GUIDE Inverter GF630N01 Series

Instruction Manual Version: 1.01



GUIDE inverter GF630N01 series is a high-performance vector control inverter, which is mainly used for three-phase AC asyncc_nous motor speed regulation. Utilizing high performance current vector control teccology, GF630N01 inverter is characterized by its high-torque output at low speeds, rapid dynamic response, and robust overload capacity. It is equipped with a Modbus485 communication bus as standard, offering extensive functionality and stable performance, and can be widely utilized for the asyncccous motor drive of various automation equipment.

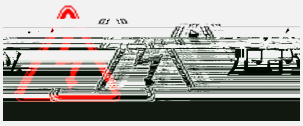
T_ fully leverage the exceptional performance of this product and ensure the safety of both users and equipment, it is imperative to thoroughly review this manual prior to use.

This Instruction Manual is an attacc ent sent with the product. Please be sure to keep it properly after use, so that it can be used for inspection and maintenance of the inverter in the future.

If you have any questions or special requirements regarding the use of this inverter, please feel free to contact our local offices or distributors, or you can directly contact our headquarters after-sales service center. We will be dedicated to serving you.

The contents of this manual are subject to change without prior notice.

Safety instructions



Do not touch the radiator by hand after ten minutes of power-on or within a period of time after power-off to prevent burns.

Do not power on and off the inverter frequently, and do not power on again within five minutes after power off.

Do not remove the cover of the inverter or touch the printed circuit board when it is powered on to prevent electric shock.

Wiring, inspection and other operations must be carried out 10 minutes after the power is turned off.

The grounding terminal of the inverter must be well grounded!

No foreign matters are allowed to fall into the inverter.



The inverter must not be installed on flammable materials.

This series of inverters are not suitable for flammable and explosive environments. If necessary, please order a special inverter from the manufacturer.

It is forbidden to disassemble, assemble or modify the inverter without permission!

It is strictly forbidden to connect the AC power supply to the output terminals U, V and W of the inverter.

When the inverter is powered on, do not open the cover or carry out wiring operations.



注意

Before unpacking, please check whether the outer packaging of the product is intact, whether there is damage, soaking, moisture, deformation, etc.

Please open the package in accordance with the specified hierarchical order. It is strictly prohibited to handle it with excessive force!

When unpacking, please check whether there is any damage, rust, or dents on the surface of the product and its accessories.

After unpacking, please carefully check whether the quantity and data of the product and its accessories are complete against the packing list.



Upon unpacking, refrain from installing the product if water has infiltrated the product, any parts are missing, or any parts are damaged!

If the product and its accessories are found to have damage, rust, signs of use and other problems during unpacking, do not install them!

Please carefully check against the packing list, and do not install if the packing list does not match the product name!



Please store and transport the product according to the storage and transportation conditions, and the storage temperature and humidity shall meet the requirements.

Avoid storage and transportation in places where water splashes, rain, direct sunlight, intense electric field, strong magnetic field, strong vibration, etc.

Avoid storing the product for more than 3 months. If the storage time is too long, please carry out closer protection and necessary inspection.

Please pack the product strictly before vehicle transportation. Closed boxes must be used for long-distance transportation.

It is strictly forbidden to transport this product together with equipment or articles that may affect or damage this product.



Be sure to use professional loading and unloading equipment to handle large or heavy equipment and products!

When handling the product by hands, be sure to hold the product housing firmly to avoid falling product parts, otherwise there is a risk of injury!

When handling the product, be sure to lift and place it gently, and always be mindful of objects underfoot to prevent tripping or falling, otherwise there is a risk of injury or product damage!

When the equipment is being lifted by lifting tools, no individuals are permitted to stand or remain beneath the equipment.



Be sure to read the product instruction manual and safety precautions carefully before installation!

It is strictly forbidden to modify this product!

It is strictly forbidden to screw the fixing bolts of product parts and components and the bolts marked in red!

Do not install this product in places with intense electric field or strong electromagnetic wave interference!

When this product is installed in a cabinet or terminal equipment, the cabinet or terminal equipment shall be provided with corresponding protective devices such as fireproof enclosure, electrical protective enclosure and mechanical protective enclosure, and the protection grade shall meet the requirements of relevant IEC standards and local laws and regulations.

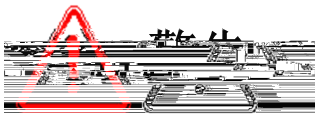


Non-professionals are strictly prohibited from product installation, wiring, maintenance, inspection or component replacement!

The installation, wiring, maintenance, inspection or component replacement of this product can only be carried out by professionals who have received relevant training on electrical equipment and have sufficient electrical knowledge.

The installation personnel must be

prevention guidelines and wear an electrostatic wrist strap during wiring and other operations to prevent damage to the internal circuitry of the equipment or product.

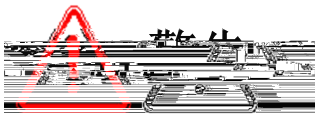


It is strictly forbidden to connect the input power supply to the output terminals of the equipment or product, as this may cause equipment damage or even lead to a fire.

When connecting the driver to the motor, be sure to ensure that the phase sequence of the driver and the motor terminals is accurate and consistent to avoid reverse rotation of the motor.

The cables used in wiring must meet the corresponding requirements for diameter and shielding, and the shielding layer of shielded cables must be reliably grounded at one end!

After wiring, make sure that there are no falling screws or exposed cables inside the equipment and product.



Before powering up, please confirm that the equipment and products are installed properly, the wiring is firm, and the motor device is

It is strictly forbidden to touch the equipment housing, fan or resistance to test the temperature, otherwise it may cause burns!

It is strictly forbidden for non-professional technicians to detect signals during running, otherwise it may cause personal injury or equipment damage!



During running, avoid other articles or metal objects from falling into the equipment, otherwise the equipment will be damaged!

Do not use the contactor on-off method to control the start and stop of the equipment, otherwise the equipment will be damaged!



Before powering up, please confirm that the equipment and products are installed properly, the wiring is firm, and the motor device is allowed to be restarted.

Before powering up, please confirm that the power supply meets the requirements of the equipment to avoid equipment damage or fire!

When powering up, the mechanical device of the equipment or product may act suddenly. Please stay away from the mechanical device.

After powering up, do not open the equipment cabinet door or product protective cover, otherwise there will be a risk of electric shock!

It is strictly prohibited to touch any wiring terminals of the equipment while it is powered on, otherwise there will be a risk of electric shock!

It is strictly prohibited to disassemble any devices or components of the equipment and products while they are powered on, otherwise there will be a risk of electric shock!



Please scrap equipment and products in accordance with relevant national regulations and standards to avoid property losses or casualties!

Scrapped equipment and products shall be treated and recycled in accordance with industrial waste treatment standards to avoid environmental pollution.

Precaution instructions

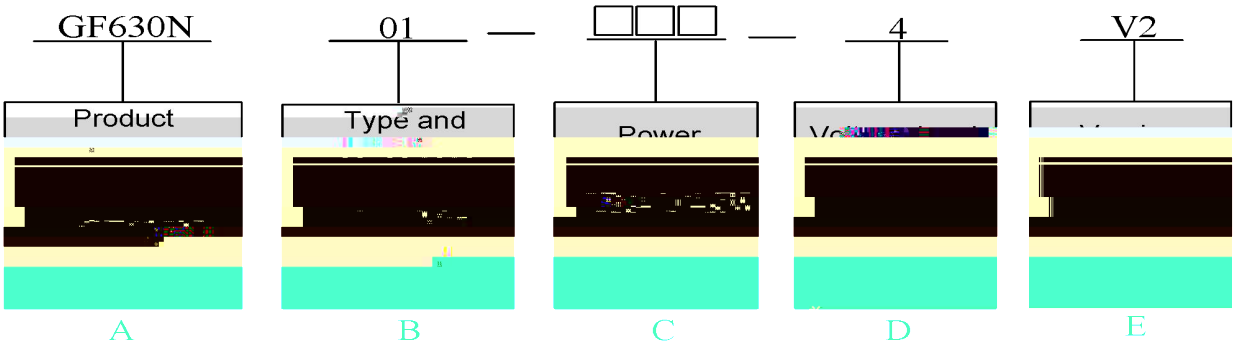
In running state, the equipment may produce a significant leakage current that flows through the protective grounding conductor. When utilizing a residual current operated protective device (RCD) or a residual current monitor (RCM), it is imperative to employ an RCD or RCM with a response delay or one that is capable of filtering higher order current harmonics.
Please install a Type B residual current device (RCD) on the primary side of the power supply. When selecting a residual current device (RCD), consider the transient and steady-state ground leakage currents that may occur during the startup and running of the equipment. Select a dedicated RCD with measures to suppress high-order harmonics, or a general RCD with a larger residual current.

When the motor is used for the first time or used again after a long time, the motor insulation inspection shall be carried out to prevent the inverter from being damaged due to the insulation failure of the motor winding. During the motor insulation inspection, please disconnect the connecting wire between the motor and the inverter. It is recommended to use a 500V voltage type megohmmeter to ensure that the measured insulation resistance of the motor is not less than 5MΩ.

If the inverter is used outside the allowable working voltage range specified in the manual, it is easy to cause internal damage to the inverter. If necessary, use a step-up or step-down device to transform the power supply and connect it to the inverter.

6.3
6.4
6.5 Analog and pulse input terminal group P5
6.6 Analog and pulse output termi
6.7 Protection parameter group P
6.8 Motor start-stop control group P8
6.9 Swing frequency and segment speed group P9
6.10 V otor 1 parameter g P10
6.11 Motor arameter group P1
6.12 Motor ector control grou 12
6.13 Moto ector control grou 13
Basic communication para r group P1
6.15 odule group P15
6.16 Digi peration module g
6.17 An

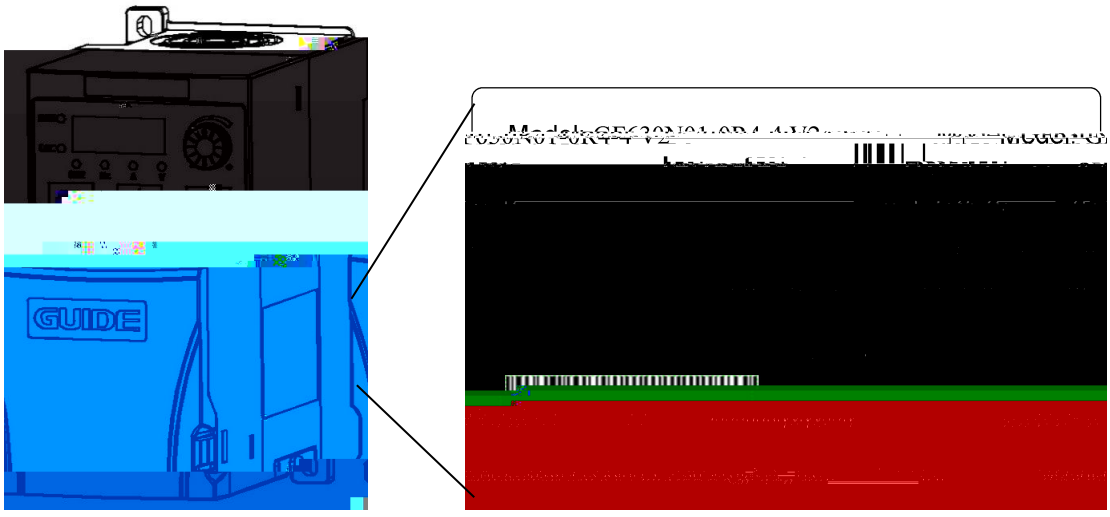
Meaning of inverter model:



System product model field description

A	Product serial number: GF630N
B	Type and construction 01: Mini type
C	Power: 0R4:0.4kW 7R5:7.5kW 022:22kW
D	Voltage level 4:400V
E	V2: Version

The nameplate of the GF630N01 series inverter is illustrated in the figure (with 0.4kW as an example)



Mo[redacted]0R4-[redacted]dicat[redacted]t the r[redacted]er of GF[redacted]N01 series inv[redacted]r is 0.4 kW and [redacted]vol[redacted]le[redacted]s 400 V.

[redacted]C power inp[redacted]

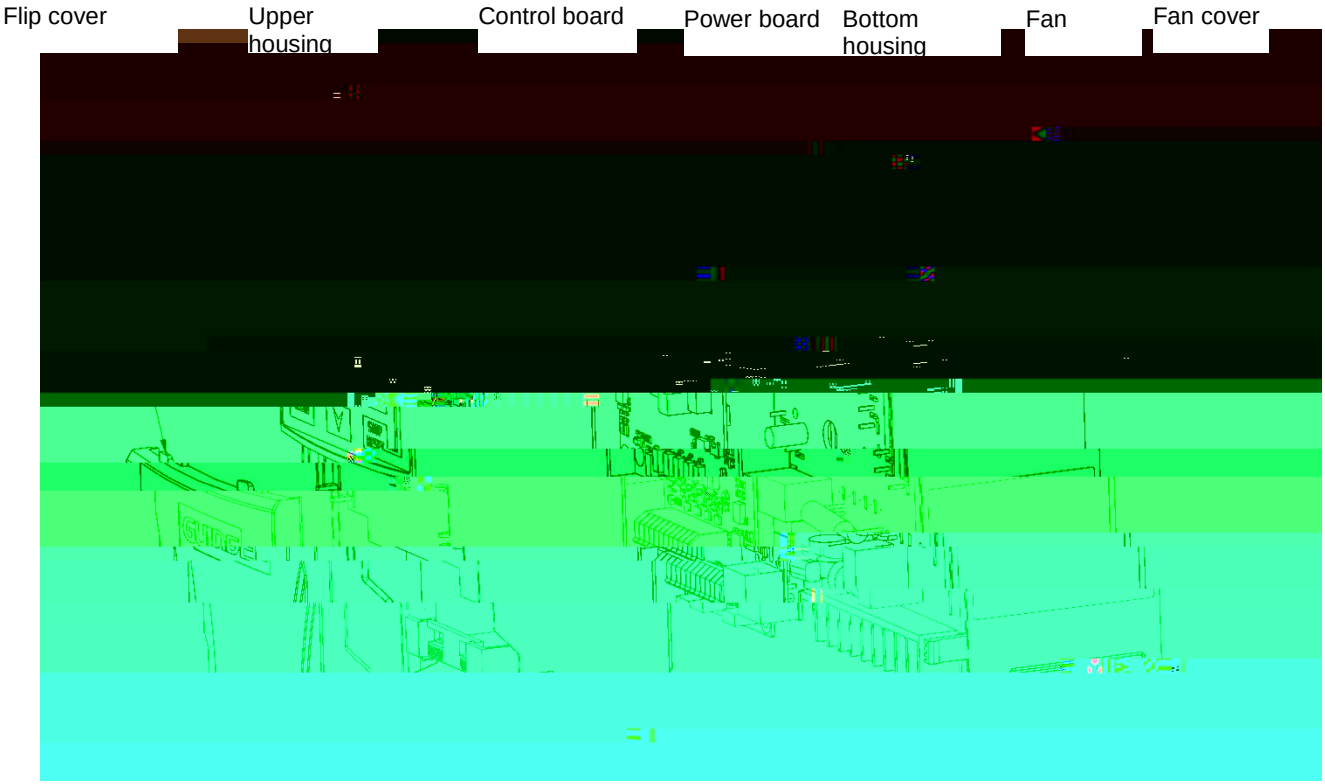
3PH indicates three-phase input and output.

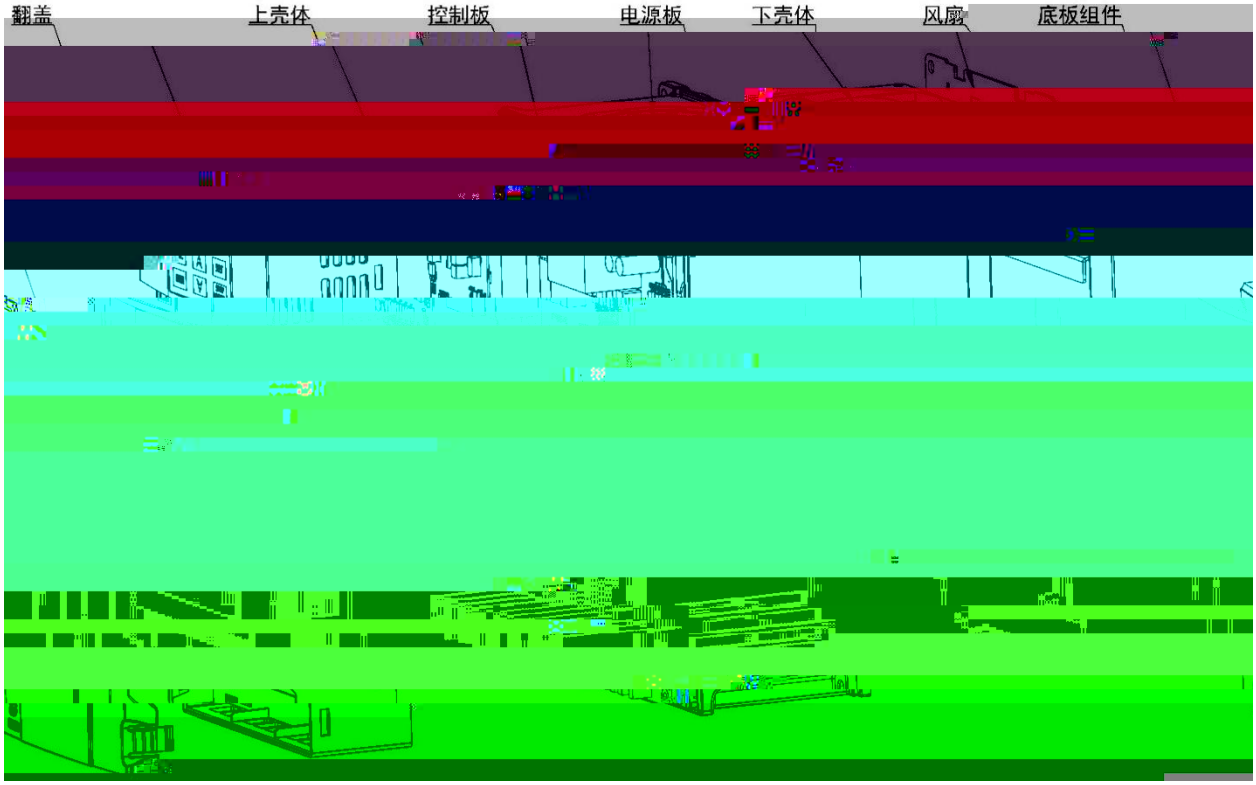
380V-480V 50/60Hz indicates the input voltage range and frequency.

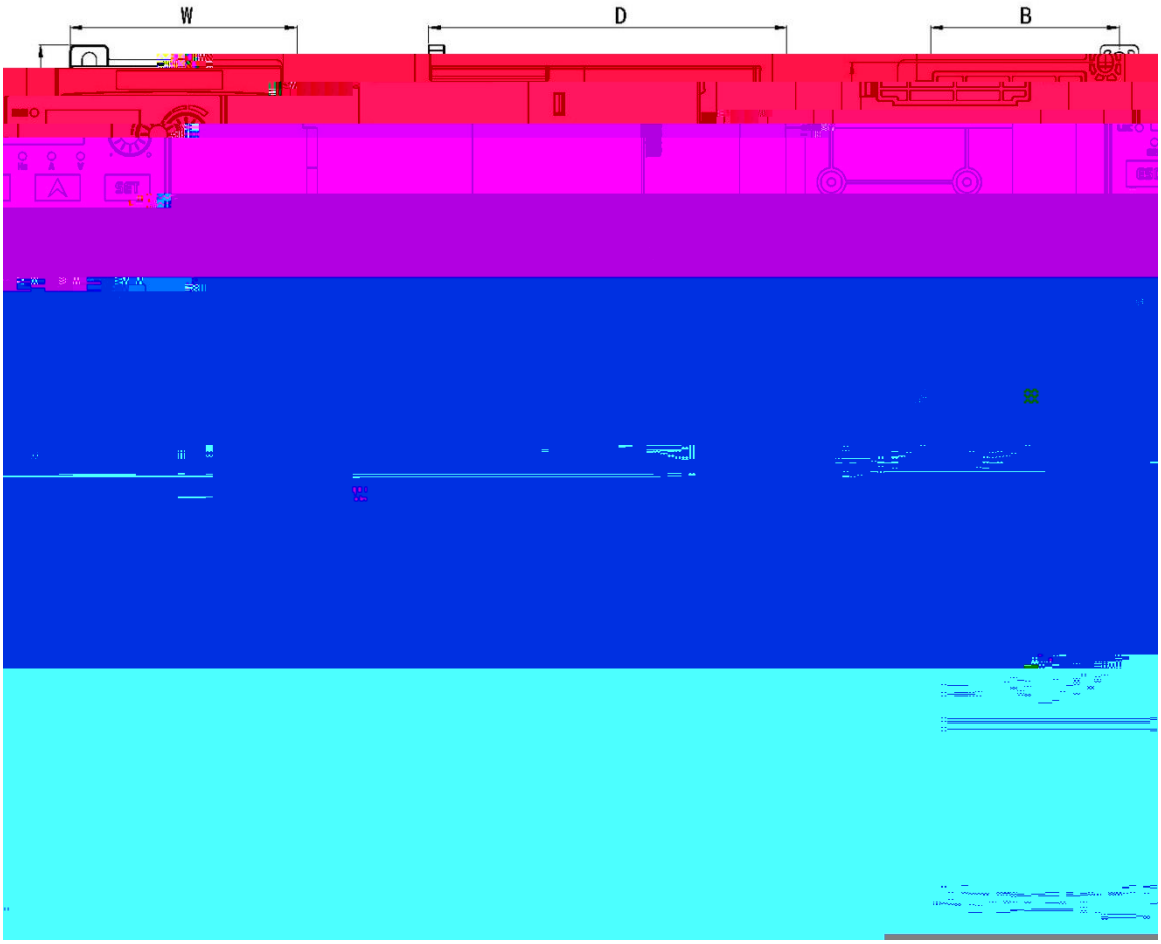
0-480V 0-300Hz indicates the output voltage range and output frequency range of the inverter.

GF630N01-0R4-4 V2	1.2	0.4	
GF630N01-0R7-4 V2	2.5	0.75	
GF630N01-1R1-4 V2	3	1.1	R1
GF630N01-1R5-4 V2	3.7	1.5	
GF630N01-2R2-4 V2	5	2.2	
GF630N01-3R7-4 V2	9	3.7	
GF630N01-5R5-4 V2	13	5.5	R2
GF630N01-7R5-4 V2	17	7.5	
GF630N01-011-4 V2	24	11	R3
GF630N01-015-4 V2	32	15	
GF630N01-018-4 V2	37	18.5	R4
GF630N01-022-4 V2	45		

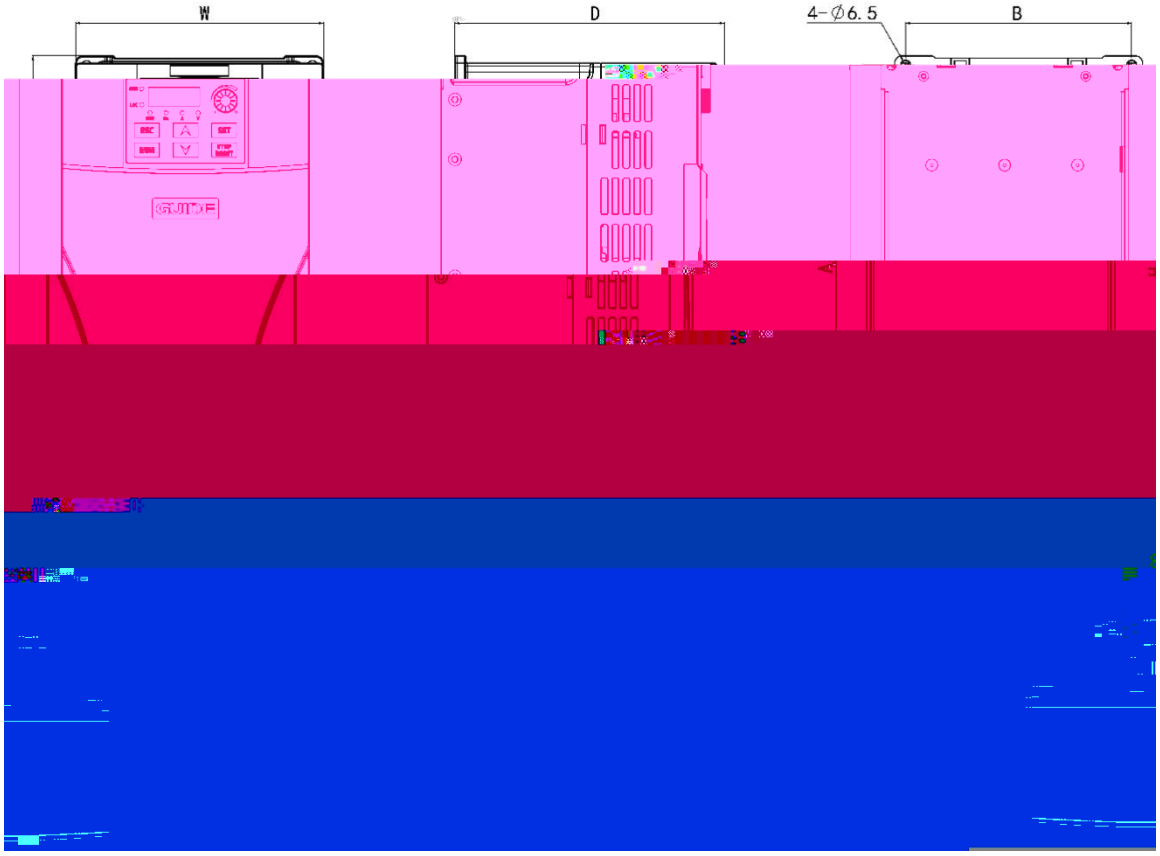
The GF630N01 series inverter is divided into two structural types based on power ratings, as illustrated in the figure below:




翻盖
上壳体
控制板
电源板
下壳体
风廊
底板组件



HO


W
D
4-Φ6.5
B



Input	Input voltage	Three-phase 380V~480V
	Rated frequency	50/60Hz
	Allowable voltage fluctuation	-15% +10%
	Allowable frequency fluctuation	The permissible frequency variation range is fLN ± 2% (± 4% for an independent power supply network). Frequency change rate: ≤ 2% fLN/s.
Output	Output voltage range	0~input voltage, equal to input voltage, error less than 5%
	Asymmetry of output voltage	

	load of each phase within the whole output frequency adjustment range.
Output frequency range	0 300Hz
Running command mode	Panel control, terminal control, and communication control
Carrier frequency	0.5 KHz~16 kHz, adjustable according to teo E ä D

Control Characteristics

No shutdown in case of instantaneous power outage:
In case of instantaneous

Special functions

er

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use

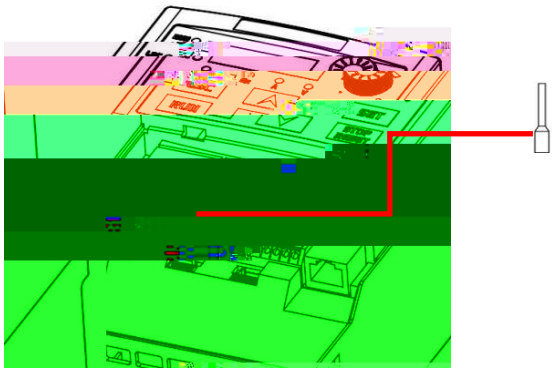
ontactor

Input reactor

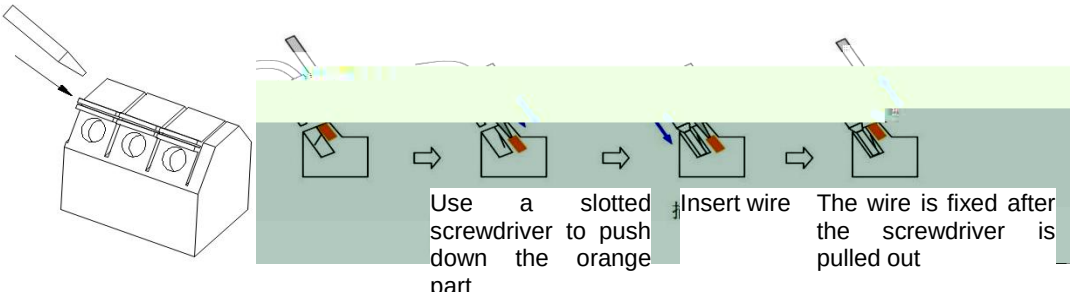
		protection of the inverter. Generally, if the distance between the inverter and the motor exceeds 100m, it is recommended to install an output AC reactor.
Dv/dt reactor	Installed close to the inverter on the output side of the inverter	Optional dv/dt reactors protect motor insulation and reduce bearing current.
Output magnetic ring	Installed close to the inverter on the output side of the inverter	The output magnetic ring is mainly used to reduce the bearing current.
Motor	Output side of the inverter	Please select the suitable motor as recommended.
Do not install a capacitor or surge suppressor on the output side of the inverter, otherwise it will cause the inverter to fail or the capacitor and surge suppressor to be damaged. The input/output (main circuit) of the inverter contains harmonic components, which may interfere with the communication equipment near the inverter. Anti-interference filters can be installed to minimize interference.		

0.4 kW	1.2	2.5	9
0.75 kW	2.5	2.5	9
1.1 kW	3	2.5	9
1.5 kW	3.7	2.5	9
2.2 kW	5	2.5	9
3.7 kW	9	2.5	12
5.5 kW	13	2.5	12

7.5 KW	17	2.5	18
11 KW	24	2.5	18
15 KW	32	4	32
18.5	37	4	50



2. Wiring method
(1) Use a slotted screwdriver to push down the orange part of the control loop terminal block. (Wire insertion port open)
(2) Use a screwdriver to push and insert the wire or rod terminal into the round hole.
(3) The wire is fixed automatically after the screwdriver is pulled out.

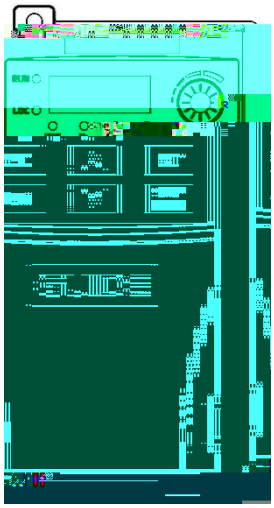
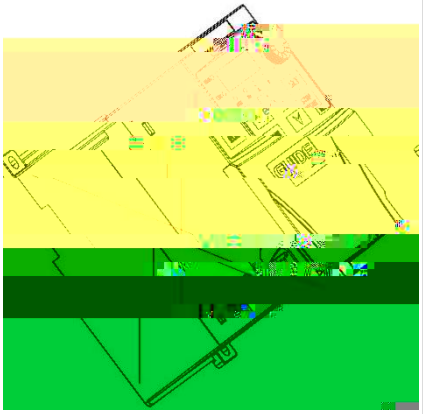
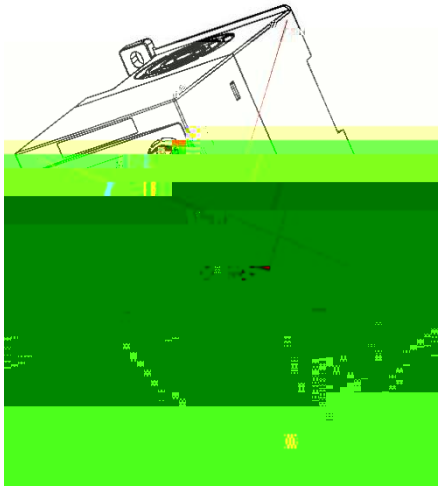


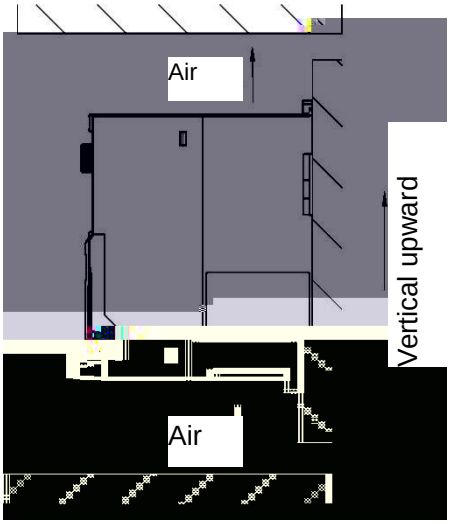
Note: To pull out the wire, do the same as above, and pull out the wire after the wire insertion port is opened.

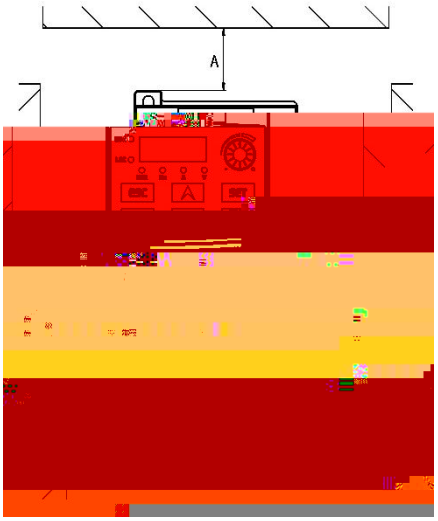
Packaging	Fixed installation	In protective packaging	In manufacturer's standard packing case
Place	Place of installation: It shall be installed vertically on a solid base indoors, with a space of at least 10 cm at the inlet and outlet and at least 5 cm on the left and right sides of the case. The cooling medium is air. Avoid direct sunlight and external biological invasion. If the requirements cannot be met, additional protection is required.	Place of storage: Store in a clean, dry indoor place. The total delivery and storage duration shall not exceed 6 months.	Means of transport: In standard packing cases, vehicles, trains, airplanes, ships and other similar tools can be used for transportation.
Environment Temperature	-10°C ~ +40°C, when the ambient temperature exceeds 40°C, it needs to be derated for use. For every 1°C increase in ambient temperature, the derating will be 1%. Consult the manufacturer for guidance when the ambient temperature exceeds 50°C. If the ambient temperature is lower than -10°C, additional auxiliary heating equipment is required.	-20 ~+60 , the air temperature change is less than 1 /min.	-20 +60
Atmosphere Pressure	70 106 kPa 0.7~1.05 atmospheric pressure	70 106 kPa 0.7~1.05 atmospheric pressure	60 106 kPa 0.6~1.05 atmospheric pressure

Vibration	Sinusoid 10Hz≤f≤57Hz: amplitude:0.075mm 57Hz≤f≤150Hz: acceleration:9.8 m/s2	Sinusoid 10Hz≤f≤57Hz: amplitude:0.075mm 57Hz≤f≤150Hz: acceleration:9.8 m/s2	Random vibration: Random vibration severity level II for road transportation
Impact	Not allowed	Maximum value 100m/s2, 11ms	Maximum value 100m/s2, 11ms
Freedom Drop	Not allowed	250mm, when weight <100kg; 100mm, when weight ≥100kg.	250mm, when weight <100kg; 100mm, when weight ≥100kg.
Relative Humidity	Less than 95%RH, no condensation of water droplets		
Installation Height	Below 1000 m, no derating is required. For places with an altitude of more than 1,000 m, please reduce the rated voltage and rated output current by 1% for each additional 100 m. Consult the manufacturer for guidance when the altitude exceeds 3,000 m.		
Pollution level	Pollution level 2		
Gas Pollution	The place of use shall be free of oil mist, metal dust, dust suspension, corrosive gas, flammable and explosive gas. If it cannot be met, additional protection shall be provided.		

In order to facilitate the heat dissipation of the inverter, the inverter shall be installed in a vertical direction. Please check the installation position according to the following requirements.

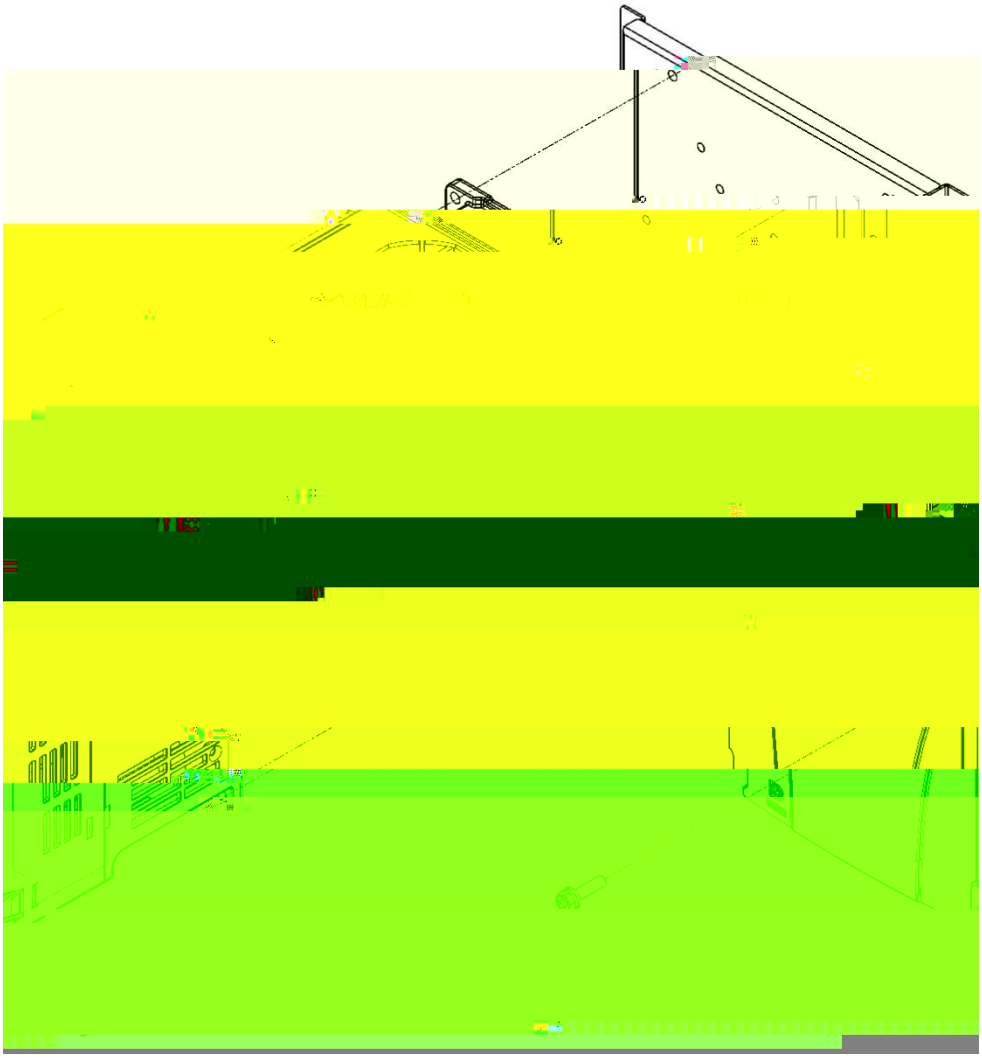
Correct installation method	Incorrect installation method	
		





Model	Power range	Dimensional requirements (unit: mm)	
R1	0.4kW 2.2kW	A≥100	B≥20
R2	3.7kW 5.5kW	A≥100	B≥20
R3	7.5kW 11kW	A≥100	B≥20
R4	15kW 22kW	A≥200	B≥20

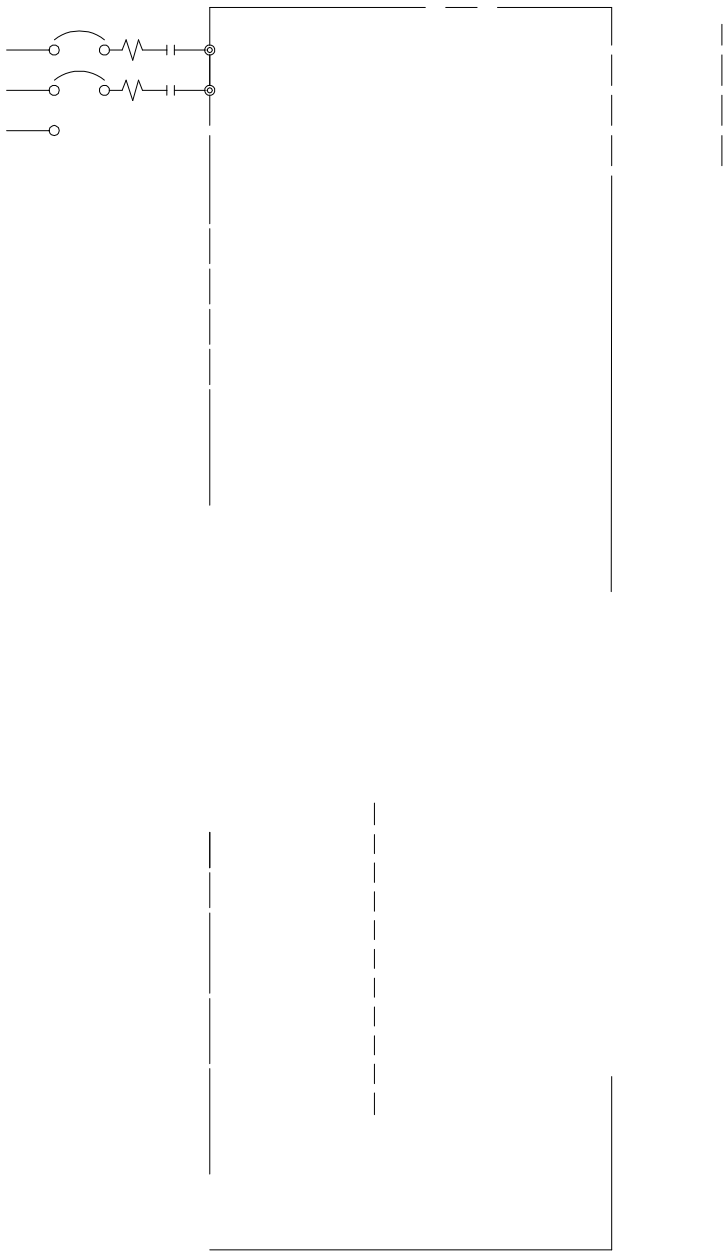
Wall-mounted installation of R2/R3/R4 products:

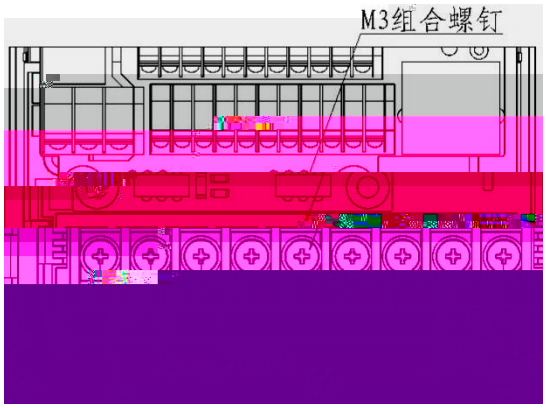
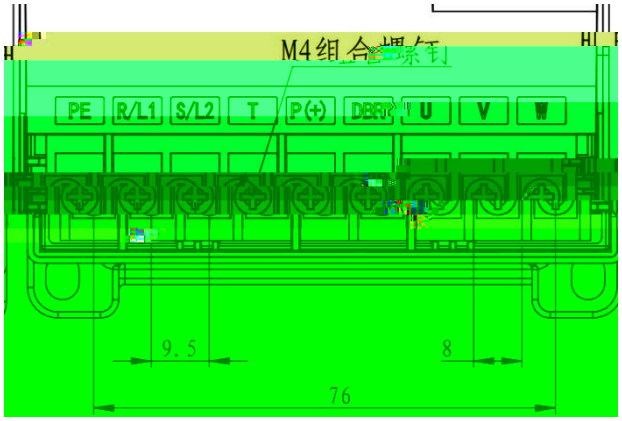
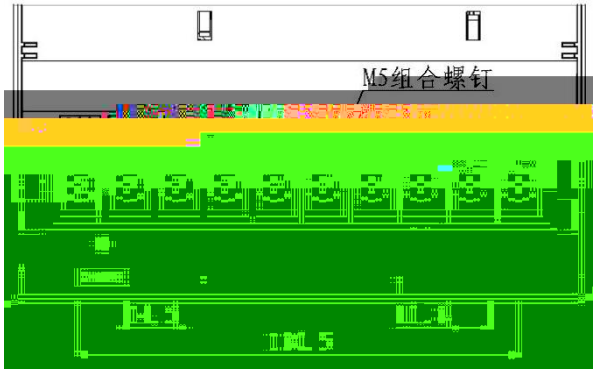


1	R1	0.4kW 2.2kW	2-M5
2	R2	3.7kW 5.5kW	4-M5
3	R3	7.5kW 11kW	4-M5
4	R4	15kW 22kW	4-M5

Note: Installation torque M5: 20±2KGF.CM;

3.3.1 Standard wiring diagram

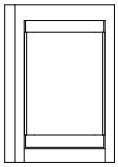


Terminal distribution diagram of R1 main circuit	Terminal distribution diagram of R2 main circuit
	
Terminal distribution diagram of R3 main circuit	Terminal distribution diagram of R4 main circuit
	

The main wiring terminals of R1/R2 models are shown in the figure below:

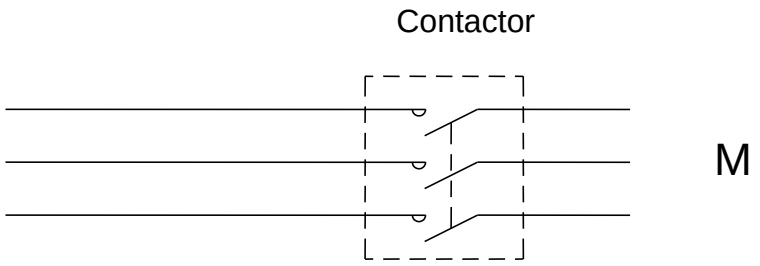


The main wiring terminals of R3/R4 models are shown in the figure below:

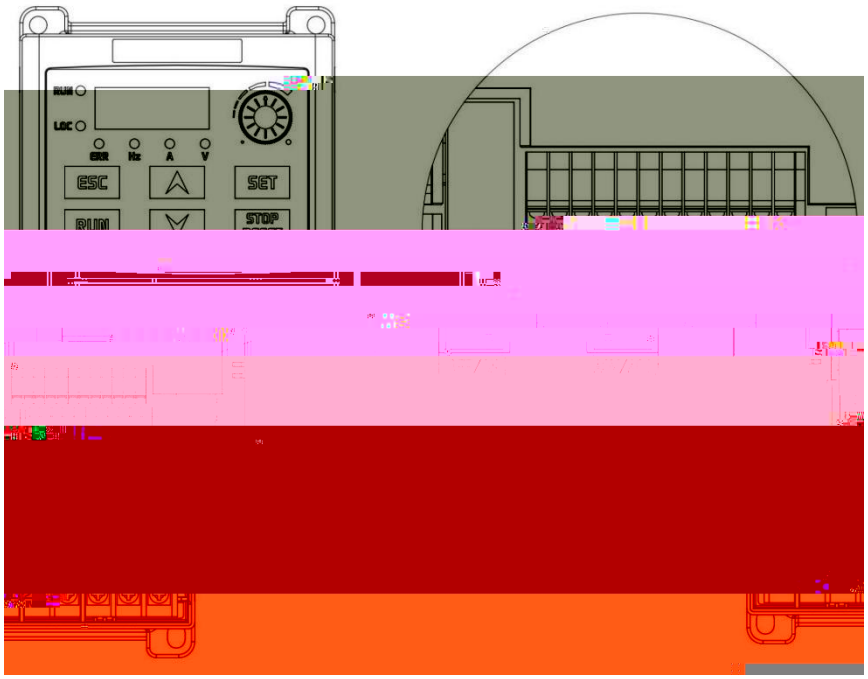


	inverter fails.	
6	When installing an electromagnetic contactor between the inverter and the motor, be sure to ensure the action timing of the contactor. The contactor can only act when the inverter has no output.	
7	The output terminals of the inverter U, V and W shall not be equipped with absorption capacitors or other resistance capacitance absorbers.	As shown in the figure below.
8	In order to reduce electromagnetic interference, please connect surge absorbers to the coils of electromagnetic contactors, relays and other devices in the circuits around the inverter.	
9	Use multi-core shielded cables or twisted pairs to connect the control terminals. During wiring, the control cable shall be more than 10 cm away from the main circuit and strong current lines (including power cords, motor lines, relays, contactor lines, etc.).	
10	The input and output circuits of the relay shall be wired with stranded wires or shielded wires of more than 0.75 mm^2. The shielding layer shall be connected to the grounding terminal of the inverter, and the wiring length shall be less than 50 m.	
11	The control line shall be separated from the main circuit power line, the parallel wiring shall be more than 10 cm apart, and the cross wiring shall be vertical.	
12	The connection between the inverter and the motor shall be less than 50 m. When the connection length is greater than 50 m, it is recommended to add an output reactor.	
13	All leads must be adequately fastened to the terminals to ensure good contact. The lead of the main circuit shall be cable or copper bar. When using cables, wiring must be carried out after cold pressing or welding with lugs of corresponding	

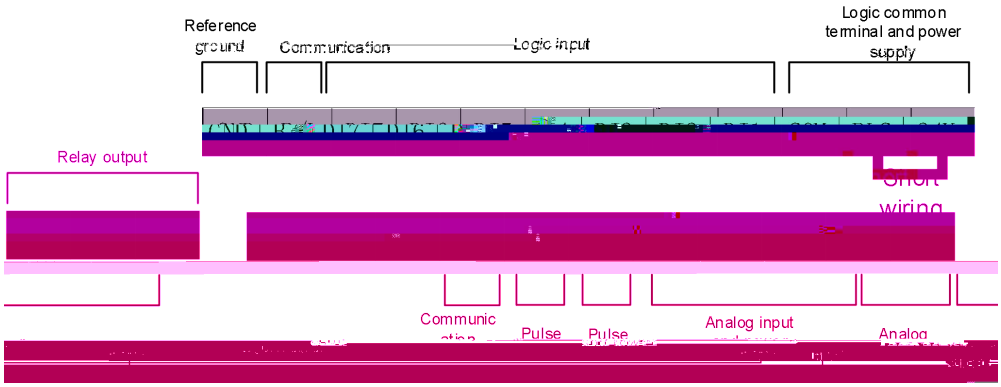
	sections.	
14	The withstand voltage of all leads must be consistent with the voltage level of the inverter.	
15	It is recommended to use shielded cables when the output cable (the connection between the inverter and the motor) is greater than 30 m.	



3.3.3 Control board



Control terminal arrangement

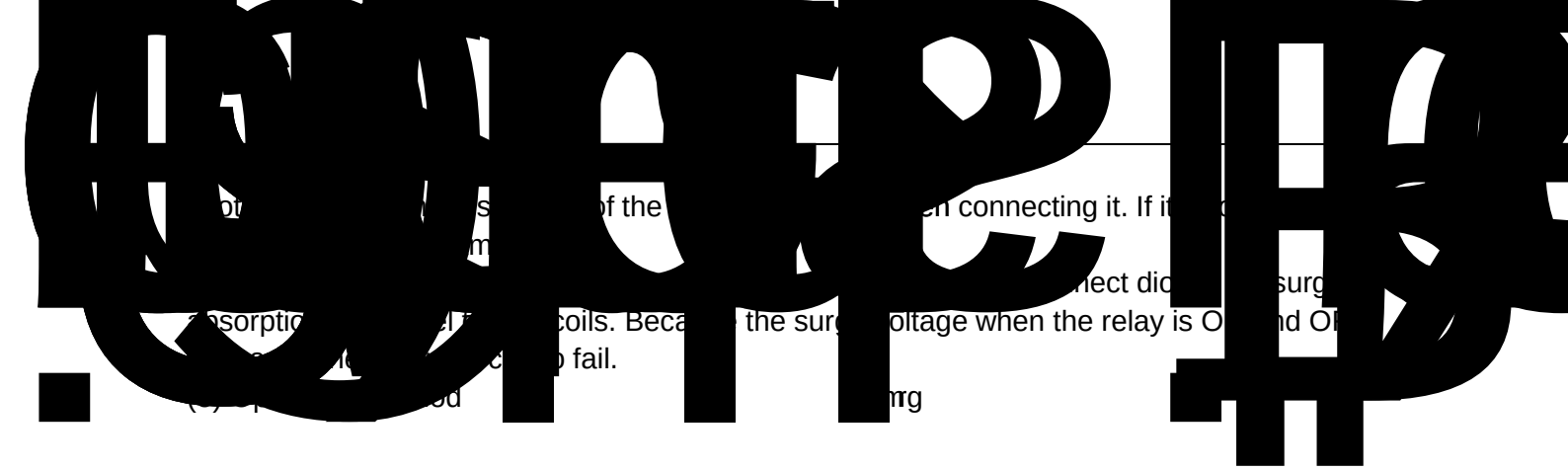


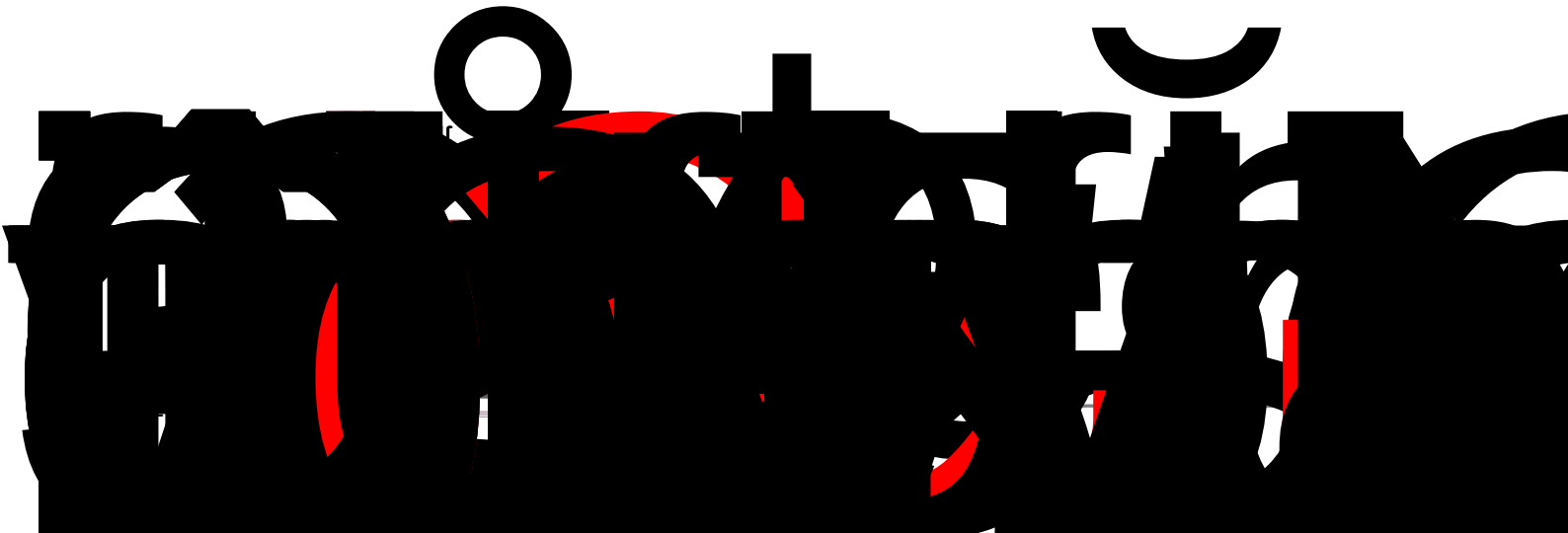
DIP switch arrangement



Category	Terminal identification	Terminal name	Terminal function description
Electric Source	10V—GND	10V reference power supply	Provide a 10V reference power supply externally, with a maximum output current of 10mA. It is generally used as an external potentiometer regulating power supply, and the potentiometer resistance is more than 5kΩ.
	24V—COM	24V power supply	Provide a 24V ±10% power supply externally, with a maximum output current of 200mA. Generally, it is used as a digital input and output working power supply or an external sensor power supply.
Analog input and output	AV—GND	Analog voltage input	1. Input range: voltage 0~10V

	HDO-COM	H[illegible]eed pulse [illegible] (FMP)	Maximu[illegible]utput freq[illegible]y: 50kHZ; Duty cyc[illegible]% 3. Open collector output, [illegible]age range 0-30V
Relay output	DOA-D0C	Relay nor[illegible]y open contact	Relay output Contact capacity:3A/AC250V
	DOB-DOC	Relay normally closed contact	
485 communication	485+(A)/CAN-H	485 communication port	485 communication port, differential signal port, standard 485 communication interface using twisted pair or shielded wire (485 or CAN need to be specified when ordering)
	485-(B)/CAN-L		
RJ45 interface	RJ45 Interface	External keyboard interface	For external keyboard (LED)





Weak analog signals are susceptible to external interference. The cabling shall be as far away from the interference source as possible, and the wiring distance shall be as short as possible, not more than 20 m. In some occasions where analog signals are seriously interfered, filter capacitors or ferrite cores shall be added to the analog signal source side; As shown in the figure below

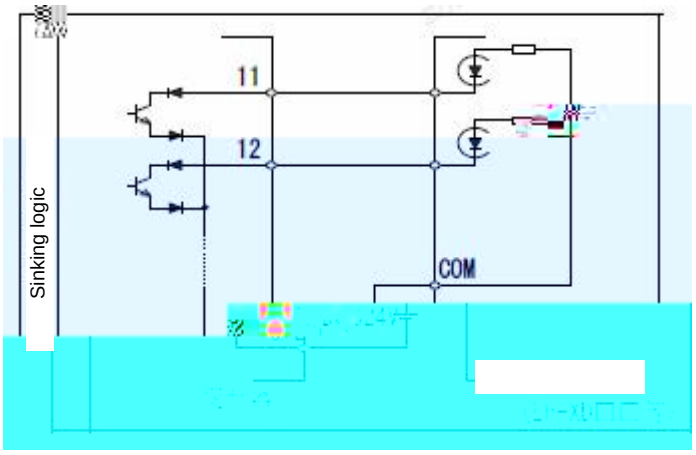


Diagram of AV wiring



Diagram of AI wiring

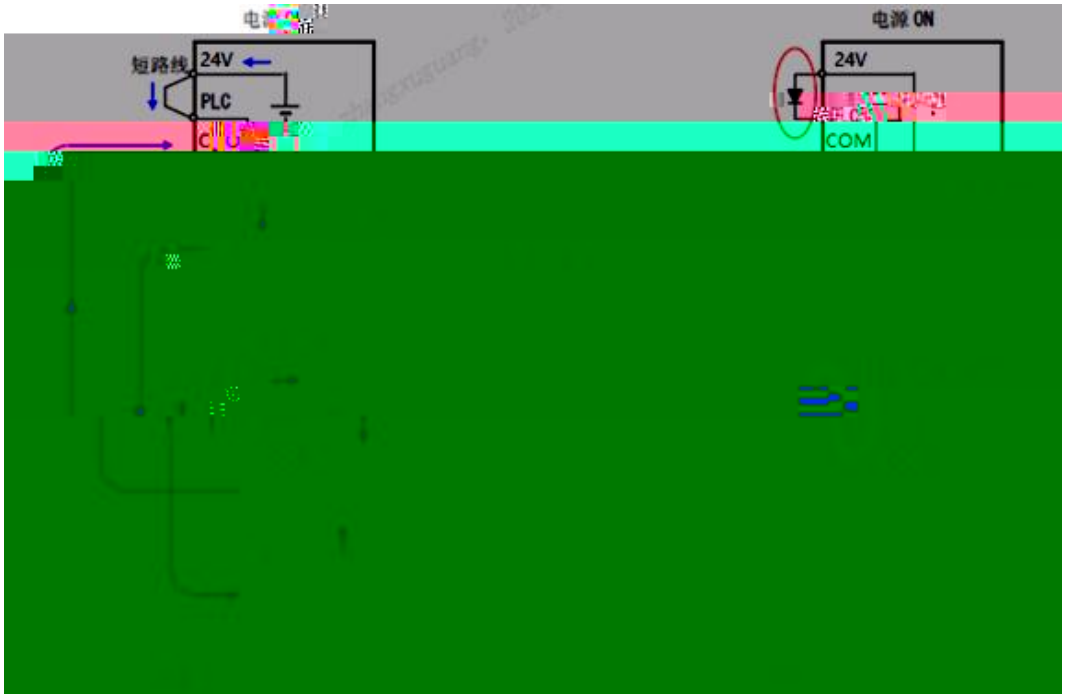
Note: The signal lines need to pass through or wind 2~3 turns in the same direction



Note: The smart output terminal is an open collector output, the power supply is externally powered (24~30V), and the maximum current is 50mA.

When multiple inverters use a common input (switch, etc.) and the power is turned on at different time points, the current backflow as shown in the figure below may occur. Although the input is OFF, it may be distinguished as ON. In this case, connect a diode (rated 50V/0.1A) in the circle shown in the figure below to prevent current backflow.

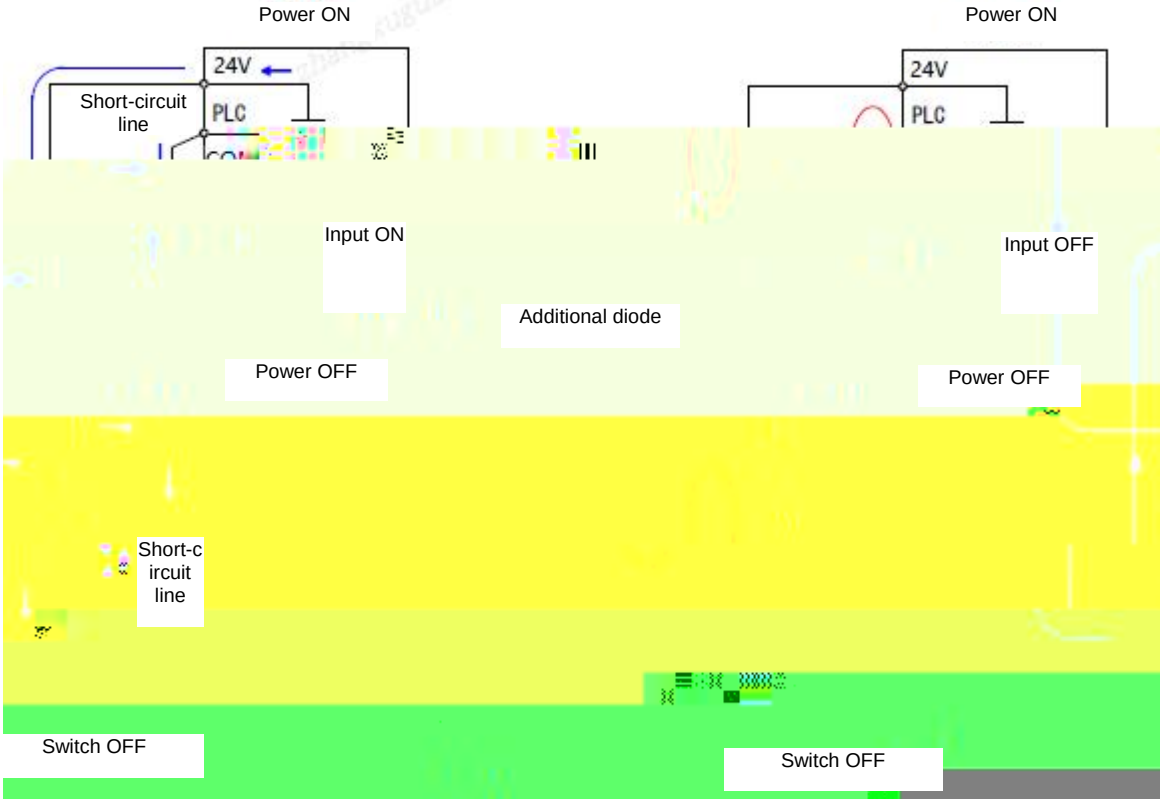
Case of sinking logic



When the switch is OFF and there is no diode, it will cause backflow, causing the input to be recognized as ON

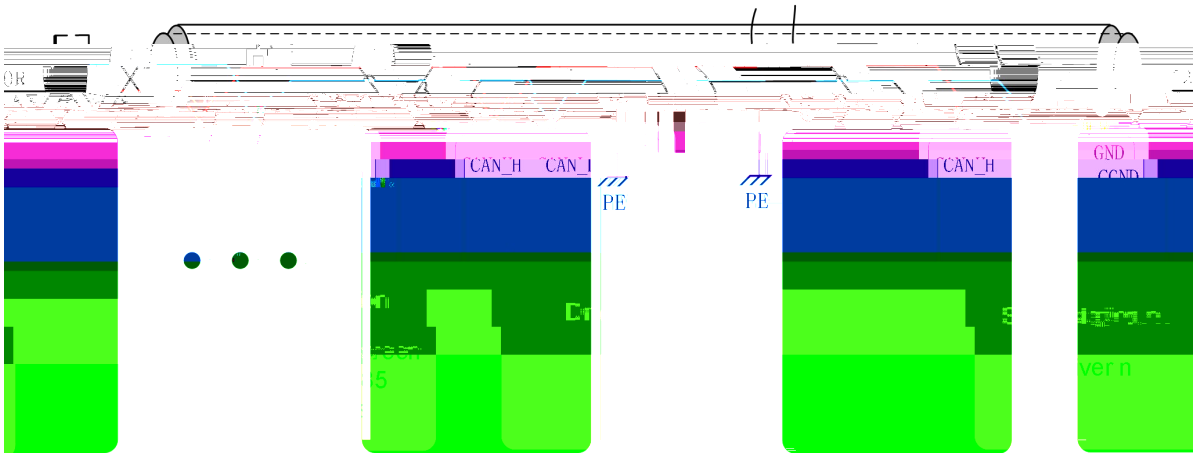
To prevent current backflow, replace the short-circuit line with a diode

Case of sourcing logic



When the switch is OFF and there is no diode, it will cause backflow, causing the input to be recognized as ON

To prevent current backflow, replace the short-circuit line with a diode



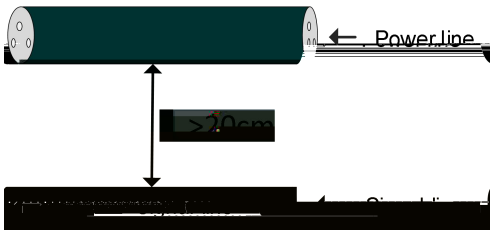
CAN bus connection topology diagram

The transmission distance of the CAN bus is directly related to the baud rate and communication cable. The relationship between the maximum bus length and the baud rate is shown in the table below. In the case of strong interference and extremely harsh electromagnetic environment, it is recommended to add relay or other filtering equipment appropriately.

Transmission distance (m)	Rate (kbps)	Number of nodes (pcs)	Wire diameter (mm2)
25	1000	64	0.205
95	500	64	0.34
560	100	64	0.5
1100	50	64	0.75

CAN bus transmission distance and number of nodes

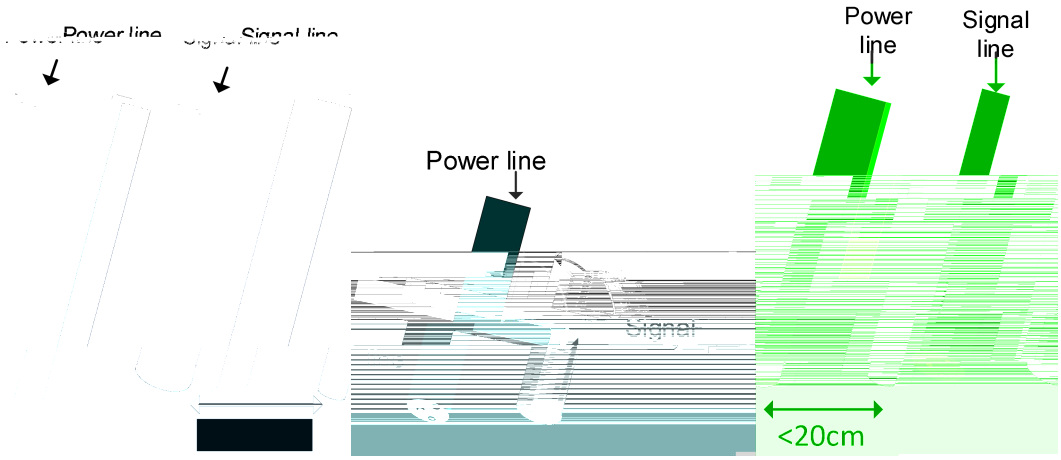
The power input lines of the inverter and the motor cables generate strong electromagnetic interference. To avoid the electromagnetic interference caused by the coupling of strong interference cables and the control loop running in parallel for long distances, the main circuit cables and signal cables shall be spaced more than 20 cm apart during wiring. Common main circuit cables include input RST line, output UVW line, DC bus and brake cable, and signal cables include IO signal line and communication line. The cables and trunking must be well connected and grounded. The aluminum trunking can guarantee the equipotential of the equipment. The inverter and motor shall be well lapped with the system (machinery or device), the installed part shall be sprayed for protection, and the conductive metal shall be fully contacted.



Cable routing diagram

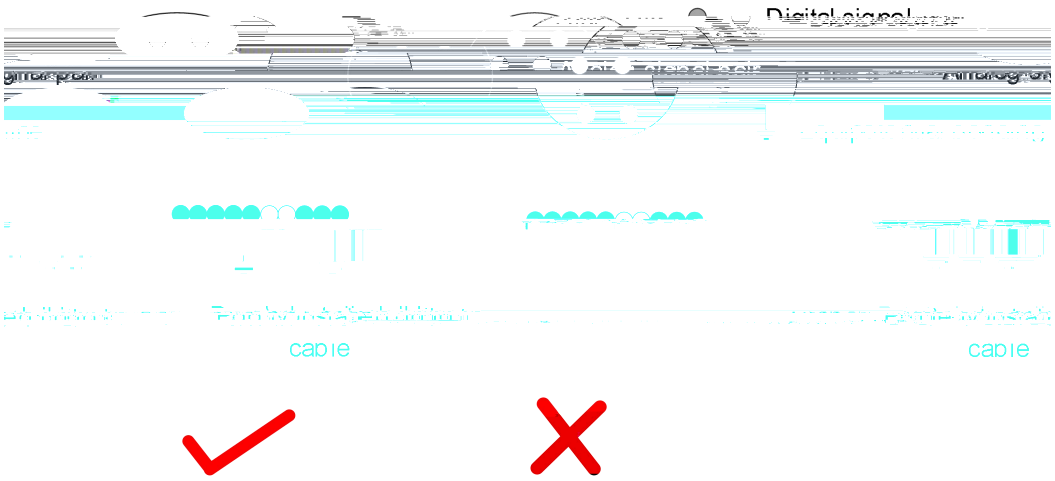
IO signals include analog input AI and output AO signals, digital input DI and output DO signals, and relay output signals. When wiring the IO signal cables, they shall be separated from the main circuit wiring (RST, UVW) and other power lines or power lines by at least 20 cm, otherwise the IO signal will be interfered.

Cables transmitting different types of signals shall be separated during wiring. A certain distance must be kept between interference cables and sensitive cables. If the wiring space is sufficient, a distance of 20 cm is recommended; If the two types of cables must cross, they shall be intersected at right angles to avoid interference, as shown in the figure below.



It is recommended that different types of signal cables be arranged separately and separated from each other by equipotential signals. For the cable arrangement of the same type of signal, the outer layer is the equipotential signal cable, and as much equipotential signal arrangement as possible is considered in the middle, as shown in the figure below.

Diagram of different types of signal cable routing



For multi-core cables, it is recommended that one cable transmit a single type of signal. If it is necessary to transmit different types of signals with one cable, a cable with shielded internal core must be used, as shown in the figure below.

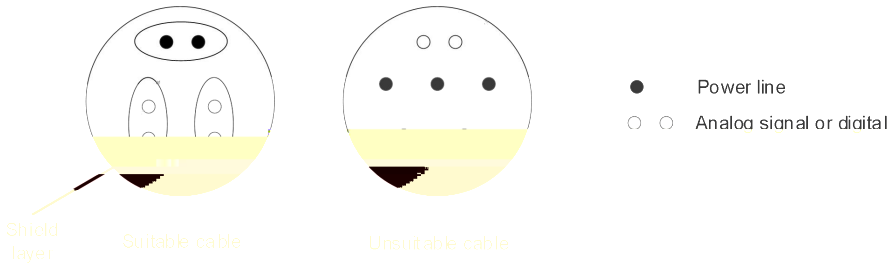
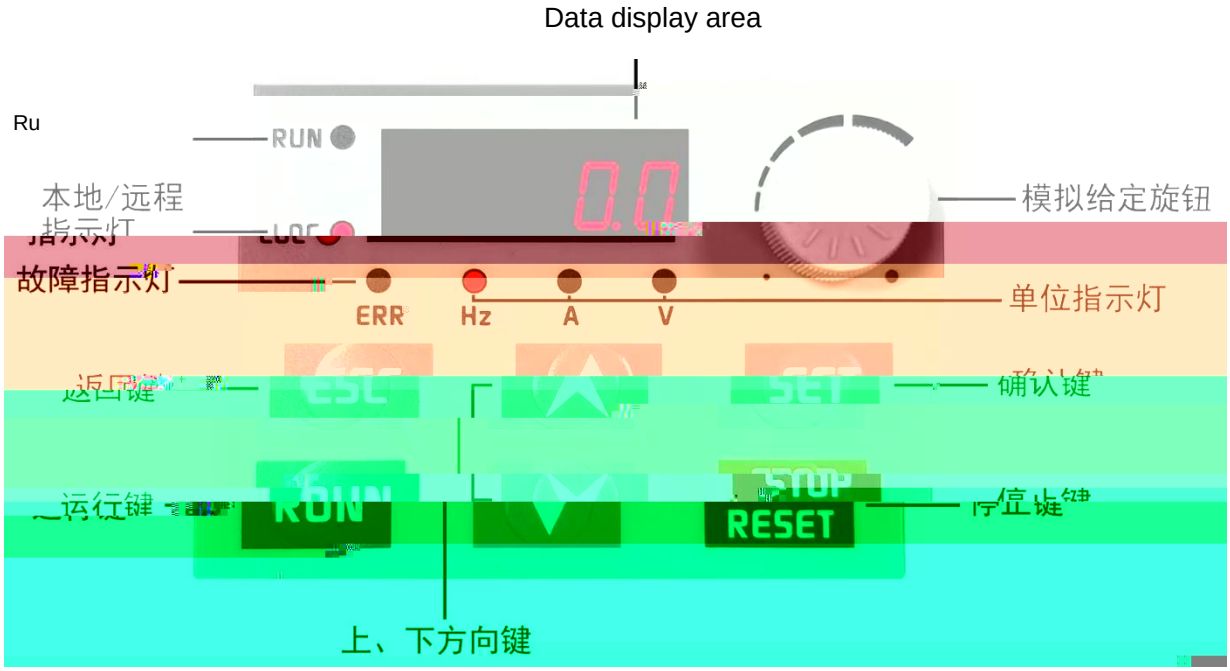


Diagram of multi-core cable routing

The GF630N01 series inverter allows for parameter viewing, modification, and other functions through the LED operation panel.

4.2.1 Introduction to LED operation panel interface

The following figure shows the appearance of the operation panel and the introduction of key functions



Status indicator lamp:

"RUN" indicator lamp:It comes on when the motor is running, otherwise it goes out

"REV" running direction indicator lamp: It comes on when the motor rotates reversely, otherwise it goes out

"LOCAL" local/remote indicator lamp: It comes on when the local mode is selected, and off when the remote mode is selected

"ERR" fault/tuning indicator lamp: It flashes when the system fails or parameter self-learning is in progress, and goes out in other cases

Unit indicator lamp:

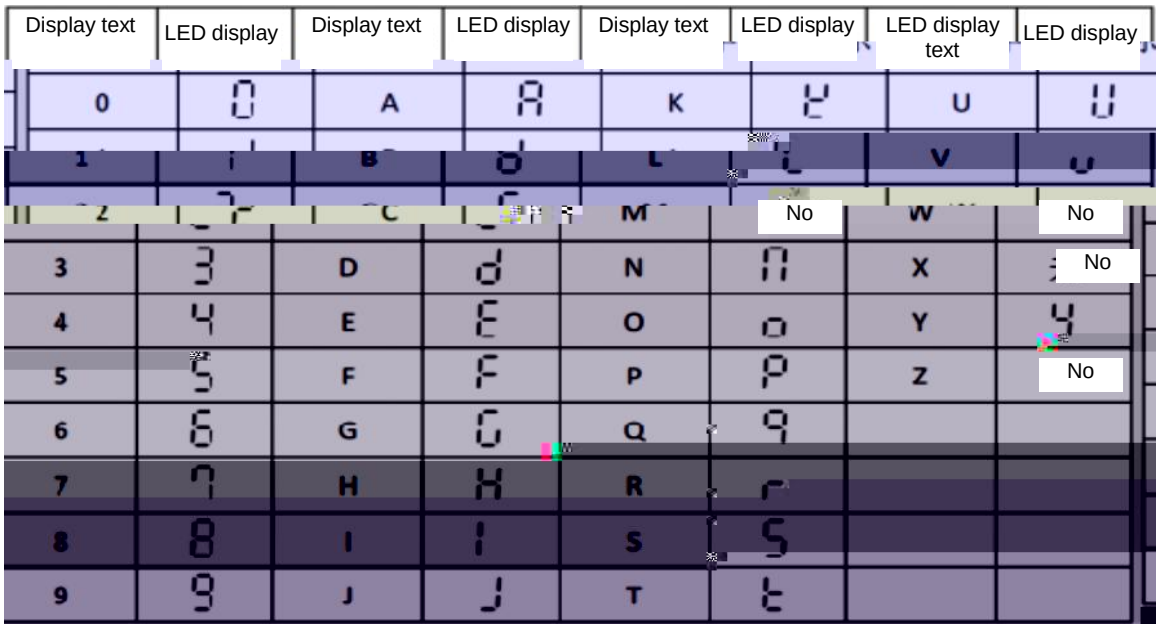
"HZ" indicator lamp: It comes on when the current display parameter unit is Hz or RPM, otherwise it goes out

"A" indicator lamp: It comes on when the current display parameter unit is A, RPM, or %, otherwise it goes out

"V" indicator lamp: It comes on when the current display parameter unit is V or %, otherwise it goes out

Data display area

There are 5 LED displays on the operation panel, which can display the set frequency, output frequency, various monitoring data and alarm codes. The following figure shows the corresponding table with LED display



ESC	Menu key	Press this key to enter or exit the primary menu. Press the ESC key in the monitoring interface to enter the primary menu, and press the ESC key in the primary menu interface to return to the monitoring display interface.
	Frequency reference adjustment	After the parameter is initialized, adjust this knob to change the reference frequency



26

Key and display interface switching logic description

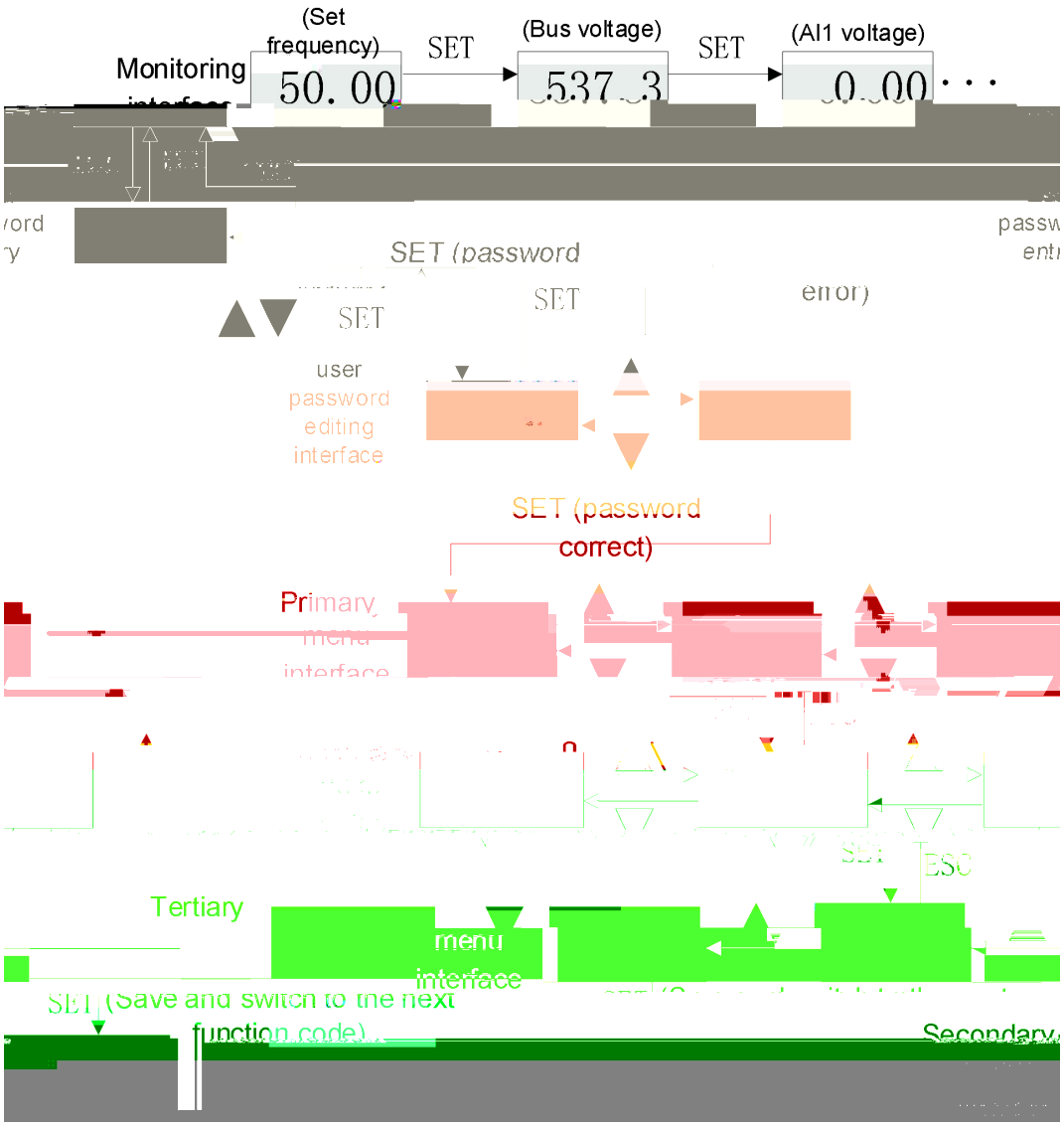
In the standby state, the monitoring interface is entered by default after power up and the set frequency is displayed. Press the SET key in the monitoring interface to switch to display other parameters. The parameters that can be displayed in the standby state are set by the function code P02.05.

In the monitoring interface, press the ESC key to enter the primary menu interface of the function code, and press the up (▲)/down (▼) arrow key in the primary menu interface to modify the group number of the function code to be viewed. Press the ESC key on the primary menu interface to return to the monitoring interface.

In the primary menu interface, press the SET key



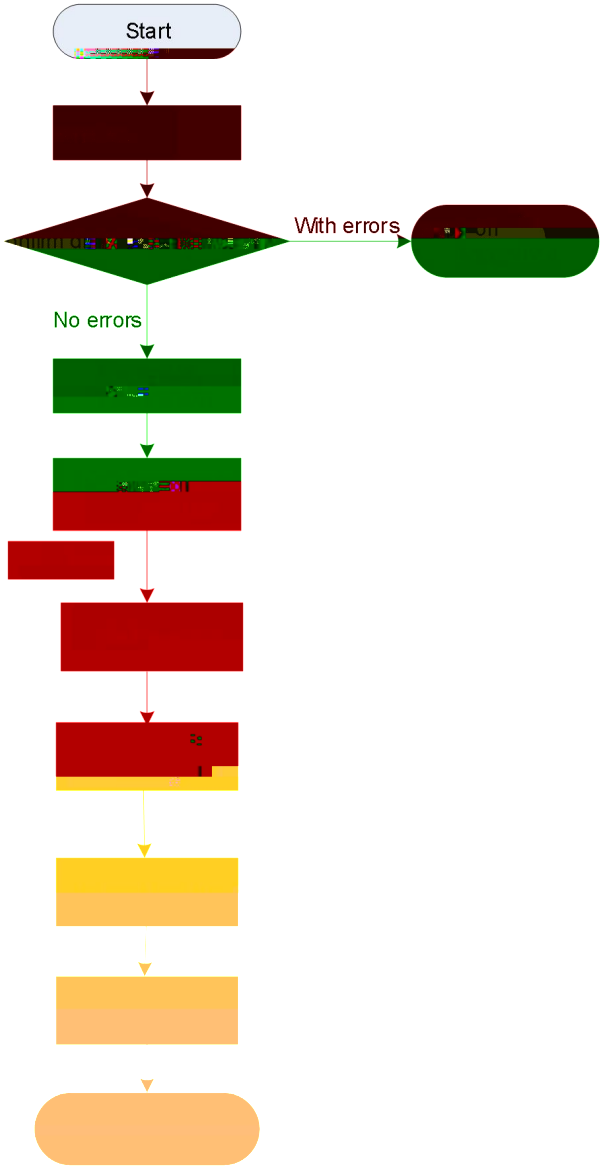
the interface (the edit bit corresponding to the flashing digital tube


(Set frequency)
SET
(Bus voltage)
SET
(AI1 voltage)
Monitoring
50. 00
537. 3
0. 00
SET (password
SET
SET
error)
user password editing interface
SET (password correct)
Primary menu interface
Tertiary menu interface
SET (Save and switch to the next function code)
Secondary

Running state

In the running state, the LED panel display is in the monitoring interface or function code view/edit interface. The switching logic between the key and the display interface is similar to that in the standby state, but the parameter categories that can be displayed on the monitoring interface in the running state are different from those in the standby state. In the running state, the pa m

Please carry out the test run according to the flow chart shown below.



0	(Hz)	reference set by analog quantity/multi-segment speed/pulse/communication, and also the default reference of acceleration/deceleration time
P08.12	Upper limit frequency (Hz)	Upper limit of frequency set by the inverter
P10.17	Motor rated pow	

1. Set the cont

No-load self-learning

	ut is ct, th ea g may fail e m otor ca t run norma h) P p

2 No-load test run:

The following describes the test run method of the motor under no-load condition.

Before running, confirm the safety around the motor and machinery, and confirm whether the emergency stop circuit and mechanical safety device can act correctly.

During running, confirm whether the rotation of the motor is normal (whether there is abnormal sound and vibration), and whether the acceleration and deceleration of the motor are normal.

The operation steps when using the operation panel are as follows

Step 1 Turn on

Mechanical system connection		Please confirm the safety around the motor and machinery Please confirm that the motor stops completely Please connect the mechanical system Please confirm whether the mounting screws are loose and fix the motor shaft and mechanical system firmly Please confirm whether the emergency stop circuit and mechanical side safety device act correctly To prevent abnormal situations, please be prepared to press the STOP key on the operation panel at any time
Running steps	Step 1	Turn on the power supply and display the initial screen
	Step 2	If local control is selected, the LOCAL indicator lamp will light up
	Step 3	Press the UP/DOWN key on the operation panel to set the reference to

Press Key ren the to

The grouping of function codes for GF630N01 Inverter is as follows:

P0	Parameter control group	P13	Motor 2 vector control group
P2	Panel settings group	P14	Basic communication parameter group
P3	Digital input terminal group	P15	PID module group
P4	Digital output terminal group	P16	Mathematical operation module
P5			

cannot be changed;

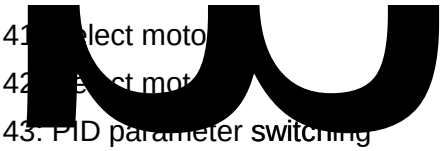
"*": It indicates that the parameter is a "manufacturer parameter" and can only be set by the manufacturer and forbidden to be operated by the user;

P00.00	User password	0	65535		0
P00.01	Parameter initialization				

P02.00	Reserved		
P02.02	STOP key function	0: The STOP key shutdown function is valid only in the keyboard operation mode 1: The STOP key shutdown function is valid in any operation mode	1
P02.03	LED running display parameter 1	0000 FFFF Bit00: running frequency 1 (Hz) Bit01: Set frequency (Hz) Bit02: Bus voltage (V) Bit03: Output voltage (V) Bit04: Output current (A) Bit05: Output power (kW) Bit06: Output torque (%) Bit07: DI input state Bit08: DO output state Bit09: AI1 voltage (V) Bit10: AI2 voltage (V) Bit11: AI3 (knob) voltage (V) Bit12: Count value Bit13: Length value Bit14: Load speed display Bit15: PID setth5 א"	

P02.04	LED running display parameter 2	0000 FFFF Bit00: PID feedback Bit01: PLC stage Bit02: PULSE input pulse frequency (kHz) Bit03: running frequency 2 (Hz) Bit04: remaining run time Bit05: AI1 voltage before calibration (V) Bit06: AI2 voltage before calibration (V) Bit07: AI3 (knob) voltage before calibration (V) Bit08: Linear velocity Bit09: Current power-up time (Hour) Bit10: current run time (Min) Bit11: PULSE input pulse frequency (Hz) Bit12: Communication setting value Bit13: Encoder feedback speed (Hz) Bit14: Main frequency X display (Hz) Bit15: Auxiliary frequency Y display (Hz)	0	
P02.05	LED shutdown display parameter	0000 FFFF Bit00: Set frequency (Hz) Bit01: Bus voltage (V) Bit02: DI input status Bit03: DO output status Bit04: AI1 voltage (V) Bit05: AI2 voltage (V) Bit06: AI3 (knob) voltage (V) Bit07: Count value Bit08: Length value Bit09: PLC stage Bit10: Load speed Bit11: PID setting Bit12: PULSE input pulse frequency (kHz)	33	
P02.06	Load speed indication factor	0.0001 6.5000	1	

16: Multi-segment speed 4
17: Select acceleration/deceleration time 1
18: Select acceleration/deceleration time 2
19: Speed reference source switching
20: Frequency UP/DOWN setting clear (terminal, keyboard)
21: Start source switching 1
22: Acceleration/deceleration prohibited
23: PID pause
24: PLC state reset
25: Swing frequency pause
26: Counter input
27: Counter reset
28: Length count input
29: Length reset
30: Torque control disabled
31: (pulse) frequency input (Only valid for DI5)
32: Reserved
33: DC braking
34: External fault normally closed input
35: Frequency modification enable
36: PID acting direction reversed
37: External shutdown signal



41: Select motor
42: Select motor
43: PID parameter switching
44: Custom fault 1
45: Custom fault 2
46: Time reached

P03.17	DI terminal active mode selection 2	0: Active high level 1: Active low level Ones digit: DI5 Tens digit: DI6 Hundreds digit: DI7 Thousands digit: reserved Myriabit: reserved	0	

P04.00	HDO digital output terminal type selection	0: Pulse output (FMP) 1: Digital output (FMR)	0
P04.01	Digital output function setting	0: Disabled 1: Running signal 2: Fault output 3: Frequency level detection FDT1 output 4: Frequency arrival 5: Zero-speed running 1 6: Motor overload pre-alarm 7: Inverter overload pre-alarm 8: Set count value arrival 9: Specified count value arrival 10: Set length	

P04.03	Reserved	16: AI1 greater than AI2 17: Upper limit frequency arrival 18: Lower limit frequency arrival (running related) 19: Undervoltage 20: Communication setting 21: (Reserved) 22: (Reserved) 23: Zero-speed running 2 (also output during shutdown) 24: Cumulative power-up time arrival	0
P04.04	Digital output terminal DO1	25: Frequency level detection FDT2 output 26: Frequency 1 arrival output 27: Frequency 2 arrival output 28: Current 1 arrival output 29: Current 2 arrival output 30: Timer arrival output 31: AI1 input value out of range 32: Load shedding 33: Reverse running 34: Zero current state 35: Module temperature arrival 36: Output current exceeds limit value 37: Output lower limit frequency (also output during shutdown) 38: Warning 39: Overtemperature warning 40: Current run time arrival	1
P04.05	Digital output terminal DO2		4
P04.06	Digital output delay	0.0s 3600.0s	0.0s

P04.10 

		16: Reserved		
P06.03	Pulse output	0.01kHz 50.00kHz	50.00kHz	
P06.04	AO1 deviation	-100.0% +100.0%	0.00%	
P06.05	AO1 gain	-10.00 +10.00	1	
P06.06	Reserved			
P06.07	Reserved			
P06.08	Reserved			
P06.09	Reserved			
P06.10	Reserved			

P07.00	Motor overload protection selection	0: Prohibited 1: Allowed	1	
P07.01	Motor overload	0.20 10.00	1	
P07.02	Motor overload	50% 100%	80%	
P07.03	Overvoltage stall gain	0 100	0	
P07.04	Overvoltage stall	120% 150%	130%	
P07.05	Overcurrent stall gain	0 100	20	
P07.06	Overcurrent stall	100% 200%	150%	
P07.07	Power-up to ground short circuit protection selection	0: Invalid 1: Valid	1	
P07.08	Reserved			
P07.09	Fault automatic reset	0 20	0	
P07.10	Fault DO action selection during	0: No action 1: Action	0	

P07.11	Fault automatic reset	0.1s 100.0s	1.0s
P07.12	Input phase loss protection	0: Prohibited 1: Allowed	00
P07.13	Output phase loss protection	0: Prohibited 1: Allowed	01
P07.14	Type of first fault	0: No fault 1: Inverter unit protection 3: Deceleration overcurrent 4: Constant speed overcurrent 8: Buffer resistor overload 11: Motor overload 15: External fault 18: Current detection abnormality 21: Parameter reading and writing abnormality 22: Inverter hardware abnormality 24: Reserved 25: Reserved 26: Run time arrival 27: User-defined fault 1 28: User-defined fault 2 29: Power-up time arrival 30: Load shedding 31: PID feedback lost during running 40: Fast current limiting timeout 41: Motor switching during running 45: Motor overtemperature 51: Initial position error 100: Acceleration overvoltage 101:	

102: Constant₹KT

P07.28	Current at the second	•
P07.29	Bus voltage at	

P07.68	verspeed detection	0.0s 60.0s	1.0s	
	Excessive speed	0.0% ~ 50.0% (maximum frequency)	20.00%	
P07.70	Excessive speed	0.0s 60.0s	5.0s	

P08.00	Reserved		
P08.01	Motor 1 control mode	0: Sensorless vector control (SVC) 1: Reserved 2: V/F control	2
P08.02	Start source selection	0: Operation panel command channel (LED off) 1: Terminal command channel (LED on) 2: Communication command channel (LED flashing)	0
P08.03	Main speed reference source X selection	0: Digital setting (preset frequency P08.08, UP/DOWN modifiable, no power down memory) 1: Digital setting (preset frequency P08.08, UP/DOWN modifiable, power down memory) 2 AI1 3 AI2 4: AI3 (knob) 5: PULSE pulse setting (DI5) 6: Multi-segment command 7: Simple PLC 8 PID 9: Communication reference	4
P08.04	Auxiliary speed reference source Y selection	Same as P08.03 (main speed reference source X selection)	0
P08.05	Auxiliary speed source Y range selection during	0: Relative	

	current				
P08.34	Start DC braking time/pre-excitation time	0.0s	100.0s		0.0s
P08.35	Acceleration and deceleration mode				

P09.17	Multi-segment command 7	-100.0%	100.0%	0.00%
P09.18	Multi-segment command 8	-100.0%	100.0%	0.00%
P09.19	Multi-segment command 9	-100.0%	100.0%	0.00%
P09.20	Multi-segment command 10	-100.0%	100.0%	0.00%
P09.21	Multi-segment command 11	-100.0%	100.0%	0.00%
P09.22	Multi-segment command 12	-100.0%	100.0%	0.00%
P09.23	Multi-segment command 13	-100.0%	100.0%	0.00%
P09.24	Multi-segment command 14	-100.0%	100.0%	0.00%
P09.25	Multi-segment command 15	-100.0%	100.0%	0.00%
P09.26	Simple PLC running mode	0: Shutdown at the end of a single run 1: Maintain the final value at the end of a single run 2: Continuous cycle		0
P09.27	Simple PLC power-down memory selection	Ones digit: Power-down memory selection 0: No power down memory 1: Power down memory		

P09.40	Simple PLC segment 6 run time	0.0s h 6553.5s h	0.0s h	
P09.41	Simple PLC segment 6 acceleration and deceleration time selection	0 3	0	
P09.42	Simple PLC segment 7 run time	0.0s h 6553.5s h	0.0s h	
P09.43	Simple PLC segment 7 acceleration and deceleration time selection	0 3	0	
P09.44	Simple PLC segment 8 run time	0.0s h 6553.5s h	0.0s h	
P09.45	Simple PLC segment 8 acceleration and deceleration time selection	0 3	0	
P09.46	Simple PLC segment 9 run time	0.0s h 6553.5s h	0.0s h	
P09.47	Simple PLC segment 9 acceleration and deceleration time selection	0 3	0	
P09.48	Simple PLC segment 10 run time	0.0s h 6553.5s h	0.0s h	
P09.49	Simple PLC segment 10 acceleration and deceleration time selection	0 3	0	
P09.50	Simple PLC segment 11 run time	0.0s h 6553.5s h	0.0s h	

P09.51	Simple PLC segment 11 acceleration and deceleration time selection	0	3					0		
P09.52	Simple PLC segment 12 run time	0.0s	h	6553.5s	h			0.0s	h	
P09.53	Simple PLC segment 12 acceleration and deceleration time selection	0								

P09.61	Multi-segment command reference mode 0	0: Function code P09.10 reference 1 AI1 2 AI2 3: AI3 (knob) 4: PULSE pulse 5 PID 6: Preset frequency (P08.08) reference, UP/DOWN can be modified	0	

P10.00	VF curve setting	0: Straight line V/F 1: Multipoint V/F 2: Square V/F 3: 1.2 power V/F 4: 1.4 power V/F 6: 1.6 power V/F 8: 1.8 power V/F 9: Reserved 10: VF full separation mode 11: VF semi-separation mode	0	
P10.01	Torque boost	0.0%: (automatic torque boost) 0.1% 30.0%	Model determination	
P10.02	Torque boost cut-off frequency	0.00Hz~maximum frequency	50.00Hz	
P10.03	VF frequency point 1	0.00Hz P10.05	0.00Hz	
P10.04	VF voltage point 1	0.0% 100.0%	0.00%	
P10.05	VF frequency point 2	P10.03 P10.07	0.00Hz	
P10.06	VF voltage point 2	0.0% 100.0%	0.00%	
P10.07	VF frequency point 3	P10.05 ~ motor rated frequency (P10.20)	0.00Hz	

P10.08	VF voltage point 3	0.0% 100.0%	0.00%	
P10.09	VF slip compensation gain	0.0% 200.0%	0.00%	
P10.10	VF overexcitation gain	0 200	64	
P10.11	VF oscillation suppression gain	0 100	Model determination	
P10.12	Reserved			
P10.13	Voltage source for VF separation	0: Digital setting (P10.14) 1 AI1 2 AI2 3: AI3 (knob) 4: PULSE pulse setting (DI5) 5: Multi-segment command 6: Simple PLC 7 PID 8: Communication reference Note: 100.0% corresponds to the motor rated voltage	0	
P10.14	Digital setting of voltage for VF separation	0V Motor rated voltage	0V	
P10.15	Voltage rise time of VF separation	0.0s 1000.0s Note: It indicates the time from 0V to motor rated voltage	0.0s	
P10.16	Motor type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor 2: Reserved	0	
P10.17	Motor rated power	0.1kW 1000.0kW	Model determination	
P10.18	Motor rated voltage	1V 2000V	Model determination	
P10.19	Motor rated current	0.01A~655.35A (inverter power <=55kW) 0.1A~6553.5A (inverter power >55kW)	Model determination	
P10.20	Motor rated frequency	0.01Hz~maximum frequency	Model determination	
P10.21	Motor rated speed	1rpm 65535rpm	Model determination	
P10.22	Asynchronous motor stator resistance	0.001Ω~65.535Ω (inverter power <=55kW) 0.0001Ω~6.5535Ω (inverter power >55kW)	Tuning parameters	

P10.23	Asynchronous motor rotor resistance	0.001 Ω ~ 65.535 Ω (inverter power <=55kW) 0.0001 Ω - 6.5535 Ω (inverter power >55kW)	Tuning parameters	
P10.24	Asynchronous motor leakage inductance	0.01mH ~ 655.35mH (inverter power <=55kW) 0.001mH ~ 65.535mH (inverter power >55kW)	Tuning parameters	
P10.25	Asynchronous motor mutual inductance	0.1MH ~ 6553.5mH (inverter power <=55kW) 0.01mH ~ 655.35mH (inverter power >55kW)	Tuning parameters	
P10.26	Asynchronous motor no-load current	0.01A~P10.19 (inverter power <=55kW) 0.1A~P10.19 (inverter power >55kW)	Tuning parameters	
P10.27 ~P10.52	Reserved			
P10.53	Tuning selection	0: No operation 1: Static tuning 2: Complete tuning motor	0	

P11.00	Motor 2 type selection	0: Common asynchronous motor 1: Variable frequency asynchronous motor 2: Reserved	
P11.01	Motor rated power	0.1kW	6
P11.02	Motor rated voltage	1V	

P11.06	Asynchronous motor stator resistance	0.001Ω~65.535Ω (inverter power <=55kW) 0.0001Ω~6.5535Ω (inverter power >55kW)	Tuning parameters
P11.07	Asynchronous motor rotor resistance	0.001Ω~65.535Ω (inverter power <=55kW) 0.0001Ω~6.5535Ω (inverter power >55kW)	Tuning parameters
P11.08	Asynchronous motor leakage inductance	0.01mH ~ 655.35mH (inverter power <=55kW) 0.001mH ~ 65.535mH (inverter power >55kW)	Tuning parameters
P11.09	Asynchronous motor mutual inductance	0.1MH ~ 6553.5mH (inverter power <=55kW) 0.01mH ~ 655.35mH (inverter power >55kW)	Tuning parameters
P11.10	Asynchronous motor no-load current	0.01A~P11.03 (inverter power <=55kW) 0.1A~P11.03 (inverter power >55kW)	Tuning parameters
P11.11~			b

P12.19	Reserved			
P12.20	Maximum weak magnetic current	1%	300%	50%
P12.21	Automatic weak magnetic adjustment gain	10%	500%	100%

P13.09	Torque upper limit source (electric) in speed control mode	0: P13.10 setting 1 AI1 2 AI2 3: AI3 (knob) 4: PULSE pulse 5: Communication reference 6 MIN(AI1,AI2) 7 MAX(AI1,AI2) Full scale of option 1.7 corresponds to P13.10 digital setting		0
P13.10	Torque upper limit digital setting (electric) in speed control mode	0.0%	200.0%	150.00%
P13.11	Reserved			
P13.12	Reserved			
P13.13	Excitation regulation proportional gain	0	60000	2000
P13.14	Excitation regulation integral gain	0	60000	1300
P13.15	Torque regulation proportional gain	0	60000	2000

		1: Reserved 2: V/F control		
P13.24	Motor 2 acceleration and deceleration time selection	0: Same as motor 1 1: Acceleration/deceleration time 1 2: Acceleration/deceleration time 2 3: Acceleration/deceleration time 3 4: Acceleration/deceleration time 4	0	
P13.25	Torque boost	0.0%: (automatic torque boost) 0.1% 30.0%	Model determination	
P13`.26	Reserved			
P13.27	Oscillation suppression gain	0 100	Model determination	

P14.00	Communication expansion card type	0: Modbus communication card 1: Reserved 2: Reserved	0	
P14.01	Baud rate	Ones digit: MODBUS 0 300BPS 1 600BPS 2 1200BPS 3 2400BPS 4 4800BPS 5 9600BPS 6 19200BPS 7 38400BPS 8 57600BPS 9 115200BPS Tens digit: Reserved Hundreds digit: Reserved Thousands digit: reserved	6009	
P14.02	MODBUS data format	0: No check (8-N-2) 1: Even check (8-E-1) 2: Odd check (8-O-1) 3: No check (8-N-1) (MODBUS valid)	3	
P14.03	Local address	1~247, 0 is the broadcast address	1	
P14.04	Response delay	0ms 20ms	2	

P14.05	Communication timeout	0.0 (invalid), 0.1 s~60.0 s	0	
P14.06	Data transmission format selection	Ones digit: MODBUS 0: Non-standard MODBUS protocol 1: Standard MODBUS protocol Tens digit: Reserved	31	
P14.07	Communication reading current resolution	0 0.01A 1 0.1A	0	
P14.08	Communication master-slave mode	0,1	0	

P15.00	PID reference source	0: P15.01 setting 1 AI1 2 AI2 3: AI3 (knob) 4: PULSE pulse setting (DI5) 5: Communication reference 6: Multi-segment command	0	
P15.01	PID value reference	0.0% 100.0%	50.00%	
P15.02	PID feedback source	0 AI1 1 AI2 2: AI3 (knob) 3 AI1.AI2 4: PULSE pulse setting (DI5) 5: Communication reference 6 AI1+AI2 7 MAX |AI1|, |AI2| 8 MIN |AI1|, |AI2|	0	
P15.03	PID action direction	0: Positive action 1: Negative action	0	
P15.04	PID reference	0 65535	1000	
P15.05	Proportional gain Kp1	0.0 100.0	20	
P15.06	Integration time Ti1	0.01s 10.00s	2.00s	

P15.07	Differential time Td1	0.000s	10.000s	0.000s
P15.08	PID reversal cut-off	0.00~maximum frequency		2.00H

P15.28	PID shutdown operation	0: Shutdown without operation 1: Operation during shutdown	0	

P16.00	Virtual VDI1 terminal	0	59	0
P16.01	Virtual VDI2 terminal	0	59	0
P16.02	Virtual VDI3 terminal	0	59	0
P16.03	Virtual VDI4 terminal	0	59	0
P16.04	Virtual VDI5 terminal	0	59	0

P16.05	Virtual VDI terminal stat-	

P16.09	AI3 terminal functiov

P16.21	VDO output terminal valid state selection	0: Positive logic 1: Reverse logic Ones digit: VDO1 Tens digit: VDO2 Hundreds digit: VDO3 Thousands digit: VDO4 Myriabit: VDO5	0	

P19.00	AI curve 4 minimum input	-10.00V		0.00V
P19.01	AI curve 4 minimum input	-100.0%		0.00%
P19.02	AI curve 4 inflection point 1 input	P19.00	P19.04	3.00V
P19.03	AI curve 4 inflection point 1 input	-100.0%		30.00%

P19.27	AI2 set jump amplitude	0.0% 100.0%	0.50%	
P19.28	AI3 set jump point	-100.0%	0.00%	
P19.29	AI3 set jump amplitude	0.0% 100.0%	0.50%	
P19.30	AI1 measured voltage 1	0.500V 4.000V	Factory calibration	
P19.31	AI1 displayed voltage 1	0.500V 4.000V	Factory calibration	
P19.32	AI1 measured voltage 2	6.000V 9.999V	Factory calibration	
P19.33	AI1 displayed voltage 2	6.000V 9.999V	Factory calibration	
P19.34	AI2 measured current 1	0.000V 20.000mA	Factory calibration	
P19.35	AI2 displayed current 1	0.000V 20.000mA	Factory calibration	
P19.36	AI2 measured current 2	0.000V 20.000mA	Factory calibration	
P19.37	AI2 displayed current 2	0.000V 20.000mA	Factory calibration	
P19.38	Reserved		Factory calibration	
P19.39	Reserved		Factory calibration	
P19.40	Reserved		Factory calibration	
P19.41	Reserved		Factory calibration	
P19.42	AO1 target voltage 1	0.500V 4.000V	Factory calibration	
P19.43	AO1 measured voltage 1	0.500V 4.000V	Factory calibration	
P19.44	AO1 target voltage 2	6.000V 9.999V	Factory calibration	
P19.45	AO1 measured voltage 2	6.000V 9.999V	Factory calibration	
P19.46	Reserved			
P19.47	Reserved			
P19.48	Reserved			
P19.49	Reserved			

P21.20	Frequency detection hysteresis (FDT1)	0.0% ~ 100.0% (FDT1 level)	5.00%
P21.21	Frequency arrival detection width	0.0% ~ 100.0% (maximum frequency)	0.00%
P21.22	Whether the jump frequency is valid during acceleration and deceleration	0: Invalid 1: Valid	0
P21.23	Reserved		
P21.24	Reserved		
P21.25	Switching frequency point between acceleration time 1 and acceleration time 2	0.00Hz~maximum frequency	0.00Hz
P21.26	Switching frequency point between deceleration time 1 and deceleration time 2	0.00Hz~maximum frequency	0.00Hz
P21.27	Terminal jog priority	0: Invalid 1: Valid	0
P21.28	Frequency detection value (FDT2)	0.00Hz~maximum frequency	50.00Hz
P21.29	Frequency detection hysteresis (FDT2)	0.0% ~ 100.0% (FDT2 level)	5.00%
P21.30	Arbitrary arrival frequency detection value 1	0.00Hz~maximum frequency	50.00Hz
P21.31	Arbitrary arrival frequency detection width 1	0.0% ~ 100.0% (maximum frequency)	0.00%
P21.32	Arbitrary arrival frequency detection value		

0.0% (not detected

P21.36 Output current over limit value

P21.52	Sleep delay time	0.0s 6500.0s	0.0s	
P21.53	Current running arrival time setting	0.0Min 6500.0Min	0.0Min	
P21.54	DPWM switching upper limit frequency	0.00Hz 15.00Hz	12.00Hz	
P21.55	PWM modulation mode	0: Asynchronous modulation 1: Synchronous modulation	0	
P21.56	Dead band compensation mode selection	0: No compensation 1: Compensation mode 1 2: Compensation mode 2	1	
P21.57	Random PWM depth	0: Random PWM invalid 1~10: PWM carrier frequency random depth	0	
P21.58	Fast current limiting enable	0: Not enabled 1: Enabled	1	
P21.59	Current detection delay compensation	0 100	5	
P21.60	Undervoltage point setting	60% 140%	100.00%	
P21.61	SVC optimization mode selection	0: Not optimized 1: Optimization mode 1 2: Optimization mode 2	1	
P21.62	Dead time adjustment	100% 200%	150%	
P21.63	Overvoltage point setting	200.0V 2500.0V	Model determination	

P23.00	Running frequency (Hz)	0.01Hz	7000H	
P23.01	Set frequency (Hz)	0.01Hz	7001H	
P23.02	Bus voltage (V)	0.1V	7002H	
P23.03	Output voltage (V)	1V	7003H	
P23.04	Output current (A)	0.01A	7004H	
P23.05	Output power (kW)	0.1kW	7005H	
P23.06	Output torque (%)	0.10%	7006H	
P23.07	DI input status	1	7007H	
P23.08	DO output status	1	7008H	
P23.09	AI1 voltage (V)	0.01V	7009H	
P23.10	AI2 voltage (V)/current (mA)	0.01V/0.01mA	700AH	
P23.11	AI3 voltage (V)	0.01V	700BH	
P23.12	Count value	1	700CH	
P23.13	Length value	1	700DH	
P23.14	Load speed display	1	700EH	
P23.15	PID setting	1	700FH	
P23.16	PID feedback	1	7010H	
P23.17	PLC stage	1	7011H	
P23.18	PULSE input pulse frequency (Hz)	0.01kHz	7012H	
P23.19	Feedback speed (Hz)	0.01Hz	7013H	
P23.20	Remaining run time	0.1Min	7014H	
P23.21	AI1 voltage before correction	0.001V	7015H	
P23.22	AI2 voltage (V)/current (mA) before correction	0.001V/0.01mA	7016H	
P23.23	AI3 voltage before correction	0.001V	7017H	
P23.24	Linear speed	1m/Min	7018H	
P23.25	Current power-up time	1Min	7019H	

P28.09	Asynchronous motor mutual inductance	0.1MH ~ 6553.5mH (inverter power <=55kW) 0.01mH ~ 655.35mH (inverter power >55kW)	Tuning parameters	✗
P28.10	Asynchronous motor no-load current	0.01A~P28.03 (inverter power <= 55kW)		

P29.07	As ro resistance	2~6.5 Ω (in ver	Tuning para meters	
P29.08	Asynchronous motor leakage inductance	0.01mH ~ 655.35mH (inverter pow er <=55kW) 0.001mH ~ 65.535mH (inverter p ower >55kW)	Tuning para meters	
P29.09	Asynchronous motor mutual inductance	0.1MH ~ 6553.5mH (inverter powe r <=55kW) 0.01mH ~ 655.35mH (inverter po wer >55kW)	Tuning para meters	
P29.10	Asynchronous motor no-load current	0.01A~P29.03 (inverter power <=5 5kW) 0.1A~P29.03 (inverter power >55 kW)	Tuning para meters	
P29.11~ P29.36	Reserved			
P29.37	Tuning selection	0: No operation 1: Static tuning of motor		

P30.00	Speed loop p	1	

P30.24	Motor 3 acceleration and deceleration time selection	0: Same as motor 1 1: Acceleration/deceleration time 1 2: Acceleration/deceleration time 2	0	
P30.25	Torque boost	0.0%: (automatic torque boost) 0.1% 30.0%	Model determination	
P30.26	Reserved			
P30.27	Oscillation suppression gain	0 100	Model determination	

P31.00	Speed loop	1 100	30	
P31.01	Speed loop integratio	0.01s 10.00s	0.50s	
P31.02	Switching frequency	0.00 P31.05	5.00Hz	
P31.03	Speed loop proportio	1 100	20	
P31.04	Speed loop integratio	0.01s 10.00s	1.00s	
P31.05	Switching frequency	P31.02~maximum frequency	10.00Hz	
P31.06	Vector control slip g	50% 200%	100%	
P31.07	Speed loop filter tim	0.000s 0.100s	0.000s	
P31.08	Vector control overex	0 200	64	
P31.09	Torque upper limit source (electric) in speed control mode	0: P31.10 setting 1 AI1 2 AI2 3 AI3 4: PULSE pulse 5: Communication reference 6 MIN(AI1,AI2) 7 MAX(AI1,AI2) Full scale of options 1-7 corresponds to P31.10 digital setting	0	
P31.10	Upper torque limit in speed control mode	0.0% 200.0%	150.00%	

P31.11	Reserved			
P31.12	Reserved			
P31.13	Excitation regulation	0	60000	2000
P31.14	Excitation regulation	0	60000	1300
P31.15	Torque regulation pr	0	60000	2000
P31.16	Torque regulation int	0	60000	1300
P31.17	Speed loop integral attribute	Ones digit: integral separation 0: Invalid 1: Valid		0
P31.18	Reserved			
P31.19	Reserved			
P31.20	Maximum weak mag			

P00.00	User password	Factory default	0
	Setting range	0 65535	

If P00.00 is set to any non-zero number, the password protection function will take effect. When entering the menu next time, you must enter the password correctly, otherwise you cannot view and modify the function parameters. Please remember the set user password.

If P00.00 is set to 00000, the set user password will be cleared and the password protection function will be invalid.

P00.01	Parameter initialization		Factory default	0
	Setting range	0	No operation
		1	Restore factory parameters, excluding motor parameters
		2	Clear record information

1. Restore factory settings, excluding motor parameters

After setting P00.01 to 1, most of the function parameters of the inverter are restored to the factory parameters, but the following parameters are not restored:

1 Manufacturer parameters (group P1);

2 Parameter control group: P00.00, P00.01;

3 Fault record information

Clear inverter fault record information, cumulative run time (P02.09), cumulative power-up time (P02.13), and cumulative power consumption (P02.14).

P00.02	Function parameter mode display attributes		Factory default	11
	Setting range	Ones digit	Groups P23 and P27 display selection	
		0	No display	
		1	Display	
		Tens digit	Groups P11, P13, P16, P19, P20, P28, P29, P30, and P31 display selection	
		0	No display	
		1	Display	

P00.04	Function code modification attributes		Factory default	0
	Setting range	0	Modifiable	
		1	Not modifiable	

The user can set whether the function code parameters can be modified to prevent the function parameter from being mistakenly altered.

If this function code is set to 0, all function codes can be modified; When it is set to 1, all function codes can only be viewed and cannot be modified.

	LED running display parameter 1	Factory default	1F

7 6 5 4 3 2 1 0

Running frequency 1 (Hz)

Set frequency (Hz)

Bus voltage (V)

Output voltage (V)

Output current (A)

Set

Fixed 0000

P02.03 Fan

Enclo FFFF

sure

P02.02	STOP/RESET key function		Factory default	1
	Setting range	0	The STOP/RES key shutdown function is valid only in the keyboard operation mode
		1	The STOP/RES key shutdown function is valid in any operation mode

LED running display parameter 2 Factory 0

7 6 5 4 3 2 1 0

PID feedback

PLC stage
PULSE input pulse

frequency (kHz)

Running frequency 2

(Hz)

Remaining run t]

Set

Fixed 0000

Fan FFFF

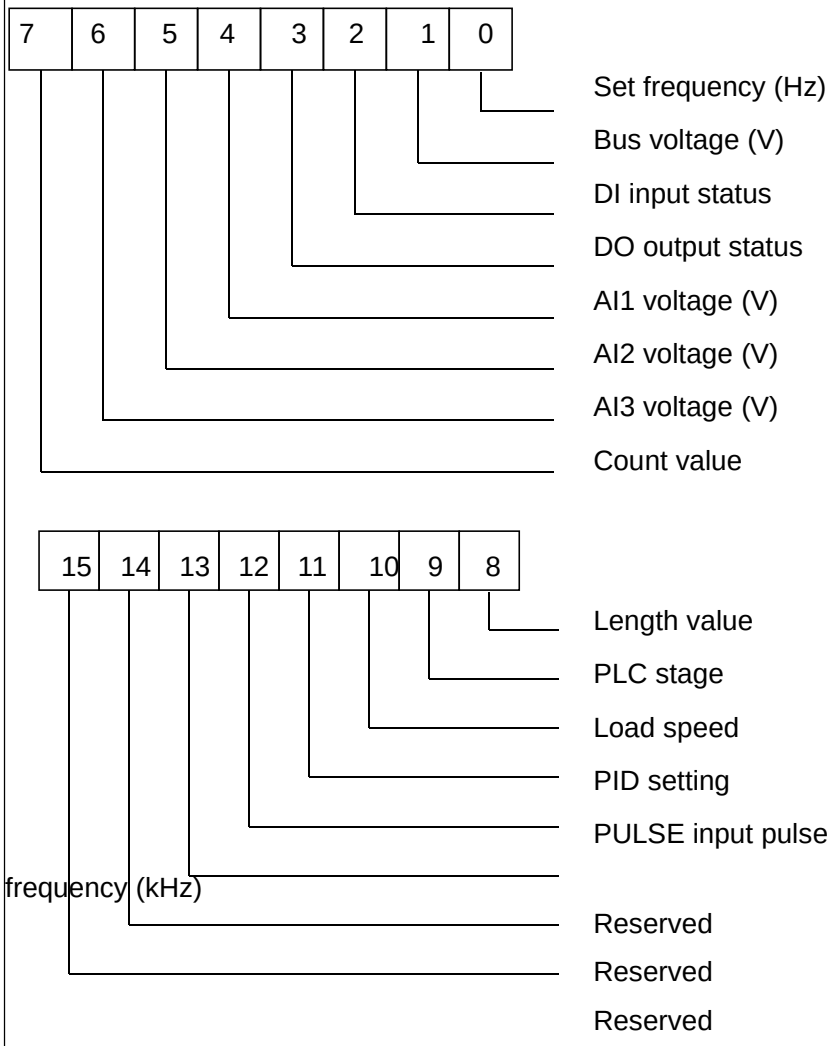
Enclos

ure

P02.04

P02.03.

P02.05	LED shutdown display parameter		Factory default	0
	Set Fixed Fan Enclosure	0000 FFFF		



If the above parameters need to be displayed during running, set the corresponding position to 1, convert this binary number to hexadecimal and set it to P02.05.

P02.06	Load speed indication factor	Factory default	1.0000
	Setting range	0.0001 6.5000	

When the load speed needs to be displayed, adjust the corresponding relationship between the output frequency of the inverter and the load speed through this parameter. Please refer to the description of P02.12 for specific correspondence.

50.00Hz as an example, the load speed in the shutdown state is: 50.0 × 2.000 = 100.00 (displayed with 2 decimal points).

P02.13	Cumulative power-up time	Factory	0h
	Setting range	0h 65535h	

Display the cumulative power-up time of the inverter from the factory.
When this time reaches the set power-up time (P21.17), the multi-function digital output function (24) of the inverter outputs an ON signal.

P02.14	Cumulative power consumption	Factory	-
	Setting range	0~65535°	

Display the cumulative power consumption of the inverter so far.

GF630N01 series inverters are equipped with 8 multi-function digital input terminals (of which HDI can be used as high-speed pulse input terminals) and 2 analog input terminals as standard.

P03.00	DI1 terminal function selection	1 (forward running)	Standard configuration
P03.01	DI2 terminal function selection	4 (forward jog)	Standard configuration
P03.02	DI3 terminal function selection	9 (fault reset)	Standard configuration
P03.03	DI4 terminal function selection	12 (Multi-segment speed 1)	Standard configuration
P03.05	DI5 terminal function selection	0	Standard configuration
P03.06	DI6 terminal function selection	0	Standard configuration

P03.07	DI7 terminal function selection	0	Standard configuration

These parameters are used to set the functions of the digital multi-function input terminal, and the functions that can be selected are shown in the following table:

0	No function	Terminals that are not in use can be set to "no function" to prevent malfunction.
1	Forward runn]	

		the inverter returns to the running state before stopping.
11	External fault normally open input	When the signal is sent to the inverter, the inverter will report the fault E015 and handle the fault according to the fault protection action mode (refer to function P07.47 for details).
12	Multi-segment speed terminal 1	The 16 states of these four terminals can be used to set 16 speed segments or 16 other command settings. See the attached table for details.
13	Multi-segment speed terminal 2	
14	Multi-segment speed terminal 3	
15	Multi-segment speed terminal 4	
16	Acceleration/deceleration time selection terminal 1	Four acceleration and deceleration times can be selected through the four states of the two terminals. See the attached table for details.
17	Acceleration/deceleration time selection terminal 2	
18	Frequency source switching	It is used to switch between different frequency sources. According to the setting of the frequency source selection function code (P08.07), when switching between two frequency sources is set as the frequency source, this terminal is used to switch between the two frequency sources.
19	UP/DOWN setting clear (terminal, keyboard)	When the frequency reference is digital frequency reference, this terminal can clear the frequency value changed by terminal UP/DOWN or keyboard UP/DOWNA, so that the reference frequency returns to the value set by P08.08.
20	Run command switching terminal	When the command source is set to terminal control (P08.02=1), this terminal can switch between terminal control and keyboard control. When the command source is set to communication control (P08.02=2), this terminal can switch between

		communication control and keyboard control.
21	Acceleration/deceleration prohibited	Ensure that the inverter is not affected by external signals (exce Ď ᵀ

		key on the keyboard.
37	Control command switching terminal 2	For switching between terminal control and communication control. If the command source is selected as terminal control, the system switches to communication control when the terminal is valid; The reverse is also true.
38	PID integral pause	When this terminal is valid, the integral adjustment function of PID is paused, but the proportional adjustment and derivative adjustment functions of PID are still valid.
39	Switching between frequency source X and preset frequency	If the terminal is valid, the frequency source X is replaced by the preset frequency (P08.08)
40	Switching between frequency source Y and preset frequency	If the terminal is valid, the frequency source Y is replaced by the preset frequency (P08.08)
41	Motor selection terminal 1	Four groups of motor parameters can be switched through the four states of the two terminals. See the attached table for details.
42	Motor selection terminal 2	
43	PID parameter switching	If the PID parameter switching condition is DI terminal (P15.18=1), when the terminal is invalid, P15.05~P15.07 shall be used for PID parameters; When the terminal is valid, P15.15~P15.17 shall be used;
44	User-defined fault 1	When user-defined faults 1 and 2 are valid, the inverter will alarm E027 and E028 respectively, and the inverter will select the action mode selected by P07.49 according to the fault protection action for processing.
45	User-defined fault 2	
46	Speed control/torque control switching	Switch the inverter between torque control and speed control modes. When this terminal is invalid, the inverter runs in the mode defined by P20.00 (speed/torque control mode). If this terminal is valid, switch to another mode.
47	Emergency Stop (E-Stop)	When this terminal is valid, the inverter stops at the fastest speed, and the current is at the set upper limit during this stop process. This function is used to meet the requirement that the inverter needs to stop as soon as possible when the system is in an emergency state.

48	External stop terminal 2	In any control mode (panel control, terminal control, communication control), this terminal can be used to make the inverter Ramp to Stop (RTS), at which point the deceleration time is fixed as deceleration time 4.
49	Deceleration DC braking	When this terminal is valid, the inverter first decelerates to the shutdown DC braking start frequency, and then switches to the DC braking state.
50	Current run time reset	When this terminal is valid, the current running timing time of the inverter will be cleared. This function needs to be used in conjunction with timing running (P21.42) and current run time arrival (P21.53).

Four multi-segment command terminals can be combined into 16 states



P03.11	Terminal command		Factory	0
	Setting range	0	Two-wire type 1	
		1	Two-wire type 2	
		2	Three-wire type 1	
		3	Three-wire type 2	

This parameter defines four different ways to control the running of the inverter through the external terminals.

Note: For the convenience of explanation, the following three terminals DI1, DI2 and DI3 from the multi-function input terminals DI1 ~ DI5 are arbitrarily selected as external terminals. That is, the functions of the three terminals DI1, DI2 and DI3 are selected by setting the values of P03.00 ~ P03.02. For detailed function definitions, see the setting range of P03.

0: Two-wire mode 1: This mode is the most commonly used two-wire mode. Terminals DIx and DIy determine the forward and reverse running of the motor.

The terminal functions are set as follows:

DIx	1	Forward running (FWD)
DIy	2	Reverse running (REV)

Among them, DIx and DIy are the multi-function input terminalti-fu

2: Three-wire control mode 1: In this mode, DIn is the enable terminal, and the direction is controlled by DIx and DIy respectively.

The terminal functions are set as follows:

DIx	1	Forward running (FWD)
DIy	2	Reverse running (REV)
DIn	3	Three-wire running control

When running is required, the DIn terminal must be closed first, and the forward or reverse control of the motor is realized by the pulse rising edge of DIx or DIy.

When stop is required, it must be achieved by disconnecting the DIn terminal signal. Among them, DIx, DIy, and DIn are the multi-function input terminals of DI1~DI10, with DIx and DIy being pulse valid, and DIn being level valid.

3: Three-wire control mode 2: The enable terminal of this mode is DIn, the run command is given by DIx, and the direction is determined by the state of DIy.
The terminal functions are set as follows:

DIx	1	Forward running (FWD)
DIy	2	Reverse running (REV)
DIn	3	Three-wire running control

When running is required, the DIn terminal must be closed first, and the motor running signal is generated by the pulse rising edge of DIx, while the motor direction signal is generated by the state of DIy.

When stop is required, it must be achieved by disconnecting the DIn terminal signal. Among them, DIx, DIy, and DIn are the multi-function input terminals of DI1~DI10, with DIx being pulse valid, and DIy and DIn being level valid.

P03.12	Terminal UP/DOWN change rate	Factory default	1.00Hz/s
	Setting range	0.01Hz/s 65.535Hz/s	

It is used to set the speed of frequency change when the terminal UP/DOWN adjusts the set frequency, that is, the amount of frequency change per second.

When P8.22 (frequency decimal point) is 2, this value ranges from 0.001Hz/s to 65.535Hz/s. When P8.22 (frequency decimal point) is 1, this value ranges from 0.01 Hz/s to 655.35.

P03.13	DI1 delay time	Factory	0.0s
	Setting range	0.0s 3600.0s	
P03.14	DI2 delay time	Factory	0.0s
	Setting range	0.0s 3600.0s	
P03.15	DI3 delay time	Factory	0.0s
	Setting range	0.0s 3600.0s	

It is used to set the delay time of the inverter when the state of the DI terminal changes.

Currently, only DI1, DI2 and DI3 have the function of setting the delay time.

P03.16	DI terminal active mode selection 1	Factory default	00000
	Setting range	Ones digit	Valid state setting of DI1 terminal
		0	Active High Level
		1	Active Low Level
		Tens digit	Valid state setting of DI2 terminal (0-1, same as
		Hundreds digit	Valid state setting of DI3 terminal (0-1, same as
		Thousands digit	Valid state setting of DI4 terminal (0-1, same as
		Myriabit	Valid state setting of HDI terminal (0-1, same as

P03.17	DI terminal active mode selection 2	Factory default	00000
	Setting range	Ones digit	Valid state setting of DI5 terminal
		0	Active High Level
		1	Active Low Level
		Tens digit	Valid state setting of DI6 terminal (0-1, same as
		Hundreds digit	Valid state setting of DI7 terminal (0-1, same as
		Thousands digit	Reserved
		Myriabit	Reserved

Used for setting the valid state mode of tal input ter als. When Ac High Level is selected, it is valid when the corresp ng DI termi s connected COM, and invalid when it is disconnected. When A e Low Leve selected, it is alid when the corresponding DI terminal is connected to COM, and valid when it is disconnected.

GF630N01 series inverters are equipped with 1 multi-function analog output terminal (AO1), 1 multi-function digital output terminal (HDO), and 2 multi-function relay output terminals (Relay 1, Relay 2) as standard.

P04.00	HDO output mode	Factory	0
	Setting range	0	Pulse output (FMP)
		1	Digital output (FMR)

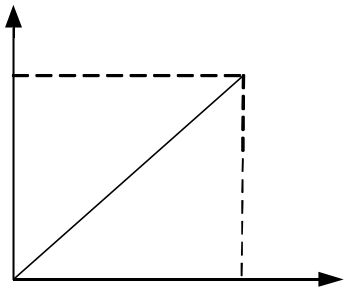
The HDO terminal is a programmable multiplex terminal that can be used as a high-speed pulse output terminal (FMP) or as a digital output terminal with open collector (FMR).

When FMP is output as a pulse, the maximum œëquuel

hen th upply of the m cuit and ontrol

15 dy for ning p of the has stabilized d the inver ha

34	Zero current state	Please refer to the description of function codes P21.28 and
35	Module temperature arrival	When the temperature of the inverter module radiator (P02.07) reaches the set module temperature value
36	Software current over limit	Please refer to the description of function codes P21.36 and
37	Lower limit frequency arrival (also output during shutdown)	When the running frequency reaches the lower limit frequency, the ON signal is output. When in the shutdown state, the signal is also ON.
38	Alarm output	When the inverter fails and the handling mode is set to Contin



	[redacted]		-100.00%	100.0%
P05.09	AI2 filtering time	Factory	0.. etting	" ɣ

	Setting range	-100.0%	100.0%
05.19	g time	Factory de	0.10s
	Setting range	0.00s	00s

The function jo[illegible] in this group are [illegible]ed to set the relationship between the DI5 pulse frequency and the corresponding set value.

The pulse frequency can only be input to the inverter through the DI5 channel. The application of this group of functions is similar to curve 1, please refer to the description of curve 1.

P05.20	AI curve selection		Factory 321
	Setting range	Ones digit	AI1 curve selection
		1	Curve 1 (2 points, see P05.00~P05.03)
		2	Curve 2 (2 points, see P05.05~P05.08)
		3	Curve 3 (2 points, see P05.10~P05.13)
		4	Curve 4 (4 points, see P23.00~P23.07)
		5	Curve 5 (4 points, see P23.08~P23.15)
		Tens digit	AI2 curve selection (1~6, same as above)
		Hundreds digit	AI3 curve selection (1~6, same as above)

The ones digit, tens digit and hundreds digit of this function code are used to select the corresponding

P05.21	AI lower than minimum input		Factory	000
	Setting range	Ones digit	AI1 lower than minimum input setting selection	
		0	Corresponds to the minimum input setting	
		1	0.0%	
		Tens digit	AI2 lower than minimum input setting	
		Hundreds digit	AI3 lower than minimum input setting	

	·ue	0~2 e· ·e motor rate(·ue
4	t ɔwer	0~2 s the rated p ·
5	Output voltage	0~1.2 times the inverter rated voltage
6	PULSE pulse input	0.(Hz 50.00kHz
7	AI1	0V 10V
8	AI2	0V~1(·r 0~20mA)
9	AI3	·· ±0V
10	Length	0~· ·mum set length
11	Count value	0~maxin· ·ount value
12	Communication setting	0.0% 100.0%
13	Motor speed	0~maximum output frequency corresponding speed
14	Output current	0.0A~1000.0A
15	Output voltage	0.0V~1000.0V
16	Output torque (actual value)	-2 times the motor rated torque ~ 2 times the motor rated torque

P06.03	FMP output maximum frequency	Factory default	50.00kHz
	Setting range	0.01kHz 100.00kHz	

When the FM tWc

and the standard output refers to the quantity represented by the analog output corresponding to 0V~10V output (or 0mA~20mA) without zero bias and gain correction.

For example, if the analog output content is running frequency, and you want to output 8V at 0 frequency and 3V at maximum frequency, the gain shall be set to "-0.50" and the zero bias shall be set to "80%".

	Motor overload protection selection	Factory default	1
P07.00			
	Setting range		

overload for 30 minutes under the condition of 120% mo motor overload protection gain is:

P07.01=12[illegible]÷Ix=120%÷129%=0.93

Note: The user must accurately set the value of P07.01 in accordance with the actual overload capacity of the motor. If this parameter is set excessively high, it may result in motor overheating and subsequent damage, while the inverter may fail to provide timely alarms and protection!

P07.02	Motor overload pre-warning coefficient	Factory	
	Setting range		

This function is used to before the motor ov how much pre-a value is, the s

When the time over outputs

P07.03		
P07.04		F

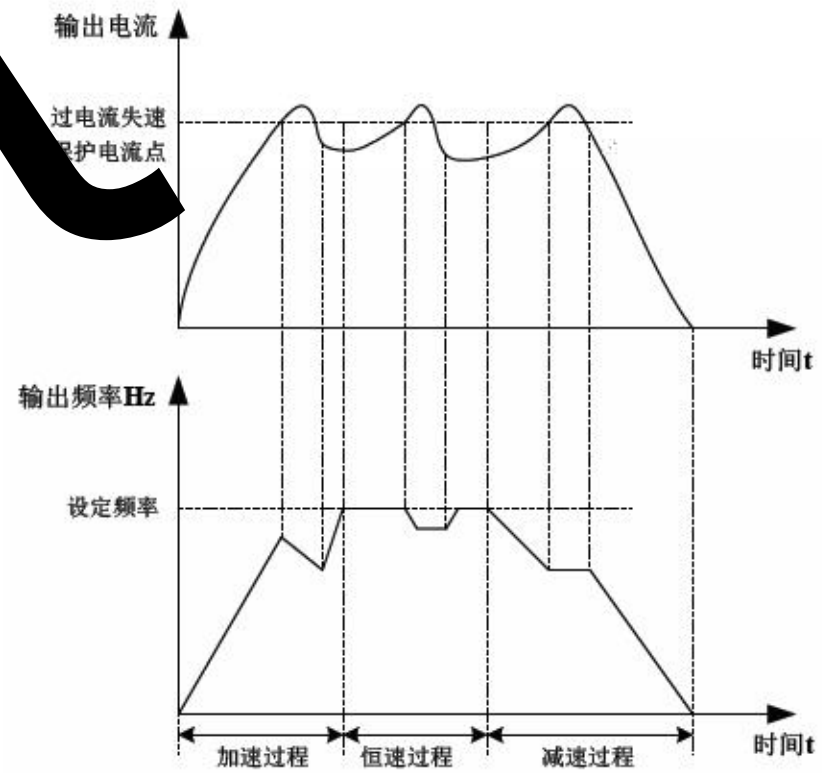
Dur he r, overv ge i the cu nt nt drops.

The o vo over ge ss o set as smal

For loads w dynamic res inertia, this v rwise

P07	Overcurrent stall gain	Factory default		20
	[illegible]		0	
P07.06	Overcurrent stall protection current	Factory default		150%
	Setting range	100%		[illegible]%

Overcurrent and stall: When the output current of the inverter reaches the set overcurrent and stall protection current (P07.06), the output frequency of the inverter will be reduced when it is running at acceleration; The output frequency will be reduced during running at constant speed; When running at deceleration, the rate of



P07.07	Power-up to ground short circuit protection selection	Factory default	01
	Setting range	0: Invalid; 1: Valid	

during the automatic fault reset can be set through P07.10.

P07.11	Fault automatic reset interval	Factory default	1.0s
	Setting range	0.1s 100.0s	

The waiting time from the inverter fault alarm to the automatic fault reset.

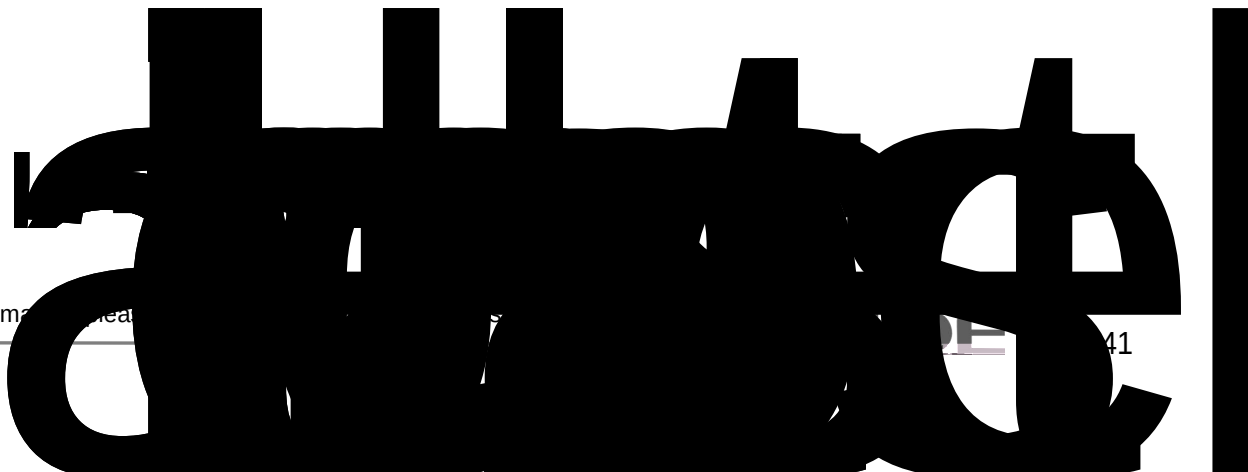
P07.12	Input phase loss protection selection	Factory default	00
	Setting range	0: Prohibited 1: Allowed	

Select whether to protect against input phase loss.

P07.13	Output phase loss protection selection	Factory default	1
	Setting range	0: Prohibited 1: Allowed	

Select whether to protect against output phase loss.

P0



P07.41	Output terminal at the first fault			
P07.42	Inverter status at the first fault			
P07.43	Power-up time at the first fault			
P07.44	Run time at the first fault			
P07.47	Fault protection action selection 1	Setting range	Factory default	00000
		Ones digit	Motor overload (E011)	
		0	Coast to Stop (CST)	
		1	Shutdown according to shutdown mode	
		2	Continue running	
		Tens digit	Input phase loss (E113) (same as ones digit)	
		Hundreds digit	Output phase loss (E114) (same as ones digit)	
		Thousands digit	External fault (E015) (same as ones digit)	
		Myriabit	Communication abnormality (E0202) (same as ones digit)	
P07.48	Fault protection action selection 2	Setting range	Factory default	00000
		Ones digit	Encoder fault (E118)	
		0	Coast to Stop (CST)	
		1	Switch to VF and shutdown according to shutdown mode	
		2	Switch to VF and continue running	
		Tens digit	Function code read/write abnormality (E021)	
		0	Coast to Stop (CST)	
		1		

		Myriabit	Run time arrival (Err26) (same as P07.7 ones digit)

P07.49	Fault protection action selection 3		Factory default	00000
	Setting range	Ones digit	User-defined fault 1 (E027) (same as P07.47 ones digit)	
		Tens digit	User-defined fault 2 (E028) (same as P07.47 ones digit)	
		Hundreds digit	Power-up time arrival (E029) (same as P07.47 ones digit)	
		Thousands digit	Load shedding (E030)	
		0	Coast to Stop (CST)	
		1	Shutdown according to shutdown mode	
		2	Decelerate to 7% of the rated frequency of the motor and continue to run, and automatically return to the set frequency if there is no load shedding	
		Myriabit	PID feedback lost during running (E031) (same as P07.47 ones digit)	
P07.50	Fault protection action selection 4		Factory default	00000
	Setting range	Ones digit	Excessive speed deviation (E119) (same as P07.47 ones digit)	
		Tens digit	Motor overspeed (E115) (same as P07.47 ones digit)	
		Hundreds digit	Initial position error (E051) (same as P07.47 ones digit)	
		Thousands digit	Speed feedback error (E052) (same as P07.47 ones digit)	
		Myriabit	Reserved	

When "Coast to Stop (CST)" is selected, the inverter displays E** and stops directly.

When "Shutdown according to shutdown mode" is selected: the inverter displays A**, and shuts down according to shutdown mode, and E** is displayed after shutdown.

When "Continue running" is selected: the inverter continues to run and displays A**, and the running frequency is set by P07.54.

P07.54	Selection of running frequency during failure		Factory default	0
	Setting range	0	Run at current running frequency	
		1	Run at set frequency	

		2	Run at upper limit frequency	
		3	Run at lower limit frequency	
		4	Run at abnormal standby frequency	
P07.55	Abnormal standby frequency		Factory default	100.0%
	Setting range		0.0% 100.0%	

When a fault occurs during the running of the inverter and the handling mode of the fault is set to Continue running, the inverter will display A** and run at the frequency determined by P07.54.

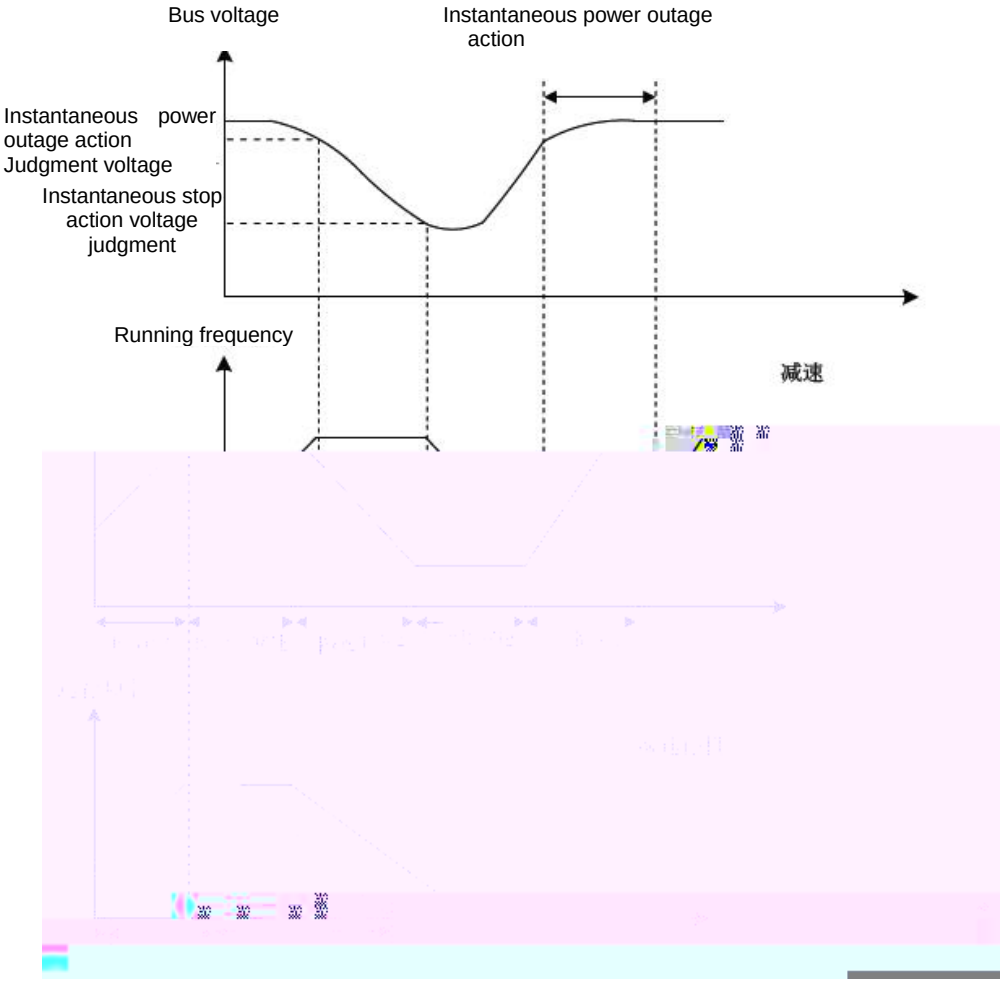
When Run at abnormal standby frequency is selected, the value set by P07.55 is a percentage relative to the maximum frequency.

P07.59	Instantaneous power outage action selection		Factory default	0
	Setting range	0	Invalid	
		1	Deceleration	
		2	Ramp to Stop (RTS)	
P07.60	Instantaneous power outage deceleration frequency switching point		Factory default	0.0%
	Setting range		0.0% 100.0%	
P07.61	Instantaneous power outage voltage recovery judgment time		Factory default	0.50s
	Setting range		0.00s 100.00s	
P07.62	Instantaneous non-stop action voltage judgment		0 Factory default	80.0%
	Setting range		60.0% ~ 100.0% (standard bus voltage)	

This function means that in case of an instand=nd=c

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If P07.59=2, in case of instantaneous power outage or sudden voltage drop, the inverter will decelerate until it stops.



Instantaneous power outage action diagram

P07.63	Load shedding protection selection		Factory default	0
	Setting range	0	Invalid	
		1	Valid	
P07.64	Load shedding detection level		Factory default	10.0%
	Setting range		0.0% ~ 100.0% (motor rated current)	
P07.65	Load shedding detection time		Factory default	1.0s
	Setting range		0.0s 60.0s	

If the load shedding protection function is effective, when the inverter output current is less than the load shedding detection level P07.64 and the duration exceeds the load shedding detection time P07.65, the inverter output frequency automatically reduces to 7% of the rated frequency. During the load shedding protection, if the load recovers, the inverter will automatically recover to run at set frequency.

P07.67	Overspeed detection value	Factory default	15.0%
	Setting range	0.0% ~ 50.0% (maximum frequency)	
P07.68	Overspeed detection time	Factory default	1.0s
	Setting range	0.0s 60.0s	

This function is only valid when the inverter is running with speed sensor vector control.

When the inverter detects that the actual motor speed exceeds the set frequency and the excess value is greater than the overspeed detection value P07.67, and the duration exceeds the overspeed detection time P07.68, the inverter triggers fault alarm E115 and handles it according to the fault protection action mode.

P07.69	Excessive speed deviation detection value	Factory default	20.0%
	Setting range	0.0% ~ 50.0% (maximum frequency)	
P07.70	Excessive speed deviation detection time	Factory default	5.0s
	Setting range	0.0s 60.0s	

This function is only valid when the inverter is running with speed sensor vector control.

When the inverter detects that the actual motor speed deviates from the set frequency and the deviation amount is greater than the excessive speed deviation detection value P07.69, and the duration exceeds the excessive speed deviation detection time P07.70, the inverter triggers fault alarm E119 and handles it according to the fault protection action mode.

When the excessive speed deviation detection time is 0.0s, cancel the excessive speed deviation fault detection.

P08.01	Motor 1 control mode		Factory default	2
	Setting range	0	Sensorless vector control (SVC)	

0: Sensorless vector control

It refers to open-loop vector control, which is suitable for general high-performance control occasions. One inverter can only drive one motor. Such as machine tools, centrifuges, wire drawing machines, injection molding machines and other loads.

1: Reserved

2: V/F control It is suitable for occasions where the load requirements are not high, or one inverter drives multiple motors, such as fans and pumps. It can be used to drive multiple motors at one time.

Tip: When selecting the vector control mode, the motor parameter identification process must be carried out. Only accurate motor parameters can give full play to the advantages of vector control mode. By adjusting the speed regulator parameter P12 group function code (motor 2 is P13 group), better performance can be obtained.

P08.02	Command source selection	Factory default	0
	Setting range	0	Operation panel command channel (LED off)
		1	Terminal command channel (LED on)
		2	Communication command channel (LED flashing)

Select the input channel of the inverter control command.

The inverter control commands include: start, stop, forward, reverse, jog, etc.

0: Operation panel command channel ("LOCAL" light on); Run command control is carried out by the RUN and STOP/RES keys on the operation panel.

1: Terminal command channel ("LOCAL" light off); Run command control is carried out by multi-function input terminals FWD, REV, JOGF, JOGR, etc.

2: Communication command channel ("LOCAL/REMOT" light flashes): The run command is given b

2	
4	
5	Pulse s ng (DI5)
6	Multi-segm command
7	
9	Communication reference

Select the input channel of the main reference frequency of the inverter. There are 10 main reference frequency channels:
0: Digital setting (power down memory)
The initial value of the set frequency is the value of P08.08 "Digital set frequency". The set frequency value of the inverter can be changed by pressing the keys and on the keyboard (or UP and DOWN of the multi-function input terminal

The corresponding relationship between the input voltage values of AI1, AI2 and AI3 and thd

	Aux		
		0	Frequency P modifia ho pow own memory
			eset freque 08.08 OWN ilable, power down
P08.04	Setting range	2	AI1
		3	AI2
		4	AI3
		5	Pulse setting (DI5)
		6	Multi-segment command
		7	PLC
		8	PID
		9	Communication reference

When the auxiliary frequency source is used as an independent frequency reference channel (i.e., the frequency source is switched from X to Y), its usage is the same as that of the main frequency source X. The usage method can refer to the relevant instructions in P08.03.

When an auxiliary frequency source is used as a superimposed reference (i.e., frequency source selection is X+Y, X to X+Y switching, or Y to X+Y switching), note that:

1) When the auxiliary frequency source is digital reference, the preset frequency (P08.08) does not work, and the frequency adjustment by the user through the ▲ and ▼ keys in the keyboard (or UP and DOWN of the multi-function input terminal) is directly adjusted on the basis of the main reference frequency.

2) When the auxiliary frequency source is analog input reference (AI1, AI2, AI3) or pulse input reference, 100% of the input setting corresponds to the auxiliary frequency source range, which can be set through P08.05 and P08.06.

3) When the frequency source is pulse

P08.05	Auxiliary frequency source Y range selection during superposition		Factory default	0
	Setting range	0	Relative to maximum frequency	
		1	Relative to main frequency source X	
P08.06	Auxiliary frequency source Y range during superposition		Factory default	0
	Setting range		0% 150%	

These two parameters are used to determine the adjustment range of the auxiliary frequency source when the frequency source is selected as "frequency superposition" (i.e., P08.07 is set to 1, 3, or 4).

P08.05 is used to determine the object corresponding to the auxiliary frequency source range. It can be selected relative to the maximum frequency or relative to the main frequency source X. If it is selected relative to the main frequency, the range of the auxiliary frequency source will change with the main frequency X.

P08.07	Frequency source superposition selection		Factory default	0
	Setting range	Ones digit	Frequency source selection	
		0	Main frequency source X	
		1	Main and auxiliary operation results (the operation relationship is determined by the	
		2	Switching between main frequency source X and auxiliary frequency source Y	
		3	Switching between main frequency source X and main-auxiliary operation result	
		4	Switching between auxiliary frequency source Y and main-auxiliary operation result	
		Tens digit	Frequency source main and auxiliary operation relationship	
		0	Main + auxiliary	
		1	Main - auxiliary	
		2	Maximum of the two	
		3	Minimum of the two	

Select the frequency reference channel through this parameter. The frequency reference is achieved by combining the main frequency source X and the auxiliary frequency source Y.
Ones digit: Frequency source selection:



0: Main frequency source X

The main frequency X is used as the target frequency.

1: Main and auxiliary operation results The main and auxiliary operation results are used as the target frequency, and the auxiliary operation relationship is shown in the "tens digit" description of the function code.

2: Switching between main frequency source X and auxiliary frequency source Y When the multi-function input terminal function 18 (frequency switching) is invalid, the main frequency X is used as the target frequency. When the multi-function input terminal function 18 (frequency

auxiliary operation relationship:

0: Main frequency source X + auxiliary frequency source Y

The sum of the main frequency X and the auxiliary frequency Y is used as the target frequency. Implement frequency superposition reference function.

1: Main frequency source X - auxiliary frequency source Y

The difference between the main frequency X and the auxiliary frequency Y is used as the target frequency.

2: MAX (main frequency source X, auxiliary frequency source Y) Take the maximum absolute value between the main frequency X and the auxiliary frequency Y as the target frequency. Bias frequency for flexibility in response to various needs.

P08.08	Preset frequency	Factory default	50.00Hz
	Setting range	0.00~maximum frequency (valid for digital setting of frequency source selection mode)	

When the frequency source is selected as "Digital Setting" or "Terminal UP/DOWN", this function code value is the initial value of the frequency digital setting of the inverter.

P08.09	Running direction		Factory default	0
	Setting range	0	Consistent direction	
		1	Opposite direction	

By changing this function code, the motor rotation direction can be changed without changing the motor wiring, which is equivalent to adjusting any two wires of the motor (U, V, W) to realize the conversion of the motor rotation direction.

Tip: After the parameters are initialized, the running direction of the motor will return to the original state. It shall be used with caution when it is strictly forbidden to change the motor steering after the system is commissioned.

P08.10	Maximum frequency	Factory default	50.00 Hz
	Setting range	50.00Hz 320.00Hz	

100.0% of analog input, pulse input (DI5), multi-segment command, etc. in GF630N01 are calibrated relative to P08.10 when used as frequency source.

The maximum output frequency of GF630N01 can reach 500Hz. In order to balance the two indicators of frequency command resolution and frequency input range, the number of decimal points of frequency command can be selected through P08.22.

When P08.22 is selected as 1, the frequency resolution is 0.1 Hz, and the setting range of P08.10 is 50.0 Hz ~ 500.0 Hz;

When P08.22 is set to 2, the frequency resolution is 0.01Hz, and the setting range of

P08.10 is 50.00Hz~500.00Hz.

P08.11	Upper limit frequency source		Factory default	0
	Setting range	0	P08.12 setting	
		1	AI1	
		2	AI2	
		3	AI3	
		4	PULSE setting	
		5	Communication setting	

Define the source of th

P08.15	Carrier frequency	Factory default	Related to model power
	Setting range	0.5kHz 16.0kHz	

Adjusting the carrier frequency affects the following performance:

Carrier frequency	Low → High
Motor noise	Large → Small
Output current waveform	Poor → Good
Motor temperature rise	High → Low
Inverter temperature rise	Low → High
Leakage current	Small → Large
External radiated interference	Small → Large

For inverters of different powers, the factory setting of carrier frequency is different. Although the user can modify it as needed, it should be noted that if the carrier frequency is set higher than the factory default, the temperature rise of the inverter radiator will increase. Under such circumstances, the user must derate the inverter to prevent the risk of an overheating alarm.

P08.16	Carrier frequency adjustment with temperature	Factory default	0
	Setting range	0: No 1: Yes	

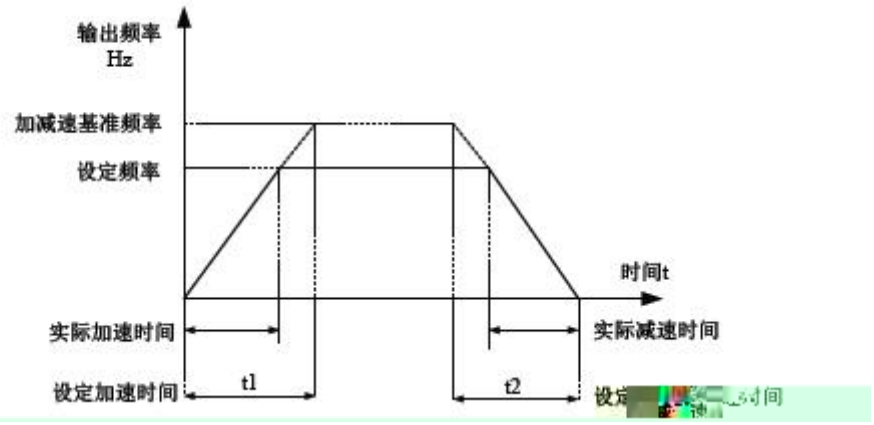
Carrier frequency adjustment with temperature means that when the inverter detects that its radiator temperature is high, it automatically reduces the carrier frequency to reduce the temperature rise of the inverter. When the radiator temperature is low, the carrier frequency gradually returns to the set value. This function can reduce the chance of inverter overheating alarm.

P08.17	Acceleration time 1	Factory default	Related to model power
	Setting range	0.00s 6500.0s	
P08.18	Deceleration time 1	Factory default	Related to model power
	Setting range	0.00s 6500.0s	

The acceleration time refers to the time required for the inverter to accelerate from [illegible] by [illegible]25), as sh[illegible]n in t1 [illegible] figure.

The [illegible]celeration [illegible]e refers [illegible]the time o [illegible] o [illegible] o [illegible] o

acceleration and deceleration reference frequency (determined by P08.25) to zero frequency, as shown in t2 in the figure.



Acceleration and deceleration time diagram

GF630N01 provides 4 groups of acceleration and deceleration time, which can be switched and selected by the user through the digital input terminal DI. The four groups of acceleration and deletion time can be set by the following function code:

Group 1: P08.17, P08.18;

Group 2: P21.03, P21.04;

Group 3: P21.05, P21.06;

Group 4: P21.07, P21.08.

P08.19	Acceleration and deceleration time unit	0	Factory default	1
		1	1 s	
	Setting range			

.22			

This parameter is used to determine the resolution of all frequency-related codes.

When the frequency resolution is 0.1Hz, the maximum output frequency of GF630N01 can reach 500Hz, and when the frequency resolution is 0.01Hz, the maximum output frequency of GF630 N01 is 500.00Hz.

Note: When modifying this function parameter, the number of decimal places for all frequency-related parameters will change, and the corresponding frequency values will also change. Special attention shall be paid during use.

P08.23	Digital set frequency shutdown memory selection		Factory default	0
	Setting range	0	No memory	
		1	Memory	

This function is only valid when the frequency source is set digitally.

"No memory" means that after the inverter stops, the digitally set frequency value returns to the value of P08.08 (preset frequency), and the frequency correction carried out by keys ▲ and ▼ on the keyboard or terminals UP and DOWN is cleared.

"Memory" means that after the inverter is shut down, the digital set frequency remains the set frequency at the last shutdown time, and the frequency correction carried out by keys ▲ and ▼ on the keyboard or terminals UP and DOWN remains valid.

P08.24	Motor selection		Factory default	0
	Setting range	0	Motor 1	
		1	Motor 2	
		2	Motor 3	
		3	Motor 4	

GF630N01 supports the application of the inverter to drag 4 motors in a time-sharing manner. The 4 motors can be set with motor nameplate parameters,

P31.

The user can select the current motor through the P08.24 function code, or switch the motor through the digital input terminal DI. When the function code selection conflicts with the terminal selection, the terminal selection shall prevail.

P08.25	Acceleration/deceleration time reference frequency		Factory default	0
	Setting range	0	Maximum frequency (P08.10)	
		1	Set frequency	
		2	100Hz	

The acceleration and deceleration time refers to the time required to accelerate and decelerate between zero frequency and the frequency set by P08.25.

When P08.25 is selected as 1, the acceleration and deceleration time is related to the set frequency. If the set frequency changes frequently, the acceleration of the motor is changing, and attention should be paid during application

P08.26	Run-time frequency command UP/DOWN reference		Factory default	0
	Setting range	0	Running frequency	
		1	Set frequency	

This parameter is only valid when the frequency source is set digitally.

It is used to determine the method to correct the set frequency when the ▲ and ▼ keys of the keyboard or the terminal UP/DOWN act, that is, whether the target frequency is increased or decreased on the basis of the running frequency or on the basis of the set frequency

The difference between the two settings is evident when the inverter is in the acceleration and deceleration process, that is, if the running frequency of the inverter is different from the set frequency, the different choices of this parameter vary greatly.

P08.27	Command source binding frequency source		Factory default	0
	Setting range	Ones digit	Operation panel command binding frequency source selection	
		0	Not bundled	
		1	Digital set frequency source	

		2	AI1
		3	AI2
		4	AI3
		5	PULSE pulse setting (HDI)
		6	Multi-segment command
		7	Simple PLC
		8	PID
		9	Communication reference
		Tens digit	Terminal command binding frequency source selection (0~9, same as ones digit)
		Hundreds digit	Communication command binding frequency source selection (0~9, same as ones digit)

Define the bundled combination between three run command channels and nine frequency reference channels to facilitate synchronous switching.

The meaning of the above frequency reference channel is the same as that of the main frequency source X selection P08.03. Please refer to the P08.03 function code description. Different

P08.31	Starting frequency	Factory default	0.00Hz
	Setting range	0.00Hz 10.00Hz	
P08.32	Starting frequency holding time	Factory default	0.0s
	Setting range	0.0s 100.0s	

In order to ensure the motor torque during starting, please set an appropriate starting frequency. In order to fully establish magnetic flux when the motor is started, the starting frequency needs to be maintained for a certain period of time.

The starting frequency P08.31 is not limited by the lower limit frequency. However, when the set target frequency is lower than the starting frequency, the inverter does not start and remains in standby state.
During the forward and reverse switching process, the starting frequency holding time does not take effect. The starting frequency holding time is not included in the acceleration time, but it is included in the run time of the simple PLC.
Example 1:
P08.31=0 Frequency source is digital reference
P08.08=2.00Hz digital set frequency is 2.00Hz
P08.31=5.00Hz starting frequency is 5.00Hz
P08.32 = 2.0s Starting frequency holding time is 2.0s. At this time, the inverter will be in standby state, and the inverter output frequency will be 0.00Hz.
Example 2:
P08.03=0 Frequency source is digital reference
P08.08=10.00Hz digital set frequency is 10.00Hz
P08.31=5.00Hz starting frequency is 5.00Hz
P08.32=2.0s starting frequency holding time is 2.0s
At this time, the inverter accelerates to 5.00 Hz for 2.0 s, and then accelerates to the reference frequency of 10.00 Hz.

P08.33	Start DC braking current	Factory default	0%
	Setting range	0% 100%	
P08.34	Start DC braking time	Factory default	0.0s
	Setting range	0.0s 100.0s	

Start DC braking, which is generally used to stop and restart the running motor. Pre-excitation is used to establish a magnetic field before starting the asynchronous motor to improve the response speed.
Start DC braking is only valid when the start mode is direct start. At this time, the inverter first performs DC braking according to the set starting DC braking current, and then starts to run after the starting DC braking time. If the DC braking time is set to 0, it will be started directly without DC braking. The greater the DC braking current, the greater the braking force.

Start DC braking current is a percentage of the inverter rated current.

P08.35	Acceleration and deceleration mode		Factory default	0
	Setting range	0	Linear acceleration and deceleration	
		1	S curve acceleration and deceleration A	
		2	S curve acceleration and deceleration B	

Select the frequency change mode of the inverter during start and stop.
0: Linear acceleration and deceleration The output frequency increases or decreases linearly.
1: S-curve acceleration and deceleration A The output frequency increases or decreases following an S-curve pattern.
The S-curve is used in places where smooth startup or shutdown is required, such as elevators and conveyor belts. Function codes P08.36 and P08.37 define the time ratio of the start and end segments of the S curve acceleration and deceleration respectively. When the set frequency is above the rated frequency, the acceleration and deceleration time is:

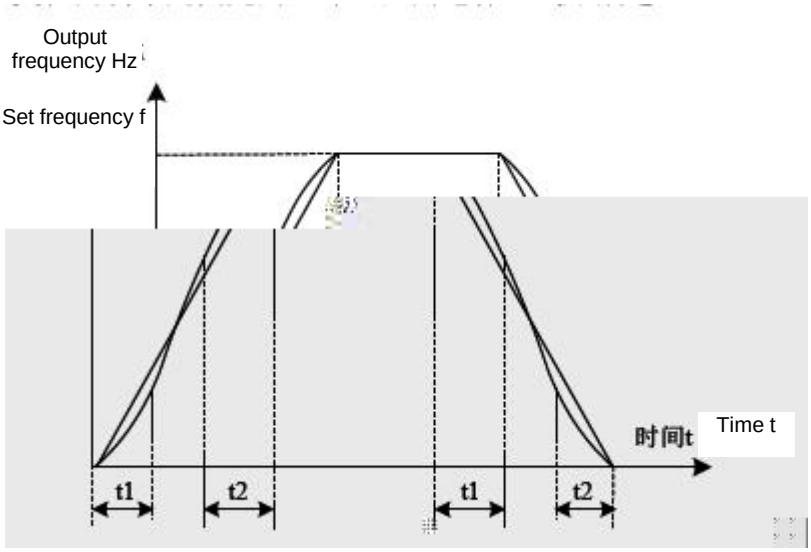
$$t = (\frac{4}{9} \times (\frac{f}{f_b})^2 + \frac{1}{9}) \times T$$

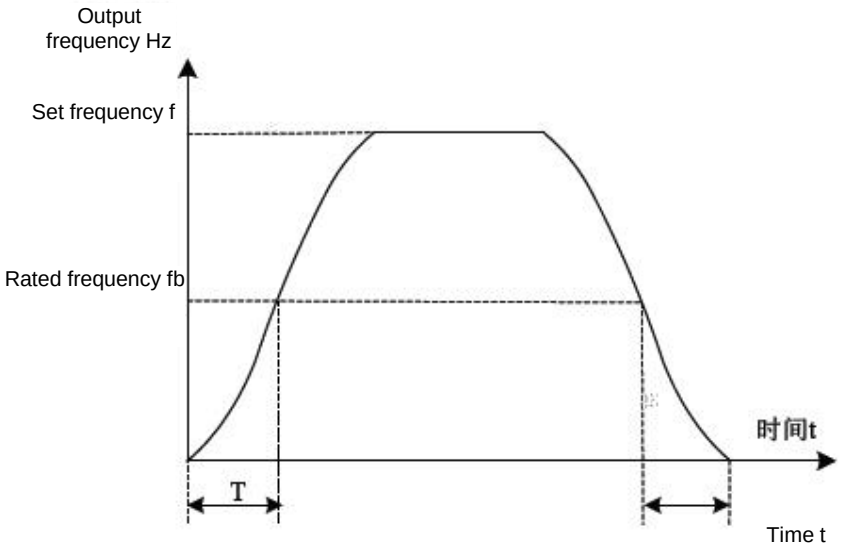
Where, f is the set frequency, f b is the rated frequency of the motor, and T is the time to accelerate from 0 frequency to the rated frequency f b.

P08.36	Proportion of S-curve start time	Factory default	30.0%
	Setting range	0.0%	100.0%- P08.37
P08.37	Proportion of S-curve end time	Factory default	30.0%
	Setting range	0.0%	100.0%- P08.36

Function codes P08.36 and P08.37 define the time ratio of the start and end segments of the S curve acceleration and deceleration A respectively. The two function codes must satisfy: P08.36 + P08.37 ≤ 100.0%.

In the figure, t1 is the parameter defined by parameter P08.36. During this period, the slope of output frequency change gradually increases. T2 is the time defined by parameter P08.37 during which the slope of the output frequency change gradually changes to 0. During the time between t1 and t2, the slope of the output frequency change is fixed, that is, linear acceleration and deceleration are carried out in this interval.





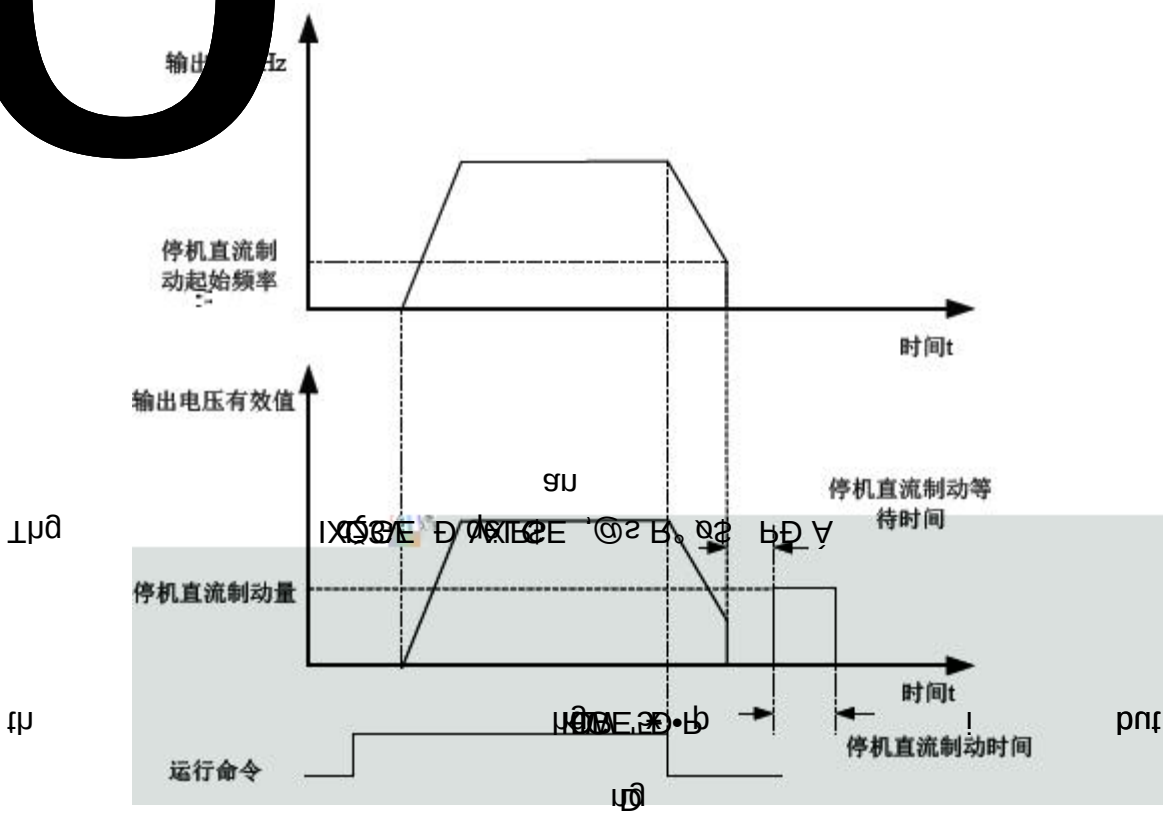
S curve acceleration and deceleration B diagram

P08.38	Shutdown mode		Factory default	0
	Setting range	0	Ramp to Stop (RTS)	
		1	Coast to Stop (CST)	

0: Ramp to Stop (RTS) After the stop command is valid, the inverter reduces the output frequency according to the deceleration time, and stops after the frequency drops to 0.
1: Coast to Stop (CST) After the stop command is valid, the inverter will immediately terminate the output, and the motor will stop freely according to the mechanical inertia.

P08.39	Shutdown DC braking start frequency	Factory default	0.00Hz
	Setting range	0.00Hz~maximum frequency	
P08.40	Shutdown DC braking waiting time	Factory default	0.0s
	Setting range	0.0s 36.0s	
P08.41	Shutdown DC braking current	Factory default	0%
	Setting range	0% 100%	
P08.42	Shutdown DC braking time	Factory default	0.0s
	Setting range	0.0s 36.0s	

Deceleration DC braking start frequency: During the Ramp to Stop (RTS) process, when the running frequency drops to this frequency, the DC braking process starts.
Shutdown DC braking waiting time: After the running frequency is reduced to the start frequency of shutdown DC braking, the inverter stops outputting for a period of time before starting the DC braking process.
Time, and then start the DC braking process. It is used to prevent faults such as overcurrent that may be caused by starting DC braking at higher speeds.
Stop DC braking current: There are two cases of stop DC braking current relative to the base value.
1. When the motor rated current is less than or equal to 80% of the inverter rated current, it is a percentage of the motor rated current as the base value.
2. When the motor rated current is greater than 80% of the inverter rated current, it is a percentage of 80% of the inverter rated current as the base value.
The shutdown DC braking process is shown in the diagram.

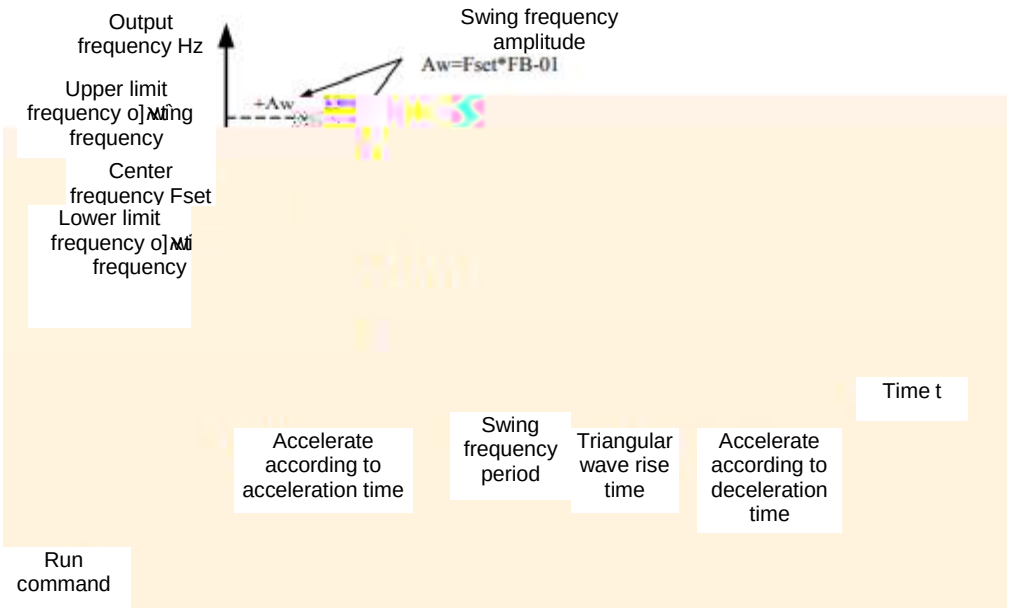


P08.43	Brake utilization rate	Factory default	100%
	Setting range	0% 100%	

It is only valid for the inverter with built-in braking unit.

It is used to adjust the duty cycle of the braking unit. If the brake utilization rate is high, the braking unit action duty cycle is high and the braking effect is strong, but the inverter bus voltage fluctuates greatly during braking.

The swing frequency function is suitable for textile, chemical fiber and other industries, as well as occasions where traverse and winding functions are required.



Swing frequency operation diagram

P09.00	Swing amplitude setting method	Factory default	0
	Setting range	0	Relative to center frequency
		1	Relative to maximum frequency

This parameter is used to determine the reference amount of swing amplitude.

0: Relative to center frequency, a variable swing amplitude system. The swing amplitude varies with the center frequency (set frequency).

1: Relative to maximum frequency, a fixed swing amplitude system, that is, the swing amplitude is fixed.

P09.01	Swing frequency amplitude	Factory default	0.0%
	Setting range	0.0% 100.0%	
P09.02	Jump frequency amplitude	Factory default	0.0%
	Setting range	0.0% 50.0%	

This parameter is used to determine the swing amplitude and jump frequency.

When the swing is set relative to the center frequency (P09.00 = 0), the swing AW = frequency source × swing amplitude P09.01.
When the swing is set relative to the maximum frequency (P09.00 = 1), the swing AW = maximum frequency × swing amplitude P09.01.

The hop frequency amplitude is the percentage of the hop frequency relative to the swing amplitude when operating at swing frequency, i.e., hop frequency = swing

amplitude AW × hop frequency amplitude P09.02. If the swing amplitude is selected relative to the center frequency (P09.00=0), the hop frequency is the variation value. If the swing amplitude is selected relative to the maximum frequency (P09.00 = 1), the jump frequency is fixed.

The swing frequency running frequency is constrained by the upper limit frequency and the lower limit frequency.

P09.03	Swing frequency	Factory default	10.0s
	Setting range	0.0s 3000.0s	
P09.04	Triangular wave rise time coefficient	Factory default	50.0%
	Setting range	0.0% 100.0%	

Swing frequency period: The time value of a complete swing frequency period.

The triangular wave rise time coefficient P09.04 is the percentage of the triangular wave rise time relative to the swing frequency period P09.03.

Triangular wave rise time = swing frequency period P09.03 × triangular

	Setting range	-100.0%	100.0%

Multi-segment command

P09.12

	Se	.0%	100.0%
P09.24	m		0.0%
	Setting ge	-100.0%	100.0%
P09.25	Multi-segment command 15	Factory default	0.0%
	Setting range	-100.0%	100.0%

The multi-segment command can be used in three situations: as a frequency source, as a voltage source for VF separation, and as a setting source for the process PID.

In the three applications, the dimension of the multi-segment command is a relative value, ranging from -100.0% to 100.0%. When it is used as a frequency source, it is a percentage of the relative maximum frequency; As the VF separation voltage source, it is a percentage of the rated

motor nameplate.

In order to obtain better VF or vector control performance, motor parameter tuning is required, and the accuracy of the adjustment result is closely related to the correct setting of motor nameplate parameters.

P10.22	Asynchronous otor stator resistance	Factory default		odel	deterination
	Setting range		0.001Ω	30.000Ω	
P10.23	Asynchronous otor rotor				

0: No operation, i.e. tuning is prohibited.
1: Static tuning of asynchronous motor is suitable for occasions where asynchronous motor and load are not easy to be disconnected and complete tuning cannot be carried out. Before static tuning of the asynchronous motor, the motor type and motor nameplate parameters P10.16~P10.21 must be set correctly. During static tuning of the asynchronous motor, the inverter can obtain three parameters P10.22~P10.24.
Action description: set this function code to 1, and then press the RUN key, and the inverter will

	Setting range	0. 0s 6500.0s	
P21.05	Acceleratio n time 3	Factory default	20.0s
	Setting range	0. 0s 6500.0s	
P21.06	Deceleratio n time 3	Factory default	20.0s
	Setting range	0. 0s 6500.0s	
P21.07	Acceleratio n time 4	Factory default	20.0s
	Setting range	0. 0s 6500.0s	
P21.08	Deceleratio n time 4	Factory default	20.0s
	Setting range	0. 0s 6500.0s	

GF630N01 provides 4 groups of acceleration and deceleration time, which are P08.17, P08.18, and the aforementioned 3 groups of acceleration and deceleration time.
The definitions of the four groups of acceleration and deceleration times are exactly the same. Please refer to the relevant instructions of P08.17 and P08.18. By using different combinations of the multi-function digital input terminals DI, you can switch and select 4 sets of acceleration and deceleration times. For detailed usage instructions, please refer to the relevant descriptions in function codes P03.01 to P03.05.

P21.09	Jump frequency 1	Factory default	0.00Hz
	Setting range	0.00Hz~maximum frequency	
P21.10	Jump frequency 2	Factory default	0.00Hz
	Setting range	0.00 Hz~maximum frequency	
P21.11	Jump frequency amplitude	Factory default	0.00Hz
	Setting range	0.00~maximum frequency	

When the set frequency is within the jump frequency range, the actual running frequency will run at a jump frequency closer to the set frequency. By setting the jump frequency, the inverter can avoid the mechanical resonance point of the load.

GF630N01 can set two jump frequency points. If both jump frequencies are set to 0, the jump frequency function will be canceled. For the schematic diagram of jump frequency and jump frequency amplitude, please refer to the following figure

P21.12	Forward and reverse dead time	Factory default	0.0s
	Setting range	0.00s 3000.0s	

Set the transition time at the output 0Hz during the forward and reverse transition of the inverter, as shown in the figure:

P21.13	Reverse control enable		Factory default	0
	Setting range	0	Allowed
		1	Prohibited

This parameter is used to set whether the inverter is allowed to run in the reverse state. If the motor is not allowed to run in reverse, set P21.13 = 1.

	Running mode with set frequency lower than lower limit frequency	Factory default	0
	Setting range		

When the set frequency is lower than the lower limit frequency, the running state of the inverter can be selected through this parameter. GF630N01 provides three running modes to meet various application requirements.

P21.15	Droop control	Factory default	0.00Hz
	Setting range	0.00Hz 10.00Hz	

The droop rate allows a small speed difference between the master and slave stations to avoid conflicts between them. The default value for this parameter is 0.

Only when the master and slave adopt the speed control mode, the droop rate needs to be adjusted. For each transmission process, the appropriate droop rate needs to gradually be found in practice. It is recommended not to set P21.15 too large, otherwise the steady-state speed will drop significantly when the load is large. The droop rate must be set for both the master and slave.

Droop speed = synchronization frequency × output torque × droop rate ÷10

For example: P21.15 = 1.00, synchronization frequency 50Hz, output torque 50%, then:

Droop speed = 50Hz×50%×1.00÷10=2.5Hz

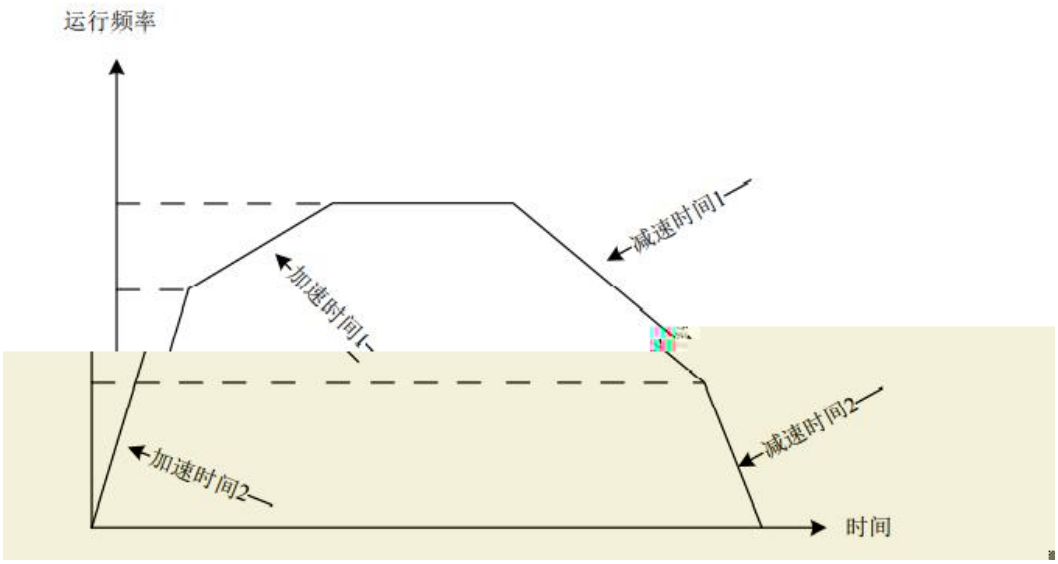
Actual frequency of inverter = 50Hz – 2.5Hz = 47.5Hz

P21.18	Start protection selection	Factory default	1
	Setting range	0: Not protected 1: Protected	

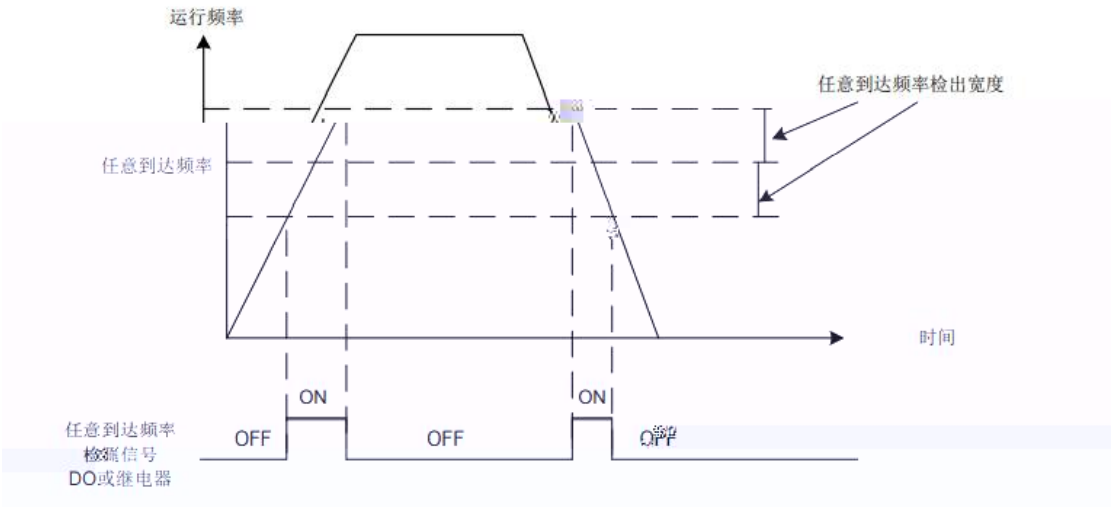
This parameter involves the safety protection function of the inverter.

If this parameter is set to 1, if the run command is valid when the inverter is powered up (for example, the terminal run command is closed before power-up), the inverter will not respond to the run command. The run command must be removed once first, and the inverter will respond only after the run command is valid again. Additionally, if this parameter is set to 1, and the run command is valid when the inverter fault is reset, the inverter will also not respond to the run command. The run command must be removed first in order to clear the run protection state. Setting this parameter to 1 can prevent the danger caused by the motor responding to the run command during power-up or fault reset without your awar] w 1

acceleration and deceleration.



The above figure is a diagram of acceleration and deceleration time switching. During acceleration, if the running frequency is less than P21.25, select acceleration time 2; If the running requency



P21.42	Timing function selection		Factory default	0
	Setting range	0		Invalid
		1		Valid
P21.43	Timed run time selection		Factory default	0
	Setting range	0		P21.44 setting
		1		AI1
		2		AI2
		3		AI3
			Analog input range 100% corresponds to P21.44	
P21.44	Timed run time		Factory default	0.0Min
	Setting range			



other measuring instruments and the displayed voltage refers to the voltage display value sampled by the inverter. See the AI voltage/current (P23.21, P23.22) display before calibration in group P23.

During

To safeguard the equipment, the inverter is equipped with protection functions such as overcurrent, overvoltage, and low voltage. When the protection function is activated, it will cut off the output of the inverter and stop the motor, and this state will remain until forced reset.

The DTC is displayed in the running state.

Inverter unit protection	E001	1. The output circuit of the inverter is short-circuited 2. The internal wiring of the inverter is loose 3. The main control board is abnormal 4. The drive board is abnormal 5. The inverter module is abnormal 6. The wiring between the motor and the inverter is too long 7. Module overheating	1. Troubleshoot peripheral faults 2. Plug in all connecting wires 3. Seek technical support 4. Seek technical support 5. Seek technical support 6. Install reactor or output filter 7. Check whether the air duct is blocked, whether the fan works normally and eliminate the existing problems
Deceleration overcurrent			

Motor overload	E011	1. Whether the motor protection parameter P07.10 is set properly 2. Whether the load is too large o the motor is stalled 3. The selected inverter is low i power level	1. Set this parameter correctly oad and check echanical
External equipment Fault	E015	1. Input the external fault signa through the multi-function termina DI 2. Input external fault signal through the virtual IO function	
Current detection Fault	E018	1. Check whether the Hall devic is abnormal 2. The drive board is abnormal	

PID feedback loss fault during running	E031	1. PID feedback is less than the set value of P15.26	1. Check the PID feedback signal or set P15.26 to an appropriate value
Cycle-by-cycle current limiting fault	E040	1. Whether the load is too large or the motor is stalled 2. The selected inverter is low in power level	1. Reduce the load and check the motor and mechanical conditions 2. Select an inverter with a higher power level
Motor switching fault during running	E041	1. During the running of the inverter, the current motor selection is changed through the terminal	1. Switch the motor after the inverter stops
Motor overtemperature fault	E045	1. The temperature sensor wiring is 2. Motor temperature is too high	1. Check the temperature sensor and troubleshoot 2. Reduce the carrier frequency or take other heat dissipation measures to dissipate the motor
Braking resistor short circuit fault	E060	Short circuit between PB port and busbar "+" terminal Braking resistor short circuit Braking resistor damage	Check the PB port and "+" wiring and troubleshoot the fault Check whether the braking resistor is short circuited Use a multimeter to check whether the resistance of the braking resistor is correct
Fault of excessive opening time of brake pipe	E061	1. The opening time of brake pipe is greater than the set value of P08.44	1. Investigate the cause of the prolonged opening of the brake pipe, and set P08.44 to 0 to shield this fault
Acceleration overvoltage	E100	1. The input voltage is too high 2. There is an external force dragging the motor to run during acceleration 3. The acceleration time is too short 4. Without the installation of a braking unit and a braking resistor	1. Adjust the voltage to the normal range 2. Cancel external power or install braking resistor 3. Increase the acceleration time 4. Install braking unit and resistor

Pressure			
Undervoltage fault	E105	1. Instantaneous power outage 2. The input voltage of the inverter is not within the range specified in the specification 3. The rectifier bridge and buffer resistance are abnormal 4. The drive board is abnormal 5. The bus voltage is abnormal 6. The control board is abnormal	1. Reset fault 2. Adjust the voltage to the normal range 3. Seek technical support 4. Seek technical support 5. Seek technical support 6. Seek technical support
Contactor fault Obstacle	E108	1. The drive board and power supply are abnormal 2. The contactor is abnormal	1. Replace the drive board or power board 2. Replace th TGr$ F
Acceleration overcurrent	E110	1. The output circuit of the inverter is grounded or short-circuited 2. The control mode is vector without parameter tuning 3. Start the rotating motor 4. Sudden load application during acceleration 5. The selected inverter is low in power level 6. The acceleration time is too short 7. Manual torque boost or	

Motor overspeed fault	E115	1. No parameter tuning performed 2. The motor overspeed detection parameters P07.67 and P07.68 are set improperly	1. Perform motor parameter tuning 2. Reasonably set the test parameters according to the actual situation
Excessive speed deviation fault	E119	1. No parameter tuning performed 2. The speed deviation detection parameters P07.69 and P07.70 are set improperly	1. Perform motor parameter tuning 2. Reasonably set the test parameters according to the actual situation
Module overheating	E120	1. The ambient temperature is too high 2. The air duct is blocked 3. The fan is damaged 4. The module thermistor is damaged 5. The inverter module is damaged	1. Reduce the ambient temperature 2. Clean the air duct 3. Replace the fan 4. Replace the thermistor 5. Replace the inverter module
Motor with load Tuning fault	E170	1. Torque upper limit P12.10 is set too low 2. Rated frequency or rated speed is set incorrectly 3. Too heavy load	1. Increase the torque upper limit P12.10 2. Check whether the rated frequency or rated speed is set correctly 3. Set the tens digit of P07.72 to 0 to shield this fault, and then retune. If other faults such as overload are still reported, it may be that the motor load is too heavy, and it is recommended to replace it with a larger model
Communication fault	E202	1. The upper computer works abnormally 2. The communication line is abnormal 3. The communication expansion card P14.00 is set incorrectly 3. The communication parameter P14 group is set incorrectly	1. Check the wiring of the upper computer 2. Check the communication cable 3. Correctly set the communication expansion card type 4. Correctly set the communication parameters

No power-up display	1. The grid voltage is not available or too low 2. The switching power supply on the inverter drive board is faulty 3. The rectifier bridge is damaged 4. The buffer resistor of the inverter is damaged 5. Control board and keyboard fault 6. The connection between the control board, the drive board and the keyboard is broken	1. Check the input power supply 2. Check the bus voltage 3. Re-plug the 34-core flat cable 4-6. Seek manufacturer service
Power-up display GF630N01	1. Poor contact between the drive board and control board connections 2. Relevant components on the control board are damaged 3. The motor or motor wire is short circuited to ground 4. Hall fault 5. The grid voltage is too low	1. Re-plug the 34-core flat cable 2-5. Seek manufacturer service
Power-up display "E112" alarm	1. The motor or output line is short circuited to ground 2. The inverter is damaged	1. Measure the insulation of the motor and output line with a megger 2. Seek manufacturer service
The display of the inverter is normal after power-up, and "GF630N01" is displayed after running and the machine stops immediately	1. The fan is damaged or stalled 2. The peripheral control terminal wiring is short circuited	1. Replace the fan 2. Troubleshoot external short circuit faults
Frequent E120 (Module overheating) fault alarms	1. The carrier frequency setting is too high 2. The fan is damaged or the air duct is blocked 3. The internal components of the inverter are damaged (thermocouple or others)	1. Reduce the carrier frequency (P08.15) 2. Replace the fan and clean the air duct 3. Seek manufacturer service
After the inverter starts running, the motor does not rotate	1. Motor and motor wire 2. The inverter parameter settings are incorrect (motor parameters) 3. Poor contact between the drive board and control board connections 4. Drive board fault	1. Reconfirm the connection between the inverter and the motor 2. Replace the motor or clear the mechanical fault 3. Check and reset the motor parameters 4. Seek manufacturer service
DI terminal failure	1. Parameter setting error 2. External signal error 3. PW and +24V jumper are loose 4. Control board fault	1. Check and reset the relevant parameters of group P3 2. Reconnect the external signal line 3. Reconfirm PW and +24V jumper 4. Seek manufacturer service



In order to prevent the inverter from malfunctioning, ensure the normal running of the equipment and prolong the service life of the inverter, it is necessary to carry out routine maintenance on the inverter. The contents of routine maintenance are as follows:

Inspection items	Inspection contents	Judgment criteria
Running environment	1. Temperature and humidity 2. Dust and gas	1. Shut down or reduce the ambient temperature when the temperature is > 40°C Humidity < 95%, no condensation 2. No odor, no flammable or explosive gas
Cooling system	1. Installation environment 2. Inverter body fan	1. The installation environment shall be well-ventilated, with no obstructions in the air ducts. 2. The body fan operates normally without abnormal noise
Inverter body	1. Vibration and temperature rise 2. Noise 3. Wires and terminals	1. Vibration is stable, and the outlet air temperature is normal 2. No abnormal noise and odor 3. The fastening screws are not loose
Motor	1. Vibration and temperature rise 2. Noise	1. Stable running and normal temperature 2. No abnormal or uneven noise
Input and output parameters	1. Input voltage 2. Output current	1. The input voltage is within the specified range 2. The output current is below the rated value

In order to prevent the inverter from malfunctioning and ensure its long-term high-performance stable operation, users must regularly (within six months) inspect the inverter. The contents of the inspection are as follows:

		with dry compressed air
Radia	Dus d dir	move debris ressed air
lytic	r th s discolo ell	Replace electrolytic
Fa	Abnormal noise and vibration Whether the cumulative time exceeds 20,000 hours	1 Remove the sundries 2 Replace the fan
PCB board	Dust and dirt	Completely remove debris with dry compressed air

The fa lytic capacitor in the inverter is easily damaged components, and the related to the use environment and maintenance conditions. The general life time of vulnerable components is

store for a lo

(1) Avoid storing the inver place

metal dust, a ensure

(2) If the inverter not used for a long Shall every six

months to restore the ch

2 Precautions

1. Be sure to read this manual before using the inverter product.
2. For safety, ask professionals