cables.
- Do not lay the 230 V mains cable and the 12/24 V DC cable in the same duct.
- Fasten the cables well.
- Lay the cables so that they cannot be tripped over or damaged.
- Operate the device only if you are certain that the housing and the cables are undamaged.
- Make sure the air inlets and outlets of the device are not covered.
- Ensure good ventilation.
- Do not connect the 230 V output of the inverter to a different 230 V source.
- Even after the fuse triggers, parts of the inverter remain live.
- Always disconnect the power supply when working on the device.

Proper use

The Pure Sine Wave Inverters convert 12 V or 24 V direct current to a 230V alternating current at a frequency of 50 Hz.

Warning!

Reverse polarity connection of the battery wires can damage the inverter. Do not use the inverter with electrical systems using positive ground.

With its low weight and compact design the inverter can be easily installed into camping mobiles, commercial vehicles or motor and sailing yachts.

The output voltage corresponds to the socket standard (pure sinus-voltage)

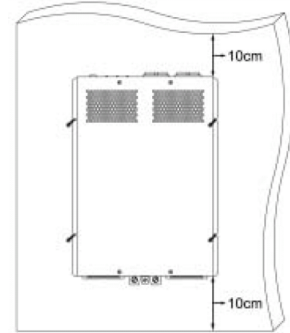
Please observe the values for constant output power and peak output power (for a maximum of 10 minutes) as indicated in the "Technical data" section.

Never connect devices that have a higher power requirement.

Note

Note when connecting devices with an electrical drive (such as power drills and refrigerators), that they often need more power than is stated on the type plate.

Installation instructions



When selecting the installation location, observe the following instructions:

- Installation of the inverter can be done horizontally or vertically.
- The inverter has to be installed in a dry and clean place that is not exposed to humidity.
- Make sure that the place is well ventilated. If installed into housing, ensure proper ventilation. Keep a free space of at least 10 cm around the inverter.
- The air intake at the bottom of the inverter and the air outlet at the back should not be blocked.
- The installation surface must be level and of sufficient strength.

In case the inverter is installed into vehicles or boats it has to be connected to the chassis (ground).

Observe the required cable cross section (see table).

Device	Minimum cable thickness
150W	2.5 mm ²
300W	6.0 mm ²
600W	10.0 mm ²
1000W	35.0 mm ²
2000W	50.0 mm ²

1. Lay the flexible connecting cable (plus and minus) from the battery to the connecting poles of the inverter.

Warning!

Make sure that the poles will not be exchanged! Reverse polarity connection will blow the internal fuses. Exchange of fuses should be done by experts only!

2. Connect the cable and the terminal together.
3. First connect the negative cable to the white negative terminal.
4. Install a DC fuse or a DC circuit breaker in the positive side of the circuit within 18 inches of the battery.
5. Connect the positive cable to the red positive terminal.

Warning!

In order for the integrated residual current-operated protective device of the inverters to work properly, the earth connection of the inverter must be electrically connected to the chassis of the vehicle or boat.

1. Lay the flexible earth cable from the earth point of the vehicle to the earth point of the inverter.
2. Connect the earth cable to the chassis terminal.

Warning!

Reverse polarity connection of the battery wires can damage the inverter. Do not use the inverter with electrical systems using positive ground.

Using the inverter

150/300/600W models:

Always connect only one consumer unit to the 230 V socket on the front of the device.

>600W models:

Always connect a maximum of two consumer units to each of the 230 V sockets on the front of the device.

Switching on

Operation is done with the ON/OFF-switch on the front side of the inverter. In switch-mode ON the LED control "Power" illuminates.

Malfunctions**150/300W**

If the battery voltage falls below 10.7 V (12V models) or 21.4 V (24V models) the LED turns orange.

This will also happen when the inverter is overheating.

The inverter switches off automatically in case the battery voltage goes down to 10 V (for 12V models) or 20 V (for 24V models).

1. If this happens, switch off the inverter.
2. Ensure that the inverter is sufficiently ventilated.
3. Wait for approximately 5 - 10 minutes and switch on the inverter only.

600/1000/2000W

If the battery voltage falls below 10.7 V (12V models) or 21.4 V (24V models) the LED control "OVER-LOAD" illuminates and an audible signal is given. The inverter switches off automatically in case the battery voltage goes down to 10 V (for 12V models) or 20 V (for 24V models).

If the device overheats, the inverter switches off – the "OVER TEMP" LED lights up.

1. If this happens, switch off the inverter.
2. Ensure that the inverter is sufficiently ventilated.
3. Wait for approximately 5 - 10 minutes and switch on the inverter only.

When operating the inverter at high load for lengthy periods, you have to pay attention to the voltage of the battery. If the voltage is not enough, please charge the battery immediately or replace it.

There is a modular jack for remote control for 1500W and 2000W on the front panel and for 600W (optional) and 1000W on the bottom plate.

Specifications:**Pure sine 150W series**

Rated input voltage	12 V DC	24 V DC
Constant output power	150W	
Peak output power	300W	
Maximum input current	20A	10A
Output voltage	230VAC +/- 3%	
Output frequency	50 Hz	
Output Wave Form	Pure Sine Wave	
Total Harmonic Distortion	3%	
No Load Current	<0.8A	<0.6A
Input voltage range	10.5V ~ 16.5V	21V~33V
Low voltage alarm	10.5V	21V
Low voltage shutdown	10 V	20 V
Efficiency up to	85 %	
Dimension (LxWxH)	215 x 147 x 66 mm	
Weight	1.28Kgs	
Remote controller	—	
GFCI	—	
Safety Certification	EN60950-1 :	
EMC	EN55022 : Class B EN55024 : EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-023658	
Protection : Reset mode		
* Input low voltage.....Automatic		
* Input over voltage.....Automatic		
* Low battery alarm.....Automatic		
* Over temperature.....Automatic		
* Over load.....Manual		
* Short circuit Manual		

Rated input voltage	12 V DC	24 V DC
Constant output power	150W	
Peak output power	300W	
Maximum input current	20A	10A
Output voltage	230V AC +/- 3%	
Output frequency	50 Hz	
Output wave form	Pure sine wave	
Total harmonic distortion	3%	
No load current	<0.8A	<0.6A
Input voltage range	10.5V ~ 16.5V	21V ~ 33V
Low voltage alarm	10.5V	21V
Low voltage shutdown	10 V	20 V
Efficiency up to	85%	
Dimensions (L x W x H)	215 x 147 x 66 mm	
Weight	1.28Kgs	
Remote controller	-	
GFCI	-	
Safety certification	EN60950-1:	
EMC	EN55022: Class B EN55024: EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-023658	
Protection: Reset mode		
* Input low voltage Automatic		
* Input over voltage Automatic		
* Low battery alarm Automatic		
* Over temperature Automatic		
* Over load..... Manual		
* Short circuit Manual		

Pure sine 300W series

Rated input voltage	12 V DC	24 V DC
Constant output power	300W	
Peak output power	500W	
Maximum input current	40A	20A
Output voltage	230VAC +/- 3%	
Output frequency	50 Hz	
Output Wave Form	Pure Sine Wave	
Total Harmonic Distortion	3%	
No Load Current	<0.7 A	<0.5 A
Input voltage range	10.5V ~ 16.5V	21V~33V
Low voltage alarm	10.5V	21V
Low voltage shutdown	10 V	20 V
Efficiency up to	88%	
Dimension (LxWxH)	215 x 147 x 66 mm	
Weight	1.32Kgs	
Remote controller	—	
GFCI	—	
Safety Certification	EN60950-1 :	
EMC	EN55022 : Class B EN55024 : EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-023658	
Protection : Reset mode		
* Input low voltage.....Automatic		
* Input over voltage.....Automatic		
* Low battery alarm.....Automatic		
* Over temperature.....Automatic		
* Over load.....Manual		
* Short circuit Manual		

Rated input voltage	12 V DC	24 V DC
Constant output power	300W	
Peak output power	500W	
Maximum input current	40A	20A
Output voltage	230V AC +/- 3%	
Output frequency	50 Hz	
Output wave form	Pure sine wave	
Total harmonic distortion	3%	
No load current	<0.7A	<0.5A
Input voltage range	10.5V ~ 16.5V	21V ~ 33V
Low voltage alarm	10.5V	21V
Low voltage shutdown	10 V	20 V
Efficiency up to	88%	
Dimensions (L x W x H)	215 x 147 x 66 mm	
Weight	1.32Kgs	
Remote controller	-	
GFCI	-	
Safety certification	EN60950-1:	
EMC	EN55022: Class B EN55024: EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-023658	
Protection: Reset mode		
* Input low voltage Automatic		
* Input over voltage Automatic		
* Low battery alarm Automatic		
* Over temperature Automatic		
* Over load..... Manual		
* Short circuit Manual		

Pure sine 600W series

Rated input voltage	12 V DC	24 V DC
Constant output power	600 W	
Peak output power (a max. of 10 min.)	1000 W (650 W)	
Maximum input current	80A	40A
Output voltage	230VAC +/- 3%	
Output frequency	50 Hz	
Output Wave Form	Pure Sine Wave	
Total Harmonic Distortion	3%	
No Load Current	<0.8A	<0.6A
Input voltage range	10.7 V – 16.5 V	21.4 V – 33 V
Low voltage alarm	10.7 V	21.4 V
Low voltage shutdown	10 V	20 V
Efficiency up to	85 %	
Dimension (LxWxH)	280 x 236 x 83 mm	
Weight	2.46kgs	
Remote controller	RC-15(Option)	
GFCI	Option	
Safety Certification	EN60950-1 :	
EMC	EN55022 : Class B EN55024 : EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-02 3659	
Protection : Reset mode		
* Input low voltage.....Automatic		
* Input over voltage.....Automatic		
* Low battery alarm.....Automatic		
* Over temperature.....Automatic		
* Over load.....Manual		
* Short circuit Manual		

Rated input voltage	12 V DC	24 V DC
Constant output power	600 W	
Peak output power (a max. of 10 min.)	1000 W (650 W)	
Maximum input current	80A	40A
Output voltage	230V AC +/- 3%	
Output frequency	50 Hz	
Output wave form	Pure sine wave	
Total harmonic distortion	3%	
No load current	<0.8A	<0.6A
Input voltage range	10.7V ~ 16.5V	21.4~ 33V
Low voltage alarm	10.7	21.4
Low voltage shutdown	10 V	20 V
Efficiency up to	85%	
Dimensions (L x W x H)	280 x 236 x 83 mm	
Weight	2.46 kgs	
Remote controller	RC-15 (Option)	
GFCI	Option	
Safety certification	EN60950-1:	
EMC	EN55022: Class B EN55024: EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-02 3659	
Protection: Reset mode		
* Input low voltage Automatic		
* Input over voltage Automatic		
* Low battery alarm Automatic		
* Over temperature Automatic		
* Over load..... Manual		
* Short circuit Manual		

Pure sine 1000W series

Rated input voltage	12 V DC	24 V DC
Constant output power	1000 W	
Peak output power (a max. of 10 min.)	2000 W (1200 W)	
Maximum input current	160A	80A
Output voltage	230VAC +/- 3%	
Output frequency	50 Hz	
Output Wave Form	Pure Sine Wave	
Total Harmonic Distortion	3%	
No Load Current	<1.2A	<0.8A
Input voltage range	10.7 V – 16.5 V	21.4 V – 33 V
Low voltage alarm	10.7 V	21.4 V
Low voltage shutdown	10 V	20 V
Efficiency up to	85 %	
Dimension (LxWxH)	395 x 236 x 83 mm	
Weight	4kgs	
Remote controller	RC-15(Optional)	
GFCI	Option	
Safety Certification	EN60950-1 :	
EMC	EN55022 : Class B EN55024 : EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-02 9726	
Protection : Reset mode		
* Input low voltage.....Automatic		
* Input over voltage.....Automatic		
* Low battery alarm.....Automatic		
* Over temperature.....Automatic		
* Over load.....Manual		
* Short circuit Manual		

Rated input voltage	12 V DC	24 V DC
Constant output power	1000 W	
Peak output power (a max. of 10 min.)	2000 W (1200 W)	
Maximum input current	160A	80A
Output voltage	230V AC +/- 3%	
Output frequency	50 Hz	
Output wave form	Pure sine wave	
Total harmonic distortion	3%	
No load current	<1.2A	<0.8A
Input voltage range	10.7V ~ 16.5V	21.4V ~ 33V
Low voltage alarm	10.7V	21.4V
Low voltage shutdown	10 V	20 V
Efficiency up to	85%	
Dimensions (L x W x H)	395 x 236 x 83 mm	
Weight	4Kgs	
Remote controller	RC-15 (Option)	
GFCI	Option	
Safety certification	EN60950-1:	
EMC	EN55022: Class B EN55024: EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-02 9726	
Protection: Reset mode		
* Input low voltage Automatic		
* Input over voltage Automatic		
* Low battery alarm Automatic		
* Over temperature Automatic		
* Over load..... Manual		
* Short circuit Manual		

Pure sine 2000W series

Rated input voltage	12 V DC	24 V DC
Constant output power	2000 W	
Peak output power (a max. of 10 min.)	4000 W (2200 W)	
Maximum input current	240A	120A
Output voltage	230VAC +/- 3%	
Output frequency	50 Hz	
Output Wave Form	Pure Sine Wave	
Total Harmonic Distortion	3%	
No Load Current	<1.6A	<1A
Input voltage range	10.7 V – 16.5 V	21.4 V – 33 V
Low voltage alarm	10.7 V	21.4 V
Low voltage shutdown	10 V	20 V
Efficiency up to	85 %	
Dimension (LxWxH)	415 x 283 x 100 mm	
Weight	5.9kgs	
Remote controller	RC-15(Optional)	
GFCI	Option	
Safety Certification	EN60950-1 :	
EMC	EN55022 : Class B EN55024 : EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-02 9594	
Protection : Reset mode		
* Input low voltage.....Automatic		
* Input over voltage.....Automatic		
* Low battery alarm.....Automatic		
* Over temperature.....Automatic		
* Over load.....Manual		
* Short circuit Manual		

Rated input voltage	12 V DC	24 V DC
Constant output power	2000 W	
Peak output power (a max. of 10 min.)	4000 W (2200 W)	
Maximum input current	240A	120A
Output voltage	230V AC +/- 3%	
Output frequency	50 Hz	
Output wave form	Pure sine wave	
Total harmonic distortion	3%	
No load current	<1.6A	<1A
Input voltage range	10.7V ~ 16.5V	21.4V ~ 33V
Low voltage alarm	10.7V	21.4V
Low voltage shutdown	10 V	20 V
Efficiency up to	85%	
Dimensions (L x W x H)	415 x 283 x 100 mm	
Weight	5.9Kgs	
Remote controller	RC-15 (Option)	
GFCI	Option	
Safety certification	EN60950-1:	
EMC	EN55022: Class B EN55024: EN61000-3-2 : EN61000-3-3 :	
E Mark	 10R-02 9594	
Protection: Reset mode		
* Input low voltage Automatic		
* Input over voltage Automatic		
* Low battery alarm Automatic		
* Over temperature Automatic		
* Over load..... Manual		
* Short circuit Manual		

Safety precautions:

To reduce risk of electric shock, this product should ONLY be opened by an authorized technician when service is required. Disconnect the product from mains and other equipment if a problem should occur. Do not expose the product to water or moisture.

**Maintenance:**

Clean only with a dry cloth. Do not use cleaning solvents or abrasives.

Warranty:

No guarantee or liability can be accepted for any changes and modifications of the product or damage caused due to incorrect use of this product.

General:

Designs and specifications are subject to change without notice.

All logos brands and product names are trademarks or registered trademarks of their respective holders and are hereby recognized as such.

Keep this manual for future reference.

Attention:

This product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collections system for these products.



