

# OLYS



## PURE SINE WAVE INVERTER INVERTER INTEGRATE WITH CHARGE USER MANUAL

Thank you very much for buying our product. Please read thoroughly before using the product

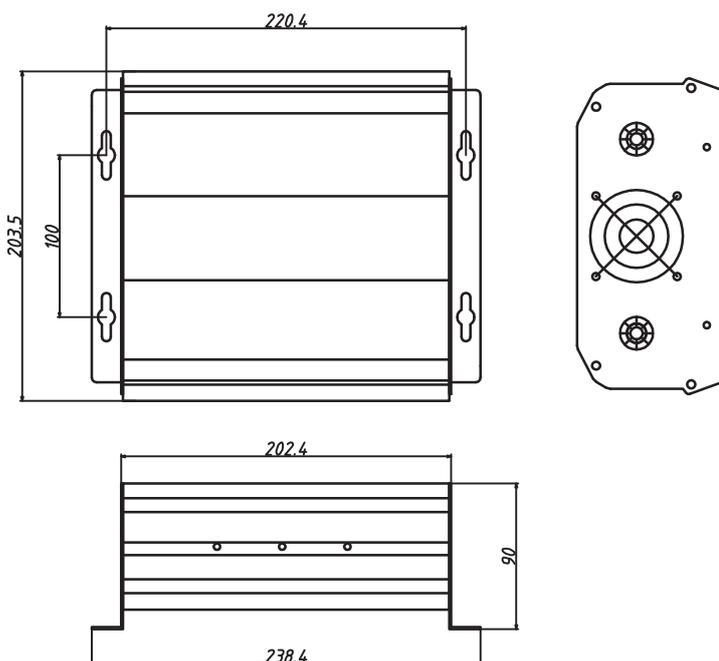
### Function

1. Inductive load like refrigerator, washing machine, electric drill are well applicable.
2. stand-by consumption only need 0.3W
3. Input voltage: 12V or 24V be option
4. safety protection device and voice alarm
5. Battery optimization function, make your battery more durable.
6. Integrate with charge controller (charge and inverter simultaneously)

### Warning

1. A deficient assembly could result in damage to the device, cause function failures or potential damage to the users
2. The working device generates a high voltage which might be lethal in case of contact. So, any manipulation of the inverter must be carried out with utmost care and meet the local rules
3. No current or voltage generating device(public grid, generator,...)may be connected to the output of the inverter because this could result into its destruction.

### Installation



unit:mm

#### Place where the inverter is to be installed

1. Out of reach of unauthorized persons, specially children.  
In a dry place(max.95% humidity), and in any case with no condensation.

Not directly on top of the batteries

No easily inflammable material should be placed directly underneath or close to the GPI. ventilation must be free, and a space of 10cm. on each side is needed for good evacuation of the internal heat

#### Connection

1. connecting the consumer devices

Once the consumer devices are connected, make sure that they are turned off before connecting the battery

- 2 connecting the battery

- Connect the battery observing carefully the polarity.

- Connect the battery using the following colours:

BLACK cable: negative pole (-)

RED cable: positive pole (+)

When connecting the battery, there is a spark(Danger of explosion!), because of the charging of the internal filtering capacitors.

A fire security fuse must be installed on the battery.

# USE

## 1. control and indicators

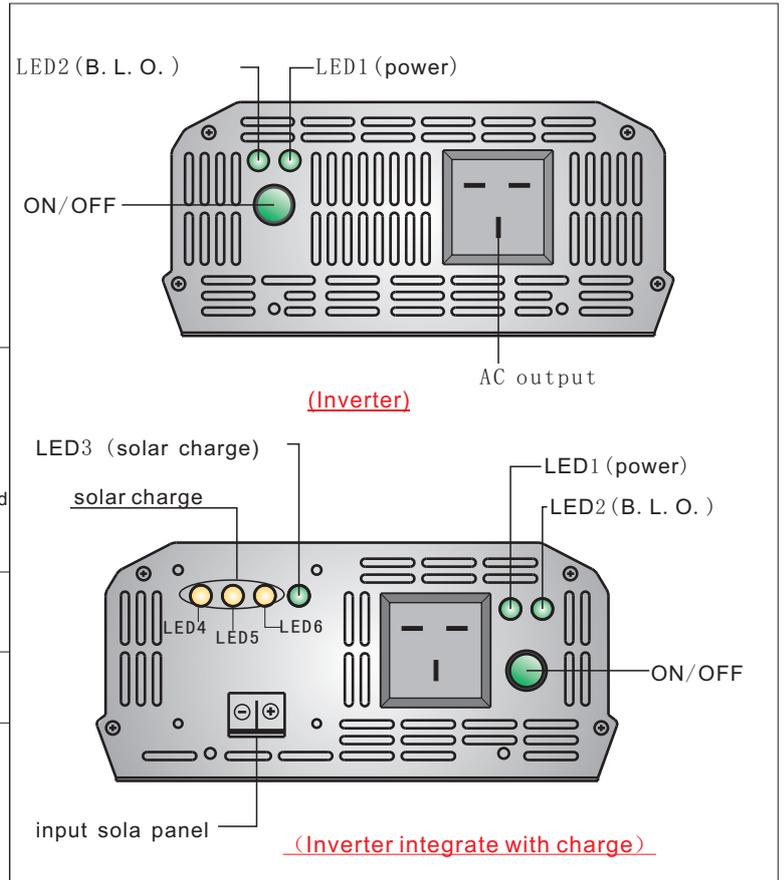
There is a switch on the inverter to activate or deactivate it. Use this function to save the energy of the batteries when you are not using the inverter

### NOTE:

The solar charge controller remains in operation even when the inverter is off

### "functioning" indicator (green LED1)

Power	LED1	<p>Illuminated: A 230v Voltage is present at the output, the inverter is on</p> <p>Blinking: ----- No load(stand-by)          ----- The 230v voltage has been cut due to an alarm; the inverter will automatically resume function when the failure has disappeared</p> <p>Off: The 230v voltage is not present at the output, the inverter is off</p>
B. L. O.	LED2	This indicator is illuminated only if the enhanced Battery Lifetime Optimizer function is activated
Solar charge	LED3	ON: normal      Off: no charge
Battery capacity	LED4 LED5 LED6	<p>ON: &gt;75%</p> <p>ON: &gt;50%</p> <p>Blinking: &lt;10%</p>



## Acoustic indicator

The GPI inverter has an acoustic indicator for the following cases:

- **Overheat:** The acoustic indicator beeps 3°C before cutting the voltage. Reduce the consumption in order to lower the inverter temperature and to avoid the output voltage is cut off
- **Low battery voltage:** The indicator beeps for a minute before the interruption. Reduce the consumption in order to get the battery voltage rise and to avoid that the output voltage is cut off
- **continuous beep for two seconds**
- you have pushed the ON/OFF switch to restart the inverter. The output voltage will be immediately present after the acoustic signal. The acoustic warning can be deactivated

## Alarm by voltage flickering

When the acoustic indicator is deactivated or when the inverter is out of hearing, it can be useful to be warned of an imminent inverter stop due to an "overheat" or a "battery undervoltage", if this function is activated, the output voltage will flicker slightly (max. 20%), leading to a variation of the lights intensity and therefore indicating the imminent stop of energy supply

The user can then choose to reduce his consumption in order to secure the supply to priority loads (for instance lighting)

## Model with stand-by system

The stand-by is an energy saving system which turns off the inverter intermittently when no consumer is detected. In this mode the functioning indicator (green LED2) blinks, showing the intermittent presence of the voltage

The detection threshold is set by default at 5W

**NOTE: In this mode the output voltage is intermittently present at the output!**

## Activation /deactivation of functions

The following function of the GPI range can be freely enabled or disabled by the user:

1. acoustic warning of imminent stop of the inverter
2. Battery lifetime optimizer function
3. Imminent stop alarm by voltage flickering

The state <activated> or <deactivated> of the functions is indicated by the buzzer with a continuous push on the on/off key after a duration given for each function as per the table below:

- single <beep> short=function activated
- Double <beep> short = function deactivated

	Function	Duration of impulse(onto on/off)	Default setting
1	Acoustic alarm	5 seconds	Activated
2	Bttery lifetime optimization (B.L.O.)	10 seconds	Deactivated
3	Alarm by voltage flickering	15 seconds	Deactivated

The state is reversed if the on/off key is released within 2 seconds following the buzzer sound.

To consult the state of functions without having any effect on them or changing their programming it is possible to main the on/off key pushed on. Beyond 20 seconds the buzzer will sound continuously to indicate the end of the sequence and will stop by the release of the key

## Safe

The inverter is electronically protected, It is portected against reverse polarity by an internal fuse, The next table displays the various possible default cases and their consequences

Caution: the inverter is not protected against the connection of an AC source(generator or grid) at its output. such connection will cause a major failure and should be avoided

### Battery portection by LVD–low voltage disconnection battery protection :

The battery is protected from deep discharge by stopping the inverter if the battery traches a voltage lower than  $0.87U_{nom}$ . (10.5 or 21V) during more than 1 minute. An accoustic signal or a voltage flickering(if authorized) is activated during 1minute before the inverters stops, the inverter must then be restarted manually, it will restart antomatically if the battery voltage is back to a value higher than  $1.04*U_{nom}$ (12.5 or 25V), the inverter will stop immediately (with no delay) if the battery voltage is lower than  $0.75*U_{nom}$ (9 or 18V).

The table below will show you the different causes of inverter stopping

CAUSE	CONSEQUENCE	SOLUTION
Low battery voltage voltage< $0.87*U_{nom}$	inverter temporary stopped ,the green indicator blinks	Automatic restart when the battery voltage rises at $1.04*U_{nom}$ The inverter should be manually restarted
Deep discharged battery voltaeg< $0.75*U_{nom}$	Inverter stopped	Inverter should be manually restarted when the battery has reached= $0.87*U_{nom}$
Overheating	Inverter temporary stopped the green indicator blinks	Automatic restart when the temperature reaches the normal range
Battery overvoltage $1.33U_{nom}$	Inverter stopped	Wait until the battery voltage reaches the correct level Push the ON/OFF button to reactivate the inverter $1.2*U_{nom}$
Short circuit at the output	Inverter stopped	Eliminate the short circuit Push the ON/OFF button to reactivate the inverter
Overload	Inverter stopped	Use the inverter only in the range of its nominal power. Regular use in overload power diminishes the lifetime of the inverter Push the ON/OFF button to reactivate the inverter
Battery reverse polarity	Internal fuse broken down	Back to manufacture for testing

## Battery lifetime Optime

Cycling a battery in permanent charging mode from 0 to 30% is often a cause of early aging of batteries, particularly in solar home systems. In order to enhance the battery lifetime, the GPI inverter are equipped with a unique function that will readjust the low voltage disconnection (LVD) threshold according to the behavior of the user consumption. This allows a full recharge of the battery.

This function can be activated at anytime

An indicator (green LED2) is lit or blinks when this function is activated. The number of blinking indicates the LVD currently applied. If this indicator is lit continuously, this means that the use of the battery is correct and that it was well charged. The LVD is then set at  $0.87 \times U_{nom}$  (10.5 or 21V) as per the model. This also means that you have the widest availability of the energy stored and that your battery is likely to last longer

If the indicator is blinking one or several times, this means that the use of the battery is restricted and that the disconnection voltage was set according to the table below ( $\pm 2\%$ )

12V	24V	LED blink number	comments
10.5V	21.2V	0x	This is also the LVD level when BLO is deactivated
11V	22V	1x off	-
11.4V	22.8V	2x off	-
11.6V	23.2V	3x off	level at BLO activation
11.8V	23.6V	4x off	-
12V	24V	5x off	-
12.2V	24.4V	6x off	-

This strategy will of course restrict the use of the battery and drive the user to reduce consumption or to increase the production (by an additional charger connected to a backup solar generator for instance)

## Inverter integrate with charge (Option-s)

The solar charge controller built in option in the inverter GPI-S is meant for charging a battery exclusively from a solar generator. Any other source of current needs an external and suitable charge controller

The maximum (open) voltage of the solar generator is 23V for 12V system, 46V for 24V system, connect firstly the inverter to the battery before connecting the solar generator. The adjustment mode is a I/Uuo ("floating") shunt and it guarantees optimal charge conditions along the battery lifetime

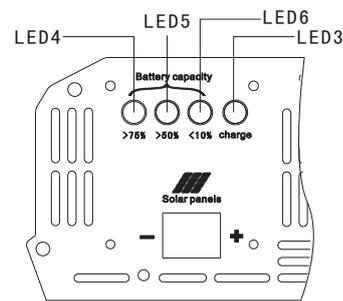
### The yellow indicator display the functioning mode (LED3)

Illuminated: The solar charge is at its maximum

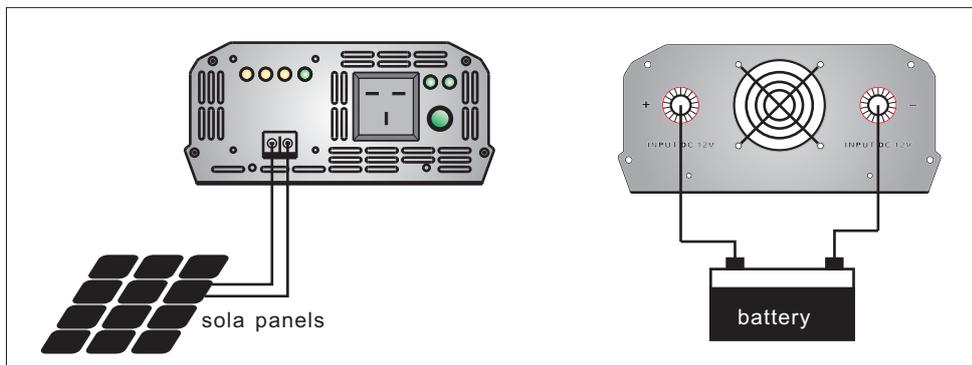
Not illuminated: the solar generator is not connected or the time is daylight

### Battery capacity display

LED4	LED5	LED6	battery capacity
ON	OFF	OFF	>75%
OFF	ON	OFF	>25-75%
OFF	OFF	ON	<25%
OFF	OFF	Blinking	<10%
OFF	OFF	OFF	low voltage protection



connection



## Pure sine wave inverter technical data

MODEL	GPI2012A	GPI3012A	GPI4012A	GPI5012A	GPI6024A
Battery voltage (Vdc)	12Vdc	12Vdc	12Vdc	12Vdc	24Vdc
Input voltage (Vdc)	10.5-16Vdc	10.5-16Vdc	10.5-16Vdc	10.5-16Vdc	21-32Vdc
Output voltage (Vdc)	AC230Vac	AC230Vac	AC230Vac	AC230Vac	AC230Vac
Output frequency (HZ)	50HZ	50HZ	50HZ	50HZ	50HZ
Continuous/30' power (VA)	150/200W	250/300W	300/400W	400/500W	500/600W
Stand-by/ON@no load (W)	0.3W/9.6W	0.3W/9.6W	0.3W/9.6W	0.3W/9.6W	0.3W/14W
Maximum efficiency (%)	93%	93%	93%	93%	94%
Dimensions (mm)	240×205×93	240×205×93	240×205×93	240×205×93	240×205×93
Weight (kg)	4.5kg	4.5kg	4.5kg	4.5kg	4.5kg
Load detect.(stan-by)	5W	5W	5W	5W	5W
Overheating protection	YES	YES	YES	YES	YES
Overload protection	YES	YES	YES	YES	YES
Short circuit protection	YES	YES	YES	YES	YES
IP protection index/IP	IP30	IP30	IP30	IP30	IP30
Cosφ	0.1-1	0.1-1	0.1-1	0.1-1	0.1-1

## Inverter integrate with charge

MODEL	GPI2012A-S	GPI3012A-S	GPI4012A-S	GPI5012A-S	GPI6024A-S
Battery voltage (Vdc)	12Vdc	12Vdc	12Vdc	12Vdc	24Vdc
Input voltage (Vdc)	10.5-16Vdc	10.5-16Vdc	10.5-16Vdc	10.5-16Vdc	21-32Vdc
Output voltage (Vdc)	AC230Vac	AC230Vac	AC230Vac	AC230Vac	AC230Vac
Output frequency (HZ)	50HZ	50HZ	50HZ	50HZ	50HZ
Continuous/30' power (VA)	150/200W	250/300W	300/400W	400/500W	500/600W
Stand-by/ON@no load (W)	0.3W/9.6W	0.3W/9.6W	0.3W/9.6W	0.3W/9.6W	0.3W/14W
Maximum efficiency (%)	93%	93%	93%	93%	94%
Dimensions (mm)	240×205×93	240×205×93	240×205×93	240×205×93	240×205×93
Weight (kg)	4.5kg	4.5kg	4.5kg	4.5kg	4.5kg
Load detect.(stan-by)	5W	5W	5W	5W	5W
solar charge controller	10A	10A	20A	20A	20A
Overheating protection	YES	YES	YES	YES	YES
Overload protection	YES	YES	YES	YES	YES
Short circuit protection	YES	YES	YES	YES	YES
IP protection index/IP	IP30	IP30	IP30	IP30	IP30
Cosφ	0.1-1	0.1-1	0.1-1	0.1-1	0.1-1