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# PRODUCT SELECTION MANUAL

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# PURSUIT OF PERFECTION

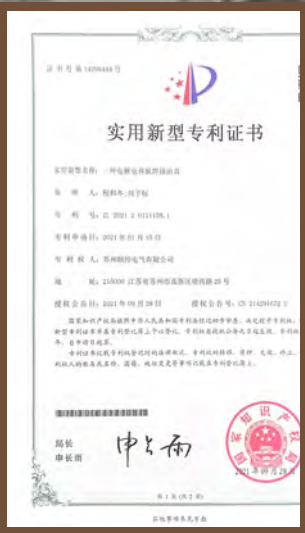
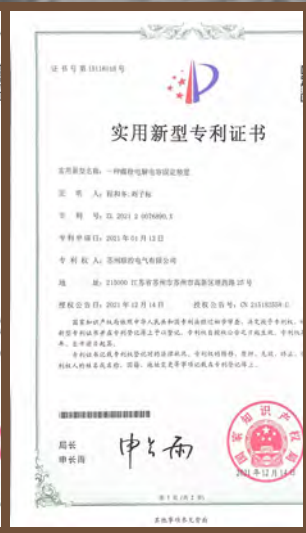
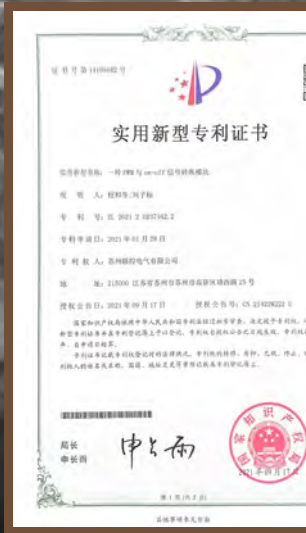
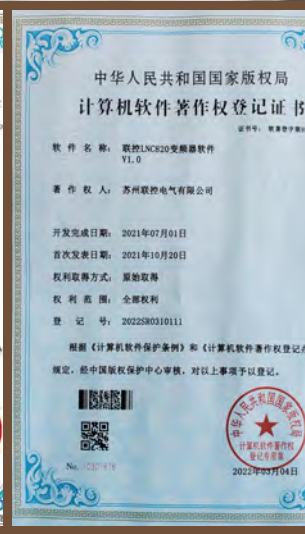
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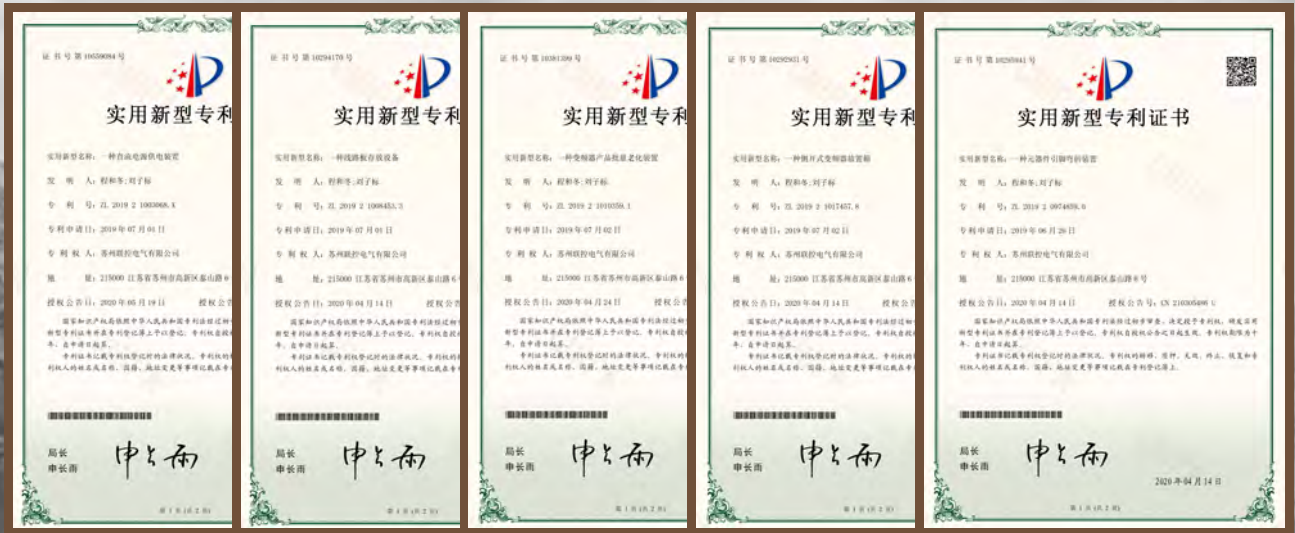
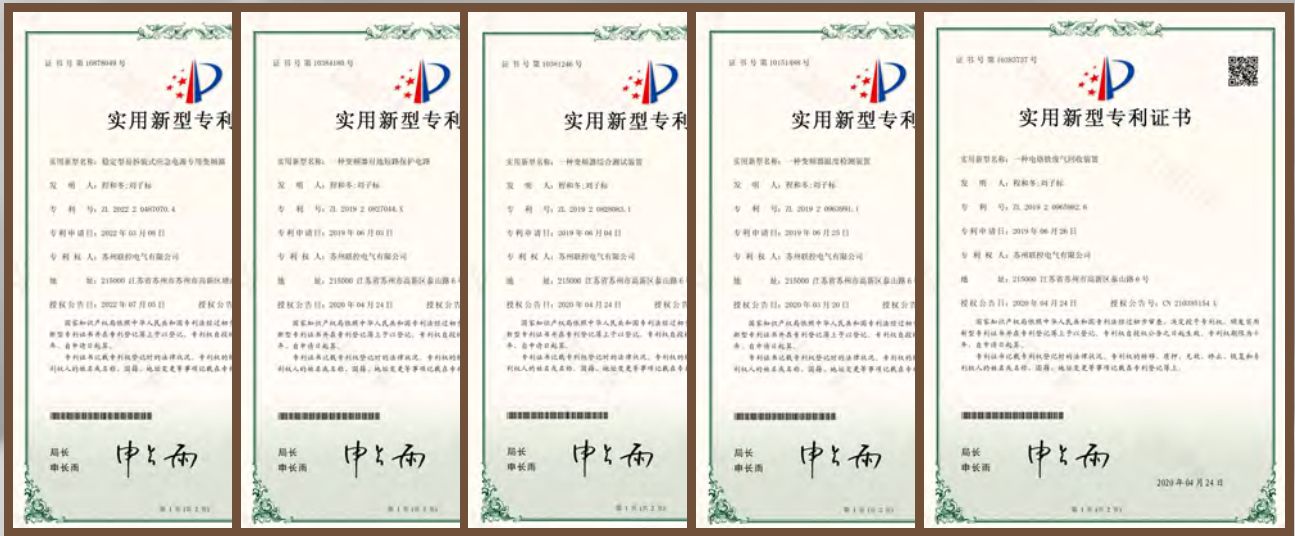
## About LINECOME

Suzhou Linecome Electric Co., Ltd. is located in the High - tech Zone of Suzhou City, Jiangsu Province, in the most dynamic Yangtze River Delta Economic Belt in China. The company was founded in November 2014. It is a technology - based enterprise dedicated to the professional management and high - quality service in the R & D, production and sales of industrial automation products, total control system integration and the Internet of Things.

The company is currently committed to providing customers with sewage treatment, intelligent pipeline drainage, automatic air detection and reporting systems, and equipment automation transformation projects for industrial and mining enterprises. It enables customers to achieve remote monitoring and alarm, remote operation, unattended operation, data storage and fault traceability. Ultimately, the company offers a comprehensive solution to enhance the overall image of customers' companies, improve overall efficiency, reduce or avoid occupational hazards, reduce labor disputes, and provide data - based services for decision - making.







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A black and white photograph of an astronaut floating in space, with a large solar panel array visible in the background against the Earth's horizon.

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# VFD Model Selection Guide





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# LNC820

LNC820 GENERAL-PURPOSE VFD

通用型变频器

绿色  
环保  
Eco-friendly



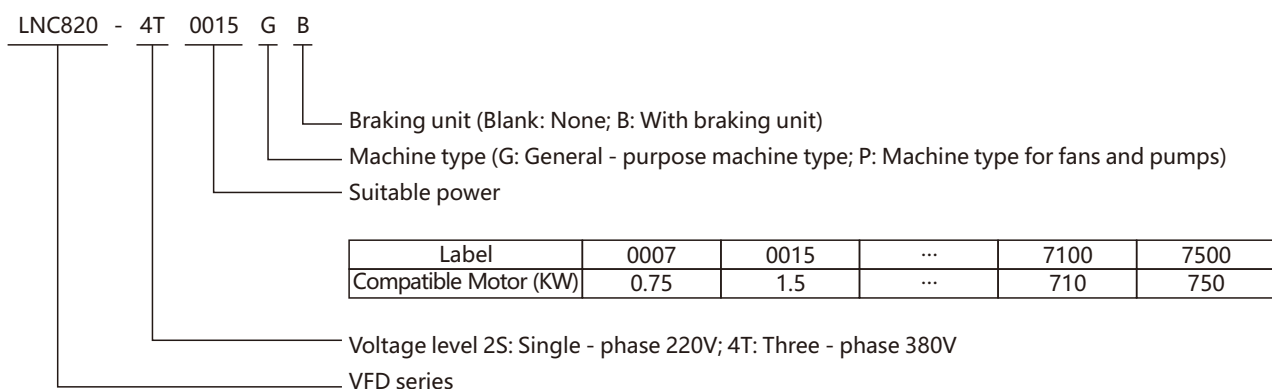
安全  
可靠  
Safe and  
Reliable



## Overview

The LNC820 Series is a general-purpose vector VFD that can easily drive and control asynchronous motors. It features powerful functions and stable performance, complying with major international standards and certifications. The main control unit adopts a dedicated DSP chip for motor control, enabling higher-performance and higher-precision motor drive control. It supports richer frequency source superposition and switching modes, advanced PID algorithms, 15-step speed control and automatic program operation, as well as wobble frequency control and speed tracking functions. While improving product reliability and environmental adaptability, it also enhances user-friendliness and industry-specific design, delivering optimized functions, more flexible applications and more stable performance. It can be applied in industries such as textiles, papermaking, wire drawing, machine tools, packaging, food processing, fans, water pumps, as well as various automated production equipment.

## Model meaning



## Product features

- ▲ It can avoid over - current faults caused by direct starting and achieve smooth starting
- ▲ When the demand for motor torque is low, the excitation current is reduced according to the load current
- ▲ Maximize the efficiency of the motor
- ▲ Reduce motor losses and energy consumption
- ▲ There are three curve - setting methods: The linear curve is suitable for ordinary constant - torque loads. The multi - point curve is suitable for loads of dehydrators and centrifuges. The square - law curve is suitable for loads of fans and pumps. The three points of the curve can be adjusted
- ▲ The most suitable curve can be set according to the torque characteristics of the equipment to achieve better energy - saving results
- ▲ It can achieve smooth starting and avoid over - current faults caused by direct starting
- ▲ It is more suitable for the use of fans and pumps

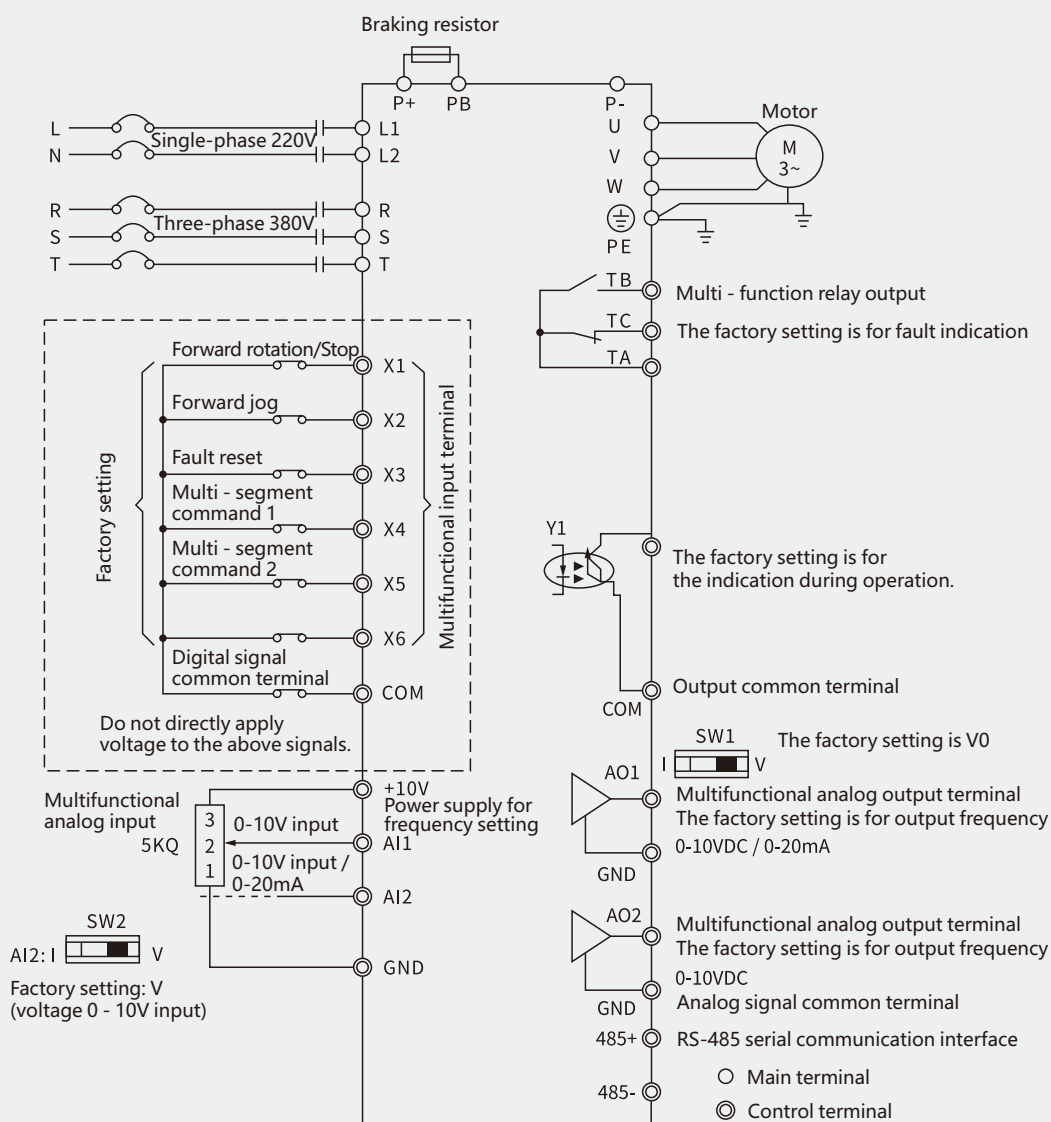
## Nameplate instructions

|         |                          |
|---------|--------------------------|
| MODEL:  | LNC820-4T0040GB/4T0055PB |
| POWER:  | 4KW 9A/5.5KW 13A         |
| INPUT:  | 3PH AC380V 50HZ/60HZ     |
| OUTPUT: | 3PH AC0V-380V 0HZ-500HZ  |
| S.N:    | Barcode                  |

## Technical specifications

|                                | Item                                            | Specification                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic functions                | Output frequency                                | 0 - 500Hz                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                | Carrier frequency                               | 0.8kHz ~ 12kHz, the carrier frequency can be automatically adjusted according to the load characteristics                                                                                                                                                                                                                                                                                                                            |
|                                | Frequency resolution                            | 0.01Hz                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                | Control mode                                    | V/F control, open-loop vector control (SVC)                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | Torque characteristics                          | With torque compensation and slip compensation, starting torque:<br>G - type machine 0.5Hz/150%, P - type machine 0.5Hz/100%                                                                                                                                                                                                                                                                                                         |
|                                | Torque boost                                    | Automatic torque boost; Manual torque boost 0.1% ~ 30.0%                                                                                                                                                                                                                                                                                                                                                                             |
|                                | Overload capacity                               | G - type machine: 150% of rated output current for 60S<br>P - type machine: 130% of rated output current for 60S                                                                                                                                                                                                                                                                                                                     |
|                                | Speed regulation range                          | 1:100                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                | Speed stability accuracy                        | ±1%                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                | Automatic voltage regulation (AVR)              | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                                                                                                                                                                                                                                               |
|                                | Over - voltage and over - current stall control | Automatically limits the current and voltage during operation to prevent frequent over - current and over - voltage tripping                                                                                                                                                                                                                                                                                                         |
|                                | Fast current - limiting function                | Minimizes over - current faults to protect the normal operation of the frequency converter                                                                                                                                                                                                                                                                                                                                           |
|                                | V/F curve                                       | Four modes: linear type; multi - point type; complete V/f separation; incomplete V/f separation                                                                                                                                                                                                                                                                                                                                      |
|                                | Acceleration and deceleration curves            | Linear or S - curve acceleration and deceleration modes; four acceleration and deceleration times; acceleration and deceleration time range: 0.1 ~ 6500.0s                                                                                                                                                                                                                                                                           |
|                                | DC braking                                      | DC braking frequency: 0.00Hz ~ maximum frequency, braking time: 0.0s ~ 36.0s, braking action current value: 0.0% ~ 100.0%                                                                                                                                                                                                                                                                                                            |
|                                | Jog control                                     | Jog frequency range: 0.00Hz ~ 50Hz; jog acceleration and deceleration time: 0.0s ~ 6500.0s                                                                                                                                                                                                                                                                                                                                           |
|                                | Simple PLC, multi - speed operation             | Up to 16 - speed operation can be achieved through the built - in PLC or control terminals                                                                                                                                                                                                                                                                                                                                           |
|                                | Built - in PID                                  | It can easily implement a process - control closed - loop control system                                                                                                                                                                                                                                                                                                                                                             |
| Operating characteristics      | Operating command channel                       | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                                                                                                                                                                             |
|                                | Frequency source                                | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, multi - speed, PID, simple PLC, which can be switched in various ways                                                                                                                                                                                                          |
|                                | Auxiliary frequency source                      | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                                                                                                                                                                                   |
|                                | Input terminals                                 | Six digital input terminals, one of which can be used as a high - speed pulse input.<br>Two analog input channels, AI1: input range 0 ~ +10V, AI2: input range 0 ~ +10V/0 - 20mA                                                                                                                                                                                                                                                     |
| Display and keyboard operation | Output terminals                                | One high - speed pulse output terminal, outputting square - wave signals from 0kHz ~ 50kHz, which can realize the output of physical quantities such as set frequency and output frequency<br>One digital output terminal<br>One relay output terminal<br>Two analog output terminals, AO2: 0V ~ 10V, AO1: 0V ~ 10V/0 - 20mA, which can indicate output frequency/current/voltage/frequency command/speed/power factor signal output |
|                                | LED display                                     | It is equipped with 8 function keys, a 5 - digit 7 - segment LED, and 5 status LED indicators. It can perform forward rotation, reverse rotation, reset, stop, jog, as well as parameter setting and display                                                                                                                                                                                                                         |
| Protection characteristics     | Protection function                             | Motor short - circuit detection upon power - on, output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, etc                                                                                                                                                                                                                  |
| Environment                    | Application place                               | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                                                                                                                                                                                      |
|                                | Altitude                                        | Less than 1000m                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                | Ambient humidity                                | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                                                                                                                                                                                |
|                                | Humidity                                        | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                                                                                                                                                                                  |
|                                | Vibration                                       | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Storage temperature                             | - 20°C ~ + 60°C                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Basic wiring diagram



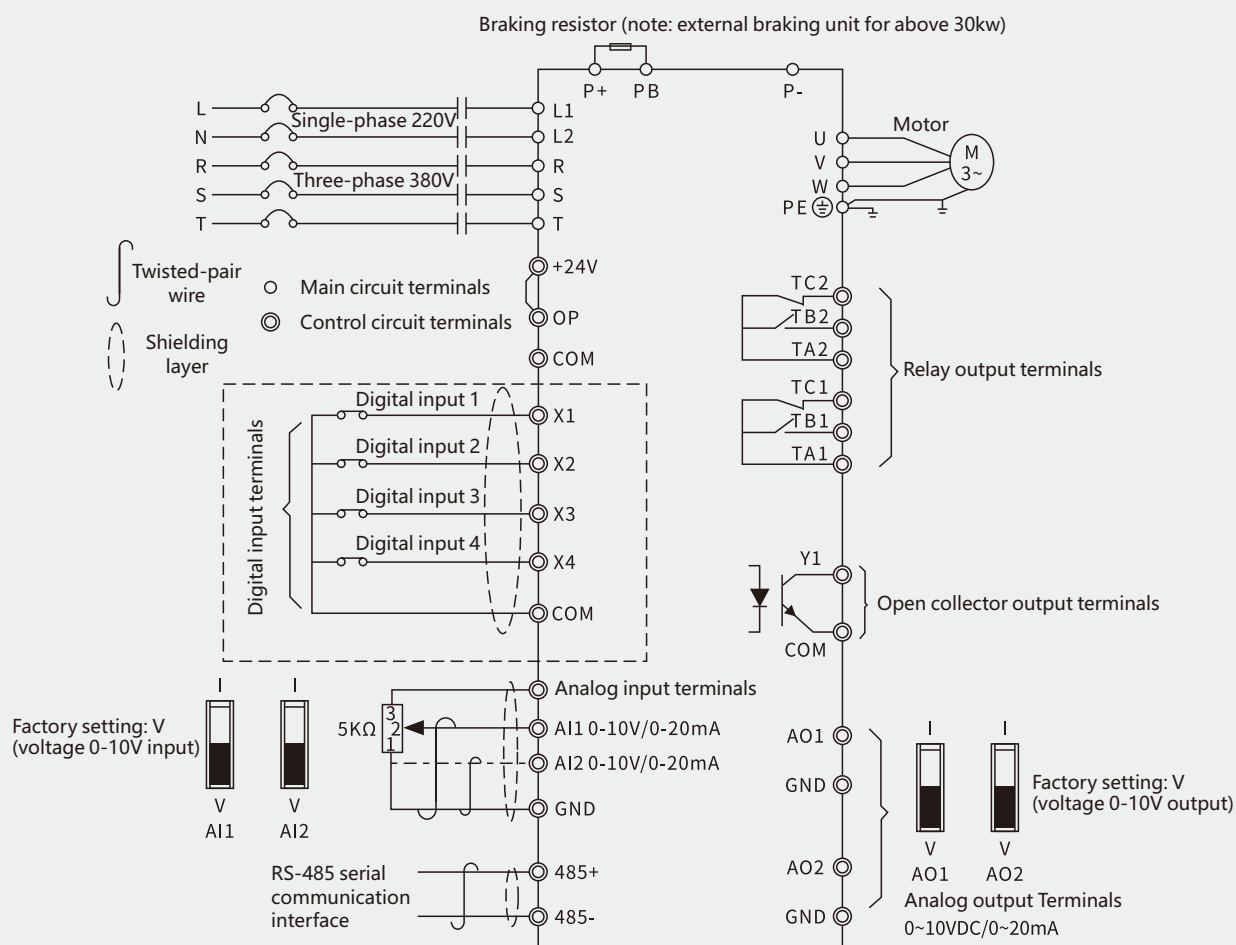
0.75-75kW Wiring diagram

## Industry application

Industries such as textiles, papermaking, wire - drawing, machine tools, packaging, food, fans, water pumps, etc., and various automated production equipment series.

For the overall dimensions and schematic diagrams, please refer to pages 07 - 08.

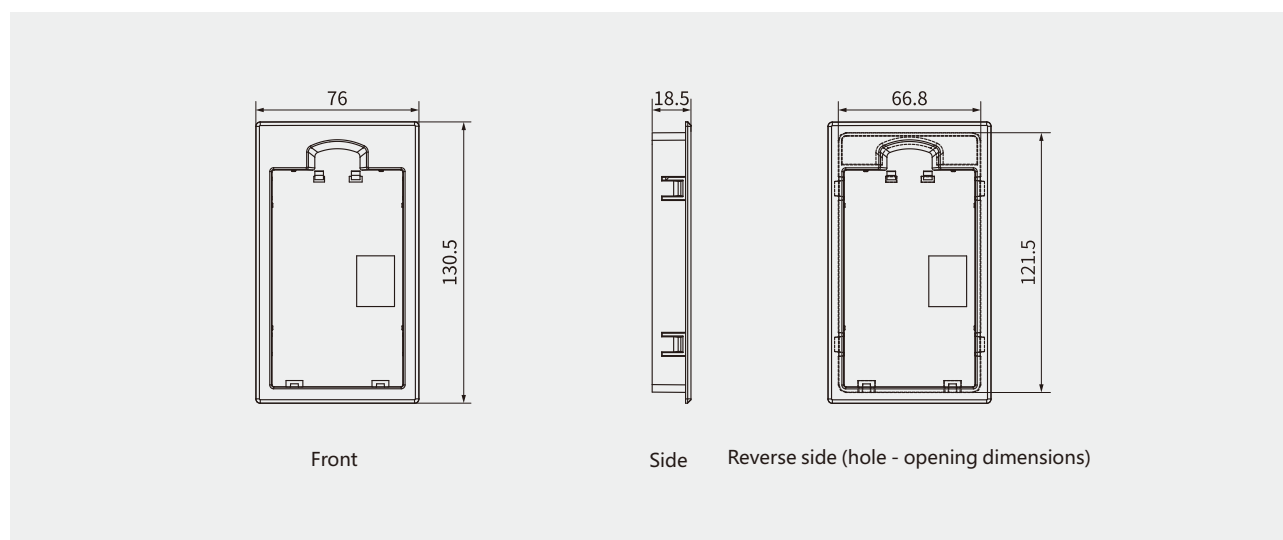
## Basic wiring diagram



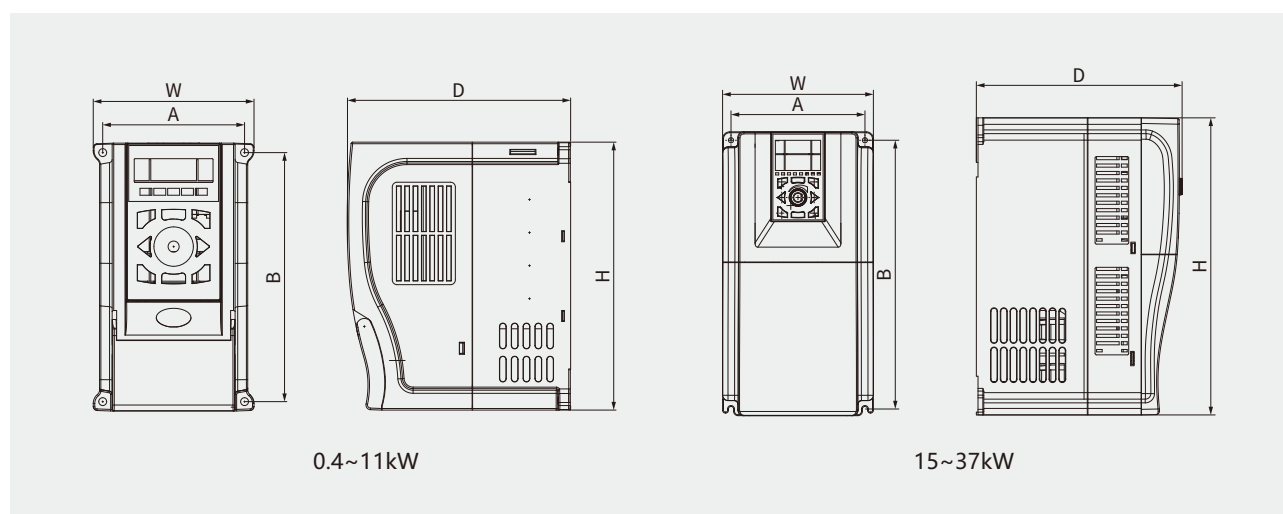
The diagram illustrates the wiring for a 90-400kW inverter system. It includes the following components and connections:

- Power Supply:** Three-phase 380V input (R, S, T) connected to the inverter terminals. A short-circuit piece is used for the DC link.
- Braking Resistor:** Connected to the DC link (P+, P-) via a braking resistor (P+, PB, P-).
- Motor:** Three-phase motor (M 3~) connected to the inverter output (U, V, W).
- Control and Expansion Ports:**
  - J5:** Multifunctional output terminal (X1-X6, COM) for Forward/Stop, Reverse/Stop, Forward jog, Fault reset, Multi-segment command, and Digital signal common terminal.
  - J6:** Frequency-division output (OA+, OA-, COM, PE).
  - J7:** Multifunctional analog input (AI1, AI2, GND).
  - J8:** RS-485 serial communication interface (485+, 485-).
  - J9:** Multifunctional relay output (TC1, TB1, TA1, TC2, TB2, TA2).
- Expansion Card Terminals:**
  - J1:** Pulse sequence output (0-100KHz).
  - J2:** Set frequency (0-50KHz, P5-00=0, P5-6=0).
  - J3:** Open-collector output 1 (0-24Vdc/0-50mA, P5-04=1).
  - J4:** Analog output 1 (0-10VDC/0-20mA, P5-08=0).
  - J5:** Analog output 2 (0-10VDC/0-20mA, P5-08=1).
- Grounding:** A grounding copper busbar is connected to the PE terminal and the motor frame.
- Wiring Notes:**
  - Twisted-pair wire for signal lines.
  - Shielding layer for signal lines.
  - Do not directly apply voltage to the above signals.
  - Factory setting: V (voltage 0-10V output).

## Installation dimensions of the keyboard base



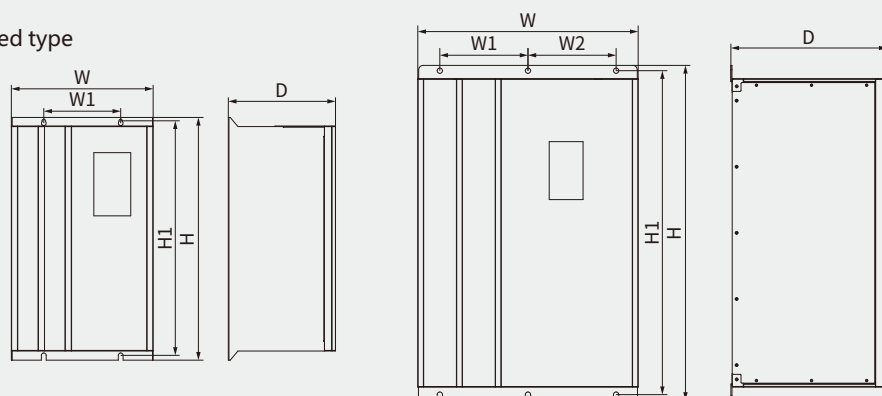
## Diagrams of the overall dimensions and installation dimensions of the plastic structure



| Applicable models | Rated output power (kW) | Input voltage                                | A (mm) | B (mm) | H (mm) | W (mm) | D (mm) | Installation aperture (mm) |
|-------------------|-------------------------|----------------------------------------------|--------|--------|--------|--------|--------|----------------------------|
| 820/860S          | 0.4~2.2                 | Single - phase<br>220V range:<br>-15%~ + 15% | 90     | 157    | 170    | 101    | 142    | Φ5                         |
| 820/860S/860E     | 0.75~2.2                |                                              | 90     | 157    | 170    | 101    | 142    | Φ5                         |
| 820/860S/860E     | 4~5.5                   | Three - phase<br>380V range:<br>-15%~ + 15%  | 111    | 183    | 197    | 129    | 175    | Φ5                         |
| 820/860S/860E     | 7.5                     |                                              | 137    | 237    | 256    | 157    | 190    | Φ5                         |
| 820               | 11                      |                                              | 137    | 237    | 256    | 157    | 190    | Φ5                         |
| 820               | 15~22                   |                                              | 151    | 303    | 320    | 170    | 222    | Φ5.8                       |
| 820               | 30~37                   |                                              | 205    | 366    | 380    | 218    | 235    | Φ6                         |

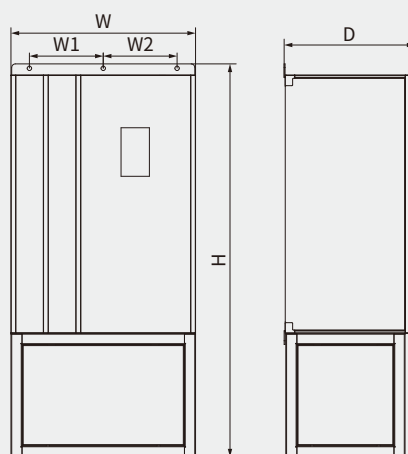
## Diagrams of the overall dimensions and installation dimensions of the sheet metal structure

Wall - mounted type



| Applicable models | Machine type | Overall dimensions |       |       | Installation dimensions |        | Installation hole diameter |
|-------------------|--------------|--------------------|-------|-------|-------------------------|--------|----------------------------|
|                   | kW           | H(mm)              | W(mm) | D(mm) | H1(mm)                  | W1(mm) | mm                         |
| 820/860S/860E     | 11-15        | 340                | 204   | 214   | 325                     | 150    | Φ6                         |
| 820/860S/860E     | 18.5-22      | 360                | 224   | 214   | 345                     | 150    | Φ6                         |
| 820/860S/860E     | 30-37        | 380                | 262   | 220   | 360                     | 192    | Φ9                         |
| 820               | 45 new       | 480                | 270   | 250   | 465                     | 190    | Φ7                         |
| 820               | 45-75        | 450                | 330   | 259   | 430                     | 240    | Φ9                         |
| 860S/860E         | 45-75        | 570                | 380   | 263   | 547.5                   | 240    | Φ10                        |
| 860S/860E         | 90-132       | 610                | 400   | 286   | 587.5                   | 240    | Φ12                        |
| 860S/860E         | 160-220      | 760                | 500   | 355   | 735                     | 200    | Φ12                        |
| 860S/860E         | 250-400      | 862                | 750   | 455   | 832                     | 250    | Φ12                        |
| 820/860S          | 450-560      | 1122               | 950   | 505   | 1092                    | 350    | Φ12                        |
| 820/860S          | 630-750      | 1045               | 1050  | 505   | 1015                    | 400    | Φ12                        |

Cabinet - type



| Applicable models | Machine type | Overall dimensions |       |       | Installation dimensions | Installation hole diameter |
|-------------------|--------------|--------------------|-------|-------|-------------------------|----------------------------|
|                   | kW           | H(mm)              | W(mm) | D(mm) | W1(mm)                  | mm                         |
| 860S              | 160-220      | 1065               | 500   | 355   | 200                     | Φ12                        |
| 860S              | 250-400      | 1329               | 750   | 455   | 250                     | Φ12                        |
| 820/860S          | 450-560      | 1644               | 950   | 505   | 350                     | Φ12                        |
| 820/860S          | 630-750      | 1625               | 1050  | 505   | 400                     | Φ12                        |

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# LNC510

LNC510 GENERAL-PURPOSE VECTOR VFD (SPLIT IGBT)  
通用型矢量变频器(分体式IGBT)

绿色  
环保  
Eco-friendly



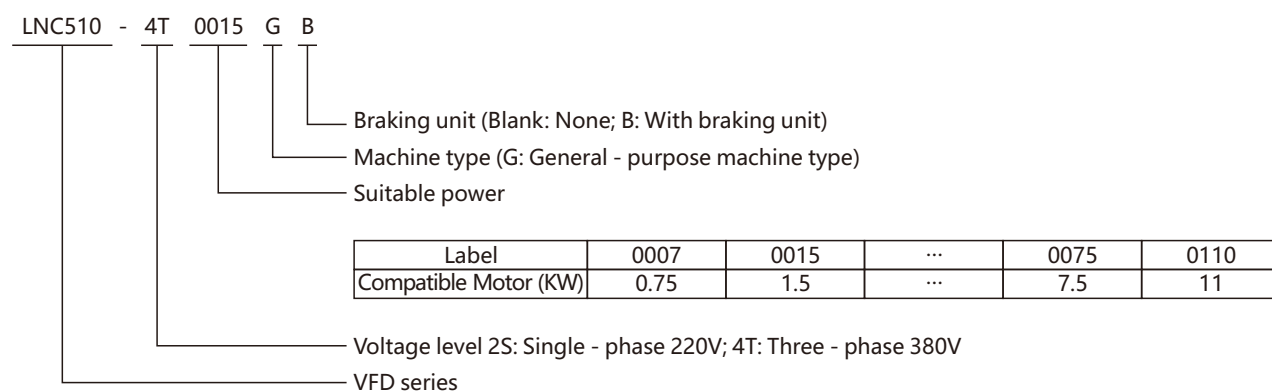
安全  
可靠  
Safe and  
Reliable



## Overview

The LNC510 Series VFD is developed on a brand-new hardware and software platform, designed to better meet market demands for machine tools, printing, textiles, chemical fibers, stone processing, engraving and other mechanical equipment. It is a general-purpose vector inverter with high power density, complete protection functions and comprehensive application features. It supports the standard Modbus communication protocol and is compatible with synchronous motors. The LNC510 Series is not equipped with a brake unit by default. If the braking function is required, please note "with brake unit" when placing an order.

## Model meaning



## Nameplate instructions

|         |                         |
|---------|-------------------------|
| MODEL:  | LNC510-4T0037G          |
| POWER:  | 3.7KW 9A                |
| INPUT:  | 3PH AC380V 50HZ/60HZ    |
| OUTPUT: | 3PH AC0V-380V 0HZ-500HZ |
| S.N:    | Barcode                 |

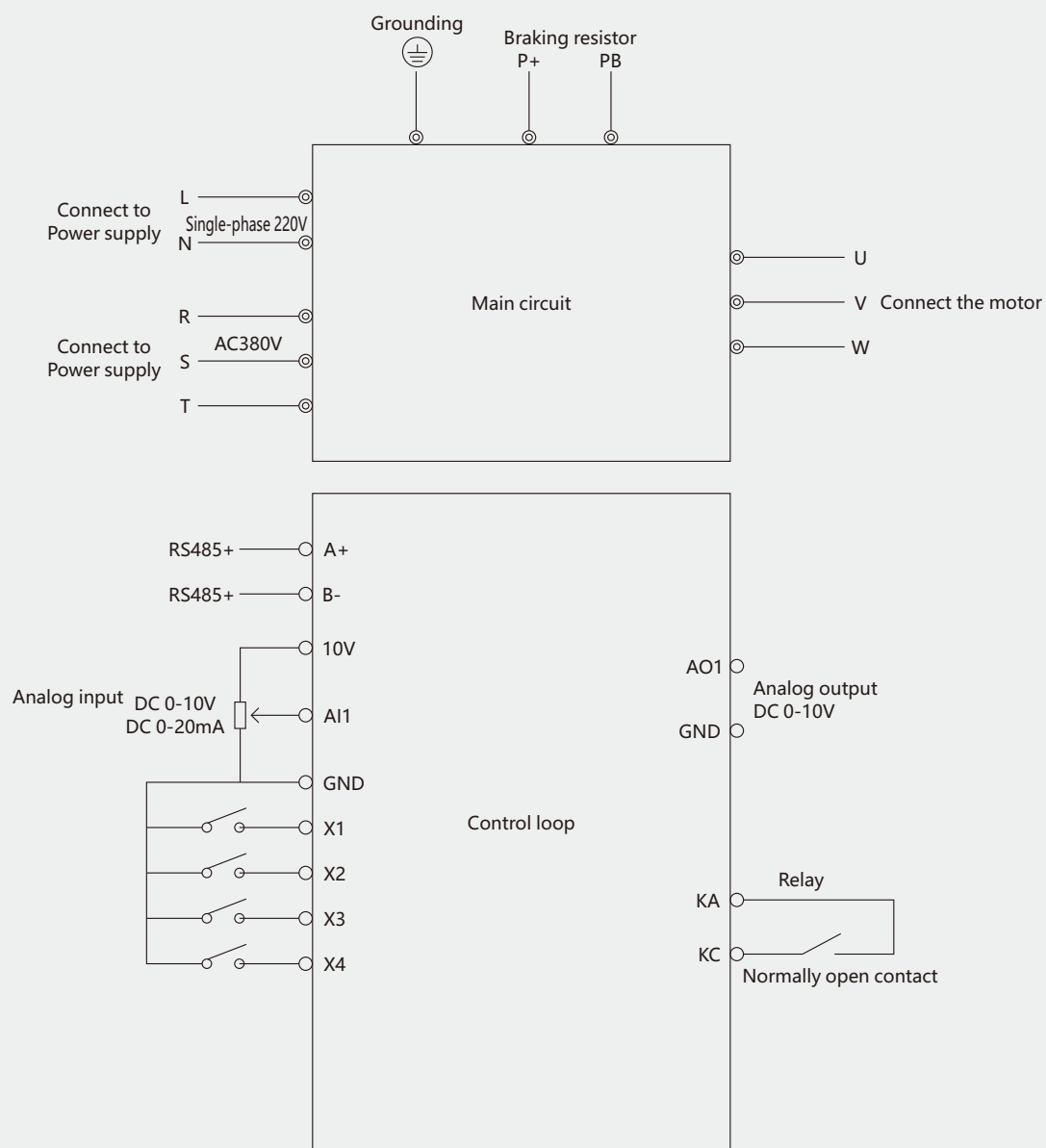
## List of machine types

| VFD model                                                                               | Power capacity (kVA) | Input current (A) | Output current (A) | Applicable motor (KW) |
|-----------------------------------------------------------------------------------------|----------------------|-------------------|--------------------|-----------------------|
| Single-phase power supply: 220V ±10%, 50/60Hz, actual permissible range: AC 198V – 242V |                      |                   |                    |                       |
| LNC510-2S0007G                                                                          | 1.5                  | 8.2               | 4.0                | 0.75                  |
| LNC510-2S0015G                                                                          | 3.0                  | 14.0              | 7.0                | 1.5                   |
| LNC510-2S0022G                                                                          | 4.0                  | 23.0              | 9.6                | 2.2                   |
| Three-phase power supply: 380V ±15%, 50/60Hz, actual permissible range: AC 323V – 437V  |                      |                   |                    |                       |
| LNC510-4T0007G                                                                          | 1.5                  | 3.4               | 2.1                | 0.75                  |
| LNC510-4T0015G                                                                          | 3.0                  | 5.0               | 3.8                | 1.5                   |
| LNC510-4T0022G                                                                          | 4.0                  | 5.8               | 5.1                | 2.2                   |
| LNC510-4T0030G                                                                          | 5.0                  | 9.0               | 6.8                | 3.0                   |
| LNC510-4T0037G                                                                          | 5.9                  | 10.5              | 9                  | 3.7                   |
| LNC510-4T0055G                                                                          | 8.9                  | 14.6              | 13                 | 5.5                   |
| LNC510-4T0075G                                                                          | 11                   | 20.5              | 17                 | 7.5                   |
| LNC510-4T0110G                                                                          | 17                   | 26                | 25                 | 11                    |

## Technical specifications

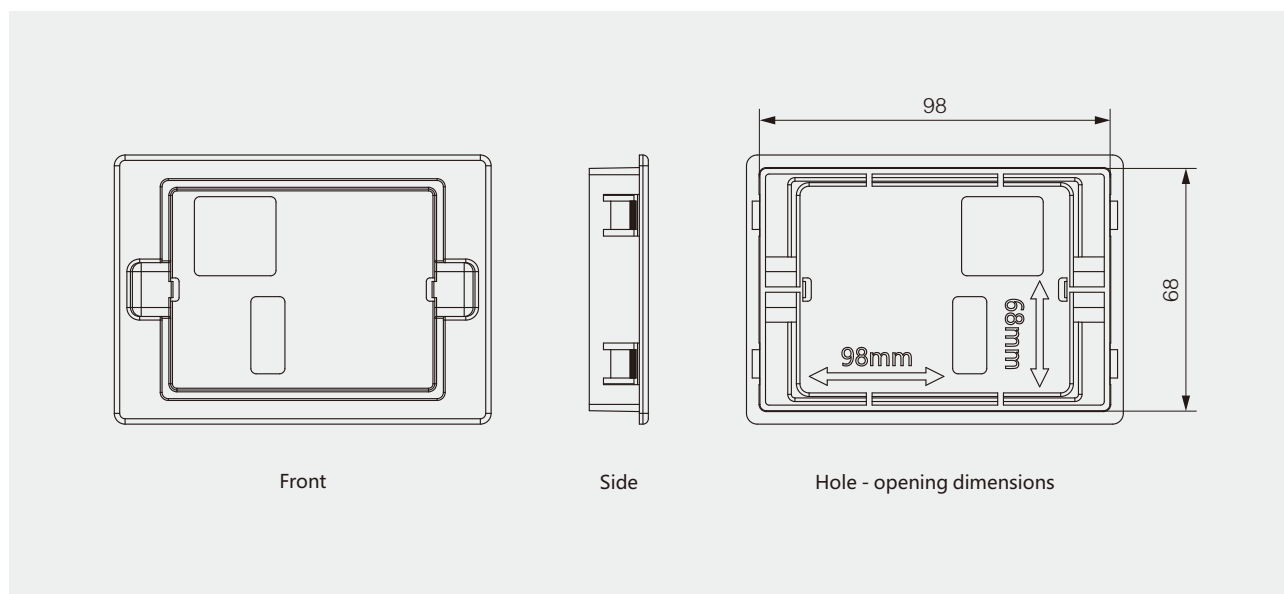
|                                | Item                                            | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic functions                | Output frequency                                | 0-500Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                | Carrier frequency                               | 0.8kHz ~ 12kHz, the carrier frequency can be automatically adjusted according to the load characteristics                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Frequency resolution                            | 0.01Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                | Control mode                                    | V/F control                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                | Torque characteristics                          | With torque compensation and slip compensation, starting torque: G - type machine 0.5Hz/150%                                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Torque boost                                    | Automatic torque boost; Manual torque boost 0.1% ~ 30.0%                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                | Overload capacity                               | G - type machine: 150% of rated output current for 60S                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                | Speed regulation range                          | 1: 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                | Speed stability accuracy                        | ±1%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Automatic voltage regulation (AVR)              | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                                                                                                                                                                                                                                                                                              |
|                                | Over - voltage and over - current stall control | Automatically limits the current and voltage during operation to prevent frequent over - current and over - voltage tripping                                                                                                                                                                                                                                                                                                                                                        |
|                                | Fast current - limiting function                | Minimizes over - current faults to protect the normal operation of the frequency converter                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | V/F curve                                       | Four modes: linear type; multi - point type; complete V/f separation; incomplete V/f separation                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | Acceleration and deceleration curves            | Linear or S - curve acceleration and deceleration modes; four acceleration and deceleration times; acceleration and deceleration time range: 0.1 ~ 6500.0s                                                                                                                                                                                                                                                                                                                          |
|                                | DC braking                                      | DC braking frequency: 0.00Hz ~ maximum frequency, braking time: 0.0s ~ 36.0s, braking action current value: 0.0% ~ 100.0%                                                                                                                                                                                                                                                                                                                                                           |
|                                | Jog control                                     | Jog frequency range: 0.00Hz ~ 50Hz; jog acceleration and deceleration time: 0.0s ~ 6500.0s                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | Simple PLC, multi - speed operation             | Up to 16 - speed operation can be achieved through the built - in PLC or control terminals                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | Built - in PID                                  | It can easily implement a process - control closed - loop control system                                                                                                                                                                                                                                                                                                                                                                                                            |
| Operating characteristics      | Operating command channel                       | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                                                                                                                                                                                                                            |
|                                | Frequency source                                | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, multi - speed, PID, simple PLC, which can be switched in various ways                                                                                                                                                                                                                                                         |
|                                | Auxiliary frequency source                      | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                                                                                                                                                                                                                                  |
|                                | Input terminals                                 | 4 digital input terminals, 1 analog input AI1, voltage/current switchable via parameters.                                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Output terminals                                | One normally open relay output terminal<br>One analog output terminal AO1                                                                                                                                                                                                                                                                                                                                                                                                           |
| Display and keyboard operation | Dual LED Display                                | It can perform forward rotation, reverse rotation, reset, stop, jog operation, as well as parameter setting and display. Upper LED display: 5-digit main LED display, which can show the set frequency, output frequency, various monitoring data, alarm codes, etc.<br>Lower LED display: 5-digit auxiliary LED display, which can show the set frequency, output frequency and various monitoring data. The specific display content shall be set via parameters P7-17 and P7-18. |
| Protection characteristics     | Protection function                             | Motor short - circuit detection upon power - on, output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, etc                                                                                                                                                                                                                                                                 |
| Environment                    | Application place                               | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                                                                                                                                                                                                                                     |
|                                | Altitude                                        | Less than 1000m                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | Ambient humidity                                | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                                                                                                                                                                                                                               |
|                                | Humidity                                        | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Vibration                                       | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                | Storage temperature                             | - 20°C ~ + 60°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## Basic wiring diagram

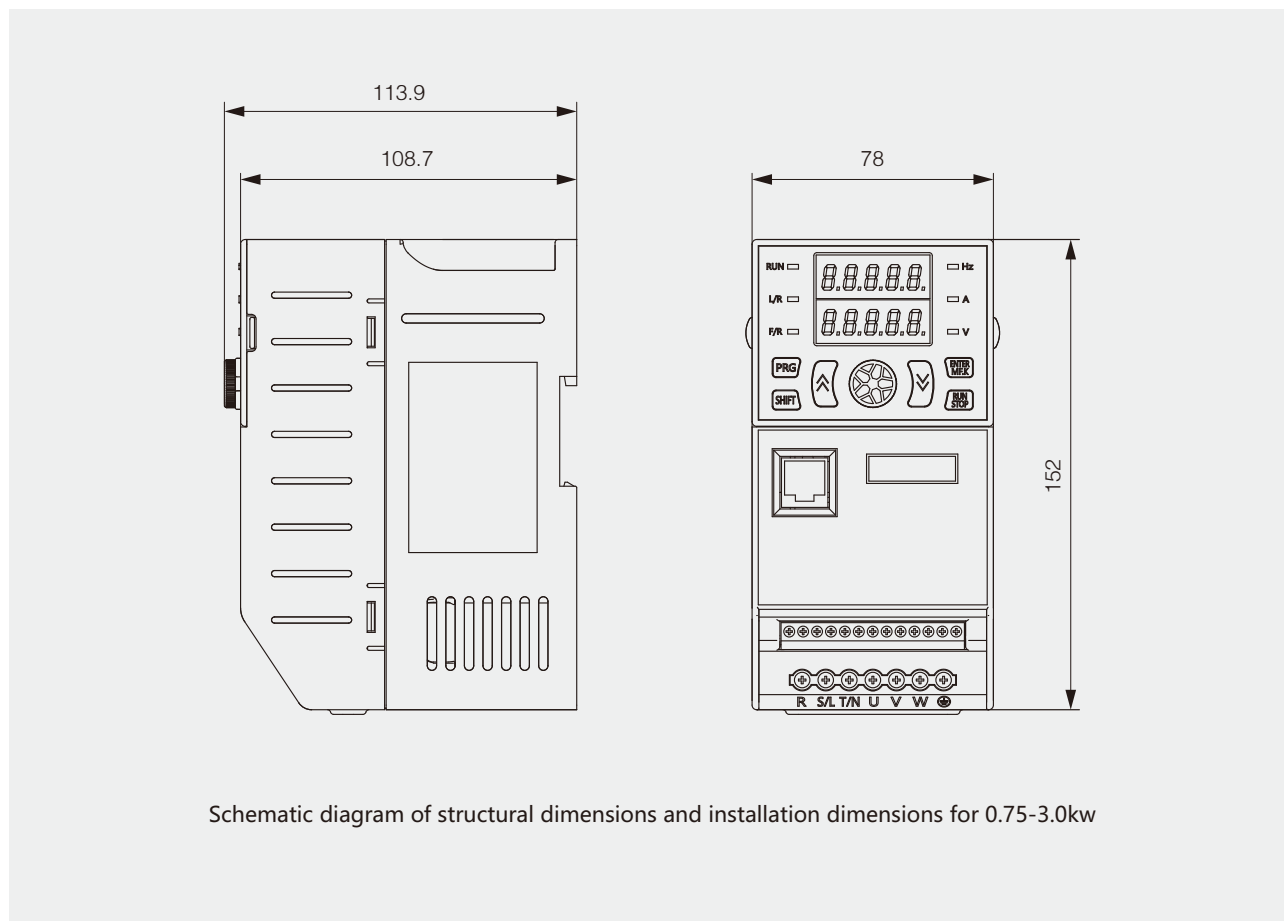


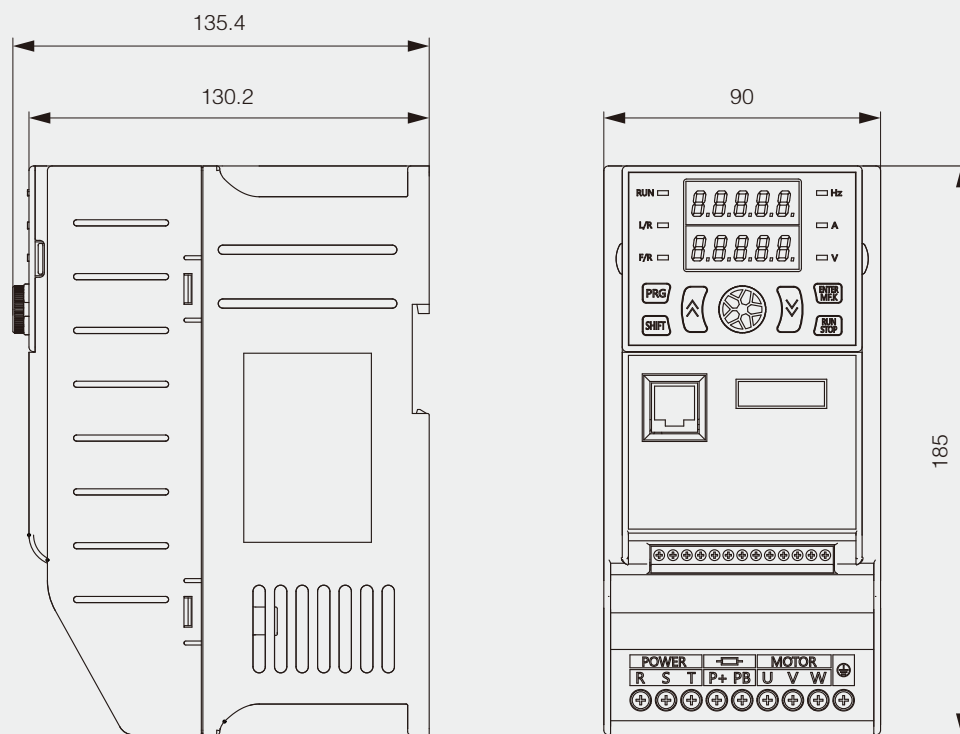
Wiring diagram of inverter

## Installation dimensions of the keyboard base



## Overall installation dimensions





Schematic diagram of structural dimensions and installation dimensions for 3.7-5.5kw

| Applicable Models | Model    | Overall dimensions |       |       | Installation dimensions |        | Installation Aperture |
|-------------------|----------|--------------------|-------|-------|-------------------------|--------|-----------------------|
|                   | kW       | H(mm)              | W(mm) | D(mm) | H1(mm)                  | W1(mm) |                       |
| 510               | 0.75-2.2 | 152                | 78    | 113.9 | 144.2                   | 68.2   | 4.2                   |
| 510               | 3.7-5.5  | 185                | 90    | 135.4 | 177.2                   | 80.2   | 4.2                   |
| 510               | 7.5-11   | 242                | 126.5 | 160   | 227.5                   | 110    | 5.5                   |

Innovation / extreme / smart  
创新 / 极致 / 智能

# LNC133

LNC133 SOLAR WATER PUMP INVERTER

光伏水泵变频器

绿色  
环保

Eco-friendly



安全  
可靠

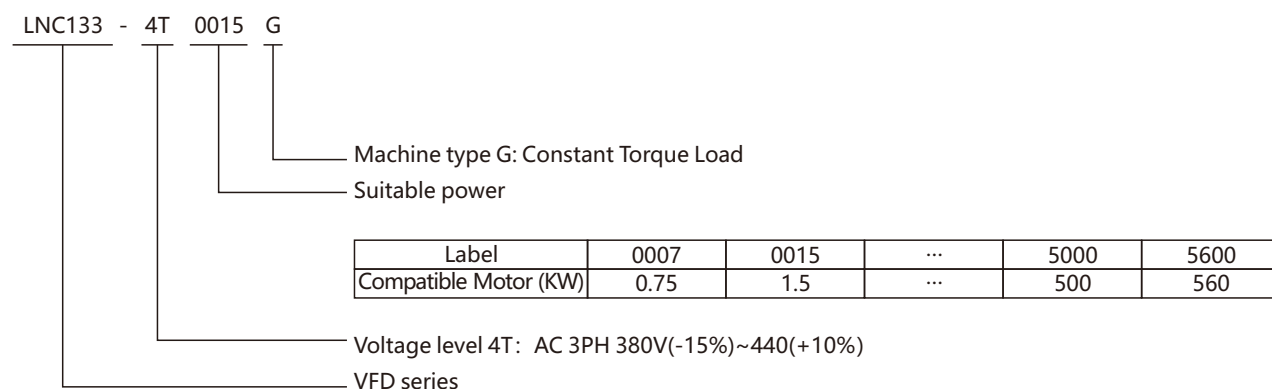
Safe and  
Reliable



## Overview

The LNC133 series solar water pump inverter is specially designed for photovoltaic water pump systems. Equipped with an advanced Maximum Power Point Tracking (MPPT) algorithm, it ensures optimal energy conversion by continuously tracking and adjusting to the most efficient power point. It is applicable to agricultural irrigation, mountain water supply, desert control and other scenarios. This series comes standard with 485 communication and dual-channel relays. Models ranging from 0.75kW to 22kW are built-in with braking units, vector control, 16-speed segments, simple PLC and constant pressure water supply PID functions.

## Model meaning



## Nameplate instructions

|         |                                           |
|---------|-------------------------------------------|
| MODEL:  | LNC133-4T0040G                            |
| POWER:  | 4kW 9A                                    |
| INPUT:  | DC: 300-750V ; AC : 3PH 380V(-15% ~ +15%) |
| OUTPUT: | 3PH AC0V-380V 0HZ-500HZ                   |
| S.N:    | Barcode                                   |

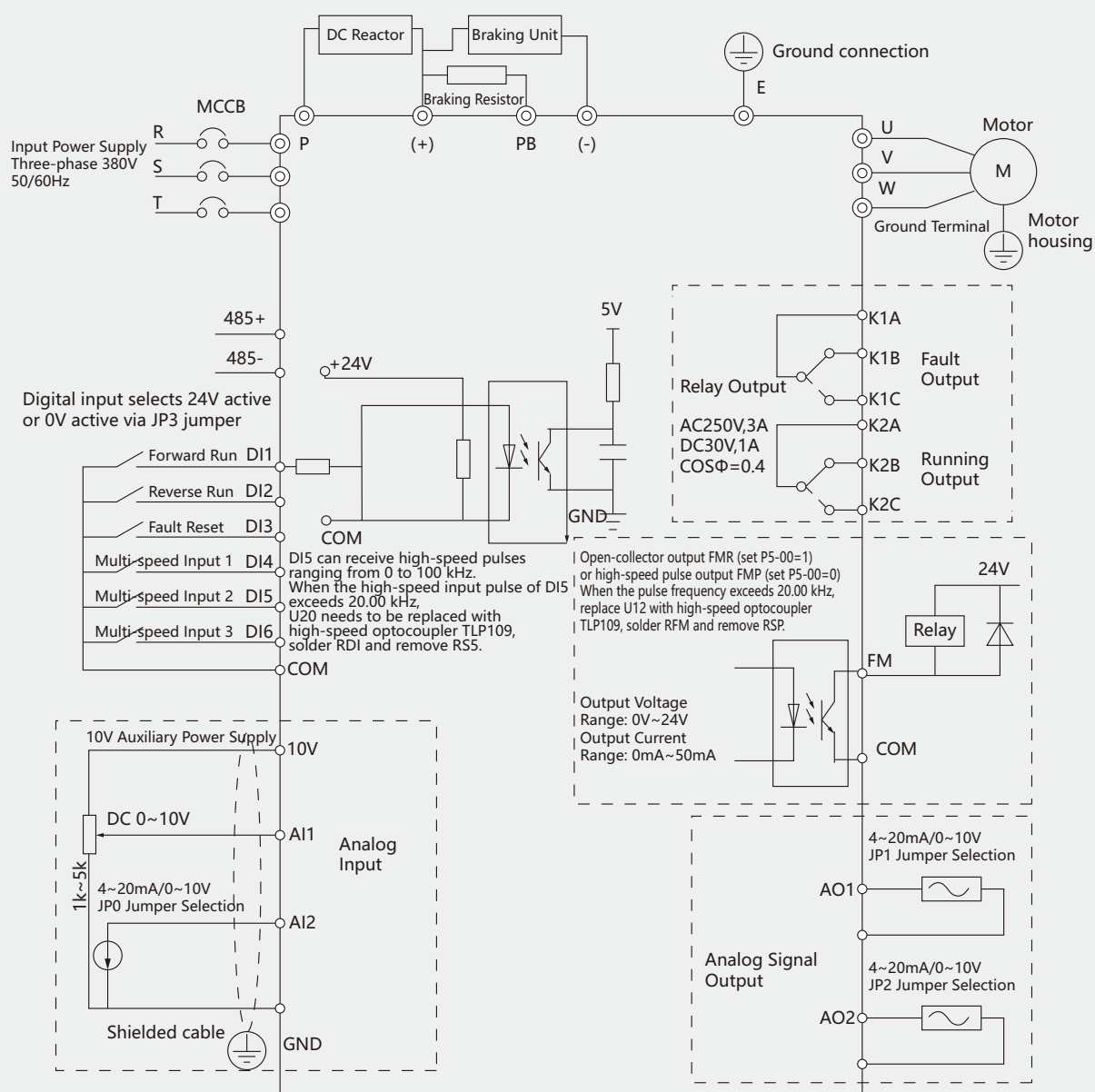
## List of machine types

| VFD model                                                                          | Power capacity (kVA) | Input current (A) | Output current (A) | Applicable motor (KW) |
|------------------------------------------------------------------------------------|----------------------|-------------------|--------------------|-----------------------|
| Three-phase power supply: 380V±15%, 50/60Hz; actual allowable range AC 323V ~ 437V |                      |                   |                    |                       |
| LNC133-4T0007G                                                                     | 1.5                  | 3.4               | 2.1                | 0.75                  |
| LNC133-4T0015G                                                                     | 3.0                  | 5.0               | 3.8                | 1.5                   |
| LNC133-4T0022G                                                                     | 4.0                  | 5.8               | 5.1                | 2.2                   |
| LNC133-4T0037G                                                                     | 5.9                  | 10.5              | 9                  | 3.7                   |
| LNC133-4T0055G                                                                     | 8.9                  | 14.6              | 13                 | 5.5                   |
| LNC133-4T0075G                                                                     | 11                   | 20.5              | 17                 | 7.5                   |
| LNC133-4T0110G                                                                     | 17                   | 26                | 25                 | 11                    |
| LNC133-4T0150G                                                                     | 21                   | 35                | 32                 | 15                    |
| LNC133-4T0185G                                                                     | 24                   | 38.5              | 37                 | 18.5                  |
| LNC133-4T0220G                                                                     | 30                   | 46.5              | 45                 | 22                    |
| LNC133-4T0300G                                                                     | 40                   | 62                | 60                 | 30                    |
| LNC133-4T0370G                                                                     | 57                   | 76                | 75                 | 37                    |
| LNC133-4T0450G                                                                     | 69                   | 92                | 91                 | 45                    |
| LNC133-4T0550G                                                                     | 85                   | 113               | 112                | 55                    |
| LNC133-4T0750G                                                                     | 114                  | 157               | 150                | 75                    |
| LNC133-4T0900G                                                                     | 134                  | 180               | 176                | 90                    |
| LNC133-4T1100G                                                                     | 160                  | 214               | 210                | 110                   |
| LNC133-4T1320G                                                                     | 192                  | 256               | 253                | 132                   |
| LNC133-4T1600G                                                                     | 231                  | 307               | 304                | 160                   |
| LNC133-4T1850G                                                                     | 270                  | 350               | 340                | 185                   |
| LNC133-4T2000G                                                                     | 290                  | 385               | 377                | 200                   |
| LNC133-4T2200G                                                                     | 310                  | 430               | 426                | 220                   |
| LNC133-4T2500G                                                                     | 355                  | 468               | 465                | 250                   |
| LNC133-4T2800G                                                                     | 396                  | 525               | 520                | 280                   |
| LNC133-4T3150G                                                                     | 445                  | 590               | 585                | 315                   |
| LNC133-4T3550G                                                                     | 500                  | 665               | 650                | 355                   |
| LNC133-4T4000G                                                                     | 600                  | 785               | 725                | 400                   |
| LNC133-4T4500G                                                                     | 700                  | 883               | 820                | 450                   |
| LNC133-4T5000G                                                                     | 800                  | 1000              | 900                | 500                   |
| LNC133-4T5600G                                                                     | 900                  | 1100              | 980                | 560                   |

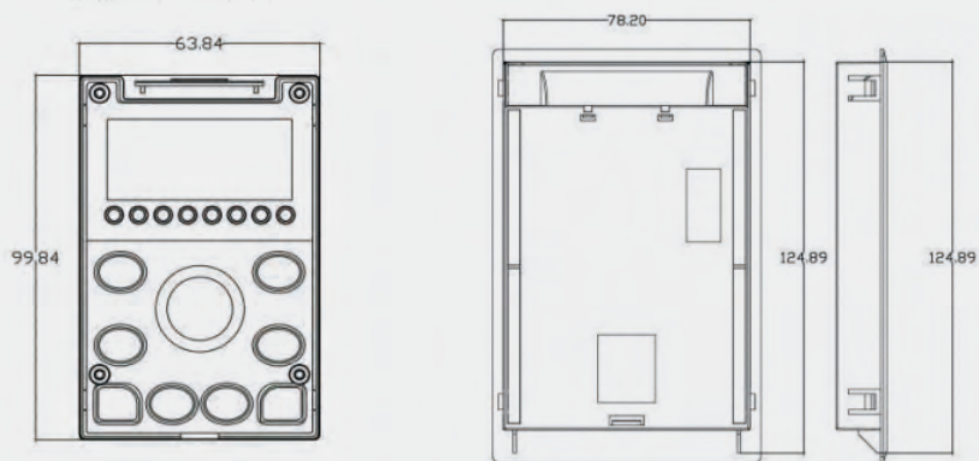
## Technical specifications

|                                | Item                                     | Specification                                                                                                                                                                                         |
|--------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control characteristics        | Output frequency                         | 0-300Hz                                                                                                                                                                                               |
|                                | Carrier frequency                        | 0.5kHz ~ 15kHz, carrier frequency can be automatically adjusted according to load characteristics                                                                                                     |
|                                | Frequency resolution                     | 0.01Hz                                                                                                                                                                                                |
|                                | Control mode                             | Open - loop vector control (SVC)<br>V/F control                                                                                                                                                       |
|                                | Starting torque                          | 0.5Hz/180% (SVC)                                                                                                                                                                                      |
|                                | Speed regulation range                   | 1: 100 (SVC)                                                                                                                                                                                          |
|                                | Speed stabilization accuracy             | ±0.5% (SVC)                                                                                                                                                                                           |
|                                | Torque control accuracy                  | ±5% (SVC)                                                                                                                                                                                             |
|                                | Overload capacity                        | G Model: 150% rated output current for 60 seconds; 180% rated current for 3 seconds                                                                                                                   |
|                                | Torque boost                             | Automatic torque boost; manual torque boost: 0.1%~30.0%                                                                                                                                               |
|                                | V/F curve                                | Three modes: Linear type; Multi-point type; V/F curve                                                                                                                                                 |
|                                | Acceleration and deceleration curve      | Linear or S - curve acceleration and deceleration modes;<br>four acceleration and deceleration times; acceleration and deceleration time range 0.1 ~ 3200.0s                                          |
|                                | DC braking                               | DC braking frequency: 0.00Hz ~ maximum frequency. Braking time: 0.0s ~ 32.0s,<br>braking action current value: 0.0% ~ 100.0%                                                                          |
|                                | Simple PLC, multi-step speed operation   | Up to 16 - step speed operation can be achieved through the built - in PLC or control terminals                                                                                                       |
|                                | Built - in PID                           | It can easily realize the process - control closed - loop control system                                                                                                                              |
|                                | Automatic voltage regulation (AVR)       | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                |
|                                | Overvoltage, overcurrent & stall control | Automatically limit current and voltage during operation to prevent frequent tripping caused by overcurrent and overvoltage                                                                           |
|                                | Fast current - limiting function         | Minimize over - current faults to the greatest extent and protect the normal operation of the frequency converter                                                                                     |
| Operating characteristics      | Operating command channel                | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                              |
|                                | Frequency source                         | Main frequency sources: digital setting, analog voltage setting, analog current setting, RS485 communication setting, multi-speed segments, PID and simple PLC, switchable via multiple methods       |
|                                | Auxiliary frequency source               | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                    |
|                                | Input terminals                          | 6-channel digital input terminals;<br>2-channel analog input terminals;<br>AI1: 0~10V voltage input;<br>AI2: 0~10V voltage input or 4~20mA current input                                              |
|                                | Output terminals                         | 1-channel open collector FM;<br>2-channel relay output terminals;<br>2-channel analog output terminals, supporting 0~20mA current output or 0~10V voltage output                                      |
| Display and keyboard operation | LED display                              | 5-digit parameter display                                                                                                                                                                             |
|                                | Key Locking and Function Selection       | Realize partial or full key locking and define the scope of functions of partial keys to prevent misoperation                                                                                         |
| Protection characteristics     | Protection function                      | Motor short-circuit detection upon power-on, output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheating protection, overload protection, etc. |
| Environment                    | Application place                        | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                       |
|                                | Altitude                                 | Derating is required when the altitude exceeds 1000 meters, with a 10% derating for every additional 1000 meters.                                                                                     |
|                                | Ambient humidity                         | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                 |
|                                | Humidity                                 | Less than 95%RH, without water droplet condensation                                                                                                                                                   |
|                                | Vibration                                | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                  |

## Basic wiring diagram



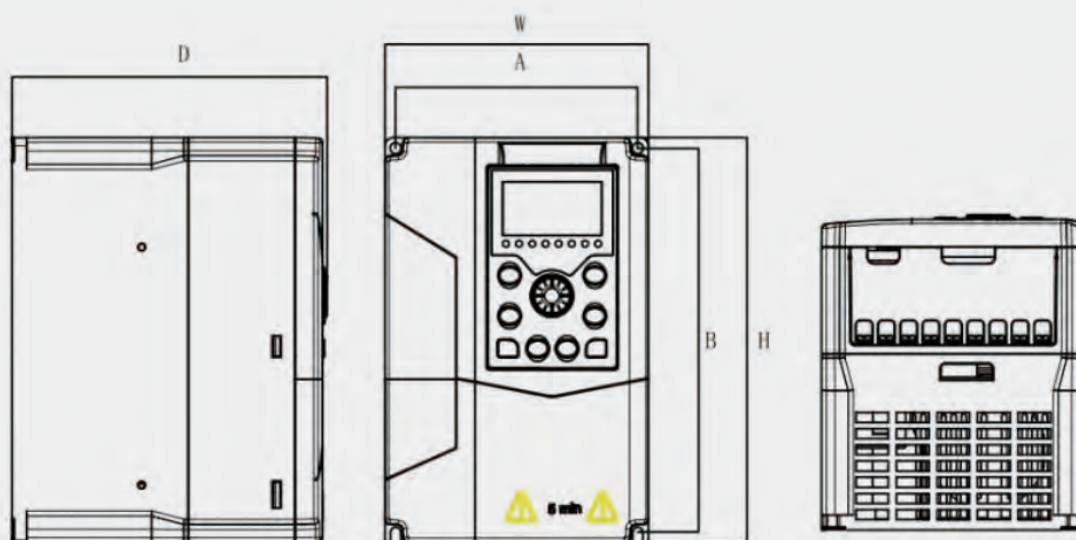
## Installation dimensions of the keyboard base



Overall Dimensions of External Keypad

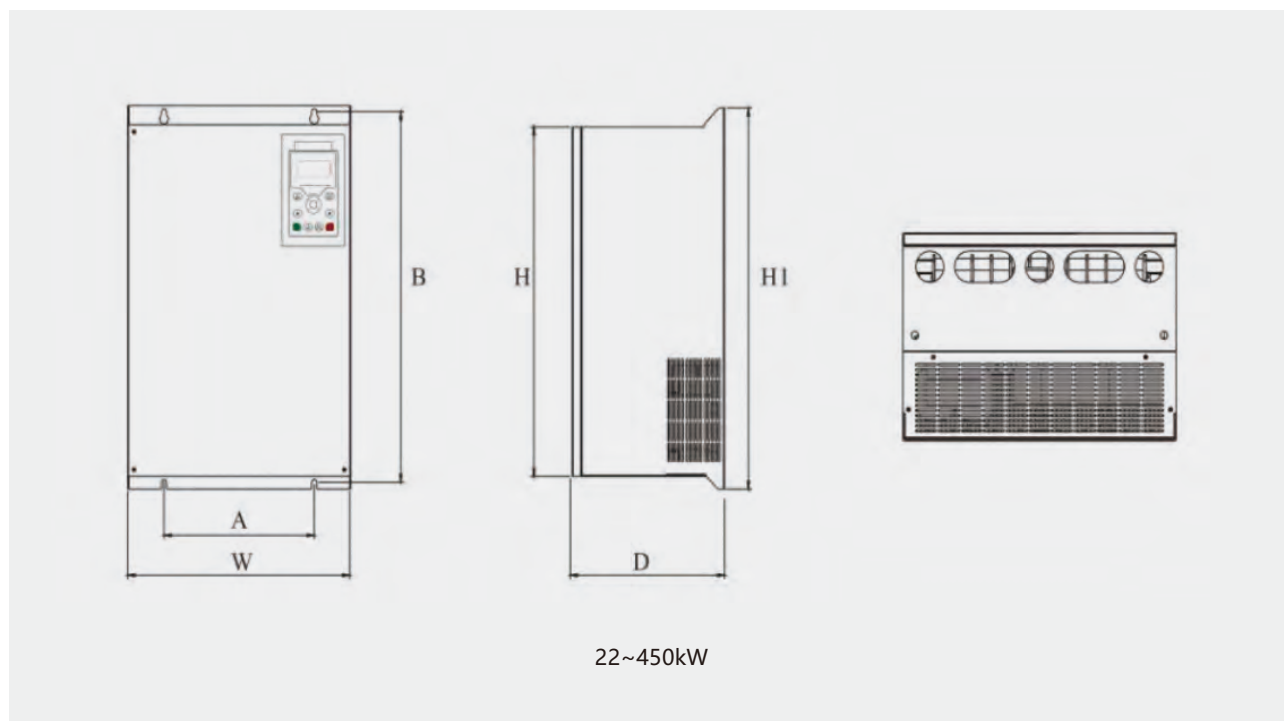
Mounting Cutout Dimensions of External Keypad

## Diagrams of the overall dimensions and installation dimensions of the plastic structure



1.5~18.5kW

## Diagrams of the overall dimensions and installation dimensions of the sheet metal structure



| Machine type | Overall dimensions      |                         |       |       | Installation dimensions |       | Installation hole diameter |
|--------------|-------------------------|-------------------------|-------|-------|-------------------------|-------|----------------------------|
| kW           | H(mm)                   | H1(mm)                  | W(mm) | D(mm) | A(mm)                   | B(mm) | mm                         |
| 0.75-5.5     | 200                     | /                       | 130   | 155.5 | 119.5                   | 189   | M4                         |
| 7.5-11       | 245                     | /                       | 140   | 160.2 | 129                     | 239   | M5                         |
| 15-18.5      | 279                     | /                       | 180   | 162.5 | 165.5                   | 268   | M5                         |
| 22-30        | 385                     | 430                     | 230   | 225   | 184                     | 410   | M6                         |
| 37-45        | 382                     | 430                     | 270   | 225   | 222                     | 410   | M6                         |
| 55-75        | 534                     | 594                     | 310   | 265   | 200                     | 570   | M8                         |
| 90-110       | 643                     | 653                     | 326   | 292   | 200                     | 635   | M8                         |
| 132-160      | 760                     | 769                     | 450   | 335   | 300                     | 751   | M8                         |
| 185-200      | 880<br>1250(with base)  | 930<br>1275(with base)  | 579   | 380   | 449                     | 903   | M8                         |
| 220-315      | 983<br>1353(with base)  | 1060<br>1392(with base) | 650   | 377   | 420                     | 1030  | M10                        |
| 355-450      | 1203<br>1653(with base) | 1358<br>1731(with base) | 800   | 400   | 520                     | 1300  | M14                        |

Innovation / extreme / smart  
创新 / 极致 / 智能

# LNC860-ST

LNC860-ST STEP-UP VFD

升压变频器

绿色  
环保  
Eco-friendly



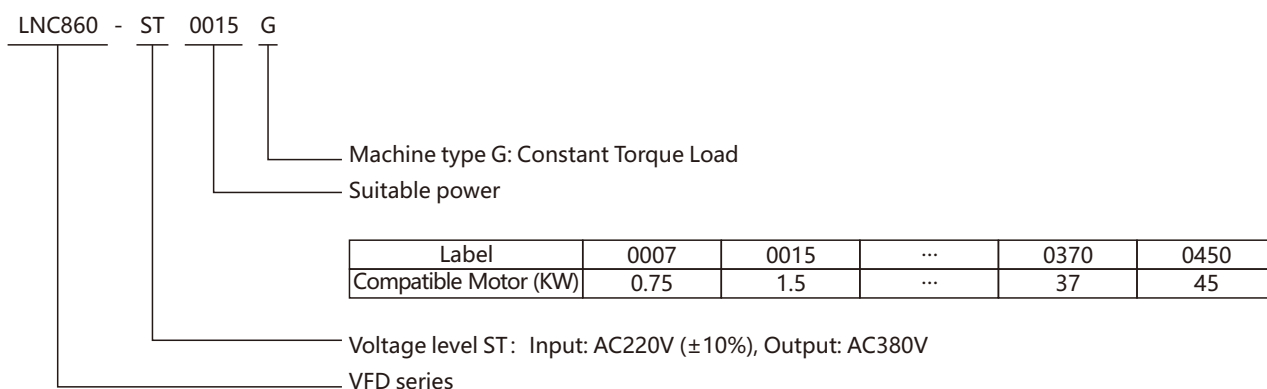
安全  
可靠  
Safe and  
Reliable



## Overview

The LNC860-ST series step-up VFD is specially designed for applications requiring single-phase 220V input and three-phase 380V output. Equipped with advanced algorithms, it converts civilian single-phase 220V power to industrial three-phase 380V power, solving the problem that industrial 380V equipment cannot be used in areas with only single-phase household electricity. It is suitable for scenarios where single-phase 220V power needs to be converted to three-phase 380V industrial power.

## Model meaning



## Nameplate instructions

MODEL: LNC860-ST0040G  
POWER: 4kW 9A  
INPUT: AC: 1PH 220V(-10% ~ +10%)  
OUTPUT: AC: 3PH 0V-380V 0HZ-500HZ  
S.N: Barcode

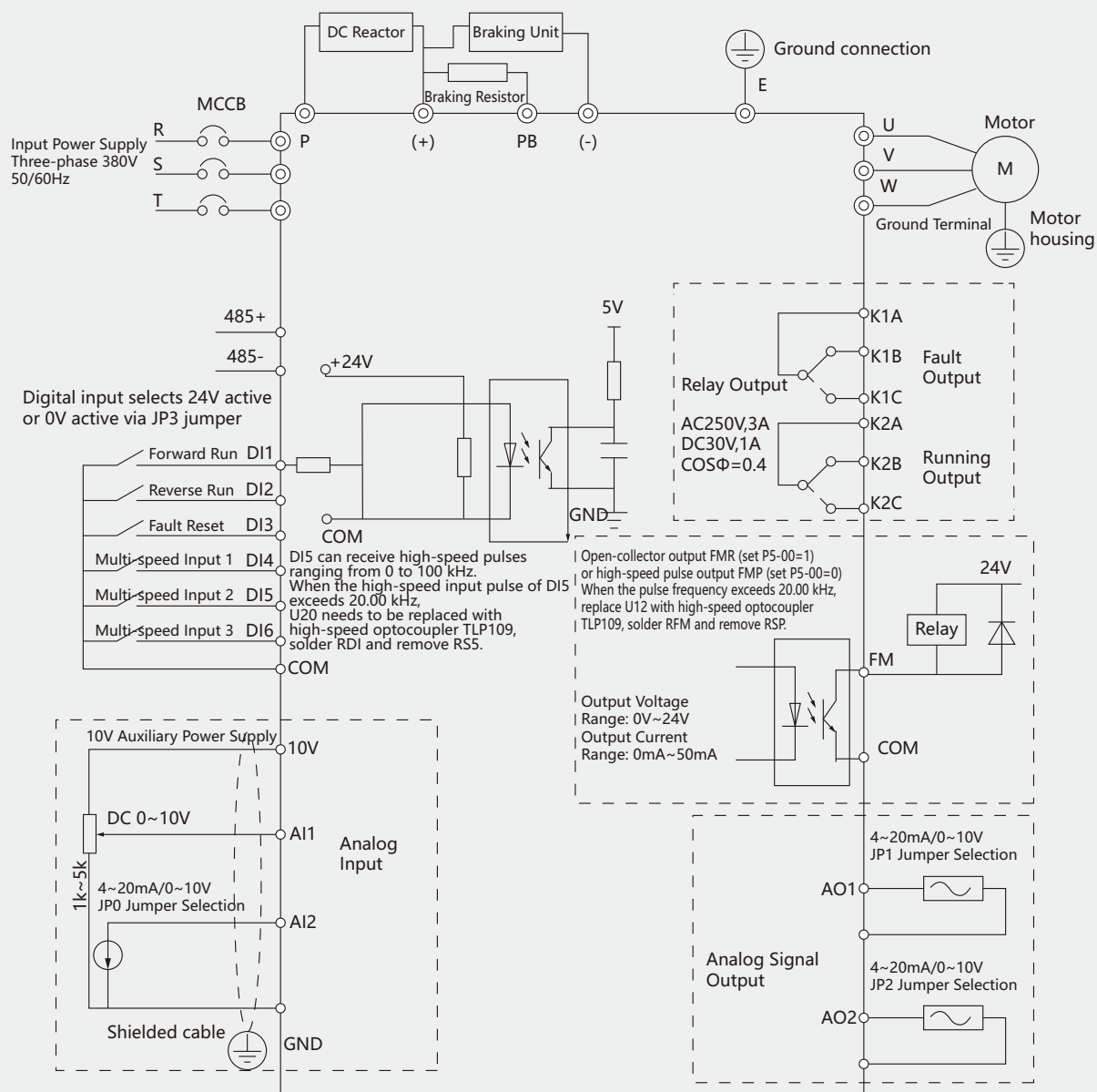
## List of machine types

| VFD model                                   | Output current (A) | Applicable motor (KW)    |
|---------------------------------------------|--------------------|--------------------------|
| Single-phase input power: 220V±10%, 50/60Hz |                    | Three-phase output: 380V |
| LNC860-ST0007G                              | 2.1                | 0.75                     |
| LNC860-ST0015G                              | 3.8                | 1.5                      |
| LNC860-ST0022G                              | 5.1                | 2.2                      |
| LNC860-ST0037G                              | 9                  | 3.7                      |
| LNC860-ST0055G                              | 13                 | 5.5                      |
| LNC860-ST0075G                              | 17                 | 7.5                      |
| LNC860-ST0110G                              | 25                 | 11                       |
| LNC860-ST0150G                              | 32                 | 15                       |
| LNC860-ST0185G                              | 37                 | 18.5                     |
| LNC860-ST0220G                              | 45                 | 22                       |
| LNC860-ST0300G                              | 60                 | 30                       |
| LNC860-ST0370G                              | 75                 | 37                       |
| LNC860-ST0450G                              | 91                 | 45                       |

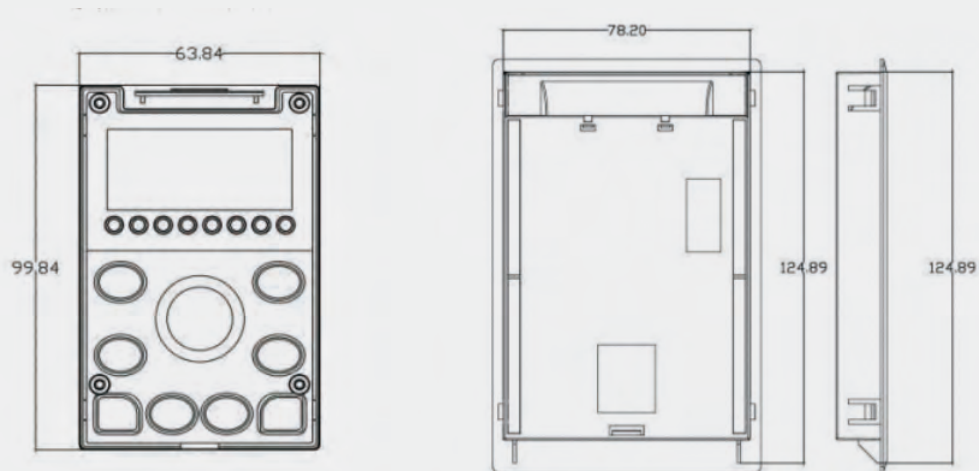
## Technical specifications

|                                | Item                                     | Specification                                                                                                                                                                                         |
|--------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control characteristics        | Output frequency                         | 0-300Hz                                                                                                                                                                                               |
|                                | Carrier frequency                        | 0.5kHz ~ 15kHz, carrier frequency can be automatically adjusted according to load characteristics                                                                                                     |
|                                | Frequency resolution                     | 0.01Hz                                                                                                                                                                                                |
|                                | Control mode                             | Open - loop vector control (SVC)<br>V/F control                                                                                                                                                       |
|                                | Starting torque                          | 0.5Hz/180% (SVC)                                                                                                                                                                                      |
|                                | Speed regulation range                   | 1: 100 (SVC)                                                                                                                                                                                          |
|                                | Speed stabilization accuracy             | ±0.5% (SVC)                                                                                                                                                                                           |
|                                | Torque control accuracy                  | ±5% (SVC)                                                                                                                                                                                             |
|                                | Overload capacity                        | G Model: 150% rated output current for 60 seconds; 180% rated current for 3 seconds                                                                                                                   |
|                                | Torque boost                             | Automatic torque boost; manual torque boost: 0.1%~30.0%                                                                                                                                               |
|                                | V/F curve                                | Three modes: Linear type; Multi-point type; V/F curve                                                                                                                                                 |
|                                | Acceleration and deceleration curve      | Linear or S - curve acceleration and deceleration modes;<br>four acceleration and deceleration times; acceleration and deceleration time range 0.1 ~ 3200.0s                                          |
|                                | DC braking                               | DC braking frequency: 0.00Hz ~ maximum frequency. Braking time: 0.0s ~ 32.0s,<br>braking action current value: 0.0% ~ 100.0%                                                                          |
|                                | Simple PLC, multi-step speed operation   | Up to 16 - step speed operation can be achieved through the built - in PLC or control terminals                                                                                                       |
|                                | Built - in PID                           | It can easily realize the process - control closed - loop control system                                                                                                                              |
|                                | Automatic voltage regulation (AVR)       | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                |
|                                | Overvoltage, overcurrent & stall control | Automatically limit current and voltage during operation to prevent frequent tripping caused by overcurrent and overvoltage                                                                           |
|                                | Fast current - limiting function         | Minimize over - current faults to the greatest extent and protect the normal operation of the frequency converter                                                                                     |
| Operating characteristics      | Operating command channel                | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                              |
|                                | Frequency source                         | Main frequency sources: digital setting, analog voltage setting, analog current setting, RS485 communication setting, multi-speed segments, PID and simple PLC, switchable via multiple methods       |
|                                | Auxiliary frequency source               | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                    |
|                                | Input terminals                          | 6-channel digital input terminals;<br>2-channel analog input terminals;<br>AI1: 0~10V voltage input;<br>AI2: 0~10V voltage input or 4~20mA current input                                              |
|                                | Output terminals                         | 1-channel open collector FM;<br>2-channel relay output terminals;<br>2-channel analog output terminals, supporting 0~20mA current output or 0~10V voltage output                                      |
| Display and keyboard operation | LED display                              | 5-digit parameter display                                                                                                                                                                             |
|                                | Key Locking and Function Selection       | Realize partial or full key locking and define the scope of functions of partial keys to prevent misoperation                                                                                         |
| Protection characteristics     | Protection function                      | Motor short-circuit detection upon power-on, output phase loss protection, overcurrent protection, overvoltage protection, undervoltage protection, overheating protection, overload protection, etc. |
| Environment                    | Application place                        | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                       |
|                                | Altitude                                 | Derating is required when the altitude exceeds 1000 meters, with a 10% derating for every additional 1000 meters.                                                                                     |
|                                | Ambient humidity                         | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                 |
|                                | Humidity                                 | Less than 95%RH, without water droplet condensation                                                                                                                                                   |
|                                | Vibration                                | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                  |

## Basic wiring diagram



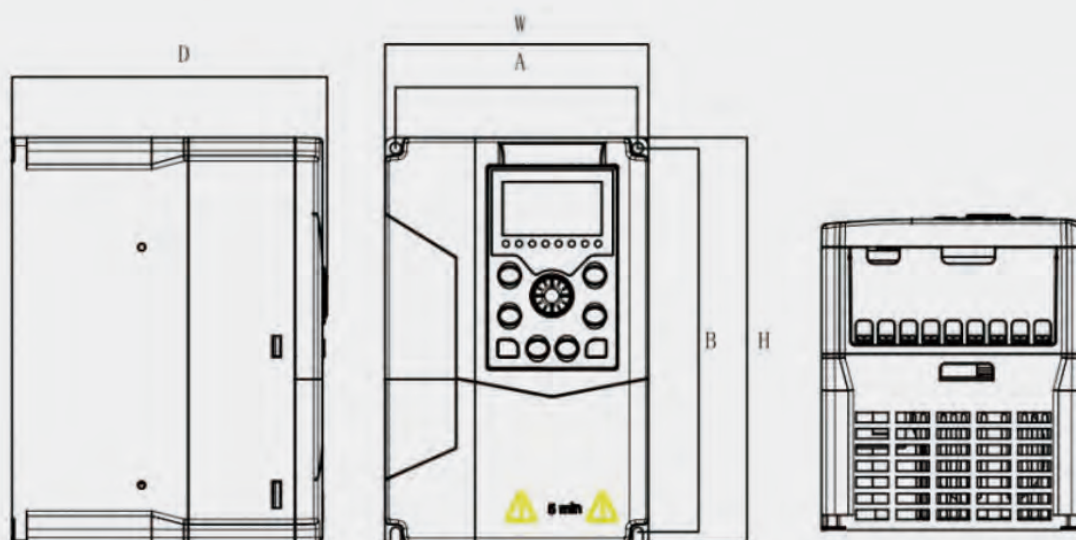
## Installation dimensions of the keyboard base



Overall Dimensions of External Keypad

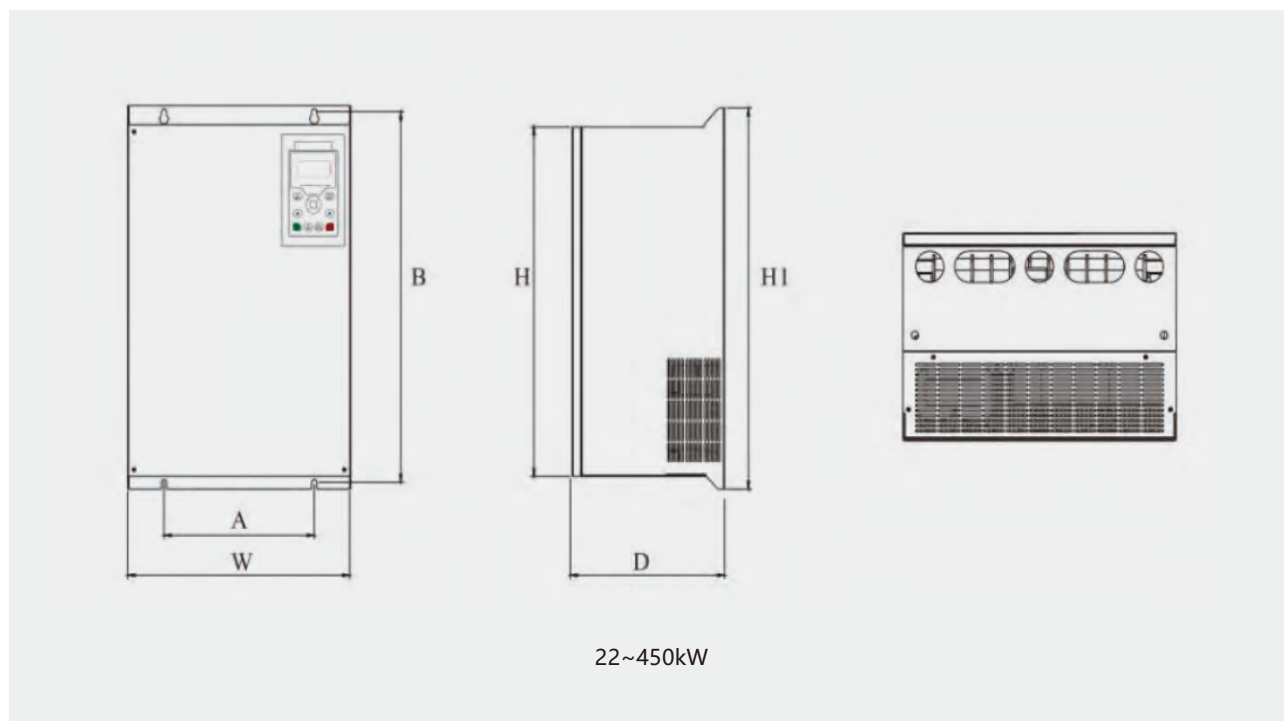
Mounting Cutout Dimensions of External Keypad

## Diagrams of the overall dimensions and installation dimensions of the plastic structure



1.5~18.5kW

## Diagrams of the overall dimensions and installation dimensions of the sheet metal structure



| Machine type | Overall dimensions      |                         |       |       | Installation dimensions |       | Installation hole diameter |
|--------------|-------------------------|-------------------------|-------|-------|-------------------------|-------|----------------------------|
| kW           | H(mm)                   | H1(mm)                  | W(mm) | D(mm) | A(mm)                   | B(mm) | mm                         |
| 0.75-5.5     | 200                     | /                       | 130   | 155.5 | 119.5                   | 189   | M4                         |
| 7.5-11       | 245                     | /                       | 140   | 160.2 | 129                     | 239   | M5                         |
| 15-18.5      | 279                     | /                       | 180   | 162.5 | 165.5                   | 268   | M5                         |
| 22-30        | 385                     | 430                     | 230   | 225   | 184                     | 410   | M6                         |
| 37-45        | 382                     | 430                     | 270   | 225   | 222                     | 410   | M6                         |
| 55-75        | 534                     | 594                     | 310   | 265   | 200                     | 570   | M8                         |
| 90-110       | 643                     | 653                     | 326   | 292   | 200                     | 635   | M8                         |
| 132-160      | 760                     | 769                     | 450   | 335   | 300                     | 751   | M8                         |
| 185-200      | 880<br>1250(with base)  | 930<br>1275(with base)  | 579   | 380   | 449                     | 903   | M8                         |
| 220-315      | 983<br>1353(with base)  | 1060<br>1392(with base) | 650   | 377   | 420                     | 1030  | M10                        |
| 355-450      | 1203<br>1653(with base) | 1358<br>1731(with base) | 800   | 400   | 520                     | 1300  | M14                        |

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创新 / 极致 / 智能

# LNC820D

LNC820D HIGH-PROTECTION VFD

高防护型变频器

绿色  
环保  
Eco-friendly



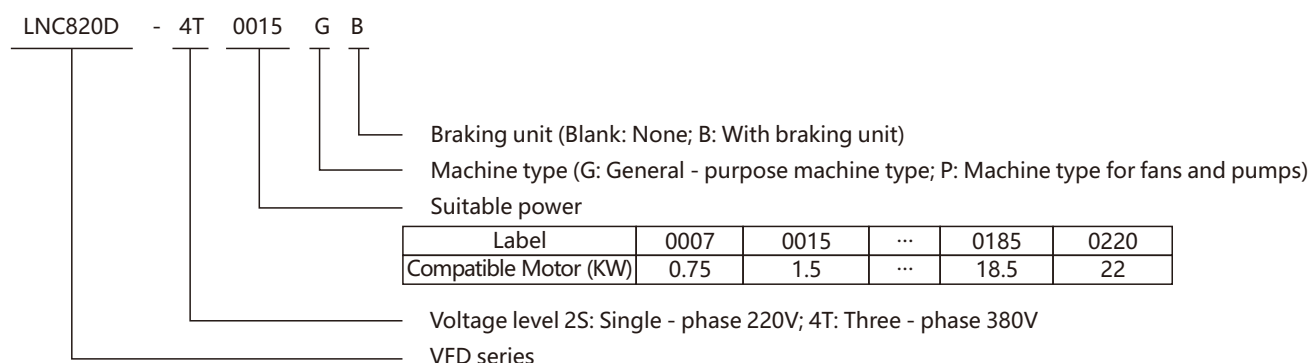
安全  
可靠  
Safe and  
Reliable



## Overview

The LNC820D Series is a high-protection VFD that can easily drive and control asynchronous motors. It features powerful functions and stable performance, complying with major international standards and certifications. The main control unit adopts a dedicated DSP chip for motor control, delivering strong current vector control performance to achieve higher-performance and higher-precision motor drive control. It supports richer frequency source superposition and switching modes, advanced PID algorithms, 15-step speed control, automatic program operation, as well as wobble frequency control and speed tracking functions. While improving product reliability and environmental adaptability, it also enhances user-friendliness and industry-specific design, resulting in optimized functions, more flexible applications and more stable performance. It can be applied in industries such as textiles, papermaking, wire drawing, machine tools, packaging, food processing, fans, water pumps, as well as various automated production equipment.

## Model meaning



## Product features

- ▲ It can avoid overcurrent faults caused by direct starting and achieve smooth starting.
- ▲ When the motor torque requirement is low, reduce the excitation current according to the load current.
- ▲ Maximize motor efficiency.
- ▲ Reduce motor losses and energy consumption.
- ▲ Three curve setting methods: The straight line curve is suitable for ordinary constant torque loads, the multi-point curve is suitable for load of water extractors and centrifuges, and the square curve is suitable for loads of fans and water pumps. The three points of the curve can be adjusted.
- ▲ The most suitable curve can be set according to the torque characteristics of the equipment to achieve better energy-saving effects.
- ▲ It can achieve smooth starting and avoid overcurrent faults caused by direct starting.
- ▲ Full series of sheet metal structure.
- ▲ IP protection level is IP65.

## Nameplate instructions

|         |                           |
|---------|---------------------------|
| MODEL:  | LNC820D-4T0110GB/4T0150PB |
| POWER:  | 11kW 25A/15KW 32A         |
| INPUT:  | 3PH AC380V 50HZ/60HZ      |
| OUTPUT: | 3PH AC0V-380V 0HZ-500HZ   |
| S.N:    | Barcode                   |

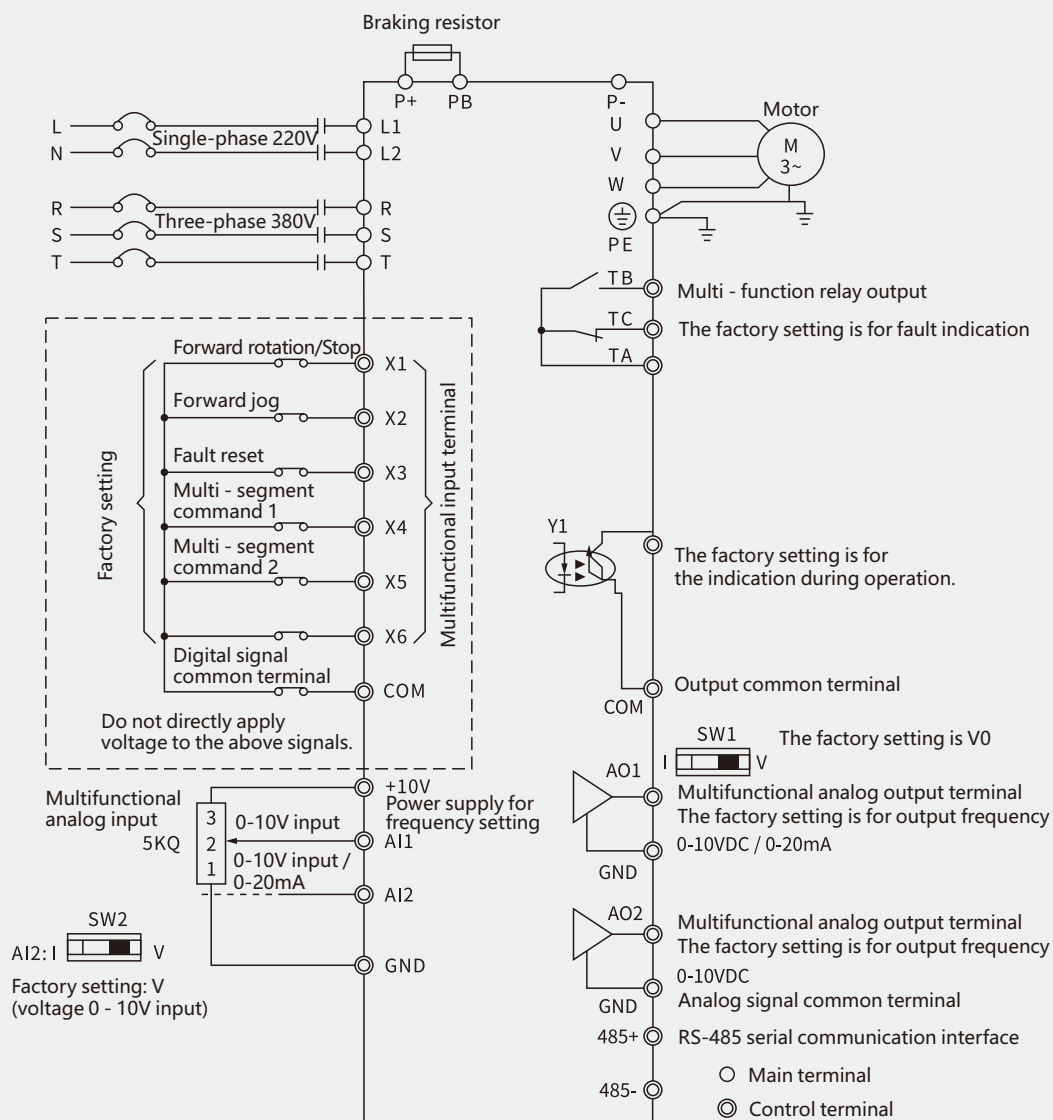
## List of machine types

| VFD model                                      | Power capacity (kVA) | Input current (A) | Output current (A) | Applicable motor (KW) |
|------------------------------------------------|----------------------|-------------------|--------------------|-----------------------|
| Single - phase power supply: 220V±15%, 50/60Hz |                      |                   |                    |                       |
| LNC820D-2S0007GB                               | 1.5                  | 8.2               | 5.0                | 0.75                  |
| LNC820D-2S0015GB                               | 3                    | 14.0              | 7.0                | 1.5                   |
| LNC820D-2S0022GB                               | 4.0                  | 23.0              | 9.6                | 2.2                   |
| Three - phase power supply: 380V±15%, 50/60Hz  |                      |                   |                    |                       |
| LNC820D-4T0007GB                               | 1.5                  | 3.4               | 2.1                | 0.75                  |
| LNC820D-4T0015GB                               | 3.0                  | 5.0               | 3.8                | 1.5                   |
| LNC820D-4T0022GB                               | 4.0                  | 5.8               | 5.1                | 2.2                   |
| LNC820D-4T0037GB                               | 5.9                  | 10.5              | 9                  | 3.7                   |
| LNC820D-4T0055GB                               | 8.9                  | 14.6              | 13                 | 5.5                   |
| LNC820D-4T0075GB                               | 11                   | 20.5              | 17                 | 7.5                   |
| LNC820D-4T0110GB                               | 17                   | 26                | 25                 | 11                    |
| LNC820D-4T0150GB                               | 21                   | 35                | 32                 | 15                    |
| LNC820D-4T0185GB                               | 24                   | 38.5              | 37                 | 18.5                  |
| LNC820D-4T0220GB                               | 30                   | 46.5              | 45                 | 22                    |

## Technical specifications

|                                | Item                                            | Specification                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic functions                | Output frequency                                | 0 - 500Hz                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | Carrier frequency                               | 0.8kHz ~ 12kHz, the carrier frequency can be automatically adjusted according to the load characteristics                                                                                                                                                                                                                                                                                                                          |
|                                | Frequency resolution                            | 0.01Hz                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                | Control mode                                    | V/F control                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Torque characteristics                          | With torque compensation and slip compensation, starting torque:<br>G - type machine 0.5Hz/150%, P - type machine 0.5Hz/100%                                                                                                                                                                                                                                                                                                       |
|                                | Torque boost                                    | Automatic torque boost; Manual torque boost 0.1% ~ 30.0%                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Overload capacity                               | G - type machine: 150% of rated output current for 60S<br>P - type machine: 130% of rated output current for 60S                                                                                                                                                                                                                                                                                                                   |
|                                | Speed regulation range                          | 1:100                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                | Speed stability accuracy                        | ±1%                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                | Automatic voltage regulation (AVR)              | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                                                                                                                                                                                                                                             |
|                                | Over - voltage and over - current stall control | Automatically limits the current and voltage during operation to prevent frequent over - current and over - voltage tripping                                                                                                                                                                                                                                                                                                       |
|                                | Fast current - limiting function                | Minimizes over - current faults to protect the normal operation of the frequency converter                                                                                                                                                                                                                                                                                                                                         |
|                                | V/F curve                                       | Four modes: linear type; multi - point type; complete V/f separation; incomplete V/f separation                                                                                                                                                                                                                                                                                                                                    |
|                                | Acceleration and deceleration curves            | Linear or S - curve acceleration and deceleration modes; four acceleration and deceleration times; acceleration and deceleration time range: 0.1 ~ 6500.0s                                                                                                                                                                                                                                                                         |
|                                | DC braking                                      | DC braking frequency: 0.00Hz ~ maximum frequency, braking time: 0.0s ~ 36.0s, braking action current value: 0.0% ~ 100.0%                                                                                                                                                                                                                                                                                                          |
|                                | Jog control                                     | Jog frequency range: 0.00Hz ~ 50Hz; jog acceleration and deceleration time: 0.0s ~ 6500.0s                                                                                                                                                                                                                                                                                                                                         |
|                                | Simple PLC, multi - speed operation             | Up to 16 - speed operation can be achieved through the built - in PLC or control terminals                                                                                                                                                                                                                                                                                                                                         |
|                                | Built - in PID                                  | It can easily implement a process - control closed - loop control system                                                                                                                                                                                                                                                                                                                                                           |
| Operating characteristics      | Operating command channel                       | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                                                                                                                                                                           |
|                                | Frequency source                                | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, multi - speed, PID, simple PLC, which can be switched in various ways                                                                                                                                                                                                        |
|                                | Auxiliary frequency source                      | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                                                                                                                                                                                 |
|                                | Input terminals                                 | Six digital input terminals, one of which can be used as a high - speed pulse input.<br>Two analog input channels, AI1: input range 0 ~ +10V, AI2: input range 0 ~ +10V/0 - 20mA                                                                                                                                                                                                                                                   |
| Display and keyboard operation | Output terminals                                | One high - speed pulse output terminal, outputting square - wave signals from 0kHz ~ 50kHz, which can realize the output of physical quantities such as set frequency and output frequency<br>One digital output terminal<br>One relay output terminal<br>Two analog output terminals, AO1: 0V ~ 10V, AO2: 0V ~ 10V/0-20mA, which can indicate output frequency/current/voltage/frequency command/speed/power factor signal output |
|                                | LED display                                     | It is equipped with 8 function keys, a 5 - digit 7 - segment LED, and 5 status LED indicators. It can perform forward rotation, reverse rotation, reset, stop, jog, as well as parameter setting and display                                                                                                                                                                                                                       |
| Protection characteristics     | Protection function                             | Motor short - circuit detection upon power - on, output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, etc                                                                                                                                                                                                                |
| Environment                    | Application place                               | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                                                                                                                                                                                    |
|                                | Altitude                                        | Less than 1000m                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Ambient humidity                                | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                                                                                                                                                                              |
|                                | Humidity                                        | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                                                                                                                                                                                |
|                                | Vibration                                       | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                                                                                                                                                                               |
|                                | Storage temperature                             | - 20°C ~ + 60°C                                                                                                                                                                                                                                                                                                                                                                                                                    |

## Basic wiring diagram

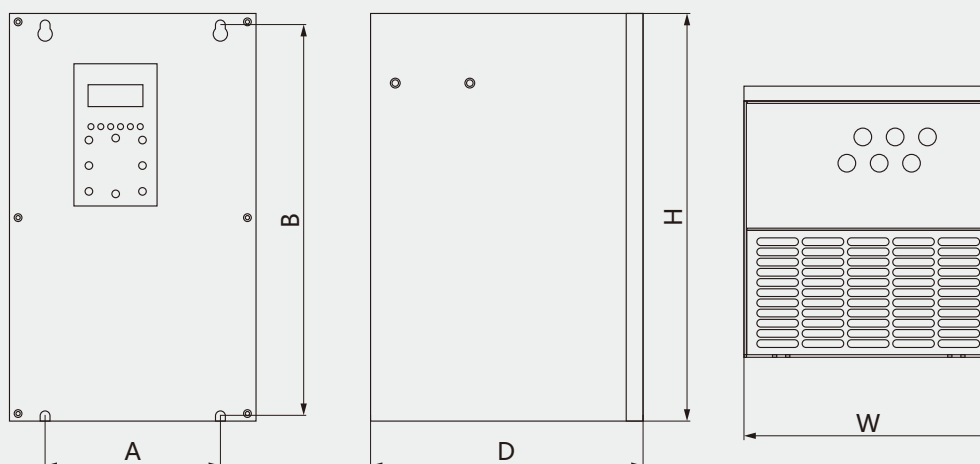


0.75-75kW Wiring diagram

## Industry application

Industries such as textiles, papermaking, wire - drawing, machine tools, packaging, food, fans, water pumps, etc., and various automated production equipment series.

## Appearance and installation dimensions



Schematic diagram of the overall dimensions and installation dimensions of the sheet metal structure

| Sheet metal structure dimensions |                    |       |       |                         |       |                       |
|----------------------------------|--------------------|-------|-------|-------------------------|-------|-----------------------|
| Machine type                     | Overall dimensions |       |       | Installation dimensions |       | Installation aperture |
| kW                               | H(mm)              | W(mm) | D(mm) | A(mm)                   | B(mm) | mm                    |
| 0.75-5.5                         | 245                | 138   | 180   | 88                      | 235.5 | Φ5                    |
| 7.5-11                           | 280                | 170   | 186   | 120                     | 267.5 | Φ6                    |
| 15-22                            | 340                | 190   | 199   | 140                     | 327.5 | Φ6                    |

Innovation / extreme / smart  
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# LNC860S

LNC860S VECTOR VFD

矢量型变频器

绿色  
环保  
Eco-friendly



安全  
可靠  
Safe and  
Reliable



## Overview

The LNC860S Series General-purpose Current Vector VFD is a brand-new product independently developed by our company. It features powerful current vector control performance, enabling higher-performance and higher-precision motor drive control. Equipped with a variety of optional extension cards, it boasts powerful functions and supports multiple fieldbuses. It provides richer frequency source superposition and switching modes, advanced PID algorithm, 16-step speed control, automatic program operation, as well as wobble frequency control and speed tracking functions. While improving product reliability and environmental adaptability, it also enhances user-friendliness and industry-specific design, resulting in optimized functions, more flexible applications and more stable performance. It is widely applicable to high-end applications in industries such as CNC machining centers, hoisting equipment, printing and packaging machinery, textile equipment, printing and dyeing equipment, metal products, petroleum and chemical engineering, etc.

## Model meaning

LNC860S - 4T 0015 G B

Braking unit (Blank: None; B: With braking unit)  
Machine type (G: General - purpose machine type; P: Machine type for fans and pumps)  
Suitable power

|                       |      |      |     |      |      |
|-----------------------|------|------|-----|------|------|
| Label                 | 0007 | 0015 | ... | 0450 | 7500 |
| Compatible Motor (KW) | 0.75 | 1.5  | ... | 45   | 750  |

Voltage level 2S: Single - phase 220V; 4T: Three - phase 380V  
VFD series

## Product features

- ▲ Reliability  
Multiple protection functions: over - voltage, over - current, overload, over - heat, etc.  
Setting of over - voltage and over - current stall protection levels  
Two - segment skip frequencies can effectively avoid mechanical resonance points
- ▲ High - performance  
Automatic torque boost: Starting torque can reach 150% at 0.5Hz  
Automatic slip compensation: More accurate speed  
No - stop during momentary power failure: Maintain short - time operation during momentary power outage  
Low noise: Smoother motor operation  
Overload capacity: Can operate at 150% rated torque for 60 seconds
- ▲ Multifunctional  
Main/auxiliary frequency addition and subtraction control frequency methods  
Pulse input for frequency control  
Maximum pulse output up to 100KHZ  
Can display voltage, current, set frequency, output frequency, rotational speed, etc. according to user definition  
Frequency - swing, fixed - length and counting functions  
Built - in PLC can operate in 16 - step speed  
Supports multiple frequency settings: digital setting, analog setting, PID setting, multi - step speed setting, simple PLC setting, PULSE pulse setting, RS485 communication setting  
Embedded RS485 communication interface, supports Modbus protocol
- ▲ Input and output  
Input functions: two - wire/three - wire control mode, external EF, UP/DOWN, automatic program operation control, counting, pulse input, etc  
Output functions: counting - reached indication, frequency - reached indication, over - torque indication, overload early warning, etc.
- ▲ The models with 0.75 - 22KW can have a built - in braking unit

## Nameplate instructions

|         |                           |
|---------|---------------------------|
| MODEL:  | LNC860S-4T0040GB/4T0055PB |
| POWER:  | 4KW 9A/5.5KW 13A          |
| INPUT:  | 3PH AC380V 50HZ/60HZ      |
| OUTPUT: | 3PH AC0V-380V 0HZ-500HZ   |
| S.N:    | Barcode                   |

## Industry application

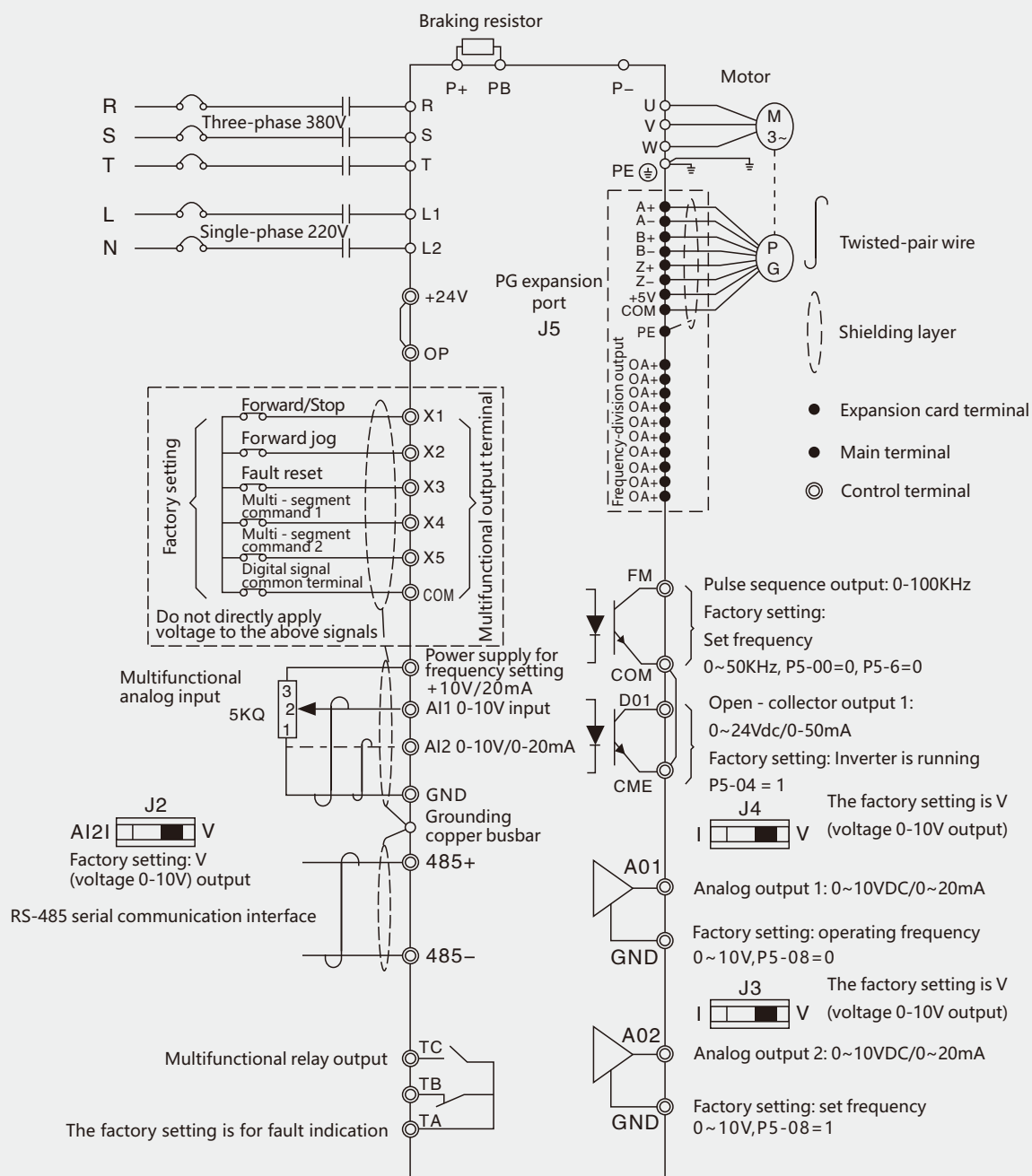
Industries such as CNC machining centers, lifting equipment, printing and packaging equipment, textile equipment, dyeing and printing equipment, metal products, petrochemicals, and high - end application scenarios.



## Technical specifications

|                                | Item                                                      | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control characteristics        | Output frequency                                          | 0 - 500Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                | Carrier frequency                                         | 0.8kHz ~ 12kHz. The carrier frequency can be automatically adjusted according to the load characteristics.                                                                                                                                                                                                                                                                                                                                                                               |
|                                | Output frequency resolution                               | Digital setting: 0.01Hz<br>Analog setting: Maximum frequency × 0.025%                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Control mode                                              | Open - loop vector control (SVC)<br>V/F control<br>Closed - loop vector control (FVC)                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Torque characteristics                                    | With torque compensation and slip compensation, the starting torque can reach 150% at 0.25Hz (SVC)                                                                                                                                                                                                                                                                                                                                                                                       |
|                                | Torque control accuracy                                   | SVC: Above 5Hz ± 5% FVC: ± 3%                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                | Over-voltage and over-current stall prevention protection | Automatically limit the voltage and current during use to prevent frequent over - voltage and over - current tripping                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Speed regulation range                                    | 1:200 (SVC) 1:1000 (FVC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Speed stabilization accuracy                              | ±0.5% (SVC) ±0.02% (FVC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Overload capacity                                         | 150% of the rated output current for one minute                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | V/F curve                                                 | Four modes: linear; multi - point; complete V/f separation; incomplete V/f separation                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Acceleration and deceleration curve                       | Linear or S - curve acceleration and deceleration modes;<br>four acceleration and deceleration times; acceleration and deceleration time range 0.1 ~ 6500.0s                                                                                                                                                                                                                                                                                                                             |
|                                | DC braking                                                | DC braking frequency: 0.00Hz ~ maximum frequency. Braking time: 0.0s ~ 36.0s,<br>braking action current value: 0.0% ~ 100.0%                                                                                                                                                                                                                                                                                                                                                             |
|                                | Jog control                                               | Jog frequency range: 0.00Hz ~ maximum frequency; jog acceleration and deceleration time 0.1s ~ 6500.0s                                                                                                                                                                                                                                                                                                                                                                                   |
|                                | Simple PLC, multi-step speed operation                    | Up to 16 - step speed operation can be achieved through the built - in PLC or control terminals                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | Built - in PID                                            | It can easily realize the process - control closed - loop control system                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Automatic voltage regulation (AVR)                        | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                | Fast current - limiting function                          | Minimize over - current faults to the greatest extent and protect the normal operation of the frequency converter                                                                                                                                                                                                                                                                                                                                                                        |
| Operating characteristics      | Operating command channel                                 | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                                                                                                                                                                                                                                 |
|                                | Frequency source                                          | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, multi - speed, PID, simple PLC, which can be switched in various ways                                                                                                                                                                                                                                                              |
|                                | Auxiliary frequency source                                | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                                                                                                                                                                                                                                       |
|                                | Input terminals                                           | Five digital input terminals, one of which can be used as a high - speed pulse input.<br>Two analog input channels, AI1: input range 0 ~ +10V, AI2: input range 0 ~ +10V/0 - 20mA                                                                                                                                                                                                                                                                                                        |
|                                | Output terminals                                          | One high - speed pulse output terminal, capable of outputting a square - wave signal from 0kHz ~ 50kHz, which can realize the output of physical quantities such as set frequency and output frequency. It can be selected as open - drain type<br>One digital output terminal<br>One relay output terminal<br>Two analog output terminals: 0V ~ 10V/0 - 20mA, which can indicate the output of output frequency/current/voltage/frequency command/rotational speed/power factor signals |
| Display and keyboard operation | LED display                                               | It is equipped with 8 function keys, a 5 - digit 7 - segment LED, and 5 status LED indicators<br>It can perform forward rotation, reverse rotation, reset, stop, jog, as well as parameter setting and display                                                                                                                                                                                                                                                                           |
| Protection characteristics     | Protection function                                       | Motor short - circuit detection upon power - on, input and output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, short - circuit protection, etc                                                                                                                                                                                                                                |
| Other characteristics          | Optional card                                             | IO expansion card, communication card (isolated type), PG card                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Multi - encoder support                                   | Supports differential, open - drain, UVW, resolver                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Environment                    | Application place                                         | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                                                                                                                                                                                                                                          |
|                                | Altitude                                                  | Less than 1000m                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                | Ambient humidity                                          | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Humidity                                                  | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                | Vibration                                                 | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | Storage temperature                                       | - 20°C ~ + 60°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Basic wiring diagram



For the overall dimensions and schematic diagrams, please refer to P07 ~ P08 in detail.

Innovation / extreme / smart  
创新 / 极致 / 智能

# LNC860E

LNC860E PERMANENT MAGNET SYNCHRONOUS VFD

永磁同步变频器

绿色  
环保

Eco-friendly



安全  
可靠

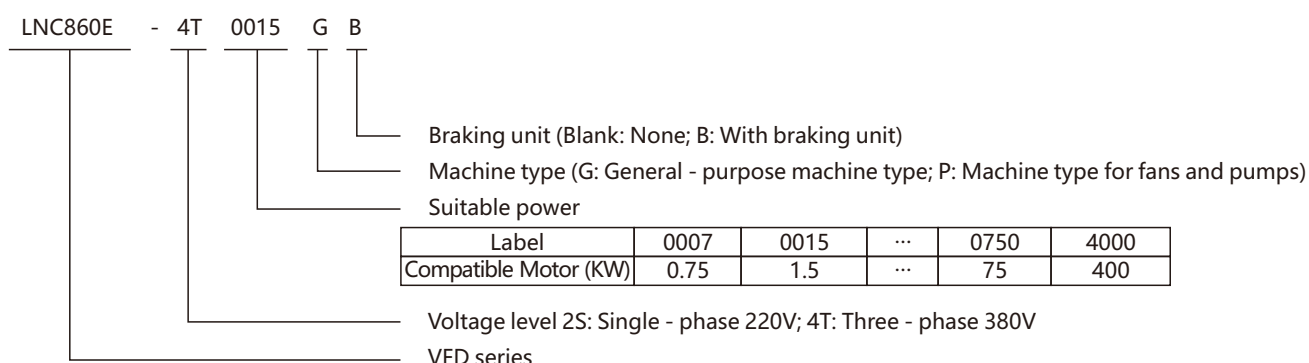
Safe and  
Reliable



## Overview

The LNC860E Series VFD is a general-purpose high-performance vector inverter, mainly used to control and adjust the speed and torque of three-phase AC synchronous motors. It adopts a 32-bit DSP chip and integrates core control algorithms such as closed-loop vector control, open-loop vector control and torque control, enabling high-performance and high-precision drive control of permanent magnet synchronous motors. It delivers high torque output at low speed, with excellent dynamic performance and strong overload capacity, and supports a variety of PG cards. While improving product reliability and environmental adaptability, it also enhances user-friendliness and industry-specific design, resulting in optimized functions, more flexible applications and more stable performance. It is widely applicable to medium-to-high-end applications such as injection molding machines, air compressors, medium and high-power servo systems, CNC machining centers, hoisting equipment and textile machinery.

## Model meaning



## Product features

- ▲ Open - loop and closed - loop vector control for permanent - magnet synchronous motors
- ▲ Supports various encoders: ABZ incremental, UVW incremental and resolver
- ▲ Wide voltage input, automatic output voltage regulation (AVR), non - stop operation during momentary power loss, with stronger adaptability
- ▲ Supports various frequency setting methods: digital setting, analog quantity setting, PID setting, RS485 communication setting
- ▲ Smooth start - up and stable operation, with speed tracking function
- ▲ Can share the DC bus to save energy
- ▲ Low noise and strong anti - interference ability
- ▲ Strong overload capacity, 150% of the rated torque can operate for 60 seconds
- ▲ Built - in advanced PID algorithm, with fast response, strong adaptability and easy debugging
- ▲ 16 - step speed control, simple PLC to achieve multi - function logic control such as timing, constant - speed and directional control
- ▲ Multiple protection functions: over - voltage, over - current, overload, over - heat, etc
- ▲ Supports LCD panel display and operation in Chinese and English
- ▲ Supports Profibus - DP and MODBUS communication
- ▲ Structurally adopts an independent air duct design, the fan can be freely disassembled, with good heat dissipation performance

## Nameplate instructions

|         |                           |
|---------|---------------------------|
| MODEL:  | LNC860E-4T0040GB/4T0055PB |
| POWER:  | 4KW 9A/5.5KW 13A          |
| INPUT:  | 3PH AC380V 50HZ/60HZ      |
| OUTPUT: | 3PH AC0V-380V 0HZ-400HZ   |
| S.N:    | Barcode                   |

## Technical specifications

|                                | Item                                   | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control characteristics        | Output frequency                       | 0-500Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                | Carrier frequency                      | 0.8kHz ~ 12kHz. The carrier frequency can be automatically adjusted according to the load characteristics                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Output frequency resolution            | 0.01Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Control mode                           | Open - loop vector control (SVC)<br>V/F control<br>Closed - loop vector control (FVC)                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | Torque characteristics                 | With torque compensation and slip compensation, the starting torque can reach 150% at 0.25Hz (SVC)                                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Torque control accuracy                | ±5% ( FVC )                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                | Stall prevention action criterion      | Set as a percentage of the rated current, ranging from 20% to 250%                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Speed regulation range                 | 1: 100 ( SVC )      1:1000 ( FVC )                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Speed stabilization accuracy           | ±0.5% ( SVC )      ±0.02% ( FVC )                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                | Overload capacity                      | 150% of the rated output current for one minute                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                | V/F curve                              | Four modes: linear; multi - point; complete V/f separation; incomplete V/f separation                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | Acceleration and deceleration curve    | Linear or S - curve acceleration and deceleration modes;<br>four acceleration and deceleration times; acceleration and deceleration time range 0.1 ~ 6500.0s                                                                                                                                                                                                                                                                                                                              |
|                                | DC braking                             | DC braking frequency: 0.00Hz ~ maximum frequency. Braking time: 0.0s ~ 36.0s,<br>braking action current value: 0.0% ~ 100.0%                                                                                                                                                                                                                                                                                                                                                              |
|                                | Jog control                            | Jog frequency range: 0.00Hz ~ maximum frequency; jog acceleration and deceleration time 0.1s ~ 6500.0s                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Simple PLC, multi-step speed operation | Up to 16 - step speed operation can be achieved through the built - in PLC or control terminals                                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Built - in PID                         | It can easily realize the process - control closed - loop control system                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                | Automatic voltage regulation (AVR)     | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                | Fast current - limiting function       | Minimize over - current faults to the greatest extent and protect the normal operation of the frequency converter                                                                                                                                                                                                                                                                                                                                                                         |
| Operating characteristics      | Operating command channel              | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                                                                                                                                                                                                                                  |
|                                | Frequency source                       | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, which can be switched in various ways                                                                                                                                                                                                                                                                                               |
|                                | Auxiliary frequency source             | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Input terminals                        | Six digital input terminals, one of which can be used as a high - speed pulse input.<br>Two analog input channels, AI1: input range 0 ~ +10V, AI2: input range 0 ~ +10V/0 - 20mA                                                                                                                                                                                                                                                                                                          |
|                                | Output terminals                       | One high - speed pulse output terminal, capable of outputting a square - wave signal from 0kHz ~ 50kHz, which can realize the output of physical quantities such as set frequency and output frequency. It can be selected as open - drain type<br>One digital output terminal<br>One relay output terminal<br>Two analog output terminals: 0V ~ 10V/0 - 20mA, which can indicate the output of output frequency/ current/voltage/frequency command/rotational speed/power factor signals |
| Display and keyboard operation | LED display                            | It is equipped with 8 function keys, a 5 - digit 7 - segment LED, and 5 status LED indicators<br>It can perform forward rotation, reverse rotation, reset, stop, jog, as well as parameter setting and display                                                                                                                                                                                                                                                                            |
|                                | Protection function                    | Motor short - circuit detection upon power - on, input and output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, etc                                                                                                                                                                                                                                                             |
| Environment                    | Application place                      | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                                                                                                                                                                                                                                           |
|                                | Altitude                               | Less than 1000m                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                | Ambient humidity                       | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                                                                                                                                                                                                                                     |
|                                | Humidity                               | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                | Vibration                              | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                | Storage temperature                    | - 20°C ~ + 60°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Industries such as textiles, papermaking, wire - drawing, machine tools, packaging, food, fans, water pumps, etc., and various automated production equipment series.  
For the overall dimensions and schematic diagrams, please refer to pages 07 - 08.

Innovation / extreme / smart  
创新 / 极致 / 智能

# LNC680

LNC680 MEDIUM VOLTAGE VFD

中压变频器

绿色  
环保  
Eco-friendly



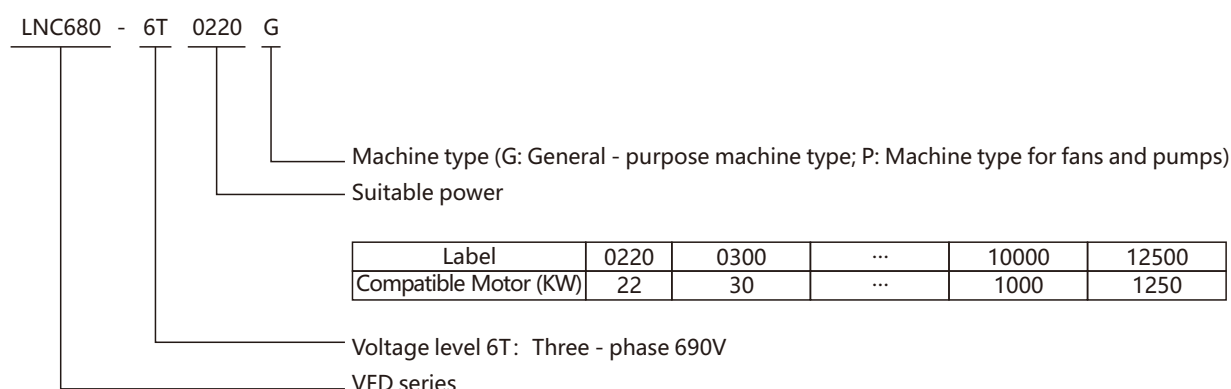
安全  
可靠  
Safe and  
Reliable



## Overview

The LNC680 Series is a medium-voltage VFD equipped with an advanced vectorized V/F algorithm. Based on the simplicity and ease of use of the V/F algorithm, its performance is equivalent to that of vector control algorithms. It provides larger low-frequency torque, high speed stability accuracy and fast response. It can be applied to coal mine main fans, centrifugal fans, water pumps, belt conveyors, air compressors, Roots blowers and permanent magnet direct drive systems.

## Model meaning



## Product features

- ▲ Output power range: 22KW - 1250KW
- ▲ Supports various V/F controls such as linear V/F control, square V/F control, and multi-point V/F control
- ▲ PID process control: Built-in powerful PID control, including dormancy, awakening, feedback overpressure protection, undervoltage protection, etc.
- ▲ PID setpoint: The PID setpoint can be set directly with a digital knob without entering parameters.
- ▲ Motor ground protection: Real-time monitoring of whether the motor is grounded and whether the output is phase-lost, providing comprehensive protection for the motor.
- ▲ Speed tracking and no-stop-on-instantaneous-power-failure: In the case of wind turbines, it can be equipped with a motor speed monitoring card to monitor the motor speed and achieve smooth starting. After an instantaneous power outage, it can automatically restart without impact when the power is restored, which is especially suitable for important occasions such as gas furnace fans.
- ▲ Rich expansion cards: It can be adapted to a variety of input and output terminal expansion cards, relay output expansion cards, etc.
- ▲ Communication: Stable RS485 communication, adapted to isolated 485 communication cards, with super-strong anti-interference ability.
- ▲ Power balance: Ensures balanced output torque of the master-slave frequency converters after they are connected to the motor through the load.
- ▲ Speed synchronization: Ensures speed synchronization of the master-slave frequency converters after they are connected to the motor through the load.

## Nameplate instructions

|         |                         |
|---------|-------------------------|
| MODEL:  | LNC680-6T0220G          |
| POWER:  | 22KW 24A                |
| INPUT:  | 3PH AC690V 50HZ/60HZ    |
| OUTPUT: | 3PH AC0V-690V 0HZ-300HZ |
| S.N:    | Barcode                 |

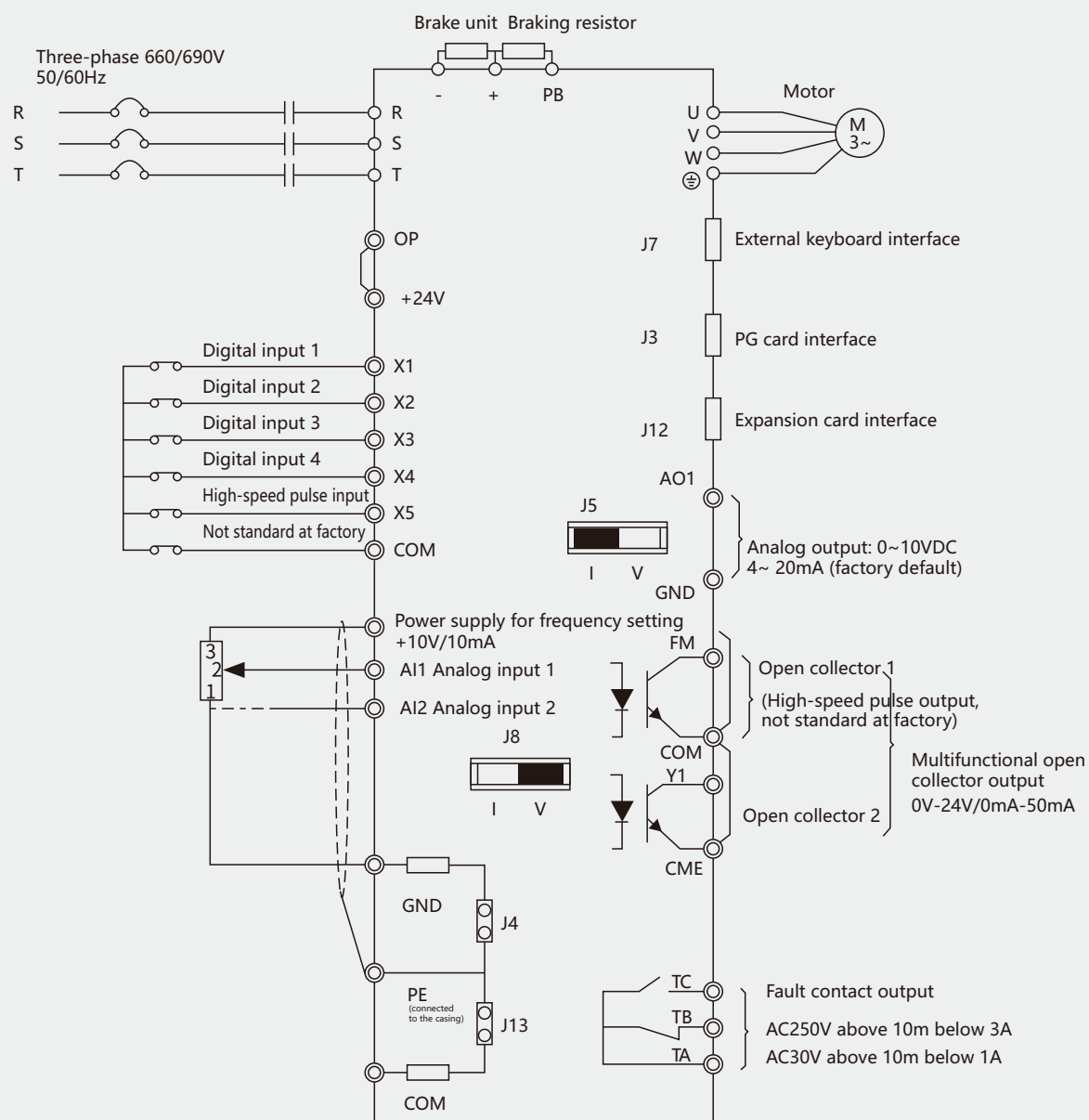
## List of machine types

| VFD model                                         | Power capacity (kVA) | Input current (A) | Output current (A) | Applicable motor (KW) |
|---------------------------------------------------|----------------------|-------------------|--------------------|-----------------------|
| Three - phase power supply: 660-690V±15%, 50/60Hz |                      |                   |                    |                       |
| LNC680-6T0220G                                    | 32                   | 27                | 24                 | 22                    |
| LNC680-6T0300G                                    | 43                   | 38                | 33                 | 30                    |
| LNC680-6T0370G                                    | 50                   | 46                | 41                 | 37                    |
| LNC680-6T0450G                                    | 62                   | 55                | 50                 | 45                    |
| LNC680-6T0550G                                    | 84                   | 70                | 62                 | 55                    |
| LNC680-6T0750G                                    | 107                  | 90                | 85                 | 75                    |
| LNC680-6T0900G                                    | 125                  | 105               | 102                | 90                    |
| LNC680-6T1100G                                    | 155                  | 130               | 125                | 110                   |
| LNC680-6T1320G                                    | 192                  | 170               | 150                | 132                   |
| LNC680-6T1600G                                    | 231                  | 200               | 175                | 185                   |
| LNC680-6T2000G                                    | 250                  | 235               | 215                | 200                   |
| LNC680-6T2200G                                    | 280                  | 247               | 245                | 220                   |
| LNC680-6T2500G                                    | 355                  | 265               | 260                | 250                   |
| LNC680-6T2800G                                    | 396                  | 305               | 299                | 280                   |
| LNC680-6T3150G                                    | 445                  | 350               | 330                | 315                   |
| LNC680-6T3550G                                    | 500                  | 382               | 374                | 355                   |
| LNC680-6T4000G                                    | 565                  | 435               | 410                | 400                   |
| LNC680-6T4500G                                    | 630                  | 490               | 465                | 450                   |
| LNC680-6T5000G                                    | 700                  | 595               | 550                | 500                   |
| LNC680-6T5600G                                    | 784                  | 605               | 590                | 560                   |
| LNC680-6T6300G                                    | 900                  | 680               | 650                | 630                   |
| LNC680-6T7100G                                    | 980                  | 750               | 730                | 750                   |
| LNC680-6T8000G                                    | 1105                 | 840               | 820                | 800                   |
| LNC680-6T10000G                                   | 1380                 | 1050              | 1025               | 1000                  |
| LNC680-6T12500G                                   | 1725                 | 1320              | 1280               | 1250                  |

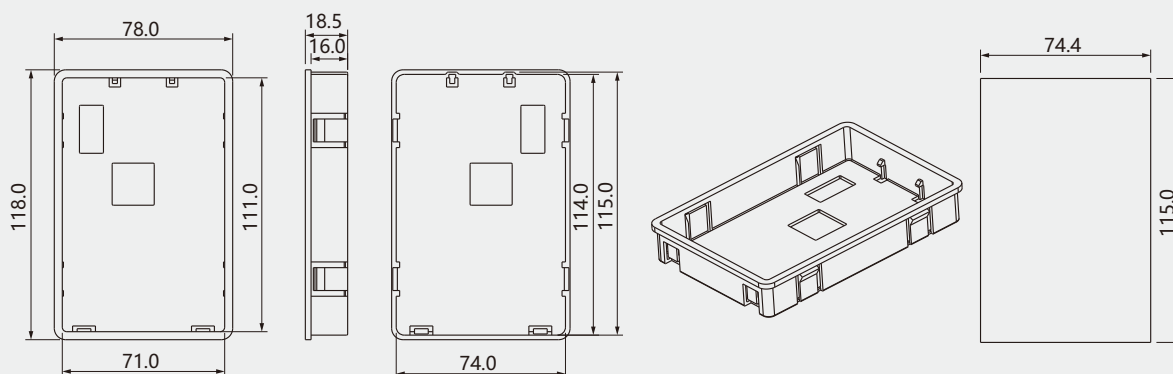
## Technical specifications

|                                | Item                                            | Specification                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic functions                | Output frequency                                | 0-3200Hz                                                                                                                                                                                                                                                                                                                                                                               |
|                                | Carrier frequency                               | 0.8kHz ~ 12kHz, the carrier frequency can be automatically adjusted according to the load characteristics                                                                                                                                                                                                                                                                              |
|                                | Frequency resolution                            | 0.01Hz                                                                                                                                                                                                                                                                                                                                                                                 |
|                                | Control mode                                    | Open - loop vector control (SVC)<br>Closed - loop vector control (FVC)<br>V/F control                                                                                                                                                                                                                                                                                                  |
|                                | Torque characteristics                          | With torque compensation and slip compensation, starting torque:<br>G - type machine 0.5Hz/150%, P - type machine 0.5Hz/100%                                                                                                                                                                                                                                                           |
|                                | Torque boost                                    | Automatic torque boost; Manual torque boost 0.1% ~ 30.0%                                                                                                                                                                                                                                                                                                                               |
|                                | Overload capacity                               | G - type machine: 150% of rated output current for 60s                                                                                                                                                                                                                                                                                                                                 |
|                                | Speed regulation range                          | 1: 200 (SVC) 1: 1000 (FVC)                                                                                                                                                                                                                                                                                                                                                             |
|                                | Speed stability accuracy                        | ±0.5% (SVC) ±0.02% (FVC)                                                                                                                                                                                                                                                                                                                                                               |
|                                | Automatic voltage regulation (AVR)              | When the grid voltage changes, it can automatically maintain a constant output voltage                                                                                                                                                                                                                                                                                                 |
|                                | Over - voltage and over - current stall control | Automatically limits the current and voltage during operation to prevent frequent over - current and over - voltage tripping                                                                                                                                                                                                                                                           |
|                                | Fast current - limiting function                | Minimizes over - current faults to protect the normal operation of the frequency converter                                                                                                                                                                                                                                                                                             |
|                                | V/F curve                                       | Four modes: linear type; multi - point type; complete V/f separation; incomplete V/f separation                                                                                                                                                                                                                                                                                        |
|                                | Acceleration and deceleration curves            | Linear or S - curve acceleration and deceleration modes; four acceleration and deceleration times; acceleration and deceleration time range: 0.1 ~ 6500.0s                                                                                                                                                                                                                             |
|                                | DC braking                                      | DC braking frequency: 0.00Hz ~ maximum frequency, braking time: 0.0s ~ 36.0s, braking action current value: 0.0% ~ 100.0%                                                                                                                                                                                                                                                              |
|                                | Jog control                                     | Jog frequency range: 0.00Hz ~ 50Hz; jog acceleration and deceleration time: 0.0s ~ 6500.0s                                                                                                                                                                                                                                                                                             |
|                                | Simple PLC, multi - speed operation             | Up to 16 - speed operation can be achieved through the built - in PLC or control terminals                                                                                                                                                                                                                                                                                             |
|                                | Built - in PID                                  | It can easily implement a process - control closed - loop control system                                                                                                                                                                                                                                                                                                               |
| Operating characteristics      | Operating command channel                       | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                                                                                                                               |
|                                | Frequency source                                | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, multi - speed, PID, simple PLC, which can be switched in various ways                                                                                                                                                            |
|                                | Auxiliary frequency source                      | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                                                                                                                                     |
|                                | Input terminals                                 | Standards:<br>5 digital input terminals, among which 1 supports high - speed pulse input up to 100kHz (optional)<br>Two analog input terminals: one only supports 0 - +10V, and the other supports 0 - +10V/0 - 20mA<br>Expansion capabilities:<br>5 digital input terminals<br>1 analog input terminal, supporting voltage input from - 10V to +10V, and also supporting PT100/PT1000 |
|                                | Output terminals                                | Standards:<br>1 digital output terminal<br>1 relay output terminal<br>1 analog output terminal, supporting 0V - 10V/0 - 20mA<br>Expansion capabilities:<br>1 relay output terminal<br>01 analog output terminal, supporting 0V - 10V/0 - 20mA                                                                                                                                          |
| Display and keyboard operation | LED display                                     | It is equipped with 8 function keys, a 5 - digit 7 - segment LED, and 5 status LED indicators. It can perform forward rotation, reverse rotation, reset, stop, jog, as well as parameter setting and display                                                                                                                                                                           |
| Protection characteristics     | Protection function                             | Motor short - circuit detection upon power - on, output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, etc                                                                                                                                                                    |
| Environment                    | Application place                               | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                                                                                                                                        |
|                                | Altitude                                        | Less than 1000m                                                                                                                                                                                                                                                                                                                                                                        |
|                                | Ambient humidity                                | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                                                                                                                                  |
|                                | Humidity                                        | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                                                                                                                                    |
|                                | Vibration                                       | Less than 5.9m/s² (0.6g)                                                                                                                                                                                                                                                                                                                                                               |
|                                | Storage temperature                             | - 20°C ~ + 60°C                                                                                                                                                                                                                                                                                                                                                                        |

## Basic wiring diagram



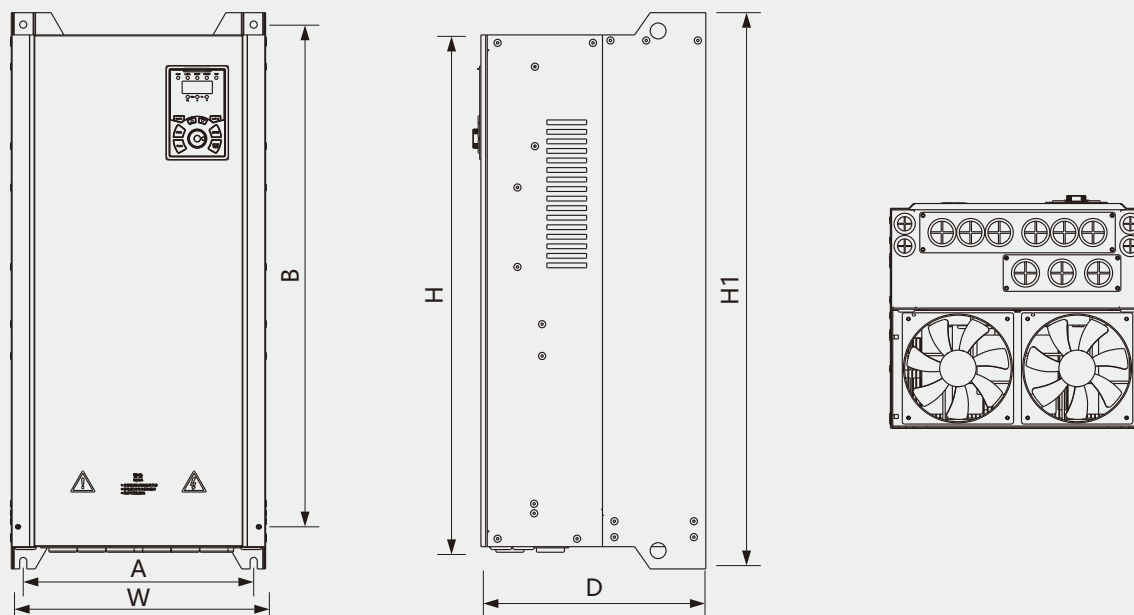
## Installation dimensions of the keyboard base



(Power range: 22KW - 1250KW)

Schematic diagram of the shape and opening dimensions of 660V/690V external keyboard bracket

## Overall installation dimensions



Schematic diagram of the external dimensions of 660V/690V chassis structure

| Frequency converter model | Mounting hole position mm |      | Overall dimensions mm |        |       |       | Mounting hole diameter mm | Installation method |
|---------------------------|---------------------------|------|-----------------------|--------|-------|-------|---------------------------|---------------------|
|                           | A                         | B    | H(mm)                 | H1(mm) | W(mm) | D(mm) |                           |                     |
| LNC680-6T0220G            | 200                       | 534  | 500                   | 550    | 260   | 240   | Φ7                        | Wall-mounted        |
| LNC680-6T0300G            | 200                       | 534  | 500                   | 550    | 260   | 240   | Φ7                        | Wall-mounted        |
| LNC680-6T0370G            | 200                       | 534  | 500                   | 550    | 260   | 240   | Φ7                        | Wall-mounted        |
| LNC680-6T0450G            | 200                       | 534  | 500                   | 550    | 260   | 240   | Φ7                        | Wall-mounted        |
| LNC680-6T0550G            | 200                       | 534  | 500                   | 550    | 260   | 240   | Φ7                        | Wall-mounted        |
| LNC680-6T0750G            | 290                       | 675  | 644                   | 700    | 320   | 283   | Φ9                        | Wall-mounted        |
| LNC680-6T0900G            | 290                       | 675  | 644                   | 700    | 320   | 283   | Φ9                        | Wall-mounted        |
| LNC680-6T1100G            | 290                       | 675  | 644                   | 700    | 320   | 283   | Φ9                        | Wall-mounted        |
| LNC680-6T1320G            | 290                       | 675  | 644                   | 700    | 320   | 283   | Φ9                        | Wall-mounted        |
| LNC680-6T1600G            | 380                       | 835  | 804                   | 860    | 410   | 303   | Φ11                       | Wall-mounted        |
| LNC680-6T2000G            | 380                       | 835  | 804                   | 860    | 410   | 303   | Φ11                       | Wall-mounted        |
| LNC680-6T2200G            | 380                       | 835  | 804                   | 860    | 410   | 303   | Φ11                       | Wall-mounted        |
| LNC680-6T2500G            | 460                       | 975  | 944                   | 1000   | 500   | 330   | Φ13                       | Wall-mounted        |
| LNC680-6T2800G            | 460                       | 975  | 944                   | 1000   | 500   | 330   | Φ13                       | Wall-mounted        |
| LNC680-6T3150G            | 460                       | 975  | 944                   | 1000   | 500   | 330   | Φ13                       | Wall-mounted        |
| LNC680-6T3550G            | 460                       | 975  | 944                   | 1000   | 500   | 330   | Φ13                       | Wall-mounted        |
| LNC680-6T4000G            | 590                       | 1175 | 1144                  | 1200   | 630   | 340   | Φ13                       | Wall-mounted        |
| LNC680-6T4500G            | 590                       | 1175 | 1144                  | 1200   | 630   | 340   | Φ13                       | Wall-mounted        |
| LNC680-6T5000G            | 590                       | 1175 | 1144                  | 1200   | 630   | 340   | Φ13                       | Wall-mounted        |
| LNC680-6T5600G            | /                         | /    | /                     | 1700   | 920   | 520   | /                         | Cabinet unit        |
| LNC680-6T6300G            | /                         | /    | /                     | 1700   | 920   | 520   | /                         | Cabinet unit        |
| LNC680-6T7100G            | /                         | /    | /                     | 1700   | 920   | 520   | /                         | Cabinet unit        |
| LNC680-6T8000G            | /                         | /    | /                     | 1700   | 1200  | 520   | /                         | Cabinet unit        |
| LNC680-6T10000G           | /                         | /    | /                     | 1700   | 1200  | 520   | /                         | Cabinet unit        |
| LNC680-6T12500G           | /                         | /    | /                     | 1750   | 1200  | 520   | /                         | Cabinet unit        |

## Industry application

Coal mine main ventilation fan, centrifugal fan, water pump, belt conveyor, air compressor, Roots blower, permanent magnet direct drive.

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# LNC180

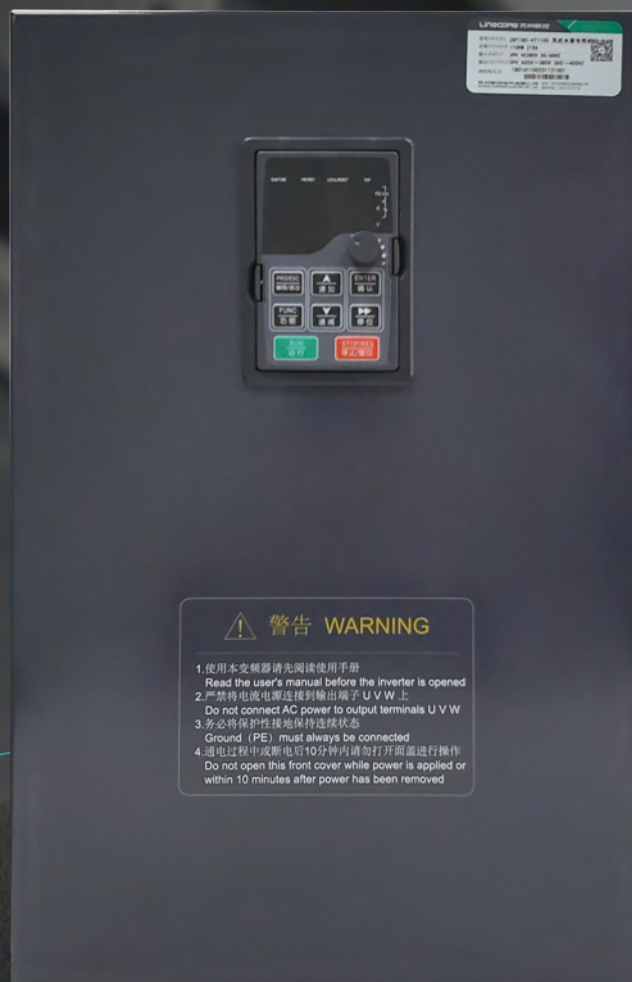
LNC180 FAN & PUMP DEDICATED VFD

风机水泵专用变频器

绿色  
环保  
Eco-friendly



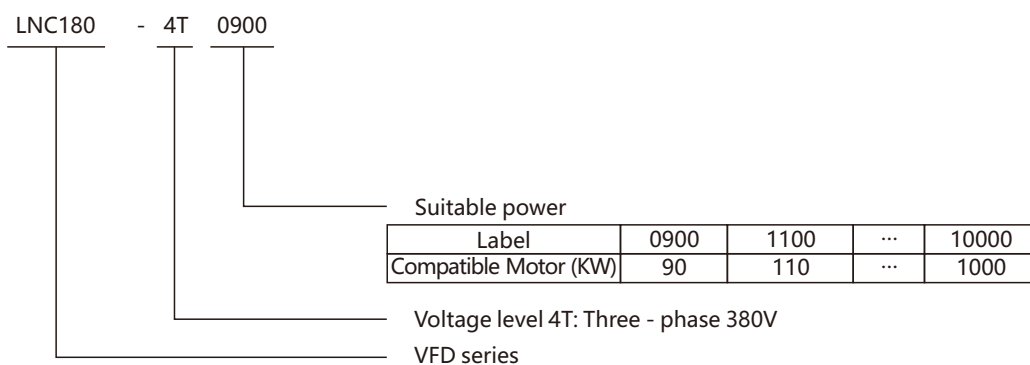
安全  
可靠  
Safe and  
Reliable



## Overview

The LNC180 Series VFD is a special-purpose inverter for fans and water pumps, mainly used to control and adjust the speed of three-phase AC asynchronous motors. Adopting high-performance control technology, it features high torque output at low speed, excellent dynamic performance and strong overload capacity, and is mainly used for driving fans and water pumps. This series is equipped with RS485 communication as standard. Power range: 90kW ~ 1000kW - 380V.

## Model meaning



## Nameplate instructions

|         |                         |
|---------|-------------------------|
| MODEL:  | LNC180-4T0900           |
| POWER:  | 90KW                    |
| INPUT:  | 3PH AC380V 50HZ/60HZ    |
| OUTPUT: | 3PH AC0V-380V 0HZ-400HZ |
| S.N:    | Barcode                 |

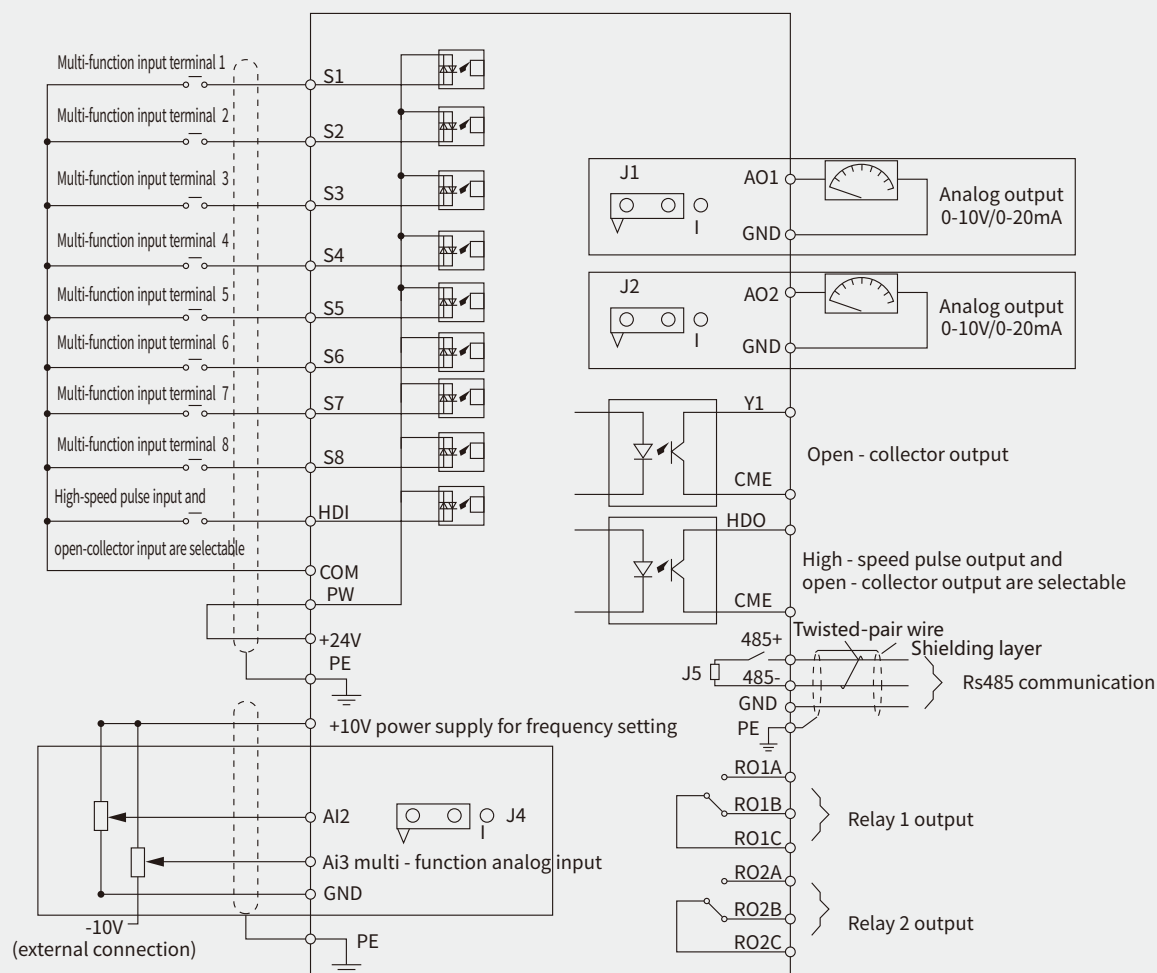
## List of machine models

| Frequency converter model | Input current (A) | Output current (A) | Applicable motor power (kW) |
|---------------------------|-------------------|--------------------|-----------------------------|
| 180-4T0900                | 190               | 180                | 90                          |
| 180-4T1100                | 225               | 215                | 110                         |
| 180-4T1320                | 265               | 260                | 132                         |
| 180-4T1600                | 310               | 305                | 160                         |
| 180-4T1850                | 345               | 340                | 185                         |
| 180-4T2000                | 385               | 380                | 200                         |
| 180-4T2200                | 430               | 425                | 220                         |
| 180-4T2500                | 485               | 480                | 250                         |
| 180-4T2800                | 545               | 530                | 280                         |
| 180-4T3150                | 610               | 600                | 315                         |
| 180-4T3500                | 625               | 650                | 350                         |
| 180-4T4000                | 715               | 720                | 400                         |
| 180-4T5000                | 890               | 860                | 500                         |
| 180-4T5600                | 980               | 1060               | 560                         |
| 180-4T6300                | 1050              | 1200               | 630                         |
| 180-4T7000                | 1126              | 1300               | 700                         |
| 180-4T8000                | 1460              | 1440               | 800                         |
| 180-4T10000               | 1800              | 1920               | 1000                        |

## Technical specifications

|                           | Item                                | Specification                                                                                                                                                                                                                                                                |
|---------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control characteristics   | Output frequency                    | 0 - 400Hz                                                                                                                                                                                                                                                                    |
|                           | Carrier frequency                   | 1kHz ~ 15kHz. The carrier frequency can be automatically adjusted according to the load characteristics                                                                                                                                                                      |
|                           | Output frequency resolution         | 0.01Hz                                                                                                                                                                                                                                                                       |
|                           | Control mode                        | V/F control                                                                                                                                                                                                                                                                  |
|                           | Overload capacity                   | 150% of the rated output current for one minute                                                                                                                                                                                                                              |
|                           | V/F curve                           | Four modes: linear type; multi - point type; complete V/f separation; incomplete V/f separation                                                                                                                                                                              |
|                           | Acceleration and deceleration curve | Linear or S - curve acceleration and deceleration modes; four acceleration and deceleration times; the acceleration and deceleration time range is 0.1 ~ 6500.0s                                                                                                             |
|                           | Jog control                         | Jog frequency range: 0.00Hz ~ maximum frequency; jog acceleration and deceleration time is 0.1s ~ 6500.0s                                                                                                                                                                    |
|                           | Simple PLC, multi - speed operation | Up to 16 - speed operation can be achieved through the built - in PLC or control terminals.                                                                                                                                                                                  |
|                           | Built - in PID                      | It can easily realize a closed - loop control system for process control.                                                                                                                                                                                                    |
|                           | Automatic voltage regulation (AVR)  | When the grid voltage changes, it can automatically maintain a constant output voltage.                                                                                                                                                                                      |
| Operating characteristics | Operating command channel           | Three channels: given by the operation panel, given by the control terminals, given by the serial communication port. It can be switched in various ways                                                                                                                     |
|                           | Frequency source                    | Ten frequency sources: given by panel knob, given by operation panel, given by analog voltage, given by analog current, given by RS485 communication, which can be switched in various ways                                                                                  |
|                           | Auxiliary frequency source          | Ten auxiliary frequency sources. It can flexibly achieve auxiliary frequency fine - tuning and frequency synthesis                                                                                                                                                           |
|                           | Input terminals                     | Eight digital input terminals, one of which can be used as a high - speed pulse input.<br>Two analog input channels, AI3: input range 0 ~ +10V, AI2: input range 0 ~ +10V/0 - 20mA                                                                                           |
|                           | Output terminals                    | 1 high - speed pulse output with a maximum frequency of 50kHz<br>One digital output terminal<br>One relay output terminal<br>Two analog output terminals. 0V ~ 10V/0 - 20mA can indicate output frequency/current/voltage/frequency command/speed/power factor signal output |
|                           | Protection function                 | Motor short - circuit detection upon power - on, input and output phase - loss protection, over - current protection, over - voltage protection, under - voltage protection, over - heat protection, overload protection, etc                                                |
| Environment               | Application place                   | Indoors, not directly exposed to sunlight, free from dust, corrosive gases, flammable gases, oil mist, water vapor, dripping water or salt, etc                                                                                                                              |
|                           | Altitude                            | Less than 1000m                                                                                                                                                                                                                                                              |
|                           | Ambient humidity                    | - 10°C ~ + 40°C (When the ambient temperature is between 40°C ~ 50°C, derating operation is required)                                                                                                                                                                        |
|                           | Humidity                            | Less than 95%RH, without water droplet condensation                                                                                                                                                                                                                          |
|                           | Vibration                           | Less than 5.9m/s <sup>2</sup> (0.6g)                                                                                                                                                                                                                                         |
|                           | Storage temperature                 | - 20°C ~ + 60°C                                                                                                                                                                                                                                                              |

## Basic wiring diagram



## Installation dimensions of the keyboard base

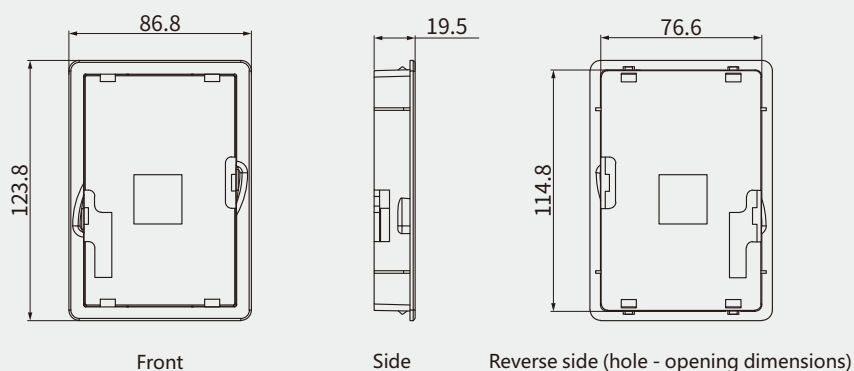


Diagram of overall dimensions and installation dimensions for 75-160kW sheet metal structure

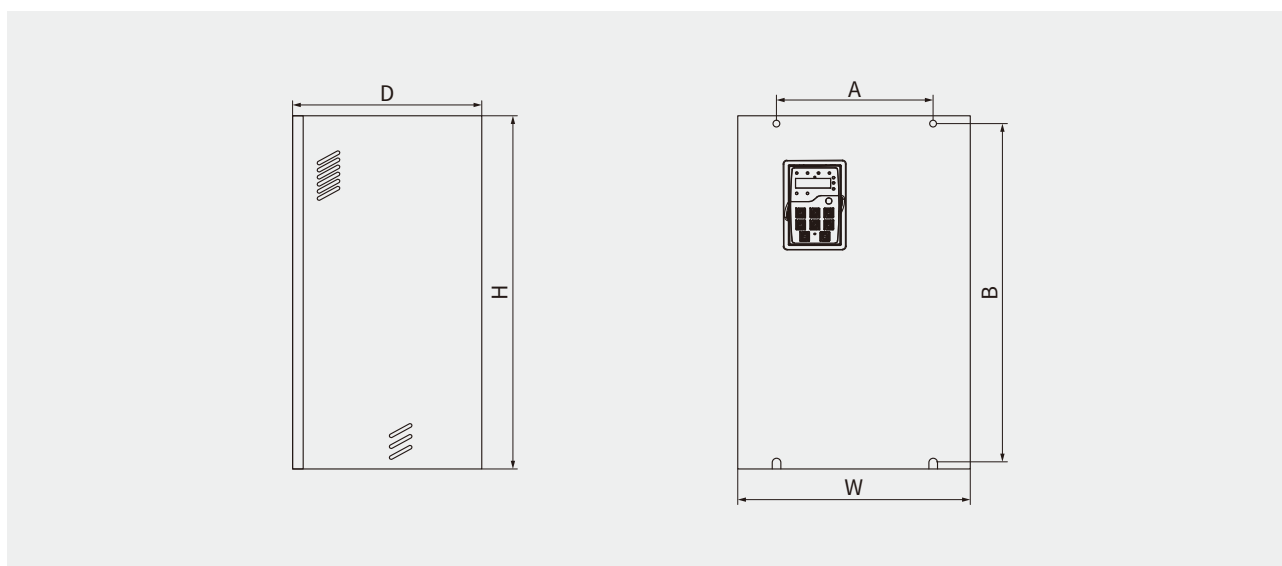
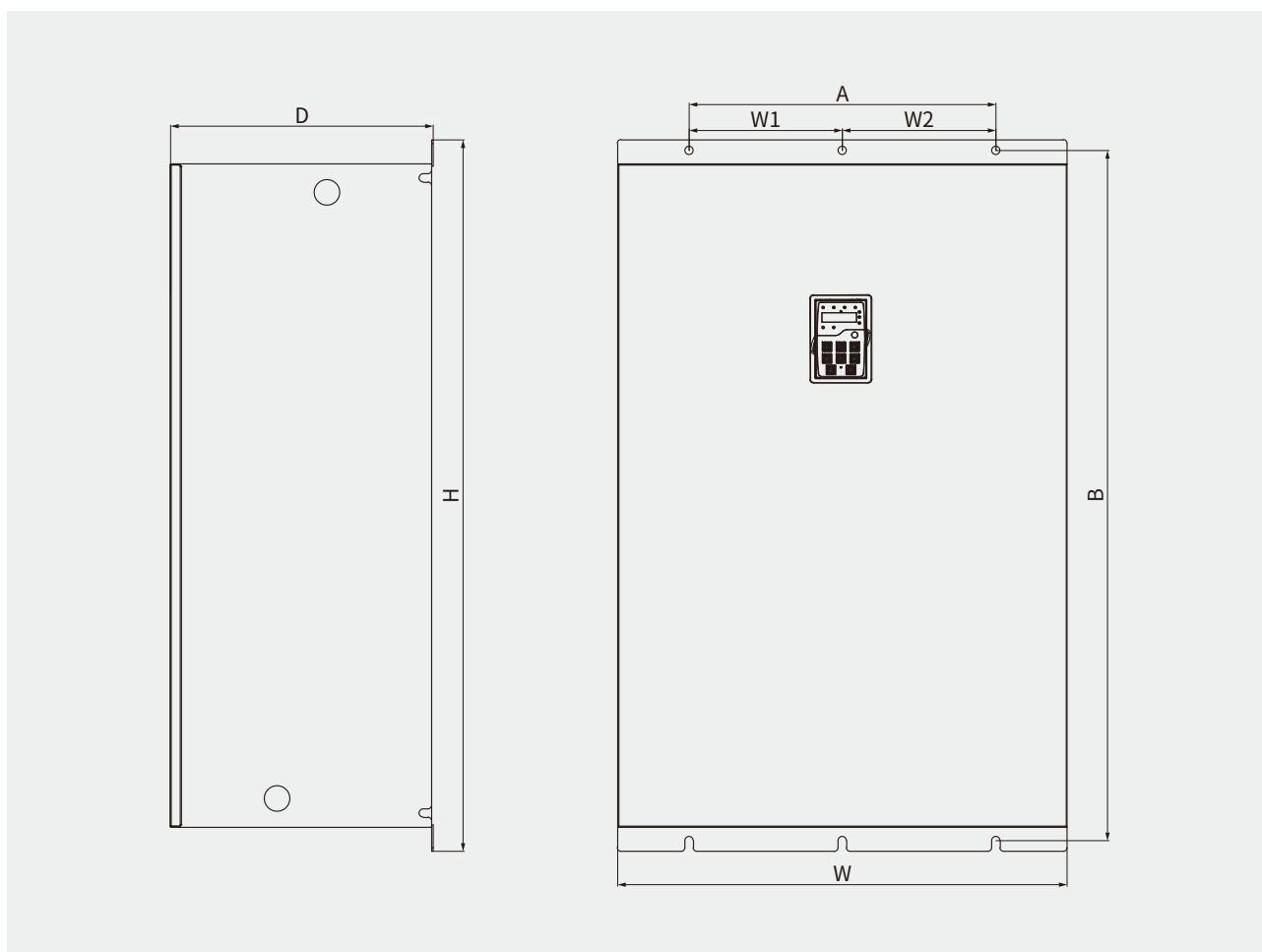
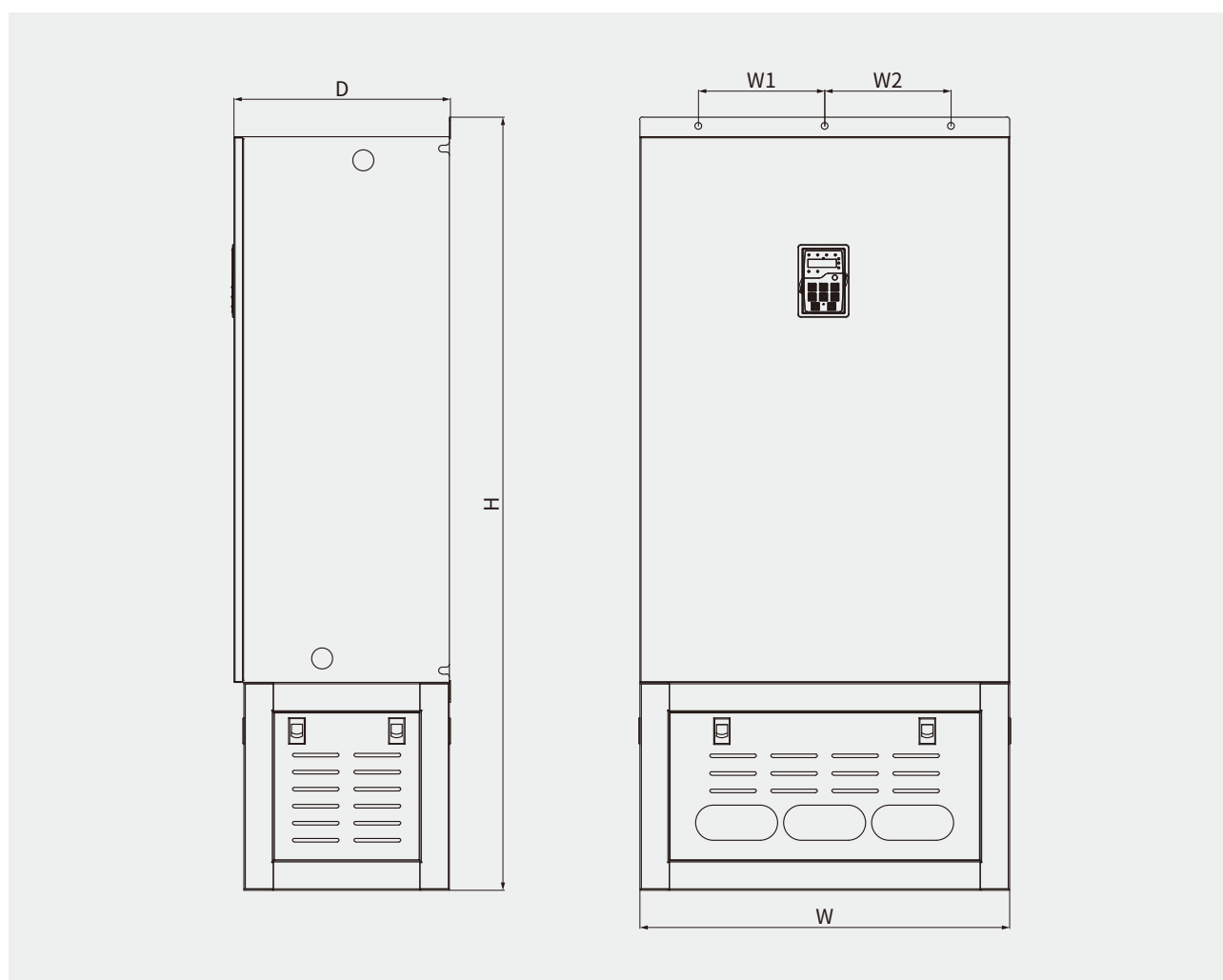


Diagram of overall dimensions and installation dimensions for 250-1000kW wall - mounted sheet metal structure



| Rated output power (kW) | Input voltage                               | A (mm) | B (mm) | H (mm) | W (mm) | D (mm) | Installation aperture (mm) |
|-------------------------|---------------------------------------------|--------|--------|--------|--------|--------|----------------------------|
| 90~110                  | Three - phase<br>380V range:<br>-15%~ + 15% | 216    | 478    | 500    | 323    | 275    | Φ10.5                      |
| 132~160                 |                                             | 330    | 598    | 630    | 453    | 310    | Φ10.5                      |
| 185~250                 |                                             | 330    | 853    | 880    | 515    | 340    | Φ10.5                      |
| 280~400                 |                                             | 430    | 967    | 997    | 630    | 380    | Φ12                        |
| 500~630                 |                                             | 610    | 1135   | 1165   | 910    | 485    | Φ12                        |
| 700~1000                |                                             | 610    | 1275   | 1305   | 930    | 485    | Φ12                        |

Diagram of external dimensions and installation dimensions of 250-1000kW wall - mounted cabinet sheet metal structure



| Rated output power (kW) | Input voltage                               | H (mm) | W (mm) | D (mm) |
|-------------------------|---------------------------------------------|--------|--------|--------|
| 280~400                 | Three - phase<br>380V range:<br>-15%~ + 15% | 1318   | 630    | 380    |
| 500~630                 |                                             | 1527   | 910    | 485    |
| 700~1000                |                                             | 1667   | 930    | 485    |

