

GP21-100

Wind Turbine Generator System Specification



Shanghai Ghrepower Green Energy Co., Ltd

Modification record

Version	Edition in Detail	Author	Edited Date
V1.00	Initial document creation, summarizing system component specifications	Yuanwei	2015/03/03
V1.01	Supplement document content and adjust document format	Ye Yusheng	2018/07/12

Content

1. SYSTEM CHARACTERISTIC	错误!未定义书签。
2. TECHNICAL PARAMETER	错误!未定义书签。
3. SYSTEM CONFIGURATION	错误!未定义书签。
4. PERFORMANCE	错误!未定义书签。
5. ON GRID INVERTER	错误!未定义书签。
6. OFF GRID INVERTER	错误!未定义书签。
7. TOWER AND FOUNDATION	错误!未定义书签。
8. SCADA REMOTE MONITORING	10

1. SYSTEM CHARACTERISTIC

- Multiple certifications such as SWCC, IEC61400, CE, etc.
- Low-speed permanent magnet generator, direct drive gearless transmission design.
- Active pitch control technology ensures output power stability in strong wind.
- Multiple safety protection for mechanical, electromagnetic brakes and active yawing.
- Full-power inverter in power frequency isolation technology with multinational grid-tie certification.
- SCADA remote real-time monitoring system.
- Suitable for small wind farms, smart grids, microgrid systems, etc.

2. TECHNICAL PARAMETER

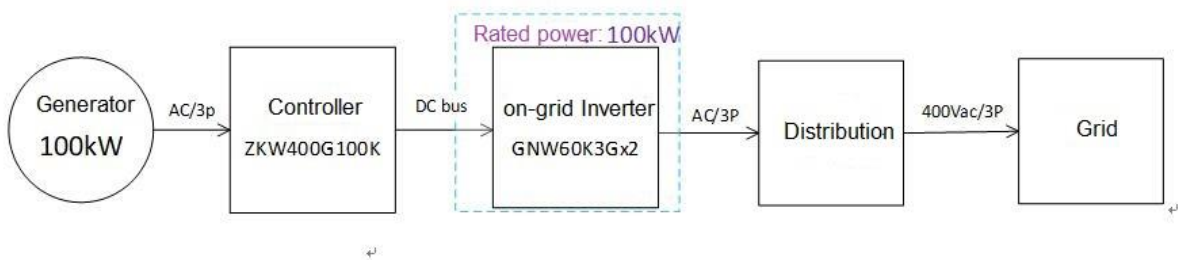
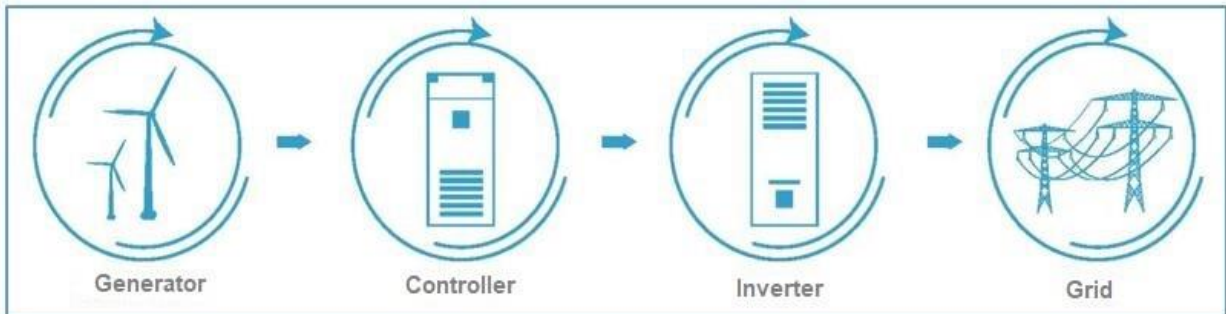
Manufacturer	Shanghai Ghrepower Green Energy Co., Ltd
Country of origin	China
Parameter	Specs
Model	FD21-100
Design class	IEC II A
Type	Permanent magnet direct drive, three blade, horizontal axis, upwind
Design life	20 years
Rotor diameter	21m
Tower height	36m (24m/42m optional)
Tower type	tubular column
Performance	
Rated power	100kW, 400 VAC, 50Hz/60Hz, 3-phase 3-line
Power regulation	Pitch control
Rated rotation speed	60rpm
Max rotation speed	72rpm
Cut-in wind speed	3m/s
Rated wind speed	13m/s
Cut-out wind speed	25m/s

Survival wind speed	59.5m/s
Weight	
Blade	3*360 kg
Nacelle & generator	9700 kg
Tower	16700 kg
Brake system	
Aerodynamic braking	Active pitch control
Mechanical braking	Mechanical principal-axis brake
Electromagnetic braking	Electronic dumpload control
Yawing & untwisting	
Yawing mode	Electric
Untwisting mode	Auto untwisting
Control system	
Control system	Industrial PLC controller
Inverter type	Full-power inverter, power frequency transformer isolation
Monitoring	SCADA Cube 2.0
Generator	
Generator type	Permanent magnet
Drive mode	Direct drive (gearless box)
Rated voltage	400VAC
Insulation grade	F class
Blade	
Blade material	Glass fiber (FRP)
Blade length	10.2 m
Blade quantity	3
Tower	
Surface treatment	Anti-rust painting
Height	36m (24m/42m optional)
Noise	
Noise level	<56dBA

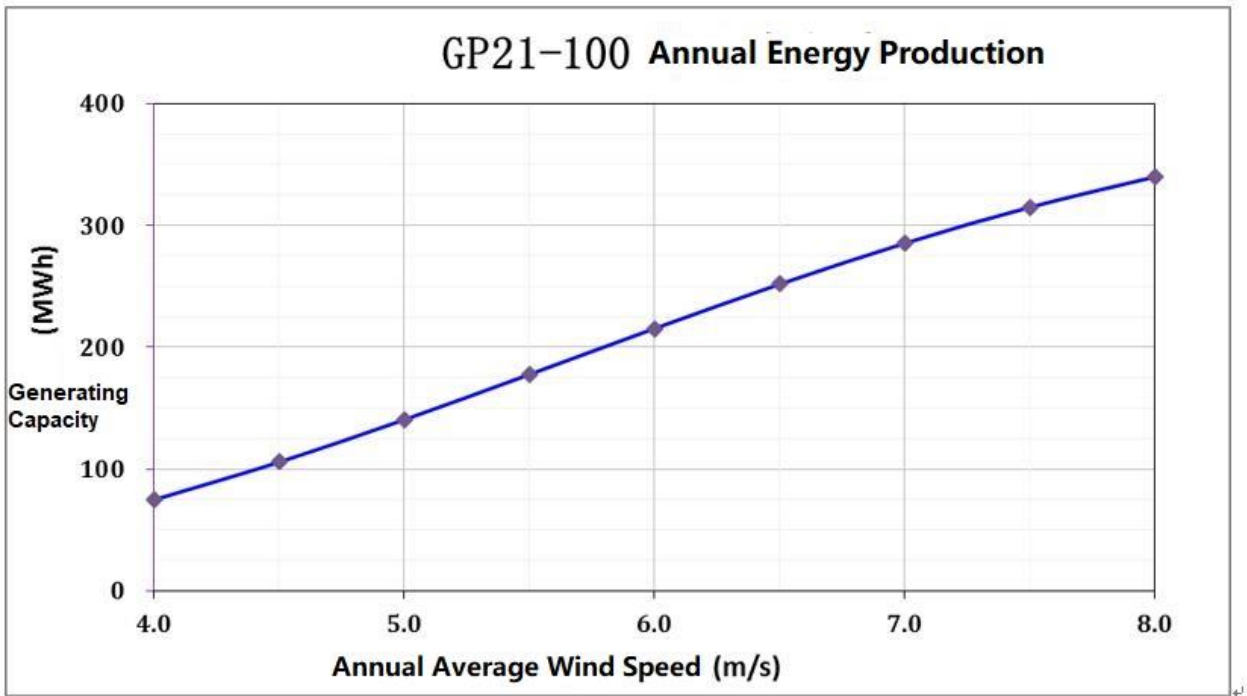
Auxiliary power supply	
Normal operation	≤2kW
Standby power demand	≤0.6kW
PCS standby consumption	≤0.2kW
Environment temperature	
Operation environment	-20°C to 50°C
Generator protection class	IP54, ISO 12944-2 C5
Lightening protection	Lightning receptors for blade tip connected to earth through loop. Anemometer and wind vane with separate lightning receptors.

3. SYSTEM CONFIGURATION

Wind turbine generator system is composed of wind turbine generator, on-grid controller and on-grid inverter. (see the photo)



4. PERFORMANCE



AWP(m/s)	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
AEP(MWh)	74.8	105.8	140.6	177.7	215.4	251.8	285.4	315.0	339.9

5. ON-GRID CONTROLLER

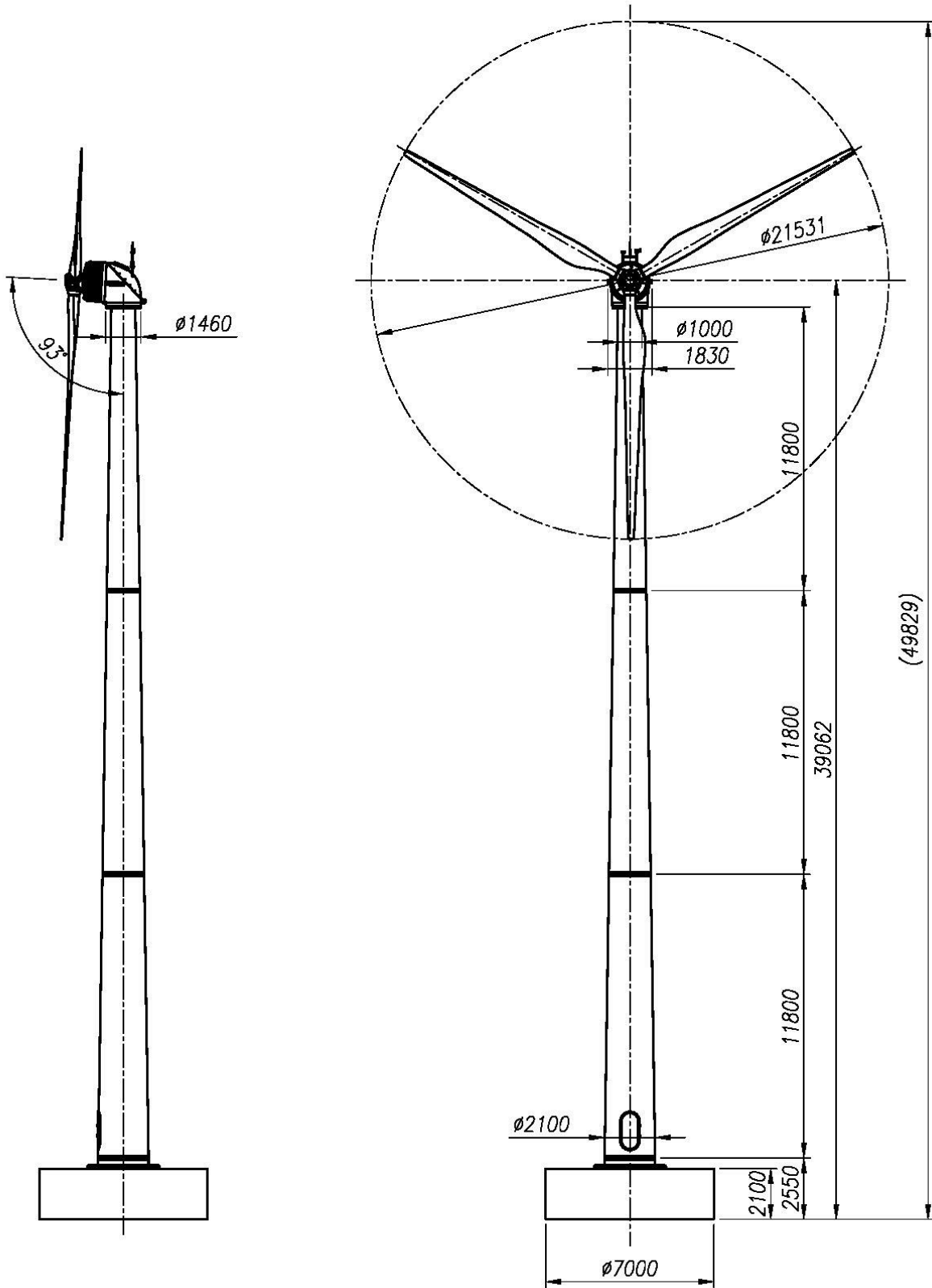
Control parameter	
Output voltage range	0~750Vdc
Rated rotation speed	60rpm
Max controlling rotation speed	72rpm
Yawing speed	0.55 °/s
Yawing accuracy	<3.2°
Environment parameter	
Working environment	-20 °C ~ +50°C
Storage environment	-30°C~+60°C
Relative humidity	<90%RH
Elevation	<1000m

6. ON-GRID INVERTER

Model	GNW60K3G
DC input	
Working voltage range	380V ~ 680VDC
Max input voltage	750VDC
On-grid output	
Rated output power	60kW
Rated grid voltage	400V±15% 3-phase 3-line
Rated working frequency	50/60Hz ± 5%
Power factor (cosθ)	>0.99
Max inverter power	≥94%
Harmonic (THD)	Total current harmonic <5% , each time<3%(rated power)
Display & communication	
Display panel	LCD
Communication interface	RS485
System application	
Inverter quantity	2 units
System rated power	100kW

7. TOWER and FOUNDATION

Tower model	TD1-36A
Height	36m
Section	3
Wall thickness	10mm
Material	Q345
Flange diameter	1000mm (upper) / 2100mm (bottom)
Surface treatment	Hot-dip galvanizing / painting
Weight	16700kg
Dimension (reference value)	7mx7mx2.1m



8. SCADA REMOTE MONITORING

Remote monitoring system SCADA CUBE2.0:

- Data connection interaction via wired/wireless network.
- Real-time monitoring operating and abnormal condition.
- Visual operating interface, real-time monitor wind turbines generating power.
- Generation energy production, meteorological data, WTGs action & warning and historical data queries and data analysis report.



Add: No. 1281, Ronghua Rd, Songjiang District, Shanghai City, China

Tele: 0086-21-37832332

Fax : 0086-21-37832356

E-mail: info@ghrepower.com

Web: www.ghrepower.com