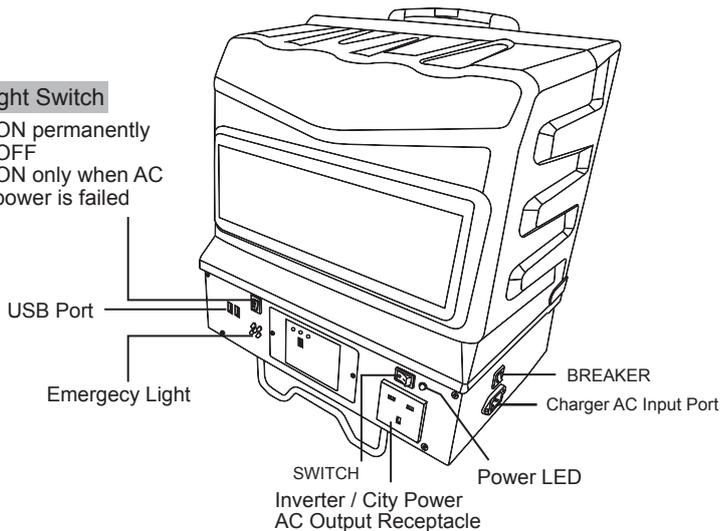


Inverter / Charger (bypass function)

HT-T-M1000

Light Switch

- ON permanently
- OFF
- ON only when AC power is failed



**Firstly, thank you for purchase our product.
Please read this manual carefully before installing or using this product.**

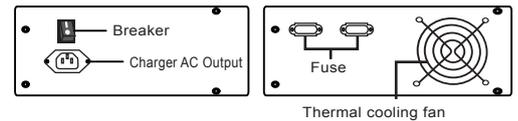
Specification

Model No.:	HT-T-M1000-12
INVERTER:	
DC input volt:	12V
Volt range:	10-16VDC(12V)
Surge power:	2000W
Continuous power:	1000W
Wave form:	Modified Sine Wave
AC voltage:	100V / 120V / 230V
Frequency:	50/60Hz±3%
AC Regulation:	±8%(100V:±10%)
No load current draw:	0.6A(12V)
Bat. low alarm:	10.5±0.5V(12V)
Bat.low shutdown:	10±0.5V(12V)
Over voltage:	16±0.5V(12V)
Bat .Polarity Reverse:	Fuse burn out
Over load:	Re-start 1 time, shutdown if failed
Bypass function:	Yes
Low AC input volt transfer to inverter mode.:	90Vac+/-5% or 180Vac+/-5%
Low AC input volt recovery to AC mode.:	95Vac+/-5% or 190Vac+/-5%
Connector	Input AC Plug: Yes
	Output AC Receptacle: Yes
CHARGER:	
Output current:	10A(12V)
AC input volt:	120V(90-135V) / 230V(180-265V)
Charging type:	multistage
Bulk stage:	14.5±0.5V, 10A(12V)
Absorption stage:	14.5±0.5V, 10A-1A(12V)
Float stage:	13.6±0.5V, min. 0.5A(12V)
Frequency:	45-65Hz
Power factor:	Yes
Recommended Battery Type:	Lead acid
Recommended Battery Size:	40-160AH
DC Power Supply (fixed output) mode:	12.5Vdc
PROTECTION:	
Over load protection:	Yes
Over temp protection:	Yes
Inverter input reverse protection:	Fuse blow
Charger output reverse protection:	Fuse blow
Inverter output short circuit protection:	Shut-off
Over temperature:	55°C ±5°C
ENVIRONMENT:	
Working temp.:	-15°C ~45°C
Storage temp.:	-25°C ~70°C
Working humidity:	20%~90% RH non-condensing
Storage temp., Humidity:	-30°C ~70°C/-22°F~+158°F,10~95% RH
Temp. Coefficient:	±0.05%/°C(0~55°C)
OTHERS:	
Dimension(LxWxH):	403x340x455mm
Net weight:	9.0kgs(without battery)

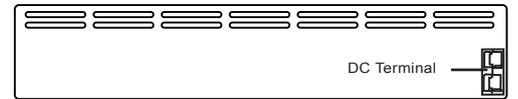
Optional

EXTRA FUNCTION	
Model no.	HT-T-M1000SC-12
Solar charger controller:	20A(PWM)
Net weight:	9.2kgs

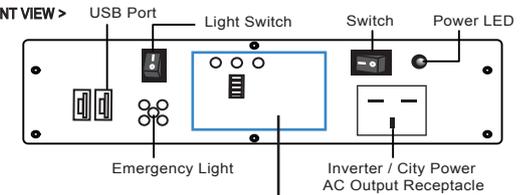
< SIED VIEW >



< REAR VIEW >



< FRONT VIEW >



Inverter ON	AC IN	
●	●	●
Charger		Fault (red): No battery, low input volt, high input volt, overtemp, overload, short circuit.
■	14V 13V 12V 11V 10V(Fault)	
Battery Volt & Charger Stage		
Charger Stage—		
Bulk:	40% graph flash	
Absorption:	60% graph flash	
Float:	100% graph flash	

Introduction

The Inverter/Charger series are the member of the most advanced line of mobile AC power systems available.

This model is used in a wide range of application including remote homes, RVs, sailboats and powerboats. It will operate most televisions and VCR's, personal computers, small appliances and tools such as drills, sanders, grinders, mixers and blenders.

To get the most out of the inverter/charger, it must be installed and used properly.

Please read the instructions in this manual before installing and using this model.

Name and Main function

1. Front view

a. ON/OFF switch: Leave in the OFF position during installation.

b. Over heat protection: LED sparkles when product temperature gets high, it would shut down automatically while temperature arrives 55°C±5°C.

c. Overload protection: Orange LED lights when inverter/charger shut down due to overloading. Inverter would re-start one time, if failed, inverter would shut down. Please turn inverter OFF, reduce load and turn inverter ON to reset.

d. AC socket: Outlet sockets available:

- Australia/NZ
- North America
- Europe
- Universal
- Japan

2. Rear view:

a. Ventilation window: Do not obstruct, allow at least one inch for airflow.

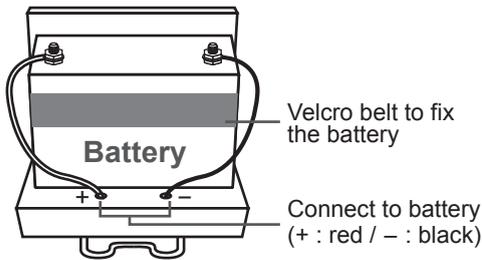
b. Battery terminals: Connect to 12V battery or other 12V power source. "+" is positive, "-" is negative. Reverse polarity connection will blow internal fuse and may damage inverter/charger permanently.



WARNING!!

Operation of the inverter/charger without a proper ground connection may result in an electrical safety hazard.

Introduction



Warning:

Don't reverse the (+) and (-) of the battery, or internal damage.

"Damage caused by reversed polarity is not covered by the warranty."

1. Where to install

The inverter/charger should be installed in a location that meets the following requirements:

- Dry - Do not allow water to drip or splash on the inverter/charger.
- Cool - Ambient air temperature should be between 0°C and 40°C, the cooler environment is better.
- Ventilated - Allow at least 3 inch (15cm) of clearance around the inverter for airflow. Ensure the ventilation openings on the rear and bottom of the unit are not obstructed.
- Safe - Do not install the inverter/charger in the same compartment as batteries or in any compartment capable of storing flammable liquids such as gasoline.



CAUTION!!

This equipment is not ignition protected and employs components that tend to produce arcs or sparks. To reduce the risk of fire or explosions, do not install in compartments containing batteries or flammable materials or areas in which ignition protected equipment is required.



CAUTION!!

To reduce the risk of electric shock and prevent premature failure due to corrosion, do not mount where exposed to rain or spray.



CAUTION!!

To prevent fire, do not obstruct ventilation openings. Do not mount in a zero clearance compartment, overheating may result.



CAUTION!!

Risk of electrical shock. Both AC & DC voltage sources are existed inside this equipment. Each circuit must be individually installed.



CAUTION!!

Risk of electrical shock. Do not remove cover, no user serviceable parts inside. Refer servicing to qualified service personnel.

APPLICATION INFORMATION:

Provided with integral electronic protection against AC & DC overloads.

Quick hook - up and testing

If you would like to quick hook-up the inverter/charger and check its performance before going ahead with your installation, please follow these guideline.

- Unpack and inspect the inverter/charger, check to see that the power switch in the OFF position.
- Connect the cables to the power input terminals on the rear panel of inverter/charger. The red terminal is positive (+) and black terminal is negative (-). Connect the cables into the terminals and tighten the wing nut to the wires securely.
- Connect the cable from the negative terminal of the inverter/charger to the negative terminal of the power source. Make a secure connection.

CAUTION!!

Loosely tightened connectors result in excessive drop and may cause overheated wires and melted insulation.

4. Before proceed further, carefully check if the terminals connect correctly.

CAUTION!!

Reverse polarity connection will blow a fuse in inverter/charger and may permanently damage the inverter/charger. Damage caused by reverse polarity connection is not covered by our warranty.

5. Connect the cable from the positive terminal of inverter/charger to the positive terminal of the power source. Make secure connection.

WARNING!!

You may observe a spark when you make this connection since current may flow to charge capacitors in the power inverter.

Do not make this connection in the presence of flammable fumes, explosions or fire may result.

6. Set power inverter switch to the ON position and turn the test load on, the inverter should supply power to the load.

Batteries

To achieve 50% cycling you should calculate your Amp-hour consumption between charging cycles and use a battery bank with twice that capacity. To calculate Amp-hour consumption first look at the rating plate on your AC appliance or tools.

Battery Charger

For lead-acid and lead-calcium batteries only.

Stage1:

Bulk Charge Max 14.5±0.5V, 10A.
Charger LED Indicator : Red.

Stage2:

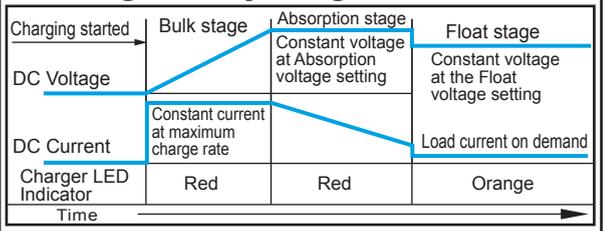
Absorption Charge 14.5±0.5V, 10~1A.
Charger LED Indicator : Red.

Stage3:

Float Charge 13.6±0.5V, min. 0.5A.
Charger LED Indicator : Orange.

Complete charging, charger LED Indicator : Green.

Multistage Battery Charger



Status Led

Inverter LED	Alarm	Question	Solution
Inverter Mode (Front inverter indicator)			
Orange flash	3 short alarm	Overload / short circuit	Reduce load /Solve short circuit question.
Orange flash	Long alarm	High temp shut down/ Hightemp. shut down	Replace or charge the battery / Allow inverter/charger to cool off. Improve ventilation.
Green flash	Quick alarm	Low battery alarm Poor DC wiring Poor DC terminal connection.	Charge or Change battery
No inverter mode, no inverter indicator LED	None	High/Low battery shut down	Reduce input vlot / charge or change battery
Charger Mode			
Red at Fault postion, (output 2-3A only)	None	Hightemp	Allow inverter/charger to cool off. Improve ventilation.

Troubleshooting

Problem	Things to Check
No Inverter Output	1. Battery voltage under load. 2. Battery connections and DC fuse. 3. Circuit breaker on front panel. 4. Thermal condition, high powered loads or inadequate ventilation may cause overheating. 5. Overloads or short circuit, check for excessive loads or bad wiring connections.
Low Inverter Output Voltage	Confirm that your volt meter is a true RMS meter. Standard volt meters will not accurately read the waveform of the inverter. If a true RMS meter is not available, check the brightness of an incandescent light bulb - if it appears normal, the output voltage is properly regulated.
Little or No Output from Battery Charger	1. Wiring connections-check both the AC and DC connections. 2. AC input voltage-low voltage input will result in low DC output current. 3. AC input spec. isn't correct to Inverter/Charger spec.
Warning: Wrong DC volt or AC volt spec., or reversed polarity is not covered by the warranty.	

Each appliance or tool will be rated in either AC Amps or AC watts or AC VA (Volts-Amps) apparent power. Use one of the following formulas to calculate the DC Amp-hour draw for a 12 Volt system:

$$(AC \text{ Amps} \times 10) \times 1.1 \times \text{hours of operation} = DC \text{ Amp-hours}$$

$$(AC \text{ watts}/12) \times 1.1 \times \text{hours of operation} = DC \text{ Amp-hours}$$

$$(AC \text{ VA}/12) \times 1.1 \times \text{hours of operation} = DC \text{ Amp-hours}$$

In all formulas, 1.1 is the factor for inverter/charger efficiency.

Calculate the above for every AC appliance or tool you intend to use on your inverter. This will give you the total number of Amp-hours used between recharges. Size your battery bank using this number as a guideline. A good rule to follow is to size the battery bank about 2 times larger than your total Amp-hour load requirement. Plan on recharging when 50% discharged.

Many electric motors have momentary starting requirements well above their operational rating. Start up watts are listed where appropriate. Individual styles and brands of appliances may vary.

NOTICE:

The output of this device is not pure sine wave, but modified sine wave.