Overview

The LNWG series wind power grid-connected inverters are core power electronic devices connecting wind turbines to the power grid, undertaking the critical tasks of energy conversion, control, and grid adaptation. Their core function is to convert the unstable electrical energy output from the wind turbine into high-quality AC power synchronized with the grid frequency and voltage, while simultaneously optimizing power and suppressing harmonics, ensuring the efficient and safe grid-connected operation of the wind power system.

The wind power grid-connected inverter uses a fully digital DSP control scheme, coupled with a touchscreen and remote monitoring interfaces (RS485/WiFi/G-PRS), enabling parameter setting, power curve adjustment (up to 30 curve points can be set), and multi-terminal data interaction. The high-frequency version incorporates a built-in DCDC DC voltage regulation circuit with boost modulation functionality. The AC voltage generated by the wind turbine is first rectified by the wind turbine controller and then reaches the DC bus through the voltage regulation circuit. The inverter control circuit chops the DC bus voltage into a pulse sequence with gradually changing pulse widths. The filtering circuit removes high-frequency harmonics, resulting in a smooth sinusoidal AC output. The low-frequency version incorporates a built-in AC step-up transformer, providing electrical isolation between the AC output and the inverter input, making it more load-friendly.

The wind power grid-connected inverter uses grid synchronization (PLL) technology to real-time detect the grid voltage phase and frequency, ensuring that the wind power grid-connected inverter output is synchronized with the grid. By dynamically adjusting the inverter output, the wind power grid-connected inverter can output maximum power under various wind speed conditions.

The features of the wind power grid-connected inverter include efficient power conversion, high reliability, a wide input voltage range, precise synchronization with the power grid, comprehensive protection functions, advanced control technology, and optimized power quality. These features ensure the stable operation and efficient energy conversion of the wind power generation system.

Typical applications: Home-use small wind power generation systems, large wind farms, distributed wind power generation systems, etc.

Technical Features

- High Flexibility: Offers 30 power curve setting points, allowing for flexible curve adaptation based on wind turbine characteristics.
- High Safety: Industrial frequency design with a built-in isolation transformer at the output, providing electrical isolation between input and output, making it more load-friendly.
- Display and Control: Color touch screen with Chinese and English language switching, integrating display and control for clear visibility of operating data.
- Automatic Control: Automatically operates when input and grid conditions are met; automatically disconnects from the grid when grid power is low, reducing power loss.

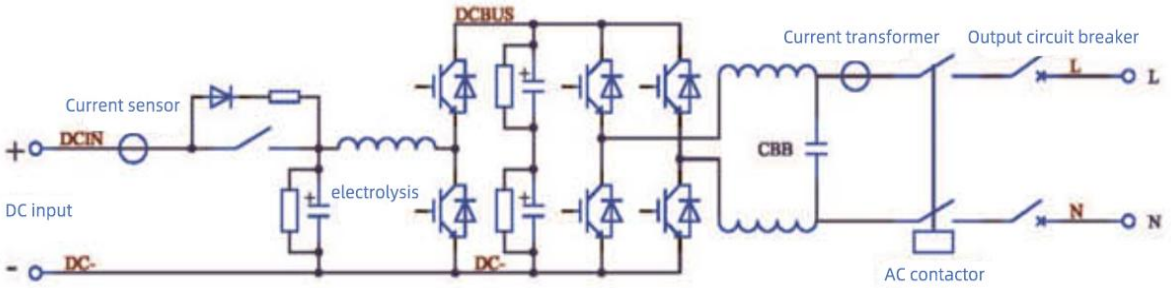
Model and meaning

LNWG-□K□ TL

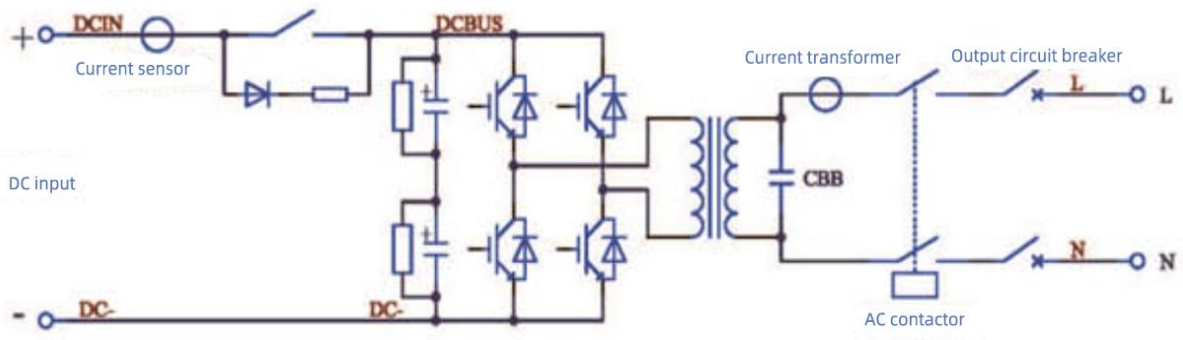
12 3 45 6 78

Number	Number name	Meaning
1	L	Company Code
2	N	Inverter power supply
3	WG	Wind power grid-connected inverter
4	□	Rated power
5	K	Unit: KW
6	□	D: Single-phase output S: Three-phase output
7	T	Power frequency transformer
8	L	Not equipped with a power frequency transformer

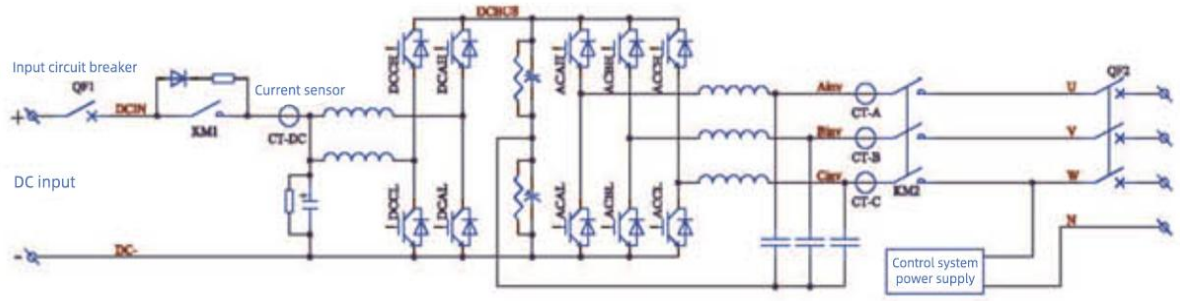
Electrical Schematic Diagram



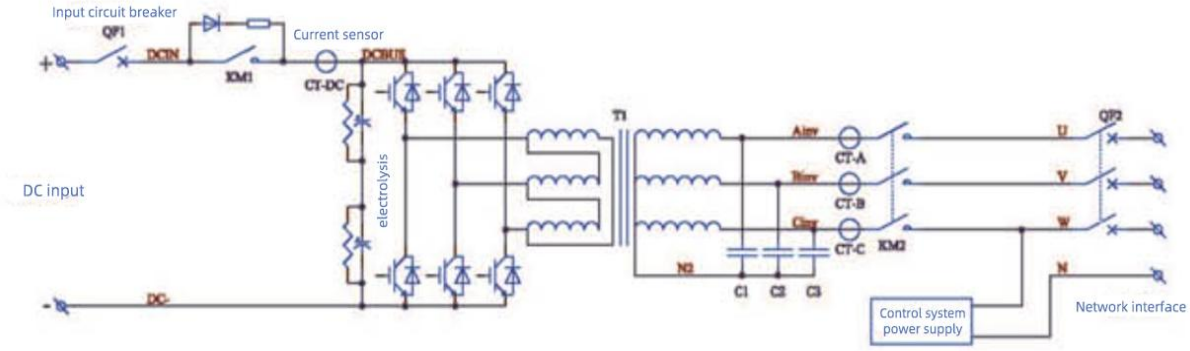
▲ Single-phase high-frequency topology



▲ Single-phase power frequency topology



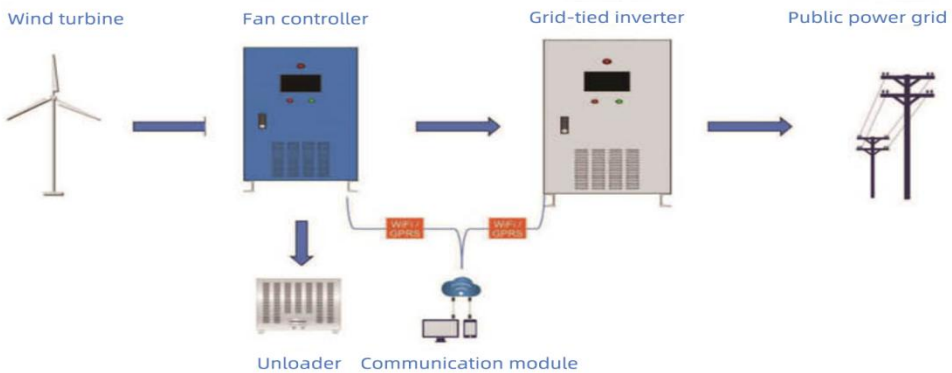
▲ Three-phase high-frequency topology



▲ Three-phase high-frequency topology

Typical work system topology

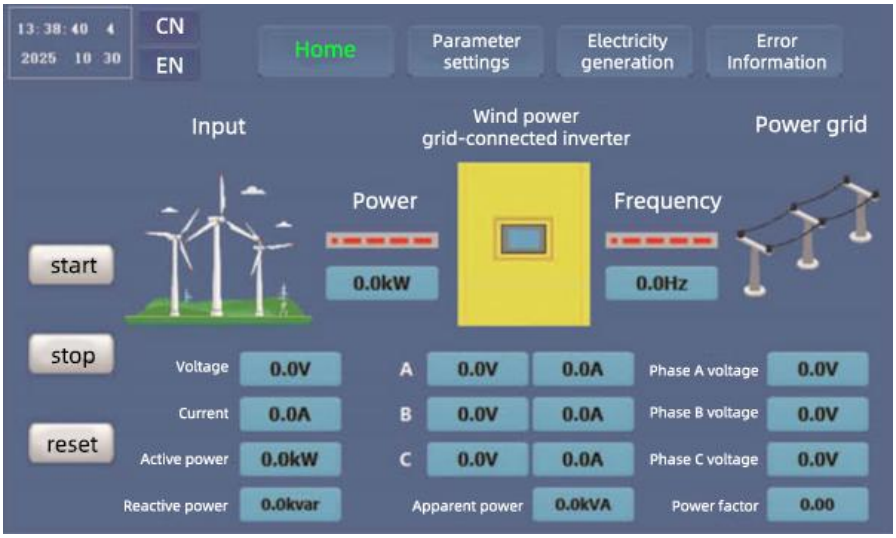
A grid-connected wind power generation system consists of a wind turbine, a wind turbine controller, a grid-connected inverter, and the public power grid system (as shown in the figure below).



The wind energy is converted into alternating current through the wind turbine controller. A grid-connected inverter then converts the electrical energy to a voltage and frequency suitable for the power grid. A portion of this energy is consumed by local loads, and the remaining portion is fed into the power grid. Therefore, the grid-connected inverter is a key component of the wind power generation system.

Operating Interface

Color touch screen, integrated display and control, supports Chinese and English language switching.



Power supply technical specifications

Single-phase grid-connected wind power inverter								
Model	LNWG-*KDTL							
Power (KVA)	5	10	15	30	50	75	100	200
Rated Power (KW)	0-450VDC (☆Other voltages available upon request)							
MPPT Voltage Range	100-400Vdc (☆Other voltages can be customized)							
Rated Input Current (A)	19.7	39.4	59.1	118.1	196.8	295.3	393.7	787.4
Maximum Input Current (A)	21.7	43.4	65	130	216.6	324.8	433.1	866.1
Rated AC Output Power (kW)	5	10	15	30	50	75	100	200
Maximum AC Output Power (kW)	5.5	11	16	33	55	82	110	220
Current Harmonic THD	<3% (of rated power)							
Power Factor	≥0.99							
Maximum Efficiency	High frequency 99%; Power frequency 96%							

Rated Output Voltage and Frequency	220Vac 50/60Hz (☆Other voltages and frequencies can be customized)
Permissible Grid Voltage Range	±15% (☆Other voltages can be customized)
Permissible Grid Frequency Range	±10% (☆Other frequencies can be customized)
Automatic Operation Conditions	DC input and grid meet requirements, inverter operates automatically
Automatic Restart Time After Power Failure	5 minutes (time can be set)
Protection functions	Reverse polarity, short circuit, islanding, overheating, overload, etc.
Display method	Touch screen
Wind turbine power curve	30 power points can be set
Operating temperature	-10℃~ +50℃ (☆Other temperatures can be customized)
Relative humidity	0-90% (non-condensing)
Altitude	Derating required above 2000 meters (1% derating for every 100 meters increase) <6000m
Cooling method	Forced air cooling
Noise level	<65dB (at 1m distance)
Protection class	IP20 (☆Customizable to IP54)
Communication protocol	Modbus RTU/ Modbus TCP

☆ indicates an optional feature. The above technical parameters are standard parameters and are for reference only; they can be customized according to the user's actual needs.

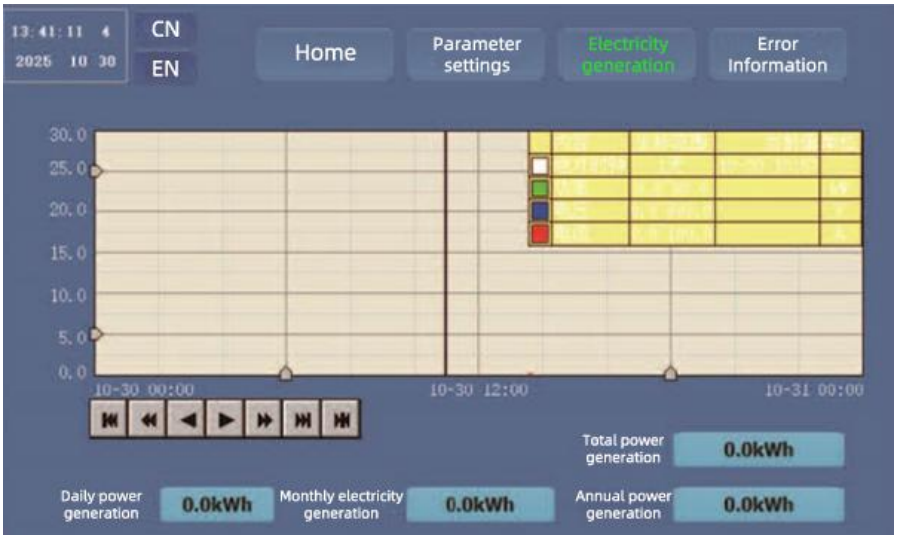
The current values in the table are calculated based on a 220V AC three-phase wind turbine by default.

Three-phase grid-connected wind power inverter								
Model	LNWG-*KDTL							
Power (KVA)	10	30	50	100	250	500	750	1000
Rated Power (KW)	0-800Vdc (☆Other voltages are available upon request, 800-1200V)							
MPPT Voltage Range	150-700Vdc (☆Other voltages available upon request: 700-1100V)							
Rated Input Current (A)	22.8	68.4	114	228	569.8	1139.6	1709.4	2279.1
Maximum Input Current (A)	25.1	75.3	125.4	250.7	626.8	1253.5	1880.3	2507
Rated AC Output Power (KW)	10	30	50	100	250	500	750	1000
Maximum AC Output Power (KW)	11	33	55	110	275	550	825	1100
Current Harmonic THD	<3% (of rated power)							
Power Factor	≥0.99							
Maximum Efficiency	High frequency 99%; Power frequency 96%							
Rated Output Voltage and Frequency	380V 50/60Hz (☆Other voltages and frequencies are available upon request)							
Permissible Grid Voltage Range	±15% (☆Other voltages can be customized)							
Permissible Grid Frequency Range	±10% (☆Other frequencies can be customized)							
Automatic Operation Conditions	DC input and grid meet requirements, inverter operates automatically							
Automatic Restart Time After Power Failure	5 minutes (time can be set)							
Protection functions	Reverse polarity, short circuit, islanding, overheating, overload, etc.							
Display method	Touch screen							
Wind turbine power curve	30 power points can be set							

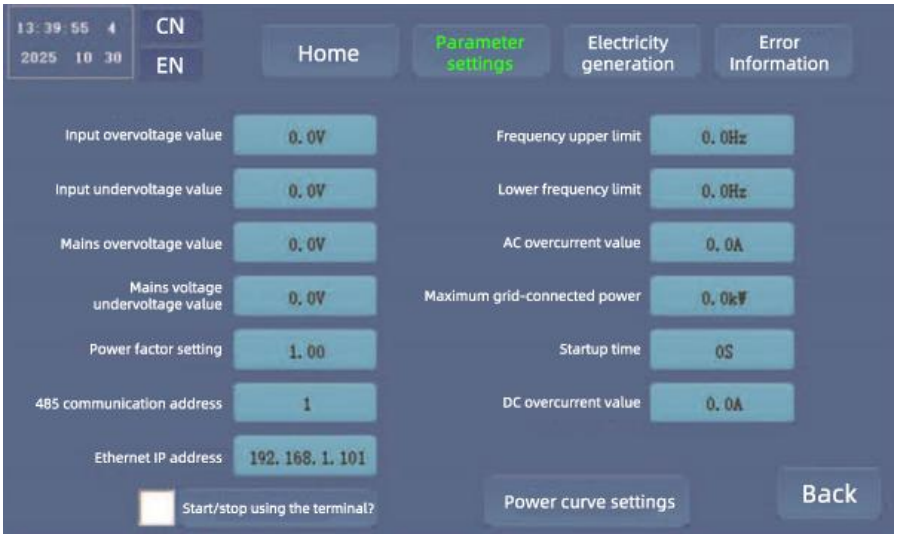
Operating temperature	-10℃~ +50℃ (☆Other temperatures can be customized)
Relative humidity	0-90% (non-condensing)
Altitude	Derating required above 2000 meters (1% derating for every 100 meters increase) <6000m
Cooling method	Forced air cooling
Noise level	<65dB (at 1m distance)
Protection class	IP20 (☆Customizable to IP54)
Communication protocol	Modbus RTU/ Modbus TCP

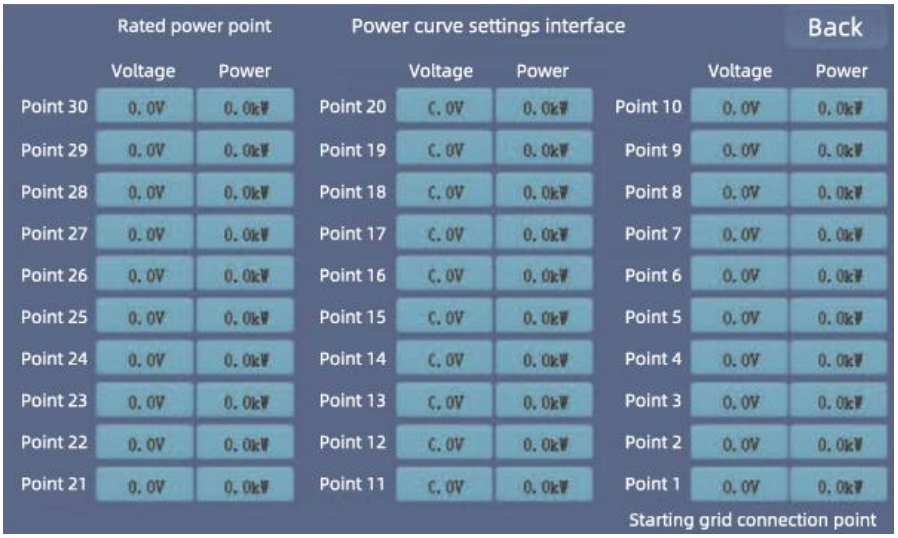
☆ indicates optional features. The above technical parameters are standard parameters and are for reference only; they can be customized according to the user's actual needs.

The current values in the table are calculated based on a 380V AC three-phase wind turbine by default.




13:42:04 4
2025 10 30
CN
EN
Home
Parameter settings
Electricity generation
Error Information
Historical failures
Input overvoltage
Input undervoltage
Busbar overvoltage
Busbar undervoltage
Input overcurrent
DC overheating
DC module failure
DC system failure
DC hardware failure
Phase A overvoltage
Phase A undervoltage
Phase B overvoltage
Phase B undervoltage
Phase C overvoltage
Phase C undervoltage
Frequency anomaly
Phase A overcurrent
Phase B overcurrent
Phase C overcurrent
Phase sequence error
AC module failure
AC system failure
AC hardware failure
Programmed shutdown
Emergency stop
Low input power
AC overheating


13:39:55 4
2025 10 30
CN
EN
Home
Parameter settings
Electricity generation
Error Information
Input overvoltage value
0.0V
Input undervoltage value
0.0V
Mains overvoltage value
0.0V
Mains voltage undervoltage value
0.0V
Power factor setting
1.00
485 communication address
1
Ethernet IP address
192.168.1.101
Start/stop using the terminal?
Frequency upper limit
0.0Hz
Lower frequency limit
0.0Hz
AC overcurrent value
0.0A
Maximum grid-connected power
0.0kW
Startup time
0S
DC overcurrent value
0.0A
Power curve settings
Back


Rated power point
Power curve settings interface
Back
Voltage
Power
Point 30 0.0V 0.0kW
Point 29 0.0V 0.0kW
Point 28 0.0V 0.0kW
Point 27 0.0V 0.0kW
Point 26 0.0V 0.0kW
Point 25 0.0V 0.0kW
Point 24 0.0V 0.0kW
Point 23 0.0V 0.0kW
Point 22 0.0V 0.0kW
Point 21 0.0V 0.0kW
Point 20 0.0V 0.0kW
Point 19 0.0V 0.0kW
Point 18 0.0V 0.0kW
Point 17 0.0V 0.0kW
Point 16 0.0V 0.0kW
Point 15 0.0V 0.0kW
Point 14 0.0V 0.0kW
Point 13 0.0V 0.0kW
Point 12 0.0V 0.0kW
Point 11 0.0V 0.0kW
Point 10 0.0V 0.0kW
Point 9 0.0V 0.0kW
Point 8 0.0V 0.0kW
Point 7 0.0V 0.0kW
Point 6 0.0V 0.0kW
Point 5 0.0V 0.0kW
Point 4 0.0V 0.0kW
Point 3 0.0V 0.0kW
Point 2 0.0V 0.0kW
Point 1 0.0V 0.0kW
Starting grid connection point

Optional Features:

Input dry contacts: Start/stop dry contact, reset control dry contact, etc.

Output dry contacts: Running status dry contact, fault status dry contact, power-on status dry contact, etc.

Dry contact definitions:

(1) Start/stop dry contact: Input type; when the dry contact is closed, the equipment runs; when the dry contact is open, the equipment stops.

(2) Reset control dry contact: Input type; when the dry contact changes from open to closed (rising edge of the signal), the equipment performs a fault reset; the closed state of the dry contact should be no less than 1 second.

(3) Running status dry contact: Output type; the dry contact operates when the equipment is running and stopped, 1NO+1NC.

(4) Fault status dry contact: Output type; the dry contact operates when the equipment malfunctions, 1NO+1NC.

(5) Power-on status dry contact: Output type; the dry contact operates when the equipment is powered on and the screen is lit, 1NO+1NC.

Note: For the selection of the number of dry contacts and definitions of other functional dry contacts, please consult technical support.

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