

Grid Tie Inverter for Wind Turbine

- **Build In Rectifier**
- **Build In Dump Load Controller**
- **Build In High Wind Protection**

Preface

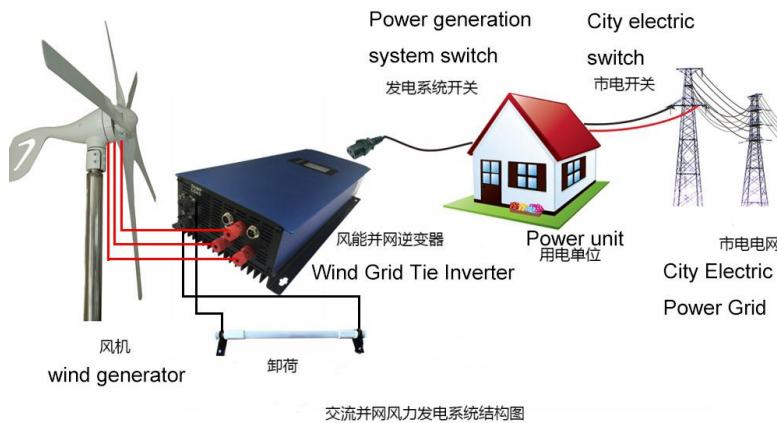
The grid-tie inverter can transfer wind energy from wind generators directly into the home grid using no extra equipment. It can be connected to any outlet (conventional network) in the home. The grid-tie inverter controls the phase and the frequency and voltage of the power generated by the wind generator. It produces a pure sine-wave and matches that of the grid.

This model grid-tie has build in bridge rectifier and dump load controller, it can maintain the rotating speed of the wind turbine and keep the voltage from the wind turbine always at the range of the rated range of the grid tie inverter. It also has a high voltage protection function, when the wind is too big, and the dump load controlling system can't keep the output voltage from the wind turbine, the controller will disconnect itself from the wind turbine, so it is very safe to be used.

Layout

There are 5 terminals on the left side of the inverter, 3 red terminals will be connected to the three phase output from the wind turbine, and 2 black terminals will be connected to dump load resistors.

There are 4 LED indicators, 3 green indicators and 1 red indicator, 3 green LED indicators will start to cycle from left to right when the grid and AC input supply is detected. This indicates the inverter is operating under normal condition. The rate of the cycling is according to how much power is being output from the wind turbine. The bigger the output power is, the faster the rate is. If there is no AC grid detected, the red LED will be on, the inverter will not put out power, this is called "Island Protection"



Structure diagram of AC grid connected wind power generation system



LCD display

On the LCD Panel of the inverter, there is one AC output socket, that will connect the AC output cable to home grid. The LCD display will display the grid AC voltage, current , active power and electric energy that combined to the grid.

LCD display Function:

1. Electric parameters measurement function (voltage, current and active power, electric energy).
2. Running time function (record load cumulative working hours).
3. Backlight function.
4. Power down data save function (save the number of kWh, operation time).
5. Large screen LCD display (display voltage, current, power, active power, cumulative running time)

Parameter

Wind grid-series models	WG1000W	WG1500W	WG2000W
Rated AC output power	1000W	1500W	2000W
DC Input Voltage Range (the test point is at the output of the rectifier)	22-60V/45-90V	45-90VDC	
Max output power factor	99%		
DC input Reverse voltage protection	Fuse		
AC output voltage range	90~160VAC/180~260VAC		
AC frequency range	46Hz~65Hz		
Islanding protection	Yes		
Output short circuit protection	Current-limiting		
Display	LED		
Cooling	Fan		
Night Power	<1W		
Ambient temperature range	-10 ℃~45℃		
Waterproof	Indoor Type Design		
dump load resistors parameter	$R=V^2/P=54*54/600 = 4.9$ (ohm)		
Electromagnetic Compatibility	EN50081.part1 EN50082.part1		
Power System Disturbance	EN61000-3-2 EN60950-1		
Network test	DIN VDE 126 UL1741		

Mechanical Specifications:

Grid-series models	WG1000W-WAL	WG1500W-WAL	WG2000W-WAL
N.W	5.0kg	7kg	7.0kg
G.W	5.5kg	7.6kg	7.6kg
Size (L x W x H cm)	32.2*19.6*8.8cm	43.3*19.6*8.8cm	43.3*19.6*8.8cm
Package(L x W x H cm)	41*28*30(2pcs)	53.5*32.5*36(2pcs)	53.5*32.5*36CM (2pcs)
G.Weight (kg)	9.9kg	15.8kg	15.8kg

Operating Temperature Range

-10 ~ 45 degrees C