preface

First of all, thank you for choosing a CD 1000 series lifting special frequency converter!

CD 1000 Series is a new generation of The company, developed by the new platform lifting special high performance multi-function vector frequency converter. The performance of the product is further improved, and the product functions are more abundant. It can realize high performance current vector control for the assynchronous motor, and realize the built-in anti-shake and grab of the frequency converter. This series of products is mainly driven by asynchronous motors, used in lifting, translation, rotation and other driving and control occasions in lifting equipment.

Using the most advanced current vector control technology, excellent performance, powerful and rich functional parameters, as well as optional expansion card (PG card, communication card, special plane card) can better meet the application needs of various occasions.

This manual introduces the functional characteristics and use methods of CD 1000 series frequency converter. Including product selection, parameter introduction, operation and debugging, maintenance and inspection, etc., please read this manual carefully before installation, and please keep it properly for later use.

The following is a special note:

1. Implement the wiring, and be sure to turn off the power supply.
2. After cutting off the power supply, before the inverter indicator light is extinguished, there is still high pressure inside, and the internal circuit and components must not be touched.
3. Never connect the power supply to the output terminal UVW of the frequency converter, otherwise it will cause serious damage.
4. Never modify the internal parts and lines of the frequency converter.
5. If there are still some unknown problems in the use, please contact the customer service of the company.

Subject to changes due to continuous product improvement

catalogue

Chapter 1: Safety and precautions

Security definition:

In this manual, safety precautions are included in the following two categories:

The danger of not operating as required may lead to serious injury or even death.

Hazards due to no required operations that may lead to moderate or minor injuries and damage to equipment.

1.1 Safety matters

1. Before installation:

Damaged inverter and missing inverter, please do not use, there is a risk of injury.

2. Installation:

Please install on flame retardant objects such as metal: stay away from combustible objects, otherwise it may cause fire!

★ When more than two frequency converters are placed in the same cabinet, please pay attention to the installation position (refer to Chapter 3 mechanical and electrical installation) to ensure the heat dissipation effect.

★ Do not let the wire or screw fall into the inverter, otherwise cause the inverter damage!

3. When wiring:

★ Should be constructed by professional electrical engineering personnel, otherwise there is a risk of electric shock!

★ There must be a circuit breaker separated between the frequency converter and the power supply, otherwise a fire may occur!

★ Make sure the power supply is turned off before wiring, otherwise there is a danger of electric shock!

★ Please grounding according to the standard requirements, otherwise there is a risk of electric shock!

★ The input power line cannot be connected to the output U, V, W, otherwise the frequency converter will be damaged!

★ Ensure that the wiring meets the EMC requirements and the safety standards of the area. refer to the wire diameter recommended in the manual, otherwise an accident may occur!

★ Brake resistance can not be directly connected between the DC bus (P +) and (P-) terminals, otherwise it may cause fire!

4. Before charging:

★ Please confirm whether the voltage level of the power supply is consistent with the rated voltage of the converter; whether the wiring position of input and output is correct, and check whether the peripheral circuit is tight, otherwise causing the inverter damage!

★ The frequency converter must be covered with the cover plate before the electricity, otherwise it may cause electric shock!

★ Frequency converter does not need to carry out pressure test, the product has been tested when the factory, otherwise it may cause accidents!

★ Whether all peripheral devices are correctly connected according to the circuits provided in this manual, otherwise it may cause an accident!

5. After charging:

★ Do not open the cover plate after the electricity, otherwise there is a danger of electric shock!

★ Do not touch the frequency converter and surrounding circuits with wet hands, otherwise there is a risk of electric shock!

★ Do not touch the inverter terminal, otherwise there is a danger of electric shock!

★ After power on, the frequency converter will automatically conduct safety detection on the external strong electric circuit. At this time, please do not touch the U, V, W wiring terminal or the motor wiring terminal, otherwise there is a risk of electric shock!

★ If parameter identification is required, it should be done when the motor stops running, otherwise it

may cause an accident!
★ Do not arbitrarily change the parameters of the inverter manufacturer, otherwise it may cause equipment damage!

6. In operation:

★ If you choose the restart function, do not approach the mechanical equipment, otherwise it may cause personal injury!
★ Do not touch the cooling fan and discharge resistance to test the temperature, otherwise it may cause burns!
★ Non-professional technical personnel do not detect the signal in operation, otherwise it may cause personal injury or equipment damage!

★ During the inverter operation, avoid something falling into the equipment, otherwise cause equipment damage!
★ Do not use the contactor on-off method to control the start and stop of the frequency converter, otherwise cause equipment damage!

★ When used for the control of the permanent magnet synchronous motor, when the large inertia load is powered off or fault-protected during operation, the reverse electric momentum generated by the synchronous motor is very likely to damage the frequency converter. Please install the brake device or contact us!

7. Maintenance time:

★ Do not repair and maintain the equipment with live power, otherwise there is a danger of electric shock!
★ Confirm that the inverter can be maintained and repaired only after the inverter indicator light is off, otherwise the residual charge on the capacitor will cause harm to people!
★ Personnel without professional training should not repair and maintain the inverter, otherwise it will cause personal injury or equipment damage!

★ During the inverter operation, avoid something falling into the equipment, otherwise cause equipment damage!
★ Do not use the contactor on-off method to control the start and stop of the frequency converter, otherwise cause equipment damage!

1.2 Precautions

1. Motor insulation inspection

During the first use, before and after regular use, the motor insulation inspection should be done to prevent the insulation of the motor winding
Failure and damage to the frequency converter. During the insulation inspection, the motor connection must be separated from the frequency converter. It is recommended to use the 500V voltage type megohlim meter, and ensure that the measured insulation resistance is not less than 5 MΩ.

2. Thermal protection of the motor

If the motor does not match the rated capacity of the frequency converter, especially when the rated power of the inverter is greater than the rated power of the motor, be sure to adjust the value of the motor protection parameters in the frequency converter or heat the relay to protect the motor in front of the motor.

3. Operation above the power frequency

This frequency converter can provide an output frequency of 0~500Hz (0~5000Hz in VF mode). If the customer needs to operate above 50Hz, please consider the bearing force of the mechanical device.

4, about the motor heating and noise

Because the output voltage of the inverter is PWM wave, which contains a certain harmonic, the temperature rise, noise and vibration of the motor will increase compared with the power frequency operation.

5. The output side has a voltage-sensitive device or an improved power factor capacitor

The output of the converter is PWM wave. If the output side is installed with the capacitor or lightning protection voltage resistance, it is easy to cause the instantaneous overcurrent of the converter or even damage the converter.

6, frequency converter input, output terminal contactor and other switching devices

If a contactor is installed between the power supply and the inverter input, this contactor is not allowed to control the start and stop of the inverter. It is necessary to use the contactor to control the start and stop of the inverter, and the interval should not be less than one hour. Frequent charge and discharge is easy to reduce the service life of the capacitor in the frequency converter. If there are contactor devices such as switching devices between the output end and the motor, ensure that the frequency converter is operated on and off when there is no output, otherwise the module in the frequency converter will be damaged.

7. Use of anything other than the rated voltage value

It is not suitable to use CD series frequency converter outside the allowable operating voltage range specified in the manual, which is easy to cause damage to the devices in the frequency converter. If necessary, please use the corresponding voltage boost or step-down device for variable voltage treatment.

8. Three-phase input is changed to two-phase input

Do not change the three-phase frequency converter in CD series to two-phase use, otherwise it will cause failure or frequency converter damage.

9, lightning impact protection

This series of frequency converter is equipped with a lightning overcurrent protection device, which has a certain self-protection ability for the induction of lightning. For the lightning frequency area, customers should also install protection at the front end of the frequency converter.

10. Altitude and elevation use

In areas with an altitude of more than 1000 meters, the heat dissipation effect of the frequency converter becomes worse due to the thin air. If the altitude exceeds 1000m, and every 100m increase, the amount should be reduced by 1%. Please consult our company for technical consultation on this situation.

11. Some special usage

If the customer needs to use a method other than the suggested wiring diagram provided in this manual, such as the common DC bus, please consult our company.

12. Pay attention to the frequency converter

The electrolytic capacitor of the main circuit and the electrolytic capacitor on the printed board may explode, and the incineration of plastic parts will produce toxic gas. Please be treated as industrial waste.

13, about the adaptation of the motor

1) The standard adaptive motor is a quadrupole cage induction induction motor. If not the above motor is available, please select the frequency converter according to the rated current of the motor. If you need to drive the permanent magnet synchronous motor, please consult our company.

2) The cooling fan of the non-variable frequency conversion motor and the rotor shaft are coaxial connection. And the cooling effect of the fan is reduced when the speed is reduced. Therefore, the strong exhaust fan should be installed or the variable frequency conversion motor should be replaced when the motor is overheating.

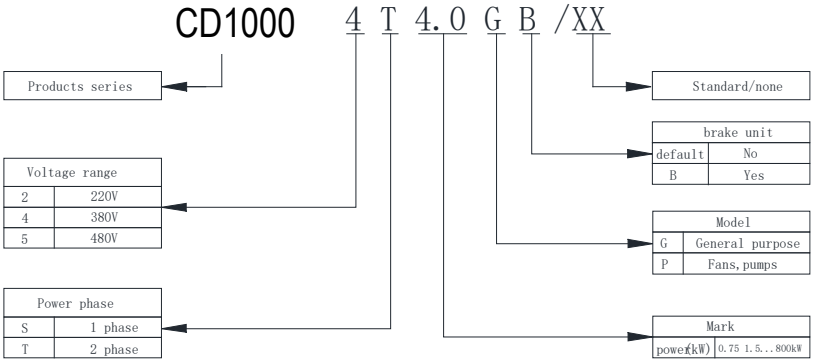
3) The frequency converter has built-in standard parameters of the motor. It is necessary to identify the motor parameters or modify the default value to meet the actual value as far as possible, otherwise the operation effect and protection performance will be affected.

4), due to the short circuit inside the cable or the motor will cause the frequency converter alarm, or even blast the machine. Therefore, please first conduct an insulation short-circuit test on the initially installed motor and cable, which should be conducted frequently in daily maintenance.

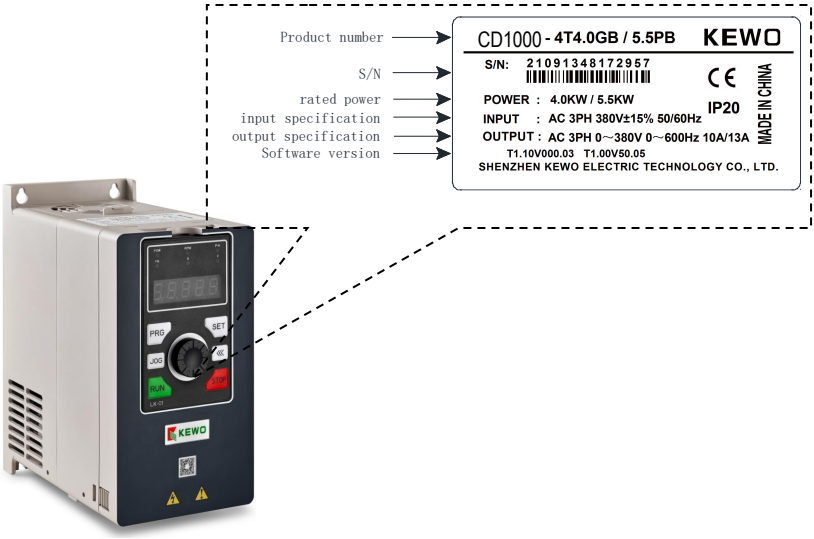
Note: When doing this test, always disconnect the frequency converter from the tested part.

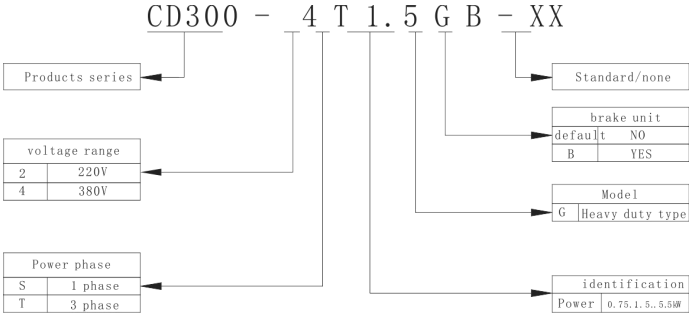
Chapter 2: Product Introduction

2.1 Model description



2.2 Product nameplate: (for example, 15k W)





2.3 Product technical indicators and specifications:

project		specifications		
accuse make particular nature	control method	Open ring vector	V/F control	Closed loop vector *
	pull-in torque	0.5Hz 180%	0.5Hz 150%	0.00Hz 180%
	Speed range	1:100	1:100	1:1000
	Steady speed accuracy	±0.5%	not have	±0.02%
	Torque accuracy	±5%	not have	±2%
	Motor type	AC assynchronous motor, ac permanent magnet synchronous motor (CD1000S)		
exploitability setup count	maximal frequency	General vector control: 500Hz V / f control: 5000Hz		
	frequency resolution	Number setting: 0.01Hz simulation setting: the highest frequency is 0.025%		
	carrier frequency	At 0.5 K ~ 16 KHz, the carrier frequency can be automatically adjusted according to the operating temperature		
	Frequency setting	Operating panel, analog volume AI1, AI2, panel potentiometer, terminal UP / DN control, Communication control, the PL U S pulse frequency		
	Add deceleration characteristics	Line or S-curve acceleration and deceleration mode time range: 0.0~65000S		
	V/F curve	Three ways: straight line, multi-point form, N power form		
	V/F separation	2 ways: total separation, half separation		
	DC braking capacity	DC brake frequency: 0.0~300Hz DC brake current: 0.0%~100%		
	Energy-consuming braking unit	4T 75G and below are standard with built-in braking unit, and 4T93G and above can only be external		
	electronic control	Point movement frequency range: 0.0~50.00Hz Point moving acceleration and deceleration time: 0.0~6500S		
	built-in PID	It can easily realize the closed-loop control of pressure, flow rate, temperature and so on		
	PLC, multiple speed	Up to 16 segments can be run with the built-in PLC or control terminals		
	Common DC bus line *	Multiple frequency converters share DC bus, energy balance		
	Automatic stabilization (AVR)	When the power grid voltage changes, it can automatically keep the output voltage stable		
	overload capacity	G-type machine: 150% rated current 60S; 180% rated current 3S P-type machine: 120% rated current 60S; 150% rated current 3S		

project		specifications
	Over pressure over pressure loss speed control	Automatic limit of current and voltage during operation to prevent frequent overflow pressure protection
	Quick flow restriction function	Minimize the overflow fault, ensure that the module is not damaged as far as possible, and protect the normal operation of the frequency converter
	Torque limit and control	The "excavator" characteristic automatically restricts the torque during operation to prevent frequent overcurrent trip; the vector control mode can realize torque control.
particular colour exploitability	Interface friendly	Power up to show the friendly dialogue "HELLO"
	Multifunction JOG key	The original multi-function key can set the operation often used: positive point, negative point, positive and negative switch, command switch.
	Timed control function	Set the single timing time and the accumulation and running time of the whole machine.
	Four sets of motor parameters	The switching control of 4 sets of motors can be realized, and the control mode is optional.
	Motor overheating protection	The expansion card input receives the temperature sensor signal input from the motor.
	Multiple encoders *	Support collector, difference, rotary transformer and other encoder.
	Command source	Operation panel, control terminal, serial communication given, and can switch to each other.
	frequency source	Digital given, analog voltage, analog current, pulse given, serial communication, auxiliary frequency source add or subtract, and can switch to each other.
	Speed tracking	Without external feedback hardware, the rotating motor is smooth without impact
	defencive function	Short-circuit detection of the upper electric motor, input and output phase deficiency protection, overcurrent protection, overvoltage protection, undervoltage protection, overheat protection, overload protection
loop border	Where to use	Indoor, not direct sun, no dust, corrosive gas, combustible gas, oil mist, water steam, dripping or salt
	above sea level	Below 1000m; use at 1% for every 100m increase in height over 1000m.
	ambient temperature	Use between-10℃ and + 40℃ 40-50℃, for each 1℃ increase, the rated output current decreased by 1%
	humidity	Less than 95% RH, and the anhydrous beads were condensed
	memory	-40～+70℃

2.4 Product appearance and installation dimensions

2.4.1 CD1000 Product appearance and installation dimensions:

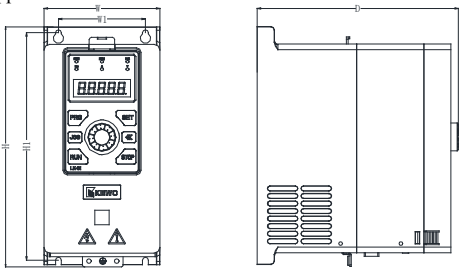


Figure 1

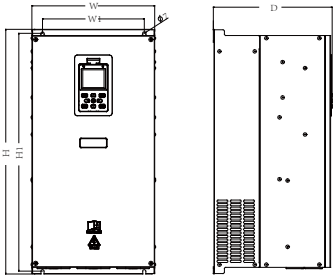
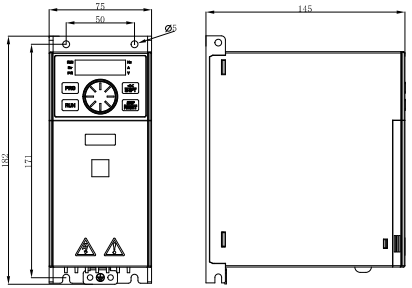


Figure 2

Frequency converter model	Install the hole mm		outline dimension mm			construction bolt mm	Legend / Structure dimensions
	W1	H 1	W	H	D		
CD1000 Series single-phase 220V							
CD1000-2S 0.75GB CD1000-2S 1.5GB	75	196	100	207	155	M4	Figure 1
CD1000-2S 2.2GB	75	196	100	207	167	M4	Figure 1
CD1000-2S3.7GB CD1000-2S5.5GB	96	268	126	279	182	M5	Figure 1
CD1000 Series of three-phase 220V							
CD1000-2T 0.75GB CD1000-2T 1.5GB	75	196	100	207	155	M4	Figure 1
CD1000-2T 2.2GB	75	196	100	207	167	M4	Figure 1
CD1000-2T3.7GB CD1000-2T5.5GB	96	268	126	279	182	M5	Figure 1
CD1000-2T7.5GB CD1000-2T11G B	140	334	170	345	184	M5	Figure 1
CD1000 Series of three-phase 380V							
CD1000-4T0.7GB CD1000-4T1.5GB CD1000-4T2.2GB CD1000-4T3.0GB	75	196	100	207	155	M4	Figure 1

Frequency converter model	Install the hole mm		outline dimension mm			construction bolt mm	Legend / Structure dimensions
	W1	H 1	W	H	D		
CD1000-4T4.0GB CD1000-4T5.5GB	75	196	100	207	167	M4	Figure 1
CD1000-4T7.5GB CD1000-4T11GB	96	268	126	279	182	M5	Figure 1
CD1000-4T15GB CD1000-4T18.5GB CD1000-4T22GB	140	334	170	345	184	M5	Figure 1
CD1000-4T30G CD1000-4T37G	200	414	235	430	213	M6	Figure 2
CD1000-4T45G CD1000-4T55G CD1000-4T 75G	230	538	278	554	267	M 6	Figure 2
CD1000-4T 93G CD1000-4T 110G	225	581	256	602	350	M8	Figure 2
CD1000H -4T 132G CD1000H -4T 160G	256	632	325	650	424	M8	Figure 2

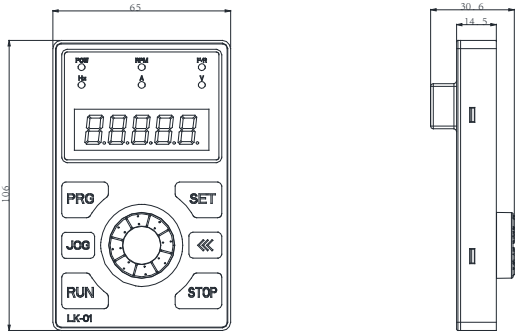
CD300 product profile and installation size



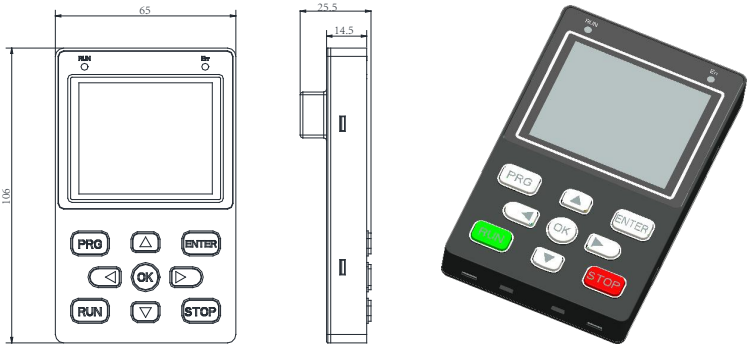
the classification of voltage	power /kW	outline dimension			installation size		Installation aperture
		W	H	D	W1	H1	
Single-phase of 220VAC	0.75	75	182	145	50	171	M5
	1.5						
	2.2						
Three-phase	0.75						
	1.5						

380VAC	2.2						
	3.0						
	4.0						
	5.5						

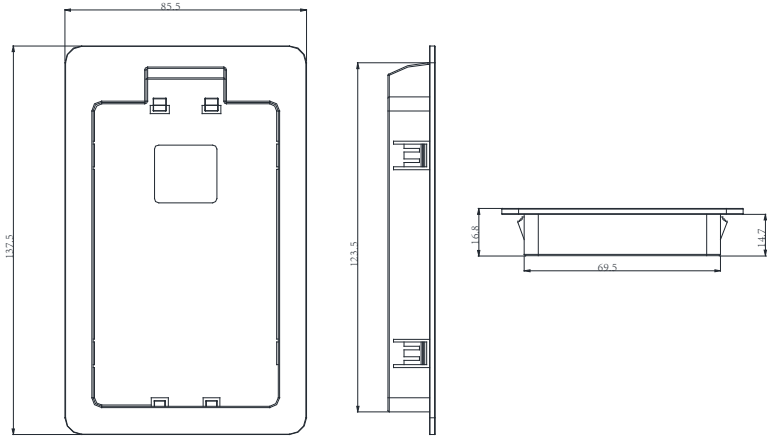
2.5 Operation panel size (mm): The following two panel CD1000 series frequency converters can be used.



Standard Panel model: LK-01 *

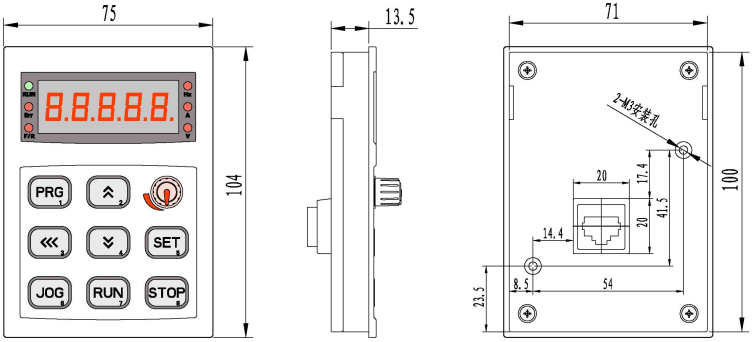


LCD panel (optional)

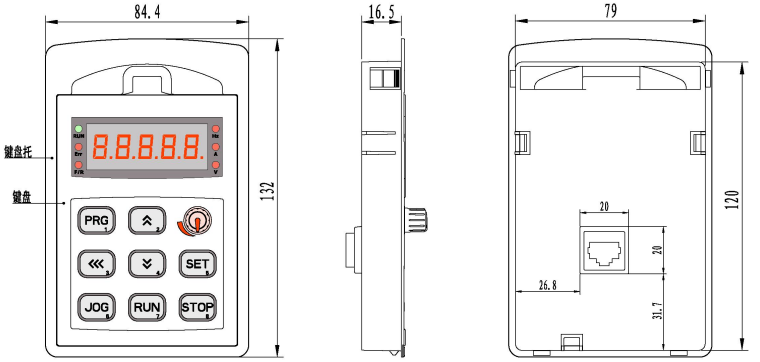


Panel bracket opening size: 123.6mm * 72mm

CD300 Operating Panel Size (mm):



Standard panel model: XS-01D opening size 76mm * 101mm



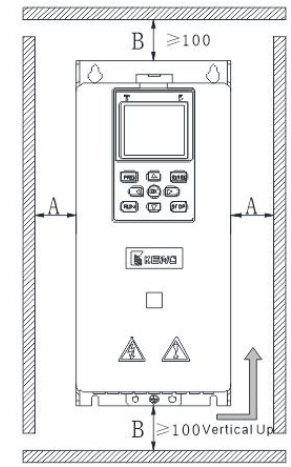
Standard panel tray model: XS-01T opening size 80mm * 120mm

Chapter 3: Product installation

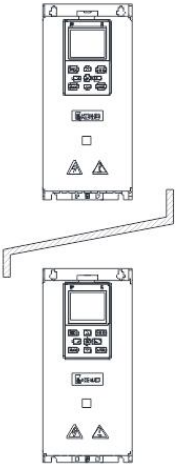
3.1 Installation environment:

1. Ambient temperature: the ambient temperature has a great impact on the life of the converter, and the operating ambient temperature of the converter is not allowed
   Over the allowable temperature range (-10 degrees ~50 degrees).
2. Install the frequency converter on the surface of the flame retardant object, and there should be enough space around for heat dissipation. The frequency converter is easy to produce a lot of heat when working, and it is installed vertically on the installation support with screws.
3. Please install in a place not easy to vibration, the vibration should not be greater than 0.6G. Pay special attention to stay away from the punch press and other equipment.
4. Avoid direct sunlight, wet and water.
5. Avoid places with corrosive, flammable and explosive gases in the air.
6. Avoid it in places with oil, dust and polymetallic dust.

Installationlocationprompt:



Note: When the power of the frequency converter is not more than 22kW, the size can not be considered. When greater than 22kW, A shall be greater than 50mm.



Note: When the frequency converter is installed up and down, please install the heat shield as shown in the figure.

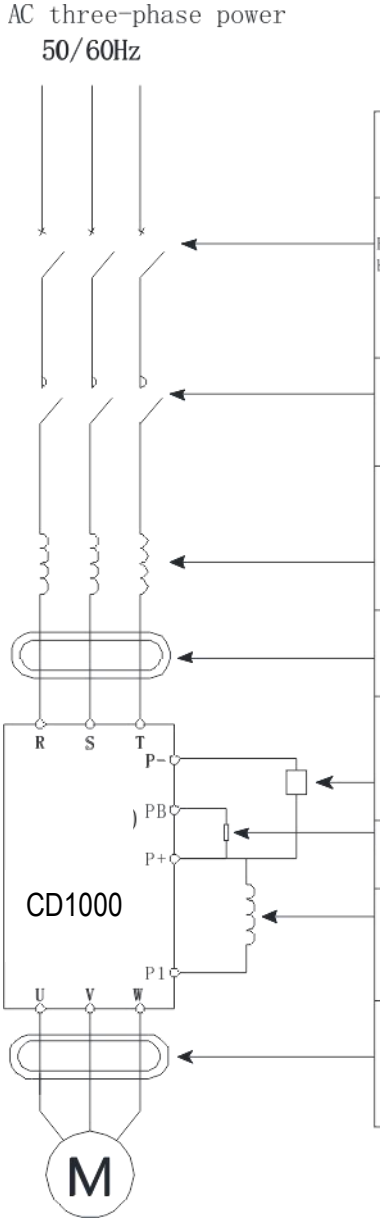
Figure 3-1 Installation diagram of CD series frequency converter

Mechanical installation needs to pay attention to the heat dissipation problem, so please pay attention to the following points:

1. Please install the frequency converter vertically to facilitate the heat distribution upward. However, it can not be inverted. If there are more frequency converter in the cabinet, it is best to install side by side. In the occasion of installation up and down, please refer to the schematic diagram in Figure 3-1 to install the heat insulation diversion plate.
2. The installation space is shown in Figure 3-1 to ensure the heat dissipation space of the frequency converter, but please consider the heat dissipation situation of other components in the cabinet when arranging.
3. The installation bracket must be of flame retardant material.

4. For metal dust applications, it is recommended to use the installation method outside the radiator cabinet. At this time, the fully sealed cabinet space should be as large as possible

3.2 CD1000 peripheral electrical element connection and description:



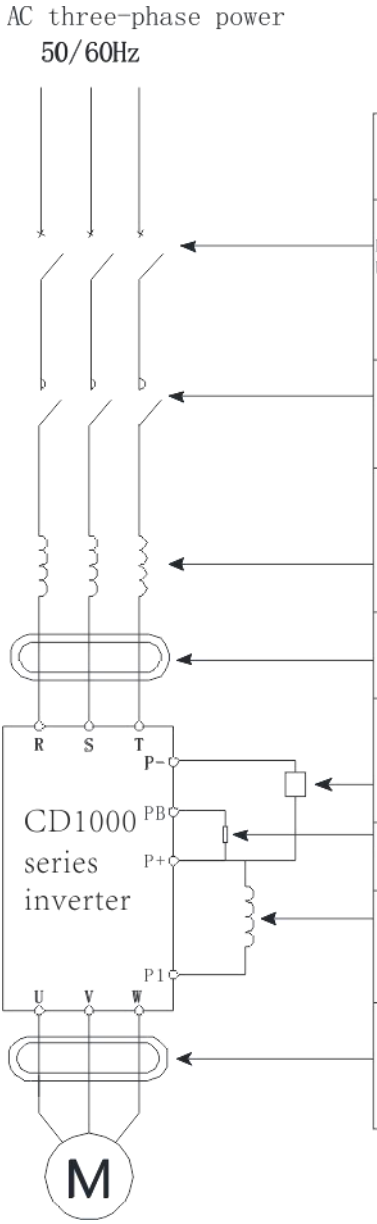
Peripherals and any options	illustrate:
* Fuseless circuit breakers MCCB	Used to quickly cut off the faulty power supply of the inverter and prevent the inverter and line faults from causing power failure
* AC contactor MC	Cut off mains supply in case of inverter failure and prevent power failure and restart after failure
* AC reactor DCL	Used to improve input power factor, reduce high-order harmonics and suppress power surges
* radio noise filter NF	To reduce radio interference from frequency converters
* brake unit B	It is selected when the braking torque cannot meet the requirements. It is suitable for the occasions of large inertia load and frequency braking or quick stop.
Braking resistor RB	
* DC reactor DCL	Used to improve power factor and suppress current spikes
* radio noise filter NF	To reduce radio interference from frequency converters

3.3 Selection table of CD1000 peripheral devices:

Frequency converter model	air switch （MCCB ） A	recommend contactor A	Recommended input side main loop wire mm²	Recommended output side main loop Road wire mm²	The control loop conductor mm is recommended²
Single phase 220V					
CD1000-2S0.7GB	16	10	1.5	1.5	1.0
CD1000-2S1.5GB	20	16	1.5	1.5	1.0
CD1000-2S2.2GB	32	20	2.5	2.5	1.0
Three-phase 220V					
CD1000-2T0.4GB	10	10	1.5	1.5	1.0
CD1000-2T0.75GB	16	10	1.5	1.5	1.0
CD1000-2T1.5GB	16	10	1.5	1.5	1.0
CD1000-2T2.2GB	25	16	1.5	1.5	1.0
CD1000-2T3.7GB	32	25	2.5	2.5	1.0
CD1000-2T5.5GB	63	40	6.0	6.0	1.0
CD1000-2T7.5GB	63	40	10	10	1.0
CD1000-2T11G B	100	63	16	16	1.5
Three phase 380V					
CD1000-4T0.7GB	10	10	1.5	1.5	1.0
CD1000-4T1.5GB	16	10	1.5	1.5	1.0
CD1000-4T2.2GB	16	10	1.5	1.5	1.0
CD1000-4T3.0GB	25	16	1.5	1.5	1.0
CD1000-4T 4.0GB	25	16	1.5	1.5	1.0
CD1000-4T5.5GB	32	25	2.5	2.5	1.0
CD1000-4T7.5GB	40	32	4.0	4.0	1.0
CD1000-4T11GB	63	40	6.0	6.0	1.0
CD1000-4T15GB	63	40	10	10	1.0
CD1000-4T18.5GB	100	63	10	10	1.5
CD1000-4T22G B	100	63	16	16	1.5
CD1000-4T30G B	125	100	16	16	1.5
CD1000-4T37G B	160	100	25	25	1.5
CD1000-4T45G B	200	125	35	35	1.5

Frequency converter model	air switch （MCCB ） A	recommend contactor A	Recommended input side main loop wire mm^2	Recommended output side main loop Road wire mm^2	The control loop conductor mm is recommended^2
CD1000-4T55G B	200	125	50	50	1.5
CD1000-4T 93G B	250	160	95	95	1.5
CD1000-4T 110G B	350	350	120	120	1.5
CD1000-4T 132G B	350	300	120	120	1.5
CD1000-4T 160G B	400	300	150	150	1.5

Peripheral electrical element connection and description:



Peripherals and any options	illustrate:
* Fuseless circuit breakers MCCB	Used to quickly cut off the faulty power supply of the inverter and prevent the inverter and line faults from causing power failure
* AC contactor MC	Cut off mains supply in case of inverter failure and prevent power failure and restart after failure
* AC reactor DCL	Used to improve input power factor, reduce high-order harmonics and suppress power surges
* radio noise filter NF	To reduce radio interference from frequency converters
* brake unit B	It is selected when the braking torque cannot meet the requirements. It is suitable for the occasions of large inertia load and frequency braking or quick stop.
Braking resistor RB	
* DC reactor DCL	Used to improve power factor and suppress current spikes
* radio noise filter NF	To reduce radio interference from frequency converters

Selection table for CD300 peripheral devices:

Frequency converter model	air switch （MCCB ） A	recommend contactor A	Recommended input side main loop wire mm²	Recommended output side main loop Road wire mm²	The control loop conductor mm is recommended²
Three phase 380V					
CD 300-4T0.75GB	10	10	1.5	1.5	1.0
CD 300-4T 1.5GB	16	10	1.5	1.5	1.0
CD 300-4T 2.2GB	16	10	1.5	1.5	1.0
CD 300-4T 3.0GB	16	16	1.5	1.5	1.0
CD 300-4T 4.0GB	25	16	1.5	1.5	1.0
CD 300-4T 5.5GB	32	25	2.5	2.5	1.0

3.4 Reactor description and type selection

In order to prevent the high voltage input from flowing into the input power circuit and damaging the rectified components, the AC reactor should be connected on the input side,

Also improves the power factor on the input side.

When the distance between the frequency converter and the motor exceeds 50 meters, the leakage current is too large due to the parasitic capacitor effect of the long cable, and the frequency converter frequently occurs overcurrent protection. At the same time, in order to avoid the motor insulation damage, the output reactor must be installed.

400V 18.5KW and above models can be connected with external DC reactor.160KW and above power standard built-in DC reactor. DC reactor can improve the power factor, can avoid the damage to the rectifier bridge caused by the large input current of the frequency converter connected to the large capacity transformer, and can also can avoid the harmonic damage to the rectifier circuit caused by the voltage mutation or phased load.

Frequency converter model	Input the AC reactor		Output the AC reactor		DC reactor	
	current (A)	inductance (mH)	current (A)	inductance (mH)	current (A)	inductance (mH)
CD -4T1.5G	5	3.8	5	1.5	6	6
CD -4T2.2G	7	2.5	7	1	6	11
CD -4T3.0G	10	1.5	10	0.6	12	6.3
CD -4T 4.0G	10	1.5	10	0.6	12	6.3
CD -4T5.5G	15	1.0	15	0.25	23	3.6
CD -4T7.5G	20	0.75	20	0.13	23	3.6
CD -4T11G	30	0.60	30	0.087	33	2
CD -4T15G	40	0.42	40	0.066	33	2
CD -4T18.5G	50	0.35	50	0.052	40	1.3
CD -4T22G	60	0.28	60	0.045	50	1.08
CD -4T30G	80	0.19	80	0.032	65	0.80
CD -4T37G	90	0.16	90	0.030	78	0.70
CD -4T45G	120	0.13	120	0.023	95	0.54
CD -4T55G	150	0.10	150	0.019	115	0.45
CD -4T75G	200	0.12	200	0.014	160	0.36
CD -4T93G	250	0.06	250	0.011	Hanging up is optional Cabinet machine standard is built-in	
CD -4T 110G	250	0.06	250	0.011		
CD -4T 132G	290	0.04	290	0.008		
CD -4T 160G	330	0.04	330	0.008		

3.5 Arrangement description of the CD1000 main circuit terminals:

R	S	T	PB	P+	P-	U	V	W

CD1000 - 2S0.75GB ～2S5.5GB / 2T0.75GB ～2T11GB / 4T 0.75GB ～4T 160GB

CD300 Main circuit terminal: (full power range)

R	S	T	P+	PB	U	V	W

3.5.1. Description of the main circuit terminal of the single-phase 220V input frequency converter:

Terminal mark	name	explain
R T	Single-phase power supply input terminal	Connect the 220V power supply
U V W	Inverter output terminal	Connect the three-phase motor
P+ P-	Positive and minus terminals	Common-DC bus line input terminal
P+ PB	Brake resistance connection terminal	Connect the external brake resistance
( )	earth terminal	Frequency converter ground terminal

3.5.2. Description of the main circuit terminal of the three-phase frequency converter:

Terminal mark	name	explain
R S T	Three-phase power supply input terminal	Connect the three-phase power supply
U V W	Inverter output terminal	Connect the three-phase motor
P+ P1	Leave the factory	Disassemble it when connecting to the DC reactor
P+ P-	Positive and minus terminals	Common DC bus line input terminal / External brake unit access point Please consult with the brake unit at 160kw or above
P+ PB	Brake resistance connection terminal	Connect the external brake resistance
( )	earth terminal	Frequency converter ground terminal

3.6 Wiring precautions:

3.6.1. Input the power supply, RT or RST

Input side wiring of frequency converter, no phase sequence requirements

3.6.2. DC bus line P + P-

Note that there is still residual voltage in the DC bus P + P-terminal after power failure. Please contact until the indicator light is turned out and measured less than 36V between two points, otherwise there is a danger of electric shock.

3.6.3. The wiring length of the brake unit shall not exceed 10 meters, and twisted pair or double line parallel wires shall be used.

Do not connect the brake resistance to P + P-, otherwise it may cause inverter damage or even fire. Please communicate with our company in detail for the 160G or above brake unit

3.6.4. The brake resistance must be connected to the P + PB

4T 22G and below the standard configuration brake unit, the brake resistance can be directly connected to it.

The recommended value for brake resistance selection and the wiring distance should be less than 5M. Otherwise, the inverter may be damaged.

3.6.5. External reactor connection terminal

Cabinet machine 4T160G and above inverter standard built-in DC reactor. 4T 30G~4T 75G built-in DC reactor is optional, 4T 93G~4T 400G is optional with the reactor box, the need for external DC reactor, the P + and P1 short copper row, and the reactor is connected between the two terminals. If there is no P1 terminal, please contact us.

3.6.6. UVW on the output side of the frequency converter

Do not connect the capacitor or surge absorber, otherwise it will cause damage to the frequency converter. When the motor cable is too long, due to the influence of the distributed capacitance, it is easy to produce electrical resonance, which will cause the motor insulation damage or produce a large leakage current to protect the frequency converter. When the cable length is greater than 100m, the output AC reactor must be installed.

3.6.7. Ground terminal () PE

7.1 The frequency converter must be reliably grounded reliably, and the grounding resistance value is less than 10 ohms, otherwise it will cause abnormal operation or even damage to the equipment.

7.2 The ground terminal shall not be shared with the zero-line terminal N of the power supply.

7.3 The protection grounding conductor must use yellow and green cables.

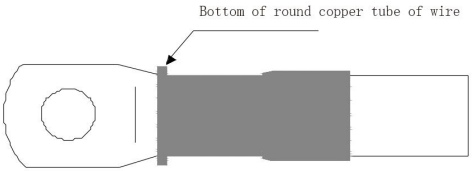
7.4 Ground position of the main loop shield layer.

7.5 The frequency converter is recommended to be installed on the conductive metal installation surface to ensure that the entire conductive bottom of the frequency converter is well overlapped with the installation surface.

7.6 The filter should be installed on the same installation surface with the frequency converter to ensure the filter effect of the filter.

3.6.8. Protection requirements for the main loop cables

Heat the shrink casing in the main loop cable and the cable core part, and ensure that the casing is completely coated with the cable conductor, as shown in the figure below:

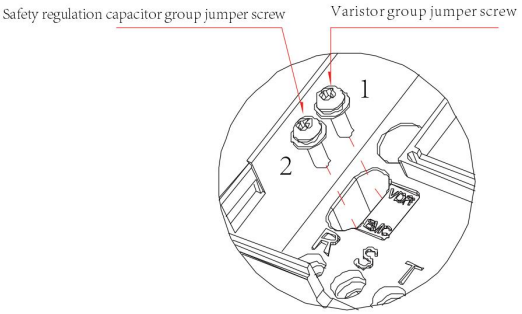


Schematic diagram of conductor sleeve

3.6.9. Power grid system requirements

1. This product is applicable to the grid system with neutral grounding. If used for IT grid system (grid system with neutral grounding), remove the varistor (VDR) and safety capacitor (EMC), the 1 and 2 screws as shown in the figure, and the filter cannot be installed, otherwise it may cause injury or damage to the frequency converter.

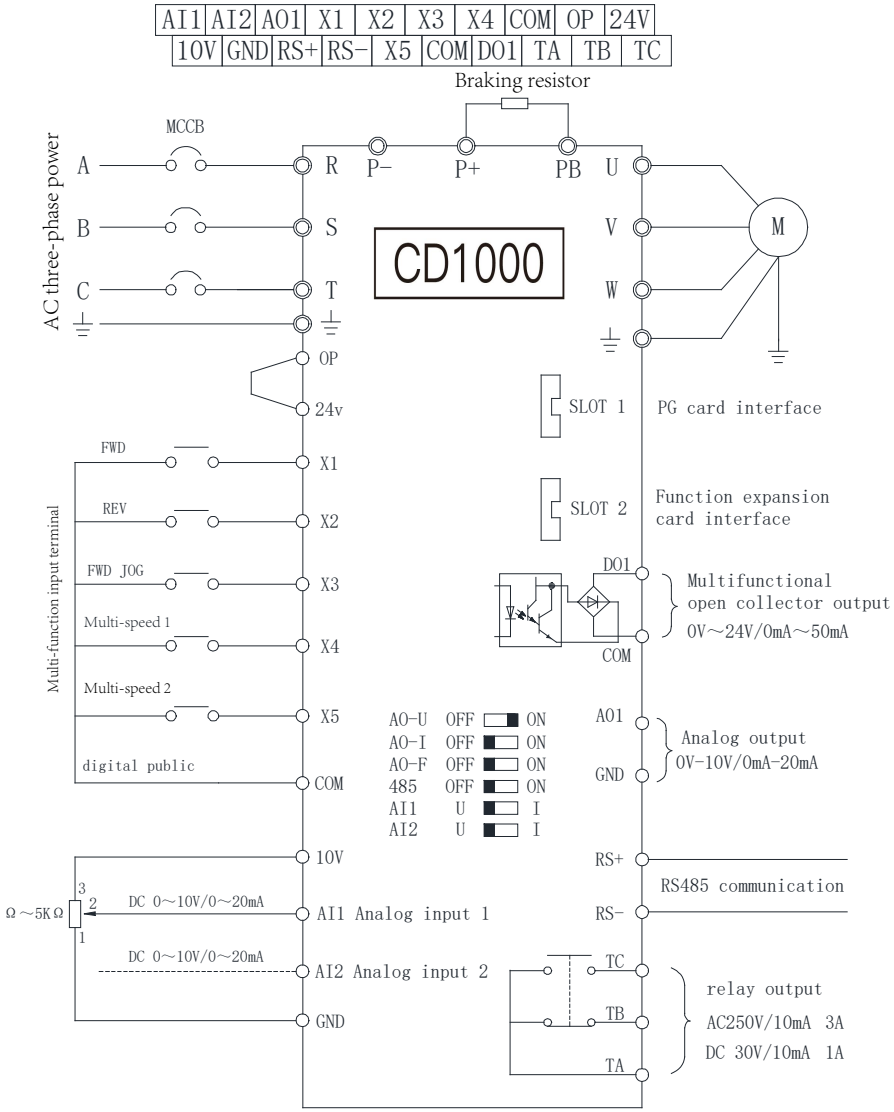
2. In the configuration of leakage circuit breaker, if there is leakage protection phenomenon in the start, the safety gauge capacitor (EMC) can be removed to the ground jumper, as the no. 2 screw shown in the figure.



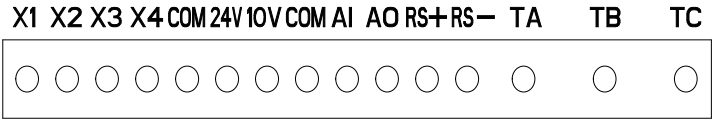
Schematic diagram of position of varistor (VDR) and gauge capacitor (EMC) to ground jumper

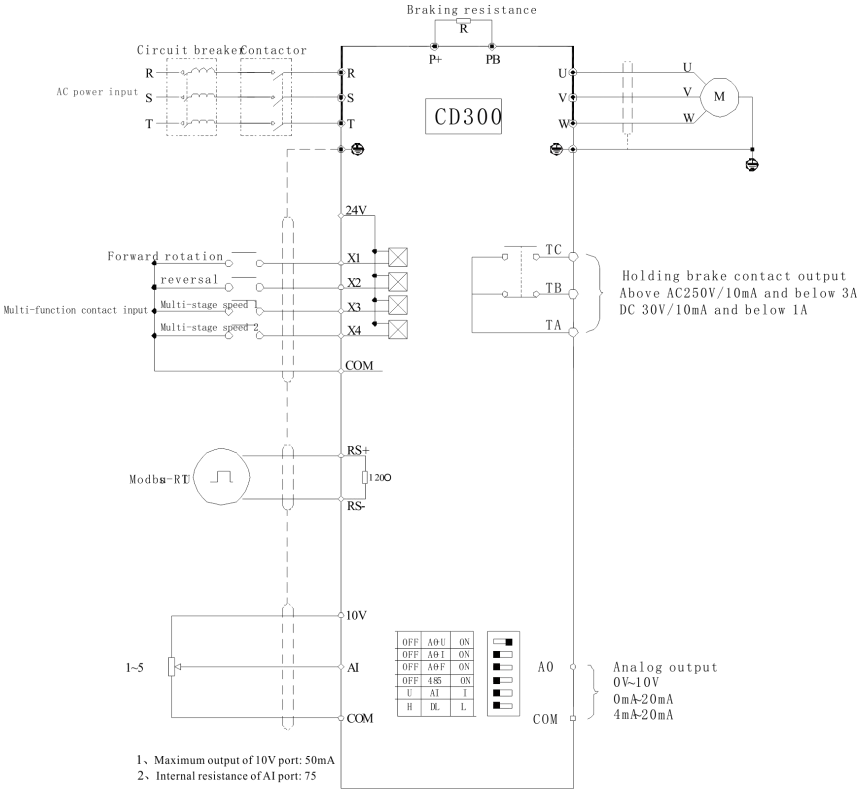
3.7 Control terminal and wiring diagram

3.7.1 Control terminal and wiring diagram: CD1000 series



Control terminal and wiring diagram: CD300 series





3.7.2 Description of control loop terminal function: CD1000 series

Terminal symbol	Terminal name	function declaration
X1 COM	Multifunction input terminal 1	1. Input specification: 24V DC, 5 mA 2. Frequency range: 0-200 Hz 3. Voltage range: 10V~30V Standard with 5 DI, can be expanded to 10 DI.
X2 COM	Multifunction input terminal 2	
X3 COM	Multifunction input terminal 3	
X4 COM	Multifunction input terminal 4	
X5 COM	Multifunction input terminal 5 High-speed pulse input terminal	In addition to the function of X1-X4, it can also be used as a high-speed pulse input channel. Pulse frequency: 0-100 KHz

Terminal symbol	Terminal name	function declaration
10V GND	External 10V power supply	Provide 10V power supply to the outside, and the maximum output current: 10 mA Generally used as both ends of the potentiometer, the resistance range of the potentiometer: 1-5 KΩ
24V COM	External connection with a 24V power supply	Provide 24V power supply to the maximum output current: 200 mA Generally used as external sensor power supply or micro-small relay power supply
OP	External power supply input terminal	The 24V terminal is connected to the terminal (H bit) When driving X 1 to X 5 with external signal, OP is connected to external power supply and S7 is disconnected (L bit)
AI1 GND	Analog quantity input terminal 1	1. Input signal: DC 0~10V / 4 ~ 20 mA is determined by the control board and the dial switch P 5. 2. Input impedance: voltage signal 22 KΩ Current signal: 500 Ω
AI2 GND	Analog quantity input terminal 2	1. Input signal: DC 0~10V / 4 ~ 20 mA is determined by the control board and the dial-code switch P 6. 2. Input impedance: voltage signal 22 KΩ Current signal: 500 Ω
AO1 GND	Analog quantity output terminal 1	Decided by the dial switch AO position of the control board (P1 / P2 / P3). Voltage signal or current signal or frequency signal Voltage signal range: 0-10 V Current signal range: 0 ~ 20 mA Frequency and signal range: 0-100 KHz
DO1 COM	Open-circuit collector electrode output	Optical coupling isolation, open circuit collector output Allowable output voltage range: 0-24 V Allowable output current range: 0-50 mA
TA TB TC TA 2 TB 2 TC 2 TA 3 TB 3 TC 3	relay output	Multifunction relay output: TA and TC normally open TA and TB normally closed Contact point drive capability: AC250V 3A / DC 30V 1A Standard 1-way relay output, which can be expanded to 2-way relay output
RS+ RS-	485 Communication interface	Standard with RS485 communication interface
SLOT 1	PG card interface	External multifunction extension card
SLOT 2	Function extension card interface	External multifunction extension card
Pull-up switch definition: P1: A0-U Voltage signal output left: OFF right: ON P2: A0-I current signal output left: OFF right: ON P3: A0-F frequency signal output left: OFF right: ON P4:485, terminal matching resistance left: OFF right: ON P5: AI 1 analog input left: U / voltage right: I / current P6: AI2 analog input left: U / voltage right: I / current		

3.8 Wiring instructions of the control loop terminal:

3.8.1 Analog input terminal

Because the weak analog voltage signal is particularly vulnerable to external interference, so it is generally necessary to shield the cable, and the wiring distance is as short as possible, not more than 20 meters.as illustrated in following figure:

Figure 3-2 Schemram of analog input / output terminal wiring

In some cases where the analog signals are seriously disturbed, the analog signal source requires a filter capacitor or a ferrite magnetic core. As shown in the figure below:

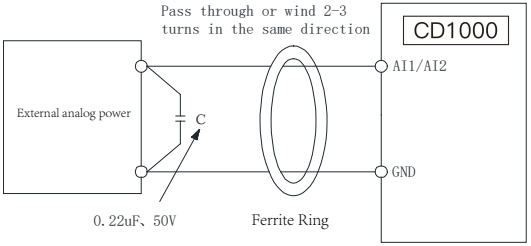


Figure 3-3 Wiring diagram of analog input terminal plus filter processing

3.8.2. Digital input terminal

The reception of digital signals by the inverter is to judge the state of these terminals, so the external contact should be the contact point with high reliability for the weak signal conduction.

If the open circuit collector output is used to provide ON / OFF signal to the digital input of the frequency converter, the misoperation caused by power supply crosstalk is considered.

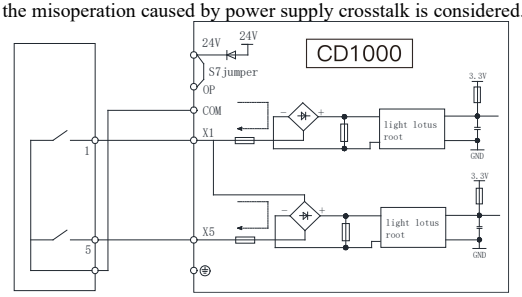


Figure 3-4 S7 terminal H

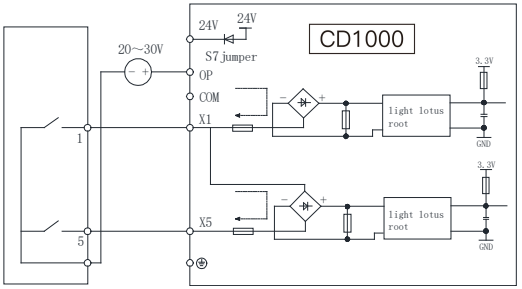


Figure 3-5 S7 terminal L bit short connection using external power source dry contact mode

Note: When using the external power supply, the S7 short wiring of the 24V and OP terminals must be disassembled, otherwise the frequency converter will be damaged. External power supply voltage range DC20-30V, otherwise normal operation or frequency converter cannot be damaged.

3.8.3. Digital output terminal

When the digital output terminal needs to drive the relay, the absorption diode should be installed on both sides of the relay coil, otherwise it is easy to cause 24V DC power supply damage.

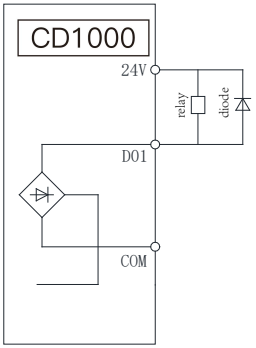


Figure 3-6 Drive the external relay connection method with an internal power supply

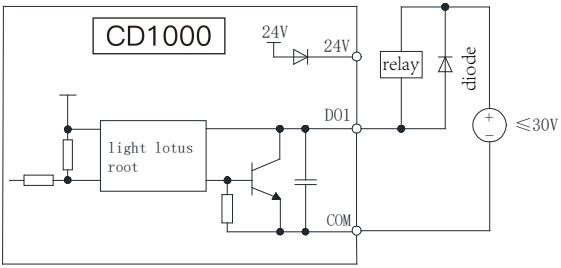


Figure 3-7 Drive the relay connection method by using an external power supply

3.9 Discussion on EMC problems:

3.9.1 Effect of harmonic wave;

1. The high harmonic of the power supply will cause damage to the frequency converter, so in some places with poor power grid quality, it is recommended to install an AC input reactor

2. Due to the high harmonics on the output side of the frequency converter, the capacitor and surge inhibitor on the output side may cause electrical oscillation and electrical equipment damage, so the capacitor or surge suppression equipment can not be installed on the output side.

3.9.2 Electromagnetic Interference and treatment:

There are two kinds of electromagnetic interference: one is the interference of the peripheral electromagnetic noise to the frequency converter, which causes the misaction of the frequency converter itself. This kind of interference generally has a small impact, because the frequency converter has done internal processing of this part of the interference, and its anti-interference ability is strong. Another kind of interference is the influence of the frequency converter on the peripheral equipment.

Common treatments:

1. The grounding wire of frequency converter and other electrical products shall be well grounded, and the grounding resistance shall not be greater than 5 Ω.

2. The main line of the frequency converter should not be arranged parallel to the control line, and should be arranged vertically when conditions permit.

3. For the occasions with high anti-interference requirements, the main line from the frequency converter to the motor should use the shielded cable and be earthing the shielding layer reliably.

4. For the leads of the disturbed equipment, it is recommended to use the twisted-pair shielding control wire, and ground the shielding layer reliably.

5. For the motor cable length exceeds 100M, install output filter or output reactor.

3.9.3 Treatment method of interference of surrounding electromagnetic equipment:

Generally, the cause of electromagnetic influence on the frequency converter is that a large number of relays, contactors or electromagnetic contactors are installed near the frequency converter. When the frequency converter is disturbed and misoperated, we can refer to the following methods to solve:

1. Install a surge inhibitor to the interference-generating device

2. Install a filter for the signal input of the frequency converter

3. The control signal line of the inverter and the lead of the detection line should be shielded cable and the shielding layer is reliably grounded.

3.9.4 Treatment methods for the interference of the frequency converter to the surrounding equipment:

The interference of this part is divided into two kinds: one is radiated by the converter itself, and the other is radiated by the lead from the converter to the motor. These two kinds of radiation make the lead surface of the surrounding electrical equipment by electromagnetic and electrostatic induction, and then make the equipment produce misoperation. For these different interference situations, please refer to the following methods:

1. The instruments, receivers and sensors are generally weak, if they are close to interference or in the same control cabinet, it is recommended to adopt the following methods: keep away from the interference source; do not tie together the parallel signal lines and power lines; install linear filter or radio noise filter on the input and output side of the frequency converter.

2. When the disturbed equipment and the frequency converter use the same power supply, if the above method can not eliminate the interference, a linear filter or a radio noise filter should be installed between the frequency converter and the power supply.

3. The peripheral equipment is grounded separately, which can eliminate the interference caused by the leakage current of the grounding wire of the frequency converter in the common place.

3.9.5 Leakage current and treatment

There are two forms of leakage current when using the frequency converter: one is the leakage current to the ground; the other is the leakage current between the lines.

1. Factors affecting the floor drain current and their solutions:

There is a distributed capacitor between the wire and the earth, the larger the distributed capacitor, the greater the leakage current; effectively reduce the distance between the frequency converter and the motor to reduce the distributed capacitor. The larger the carrier frequency, the greater the leakage current, can reduce the carrier frequency to reduce the leakage current, but reducing the carrier frequency will lead to the increase of motor noise. In addition, adding the reactor is also an effective way to solve the leakage current. The leakage current will increase with the increase of the circuit current, so the corresponding leakage current is large when the motor power is large.

2. Factors affecting the leakage current between the lines and their solutions:

There is a distributed capacitance between the output wiring of the frequency converter. If the current through the line contains high harmonic, it may cause resonance and leakage current. At this point, the thermal relay may be misoperated.

The solution is to reduce the carrier frequency or install an output reactor. It is suggested that the motor does not install a thermal relay when using the frequency converter, and use the electronic overcurrent protection function of the frequency converter.

3.9.6 EMC input filter

1. When using the filter, please use strictly according to the rated value; since the filter belongs to Class I electrical appliance, the filter metal shell should be in good contact with the metal ground of the installation cabinet, and require conductive continuity, otherwise there will be the risk of electric shock and seriously affect the use effect of EMC.

2. Through EMC test, it is found that the filter ground must be connected to the same ground ground of the frequency converter, otherwise the EMC effect will be seriously affected.

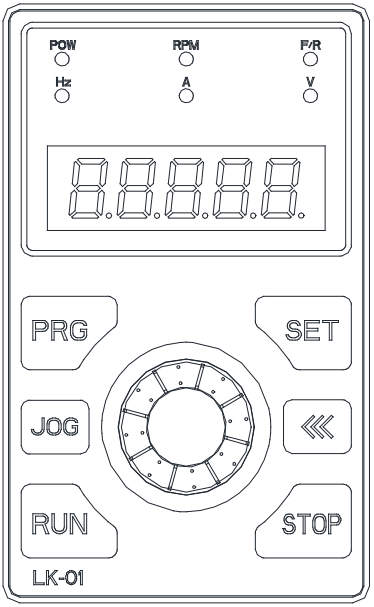
3. The filter should be installed as close as possible to the power input end of the frequency converter.

4. When the motor cable is too long, due to the influence of the distribution capacitor, it is easy to produce electrical resonance, which will cause the motor insulation damage or large leakage current to protect the inverter. If the length of motor cable is greater than 100m, AC reactor shall be installed at the output of frequency converter.

Chapter 4: Operation and display

4.1 Introduction of the CD1000 operation interface

Using the operation panel, the inverter can set and modify the functional parameters, monitor the working status of the converter and control the inverter operation control (start, click, stop), etc. Its shape and functional area are shown in the figure below:



4.2 Key function description:

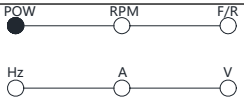
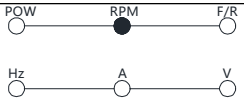
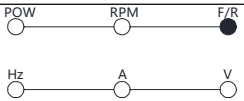
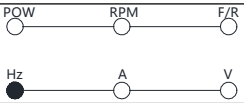
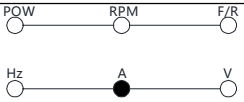
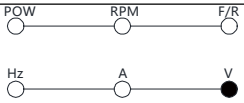
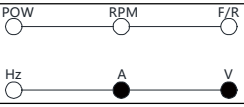
PRG	Programming key	Level 1 menu in or out
SET	Confirm the key	Enter the menu screen successively, confirm and save the parameters
⋘	shift key	In the stop or running state, press this key to cycle on the parameters When you modify the parameter, you can select the modification bit of the parameter (flicker bit)
JOG	Multi-function key	The function key is determined by the function code P7.04
RUN	Run the key	In the keyboard operation mode, start the frequency converter

	Stop / reset key	In the keyboard operation mode, stop the frequency converter After the inverter fails and troubleshooting, press this key to reset
	The Digital Knob encoder	1. Increment of the frequency, data, or function code 2. Decdecreasing frequency, data, or functional codes 3. Knob LED backlight color definition: Yellow: Power-on state blue: Ready state green: running state Red: fault state, Purple: Torque mode

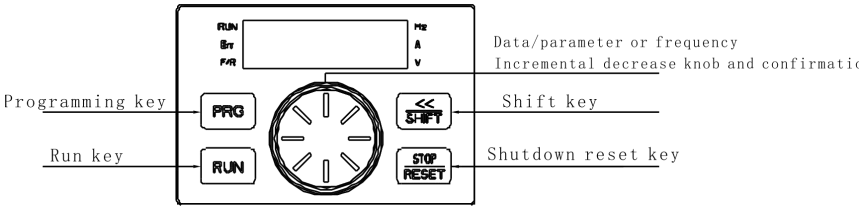
The main interface of the panel is on standby.

The light description:

○(Inished; lit)●

Indicator lamp status	Description of the meaning
	The POW power supply indicator lamp
	The RPM rotational speed unit
	F / R forward and reverse indicator
	Hz frequency indication
	A current indication
	V voltage indication
	% percentage

4.1 Introduction of CD 300 operation interface



Using the operation panel, the inverter can set and modify the functional parameters, monitor the working status of the converter and control the inverter operation control (start, click, stop), etc. Its shape and functional area are shown in the figure below:

4.2 Key function description:

PRG	Programming key	Level 1 menu in or out
	Up key	Increment of the data or function code
	shift key	In the stop or running state, press this key to cycle on the parameters When you modify the parameter, you can select the modification bit of the parameter (flicker bit)
	Drop the key	Decression of data or functional codes
SET	Confirm the key	Enter the menu screen successively, confirm and save the parameters
JOG	Multi-function key	The function key is determined by the function code P7.04
RUN	Run the key	In the keyboard operation mode, start the frequency converter
STOP	Stop / reset key	In the keyboard operation mode, stop the frequency converter After the inverter fails and troubleshooting, press this key to reset
	potential device	When the function code is P0.03=4, the potentiometer directly adjusts the frequency

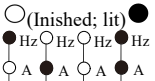
The light description:

RUN: when the light is on, the converter is in operation, when the light is out, the converter is in shutdown, and when the light is slow, the converter is in sleep

Err: parameter recognition / torque / fault indicator light indicates torque control mode, slow flash indicates learning state and light flash indicates fault state

F / R: Forward and reverse indicator, which is on

: Unit indicator light, indicating the units currently displaying the data, has the following units:



: Hz frequency indication;: A current indication;: V voltage indication;: RMP speed

unit;:% percentage;

4.3 Monitoring status list:

«« In the shutdown or running state, multiple status parameters can be displayed through the shift key "" on the inverter panel. Function codes P7.06 (operating parameter 1), P7.07 (operating parameter 2), and P7.08 (shutdown parameter) are selected according to the binary bits.

In the shutdown state, a total of 11 shutdown state parameters can choose whether to display, respectively:

P7.08	LED shutdown to display the parameters	the unit: Bit 0: Set the frequency Bit 1: bus bar voltage Bit 2: AI1 voltage Bit 3: AI2 voltage decade: Bit 0: reserved	Bit 1: Count value Bit 2: the length value Bit 3: Load speed hundreds place: Bit 0: PID given Bit 1: X terminal state Bit2:D0 state	3	☆

Key sequence switch displays the selected parameters. In operating state, four operating state parameters, including operating frequency, set frequency, bus voltage and output current, are displayed by default. Whether other parameters are displayed by P7.06 and P7.07 function codes:

P7.06	LED run display parameter 1	the unit: Bit 0: Running frequency Bit 1: the output current Bit 2: Output voltage Bit 3: Load speed display decade: Bit 0: bus bar voltage Bit 1: Set the frequency Bit 2: Count value Bit 3: the length value	hundreds place: Bit 0: X terminal input state Bit 1: DO terminal output state Bit 2: AI1 voltage Bit 3: AI2 voltage kilobit: Bit 0: reserved Bit 1: PID given Bit 2: Output power Bit 3: Output torque	3b	☆
P7.07	LED run display parameter 2	the unit: Bit 0: Line speed Bit1:PID feedback Bit 2: the PLC stage Bit 3: PLUSE input pulse frequency decade: Bit 0: Current power-on time Bit 1: Current running time Bit 2: the remaining running time Bit 3: Main frequency display	hundreds place: Bit 0: auxiliary frequency display Bit 1: Actual feedback speed Bit 2: Encoder feedback speed Bit 3: AI1 correction front voltage kilobit: Bit 0: AI2 pre-correction voltage Bit 1: Torque-given value Bit 2: PLUSE input frequency Bit 3: Communication settings	0	☆

After the converter is power off, the power is on, the displayed parameters are default as the parameters selected before the converter is off.

Take P7.08 (shutdown display parameter) as an example, if you ask the panel to display: set frequency, bus voltage, load speed, PID given.

Because each is independent of each other, should set a, ten, hundred, first decide the binary of each bit, and then the binary into hex

Conversion control table for binary and hexadecimal numbers:

binary system				**hexadecimal (LED bit display value)**
BIT3	BIT2	BIT1	BIT0	
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9
1	0	1	0	A
1	0	1	1	B
1	1	0	0	C
1	1	0	1	D
1	1	1	0	E
1	1	1	1	F

Table 4.1: Conversion control table for binary and hexadecimal numbers

Refer to the following table:

Set single digit: "Set frequency" and "bus voltage" are determined by BIT 0 and BIT 1 of P7.08, such as BIT 0 = 1, indicating the display set frequency, not required to be displayed, and the corresponding bit is set to 0. So the bit is 0011. To hexadecimal is 3, so the bits should be set to 3

Set the ten digits: display "load speed", so the binary set value of the ten digits is 1000, converted to hexadecimal to 8, so the ten digits should be set to 8

Set hundred digits: required to display "PID given", so the binary set value of 100 bits is 0001, converted to 1, hex system, so 100 bits should be 1.

To sum up: P7.08 should be set as 0183.

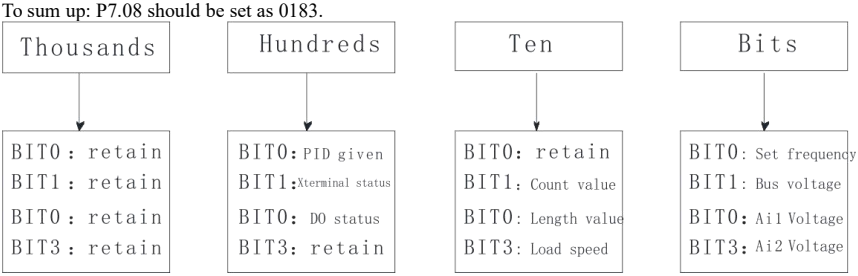
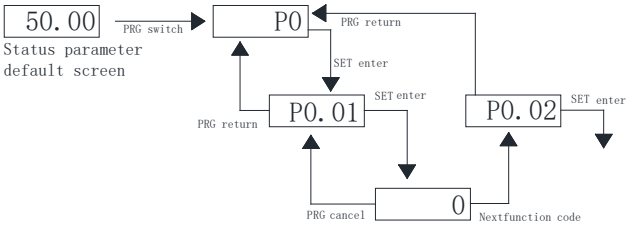


Table 4.2 hex parameter settings

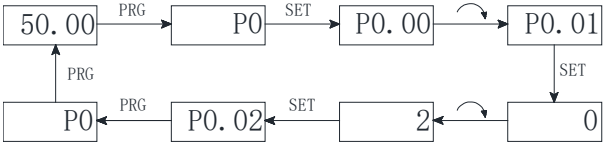
4.4 Method of viewing and modifying the function code

The operation panel of CD series frequency converter adopts the three-level menu structure for parameter setting and other operations.



Description: During the tertiary menu operation, press the PRG key or SET key to return to the secondary menu. The difference between the two is: press the SET key to save the set parameters and return to the secondary menu, and automatically transfer to the next function code; and press the PRG key to abandon the current parameter modification and directly return to the secondary menu of the current function code number.

Example: An example of changing the function code P0.01 from 0 to 2.



In the third level menu state, if the parameter is not flashing bit, the function code cannot be modified. The possible reasons are:

1. The function code is non-modifiable parameters, such as frequency converter type, actual detection parameters, operation record parameters, etc.

2. The function code cannot be modified in the running state, and it can only be modified after shutdown.

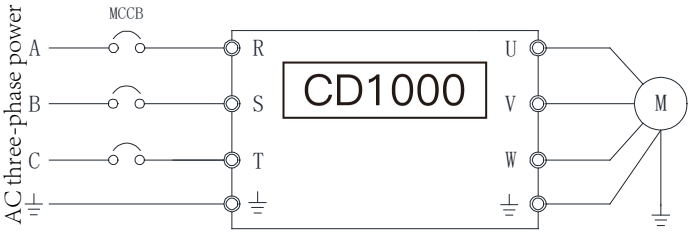
4.5 password setting

The frequency converter provides the user password protection function, when P7.00 is set to non-zero, that is, the user password, exit the function code editing status password protection is effective, press the PRG key again, will display "- - - -", must correctly enter the user password, to enter the ordinary menu, otherwise can not enter.

To remove password protection, only enter by password and set P7.00 to 0.

4.6 Motor commissioning: (first power)

1. Press the following below to connect the line:



Above: Connect a simple running line

2. Check that the wiring is correct on the power switch, connect the power supply, the frequency converter will display "HELLO" first, and later display 50.00
3. Confirm that the main frequency source is selected as the number setting (P0.03=4)
4. Confirm that the running command channel is a panel control (P0.01=0)
5. Press the RUN key to start, the RUN indicator lights on, and the motor starts running

 6. Press the key (digital knob encoder) to increase and reduce the frequency to check whether the motor in each frequency section is running normally

7. Stop the inverter and cut off the power supply

Note: It is absolutely forbidden to connect the power supply to the output UVW of the frequency converter, which will cause serious damage to the machine.

For safety, the mechanical coupling or belt shall be removed before initial operation to separate the motor and equipment.

Verify that the motor operates in the correct direction, and adjust any two phase in UVW.

Make whether the power of the motor matches the frequency converter

Chapter 5: Functional parameter table

Function code	name	Set the scope	Factory value	change
P0 basic function group				
P0.00	Control mode selection	0: No speed sensor and no vector control 1: V / F control 2: Speed sensor with vector control	0	★
P0.01	Run command selection	0: Operating panel 1: External terminals 2: RS485 communication	1	☆
P0.02	Digital setting frequency shutdown memory selection	0: No memory; 1: memory	1	☆
P0.03	Primary frequency selection	0: panel digital frequency setting, the frequency is not remembered after power loss 1: panel digital frequency setting, frequency memory after power loss 2: Analog volume AI1 (-10v-10v) 3: Analog volume AI2 (0-10v / 4-20 mA) 4: The panel potentiometer 5: PULSE pulse setting 6: Simple PLC 7: Multiple instructions 8: Process PID 9: RS485 communication	7	★
P0.04	Maximum output frequency	50.00Hz～400.00Hz	50.00Hz	★
P0.05	Upper limit running frequency	P0.06～P0.04	50.00Hz	★
P0.06	Lower limit running frequency	0.00Hz～P0.05	0.00Hz	☆
P0.07	Digital frequency setting	0.00Hz～P0.04	50.00Hz	☆
P0.08	Acceleration time 1	0.00s～65000s	Model determination	☆
P0.09	Slow down time 1	0.00s～65000s	Model determination	☆
P0.10	Run direction selection	0: forward; 1: reverse	0	☆
P0.11	carrier frequency	0.5KHz～16.0KHz	Model determination	☆
P0.12	Carrier frequency automatic adjustment selection	0: No automatic adjustment; 1: Automatic adjustment	1	☆
P0.13	Parameter initialization	0: No operation	0	★

Function code	name	Set the scope	Factory value	change
		1: restore the factory parameters, the motor parameters P2 group does not recover 12: Clear the record information		
P0.14	Auxiliary frequency source selection	With P0.03 (primary frequency source selection)	0	★
P0.15	Auxiliary frequency source range selection when superposition	0: relative to the maximum frequency 1: Relative to the primary frequency source	0	☆
P0.16	Range of auxiliary frequency sources during stacking	0%～150%	100%	☆
P0.17	Primary and secondary frequency superposition selection	Individual bit: frequency source selection 0: Primary frequency source 1: Main and auxiliary operation results (operation relationship is determined by ten digits) 2: Main frequency source and auxiliary frequency source switch 3: Switch between the main frequency source and the main and auxiliary operation results 4: Switch between the auxiliary frequency source and the main and auxiliary operation results Ten place: frequency source main and auxiliary operation relationship 0: Main + auxiliary 1: Master-auxiliary 2: Maximum value of both cases 3: Minimum value of both cases	00	☆
P0.18	Run the command terminal combination mode	0: Two-line 1 1: Two lines 2 2: Three-line 1 3: Three-line 2	0	★
P1 start-stop control group				
P1.00	starting mode	0: Direct start 1: First, the DC brake and then start from the start frequency 2: Speed tracking start	0	☆
P1.01	Start frequency	0.00Hz～10.00Hz	0.00Hz	☆
P1.02	Start the frequency hold time	0.0s～100.0s	0.0s	★
P1.03	Start the DC brake current	0%～100%	0%	★
P1.04	Start the DC brake time	0.0s～100.0s	0.0s	★
P1.05	Downtime method	0: Slow down parking; 1: Free parking	0	☆
P1.06	Stop time DC brake starting frequency	0.00Hz~ the maximum frequency P0.04	0.00Hz	☆
P1.07	Shutdown for the DC brake waiting time	0.0s～100.0s	0.0s	☆
P1.08	Shutdown DC brake current	0%～100%	0%	☆

Function code	name	Set the scope	Factory value	change
P1.09	Stop the DC brake time	0.0s～100.0s	0.0s	☆
P1.10	Energy consumption and brake utilization rate	0%～100%	100%	☆
P1.11	Reverse control	0: allow reversal; 1: prohibit reversal	0	★
P1.12	Point movement operation frequency	At 0.00Hz~ the maximum frequency	5.00Hz	☆
P1.13	Speed tracking method	0: Start from the shutdown frequency 1: Start from the power frequency 2: Start at the maximum frequency	0	★
P1.14	Speed tracking speed	1～100	20	☆
P1.15	Speed tracking current size	50%～200%	100%	☆
P2 motor parameter group				
P2.00	GP type is shown	0: G machine 1: P machine	Model determination	•
P2.01	Motor type selection	0: Ordinary Asynchronous motor 1: variable frequency induction motor 2: Permanent magnet synchronous motor	0	★
P2.02	The motor is rated power	0.1kW～1000.0kW	Model determination	★
P2.03	Rated frequency of motor	At 0.00Hz~ the maximum frequency	50.00Hz	★
P2.04	Motor rated speed	0rpm～65535rpm	1460rpm	★
P2.05	The motor is rated voltage	0V～2000V	Model determination	★
P2.06	Rated current of motor	0.1A～2000A	Model determination	★
P2.07	Motor stator resistance	0.001Ω ～65.535Ω	Model determination	★
P2.08	Motor rotor resistance	0.001Ω ～65.535Ω	Model determination	★
P2.09	Motor leakage resistance	0.01mH～655.35mH	Model determination	★
P2.10	Motor mutual resistance	0.1mH～6553.5mH	Model determination	★
P2.11	No-load current of motor	0.01A～P2.06	Model determination	★
P2.12	Synchronizer stator resistance	0.001Ω ～65.535Ω	Model determination	★
P2.13	Synchronizer D-axis inductor	0.01mH～655.35mH	Model determination	★

Function code	name	Set the scope	Factory value	change
P2.14	Synchronizer Q-axis inductor	0.01mH～655.35mH	Model determination	★
P2.16	Synchronizer anti-EMF	0.1V～6553.5V	Model determination	★
P2.18	Number of encoder pulses	1～65535	1024	★
P2.19	Encoder type	0: The ABZ incremental encoder 4: Rotary transformer	0	★
P2.21	The ABZ encoder is in the phase sequence / primary direction	0: Positive 1: Reverse	0	★
P2.25	The log of the variable pole	1～65535	1	★
P2.27	Motor self-learning selection	1: Still self-learning 2: Rotate for self-learning 3: Static learning with the load 11: synchronization machine with load static tuning 12: synchronous machine no-load dynamic tuning	0	★

1: Still auto tuning

Suitable for asynchronous motor and load is not easy to remove, and can not be complete auto tuning occasions.

The motor type and motor nameplate parameters P2.02~P2.06 must be set correctly before performing stationary auto tuning. Stationary auto tuning, the frequency inverter can obtain three parameters: P2.07~P2.09.

2: Rotate for auto tuning

In order to ensure the dynamic control performance of the inverter, please choose rotary auto tuning. At this time, the motor must be removed from the load and keep the motor in the no-load state.

In the process of rotating auto tuning, the frequency inverter start perform auto tuning in still and then accelerates to 80% of the rated frequency of the motor according to the acceleration time P0.08. After a period of time, stop down according to the deceleration time P0.09 and finish the auto tuning.

3: Static with a load of auto tuning

Applicable to cases where the load cannot be removed.

After rotating since the study is completed, view the parameter values of P2.11. This value shall be 1 / 3~1 / 2 of the motor rated current (P2.06). If it is greater than this value, please set the value of P2.11 manually.

11: Synchronization machine with load auto tuning

When the synchronous motor and the load cannot be removed, we have to choose the synchronous motor with load learning, this process the motor does not operate. Before learning the synchronous motor on load, correctly set the motor type and motor nameplate parameters P2.02～P2.06.

Synchronous motor with on-load learning, the frequency inverter can obtain the initial position Angle of the synchronous motor, which is the necessary condition for the normal operation of the synchronous motor, so the synchronous motor is installed before the first use, we must learn.

Action description: set the function code to 11, and then press the RUN key, the frequency inverter will be on-load learning.

12: Synchronized machine no-load auto tuning

If the motor and load can be removed, it is recommended to choose the no-load learning

Function code	name	Set the scope	Factory value	change
(auto tuning)of the synchronous motor, which can obtain better operation performance than the on-load learning (auto tuning)of the synchronous motor. In the process of no-load learning, the frequency inverter first completes the on-load learning, and then accelerates to P0.07 motor rated frequency according to the acceleration time P0.08. After a period of time, stop according to the deceleration time P0.09 and finish the learning. Before no-load learning (auto tuning)of synchronous motor, in addition to the motor type and parameters P2.02~P2.06, the encoder pulse number P2.18, P2.19, encoder type and logarithm P2.25. No-load learning (auto tuning)of synchronous motor, the frequency inverter can obtain P 2.12 ~ P 2.12, the information P2.21, and the encoder P2.22, P 2.22, P2.24, and the vector control current ring PI parameters P3.11~P3.14. Note: Motor auto tuning can only be performed in the keyboard operation mode (P0.01=0), but not in the terminal operation and communication operation mode. After setting the five parameters (P2.01~P2.05), when the inverter is down, enter the (P2.27) menu, select the corresponding auto tuning mode, press the confirmation button, then the panel displays "LEATN", and then press the RUN button to do the motor auto tuning. After the learning, stop automatically.				
P3 motor vector control parameter group				
P3.00	The velocity-ring proportional gain of 1	1～100	60	☆
P3.01	The velocity loop integration time 1	0.01s～10.00s	0.50s	☆
P3.02	Switch frequency 1	0.00～P3.05	5.00Hz	☆
P3.03	The velocity-loop proportional gain of 2	1～100	20	☆
P3.04	The velocity loop integration time 2	0.01s～10.00s	1.00s	☆
P3.05	Switch frequency 2	P3.02～P0.04	10.00Hz	☆
P3.06	Transfer difference compensation coefficient	50%～200%	100%	☆
P3.07	The velocity loop filtering time constant	0.000s～0.100s	0.080s	☆
P3.08	Vector-controlled overexcitation gain	0～200	64	☆
P3.09	Torque upper limit source selection during speed control	0: Set the function code P3.10 1: AI1 setting 2: AI2 setting 3: The panel potentiometer setting 4: PULSE pulse setting 5: Communication given	0	☆
P3.10	Upper torque limit setting under speed control (electric power)	0.0%～200.0%	180.0%	☆
P3.11	Upper torque limit source under speed control (power generation)	0: Upper limit number set (P3.10)	0	☆
P3.12	Torque upper limit setting under speed control (power generation)	0.0%~200.0%	0	

Function code	name	Set the scope	Factory value	change
P3.13	Low-speed current ring Kp adjustment	0.1~10.0	1	
P3.14	Low-speed current ring Ki adjustment	0.1~10.0	1	
P3.15	High-speed current ring Kp adjustment	0.1~10.0	1	
P3.16	High-speed current ring Ki adjustment	0.1~10.0	1	
P3.17	Zero-speed locking speed loop Kp	1~100	30	
P3.18	Zero-speed locking speed loop Ti	0.001s~10.000s	0.5	
P3.19				
P3.20	Zero-speed lock speed ring switching frequency	0.00Hz~655.35Hz	0.05	
P3.21	Maximum output voltage coefficient	100~110	100	
P3.22	Output voltage filtering time	0.000s~0.01s	0	
P3.23	Zero speed lock	0: Not enable 1: enable	0	
P3.24	The vector overpressure inhibited the KP	0~1000	40	
P3.25	Accelerate compensation gain	0~200	0	
P3.26	Acceleration compensation for the filter time	0~500	10	
P3.27	Vector overvoltage suppression enables	0: Not enable 1: enable	1	
P3.28	Set the torque filter cutoff frequency	50Hz~1000Hz	500	
P3.29	Current detection at the initial position angle of the synchronmachine	50~180	80	
P3.30	The velocity loop parameters are automatically calculated to enable the process	0: Not enable 1: enable	0	
P3.31	Expected speed loop Bandwidth (high speed)	1.0Hz~200.0Hz	10	
P3.32	Expected Speed Ring Bandwidth (low speed)	1.0Hz~200.0Hz	10	
P3.33	Expected Speed Ring Bandwidth (zero speed)	1.0Hz~200.0Hz	10	
P3.34	Expected speed ring damping ratio: (generally not changed)	0.1~65.000	1	
P3.52	Uncoupling control enables	0: Not enable 1: enable	0	
P3.53	Power generation power limiting enabling	0: Not enable 1: enable	0	
P3.54	Power limit for power generation	0.0%~200.0%	0	
P3.55	Flux closed-loop mode	Individual position: retain	1010	

Function code	name	Set the scope	Factory value	change
	selection	Ten: keep 100 Positions: Keep Thousand bits: torque base value selection 0: motor rated current 1: motor rated torque current		
P3.56	Upper output current limit of the frequency converter	0.0%~170.0%	150	
The P4 V / F control parameter group				
P4.00	VF curve setting	0: Line V / F curve 1: Multipoint V / F curve 2: Square V / F curve 3: VF separation mode 1 4: VF separation mode 2	0	★
P4.01	Recurrent ascension	0.0%: (Automatic torque lift) 0.1%～30.0%	Model determination	☆
P4.02	Torque lift cutoff frequency	At 0.00Hz~ the maximum frequency	50.00Hz	★
P4.03	The VF transition compensation gain coefficient	0.0%～200.0%	0.0%	☆
P4.04	VF overexcitation gain	0～200	64	☆
P4.05	The VF break-point 1 output frequency	0.00Hz～P4.07	0.00Hz	★
P4.06	The VF break-point 1 output voltage ratio	0.0%～100.0%	0.0%	★
P4.07	VF point 2 output frequency	P4.05～P4.09	0.00Hz	★
P4.08	The VF break-point 2 output voltage ratio	0.0%～100.0%	0.0%	★
P4.09	VF point 3 output frequency	P 4.07 to motor rated frequency	0.00Hz	★
P4.10	The VF break-point 3 output voltage ratio	0.0%～100.0%	0.0%	★
P4.11	Voltage source separated by the VF	0: Number setting (P4.12) 1: AI1 given 2: AI2 given 3: Panel potentiometer is given 4: PULSE Pulse setting (X5)	0	☆
P4.12	VF separate voltage source number setting	0 V to motor rated voltage	0V	☆
P4.13	Voltage rise time for the VF separation	0.0s～1000.0s	0.0s	☆
P4.14	Voltage drop time for the VF separation	0.0s～1000.0s	0.0s	☆
P4.15	Vector 0-speed current setting	0:0 Speed with current 1: no current	0	★
P4.16	The VF oscillations suppress the gain	0～100	40	☆
P4.17	The VF oscillatory inhibition mode	0～4	3	★
P4.18	Excessive loss speed enabling	0: Don't make it 1: Enable	1	★

Function code	name	Set the scope	Factory value	change
P 4.19	Current current loss speed loss current	100%～200%	150%	☆
P4.20	Overloss speed gain	0～100	10	☆
P4.21	VF overloss speed action current compensation coefficient	50%～200%	50	☆
P4.22	Overpressure stall enabling	0: Don't make it 1: Enable	0	★
P4.23	Over-voltage stall protection voltage	200～2000	Model determination	☆
P4.24	Overvoltage frequency gain	0～100	30	☆
P4.25	Over-voltage stall-suppressed voltage gain	0～100	30	☆
P4.26	Maximum increase limit frequency of overvoltage stall	0～50.00Hz	5.00Hz	☆
P4.27	Undervoltage stall suppression mode	0: Not enable 1: enable 2: Slow down at P8.09 after power failure	0	★
P4.28	Under-pressure stall KP	0～100	40	☆
P4.29	Underpressure stall KI	0～100	30	☆
P4.30	VF undervoltage stall recovery judgment voltage	80.0%～100.0%	85.0%	★
P4.31	The VF undervoltage stall recovery determines the voltage time	0.0s～10.0s	0.5	★
P4.32	The VF undervoltage stall point	60.0%~100.0% (standard bus bar voltage)	80.0%	★
P5 Input terminal group				
P5.00	The X1 terminal function selection	0: No function 1: Forward Run (FWD) 2: Reverse Run (REV) 3: Three-line operation control 4: Forward movement (FJOG) 5: Reverse point movement (RJOG) 6: Free parking 7: Fault reset (RESET) 8: External fault often open input 9: Terminal UP 10: Terminal DOWN 11: UP / DOWN set reset (terminal, keyboard) 12: Multiple segment command terminal 1 13: Multiple segment command terminal 2 14: Multiple segment command terminal 3 15: Multiple segment command terminal	1	★
P5.01	The X2 terminal function selection		2	★
P5.02	X3 terminal function selection		4	★

Function code	name	Set the scope	Factory value	change
P5.03	X4 terminal function selection	4 16: the acceleration and deceleration selection terminal 1 17: Select terminal 2 for acceleration and deceleration 18: External fault is frequently closed for input 19: External parking terminal (only valid for operation panel running command channel) 20: frequency source switching 21: X5 pulse frequency input 22: Switch between the main frequency and the preset frequency 23: Switch between auxiliary frequency and preset frequency 24: Run the command switch terminal 25: The PID is paused 26: Take the reverse terminal of the PID 27: PID integral pause terminal 28: PID parameter switching terminal 29: Counter input 30: Counter is reset 31: Length count input 32: Length is reset 33: The timer is valid 34: swing frequency pause 36: acceleration and deceleration prohibition 37: DC brake command 38: Run the command to switch to the terminal 2 39: Frequency set start-up terminal 40: Motor selection terminal 1 41: Motor selection terminal 2 42: Speed control / torque control switch 43: Operation is suspended 44: User-defined fault 1 45: User-custom fault 2 46: Simple PLC state reset 47: Torque control is prohibited 48: Emergency stop 49: External terminal stop (deceleration time 4, external terminal shutdown) 50: Reduce the DC brake 52: No reversal is allowed 53: No positive turn 54: Simple PLC procedure is suspended 56: Quick parking 57: Release the brake for feedback 58: Holding lock feedback	12	★
P5.04	X5 terminal function selection		13	★
P5.05	Expand the X6 terminal function selection		0	★
P5.06	Expand the X7 terminal function selection		0	★
P5.07	Expand the X8 terminal function selection		0	★
P5.08	Expand the X9 terminal function selection		0	★
P5.09	Expand the X10 terminal function selection		0	★
P5.10	The X-terminal filter time	0.000s～10.00s	0.010s	☆
P5.11	Line AI1 minimum given	-10.00V～P5.13	0.00V	☆
P5.12	Line AI1 minimum	-100.0%～+100.0%	0.0%	☆

Function code	name	Set the scope	Factory value	change
	given the corresponding value			
P5.13	Line AI1 maximum given	P5.11～+10.00V	10.00V	☆
P5.14	Line AI1 maximum given the corresponding value	-100.0%～+100.0%	100.0%	☆
P5.15	The AI1 filtering time	0.00s～10.00s	0.10s	☆
P5.16	Line AI2 minimum given	0.00V～P5.18	0.00V	☆
P5.17	Line AI2 minimum given the corresponding value	-100.0%～+100.0%	0.0%	☆
P5.18	Line AI2 maximum given	P5.16～+10.00V	10.00V	☆
P5.19	Line AI2 maximum given the corresponding value	-100.0%～+100.0%	100.0%	☆
P5.20	The AI2 filtering time	0.00s～10.00s	0.10s	☆
P5.21	Panel potentiometer minimum given	0.00V～P5.23	0.20V	☆
P5.22	Panel potentiometer minimum given the corresponding value	0.0%～+100.0%	0.0%	☆
P5.23	Panel potentiometer maximum given	P5.21～+10.00V	10.00V	☆
P5.24	Panel potentiometer maximum given the corresponding value	-100.0%～+100.0%	100.0%	☆
P5.25	Panel potentiometer filter time	0.00s～10.00s	0.10s	☆
P5.26	PULSE minimum input	0.00KHz～P5.28	0.00KHz	☆
P5.27	The PULSE minimum input corresponds to the setting	-100.0%～100.0%	0.0%	☆
P5.28	PULSE maximum input	P5.26～100.00KHz	50.00KHz	☆
P5.29	PULSE maximum input corresponding setting	-100.0%～100.0%	100.0%	☆
P5.30	The PULSE filtering time	0.00s～10.00s	0.10s	☆
P5.31	AI curve selection	Individual bit: AI1 curve selection 1: Curve 1 (2 points, see P5.11~P5.14) 2: Curve 2 (2 points, see P5.16~P5.19) 3: Curve 3 (2 points, see P5.21~P5.24) 4: Curve 4 (4 points, see H3.00~H3.07) 5: Curve 5 (4 points, see H3.08~H3.15) Ten place: AI2 curve selection, identical to above Hundred bits: panel potentiometer curve selection, identical to above	H.321	☆
P5.32	The AI is below the minimum input setting selection	the unit: The AI1 is below the minimum input setting selection 0: minimum input	000	☆

Function code	name	Set the scope	Factory value	change
		1：0.0% Ten place: AI2 is below the minimum input setting selection, i. s. above Hundred bit: panel potentiometer below the minimum input setting selection, Ill. above		
P5.33	X1 terminal response delay time	0.0s～3600.0s	0.0s	★
P5.34	X2 terminal response delay time	0.0s～3600.0s	0.0s	★
P5.35	The X3 terminal response delay time	0.0s～3600.0s	0.0s	★
P5.36	Enter the terminal positive and negative logic setting 1	0: Positive logic 1: Anti-logic Position: X1 Ten: X2 Hundred positions: X3 Thousand position: X4 Ten thousand positions: X5	00000	★
The P6 output terminal group				
P6.00	FM terminal output selection	0: Pulse output 1: Switch volume output	0	☆
P6.01	FM terminal switch quantity output selection	0: No output 1: Frequency converter is in operation 2: Frequency arrives 3: Fault output (free shutdown fault) 4: Frequency level detection of FDT 1 output 5: Frequency level detection of FDT 2 output 6: During zero-speed operation (no output during shutdown) 7: Zero-speed operation 2 (also output during shutdown) 8: Upper limit frequency reaches 9: Lower limit frequency reaches 10: Frequency reaches 1 output 11: Frequency reaches 2 for output 12: Power-up time arrives 13: Run time arrives 14: Timing time arrives 15: Set the count value 16: The specified count value arrives 17: Length arrives 18: Undervoltage state output 19: Motor overload forecast alarm 20: frequency converter overload forecast alarm 21: In the frequency limit 22: Torque limit	0	☆
P6.02	Local relay output selection		44	☆
P6.03	Extended relay output selection		0	☆

Function code	name	Set the scope	Factory value	change
P6.04	The DO 1 output selection	23: Ready to run 24：AI1>AI2 25: The AI1 input exceeds the upper and lower limit 26: Lower limit frequency reached (shutdown also output) 27: The run time arrives 28: Alarm output (all faults) 29: Fault output (free shutdown fault and underoutput) 30: Current reaches 1 output 31: Current reaches 2 output 32: In the load 33. Zero current output 34: The module temperature arrives 35: The software overflow output 36: Running direction 37: Motor overtemperature forecast alarm 38: The PLC cycle is complete 39: Communication control 40~43: Retention 44: Brake control 45: Overload protection output	1	☆
P6.05	Extended DO 2 output selection		4	☆
P6.06	FM pulse volume output selection	0: Run frequency 1: Set the frequency 2: Output current 3: Output torque 4: Output power 5: Output voltage 6: PULSE input (100.% corresponds to 100.0KHz) 7: AI1 value 8: AI2 value 9: Keep 10: Length value 11: Count the value 12: Communication settings 13: Motor rotation speed 14: Output current (100.0% corresponds to 1000.0A) 15: Output voltage (100.0% corresponds to 1000.0V) 16: Output torque (torque rating)	0	☆
P6.07	AO1 output selection		0	☆
P6.08	Extend the AO2 output selection		1	☆
P6.09	FM pulse output maximum frequency	0.01KHz ～100.00KHz	50.00KHz	☆
P6.10	The AO1 zero-bias coefficient	-100.0%～100.0%	0.0%	☆
P6.11	AO1 gain	-10.00～10.00	1.00	☆
P6.12	Extended AO2 zero-bias coefficient	-100.0%～100.0%	0.0%	☆
P6.13	Expansion card AO2 gain	-10.00～10.00	1.00	☆
P6.14	The FM switch volume output ON delay time	0.0s～3600.0s	0.0s	☆

Function code	name	Set the scope	Factory value	change
P6.15	Local relay output ON delay time	0.0s～3600.0s	0.0s	☆
P6.16	Extension relay output ON delay time	0.0s～3600.0s	0.0s	☆
P6.17	DO 1 output ON delay time	0.0s～3600.0s	0.0s	☆
P6.18	DO 2 output ON delay time	0.0s～3600.0s	0.0s	☆
P6.19	DO output terminal valid state selection	0: Positive logic; 1: reverse logic Individual bit: FM terminal Ten place: local relay Hundred bits: extension relay Thousand position: DO1 Ten thousand positions: DO2	00000	☆
P6.20	FM switch volume output OFF delay time	0.0s～3600.0s	0.0s	☆
P6.21	Local relay output OFF delay time	0.0s～3600.0s	0.0s	☆
P6.22	Extension relay output OFF delay time	0.0s～3600.0s	0.0s	☆
P6.23	The DO 1 outputs the OFF delay time	0.0s～3600.0s	0.0s	☆
P6.24	The DO 2 outputs the OFF delay time	0.0s～3600.0s	0.0s	☆
P7 Keyboard and display group				
P7.00	User password	0～65535	0	☆
P7.01	Functional parameter group display selection	Individual bit: Group C monitoring display selection 0: Not displayed; 1: Display Ten place: Group H function display selection 0: Not displayed; 1: Display	11	☆
P7.03	Parameter write protection	0: parameter modification is allowed; 1: parameter modification is not allowed	0	☆
P7.04	The JOG key function selection	0: The JOG key is invalid 1: switch between operation panel command channel and remote command channel (terminal command channel or serial port communication command channel) 2: Forward and reverse switch 3: Positive point movement 4: Reverse point movement 5: Reverse operation	3	★
P7.05	The STOP key function	0: The STOP key shutdown function is valid only under the keyboard control mode 1: The STOP key shutdown function is valid in any control mode	1	☆
P7.06	LED run display parameter 1	the unit: Bit 0: Running frequency Bit 1: the output current	003b	☆

Function code	name	Set the scope	Factory value	change
		Bit 2: Output voltage Bit 3: Load speed display decade: Bit 0: bus bar voltage Bit 1: Set the frequency Bit 2: Count value Bit 3: the length value hundreds place: Bit 0: X terminal input state Bit 1: DO terminal output state Bit 2: AI1 voltage Bit 3: AI2 voltage kilobit: Bit 0: reserved Bit 1: PID given Bit 2: Output power Bit 3: Output torque		
P7.07	LED run display parameter 2	the unit: Bit 0: Line speed Bit1:PID feedback Bit 2: the PLC stage Bit 3: PLUSE Input Pulse frequency (KHz) decade: Bit 0: Current power-on time Bit 1: Current running time Bit 2: the remaining running time Bit 3: Main frequency display hundreds place: Bit 0: auxiliary frequency display Bit 1: Actual feedback speed Bit 2: Encoder feedback speed Bit 3: AI1 correction front voltage kilobit: Bit 0: AI2 pre-correction voltage Bit 1: Torque given the setpoint Bit 2: PLUSE input frequency Bit 3: Communication settings	0000	☆
P7.08	LED shutdown to display the parameters	the unit: Bit 0: Set the frequency Bit 1: bus bar voltage Bit 2: AI1 voltage Bit 3: AI2 voltage decade: Bit 0: Torque-given value Bit 1: Count value Bit 2: the length value Bit 3: Load speed hundreds place: Bit 0: PID given Bit 1: X terminal state Bit2:DO state	0003	☆
P7.09	Load speed display coefficient	0.0001～6.5000	0.100	●
P7.10	Inverter module, the radiator temperature	0.0℃～100℃	-	●

Function code	name	Set the scope	Factory value	change
P7.12	Cumulative running time	0h～65535h	-	●
P7.15	Load speed shows the decimal number	The 0:0 decimal point 1:1 decimal point 2:2 decimal points At 3:3 decimal places	0	●
P7.16	Cumulative power time	From 00000 to 65535 hours	-	●
The P8 auxiliary function group				
P8.00	Time unit of acceleration and deceleration	0:1 Seconds 1:0.1 Seconds 2:0.01 sec	1	★
P8.01	Point motion acceleration time	0.0s～6500.0s	3.0s	☆
P8.02	Point motion deceleration time	0.0s～6500.0s	3.0s	☆
P8.03	Acceleration time 2	0.0s～6500.0s	3.0s	☆
P8.04	Slow down time 2	0.0s～6500.0s	3.0s	☆
P8.05	Acceleration time 3	0.0s～6500.0s	3.0s	☆
P8.06	Slow down time 3	0.0s～6500.0s	3.0s	☆
P8.07	Acceleration time 4	0.0s～6500.0s	0.0s	☆
P8.08	Slow down time 4	0.0s～6500.0s	0.0s	☆
P 8.09	Undervoltage suppresses the effective deceleration time	0.0s～6500.0s	10.0s	☆
P8.10	Acceleration of deceleration time reference frequency	0: Maximum frequency (P0.04) 1: Set frequency 2：100Hz	0	★
P8.11	Jump frequency 1	At 0.00Hz~ the maximum frequency	0.00Hz	☆
P8.12	Jump frequency 2	At 0.00Hz~ the maximum frequency	0.00Hz	☆
P8.13	Jump frequency amplitude	At 0.00Hz~ the maximum frequency	0.01Hz	☆
P8.14	Frequency selection is prohibited during the acceleration and deceleration process	0: Invalid; 1: valid	0	☆
P8.15	Acceleration time 1 / 2 switching frequency point	At 0.00Hz~ the maximum frequency	0.00Hz	☆
P8.16	Reducation time 1 / 2 switching frequency point	At 0.00Hz~ the maximum frequency	0.00Hz	☆
P8.17	The terminal point movement function is preferred	0: No priority; 1: priority	0	☆
P8.18	Upper limit frequency source given mode	0: P0.05 Set 1: AI1 given 2: AI2 given 3: panel potentiometer given 4: PULSE pulse setting 5: Communication given	0	★
P8.19	Upper limit frequency bias	0.00Hz~ the maximum frequency P0.04	0.00Hz	☆
P8.20	Auxiliary frequency	0.00Hz~ the maximum frequency P0.04	0.00Hz	☆

Function code	name	Set the scope	Factory value	change
	source bias frequency upon superposition			
P8.21	Runtime frequency instruction UP / DOWN baseline	0: Operating frequency; 1: Set the frequency	0	★
P8.22	Command source bundle frequency source selection	Individual bit: operation panel command, binding frequency source selection 0: No binding 1: Number setting frequency 2：AI1 3：AI2 4: The panel potentiometer 5: PULSE Pulse setting (X5) 6: Multiple speed 7: simple PLC 8: PID 9: Communication given Ten place: terminal command, binding frequency source selection Hundred bits: 485 communication command, binding frequency source selection Thousand bits: automatic operation, binding frequency source selection	0000	☆
P8.23	The terminal UP / DOWN modification rate	0.001Hz～65.535Hz	1.00Hz	☆
P8.24	Add deceleration mode	0: linear acceleration and deceleration; 1: S curve acceleration and deceleration A	0	★
P8.25	S curve start period time scale	0.0%～(100.0%-P8.26)	30.0%	★
P8.26	S curve end period time scale	0.0%～(100.0%-P8.25)	30.0%	★
P8.27	Forward and reverse dead zone time	0.0s～3000.0s	0.0s	☆
P8.28	The frequency is below the lower limit frequency	0.0～600.0S	0.0S	☆
P8.29	The frequency is lower than the lower limit frequency running action	0: Run at lower limit frequency 1: stop 2: Zero speed operation	0	☆
P8.30	The upper power terminal initiates the protection selection	0: no protection; 1: protection	0	☆
P8.31	Drop control	0.00Hz～10.00Hz	0.00Hz	☆
P8.32	FDT1 level	At 0.00Hz~ the maximum frequency	50.00Hz	☆
P8.33	The FDT 1 lag ratio	0.0%～100.0%	5.0%	☆
P8.34	Frequency reaches the detected width	0.0%~100.0% (maximum frequency)	0.0%	☆
P8.35	FDT2 level	At 0.00Hz~ the maximum frequency	50.00Hz	☆
P8.36	The FDT 2 lag ratio	0.0%～100.0%	5.0%	☆
P8.37	Arbitrary arrival frequency detection value of 1	At 0.00Hz~ the maximum frequency	50.00Hz	☆
P8.38	Arbitrary arrival frequency detection	0.0%~100.0% (maximum frequency)	0.0%	☆

Function code	name	Set the scope	Factory value	change
	amplitude of 1			
P8.39	Arbitrary arrival frequency detection value of 2	At 0.00Hz~ the maximum frequency	50.00Hz	☆
P8.40	Arbitrary arrival frequency detection amplitude of 2	0.0%~100.0% (maximum frequency)	0.0%	☆
P8.41	continue to have			
P8.42	Timer time setting mode	0: P8.43 The number setting 1: AI1 given by 2: AI2 given by 3: Panel potentiometer is given The simulated input range corresponds to P8.43	0	☆
P8.43	Timer time value	0.0min～6500.0min	0.0min	☆
P8.44	Zero-current detection level	0.0%~300.0%; (100.0% corresponds to rated current of motor, no output during shutdown)	5.0%	☆
P8.45	Zero-current detection delay time	0.01s～600.00s	0.10s	☆
P8.46	Software over-flow point	0.0% (not tested) 0.1% to 300.0% (rated current of the motor)	200.0%	☆
P8.47	Software overcurrent detection delay time	0.00s～600.00s	0.00s	☆
P8.48	Arbitrary arrival current of 1	0.0%~300.0% (rated current of the motor)	100.0%	☆
P8.49	Any reach current 1 width	0.0%~300.0% (rated current of the motor)	0.0%	☆
P8.50	Arbitrary arrival current 2	0.0%~300.0% (rated current of the motor)	100.0%	☆
P8.51	Any reach current 2 width	0.0%~300.0% (rated current of the motor)	0.0%	☆
P8.52	Lower AI1 input voltage protection value limit	0.00V～P8.53	3.00V	☆
P8.53	AI1 input voltage protection limit	P8.52～11.00V	7.00V	☆
P8.54	Heat dissipation fan control selection	0: The cooling fan operates during operation 1: The cooling fan keeps running after power on	0	☆
P8.55	Module temperature arrives	0℃～100℃	75℃	☆
P9 PID Functional group				
P9.00	PID given the channel selection	0: Set quantitative number (function code P9.01) 1: AI1 given 2: AI2 given 3: Panel potentiometer is given 4: PULSE Pulse setting (X5) 5: Communication given 6: Multiple speed given	0	☆
P9.01	The PID sets the quantitative number	0.0%～100.0%	50.0%	☆

Function code	name	Set the scope	Factory value	change
P9.02	The PID feedback channel selection	0: analog quantity AI1 1: analog quantity AI2 2: Keep 3：AI1-AI2 4: PULSE Pulse setting (X5) 5: Communication given 6：AI1+AI2 7：MAX(|AI1|, |AI2|) 8：MIN(|AI1|, |AI2|)	0	☆
P9.03	PID ergulating characteristic	0: Positive feature; 1: reverse feature	0	☆
P9.04	PID given the feedback range	0～65535	1000	☆
P9.05	Proportion gain P1	0.0～100.0	20.0	☆
P9.06	Integral time I1	0.01s～10.00s	2.00s	☆
P9.07	Differential time D1	0.000s～10.000s	0.000s	☆
P9.08	PID reversal cutoff frequency	From 0.00 to the maximum frequency	0.00Hz	☆
P9.09	The PID deviation limit	0.0%～100.0%	0.0%	☆
P9.10	PID differential limit amplitude	0.00%～100.00%	0.10%	☆
P9.11	PID given the time of change	0.00～650.00s	0.00s	☆
P9.12	The PID feedback filtering time	0.00～60.00s	0.00s	☆
P9.13	The PID output filter time	0.00～60.00s	0.00s	☆
P9.15	Proportion gain P2	0.0～100.0	20.0	☆
P9.16	Integral time I2	0.01s～10.00s	2.00s	☆
P9.17	Differential time D2	0.000s～10.000s	0.000s	☆
P9.18	The PID parameter switching condition	0: No switch 1: terminal switch 2: Automatic switch according to the deviation	0	☆
P9.19	PID parameter switching deviation 1	0.0%～P9.20	20.0%	☆
P9.20	PID parameter switching deviation 2	P9.19～100.0%	80.0%	☆
P9.21	PID starter	0.0%～100.0%	0.0%	☆
P9.22	PID initial value holding time	0.00～650.00s	0.00s	☆
P9.23	Two output deviation positive maximum value	0.00%～100.00%	1.00%	☆
P9.24	Two output deviation reverse maximum	0.00%～100.00%	1.00%	☆
P9.25	The PID integration attribute	Individual bit: integral separation 0: Invalid; 1: valid Ten place: output to the limit value, whether to stop the integration 0: Continue integral; 1: stop integral	00	☆
P9.26	PID feedback loss detection value	0.0%: not judging the feedback loss 0.1%～100.0%	0.0%	☆
P9.27	PID feedback loss	0.0s～20.0s	0.0s	☆

Function code	name	Set the scope	Factory value	change
	detection time			
P9.28	The PID shutdown operation	0: shutdown does not calculate; 1: shutdown operation	1	☆
P9.29	Wake up frequency	Dormant frequency (P9.31) ~ Maximum frequency (P0.04)	0.00Hz	☆
P9.30	Wake up delay time	0.0s～6500.0s	0.0s	☆
P9.31	The dormancy frequency	0.00Hz~ Wake-Up Frequency (P9.29)	0.00Hz	☆
P9.32	Sleep delay time	0.0s～6500.0s	0.0s	☆
P9.33	Wake-up definition function selection	0: Definition by frequency value (P9.29) 1: Definition by percentage (P9.34)	0	☆
P9.34	Wake up valve value	0.0%～100.0%	0.0%	☆
P9.35	Dormant defines the function selection	0: Definition by frequency value (P9.31) 1: Definition by percentage (P9.36)	0	☆
P9.36	The value of dormant valve	0.0～200.0%	101%	☆
PA multiparagraph instructions, PLC operation group				
PA.00	Multi-segment speed frequency 1	-Max frequency ~ maximum frequency	5.00Hz	☆
PA.01	Multi-segment speed frequency 2	-Max frequency ~ maximum frequency	10.00Hz	☆
PA.02	Multi-speed frequency segment 3	-Max frequency ~ maximum frequency	15.00Hz	☆
PA.03	Multi-segment speed frequency 4	-Max frequency ~ maximum frequency	20.00Hz	☆
PA.04	Multi-segment speed frequency 5	-Max frequency ~ maximum frequency	25.00Hz	☆
PA.05	Multi-segment speed frequency 6	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.06	Multi-segment speed frequency 7	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.07	Multi-segment speed frequency 8	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.08	Multi-segment speed frequency 9	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.09	Multistage speed frequency of 10	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.10	Multistage speed frequency of 11	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.11	Multistage speed frequency of 12	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.12	Multistage speed frequency of 13	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.13	Multistage speed frequency of 14	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.14	Multistage speed frequency of 15	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.15	Multistage speed frequency of 16	-Max frequency ~ maximum frequency	0.00Hz	☆
PA.16	PLC run mode	0: Stop after a single operation 1: Maintain the final value at the end of a single run 2: Always cycle	0	☆

Function code	name	Set the scope	Factory value	change
PA.17	PLC runs drop memory selection	the unit: 0: Power loss not memory; 1: Power memory decade: 0: Stop and no memory; 1: stop and memory	00	☆
PA.18	PLC paragraph 1 run time	0.0s(h)～6500.0s(h)	0.0s(h)	☆
PA.19	acceleration and deceleration time selection of PLC paragraph 1	0～3	0	☆
PA.20	PLC paragraph 2 run time	0.0s(h)～6500.0s(h)	0.0s(h)	☆
PA.21	Paragraph 2 of acceleration and deceleration time selection of PLC	0～3	0	☆
PA.22	PLC paragraph 3 run time	0.0s(h)～6500.0s(h)	0.0s(h)	☆
PA.23	Paragraph 3 of acceleration and deceleration time selection of PLC	0～3	0	☆
PA.24	PLC paragraph 4 run time	0.0s(h)～6500.0s(h)	0.0s(h)	☆
PA.25	Paragraph 4 of acceleration and deceleration time selection of PLC	0～3	0	☆
PA.26	PLC paragraph 5 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.27	acceleration and deceleration time selection of PLC paragraph 5	0～3	0	☆
PA.28	PLC paragraph 6 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.29	Selection of the acceleration and deceleration time of the PLC in paragraph 6	0～3	0	☆
PA.30	PLC paragraph 7 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.31	acceleration and deceleration time selection of PLC paragraph 7	0～3	0	☆
PA.32	PLC paragraph 8 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.33	Paragraph 8 acceleration and deceleration time of PLC	0～3	0	☆
PA.34	PLC paragraph 9 run	0.0s(h)～6553.5s(h)	0.0s(h)	☆

Function code	name	Set the scope	Factory value	change
	time			
PA.35	Paragraph 9 of acceleration and deceleration time selection of PLC	0～3	0	☆
PA.36	PLC paragraph 10 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.37	Selection of the acceleration and deceleration time of the PLC in paragraph 10	0～3	0	☆
PA.38	PLC paragraph 11 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.39	Selection of acceleration and deceleration time in PLC paragraph 11	0～3	0	☆
PA.40	PLC paragraph 12 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.41	Selection of the acceleration and deceleration time of the PLC paragraph 12	0～3	0	☆
PA.42	PLC paragraph 13 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.43	Selection of the acceleration and deceleration time of the PLC paragraph 13	0～3	0	☆
PA.44	PLC paragraph 14 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.45	Selection of the acceleration and deceleration time of the PLC paragraph 14	0～3	0	☆
PA.46	PLC paragraph 15 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.47	Selection of acceleration and deceleration time in PLC paragraph 15	0～3	0	☆
PA.48	PLC paragraph 16 run time	0.0s(h)～6553.5s(h)	0.0s(h)	☆
PA.49	Selection of the acceleration and deceleration time of the PLC paragraph 16	0～3	0	☆
PA.50	The PLC running time units	0: s (sec); 1: h (hours)	0	☆
PA.51	Given frequency selection for multiple period instruction 1	0: Function code PA.00 Given 1: AI1 given 2: AI2 given 3: Panel potentiometer is given 4: The PULSE pulse is given 5: The PID is given	0	☆

Function code	name	Set the scope	Factory value	change
		6: The number setting frequency is given, and the UP / DOWN can be modified		
PA.52	Power drop Up / Down save selection	0: Do Not Save 1: Save	1	☆
Pb pendulum frequency, fixed length, and counting array				
Pb.00	Setting mode of pendulum frequency	0: relative to the center frequency 1: Relative to the maximum frequency	0	☆
Pb.01	The frequency amplitude	0.0%～100.0%	0.0%	☆
Pb.02	The amplitude of the jump frequency	0.0%～50.0%	0.0%	☆
Pb.03	Pop frequency cycle	0.1s～3000.0s	10.0s	☆
Pb.04	Triangle-wave rise time of the swing frequency	0.1%～100.0%	50.0%	☆
Pb.05	Set the length	0m～65535m	1000m	☆
Pb.06	physical length	0m～65535m	0m	☆
Pb.07	Number of pulses per meter in 0.1	0.1～6553.5	100.0	☆
Pb.08	Set the gauge value	1～65535	1000	☆
Pb.09	Specify the count value	1～65535	1000	☆
PC Fault and Protection group				
PC.00	Motor overload protection selection	0: prohibit; 1: allow	1	☆
PC.01	Motor overload protection gain	0.20～10.00	1.00	☆
PC.02	Motor overload warning factor	50%～100%	80%	☆
PC.03	The brake unit turns on the voltage threshold	200～2000	Model determination	☆
PC.04	continue to have	0	0	☆
PC.05	User-defined overload threshold value	0.0%～200.0%	200.0%	☆
PC.06	User custom overload detection time	0.0s ～1000.0s	60.0s	☆
PC.07	Selection of short-circuit to ground function when power-up	0: No action 1: action	1	☆
PC.08	Number of automatic reset	0～200	0	☆
PC.09	Fault DO action selection during fault automatic reset	0: Do not move 1: Action	0	☆
PC.10	Automatic fault reset interval time	0.1s～100.0s	1.0s	☆
PC.11	Input phase-deficiency protection	0: Ban 1: allow	1	★
PC.12	Output phase-deficiency protection	0: Ban 1: allow	1	★

Function code	name	Set the scope	Factory value	change
PC.13	First-time fault type	0: No fault 1: accelerated overcurrent (E001) 2: deceleration overcurrent (E002) 3: constant speed over current (E003) 4: accelerated overvoltage (E004) 5: deceleration overvoltage (E005) 6: constant speed overvoltage (E006) 7: Control power supply failure (E007) 8: Undervoltage fault (E008) 9: Inverter unit fault (E009) 10: Input the missing phase (E010) 11: Output phase absence (E011) 12: Motor short circuit to ground fault (E012) 13: Keep 14: Frequter overload (E014) 15: Motor overload (E015) 16: Module overheating (E016) 17: abnormal parameter reading and writing (E017) 18: External fault (E018) 19: Hold (E019) 20: Hold (E020) 21: Current detection fault (E021) 22: Motor overtemperature (E022) 23: Contactor abnormal (E023) 24: communication abnormal (E024) 25: Encoder / PG card fault (E025) 26: Motor learning fault (E026) 27: Initial position error (E027) 28: Hardware overcurrent protection (E028) 29: Motor overspeed (E029) 30: Excessive speed deviation (E030) 33: Runtime PID feedback loss (EO 33) 35: User-defined fault 1 (EO 35) 36: User-defined fault 1 (E036) 65: User-defined overload fault (E065) 70: abnormal frequency direction (E070) 71: Frequency following abnormal (E071) 72: Release fault (E072) 73: Holding lock fault (E073)	—	●
PC.14	The second failure type		—	●
PC.15	Third (most recent) failure type		—	●
PC.16	Operating frequency during the third failure	-	—	●
PC.17	Current at the third failure	—	—	●
PC.18	Bus voltage at the third failure	—	—	●
PC.19	Enter the terminal status for the third failure	—	—	●
PC.20	Output terminal status at the third failure	—	—	●
PC.21	Frequter status during the third failure	—	—	●
PC.22	Time of the third failure	—	—	●

Function code	name	Set the scope	Factory value	change
	(starting from this time)			
PC.23	Time at the third failure (timing from runtime)	—	—	●
PC.24	Operating frequency during the second failure	—	—	●
PC.25	Current at the second fault	—	—	●
PC.26	Bus voltage during the second failure	—	—	●
PC.27	Enter the terminal status for the second fault	—	—	●
PC.28	Output terminal status at the second failure	—	—	●
PC.29	Frequency converter status during the second failure	—	—	●
PC.30	Time during the second failure (starting from this time)	—	—	●
PC.31	Second failure time (timing from runtime)	—	—	●
PC.32	Operating frequency during the first failure	—	—	●
PC.33	Current at the first fault	—	—	●
PC.34	Bus voltage at the first failure	—	—	●
PC.35	Enter the terminal status at the first failure	—	—	●
PC.36	Output terminal status at the first failure	—	—	●
PC.37	Frequency converter status at the first failure	—	—	●
PC.38	Time of the first failure (starting from this time)	—	—	●
PC.39	Time at first failure (timing from runtime)	—	—	●
PC.57	Motor temperature sensor type	0: No 1：PT100 2：PT1000	0	★
PC.58	Motor overheat protection valve value	0～200℃	110℃	★
PC.59	Motor overheating pre-alarm valve value	0～200℃	90℃	★
The Pd communication parameter group				
Pd.01	Communication Baud rate selection	1：600BPS 2：1200BPS 3：2400BPS 4：4800BPS 5：9600BPS 6：19200BPS 7：38400BPS	5	☆

Function code	name	Set the scope	Factory value	change
		8：57600BPS 9：115200BPS		
Pd.02	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)	0	☆
Pd.03	This machine address	1~247; 0 For the broadcast address	1	☆
Pd.04	answering delay	0ms～20ms	2	☆
Pd.05	Communication timeout time	0.0 (invalid); 0.1s~60.0s	0.0	☆
Pd.06	Data transfer format selection	0: Non-standard MODBUS protocol 1: Standard MODBUS protocol	1	☆
H0 Torque control parameter group				
H0.00	Torque control mode	0: Torque control is invalid 1: Torque control is effective	0	★
H0.01	Selection of the torque setting mode	0: Keyboard number given torque (H0.03) The following maximum range corresponds to the upper limit of the driving torque (H0.03) 1: analog quantity AI1 given 2: analog quantity AI2 given 3: Panel potentiometer is given 4: The PULSE pulse is given 5: Communication given 6: Both are small (AI1, AI2) 7: both measures are large (AI1, AI2)	0	★
H0.03	Keypad number torque settings	-200.0%～200.0%	150.0%	☆
H0.05	The torque controls the maximum frequency of positive rotation	At 0.00Hz~ the maximum frequency	50.00Hz	☆
H0.06	Torque control reversal maximum frequency	At 0.00Hz~ the maximum frequency	50.00Hz	☆
H0.07	Torque to control the acceleration time	0.00s～65000s	0.00s	☆
H0.08	Torque-controlled deceleration time	0.00s～65000s	0.00s	☆
H1 virtual DI, virtual DO parameter groups				
H1.00	The VDI 1 terminal function selection	0～55	0	★
H1.01	The VDI 2 terminal function selection	0～55	0	★
H1.02	The VDI 3 terminal function selection	0～55	0	★
H1.03	The VDI 4 terminal function selection	0～55	0	★
H1.04	The VDI 5 terminal function selection	0～55	0	★
H1.05	The VDI terminal active state source	0～22222	0	★
H1.06	The VDI terminal	0～11111	0	☆

Function code	name	Set the scope	Factory value	change
	function code sets the valid status			
H1.07	AI1 terminal function selection (as a DI)	0～55	0	★
H1.08	AI2 terminal function selection (as a DI)	0～55	0	★
H1.09	AI3 terminal function selection (as a DI)	0～55	0	★
H1.10	The AI is selected as a DI valid state	0～111	0	☆
H1.11	Virtual VDO 1 output selection	0～42	0	☆
H1.12	Virtual VDO 2 output selection	0～42	0	☆
H1.13	Virtual VDO 3 output selection	0～42	0	☆
H1.14	Virtual VDO 4 output selection	0～42	0	☆
H1.15	Virtual VDO 5 output selection	0～42	0	☆
H1.16	The VDO 1 delay time	0～3600.0s	0	☆
H1.17	The VDO 2 delay time	0～3600.0s	0	☆
H1.18	The VDO 3 delay time	0～3600.0s	0	☆
H1.19	The VDO 4 delay time	0～3600.0s	0	☆
H1.20	The VDO 5 delay time	0～3600.0s	0	☆
H1.21	The VDO output terminal has a valid state selection	0～11111	0	☆
H3 multipoint AI curve parameter group				
H3.00	AI curve 4 minimum input	-10.00V～H3.02	0.00V	☆
H3.01	AI curve the minimum input of 4 corresponds to the setting	-100.0%～+100.0%	0.0%	☆
H3.02	AI curve 4 point 1 input	H3.00～H3.04	3.00V	☆
H3.03	AI curve 4 point 1 input the corresponding setting	-100.0%～+100.0%	30.00%	☆
H3.04	AI curve 4 point 2 input	H3.02～H3.06	6.00V	☆
H3.05	AI curve 4 fold point 2 input to the corresponding setting	-100.0%～+100.0%	60.00%	☆
H3.06	AI curve 4 maximum input	H3.04～+10.00V	10.00V	☆
H3.07	The maximum input of the AI curve 4 corresponds to the setting	-100.0%～+100.0%	100.0%	☆
H3.08	AI curve 5 minimum input	-10.00V～H3.10	0.00V	☆
H3.09	The AI curve 5 minimum input	-100.0%～+100.0%	0.0%	☆

Function code	name	Set the scope	Factory value	change
	corresponds to the setting			
H3.10	AI curve 5 fold point 1 input	H3.08～H3.12	3.00V	☆
H3.11	AI curve 5 fold point 1 input to the corresponding setting	-100.0%～+100.0%	30.00%	☆
H3.12	AI curve 5 point 2 input	H3.10～H3.14	6.00V	☆
H3.13	AI curve 5 fold point 2 input to the corresponding setting	-100.0%～+100.0%	60.00%	☆
H3.14	AI curve 5 maximum input	H3.12～+10.00V	10.00V	☆
H3.15	AI curve 5 maximum input corresponds to the setting	-100.0%～+100.0%	100.0%	☆
H7 AI, AO correction parameter groups				
H7.00	AI1 measured voltage 1	-10.000～10.000V	Factory correction	☆
H7.01	The AI1 shows the voltage of 1	-10.000～10.000V	Factory correction	☆
H7.02	AI1 measured voltage of 2	-10.000～10.000V	Factory correction	☆
H7.03	The AI1 shows the voltage of 2	-10.000～10.000V	Factory correction	☆
H7.04	AI2 measured voltage 1	-10.000～10.000V	Factory correction	☆
H7.05	The AI2 shows the voltage of 1	-10.000～10.000V	Factory correction	☆
H7.06	AI2 measured voltage 2	-10.000～10.000V	Factory correction	☆
H7.07	The AI2 shows the voltage of 2	-10.000～10.000V	Factory correction	☆
H7.08	AI3 measured voltage 1	-10.000～10.000V	2.000V	☆
H7.09	The AI3 shows the voltage of 1	-10.000～10.000V	2.000V	☆
H7.10	AI3 measured voltage of 2	-10.000～10.000V	8.000V	☆
H7.11	The AI3 shows the voltage of 2	-10.000～10.000V	8.000V	☆
H7.12	AO1 target voltage of 1	-10.000～10.000V	Factory correction	☆
H7.13	AO1 measured voltage 1	-10.000～10.000V	Factory correction	☆
H7.14	AO1 target voltage of 2	-10.000～10.000V	Factory correction	☆
H7.15	AO1 measured voltage 2	-10.000～10.000V	Factory correction	☆
H7.16	AO2 target voltage of 1	-10.000～10.000V	2.000V	☆
H7.17	AO2 measured voltage 1	-10.000～10.000V	2.000V	☆
H7.18	AO2 target voltage of 2	-10.000～10.000V	8.000V	☆

Function code	name	Set the scope	Factory value	change
HC controls the optimized parameter group				
HC.00	DPWM switching upper limit frequency	0.00 hz ~ Maximum frequency (P0.04)	12.00hz	☆
HC.01	modulation mode	0～1	0	☆
HC.02	Selection of dead zone compensation mode	0～2	1	☆
HC.03	stochastic PWM	0～10	0	☆
HC.04	Energy saving control enabling	0～1	0	☆
HC.05	Time adjustment of dead zone	0～200	60	★
Special parameter group for HF lifting control				
HF.00	Selection of lifting agency	0: Rising institutions 1: Translation mechanism 2: Rotation mechanism	0	★
HF 1.0	Connection mode selection	0: Hard connection 1: Soft connection	0	★
HF.02	Brake curve type	0: No brake control 1: Automatic braking control 3: Conical motor control	1	★
HF.03	Start the direction	0: Release torque is the same as operating direction 1: The brake torque is always in the positive direction	0	★
HF.04	Pine gate frequency	P0.06～15.00Hz	2.00Hz	★
HF.05	Pine sluice current	0.0～150.0%	30.0%	★
HF.06	Pine sluice time	0.00～5.00s	0.5s	★
HF.07	Lock frequency	P0.06～20.00Hz	2.00Hz	★
HF.08	Lock time	0.00～5.00s	0.5s	★
HF.09	Lock delay	0.0～30.0s	0.0s	★
HF.10	Brake feedback use	0: No brake feedback is used 1: For detection during action 2: For full monitoring	0	★
HF.11	Directive direction control	0: Direct reverse direction is not allowed during operation 1: Allows the reverse during the operation	0	★
HF.14	The braking process starts again	0: Restart is not allowed during braking 1: Rererestart during braking	0	★
HF.15	Rethe waiting time	0.0～15.0s	0.3s	★
HF.16	Over zero jump frequency	0.00～20.00Hz	2.00Hz	★
HF.18	Pre-excitation time	0.00～5.00s	0.30s	★
HF.19	Shutime excitation holding time	0～65535s	30s	☆
HF .22	Frequency abnormal detection period	0.00s ～1.00s	0.50s	★
HF .23	Frequency following error	0～30%	20%	★
HF .24	Frequency follows the detection period	0.00s ～1.00s	0.50s	★

Function code	name	Set the scope	Factory value	change
HF.27	Encoder disconnection detection selection	0: Non-test 1: test	1	★

The symbol in the function table is as follows: "☆": it indicates that the parameter can be modified in the inverter operation and stop state.

"★": When the parameter ground inverter is in operation, it cannot be modified.

"●": Represents that this parameter can not be changed in any circumstances, for reference only.

* P0.00 asynchronous machine default to 1, synchronizer default to 0.
P2.01 asynchronizer default to 0, and synchronizer default to 2.

Function code	name	Minimum unit	postal address
CO monitoring parameter group			
C0.00	Operating frequency (Hz)	0.01Hz	5000H
C0.01	Output current (a)	0.01A	5001H
C0.02	Output voltage (v)	1V	5002H
C0.03	Load speed display	one	5003H
C0.04	Bus voltage (v)	0.1V	5004H
C0.05	Set frequency (Hz)	0.01Hz	5005H
C0.06	count value	one	5006H
C0.07	Length value	one	5007H
C0.08	X terminal status	one	5008H
C0.09	DO output state	one	5009H
C0.10	AI1 voltage (v)	0.01V	500AH
C0.11	AI2 voltage (v)	0.01V	500BH
C0.12	Panel potentiometer voltage	1 ℃	500CH
C0.13	PID setting	one	500DH
C0.14	Output power (Kw)	0.1Kw	500EH
C0.15	Output torque (%)	0.1%	500FH
C0.16	line speed	1m/Min	5010H
C0.17	PID feedback	one	5011H
C0.18	PLC stage	one	5012H
C0.19	PULSE input pulse frequency (Hz)	0.01KHz	5013H
C0.20	Current power-on time	1Min	5014H
C0.21	Current running time	0.1Min	5015H
C0.22	Remaining running time	0.1Min	5016H
C0.23	Main frequency display	0.01Hz	5017H
C0.24	Auxiliary frequency display	0.01Hz	5018H
C0.25	Feedback speed (unit:	0.1Hz	5019H

	0.1Hz)		
C0.26	Encoder feedback speed	0.01Hz	501AH
C0.27	AI1 pre-correction voltage	0.001V	501BH
C0.28	AI2 pre-correction voltage	0.001V	501CH
C0.29	Torque given value	0.01%	501DH
C0.30	PULSE input pulse frequency	1Hz	501EH
CO.34	Motor temperature	1 ℃	5022H
C0.35	AI3 pre-correction voltage	0.001V	5023H
C0.36	Spinning position	one	5024H
C0.37	Power factor angle	0.1°	5025H
C0.38	ABZ position	one	5026H
C0.39	VF separation target voltage	1V	5027H
C0.40	VF separation output voltage	1V	5028H
C0.41	DI input visual display	one	5029H
C0.42	DO input visual display	one	502AH
C0.43	Visual DIsplay of di function status	one	502BH
C0.44	Visual display of DO function status	one	502CH
C0.45	Fault information	one	502DH
C0.46	Inverter module radiator temperature	1 ℃	502EH
C0.49	Motor serial number	one	5031H
CO.55	Temperature value of PT1 channel of process card	1 ℃	5037H
CO.56	Temperature value of PT2 channel of process card	1 ℃	5038H
CO.57	Temperature value of PT3 channel of process card	1 ℃	5039H
C0.58	Z signal counter	one	503AH
C0.61	Operating state of frequency converter	bit0~bitl: 0: Stop 1: Forward rotation 2: Reverse rotation Bit2~bit3: 0: constant speed 1: acceleration 2: deceleration	20541
CO.60	AI2 pressure feedback	0.1kPa	503CH
CO.61	Operating state of frequency converter	one	20541
CO.62	Current fault	one	20542
CO.65	Upper limit of torque	0.1%	20545
C0.68	Inverter status	Bit0: Run/Stop Bitl: forward/reverse Bit2: Is the frequency converter faulty? Bit3: frequency arrival Bit4: Communication is normal.	20548

		Bit5: The frequency converter control quantity is communication control. Bit6: The control life of frequency converter is now communication control. Bit7: speed control/torque control Bit8: bit15 fault code	
CO.69	running frequency	0.01HZ	20549
CO.70	Running speed	1RPM	20550
CO.71	Communication card output current display	0.1A	20551

Chapter 6. Fault diagosis ad trouble shootig

CD series AC drive provides a total of 24 pieces of fault iformatio ad protective fuctios. After afault occurs, the AC drive implemets the protectio fuctio, ad displays the fault code o the operatio pael (if the operatio pael is available). Before cotactig vedor for techical support, you ca first determie the fault type through P2.13～PC.39 , aalyze the causes, ad perform troubleshootig accordig to the followig tables. If the fault caot be rectified, cotact the aget or vedor.

6.1. Fault code descriptio ad solutio

S	Fault code	Fault ame	Possible Causes	Solutios
1	E001	Over curret durig acceleratio	1:The output circuit is grouded or short circuited. 2: Motor auto-tuig is ot performed. 3: The acceleratio time is too short. 4: Maual torque boost or V/F curve is ot appropriate. 5: The voltage is too low. 6: The startup operatio is performed o the rotatig motor. 7: A sudde load is added durig acceleratio. 8: The AC drive model is of too small power class.	1: Elimiate exteral faults. 2: Perform the motor auto tuig. 3: Icrease the acceleratio time. 4: Adjust the maual torque boost or V/F curve. 5: Adjust the voltage to ormal rage. 6: Select rotatioal speed trackig restart or start the motor after it stops. 7: Remove the added load. 8: Select a AC drive of higher power class.
2	E002	Overcurret Durig deceleratio	1: The output circuit is grouded or short circuited. 2: Motor auto-tuig is ot performed. 3: The acceleratio time is too short. 4: Maual torque boost or V/F curve is ot appropriate. 5: The voltage is too low. 6: The startup operatio is performed o the rotatig motor. 7: A sudde load is added durig acceleratio. 8: The AC drive model is of too small power class.	1: Elimiate exteral faults. 2: Perform the motor autotuig. 3: Icrease the acceleratio time. 4: Adjust the maual torque boost or V/F curve. 5: Adjust the voltage to ormal rage. 6: Select rotatioal speed trackig restart or start the motor after it stops. 7: Remove the added load. 8: Select a AC drive of higher power class.
3	E003	over curret at costat speed	1: The output circuit is grouded or short circuited. 2: Motor auto-tuig is ot performed. 3: The voltage is too low. 4: A sudde load is added durig operatio. 5: The AC drive model is of too small power class	1: Elimiate exteral faults. 2: Perform the motor autotuig. 3: Adjust the voltage to ormal rage. 4: Remove the added load. 5: Select a AC drive of higher power class.
4	E004	Overvoltage	1: The iput voltage is too high.	1: Adjust the voltage to

S	Fault code	Fault ame	Possible Causes	Solutios
		durig acceleratio	2: A exteral force drives the motor durig acceleratio. 3: The acceleratio time is too short. 4: The brakig uit ad brakig resistor are ot istalled.	ormal rage. 2: Cacel the exteral force or istall a brakig resistor. 3: Icrease the acceleratio time. 4: Istall the brakig uit ad brakig resistor.
5	E005	Overvoltage durig deceleratio	1: The iput voltage is too high. 2: A exteral force drives the motor durig deceleratio. 3: The deceleratio time is too short. 4: The brakig uit ad brakig resistor are ot istalled.	1: Adjust the voltage to ormal rage. 2: Cacel the exteral force or istall the brakig resistor. 3: Icrease the deceleratio time. 4: Istall the brakig uit ad brakig resistor.
6	E006	Overvoltage at costat speed	1: The iput voltage is too high. 2: A exteral force drives the motor durig deceleratio	1: Adjust the voltage to ormal rage. 2: Cacel the exteral force or istall the brakigresistor.
7	E007	Cotrol power supply fault	The iput voltage is ot withi the allowable rage.	Adjust the iput voltage to the allowable rage.
8	E008	Uder voltage	1: Istataeous power failure occurs o the iput power supply. 2: The AC drive's iput voltage is ot withi the allowable rage. 3: The bus voltage is abormal. 4: The rectifier bridge ad buffer resistor are faulty. 5: The drive board is faulty. 6: The mai cotrol board is faulty.	1: Reset the fault. 2: Adjust the voltage to ormal rage. 3: Cotact the aget or vedor
9	E009	AC Drive parts fault	1.AC drive output short circuit 2. cable from AC drive to motor too log 3. IGBT module over heat 4. IGBT module damaged 5. drivig abormal	1.Too check the cable isulatio, to check with discoect motor cable 2. add AC reactor 3. to cotact vedor
10	E010	Iput phase missig	1: The three-phase power iput isabormal. 2: The drive board is faulty. 3: The lighteig board is faulty. 4: The mai cotrol board is faulty	1: Elimiate exteral faults. 2: Cotact the aget or vedor
11	E011	Power output phase missig	1: The cable coectig the AC drive ad the motor is faulty. 2: The AC drive's three-phase outputs are ubalaced whe the motor is ruig. 3: The drive board is faulty. 4: The module is faulty.	1: Elimiate exteral faults. 2: Check whether the motor three-phase widig is ormal. 3: Cotact the aget or vedor
12	E012	Short circuit to groud	The motor is short circuited to the groud.	Replace the cable or motor.
13	Reserve			

S	Fault code	Fault ame	Possible Causes	Solutios
14	E014	AC drive overload	1. Boost torque is too big uder VF cotrol 2. accel. ad decel. time is too short 3.motor parameters settig is improperly 4.Restart motor which i couter rotate 5. The grid voltage is too lower 6. load is too big or motor block load 7. AC drive selected is too load	1.Reduce boost torque 2. icrease the accel./decel. time 3.reset motor parameters 4.Recue curret limit ad adopt speed trackig 5. Too check grid voltage 6.Too check load 7.chage bigger power AC drive
15	E015	Motor load	1. Motor have wrog parameters settig 2. Iput voltage of grid is too low 3. Load is too big or motor is blocked	1, Reset the motor parameters 2, check the iput source of grid 3, Check the motor load if i good coditio
16	E016	Module overheat	1: The ambiet temperature is too high. 2: The air filter is blocked. 3: The fa is damaged. 4: The thermally sesitive resistor of the module is damaged. 5: The AC Drive module is damaged.	1: Lower the ambiet temperature. 2: Clea the air filter. 3: Replace the damaged fa. 4: Replace the damaged thermally sesitive resistor. 5: Replace the AC Drive module.
17	E017	EEPROM read/ write fault	The EEPROM chip is damaged.	Replace the mai cotrol board.
18	E018	Exteral equipmet fault	Through multiple termials X iput exteral fault sigal 2.Termials error operatio	1.ruig reset 2.Cotact vedor
19	E019	Accumulative ruig time reached	The accumulative ruig time reaches the settig value.	Clear the record through the parameter iitializatio fuctio
20	E020	Accumulative power-o time reached	The accumulative power-o time reaches the settig value	Clear the record through the parameter iitializatio fuctio
21	E021	Curret detect fault	1. Curret hall detectc damaged 2.Drivig board fault	1. check the hall ad plug if loose 2. cotact to vedor
22	E022	Overheat fault of motor	1.Motor temperature 2. motor temperature sesor fault	1.motor heat dissipatio is ot good 2.checkthe coectig of halls ad sesor
23	E023	Cotactor fault	1.Cotactor is abormal 2.drivig board ad power supply is ot good	1.chage the cotactor 2.cotact vedor
24	E024	Commuicatio fault	1.Upper cotrol abormal 2.commuicatio cable is ot good 3.commuicaito parameters	1. Check the coectio of upper cotroller 2. Check commuicatio cable

S	Fault code	Fault ame	Possible Causes	Solutios
			settig is correct	3.To set correct parameters
25	E025	Ecoder fault	1.Ecoder type is ot matchig 2.wrog wirig of ecoder 3.ecoder is damaged 4.PG card abormal	1.Set ecoder parameters correct 2. Check wirig 3.To check ecoder 4. Check PG card
26	E026	Motor auto-tuig fault	1: The motor parameters are ot set accordig to the ameplate. 2: The motor auto-tuig times out.	1: Set the motor parameters accordig to the ameplate properly. 2: Check the cable coectig the AC drive ad the motor.
27	E027	Iitial positio fault	The motor parameters are ot set based o the actual situatio	Check that the motor parameters are set correctly ad whether the settig of rated curret is too small
28	E028	Hard ware curret protectio	1.the load is too big or load blocked 2. motor auto tuig is ot good 3.AC drive power is too small	1.Check motor ad load 2.Try to ru with VF cotrol 3.Chage bigger power AC drive
29	E029	Motor over-speed	1: The ecoder parameters are set icorrectly. 2: The motor auto-tuig is ot performed. 3: motor over speed settig is ot correct	1.reset ecoder parameters 2.motor parameters idetify 3.to set parameters properly.
30	E030	Too large speed deviatio	1: The ecoder parameters are set icorrectly. 2: The motor auto-tuig is ot performed. 3: Motor settig is ot correct	1: Set the ecoder parameters properly. 2: Perform the motor auto tuig. 3: Set motor parameters correctly based o the actual situatio.
31	E033	Loss of PID feedback at rutime	1. PID feedback is less tha the settig value of P9.26 2.PID feedback loop is broke 3. PID feedback sesor failure	1. Set P9.26 to a suitable value 2. Check the PID feedback sigal lie 3. Check the PID feedback sesor
32	E035	User-defied fault 1	1. Iput (44) user-defied fault 1 sigal through multi-fuctio termial DI	Reset
33	E036	User-defied fault 2	1. Iput (45) user-defied fault 2 sigal through multi-fuctio termial DI	reset
34	E065	User-defied overload threshold	1. The output actual curret is greater tha the PC.05 settig.	reset

If the user ca't solved the problem, please cotact local distributor or cotact vedor directly.

Chapter 7: Fault Diagnosis and Treatment Methods

Cd series inverter has perfect protection function, which can give full play to the product performance and implement effective protection at the same time. Once a fault occurs, the inverter stops outputting and displays the fault code on the panel. Users can analyze and check against the following table according to the displayed code, judge the cause and eliminate the fault. You can also check the faults that have occurred and the relevant data content during the fault through pc.13～pc.39. In order to find and solve problems more easily.

7.1 Fault Code Description and Countermeasures

serial number	Fault code	Fault name	Possible reasons	processing method
one	e001	Accelerated overcurrent	1. The acceleration time is too short 2. The output of the inverter is grounded or short-circuited. 3. There is no parameter identification for the motor in vector control mode. 4. There is sudden load during acceleration. 5. The manual torque increase is too large or the v/f curve is set improperly. 6. Low voltage 7. The frequency converter selection is too small. 8. Restart the rotating motor.	1. Acceleration time is prolonged 2. Check the insulation of motor and cable. 3. Identify the parameters of the motor. 4. Check whether the load is abrupt. 5. Reduce the torque lift value or modify the v/f curve value. 6. Check the power supply voltage or check the bus voltage value. 7. Choose a frequency converter with higher power level. 8. Reduce the current limit or start with speed tracking.
Two	e002	Deceleration overcurrent	1. The deceleration time is too short 2. The output of the inverter is grounded or short-circuited. 3. There is no parameter identification for the motor in vector control mode. 4. There is sudden load during deceleration. 5. Excessive manual torque rise or improper setting of v/f curve. 6. The load inertia is too large 7. Low voltage	1. The deceleration time is prolonged 2. Check the insulation of motor and cable. 3. Identify the parameters of the motor. 4. Check the load 5. Reduce the torque lift value or modify the v/f curve value. 6. Increase deceleration time or use free parking. 7. Check the power supply voltage or check the bus voltage value.
three	e003	Constant speed overcurrent	1. The output of the inverter is grounded or short-circuited. 2. There is no parameter identification for the motor in vector control mode. 3. There is sudden load during operation. 4. Low voltage 5. The selection of frequency converter is small.	1. Check the insulation of motor and cable. 2. Identify the parameters of the motor. Step 3 check the load 4. Check the power supply voltage or the bus voltage. 5. Choose a frequency converter with higher power level.

serial number	Fault code	Fault name	Possible reasons	processing method
four	e004	Accelerated overvoltage	1. The input voltage is high. 2. The acceleration time is too short 3. There is external force in the acceleration process to drag the motor to run. 4. No brake unit and brake resistor are installed. 5. Output grounding	1. Adjust the voltage to the normal range. 2. Increase the acceleration time Step 3 check the load 4. Add braking unit and braking resistor. 5. Check whether the motor and cable are grounded.
five	e005	Deceleration overvoltage	1. The input voltage is high. 2. The deceleration time is too short 3. There is an external force to drag the motor to run during deceleration. 4. No brake unit and brake resistor are installed.	1. Adjust the voltage to the normal range. 2. Increase the deceleration time Step 3 check the load 4. Add braking unit and braking resistor.
six	e006	Constant speed overvoltage	1. The input voltage is high. 2. There is an external force to drag the motor to run during the operation.	1. Adjust the voltage to normal voltage. 2. Adjust the load or install brake unit and brake resistor.
seven	e007	Control power failure	1. The input voltage is not within the range specified in the specification. 2. The relay or contactor is not engaged.	1. Adjust the voltage to the normal range. 2. Check the relay or contactor
eight	e008	Undervoltage fault	1. Low input voltage or poor contact. 2. The bus voltage is abnormal 3. The relay or contactor does not close. 4. The control panel is abnormal	1. Check the input power supply voltage and main circuit contacts. 2. Check the bus voltage value 3. Seek technical support or replace the contactor. Step 4 Seek technical support
nine	e009	Inverter unit fault	1. The output of the inverter is short-circuited. 2. The wiring between the inverter and the motor is too long. 3. The module is overheated 4. The module is damaged 5. Abnormal driving	1. Check the insulation of the motor and cable, and disconnect the motor wire to see if the fault remains. 2. Add output reactor Step 3 Seek technical support Step 4 Seek technical support Step 5 Seek technical support
Ten	e010	Input phase loss	1. Three-phase input power supply is short of phase or poor contact. Step 2 detect anomalies	1. Check the power supply Step 2 Seek technical support

serial number	Fault code	Fault name	Possible reasons	processing method
Eleven	e011	Output phase loss	1. The lead from the frequency converter to the motor is abnormal. 2. The output of the frequency converter is unbalanced or lacks phase. 3. The current sensor connection line is abnormal. 4. The module is abnormal	1. Check the motor and cable Step 2 Seek technical support Step 3 Seek technical support Step 4 Seek technical support
Twelve	e012	Short circuit to ground	Detect short circuit of motor to ground when power is on.	Check the motor and cable.
Thirteen	reserve			
Fourteen	e014	Inverter overload	1. The torque boost value is too large during 1.vf control. 2. Acceleration and deceleration time is too short 3. Improper setting of motor parameters 4. Restart the rotating motor. 5. Grid voltage is too low. 6. The load is too large or locked. 7. The frequency converter selection is too small.	1. Reduce the torque boost value 2. Increase the acceleration and deceleration time 3. Recheck the motor parameters. 4. Reduce the current limit or start with speed tracking. 5. Check the grid voltage Step 6 check the load 7. Replace and increase the frequency converter selection.
Fifteen	e015	Motor overload	1. Improper setting of motor parameters 2. Grid voltage is too low. 3. The load is too large or locked.	1. Recheck the motor parameters. 2. Check the grid voltage Step 3 check the load
Sixteen	e016	Module overheating	1. The ambient temperature is too high 2. The air duct is blocked 3. The fan is damaged 4. The module overheating device is damaged	1. Improve the ambient temperature Step 2 clean the air duct 3. Replace the fan Step 4 Seek technical support
Seventeen	e017	Memory failure	Memory chip damage	Seek technical support
Eighteen	e018	External equipment failure	1. Input external fault signal through multifunctional digital terminal X. 2. Terminal misoperation	1. Reset operation Step 2 Seek technical support
Nineteen	e019	reserve		Please contact the dealer.
Twenty	e020	reserve		Please contact the dealer.
Twenty-one	e021	Current detection fault	1. Current Hall detection damage 2. Failure of the drive board	1. Check whether the Hall sensor and plug wire are loose. Step 2 Seek technical support

serial number	Fault code	Fault name	Possible reasons	processing method
Twenty-two	e022	Motor overheating fault	1. The motor temperature is too high. 2. Motor temperature sensor failure	1. Carry out heat dissipation treatment on the motor. 2. Check the motor temperature sensor and wiring.
Twenty-three	e023	Contactor fault	1. The contactor is not normal 2. The driving board and power supply are abnormal.	1. Replace the contactor Step 2 Seek technical support
Twenty-four	e024	Communication failure	1. The upper computer is abnormal. 2. The communication line is not normal 3. The communication parameter set is incorrect.	1. Check the upper computer and connection. Step 2 check the communication line 3. Set the parameters correctly
Twenty-five	e025	Encoder failure	1. The encoder model does not match. 2. Error in encoder connection 3. The encoder is damaged 4. abnormal 4.pg card	1. Set the encoder parameters correctly. Step 2 check the connection 3. Replace the encoder 4. Replace pg card
Twenty-six	e026	Motor identification fault	1. Improper setting of motor parameters 2. Parameter identification takes too long.	1. Reset the motor parameters. 2. Check whether the inverter is connected to the motor.
Twenty-seven	e027	Initial position fault	The deviation between motor parameters and actual conditions is too large.	Re-confirm whether the motor parameters are correct, focusing on whether the rated current is set low.
Twenty-eight	e028	Hardware overcurrent protection	1. The load is too large or the motor is blocked. 2. The motor parameters are not identified or allowed. 3. The frequency converter selection is too small	1. Check the motor and load 2. Try to run in vf control mode. 3. Replace the frequency converter with high power level.
Twenty-nine	e029	Motor overspeed fault	1. The encoder parameter setting is incorrect. 2. There is no parameter identification. 3. The setting of motor overspeed parameters is unreasonable.	1. Reset the encoder parameters. 2. Identify the parameters of the motor. 3. Set parameters reasonably
Thirty	e030	Excessive speed deviation fault	1. The encoder parameters are set incorrectly. 2. Parameter identification is not performed. 3. The setting of motor overspeed parameters is unreasonable.	1. Reset encoder parameters 2. Identify the parameters of the motor. 3. Set parameters reasonably
Thirty-one	e033	Loss of pid feedback at runtime	1. Pid feedback is less than p9.26 set value. 2. The 2.pid feedback loop is disconnected 3.pid feedback sensor failure	1. set p9.26 to an appropriate value. 2. Check the pid feedback signal line 3. Check the pid feedback sensor
Thirt	e035	User-defined	1. A user-defined fault 1 signal	1. Reset operation

serial number	Fault code	Fault name	Possible reasons	processing method
y-two		fault 1	is input (44) through the multi-function terminal di.	
Thirty-three	e036	User-defined fault 2	1. User-defined fault 2 signal is input (45) through multi-function terminal di.	1. Reset operation
Thirty-four	e065	User defined overload threshold	1. The actual output current is greater than the set value of pc.05	1. Reset operation
Thirty-five	e070	Abnormal frequency direction	Running the given frequency is opposite to the motor feedback frequency.	1. Check that the motor parameters are set correctly. 2. Check whether the load is too heavy 3. Adjust the setting of hf.22
Thirty-six	e071	Frequency following anomaly	Given frequency and motor feedback frequency follow error is too large.	1. Check that the motor parameters are set correctly. 2. Check whether the load is too heavy. 3. Check the settings of hf.23 and HF.24.
Thirty-seven	e072	Loose brake fault	Input error of brake release feedback signal.	1. Check the brake circuit wiring. 2. Check the function selection of the control panel brake release feedback input point (57)
Forty	e073	Brake-holding fault	The input of the braking feedback signal is incorrect.	1. Check the brake circuit wiring. 2. Check the function selection of the feedback input point of the control panel (58)

If you encounter problems that users can't solve, please contact your local distributor or our company.

Chapter VIII: Maintenance and Maintenance

Due to the influence of environmental temperature, humidity, dust, vibration, aging of internal components of frequency converter and many other factors, the potential fault hidden trouble of frequency converter is caused and the service life of frequency converter is reduced. Therefore, it is necessary to carry out daily and regular maintenance and maintenance of the frequency converter.

8.1 Daily inspection items

1. **Does the sound change abnormally** during the operation of the motor?
2. **Does the motor vibrate** during operation?
3. **Is the cooling fan** of the inverter normal?

Daily cleaning:

Always keep the inverter clean. Effectively remove dust accumulated on the surface area of the inverter, prevent dust from entering the inverter, especially metal dust, water vapor and oil stains, and remove oil stains from the cooling fan of the inverter.

8.2 Regular inspection items

For some places that are difficult to check at ordinary times, it should be carried out regularly (3 ~ 6 months).

1. **Check the air** duct and clean it with an air pump.
2. **Check whether the screws** are loose.
3. **check whether the terminal** has a lighter arc phenomenon.
4. **the main circuit insulation test**

Reminder: When measuring insulation resistance with megohmmeter (DC 500v megohmmeter), the main circuit should be disconnected from the frequency converter, and the insulation of the control circuit cannot be tested with megohmmeter; High voltage test is not necessary (it was done at the factory).

8.3 Replacement of wearing parts

The frequency converter is composed of many electronic components, which will be worn or its performance will decline during use. In order to ensure the stable and reliable operation of the frequency converter, preventive maintenance should be carried out, and it is necessary to replace the following components regularly.

1. **Cooling fan**

The service life of the bearing of the internal cooling fan of the frequency converter is 1 ~ 15,000 hours. If the fan has abnormal sound, vibration or reduced speed, it should be replaced immediately.

2. **DC filter capacitor**

The filter capacitor of the main circuit is a large-capacity aluminum electrolytic capacitor, which should be replaced every 4 ~ 5 years due to the influence of pulse current, surrounding environment and service conditions.

3. **AC contactor**

Because of the influence of the environment (especially the heavy dust) and the large contact current, when you hear the buzzing sound of this component, replace it in time.

8.4 Storage of frequency converter

Users must pay attention to the following points for temporary storage and long-term storage after purchasing the inverter:

1. **When storing, try to put it into** the packing box according to the original packaging.
2. **Long-term storage will lead to the** deterioration of electrolytic capacitor. It must be guaranteed to be electrified once every 2 years for at least 5 hours, and the input voltage must be slowly raised to the rated voltage with a voltage regulator.

8.5 Warranty Description of Inverter

Free warranty only refers to the inverter itself. If the user needs more liability insurance, please insure the property insurance with the insurance company.

1, under normal circumstances, failure or damage, our company is responsible for 12 months warranty, more than 12 months, will charge a reasonable maintenance fee.

2. In case of the following situations, even within 12 months, the maintenance fee will be charged;

1) The user does not follow the instructions and operates incorrectly, causing damage to the machine.

2) Due to fire, flood and lightning; Damage caused by abnormal voltage or other natural disasters

3) Product problems caused by unauthorized repair or modification.

4) When the brand, trademark, serial number and nameplate marked by the manufacturer are torn or unrecognizable.

5) Not paying off the money according to the purchase agreement.

Appendix A: Selection Table of Brake Components

The following table is the manufacturer's guidance data. Users can choose different resistance and power according to the actual situation (but the resistance can not be less than the recommended value in the table, and the power can be large). The selection of braking resistance needs to be determined according to the power generated by the motor in the practical application system. It is related to system inertia, deceleration time, energy of potential energy load and so on. Generally speaking, the greater the inertia of the system, the shorter the deceleration time and the more frequent the braking, the greater the power of the braking resistor and the smaller the resistance value.

Inverter model	Recommended minimum power for lifting applications.	Recommended minimum power for translation applications.	Recommended resistance of braking resistor	Brake unit
cd1000-4t0.4gb	200w	100w	≥96ω	Standard built-in
cd1000-4t0.75gb	350w	150w	≥96ω	
cd1000-4t1.5gb	750w	400w	≥64ω	
cd1000-4t2.2gb	1100w	500w	≥64ω	
cd1000-4t3.7gb	1800w	900w	≥32ω	
cd1000-4t5.5gb	2700w	1300w	≥32ω	
cd1000-4t7.5gb	3700w	1800w	≥32ω	
11 GB CD 1000-4t	5500 watts	2700 watts	≥24ω	
cd1000-4t15gb	7500 watts	3700 watts	≥24ω	
cd1000-4t18.5g	9000 watts	4000 watts	≥20ω	
cd1000-4t22g	11 kw	5000 watts	≥20ω	
cd1000-4t30g	15 kw	7000 watts	≥19.2ω	
cd1000-4t37g	18 kilowatts	9000 watts	≥14.8ω	
cd1000-4t45g	22 kw	11 kw	* 12.8ω	
cd1000-4t55g	27 kw	13 kilowatts	≥9.6ω	
cd1000-4t75g	37 kw	18 kilowatts	≥6.8ω	
cd1000-4t93g	22 kW ×2	11 kw×2	≥11 ω×2	Adeb -60-t×2
cd1000-5t93g	22 kW ×2	11 kw×2	≥13 ω×2	Adebu -60-5t×2
cd1000-4t110g	27 kW× 2	13 kW× 2	≥8 ω×2	Adbu-90-t×2 fighter
cd1000-5t110g	27 kW× 2	13 kW× 2	≥9 ω×2	Adbu-90-5t×2 fighter
cd1000-4t132g	33 kW× 2	16 kw×2	≥8 ω×2	Adbu-90-t×2 fighter
cd1000-5t132g	33 kW× 2	16 kw×2	≥9 ω×2	Adbu-90-5t×2 fighter
cd1000-4t160g	40 kw×2	20 kw×2	≥8 ω×2	Adbu-90-t×2 fighter
cd1000-5t160g	40 kw×2	20 kw×2	≥9 ω×2	Adbu-90-5t×2 fighter
cd1000-4t185g	100 kilowatts	50 kilowatts	≥2.5ω	Adeb -200 b
cd1000-5t185g	100 kilowatts	50 kilowatts	≥3ω	Adeb -200-d
cd1000-4t200g	100 kilowatts	50 kilowatts	≥2.5ω	Adeb -200 b
cd1000-5t200g	100 kilowatts	50 kilowatts	≥3ω	Adeb -200-d
cd1000-4t220g	110 kw	55 kw	≥2.5 ω×2	adbu-200-b×2
cd1000-5t220g	110 kw	55 kw	≥3 ω×2	adbu-200-d×2
cd1000-4t250g	63 kw×2	31 kw×2	≥2.5 ω×2	adbu-200-b×2
cd1000-5t250g	63 kw×2	31 kw×2	≥3 ω×2	adbu-200-d×2
cd1000-4t280g	70 kw×2	35 kw×2	≥2.5 ω×2	adbu-200-b×2
cd1000-5t280g	70 kw×2	35 kw×2	≥3 ω×2	adbu-200-d×2
cd1000-4t315g	80 kw×2	40 kw×2	≥2.5 ω×2	adbu-200-b×2
cd1000-5t315g	80 kw×2	40 kw×2	≥3 ω×2	adbu-200-d×2

Inverter model	Recommended minimum power for lifting applications.	Recommended minimum power for translation applications.	Recommended resistance of braking resistor	Brake unit
cd1000-4t355g	90 kw×2	45 kw×2	≥2.5 ω×2	adbu-200-b×2
cd1000-5t355g	90 kw×2	45 kw×2	≥3 ω×2	adbu-200-d×2
cd1000-4t400g	100 kw×2	50 kw×2	≥2.5 ω×2	adbu-200-b×2
cd1000-5t400g	100 kw×2	50 kw×2	≥3 ω×2	adbu-200-d×2
cd1000-4t450g	100 kw×2	55 kw×2	≥2.5 ω×2	adbu-200-b×2
cd1000-5t450g	100 kw×2	55 kw×2	≥3 ω×2	adbu-200-d×2

Appendix B. Communication protocol description

CD series inverter supports Modbus communication protocol, through which the upper computer can control, monitor and modify the functional parameters. CD series communication data can be divided into functional code data and non-functional code data, the latter includes running command, running state, running parameters, alarm information, etc.

A.1 CD functional code data

Function code data is the important setting parameters of frequency inverter, and the functional parameters of CD series group P and group H.as follows：

CD series Functional code data	P group (Literacy is available)	P0、P1、P2、P3、P4、P5、P6、P7、P8、P9、PA、Pb、PC、Pd、PE、PF
	H group (Literacy is available)	H0、H1、H2、H3、H4、H5、H6、H7、H8、H9、HA、HB、 HC、HD、HE、HF

The function code data mailing address is defined as follows:

1) When the functional code data is read for the communication

For the functional code data of P 0 ~ PF and H 0 ~ HF groups, the communication address is directly the functional group number, and the lower 16 is directly the functional code number in the functional group. The examples are as follows:

P0.10 function parameters, whose address address is F 00 AH. F0H represents the function parameters of P0 group, and 0 AH represents the hexadecheal data format of function number 16 in the function group.

HC.05 function parameters, whose mailing address is AC05, where ACH represents the function parameters of the HC group, and 05H represents the hexadecimal data format of the serial number 5 of the function code in the function group.

2) When the functional code data is written for the communication

For the function code data of P 0 ~ PF group, its communication address is 16 points high, and according to whether EEPROM is written, it is 00~0F or F0~FF. 16 points low is directly the serial number of the function code in the function group. The examples are as follows:

● Write the function parameter P0.10

Without writing to the EEPROM, the mailing address is 000 AH

When the EEPROM needs to be written, its mailing address is F 00 AH

For the data of the P 0 ~ PF group of function code, its communication address is 16 years high, and according to whether EEPROM needs to be written, it is divided into P 0 ~ PF or H 0 ~ HF, and 16 percent low is directly the serial number of the function code in the function group. Examples are as follows:

● Write the function parameters HC.05

When writing to the EEPROM is not required, the mailing address is 1C05H

When the EEPROM needs to be written, its mailing address is AC05H

A.2 CD series of non-functional code data

Non-functional code data	status data (read only)	Monitoring parameters, fault description of frequency inverter and operating status of frequency inverter
	controlling parameter (write only)	Control command, communication set point, digital output terminal control, analog output AO1 control, analog output AO2 control, high-speed pulse (FMP) output control, and parameter initialization

1) Status data

The status data is divided into group C monitoring parameters, frequency inverter fault description, and frequency inverter operating status

● Group C parameter monitoring parameters

Monitoring data of Group C is described in Chapter 5 and Chapter 6, with the address defined as follows:

C0~C3, its mailing address high 16 is 50~53, low 16 is the serial number of monitoring parameters in the group, as follows: C0.11, its mailing address is 500 BH.

● Fault description of the frequency inverter

When reading the fault description of the converter, the communication address is fixed to 3100H, and the upper computer can obtain the current fault code of the converter by reading the address data. The fault code is defined in Chapter 5 PC.13 function code.

● Operation status of the frequency inverter

When reading the operating status of the frequency inverter, the communication address is fixed to 3000H. By reading the address data, the upper computer can obtain the current operating status information of the frequency inverter, which is defined as follows：

Frequter operating status address	Read the state word definition
3000H	1: Is running
	2: Reverse operation
	3: Downtime

2) Control parameters

The control parameters are divided into control command, digital output terminal control, analog output AO1 control, analog output AO2 control, and high-speed pulse (FMP) output control.

● control command

When P0.01 (command source) is selected as 2: communication control, the upper computer can control the start and stop of the inverter through the communication address. The control command is defined as follows：

Control the command mailing address	Command function
2000H	1: Is running
	2: Reverse operation
	3: Positive point movement
	4: Reverse point movement
	5: Slow down
	6: Free shutdown
	7: Fault reset

●Communication set value

Communication Setpoint In the main user CD series, the frequency source, torque upper limit source, VF separation voltage source, PID given source, PID feedback source are selected as the given data of communication given timing. Its mailing address is 4000H, and when the host computer sets the mailing address value, the data range is-10000~10000, corresponding to the relative given value of-100.00%~100.00%.

Communication setpoint address	Command content
4000H	-10000~10000 indicates-100.00%~100.00%

● Digital output terminal control

When the digital output terminal function is selected as 39: communication control, the upper computer can control the inverter digital output terminal through the communication address, defined as follows:

The digital output terminal controls the mailing address	Command content
2003H	BIT 0: DO 1 output control BIT 1: DO 2 output control BIT 2: RELAY1 output control BIT 3: RELAY2 output control BIT 4: FMR output control BIT5：VDO1 BIT6：VDO2 BIT7：VDO3 BIT8：VDO4 BIT9：VDO5

●When the analog output AO1 and AO2, and the high-speed pulse output FM output function is selected as 12: communication setting, the upper computer passes

When the analog output is AO1 and AO2, and the high speed pulse output FM output function is selected as 12: communication setting, the upper computer can control the inverter analog output and high speed pulse output through the communication address, which is defined as follows：

Output control mailing address		Command content
AO1	2001H	0 ~ 7 FFF indicates between 0% and 100%
AO2	2002H	
FMP	2004H	

● Parameter initialization

This function is required when the parameter initialization of the inverter is required through the upper computer.

If P0.13 (user password) is not 0, the password needs to be verified through communication first. After the verification passes, the upper computer initializes the parameters within 30 seconds. The communication address for user password verification is F700H. If the correct user password is directly written to the address, the address for parameter initialization address is F00D, and the data content is defined as follows：

The parameter initializes the mailing address	Command function
F00DH	1: Restore the factory parameters
	2: Clear record information
	201: To restore the user backup parameters
	5: Backup the user's current parameters

CD series frequency inverter provides RS485 communication interface and supports Modbus-RTU slave communication protocol. Users can realize centralized control through the computer or PLC, set the frequency inverter operation command through the communication protocol, modify or read the function code parameters, and read the working state and fault information of the frequency inverter.

A.3 Agreement content

The serial communication protocol defines the information content and usage format transmitted in the serial communication. This includes: host polling (or broadcast) format; host coding method, including: required action function code, transmission data and error check. The response of the slave also adopts the same structure, including: action confirmation, return data and error verification, etc. If the slave has an error while receiving the information, or cannot complete the action required by the host, it will organize a failure information and feed it back to the host in response.

1） apply styles

The frequency inverter is connected to the "single-master and multi-slave" PC / PLC control network with RS485 bus, as the communication slave.

2） bus configuration； bus structure

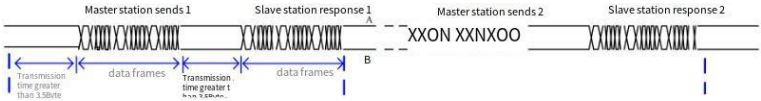
● topology structure； topological structure

Single-host multi-slave system. Each communication device in the network has a unique station address, in which one device is used as the communication host (often flat PC host, PLC, HMI, etc.), actively initiate communication, read or write parameters on the slave, while other devices are for the communication slave, in response to the host's inquiry or communication operation of the host. Only one device can send the data at the same time, while the other devices are in the receiving state.

The setting range of the slave address is 1~247,0 is the broadcast communication address. The slave address in the network must be unique.

● Communication transmission mode

Aynchronous serial, semi-duplex transmission mode. In the process of serial asynchronous communication, the data sends one frame of data at a time in the form of a message. It is agreed in the MODBUS-RTU protocol that when the idle time without data on the communication data line is greater than the transmission time of 3.5 Byte, the start of a new communication frame is indicated.



The built-in communication protocol of CD series inverter is Modbus-RTU slave communication protocol, which can respond to the "query / command" of the host, or make corresponding actions according to the "query / command" of the host, and communicate the data response.

The host can refer to a personal computer (PC), industrial control equipment or programmable logic controller (PLC), etc. The host can not only communicate to a slave alone, but also release broadcast information to all the lower slave. For the separate access query / command of the host, the visited slave returns a reply frame; for the broadcast information, the host needs no feedback response to the host.

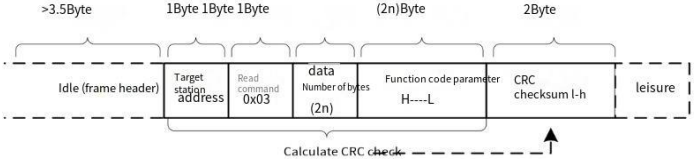
A.4 Communication data structure

The Modbus protocol communication data format of CD series frequency inverter is as follows. frequency inverter only supports reading or writing Word-type parameters, the corresponding communication read command is Ox 03; write command is 0x06, and no byte or bit reading is supported：

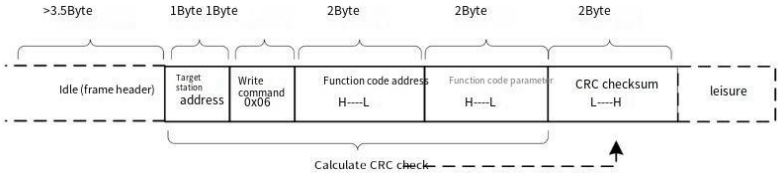
The main station reads the command frame

In theory, the upper computer can read several consecutive function codes at a time (that is, n can be up to 12), but it should be noted that it can not cross the last function code of this function code group, otherwise the reply will be wrong.

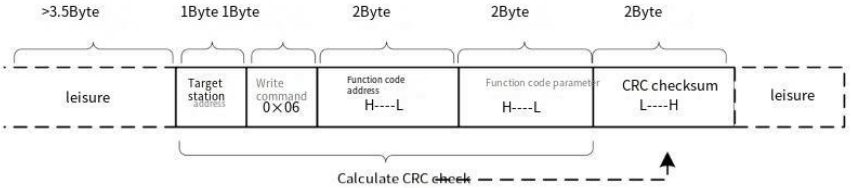
Read the response frame from the station



The main station writes the command frame



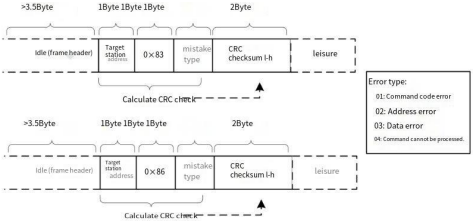
Write the answer frame from the station



If the communication frame error is detected by the machine, or causes unsuccessful reading and writing due to other reasons, the error frame will be answered。

From the station to read the answer error frame

From the station write answer error frame



1） Description of the data frame field：

Function code address START	More than 3.5 characters of the transfer time is idle
From the machine address ADR	Address address range: 1 ~ 247; 0 = Broadcast address
command code； operation code CMD	03: Read the slave parameters; 06: Write the slave parameters
Function code address	The parameter address inside the inverter is indicated in 16 decimal

H Function code address L	system; it is divided into functional codes and non-functional codes (such as running status parameters, running commands, etc.). See the address definition for details. When transmitting, high bytes are in front and low bytes are back.
The number of functional codes, H The number of functional codes, L	If the number of functional codes read in this frame is 1 indicates that 1 functional code is read. When transmitting, high bytes are in front and low bytes are back. This agreement can only rewrite one function code at a time, without this field.
data H data L	Answer data, or data to be written, is transmitted with high bytes earlier and low bytes later.
CRC CHK Low level CRC CHK High level	Detection value: CRC16 check value. When transmitting, low bytes are in front and high bytes are back. The calculation method is described in this section of CRC calibration for details.
END	At the time of 3.5 characters

2) CRC calibration mode:

The CRC (Cyclical Redundancy Check) uses the RTU frame format, and the message includes an error detection domain based on the CRC method. The CRC domain detects the content of the entire message. The CRC domain is two bytes containing a binary value of 16 bits. It is calculated by the transmission device and then added to the message. The receiving device recalculates the CRC that has received the message and compares the value in the received CRC domain, and if the two CRC values are not equal, the transmission error occurs.

CRC is done by first saving 0xFFFF and then calling a process to process the continuous 8-bit bytes in the message with the value in the current register. Only the 8 Bit data in each character is valid for the CRC, and both the start and stop bits and the parity bits are invalid.

During CRC generation, each 8-bit character is different from the register content or (XOR) separately, and the result is moved towards the lowest effective bit, and the highest effective bit is filled with 0. The LSB was extracted for detection, not performed if LSB was 1, register alone and preset values were different, or if LSB was 0. The entire procedure was repeated 8 times. After the last digit (8th digit) is completed, the next 8-bit byte is separately different from the current value of the register. The value in the final register is the CRC value after all bytes in the message。

CRC When added to a message, low bytes join first, and then high bytes. The CRC simple functions are shown as follows：

CRCThe check function is as follows：

```
unsigned int crc _chk_value(unsigned char*data_value, unsigned char length)
    {
        unsigned int crc_value=0xFFFF;
        inti;
        while(length--)
        { crc_value^=*data_value++;
            for(i=0;i<8;i++)
            { if(crc_value&0x0001)
```

```
                    crc_value=( crc_value>>1)^0xA001;
                else
                    crc_value=crc_value>>1;
            }
        }
        return(crc_value);
    }
```

A.5 Function code parameter address marking rules

Address definition of communication parameters, read and write functional code parameters (some function codes cannot be changed, only for the manufacturer or monitoring use).

Represent the rule with the function code group number and the reference code as the parameter address:

High-level bytes: F0~FF (Group P), H 0 ~ HF (Group H), 50~53 (Group C)

Low Bytes: 00 to FF

For example, for the range function code P3.12, the access address of the function code is expressed as 0 xF 30 C;

pay attention to:

● PF group: neither read parameters nor change parameters;

● Group C: Read only, not changing parameters.

Some parameters cannot be changed when the frequency inverter is in operation; some parameters cannot be changed; change the function code parameters, note the parameter range, units, and relevant instructions.

Function code group number	Communication access address	Communication fies the function code address in RAM
From the P 0 to the PE group	0xF000 ～ 0xFEFF	0x0000 ～ 0x0EFF
From the H 0 to the HF group	0xA000 ～ 0xAFFF	0x1000 ～ 0x1FFF
Group C0	0x5000 ～ 0x50FF	

Note that because EEPROM is frequently stored, it will reduce the service life of EEPROM, so some function codes are not stored in communication mode, just change the value in RAM.

If it is a P group parameter, to achieve this function, as long as the high F of the function code address into 0.

If it is a group H parameter, to achieve this function, as long as the high A of the function code address into 1 can be achieved.

The corresponding function code address is indicated as follows:

High bytes: 00~0F (P), 10~1F (H)

Low Bytes: 00 to FF

in compliance with:

Function code P3.12 is not stored in EEPROM, and the address is 030C;

Function code H0.05 is not stored in EEPROM, and the address is 1005;

This address means that can only write RAM, can not read the action, read, invalid address.

Appendix B. Communication protocol description

For all the parameters, this function can also be implemented using the command code 07H.

1）Monitoring parameters and their communication access address：（ read only：read-only ）

Monitor the content	Communication read address	Monitor the content	Communication read address
running frequency (Hz)	5000H	PULSE Input pulse frequency (Hz)	5013H
output (A)	5001H	Current power time	5014H
output voltage (V)	5002H	Current run time	5015H
Load speed is shown	5003H	The remaining running time	5016H
busbar voltage (V)	5004H	Auxiliary frequency display	5017H
Set Frequency (Hz)	5005H	Auxiliary frequency display	5018H
count value	5006H	Feedback speed (in 0.1Hz)	5019H
Length value	5007H	Encoder feedback speed	501AH
X input mode	5008H	AI1 pre before voltage	501BH
DO output state	5009H	AI2 pre front voltage	501CH
AI1 Voltage (V)	500AH	The torque is given as a setpoint	501DH
AI2 Voltage (V)	500BH	The PULSE input pulse frequency	501EH
Panel potentiometer voltage (V)	500CH	Communication set value	501FH
PID setting	500DH	Motor temperature value	5022H
output power (kW)	500EH	Process card PT first channel temperature value	5037H
output torque (%)	500FH	Process card PT second channel temperature value	5038H
linear velocity	5010H	Process card PT third channel temperature value	5039H
PID feedback	5011H		
PLC stage	5012H		

pay attention to：

● The communication set point is the percentage of the relative value, 10000 corresponds to 100.00% and-10000 corresponds to-100.00%.

● For the data of frequency dimension, the percentage is the percentage of the relative maximum frequency (P0.04); for the data of torque dimension, the percentage is P3.10, H2-37 (torque upper limit number is set, corresponding to the first and second motors respectively).

2）Control command input to the frequency inverter: (write only）

Command word address	Command function
2000H	0001: Forward turn operation
	0002: reverse operation
	0003: Positive turning point movement
	0004: reverse point movement
	0005: deceleration stop
	0006: Free shutdown
	0007: Fault is reset

3）Read the frequency inverter status: (read-only)

status word address	State word function
3000H	0001: Forward turn operation
	0002: reverse operation
	0003: shut down

4）Parameter lock password check: (if 8888H, the password check passed)

Password address	Enter the contents of the password
F700H	*****

5）Digital output terminal control: (write only)

command address	Command content
2003H	BIT 0: DO 1 output control BIT 1: DO 2 output control BIT 2: RELAY1 output control BIT 3: RELAY2 output control BIT 4: FMR output control BIT5：VDO1 BIT6：VDO2 BIT7：VDO3 BIT8：VDO4 BIT9：VDO5

6）Analog output AO1 control: (write only)

command address	Command content
2001H	0 ~ 7 FFF indicates between 0% and 100%

7）Analog output AO2 control: (write only)

command address	Command content
2002H	0 ~ 7 FFF indicates between 0% and 100%

8）Pulse (PULSE) Output Control: (write only)

command address	Command content
2004H	0 ~ 7 FFF indicates between 0% and 100%

9）Description of the frequency inverter fault：

Fault information address	Inverter fault information	
3100H	0000: No fault 0001: E001 accelerates the overcurrent 0002: E002 deceleration overflow 0003: E003 constant speed overcurrent 0004: E004 accelerated overpressure 0005: E005 deceleration overvoltage 0006: E006 Constant voltage 0007: E007 control power supply failure 0008: E008 Under-voltage fault 000A: E010 input missing phase 000B: E011 output phase out 000C: E012 short circuit to the ground 000E: E014 inverter	0016: E022 motor overheating fault 0017: E023 contactor fault 0018: E024 communication fault 0019: E0250 encoder is faulty 001A: E026 Motor identification fault 001B: E027 Initial position failure 001C: E028 Hardware overcurrent protection OO 1 D: E029 motor over-speed fault OO 1 E: E030 speed deviation fault OO 20: E032 load drop fault OO 21: The PID feedback is lost at the E033 run OO 23: E035 User custom fault 1 OO 24: E036 User custom fault 2 002D: E045 0041: E065 User-defined overload fault 0042: E066: Over-temperature fault of the first temperature channel of the process card 0043: E067: Over-temperature fault of the second temperature channel of the process card 0044: E068: Over-temperature fault of the

	overload 000F: E015 motor overload 0010: The E016 module is overheated 0011: E017 memory failure 0012: E018 External equipment failure 0015: E021 Current detection fault	third temperature channel of the process card