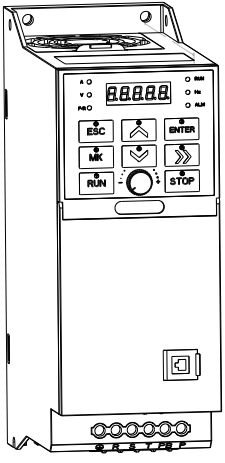
Preface

Thanks for choosing our JT300 series of inverter.



Notes

● To illustrate the details of the product, the illustrations in this manual sometimes refer to the state of removing the outer cover or safety cover. When using this product, please be sure to install the shell or cover as required, and operate according to the manual.

●The illustrations in this manual are for illustration purposes only and may differ from the products you purchase.

●Our company is committed to the continuous improvement of the products, the product function will continue to upgrade,so the information provided is subject to change without prior notice.

●If you have any problems in the process of using, please contact our regional agents, or contact our customer service center directly.

Service Hotline：0510-85380261 Fax：0510-85380361

24 Hour Technical Service：13306170378 13306170877

Safety Precaution

Safety Mark:

Danger: Improper use may lead to fire, serious injury or even death.

Attention: Improper use may result in moderate or minor injury to the person and equipment damage.

■ Before Installation

Danger
●Do not use hand to touch control terminals, single board components and inverter components directly! ●Please do not use the inverter with missing or damaged parts, or there will be the risk of failure and injury to personnel!

Attention
●The nameplate rating should be consistent with your order requirements. If not, please do not install! ●If the packing list is inconsistent with the material object, please do not install.

■ Installation

Danger
●Must have the professional qualification personnel to carry on the installation work, otherwise has the electric shock danger! ●Inverter should be installed on metal or other flame retardant objects, otherwise there is fire risk! ●Inverter should be installed away from flammable objects and heat sources, otherwise there is fire risk! ●Inverter can not be installed in the environment containing explosive gas, otherwise there is a risk of explosion! ●Do not screw the fixed screw of equipment parts at will, otherwise there is a risk of equipment damage!

Attention

- Handle gently and hold the product bottom plate, in case of foot damage or damage to the inverter!
- Please install in a place that can withstand the weight of the inverter, otherwise there is a risk of damage to equipment and injury when falling!
- Please confirm that the installation environment meets the requirements. If it fails to meet the requirements, please derate the product or do not use it, or the equipment may be damaged or malfunction may occur.
- Avoid dropping drilling residues, thread heads and screws into the inverter during installation, otherwise the inverter may fail!
- Inverter installed in the cabinet needs to have heat dissipation, otherwise it may cause product failure or damage!

■ Wiring

Danger

- Wiring operations must be carried out by professionally qualified personnel, otherwise there is a risk of electric shock or equipment damage!
- Strictly follow this manual in wiring process, otherwise there is a risk of electric shock or equipment damage!
- Make sure the input power supply is completely disconnected before wiring operation, otherwise there is a risk of electric shock!
- All wiring should comply with EMC and safety standards. Please refer to the recommendations in this manual for the wire diameter. Otherwise, accidents may occur!
- The leakage current of the whole inverter may be greater than 3.5mA. To ensure safety, the inverter and motor must be grounded, or there is a risk of electric shock!
- Strictly follow the inverter terminal screen printing wiring, three-phase power supply is prohibited to connect to the output terminal U, V, W, otherwise there is a risk of equipment damage!
- Please correctly install the brake resistance at both ends of + and PB, and do not connect to other terminals, otherwise there is a risk of equipment damage!
- The wiring screw of the main loop terminal must be tightened, otherwise there is the risk of equipment damage!

Attention

- Inverter terminal signal line should be as far as possible away from the main power line wiring, can not ensure the distance to the vertical cross distribution, otherwise it will cause interference control signal!
- When the motor cable length is more than 100 meters, it is recommended to choose the output reactor, otherwise there is the risk of equipment failure!

■ Running

Danger

- Storage time more than 2 years of the inverter, please use the voltage regulator gradually boost power, otherwise there is a risk of equipment damage!
- According to the requirements of the completion of wiring before the inverter on the power, otherwise there is equipment damage or shock danger!
- After the wiring of frequency converter is confirmed to be correct, cover the cover plate before power on. It is strictly prohibited to open the cover plate after power on, otherwise there is a risk of electric shock!
- After the inverter is powered on, no matter what state the inverter is in, do not touch the inverter and the surrounding circuit, otherwise there is a risk of electric shock!
- Before running the inverter, please confirm whether there is no people can touch the motor around , otherwise there is a risk of injury!
- When the inverter is running, please avoid foreign bodies fall into the equipment, otherwise there is a risk of equipment damage!
- Non-professional technicians are not allowed to test the signal in operation, otherwise there is a risk of injury or equipment damage!
- Do not change the inverter parameters at will, otherwise there is a risk of equipment damage!

Attention

- Please confirm whether power phase and rated voltage are consistent with the nameplate of the product, otherwise it may cause damage to the equipment!
- Check whether there is a short circuit in the peripheral circuit connected to the frequency converter, and whether the connection line is fastened, otherwise it may cause damage to the equipment!
- Before operation, please confirm whether the motor and machinery are in the allowed range of use, or it may cause damage to the equipment!
- Do not directly touch fan, radiator, brake resistance, otherwise there is a risk of mechanical damage and scalding!
- It is not allowed to control the start and stop of inverter by power off frequently, otherwise it may cause equipment damage!
- Please ensure that the inverter is in no-output state before inverter output switch or contactor input/cut out , otherwise it may cause equipment damage!

■ Maintenance

Danger

- The product maintenance, inspection or replacement parts must be carried out by a professional qualified engineer!
- It is forbidden to carry out maintenance, inspection or replacement of parts on the product, otherwise there is a risk of electric shock!
- After power outage, please wait at least 10 minutes to ensure that the residual voltage of electrolytic capacitor falls below 36V before maintenance, inspection or replacement of parts!
- If change the inverter, the above procedures must be strictly execute again!

Attention

- Do not touch the component body when maintaining, inspecting or changing parts, otherwise there is a risk of electrostatic damage to the device!
- All pluggable devices must be plugged in or out in the case of power outage!

■ Other Notes

Input Power

This series of inverters shall not be used to operate beyond the voltage range specified in this manual. If necessary, please use a voltage boost or voltage drop device to raise or lower the voltage below or above the requirements of this manual to the specified voltage range.

Surge Protection

This series of inverters are equipped with surge suppressors internally, which have certain protection ability against induced lightning. However, for frequent lightning areas, users need to put external surge suppressors in front of the power input end of the inverters.

Usage of Contactor

In the configuration of peripheral devices recommended in this manual, a contactor should be installed between the power supply and the inverter. It is forbidden to use this contactor as the start-stop control device of the inverter, because frequent charging and discharging may affect the service life of its internal electrolytic capacitor.

When a contactor needs to be installed between the output end of the inverter and the motor, it is necessary to ensure that the inverter is in a no-output state before the contactor is put in/cut out, otherwise it may cause damage to the inverter.

Output Filter

When the output of inverter is PWM high-frequency chopper voltage, add filter devices between motor and inverter, such as output filter or output AC reactor, which can effectively reduce noise output and avoid interfering with the normal operation of other equipment in the system.

When the cable length between the inverter and the motor exceeds 100 meters, it is recommended to choose the output AC reactor to avoid the inverter fault caused by the over current generated by excessive distributed capacitance.Output filters are selected according to field requirements.

Do not install phase shifting capacitor or surge absorber on the output side of inverter, otherwise the inverter may burn down due to overheating.

Motor Insulation

The output of the inverter is PWM high-frequency chopper voltage, which contains a large proportion of high-order harmonics. The noise, temperature rise and vibration of the motor will be increased relative to the power-frequency voltage, especially the insulation of the motor will be affected.Therefore, when the motor is used for the first time or stored for a long time, insulation inspection is required. Normal use of the motor also need to do regular insulation inspection, in order to avoid inverter damage caused by the motor insulation. It is recommended to use 500V voltage tramegger, disconnect the motor and inverter when do the inspection. Insulation resistance value should be higher than 5M Ω.

Derating

The air at high altitudes area is thin, so the cooling effect of forced air cooling inverters will be reduced. Electrolytes of electrolytic capacitors are also easy to volatilize, affecting its life span. Accordingly, in the area of altitude above 1000 meters, the inverters should be derated to use. It is recommended that the rated output current should be reduced by 1% for every 100 meters of altitude.

Contents

Chapter One Product Information

1.1 Model Description

The column of inverter model on the nameplate shows the product series, power level, brake unit and other information with numbers and letters.

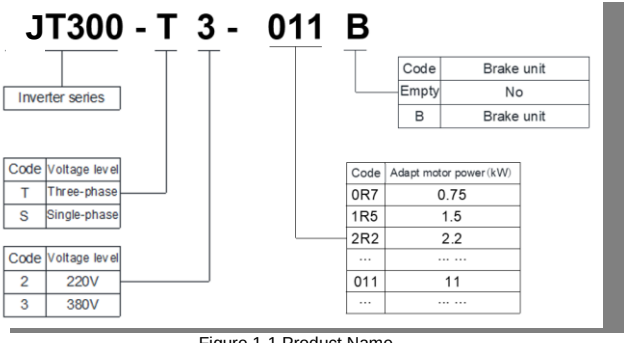


Figure 1-1 Product Name

1.2 Nameplate Description

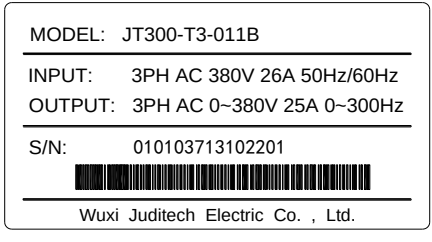


Figure 1-2 Product Nameplate

1.3 JT300 Series of Inverter

Model	Power Capacity(kVA)	Input Current(A)	Rated Current(A)	Adapter Motor(kW)
Single-phase Power：220V，50/60Hz				
JT300-S2-0R7	2.0	8.2	5.0	0.75
JT300-S2-1R5	2.8	14	7.0	1.5
Three-phase Power：380V，50/60Hz				
JT300-T3-0R7B	2.2	3.4	2.7	0.75
JT300-T3-1R5B	3.2	5	4.0	1.5
JT300-T3-2R2B	4.0	5.8	5.0	2.2
JT300-T3-3R7B	6.8	10.5	8.5	3.7
JT300-T3-5R5B	10	14.6	12.5	5.5
JT300-T3-7R5B	14	20.5	17.5	7.5
JT300-T3-011B	17	26	25	11
JT300-T3-015B	21	35	32	15
JT300-T3-018B	24	38.5	37	18.5
JT300-T3-022B	30	46.5	45	22
JT300-T3-030	40	62	60	30
JT300-T3-037	57	76	75	37
JT300-T3-045	69	92	91	45
JT300-T3-055	85	113	112	55
JT300-T3-075	114	157	150	75
JT300-T3-090	134	180	176	90
JT300-T3-110	160	214	210	110
JT300-T3-132	192	256	253	132

1.4 Description of Each Part

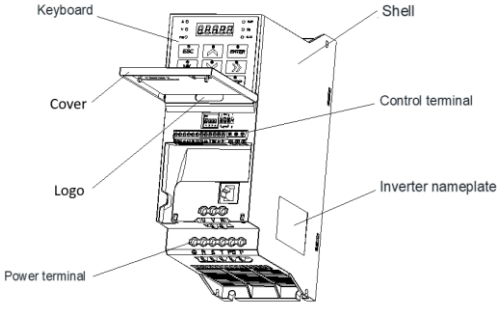


Figure 1-3 Name of Shell Part

1.5 Appearance and Installation Dimensions(unit:mm)

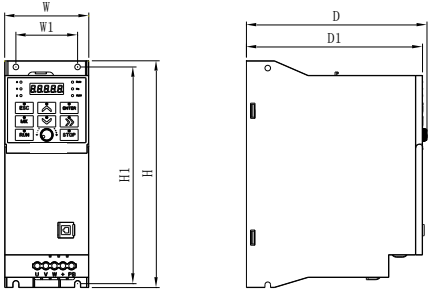


Figure 1-4 Installation Dimensions

Model	Installation Hole Site		Dimension				Hole Diameter
	W1	H1	H	W	D1	D	
JT300-S2-0R7	81	139	150	90	116	120	Φ4.5
JT300-S2-1R5							
JT300-T3-0R7B	55	193	202	75	157	161	Φ5
JT300-T3-1R5B							
JT300-T3-2R2B							
JT300-T3-3R7B							
JT300-T3-5R5B							
JT300-T3-7R5B	80	308	322	108	176	180	Φ5
JT300-T3-011B							
JT300-T3-015B	190	273.5	291.5	197	175	182	Φ6
JT300-T3-018B							
JT300-T3-022B							
JT300-T3-030	220	392	405	253	180	187	Φ7
JT300-T3-037							

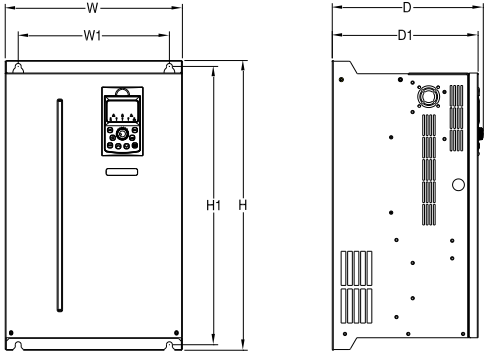


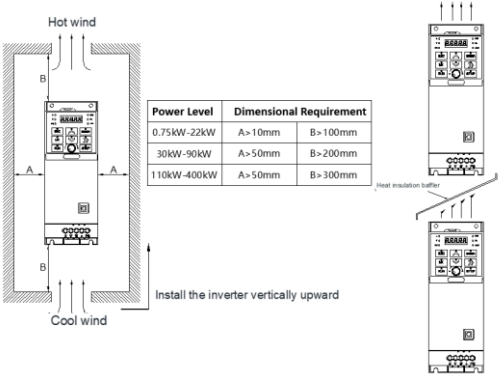
Figure 1-5 Installation Dimensions

Model	Installation Hole Site		Dimension				Hole Diameter
	W1	H1	H	W	D1	D	
JT300-T3-045	200	455	475	300	248	255	Φ10
JT300-T3-055	256	473	492	300	248	255	Φ10
JT300-T3-075	286	473	492	335	248	225	Φ10
JT300-T3-090	260	590	610	410	270	279	Φ10
JT300-T3-110	320	690	720	455	325	334	Φ12
JT300-T3-132							

Chapter Two Mechanical Installation

2.1 Installation Environment

1) Environment Temperature：Ambient temperature has a great influence on the inverter life span. Do not allow the inverter running environment temperature exceed the allowed temperature range (- 10 ℃ to 50 ℃).
2) The inverter shall be installed on the surface of the flame retardant object and mounted vertically on the mounting support with screws.There should be enough space around the inverter to dissipate heat, because the inverter will produce a lot of heat when working.
3) Please install it in a place which is not easy to vibrate.The vibration should not be greater than 0.6g. Pay special attention to stay away from punch and other equipment.
4) Avoid installation in direct sunlight, moisture, where there are beads of water.
5) Avoid installing in the area with corrosive, flammable and explosive gases.
6) Avoid installing in the area with oil, dust and mental dust.



Power Level	Dimensional Requirement	
0.75kW-22kW	A>10mm	B>100mm
30kW-90kW	A>50mm	B>200mm
110kW-400kW	A>50mm	B>300mm

Figure 2-1 Installation Instruction

Mechanical installation needs to pay attention to the problem of heat dissipation. So please pay attention to the following points:

1) Please install the inverter vertically to facilitate the upward heat emission, but cannot be inverted. If there are more inverters in the cabinet.It is better to be put side-by-side.Refer to figure 2-1 for installation of heat insulation baffler where upper and lower installation is required.
2) The installation space shall follow the figure 2-1 to ensure the heat dissipation space of the inverter.But please consider the heat dissipation of other devices in the cabinet situation.

2.2 Removal of Cover Plate

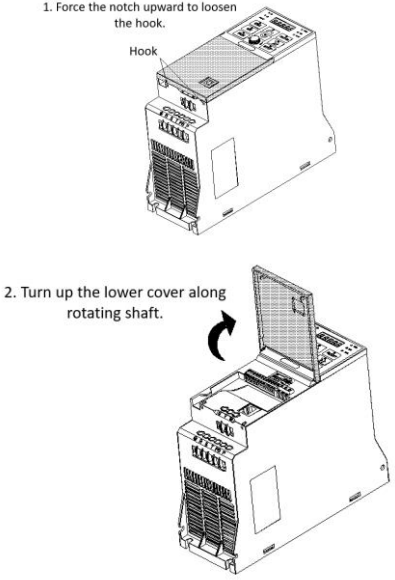


Figure 2-2 Removal of Lower Cover

Chapter Three Electrical Installation

3.1 Selection of Brake Resistance

Data in the table below as a guide, the user can choose according to the actual situation of different resistance tolerance and power (but resistance must not be less than the recommended value in the table, the power can be big), brake resistance selection need according to the practical application of the power to determine the motor power, and the system of inertia, deceleration time, the energy of the potential energy load. The customers need to choose according to actual situation.The larger the system of inertia, the shorter the deceleration time and the more frequent braking, so the greater the brake resistance power is and the smaller the resistance value will be.

Model	Recommended Power	Recommended Resistance Value
JT300-S2-0R7	100W	≥200Ω
JT300-S2-1R5	300W	≥100Ω
JT300-T3-0R7B	80W	≥750Ω
JT300-T3-1R5B	300W	≥400Ω
JT300-T3-2R2B	300W	≥250Ω
JT300-T3-3R7B	400W	≥150Ω
JT300-T3-5R5B	500W	≥100Ω
JT300-T3-7R5B	1000W	≥75Ω
JT300-T3-011B	800W	≥43Ω
JT300-T3-015B	1.0kW	≥32Ω
JT300-T3-018B	1.3kW	≥25Ω
JT300-T3-022B	1.5kW	≥22Ω
JT300-T3-030	2.5kW	≥16Ω
JT300-T3-037	3.7kW	≥12.6Ω
JT300-T3-045	4.5kW	≥9.4Ω
JT300-T3-055	5.5kW	≥9.4Ω
JT300-T3-075	7.5kW	≥6.3Ω
JT300-T3-090	4.5 kW×2	≥9.4Ω×2

Model	Recommended Power	Recommended Resistance Value
JT300-T3-110	5.5 kW×2	≥9.4Ω×2
JT300-T3-132	6.5 kW×2	≥6.3Ω×2

3.2 Connection Mode

1) JT300 series inverters with power of 11KW and below is shown in figure 3-1.：

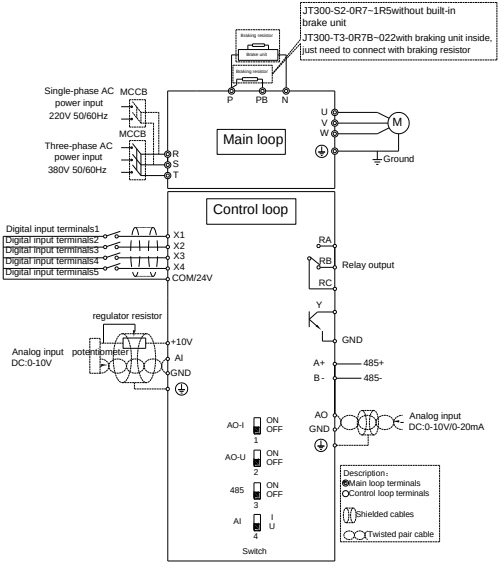


Figure 3-1 Schematic diagram of wiring up to 11kW

Remarks：The effective state of digital input terminals of 11kW and below is modified by software parameters (F2.45)

3) The 15-45KW connection mode of JT300 series frequency converter is shown in figure 3-2：

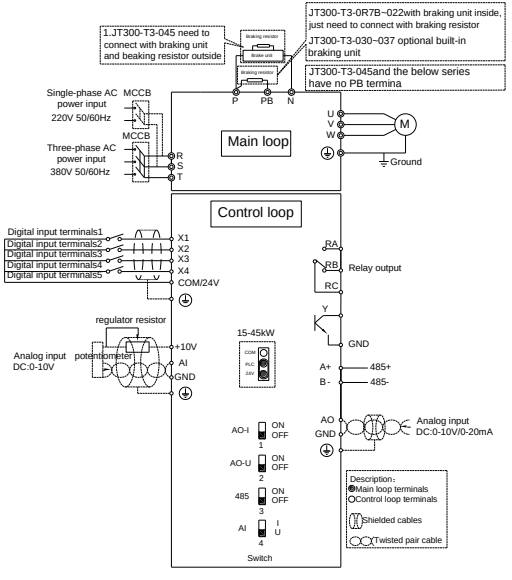


Figure 3-2 Schematic diagram of 15-45KW wiring

4) The 55-75KW connection mode of JT300 series frequency converter is shown in figure 3-3

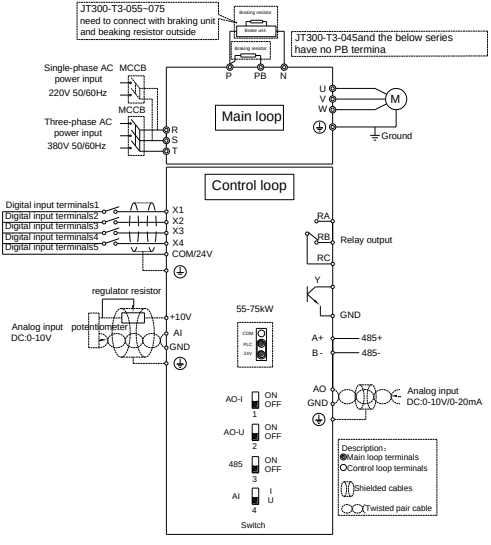


Figure 3-3 Schematic diagram of 55-75KW wiring

Notes:

1) The "B" after the product model indicates the brake unit.

2) The users can choose the brake resistance according to your requirements. See the brake resistance selection.

3) Signal and power lines must be routed separately. If the control and power cables cross, they should be crossed at a 90-degree angle whenever possible. It is better to choose shielded twisted pair for analog signal line and shielded three-core cable for power cable (its specification is one step larger than that of ordinary motor cable) or follow the user manual of inverter.

3.2.1 Product Terminals and Wiring

1) Single-Phase Inverter's Terminal Layout of Major Circuit and Size Description:

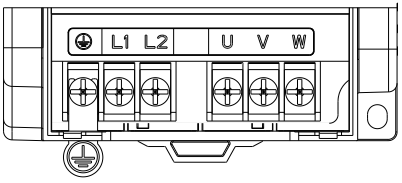


Figure 3-4 Single-Phase 0.75-2.2kW Inverter's Terminal Layout of Major Circuit and Size Diagram

Symbol	Name	Function Descriptions
L1、L2	Single-phase power input terminal	Connecting point of single-phase 220V AC
U、V、W	Output terminal of inverter	Connect three-phrase motor
⏚	Grounding terminal	Grounding terminal

2)Three-Phase Inverter's Terminal Layout of Major Circuit and Size Description:

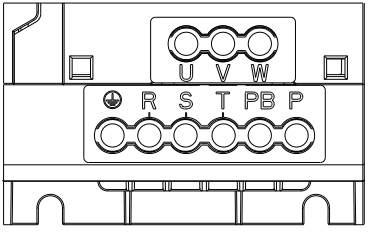


Figure 3-5 Three-Phase 0.75-5.5kW Inverter's Terminal Layout of Major Circuit and Size Diagram

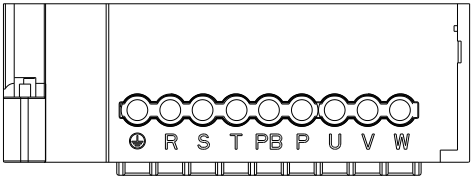


Figure 3-6 Three-Phase 7.5-11kW Inverter's Terminal Layout of Major Circuit and Size Diagram

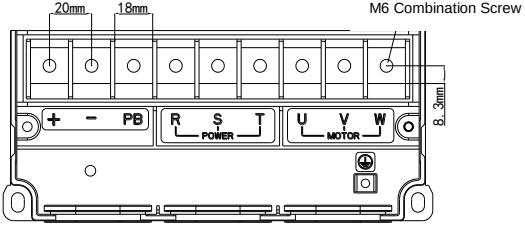


Figure 3-7 Three-Phase 15-22kW Inverter's Terminal Layout of Major Circuit and Size Diagram

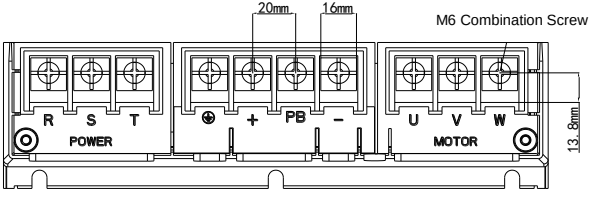


Figure 3-8Three-Phase 30-37kW Inverter's Terminal Layout of Major Circuit and Size Diagram

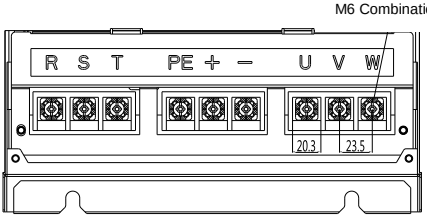


Figure 3-9 Three-Phase 45kW Inverter's Terminal Layout of Major Circuit and Size Diagram

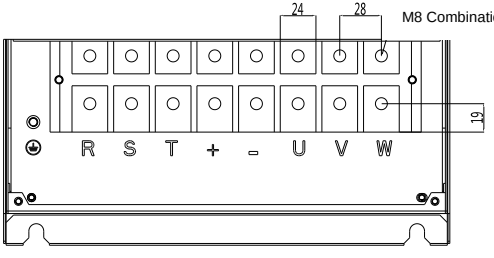


Figure 3-10 Three-Phase 55kW Inverter's Terminal Layout of Major Circuit and Size Diagram

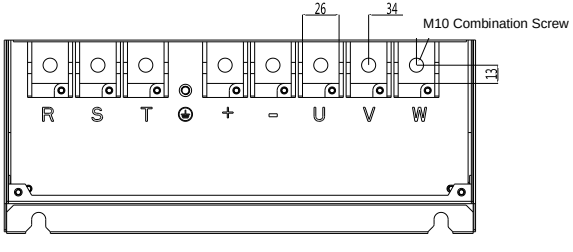


Figure 3-11 Three-Phase 75kW Inverter's Terminal Layout of Major Circuit and Size Diagram

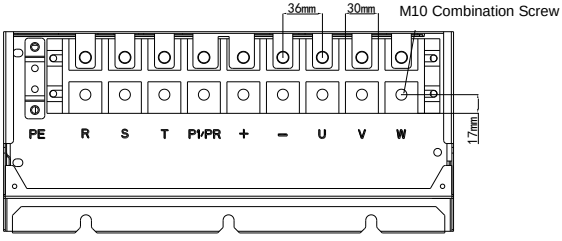


Figure 3-12 Three-Phase 90kW Inverter's Terminal Layout of Major Circuit and Size Diagram

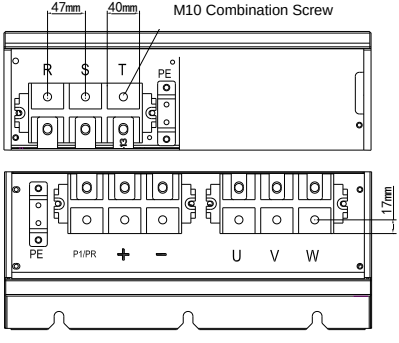


Figure 3-13 Three-Phase 110-132kW Inverter's Terminal Layout of Major Circuit and Size Diagram

Symbol	Name	Function Descriptions
R、S、T	Three-Phase Power Supply Input Terminals	Connect to the three-phase AC power supply
+、-	Positive and Negative Terminals of DC Bus	Common DC Bus Input point Connect the external braking units to the inverters of 45 kW and above
PB、+	Connecting Terminals of Braking Resistors	Connect the braking resistors to the inverters of 37 kW and below

P1/PR、+	Connecting Terminals of External Reactor	Connect to an external reactor
U、V、W	Inverter Output Terminals	Connect to a three-phase motor
⏚、PE	Ground Terminal	Must be grounded

3.2.2 **Control Terminals and Wiring**

1) Terminal Arrangement of Control Circuit:

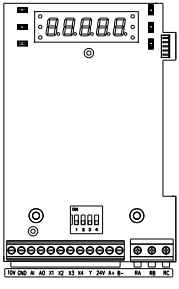


Figure 3-14 4.0-11kW *Control Circuit Terminals Layout*

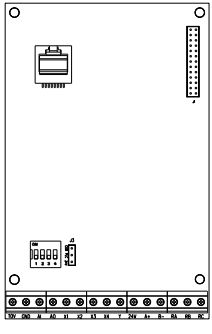


Figure 3-14 15-45kW *Control Circuit Terminals Layout*

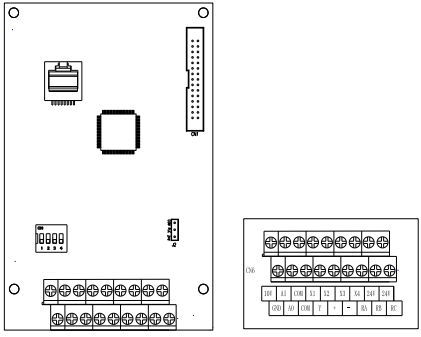


Figure 3-16 55-75kW *Control Circuit Terminals Layout*

2) Control terminal function description:

Terminal Symbol	Terminal Function	Description
10V	+10V power	1.Supply +10V power to the outside 2.Maximum output current: 10mA
GND	Digital/analog/communication and power grounding terminals	GND internal and PE insulation
AI	Analog input voltage	1.Input voltage range: DC 0V~10V 2.Input resistance: 22kΩ
AO	Analog output, select current or voltage through jumper J2, default is voltage output	output range：0V~10V/0mA~20mA
X1	Multifunctional digital input	1.Active-high 2.Support internal only: 24V
X2		
X3		
X4		
Y	Multifunctional digital output	Output voltage range: 0V～24V Output current range: 0mA～50mA

24V	+24V power	Maximum output current: 200mA
A+	485 signal A	Rate：4800/9600/19200/38400bps
B-	485 signal B	Can connect 1 to 32 RS485 sites
RA.RB.RC	Multifunction relay output	RA-RC:normally open RB-RC:normally close Contactor specification: 250VAC/3A

5) Control terminal wiring description：

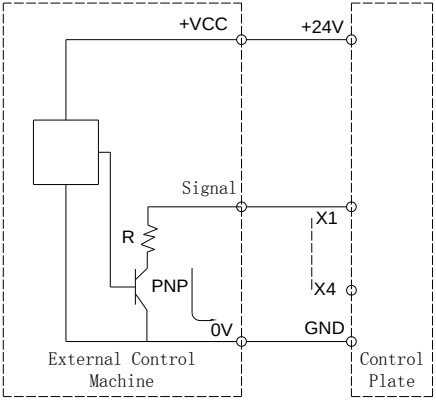
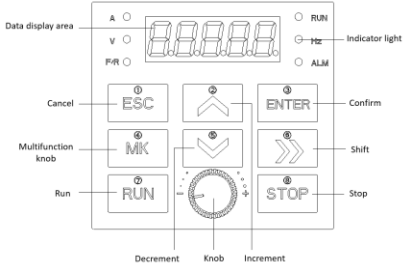


Figure 3-3 X Terminal Wiring

Chapter Four Keyboard and Display

4.1 Operation and Display Interface

The operation panel can be used to modify the function parameters of the inverter, monitor the working state and control the operation of the inverter (start and stop), etc. Its appearance and function area are shown as follows:



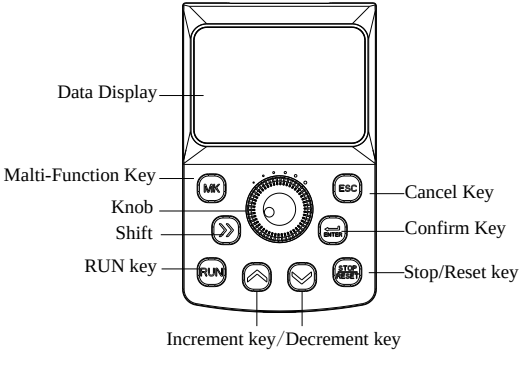


Figure 4-1 Keyboard Diagram

4.2 Keyboard Indicator Light Description

- A：Current unit indicator light. The light on indicates the current display parameter unit is "A";
- V：Voltage unit indicator light.The light on indicates the current display parameter unit is "V";
- F/R：Direction status indicator light.The light indicates the current state is reversed.
- RUN：Operation indicator light. The light on indicates the current operation;
- Hz：Frequency unit indicator light. The light on indicates the current display parameter unit is "Hz";
- ALM：Fault/motor parameter identification indicator light. Flicker indicates that the current fault state or motor parameter identification is under way.

4.3 Button Instruction

Button	Name	Function
ESC	ESC button	Menu entry or exit
ENTER	Confirm button	Enter into the menu screen step by step/setting parameter confirmation
Λ	Increment	Increment of data or function code
V	Decrement	Decrement of data or function code
MK	Multi-function selection	Make function switch selection according to F8.01
>>	Shift button	Under the stop and running display interface, the display parameters can be selected circularly. When modifying a parameter, the modification of parameter can be selected
RUN	Running button	Under the keyboard operation, it is used to run operations
STOP	Stop button	Press this button to stop running operation in running condition. In failure alarm state, it can be used to reset the operation.

Chapter Five Parameter List

The symbols in the list are illustrated below:

"●": It indicates that code parameters can be changed when the inverter is running.

"○": It indicates that code parameters cannot be changed when the inverter is running.

"◇": It indicates that the value of this parameter is the record value actually detected and cannot be changed.

" * ": It indicates that the parameter content has a variety of settings or the parameter content needs to be set according to the specific situation.

F0：Basic Function Parameters

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F0.01	Motor control mode	0: Sensorless vector control(SVC) 1: Retain 2: V/F control	2	○
F0.02	Run the command in the given manner	0：Inverter keyboard control 1：Terminal control 2：Communication control	0	●
F0.03	Principal frequency given mode	0: Digital setting(digital frequency F0.08, UP/DOWN can be modified, power down cannot be memorized) 1: Digital setting (digital frequency F0.08, UP/DOWN can be modified, power down can be memorized) 2：AI 3：Keyboard potentiometer 4：Retain 5：Retain	4	○

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		6：Multistage instruction 7：Simple PLC 8：PID 9：Communications given		
F0.04	Auxiliary frequency given mode	Same as F0.03 (principal frequency given mode)	0	○
F0.05	Assistant speed range selection when stacking	0：Relative to the maximum frequency 1：Relative to principal frequency	0	●
F0.06	Range of auxiliary speeds when stacking	0% to 150%	100%	●
F0.07	Frequency given mode	Unit's digital: frequency source selection 0：Principal frequency 1：Operation result of principal and auxiliary frequency (The relationship is determined by the tens place) 2：Principal and auxiliary frequency switch 3：Operation result of principal and auxiliary frequency switch 4：Operation result of auxiliary frequency and	00	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		principal and auxiliary operation result switch Ten place: frequency source principal and auxiliary operations 0：principal + auxiliary 1：principal - auxiliary 2：Maximum of principal and auxiliary		
F0.08	Digital frequency	0.00Hz to maximum frequency(F0.10)	50.00Hz	●
F0.09	Rotation direction	0：Forward direction 1：Reverse direction	0	●
F0.10	Maximum frequency	50.00Hz~300.00Hz	50.00Hz	○
F0.11	Source frequency upper limit	0：F0.12 set 1：AI 2：Keyboard potentiometer 3：Retain 4：Retain 5：Communication given	0	○
F0.12	Upper limiting frequency	Lower limiting frequency (F0.14) to maximum frequency (F0.10)	50.00Hz	●
F0.13	Upper limiting frequency	0.00Hz to maximum frequency (F0.10)	0.00Hz	●
F0.14	Lower limiting frequency	0.00Hz to upper limiting frequency F0.12	0.00Hz	●
F0.15	Carrier frequency	0.5kHz to 16.0kHz	Models to determine	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F0.16	Carrier frequency adjustment with temperature	0：No 1：Yes	1	●
F0.17	Acceleration time 1	0.0s to 6500.0s	Models to determine	●
F0.18	Deceleration 1	0.0s to 6500.0s	Models to determine	●
F0.19	Stacking auxiliary frequency source bias frequency	0.00Hz to maximum frequency(F0.10)	0.00Hz	●
F0.20	Digital set frequency property selection	The unit：stop memory selection 0：No memory 1：Memory Tens place：UP/DN reversal selection when superimposed with analog quantity 0：reverse 1：reverse not allowed Hundreds place：UP/DN effectively selected at stop 0：Valid 1：Invalid Thousands place：Terminal UP/DN rate mode 0：Frequency rate. F2.12 is rate, the unit is Hz/s	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		1：Integral rate. F2.12 is time, the unit is “s”. Only one decimal of F2.12 is effective and the last two are ignored		
F0.21	Acceleration/ deceleration time base frequency	0：Maximum frequency(F0.10) 1：Set frequency 2：100Hz	0	○
F0.22	Frequency instruction when running UP/DOWN standard	0：Operating frequency 1：Set frequency	0	○
F0.23	User password	0~65535	0	●
F0.24	Parameter default setting	0：No operation 1：Restore factory setting except of motor parameters 2：Clear records	0	○
F0.25	Personalized menu display options	Non-factory value menu displays selection 0：Not displayed 1：Display	0	●
F0.26	Parameter modification property	0：Modifiable 1：Not modifiable	0	●
F0.28	Frequency decimal number	1： 1 decimal places 2： 2 decimal places	2	○

F1：Motor Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F1.00	Motor type selection	0：Ordinary asynchronous machine 1：Variable-frequency asynchronous machine	0	○
F1.01	Motor rated power	0.1kW~1000.0kW	Models to determine	○
F1.02	Motor rated voltage	1V~2000V	Models to determine	○
F1.03	Motor rated current	0.01A~655.35A (inverter power<=55kW) 0.1A~6553.5A (inverter power >55kW)	Models to determine	○
F1.04	Motor rated frequency	0.01Hz~Maximum frequency	Models to determine	○
F1.05	Motor rated speed	1rpm~65535rpm	Models to determine	○
F1.06	Motor stator resistance	0.001Ω~65.535Ω <=55kW 0.0001Ω~6.5535Ω >55kW	Tuning parameter	○
F1.07	Motor rotor resistance	0.001Ω~65.535Ω <=55kW 0.0001Ω~6.5535Ω >55kW	Tuning parameter	○
F1.08	Motor leakage reactance	0.01mH~655.35mH <=55kW 0.001mH~65.535mH >55kW	Tuning parameter	○
F1.09	Motor mutual inductance	0.1mH~6553.5mH <=55kW 0.01mH~655.35mH >55kW	Tuning parameter	○
F1.10	Motor no load current	0.01A~A1.03 <=55kW 0.1A~A1.03 >55kW)	Tuning parameter	○

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F1.37	Motor parameters self-identification	0：no-operation 1：Static identification 2：Complete identification	0	○

F2：Input Terminals

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F2.00	X1 Terminal function selection	0：No function 1：Forward RUN(FWD) 2：Reverse RUN(REV) 3：Three-line control 4：Forward JOG(FJOG) 5：Reverse JOG(RJOG) 6：Terminal UP 7：Terminal DOWN 8：Free parking 9：Fault resetting(RESET) 10：RUN pause 11：External fault normally open input 12：Multiple command terminals 1 13：Multiple command terminals 2 14：Multiple command terminals 3 15：Multiple command terminals 4 16：Acceleration and deceleration time select terminal 1 17：Acceleration and deceleration time select terminal 2 18：Frequency source switch	1	○
F2.01	X2 Terminal function selection		4	○
F2.02	X3 Terminal function selection		9	○
F2.03	X4 Terminal function selection		12	○

		19：UP/DOWN Set the reset(Terminal, keyboard) 20：Command source switch over keyboard 21：Acceleration /Deceleration prohibited 22：PID pause 23：PLC status reset 24: Swing pause 25: Counter input 26: Counter reset 27: Length count input 28: Length reset 29: Torque control Prohibited 30：Retain 31：Retain 32: Immediate DC braking 33: Normally closed input of external fault 34：Frequency modification enablement 35：PID direction action reverse 36：External parking terminal 1 37：RUN command switch terminal 38：PID Integral suspend 39：Principle frequency and digital frequency switch		

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		40：Auxiliary frequency and digital frequency switch 41：PID parameter switch 42：User-defined fault 1 43：User-defined fault 2 44: Speed control/Torque control 45:Emergency stop 46: External STOP terminal 2 47: Deceleration DC braking 48: Clear the current		
F2.10	X filter time	0.000s~1.000s	0.010s	●
F2.11	Terminal command mode	0: Two-line mode 1 1: Two-line mode 2 2: Three-line mode 1 3: Three-line mode 2	0	○
F2.12	Terminal UP/DOWN rate	0.001Hz/s~65.535Hz/s	1.000Hz/s	●
F2.13	AI filter time	0.00s~10.00s	0.10s	●
F2.15	Retain	-	-	-
F2.16	AI curve 1 minimum input	0.00V~F2.18	0.20V	●
F2.17	Corresponding setting of AI curve1 minimum input	-100.0%~+100.0%	0.0%	●
F2.18	AI curve 1 maximum input	F2.16~+10.00V	10.00V	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F2.19	Corresponding setting of AI curve 1 maximum input	-100.0%~+100.0%	100.0%	●
F2.20	AI curve 2 minimum input	0.00V ~ F2.22	0.20V	●
F2.21	Corresponding setting of AI curve 2 minimum input	-100.0%~+100.0%	0.0%	●
F2.22	AI curve 2 maximum input	F2.20~+10.00V	10.00V	●
F2.23	Corresponding setting of AI curve 2 maximum input	-100.0%~+100.0%	100.0%	●
F2.24	AI curve 3 minimum input	0.00V~F2.22	0.20V	●
F2.25	Corresponding setting of AI curve 3 minimum input	-100.0%~+100.0%	0.0%	●
F2.26	AI curve 3maximum input	F2.20~+10.00V	10.00V	●
F2.27	Corresponding setting of AI curve 3 maximum input	-100.0%~+100.0%	100.0%	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F2.33	AI curve selection	The unit：AI curve selection 1：Curve 1 (2 points, see F2.16~F2.19) 2：Curve 2 (2 points, see F2.20~F2.23) 3：Curve 3 (2 points, see F2.24~F2.27) 4：Curve 4 (4 points, see P0.00~P0.07) Tens place：Keyboard potentiometer curve selection, ditto	21	●
F2.34	AI below minimum input settings selection	The unit：AI lower than minimum input setting selection 0：Corresponding to minimum input setting 1：0.0% Tens place：The keyboard potentiometer is below the minimum input setting	00	●
F2.35	X1 Closing delay time	0.0s~3600.0s	0.0s	●
F2.36	X1 Disconnect delay time	0.0s~3600.0s	0.0s	●
F2.37	X2 Closing delay time	0.0s~3600.0s	0.0s	●
F2.38	X2 Disconnect delay time	0.0s~3600.0s	0.0s	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F2.39	X3 Closing delay time	0.0s~3600.0s	0.0s	●
F2.40	X3 Disconnect delay time	0.0s~3600.0s	0.0s	●
F2.41	X terminal valid mode selection	0：High level valid 1：Low level valid	00000	○
F2.45	Input mode selection	0：High level valid 1：Low level valid	1	●

F3：Output Terminal

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F3.01	Y output	0：No output 1：Inverter running 2: Fault output (stop) 3: Frequency-level detection FDT1 output 4: Frequency reached 5: Zero-speed running (no output at stop) 6: Motor overload pre-warning 7: Inverter overload pre-warning 8: Set count value reached 9: Designated count value reached 10: Length reached 11: PLC cycle complete 12: Accumulative running time reached 13: Frequency limited 14：Torque limiting 15：Ready for running 16：Retain 17：Upper frequency reached 18：Lower frequency reached(no output at stop) 19: Under voltage state output 20: Communication setting 21：Retain	1	●
F3.02	Retain		0	
F3.03	Relay R output function selection		2	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		22：Retain 23：Zero-speed running 2(output at stop) 24: Accumulative power on time reached 25: Frequency level detection FDT2 output 26: Frequency 1 reached 27: Frequency 2 reached 28: Current 1 reached 29: Current 2 reached 30: Timing reached 31: AI1 input limit exceeded 32：Off load 33：In reverse operation 34：Zero-current status 35：Module temperature reached 36：output current exceeded 37：Lower limiting frequency reached(output at stop) 38：Alarm output(in operation) 39：Motor over temperature warning 40：Running time reached 41：Analog level ADT1 42：Analog level ADT2 44：X1 Condition 45：X2 Condition		

F3.07	AO output function selection	0：Running frequency 1：Set frequency 2：Output current 3：Output torque 4：Output frequency 5：Output voltage 6：Retain 7：AI 8：Keyboard potentiometer 9：Retain 10：Length 11：Count value 12：Communication setting 13：motor speed 14：Output current(100.0% corresponds to1000.0A) 15：Output voltage(100.0% corresponds to1000.0V) 16：Retain	0	●
F3.10	AO zero bias coefficient	-100.0%~+100.0%	0.0%	●
F3.11	AO gain	-10.00~+10.00	1.00	●
F3.14	Y Closing delay time	0.0s~3600.0s	0.0s	●
F3.15	Y output delay time	0.0s~3600.0s	0.0s	●
F3.18	Relay R output delay time	0.0s~3600.0s	0.0s	●
F3.19	Effective state selection of output terminal	0：Positive logic 1：Negative logic The unit：Y Tens place：R relay	00	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F3.22	Y Single pulse output time	0.0s~30.0s	0.0s	●
F3.24	R relay Single pulse output time	0.0s~30.0s	0.0s	●
F3.27	Output terminal valid state selection	0:Positive logic 1:Antilogical	0000	●

F4：Auxiliary parameter set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F4.00	JOG running frequency	0.00Hz~Maximum frequency	2.00Hz	●
F4.01	JOG acceleration time	0.0s~6500.0s	20.0s	●
F4.02	JOG deceleration time	0.0s~6500.0s	20.0s	●
F4.03	Acceleration time 2	0.0s~6500.0s	Models to determine	●
F4.04	Deceleration time 2	0.0s~6500.0s	Models to determine	●
F4.05	Acceleration time 3	0.0s~6500.0s	Models to determine	●
F4.06	Deceleration time 3	0.0s~6500.0s	Models to determine	●
F4.07	Acceleration time 4	0.0s~6500.0s	Models to determine	●
F4.08	Deceleration time 4	0.0s~6500.0s	Models to determine	●
F4.09	Jump frequency 1	0.00Hz~Maximum frequency	0.00Hz	●
F4.10	Jump frequency 2	0.00Hz~Maximum frequency	0.00Hz	●
F4.11	Jump frequency range	0.00Hz~Maximum frequency	0.01Hz	●
F4.12	Positive and negative dead zone time	0.0s~3000.0s	0.0s	●
F4.13	Reverse control	0：Allowed 1：Prohibited	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F4.14	Setting frequency lower than lower limiting frequency operating mode	0：Run at frequency lower limit 1：Stop 2：Zero-speed running	0	●
F4.15	Droop control	0.00Hz~10.00Hz	0.00Hz	●
F4.16	Accumulative power-on time	0h~65000h	0h	●
F4.17	Set accumulative operating time	0h~65000h	0h	●
F4.18	Startup protection	0：NO 1：Yes	0	●
F4.19	Frequency detection value(FDT1)	0.00Hz~Maximum frequency	50.00Hz	●
F4.20	Frequency detection lag value (FDT1)	0.0%~100.0%(F4.19)	5.0%	●
F4.21	Frequency detection width	0.0%~100.0%(Maximum frequency)	0.0%	●
F4.22	Whether jump frequency is valid during acceleration and deceleration	0：Invalid 1：Valid	0	●
F4.25	Switch frequency points between acceleration time 1 and 2	0.00Hz~Maximum frequency	0.00Hz	●
F4.26	Switch frequency points between deceleration time 1 and 2	0.00Hz~Maximum frequency	0.00Hz	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F4.27	Terminal JOG preferred	0：Invalid 1：Valid	0	●
F4.28	Frequency detection value(FDT2)	0.00Hz~Maximum frequency	50.00Hz	●
F4.29	Frequency detection lag value(FDT2)	0.0%~100.0%(FDT2 Level)	5.0%	●
F4.30	Any arriving frequency detection value 1	0.00Hz~Maximum frequency	50.00Hz	●
F4.31	Any arriving frequency detection amplitude 1	0.0%~100.0%(Maximum frequency)	0.0%	●
F4.32	Any arriving frequency detection value 2	0.00Hz~Maximum frequency	50.00Hz	●
F4.33	Any arriving frequency detection amplitude 2	0.0%~100.0%(Maximum frequency)	0.0%	●
F4.34	Zero current detection level	0.0%~300.0% 100.0% corresponds to motor rated current	5.0%	●
F4.35	Zero current detection delay time	0.01s~600.00s	0.10s	●
F4.36	Output current exceeds limit	0.0%(Not detected) 0.1%~300.0%(Motor rated current)	200.0%	●
F4.37	Output current over - limit detection delay time	0.00s~600.00s	0.00s	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F4.38	Any arrival current 1	0.0%~300.0%(Motor rated current)	100.0%	●
F4.39	Any arrival current 1 width	0.0%~300.0%(Motor rated current)	0.0%	●
F4.40	Any arrival current 2	0.0%~300.0%(Motor rated current)	100.0%	●
F4.41	Any arrival current 2 width	0.0%~300.0%(Motor rated current)	0.0%	●
F4.42	Timing function selection	0：Invalid 1：Valid	0	●
F4.43	Timing run time selection	0：F4.44 set 1：AI 2：keyboard potentiometer 3：Retain Analog input range corresponds to F4.44	0	●
F4.44	Timed running time	0.0Min~6500.0Min	0.0Min	●
F4.45	AI Lower limit of input voltage protection	0.00V~F4.46	3.10V	●
F4.46	AI Upper limit of input voltage protection	F4.45~10.00V	6.80V	●
F4.47	Module temperature reached	0℃~100℃	0℃	●
F4.48	Cooling fan control	0：Fan working during running 1：Fan running all the time	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F4.49	Wakeup frequency	Dormant frequency(F4.51)~Maximum frequency(F0.10)	0.00Hz	●
F4.50	Wakeup delay time	0.0s~6500.0s	0.0s	●
F4.51	Dormant frequency	0.00Hz~Wakeup frequency(F4.49)	0.00Hz	●
F4.52	Dormant delay time	0.0s~6500.0s	0.0s	●
F4.53	Set the arrival time for the running	0.0Min~6500.0Min	0.0Min	●
F4.54	ADT1 channel selection	The unit: 0：AI 1：keyboard potentiometer Tens place: 0：No output at stop 1：Output at stop	00	●
F4.55	ADT2 channel selection	The unit: 0：AI 1：keyboard potentiometer Tens place: 0：No output at stop 1：Output at stop	01	●
F4.56	ADT1 Upper limit of output	F4.57~10.00	10.00V	●
F4.57	ADT1 Lower limit of output	0.00~F4.56	0.00V	●
F4.58	ADT2 Upper limit of output	F4.59~10.00	10.00V	●
F4.59	ADT2 Lower limit of output	0.00~F4.58	0.00V	●

F5：Vector Control Functions Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F5.00	Proportional gain of velocity loop 1	1~100	30	●
F5.01	Velocity loop integral time 1	0.01s~10.00s	0.50s	●
F5.02	Switch frequency1	0.00~F5.05	5.00Hz	●
F5.03	Proportional gain of velocity loop 2	1~100	20	●
F5.04	Velocity loop integral time 2	0.01s~10.00s	1.00s	●
F5.05	Switch frequency 2	F5.02~Maximum frequency	10.00Hz	●
F5.06	Vector slip gain	50%~200%	100%	●
F5.07	Velocity ring filtering time	0.000s~0.100s	0.000s	●
F5.08	Vector over excitation gain	0~200	64	●
F5.09	Speed control mode under torque upper limit source	0：F5.10 1：AI 2：Retain 3：Keyboard potentiometer 4：PULSE Setting 5：Communication setting (Full range of the option corresponds to F5.10)	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F5.10	Upper limit number of torque under speed control	0.0%~200.0%	150.0%	●
F5.13	Excitation proportional gain	0~60000	2000	●
F5.14	Gain of excitation integral	0~60000	1300	●
F5.15	Torque proportional gain	0~60000	2000	●
F5.16	Torque integral gain	0~60000	1300	●
F5.22	Overexcitation enable	0:Be invalid 1:Effective	0	●

F6：VF Control Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F6.00	V/F curve setting	0：Linear V/F 1：Multi-point V/F 2：Square V/F 3：1.2 power V/F 4：1.4 power V/F 6：1.6 power V/F 8：1.8 power V/F	0	○

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F6.01	Torque lifting	0.0%：(Automatic torque lifting) 0.1%~30.0%	Determine the model	●
F6.02	Cutoff frequency of torque lifting	0.00Hz~Maximum frequency	50.00Hz	○
F6.03	Multi-point V/F frequency 1	0.00Hz~F6.05	0.00Hz	○
F6.04	Multi-point V/F voltage 1	0.0%~100.0%	0.0%	○
F6.05	Multi-point V/F frequency 2	F6.03~F6.07	0.00Hz	○
F6.06	Multi-point V/F voltage 2	0.0%~100.0%	0.0%	○
F6.07	Multi-point V/F frequency 3	F6.05~motor rated frequency(F1.04)	0.00Hz	○
F6.08	Multi-point V/F voltage 3	0.0%~100.0%	0.0%	○
F6.09	V/F Slip compensating gain	0.0%~200.0%	0.0%	●
F6.10	V/F Overexcitation gain	0~200	64	●
F6.11	V/F Oscillation suppression gain	0~100	Determine the model	●
F6.13	Current limiting protection function selection	0~1	0	○

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F6.14	Current limiting protection value	0~600	70A	●
F6.15	Current limiting protection operation time	0.0~60.0	02.0s	●
F6.16	V/F Overcurrent suppression enable	0:Be invalid 1:Effective	1	●
F6.17	V/F Overcurrent suppression point	50%~200%	150%	●
F6.18	V/F Overcurrent suppression gain	0~100	20	●
F6.19	V/F Weak magnetic Overcurrent point	50-200	50	●
F6.20	V/F Overcurrent suppression enable	0:Be invalid 1:Effective(V/F shared with SVC	0	●

F7：Start-stop Control Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F7.00	Starting Mode	0: Direct start 1: Rotational speed tracking restart 2: Dc brake restart	0	●
F7.01	Rotational speed tracking mode	0：Start from stop frequency 1：Start from zero speed 2：Start from maximum frequency	0	○
F7.02	Speed tracks speed	1~100	20	●
F7.03	Startup frequency	0.00Hz~10.00Hz	0.00Hz	●
F7.04	Frequency holding time	0.0s~100.0s	0.0s	○
F7.05	DC brake current	0%~100%	0%	○
F7.06	DC brake time	0.0s~100.0s	0.0s	○
F7.07	Acceleration/ deceleration mode	0：Linear 1：S-curve acceleration/deceleration A 2：S-curve acceleration/deceleration B	0	○
F7.08	Time ratio of S-curve start segment	0.0%~(100.0%-F7.09)	30.0%	○
F7.09	Time ratio of S-curve end segment	0.0%~(100.0%-F7.08)	30.0%	○

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F7.10	Stop Mode	0：Slow down 1：Free parking	0	●
F7.11	Initial frequency of DC braking at stop	0.00Hz~Maximum frequency	0.00Hz	●
F7.12	Waiting time of DC braking at stop	0.0s~100.0s	0.0s	●
F7.13	DC braking current at stop	0%~100%	0%	●
F7.14	DC braking time at stop	0.0s~100.0s	0.0s	●
F7.15	Braking usage ratio	0%~100%	100%	●
F7.16	Speed tracking current	20%~200%	100%	●
F7.17	Speed tracking KP	0~1000	500	●
F7.18	Speed tracking KI	0~1000	800	●
F7.19	Tracking speed demagnetization time	0.00s~10.00s	1.00	●
F7.20	0Hz Output enable	0：No output 1：Output	1	●

F8：Keyboard and Display Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F8.01	MK button function selection	0：Menu switch 1：Switch the operation panel command channel to the remote command channel (terminal command channel or communication command channel) 2：Forward and reverse rotation switch 3：Forward JOG 4：Reverse JOG	0	○
F8.02	STOP/RESET button function	0：STOP/RES shutdown function is only available in keyboard mode 1：In any operation mode, STOP/RES key shutdown function is available	1	●
F8.03	LED running display function 1	0000~FFFF Bit00：Running frequency(Hz) Bit01：Set frequency(Hz) Bit02：Output current(A) Bit03：Output voltage(V) Bit04：Output power(kW) Bit05：Output torque(%) Bit06：Bus voltage(V) Bit07：X input status Bit08：Retain Bit09：Digital output status	1F	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		Bit10：AI voltage(V) Bit11：Keyboard potentiometer voltage(V) Bit12：Retain Bit13：Retain Bit14：PID set Bit15：PID feedback		
F8.04	LED running display function 2	0000~FFFF Bit00：PID output Bit01：Load speed display Bit02：Principle frequency display Bit03：Auxiliary frequency display Bit04：Feedback speed Bit05：Count value Bit06：Length value Bit07：Linear speed Bit08：Current power-on time(Hour) Bit09：Current running time(Min) Bit10：Overload count Bit11：Output current percentage Bit12：Remaining running time Bit13：PLC stage Bit14：Communication setting value	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F8.05	LED display parameter at stop	0000~FFFF Bit00：Ser frequency(Hz) Bit01：Bus voltage(V) Bit02：X input status Bit03：Digital output status Bit04：AI voltage(V) Bit05：Keyboard potentiometer voltage(V) Bit06：Retain Bit07：Count value Bit08：Length value Bit09：PLC stage Bit10：Load speed Bit11：PID setting Bit12~15:Retain	33	●
F8.06	Load speed display coefficient	0.0001~6.5000	3.0000	●
F8.07	Module radiator temperature	0.0℃~100.0℃	0.0℃	◇
F8.08	Keyboard Software version			◇
F8.09	Accumulative running time	0h~65535h	0h	◇
F8.11	Software version			◇
F8.12	Number of decimal places for load speed	0：0 decimal place 1：1 decimal place 2：2 decimal places 3：3 decimal places	1	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F8.13	Accumulative power-on time	0h~65535h		◇
F8.14	Accumulative power consumption	0~65535kWh		◇

F9：Fault and Protection Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F9.00	Motor overload protection selection	0：Allowed 1：Prohibited	1	●
F9.01	Motor overload protection gain	0.20~10.00	1.00	●
F9.02	Motor overload warning coefficient	50%~100%	80%	●
F9.03	Overpressure stall gain	0~100	0	●
F9.04	Overvoltage stall protect voltage	120%~150%	130%	●
F9.05	Overcurrent stall gain	0~100	20	●
F9.06	Overcurrent stall protect current	100%~200%	150%	●
F9.09	Fault automatic reset times	0~20	0	●
F9.10	Selection of fault digital terminal action during fault automatic reset	0：No action 1：Action	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F9.11	Fault automatic reset interval	0.1s~100.0s	1.0s	●
F9.12	Input missing phase protection option	0：Prohibited 1：Allowed	1	●
F9.13	Output missing phase protection option	0：Prohibited 1：Allowed	1	●
F9.14	First failure type	0：No fault 1：Retain 2：Acceleration overcurrent 3：Deceleration overcurrent 4：Constant speed overcurrent 5：Acceleration overvoltage 6：Deceleration overvoltage 7：Constant speed overvoltage 8：Buffer resistance overload 9：undervoltage 10：Inverter overload 11：Motor overload 12：Power input phase loss 13：Power output phase loss 14：,Module overheat 15：External fault 16：Communication fault 18：Current detection default 19：Motor auto-tuning fault	—	◇
F9.15	Second failure type		—	◇
F9.16	Third failure type(the latest)		—	◇

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		20：Retain 21：Write and read parameter fault 22：Internal communication fault 23：Motor short circuit to ground 27：User- defined fault 1 28：User- defined fault 2 29：Accumulative power-on time reached 30：Off load 31：PID feedback lost during running 40：Fast current limit timeout 42：Excessive velocity deviation 43：Motor overspeed 51：Retain		
F9.17	Third fault frequency (the latest)	—	—	◇
F9.18	Third fault current (the latest)	—	—	◇
F9.19	Third fault bus voltage (the latest)	—	—	◇

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F9.20	Third fault terminal input status (the latest)			
F9.21	Third fault inverter temperature (the latest)	—	—	◇
F9.22	Third fault inverter status(the latest)	—	—	◇
F9.23	Third fault power-on time (the latest)	—	—	◇
F9.24	Third fault running time (the latest)	—	—	◇
F9.27	Second fault frequency	—	—	◇
F9.28	Second fault current	—	—	◇
F9.29	Second fault bus voltage	—	—	◇
F9.30	Second fault terminal input status	—	—	◇
F9.31	Second fault inverter	—	—	◇

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
	temperature			
F9.32	Second fault inverter status	—	—	◇
F9.33	Second fault power-on time	—	—	◇
F9.34	Second fault running time	—	—	◇
F9.37	First fault frequency	—	—	◇
F9.38	First fault current	—	—	◇
F9.39	First fault bus voltage	—	—	◇
F9.40	First fault terminal input status	—	—	◇
F9.41	First fault inverter temperature	—	—	◇
F9.42	First fault inverter status	—	—	◇
F9.43	First fault power-on time	—	—	◇
F9.44	First fault running time	—	—	◇
F9.47	Fault protection action 1	The unit：motor overload(11) 0：Free parking 1：Stop the machine according to stop mode	00000	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		2：Continue to run Tens place：input phase loss(12) Hundreds place：output phase loss (13) Thousands place：external fault(15) Myriabit：Communication fault(16)		
F9.48	Fault protection action 2	The unit：Retain Hundreds place：Retain Thousands place：Retain Myriabit：running time reached(26) 0：Free parking 1：Stop the machine according to stop mode 2：Continue to run	00000	●
F9.49	Fault protection action 3	The unit：User- defined fault 1(27) 0：Free parking 1：Stop the machine according to stop mode 2：Continue to run Tens place：User- defined fault 2 (28) 0：Free parking 1：Stop the machine according to stop mode 2：Continue to run	00000	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
		Hundreds place：power-on time reached(29) 0：Free parking 1：Stop the machine according to stop mode 2：Continue to run Thousands place：off load(30) 0：Free parking 1：Ramp to stop 2：slow down to 7% of motor rated frequency and continue to run. Automatic recovery to setting frequency when not off load Myriabit：PID feedback lost during running(31) 0：Free parking 1：Stop the machine according to stop mode 2：Continue to run		
F9.50	Fault protection action 4	The unit：Excessive velocity deviation (42) 0：Free parking 1：Stop the machine according to stop mode 2：Continue to run	00000	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F9.54	Continue running frequency selection when failure	0：Run at current running frequency 1：Run at setting frequency 2：Run at upper limiting frequency 3：Run at lower limiting frequency 4：Run at fault backup frequency	0	●
F9.55	Abnormal backup frequency	60.0%~100.0% 100.0% corresponds to maximum frequency(F0.10)	100.0%	●
F9.59	Instantaneous no power action selection	0：Invalid 1：Deceleration 2：Slow down to stop	0	●
F9.60	Transient stop action to judge voltage	80.0%~100.0%	90.0%	●
F9.61	Instantaneous outage voltage rise to judge the time	0.00s~100.00s	0.50s	●
F9.62	Instantaneous blackout action to judge voltage	60.0%~100.0% (Standard busvoltage)	80.0%	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
F9.63	Off load protection selection	0：Invalid 1：Valid	0	●
F9.64	Off load detection level	0.0~100.0%	10.0%	●
F9.65	Off load detection time	0.0~60.0s	1.0s	●
F9.67	Overspeed detection value	0.0%~50.0%(Maximum frequency)	20.0%	●
F9.68	Overspeed detection time	0.0s~60.0s	1.0s	●
F9.69	Excessive speed deviation detection value	0.0%~50.0%(Maximum frequency)	20.0%	●
F9.70	Excessive speed deviation detection time	0.0s~60.0s	5.0s	●
F9.71	Excessive speed deviation detection value	0.0%~50.0%（Maximum frequency）	20.0%	●
F9.72	Excessive speed deviation detection time	0.0s~60.0s	5.0s	●

FA：PID Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FA.00	PID given source	0：FA.01 setting 1：AI 2：keyboard potentiometer 3：Retain 4：Retain 5：Communication given 6：Multiple instructions given	0	●
FA.01	PID value given	0.0%~100.0%	50.0%	●
FA.02	PID feedback source	0：AI 1：keyboard potentiometer 2：Retain 3：AI-keyboard potentiometer 4：Retain 5：Communication given 6：AI+keyboard potentiometer	0	●
FA.03	PID function direction	0：Positive function 1：Negative function	0	●
FA.04	PID feedback range given	0~65535	1000	●
FA.05	Proportional gain Kp1	0.0~100.0	20.0	●
FA.06	Integral time Ti1	0.01s~10.00s	2.00s	●
FA.07	Derivative time Td1	0.000s~10.000s	0.000s	●
FA.08	PID reverse cut-off frequency	0.00~Maximum frequency	0.00Hz	●
FA.09	PID deviation limits	0.0%~100.0%	0.0%	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FA.10	PID derivative limits	0.00%~100.00%	0.10%	●
FA.11	PID variable time given	0.00~650.00s	0.00s	●
FA.12	PID feedback filtering time	0.00~60.00s	0.00s	●
FA.13	PID output filtering time	0.00~60.00s	0.00s	●
FA.15	Proportional gain Kp2	0.0~100.0	20.0	●
FA.16	Integral time Ti2	0.01s~10.00s	2.00s	●
FA.17	Derivative time Td2	0.000s~10.000s	0.000s	●
FA.18	PID parameter switching condition	0：No switch 1：Switch via X terminal 2：Auto switch through deviation	0	●
FA.19	PID parameter switching deviation1	0.0%~FA.20	20.0%	●
FA.20	PID parameter switching deviation12	FA.19~100.0%	80.0%	●
FA.21	PID starting value	0.0%~100.0%	0.0%	●
FA.22	PID starting value remaining time	0.00~650.00s	0.00s	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FA.23	Two output deviations from positive maximum	0.00%~100.00%	1.00%	●
FA.24	Two output deviations from negative maximum	0.00%~100.00%	1.00%	●
FA.25	PID integral property	The unit：integral separation 0：Invalid 1：Valid Tens place：integral stop after the output reaches the limit value or not 0：Continue to integral 1：Stop integral	00	●
FA.26	PID feedback lost detection value	0.0%：do not judge feedback lost 0.1%~100.0%	0.0%	●
FA.27	PID feedback lost detection time	0.0s~20.0s	0.0s	●
FA.28	PID stop operation	0：Stop operation 1：Operation at stop	0	●

FB：Pendulum Frequency, Fixed Length and Counting Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
Fb.00	Pendulum frequency setting mode	0：Relative to center frequency 1：Relative to maximum frequency	0	●
Fb.01	Pendulum frequency range	0.0%~100.0%	0.0%	●
Fb.02	Kick frequency range	0.0%~50.0%	0.0%	●
Fb.03	Pendulum frequency cycle	0.1s~3000.0s	10.0s	●
Fb.04	Rise time of triangular wave of pendulum frequency	0.1%~100.0%	50.0%	●
Fb.05	Setting length	0m~65535m	1000m	●
Fb.06	Physical length	0m~65535m	0m	●
Fb.07	Pulse per meter	0.1~6553.5	100.0	●
Fb.08	Setting count value	1~65535	1000	●
Fb.09	Specified count value	1~65535	1000	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
Fb.10	Selection of speed/torque control mode	0：Speed control 1：Torque control	0	○
Fb.11	Selection of torque set source in torque control mode	0：Digital setting（Fb.12） 1：AI 2：Retain 3：Keyboard potentiometer 4：PULSE 5：Communication given 6：Retain 7：Retain （(Full range of the option corresponds to Fb.12)	0	○
Fb.12	Torque digital reference in torque control mode	-200.0%~200.0%	150.0%	●
Fb.13	Control forward maximum frequency of torque	0.00Hz~Maximum frequency	50.00Hz	●
Fb.14	Torque control reverse maximum frequency	0.00Hz~ Maximum frequency	50.00Hz	●
Fb.15	Torque control acceleration time	0.00s~65000s	0.00s	●
Fb.16	Torque control deceleration acceleration time	0.00s~65000s	0.00s	●

FC：Multistage Speed and Simple PLC Operation Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.00	Multistage instruction 0	-100.0%~100.0%	0.0%	●
FC.01	Multistage instruction 1	-100.0%~100.0%	0.0%	●
FC.02	Multistage instruction 2	-100.0%~100.0%	0.0%	●
FC.03	Multistage instruction 3	-100.0%~100.0%	0.0%	●
FC.04	Multistage instruction 4	-100.0%~100.0%	0.0%	●
FC.05	Multistage instruction 5	-100.0%~100.0%	0.0%	●
FC.06	Multistage instruction 6	-100.0%~100.0%	0.0%	●
FC.07	Multistage instruction 7	-100.0%~100.0%	0.0%	●
FC.08	Multistage instruction 8	-100.0%~100.0%	0.0%	●
FC.09	Multistage instruction 9	-100.0%~100.0%	0.0%	●
FC.10	Multistage instruction 10	-100.0%~100.0%	0.0%	●
FC.11	Multistage instruction 11	-100.0%~100.0%	0.0%	●
FC.12	Multistage instruction 12	-100.0%~100.0%	0.0%	●
FC.13	Multistage instruction 13	-100.0%~100.0%	0.0%	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.14	Multistage instruction 14	-100.0%~100.0%	0.0%	●
FC.15	Multistage instruction 15	-100.0%~100.0%	0.0%	●
FC.16	Simple PLC running mode selection	0：Stop after inverter runs one cycle 1：Keep final values after inverter runs one cycle 2：Repeat after inverter runs one cycle	0	●
FC.17	Simple PLC power off memory selection	The unit：power off memory selection 0：Power off no memory 1：Power off memory Tens place：power off memory selection 0：Power off no memory 1：Power off memory	00	●
FC.18	Simple PLC stage 0 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.19	Simple PLC stage 0 acceleration and deceleration time selection	0~3	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.20	Simple PLC stage 1 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.21	Simple PLC stage 1 acceleration and deceleration time selection	0~3	0	●
FC.22	Simple PLC stage 2 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.23	Simple PLC stage 2 acceleration and deceleration time selection	0~3	0	●
FC.24	Simple PLC stage 3 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.25	Simple PLC stage 3 acceleration and deceleration time selection	0~3	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.26	Simple PLC stage 4 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.27	Simple PLC stage 4 acceleration and deceleration time selection	0~3	0	●
FC.28	Simple PLC stage 5 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.29	Simple PLC stage 5 acceleration and deceleration time selection	0~3	0	●
FC.30	Simple PLC stage 6 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.31	Simple PLC stage 6 acceleration and deceleration time selection	0~3	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.32	Simple PLC stage 7 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.33	Simple PLC stage 7 acceleration and deceleration time selection	0~3	0	●
FC.34	Simple PLC stage 8 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.35	Simple PLC stage 8 acceleration and deceleration time selection	0~3	0	●
FC.36	Simple PLC stage 9 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.37	Simple PLC stage 9 acceleration and deceleration time selection	0~3	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.38	Simple PLC stage 10 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.39	Simple PLC stage 10 acceleration and deceleration time selection	0~3	0	●
FC.40	Simple PLC stage 11 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.41	Simple PLC stage 11 acceleration and deceleration time selection	0~3	0	●
FC.42	Simple PLC stage 12 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.43	Simple PLC stage 12 acceleration and deceleration time selection	0~3	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.44	Simple PLC stage 3 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.45	Simple PLC stage 3 acceleration and deceleration time selection	0~3	0	●
FC.46	Simple PLC stage 14 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.47	Simple PLC stage 14 acceleration and deceleration time selection	0~3	0	●
FC.48	Simple PLC stage 15 running time	0.0s(h)~6500.0s(h)	0.0s(h)	●
FC.49	Simple PLC stage 15 acceleration and deceleration time selection	0~3	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
FC.50	Simple PLC running time unit	0：s(second) 1：h(hour)	0	●
FC.51	Multistage instruction 0 given mode	0：FC.00 given 1：AI 2：Keyboard potentiometer 3：Retain 4：Retain 5：PID 6：Pre-setting frequency(F0.08)given, UP/DOWN Can be modified	0	●

FD：Communication Function Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
Fd.00	Baud rate	1：600BPS 2：1200BPS 3：2400BPS 4：4800BPS 5：9600BPS 6：19200BPS 7：38400BPS	5	●
Fd.01	Data format	0：No check (8.N.2) 1：Even parity check(8.E.1) 2：Odd parity check (8.O.1) 3：No check (8.N.1)	0	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
Fd.02	Inverter address	1~247，0 is broadcast address	1	●
Fd.03	Answering delay	0ms~20ms	2	●
Fd.04	Communication timeout	0.0(Invalid)，0.1s~60.0s	0.0	●
Fd.05	Data transfer format selection	The unit：MODBUS 0：Not standard MODBUS contract 1：Standard MODBUS contract	1	●
Fd.06	Communication read current resolution	0：0.01A 1：0.1A	0	●

P0：Analog Quantity Four- points Bias Parameter Set

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
P0.00	AI curve 4 minimum input	-10.00V~P0.02	0.00V	●
P0.01	AI curve 4 minimum input corresponding setting	-100.0%~+100.0%	0.0%	●
P0.02	AI curve 4 inflection point 1 input	P0.00~P0.04	3.00V	●

Function Code	Function Name	Setting Range and Data Content	Factory Default	Change
P0.03	AI curve 4 inflection point 1 input corresponding setting	-100.0%~+100.0%	30.0%	●
P0.04	AI curve 4 inflection point 2 input	P0.02~P0.06	6.00V	●
P0.05	AI curve 4 inflection point 2 input corresponding setting	-100.0%~+100.0%	60.0%	●
P0.06	AI curve 4 maximum input	P0.04~+10.00V	10.00V	●
P0.07	AI curve 4 maximum input corresponding setting	-100.0%~+100.0%	100.0%	●
P0.24	AI set jump point	-100.0%~100.0%	0.0%	●
P0.25	AI set jump range	0.0%~100.0%	0.5%	●
P0.26	Keyboard potentiometer set jump range	-100.0%~100.0%	0.0%	●
P0.27	Keyboard potentiometer set jump range	0.0%~100.0%	0.5%	●
P0.28	Retain	-100.0%~100.0%	0.0%	●
P0.29	Retain	0.0%~100.0%	0.5%	●

H0：Basic Monitoring Parameter Set

Function Code	Function Name	Minimum Unit
H0.00	Running frequency(Hz)	0.01Hz
H0.01	Setting frequency(Hz)	0.01Hz
H0.02	Output current(A)	0.01A
H0.03	Output voltage(V)	1V
H0.04	Output power(kW)	0.1kW
H0.05	Output torque(%)	0.1%
H0.06	Bus voltage(V)	0.1V
H0.07	X input status 1	1
H0.09	DO output status	1
H0.10	AI voltage(V)	0.01V
H0.11	Keyboard potentiometer voltage (V)	0.01V
H0.14	PID setting	1
H0.15	PID feedback	1
H0.16	PID output	1
H0.17	Load speed display	1
H0.18	Principle frequency display	0.01Hz
H0.19	Auxiliary frequency display	0.01Hz
H0.20	feedback speed (unit0.01Hz)	0.01Hz
H0.21	Count value	1
H0.22	Length value	1
H0.23	Linear speed	1m/Min
H0.24	Current power-on time	1Min
H0.25	Current running time	0.1Min
H0.26	Motor overload time	0.1%
H0.27	Motor current percentage	0.1%
H0.28	Remaining running time	0.1Min
H0.29	PLC stage	1
H0.30	Communication setting value	0.01%

Function Code	Function Name	Minimum Unit
H0.31	AI voltage before correction	0.01V
H0.32	Keyboard potentiometer voltage before correction	0.01V
H0.34	Inverter overload count	0.1%
H0.35	Inverter current percentage	0.1%

Chapter Six Maintenance and Troubleshooting

6.1 Routine Maintenance of Inverter

6.1.1 Routine maintenance

The influence of the ambient temperature, humidity, dust and vibration will cause the aging of the devices in the inverter, which may cause potential faults or reduce the service life of the inverter. Therefore, it is necessary to carry out routine and periodic maintenance.

Check items：

1) Whether the motor sounds abnormally during running;

2) Whether the motor vibrates excessively during running;

3) Whether the installation environment of the inverter changes;

4) Whether the inverter 's cooling fan works normally;

5) Whether the inverter overheats.

Cleaning items：

6) Keep the inverter clean all the time;

7) Remove the dust, especially metal powder on the surface of the inverter, to prevent the dust from entering the inverter;

8) Clear the oil stain on the cooling fan of the inverter.

6.1.2 Periodic inspection

Check the parts of the operation that are difficult to check periodically.

Regular inspection items:

1) Check the air duct and clean it regularly;

2) Check if the screws are loose;

3) Check whether the inverter is corroded;

4) Check whether the wiring terminals show signs of arcing;

5) Main circuit insulation test.

Reminders:

When measuring the insulation resistance with a megohmmeter (please use a 500V megohmmeter), separate the main return route from the inverter.Do not test control loop

insulation with an insulation resistance meter.There is no need for high pressure testing (completed upon delivery).

6.1.3 Replacement of wear parts

The main wear parts of inverter are cooling fan and electrolytic capacitor for filtering, which is closely related to the service environment and maintenance condition.

Common service life：

Fan: 2~3 years

Electrolytic capacitor: 4 to 5 years

Notes: The standard replacement time is the time when it is used under the following conditions. The user can determine the replacement time according to the running time.

- Ambient temperature: the annual average temperature is about 30℃
- Load rate: below 80%
- Operating rate: less than 20 hours/day

1) Cooling fan

Possible causes of damage: bearing wear, blade aging.

Criteria: whether there are cracks in fan blades, etc., and whether there are abnormal vibration sounds when starting up.

2) Filter electrolytic capacitor

Possible causes of damage: poor quality of input power supply, high ambient temperature, frequent load jump, aging of electrolyte。

Criteria: whether there is liquid leakage, whether the safety valve has been protruded, determination of electrostatic capacitance, determination of insulation resistance.

6.1.4 Storage of inverter

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

1) The storage shall be packed in the original package as far as possible in the company's packing box;

2) Long storage will lead to the deterioration of the electrolytic capacitor. It must be guaranteed to be electrified within 2 years for at least 5 hours. The input voltage must be slowly raised to the rated value by the voltage regulator.

6.2 Warranty Agreement

1) Free warranty only refers to the inverter itself;

2) In case of failure or damage under normal use, our company shall be responsible for the 18-month warranty (from the date of delivery, the barcode on the fuselage shall prevail, and the contract agreement shall be followed). Reasonable maintenance fees will be charged for more than 18 months.

3) Within 18 months, a maintenance fee will be charged if

a) Machine damage caused by users not following the rules in the user manual;

b) Damage caused by fire, flood, abnormal voltage, etc.;

c) Damage caused by using inverter for abnormal function.

4) The service fee shall be calculated according to the manufacturer's uniform standard. If there is a contract, the contract shall prevail.

6.3 Faults and Solutions

When the JT300 inverter system fails during operation, the inverter will immediately protect the motor to stop output, and at the same time the frequency converter fails to relay contact action.The inverter panel will display the fault code. The corresponding fault type and common solutions are shown in the following table.The list in the form is for reference only. Please do not repair or transform without permission. If the fault cannot be solved, please seek technical support from our company or product agent.

Fault Name	Display	Troubleshooting	Solutions
Overcurrent during acceleration	Err02	1. Output circuit of inverter is grounded or short-circuited 2. Control mode is vector without parameter identification 3. Acceleration time is too short 4. Manual torque lifting or V/F curves not appropriate 5. Low voltage 6. Start the running motor 7. A sudden load is applied during the acceleration process	1.Peripheral troubleshooting 2.Conduct motor parameter identification 3.Increase acceleration time 4. Manual torque lifting or V/F curves 5. Adjust the voltage to the normal range 6. Select speed tracking start or wait until the motor stops before starting
		8. Inverter model is of too small power	7. Cancel the sudden load 8. Choose a higher power level

			inverter
Overcurrent during deceleration	Err03	1. Output circuit of inverter is grounded or short-circuited 2. Control mode is vector without parameter identification 3. Deceleration time is too short 4. Low voltage 5. A sudden load is applied during the deceleration 6. No additional brake unit and brake resistance	1.Peripheral troubleshooting 2.Conduct motor parameter identification 3. Increase deceleration time 4. Adjust the voltage to the normal range 5. Cancel the sudden load 6. Add brake unit and resistance
Overcurrent at constant speed	Err04	1. Output circuit of inverter is grounded or short-circuited 2. Control mode is vector without parameter identification 3. Low voltage 4. A sudden load is applied during the acceleration process 5. Inverter model is of too small power	1.Peripheral troubleshooting 2.Conduct motor parameter identification 3. Adjust the voltage to the normal range 4. Cancel the sudden load 5. Choose a higher power level inverter
Overvoltage during acceleration	Err05	1. High input voltage 2. External force driving the motor during acceleration 3. Acceleration time is too short 4. No additional brake unit and brake resistance	1. Adjust the voltage to the normal range 2. Cancel additional power or add brake resistance 3. Increase acceleration time 4. Add brake unit and resistance
Overvolta ge during deceleration	Err06	1. High input voltage 2. External force driving the motor during deceleration 3. Deceleration time is too short 4. No additional brake unit and brake resistance	1. Adjust the voltage to the normal range 2. Cancel additional power or add brake resistance 3. Increase deceleration time 4. Add brake unit and resistance

Overvoltage at constant speed	Err07	1. High input voltage 2. External force driving the motor during running	1. Adjust the voltage to the normal range 2. Cancel additional power or add brake resistance
Control power supply fault	Err08	1. The input voltage is not within the range specified in the specification	1. Adjust the voltage to the specification
Under voltage	Err09	1. Instantaneous power failure 2. The input voltage of the inverter is out of the specification 3. The bus voltage is abnormal 4. Rectifier bridge and buffer resistance are abnormal 5. Drive plate is abnormal 6. Control plate is abnormal	1. Reset the fault. 2. Adjust the voltage to normal range 3. Ask for technical support
Inverter overload	Err10	1. Whether the load is too large or the motor is blocked 2. Inverter model is of too small power	1. Reduce load and check motor and mechanical condition 2. Choose a higher power level inverter
Motor overload	Err11	1. Whether the motor protection parameter F9.01 is set properly 2. Whether the load is too large or the motor is blocked 3. Inverter model is of too small power	1. Set this parameter correctly 2. Reduce load and check motor and mechanical condition 3. Choose a higher power level inverter
Input phase loss	Err12	1. The three-phase input power supply is abnormal 2. Drive plate is abnormal 3. Lightning protection plate is abnormal	1. Check and troubleshoot problems in peripheral circuits 2. Ask for technical support 3.Ask for technical support 4.Ask for technical support

		4. Main control board is abnormal	
Output phase	Err13	1. The lead of the inverter to the motor is abnormal 2. The three-phase output of inverter is unbalanced when the motor is running 3. Drive plate is abnormal 4.Module is abnormal	1.Peripheral troubleshooting 2. Check whether the three-phase winding of the motor is normal and troubleshoot 3.Ask for technical support 4.Ask for technical support
Module overheat	Err14	1.High environment temperature 2. Air duct blockage 3. Damage of fan 4. Damage to module thermistor 5. Inverter module damage	1. Lower environment temperature 2.Clean air duct 3. Replace fan 4. Replace the thermistor 5. Replace inverter module
External equipment failure	Err15	1. Input the signal of external fault through multi-function terminal X	1. Reset operation
External communicatio n failure	Err16	1. The computer is not working normally 2. The communication line is not working 3. Communication parameter FD is not set correctly	1. Check upper computer wiring 2. Check communication cables 3. Set communication parameters correctly
Contactor fault	Err17	1. Abnormal driving plate and power supply 2. Contactor is abnormal	1. Replace drive board or power board 2. Replace contactor
Current detection fault	Err18	1. Check hall device abnormality 2. Drive plate is abnormal	1.Replace hall device 2.Replace drive plate
Motor tuning fault	Err19	1. Motor parameters are not set according to the nameplate 2. Parameter identification	1. Set motor parameters correctly according to nameplate

		process timeout	2. Check motor lead of the inverter
EEPROM Read/write failure	Err21	1.EEPROM chip damage	1. Replace the main control board
Internal communicatio n failure	Err22	1. No internal communication returned 2. Disconnect communication 3. Illegal communication data	1. Reset operation 2. Replace the control panel 3. Check communication data
Short circuit to ground fault	Err23	1. Short circuit of motor to ground	1. Replace the cable or motor
User- defined fault 1	Err27	1. Input the signal of user-defined fault 1 through multi-function terminal X	1. Reset operation
User- defined fault 2	Err28	1. Input the signal of user-defined fault 2 through multi-function terminal X	1. Reset operation
Accumulative power time arrives	Err29	1. Accumulated power time (F8.13) reaches the set value (F4.16)	1. Use the parameter initialization function to clear the record information
Off load fault	Err30	1. The operating current of the converter is less than F9.64	1. Confirm whether the load is off or whether the parameter setting of F9.64.F9.65 is in line with the actual operating conditions
PID feedback is lost at run time	Err31	1.PID feedback is less than the set value of FA.26	1. Check PID feedback signal or set FA.26 as an appropriate value
Wave-by -wave current limiting fault	Err40	1. Whether the load is too large or the motor is blocked 2. Small frequency converter	1. Reduce load and check motor and mechanical condition 2. Choose a frequency

		selection	converter with higher power level
Failure of excessive speed deviation	Err42	1. No parameter identification 2. Excessive speed deviation Detection parameter F9.69.F9.70 setting is unreasonable	1.Conduct motor parameter identification 2. Set test parameters reasonably according to the actual situation
Motor overspeed fault	Err43	1. No parameter identification 2. Motor overspeed detection parameter F9.67.F9.68 setting is unreasonable	1.Conduct motor parameter identification 2. Set test parameters reasonably according to the actual situation

Appendix I Modbus Communication Protocol

JT300 series inverter provides RS485 communication interface and supports MODBUS-RTU slave station communication protocol.The user can realize centralized control through computer or PLC. Through this communication protocol, the operation command of the converter can be set, the parameters of function code can be modified or read, and the working state and fault information of the converter can be read.

1.1 Agreement content

The serial communication protocol defines the content and format of information transmitted in serial communication.These include: host polling (or broadcast) format.The encoding method of the host includes: function code of required action, transmission data and error checking, etc.The response of the slave adopts the same structure, including action confirmation, return data and error checking, etc.If an error occurs while the slave machine is receiving information, or if it fails to perform the actions requested by the host, it will organize a fault message as a response to the host.

1.1.1 Application mode

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

1.1.2 Bus structure

(1) Hardware interface

Need to insert RS485 extension card in the converter.

(2) Topological structure

Single - host multi - slave system.Each communication device in the network has a unique slave station address, in which a device ACTS as a communication host (usually a flat PC upper computer.PLC.HMI, etc.) to initiate communication actively and carry out parameter reading or writing operation on the slave. Other devices are communication slaves and

respond to the host's inquiry or communication operation on the machine.Only one device can send data at any one time, while the other devices are in the receiving state.

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

(3) Communication transmission mode

Asynchronous serial, half duplex transmission mode.In the process of serial asynchronous communication, data is sent one frame at a time in the form of message. It is agreed in modbus-RTU protocol that when the idle time of countless data on the communication data line is greater than the transmission time of 3.5Byte, it represents the beginning of a new communication frame.

The communication protocol built into THE JT300 series inverter is the 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 answer the communication data.

A host can be a personal computer (PC), an industrial control device, or a programmable logic controller (PLC), etc., which can communicate individually to a slave or broadcast information to all subordinate slaves.For a single "query/command" accessed by the host, a reply frame is returned by the accessed slave;The slave does not need to respond back to the host for the broadcast message sent by the host.

1.2 Communication frame description

1.2.1 Communication frame format

The Modbus protocol communication data format of JT300 series inverter is RTU mode, and RTU data format is as follows:

Composition of bytes: start bits.8 data bits. Check bits and stop bits.

Start bits	Bit1.Bit2.Bit3.Bit4.Bit5.Bit6.Bit7.Bit8	Check bits	Stop bits

With RTU mode, messages are sent starting at a minimum of 3.5 character pause intervals.In the network baud rate under the variety of character time, this is the most easy to achieve.The first field of transmission is the device address, and the transmission characters that can be used are hexadecimal 0...9, A...F.The network device continuously detects the network bus, including during pauses.When the first field (address field) is received, each

device decodes to determine whether to send it to itself.After the last transmission character, a pause of at least 3.5 characters marks the end of the message.A new message can begin after this pause.If a new message starts after the previous message in less than 3.5 characters, the receiving device will consider it a continuation of the previous message.This will result in an error because the value of the CRC field at the end is not possible to be correct.

The FORMJT of RTU data frames is as follows:

Start bits	Slave machine address	Command code	Function Code	Data	Check bits	Stop bits

Data frame Field description:

Frame header START	More than 3.5 characters free transfer time
Slave machine address ADR	Mailing address range: 1~247; 0 = broadcast address
Function Code CMD	03: Reading machine parameters; 06: Write slave machine parameters
Function code address H	The parameter address inside the frequency converter, expressed in hexadecimal;It is divided into functional code type and non-functional code type (such as running state parameters, running commands, etc.) parameters and so on
Function code address L	
Number of function codes H	The number of function codes read by the frame, if is 1, it means to read 1 function code.When sending, the high byte comes before the low byte.。
Number of function codes L	
Data H	Data in reply, or data to be written, is transmitted in high bytes before in low bytes.
Data L	
CRC CHK low position	Test value: CRC16 check value.When sending, the low byte comes before the high byte.The calculation method is described in the CRC check in this section.
CRC CHK high-order	
END	3.5 characters

1.2.2 Command code and communication data description

The inverter only supports the read or write of Word type parameters, and the corresponding communication read operation command is 0x03;The write command is 0x06 and reads and writes in bytes or bits are not supported.

(1) Command code: 03H, read N words (read up to 12 words).

For example, one word is read from F003, the starting address of the inverter with the machine address of 01. The structure description of this frame is as follows:

Host command information:

ADR	01H
CMD	03H
Starting address high position	F0H
Starting address low position	03H
Number of registers high order	00H
Number of registers low order	01H
CRC CHK low position	Its CRC CHK value is to be calculated
CRC CHK high position	

Slave machine response message:

When FD.05 is 0(non-standard Modbus protocol) :

ADR	01H
CMD	03H
Number of bytes high position	00H
Number of bytes low position	02H
F003H high position	00H
F003H low position	04H
CRC CHK low position	E5
CRC CHK high position	C9

When FD.05 is 1(standard Modbus protocol) :

ADR	01H
CMD	03H
Number of bytes low position	02H
F003H high position	00H
F003H low position	04H
CRC CHK low position	B9
CRC CHK high position	87

（2) Command code 06H, write one Word (Word).

Function: Writes a word to the specified data address, which can be used to modify the frequency converter parameter value.

For example, 5000(1388H) is written to the F00A([F0.10]) address of the slave 01H inverter. The frame structure is described as follows:

Host command information:

ADR	01H
CMD	06H
Data address high position	F0H
Data address low position	0AH
Data content high position	13H
Data content low position	88H
CRC CHKlow position	Its CRC CHK value is to be calculated
CRC CHKhigh position	

Slave machine response message:

ADR	01H
CMD	06H
Data address high position	F0H
Data address low position	0AH
Data content high position	13H
Data content low position	88H
CRC CHKlow position	97
CRC CHKhigh position	9E

1.2.3 CRC check mode

The CRC(Cyclical Redundancy Check) USES the RTU frame format, and the messages include error detection fields based on CRC methods.The CRC domain detects the content of the entire message.A CRC field is a pair of bytes containing 16-bit binary values.It is computed by the transport device and added to the message.The receiving device recalculates the CRC of the message and compares it with the value in the received CRC domain. If the two CRC values are not equal, then there is an error in transmission.

CRC is stored at 0xFFFF and then calls a procedure to process the consecutive 8-bit bytes in the message with the value in the current register.Only 8 bits of data per character are valid for CRC, starting bit. Stop bit and parity bit are not valid.During CRC generation, each 8-bit character is independently different or (XOR) from the register content, resulting in a move towards the lowest significant bit, with the highest significant bit populated with 0.LSB is extracted for detection, if LSB is 1, the register is separate from the preset value or if LSB is 0, it is not performed.The whole process is repeated eight times.After the last bit (the eighth bit) is completed, the next 8-bit byte is either different or different from the current value of the register.The value in the final register is the CRC value after all the bytes in the message have been executed.

When the CRC is added to a message, low bytes are added first, followed by high bytes.The CRC simple function is as follows:

```
unsigned int crc_chk_value(unsigned char *data_value,unsigned char length){
unsigned  int crc_value=0xFFFF;
int i;
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);
}
```

1.3 Communication data address definition

Read and write function code parameters (some function codes can not be changed, only for the use of manufacturers or monitoring).

1.3.1 Code parameter address identification rules

The register address of frequency converter function parameter is divided into two parts: high byte and low byte.The high byte represents the group ordinal of the function parameter, and the low byte represents the group ordinal of the function parameter, which needs to be converted to hexadecimal.

High position bits：F0~FF(F set).70(H set)。

Low position bits：00~FF。

The functional code group number and the corresponding communication access address are as follows:

The corresponding communication access address of F0~FE group is 0xF000~0xFEFF; The corresponding communication access address of H0 group is 0x7000~0x70FF.

For example: To range function code F3.12, the access address of the function code is expressed as: 0xF30C.

Notes：

FF group: Neither read nor change parameters.

Group H: Parameters can only be read and cannot be changed.

Some parameters can not be changed when the converter is running.Some parameters can not be changed no matter what state the inverter is in.Change the function code parameters, but also pay attention to the parameters range, units and related descriptions. In addition, because EEPROM is frequently stored, the service life of EEPROM will be reduced. Therefore, some function codes in the communication mode need not be stored, but only the value in RAM can be changed.To implement this Function, simply change the Function Code Address high position F to 0.For example, function code F3-12 is not stored in EEPROM, and the address is 030C.

1.3.2 Address description of other function parameters

(1) Stop/run parameters section：

Parameter address	Parametric description	Parameter address	Parametric description
1000H	* Communication set point -10000~10000	1010H	PID setting
1001H	Running frequency	1011H	PID feedback
1002H	Bus voltage	1012H	PLC procedures
1003H	Output voltage	1013H	-
1004H	Output current	1014H	Feedback speed, unit 0.1Hz
1005H	Output power	1015H	Remaining running time
1006H	Output torque	1016H	AI1 pre-correction voltage
1007H	Running speed	1017H	AI2 pre-correction voltage
1008H	DI input symbol	1018H	-
1009H	DO output symbol	1019H	Linear speed
100AH	AI1 voltage	101AH	Current power on voltage
100BH	AI2 voltage	101BH	Current running time

100CH	-	101CH	-
100DH	Count value input	101DH	Communication set value
100EH	Length value input	101EH	Actual feedback speed
100FH	Loading speed	101FH	Main frequency X display
-	-	1020H	Auxiliary frequency X display

Notes：

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

For data in the frequency dimension, this percentage is a percentage of the Maximum Frequency (F0.10).

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

Command word address	Command function
2000H	0001：Forward running
	0002：Reverse running
	0003：Forward JOG
	0004：Reverse JOG
	0005：Free stop
	0006：Slowing down to stop
	0007：fault resetting

(3) Read inverter status :(read only)

Status word address	Status word function
3000H	0001：Forward running
	0002：Reverse running
	0003：Stop

(4) Digital output terminal control :(write only)

Command address	Command content
2001H	BIT0：Y1 output control
	-
	BIT2：RELAY1 output control
	-
	-

(5) Analog output AO1 control :(write only)

Command address	Command content
2002H	0~7FFF represents 0%~100%

(6) Analog output AO2 control :(write only)

Command address	Command content
2003H	0~7FFF represents 0%~100%

(7) PULSE output control :(write only)

Command address	Command content
2004H	0~7FFF represents 0%~100%

(8) Inverter fault description:

Faults Address	Faults Information	
8000H	0000: No Error 0001: Reserved 0002:Over current during Acceleration 0003:Over current during Deceleration 0004: Over current at a Constant Speed 0005: Over voltage during Acceleration 0006: Over voltage during Deceleration 0007: Over voltage at a Constant Speed 0008:Buffer Resistor Overload 0009: Under voltage 000A: Inverter Overload 000B: Motor Overload 000C:Power Input Phase Loss 000D: Power Output Phase Loss 000E: Module Overheated 000F: External Parts Error	0015: EEPROM Read-Write Error 0016: Inverter Hardware Errors 0017: Motor Short to Ground 0018: Reserved 0019: Reserved 001A: Operating Time Reached 001B: User-Defined Fault 1 001C: User-Defined Fault 2 001D:Accumulated Power-On Time Reached 001E: Load Drop 001F:PID Feedback Lost during Operating 0028: Rapid Current Limit Over-Time Fault 002A: Large Speed Deviation

	0010: Communication Errors 0011: Contactor Fault 0012: Current Detection Errors 0013: Motor Auto-tuning Errors 0014: Encoder/PG Card Errors	002B: Motor Over-speed 005A: Encoders PPR Setting Fault 005B: Encoder Disconnected 005C: Faulty Initial Position
Communication fault address		**Failure function description**
8001H		0000: Trouble-free 0001: Password error 0002: Command code error 0003: CRC check error 0004: Invalid address 0005: Invalid parameter 0006: Invalid parameter change 0007: The system is locked 0008: Operating at EEPROM

1.4 Communication parameters of FD group

This parameter is used to set the data transfer rate between the upper computer and the frequency converter.Note: The baud rate set by upper computer and frequency converter must be consistent.Otherwise, communication cannot take place.The higher the baud rate, the faster the communication speed.

Fd.01	Data format	Factory default	0
	Setting range	0: no validation: data format <8,N,2> 1: even check: data format <8,E,1> 2: odd check: data format <8,O,1> 3: no validation: data format < 8-n-1 >	

The data format set by upper computer and frequency converter must be consistent.Otherwise, communication cannot take place.

Data format	Factory default	1
Setting range	1~247，0 is the broadcast address	

When the local address is set to bit 0, the address is broadcast to realize the broadcast function of upper computer.

The address of the machine is unique (except the broadcast address), which is the basis of realizing the point-to-point communication between the upper computer and the frequency converter.

Fd.03	Data format	Factory default	2ms
	Setting range	0~20ms	

Response delay: refers to the frequency converter data receiving end to the middle time between the upward machine to send.If the response delay is less than the system processing time, the response delay shall be subject to the system processing time.If the response time is longer than the system processing time, then the system processing data, to delay the wait until the response time, only to send data up the machine.

Fd.04	Data format	Factory default	0.0s
	Setting range	0.0s(Invalid)；0.1s~60.0s	

When the function code is set to 0.0s, the communication timeout parameter is invalid.

When the function code is set to the valid value, if the interval between one communication and the next exceeds the communication timeout, the system will report the communication failure error (Err16).Normally, this will be set to invalid.Set this parameter to monitor the state of communications if you are in a continuously communicating system.

Fd.05	Data format	Factory default	0
	Setting range	0: Non-standard Modbus protocol; 1: Standard Modbus protocol	

Fd.05=1: select the standard Modbus protocol;

Fd.05=0: Select non-standard Modbus protocol.When reading a command, the number of bytes returned from the machine is one byte more than the standard Modbus protocol.

Fd.06	Data format	Factory default	0
	Setting range	0：0.01A；1：0.1A	

Used to determine the Output unit of the current value when the communication reads the Output current.

Maintenance Contract

1) The warranty period of the product is 18 months (subject to the barcode information of the machine body). During the warranty period, if the product breaks down or is damaged according to the normal use of the manual, our company will be responsible for free maintenance.

2) Within the warranty period, maintenance fees will be charged for damage caused by the following reasons:

- Product damage caused by improper use, unauthorized repair or modification.
- Product damage caused by fire, flood, earthquake, lightning, abnormal voltage, other natural disasters and secondary disasters.
- Product damage caused by fall and transportation after purchase.
- Product failure and damage caused by external obstacles (such as external equipment).
- Product failure and damage due to gas corrosion, salt corrosion, metal dust and other harsh environmental applications beyond the requirements of the manual.

3) In case of failure or damage to the product, please fill in all items in the warranty card correctly.

4) The maintenance fee shall be calculated according to the actual cost. If there is any other contract, the contract shall prevail.

5) Please be sure to keep this card and show it to the maintenance center under warranty.

6) If there is any problem in the process of service, please contact our agent or our company in time.

Product Warranty Card

<table>
<tr><td rowspan="3">Client Information</td><td colspan="2">Company Address：</td></tr>
<tr><td>Company Name：</td><td>Contact：</td></tr>
<tr><td>Postcode：</td><td>Phone：</td></tr>
<tr><td rowspan="3">Product Information</td><td colspan="2">Product Model：</td></tr>
<tr><td colspan="2">Product Barcode：</td></tr>
<tr><td colspan="2">Name of Agent：</td></tr>
<tr><td>Fault Information</td><td colspan="2">(Maintenance time and contents)：

Signature：
Date:</td></tr>
<tr><td>User Evaluation of Service</td><td colspan="2">

Signature：
Date:</td></tr>
</table>