


# Contents


<b>CHAPTER 1 PRODUCT INFORMATION.....</b>	<b>2</b>
1.1 SAFETY INFORMATION AND PRECAUTIONS.....	2
1.2 NAMING RULES.....	2
1.3 NAMEPLATE.....	2
1.4 YL620-H INVERTER SERIES INDEX.....	3
1.5 PRODUCT APPEARANCE, INSTALLATION HOLE SIZE.....	3
1.5.1 <i>Product appearance diagram</i> .....	3
1.6 WARRANTY INSTRUCTIONS FOR THE INVERTER.....	4
<b>CHAPTER 2 ELECTRICAL INSTALLATION.....</b>	<b>5</b>
2.1.1 <i>Main circuit terminals and wiring</i> .....	5
2.1.2 <i>Wiring mode of inverter control circuit</i> .....	5
2.1.3 <i>Description of control terminals</i> .....	6
2.1.4 <i>Function description of control terminal</i> .....	6
2.1.5 <i>Wiring instructions for signal input terminals</i> :	7
<b>CHAPTER 3 OPERATION DISPLAY.....</b>	<b>8</b>
3.1 INTRODUCTION TO OPERATION AND DISPLAY INTERFACE.....	8
<b>CHAPTER 4 FUNCTION PARAMETER TABLE.....</b>	<b>10</b>
4.1 BRIEF TABLE OF BASIC FUNCTION PARAMETERS.....	10
<b>CHAPTER 5 FAULT DIAGNOSIS AND COUNTERMEASURES.....</b>	<b>37</b>
5.1 FAULT ALARM AND COUNTERMEASURES.....	37
5.2 COMMON FAULTS AND SOLUTIONS.....	41
5.3 COMMUNICATION DATA ADDRESS DEFINITION.....	43
Section 1 <i>communication data address definition</i> .....	43
Section 2 <i>Modbus communication protocol</i> .....	46

# Chapter 1 Product Information

## 1.1 Safety information and precautions

Safety definition: In this manual, safety precautions are divided into the following two categories:

 **Danger:** The danger caused by failure to operate as required, which may cause serious injury or even death ;

 **Note:** The danger caused by failure to operate as required may result in moderate injury or minor injury, and equipment damage ;

Please read this chapter carefully when installing, debugging and servicing this system, and be sure to follow the safety precautions required by this chapter . Any injuries and losses caused by illegal operations have nothing to do with the company.

## 1.2 Naming rules

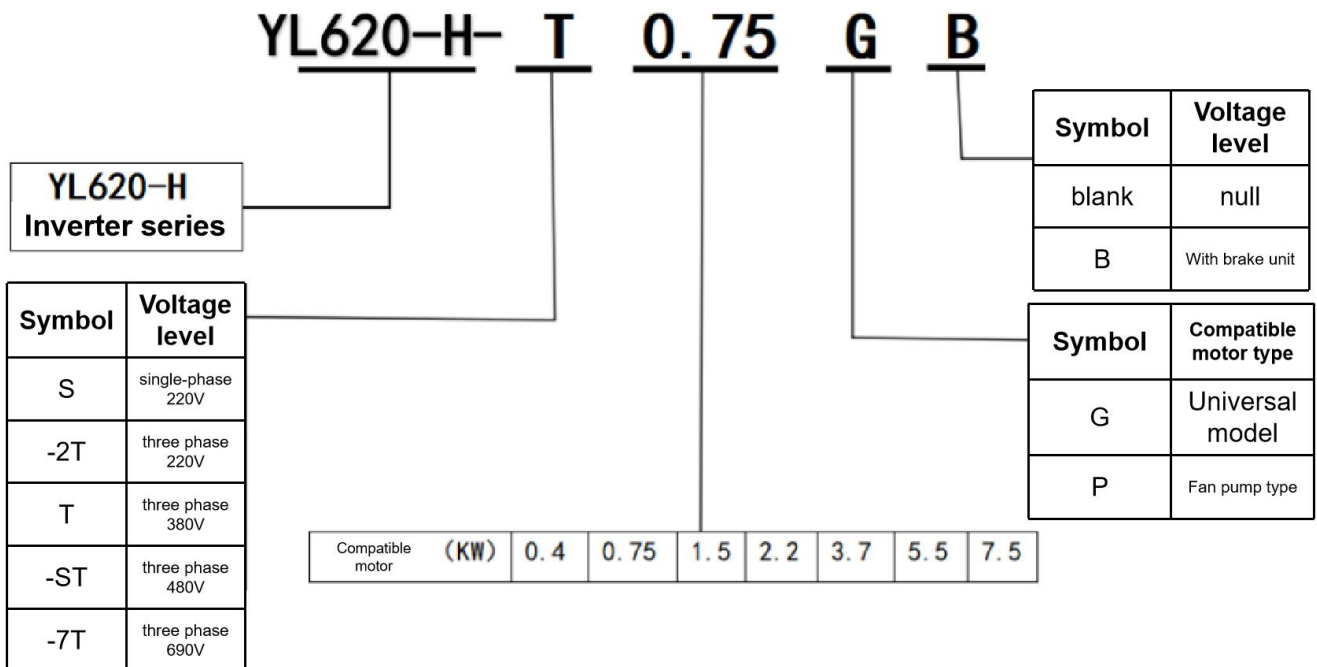
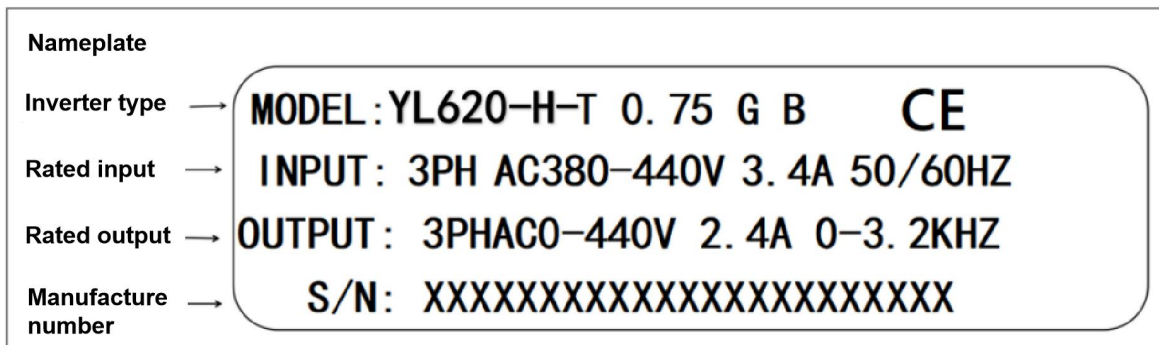


Figure 1-1 Naming specifications

## 1.3 Nameplate



## 1.4 YL620-H inverter series index

Table 1-1 Model and technical data of YL620-H inverter

Inverter model	battery capacity KVA	Input Current A	Output current A	Adapted motor	
				kW	HP
Single-phase power supply: 220V , 50/60Hz					
YL620-H-0.75KW-220V	1.5	5.2	4.0	0.75	1
YL620-H-1.5KW-220V	3.0	9.1	7.0	1.5	2
YL620-H-2.2KW-220V	4.0	13	9.6	2.2	3
YL620-H-3KW-220V	5.2	17	13.3	3.0	4
YL620-H-4KW-220V	6.8	22	17	4.0	5.3
YL620-H-5.5KW-220V	10	32	25	5.5	7.5
YL620-H-7.5KW-220V	14	44	34	7.5	10
Three-phase power supply: 380V , 50/60Hz					
YL620-H-0.75KW-380V	1.5	2.8	2.1	0.75	1
YL620-H-1.5KW-380V	3.0	5.0	3.8	1.5	2
YL620-H-2.2KW-380V	4.0	6.5	5.1	2.2	3
YL620-H-3KW-380V	5.2	10	8.0	3.0	4
YL620-H-4KW-380V	8.9	13	10	4.0	5.3
YL620-H-5.5KW-380V	10	19	14.5	5.5	7.5
YL620-H-7.5KW-380V	14	26	19.5	7.5	10

## 1.5 Product appearance, installation hole size

### 1.5.1 Product appearance diagram

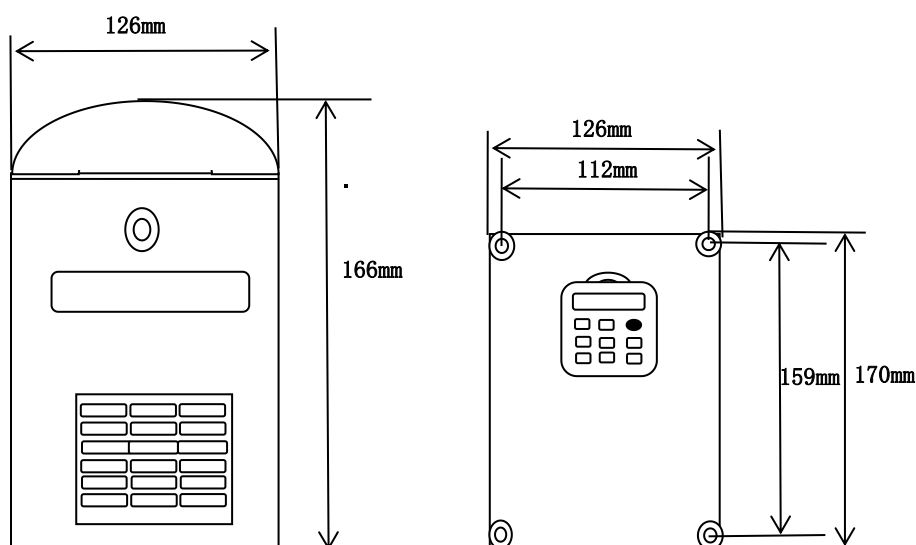


Figure 1-2 The appearance and installation dimensions of YL620-H plastic structure

### 1.5.2 External dimensions of the keyboard

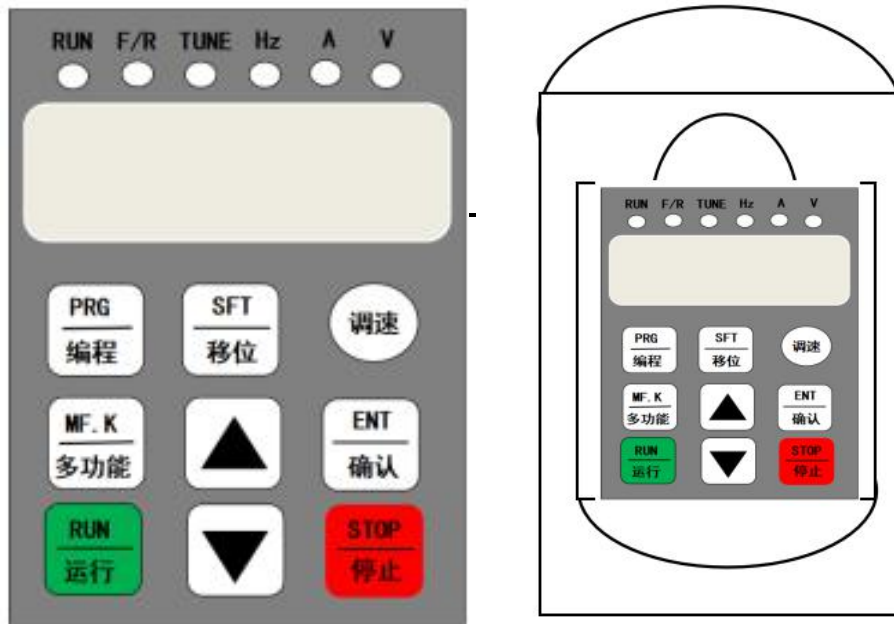


Figure 1-4 External dimensions of the keyboard

### 1.6 Warranty instructions for the inverter

Free warranty only refers to the drive itself. Under normal use, if there is a failure or damage, our company is responsible for a 12-month warranty (from the date of manufacture and delivery, subject to the barcode on the fuselage), and a reasonable maintenance fee will be charged for more than 12 months;



Within 12 months, if the following situations occur, a certain maintenance fee shall be charged:

- 1) The damage to the machine caused by the user not following the regulations in the manual;
- 2) Damage caused by fire, flood, abnormal voltage, etc.;
- 3) Damage caused when the inverter is used for abnormal functions;
- 4) The service fee is calculated in accordance with the manufacturer's unified standard. If there is a contract, the contract shall be treated as a priority.

## Chapter 2 Electrical Installation

### 2.1.1 Main circuit terminals and wiring

1) Description of inverter main circuit terminals:

Terminal	Name called		introduction
R、S、T	L、N	Power input	Single-phase 220V AC power connection point
P+、PB	P+、PB	Braking resistor	Connect braking resistor
U、V、W	U、V、W	Inverter output	Connect a three-phase motor
		Ground terminal	Ground terminal

### 2.1.2 Wiring mode of inverter control circuit

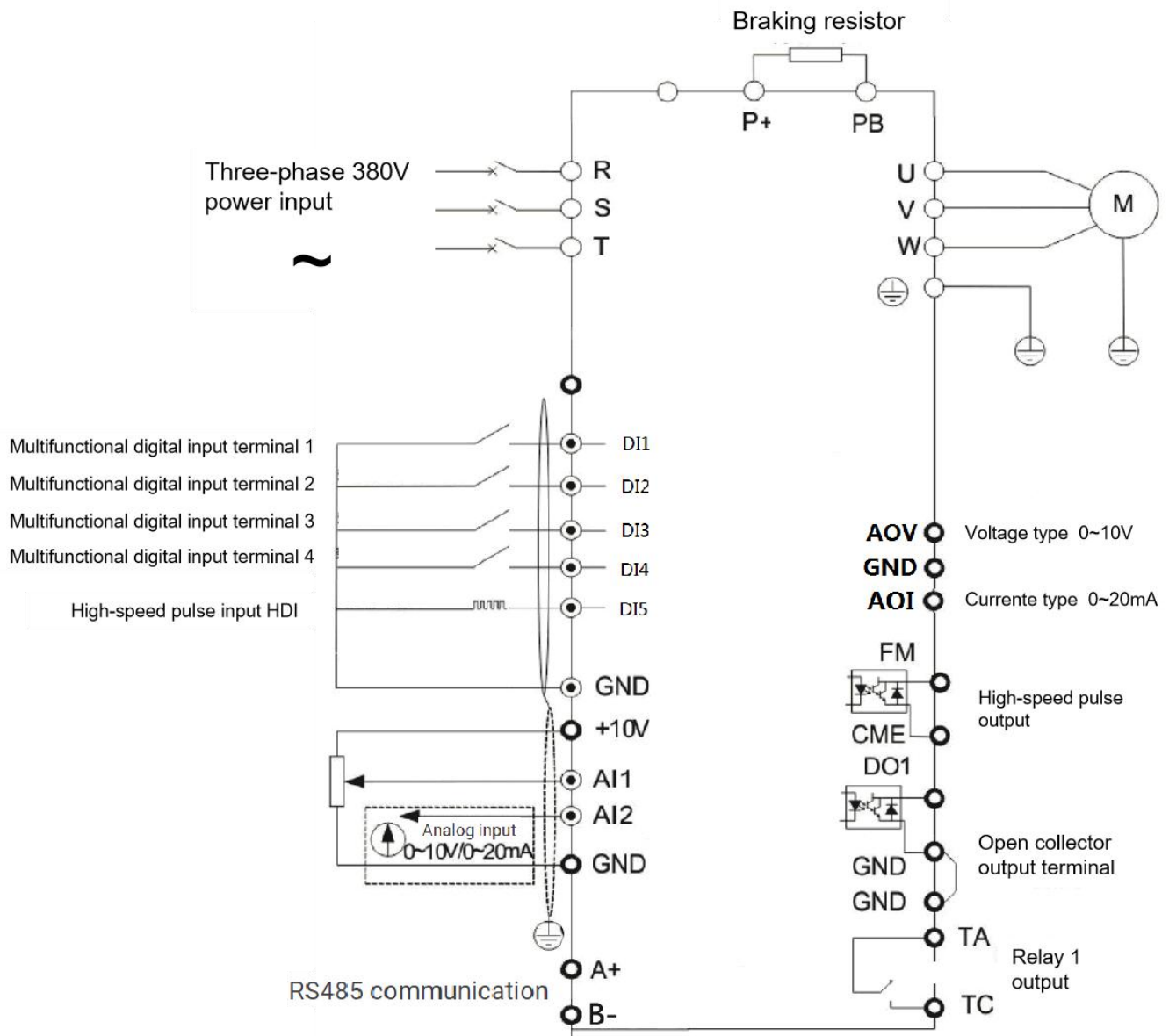


Figure 2-2 Wiring mode of inverter control circuit

Note: The wiring of the control circuit of all YL620-H series inverters is the same. The above figure is a schematic diagram of the wiring of a three-phase 380V inverter. The terminal © indicates the main circuit terminal, and ○ indicates the control circuit terminal.

### 2.1.3 Description of control terminals

The layout diagram of the control circuit terminals is shown below:

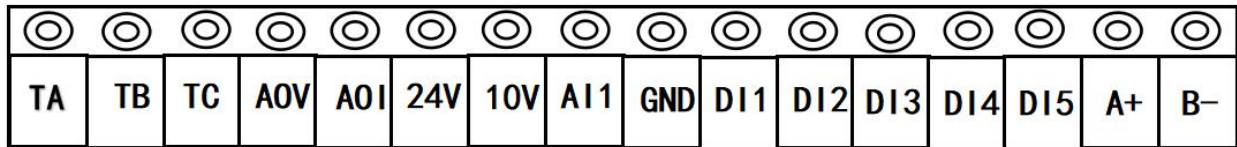


Figure 2-3 Layout of control circuit terminals

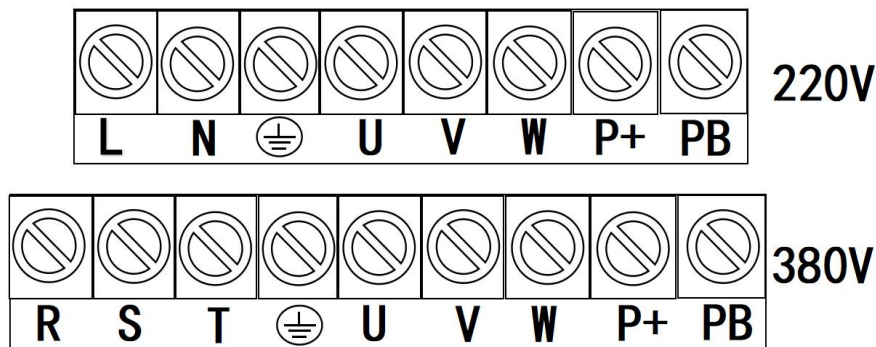


Figure 2-4 Terminal layout of main control circuit

### 2.1.4 Function description of control terminal:

Table 2-1 YL620-H inverter control terminal function description

category	Terminal symbol	Terminal name	Function Description
Power source	+10V-GND	External + 10V power supply	Providing outwardly + 10V power supply, the maximum output current: <b>150mA ( with short-circuit protection )</b> Generally used as an external potentiometer power supply, the resistance range of the potentiometer: 1kΩ~5kΩ
	+24V- GND	External + 24V power supply	Provide +24V power supply, generally used as the power supply for digital input and output terminals and External sensor power supply Maximum output current: 200mA

Analog input	AI1-GND	Analog input terminal 1	1. Input range: DC 0V~10V/0mA~20mA , determined by P4-39 2. Input impedance: 22kΩ for voltage input and 500Ω for current input
	DI1- GND	Digital input 1	1. Input impedance: 1kΩ 2. Voltage range when level input: 5V~30V
Digital input	DI2- GND	Digital input 2	In addition to the characteristics of DI1~DI4 , DI5 can also be used as a high-speed pulse input channel. Maximum input frequency: 20kHz
	DI3- GND	Digital input 3	
	DI4- GND	Digital input 4	
	DI5- GND	High-speed pulse input terminal	
	AOV-GND AOI -GND	Analog output 1	Output voltage range: 0V~10V Output current range: 0mA~20mA, 4~20mA ( optional on P5-23 )
	A + B-	RS-485 communication	A+ is differential positive input, B- is differential negative input
Digital output	FM- GND	High-speed pulse output	Restricted by function code P5 -00 “FM terminal output mode selection” When used as a high-speed pulse output, the highest frequency is 20kHz ; When used as an open collector output, it has the same specifications as D01 .
	TA- TB - TC	Relay normally open terminal	Contact drive capability: AC250V , 3A , COSØ = 0.4 。 DC 30V, 1A

### 2.1.5 Wiring instructions for signal input terminals :

Because the weak analog voltage signal is particularly susceptible to external interference, it is generally necessary to use a shielded cable, and the wiring distance should be as short as possible, not more than 20m. In some situations where the analog signal is severely disturbed, a filter capacitor or ferrite magnet must be added to the analog signal source side.

## Chapter 3 Operation Display

### 3.1 Introduction to operation and display interface

With the operation panel, you can modify the function parameters of the inverter, monitor the working status of the inverter, and control the operation of the inverter (start, stop). Its appearance and function area are shown in the figure below:



Figure 3-1 Schematic diagram of the operation panel

1) Description of function indicator:

- RUN : When the light is off, it means the inverter is in stop state, and when the light is on, it means the inverter is in running state.
- LOCAL/REMOT : indicator light for keyboard operation, terminal operation and remote operation (communication control):

- |                            |                                      |
|----------------------------|--------------------------------------|
| ○ LOCAL/REMOTE Light OFF   | Panel start-stop control             |
| ● LOCAL/REMOTE Light ON    | Terminal start-stop control          |
| ◐ LOCAL/REMOTE Light FLASH | Communication start and stop control |

- FWD/REV : Forward and reverse indicator light, when the light is on, it means it is in the forward rotation state.
- TUNE/TC : Tuner / torque control / fault indicator light indicates in the torque control mode, the lamp blinks slowly expressed in tone harmonic state, light fast blinking indicates a failed state.



2 ) Unit indicator:

Hz	Frequency unit
A	Current unit
V	Voltage unit
RPM(Hz+A)	Speed unit
% (A + V)	percentage

3 ) Digital display area:

5-digit LED display, can display the set frequency, output frequency, various monitoring data and alarm codes, etc.

4 ) Keyboard button description table

Table 3-1 Keyboard function table

Key	Name	Function
PRG	Programming key	Enter or exit the first level menu
ENTER	Enter	Enter the menu screen step by step, confirm the setting parameters
△	Increment key	Increment of data or function code
▽	Decrement key	Decrement of data or function code
▷	Shift key	In the stop display interface and the running display interface, the display parameters can be selected cyclically; When counting, you can select the modification position of the parameter
RUN	Run key	In keyboard operation mode, it is used to run operation
STOP/RES	Stop / reset	In the running state, pressing this key can be used to stop the running operation; in the fault alarm state, it can be used to For reset operation, the characteristics of this key are restricted by the function code P7-02.
MF. K	Multi-function selection key	Make function switch selection according to P7-01

## Chapter 4 Function Parameter Table

### 4.1 Brief table of basic function parameters

"☆": Indicates that the set value of this parameter can be changed when the inverter is in stop or running state;

"★": Indicates that the set value of this parameter cannot be changed when the inverter is running;

"●": Indicates that the value of this parameter is the actual test record value and cannot be changed;

Function code	name	Predetermined area	Factory default	Attributes	DEC address
Basic parameters of P0 group					
P0-01	Command source selection	0 : Vector control without speed sensor 2 : V/F control	2	★	61441
P0-02	Command source selection	0 : Panel command channel ( LED off) 1 : Terminal command channel ( LED on) 2 : Communication command channel ( LED flashes)	0	☆	61442
P0-03	Main frequency source X selection	0 : Digital setting ( preset frequency P0-08 , UP/DOWN can be modified, no memory when power off ) 1 : Digital setting ( preset frequency P0-08 , UP/DOWN can be modified, power off memory ) 2 : AI1 3 : AI2 local potentiometer 4 : AI3 external keyboard potentiometer 5 : HDI pulse setting ( DI5 ) 6 : Multi-segment command 7 : Simple PLC 8 : PID 9 : Communication setting	3	★	61443
P0-04	Auxiliary frequency source Y selection	Same as P0-03 ( Main frequency source X selection)	0	★	61444
P0-05	Frequency source Y during superposition Range selection	0 : Relative to the maximum frequency 1 : Relative to the frequency source X	0	☆	61445
P0-06	Y range of frequency source when superimposed	0% ~150%	100%	☆	61446

P0-07	Frequency source superposition mode selection	<p>Units digit: frequency source selection</p> <p>0: Main frequency source X</p> <p>1: Main and auxiliary operation (the operation method is determined by the ten's place)</p> <p>2: Switch between main frequency source X and auxiliary frequency source Y</p> <p>3: Switch between main frequency source X and main and auxiliary calculation results</p> <p>4: Switch between auxiliary frequency source Y and main and auxiliary calculation results</p> <p>Tens digit: main and auxiliary operation relationship of frequency source</p> <p>0: main + auxiliary</p> <p>1: Main-auxiliary</p> <p>2: The maximum value of the two</p> <p>3: The minimum of the two</p> <p>4: main x auxiliary</p>	00	☆	61447
P0-08	Preset frequency	0.00Hz ~ maximum frequency ( P0-10 )	50.00Hz	☆	61448
P0-09	Running direction	0 : Same direction 1 : Reverse direction	0	☆	61449
P0-10	Maximum frequency	50.00Hz~320.00Hz (P0-22=2) 50.0Hz~3200.0Hz (P0-22=1)	50.00Hz 50.0Hz	★	61450
P0-11	Upper limit frequency source	<p>0 : P0-12 setting</p> <p>1 : AI1</p> <p>2 : AI2 local potentiometer</p> <p>3 : AI3 external keyboard potentiometer</p> <p>4 : HDI pulse setting</p> <p>5 : communication setting</p>	0	★	61451
P0-12	Upper limit frequency	Lower limit frequency P0-14 ~Maximum frequency P0-10	50.00Hz	☆	61452
Function code	name	Predetermined area	Factory default	Attrib	DEC address

				utes	
P0-13	Upper limit frequency offset	0.00Hz ~ maximum frequency P0-10	0.00Hz	☆	61453
P0-14	Lower limit frequency	0.00Hz ~ upper limit frequency P0-12	0.00Hz	☆	61454
P0-15	Carrier frequency	0.5kHz~16.0kHz	Model determination	☆	61455
P0-16	Carrier frequency adjusts with temperature	0 : No 1 : Yes	1	☆	61456
P0-17	Acceleration time 1	0s~65000s (P0-19=0)	Model determination	☆	61457
P0-18	Deceleration time 1	0.0s ~ 6500.0s (P0-19 = 1) 0.00s ~ 650.00s (P0-19 = 2)			61458
P0-19	Acceleration and deceleration time unit	0 : 1 second 1 : 0.1 second 2 : 0.01 second	1	★	61459
P0-21	Auxiliary frequency source offset frequency when superimposing	0.00Hz ~ maximum frequency P0-10	0.00Hz	☆	61461
P0-22	Frequency command resolution	1: 0.1Hz 2: 0.01Hz	2	★	61462
P0-23	Digital setting frequency shutdown memory	0 : No memory 1 : Memory	1	☆	61463
P0-24	Reserve	-	1	☆	61464
P0-25	Base frequency of acceleration and deceleration time	0 : Maximum frequency ( P0-10 ) 1 : Set frequency	0	★	61465
P0-26	Frequency command UP/DOWN reference during operation	0 : Operating frequency 1 : Set frequency	0	★	61466
P0-27	Command source bundling frequency source	Units digit: Operation panel command binding frequency source selection 0: No binding 1: Digital setting frequency 2: AI1 3: AI2 local potentiometer 4: AI3 external keyboard potentiometer 5: HDI pulse setting (DI5) 6: Multi-speed 7: Simple PLC 8: PID 9: Communication setting	0000	☆	61467

		Tens digit: terminal command binding frequency source selection Hundreds digit: communication command binding frequency source selection Thousands digit: automatic operation binding frequency source selection			
P1 group motor parameters					
P1-00	Motor type selection	0 : Ordinary asynchronous motor 1 : Variable-frequency asynchronous motor	0	★	61696
P1-01	Motor rated power	0.1~1000KW	Model determinat ion	★	61697
P1-02	Motor rated voltage	1~380V	Model determinat ion	★	61698
P1-03	Motor rated current	0.01~100.00A	Model determinat ion	★	61699
P1-04	Motor rated frequency	0.01Hz ~ maximum frequency	Model determinat ion	★	61700
P1-05	Motor rated speed	1 ~65535rpm	Model determinat ion	★	61701
P1-10	Asynchronous motor no- load current	0.01~P1-03	Tuning parameters	★	61706
P1-37	Tuning options	0 : No operation 1 : Asynchronous machine static tuning 2 : Asynchronous machine complete tuning 3 : Static tuning 2	0	★	61733
P2 group vector parameters					
P2-00	Speed loop proportional gain 1	1~100	30	☆	61952
P2-01	Speed loop integral time 1	0.01~10.00s	0.50s	☆	61953
P2-02	Switching frequency 1	0.00~P2-05	5.00Hz	☆	61954
P2-03	Speed loop proportional gain 2	1 ~100	20	☆	61955
Function code	name	Predetermined area	Factory default	Att rib ute	DEC address

				s	
P2-04	Speed loop integral time 2	0.01s~10.00s	1.00s	☆	61956
P2-05	Switching frequency 2	P2-02 ~Maximum frequency	10.00Hz	☆	61957
P2-06	Vector control slip gain	50 ~200%	150%	☆	61958
P2-07	Speed loop filter time constant	0.000~0.100s	0.000s	☆	61959
P2-08	Vector control overexcitation gain	0 ~2 0 0	64	☆	61960
P2-09	Torque upper limit source in speed control mode	0 : Function code P2-10 setting 1 : AI1 2 : AI2 3 : Keyboard potentiometer 4 : PULSE pulse setting 5 : Communication setting 6 : MIN (AI1,AI2 ) 7: MAX (AI1,AI2) The full scale of options 1-7 corresponds to P2-10	0	☆	61961
P2-10	Torque upper limit digital setting in speed control mode	0.0% ~200.0%	150.0%	☆	61962
P2-13	Excitation adjustment proportional gain	0 ~60000	2000	☆	61965
P2-14	Excitation adjustment integral gain	0 ~60000	1300	☆	61966
P2-15	Torque adjustment proportional gain	0 ~60000	2000	☆	61967
P2-16	Torque adjustment integral gain	0 ~60000	1300	☆	61968
P2-17	Speed loop integral properties	Units digit: integral separation 0 : invalid 1 : Effective	0	☆	61969
<b>P3 group V/F control parameters</b>					
P3-00	VF curve setting	0 : straight line V/F 1 : multipoint V/F 2 : square V/F 3 : 1.2 power V/F 4 : 1.4 power V/F 6 : 1.6 power V/F 8 : 1.8 power V/ F	0	★	62208
P3-01	Torque boost	0.0% : (automatic torque boost) 0.1 ~30.0%	Model determination	☆	62209

P3-02	Torque boost cut-off frequency	0.00Hz ~ maximum frequency	50.00Hz	★	62210
P3-03	Multipoint VF frequency point 1	0.00Hz~P3-05	0.00Hz	★	62211
P3-04	Multi-point VF voltage point 1	0.0% ~100.0%	0.0%	★	62212
P3-05	Multipoint VF frequency point 2	P3-03~P3-07	0.00Hz	★	62213
P3-06	Multi-point VF voltage point 2	0.0% ~100.0%	0.0%	★	62214
P3-07	Multipoint VF frequency point 3	P3-05 ~motor rated frequency ( P1-04 )	0.00Hz	★	62215
P3-08	Multi-point VF voltage point 3	0.0% ~100.0%	0.0%	★	62216
P3-09	VF slip compensation gain	0.0% ~200.0%	0.0%	☆	62217
P3-10	VF overexcitation gain	0 ~200	64	☆	62218
P3-11	VF oscillation suppression gain	0 ~100	Model determination	☆	62219
P4 group input terminal					
P4-00	DI1 terminal function selection	0 : No function 1 : Forward running ( FWD ) 2 : Reverse running ( REV ) 3 : Three-wire running control 4 : Forward jog ( FJOG ) 5 : Reverse jog ( RJOG )	1	★	62464
P4-01	DI2 terminal function selection	6 : Terminal UP 7 : Terminal DOWN 8 : Free stop 9 : Fault reset ( RESET ) 10 : Running pause 11 : External fault normally open input	2	★	62465
P4-02	DI3 terminal function selection	12 : Multi-segment command terminal 1 13 : Multi-segment command terminal 2 14 : Multi-segment command terminal 3	4	★	62466
P4-03	DI4 terminal function selection	15 : Multi-segment command terminal 4 16: Acceleration/deceleration time selection terminal 1	9	★	62467

P4-04	DI5 terminal function selection	17 : Acceleration/deceleration time selection terminal 2 18 : Frequency source switching 19 : UP/DOWN setting clear ( terminal / keypad ) 20 : Run command switching terminal 1 21 : Acceleration/deceleration prohibited 22 : PID pause 23 : PLC state reset 24 : swing frequency pause 25 : counter input 26 : counter reset 27 : Length counting input 28 : length reset 29 : torque control prohibited 30 : HDI pulse frequency input (DI5) 31 : reserved 32 : immediate DC braking 33 : external fault normally closed input 34 : frequency modification enable 35 : PID action direction reverse 36 : External stop terminal 1 37 : Run command switching terminal 2 38 : PID integral pause 39 : Frequency source X and preset frequency switch 40 : Frequency source Y and preset frequency switch 43 : PID parameter switch 44 : User-defined fault 1 45 : User-defined fault 2 46 : Speed control / torque control switch 47 : Emergency stop 48 : External stop terminal 2 49 : Deceleration DC braking 50 : Clear the current running time	12	★	62468
Function code	name	Predetermined area	Factory default	Att rib	DEC address



				ute s	
P4-10	DI filter time	0.000s~1.000s		0.010s	☆ 62474
Function code	name	Predetermined area		Factory default	Att rib ute s DEC address
P4-11	Terminal command mode	0 : Two-wire type 1 1 : Two-wire type 2	2 : Three-wire type 1 3 : Three-wire type 2	0	★ 62475
P4-12	Terminal UP/DOWN change rate	0.001Hz/s~65.535Hz/s		1.00Hz/s	☆ 62476
P4-13	AI curve 1 minimum input	0.00V~P4-15		0.00V	☆ 62477
P4-14	AI curve 1 minimum input corresponding setting	-100.0% ~+100.0%		0.0%	☆ 62478
P4-15	AI curve 1 maximum input	P4-13~+10.00V		10.00V	☆ 62479
P4-16	AI curve 1 maximum input corresponding setting	-100.0% ~+100.0%		100.0%	☆ 62480
P4-17	AI1 filter time	0.00s ~10.00s		0.10s	☆ 62481
P4-18	AI curve 2 minimum input	0.00V~P4-20		0.00V	☆ 62482
P4-19	AI curve 2 minimum input corresponding setting	-100.0% ~+100.0%		0.0%	☆ 62483
P4-20	AI curve 2 maximum input	P4-18~+10.00V		10.00V	☆ 62484
P4-21	AI curve 2 maximum input corresponding setting	-100.0% ~+100.0%		100.0%	☆ 62485
P4-22	AI2 filter time	0.00s ~10.00s		0.10s	☆ 62486
P4-23	AI curve 3 minimum input	0.00V~P4-25		0.00V	☆ 62482
P4-24	AI curve 3 minimum input corresponding setting	-100.0% ~+100.0%		0.0%	☆ 62483
P4-25	AI curve 3 maximum input	P4-23~+10.00V		10.00V	☆ 62484
P4-26	AI curve 3 maximum input corresponding setting	-100.0% ~+100.0%		100.0%	☆ 62485
P4-27	AI3 filter time	0.00s ~10.00s		0.10s	☆ 62486
P4-28	HDI pulse minimum input	0.00kHz~P4-30		0.00kHz	☆ 62492
P4-29	HDI pulse minimum input corresponding setting	-100.0% ~100.0%		0.0%	☆ 62493
P4-30	HDI pulse maximum input	P4-28~50.00kHz		50.00kHz	☆ 62494
P4-31	HDI pulse maximum input setting	-100.0% ~100.0%		100.0%	☆ 62495
P4-32	HDI pulse filter time	0.00s ~10.00s		0.10s	☆ 62496
P4-33	AI curve selection	Units digit: AI1 curve selection 1 : curve 1 ( 2 points, P4-13 ~ P4- 16 ) 2 : curve 2 ( 2 points, P4-18		321	☆ 62497

		~ P4-21 ) 3 : curve 3 ( 2 points, P4-23 ~ P4-26 ) ten: AI2 curve selection, above one hundred: AI3 curve selection, ibid.			
P4-34	AI is lower than the minimum input Setting selection	Units digit: AI1 is lower than the minimum input setting selection 0: Corresponding to the minimum input setting 1: 0.0% Tens digit: AI2 is lower than the minimum input setting selection, same as above Hundreds digit: AI3 is lower than the minimum input setting selection, same as above	000	☆	62498
P4-35	DI1 delay time	0.0s ~3600.0s	0.0S	★	62499
P4-36	DI2 delay time	0.0s ~3600.0s	0.0S	★	62500
P4-37	DI3 delay time	0.0s ~3600.0s	0.0S	★	62501
P4-38	DI terminal effective mode selection 1	0 : High level is valid 1 : Low level is valid Units digit: DI1 Tens digit: DI2 Hundreds place: DI3 Thousands digit: DI4 Ten Thousand digit : DI5	000	★	62502
P4-39	AI1 input voltage / current selection	0 : Voltage input 1 : Current input	0	★	62503
P5 group output terminal					
P5-00	FM terminal output mode selection	0 : Pulse output ( FMP ) 1 : Switch output ( FMR )	0	☆	62720

Function code	name	Predetermined area	Factory default	Attributes	DEC address
P5-01	FMR output function selection	0 : No output 1 : Inverter running 2 : Fault output (fault shutdown) 3 : Frequency level detection FDT1 output 4 : Frequency reached 5 : Zero speed running (no output	0	☆	62721

P5-02	Board relay function selection ( TA- TB -TC )	when stopping) 6 : Motor overload pre-alarm 7 : Frequency conversion Device overload pre-alarm 8 : Set count value reached 9 : Designated count value reached 11 : PLC cycle completed 12 : Accumulated running time reached	2	☆	62722
P5-04	Reserve	13 : Frequency limit 14 : Torque limit 15 : Ready to run 16 : AI1>AI2 17 : Upper limit frequency reached 18 : Lower limit frequency reached (related to operation) 19 : Undervoltage status output 20: Communication setting 23 : zero speed operation in 2 (also output stop) 24 : the cumulative power-on time reaches 25 : Frequency detection FDT2 output 26 : frequency 1 to the output 27 : frequency of 2 to the output 28 : current 1 to the output 29 : Current 2 arrives at output 30 : Timing arrives at output 31 : AI1 input exceeds limit 32 : Lost load 33 : Reverse running 34 : Zero current state 35 : Module temperature arrives 36: Output current exceeds limit 37 : Lower limit frequency arrives (stop Also output) 38 : Alarm output (continue to run) 40 : The current running time reaches 41 : Fault output (it is a free stop fault and no output under voltage	1	☆	62724
P5-06	FMP output function selection	0 : Operating frequency 1 : Setting frequency 2 : Output current 3 : Output torque	0	☆	62726

P5-07	A01 output function selection	4 : Output power 5 : Output voltage 6 : HDI pulse input (100.% corresponds to 100.0kHz) 7 : AI1 8 : AI2 11 : Count value 12 : Communication setting 13 : Motor speed 14 : Output current (100.0% corresponds to 1000.0A) 15 : Output voltage (100.0% corresponds to 1000.0V) 16 : reserved	0	☆	62727
function code	name	Predetermined area	Factory default	Attributes	DEC address
P5-09	FMP output maximum frequency	0.01kHz~50.00kHz	50.00kHz	☆	62729
P5-10	A01 zero bias factor	-100.0% ~+100.0%	0.0%	☆	62730
P5-11	A01 gain	-10.00 ~+10.00	1.00	☆	62731
P5-17	FMR output delay time	0.0s ~3600.0s	0.0s	☆	62737
P5-18	RELAY1 delayed closing time	0.0s ~3600.0s	0.0s	☆	62738
P5-19	RELAY1 delay off time	0.0s ~3600.0s	0.0s	☆	62739
P5-23	A01 current output selection	0 : 0~20 mA 1: 4~20mA	0	☆	62743
P6 group start and stop control					
P6-00	Start method	0 : Direct start 1 : Speed tracking restart 2 : Pre-excitation start (AC asynchronous motor)	0	☆	62976
P6-01	Speed tracking method	0 : Start from the stop frequency 1 : Start from zero speed 2 : Start from the maximum frequency	0	★	62977
P6-02	Speed tracking	1 ~100	20	☆	62978
P6-03	Start frequency	0 ~P0-08	0.00Hz	☆	62979
P6-04	Start frequency hold time	0.0s ~100.0s	0.0s	★	62980
P6-05	Start DC braking current / pre-excitation current	0% ~100%	0%	★	62981
P6-06	Start DC braking time / pre-excitation time	0.0s ~100.0s	0.0s	★	62982
P6-07	Acceleration and	0 : Linear acceleration/deceleration	0	★	62983

	deceleration method	1 : S- curve acceleration/deceleration A 2 : S- curve acceleration/deceleration B			
P6-08	S- curve start time ratio	0.0% ( (100.0% -P6-09 )	30.0%	★	62984
P6-09	S- curve end time ratio	0.0% ( (100.0% -P6-08 )	30.0%	☆	62985
P6-10	Stop mode	0 : decelerate to stop 1 : Free parking	0	☆	62986
P6-11	Start frequency of DC braking at stop	0.00Hz ~ maximum frequency	0.00Hz	☆	62987
P6-12	DC braking waiting time at stop	0.0s ~100.0s	0.0s	☆	62988
P6-13	Stop DC braking current	0% ~100%	0%	☆	62989
P6-14	DC braking time at stop	0.0s ~100.0s	0.0s	☆	62990
P6-15	Brake usage rate	0% ~100%	100%	☆	62991
P7 group keyboard and display					
P7-01	MF.K key function selection	0 : MF.K is invalid 1 : Switch between operation panel command channel and remote command channel ( terminal command channel or communication command channel ) 2 : Forward and reverse switching 3 : Forward jog 4 : Reverse jog	2	☆	63233
Function code	name	Predetermined area	Factory default	Attributes	DEC addresses
P7-02	STOP/RESET key function	0: Only in the keyboard operation mode, the STOP/RES key stop function is valid 1: In any operation mode, the stop function of the STOP/RES key is valid	1	☆	63234
P7-03	LED running display parameter 1	0000 ~FFFF Bit00: Operating frequency 1 ( Hz ) Bit01: Setting frequency ( Hz ) Bit02: Bus voltage ( V ) Bit03: Output voltage ( V ) Bit04: Output current ( A ) Bit05: Output power ( kW ) Bit06: Output Torque ( % ) Bit07: DI input status Bit08: DO output status	001F	☆	63235

		Bit09: AI1 voltage ( V ) Bit10: AI2 voltage ( V ) Bit11: AI3 panel potentiometer voltage ( V ) Bit12: Counting value Bit14: Load speed display Bit15: PID setting			
P7-04	LED running display parameter 2	0000 ~ FFFF BIT00 : the PID feedback Bit01 : the PLC stage BIT02 : HDI input pulse frequency (kHz) BIT03 : running frequency 2 ( Hz ) BIT04 : the remaining operating time Bit05 : AI1 pre-correction voltage ( V ) Bit06 : AI2 pre-correction voltage ( V ) Bit07 : Voltage before panel potentiometer calibration (V) Bit08 : Linear speed Bit09 : Current power-on time ( Hour ) Bit10 : Current running time ( Min ) Bit11 : HDI input pulse frequency (Hz) Bit12 : Communication setting value Bit13 : Encoder feedback speed ( Hz ) Bit14 : Main frequency X display ( Hz ) Bit15 : Auxiliary frequency Y display ( Hz )	0000	☆	63236
P7-05	LED stop display parameters	0000 ~FFFF Bit00: Setting frequency ( Hz ) Bit01: Bus voltage ( V ) Bit02 : DI input status Bit03: DO output status Bit04: AI1 voltage ( V ) Bit05: AI2 voltage ( V ) Bit06: Panel potentiometer voltage ( V ) Bit07: Count value Bit08: Length value Bit09: PLC stage	0033	☆	63237

function code	name	Predetermined area		Factory default	Attributes	DEC address
		Bit10: Load speed Bit11: PID setting Bit12: HDI input pulse frequency (kHz)				
P7-06	Load speed display coefficient	0.0001 ~6.5000		1.0000	☆	63238
P7-07	Inverter module radiator temperature	0.0 °C ~100.0 °C		-	●	63239
P7-09	Cumulative running time	0h~65535h		-	☆	63241
P7-12	Load speed display decimal places	0 : 0 decimal places 1 : 1 decimal place	2 : 2 decimal places 3 : 3 decimal places	1	☆	63244
P7-13	Accumulated power-on time	0~65535h		-	●	63245
P7-14	Cumulative power consumption	0 ~ 65535 degrees		-	●	63246
<b>P8 group auxiliary function</b>						
P8-00	Jog operation frequency	0.00Hz ~ maximum frequency		6.00Hz	☆	63488
P8-01	Jog acceleration time	0.0s ~6500.0s		20.0s	☆	63489
P8-02	Jog deceleration time	0.0s ~6500.0s		20.0s	☆	63490
P8-03	Acceleration time 2	0.0s ~6500.0s		Model determination	☆	63491
P8-04	Deceleration time 2	0.0s ~6500.0s		Model determination	☆	63492
P8-05	Acceleration time 3	0.0s ~6500.0s		Model determination	☆	63493
P8-06	Deceleration time 3	0.0s ~6500.0s		Model determination	☆	63494
P8-07	Acceleration time 4	0.0s ~6500.0s		Model determination	☆	63495
P8-08	Deceleration time 4	0.0s ~6500.0s		Model determination	☆	63496
P8-09	Hop frequency 1	0.00Hz ~ maximum frequency		0.00Hz	☆	63497
P8-10	Hop frequency 2	0.00Hz ~ maximum frequency		0.00Hz	☆	63498

P8-14	The set frequency is lower than the lower limit frequency Operating mode	0 : Run at the lower frequency limit 1 : Stop 2 : Run at zero speed	0	☆	63502
P8-15	Droop control	0.00Hz~10.00Hz	0.00Hz	☆	63503
P8-16	Set cumulative power-on arrival time	0h~65000h	0h	☆	63504
P8-17	Set cumulative running arrival time	0h~65000h	0h	☆	63505
P8-18	Start protection selection	0 : No protection 1 : Protection	0	☆	63506
P8-19	Frequency detection value ( FDT1 )	0.00Hz ~ maximum frequency	50.00Hz	☆	63507
P8-20	Frequency detection hysteresis value	0.0% ~100.0% ( FDT1 level)	5.0%	☆	63508
P8-21	Frequency reach detection width	0.0% ~100.0% (maximum frequency)	0.0%	☆	63509
P8-25	Acceleration time 1 and Acceleration time 2 switching frequency point	0.00Hz ~ maximum frequency	0.00Hz	☆	63513
P8-26	Deceleration time 1 and Deceleration time 2 switching frequency point	0.00Hz ~ maximum frequency	0.00Hz	☆	63514
P8-27	Terminal jog priority	0 : invalid 1 : valid	0	☆	63515
P8-28	Frequency detection value ( FDT2 )	0.00Hz ~ maximum frequency	50.00Hz	☆	63516
P8-29	Frequency detection hysteresis value	0.0% ~100.0% ( FDT2 level)	5.0%	☆	63517
P8-30	Arbitrary arrival frequency detection value 1	0.00Hz ~ maximum frequency	50.00Hz	☆	63518
P8-31	Arbitrary arrival frequency detection width 1	0.0% ~100.0% (maximum frequency)	0.0%	☆	63519
P8-32	Arbitrary arrival frequency detection value 2	0.00Hz ~ maximum frequency	50.00Hz	☆	63520
P8-33	Arbitrary arrival frequency detection width 2	0.0% ~100.0% (maximum frequency)	0.0%	☆	63521
P8-34	Zero current detection level	0.0% ~300.0%	5.0%	☆	63522
P8-35	Zero current detection delay time	0.01s~600.00s	0.10s	☆	63523
P8-36	Output current exceeds the	0.0% (no detection)	200.0%	☆	63524



	limit				
P8-37	Output current overrun detection delay time	0.00s ~ 600.00s	0.00s	☆	63525
P8-38	Arbitrary arrival current 1	0.0% ~300.0% (motor rated current)	100.0%	☆	63526
P8-39	Arbitrarily reach current 1 width	0.0% ~300.0% (motor rated current)	0.0%	☆	63527
P8-40	Arbitrary arrival current 2	0.0% ~300.0% (motor rated current)	100.0%	☆	63528
P8-41	Arbitrarily reach current 2 width	0.0% ~300.0% (motor rated current)	0.0%	☆	63529
Function code	name	Predetermined area	Factory default	Attributes	DEC addresses
P8-42	Timing function selection	0 : invalid 1 : valid	0	☆	63530
P8-43	Timing operation time selection	0 : P8-44 setting 1 : AI1 2 : AI2 3 : AI3 <i>Note: The analog input range corresponds to P8-44</i>	0	☆	63531
P8-44	Timing running time	0.0Min~6500.0Min	0.0Min	☆	63532
P8-45	AI1 input voltage protection value lower limit	0.00V~P8-46	3.10V	☆	63533
P8-46	AI1 input voltage protection value upper limit	P8-45~10.00V	6.80V	☆	63534
P8-47	Module temperature reached	0 °C ~100 °C	75 °C	☆	63535
P8-48	Fan control ( motherboard FAN seat )	0 : Fan rotates during operation 1 : Fan keeps rotating	0	☆	63536
P8-49	Wake-up frequency	Sleep frequency ( P8-51 ) ~ maximum frequency ( P0-10 )	0.00Hz	☆	63537
P8-50	Wake-up delay time	0.0s ~6500.0s	0.0s	☆	63538
P8-51	Sleep frequency	0.00Hz ~Wake-up frequency ( P8-49 )	0.00Hz	☆	63539
P8-52	Sleep delay time	0.0s ~6500.0s	0.0s	☆	63540
P8-53	Arrival time setting for this run	0.0Min~6500.0Min	0.0Min	☆	63541
P9 group fault and protection					
P9-00	Motor overload protection selection	0 : Disable 1 : Allow	1	☆	63744
P9-01	Motor overload protection gain	0.20 ~10.00	1.00	☆	63745

P9-02	Motor overload warning coefficient	50% ~100%	80%	☆	63746
P9-03	Overvoltage stall gain	0 ~100	0	☆	63747
P9-04	Overvoltage stall protection voltage	120% ~150%	130%	☆	63748
P9-05	Over churn gain	0 ~100	20	☆	63749
P9-06	Over-current stall protection current	100% ~200%	150%	☆	63750
P9-07	Power-on to ground short-circuit protection options	0 : invalid 1 : valid	1	☆	63751
P9-08	Dynamic braking action voltage	200.0~2000.0V	220V:360V 380V:700V	☆	63752
P9-09	Automatic fault reset times	0 ~20	0	☆	63753
P9-10	Action selection of fault DO during fault automatic reset	0 : No action 1 : Action	0	☆	63754
P9-11	Automatic fault reset interval time	0.1s~100.0s	1.0s	☆	63755
P9-12	Input phase loss protection selection	0 : Disable 1 : Allow	0	☆	63756
P9-13	Output phase loss protection option	0 : Disable 1 : Allow	1	☆	63757
P9-14	Type of first failure	0 : no fault 1 : reserved 2 : acceleration overcurrent 3 : deceleration overcurrent 4 : constant speed overcurrent 5 : acceleration overvoltage 6 : deceleration overvoltage 7 : constant speed overvoltage	-	●	63758
P9-15	Type of second failure	8 : buffer resistor overload 9 : undervoltage 10 : Inverter overload 11 : Motor overload 12 : Input phase loss 13 : Output phase loss 14 : Module overheat	-	●	63759

P9-16	The third ( most recent ) failure type	15 : External fault 16 : Communication abnormality 17 : Contactor abnormality 18 : Current detection abnormality 19 : Motor tuning abnormality 20 : Reserved 21 : Parameter Reading and writing abnormality 22 : Inverter hardware abnormality 23: Motor ground short circuit 24 : Reserved 25 : Reserved 26 : running time reaches 27: User-defined fault . 1 28: User-defined fault 2 29: the power-on time reaches 30 : the load loss 31 : run-time PID feedback loss 40 : Fast Current limit timeout 41 : Switch the motor during operation 42: Speed deviation is too large 43 : Motor overspeed 45 : Reserved 51 : Reserved	-	●	63760
Function code	name	Predetermined area	Factory default	Attributes	DEC address
P9-17	Frequency at the third ( most recent ) failure	-	-	●	63761
P9-18	Current at the third ( most recent ) fault	-	-	●	63762
P9-19	Bus voltage at the third ( most recent ) failure	-	-	●	63763
P9-20	Input terminal status at the third ( most recent ) fault	-	-	●	63764
P9-21	Output terminal status at the third ( most recent ) fault	-	-	●	63765

P9-22	Inverter status at the third ( most recent ) fault	-	-	●	63766
P9-23	The third ( last ) failure on power-up time	-	-	●	63767
P9-24	Running time at the third ( most recent ) failure	-	-	●	63768
P9-27	Frequency at the second failure	-	-	●	63771
P9-28	Current at the second fault	-	-	●	63772
P9-29	Bus voltage at the second fault	-	-	●	63773
P9-30	Input terminal status at the second fault	-	-	●	63774
P9-31	Output terminal status at the second failure	-	-	●	63775
P9-32	Inverter status at the second fault	-	-	●	63776
P9-33	Power-on time at the second failure	-	-	●	63777
Function code	name	Predetermined area	Factory default	Attributes	DEC address
P9-34	Running time at the second failure	-	-	●	63778
P9-37	Frequency at the first failure	-	-	●	63781
P9-38	Current at the first failure	-	-	●	63782
P9-39	Bus voltage at the first failure	-	-	●	63783
P9-40	Input terminal status at the first failure	-	-	●	63784
P9-41	Output terminal status at the first failure	-	-	●	63785
P9-42	Inverter status at the first failure	-	-	●	63786
P9-43	Power-on time at the first failure	-	-	●	63787

P9-44	Running time at the first failure	-	-	●	63788
P9-47	Fault protection action selection 1	Units place: Motor overload ( 11 ) 0 : Free stop 1 : Stop according to the stop mode 2 : Continue to run Tens place: Input phase loss ( 12 ) Hundreds place: Output phase loss ( 13 ) Thousands place: External fault ( 15 ) Ten thousand digits : Communication is abnormal ( 16 )	00000	☆	63791
P9-54	Continue to run frequency selection in case of failure	0 : Run at the current operating frequency 1 : Run at the set frequency 2 : Run at the upper limit frequency 3 : Run at the lower limit frequency 4 : Run at the abnormal standby frequency	0	☆	63798
P9-55	Abnormal backup frequency	60.0% ~100.0% (100.0% corresponds to the maximum frequency P0-10)	100.0%	☆	63799
P9-59	Instantaneous power failure action selection	0 : Invalid 1 : Decelerate 2 : Decelerate to stop	0	☆	63803
P9-60	Momentary stop action pause judgment voltage	P9-62 ~100.0%	100.0%	☆	63804
P9-61	Instantaneous power failure voltage recovery judgment time	0.00s ~ 100.00s	0.50s	☆	63805
P9-62	Instantaneous power failure action judgment voltage	60.0% ~100.0% (Standard bus voltage)	80.0%	☆	63806
P9-63	Offload protection options	0 : invalid 1 : valid	0	☆	63807
P9-64	Offload detection level	0.0 ~100.0%	10.0%	☆	63808

P9-65	Offload detection time	0.0 ~60.0s	1.0s	☆	63809
PID function of PA group					
PA-00	PID given source	0 : PA-01 setting 1 : AI1 2 : AI2 local potentiometer 3 : AI3 external keyboard potentiometer 4 : HDI input pulse setting ( DI5 ) 5 : communication setting 6 : multi-segment command setting	0	☆	64000
PA-01	PID value given	0.0 ~100.0%	50.0%	☆	64001
PA-02	PID feedback source	0 : AI1 1 : AI2 local potentiometer 2 : AI3 external keyboard potentiometer 3 : AI1-AI2 4 : HDI input pulse setting ( DI5 ) 5 : communication setting 6 : AI1+AI2 7 : MAX (  AI1  ,  AI2  ) 8 : MIN (  AI1  ,  AI2  )	0	☆	64002
Function code	name	Predetermined area	Factory default	Attributes	DEC addresses
PA-03	PID action direction	0 : positive effect 1 : negative effect	0	☆	64003
PA-04	PID given feedback range	0 ~65535	1000	☆	64004
PA-05	Proportional gain KP1	0.0 ~100.0	20.0	☆	64005
PA-06	Integration time Ti1	00:01 ~ 10.00s	2.00s	☆	64006
PA-07	Differential time Td1	0.000~10.000s	0.000s	☆	64007
PA-08	PID reverse cutoff frequency	0.00 ~Maximum frequency	2.00Hz	☆	64008
PA-09	PID deviation limit	0.0 ~100.0%	0.0%	☆	64009
PA-10	PID differential limit	0.00 ~100.00%	0.10%	☆	64010
PA-11	PID given change time	00:00 ~ 650.00s	0.00s	☆	64011
PA-12	PID feedback filter time	00:00 ~ 60.00s	0.00s	☆	64012
PA-13	PID output filter time	00:00 ~ 60.00s	0.00s	☆	64013
PA-15	Proportional gain KP2	0.0 ~100.0	20.0	☆	64015
PA-16	Integration time Ti2	0.01s~10.00s	2.00s	☆	64016
PA-17	Differential time Td2	0.000s~10.000s	0.000s	☆	64017
PA-18	PID parameter switching conditions	0 : Do not switch 1 : Switch through DI terminal 2 : Automatically switch according to	0	☆	64018

		deviation			
PA-19	PID parameter switching deviation 1	0.0% ~PA-20	20.0%	☆	64019
PA-20	PID parameter switching deviation 2	PA-19 ~ 100.0%	80.0%	☆	64020
PA-21	PID initial value	0.0 ~100.0%	0.0%	☆	64021
PA-22	PID initial value holding time	00:00 ~ 650.00s	0.00s	☆	64022
PA-23	The maximum value of two output deviations in the positive direction	0.00 ~100.00%	1.00%	☆	64023
PA-24	Two output deviation reverse maximum value	0.00 ~100.00%	1.00%	☆	64024
PA-25	PID integral properties	Units place: integral separation 0 : invalid 1 : effective tens place: whether to stop integration after output to the limit 0 : continue integration 1 : stop integration	00	☆	64025
PA-26	PID feedback loss detection value	0.0% : Do not judge the loss of feedback 0.1 ~100.0 %	0.0%	☆	64026
PA-27	PID feedback loss detection time	0.0s ~20.0s	0.0s	☆	64027
PA-28	PID shutdown calculation	0 : No operation at shutdown 1 : Operation at shutdown	1	☆	64028
<b>Pb group swing frequency, fixed length and counting</b>					
Pb-00	Swing frequency setting method	0 : Relative to the center frequency 1 : Relative to the maximum frequency	0	☆	64256
Pb-01	Swing frequency amplitude	0.0 ~100.0%	0.0%	☆	64257
Pb-02	Sudden jump frequency amplitude	0.0 ~50.0%	0.0%	☆	64258
Pb-03	Swing frequency period	0.1 ~3000.0s	10.0s	☆	64259
Pb-04	Triangular wave rise time of swing frequency	0.1 ~100.0%	50.0%	☆	64260
Pb-05	Set length	0 ~65535m	1000m	☆	64261
Pb-06	Actual length	0 ~65535m	0m	☆	64262
Pb-07	Number of pulses per meter	0.1 ~6553.5	100.0	☆	64263

Pb-08	Set count value	1 ~65535	1000	☆	64264
Pb-09	Specify the count value	1 ~65535	1000	☆	64265
Pc group multi-segment instructions and simple PLC					
PC-00	Multi-segment instruction 0	-100.0% ~100.0%	0.0%	☆	64512
PC-01	Multi-segment instruction 1	-100.0% ~100.0%	0.0%	☆	64513
PC-02	Multi-segment instruction 2	-100.0% ~100.0%	0.0%	☆	64514
PC-03	Multi-segment instruction 3	-100.0% ~100.0%	0.0%	☆	64515
Function code	name	Predetermined area	Factory default	Attributes	DEC addresses
PC-04	Multi-segment instructions 4	-100.0% ~100.0%	0.0%	☆	64516
PC-05	Multi-segment instructions 5	-100.0% ~100.0%	0.0%	☆	64517
PC-06	Multi-segment instructions 6	-100.0% ~100.0%	0.0%	☆	64518
PC-07	Multi-segment instructions 7	-100.0% ~100.0%	0.0%	☆	64519
PC-16	Simple PLC operation mode	0 : Stop at the end of a single operation 1 : Keep the final value at the end of a single operation 2 : Circulate all the time	0	☆	64528
PC-17	Easy PLC power-down memory selection	Units digit: down memory selection 0 : down without Memory 1 : power-down memory Tens digit: Stop memory selection 0 : Stop not Memory 1 : Stop memory	00	☆	64529
PC-18	Simple PLC 0 segment running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64530
PC-19	Simple PLC 0 segment Acceleration and deceleration time	0 ~3	0	☆	64531



	selection				
PC-20	Simple PLC 1 segment running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64532
PC-21	Simple PLC 1 segment Acceleration and deceleration time selection	0 ~3	0	☆	64533
PC-22	Simple PLC 2- stage running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64534
PC-23	Simple PLC 2 stage Acceleration and deceleration time selection	0 ~3	0	☆	64535
PC-24	Simple PLC 3- stage running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64536
PC-25	Simple PLC 3 segments Acceleration and deceleration time selection	0 ~3	0	☆	64537
PC-26	Simple PLC 4- stage running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64538
PC-27	Simple PLC 4 segments Acceleration and deceleration time selection	0 ~3	0	☆	64539
PC-28	Simple PLC 5- stage running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64540
PC-29	Simple PLC 5 segments Acceleration and deceleration time selection	0 ~3	0	☆	64541
PC-30	Simple PLC 6- segment running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64542
PC-31	Simple PLC 6 segments Acceleration and deceleration time selection	0 ~3	0	☆	64543
PC-32	Simple PLC 7- segment running time	0.0s (h) ~6553.5s (h)	0.0s (h)	☆	64544
PC-33	Simple PLC 7- segment Acceleration and deceleration time selection	0 ~3	0	☆	64545
PC-50	Simple PLC operation	0 : s (second) 1 : h (hour)	0	☆	64562

	time unit				
PC-51	Multi-segment instruction 0 setting mode	0 : Function code PC-00 given 1 : AI1 2 : AI2 local potentiometer 3 : AI3 external keyboard potentiometer 4 : HDI input pulse 5 : PID 6 : preset frequency ( P0-08 ) given, UP/ DOWN can be modified	0	☆	64563
Pd group communication parameters					
Function code	name	Predetermined area	Factory default	Attribute	DEC address
Pd-00	Baud rate	0: 300BPS 1: 600BPS 2: 1200BPS 3: 2400BPS 4: 4800BPS 5: 9600BPS 6: 19200BPS 7: 38400BPS 8: 57600BPS	5	☆	64768
Pd-01	Data Format	0 : No parity ( 8-N-2 ) 1 : Even parity ( 8-E-1 ) 2 : Odd parity ( 8-O-1 ) 3 : No parity ( 8-N-1 )	3	☆	64769
Pd-02	Local address	1 ~247	1	☆	64770
Pd-03	Response delay	0~20ms	2	☆	64771
Pd-04	Communication timeout	0.0 ( invalid ), 0.1s ~60.0s	0.0	☆	64772
Pd-05	Data transfer format selection	Ones place: MODBUS 0 : Non-standard MODBUS protocol 1 : Standard MODBUS protocol	1	☆	64773
Pd-06	Communication reading current resolution	0: 0.01A 1: 0.1A	0	☆	64774
Pd-07	Reserve	-	0	☆	64775
PP group function code management					
PP-00	user password	0 ~65535	00000	☆	7936
PP-01	Parameter initialization	0 : No operation 01 : Restore factory parameters, excluding motor parameters 02 : Clear record information 03 : Restore factory parameters, including motor parameters	000	★	7937
PP-02	Function parameter group display selection	Units place: U group display selection	11	★	7938

		0 : no display 1 : display tens place: A group display selection 0 : no display 1 : display			
PP-04	Function code modification attribute	0 : Can be modified 1 : Can not be modified	0	☆	7940
A5 group control optimization parameters					
A5-00	DPWM switching upper limit frequency	0.00Hz~15.00Hz	12.00Hz	☆	42240
A5-01	PWM modulation method	0 : Asynchronous modulation 1 : Synchronous modulation	0	☆	42241
A5-02	Dead zone compensation mode selection	0 : No compensation 1 : Compensation mode 1 2 : Compensation mode 2	1	☆	42242
A5-03	Random PWM depth	0 : Random PWM is invalid 1 ~10 : PWM carrier frequency random depth	0	☆	42243
A5-04	Fast current limit enable	0 : Disabled 1 : Enable	1	☆	42244
A5-05	Current detection compensation	0 ~100	5	☆	42245
A5-06	Undervoltage point setting	60.0 ~140.0%	100.0%	☆	42246
A5-07	SVC optimization mode selection	0 : no optimization 1 : optimization mode 1 2 : optimization mode 2	1	☆	42247
A5-08	Dead time adjustment	100 ~200%	150%	☆	42248
A5-09	Overpressure point setting	200.0-2500.0V	Model set	★	42249

Function code	name	Predetermined area	Factory default	Attributes	DEC address
U0 group monitoring parameter table					
U0-00	Operating frequency ( Hz )	-	0.01Hz	●	28672
U0-01	Setting frequency ( Hz )	-	0.01Hz	●	28673
U0-02	Bus voltage ( V )	-	0.1V	●	28674
U0-03	Output voltage ( V )	-	1V	●	28675
U0-04	Output current ( A )	-	0.01A	●	28676
U0-05	Output power ( kW )	-	0.1kW	●	28677
U0-06	Output torque ( % )	-	0.1%	●	28678
U0-07	DI input status	-	1	●	28679
U0-08	DO output status	-	1	●	28680

U0-09	AI1 voltage ( V )	-	0.01V	●	28681
U0-10	AI2 voltage ( V )	-	0.01V	●	28682
U0-11	AI3 panel potentiometer voltage	-	0.01V	●	28683
U0-12	Count value	-	1	●	28684
U0-13	Length value	-	1	●	28685
U0-14	Load speed display	-	1	●	28686
U0-15	PID setting	-	1	●	28687
U0-16	PID feedback	-	1	●	28688
U0-17	PLC stage	-	1	●	28689
U0-18	HDI input pulse frequency (Hz)	-	0.01kHz	●	28690
U0-19	Feedback speed ( unit: 0.1Hz )	-	0.1Hz	●	28691
U0-20	Remaining running time	-	0.1Min	●	28692
U0-21	AI1 voltage before calibration	-	0.001V	●	28693
U0-22	AI2 voltage before correction	-	0.001V	●	28694
U0-23	Voltage before panel potentiometer calibration	-	0.001V	●	28695
U0-24	Line speed	-	1m / Min	●	28696
U0-25	Current power-on time	-	1Min	●	28697
U0-26	Current running time	-	0.1Min	●	28698
U0-27	HDI input pulse frequency	-	1Hz	●	28699
U0-28	Communication settings	-	0.01%	●	28700
U0-30	Main frequency X display	-	0.01Hz	●	28702
U0-31	Auxiliary frequency Y display	-	0.01Hz	●	28703
U0-32	View the value of any memory address	-	1	●	28704
function code	name	Predetermined area	Factory default	Attributes	DEC address
U0-35	Target torque ( % )	-	0.1%	●	28707
U0-37	Power factor angle	-	0.1°	●	28709
U0-39	Reserve	-	1V	●	28711
U0-40	Reserve	-	1V	●	28712
U0-41	DI input status visual display	-	1	●	28713
U0-42	Visual display of D0 input status	-	1	●	28714
U0-43	DI function status visual display 1 ( Function 01-40)	-	1	●	28715
U0-44	DI function status visual display 2 ( Function 41-80)	-	1	●	28716
U0-45	accident details	-	1	●	28717
U0-59	Setting frequency ( % )	-	0.01%	●	28731
U0-60	Operating frequency ( % )	-	0.01%	●	28732
U0-61	Inverter status	-	1	●	28733
U0-62	Current fault code	-	1	●	28734
U0-65	Torque upper limit	-	0.1%	●	28737

## Chapter 5 Fault Diagnosis and Countermeasures

### 5.1 Fault alarm and countermeasures

YL620-H inverter has a total of 24 warning messages and protection functions. Once a fault occurs, the protection function will operate, the inverter will stop output, the inverter fault relay contact will act, and the fault code will be displayed on the inverter display panel. Before seeking service, the user can perform self-examination according to the prompts in this section, analyze the cause of the failure, and find a solution. If it belongs to the reasons described in the dotted box, please seek service, contact the agent of the inverter you purchased or contact our company directly.

Among the 21 warning messages, Err22 is a hardware overcurrent or overvoltage signal. In most cases, a hardware overvoltage fault causes Err22 to alarm.

Fault name	Fault Code	Trouble shooting	Troubleshooting countermeasures
Inverter unit protect	Err01	<ol style="list-style-type: none"> <li>1. Short circuit of inverter output circuit</li> <li>2. The wiring of the motor and the inverter is too long</li> <li>3. The module is overheated</li> <li>4. The internal wiring of the inverter is loose</li> <li>5. The main control board is abnormal</li> <li>6. The drive board is abnormal</li> <li>7. Abnormality of the inverter module</li> </ol>	<ol style="list-style-type: none"> <li>1. Eliminate peripheral faults</li> <li>2. Install reactor or output filter</li> <li>3. Check if the air duct is blocked and the fan is correct</li> <li>Work often and troubleshoot problems</li> <li>4. Plug in all connecting wires</li> <li>5. Seek technical support</li> <li>6. Seek technical support</li> <li>7. Seek technical support</li> </ol>
Accelerating overcurrent	Err02	<ol style="list-style-type: none"> <li>1. There is a grounding or short circuit in the output circuit of the inverter</li> <li>2. The control mode is vector and no parameter identification is performed</li> <li>3. The acceleration time is too short</li> <li>4. Manual torque boost or V/F curve is inappropriate</li> <li>5. Low voltage</li> <li>6. Start the rotating motor</li> <li>7. Sudden load during acceleration</li> <li>8. The inverter selection is too small</li> </ol>	<ol style="list-style-type: none"> <li>1. Eliminate peripheral faults</li> <li>2. Perform motor parameter identification</li> <li>3. Increase acceleration time</li> <li>4. Adjust the manual lifting torque or V/F curve</li> <li>5. Adjust the voltage to the normal range</li> <li>6. Choose speed tracking start or wait for the motor to stop</li> <li>Start again</li> <li>7. Cancel the sudden load</li> <li>8. Choose a frequency converter with a higher power rating</li> </ol>
Deceleration overcurrent	Err03	<ol style="list-style-type: none"> <li>1. There is a grounding or short circuit in the output circuit of the inverter</li> <li>2. The control mode is vector and no parameter identification is performed</li> <li>3. The deceleration time is too short</li> </ol>	<ol style="list-style-type: none"> <li>1. Eliminate peripheral faults</li> <li>2. Perform motor parameter identification</li> <li>3. Increase the deceleration time</li> <li>4. Adjust the voltage to the normal</li> </ol>

		<ol style="list-style-type: none"> <li>4. Low voltage</li> <li>5. Sudden load added during deceleration</li> <li>6. There is no additional braking unit and braking resistor</li> </ol>	<ol style="list-style-type: none"> <li>range</li> <li>5. Cancel the sudden load</li> <li>6. Install braking unit and resistor</li> </ol>
Constant speed overcurrent	Err04	<ol style="list-style-type: none"> <li>1. There is a grounding or short circuit in the output circuit of the inverter</li> <li>2. The control mode is vector and no</li> </ol>	<ol style="list-style-type: none"> <li>1. Eliminate peripheral faults</li> <li>2. Perform motor parameter identification</li> </ol>
Acceleration overvoltage	Err05	<ol style="list-style-type: none"> <li>1. The input voltage is too high</li> <li>2. There is an external force that drives the motor to run during acceleration</li> <li>3. The acceleration time is too short</li> <li>4. There is no additional braking unit and braking resistor</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the voltage to the normal range</li> <li>2. Cancel the external power or install a braking resistor</li> <li>3. Increase acceleration time</li> <li>4. Install brake unit and resistor</li> </ol>
Save speed overvoltage	Err06	<ol style="list-style-type: none"> <li>1. The input voltage is too high</li> <li>2. There is an external force that drives the motor to run during acceleration</li> <li>3. The deceleration time is too short</li> <li>4. There is no additional braking unit and braking resistor</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the voltage to the normal range</li> <li>2. Cancel the external power or install a braking resistor</li> <li>3. Increase acceleration time</li> <li>4. Install brake unit and resistor</li> </ol>
Constant speed overvoltage	Err07	<ol style="list-style-type: none"> <li>1. The input voltage is too high</li> <li>2. There is an external force that drives the motor to run during operation</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the voltage to the normal range</li> <li>2. Cancel the external power or install a braking resistor</li> </ol>
Fault name	Fault Code	Trouble shooting	Troubleshooting countermeasures
Control power Fault	Err08	<ol style="list-style-type: none"> <li>1. The input voltage is not within the range specified by the specification</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the voltage to within the range required by the specification</li> </ol>
Undervoltage fault	Err09	<ol style="list-style-type: none"> <li>1. Instantaneous power failure</li> <li>2. The input voltage of the inverter is not within the range required by the specification</li> <li>3. Abnormal bus voltage</li> <li>4. The rectifier bridge and buffer resistance are abnormal</li> <li>5. The drive board is abnormal</li> <li>6. Abnormal control board</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset the fault</li> <li>2. Adjust the voltage to the normal range</li> <li>3. Seek technical support</li> <li>4. Seek technical support</li> <li>5. Seek technical support</li> <li>6. Seek technical support</li> </ol>
Inverter overload	Err10	<ol style="list-style-type: none"> <li>1. Whether the load is too large or the motor is blocked</li> <li>2. The inverter selection is too small</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce the load and check the motor and mechanical conditions</li> <li>2. Choose a frequency converter with a higher power rating</li> </ol>
Motor overload	Err11	<ol style="list-style-type: none"> <li>1. Whether the setting of motor</li> </ol>	<ol style="list-style-type: none"> <li>1. Set this parameter correctly</li> </ol>

		<p>protection parameter P9-01 is appropriate</p> <ol style="list-style-type: none"> <li>Whether the load is too large or the motor is blocked</li> <li>The inverter selection is too small</li> </ol>	<ol style="list-style-type: none"> <li>Reduce the load and check the motor and mechanical conditions</li> <li>Choose a frequency converter with a higher power rating</li> </ol>
Input phase loss	Err12	<ol style="list-style-type: none"> <li>The three-phase input power is abnormal</li> <li>The drive board is abnormal</li> <li>The lightning protection board is abnormal</li> <li>The main control board is abnormal</li> </ol>	<ol style="list-style-type: none"> <li>Check and eliminate the problems in the peripheral circuit</li> <li>Seek technical support</li> <li>Seek technical support</li> <li>Seek technical support</li> </ol>
Output phase loss	Err13	<ol style="list-style-type: none"> <li>The lead from the inverter to the motor is abnormal</li> <li>The three-phase output of the inverter</li> </ol>	<ol style="list-style-type: none"> <li>Eliminate peripheral faults</li> <li>Check whether the three-phase winding of the motor is normal and</li> </ol>
Module is overheated	Err14	<ol style="list-style-type: none"> <li>The ambient temperature is too high</li> <li>The air duct is blocked</li> <li>The fan is damaged</li> <li>The module thermistor is damaged</li> <li>The inverter module is damaged</li> </ol>	<ol style="list-style-type: none"> <li>Lower the ambient temperature</li> <li>Clean up the air duct</li> <li>Replace the fan</li> <li>Replace the thermistor</li> <li>Replace the inverter module</li> </ol>
external device Fault	Err15	<ol style="list-style-type: none"> <li>The multi-function terminal DI inputs external fault signals</li> <li>The virtual IO function inputs external fault signals</li> </ol>	<ol style="list-style-type: none"> <li>Reset operation</li> <li>Reset operation</li> </ol>
communication fail	Err16	<ol style="list-style-type: none"> <li>The upper computer is not working properly</li> <li>The communication line is abnormal</li> <li>Reservation</li> <li>The communication parameter PD group setting is incorrect</li> </ol>	<ol style="list-style-type: none"> <li>Check the upper computer wiring</li> <li>Check the communication cable</li> <li>Correctly set the type of communication expansion card</li> <li>Set the communication parameters correctly</li> </ol>
Contactor failure	Err17	<ol style="list-style-type: none"> <li>The drive board and power supply are abnormal</li> <li>The contactor is abnormal</li> </ol>	<ol style="list-style-type: none"> <li>Replace the drive board or power board</li> <li>Replace the contactor</li> </ol>
Current Detection Fault	Err18	<ol style="list-style-type: none"> <li>Check the abnormality of the Hall device</li> <li>The drive board is abnormal</li> </ol>	<ol style="list-style-type: none"> <li>Replace the Hall device</li> <li>Replace the drive board</li> </ol>
Motor tuning Fault	Err19	<ol style="list-style-type: none"> <li>The motor parameters are not set according to the nameplate</li> <li>The parameter identification process has timed out</li> </ol>	<ol style="list-style-type: none"> <li>Set the motor parameters correctly according to the nameplate</li> <li>Check the lead from the inverter to the motor</li> </ol>

EEPROM Read and write failure	Err21	. 1 , the EEPROM chip damage	1. Replace the main control board
Fault name	Fault Code	Trouble shooting	Troubleshooting countermeasures
Frequency converter hardware malfunction	Err22	1. There is overpressure 2. There is overcurrent	1. According to the overvoltage fault handling 2. According to the over-current fault processing
Short to ground	Err23	1. Short circuit of motor to ground	1. Replace the cable or motor
Accumulated running time reaches the fault	Err26	1. The accumulated running time reaches the set value	1. Use the parameter initialization function to clear the record information
Custom Fault 1	Err2 7	1. Input the signal of user-defined fault 1 through the multi-function terminal DI 2. Input the signal of user-defined fault 1 through the virtual IO function	1. Reset operation 2. Reset operation
Custom Fault 2	Err2 8	1. Input the signal of user-defined fault 2 through the multi-function terminal DI	1. Reset operation 2. Reset operation
Accumulated power-on time reaches the fault	Err29	1. The accumulated power-on time reaches the set value	1. Use the parameter initialization function to clear the record information
Offload fault	Err30	1. The inverter operating current is less than P9-64	1. Confirm whether the load is separated or whether the parameter settings of P9-64 and P9-65 conform to the actual operating conditions
PID feedback lost during operation	Err31	. 1 , the PID feedback is smaller than P A-26 is the set value	1. Check the PID feedback signal or set PA-26 to an appropriate value
Wave-by-wave current limit	Err40	1. Whether the load is too large or the motor is blocked	1. Reduce the load and check the motor and mechanical conditions
Switching motor failure during operation	Err41	1. Change through the terminal during the operation of the inverter Current motor selection	1. Perform motor switching operation after the inverter has stopped



Motor over temperature Fault	Err45	<ol style="list-style-type: none"> <li>1. The temperature sensor wiring is loose</li> <li>2. The motor temperature is too high</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the temperature sensor wiring and troubleshoot</li> <li>2. Reduce the carrier frequency or take other heat dissipation measures to heat the motor</li> </ol>
initial position mistake	Err51	<ol style="list-style-type: none"> <li>1. The deviation between the motor parameters and the actual is too large</li> </ol>	<ol style="list-style-type: none"> <li>1. Reconfirm whether the motor parameters are correct, and focus on whether the rated current is set too small</li> </ol>

## 5.2 Common faults and solutions

The following fault conditions may be encountered during the use of the inverter, please refer to the following methods for simple fault analysis:

Table 4-1 Common faults and solutions

Serial number	Failure phenomenon	Possible Causes	Solution
1	No display after power-on	<p>The grid voltage is not or too low;</p> <p>The switching power supply on the drive board of the inverter is faulty; the rectifier bridge is damaged;</p> <p>The buffer resistance of the inverter is damaged;</p> <p>The control panel, keyboard, and keyboard wire are faulty;</p>	<p>Check the input power;</p> <p>Seek service from manufacturers;</p> <p>Check the bus voltage;</p> <p>Seek service from manufacturers;</p> <p>Replace the keyboard cable or contact the manufacturer;</p> <p>Seek service from manufacturers;</p>
2	Power-on repeat display [ ]	<p>The wiring between the drive board and the control board is in poor contact; the related components of the control board are damaged;</p> <p>The grid voltage is too low;</p> <p>The switching power supply problem of the driver board ;</p>	<p>Re-plug the motherboard pin header;</p> <p>Seek service from manufacturers;</p> <p>Check the grid voltage;</p> <p>Seek service from manufacturers;</p>
3	Power-on display " Err23 " alarm	<p>The motor or output wire is short-circuited to the ground;</p> <p>the inverter is damaged;</p>	<p>Use a shaker to measure the insulation between the motor and the output line; seek the service of the manufacturer;</p>

4	A power display to normal, which was run shows "[ ]" and immediately shut down	The fan is damaged or blocked; There is a short circuit in the peripheral control terminal wiring;	Replace the fan; Eliminate external short-circuit faults; Seek service from manufacturers;
5	Frequently reported Err14 (Module overheating) failure	The carrier frequency is set too high. The fan is damaged or the air duct is blocked. The internal components of the inverter are	Reduce the carrier frequency ( P0-15 ). Replace the fan and clean the air duct. Seek service from manufacturers.
6	After the inverter is running Electric machine does not rotate	The motor wire is not connected properly; Inverter parameter setting error (motor parameter); bad connection between the drive board and the control board; Drive board failure;	Reconfirm the connection between the inverter and the motor; replace the motor or clear the mechanical fault; Check and reset the motor parameters;
7	The inverter frequently reports over-current and over-voltage faults.	The motor parameters are set incorrectly; The acceleration and deceleration time is inappropriate; Load fluctuations;	Reset motor parameters or perform motor Tuning Set appropriate acceleration and deceleration time; Seek service from manufacturers;
8	Power-on display <b>AAAAA</b>	The related components on the control board are broken;	Replace the control board;

## 5.3 Communication data address definition

### Section 1 communication data address definition

Communication data can be divided into function code data and non-function code data. The latter includes operating commands, operating status, operating parameters, and alarm information.

#### 1.1 Function code data

The function code data is an important setting parameter of the inverter. There are group P and group A function parameters. The parameter groups are as follows:

Function code data	Group P (read and write)	P0、P1、P2、P3、P4、P5、P6、P7、P8、P9、PA、PB、PC、PD、PE、PF
	Group A (read and write)	A0、A1、A2、A3、A4、A5、A6、A7、A8、A9、AA、AB、AC、AD、AE、AF

The function code data communication address is defined as follows:

##### 1. When reading function code data for communication

For P0-PF and A0-AF group function code data, the high sixteen digits of the communication address are directly the function group number, and the low sixteen digits are directly the serial number of the function code in the function group. Examples are as follows:

P0-16 function parameter, its communication address is P010H, where P0H represents the P0 group function parameter, 10H represents the hexadecimal data format of the serial number 16 in the function group

AC-08 function parameter, its communication address is AC08, where ACH represents the function parameter of the AC group, 08H represents the hexadecimal data format of the serial number 8 of the function code in the function group

##### 2. When writing function code data for communication

For the function code data of the P0-PF group, the high sixteen bits of the communication address are classified as 00-0F or P0-PF according to whether it is written into the EEPROM. The low sixteen bits are directly the serial number of the function code in the function group, for example:

Write function in parameter P0-16

When you don't need to write to EEPROM, its communication address is 0010H

When writing to EEPROM, its communication address is P010H

For A0-AF group function code data, the high sixteen bits of the communication address can be divided into 10-4F or A0-AF according to whether it needs to be written into the EEPROM. The low sixteen bits are directly the serial number of the function code in the function group, for example, as follows :

Write function parameters AC-08

When there is no need to write EEPROM, its communication address is 4C08H

When writing to EEPROM, its communication address is AC08H

## 1.2 Non-function code data

Non-function code data	Status data (Readable)	Group U monitoring parameters, inverter fault description, inverter running status
	control parameter (Writable)	Control commands, communication settings, digital output terminal control, analog output AO1 control, analog output AO2 control, high-speed pulse ( FMP ) output control, parameter initialization

### 1.2.1 Status data

The status data is divided into U group monitoring parameters, inverter fault description, inverter running status

U group parameter monitoring parameter

For the description of the monitoring data of group U, see related descriptions in Chapter 5 and Chapter 6, and its address is defined as follows:

U0-UF , the high sixteen bits of the communication address are 70 ~ 7F , and the low sixteen bits are the serial numbers of the monitoring parameters in the group. Examples are as follows:

U0-11 , its communication address is 700BH

Inverter fault description

When the communication reads the inverter fault, the communication address is fixed at 8000H , and the upper computer can obtain the current inverter fault code by reading the address data. The fault code description is defined in the function code of P9-14 in Chapter 5

Inverter running status

When reading the communication inverter operating state, as a result of the communication address 3000H , the host computer by reading the local Yan data, may retrieve the current operating status information of the inverter, is defined as follows:

Inverter running status communication address	Read status word definition
3000H	1 : Forward running
	2 : Reverse operation
	3 : Shutdown

### 1.2.2 Control parameters

Control parameters are divided into control commands, digital output terminal control, analog output AO1 control, analog output AO2 control, high-speed pulse ( FMP ) output control

control commands

When P0-02 ( command source ) is selected as 2 : communication control, the host computer can realize the start and stop related command control of the inverter through this communication address. The control commands are defined as follows:

Control command communication address	Command function
2000H	1 : Forward running
	2 : Reverse operation
	3 : Forward jog
	4 : Reverse jog
	5 : Free stop
	6 : Decelerate to stop
	7 : Fault reset

### 1.2.3 Communication settings

The communication setting value is mainly selected as the given data of the communication given time among the frequency source, torque upper limit source, VF separation voltage source, PID given source, PID feedback source, etc. The communication address is 1000H , and the host computer sets this When communicating address value, its data range is -10000 ~10000 , corresponding to relative given value -100.00%-100.00%

### 1.2.4 Digital output terminal control

When the digital output terminal function is selected as 20 : communication control, the host computer can realize the control of the inverter's digital output terminal through the communication address, which is defined as follows:

Digital output terminal control communication address	Command content
2001H	Bit0 : D01 output control Bit1 : D02 output control Bit2 : RELAY1 output control Bit3 : RELAY2 output control Bit4 : FMR output control Bit5 : VD01 Bit6 : VD02

	Bit7 : VD03 Bit8 : VD04 Bit9 : VD05
--	---

### 1.2.5 Analog output A01 , A02 , high-speed pulse output FMP control

When the analog output A01 , A02 , high-speed pulse output FMP output function is selected as 12 : when the communication setting, the host computer can realize the control of the inverter's analog and high-speed pulse output through the communication address, which is defined as follows

Output control		Command
A01	2002H	0 ~7FFF means 0% ~100%
A02	2003H	
FMP	2004H	

### 1.2.6 Parameter initialization

This function needs to be used when it is necessary to initialize the parameters of the inverter through the upper computer.

If PP-00 ( user password ) is not 0 , you need to pass the password verification first. After the verification is passed, after 30 seconds, the upper computer will initialize the parameters.

The communication address for user password verification is 1F00H , directly write the correct user password to this address, then the password verification can be completed

The communication address for parameter initialization is 1F01H , and its data content is defined as follows:

Parameter initialization communication address	Command function
1F01H	1 : Restore factory parameters
	2 : Clearly record information
	4 : Restore user backup parameters
	501 : Backup user current parameters

## Section 2 Modbus communication protocol

Series inverters provide RS485 communication interface and support Modbus-RTU communication protocol. Users can count computer or PLC centralized control, sets the operation command via the

communication protocol, to modify or read function code reading taken inverter working status and fault information, and the like.

## 2.1 Agreement content

The serial communication protocol defines the content and format of information transmitted in serial communication. Which comprises: polling (or wide broadcast) format; master coding method, include: required function code operation, and error checking of data transmission. Slave response should also use the same configuration, including: operation confirmation, return data and error checking. If the slave has an error when receiving information , or cannot complete the action required by the master, it will organize a fault message as a response and feed it back to the master.

### 2.1.1 Application method

Drive access includes R & lt S 485 bus ~ single master more from the ~ P C / P the LC control network, as a communication slave.

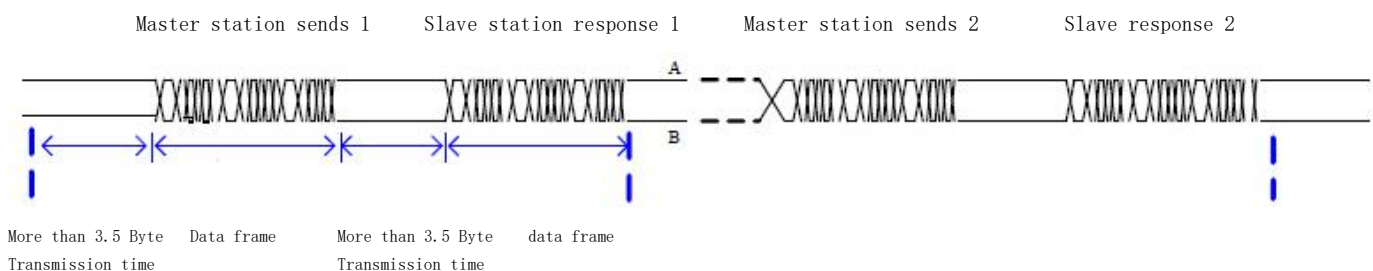
### 2.1.2 Bus structure

( 1 ) The hardware interface needs to insert RS485 expansion card PC60TX1 hardware on the inverter .

( 2 ) Topological structure single-master multi-slave system. Each communication device in the network has a unique slave address. One of the devices serves as a communication host (usually a flat PC host computer, PLC , HMI, etc.). The host initiates communication to read or write parameters from the slave . Other devices are communication slaves, responding to the host's inquiries or communication operations on this machine. At the same time, only one device can send data, while the other devices are in the receiving state.

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

( 3 ) The communication transmission mode is asynchronous serial, half-duplex transmission mode. In the process of serial asynchronous communication, data is sent one frame of data at a time in the form of messages. The MODBUS-RTU protocol stipulates that when the idle time of no data on the communication data line is greater than the transmission time of 3.5Byte , it means a new one. The start of the communication frame.



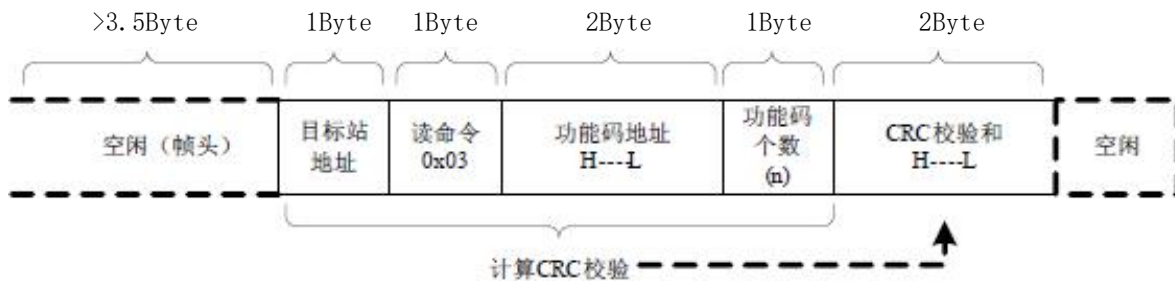
The built-in communication protocol of the series inverter is Modbus-RTU slave communication

protocol, which can respond to the "query / command" of the host, or make corresponding actions according to the "query / command" of the host, and respond to the communication data.

The host can refer to a personal computer ( PC ), an industrial control device or a programmable logic controller ( PLC ), etc. The host can communicate with a certain slave alone, or publish broadcast information to all lower slaves . For the individual access "query / command" of the master , the accessed slave must return a response frame rate; for the broadcast information sent by the master, the slave does not need to respond to the master.

### 2.1.3 Communication data structure

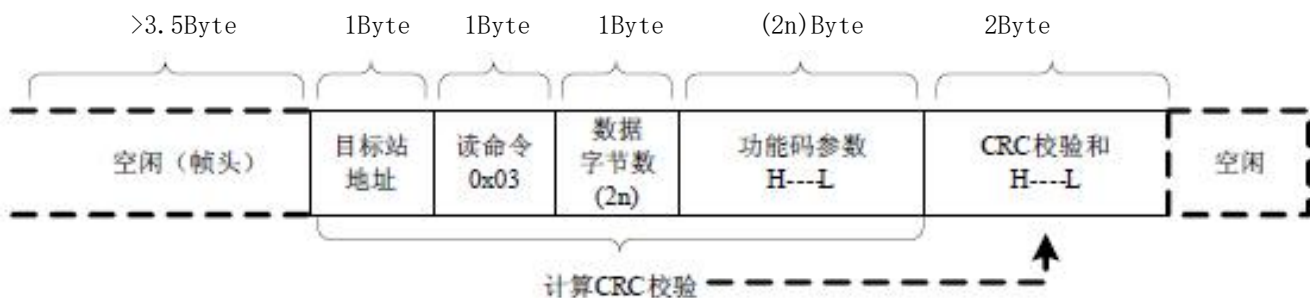
The Modbus protocol communication data format of the series inverter is as follows, the inverter only supports the reading or writing of Word type parameters. The corresponding communication read operation command is 0x03 ; the write operation command is 0x06 , which does not support byte or bit read and write operations:



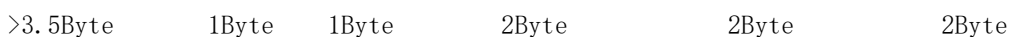
Master read command frame

Theoretically, the host computer can read several consecutive function codes at one time (that is, n can be up to 12 ), but be careful not to cross the last function code of this function code group, otherwise it will reply with an error.

Read response frame from the station



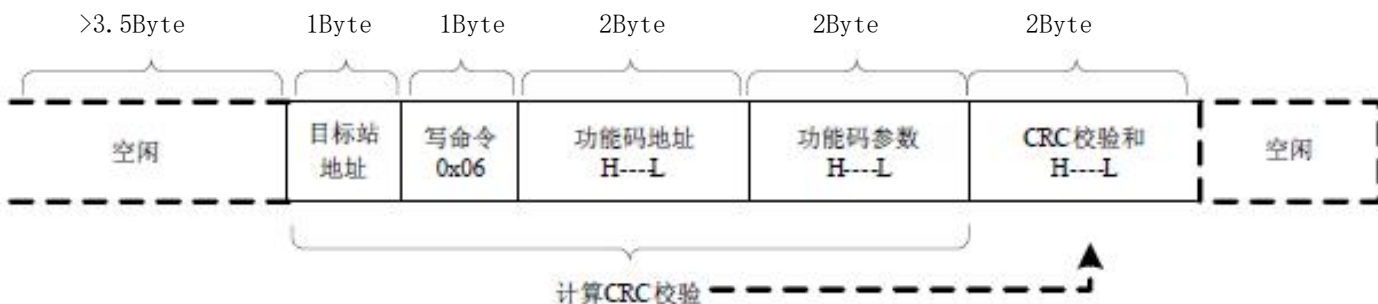
Master write command frame





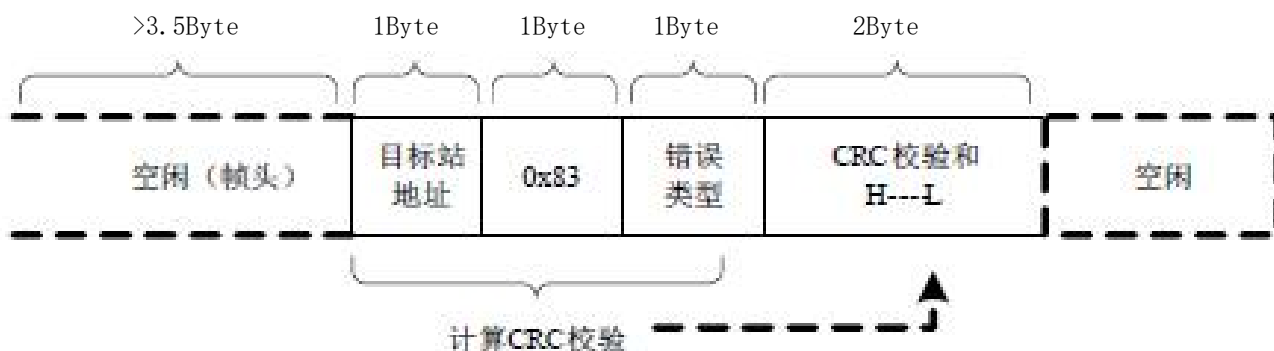


Slave write response frame

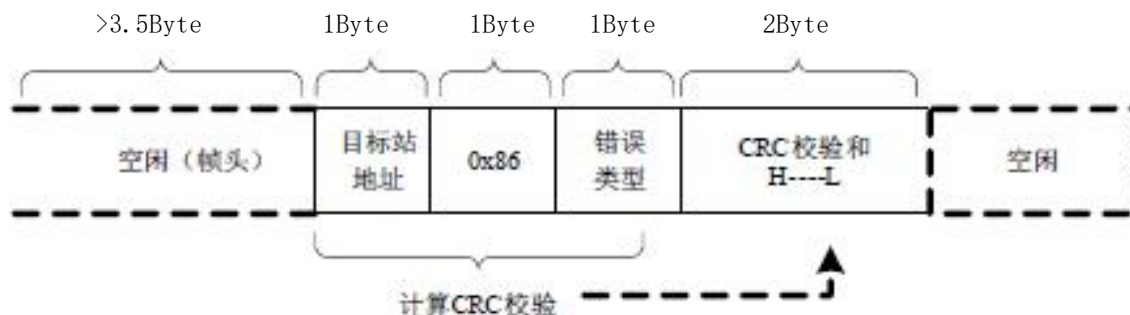


If the machine detects the communication from the frame error , or other causes unsuccessful reading and writing , it will answer the wrong frame.

Slave read response error frame



Slave write response error frame



Error type

- 01 : command code error
- 02 : address error
- 03 : Data error

04 : Command cannot be processed

#### 2.1.4 Data frame field description:

Frame header START	Idle for transmission time greater than 3.5 characters
Slave address ADR	Communication address range: 1~247 ; 0= broadcast address
Command code CMD	03 : read slave parameters; 06 : write slave parameters
Function code address H	Internal drive parameter address 16 hexadecimal; divided into functional and non-functional code pattern ( such as operating state parameters, run commands, etc.) and other parameters, refer to the address defined. When transmitting, the high byte is in front and the low byte is in the back
Function code address L	
Function code number H	The number of function codes read in this frame , if it is 1, it means to read 1 function code. When transmitting, the high byte comes first and the low byte comes after. This agreement can be rewritten only once . 1 function codes, not the field.
Number of function codes L	
Data H	The response data, or specially written data, is transmitted with the high byte first and the low byte after.
Data L	
CRC CHK high bit	Detection value: CRC16 check value. When transmitting, the high byte comes first, and the low byte comes after. The calculation method is detailed in the description of CRC check in this section .
CRC CHK low bit	
END	3.5 character time

#### 2.1.5 CMD verification method :

Check mode - CRC check mode: CRC ( Cyclical Redundancy Check ) uses the R TU frame format, and the message includes an error detection field based on the CRC method. The CRC field detects the content of the entire message. The CRC field is two bytes and contains a 16 -bit binary value. It is calculated by the transmission equipment and added to the message. The receiving device recalculates the CRC of the received message and compares it with the value in the received CRC field. If the two CRC values are not equal, it means that there is an error in the transmission.

CRC is first stored in 0xFFFF , and then a process is called to process the continuous 8 -bit byte in the message and the value in the current register . Only the 8Bit data in each character is valid for CRC , and the start bit, stop bit and parity bit are invalid.

During the CRC generation process, each 8 -bit character is individually exclusive OR ( XOR ) with the contents of the register , and the result moves to the least significant bit, and the most significant bit is filled with 0 . The LSB is extracted and tested. If the LSB is 1 , the register alone is XORed with the preset value. If the LSB is 0 , it is not performed. The whole process should be repeated 8 times. After the last bit ( 8th bit) is completed, the next

A . 8 -bit byte and the individual current values of different registers or . The value in the final

register is the CRC value after all bytes in the message are executed .

When CRC is added to the message, the low byte is added first, and then the high byte. The simple function of CRC is as follows:

A . 8 -bit byte and the individual current values of different registers or . The value in the final register is the CRC value after all bytes in the message are executed .

When CRC is added to the message, the low byte is added first, and then the high byte. The simple function of CRC is as follows:

### 2.1.6 Function code parameter address marking rules:

Read and write function code parameters (some function codes cannot be changed and are only for manufacturers or monitoring use):

Use function code group number and label as parameter address expression rule:

High byte: P0~PF ( P group), A0~AF ( A group), 70~7F ( U group)

Low byte: 00~FF

For example: if you want to range the function code P3-12 , the access address of the function code is expressed as 0 × F30C ;

Notice:

PF group: can neither read the parameters nor change the parameters;

U group: can only read the parameters, and can not change the parameters.

Some parameters cannot be changed when the inverter is running; some parameters cannot be changed no matter what state the inverter is in; to change the function code parameters, pay attention to the parameter range, unit, and related instructions.

Function code group number	Correspondence access address	Communication to modify the function code address in RAM
P0 ~PE group	0×F000 ~0×FEFF	0×0000 ~0×0EFF
A0 ~ AC group	0×A000 ~0×ACFF	0×4000 ~0×4CFF
U0 group	0×7000 ~0×70FF	

Note that since the EEPROM frequently stored, will reduce the EEPROM life, so some function code pass under inquiry mode, no storage, as long as the changes RAM value on it.

If it is a group P parameter, to realize this function, it can be realized by changing the high bit F of the function code address to 0 . If it is a group A parameter, to realize this function, it can be realized only by changing the high bit A of the function code address to 4 .

The corresponding function code address is expressed as follows:

High byte: 00~0F ( P group), 40~4F ( A group)

Low byte: 00~FF

like:

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

Function code A0-05 is not stored in EEPROM , and the address is expressed as 4005 ;

This address means that only RAM can be written , but not read . When reading, it is an invalid address.

For all parameters, the command code 07H can also be used to realize this function.

### 2.1.7 Shutdown / operation parameter section :

Parameter	Parameter	Parameter	Parameter Description
1000	* Communication setting value (decimal)	1010	PID settings
1001	Operating frequency	1011	PID feedback
1002	bus voltage	1012	PLC steps
1003	The output voltage	1013	PULSE input pulse frequency, unit 0.01kHz
1004	Output current	1014	Feedback speed, unit 0.1Hz
1005	Output Power	1015	Remaining running time
1006	Output torque	1016	AI1 voltage before calibration
1007	Running speed	1017	AI2 voltage before correction
1008	DI input flag	1018	AI3 voltage before correction
1009	DO output flag	1019	Line speed
100A	AI1 voltage	101A	Current power-on time
100B	AI2 voltage	101B	Current running time
100C	AI3 voltage	101C	PULSE input pulse frequency, unit 1Hz
100D	Count value input	101D	Communication settings
100E	Length value input	101E	Actual feedback speed
100F	Load speed	101F	Main frequency X display
		1020	Auxiliary frequency Y display

#### Note :

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

For frequency dimension data, the percentage is relative to the maximum frequency ( P0-10 ); for torque dimension data, the percentage is P2-10 , A2-48 , A3-48 , A4-48 (torque The upper limit digital setting corresponds to the first, second, third and fourth motors respectively).

Control command input to the inverter: (write only)

Command word address	Command function
2000	0001 : Forward running
	0002 : Reverse operation
	0003 : Forward jog
	0004 : Reverse jog
	0005 : Free stop
	0006 : Decelerate to stop
	0007 : fault reset

Read inverter status: (read only)

Status word address	Status word function
---------------------	----------------------

3000	0001 : Forward running
	0002 : Reverse operation
	0003 : shutdown

Parameter lock password verification: (If the return is 8888H , it means the password verification passed)

Password address	Enter the content of the password
1F00	*****

**2.1.8 Digital output terminal control: (write only)**

Command address	Command content
2001	BIT0 : D01 output control BIT1 : D02 output control BIT2 : REL A Y1 output control BIT3 : REL A Y2 output control BIT4 : FMR output control BIT5 : VD01 BIT6 : VD02 BIT7 : VD03 BIT8 : VD04 BIT9 : VD05

**2.1.9 Analog output A01 control: (write only)**

Command address	Command content
2002	0 ~7FFF means 0 %~100 %

**2.1.10 Analog output A02 control: (write only)**

Command address	Command content
2003	0 ~7FFF means 0 %~100 %

**2.1.11 Pulse ( PULSE ) output control: (write only)**

Command address	Command content
2004	0 ~7FFF means 0 %~100 %

## 2.2 Description of inverter fault :

Inverter fault address	Inverter fault information	
8000	0000 : No fault 0001 : reserved 0002 : Accelerating overcurrent 0003 : Deceleration overcurrent 0004 : Constant speed overcurrent 0005 : Accelerating overvoltage 0006 : Deceleration overvoltage 0007 : Constant speed overvoltage 0008 : snubber resistor overload fault 0009 : Undervoltage fault 000A : Inverter overload 000B : Motor overload 000C : Input phase loss 000D : Output phase loss 000E : The module is overheated 000F : External fault 0010 : Communication is abnormal 0011 : The contactor is abnormal 0012 : Current detection failure 0013 : Motor tuning failure 0014 : Encoder /PG card failure	0015 : Parameter read and write exception 0016 : Inverter hardware failure 0017 : Short-circuit fault of motor to ground 0018 : reserved 0019 : reserved 001A : The running time arrives 001B: User-defined fault 1 001C: User-defined fault 2 001D: On power-up time arrives 001E : Offload 001F : PID feedback is lost during operation 0028 : Fast current limit timeout fault 0029 : Switching motor failure during operation 002A: Speed deviation is too large 002B : Motor overspeed 002D : Motor over temperature 005A : The number of encoder lines is set incorrectly 005B : The encoder is not connected 005C : Initial position error 005E : Speed feedback error

## 2.3 Description of P D group communication parameters

Pd-00	Baud rate	Factory	6005
	Predetermined area	Units digit: MODUBS baud rate	
	0: 300BPS	5: 9600BPS	
	1: 600BPS	6: 19200BPS	
	2: 1200BPS	7: 38400BPS	

This parameter is used to set the data transmission rate between the host computer and the inverter. Note that the baud rate set by the host computer and the inverter must be the same, otherwise, the communication cannot be carried out. The greater the baud rate, the faster the

communication speed.

Pd-01	Data Format	Factory	0
	Predetermined area	0 : No parity: data format <8,N,2> 1 : Even inspection: data format <8,E,1> 2 : Odd parity: data format <8,0,1> 3 : No parity: data format <8-N-1>	

The data format set by the host computer and the inverter must be consistent, otherwise, the communication cannot be carried out.

Pd-02	Local address	Factory default	1
	Predetermined area	1~247 , 0 is the broadcast address	

When the local address is set to 0 , it is the broadcast address, which realizes the broadcast function of the host computer.

The local address is unique (except the broadcast address), which is the basis for the point-to-point communication between the host computer and the inverter.

Pd-03	Response delay	Factory default	2ms
	Predetermined area	0~20ms	

Response delay: It refers to the intermediate time between the end of the inverter receiving data and the sending of data to the upper computer. If less response delay in processing time of the system, the response delay to the processing system based on the time, such as longer than the response delay time of the processing system, the system at processing

After finishing the data, wait for a delay until the response delay time expires before sending the data to the upper computer.

Pd-04	Communication timeout	Factory default	0.0 s
	Predetermined area	0.0 s (invalid) ; 0.1 ~ 60.0s	

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

When the function code is set to a valid value, and if the communication time interval of next communication exceeds the communication timeout-based system will report the communication failure error ( Err16 ). Under normal circumstances, it is set to invalid. If you are in a continuous communication system , you can set the secondary parameters to monitor the communication status.

Pd-05	Communication protocol selection	Factory default	1
	Predetermined area	0 : Non-standard Modbus protocol; 1 : Standard Modbus protocol	

Pd-05=1 : Select the standard Modbus protocol.

05 = 0-PD : read command , it returns the number of bytes from the machine than standard Modbus protocol a multi-byte, see in particular the present Association Protocol 《5 Communication Data Structure 》 section.

Pd-06	Communication reading current resolution	Factory default	0
	Predetermined area	0: 0.01A; 1: 0.1A	

Used to determine the output unit of the current value when the communication reads the output current



# Warranty Agreement

1) The warranty period of this product is twelve months (subject to the barcode information of the fuselage). During the warranty period, follow the normal use of the instruction manual. If the product fails or is damaged, our company is responsible for free maintenance.

2) During the warranty period, if the damage is caused by the following reasons, a certain maintenance fee will be charged:

- A. Damage to the machine caused by mistakes in use and unauthorized repairs and alterations;
- B. Machine damage caused by fire, flood, abnormal voltage, other natural disasters and secondary disasters;
- C. Hardware damage caused by artificial drop and transportation after purchase;
- D. Damage to the machine caused by operation not in accordance with the user manual provided by our company;
- E. Failure and damage caused by obstacles other than the machine (such as external equipment factors);

3) When the product fails or is damaged, please fill in the contents of the "Product Warranty Card" correctly and in detail.

4) The maintenance fee shall be collected in accordance with the "Maintenance Price List" newly adjusted by our company.

5) This warranty card will not be reissued under normal circumstances. You must keep this card and show it to the maintenance personnel during the warranty period.

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

Yalang Electrical Appliance Factory  
Henglin  
Economic Development Zone  
Changzhou  
consumer hotline:  
URL:

## Customer feedback