苏特SUSWE

技术支持
technical support

通用矢量变频器
vector Frequency Inverter

SU-700/800/900/1000
SU-700/800/900/1000 series

使用说明书 V1.0

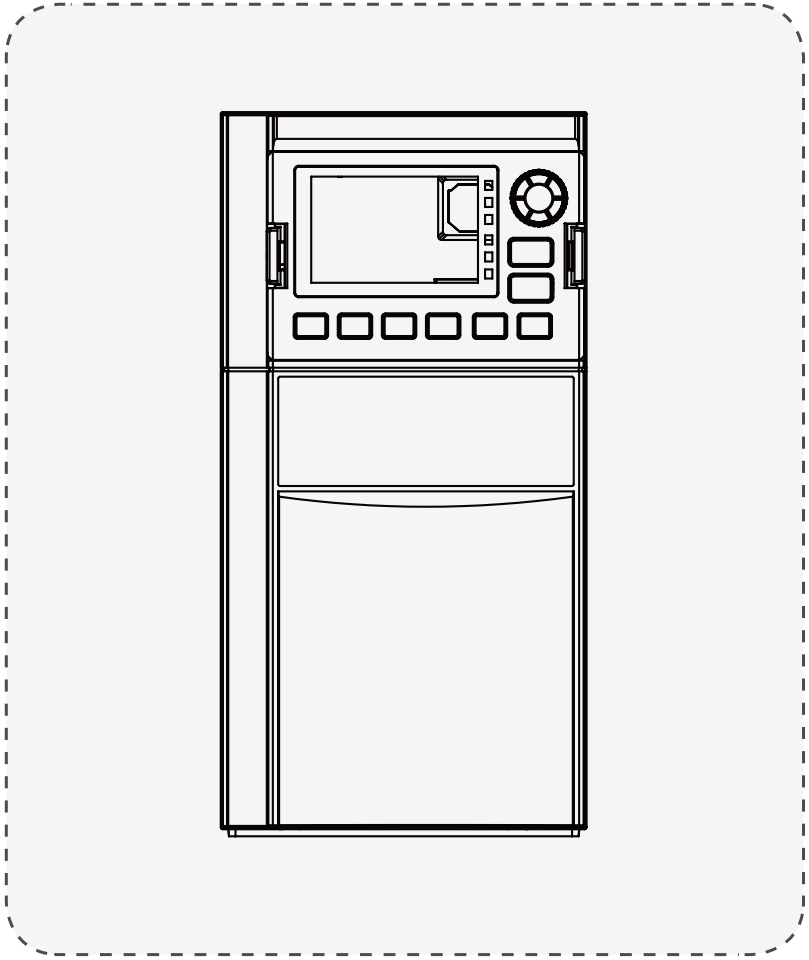
operating specification Manual V1.0

请在使用前仔细阅读本说明书，并请妥善保存以供今后参考。
please read this specification carefully before use
and please safety keep for future reference.

SUSWE

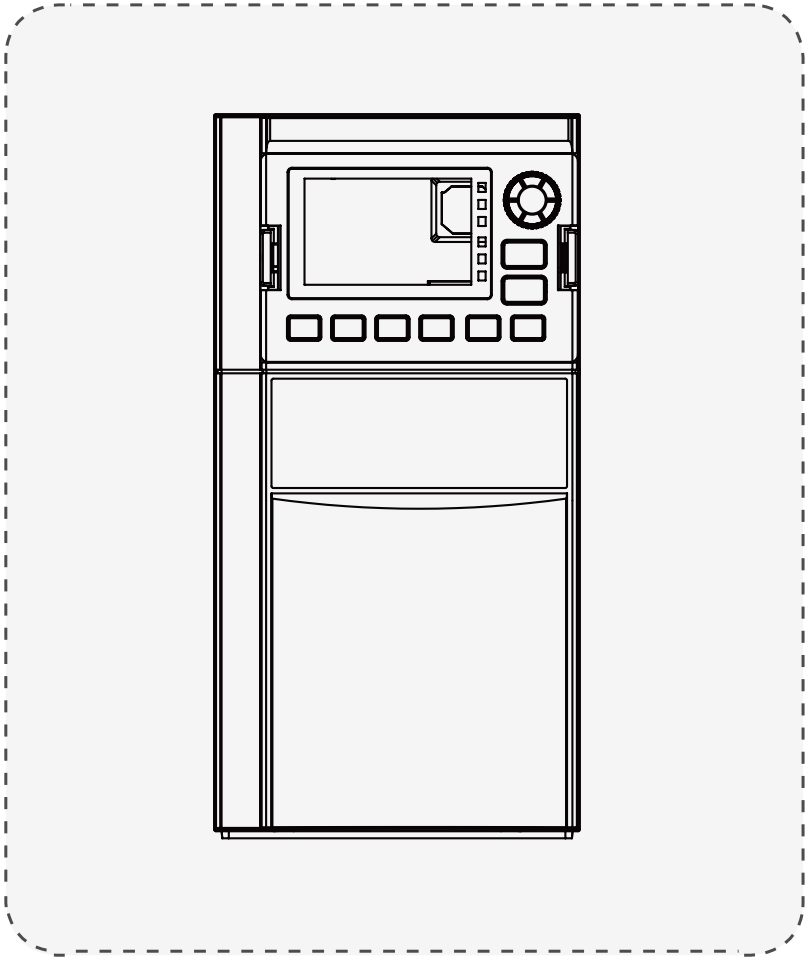
SU-700/800/900/1000型矢量变频器

使用说明书



SU-700/800/900/1000 series
vector frequency converter

operating specification Manual



感谢您选用本公司 700/800/900/1000 系列变频器产品。

请在使用之前仔细阅读本使用手册，以确保正确、安全的使用本产品。

在使用之前，请务必仔细阅读【安全注意事项】。

请妥善保管本使用手册，以便需要时查阅。若有任何的疑惑，请联系我们的客服或者技术支持，我们的专业人员将为您竭诚服务。

本使用手册提供 700/800/900/1000 系列变频器的相关信息，内容包括：

◇ 变频器的安全事项

◇ 变频器的安装和检查

◇ 变频器的接线说明

◇ 变频器的操作说明

◇ 所有参数说明

◇ 通讯协议说明

◇ 异常排除

本使用手册适合下列使用人员参考：

◇ 系统设计选型人员

◇ 安装或配线人员

◇ 调机人员

◇ 维护或保养人员

Thanks for you selecting and using our 700/800/900/1000 frequency converter products.

Please read this specification manual carefully before using to use this product correctly and safely.

Please read [safety notices] carefully before using.

Please keep this manual properly so that it is convenient for you to check and read when required. Any questions please contact our customer service staff to ask for technical support, our professionals will do best to service for you.

This operating manual provided the relate information of 700/800/900/1000 frequency converter, the contents include:

◇ safety notices of frequency converter

◇ installation and inspection of frequency converter

◇ wiring instruction of frequency converter

◇ operation instruction of frequency converter

◇ all parameters instruction

◇ communication agreement instruction

◇ troubleshooting

This operating manual suitable to be consulted by the below operators:

◇ system design and model select staffs

◇ installation or wiring staffs

◇ debugging staffs

◇ maintain or maintenance staffs

目录

Catalogue

第一章 产品信息

1.1 安全信息及注意事项

安全定义： 在本手册中，安全注意事项分以下两类：

⚠ 危险：由于没有按要求操作造成的危险，可能导致重伤，甚至死亡的情况；

⚠ 注意：由于没有按要求操作造成的危险，可能导致中度伤害或轻伤，及设备损坏的情况；

请用户在安装、调试和维修本系统时，仔细阅读本章，务必按照本章内容所要求的安全注意事项进行操作。如出现因违规操作而造成的任何伤害和损失均与本公司无关。

1.2 命名规则

SU700/800/900/1000 - 2R2 - G3

电压等级：G1＝输入单相220V 输出三相380V
G2＝输入单相220V 输出三相220V
G3＝输入单相380V 输出三相380V

功率等级：0R75=0.75KW
1R5 =1.5KW
2R2 =2.2KW

型号： 700/800/900/1000

1.3 部分变频器系列指标

变频器型号	电源容量 KVA	输入电流 A	输出电流 A	适配电机	
				kW	HP
单相电源：220V，50Hz/60Hz					
SU700-0R75G1	1.5	8.2	2.1	0.75	1
SU700-1R5G1	3	14	3.8	1.5	2
SU700-2R2G1	4	23	5.1	2.2	3
SU700-4R0G1	5.5	31	9	4	4
SU700-5R5G1	8.9	37	13	5.5	5
SU700-7R5G1	11	50.5	17	7.5	10

chapter 1 product information

1.1 safety information and notices

safety deinition: the safety notices in this manual divided into the below two types:

⚠ Danger: the danger caused by that operation not according to requirements,which maybe cause serious hurt, even though death;

⚠ Attention: the danger caused by that operation not according to requirements maybe cause medium hurt or minor hurt and equipment damaged; please read this chapter carefully when user install, debug and maintain this system, must operating according to the required safety notices in the content of this chapter. Any hurt and loss which caused by the operation not according to the requirements are unconcerned with our company.

1.2 Naming rules

SU700/800/900/1000 - 2R2 - G3

voltage grade: G1＝Input single-phase 220V output three-phase 380V
G2＝input single-phase 220V output three-phase 220V
G3＝input single-phase 380V output three-phase 380V

ower grade: 0R75=0.75KW
1R5 =1.5KW
2R2 =2.2KW

model:700/800/900/1000

1.3 Partial indicators of frequency converter series

Frequency Converter mode	Power supply Capacity (KVA)	Rated input current (A)	Rated output current (A)	Adapted motor	
				kW	HP
single phase power supply: 220v, 50Hz/60Hz					
SU700-0R75G1	1.5	8.2	2.1	0.75	1
SU700-1R5G1	3	14	3.8	1.5	2
SU700-2R2G1	4	23	5.1	2.2	3
SU700-4R0G1	5.5	31	9	4	4
SU700-5R5G1	8.9	37	13	5.5	5
SU700-7R5G1	11	50.5	17	7.5	10

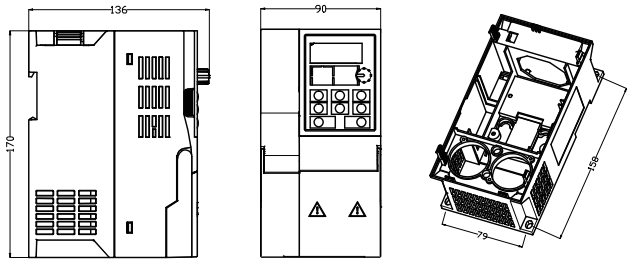
1.3 变频器系列指标

变频器型号	电源容量 KVA	输入电流 A	输出电流 A	适配电机	
				kW	HP
SU700-11R0G1	17	74	25	11	15
SU700-15R0G1	21	101	32	15	20
SU700-18R5G1	24	124.5	37	18.5	25
SU700-22R0G1	30	148	45	22	30
单相电源：220V，50Hz/60Hz					
SU700-0R75G2	1.5	8.2	4	0.75	1
SU700-1R5G2	3	14	7	1.5	2
SU700-2R2G2	4	23	9.6	2.2	3
SU700-4R0G2	5.5	31	17	4	4
SU700-5R5G2	8.9	26	25	5.5	5
SU700-7R5G2	21	35	32	7.5	10
三相电源：380V，50Hz/60Hz					
SU700A-0R75G3	1.5	3.6	2.5	0.75	1
SU700A-1R5G3	3	5.1	4.1	1.5	2
SU700A-2R2G3	4	6	5.8	2.2	3
SU700A-4R0G3	6.1	10.5	9	4	5
SU700A-5R5G3	8.9	14	13	5.5	7.5
SU700A-7R5G3	11	21	17	7.5	10
SU700B-0R75G3	1.5	3.6	2.5	0.75	1
SU700B-1R5G3	3	5.1	4.1	1.5	2
SU700B-2R2G3	4	6	5.8	2.2	3
SU700B-4R0G3	6.1	10.5	9	4	5
SU700B-5R5G3	8.9	14.6	13	5.5	7.5
SU700B-7R5G3	11	21	17	7.5	10
SU700B-7R5G3	11	21	17	7.5	10
SU700B-11R0G3	17	26	25	11	15
SU700B-15R0G3	21	35	32	15	20
SU700B-18R5G3	24	38.5	37	18.5	25
SU700B-22R0G3	30	46.5	45	22	30

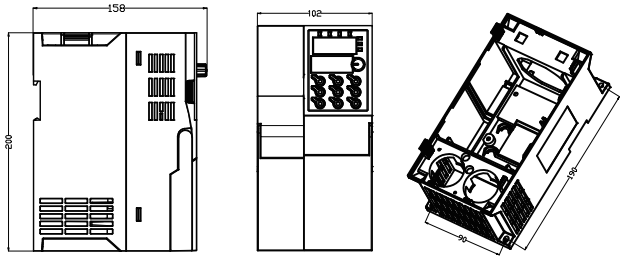
1.3 Inverter Series Index

Frequency Converter mode	Power supply Capacity (KVA)	Rated input current (A)	Rated output current (A)	Adapted motor	
				kW	HP
SU700-11R0G1	17	74	25	11	15
SU700-15R0G1	21	101	32	15	20
SU700-18R5G1	24	124.5	37	18.5	25
SU700-22R0G1	30	148	45	22	30
single phase power supply: 220v, 50Hz/60Hz					
SU700-0R75G2	1.5	8.2	4	0.75	1
SU700-1R5G2	3	14	7	1.5	2
SU700-2R2G2	4	23	9.6	2.2	3
SU700-4R0G2	5.5	31	17	4	4
SU700-5R5G2	8.9	26	25	5.5	5
SU700-7R5G2	21	35	32	7.5	10
Three phase power supply: 380v, 50Hz/60Hz					
SU700A-0R75G3	1.5	3.6	2.5	0.75	1
SU700A-1R5G3	3	5.1	4.1	1.5	2
SU700A-2R2G3	4	6	5.8	2.2	3
SU700A-4R0G3	6.1	10.5	9	4	5
SU700A-5R5G3	8.9	14	13	5.5	7.5
SU700A-7R5G3	11	21	17	7.5	10
SU700B-0R75G3	1.5	3.6	2.5	0.75	1
SU700B-1R5G3	3	5.1	4.1	1.5	2
SU700B-2R2G3	4	6	5.8	2.2	3
SU700B-4R0G3	6.1	10.5	9	4	5
SU700B-5R5G3	8.9	14.6	13	5.5	7.5
SU700B-7R5G3	11	21	17	7.5	10
SU700B-7R5G3	11	21	17	7.5	10
SU700B-11R0G3	17	26	25	11	15
SU700B-15R0G3	21	35	32	15	20
SU700B-18R5G3	24	38.5	37	18.5	25
SU700B-22R0G3	30	46.5	45	22	30

1.4 部分变频器外形及尺寸

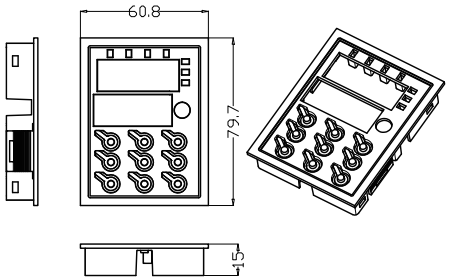


700 系列 0.75-2.2KW 外形及安装尺寸图



700 系列 4-7.5KW 外形及安装尺寸图

1.4.2 外引键盘仓的外型尺寸



1.5变频器的保修说明

免费保修仅指变频器本身。在正常使用情况下，发生故障或损坏，我公司负责 18 个月保修（从制造出厂之日起，以机身上条形码为准），18 个月以上，将收取合理的维修费用；

在 18 个月内，如发生以下情况，应收取一定的维修费用：

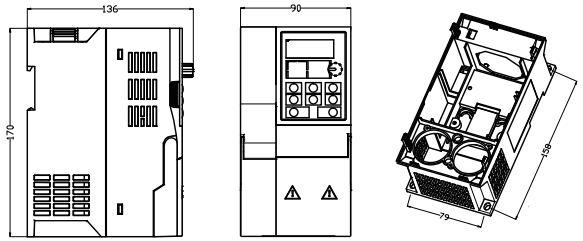
1）用户不按使用手册中的规定，带来的机器损害；

2）由于火灾、水灾、电压异常等造成的损害；

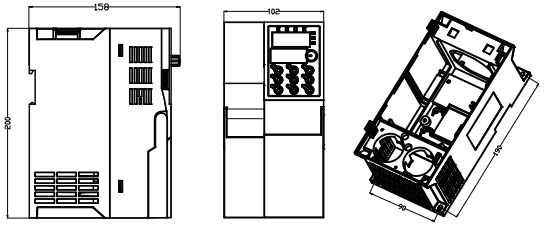
3）将变频器用于非正常功能时造成的损害；

4）有关服务费用按照厂家统一标准计算，如有契约，以契约优先的原则处理。

1.4 Partial appearance and dimensions of frequency converters

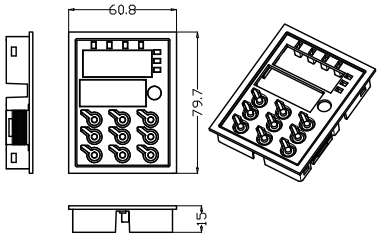


picture of 700 Series 0.75-2.2Kw shape and installation dimension



picture of 700 Series 4-7.5Kw shape and installation dimension

Exterior dimensions of external keyboard silos



1.5 Warranty description of Inverter

Free warranty refers only to the frequency converter itself. In normal use, if failure or damage occurs, our company shall be responsible for the 18-month warranty (From the date of manufacture, subjected to the bar code on the appearance), a reasonable maintenance fee will be charged for more than 18 months.

Within 18 months, a certain maintenance fee shall be charged if:

1)damage to the machine caused by the user's failure to comply with the provisions ofthe manual

2) damage caused by fire, flood, abnormal voltage, etc.

3) damage caused by the application of frequency converters to abnormal functions

4) the relevant service costs shall be calculated in accordance with the uniform standards of the manufacturer and, if there is a contract, shall be dealt with in accordance with the principle of contract priority

第二章 电气安装

2.1 主电路端子及接线

1）变频器主回路端子说明：

端子标记	名 称	说 明
R、S、T/L、N	电源输入端子	三相 380V/ 单相 220V 交流电源连接点
P+、PB	制动电阻连接端子	连接制动电阻
U、V、W	变频器输出端子	连接三相电动机
⏚	接地端子	接地端子

2.1.2 变频器控制回路接线方式

注：所有700系列变频器控制回路接线方式一样，上图为三相 380V 变频器接线示意图，○表示主回路端子，◎表示控制回路端子。

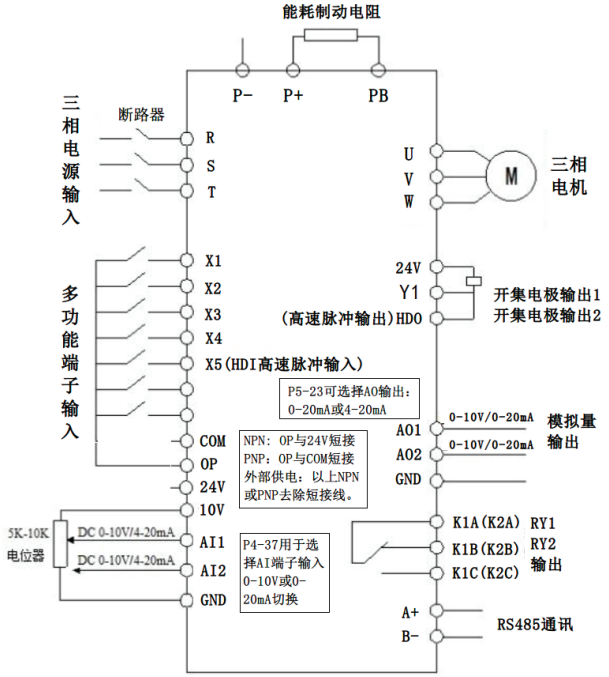


图 2-2 变频器控制回路接线方式

chapter 2 Electric installations

2.1 Main circuit terminals and wiring

1）Frequency converter main circuit terminal instruction:

Terminal marks	Name	Instruction
R、S、T/L、N	Power supply input terminals	connection point of three-phase 380V / single-phase 220VAc power supply
P+、PB	Brake electric resistance connect terminals	connect brake electric resistance
U、V、W	Frequency converter output terminals	connect three phase motor
⏚	Grounding terminals	Grounding terminals

2.1.2 wiring method of frequency converter control circuit

Note: the control circuit wiring of all 700 series inverter is the same, the picture is the three-phase 380V converter wiring diagram, indicate the main loop terminal, ◎represents the control loop terminal.

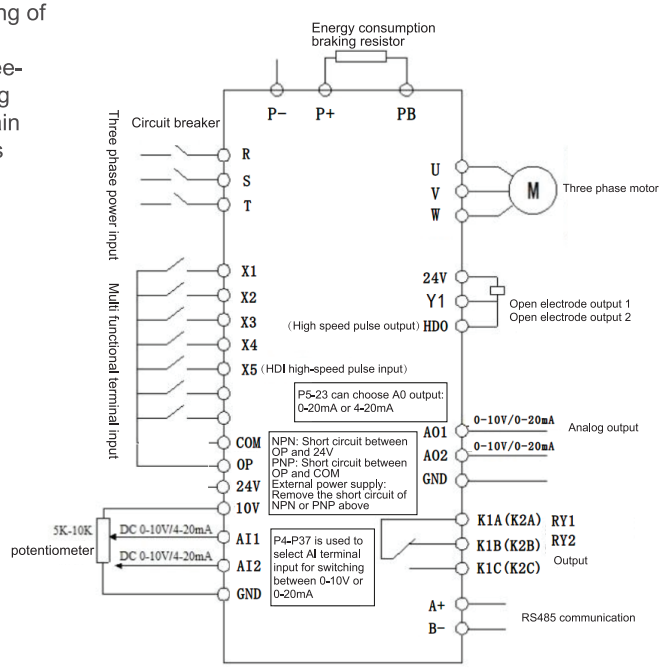


Fig 2-2 wiring method of frequency converter control circuit

2.1.3 控制端子说明

控制回路端子布置图如下示：

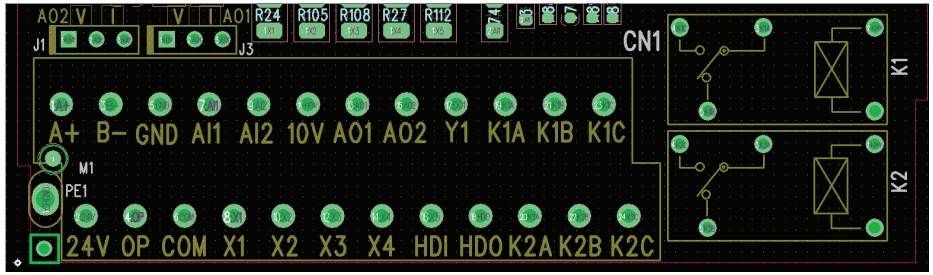


图 2-4（隔离版本）控制回路端子布置图

出厂默认OP与24V短接（NPN）型，拆掉短接片后，OP与COM可以使用外部24V供电输入，AO2具备0~10V和0~20mA输出选择（由J1跳线帽选择）

2.1.3 control terminals instruction

The control circuit terminals layout diagram shown as the below:

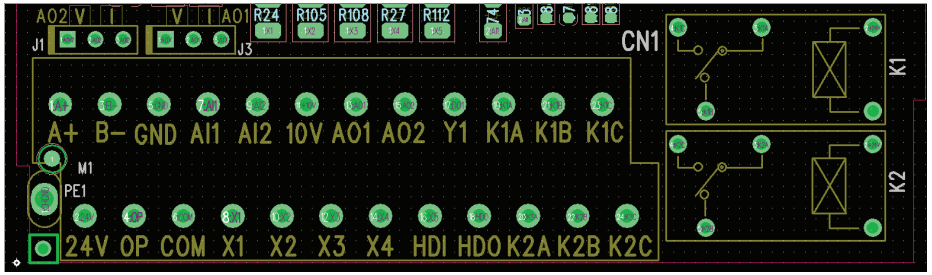


Fig 2-4 isolated(version control)circuit terminal layout

The factory default is OP and 24V short circuited (NPN) type. After removing the short circuited piece, OP and COM can use external 24V power input. AO2 has 0~10V and 0~20mA output options (selected by J1 jumper cap)

2.1.4 控制端子功能说明：

类别	端子符号	端子名称	功能说明
电源	+10V-GND	外接＋10V电源	向外提供+10V电源，最大输出电流：150mA(带短路保护) 一般用作外接电位器工作电源，电位器阻值范围： 1kΩ~5kΩ
	+24V- COM	外接＋24V电源	向外提供+24V电源，一般用作数字输入输出端子工作电源和外接传感器电源 最大输出电流：200mA
	24V-OP	输入端子NPN	24V与OP短接，输入端子可以实现NPN模式
	OP-COM	输入端子PNP	OP与COM短接，输入端子可以实现PNP模式
	OP	OP与COM外接24V电源	当拆掉24V与OP或OP与COM短接片时，OP外接电源正，COM外接电源负极时，可以实现输入端子外部电源供电。
模拟端子	AI1-GND	模拟量输入端子1	1、输入范围：DC 0V~10V/0mA~20mA，由P4-37决定。 2、输入阻抗：电压输入时22kΩ，电流输入时500Ω。
	AI2-GND	模拟量输入端子2	1、输入范围：DC 0V~10V/0mA~20mA，由P4-37决定。 2、输入阻抗：电压输入时22kΩ，电流输入时500Ω。
	AO1-GND	模拟量输出端子1	输出电压范围：0V~10V 输出电流范围：0mA~20mA，4~20mA(P5-23可选择) AO1输出电压和电流选择由J3决定。
	AO2-GND	模拟量输出端子2	输出电压范围：0V~10V (主控板上的J1跳线帽至AO2位置) 输出电流范围：0mA~20mA，4~20mA(P5-23可选择) 注意：可输出0~10V或者0~20mA，由J1选择。

2.1.4 Control terminal function instruction:

category	Terminal symbol	Terminal name	Function instruction
power supply	+10V-GND	External+10V power supply	Provide external+10V power supply, maximum output current: 150mA (with short circuit protection) Generally used as an external potentiometer power supply, potentiometer resistance range: 1kΩ~5kΩ
	+24V- COM	External+24V power supply	Provide+24V power supply externally, generally used as working power supply for digital input/output terminals and external sensor power supply Maximum output current: 200mA
	24V-OP	Input terminal NPN	Short circuit 24V to OP, input terminal can achieve NPN mode
	OP-COM	Input terminal PNP	OP and COM are short circuited, and the input terminal can achieve PNP mode
	OP	OP and COM external 24V power supply	When the 24V and OP or OP and COM short circuiting pieces are removed, and the OP external power supply is positive and the COM external power supply is negative, external power supply to the input terminal can be achieved.
Analog terminal	AI1-GND	Analog input terminal 1	1. Input range: DC 0V~10V/0mA~20mA, determined by P4-37. 2. Input impedance: 22k Ω for voltage input and 500 Ω for current input.
	AI2-GND	Analog input terminal 1	1. Input range: DC 0V~10V/0mA~20mA, determined by P4-37. 2. Input impedance: 22k Ω for voltage input and 500 Ω for current input.
	AO1-GND	Analog output terminal 1	Output voltage range: 0V~10V Output current range: 0mA~20mA, 4~20mA (P5-23 optional) The selection of AO1 output voltage and current is determined by J3.
	AO2-GND	Analog output terminal 2	Output voltage range: 0V~10V (from J1 jumper cap on the main control board to AO2 position) Output current range: 0mA~20mA, 4~20mA (P5-23 optional) Note: It can output 0~10V or 0~20mA, selected by J1.

数字输入	X1- COM	数字输入 1	HDI(X5) 除有 X1~X4 的特点外，还可作为高速脉冲输入通道。 最高输入频率：50kHz 1、输入阻抗：1kΩ 2、电平输入时电压范围： 5V~30V
	X2- COM	数字输入 2	
	X3- COM	数字输入 3	
	X4- COM	数字输入 4	
	HDI- COM (X5 端子)	数字输入 5 高速脉冲输入端子	
	A+ B-	RS485 通讯	A+ 为 485 通讯差分信号正输入，B- 为差分信号负输入
数字输出	Y1- COM	集电极开路输出	当作为集电极开路输出端子
	HDO- COM	高速脉冲输出	受功能码P5-00“HDO端子输出方式选择”约束 当作为高速脉冲输出，最高频率到50kHz； 当作为集电极开路输出，与Y1规格一样。
	K1A-K1B-K1C	继电器 1 端子	触点描述： A：公共点 B：常闭点 C：常开点 触点驱动能力： AC250V，3A，COSø=0.4。 DC 30V，1A
	K2A-K2B-K2C	继电器 2 端子	

2.1.5 信号输入端子接线说明：

因微弱的模拟电压信号特别容易受到外部干扰，所以一般需要用屏蔽电缆，而且配线距离尽量短，不要超过 20m。在某些模拟信号受到严重干扰的场合，模拟信号源侧需加滤波电容器或铁氧体磁。

Digit input	X1- COM	Digit input 1	HDI still can be as high speed pulse input passageway except the characteristics of X1- X4. The highest input frequency: 50KHz Input impedance: 1KΩ Electric level input voltage range: 5v-30v
	X2- COM	Digit input 2	
	X3- COM	Digit input 3	
	X4- COM	Digit input 4	
	HDI- COM (X5 terminal)	Digit input 5	
	A+ B-	Rs485 communication	A+ is positive input of 485 communication difference signal, B- is negative input of difference signal
Digit output	Y1- COM	Collector open circuit output	When used as an open collector output terminal
	HDO- COM	High speed pulse output	Constrained by function code P5-00 "HDO terminal output mode selection" When used as a high-speed pulse output, the highest frequency reaches 50kHz; When used as an open collector output, it is the same as the Y1 specification.
	K1A-K1B-K1C	Electric relay 1 terminal	Contact description: A:public point B:normally close point C:normally open point Contact drive capacity:AC250v, 3A, COSΦ=0.4. DC 30v, 1A
	K2A-K2B-K2C	Electric relay 2 terminal	

2.1.5 signal input terminal wiring instruction:

Because the weak analog voltage signal especially been outer disturbed easily, so, generally need shielded cable, and the cable distribute distance should do best to be short, not exceed 20m. The analog signal source side need additionally add filter wave electric capacitor or iron-oxygen magnetism in the place where some analog signals seriously disturbed.

第三章 操作显示

3.1 操作与显示界面介绍

用操作面板，可对变频器进行功能参数修改、变频器工作状态监控和变频器运行控制（起动、停止）等操作，其外型及功能区如下图所示：

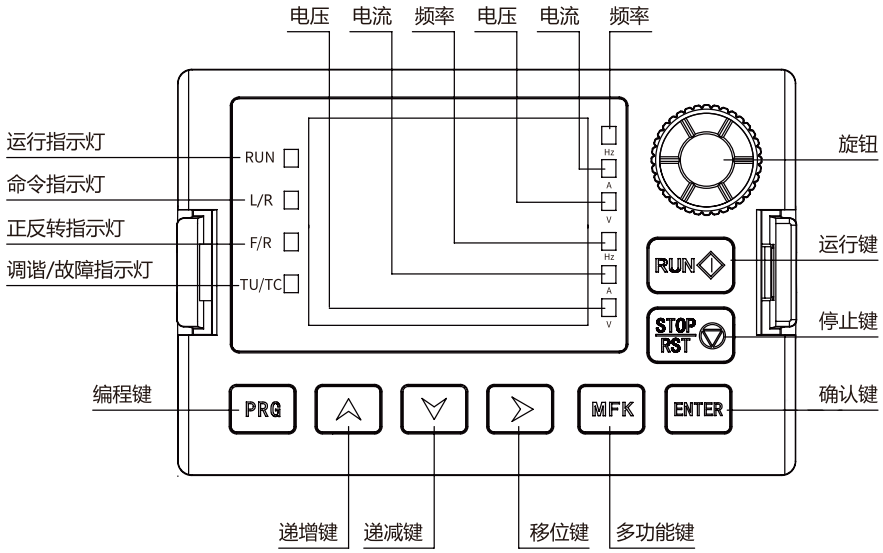


图 3-1 操作面板示意图

chapter 3 operating display

3.1 introduction to the operation and display interface

Able to process the operations such as modify the function parameters of frequency converter, monitor working status of frequency converter and control frequency converter running（start and stop）through operating panel, the proile and function area shown as the below diagram:

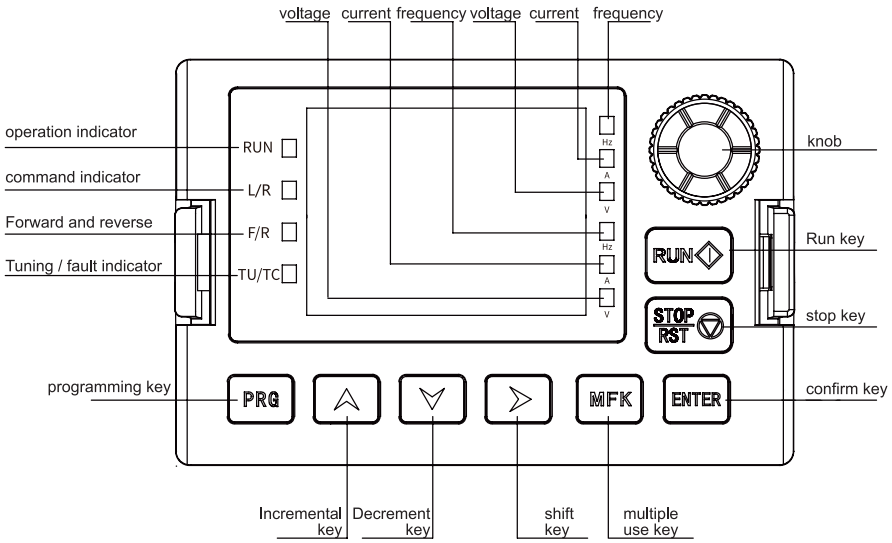


Fig 3-1 schematic diagram of operation panel

1） 功能指示灯说明：

◇ RUN：灯灭时表示变频器处于停机状态，灯亮时表示变频器处于运转状态。

◇ LOCAL/REMOT： 键盘操作、端子操作与远程操作（通信控制）指示灯：

○ LOCAL/REMOTE 熄灭	面板启停控制
● LOCAL/REMOTE 常亮	端子启停控制
◒ LOCAL/REMOTE 闪烁	通讯启停控制

◇ FWD/REV：正反转指示灯，灯亮表示处于正转状态。

◇ TUNE/TC：调谐 / 转矩控制 / 故障指示灯，灯亮表示处于转矩控制模式，灯慢闪表示处于调谐状态，灯快烁表示处于故障状态。

2） 单位指示灯：

Hz	频率单位
A	电流单位
V	电压单位
RPM(Hz+A)	转速单位
%(A+V)	百分比

3） 数码显示区：

上行数码管：5位LED主显示，可显示设定频率、输出频率，各种监视数据以及报警代码等。
下行数码管：监视功能用，监视参数可以由P7-17和P7-18设定监视内容，设定的参数编号和U0组菜单编号对应，可以参考功能菜单表U0组。

1）Function indicate lamp instruction:

◇ RUN: lamp extincted means the frequency converter be at stop machine status,

◇ lamp lighting means the frequency converter be at running status.

○ LOCAL/REMOTE extincted	panel start-stop control
● LOCAL/REMOTE normally lighting	Terminal start-stop control
◒ LOCAL/REMOTE lashing	Communication start-stop control

◇ LOCAL/REMOT: keyboard operation, terminal operation and remote operation （communication control）indicate lamp:

◇ FWD/REV:forward and reverse running indicate lamp, lamp lighting means it be at forward status.

◇ TUNE/TC: tune/torque control/failure indicate lamp, lamp lighting means it be at torque control mode, lamp slow flashing means it be at tune status, lamp quick lashing means it be at failure status.

2）Unit indicate lamp:

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

3）Digit display area:

Upward digital display: 5-digit LED main display, capable of displaying set frequency, output frequency, various monitoring data, and alarm codes.
Downward digital tube: used for monitoring function. The monitoring parameters can be set by P7-17 and P7-18 to monitor the content. The set parameter numbers correspond to the U0 group menu numbers, which can be referred to in the U0 group menu table.

4） 键盘按钮说明表

按键	按键名称	按键功能
PRG	编程键	一级菜单进入或退出
ENTER	确认键	逐级进入菜单画面、设定参数确认
▲	递增键	数据或功能码的递增
▼	递减键	数据或功能码的递减
▶	移位键	在停机显示界面和运行显示界面下，可循环选择显示参数；在修改参数时，可以选择参数的修改位
RUN	运行键	在键盘操作方式下，用于运行操作
STOP/RES	停止 / 复位	运行状态时，按此键可用于停止运行操作；故障报警状态时，可用来复位操作，该键的特性受功能码 P7-02 制约。
MF.K	多功能选择键	根据 P7-01 作功能切换选择

表 3-1 键盘功能表

4）keyboard button description table

keys	key name	key function
PRG	programming key	Level I menu enter into or withdraw
ENTER	Confirm key	Level to level enter into menu tableau, confirm setting parameters
▲	progressively increase key	Data or function code progressively increase
▼	progressively reduce key	Data or function code progressively reduce
▶	Shift key	Able to circling select the display parameters under the stop machine indicate interface and running display interface; able to select the modify bit of parameter when modifying parameters
RUN	Running key	Used in running operation under keyboard operating method
STOP/RES	Stop/reset	press this key able to used in stop running operation at running status; able to be used in reset operation at failure alarm status, thecharacteristics of this key restrained by function code p7-02.
MF.K	Multiply functions select key	process function shift selection according to p7-01

Table 3-1 keyboard function table

第四章 功能参数表

4.1 基本功能参数简表

“☆”：表示该参数的设定值在变频器处于停机、运行状态中，均可更改；

“★”：表示该参数的设定值在变频器处于运行状态时，不可更改；

“●”：表示该参数的数值是实际检测记录值，不能更改；

P0 组 - 基本运行参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P0-00	G/P 机型	1：G 型 2：P 型	1	★	61440
P0-01	电机控制方式	0：无速度传感器矢量控制 2：V/F 控制	2	★	61441
P0-02	命令源选择	0:面板命令通道(LED灭) 1:端子命令通道(LED亮) 2:通讯命令通道(LED闪)	0	☆	61442
P0-03	主频率源 X 选择	0:数字设定(预置频率P0-08，UP/DOWN可修改，掉电不记忆) 1:数字设定(预置频率P0-08，UP/DOWN可修改，掉电记忆) 2:AI1 3:AI2 4:AI3键盘电位器 5:HDI脉冲设定(X5) 6:多段指令 7:简易PLC 8:PID 9:通讯给定 注1:使用编码器键盘时AI3全程失效，自动切换至1(数字设定)	4	★	61443
P0-04	辅频率源 Y 选择	同 P0-03（主频率源 X 选择）	0	★	61444

Chapter 4 Function parameters table

4.1 Basic function parameters simple table

“☆”：means the setting value of this parameter in frequency converter be at stop machine and running status, all can be modiied;

“★”：means the setting value of this parameter in frequency converter be at running status, can,t be modified;

“●”：means the value of this parameter is actual test record value, can,t be modified;

FO group-basic running parameters

Function code	Name	setting range	Leave factory value	property	EDC address
P0-00	G/P model	1：G 2：P	1	★	61440
P0-01	order source select	0:no speed sensor vector control 2:V/F control	2	★	61441
P0-02	order source selec	0:panel order passageway(LED extincted) 1:Terminal order passageway (LED lighting) 2:communication order Passageway (LED lashing)	0	☆	61442
P0-03	Main frequency source X selection	0: Digital setting (preset frequency P0-08, UP/DOWN can be modified, but it will not be remembered in case of power failure 1: Digital setting (preset frequency P0-08, UP/DOWN can be modified, power failure memory) 2：AI1 3：AI2 4: AI3 keyboard potentiometer 5: HDI pulse setting (X5) 6: Multi segment instruction 7: Simple PLC 8：PID 9: Communication given Note 1: When using the encoder keyboard, AI3 will fail throughout the entire process and automatically switch to 1 (numerical setting)	4	★	61443
P0-04	Assist frequency source Y selection	same to P0-03 (Main frequency source X selection)	0	★	61444

4.1 基本功能参数简表

P0组-基本参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P0-05	叠加时频率源Y 范围选择	0:相对于最大频率 1:相对于频率源X	0	☆	61445
P0-06	叠加时频率源Y范围	0%～150%	100%	☆	61446
P0-07	频率源叠加方式选择	个位:频率源选择 0:主频率源X 1:主辅运算(运算方式由十位确定) 2:主频率源X与辅频率源Y切换 3:主频率源X与主辅运算结果切换 4:辅频率源Y与主辅运算结果切换 十位:频率源主辅运算关系 0:主+辅 1:主-辅 2:二者最大值 3:二者最小值 4:主x辅 5:主÷辅 注意:使用主÷辅时注意主先调到最小值,辅调至最大值	00	☆	61447
P0-08	预置频率	0.00Hz～最大频率(P0-10)	50.00Hz	☆	61448
P0-09	运行方向	0:方向一致 1:方向相反	0	☆	61449
P0-10	最大频率	50.00Hz～320.00Hz(P0-22=2) 50.0Hz～3200.0Hz(P0-22=1)	50.00Hz	★	61450
P0-11	上限频率源	0:P0-12设定 1:AI1 2:AI2 3:AI3外引键盘电位器 4:HDI脉冲设定 5:通讯给定	0	★	61451
P0-12	上限频率	下限频率P0-14～最大频率P0-10	50.00Hz	☆	61452
P0-13	上限频率偏置	0.00Hz～最大频率P0-10	0.00Hz	☆	61453
P0-14	下限频率	0.00Hz～上限频率P0-12	0.00Hz	☆	61454
P0-15	载波频率	0.5kHz～16.0kHz	机型确定	☆	61455
P0-16	载波频率随温度调整	0:否 1:是	0	☆	61456

4.1 Basic function parameters simple table

P0 group - basic parameters

Function code	Name	Setting range	Leave factory value	property	EDC address
P0-05	Overlay frequency source Y Scope selection	0: Relative to maximum frequency 1: Relative to frequency source X	0	☆	61445
P0-06	Range of frequency source Y during superposition	0%～150%	100%	☆	61446
P0-07	Selection of frequency source superposition method	Units: Frequency source selection 0: Main frequency source X 1: Main and auxiliary operation (operation mode is determined by the tens digit 2: Switch between main frequency source X and auxiliary frequency source Y 3: Switch between main frequency source X and main and auxiliary operation result 4: Switch between auxiliary frequency source Y and main and auxiliary operation result Tens: Main and auxiliary operation relationship of frequency source 0: Main + auxiliary 1: Main - auxiliary 2: Maximum value of the two 3: Minimum value of the two 4: Main x auxiliary 5: Main ÷ auxiliary Note: When using main ÷ auxiliary, please make sure that the main is adjusted to the minimum value first and the auxiliary is adjusted to the maximum value	00	☆	61447
P0-08	Preset frequency	0.00Hz～maximum frequency (P0-10)	50.00Hz	☆	61448
P0-09	Operation direction	0: same direction 1: opposite direction	0	☆	61449
P0-10	Maximum frequency	50.00Hz～320.00Hz（P0-22=2） 50.0Hz～3200.0Hz（P0-22=1）	50.00Hz	★	61450
P0-11	Upper frequency source	0: P0-12 setting 1: AI1 2: AI2 3: AI3 external keyboard potentiometer 4: HDI pulse setting 5: Communication setting	0	★	61451
P0-12	Upper frequency limit	Lower frequency limit P0-14 ~ Maximum frequency P0-10	50.00Hz	☆	61452
P0-13	Upper frequency limit offset	0.00Hz ~ Maximum frequency P0-10	0.00Hz	☆	61453
P0-14	Lower frequency limit	0.00Hz ~ Upper frequency limit P0-12	0.00Hz	☆	61454
P0-15	Carrier frequency	0.5kHz ~ 16.0kHz	Model confirmation	☆	61455
P0-16	Carrier frequency adjustment with temperature	0: No 1: Yes	0	☆	61456

4.1 基本功能参数简表

P0组-基本参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P0-17	加速时间1	0s～65000s (P0-19=0) 0.0s～6500.0s (P0-19=1) 0.00s～650.00s (P0-19=2)	机型确定	☆	61457
P0-18	减速时间1				61458
P0-19	加减速时间单位	0:1秒 1:0.1秒 2:0.01秒	1	★	61459
P0-21	叠加时辅助频率源偏置频率	0.00Hz～最大频率P0-10	0.00Hz	☆	61461
P0-22	频率指令分辨率	1:0.1Hz 2:0.01Hz 注:改为1可以实现高频率输出	2	★	61462
P0-23	数字设定频率停机记忆	0:不记忆 1:记忆	1	☆	61463
P0-24	保留	-	0	★	61464
P0-25	加减速时间基准频率	0:最大频率(P0-10) 1:设定频	0	★	61465
P0-26	运行时频率指令UP/DOWN基准	0:运行频率 1:设定频率	0	★	61466
P0-27	上限频率源	个位:操作面板命令绑定频率源选择 0:无绑定 1:数字设定频率 2:AI1 3:AI2 4:AI3外引键盘电位器 5:HDI脉冲设定(X5) 6:多段速 7:简易PLC 8:PID 9:通讯给定 十位:端子命令绑定频率源选择 百位:通讯命令绑定频率源选择 千位:自动运行绑定频率源选择	0000	☆	61467

4.1 Basic function parameters simple table

P0 group - basic parameters

Function code	Name	Setting range	Leave factory value	property	EDC address
P0-17	Acceleration time 1	0s～65000s (P0-19=0) 0.0s～6500.0s (P0-19=1) 0.00s～650.00s (P0-19=2)	Model confirmation	☆	61457
P0-18	Deceleration time 1				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 when superimposed Offset frequency	0.00Hz～Maximum frequency P0-10	0.00Hz	☆	61461
P0-22	Frequency command resolution	1: 0.1Hz 2: 0.01Hz Note: Changing to 1 can achieve high frequency output	2	★	61462
P0-23	Digital setting frequency shutdown memory	0: Do not remember 1: Remember	1	☆	61463
P0-24	Reserve	-	0	★	61464
P0-25	Acceleration/deceleration time reference frequency	0: Maximum frequency (P0-10) 1: Set frequency	0	★	61465
P0-26	Frequency command during operation	0: Operating frequency 1: Setting frequency	0	★	61466
P0-27	Upper frequency source	Units: Operation panel command binding frequency source selection 0: No binding 1: Digital setting frequency 2: AI1 3: AI2 4: AI3 external keyboard potentiometer 5: HDI pulse setting (X5) 6: Multi-speed 7: Simple PLC 8: PID 9: Communication setting Tens: Terminal command binding frequency source selection Hundreds: Communication command binding frequency source selection Thousands: Automatic operation binding frequency source selection	0000	☆	61467

4.1 基本功能参数简表

P0 组 - 基本运行参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P0-29	应用宏	设定范围:0～65535 10000:功能码恢复出厂设置宏 1:变频单泵恒压力供水宏 2:一拖三恒压力供水宏(1变2工) 3:一拖五恒压力供水宏(1变4工) 7:消防巡检供水宏 11:数控机床100Hz宏1 12:数控机床100Hz宏2 17:主轴雕刻300Hz宏1(直线多段) 18:主轴雕刻300Hz宏2(多点多段) 19:主轴雕刻300Hz宏3(17+休眠) 20:主轴雕刻300Hz宏4(18+休眠) 21:主轴雕刻400Hz宏1(直线多段) 22:主轴雕刻400Hz宏2(多点多段) 23:主轴雕刻400Hz宏3(21+休眠) 24:主轴雕刻400Hz宏4(22+休眠) 30: 主轴雕刻600Hz宏4(多点+休眠) 注1:选择宏编号前,先执行P0-29恢复出厂值,再选择宏编号。 注2:一拖多供水详见b0参数组	0	☆	61469

P1 组 - 电机参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P1-00	电机类型选择	0: 普通异步电机 1: 变频异步电机 2: 永磁同步电机（机型确定）	0	★	61696
P1-01	电机额定功率	0.1 ～ 1000KW	机型确定	★	61697
P1-02	电机额定电压	1 ～ 380V	机型确定	★	61698
P1-03	电机额定电流	0.01 ～ 100.00A	机型确定	★	61699
P1-04	电机额定频率	0.01Hz ～最大频率	机型确定	★	61700
P1-05	电机额定转速	1 ～ 65535rpm	机型确定	★	61701
P1-10	异步电机空载电流	0.01 ～ P1-03	调谐参数	★	61706

4.1 Basic function parameters simple table

FO group-basic running parameters

Function code	Name	setting range	Leave factory value	property	EDC address
P0-29	Apply macro	Setting range: 0-65535 10000: Function code restore factory settings macro 1: Variable frequency single pump constant pressure water supply macro 2: One to Three Constant Pressure Water Supply Macro (1 Transformer, 2 Workers) 3: One to five constant pressure water supply macro (1 transformer and 4 workers) 7: Fire inspection water supply macro 11: CNC machine tool 100Hz macro 1 12: CNC machine tool 100Hz macro 2 17: Spindle carving 300Hz macro 1 (straight line multi segment) 18: Spindle carving 300Hz macro 2 (multi-point multi segment) 19: Spindle carving 300Hz macro 3 (17+sleep mode) 20: Spindle carving 300Hz macro 4 (18+sleep mode) 21: Spindle carving 400Hz macro 1 (straight line multi segment) 22: Spindle carving 400Hz macro 2 (multi-point multi segment) 23: Spindle carving 400Hz macro 3 (21+sleep) 24: Spindle carving 400Hz macro 4 (22+sleep) 30: Spindle carving 600Hz macro 4 (multi-point+sleep) Note 1: Before selecting the macro number, execute P0-29 to restore the factory value, and then select the macro number. Note 2: For details on one to multiple water supply, please refer to parameter group b0	0	☆	61469

F1 group-motor parameters

Function code	Name	setting range	Leave factory value	property	EDC address
P1-00	order source select	0:common asynchronous motor 1:frequency converter asynchronous motor 2: permanent magent synchronous motor （Model confirm ation）	0	★	61696
P1-01	Motor rated powe	0.1 ~ 1000KW	Model confirm ation	★	61697
P1-02	Motor rated voltage	1V ~ 380V	Model confirm ation	★	61698
P1-03	Motor rated current	0.01A ~ 100.00A	Model confirm ation	★	61699
P1-04	Motor rated frequency	0.01Hz ~ The max frequency	Model confirm ation	★	61700
P1-05	Motor rated speed	1 ~ 65535rpm	Model confirm ation	★	61701
P1-10	Asynchronous motor unload current	0.01 ~ P1-03	Tune parameters	★	61706

4.1 基本功能参数简表

P1组 电机参数					
功能码	名称	设定范围	出厂值	属性	EDC 地址
P1-16	同步机定子电阻	0.001~65.535Ω(≤55KW) 0.0001~6.5535Ω(>55KW)	调谐参数	★	61712
P1-17	同步机D轴电感	0.01~655.35mH(≤55KW) 0.001~65.535 mH (>55KW)	调谐参数	★	61713
P1-18	同步机Q轴电感	0.01~655.35mH(≤55KW) 0.001~65.535 mH (>55KW)	调谐参数	★	61714
P1-20	同步机反电动势	0.0~6553.5V	调谐参数	★	61716
P1-37	调谐选择	0:无操作 1:异步机静止调谐 2:异步机完整调谐 3:静止调谐2 11: 同步机带载调谐 12: 同步机空载调谐	0	★	61733

4.1 Basic function parameters simple table

P1 Group Motor Parameters					
Function code	Name	Setting range	Leave factory value	property	EDC address
P1-16	Synchronous machine stator resistance	0.001~65.535Ω(≤55KW) 0.0001~6.5535Ω(>55KW)	Tuning parameters	★	61712
P1-17	Synchronous machine D-axis inductance	0.01~655.35mH(≤55KW) 0.001~65.535 mH (>55KW)	Tuning parameters	★	61713
P1-18	Synchronous machine Q-axis inductance	0.01~655.35mH(≤55KW) 0.001~65.535 mH (>55KW)	Tuning parameters	★	61714
P1-20	Synchronous machine back electromotive force	0.0~6553.5V	Tuning parameters	★	61716
P1-37	Tuning selection	0: No operation 1: Asynchronous motor static tuning 2: Asynchronous motor complete tuning 3: Static tuning 2 11: Synchronous motor on-load tuning 12: Synchronous motor no-load tuning	0	★	61733

4.1 基本功能参数简表

P2 组 - 矢量参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P2-00	速度环比例增益1	1~100	30	☆	61952
P2-01	速度环积分时间1	0.01~10.00s	0.50s	☆	61953
P2-02	切换频率1	0.00~P2-05	5.00Hz	☆	61954
P2-03	速度环比例增益2	1～100	20	☆	61955
P2-04	速度环积分时间2	0.01s～10.00s	1.00s	☆	61956
P2-05	切换频率2	P2-02～最大频率	10.00Hz	☆	61957
P2-06	矢量控制转差增益	50～200%	150%	☆	61958
P2-07	速度环滤波时间常数	0.000～0.100s	0.050s	☆	61959
P2-08	矢量控制过励磁增益	0～200	64	☆	61960
P2-09	速度控制方式下转矩上限源	0:功能码P2-10设定 1:AI1 2:AI2 3:键盘电位器 4:PULSE脉冲设定 5:通讯给定 6:MIN (AI1,AI2) 7:MAX (AI1,AI2) 1-7选项的满量程对应P2-10	0	☆	61961
P2-10	速度控制方式下转矩上限数字设定	0.0%～200.0%	150.0%	☆	61962
P2-13	励磁调节比例增益	0～60000	2000	☆	61965
P2-14	励磁调节积分增益	0～60000	1300	☆	61966
P2-15	转矩调节比例增益	0～60000	2000	☆	61967
P2-16	转矩调节积分增益	0～60000	1300	☆	61968

4.1 Basic function parameters simple table

P2 group-vector parameters

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
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
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	0.050s	☆	61959
P2-08	Vector control overexcitation gain	0～200	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 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	In speed control mode, the torque upper limit is digitally set	0.0%～200.0%	150.0%	☆	61962
P2-13	Excitation regulation proportional gain	0～60000	2000	☆	61965
P2-14	Excitation regulation integral gain	0～60000	1300	☆	61966
P2-15	Torque regulation proportional gain	0～60000	2000	☆	61967
P2-16	Torque regulation integral gain	0～60000	1300	☆	61968

4.1 基本功能参数简表

P2 组 - 矢量参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P2-17	速度环积分属性	个位:积分分离 0:无效 1:有效	0	☆	61969
P2-18	同步机弱磁模式	0～2	1	★	61970
P2-19	同步机弱磁系数	1～50	5	☆	61971
P2-20	同步机最大弱磁电流	0～300	50	☆	61972
P2-21	同步机弱磁自动调谐系数	10～500	100	☆	61973
P2-22	同步机弱磁积分倍数	0～1	0	★	61974
P2-23	同步机弱磁深度	1～50%	5%	☆	61975
P2-24	同步机初始位置检测电流	50～180%	80%	☆	61976
P2-25	同步机初始位置检测	0～2	0	☆	61977
P2-27	同步机最大出力调整系数	50～500	100	☆	61979
P2-28	同步机压频限幅使能	0～1	0	☆	61980
P2-33	同步机SVC速度滤波级别	10～1000	机型确定	☆	61985
P2-34	同步机SVC速度估算比例增益	5～200	40	☆	61986
P2-35	同步机SVC速度估算积分增益	5～200	30	☆	61987
P2-36	同步机SVC初始励磁电流限幅	0～80%	30%	☆	61988
P2-37	同步机SVC最低载波频率	0.8～P0-15	1.5	☆	61989
P2-41	低频制动电流	0～80%	50%	☆	61993

P3 组 - V/F 控制参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P3-00	VF 曲线设定	0:直线V/F 1:多点V/F 2:平方V/F 3:1.2次方V/F 4:1.4次方V/F 6:1.6次方V/F 8:1.8次方V/F 9:保留 10:VF完全分离 11:VF半分离	0	★	62208

4.1 Basic function parameters simple table

P2 group-vector parameters

Function code	Name	Setting range	Leave factory value	property	EDC address
P2-17	Integral attribute of speed loop	Individual position: Integral separation 0: Invalid 1: Valid	0	☆	61969
P2-18	Synchronous machine weak magnetic mode	0～2	1	★	61970
P2-19	Weak magnetic coefficient of synchronous machine	1～50	5	☆	61971
P2-20	Maximum weak magnetic current of synchronous machine	0～300	50	☆	61972
P2-21	Synchronous machine weak magnetic automatic tuning coefficient	10～500	100	☆	61973
P2-22	Synchronous machine weak magnetic integration multiple	0～1	0	★	61974
P2-23	Synchronous machine weak magnetic depth	1～50%	5%	☆	61975
P2-24	Synchronous machine initial position detection current	50～180%	80%	☆	61976
P2-25	Synchronous machine initial position detection	0～2	0	☆	61977
P2-27	Maximum output adjustment coefficient of synchronous machine	50～500	100	☆	61979
P2-28	Synchronous machine voltage frequency limiting enable	0～1	0	☆	61980
P2-33	Synchronous SVC speed filtering level	10～1000	Model determination	☆	61985
P2-34	Synchronous SVC speed estimation proportional gain	5～200	40	☆	61986
P2-35	Synchronous SVC speed estimation integral gain	5～200	30	☆	61987
P2-36	Synchronous machine SVC initial excitation current limit	0～80%	30%	☆	61988
P2-37	Synchronous SVC Minimum Carrier Frequency	0.8～P0-15	1.5	☆	61989
P2-41	Low frequency braking current	0～80%	50%	☆	61993

P3 group-v/F control parameters

Function code	Name	Setting range	Leave factory value	property	EDC address
P3-00	VF curve setting	0: Straight line 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 9: Reserved 10: VF completely separated 11: VF semi separation	0	★	62208

4.1 基本功能参数简表

P3 组 - V/F 控制参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
P3-01	转矩提升	0.0%:(自动转矩提升) 0.1～30.0%	机型确定	☆	62209
P3-02	转矩提升截止频率	0.00Hz～最大频率	50.00Hz	★	62210
P3-03	多点VF频率点1	0.00Hz～P3-05	1.30Hz	★	62211
P3-04	多点VF电压点1	0.0%～100.0%	15.0%	★	62212
P3-05	多点VF频率点2	P3-03～P3-07	5.00Hz	★	62213
P3-06	多点VF电压点2	0.0%～100.0%	20.0%	★	62214
P3-07	多点VF频率点3	P3-05～电机额定频率(P1-04)	70.00Hz	★	62215
P3-08	多点VF电压点3	0.0%～100.0%	100.0%	★	62216
P3-09	VF转差补偿增益	0.0%～200.0%	0.0%	☆	62217
P3-10	VF过励磁增益	0～200	64	☆	62218
P3-11	VF振荡抑制增益	0～100	机型确定	☆	62219
P3-34	AVR功能选择	0: 关闭AVR 1: AVR使能	0	☆	62242

P4 组 - 输入端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P4-00	X1端子功能选择	0:无功能 1:正转运行(FWD) 2:反转运行(REV) 3:三线式运行控制 4:正转点动(FJOG) 5:反转点动(RJOG) 6:端子UP 7:端子DOWN 8:自由停车 9:故障复位(RESET) 10:运行暂停 11:外部故障常开输入 12:多段指令端子1 13:多段指令端子2 14:多段指令端子3 15:多段指令端子4	01	★	62464
P4-01	X2端子功能选择		02	★	62465

4.1 Basic function parameters simple table

P3 group-v/F control parameters

Function code	Name	Setting range	Leave factory value	property	EDC address
P3-01	Torque boost	0.0%: (Automatic torque boost) 0.1～30.0%0.1～30.0%	Model determination	☆	62209
P3-02	Torque increase cut-off frequency	0.00Hz～Maximum frequency	50.00Hz	★	62210
P3-03	Multi point VF frequency point 1	0.00Hz～P3-05	1.30Hz	★	62211
P3-04	Multi point VF voltage point 1	0.0%～100.0%	15.0%	★	62212
P3-05	Multi point VF frequency point 2	P3-03～P3-07	5.00Hz	★	62213
P3-06	Multi point VF voltage point 2	0.0%～100.0%	20.0%	★	62214
P3-07	Multi point VF frequency point 3	P3-05～Rated frequency of motor（P1-04）	70.00Hz	★	62215
P3-08	Multi point VF voltage point 3	0.0%～100.0%	100.0%	★	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
P3-34	AVR function selection	0: Turn off AVR 1: AVR Enable	0	☆	62242

P4 group-input terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P4-00	X1 terminal function selection	0: No functionality 1: Forward running (FWD) 2: Reverse Run (REV) 3: Three line operation control 4: Forward turning jog (FJOG) 5: Reverse Jogging (RJOG) 6: Terminal UP 7: Terminal Down 8: Free Parking 9: Fault reset (RESET) 10: Pause operation 11: External fault normally open input 12: Multi segment instruction terminal 1 13: Multi segment instruction terminal 2 14: Multi segment instruction terminal 3 15: Multi segment instruction terminal 4	01	★	62464
P4-01	X2 terminal function selection		02	★	62465

4.1 基本功能参数简表

P4 组 - 输入端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P4-02	X3端子功能选择	16:加减速时间选择端子1 17:加减速时间选择端子2 18:频率源切换 19:UP/DOWN设定清零(端子/键盘) 20:运行命令切换端子1 21:加减速禁止 22:PID暂停 23:PLC状态复位 24:摆频暂停 25:计数器输入 26:计数器复位 27:长度计数输入 28:长度复位 29:转矩控制禁止 30:HDI脉冲频率输入(X5) 31:保留 32:立即直流制动 33:外部故障常闭输入 34:频率修改使能 35:PID作用方向取反 36:外部停车端子1 37:运行命令切换端子2 38:PID积分暂停 39:频率源X与预置频率切换 40:频率源Y与预置频率切换 43:PID参数切换44:用户自定义故障1 44:用户自定义故障1 45:用户自定义故障2 46:速度控制/转矩控制切换	04	★	62466
P4-03	X4端子功能选择		09	★	62467

4.1 Basic function parameters simple table

P4 group-input terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P4-02	X3 terminal function selection	16: Acceleration and deceleration time selection terminal 1 17: Acceleration and deceleration time selection terminal 2 18: Frequency source switching 19: UP/DOWN reset (terminal/key-board) 20: Run command to switch terminal 1 21: Acceleration and deceleration are prohibited 22: PID pause 23: PLC status reset 24: Swing frequency pause 25: Counter input 26: Counter reset 27: Length Count Input 28: Length reset 29: Torque control prohibited 30: HDMI pulse frequency input (X5) 31: Reserved 32: Immediate DC braking 33: External fault normally closed input 34: Frequency modification enable 35: PID action direction is reversed 36: External parking terminal 1 37: Run command to switch terminal 2 38: PID points suspended 39: Switching between frequency source X and preset frequency 40: Switching between frequency source Y and preset frequency 43: PID parameter switching 44: User defined fault 1 44: User defined fault 1 45: User defined fault 2 46: Switching between speed control and torque control	04	★	62266
P4-03	X4 terminal function selection		09	★	62267

4.1 基本功能参数简表

P4 组 - 输入端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P4-04	X5(HDI)端子功能选择	47:紧急停车 48:外部停车端子2 49:减速直流制动 50:本次运行时间清零 51:两线式和三线式切换 52:禁止反转 53:单端子UP/DOWN使能，频率源切换(同功能18) 54:端子激活UP不激活为DOWN	12	★	62468
P4-10	X端子滤波时间	0.000s～1.000s	0.010s	☆	62474
P4-11	端子命令方式	个位:两线式和三线式选择 0:两线式1 1:两线式2 2:三线式1 3:三线式2 十位:多段速端子启动使能 0:无效 1:使能	00	★	62475
P4-12	端子UP/DOWN变化率	0.001Hz/s～65.535Hz/s	1.00Hz/s	☆	62476
P4-13	AI曲线1最小输入	0.00V～P4-15	0.00V	☆	62477
P4-14	AI曲线1最小输入对应设定	-100.0%～+100.0%	0.0%	☆	62478
P4-15	AI曲线1最大输入	P4-13～+10.00V	10.00V	☆	62479
P4-16	AI曲线1最大输入对应设定	-100.0%～+100.0%	100.0%	☆	62480
P4-17	AI1滤波时间	0.00s～10.00s	0.10s	☆	62481
P4-18	AI曲线2最小输入	0.00V～P4-20	0.00V	☆	62482
P4-19	AI曲线2最小输入对应设定	-100.0%～+100.0%	0.0%	☆	62483
P4-20	AI曲线2最大输入	P4-18～+10.00V	10.00V	☆	62484

4.1 Basic function parameters simple table

P4 group-input terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P4-04	X5 (HDI) terminal function selection	47: Emergency stop 48: External parking terminal 2 49: Deceleration DC braking 50: This run time is reset to zero 51: Switching between two-wire and three wire modes 52: Do not reverse 53: Single terminal UP/DOWN enable, frequency source switching (same function 18) 54: Terminal activation UP not activated to DOWN	12	★	62268
P4-10	X terminal filtering time	0.000s～1.000s	0.010s	☆	62474
P4-11	Terminal command method	Position: Two line and three line options 0: Two line type 1 1: Two line type 2 2: Three line type 1 3: Three line type 2 Ten digit: Multi speed terminal start enable 0: Invalid 1: Enable	00	★	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 filtering 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

4.1 基本功能参数简表

P4 组 - 输入端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P4-21	AI曲线2最大输入对应设定	-100.0%～+100.0%	100.0%	☆	62485
P4-22	AI2滤波时间	0.00s～10.00s	0.10s	☆	62486
P4-23	AI曲线3最小输入	0.00V～P4-25	0.50V	☆	62482
P4-24	AI曲线3最小输入对应设定	-100.0%～+100.0%	0.0%	☆	62483
P4-25	AI曲线3最大输入	P4-23～+10.00V	9.70V	☆	62484
P4-26	AI曲线3最大输入对应设定	-100.0%～+100.0%	100.0%	☆	62485
P4-27	AI3滤波时间	0.00s～10.00s	0.10s	☆	62486
P4-28	HDI脉冲最小输入	0.00kHz～P4-30	0.00kHz	☆	62492
P4-29	HDI脉冲最小输入对应设定	-100.0%～100.0%	0.0%	☆	62493
P4-30	HDI脉冲最大输入	P4-28～50.00kHz	50.00kHz	☆	62494
P4-31	HDI脉冲最大输入设定	-100.0%～100.0%	100.0%	☆	62495
P4-32	HDI脉冲滤波时间	0.00s～10.00s	0.10s	☆	62496
P4-33	AI曲线选择	个位:AI1曲线选择 1:曲线1(2点,P4-13～P4-16) 2:曲线2(2点,P4-18～P4-21) 3:曲线3(2点,P4-23～P4-26) 十位:AI2曲线选择,同上 百位:AI3曲线选择,同上	H.321	☆	62497
P4-34	AI低于最小输入设定选择	个位:AI1低于最小输入设定选择 0: 对应最小输入设定 1: 0.0% 十位:AI2低于最小输入设定选择,同上 百位:AI3低于最小输入设定选择,同上	H.000	☆	62498
P4-35	X端子有效模式选择1	0:高电平有效 1:低电平有效 个位:X1 十位:X2 百位:X3 千位:X4 万位:X5	00000	★	62499

4.1 Basic function parameters simple table

P4 group-input terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P4-21	AI curve 2 maximum input corresponding setting	-100.0%～+100.0%	100.0%	☆	62485
P4-22	AI2 filtering time	0.00s～10.00s	0.10s	☆	62486
P4-23	AI Curve 3 Minimum Input	0.00V～P4-25	0.50V	☆	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	9.70V	☆	62484
P4-26	AI curve 3 maximum input corresponding setting	-100.0%～+100.0%	100.0%	☆	62485
P4-27	AI3 filtering 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 filtering time	0.00s～10.00s	0.10s	☆	62496
P4-33	AI curve selection	Individual position: AI1 curve selection 1: Curve 1 (2 points, P4-13 to P4-16) 2: Curve 2 (2 points, P4-18~P4-21) 3: Curve 3 (2 points, P4-23 to P4-26) Tenth digit: AI2 curve selection, as above Hundred digit: AI3 curve selection, as above	H.321	☆	62497
P4-34	AI below minimum input Set selection	Position: AI1 is below the minimum input setting selection 0: Corresponding minimum input setting 1: 0.0% Ten digit: AI2 is lower than the minimum input setting selection, as above Hundred digit: AI3 below the minimum input setting selection, as above	H.000	☆	62498
P4-35	X terminal effective mode selection 1	0: High level effective 1: Low level effective Position: X1 Tenth digit: X2 Centennial: X3 Thousand positions: X4 Number of seats: X5	00000	★	62499

4.1 基本功能参数简表

P4 组 - 输入端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P4-37	AI输入电压/电流选择	个位:AI1 十位:AI2 0:电压输入 1:电流输入	10	★	62501
P4-38	X1导通延迟时间	0.0s～6553.5s	0.0S	★	62502
P4-39	X2导通延迟时间	0.0s～6553.5s	0.0S	★	62503
P4-40	X3导通延迟时间	0.0s～6553.5s	0.0S	★	62504
P4-41	X4导通延迟时间	0.0s～6553.5s	0.0S	★	62505
P4-42	X5导通延迟时间	0.0s～6553.5s	0.0S	★	62506
P4-43	X6导通延迟时间	0.0s～6553.5s	0.0S	★	62507
P4-44	X7导通延迟时间	0.0s～6553.5s	0.0S	★	62508
P4-48	X1断开延迟时间	0.0s～6553.5s	0.0S	★	62512
P4-49	X2断开延迟时间	0.0s～6553.5s	0.0S	★	62513
P4-50	X3断开延迟时间	0.0s～6553.5s	0.0S	★	62514
P4-51	X4断开延迟时间	0.0s～6553.5s	0.0S	★	62515
P4-52	X5断开延迟时间	0.0s～6553.5s	0.0S	★	62516
P4-53	X6断开延迟时间	0.0s～6553.5s	0.0S	★	62517
P4-54	X7断开延迟时间	0.0s～6553.5s	0.0S	★	62518
P4-58	频率UP/DOWN自动清零模式	0:无自动清零功能 1:点动时清零 2:故障时清零 3:反转时清零	0	★	62522

P5组-输出端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P5-00	HDO端子输出模式选择	0:高速脉冲输出(HDO) 1:端子开关量输出(FMR)	00	☆	62720

4.1 Basic function parameters simple table

P4 group-input terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P4-37	AI input voltage/current selection	Position: AI1 Ten: AI2 0: Voltage input 1: Current input	10	★	62501
P4-38	X1 conduction delay time	0.0s～6553.5s	0.0S	★	62502
P4-39	X2 conduction delay time	0.0s～6553.5s	0.0S	★	62503
P4-40	X3 conduction delay time	0.0s～6553.5s	0.0S	★	62504
P4-41	X4 conduction delay time	0.0s～6553.5s	0.0S	★	62505
P4-42	X5 conduction delay time	0.0s～6553.5s	0.0S	★	62506
P4-43	X6 conduction delay time	0.0s～6553.5s	0.0S	★	62507
P4-44	X7 conduction delay time	0.0s～6553.5s	0.0S	★	62508
P4-48	X1 disconnection delay time	0.0s～6553.5s	0.0S	★	62512
P4-49	X2 disconnection delay time	0.0s～6553.5s	0.0S	★	62513
P4-50	X3 disconnection delay time	0.0s～6553.5s	0.0S	★	62514
P4-51	X4 disconnection delay time	0.0s～6553.5s	0.0S	★	62515
P4-52	X5 disconnection delay time	0.0s～6553.5s	0.0S	★	62516
P4-53	X6 disconnection delay time	0.0s～6553.5s	0.0S	★	62517
P4-54	X7 disconnection delay time	0.0s～6553.5s	0.0S	★	62518
P4-58	Frequency UP/DOWN auto reset mode	0: No automatic reset function 1: Reset to zero during jogging 2: Reset to zero during malfunction 3: Reset to zero during reversal	0	★	62522

P5 group output terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P5-00	HDO terminal output mode selection	0: High speed pulse output (HDO) 1: Terminal Switching Output (FMR)	0	☆	62720

4.1 基本功能参数简表

P5组-输出端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P5-01	HDO端子开关量输出功能选择(FMR)	0:无输出 1:变频器运行中 2:故障输出(故障停机) 3:频率水平检测FDT1输出 4:频率到达 5:零速运行中(停机时不输出) 6:电机过载预报警 7:变频器过载预报警 8:设定记数值到达 9:指定记数值到达 11:PLC循环完成 12:累计运行时间到达 13:频率限定中 14:转矩限定中 15:运行准备就绪 16:AI1>AI2 17:上限频率到达 18:下限频率到达(运行有关) 19:欠压状态输出 20:通讯设定 23:零速运行中2(停机时也输出) 24:累计上电时间到达 25:频率水平检测FDT2输出 26:频率1到达输出 27:频率2到达输出 28:电流1到达输出 29:电流2到达输出 30:定时到达输出 31:AI1输入超限 32:掉载中 33:反向运行中 34:零电流状态 35:模块温度到达 36:输出电流超限	00	☆	62721
P5-02	继电器RY1功能选择(K1A-K1B-K1C)		02	☆	62722
P5-03	继电器RY2功能选择(K2A-K2B-K2C)		00	☆	62723

4.1 Basic function parameters simple table

P5 group - output terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P5-01	HDO terminal switch quantity Output function selection (FMR)	0: No output 1: Inverter in operation 2: Fault output (fault shutdown) 3: Frequency level detection FDT1 output 4: Frequency arrival 5: Zero speed operation (no output during shutdown) 6: Motor overload warning 7: Inverter overload warning 8: Set the record value to arrive 9: The specified record value has been reached 11: PLC cycle completed 12: Accumulated running time reached 13: Under frequency limitation 14: Torque limitation 15: Ready for operation 16: AI1>AI2 17: The upper limit frequency has been reached 18: The lower limit frequency has been reached (related to operation) 19: Under voltage state output 20: Communication settings 23: Zero speed operation 2 (also output when stopped) 24: Accumulated power on time reached 25: Frequency level detection FDT2 output 26: Frequency 1 reaches output 27: Frequency 2 reaches output 28: Current 1 reaches output 29: Current 2 reaches output 30: Timed arrival output 31: AI1 input exceeds the limit 32: Falling load 33: Running in reverse 34: Zero current state 35: The module temperature has reached 36: Output current exceeds the limit	00	☆	62721
P5-02	Relay RY1 function selection (K1A-K1B-K1C)		02	☆	62722
P5-03	Relay RY2 function selection (K2A-K2B-K2C)		00	☆	62723

4.1 基本功能参数简表

P5组-输出端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P5-04	Y1输出功能选择	37:下限频率到达(停机也输出) 38:告警输出(继续运行) 40:本次运行时间到达 41:故障输出(为自由停机的故障且欠压不输出 42:频率1 <= 运行频率 <=频率2 43:频率1 >= 运行频率 >=频率2 44:频率1 <= 设定频率 <=频率2 45:频率1 >= 设定频率 >=频率2 (注: 频率1,2指的是P8-30,P8-32) 46:联动X1端子输出 47:联动X2端子输出 48:联动X3端子输出 49:联动X4端子输出 50: 辅助电机水泵1 51: 辅助电机水泵2 52: 辅助电机水泵3 53: 辅助电机水泵4 54:休眠中	01	☆	62724
P5-06	HDO高速脉冲输出功能选择	0:运行频率 1:设定频率 2:输出电流 3:输出转矩 4:输出功率 5:输出电压 6:HDI脉冲输入 (100.%对应100.0kHz) 7:AI1 8:AI2 9:AI3 11:记数值 12:通讯设定 13:电机转速 14:输出电流(100.0%对应1000.0A) 15:输出电压(100.0%对应1000.0V) 16:保留 17:变频器输出转矩	00	☆	62726
P5-07	AO1输出功能选择		00	☆	62727
P5-08	AO2输出功能选择		01	☆	62728

4.1 Basic function parameters simple table

P5 group - output terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P5-04	Y1 output function selection	37: The lower limit frequency has been reached (output even when stopped) 38: Alarm output (continue running) 40: The current running time has arrived 41: Fault output (is a fault of free shutdown and does not output under voltage) 42: Frequency 1<=Operating frequency<=-Frequency 2 43: Frequency 1>=Operating frequency>=-Frequency 2 44: Frequency 1<=Set frequency<=Frequency 2 45: Frequency 1>=Set frequency>=Frequency 2 (Note: Frequency 1 and 2 refer to P8-30 and P8-32) 46: Linkage X1 terminal output 47: Linkage X2 terminal output 48: Linkage X3 terminal output 49: Linkage X4 terminal output 50: Auxiliary motor water pump 1 51: Auxiliary motor water pump 2 52: Auxiliary motor water pump 3 53: Auxiliary motor water pump 4 54: Sleeping	01	☆	62724
P5-06	HDO high-speed pulse Output function selection	0: Operating frequency 1: Set frequency 2: Output current 3: Output torque 4: Output power 5: Output voltage 6: HDI pulse input (100% corresponds to 100.0kHz) 7: AI1 8: AI2 9: AI3 11: Record numerical values 12: Communication settings 13: Motor speed 14: Output current (100.0% corresponds to 1000.0A) 15: Output voltage (100.0% corresponds to 1000.0V) 16: Reserved 17: Inverter output torque	00	☆	62726
P5-07	AO1 output function selection		00	☆	62727
P5-08	AO2 output function selection		01	☆	62728

4.1 基本功能参数简表

P5组-输出端子

功能码	名称	设定范围	出厂值	属性	EDC 地址
P5-09	HDO输出最大频率	0.01kHz～50.00kHz	50.00kHz	☆	62729
P5-10	AO1零偏系数	-100.0%～+100.0%	0.0%	☆	62730
P5-11	AO1增益	-10.00～+10.00	1.00	☆	62731
P5-12	AO2零偏系数	-100.0%～+100.0%	0.0%	☆	62732
P5-13	AO2增益	-10.00～+10.00	1.00	☆	62733
P5-17	FMR延迟延迟时间	0.0s～6553.5s	0.0s	☆	62737
P5-18	RY1延迟闭合时间	0.0s～6553.5s	0.0s	☆	62738
P5-19	RY2延迟闭合时间	0.0s～6553.5s	0.0s	☆	62739
P5-20	Y1延迟闭合时间	0.0s～6553.5s	0.0s	☆	62740
P5-21	保留	-	-	-	62741
P5-22	Y端子输出有效状态选择	0:正逻辑 1:反逻辑 个位:HDO端子 十位:RY1 百位:RY2 千位:Y1 万位:保留	00000	☆	62742
P5-23	AO电流输出选择	个位:AO1 十位:AO2 0:0~20 mA 1:4~20mA	00	☆	62743
P5-24	FMR延迟断开时间	0.0s～6553.5s	0.0s	☆	62744
P5-25	RY1延迟断开时间	0.0s～6553.5s	0.0s	☆	62745
P5-26	RY2延迟断开时间	0.0s～6553.5s	0.0s	☆	62746
P5-27	Y1延迟断开时间	0.0s～6553.5s	0.0s	☆	62747

P6组-启停控制

功能码	名称	设定范围	出厂值	属性	EDC 地址
P6-00	启动方式	0:直接启动 1:速度跟踪再启动 2:预励磁启动(交流异步机)	0	☆	62976

4.1 Basic function parameters simple table

P5 group - output terminal

Function code	Name	Setting range	Leave factory value	property	EDC address
P5-09	HDO output maximum frequency	0.01kHz～50.00kHz	50.00kHz	☆	62729
P5-10	AO1 zero bias coefficient	-100.0%～+100.0%	0.0%	☆	62730
P5-11	AO1 gain	-10.00～+10.00	1.00	☆	62731
P5-12	AO2 zero bias coefficient	-100.0%～+100.0%	0.0%	☆	62732
P5-13	AO2 gain	-10.00～+10.00	1.00	☆	62733
P5-17	FMR delay time	0.0s～6553.5s	0.0s	☆	62737
P5-18	RY1 delayed closure time	0.0s～6553.5s	0.0s	☆	62738
P5-19	RY2 delayed closure time	0.0s～6553.5s	0.0s	☆	62739
P5-20	Y1 delayed closure time	0.0s～6553.5s	0.0s	☆	62740
P5-21	retain	-	-	-	62741
P5-22	Y terminal output effective state selection	0: Positive Logic 1: Negative Logic Position: HDO terminal Tenth digit: RY1 Hundred: RY2 Thousand positions: Y1 Ten thousand positions: reserved	00000	☆	62742
P5-23	AO current output selection	Position: AO1 Ten: AO2 0: 0~20 mA 1: 4~20mA	00	☆	62743
P5-24	FMR delayed disconnection time	0.0s～6553.5s	0.0s	☆	62744
P5-25	RY1 delayed disconnection time	0.0s～6553.5s	0.0s	☆	62745
P5-26	RY2 delayed disconnection time	0.0s～6553.5s	0.0s	☆	62746
P5-27	Y1 delayed disconnection time	0.0s～6553.5s	0.0s	☆	62747

P6 group - start stop control

Function code	Name	Setting range	Leave factory value	property	EDC address
P6-00	Start mode	0: Directly start 1: Speed tracking restart 2: Pre excitation start (AC asynchronous machine)	0	☆	62976

4.1 基本功能参数简表

P6组-启停控制

功能码	名称	设定范围	出厂值	属性	EDC 地址
P6-01	转速追踪方式	0:从停机频率开始 1:从零速开始 2:从最大频率开始	0	★	62977
P6-02	转速跟踪快慢	1～100	20	☆	62978
P6-03	启动频率	0 ～P0-08	0.00Hz	☆	62979
P6-04	启动频率保持时间	0.0s～100.0s	0.0s	★	62980
P6-05	启动直流制动电流/ 预励磁电流	0%～100%	0%	★	62981
P6-06	启动直流制动时间/ 预励磁时间	0.0s～100.0s	0.0s	★	62982
P6-07	加减速方式	0:直线加减速 1:S曲线加减速A 2:S曲线加减速B	0	★	62983
P6-08	S曲线开始段时间比例	0.0%～(100.0%-P6-09)	30.0%	★	62984
P6-09	S曲线结束段时间比例	0.0%～(100.0%-P6-08)	30.0%	☆	62985
P6-10	停机方式	0:减速停车 1:自由停车	0	☆	62986
P6-11	停机直流制动起始频率	0.00Hz～最大频率	0.00Hz	☆	62987
P6-12	停机直流制动等待时间	0.0s～100.0s	0.0s	☆	62988
P6-13	停机直流制动电流	0%～100%	0%	☆	62989
P6-14	停机直流制动时间	0.0s～100.0s	0.0s	☆	62990
P6-15	制动使用率	0%～100%	100%	☆	62991

P7组-键盘与显示

功能码	名称	设定范围	出厂值	属性	EDC 地址
P7-00	显示功能扩展1	个位:电源电压监视方式 0:直流母线电压 1:输入交流电压(前带U字母)	00000	☆	63232

4.1 Basic function parameters simple table

P6 group - start stop control

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P6-01	Speed tracking method	0: Starting from the shutdown frequency 1: Starting from zero speed 2: Starting from the maximum frequency	0	★	62977
P6-02	Speed tracking speed	1～100	20	☆	62978
P6-03	Start frequency	0 ～P0-08	0.00Hz	☆	62979
P6-04	Start frequency holding 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 deceleration methods	0: Linear acceleration and deceleration 1: S-curve acceleration and deceleration A 2: S-curve acceleration and deceleration B	0	★	62983
P6-08	Proportion of time at the beginning of the S-curve	0.0%～（100.0%-P6-09）	30.0%	★	62984
P6-09	Proportion of time at the end of the S-curve	0.0%～（100.0%-P6-08）	30.0%	☆	62985
P6-10	Shutdown mode	0: Slow down and stop 1: Free Parking	0	☆	62986
P6-11	Starting frequency of shutdown DC braking	0.00Hz～Maximum frequency	0.00Hz	☆	62987
P6-12	Shutdown DC braking waiting time	0.0s～100.0s	0.0s	☆	62988
P6-13	Shutdown DC brake current	0%～100%	0%	☆	62989
P6-14	Shutdown DC braking time	0.0s～100.0s	0.0s	☆	62990
P6-15	Brake utilization rate	0%～100%	100%	☆	62991

P7 Group - Keyboard and Display

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P7-00	Display Function Extension 1	Position: Power supply voltage monitoring method 0: DC bus voltage 1: Input AC voltage (preceded by the letter U)	00000	☆	63232

4.1 基本功能参数简表

P7组-键盘与显示

功能码	名称	设定范围	出厂值	属性	EDC 地址
P7-01	MF.K键功能选择	0:MF.K无效 1:操作面板命令通道与远程命令通道 (端子命令通道或通讯命令通道)切换 2:正反转切换 3:正转点动 4:反转点动	0	☆	63233
P7-02	STOP/RESET键功能	0:只在键盘操作方式下, STOP/RES键停机功能有效 1:在任何操作方式下, STOP/RES键停机功能均有效	1	☆	63234
P7-03	LED运行显示参数1	0000～FFFF Bit00: 运行频率1(Hz) Bit01: 设定频率(Hz) Bit02: 母线电压(V) Bit03: 输出电压(V) Bit04: 输出电流(A) Bit05: 输出功率(kW) Bit06: 输出转矩(%) Bit07: X输入状态 Bit08: Y输出状态 Bit09: AI1电压(V) Bit10: AI2电压(V) Bit11: AI3面板电位器电压(V) Bit12: 计数值 Bit13: 保留 Bit14: 负载速度显示 Bit15: PID设定(供水宏显示压力值) 0000～FFFF Bit00:PID反馈 (供水宏显示压力值)	H.001F	☆	63235

4.1 Basic function parameters simple table

P7 Group - Keyboard and Display

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P7-01	MF. K key function selection	0: MF. K is invalid 1: Operation panel command channel and remote command channel Switching between terminal command channel or communication command channel 2: Forward and reverse switching 3: Forward turning jog 4: Reverse jog	0	☆	63233
P7-02	STOP/RESET button function	0: Only in keyboard operation mode, The STOP/RES button has an effective shutdown function 1: In any mode of operation, The STOP/RES button shutdown function is effective	1	☆	63234
P7-03	LED operation display parameter 1	0000～FFFF Bit00: Operating frequency 1 (Hz) Bit01: Set frequency (Hz) Bit02: Bus voltage (V) Bit03: Output voltage (V) Bit04: Output current (A) Bit05: Output power (kW) Bit06: Output torque (%) Bit07: X Input Status Bit08: Y output status Bit09: AI1 voltage (V) Bit10: AI2 voltage (V) Bit11: AI3 panel potentiometer voltage (V) Bit12: Count value Bit13: Reserved Bit14: Load speed display Bit15: PID setting (water supply macro displays pressure value)	H.001F	☆	63235

4.1 基本功能参数简表

P7组-键盘与显示

功能码	名称	设定范围	出厂值	属性	EDC 地址
P7-04	LED运行显示参数2	0000～FFFF Bit00：PID反馈 (供水宏显示压力值) Bit01：PLC阶段 Bit02：HDI输入脉冲频率(kHz) Bit03：运行频率2（Hz） Bit04：剩余运行时间 Bit05：AI1校正前电压（V） Bit06：AI2校正前电压（V） Bit07：AI3面板电位器校正前电压（V） Bit08：线速度 Bit09：当前上电时间（Hour） Bit10：当前运行时间（Min） Bit11：HDI输入脉冲频(Hz) Bit12：通讯设定值 Bit13：编码器反馈速度（Hz） Bit14：主频率X显示（Hz） Bit15：辅频率Y显示（Hz）	H.0000	☆	63236
P7-05	LED停机显示参数	0000～FFFF Bit00: 设定频率（Hz） Bit01: 母线电压（V） Bit02: X输入状态 Bit03: Y输出状态 Bit04: AI1电压（V） Bit05: AI2电压（V） Bit06: AI3面板电位器电压（V） Bit07: 计数值 Bit08: 长度值 Bit09: PLC阶段 Bit10: 负载速度 Bit11: PID设定(压力) Bit12: HDI输入脉冲频率(kHz) Bit13: PID反馈(压力)	H.0033	☆	63237

4.1 Basic function parameters simple table

P7 Group - Keyboard and Display

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P7-04	LED operation display parameter 2	0000～FFFF Bit00: PID feedback (water supply macro displays pressure value) Bit01: PLC Stage Bit02: HDMI input pulse frequency (kHz) Bit03: Operating frequency 2 (Hz) Bit04: Remaining running time Bit05: AI1 pre calibration voltage (V) Bit06: AI2 pre calibration voltage (V) Bit07: Voltage before calibration of AI3 panel potentiometer (V) Bit08: Line speed Bit09: Current power on time (Hour) Bit10: Current running time (Min) Bit11: HDI input pulse frequency (Hz) Bit12: Communication settings Bit13: Encoder feedback speed (Hz) Bit14: Main frequency X display (Hz) Bit15: Auxiliary frequency Y display (Hz)	H.0000	☆	63236
P7-05	LED shutdown display parameters	0000～FFFF Bit00: Set frequency (Hz) Bit01: Bus voltage (V) Bit02: X Input Status Bit03: Y output status Bit04: AI1 voltage (V) Bit05: AI2 voltage (V) Bit06: AI3 panel potentiometer voltage (V) Bit07: Count value Bit08: Length value Bit09: PLC Stage Bit10: Load speed Bit11: PID setting (pressure) Bit12: HDI input pulse frequency (kHz) Bit13: PID feedback (pressure)	H.0033	☆	63237

4.1 基本功能参数简表

P7组-键盘与显示

功能码	名称	设定范围		出厂值	属性	EDC 地址
P7-06	负载速度显示系数	0.0001～6.5000		1.0000	☆	63238
P7-07	逆变器模块散热器温度	0.0°C～100.0°C		-	●	63239
P7-09	累计运行时间	0h～65535h		-	☆	63241
P7-12	负载速度显示小数点位数	0:0位小数位 1:1位小数位	2:2位小数位 3:3位小数位	1	☆	63234
P7-13	累计上电时间	0～65535h		-	●	63245
P7-14	累计耗电量	0～65535度		-	●	63246
P7-17	数码管2停机监视选择	00～99(对应U0组参数编号)		02	☆	63249
P7-18	数码管2运行监视选择	00～99(对应U0组参数编号)		04	☆	63250

P8组-辅助功能

功能码	名称	设定范围	出厂值	属性	EDC 地址
P8-00	点动运行频率	0.00Hz～最大频率	6.00Hz	☆	63488
P8-01	点动加速时间	0.0s～6500.0s	20.0s	☆	63489
P8-02	点动减速时间	0.0s～6500.0s	20.0s	☆	63490
P8-03	加速时间2	0.0s～6500.0s	机型确定	☆	63491
P8-04	减速时间2	0.0s～6500.0s	机型确定	☆	63492
P8-05	加速时间3	0.0s～6500.0s	机型确定	☆	63493
P8-06	减速时间3	0.0s～6500.0s	机型确定	☆	63494
P8-07	加速时间4	0.0s～6500.0s	机型确定	☆	63495
P8-08	减速时间4	0.0s～6500.0s	机型确定	☆	63496
P8-09	跳跃频率1	0.00Hz～最大频率	0.00Hz	☆	63497
P8-10	跳跃频率2	0.00Hz～最大频率	0.00Hz	☆	63498
P8-14	设定频率低于下限频率运行模式	0:以下限频率运行 1:停机 2:零速运行	0	☆	63502

4.1 Basic function parameters simple table

P7 Group - Keyboard and Display

Function code	Name	Setting range		Leave factory value	prop-erty	EDC address
P7-06	Load speed display coefficient	0.0001～6.5000		1.0000	☆	63238
P7-07	Inverter module radiator temperature	0.0℃～100.0℃		-	●	63239
P7-09	Accumulated running time	0h～65535h		-	☆	63241
P7-12	Number of decimal places displayed for load speed	0:0 decimal places 1: One decimal place	2: Two decimal places 3: 3 decimal places	1	☆	63234
P7-13	Accumulated power on time	0～65535h		-	●	63245
P7-14	Accumulated power consumption	0～65535度		-	●	63246
P7-17	Selection of shutdown monitoring for digital tube 2	00～99 (Corresponding U0 group parameter number)		02	☆	63249
P7-18	Digital tube 2 operation monitoring selection	00～99 (Corresponding U0 group parameter number)		04	☆	63250

P8 Group - Auxiliary Functions

功能码	名称	设定范围	出厂值	属性	EDC 地址
P8-00	Jogging operating frequency	0.00Hz～Maximum frequency	6.00Hz	☆	63488
P8-01	Jogging acceleration time	0.0s～6500.0s	20.0s	☆	63489
P8-02	Jogging 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	Jump frequency 1	0.00Hz～Maximum frequency	0.00Hz	☆	63497
P8-10	Jump frequency 2	0.00Hz～Maximum frequency	0.00Hz	☆	63498
P8-14	Set the frequency below the lower limit frequency Operation mode	0: Running at the lower limit frequency 1: Shutdown 2: Zero speed operation	0	☆	63502

4.1 基本功能参数简表

P8组-辅助功能

功能码	名称	设定范围	出厂值	属性	EDC 地址
P8-15	下垂控制	0.00Hz～10.00Hz	0.00Hz	☆	63503
P8-16	设定累计上电到达时间	0h～65000h	0h	☆	63504
P8-17	设定累计运行到达时间	0h～65000h	0h	☆	63505
P8-18	启动保护选择	0:不保护 1:保护	0	☆	63506
P8-19	频率检测值(FDT1)	0.00Hz～最大频率	50.00Hz	☆	63507
P8-20	频率检测滞后值	0.0%～100.0%(FDT1电平)	5.0%	☆	63508
P8-21	频率到达检出宽度	0.0%～100.0%(最大频率)	0.0%	☆	63509
P8-25	加速时间1与 加速时间2切换频率点	0.00Hz～最大频率	0.00Hz	☆	63513
P8-26	减速时间1与 减速时间2切换频率点	0.00Hz～最大频率	0.00Hz	☆	63514
P8-27	端子点动优先	0:无效 1:有效	0	☆	63515
P8-28	频率检测值(FDT2)	0.00Hz～最大频率	50.00Hz	☆	63516
P8-29	频率检测滞后值	0.0%～100.0%(FDT2电平)	5.0%	☆	63517
P8-30	任意到达频率检测值1	0.00Hz～最大频率	50.00Hz	☆	63518
P8-31	任意到达频率检出宽度1	0.0%～100.0%(最大频率)	0.0%	☆	63519
P8-32	任意到达频率检测值2	0.00Hz～最大频率	50.00Hz	☆	63520
P8-33	任意到达频率检出宽度2	0.0%～100.0%(最大频率)	0.0%	☆	63521
P8-34	零电流检测水平	0.0%～300.0%	5.0%	☆	63522
P8-35	零电流检测延迟时间	0.01s～600.00s	0.10s	☆	63523
P8-36	输出电流超限值	0.0%(不检测)	200.0%	☆	63524
P8-37	输出电流超限检测延迟时间	0.00s～600.00s	0.00s	☆	63525
P8-38	任意到达电流1	0.0%～300.0%(电机额定电流)	100.0%	☆	63526
P8-39	任意到达电流1宽度	0.0%～300.0%(电机额定电流)	0.0%	☆	63527
P8-40	任意到达电流2	0.0%～300.0%(电机额定电流)	100.0%	☆	63528
P8-41	任意到达电流2宽度	0.0%～300.0%(电机额定电流)	0.0%	☆	63529

4.1 Basic function parameters simple table

P8 Group - Auxiliary Functions

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P8-15	Droop control	0.00Hz～10.00Hz	0.00Hz	☆	63503
P8-16	Set the cumulative power on arrival time	0h～65000h	0h	☆	63504
P8-17	Set the cumulative running arrival time	0h～65000h	0h	☆	63505
P8-18	Activate protection selection	0: Not protected 1: Protected	0	☆	63506
P8-19	Frequency detection value (FDT1)	0.00Hz～Maximum frequency	50.00Hz	☆	63507
P8-20	Frequency detection lag value	0.0%～100.0%（FDT1 level）	5.0%	☆	63508
P8-21	Frequency reaches the 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 lag value	0.0%～100.0%（FDT2 level）	5.0%	☆	63517
P8-30	Random arrival frequency detection value 1	0.00Hz～Maximum frequency	50.00Hz	☆	63518
P8-31	Random arrival frequency detection width 1	0.0%～100.0%（Maximum frequency）	0.0%	☆	63519
P8-32	Random arrival frequency detection value 2	0.00Hz～Maximum frequency	50.00Hz	☆	63520
P8-33	Random 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 limit value	0.0%（No Detect）	200.0%	☆	63524
P8-37	Delay time for detecting output current exceeding limit	0.00s～600.00s	0.00s	☆	63525
P8-38	Any current reaching 1	0.0%～300.0%（Rated current of motor）	100.0%	☆	63526
P8-39	Any current reaching a width of 1	0.0%～300.0%（Rated current of motor）	0.0%	☆	63527
P8-40	Any current reaching 2	0.0%～300.0%（Rated current of motor）	100.0%	☆	63528
P8-41	Any current reaching a width of 2	0.0%～300.0%（Rated current of motor）	0.0%	☆	63529

4.1 基本功能参数简表

P8组-辅助功能

功能码	名称	设定范围	出厂值	属性	EDC 地址
P8-42	定时功能选择	0:无效 1:有效	0	☆	63530
P8-43	定时运行时间选择	0:P8-44设定 1:AI1 2:AI2 3:AI3 注:模拟输入量程对应P8-44	0	☆	63531
P8-44	定时运行时间	0.0Min～6500.0Min	0.0Min	☆	63532
P8-45	AI1输入电压保护值下限	0.00V～P8-46	3.10V	☆	63533
P8-46	AI1输入电压保护值上限	P8-45～10.00V	6.80V	☆	63534
P8-47	模块温度到达	0°C～100°C	75°C	☆	63535
P8-48	风扇控制	0:运行时风扇转 1:风扇一直转 2:P8-54设定温度启动风扇	0	☆	63536
P8-49	唤醒频率	休眠频率(P8-51)～最大频率(P0-10)	0.00Hz	☆	63537
P8-50	唤醒延迟时间	0.0s～6500.0s	0.0s	☆	63538
P8-51	休眠频率	0.00Hz～唤醒频率(P8-49)	0.00Hz	☆	63539
P8-52	休眠延迟时间	0.0s～6500.0s	0.0s	☆	63540
P8-53	本次运行到达时间设定	0.0Min～6500.0Min	0.0Min	☆	63541
P8-57	设定温度启动风扇	0°C～120°C	30°C	☆	63542

P9组-故障与保护

功能码	名称	设定范围	出厂值	属性	EDC 地址
P9-00	电机过载保护选择	0:禁止 1:允许	1	☆	63744
P9-01	电机过载保护增益	0.20～10.00	1.00	☆	63745
P9-02	电机过载预警系数	50%～100%	80%	☆	63746
P9-03	过压失速增益	0～100	30	☆	63747
P9-04	过压失速动作电压	200.0～2000.0V 220V: 380V 380V: 760V	机型确定	☆	63748

4.1 Basic function parameters simple table

P8 Group - Auxiliary Functions

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P8-42	Timer function selection	0: Invalid 1: Valid	0	☆	63530
P8-43	Timed running time selection	0: P8-44 setting 1: AI1 2: AI2 3: AI3 Note: The analog input range corresponds to P8-44	0	☆	63531
P8-44	Timed running time	0.0Min～6500.0Min	0.0Min	☆	63532
P8-45	Lower limit of AI1 input voltage protection value	0.00V～P8-46	3.10V	☆	63533
P8-46	AI1 input voltage protection upper limit	P8-45～10.00V	6.80V	☆	63534
P8-47	The module temperature has reached	0℃～100℃	75°C	☆	63535
P8-48	Fan control	0: Fan rotation during operation 1: The fan keeps turning 2: P8-54 Set temperature to start fan	0	☆	63536
P8-49	Wake up frequency	Sleep frequency (P8-51) to 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	Set the arrival time for this run	0.0Min～6500.0Min	0.0Min	☆	63541
P8-57	Set the temperature to start the fan	0℃～120℃	30°C	☆	63542

P9 group faults and protection

Function	Name	Setting range	Leave factory value	prop-erty	EDC
P9-00	Selection of motor overload protection	0: Prohibit 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	30	☆	63747
P9-04	Overvoltage stall action voltage	200.0～2000.0V 220V: 380V 380V: 760V	Model determina-tion	☆	63536

4.1 基本功能参数简表

P9组-故障与保护

功能码	名称	设定范围	出厂值	属性	EDC 地址
P9-05	过流失速增益	0～100	20	☆	63749
P9-06	过流失速保护电流	100%～200%	150%	☆	63750
P9-07	上电对地短路保护选择	0:无效 1:有效	1	☆	63751
P9-08	能耗制动动作电压	200.0～2000.0V	220V:360V 380V:700V	☆	63752
P9-09	故障自动复位次数	0～65535	0	☆	63753
P9-10	故障自动复位期间 故障DO动作选择	0:不动作 1:动作	0	☆	63754
P9-11	故障自动复位间隔时间	0.1s～100.0s	1.0s	☆	63755
P9-12	输入缺相保护选择	0:禁止 1:允许	1	☆	63756
P9-13	输出缺相保护选择	0:禁止 1:允许	1	☆	63757
P9-14	第一次故障类型	0:无故障 1:保留 2:加速过电流 3:减速过电流 4:恒速过电流 5:加速过电压 6:减速过电压 7:恒速过电压 8:缓冲电阻过载 9:欠压 10:变频器过载 11:电机过载 12:输入缺相 13:输出缺相 14:模块过热 15:外部故障 16:通讯异常 17:接触器异常 18:电流检测异常 19:电机调谐异常 20:保留	--	☆	63758

4.1 Basic function parameters simple table

P9 group faults and protection

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P9-05	Overcurrent stall gain	0～100	20	☆	63749
P9-06	Overcurrent stall protection current	100%～200%	150%	☆	63750
P9-07	Selection of short-circuit protection for power on to ground	0: Invalid 1: Valid	1	☆	63751
P9-08	Energy consumption braking action voltage	200.0～2000.0V	220V:360V 380V:700V	☆	63752
P9-09	Number of automatic fault resets	0～65535	0	☆	63753
P9-10	During the automatic fault reset period Fault DO action selection	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: Prohibit 1: Allow	1	☆	63756
P9-13	Output phase loss protection selection	0: Prohibit 1: Allow	1	☆	63757
P9-14	First fault type	0: No malfunction 1: Reserved 2: Accelerated overcurrent 3: Deceleration overcurrent 4: Constant speed overcurrent 5: Accelerated overvoltage 6: Deceleration overvoltage 7: Constant speed overvoltage 8: Buffer resistor overload 9: Undervoltage 10: Inverter overload 11: Motor overload 12: Input phase loss 13: Output phase loss 14: Module overheating 15: External malfunction 16: Communication abnormality 17: Abnormal contactor 18: Abnormal current detection 19: Abnormal motor tuning 20: Reserved	--	☆	63758

4.1 基本功能参数简表

P9组-故障与保护

功能码	名称	设定范围	出厂值	属性	EDC 地址
P9-15	第二次故障类型	21:参数读写异常 22:变频器硬件异常 23:电机对地短路 24:保留 25:保留 26:运行时间到达 27: 用户自定义故障1 28: 用户自定义故障2 29: 上电时间到达 30:掉载 31:运行时PID反馈丢失 40:快速限流超时 41:运行时切换电机 42: 速度偏差过大 43:电机超速 45:保留 51:保留 70:缺水压故障 71:超水压故障	--	●	63759
P9-16	第三次(最近一次)故障类型		--	●	63760
P9-17	第三次(最近一次)故障时频率	--	--	●	63761
P9-18	第三次(最近一次)故障时电流	--	--	●	63762
P9-19	第三次(最近一次)故障时母线电压	--	--	●	63763
P9-20	第三次(最近一次)故障时输入端子状态	--	--	●	63764
P9-21	第三次(最近一次)故障时输出端子状态	--	--	●	63765
P9-22	第三次(最近一次)故障时变频器状态	--	--	●	63766
P9-23	第三次(最近一次)故障时上电时间	--	--	●	63767
P9-24	第三次(最近一次)故障时运行时间	--	--	●	63768

4.1 Basic function parameters simple table

P9 group faults and protection

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P9-15	Second fault type	21: Parameter read/write exception 22: Hardware abnormality of frequency converter 23: Motor short circuit to ground 24: Reserved 25: Reserved 26: The running time has arrived 27: User defined fault 1 28: User defined fault 2 29: The power on time has arrived 30: Load shedding 31: PID feedback lost during runtime 40: Fast current limiting timeout 41: Switching motors during operation 42: Excessive speed deviation 43: Motor overspeed 45: Reserved 51: Reserved 70: Water shortage pressure fault 71: Overwater pressure fault	--	●	63759
P9-16	Third (most recent) fault type		--	●	63760
P9-17	Frequency during the third (most recent) malfunction	--	--	●	63761
P9-18	Current during the third (most recent) malfunction	--	--	●	63762
P9-19	During the third (most recent) malfunction Bus voltage	--	--	●	63763
P9-20	During the third (most recent) malfunction Input terminal status	--	--	●	63764
P9-21	During the third (most recent) malfunction Output terminal status	--	--	●	63765
P9-22	During the third (most recent) malfunction Inverter status	--	--	●	63766
P9-23	During the third (most recent) malfunction Power on time	--	--	●	63767
P9-24	During the third (most recent) malfunction Running time	--	--	●	63768

4.1 基本功能参数简表

P9组-故障与保护

功能码	名称	设定范围	出厂值	属性	EDC 地址
P9-27	第二次故障时频率	--	--	●	63771
P9-28	第二次故障时电流	--	--	●	63772
P9-29	第二次故障时母线电压	--	--	●	63773
P9-30	第二次故障时输入端子状态	--	--	●	63774
P9-31	第二次故障时输出端子状态	--	--	●	63775
P9-32	第二次故障时变频器状态	--	--	●	63776
P9-33	第二次故障时上电时间	--	--	●	63777
P9-34	第二次故障时运行时间	--	--	●	63778
P9-37	第一次故障时频率	--	--	●	63781
P9-38	第一次故障时电流	--	--	●	63782
P9-39	第一次故障时母线电压	--	--	●	63783
P9-40	第一次故障时输入端子状态	--	--	●	63784
P9-41	第一次故障时输出端子状态	--	--	●	63785
P9-42	第一次故障时变频器状态	--	--	●	63786
P9-43	第一次故障时上电时间	--	--	●	63787
P9-44	第一次故障时运行时间	--	--	●	63788
P9-47	故障保护动作选择1	个位:电机过载(11) 十位:输入缺相(12) 百位:输出缺相(13) 千位:外部故障(15) 万位:通讯异常(16) 0:自由停车 1:按停机方式停机 2:继续运行	00000	☆	63791
P9-54	故障时继续运行频率选择	0:以当前的运行频率运行 1:以设定频率运行 2:以上限频率运行 3:以下限频率运行 4:以异常备用频率运行	0	☆	63798

4.1 Basic function parameters simple table

P9 group faults and protection

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P9-27	Frequency during the second malfunction	--	--	●	63771
P9-28	Current during the second fault	--	--	●	63772
P9-29	Bus voltage during the second fault	--	--	●	63773
P9-30	Input terminal status during the second malfunction	--	--	●	63774
P9-31	Output terminal status during the second fault	--	--	●	63775
P9-32	The status of the frequency converter during the second malfunction	--	--	●	63776
P9-33	Power on time during the second malfunction	--	--	●	63777
P9-34	Running time during the second malfunction	--	--	●	63778
P9-37	Frequency during the first malfunction	--	--	●	63781
P9-38	Current during the first malfunction	--	--	●	63782
P9-39	Bus voltage during the first malfunction	--	--	●	63783
P9-40	Input terminal status during the first malfunction	--	--	●	63784
P9-41	Output terminal status during the first malfunction	--	--	●	63785
P9-42	The status of the frequency converter during the first malfunction	--	--	●	63786
P9-43	Power on time during the first malfunction	--	--	●	63787
P9-44	Running time during the first malfunction	--	--	●	63788
P9-47	Fault protection action selection 1	Position: Motor overload (11) Ten digits: Input missing phase (12) Hundred bit: Output phase loss (13) Thousand positions: External faults (15) Ten thousand digits: Communica-tion abnormality (16) 0: Free Parking 1: Stop the machine according to the shutdown method 2: Continue running	00000	☆	63791
P9-54	Continue operating frequency selection in case of malfunction	0: Run at the current operating frequency 1: Run at the set frequency 2: Operate at the upper limit frequency 3: Operate at the lower limit frequency 4: Operating at an abnormal backup frequency	0	☆	63798

4.1 基本功能参数简表

P9组-故障与保护

功能码	名称	设定范围	出厂值	属性	EDC 地址
P9-55	异常备用频率	60.0%～100.0% (100.0%对应最大频率P0-10)	100.0%	☆	63799
P9-59	瞬时停电动作选择	0:无效 1:减速 2:减速停机	0	☆	63803
P9-60	瞬停动作暂停判断电压	P9-62～100.0%	85.0%	☆	63804
P9-61	瞬时停电电压回升判断时间	0.00s～100.00s	0.50s	☆	63805
P9-62	瞬时停电动作判断电压	60.0%～100.0% (标准母线电压)	80.0%	☆	63806
P9-63	掉载保护选择	0:无效 1:有效	0	☆	63807
P9-64	掉载检测水平	0.0～100.0%	10.0%	☆	63808
P9-65	掉载检测时间	0.0～60.0s	1.0s	☆	63809

PA组-PID功能

功能码	名称	设定范围	出厂值	属性	EDC 地址
PA-00	PID给定源	0:PA-01设定 1:AI1 2:AI2 3:AI3外引键盘电位器 4:HDI输入脉冲设定(X5) 5:通讯给定 6:多段指令给定 7:由供水组b0-01压力给定	0	☆	64000
PA-01	PID数值给定	0.0～100.0%	50.0%	☆	64001
PA-02	PID反馈源	0:AI1 1:AI2 2:AI3外引键盘电位器 3:AI1-AI2 4:HDI输入脉冲设定(X5) 5:通讯给定 6:AI1+AI2 7:MAX(|AI1|, |AI2|) 8:MIN(|AI1|, |AI2|)	0	☆	64002

4.1 Basic function parameters simple table

P9 group faults and protection

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
P9-55	Abnormal backup frequency	60.0%～100.0% (100.0% corresponds to maximum frequency P0-10)	100.0%	☆	63799
P9-59	Selection of instantaneous power outage action	0: Invalid 1: Slow down 2: Slow down and stop the machine	0	☆	63803
P9-60	Instant stop action pause voltage judgment	P9-62～100.0%	85.0%	☆	63804
P9-61	Instantaneous power outage voltage rebound judgment time	0.00s～100.00s	0.50s	☆	63805
P9-62	Instantaneous power outage action judgment voltage	60.0%～100.0% (Standard bus voltage)	80.0%	☆	63806
P9-63	Load drop protection selection	0: Invalid 1: Effective	0	☆	63807
P9-64	Load drop detection level	0.0～100.0%	10.0%	☆	63808
P9-65	Load drop detection time	0.0～60.0s	1.0s	☆	63809

PA group PID function

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
PA-00	PID given source	0: PA-01 setting 1: AI1 2: AI2 3: AI3 external keyboard potentiome-ter 4: HDI input pulse setting (X5) 5: Communication given 6: Multi segment instruction given 7: Given by the pressure of water supply group b0-01	0	☆	64000
PA-01	PID value given	0.0～100.0%	50.0%	☆	64001
PA-02	PID feedback source	0: AI1 1: AI2 2: AI3 external keyboard potentiome-ter 3: AI1-AI2 4: HDI input pulse setting (X5) 5: Communication given 6: AI1+AI2 7: MAX（|AI1|, |AI2|） 8: MIN（|AI1|, |AI2|）	0	☆	64002

4.1 基本功能参数简表

PA组-PID功能

功能码	名称	设定范围	出厂值	属性	EDC 地址
PA-03	PID作用方向	0:正作用 1:反作用	0	☆	64003
PA-04	PID给定反馈量程	0～65535	1000	☆	64004
PA-05	比例增益KP1	0.0～100.0	20.0	☆	64005
PA-06	积分时间Ti1	0.01～10.00s	2.00s	☆	64006
PA-07	微分时间Td1	0.000～10.000s	0.000s	☆	64007
PA-08	PID反转截止频率	0.00～最大频率	0.00Hz	☆	64008
PA-09	PID偏差极限	0.0～100.0%	0.0%	☆	64009
PA-10	PID微分限幅	0.00～100.00%	0.10%	☆	64010
PA-11	PID给定变化时间	0.00～650.00s	0.00s	☆	64011
PA-12	PID反馈滤波时间	0.00～60.00s	0.00s	☆	64012
PA-13	PID输出滤波时间	0.00～60.00s	0.00s	☆	64013
PA-15	比例增益KP2	0.0～100.0	20.0	☆	64015
PA-16	积分时间Ti2	0.01s～10.00s	2.00s	☆	64016
PA-17	微分时间Td2	0.000s～10.000s	0.000s	☆	64017
PA-18	PID参数切换条件	0:不切换 1:通过X端子切换 2:根据偏差自动切换	0	☆	64018
PA-19	PID参数切换偏差1	0.0%～PA-20	20.0%	☆	64019
PA-20	PID参数切换偏差2	PA-19～100.0%	80.0%	☆	64020
PA-21	PID初值	0.0～100.0%	0.0%	☆	64021
PA-22	PID初值保持时间	0.00～650.00s	0.00s	☆	64022
PA-23	两次输出偏差正向最大值	0.00～100.00%	1.00%	☆	64023
PA-24	两次输出偏差反向最大值	0.00～100.00%	1.00%	☆	64024
PA-25	PID积分属性	0:不切换 1:通过X端子切换 2:根据偏差自动切换	00	☆	64025

4.1 Basic function parameters simple table

PA group PID function

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
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	Integral time Ti1	0.01～10.00s	2.00s	☆	64006
PA-07	Differential time Td1	0.000～10.000s	0.000s	☆	64007
PA-08	PID inversion cut-off frequency	0.00 to maximum frequency	0.00Hz	☆	64008
PA-09	PID deviation limit	0.0～100.0%	0.0%	☆	64009
PA-10	PID differential limiting	0.00～100.00%	0.10%	☆	64010
PA-11	PID given change time	0.00～650.00s	0.00s	☆	64011
PA-12	PID feedback filtering time	0.00～60.00s	0.00s	☆	64012
PA-13	PID output filtering time	0.00～60.00s	0.00s	☆	64013
PA-15	Proportional gain KP2	0.0～100.0	20.0	☆	64015
PA-16	Integral 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: No switching 1: Switching via X terminal 2: Automatic switching based on deviation	0	☆	64018
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	0.00～650.00s	0.00s	☆	64022
PA-23	Maximum value of two output deviations in the positive direction	0.00～100.00%	1.00%	☆	64023
PA-24	Maximum value of two output deviations in the reverse direction	0.00～100.00%	1.00%	☆	64024
PA-25	PID integral attribute	0: Do not switch 1: Switching through X terminal 2: Automatically switch based on deviation	00	☆	64025

4.1 基本功能参数简表

PA组-PID功能

功能码	名称	设定范围	出厂值	属性	EDC 地址
PA-26	PID反馈丢失检测值	0.0%:不判断反馈丢失 0.1～100.0%	0.0%	☆	64026
PA-27	PID反馈丢失检测时间	0.0s～20.0s	0.0s	☆	64027
PA-28	PID停机运算	0:停机不运算 1:停机时运算	1	☆	64028

Pb组 - 摆频、定长和计数

功能码	名称	设定范围	出厂值	属性	EDC 地址
Pb-00	摆频设定方式	0.0%:不判断反馈丢失 0.1～100.0%	0	☆	64256
Pb-01	摆频幅度	0.0～100.0%	0.0%	☆	64257
Pb-02	突跳频率幅度	0.0～50.0%	0.0%	☆	64258
Pb-03	摆频周期	0.1～3000.0s	10.0s	☆	64259
Pb-04	摆频的三角波上升时间	0.1～100.0%	50.0%	☆	64260
Pb-05	设定长度	0～65535m	1000m	☆	64261
Pb-06	实际长度	0～65535m	0m	☆	64262
Pb-07	每米脉冲数	0.1～6553.5	100.0	☆	64263
Pb-08	设定计数值	1～65535	1000	☆	64264
Pb-09	指定计数值	1～65535	1000	☆	64265

4.1 Basic function parameters simple table

PA group PID function

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
PA-26	PID feedback loss detection value	0.0%: Feedback loss without judgment 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: Shutdown without calculation 1: Calculation during shutdown	1	☆	64028

Pb group - swing frequency, fixed length, and counting

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
Pb-00	Swing frequency setting method	0.0%: Feedback loss without judgment 0.1～100.0%	0	☆	64256
Pb-01	Swing frequency amplitude	0.0～100.0%	0.0%	☆	64257
Pb-02	Jumping frequency amplitude	0.0～50.0%	0.0%	☆	64258
Pb-03	Oscillation frequency cycle	0.1～3000.0s	10.0s	☆	64259
Pb-04	Rise time of triangular wave in oscillation 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	Pulse count per meter	0.1～6553.5	100.0	☆	64263
Pb-08	Set the count value	1～65535	1000	☆	64264
Pb-09	Specify the count value	1～65535	1000	☆	64265

4.1 基本功能参数简表

Pc组 多段指令和简易PLC

功能码	名称	设定范围	出厂值	属性	EDC 地址
PC-00	多段指令0	-100.0%～100.0%	0.0%	☆	64512
PC-01	多段指令1	-100.0%～100.0%	0.0%	☆	64513
PC-02	多段指令2	-100.0%～100.0%	0.0%	☆	64514
PC-03	多段指令3	-100.0%～100.0%	0.0%	☆	64515
PC-04	多段指令4	-100.0%～100.0%	0.0%	☆	64516
PC-05	多段指令5	-100.0%～100.0%	0.0%	☆	64517
PC-06	多段指令6	-100.0%～100.0%	0.0%	☆	64518
PC-07	多段指令7	-100.0%～100.0%	0.0%	☆	64519
PC-08	多段指令8	-100.0%～100.0%	0.0%	☆	64520
PC-09	多段指令9	-100.0%～100.0%	0.0%	☆	64521
PC-10	多段指令10	-100.0%～100.0%	0.0%	☆	64522
PC-11	多段指令11	-100.0%～100.0%	0.0%	☆	64523
PC-12	多段指令12	-100.0%～100.0%	0.0%	☆	64524
PC-13	多段指令13	-100.0%～100.0%	0.0%	☆	64525
PC-14	多段指令14	-100.0%～100.0%	0.0%	☆	64526
PC-15	多段指令15	-100.0%～100.0%	0.0%	☆	64527
PC-16	简易PLC运行方式	0:单次运行结束停机 1:单次运行结束保持终值 2:一直循环	0	☆	64528

4.1 Basic function parameters simple table

PC group multi-stage instructions and simple PLC

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
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
PC-04	Multi segment instruction 4	-100.0%～100.0%	0.0%	☆	64516
PC-05	Multi segment instruction 5	-100.0%～100.0%	0.0%	☆	64517
PC-06	Multi segment instruction 6	-100.0%～100.0%	0.0%	☆	64518
PC-07	Multi segment instruction 7	-100.0%～100.0%	0.0%	☆	64519
PC-08	Multi segment instruction 8	-100.0%～100.0%	0.0%	☆	64520
PC-09	Multi segment instruction 9	-100.0%～100.0%	0.0%	☆	64521
PC-10	Multi segment instruction 10	-100.0%～100.0%	0.0%	☆	64522
PC-11	Multi segment instruction 11	-100.0%～100.0%	0.0%	☆	64523
PC-12	Multi segment instruction 12	-100.0%～100.0%	0.0%	☆	645224
PC-13	Multi segment instruction 13	-100.0%～100.0%	0.0%	☆	64525
PC-14	Multi segment instruction 14	-100.0%～100.0%	0.0%	☆	64526
PC-15	Multi segment instruction 15	-100.0%～100.0%	0.0%	☆	64527
PC-16	Simple PLC operation mode	0: Stop at the end of a single run 1: Keep the final value at the end of a single run 2: Keep looping	0	☆	64528

4.1 基本功能参数简表

Pc组-多段指令和简易PLC					
功能码	名称	设定范围	出厂值	属性	EDC 地址
PC-17	简易PLC掉电记忆选择	个位:掉电记忆选择 0:掉电不记忆 1:掉电记忆 十位:停机记忆选择 0:停机不记忆 1:停机记忆	00	☆	64529
PC-18	简易PLC0段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64530
PC-19	简易PLC0段 加减速时间选择	0～3	0	☆	64531
PC-20	简易PLC1段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64532
PC-21	简易PLC1段 加减速时间选择	0～3	0	☆	64533
PC-22	简易PLC2段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64534
PC-23	简易PLC2段 加减速时间选择	0～3	0	☆	64535
PC-24	简易PLC3段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64536
PC-25	简易PLC3段 加减速时间选择	0～3	0	☆	64537
PC-26	简易PLC4段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64538
PC-27	简易PLC4段 加减速时间选择	0～3	0	☆	64539
PC-28	简易PLC5段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64540
PC-29	简易PLC5段 加减速时间选择	0～3	0	☆	64541
PC-30	简易PLC6段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64542
PC-31	简易PLC6段 加减速时间选择	0～3	0	☆	64543
PC-32	简易PLC7段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64544
PC-33	简易PLC7段 加减速时间选择	0～3	0	☆	64545
PC-34	简易PLC8段运行时间	0.0s(h)～6553.5s(h)	0.0s(h)	☆	64546

4.1 Basic function parameters simple table

PC group multi-stage instructions and simple PLC					
Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
PC-17	Simple PLC power down memory selection	Position: Power down memory selection 0: No memory after power failure 1: Power off memory Ten digit: Shutdown Memory Selection 0: Shutdown without memory 1: Shutdown 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 selection	0～3	0	☆	64531
PC-20	Simple PLC 1-stage 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 segment 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 segment 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 segment 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 segment Acceleration and deceleration time selection	0～3	0	☆	64541
PC-30	Simple PLC 6-stage running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64542
PC-31	Simple PLC 6 segment Acceleration and deceleration time selection	0～3	0	☆	64543
PC-32	Simple PLC 7-stage 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-34	Simple PLC 8-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64546

4.1 基本功能参数简表

Pc组-多段指令和简易PLC

功能码	名称	设定范围	出厂值	属性	EDC 地址
PC-35	简易PLC8段 加减速时间选择	0～3	0	☆	64547
PC-36	简易PLC9段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64548
PC-37	简易PLC9段 加减速时间选择	0～3	0	☆	64549
PC-38	简易PLC10段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64550
PC-39	简易PLC10段 加减速时间选择	0～3	0	☆	64551
PC-40	简易PLC11段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64552
PC-41	简易PLC11段 加减速时间选择	0～3	0	☆	64553
PC-42	简易PLC12段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64554
PC-43	简易PLC12段 加减速时间选择	0～3	0	☆	64555
PC-44	简易PLC13段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64556
PC-45	简易PLC13段 加减速时间选择	0～3	0	☆	64557
PC-46	简易PLC14段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64558
PC-47	简易PLC14段 加减速时间选择	0～3	0	☆	64559
PC-48	简易PLC15段运行时间	0.0s (h) ～6553.5s (h)	0.0s(h)	☆	64560
PC-49	简易PLC15段 加减速时间选择	0～3	0	☆	64561
PC-50	简易PLC运行 时间单位	0:s (秒)　1:h (小时)	0	☆	64562
PC-51	多段指令0给定方式	0:功能码PC-00给定 1:AI1 2:AI2 3:AI3外引键盘电位器 4:HDI输入脉冲 5:PID 6:预置频率 (P0-08) 给定， UP/DOWN可修改	0	☆	64563

4.1 Basic function parameters simple table

Pc Group - Multi-segment Instructions and Simple PLC

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
PC-35	Simple PLC 8-segment Acceleration and deceleration time selection	0～3	0	☆	64547
PC-36	Simple PLC 9-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64548
PC-37	Simple PLC 9-segment Acceleration and deceleration time selection	0～3	0	☆	64549
PC-38	Simple PLC 10-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64550
PC-39	Simple PLC 10-segment Acceleration and deceleration time selection	0～3	0	☆	64551
PC-40	Simple PLC 11-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64552
PC-41	Simple PLC 11-segment Acceleration and deceleration time selection	0～3	0	☆	64553
PC-42	Simple PLC 12-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64554
PC-43	Simple PLC 12-segment Acceleration and deceleration time selection	0～3	0	☆	64555
PC-44	Simple PLC 13-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64556
PC-45	Simple PLC 13-segment Acceleration and deceleration time selection	0～3	0	☆	64557
PC-46	Simple PLC 14-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64558
PC-47	Simple PLC 14-segment Acceleration and deceleration time selection	0～3	0	☆	64559
PC-48	Simple PLC 15-segment running time	0.0s（h）～6553.5s（h）	0.0s(h)	☆	64560
PC-49	Simple PLC 15-segment Acceleration and deceleration time selection	0～3	0	☆	64561
PC-50	Simple PLC operation Time unit	0: s (seconds) 1: h (hours)	0	☆	64562
PC-51	Multi segment instruction 0 given method	0: Function code PC-00 given 1: AI1 2: AI2 3: AI3 external keyboard potentiometer 4: HDI input pulse 5: PID 6: Preset frequency (P0-08) given, UP/DOWN can be modified	0	☆	64563

4.1 基本功能参数简表

Pd组-通讯参数

功能码	名称	设定范围		出厂值	属性	EDC 地址
Pd-00	波特率	0:300BPS 1:600BPS 2:1200BPS 3:2400BPS 4:4800BPS	5:9600BPS 6:19200BPS 7:38400BPS 8:57600BPS 9:保留	5	☆	64768
Pd-01	数据格式	0:无校验(8-N-2) 1:偶校验(8-E-1) 2:奇校验(8-O-1) 3:无校验(8-N-1)		3	☆	64769
Pd-02	本机地址	1～247		1	☆	64770
Pd-03	应答延迟	0～20ms		2	☆	64771
Pd-04	通讯超时时间	0.0(无效), 0.1s～60.0s		0.0	☆	64772
Pd-05	数据传送格式选择	1:标准的MODBUS协议		1	☆	64773
Pd-06	通讯读取电流分辨率	0:0.01A 1:0.1A		0	☆	64774
Pd-07	保留	-		0	☆	64775

PP组-功能码管理

功能码	名称	设定范围	出厂值	属性	EDC 地址
PP-00	用户密码	0～65535	00000	☆	7936
PP-01	参数初始化	0:无操作 01:恢复出厂参数,不包括电机参数 02:清除记录信息 03:恢复出厂参数,包括电机参数 04:保留 10:切换至60HZ模式	000	★	7937
PP-02	功能参数组显示选择	个位:U组显示选择 十位:A组显示选择 百位:b组显示选择 0:不显示 1:显示	111	★	7938
PP-04	功能码修改属性	0:可修改 1:不可修改	0	☆	7940
PP-05	保留	-	-	-	-

4.1 Basic function parameters simple table

Pd group communication parameters

Function code	Name	Setting range		Leave factory value	prop-erty	EDC address
Pd-00	Baud rate	0: 300BPS 1: 600BPS 2: 1200BPS 3: 2400BPS 4: 4800BPS	5: 9600BPS 6: 19200BPS 7: 38400BPS 8: 57600BPS 9: Reserved	5	☆	64768
Pd-01	Data format	0: No verification (8-N-2) 1: Even verification (8-E-1) 2: Odd verification (8-O-1) 3: No verification (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 transmission format selection	1: Standard MODBUS protocol		1	☆	64773
Pd-06	Communication reading current resolution	0: 0.01A 1: 0.1A		0	☆	64774
Pd-07	Reserved	-		0	☆	64775

PP Group - Function Code Management

功能码	名称	设定范围	出厂值	属性	EDC 地址
PP-00	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 04: Reserved 10: Switch to 60HZ mode	000	★	7937
PP-02	Function parameter group display selection	Position: U group display selection Ten digits: Group A display selection Hundred digit: Group B display selection 0: Not displayed 1: Display	111	★	7938
PP-04	Function code modification attribute	0: modifiable 1: non modifiable	0	☆	7940
PP-05	Reserved	-	-	-	-

4.1 基本功能参数简表

A0组 转矩控制参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
A0-00	速度/转矩选择	0:速度控制 1:转矩控制	0	☆	40960
A0-01	转矩设定源	0:A0-03设定 1:AI1设定 2:AI2设定 3:AI3键盘电位器设定 4:HDI高速脉冲设定 5:通讯设定 6:MIN(AI1,AI2) 7:MAX(AI1,AI2) 注:1-7满量程对应A0-03数字设定	0	★	40961
A0-02	保留	-	-	-	-
A0-03	转矩数字设定	-200.0%～200.0%	150.0%	☆	40963
A0-04	保留	-	-	-	-
A0-05	转矩正向最大频率	0.00Hz～最大频率(P0-10)	50.00Hz	☆	40965
A0-06	转矩反向最大频率	0.00Hz～最大频率(P0-10)	50.00Hz	☆	40966
A0-07	矩转加速时间	0～655.35s	0.00s	☆	40967
A0-08	矩转减速时间	0～655.35s	0.00s	☆	40968

A5组 控制优化参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
A5-00	DPWM切换上限频率	0.00Hz～15.00Hz	12.00Hz	☆	42240
A5-01	PWM调制方式	0:异步调制 1:同步调制	0	☆	42241
A5-02	死区补偿模式选择	0:不补偿 1:补偿模式1 2:补偿模式2	1	☆	42242
A5-03	随机PWM深度	0:随机PWM无效 1～10:PWM载频随机深度	0	☆	42243
A5-04	快速限流使能	0:不使能 1:使能	1	☆	42244
A5-05	电流检测补偿	0～100	5	☆	42245

4.1 Basic function parameters simple table

A0 group torque control parameters

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
A0-00	Speed/torque selection	0: Speed control 1: Torque control	0	☆	40960
A0-01	Torque setting source	0: A0-03 setting 1: AI1 setting 2: AI2 setting 3: AI3 keyboard potentiometer setting 4: HDI high-speed pulse setting 5: Communication settings 6: MIN(AI1,AI2) 7: MAX(AI1,AI2) Note: 1-7 full range corresponds to A0-03 digital setting	0	★	40961
A0-02	retain	-	-	-	-
A0-03	Torque digital setting	-200.0%～200.0%	150.0%	☆	40963
A0-04	retain	-	-	-	-
A0-05	Maximum frequency of forward torque	0.00Hz to maximum frequency (P0-10)	50.00Hz	☆	40965
A0-06	Maximum frequency of torque reversal	0.00Hz to maximum frequency (P0-10)	50.00Hz	☆	40966
A0-07	Torque to acceleration time	0～655.35s	0.00s	☆	40967
A0-08	Torque deceleration time	0～655.35s	0.00s	☆	40968

A5 group control optimization parameters

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
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	Quick current limiting enable	0: Do not enable 1: Enable	1	☆	42244
A5-05	Current detection compensation	0～100	5	☆	42245

4.1 基本功能参数简表

A5组 控制优化参数

功能码	名称	设定范围	出厂值	属性	EDC 地址
A5-06	欠压点设置	100.0～2000.0V	机型确定	☆	42246
A5-07	SVC优化模式选择	0:不优化 1:优化模式1 2:优化模式2	1	☆	42247
A5-08	死区时间调整	100～200%	150%	☆	42248
A5-09	过压点设定	200.0-2500.0V	机型确定	★	42249

b0组 智能恒压供水参数表 (适用于恒温控制)

功能码	名称	设定范围	出厂值	属性	EDC 地址
b0-00	压力传感器量程	0～99.99Bar(kg)	10.00	☆	45056
b0-01	目标压力数字给定 注:目标压力由PA-01选定	0～99.99Bar(kg)	5.00	☆	45057
b0-02	休眠压力	0～150.0%(以目标压力比列联动) 注:最大值受(b0-00/b0-01)*100%限制	100.0%	☆	45058
b0-03	唤醒压力	0～100.0% (以目标压力比列联动)	95.0%	☆	45059
b0-04	压力偏差量	0～100.0% (以目标压力比列联动)	2.0%	☆	45060
b0-05	休眠延时	0～6553.5s （0:关闭休眠）	20.0s	☆	45061
b0-06	唤醒延时	0～6553.5s	0.0s	☆	45062
b0-07	压力上限保护值	0～200.0% (以目标压力比列联动)	120.0%	☆	45063
b0-08	压力上限保护停机延时	0～6553.5s（0:关闭检测）	0.0s	☆	45064
b0-09	恒压强制休眠延时	0～6553.5s（0:关闭检测）	0.0s	☆	45065
b0-10	辅泵数量设定	0～4（0:关闭一拖多）	0	☆	45066
b0-11	加辅泵压力容差	0～100.0% (以目标压力比列联动)	5.0%	☆	45067
b0-12	加辅泵延时	0～6553.5s	30.0s	☆	45068
b0-13	减辅泵压力容差	0～100.0% (以目标压力比列联动)	5.0%	☆	45069
b0-14	减辅泵延时	0～6553.5s	30.0s	☆	45070

4.1 Basic function parameters simple table

A5 group control optimization parameters

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
A5-06	Undervoltage point setting	100.0～2000.0V	Model determination	☆	42246
A5-07	SVC optimization mode selection	0: Not optimized 1: Optimization Mode 1 2: Optimization Mode 2	1	☆	42247
A5-08	Dead time adjustment	100～200%	150%	☆	42248
A5-09	Overvoltage point setting	200.0-2500.0V	Model determination	★	42249

B0 group intelligent constant pressure water supply parameter table (applicable to constant temperature control)

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
b0-00	Range of pressure sensor	0～99.99Bar（kg）	10.00	☆	45056
b0-01	Target pressure number given Note: The target pressure is selected by PA-01	0～99.99Bar（kg）	5.00	☆	45057
b0-02	Sleep pressure	0-150.0% (linked by target pressure ratio) Note: The maximum value is limited by (b0-00/b0-01) * 100%	100.0%	☆	45058
b0-03	Awaken stress	0-100.0% (linked by target pressure ratio)	95.0%	☆	45059
b0-04	Pressure deviation amount	0-100.0% (linked by target pressure ratio)	2.0%	☆	45060
b0-05	Sleep delay	0-6553.5s (0: sleep off)	20.0s	☆	45061
b0-06	Wake up delay	0～6553.5s	0.0s	☆	45062
b0-07	Pressure upper limit protection value	0-200.0% (linked by target pressure ratio)	120.0%	☆	45063
b0-08	Pressure upper limit protection shutdown delay	0-6553.5s (0: turn off detection)	0.0s	☆	45064
b0-09	Constant voltage forced sleep delay	0-6553.5s (0: turn off detection)	0.0s	☆	45065
b0-10	Quantity setting of auxiliary pumps	0-4 (0: turn off one to many)	0	☆	45066
b0-11	Pressure tolerance of auxiliary pump	0-100.0% (linked by target pressure ratio)	5.0%	☆	45067
b0-12	Add auxiliary pump delay	0～6553.5s	30.0s	☆	45068
b0-13	Pressure tolerance of auxiliary pump	0-100.0% (linked by target pressure ratio)	5.0%	☆	45069
b0-14	Delay of auxiliary pump	0～6553.5s	30.0s	☆	45070

4.1 基本功能参数简表

b0组 智能恒压供水参数表 (适用于恒温控制)

功能码	名称	设定范围	出厂值	属性	EDC 地址
b0-15	压力上限紧急减辅泵延时(抢占b0-14的正常减泵时间)	0～6553.5s	3.0s	☆	45071
b0-16	缺水保护压力	0～100.0% (以目标压力比列联动) 注:超过上限频率开始检测	20.0%	☆	45072
b0-17	缺水保护延时	0～6553.5s（0:关闭检测）	0.0s	☆	45073
b0-18	休眠方式选择	0: 关闭休眠 1: 压力休眠(反馈压力 ≥ b0-02) 2: 频率休眠(输出频率 ≤ b0-19) 3: 休眠压力(b0-02)+休眠频率(b0-19)	20.0%	★	45074
b0-19	休眠侦测频率	0.00Hz～最大频率(P0-10) 注:仅对b0-18=2有效	20.00Hz	☆	45075
b0-20	压力保护故障选择	00～11 个位:超压力上限保护(b0-07) 十位:缺水欠压力保护(b0-16) 0: 不报故障 1: 报故障 注:欠压故障Err70,超压故障Err71	00	★	45076
b0-21	休眠停机方式	0: 减速停机 1: 自由停车	0	★	45077

U0组 参数监视组

功能码	名称	设定范围	出厂值	属性	EDC 地址
U0-00	运行频率(Hz)	--	0.01Hz	●	28672
U0-01	设定频率(Hz)	--	0.01Hz	●	28673
U0-02	母线电压(V)	--	0.1V	●	28674
U0-03	输出电压(V)	--	1V	●	28675
U0-04	输出电流(A)	--	0.01A	●	28676

4.1 Basic function parameters simple table

B0 group intelligent constant pressure water supply parameter table (applicable to constant temperature control)

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
b0-15	Pressure upper limit emergency reduction auxiliary pump delay (Seize the normal pump reduction time of b0-14)	0～6553.5s	3.0s	☆	45071
b0-16	Water shortage protection pressure	0-100.0% (linked by target pressure ratio) Note: Detection begins when the frequency exceeds the upper limit	20.0%	☆	45072
b0-17	Water shortage protection delay	0-6553.5s (0: turn off detection)	0.0s	☆	45073
b0-18	Sleep mode selection	0: Turn off sleep mode 1: Pressure sleep (feedback pressure ≥ b0-02) 2: Frequency sleep (output frequency ≤ b0-19) 3: Sleep pressure (b0-02)+sleep frequency (b0-19)	20.0%	★	45074
b0-19	Sleep detection frequency	0.00Hz to maximum frequency (P0-10) Note: Only valid for b0-18=2	20.00Hz	☆	45075
b0-20	Selection of pressure protection faults	00～11 Position: Overpressure upper limit protection (b0-07) Tenth digit: Water shortage and under pressure protection (b0-16) 0: No fault reported 1: Report a malfunction Note: Undervoltage fault Err70, Overvoltage fault Err71	00	★	45076
b0-21	Sleep shutdown mode	0: Slow down and stop the machine 1: Free Parking	0	★	45077

U0 parameter monitoring group

功能码	名称	设定范围	出厂值	属性	EDC 地址
U0-00	Operating frequency (Hz)	--	0.01Hz	●	28672
U0-01	Set 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

4.1 基本功能参数简表

U0组 参数监视组

功能码	名称	设定范围	出厂值	属性	EDC 地址
U0-05	输出功率(kW)	--	0.1kW	●	28677
U0-06	输出转矩(%)	--	0.1%	●	28678
U0-07	X输入状态	--	1	●	28679
U0-08	Y输出状态	--	1	●	28680
U0-09	AI1电压(V)	--	0.01V	●	28681
U0-10	AI2电压(V)	--	0.01V	●	28682
U0-11	AI3面板电位器电压	--	0.01V	●	28683
U0-12	计数值	--	1	●	28684
U0-13	长度值	--	1	●	28685
U0-14	负载速度显示	--	1	●	28686
U0-15	PID设定(无量纲) PID设定压力值(供水激活)	--	1 0.01kg	●	28687
U0-16	PID反馈(无量纲) PID反馈压力值(供水激活)	--	1 0.01kg	●	28688
U0-17	PLC阶段	--	1	●	28689
U0-18	HDI输入脉冲频率(Hz)	--	0.01kHz	●	28690
U0-19	反馈速度(单位0.1Hz)	--	0.1Hz	●	28691
U0-20	剩余运行时间	--	0.1Min	●	28692
U0-21	AI1校正前电压	--	0.001V	●	28693
U0-22	AI2校正前电压	--	0.001V	●	28694
U0-23	面板电位器校正前电压	--	0.001V	●	28695
U0-24	线速度	--	1m/Min	●	28696
U0-25	当前上电时间	--	1Min	●	28697
U0-26	当前运行时间	--	0.1Min	●	28698
U0-27	HDI输入脉冲频率	--	1Hz	●	28699
U0-28	通讯设定值	--	0.01%	●	28700
U0-30	主频率X显示	--	0.01Hz	●	28702
U0-31	辅频率Y显示	--	0.01Hz	●	28703
U0-32	查看任意内存地址值	--	1	●	28704
U0-35	目标转矩(%)	--	0.1%	●	28707

4.1 Basic function parameters simple table

U0 parameter monitoring group

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
U0-05	Output power (kW)	--	0.1kW	●	28677
U0-06	Output torque (%)	--	0.1%	●	28678
U0-07	X input status	--	1	●	28679
U0-08	Y 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 (dimensionless) PID set pressure value (water supply activation)	--	1 0.01kg	●	28687
U0-16	PID feedback (dimensionless) PID feedback pressure value (water supply activation)	--	1 0.01kg	●	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 pre calibration voltage	--	0.001V	●	28693
U0-22	AI2 pre calibration voltage	--	0.001V	●	28694
U0-23	Voltage before panel potentiometer calibration	--	0.001V	●	28695
U0-24	Linear velocity	--	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 any memory address value	--	1	●	28704
U0-35	Target torque (%)	--	0.1%	●	28707

4.1 基本功能参数简表

U0组 参数监视组

功能码	名称	设定范围	出厂值	属性	EDC 地址
U0-36	当前工作辅助泵数量	--	0	●	28708
U0-37	功率因素角度	--	0.1°	●	28709
U0-39	保留	--	1V	●	28711
U0-40	保留	--	1V	●	28712
U0-41	X输入状态直观显示	--	1	●	28713
U0-42	Y输入状态直观显示	--	1	●	28714
U0-43	X功能状态直观显示1	--	1	●	28715
U0-44	X功能状态直观显示2	--	1	●	28716
U0-45	故障信息	--	1	●	28717
U0-59	设定频率 (%)	--	0.01%	●	28731
U0-60	运行频率 (%)	--	0.01%	●	28732
U0-61	变频器状态	--	1	●	28733
U0-62	当前故障编码	--	1	●	28734
U0-65	转矩上限	--	0.1%	●	28737
U0-66	U相电流显示(A)	--	0.01A	●	28738
U0-67	V相电流显示(A)	--	0.01A	●	28739
U0-68	W相电流显示(A)	--	0.01A	●	28740

4.1 Basic function parameters simple table

U0 parameter monitoring group

Function code	Name	Setting range	Leave factory value	prop-erty	EDC address
U0-36	Current number of auxiliary pumps for work	--	0	●	28708
U0-37	Power factor perspective	--	0.1°	●	28709
U0-39	retain	--	1V	●	28711
U0-40	retain	--	1V	●	28712
U0-41	Intuitive display of X input status	--	1	●	28713
U0-42	Y Input Status Visual Display	--	1	●	28714
U0-43	Visual display of X function status 1	--	1	●	28715
U0-44	Visual display of X function status 2	--	1	●	28716
U0-45	Fault information	--	1	●	28717
U0-59	Set 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
U0-66	U-phase current display (A)	--	0.01A	●	28738
U0-67	V-phase current display (A)	--	0.01A	●	28739
U0-68	W-phase current display (A)	--	0.01A	●	28740

P0-29行业应用宏使用说明

使用宏参数须要注意，本机的宏功能，旨意在减少客户配置功能码参数的量，并不是所有参数都考虑得百分之百齐全，现场如有使用中遇到些问题，须具体问题具体分析，发挥自已的经验并调节一些有帮助的参数以达到最佳的使用效果。

当前已设定了某一个宏时，切换另一个宏使用时建议先执行P0-29=10000恢复出厂值，再执行另一个宏设定操作。

一、恢复出厂参数宏 （P0-29=0不包含电机参数组）

P0-29=10000同等于PP-01=1的恢复出厂值效果。执行行业应用宏操作前，请先执行一次P0-29=10000。

二、恒压供水宏：（小提示：1bar=1kg=0.1MPa=10米水柱）

本恒压力供水特点：直接选择供水宏，再输入传感器量程值和目标压力，其它参数基本上不动就能直接实现高效率的恒水供水控制，调压能力强大，反应迅速灵敏，因此比传统的PID控制频率方式的供水控制更优秀，压力更稳定，更节能等优点。同时对有压力罐的现场有更好的恒压保压效果。以及主板双继电器直接实现一拖三，或配合Y1和HDO端子外接继电器控制最多可实现一拖五供水，有独立的加泵和减泵压力以及延时控制，还可以实现超压力时，备用紧急的减泵专用时间控制，只要适当减小【b0-15压力上限紧急减辅泵延时】的时间值，即可快速减泵并停机，合理避免水压上升太快的难题。另外，键盘可以通过移位键切换直接监视压力设定目标值，或压力反馈值。掉电后重新上电后运行时，监视内容不变。同时本机还直接支持双显键盘监视压力设定值以及反馈值。

1.单泵变频恒压力供水宏：P0-29=1时，其自动初始化一些参数。

注意1:P0-29选中任意供水宏后，按移位键可以让上行数码管（第一数码管）显示设定压力值出来（默认是5.00KG，第一数码管的单位AV灯同时亮起；下行数码管（第二数码管）监视反馈压力值，对应数码管的单位AV灯同时亮起。

注意2：超水压保护：立即停机方式: P6-10=1（自由停车）

P0-29 Industry Application Macro Usage Instructions

When using macro parameters, it is important to note that the macro functions of this machine are intended to reduce the number of function code parameters configured by customers. Not all parameters are considered 100% complete. If there are any problems encountered during on-site use, specific analysis should be conducted, and one's own experience should be utilized to adjust some helpful parameters to achieve the best usage effect.

When a macro has already been set, it is recommended to perform P0-29=10000 to restore the factory value before switching to another macro.

1、 Restore factory parameter macro

(P0-29=0, excluding motor parameter group)

P0-29=10000 is equivalent to the factory reset effect of PP-01=1. Before executing industry application macro operations, please execute P0-29=10000 once.

2、 Constant pressure water supply macro

(Tip: 1bar=1kg=0.1MPa=10m water column)

The characteristics of this constant pressure water supply: directly selecting the water supply macro, then inputting the sensor range value and target pressure, other parameters can be basically unchanged to directly achieve high-efficiency constant water supply control, with strong pressure regulation ability and quick and sensitive response. Therefore, it is superior to traditional PID control frequency based water supply control, with more stable pressure, energy saving and other advantages. At the same time, it has a better constant pressure and pressure holding effect on sites with pressure tanks. And the motherboard dual relay can directly achieve one to three, or with the external relay control of Y1 and HDO terminals, it can achieve up to one to five water supply. It has independent pump adding and reducing pressure and delay control, and can also achieve dedicated time control for emergency pump reduction when overpressure occurs. By appropriately reducing the time value of the emergency auxiliary pump reduction delay for the upper pressure limit of b0-15, the pump can be quickly reduced and stopped, avoiding the problem of rapid water pressure rise. In addition, the keyboard can switch between directly monitoring the pressure setting target value or pressure feedback value through the shift key. When running again after power failure, the monitoring content remains unchanged. At the same time, this machine also directly supports dual display keyboard monitoring of pressure setting values and feedback values.

1. Single pump variable frequency constant pressure water supply macro: When P0-29=1, it automatically initializes some parameters.

Note 1: After selecting any water supply macro in P0-29, press the shift key to display the set pressure value on the upstream digital tube (first digital tube) (default is 5.00KG), and the unit AV light of the first digital tube will light up at the same time; the downstream digital tube (second digital tube) will monitor the feedback pressure value, and the corresponding unit AV light of the digital tube will light up at the same time.

Note 2: Overwater pressure protection: Immediate shutdown mode: P6-10=1 (free parking)

注意3：要求不休眠：把b0-05=0 .0(休眠延时)即可禁止休眠，且b0-09=0.0（限频率超目标压力保护延时）关闭下限频率超压保护，即可达到效果。但须 注意超压停机参数b0-07,b0-08还在起作用，看现场须要是否关掉即可。

注意4：缺水保护：b0-16,b0-17缺水时运行至上限频率且缺水保护延时到达，停机并报缺水故障Err70。

注意5：b0-20可用于设定是否打开缺水故障（Err70）或超压力故障(Err71)。

P0-01=2, P0-02=1, P0-03=8, P0-14=20.00Hz, p4-18=2.00,P7-03=8015, P7-04=0001, P7-05=3003, P7-17=15, P7-18=16, PA-00=3, PA-05=50.0, PA-06=0.10, PA-28=0(如果想加快反应速度，可以增大PA-05和减小PA-06的值；减慢反应速度，这两参数反之)，AI1默认为0~10V输入作为PID压力反馈，如要须要改为4~20MA输入，请补充参数：P4-13=2.00V, P4-37=11（个位设1为电流输入型）。变频器本身出厂AI2默认为0~20MA输入，如果使用AI2作为PID压力反馈源，对应补充参数：P4-18=2.00V, P4-37=10即可。AI1和AI2改为电流输入时，须要串接端子24V作为传感器供电。

注意：如果选择了供水宏功能，又要把默认反馈源AI1改用AI2作为电压反馈源时，须要人工把P4-18由2.00V改为0.00V，并把P4-37十位值由1改为0，PA-02=1即可使用AI2作为电压反馈源。

B0组为恒压力供水参数组，其中B0-00为压力传感器的量程须要如实输入，例如：传感器最大值标记为1.6MP,则B0-00=16.00kg。

PA-00用于选定目标压力给定源默认是7键盘UP/DOWN上下键可以调节目标压力值，b0-01默认为5.00kg，可按须求更改。休眠和唤醒压力以及相关的延时可以调整，休眠、唤醒以及各种压力偏差量，都是自动跟随着目标压力的百分比值联动自动适应调整，基本上不须要调节就能稳定工作。

* b0-07=110%（假如目标压力为5.0公斤，则超压保护为5.5公斤）为超水压力上限保护值，当超过此水压力，进入计时保护，当须要实现紧急保护时，请把P06-10=1(即把变频器设定为自由停车模式)即可实现超压紧急保护。

注意：关于恒压供水的变频器相关接线，请自行解决，不在此叙述。

Note 3: No sleep requirement: To disable sleep, set b0-05=0.0 (sleep delay), and b0-09=0.0 (frequency limit beyond target pressure protection delay), turn off the lower limit frequency overpressure protection to achieve the desired effect. However, it should be noted that the overpressure shutdown parameters b0-07 and b0-08 are still in effect, and it depends on whether they need to be turned off on site.

Note 4: Water shortage protection: When b0-16 and b0-17 run to the upper frequency limit and the water shortage protection delay is reached, stop the machine and report a water shortage fault Err70.

Note 5: b0-20 can be used to set whether to turn on water shortage fault (Err70) or overpressure fault (Err71).

P0-01=2, P0-02=1, P0-03=8, P0-14=20.00Hz, p4-18=2.00, P7-03=8015, P7-04=0001, P7-05=3003, P7-17=15, P7-18=16, PA-00=3, PA-05=50.0, PA-06=0.10, PA-28=0 (if you want to speed up the reaction rate, you can increase the value of PA-05 and decrease the value of PA-06); Slow down the reaction speed, these two parameters are reversed), AI1 defaults to 0~10V input as PID pressure feedback. If you need to change it to 4~20MA input, please add parameters: P4-13=2.00V, P4-37=11 (set 1 as current input type). The default AI2 input for the frequency converter itself is 0-20mA. If AI2 is used as the PID pressure feedback source, the corresponding supplementary parameters are P4-18=2.00V and P4-37=10. When AI1 and AI2 are changed to current input, a 24V terminal needs to be connected in series as the sensor power supply.

Attention: If the water supply macro function is selected and the default feedback source AI1 is changed to AI2 as the voltage feedback source, it is necessary to manually change P4-18 from 2.00V to 0.00V, and change the ten digit value of P4-37 from 1 to 0. PA-02=1 to use AI2 as the voltage feedback source.

The B0 group is a constant pressure water supply parameter group, where B0-00 is the range of the pressure sensor that needs to be accurately inputted. For example, if the maximum value of the sensor is marked as 1.6MP, then B0-00=16.00kg.

PA-00 is used to select the target pressure source. The default is 7 keyboard UP/DOWN up and down keys to adjust the target pressure value. b0-01 defaults to 5.00kg and can be changed as needed. The sleep and wake-up pressure, as well as related delays, can be adjusted. Sleep, wake-up, and various pressure deviations are automatically adjusted in conjunction with the percentage value of the target pressure, and can work stably without the need for adjustment.

*B0-07=110% (if the target pressure is 5.0 kg, the overpressure protection is 5.5 kg) is the upper limit protection value for overpressure. When this water pressure is exceeded, the timer protection is activated. When emergency protection is required, set P06-10=1 (i.e. set the frequency converter to free parking mode) to achieve overpressure emergency protection..

Attention: Regarding the wiring of the frequency converter for constant pressure water supply, please solve it yourself and do not describe it here.

2.一拖三恒压力供水宏：P0-29=2,即可实现1变频泵拖2工频泵的恒压供水模式

此模式基于上面【单泵变频恒压力供水宏】的初始化默认参数条件下，增加如下默认参数：

P5-02=50(RLY1为辅助泵1)，P5-03=51(RLY2为辅助泵2)，P5-25=0.3S, P5-26=0.3S, b0-11=2(两个辅助泵)，更多控制参数请看恒压供水参数B0组。

3.一拖五恒压力供水宏：P0-29=3,即可实现1变频泵拖4工频泵的恒压供水模式：

此模式基于上面【一拖三恒压力供水宏】的初始化默认参数条件下，增加如下默认参数：

P5-04=52(Y1为辅助泵3)，P5-01=53(HDO为辅助泵4)，P5-00=1, P5-24=0.3S, P5-27=0.3S, b0-10=4(四个辅助泵)，更多控制参数请看恒压供水参数B0组。

4.消防供水巡检柜专用宏:

P0-29=7，P0-02=1, P0-03=0, P0-08=10.00HZ，P0-12=15.00HZ, P4-00=1, P4-03=9, P6-10=1

三、机床宏100HZ：AI1输入0~10V给定转速，X1端子正转启停，须接刹车电阻，如果刹车过压，须要注意减少P9组的过压失速增益值，此值过小，容易对IGBT冲击过大。

2. One drag three constant pressure water supply macro: P0-29=2, can achieve a constant pressure water supply mode of 1 variable frequency pump dragging 2 power frequency pumps

This mode is based on the initialization default parameter conditions of the "Single Pump Variable Frequency Constant Pressure Water Supply Macro" above, and adds the following default parameters:

P5-02=50 (RLY1 is auxiliary pump 1), P5-03=51 (RLY2 is auxiliary pump 2), P5-25=0.3S, P5-26=0.3S, b0-11=2 (two auxiliary pumps). For more control parameters, please refer to the B0 group of constant pressure water supply parameters.

3. One to five constant pressure water supply macro: P0-29=3, can achieve a constant pressure water supply mode of 1 variable frequency pump dragging 4 power frequency pumps:

This mode is based on the initialization default parameter conditions of the "One to Three Constant Pressure Water Supply Macro" above, and adds the following default parameters:

P5-04=52 (Y1 is auxiliary pump 3), P5-01=53 (HDO is auxiliary pump 4), P5-00=1, P5-24=0.3S, P5-27=0.3S, b0-10=4 (four auxiliary pumps). For more control parameters, please refer to the constant pressure water supply parameter B0 group.

3、 Machine tool macro 100HZ: AI1 input 0~10V given speed, X1 terminal rotates forward to start and stop, brake resistor must be connected. If the brake overvoltage occurs, attention should be paid to reducing the overvoltage stall gain value of P9 group. If this value is too small, it is easy to cause excessive impact on IGBT.

四、雕刻机400HZ宏1(P0-29=21直线多段速)：24000转

X1正转启停，X2多段速端子1，X3多段速端子2，X4多段速端子3。三端子组合如下：

段速	段速值	对应频率	多段速端子1	多段速端子2	多段速端子3
0	0.0%	0HZ	OFF	OFF	OFF
1	25.0%	100HZ	ON	OFF	OFF
2	37.5%	150HZ	OFF	ON	OFF
3	50.0%	200HZ	ON	ON	OFF
4	62.5%	250HZ	OFF	OFF	ON
5	75.0%	300HZ	ON	OFF	ON
6	87.5%	350HZ	OFF	ON	ON
7	100.0%	400HZ	ON	ON	ON

其它类似宏，端子的使用方法类同，不再举例。

4、 Carving machine 400Hz macro 1 (P0-29=21 linear multi-stage speed): 24000 revolutions per minute

X1 is turning to start and stop, X2 multi-segment speed terminal 1 Magi X3 multi-segment speed terminal 2 and X4 multi-segment speed terminal 3. The three-terminal combination is as follows:

Section speed	Segment speed value	Corresponding frequency	Multi-stage speed terminal 1	Multi-stage speed terminal 2	Multi-stage speed terminal 3
0	0.0%	0HZ	OFF	OFF	OFF
1	25.0%	100HZ	ON	OFF	OFF
2	37.5%	150HZ	OFF	ON	OFF
3	50.0%	200HZ	ON	ON	OFF
4	62.5%	250HZ	OFF	OFF	ON
5	75.0%	300HZ	ON	OFF	ON
6	87.5%	350HZ	OFF	ON	ON
7	100.0%	400HZ	ON	ON	ON

The usage methods of other similar macros and terminals are similar and will not be given as examples.

第五章 通讯协议

通讯数据可分为功能码数据、非功能码数据，后者包括运行命令、运行状态、运行参数、告警信息等。

5.1 功能码数据

功能码数据为变频器的重要设置参数， 有 P 组和 A 组功能参数，参数群组如下：

功能码数据	P 组（可读写）	P0、P1、P2、P3、P4、P5、P6、P7、P8、P9、PA、PB、PC、PD、PE、PF
	A 组（可读写）	A0、A1、A2、A3、A4、A5、A6、A7、A8、A9、AA、AB、AC、AD、AE、AF

功能码数据通讯地址定义如下：

1、当为通讯读取功能码数据时，对于P0～PF、A0～AF组功能码数据，其通讯地址高十六位直接为功能组编号，低十六位直接为功能码在功能组中序号，举例如下：

P0-16功能参数：其通讯地址为F010H,其中F0H代表P0组功能参数，10H代表功能组中序号16的十六进制数据格式。

AC-08功能参数：其通讯地址为AC08,其中ACH代表AC组功能参数，08H代表功能码在功能组中序号08的十六进制数据格式。

2、当为通讯写入功能码数据时，对于P0～PF组功能码数据，其通讯地址高十六位，根据是否写入EEPROM,区分为00～0F或F0～FF，低十六位直接为功能码在功能组中序号，举例如下：

写功能在参数P0-16：
需要写入EEPROM时，其通讯地址为F010H，
不需要写入EEPROM时，其通讯地址为0010H，

3、当为通讯写入EEPROM数据时，，对于A0～AF组功能码数据，其通讯地址高十六位区分为10～4F或A0～AF,低十六位直接为功能码在功能组中序号，举例如下：

写功能参数AC-08：
需要写入EEPROM时，其通讯地址为AC08H，
不需要写入EEPROM时，其通讯地址为4C08H，

Chapter 5 Communication Protocol

Communication data can be divided into function code data and non-function code data, the latter including running commands, running status, running parameters, alarm information and so on.

5.1 function code data

The function code data is an important setting parameter of the frequency converter, there are P group and A group function parameters, the parameter groups are as follows:

Function code data	Group P(readable and writable	P0、P1、P2、P3、P4、P5、P6、P7、P8、P9、PA、PB、PC、PD、PE、PF
	Group A(readable and writable)	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 the function code data of groups P0~PF, A0~AF, the high sixteen bits of the communication address are directly the function group number, and the low sixteen bits are directly the sequence number of the function code in the function group. The following is an example:

P0-16 function parameters: Its communication address is F010H, where F0H represents the P0 group function parameters, and 10H represents the hexadecimal data format of the sequence number 16 in the function group.

AC-08 function parameters: Its communication address is AC08, where ACH represents the AC group function parameters, and 08H represents the hexadecimal data format of the function code in the sequence number 08 in the function group.

2. When writing function code data for communication, for the function code data of group P0~PF, the high sixteen bits of the communication address are divided into 00~0F or F0~FF according to whether they are written into EEPROM, and the low sixteen bits are directly the serial number of the function code in the function group. The following is an example:

Write function in parameter P0-16:
When writing to EEPROM is required, the communication address is F010H,
When writing to EEPROM is not required, the communication address is 0010H,

3. When writing EEPROM data for communication, for the function code data of group A0~AF, the high sixteen bits of the communication address are divided into 10~4F or A0~AF, and the low sixteen bits are directly the serial number of the function code in the function group. For example:

Write function parameter AC-08:
When writing to EEPROM is required, the communication address is AC08H,
When writing to EEPROM is not required, the communication address is 4C08H,

5.2 非功能码数据

非功能码数据	状态数据（可读）	U组监视参数、变频器故障描述、变频器运行状态
	控制参数（可写）	控制命令、通讯设定值、数字输出端子控制、模拟输出AO1控制、模拟输出AO2控制、高速脉冲（FMP）输出控制、参数初始化

5.2.1状态数据

状态数据分为U组监视参数、变频器故障描述、变频器运行状态。

1、U组参数监视参数

U组监视数据描述见说明书相关U0组功能描述，其地址定义如下：

U0～UF，其通讯地址高十六位为70～7F,低十六位为监视参数在组中的序号，举例如下：U0-11，其通讯地址为700BH。

2、变频器故障描述

讯读取变频器故障时，通讯地址固定为8000H,上位机通过读取该地址数据，可以获取当前变频器故障代码，故障代码描述见第五章P9-14功能码中定义。

3、变频器运行状态

通讯读取变频器运行状态时，通讯地址因定为3000H,上位机通过读取该地焉数据，可以获取当前变频器运行状态信息，定义如下：

变频器运行状态通讯地址	读取状态字定义
3000H	1：正转运行
	2：反转运行
	3：停机

5.2 Non-function code data

Non-function code data	Status data (readable)	U group monitoring parameters, inverter fault description, inverter operation status
	Status data (readable)	Control commands, communication set values, digital output terminal control, analog output AO1 control, analog output AO2 control, high-speed pulse (FMP) output control, parameter initializa-

5.2.1 Status Data

The status data is divided into U group monitoring parameters, inverter fault description, and inverter operating status.

1. U group parameter monitoring parameters

For the description of U group monitoring data, please refer to the relevant U0 group function description in the manual. Its address is defined as follows:

U0~UF, the communication address is 70~7F in the upper sixteen bits, and the lower sixteen bits are the serial number of the monitoring parameter in the group. For example:

U0-11, the communication address is 700BH.

2. Inverter fault description

When reading the inverter fault, the communication address is fixed to 8000H. The host computer can obtain the current inverter fault code by reading the address data. The fault code description is defined in Chapter 5 P9-14 Function Code.

3. Inverter operating status

When the communication reads the inverter running status, the communication address is set to 3000H. The host computer can obtain the current inverter running status information by reading the data at this address. The definition is as follows:

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

5.2.2控制参数

控制参数分为控制命令、数字输出端子控制、模拟输出AO1控制、模拟输出AO2控制、高速脉冲(FMP)输出控制。

5.2.3 控制命令

在P0-02(命令源)选择为2:通讯控制时,上位机通过该通讯地址,可以实现对变频器的启停等相关命令控制,控制命令定义如下:

控制命令通讯地址	读取状态字定义
2000H	1:正转运行
	2:反转运行
	3:正转点动
	4:反转点动
	5:自由停机
	6:减速停机
	7:故障复位

5.2.4通讯设定值

通讯设定值主要用于中频率源、转矩上限源、VF分离电压源、PID给定源、PID反馈源等选择为通讯给定时的给定数据,其通讯地址为1000H,上位机设定该通讯地址值时,其数据范围为-10000～10000,对应相对给定值-100.00%-100.00%

1.2.5数字输出端子控制

当数字输出端子功能选择为20:通讯控制时,上位机通过该通讯地址,可以实现对变频器数字输出端子的控制,定义如下:

数字输出端子控制通讯地址	命令内容
2001H	BiT0:DO1输出控制 BiT1:DO2输出控制 BiT2:RELAY1输出控制 BiT3:RELAY2输出控制 BiT4:FMR输出控制 BiT5:VDO1 BiT6:VDO2 BiT7:VDO3 BiT8:VDO4 BiT9:VDO5

5.2.2 Control parameters

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

5.2.3 Control Commands

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

Control command communication address	Read status word definition
2000H	1: Forward operation
	2: Reverse operation
	3: Forward jog
	4: Reverse jog
	5: Free stop
	6: Deceleration stop
	7: Fault reset

5.2.4 Communication setting value

The communication setting value is mainly used for the given data when the medium frequency source, torque upper limit source, VF separation voltage source, PID given source, PID feedback source, etc. are selected as the communication given. Its communication address is 1000H. When the host computer sets the communication address value, its data range is -10000~10000, corresponding to the relative given value -100.00%-100.00%

5.2.5 Digital output terminal control

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

Digital output terminal control communication address	Command content
2001H	BiT0: DO1 output control BiT1: DO2 output control BiT2: RELAY1 output control BiT3: RELAY2 output control BiT4: FMR output control BiT5: VDO1 BiT6: VDO2 BiT7: VDO3 BiT8: VDO4 BiT9: VDO5

5.2.6模拟量输出AO1、AO2,高速脉冲输出FMP控制

当模拟量输出AO1、AO2,高速脉冲输出FMP输出功能选择为12:通讯设定时,上位机通过该通讯地址,可以实现对变频器模拟量、高速脉冲输出的控制,定义如下:

输出控制通讯地址		命令内容
AO1	2002H	0～7FFF表示0%～100%
AO2	2003H	
FMP	2004H	

5.2.7参数初始化

当需要通过上位机实现对变频器的参数初始化操作时,需要使用该功能。

如果PP-00(用户密码)不为0,则首先需要通过进行密码校验,校验通过后,在30秒后,上位机进行参数初始化操作。

通讯进行用户密码校验的通讯地址为1F00H,直接将正确的用户密码写入该地址,则可以完成密码校验。

通讯进行参数初始化的地址为1F01H,其数据内容定义如下:

参数初始化通讯地址	命令功能
1F01H	1：恢复出厂参数
	2：清楚记录信息
	4：恢复用户备份参数
	501:备份用户当前参数

5.2.6 Analog output AO1, AO2, high-speed pulse output FMP control

When the analog output AO1, AO2, high-speed pulse output FMP output function selection is 12: communication setting, the host computer can control the analog and high-speed pulse output of the inverter through the communication address, which is defined as follows:

Output control communication address		Command content
AO1	2002H	0～7FFF means 0%～100%
AO2	2003H	
FMP	2004H	

5.2.7 Parameter Initialization

This function is required when the inverter parameters need to be initialized through the host computer.

If PP-00 (user password) is not 0, you must first pass the password verification. After the verification is passed, the host computer will perform parameter initialization operations after 30 seconds.

The communication address for user password verification is 1F00H. Simply write the correct user password into this address to complete the password verification.

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

Parameter initialization communication address	Function
1F01H	1: Restore factory parameters
	2: Clear recorded information
	4: Restore user backup parameters
	501: Back up user current parameters

变频器提供RS485通信接口，并支持Modbus-RTU通讯协议。用户可通过计算机或PLC实现集中控制，通过该通讯协议设定变频器运行命令，修改或读取功能码参数，读取变频器的工作状态及故障信息等。

5.3协议内容

该串行通信协议定义了串行通信中传输的信息内容及使用格式。其中包括：主机轮询（或广 播）格式；主机的编码方法，内容包括：要求动作的功能码，传输数据和错误校验等。从机的响 应也是采用相同的结构，内容包括：动作确认，返回数据和错误校验等。如果从机在接收信息时 发生错误，或不能完成主机要求的动作，它将组织一个故障信息作为响应反馈给主机。

5.3.1 应用方式

变频器接入具备RS485总线的“单主多从”PC/PLC控制网络，作为通讯从机。

5.3.2 总线结构

（1）硬件接口

自带通讯接口A+、B-接线端子。

（2）拓扑结构

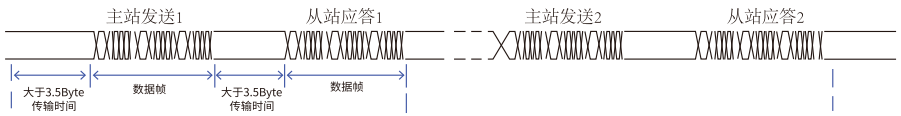
单主机多从机系统。网络中每一个通讯设备都有一个唯一的从站地址，其中有一个设备作为通讯主机（PC上位机、PLC、HMI等），主机发动通讯，对从机进行参数读或写操作，其它设备在为通讯从机，响应主机对本机的询问或通讯操作。在同一时刻只能有一个设备发送数据，而其他设备处于接收状态。

从机地址的设定范围为1～247，0为广播通信地址。网络中的从机地址必须是唯一的。

讯读取变频器故障时，通讯地址固定为8000H,上位机通过读取该地址数据，可以获取当前变频器故障代码，故障代码描述见第五章P9-14功能码中定义。

（3）通讯传输方式

异步串行，半双工传输方式。数据在串行异步通信过程中，是以报文的形式，一次发送一帧数据，MODBUS-RTU协议中约定，当通讯数据线上无数据的空闲时间大于3.5Byte的传输时间，表示新的一个通讯帧的起始。



The inverter provides RS485 communication interface and supports Modbus-RTU communication protocol. Users can realize centralized control through computer or PLC, set inverter operation command, modify or read function code parameters, read inverter working status and fault information, etc. through this communication protocol.

5.3 Contents of the Agreement

The serial communication protocol defines the information content and format used in serial communication. These include: host polling (or broadcasting) format; host encoding method, including: function code for required action, transmission data and error checking, etc. The response of the slave also adopts the same structure, including: action confirmation, return data and error checking, etc. If the slave makes an error when receiving information, or cannot complete the action required by the host, it will organize a fault message as a response to the host.

5.3.1 Application

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

5.3.2 Bus structure

(1) Hardware interface

Built-in communication interface A+ and B- terminals.

(2) Topological structure

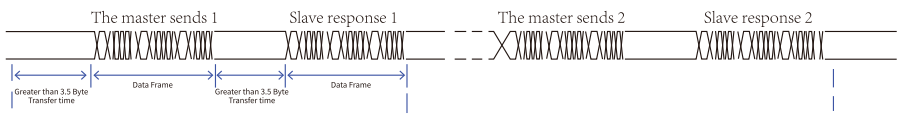
Single host and multiple slave systems. Each communication device in the network has a unique slave address, one of which is the communication host (PC host, PLC, HMI, etc.). The host initiates communication and reads or writes parameters to the slave. Other devices are communication slaves, responding to the host's inquiries or communication operations. Only one device can send data at the same time, while other devices are in receiving state.

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

When reading the inverter fault, the communication address is fixed to 8000H. The host computer can obtain the current inverter fault code by reading the address data. The fault code description is defined in Chapter 5 P9-14 Function Code.

(3) Communication transmission method

Asynchronous serial, half-duplex transmission mode. In the process of serial asynchronous communication, data is sent in the form of messages, one frame of data at a time. The MODBUS-RTU protocol stipulates that when the idle time without data on the communication data line is greater than the transmission time of 3.5 bytes, it indicates the start of a new communication frame.

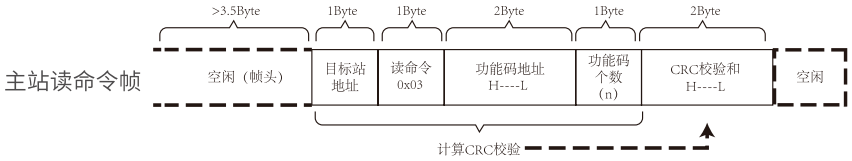


变频器内置的通信协议是Modbus-RTU从机通信协议，可响应主机的“查询/命令”，或根据主机的“查询/命令”做出相应的动作，并通讯数据应答。

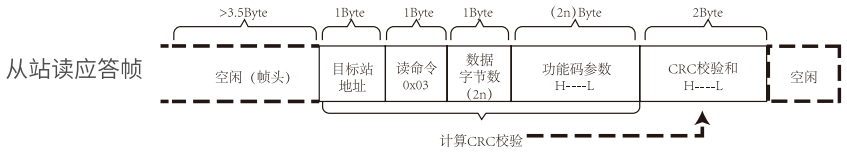
主机可以是指个人计算机（PC），工业控制设备或可编程逻辑控制器（PLC）等，主机既能对某个从机单独进行通信，也能对所有下位从机发布广播信息。对于主机的单独访问“查询/命令”，被访问从机要返回一个应答帧频；对于主机发出的广播信息，从机无需反馈响应给主机。

5.3.3 通讯资料结构

Modbus协议通讯数据格式如下，变频器只支持Word型参数的读或写。对应的通讯读操作命令为0x03；写操作命令为0x06，不支持字节或位的读写操作：



理论上，上位机可以一次读取连续的几个功能码（即其中n最大可达12个），但要注意不能跨过本功能码组的最后一个功能码，否则会答复出错。

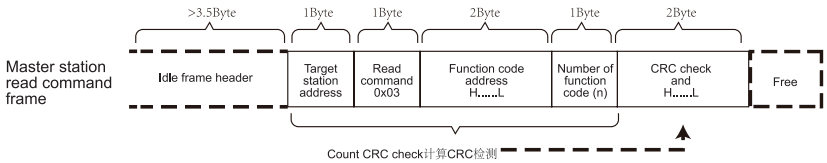


The built-in communication protocol of the inverter is the Modbus-RTU slave communication protocol, which can respond to the host's "query/command", or take corresponding actions according to the host's "query/command", and communicate data responses.

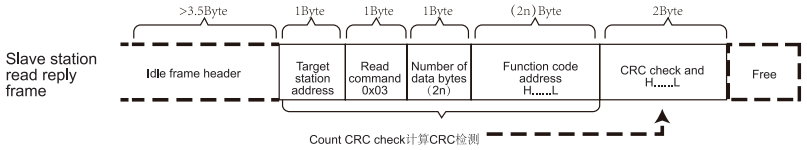
The host can refer to a personal computer (PC), industrial control equipment or programmable logic controller (PLC), etc. The host can communicate with a slave individually, and can also issue broadcast information to all subordinate slaves. For the host's individual access "query/command", the accessed slave must return a response frame rate; for the broadcast information sent by the host, the slave does not need to feedback the response to the host.

5.3.3 Communication data

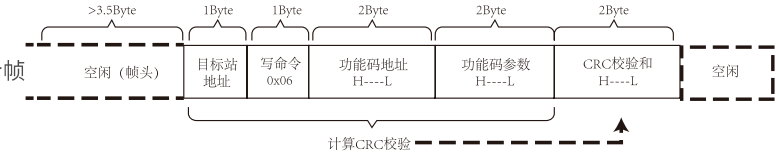
The Modbus protocol communication data format is as follows. The inverter only supports the reading or writing of Word type parameters. The corresponding communication read operation command is 0x03; the write operation command is 0x06, and does not support byte or bit read and write operations:



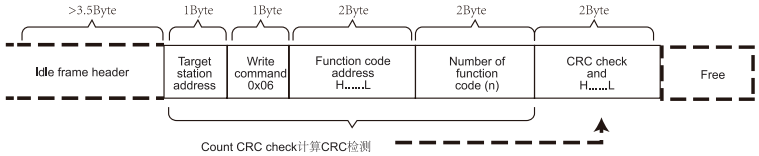
Theoretically, the host computer can read several consecutive function codes at one time (that is, n can be up to 12 at most), but be careful not to skip the last function code of this function code group, otherwise an error will be reported.



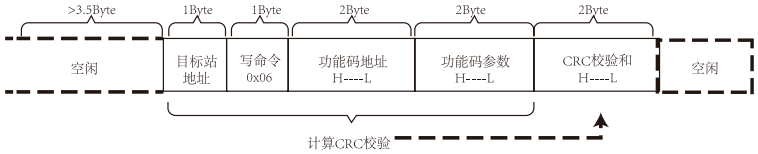
主站写命令帧



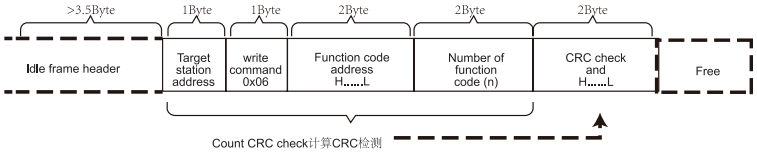
Master station write command frame



从站写应答帧



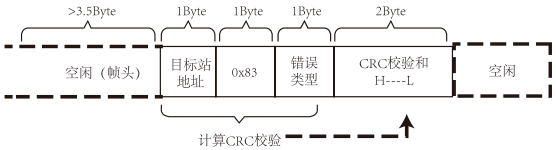
Slave station write reply frame



若从机检测到通讯帧错误，或其他原因导致的读写不成功，会答复错误帧。

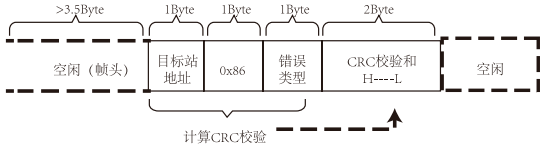
If a communication frame error is detected from the slave machine, or if the read and write are not successful due to other reasons, the error frame will be replied.

主站写命令帧

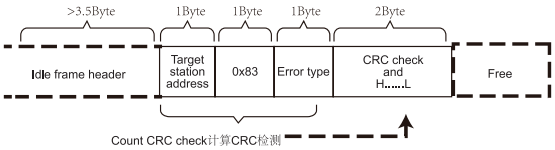


错误类型
01：命令码错误
02：地址错误
03：数据错误
04：命令无法处理

从站写应答帧

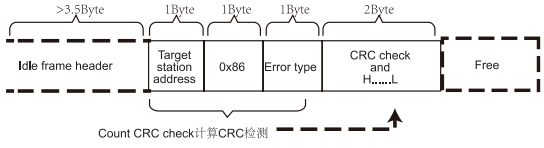


Master station read reply frame



Error type:
01:command code error
02:address error
03:data error
04:command cannot be processed

slave station write command frame



5.3.4 数据帧字段说明：

帧头 START	大于 3.5 个字符传输时间的空闲
从机地址 ADR	通讯地址范围：1~247； 0= 广播地址
命令码 CMD	03：读从机参数；06：写从机参数
功能码地址 H	变频器内部的参数地址，16 进制表示；分为功能码型和非功能码型（如运行状态参数、运行命令等）参数等，详见地址定义。 传送时，高字节在前，低字节在后
功能码地址 L	
功能码个数 H	本帧读取的功能码个数，若为 1 表示读取 1 个功能码。传送时，高字节在前，低字节在后。 本协议一次只能改写 1 个功能码，没有该字段。
功能码个数 L	
数据 H	应答的数据，或特写入的数据，传送时，高字节在前，低字节在后。
数据 L	
CRC CHK 高位	检测值：CRC16 校验值。传送时，高字节在前，低字节在后。 计算方法详见本节 CRC 校验的说明。
CRC CHK 低位	
END	3.5 个字符时间

5.3.5 CMD 校验方式：

校验方式——CRC 校验方式：CRC（Cyclical Redundancy Check）使用 RTU 帧格式，消息包括了基于 CRC 方法的错误检测域。CRC 域检测了整个消息的内容。CRC 域是两个字节，包含 16 位的二进制值。它由传输设备计算后加入到消息中。接收设备重新计算收到消息 CRC，并与接收到的 CRC 域中的值比较，如果两个 CRC 值不相等，则说明传输有错误。

CRC是先存入0xFFFF，然后调用一个过程将消息中连续的8位字节与当前寄存器中的值进 行处理。仅每个字符中的8Bit数据对CRC有效，起始位和停止位以及奇偶校验位均无效。

CRC产生过程中，每个8位字符都单独和寄存器内容相异或（XOR），结果向最低有效位方向移动，最高有效位以0填充。LSB被提取出来检测，如果LSB为1，寄存器单独和预置的值相异或，如果LSB为0，则不进行。整个过程要重复8次。在最后一位（第8位）完成后，下一个8位字节又单独和寄存器的当前值相异或。最终寄存器中的值，是消息中所有的字节都执行之后的CRC值。

5.3.4 description of digital frame field

Frame header START	Idle more than 3.5 characters transfer time
Slave address ADR	Mailing address range:1~247; 0=Broadcast address
Command code CMD	03:Read slave parameters 06:Write slave parameters
Function code address H	The internal parameter address of the frequency converter is expressed in functional code type and non-functional code type (such as running status parameters, running commands and other parameters, running commands)and other parameters.For more information,please see the address definition. When transmitting, the high byte comes first and the low byte comes last.
Function code address L	
Number of function codes H	If the number of function codes read in this frame is 1,it means that a function code is read. When transmitting, the high byte comes first and the low byte comes last.
Number of function codes L	
Data H	When replying data or specially written data,the high byte comes first and the low byte comes last.
Data L	
CRC CHK high position	Detection value:CRC16 check value. When it is transmitted,the high byte comes first and the low byte comes last.
CRC CHK low order	
NED	3.5 characters time

5.3.5 description of digital frame field

Check mode -- CRC Check mode: CRC (Cyclical Redundancy Check) uses RTU frame format, and the message includes an error detection domain based on CRC method. The CRC domain detects the contents of the entire message. The CRC field is two bytes and contains 16-bit binary values. It is calculated by the transmission device and added to the message. The receiving device recalculates the Information CRC, and compared with the values in the received CRC domain, if the two CRC values are not equal, 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 bytes in the message and the value in the current register. Only the 8-bit 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 XORed with the register content, and the result is moved toward the least significant bit, and the most significant bit is filled with 0. The LSB is extracted for detection. If the LSB is 1, the register is XORed with the preset value alone. If the LSB is 0, it is not performed. The whole process is repeated 8 times. After the last bit (the 8th bit) is completed, the next 8-bit byte is XORed with the current value of the register alone. The final value in the register is the CRC value after all bytes in the message are executed.

CRC添加到消息中时，低字节先加入，然后高字节。CRC简单函数如下：

```
unsigned int CRC16_CHK(unsigned char *data, unsigned char length)
{
  int j = 0;
  unsigned int reg_crc = 0xFFFF;

  while (length--) {
    reg_crc ^= *data++;
    for (j = 0; j < 8; j++) {
      if (reg_crc & 0x01) {
        reg_crc = (reg_crc >> 1) ^ 0xA001;
      } else {
        reg_crc = reg_crc >> 1;
      }
    }
  }
  return reg_crc;
}
```

5.3.6 功能码参数地址标示规则：

读写功能码参数（有些功能码是不能更改的，只供厂家使用或监视使用）：
以功能码组号和标号为参数地址表示规则：

高位字节：P0~PF（P组）、A0~AF（A组）、70~7F（U组）
低位字节：00~FF
例如：若要范围功能码P3-12，则功能码的访问地址表示为F30CH
注意：
PF组：既不可读取参数，也不可更改参数；
U组：只可读取，不可更改参数。

有些参数在变频器处于运行状态时不可更改；有些参数不论变频器处于何种状态，均不可更改；
更改功能码参数，还要注意参数的范围、单位及相关说明。

功能码组号	通讯访问地址	通讯修改RAM中功能码地址
P0～PE组	0×F000～0×FEFF	0×0000～0×0EFF
A0～AC组	0×A000～0×ACFF	0×4000～0×4CFF
U0组	0×7000～0×70FF	只读，不可写

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

```
unsigned int CRC16_CHK(unsigned char *data, unsigned char length) {
  int j = 0;
  unsigned int reg_crc = 0xFFFF;

  while (length--) {
    reg_crc ^= *data++;
    for (j = 0; j < 8; j++) {
      if (reg_crc & 0x01) {
        reg_crc = (reg_crc >> 1) ^ 0xA001;
      } else {
        reg_crc = reg_crc >> 1;
      }
    }
  }
  return reg_crc;
}
```

5.3.6 Function code parameter address marking rules:

Read and write function code parameters (some function codes cannot be changed and are only used by manufacturers or for monitoring):
The function code group number and label are used as the parameter address representation rules:

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 function code P3-12, the access address of the function code is expressed as F30CH
Note:
PF group: parameters cannot be read or changed;
U group: parameters can only be read, not changed.

Some parameters cannot be changed when the inverter is in operation; some parameters cannot be changed regardless of the inverter state;
When changing function code parameters, pay attention to the parameter range, unit and related instructions.

Function code group	Communication access address	Communication modifies 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	Read-only, not writable

注意，由于 EEPROM 频繁被存储，会减少 EEPROM 的使用寿命，所以，有些功能码在通讯的模式下，无须存储，只要更改 RAM 中的值就可以了。

如果为 P 组参数，要实现该功能，只要把该功能码地址的高位 F 变成 0 就可以实现。如果为 A 组参数，要实现该功能，只要把该功能码地址的高位 A 变成 4 就可以实现。

写入RAM相应功能码地址表示如下：

高位字节：00~0F（P组）、40~4F（A组）

低位字节：00~FF

例如：功能码P3-12不存储到EEPROM中，地址表示为030CH；

功能码A0-05不存储到EEPROM中，地址表示为4005H；

注意：

该地址表示只能做写RAM，不能做读的动作，读时，为无效地址。对于所有参数，也可以使用命令码07H来实现该功能。

5.3.7 停机/运行参数部分：

参数地址	参数描述	参数地址	参数描述
1000H	通信设定值（十进制）-10000~10000	1010H	PID设置
1001H	运行频率	1011H	PID反馈
1002H	母线电压	1012H	PLC步骤
1003H	输出电压	1013H	输入脉冲频率，单位0.01kHz
1004H	输出电流	1014H	反馈速度，单位0.1Hz
1005H	输出功率	1015	剩余运行时间
1006H	输出转矩	1016	AI1校正前电压
1007H	运行速度	1017	AI2校正前电压
1008H	DI输入标志	1018	AI3校正前电压
1009H	DO输出标志	1019	线速度
100AH	AI1电压	101A	当前上电时间
100BH	AI2电压	101B	当前运行时间
100CH	AI3电压	101C	输入脉冲频率，单位1Hz
100DH	计数值输入	101D	通讯设定值
100EH	长度值输入	101E	实际反馈速度
100FH	负载速度	101F	主频率X显示
		1020	辅频率Y显示

Note: because EEPROM is stored frequently, it will reduce the service life of EEPROM, so some function codes do not need to be stored in communication mode, as long as you change the value in RAM.

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

If it is a group A parameter, to achieve this function, just change the high order An of the function code address into 4.

The address of the corresponding function code of the RAM is as follows:

High -level bytes: 00 ~ 0F (group P), 40 ~ 4F (group A)
Low byte: 00 ~ ff
For example: Function code P3-12 is stored in EEPROM, the address is expressed as 030CH;
Function code A0-05 is not stored in EEPROM, and the address is 4005h;

Notice:

This address indicates that it can only be used to write RAM and cannot be read. When reading, it is an invalid address. For all parameters, you can also use the command code 07h to implement this function.

5.3.7 Disclosure/Run parameter part:

Parameter address	Parameter description	Parameter address	Parameter description
1000H	Communication setting value (decimal)	1010H	PID settings
1001H	Running frequency	1011H	Pid feedback
1002H	Bus voltage	1012H	PLC step
1003H	Output voltage	1013H	Input pulse frequency, Unit 0.01kHz
1004H	Output current	1014H	Feedback speed, unit 0.1Hz
1005H	Output power	1015	Remaining operation time
1006H	Output torque	1016	AI1 Correcting Voltage
1007H	Run speed	1017	AI2 Correcting Voltage
1008H	DI input logo	1018	AI3 Correcting voltage
1009H	Do output logo	1019	Line speed
100AH	AI1 voltage	101A	Current call time
100BH	AI2 voltage	101B	Current operation time
100CH	AI3 voltage	101C	Input pulse frequency, unit 1Hz
100DH	Critical input	101D	Communication settings
100EH	Length value input	101E	Actual feedback speed
100FH	Load speed	101F	Main frequency x display
		1020	Aid frequency y display

注意：

通信设定值是相对值的百分数，10000 对应 100.00%，-10000 对应 -100.00%。

对频率量纲的数据，该百分比是相对最大频率（P0-10）的百分数；对转矩量纲的数据，该百分比是 P2-10、A2-48、A3-48、A4-48（转矩上限数字设定，分别对应第一、二、三、四电机）。

控制命令输入到变频器：（只写）

控制命令通讯地址	命令功能
2000H	0001：正转运行
	0002：反转运行
	0003：正转点动
	0004：反转点动
	0005：自由停机
	0006：减速停机
	0007：故障复位

读取变频器状态：（只读）

状态字地址	状态字功能
3000H	0001：正转运行
	0002：反转运行
	0003：停机

参数锁定密码校验：（如果返回为 8888H，即表示密码校验通过）

密码地址	输入密码的内容
1F00H	*****

Note:

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

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

Control command input to frequency converter: (write only)

Control command communication address	Command function
2000H	0001:Positive operation
	0002:reverse operation
	0003:turn forward and move
	0004:reverse point motion
	0005:free shutdown
	0006:slow down and stop
	0007:fault reset

States word address	States word function
3000H	0001:Positive operation
	0002:reverse operation
	0003:shutdown

Status lock password check:(if 8888H is returned,the password verification is passed):

Password address	Content of the password
1F00H	*****

5.3.8 数字输出端子控制：（只写）

命令地址	命令内容
2001H	BIT0：DO1 输出控制 BIT1：DO2 输出控制 BIT2：RELAY1 输出控制 BIT3：RELAY2 输出控制 BIT4：FMR 输出控制 BIT5：VDO1 BIT6：VDO2 BIT7：VDO3 BIT8：VDO4 BIT9：VDO5

5.3.9 模拟输出 AO1 控制：（只写）

命令地址	命令内容
2002H	0 ～ 7FFF 表示 0%～ 100%

5.3.10 模拟输出 AO2 控制：（只写）

命令地址	命令内容
2003H	0 ～ 7FFF 表示 0%～ 100%

5.3.11 脉冲（PULSE）输出控制：（只写）

命令地址	命令内容
2004H	0 ～ 7FFF 表示 0%～ 100%

5.3.8Digital output terminal control(write only)

Digital output terminal control communication address	Command content
2001H	BiT0:DO1 output control BiT1:DO2 output control BiT2:RELAY 1 output cintrol BiT3:RELAY 2 output cintrol BiT4:FMR output control BiT5:VDO1 BiT6:VDO2 BiT7:VDO3 BiT8:VDO4 BiT9:VDO5

5.3.9analog output AO1 control(write only)

Command address	Content of the command
2002H	0~7FFFRE represents 0%~100%

5.3.10analog output AO2 control(write only)

Command address	Content of the command
2003H	0~7FFFRE represents 0%~100%

5.3.11pulse output control(write only)

Command address	Content of the command
2004H	0~7FFFRE represents 0%~100%

5.4 变频器故障描述

变频器故障地址	变频器故障信息
8000H	0000：无故障 0001：保留 0002：加速过电流 0003：减速过电流 0004：恒速过电流 0005：加速过电压 0006：减速过电压 0007：恒速过电压 0008：缓冲电阻过载故障 0009：欠压故障 000A：变频器过载 000B：电机过载 000C：输入缺相 000D：输出缺相 000E：模块过热 000F：外部故障 0010：通讯异常 0011：接触器异常 0012：电流检测故障 0013：电机调谐故障 0014：编码器 /PG 卡故障 0015：参数读写异常 0016：变频器硬件故障 0017：电机对地短路故障 0018：保留 0019：保留 001A：运行时间到达 001B：用户自定义故障 1 001C：用户自定义故障 2 001D：上电时间到达 001E：掉载 001F：运行时 PID 反馈丢失 0028：快速限流超时故障 0029：运行时切换电机故障 002A：速度偏差过大 002B：电机超速度 002D：电机过温 005A：编码器线数设定错误 005B：未接编码器 005C：初始位置错误 005E：速度反馈错误

5.4 fault description of frequency converter

fault address of frequency converter	fault information of frequency converter
8000H	0000: no failure 0001: reserved 0002: accelerating over-current 0003: decelerate over-current 0004: constant speed over-current 0005: accelerated over-voltage 0006: deceleration over-voltage 0007: constant speed over-voltage 0008: buffer overload fault 0009: under-voltage fault 000A: frequency converter overload 000B: motor overload 000C: input out of phase 000D: output out of phase 000E: module overheating 000F: external failure 0010: communication exception 0011: abnormal contactor 0012: current detection fault 0013: motor tuning fault 0014: encoder / PG card failure 0015: read and write exception caused by participation 0016: hardware failure of frequency converter 0017: motor-to-ground short circuit fault 0018: reserved 0019: reserved 001A: run time arrives 001B: user-defined fault 1 001C: user-defined fault 2 001D: power-up time arrives 001E: unloading 001F: runtime PID feedback is lost 0028: fast current limit timeout failure 0029: switch motor failure at run time 002A: speed deviation is too large 002B: motor over-speed 002D: motor over temperature 005A: encoder line number setting error 005B: no encoder 005C: initial position error 005E: speed feedback error

5.5 PD 组通讯参数说明

Pd-00	波特率	出厂值	600
	设定范围	个位：MODUBS 波特率	
		0：300BPS 1：600BPS 2：1200BPS 3：2400BPS 4：4800BPS	5：9600BPS 6：19200BPS 7：38400BPS 8：57600BPS 9：115200BPS

此参数用来设定上位机与变频器之间的数据传输速率。注意，上位机与变频器设定的波特率 必须一致，否则，通讯无法进行。波特率越大，通讯速度越快。

Pd-01	数据格式	出厂值	0
	设定范围	0：无校验：数据格式 <8,N,2> 1：偶检验：数据格式 <8,E,1> 2：奇校验：数据格式 <8,O,1> 3：无校验：数据格式 <8-N-1>	

上位机与变频器设定的数据格式必须一致，否则，通讯无法进行。

Pd-02	本机地址	出厂值	1
	设定范围	1~247，0 为广播地址	

当本机地址设定为 0 时，即为广播地址，实现上位机广播功能。

本机地址具有唯一性（除广播地址外），这是实现上位机与变频器点对点通讯的基础。

Pd-03	应答延时	出厂值	2ms
	设定范围	0~20ms	

应答延时：是指变频器数据接受结束到向上位机发送数据的中间间隔时间。如果应答延时小 于系统处理时间，则应答延时以系统处理时间为准，如应答延时长于系统处理时间，则系统处理完数据后，要延迟等待，直到应答延迟时间到，才往上位机发送数据。

5.5 Description of Pd group communication parameters

Pd-00	Baud rate	Leave factory value	600
	setting range	Unit :MODUBS baud	
		0：300BPS 1：600BPS 2：1200BPS 3：2400BPS 4：4800BPS	5：9600BPS 6：19200BPS 7：38400BPS 8：57600BPS 9：115200BPS

This parameter is used to set the data transmission rate between the host computer and frequency converter.Note that the baud rate set by the host computer and the one of frequency converter must be the same,otherwise,the one communication can not be carried out. The higher the baud rate, the faster the communication speed.

Pd-01	Data format	Leave factory value	0
	setting range	0:no check:data format(8,N,2) 1:even check:data format(8,E,1) 2:odd check:data format(8,O,1) 3:no check:data format(8-N-1)	

The data format set by the host computer and the one of frequency converter must be the same,otherwise,the one communication can not be carried out.

Pd-02	This machine address	Leave factory value	1
	setting range	1~247(0represents the broadcast address)	

When the local address is set to 0, it is the broadcast address, which realize the broadcasting function of the host computer. The local address (except the broadcast address)is unique, which is the basis for realizing point-to-point communication between the host computer and the frequency converter.

Pd-03	Apply delay	Leave factory value	2ms
	setting range	0~20ms	

Response delay refers to the interval between end of data acceptance of the frequency converter and the time when the data is sent to the host computer. If the response delay is less than the system processing time,the response delay shall be based on the system processing time, the response delay is longer the system processing time,the system will wait until the response delay time is up the send data to the upper computer.

Pd-04	通讯超时时间	出厂值	0.0 s
	设定范围	0.0 s（无效）； 0.1~60.0s	

当该功能码设置为 0.0 s 时，通讯超时时间参数无效。

当该功能码设置成有效值时，如果一次通讯与下一次通讯的间隔时间超出通讯超时时间，系 统将报通讯故障错误（Err16）。通常情况下，都将其设置成无效。如果在连续通讯的系统中，设置次参数，可以监视通讯状况。

Pd-05	通讯协议选择	出厂值	0
	设定范围	0：非标准的Modbus协议； 1：标准的Modbus协议	

Pd-05=1：选择标准的Modbus协议。

Pd-05=0：读命令时，从机返回字节数比标准的Modbus协议多一个字节，具体参见本协议“通讯资料结构”部分。

Pd-06	通讯读取电流分辨率	出厂值	0
	设定范围	0：0.01A;； 1：0.1A	

用来确定通讯读取输出电流时，电流值的输出单位。

2.4 485通讯指令恢复出厂值操作

1、先对PP-00的菜单地址写入密码（通讯地址为0X1F00,如果密码为0，也必须要先向这地址写入0密码值）

2、再对PP-01=3，即可对变频器所有参数恢复（包括电机参数），地址为0X1F01

Pd-04	Communication overtime time	Leave factory value	0.0 s
	setting range	0.0(invalid), 1.0s~60.0s	

When the function code is set to 0.0s,the communication overtime parameter is invalid.When the function code is set to a valid value,if the interval between one communication and the next communication exceeds the communication overtime, the system will report a communication error(Err16). In general, it is set to invalid, and if you set secondary parameters in a continuous communication system, you can monitor the communication status.

Pd-05	Selection of communication	Factory value	0
	Scope	0: Non -standard MODBUS protocol; 1: Standard Modbus protocol	

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

PD-05 = 0: When reading the command, the number of bytes returned from the machine than the standard Modbus protocol one byte,

For details, please refer to the "Communication Data Structure" part of this agreement.

Pd-06	Communication reading current resolution	Factory value	0
	Scope	0： 0.01A;； 1： 0.1A	

It is used to determine the output unit of the current value when reading the output current.

2.4 485 communication instructions to restore the factory value operation

1. First write the password of the menu address of the PP-00 (the address is 0x1F00. If the password is 0, you must first write the 0 password value to this address).)

2. Then PP-01 = 3, you can restore all parameters of the inverter (including motor parameters), and the address is 0x1F01

第六章 故障诊断及对策

6.1 故障报警及对策

SU700 变频器共有 24 项警示信息及保护功能，一旦故障发生，保护功能动作，变频器停止输出，变频器故障继电器接点动作，并在变频器显示面板上显示故障代码。用户在寻求服务之前，可以先按本节提示进行自查，分析故障原因，找出解决方法。如果属于虚线框内所述原因，请寻求服务，与您所购变频器的代理商或直接与我公司联系。

21 项警示信息中 Err22 为硬件过流或过压信号，大部分情况下硬件过压故障造成 Err22 报警。

故障名称	故障代码	故障原因排查	故障处理对策
逆变单元保护	Err1	1、变频器输出回路短路 2、电机和变频器接线过长 3、模块过热 4、变频器内部接线松动 5、主控板异常 6、驱动板异常 7、逆变模块异常	1、排除外围故障 2、加装电抗器或输出滤波器 3、检查风道是否堵塞、风扇是否正常工作并排除存在问题 4、插好所有连接线 5、寻求技术支持 6、寻求技术支持 7、寻求技术支持
加速过电流	Err2	1、变频器输出回路存在接地或短路 2、控制方式为矢量且没有进行参数辨识 3、加速时间太短 4、手动转矩提升或 V/F 曲线不合适 5、电压偏低 6、对正在旋转的电机进行启动 7、加速过程中突加负载 8、变频器选型偏小	1、排除外围故障 2、进行电机参数辨识 3、增大加速时间 4、调整手动提升转矩或 V/F 曲线 5、将电压调至正常范围 6、选择转速追踪启动或等电机停止后再启动 7、取消突加负载 8、选用功率等级更大的变频器

Chapter 6 Failure diagnose and policies

6.1 Failure alarm and policies

SU700 frequency converter total has 24 items warning information and protection function, protection function act once happen failure, frequency converter stop output, frequency converter failure electric relay contact act and indicate failure code on the frequency converter display panel. The users able to self check according to the reminding in this chapter before seeking for service, analyse the failure reason and ind out the solve methods. If failure belong to the described reasons in dotted line frame then please seeking for service, contact the agent of the purchased frequency converter or directly contact our company.

Err22 in 21 items warning information is over current or over voltage signal, in most of the situation, hardware over voltage caused Err22 alarm.

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Inverter unit protection	Err1	1.Frequency converter output circuit short circuit 2.Too long motor and frequency converter wiring 3.overheat module 4.Internal wiring of frequency converter loosen 5.Abnormal main control board 6.Abnormal drive board 7.Abnormal mutation module	1.solve outer failure 2.Additionally install reactor or output filter wave device 3.check whether air channel blocked, whether fan normally working and solve the existing problems 4.Plug in well all wiring 5.seeking for technical support 6.seeking for technical support 7.seeking for technical support
Accelerate over current	Err2	1.Frequency converter output circuit existinggrounding or short circuit 2.control method is vector and not process parameter identification 3.Too short accelerate time 4.Manual torque rise or unsuitable V/F curve 5.Lower voltage 6.start the rotating motor 7.suddenly add load during accelerating 8.smaller frequency converter device model select	1.solve outer failure 2.process motor parameter identification 3.Increase accelerate time 4.Adjust manually rise torque or V/F curve 5.Adjust the voltage to normal range 6.select speed tracing start or restart after motor stopped 7.cancel suddenly added load 8. select more bigger power grade frequency converter

6.1 故障报警及对策

故障名称	故障代码	故障原因排查	故障处理对策
减速过电流	Err3	1、变频器输出回路存在接地或短路 2、控制方式为矢量且没有进行参数辨识 3、减速时间太短 4、电压偏低 5、减速过程中突加负载 6、没有加装制动单元和制动电阻	1、排除外围故障 2、进行电机参数辨识 3、增大减速时间 4、将电压调至正常范围 5、取消突加负载 6、加装制动单元及电阻
恒速过电流	Err4	1、变频器输出回路存在接地或短路 2、控制方式为矢量且没有进行参数辨识 3、电压偏低 4、运行中是否有突加负载 5、变频器选型偏小	1、排除外围故障 2、进行电机参数辨识 3、将电压调至正常范围 4、取消突加负载 5、选用功率等级更大的变频器
加速过电压	Err5	1、输入电压偏高 2、加速过程中存在外力拖动电机运行 3、加速时间过短 4、没有加装制动单元和制动电阻	1、将电压调至正常范围 2、取消此外动力或加装制动电阻 3、增大加速时间 4、加装制动单元及电阻
减速过电压	Err6	1、输入电压偏高 2、加速过程中存在外力拖动电机运行 3、减速时间过短 4、没有加装制动单元和制动电阻	1、将电压调至正常范围 2、取消此外动力或加装制动电阻 3、增大加速时间 4、加装制动单元及电阻
恒速过电压	Err7	1、输入电压偏高 2、运行过程中存在外力拖动电机运行	1、将电压调至正常范围 2、取消此外动力或加装制动电阻
控制电源故障	Err08	1、输入电压不在规范规定的范围内	1、将电压调至规范要求的范围内

6.1 Failure alarm and policies

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Moderate over current	Err3	1.Frequency converter output circuit existing grounding or short circuit 2.control method is vector and not process parameter identification 3.Too short moderate time 4.Lower voltage 5.suddenly add load during moderating 6.Not additionally install brake unit and brake electric resistance	1.solve outer failure 2.process motor parameter identification 3.Increase moderate time 4.Adjust the voltage to normal range 5.cancel suddenly added load 6.Additionally install brake unit and brake electric resistance
constant speed over current	Err4	1.Frequency converter output circuit existing grounding or short circuit 2.control method is vector and not process parameter identification 3.Lower voltage 4.whether has sudden load during running 5.smaller frequency converter device model select	1.solve outer failure 2.process motor parameter identification 3.Adjust the voltage to normal range cancel suddenly addedload 5.select more bigger power grade frequency converter
Accelerate over voltage	Err5	1.Higher input voltage 2.Existing outer force drive motor to run during accelerating 3.Too short accelerate time 4.Not additionally install brake unit and brake electric resistance	1.Adjust the voltage to normal range 2.cancel additional power or add braking resistance 3.Increase accelerate time 4.Additionally install brake unit and brake electric resistance
Moderate over voltage	Err6	1.Higher input voltage 2.Existing outer force drive motor to run during accelerating 3.Too short moderate time 4.Not additionally install brake unit and brake electric resistance	1.Adjust the voltage to normal range 2.cancel additional power or add braking resistance 3.Increase accelerate time 4.Additionally install brake unit and brake electric resistance
constant speed over voltage	Err7	1.Higher input voltage 2.Existing outer force drive motor to run during running	1.Adjust the voltage to normal range 2.cancel this outer power or additionally install brake electric resistance
control power supply failure	Err08	1.Input voltage not in the standard stipulated range	1.Adjust the voltage in the standard required range

6.1 故障报警及对策

故障名称	故障代码	故障原因排查	故障处理对策
欠压故障	Err09	1、瞬时停电 2、变频器输入电压不在规范要求的范围 3、母线电压不正常 4、整流桥及缓冲电阻不正常 5、驱动板异常 6、控制板异常	1、复位故障 2、调整电压到正常范围 3、寻求技术支持 4、寻求技术支持 5、寻求技术支持 6、寻求技术支持
变频器过载	Err10	1、负载是否过大或发生电机堵转 2、变频器选型偏小	1、减小负载并检查电机及机械情况 2、选用功率等级更大的变频器
电机过载	Err11	1、电机保护参数 P9-01 设定是否合适 2、负载是否过大或发生电机堵转 3、变频器选型偏小	1、正确设定此参数 2、减小负载并检查电机及机械情况 3、选用功率等级更大的变频器
输入缺相	Err12	1、三相输入电源不正常 2、驱动板异常 3、防雷板异常 4、主控板异常	1、检查并排除外围线路中存在的问题 2、寻求技术支持 3、寻求技术支持 4、寻求技术支持
输出缺相	Err13	1、变频器到电机的引线不正常 2、电机运行时变频器三相输出不平衡 3、驱动板异常 4、模块异常	1、排除外围故障 2、检查电机三相绕组是否正常并排除故障 3、寻求技术支持 4、寻求技术支持
模块过热	Err14	1、环境温度过高 2、风道堵塞 3、风扇损坏 4、模块热敏电阻损坏 5、逆变模块损坏	1、降低环境温度 2、清理风道 3、更换风扇 4、更换热敏电阻 5、更换逆变模块
外部设备故障	Err15	1、多功能端子 X 输入外部故障的信号 2、虚拟 IO 功能输入外部故障的信号	1、复位运行 2、复位运行

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Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Lack voltage failure	Err09	1.Moment power of 2.Frequency converter input voltage not in the standard required range 3.Abnormal bus line voltage 4.Abnormal rectification bridge and recoil resistance 5.Abnormal drive board 6.Abnormal control board	1.Reset failure 2.Adjust voltage to normal range 3.seeking for technical support 4.seeking for technical support 5.seeking for technical support 6.seeking for technical support
Frequency converter over load	Err10	1.whether too big load or happen motor blocked 2.smaller frequency converter device model select	1.Reduce load and check the motor and mechanical situation 2.select more bigger power grade frequency converter
Motor overload	Err11	1.whether suitable motor protect parameters P9-01 2.whether too big load or happen motor blocked 3.smaller frequencyconverter device model select	1.correctly set this parameter 2.Reduce load and check the motor and mechanical situation 3.select more bigger power grade frequency converter
Input lack phase	Err12	1.Abnormal three phase input power supply 2.Abnormal drive board 3.Abnormal lightning protection board 4.Abnormal main control board	1.check and solve the existing problems in outer circuit 2.seeking for technical support 3.seeking for technical support 4.seeking for technical support
output lack phase	Err13	1.Abnormal lead wire from frequency converter to motor 2.unbalance frequency converter t hree phase output during motor running 3.Abnormal drive board 4.Abnormal module	1.solve outer failure 2.check whether motor three phase winding normal and solve the problems 3.seeking for technical support 4.seeking for technical support
Module overheat	Err14	1.Too high environment temperature 2.Air channel blocked 3.Fan damaged 4.Module thermal resistor damaged 5.inverter module damaged	1.Reduce environment temperature 2.clean air channel 3.Renewal fan 4.Renewal thermal resistor 5.Renewal inverter module
outer equipment failure	Err15	1.Multifunctional terminal X inputsignal of outer failure 2.virtual IO function input signal of outer failure	1. reset operation 2. reset operation

6.1 故障报警及对策

故障名称	故障代码	故障原因排查	故障处理对策
通讯故障	Err16	1、上位机工作不正常 2、通讯线不正常 3、保留 4、通讯参数 PD 组设置不正确	1、检查上位机接线 2、检查通讯连接线 3、正确设置通讯扩展卡类型 4、正确设置通讯参数
接触器故障	Err17	1、驱动板和电源不正常 2、接触器不正常	1、更换驱动板或电源板 2、更换接触器
电流检测故障	Err18	1、检查霍尔器件异常 2、驱动板异常	1、更换霍尔器件 2、更换驱动板
电机调谐故障	Err19	1、电机参数未按铭牌设置 2、参数辨识过程超时	1、根据铭牌正确设定电机参数 2、检查变频器到电机引线
EEPROM 读写故障	Err21	1、EEPROM 芯片损坏	1、更换主控板
变频器硬件故障	Err22	1、存在过压 2、存在过流	1、按过压故障处理 2、按过流故障处理
对地短路故障	Err23	1、电机对地短路	1、更换电缆或电机
累计运行时间到达故障	Err26	1、累计运行时间达到设定值	1、使用参数初始化功能清除记录信息
用户自定义故障 1	Err27	1、通过多功能端子 X 输入用户自定义故障 1 的信号 2、通过虚拟 IO 功能输入用户自定义故障 1 的信号	1、复位运行 2、复位运行
用户自定义故障 2	Err28	1、通过多功能端子 X 输入用户自定义故障 1 的信号 2、通过虚拟 IO 功能输入用户自定义故障 1 的信号	1、复位运行 2、复位运行
累计上电时间到达故障	Err29	1、累计上电时间达到设定值	1、使用参数初始化功能清除记录信息

6.1 Failure alarm and policies

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
communication failure	Err16	1.Abnormal host computer working 2.Abnormal communication wire 3.Remain 4.Incorrect communication parameter PD group setting	1.check host computer wiring 2.check communication wiring 3.correctly set communication expanding card type 4.correctly set communication parameters
contactor failure	Err17	1.Abnormal drive board and power supply 2.Abnormal contactor	1.Renewal drive board and power supply 2.Renewal contactor
current test failure	Err18	1.check abnormal Hall apparatus 2.Abnormal drive board	1.Renewal Hall apparatus 2.Renewal drive board
Motor tune failure	Err19	1.Motor parameters not set according to data plate 2.parameter identify process overtime	1.correctly set motor parameter according to data plate 2.check the lead wire from frequency converter to motor
EEPROM read and write failure	Err21	1.EEPROM chips damaged	1.Renewal main control board
Frequency converter hardware failure	Err22	1.Existing over voltage 2.Existing over current	1.Treat according to over voltage failure 2.Treat according to over current failure
Grounding short circuit failure	Err23	1.Motor grounding short circuit	1.Renewal cable or motor
Accumulated running time arrive failure	Err26	1.Accumulated running time arrived setting value	1.use parameter initialize function to clean record information
user self defined failure 1	Err27	1.Input signal of user self defined failure 1 through multifunctional terminal x 2.Input signal of user self defined failure 1 through invented 10 function	1.Reset running 2.Reset running
user self deined failure 2	Err28	1.Input signal of user self defined failure 1 through multifunctional terminal x 2.Input signal of user self defined failure 1	1.Reset running 2.Reset running
Accumulate power on time arrived failure	Err29	1.Accumulate power on time arrived setting value	1.use parameter initialize function to clean record information

6.1 故障报警及对策

故障名称	故障代码	故障原因排查	故障处理对策
掉载故障	Err30	1、变频器运行电流小于 P9-64	1、确认负载是否脱离或 P9-64、P9-65 参数设置是否符合实际运行工况
运行时 PID 反馈丢失故障	Err31	1、PID 反馈小于 PA-26 设定值	1、检查 PID 反馈信号或设置 PA-26 为一个合适值
逐波限流故障	Err40	1、负载是否过大或发生电机堵转 2、变频器选型偏小	1、减小负载并检查电机及机械情况 2、选用功率等级更大的变频器
运行时切换电机故障	Err41	1、在变频器运行过程中通过端子更改当前电机选择	1、变频器停机后再进行电机切换操作
电机过温故障	Err45	1、温度传感器接线松动 2、电机温度过高	1、检测温度传感器接线并排除故障 2、降低载频或采取其它散热措施对电机进行散热处理
初始位置错误	Err51	1、电机参数与实际偏差太大	1、重新确认电机参数是否正确，重点关注额定电流是否设定偏小
缺水保护	Err70	1、现场水压低于b0-16设定缺水保护压力	1、检查b0-16值设定值是否合理， 2、水管是否暴裂， 3、水泵是否损坏
超水压保护	Err71	1、现场水压高于b0-07设定压力值	1、检查b0-07值设定值是否合理， 2、出水阀门是否关闭， 3、压力传感器是否损坏，

6.1 Failure alarm and policies

Failure name	Failure code	Failure reason one by one check	Failure treatment policies
Loss load failure	Err30	1.Frequency converter running current lower than P9-64	1.conirm whether load separated or whether P9-64, P9-65 parameter setting accordance with actual running working condition
feedback loss failure during running	Err31	1.PID feedback less than PA-26 setting value	1.check PID feedback signal or set PA-26 as one suitable value
wave tracing and limit current failure	Err40	1.whether too big load or happen motor blocked 2.smaller frequency converter device model select	1.Reduce load and check the motor and mechanical situation 2.select more bigger power grade frequency
shift motor failure during running	Err41	1.Modify current motor select through terminal during frequency converter running	1.process motor shift operation after frequency converter stop machine
Motor over temperature failure	Err45	1.Temperature sensor wiring loosen 2.Too high temperature motor	1.Test temperature sensor wiring and solve the failure 2.Reduce carriage frequency or adopt other heat radiation actions to process heat radiation of motor
Initial position error	Err51	1.Too big motor parameter and actual tolerance	1.confirm again whether motor parameter correct, pay attention at focus on whether lower rated current setting
Water shortage protection	Err70	1. The on-site water pressure is lower than the water shortage protection pressure set in b0-16	1. Check whether the b0-16 value setting is reasonable, 2. Check whether the water pipe is burst, 3. Check whether the water pump is damaged
Overpres-sure protection	Err71	1. The on-site water pressure is higher than the set pressure value of b0-071. The on-site water pressure is higher than the set pressure value of b0-07	1. Check whether the setting value of b0-07 is reasonable, 2. Check whether the water outlet valve is closed, 3. Check whether the pressure sensor is damaged,

6.2 常见故障及其处理方法

变频器使用过程中可能会遇到下列故障情况，请参考下述方法进行简单故障分析：

序号	故障现象	可能原因	解决方法
1	上电无显示	电网电压没有或者过低； 变频器驱动板上的开关电源故障； 整流桥损坏； 变频器缓冲电阻损坏； 控制板、键盘、键盘线故障； 控制板与驱动板、键盘之间连线断；	检查输入电源； 寻求厂家服务； 检查母线电压； 寻求厂家服务； 更换键盘线排线或联系厂家； 寻求厂家服务；
2	上电重复显示[ ]	驱动板与控制板之间的连线接触不良； 控制板相关器件损坏； 电网电压过低； 驱动板开关电源问题；	重新拔插主板插针排母； 寻求厂家服务； 检查电网电压； 寻求厂家服务；
3	上电显示“Err23”报警	电机或者输出线对地短路； 变频器损坏；	用摇表测量电机和输出线的绝缘； 寻求厂家服务；
4	上电显示 正常，运行后显示“[ ]”并马上停机	风扇损坏或者堵转； 外围控制端子接线有短路；	更换风扇； 排除外部短路故障； 寻求厂家服务；
5	频繁报 Err14（模块过热）故障	载频设置太高。 风扇损坏或者风道堵塞。 变频器内部器件损坏 （热电偶或其他）	降低载频（P0-15）； 更换风扇、清理风道； 寻求厂家服务；
6	变频器运行后电 机不转动	电机线没接好； 变频器参数设置错误（电机参数）； 驱动板与控制板连线接触不良； 驱动板故障；	重新确认变频器与电机之间连线； 更换电机或清除机械故障； 检查并重新设置电机参数；
7	变频器频繁报过流和过压故障	电机参数设置不对； 加减速时间不合适； 负载波动；	重新设置电机参数或者进行电机调谐； 设置合适的加减速时间； 寻求厂家服务；
8	上电显示 8.8.8.8.8	控制板上相关器件坏；	更换控制板；

6.2 common failure and solve methods

The frequency converter maybe meeting the below failure situation during use, please process simple failure analyse refer to the below methods.

S/N	Failure appearance	possible reason	Solve method
1	power on but no indication	No power grid voltage or too low; switch power supply failure on frequency converter drive board; Rectification bridge damaged; Frequency converter bufer electric resistance damaged; control board, keyboard, keyboard wire failure; wiring among control board, drive board and keyboard broken;	check input power supply; seeking factory service; check bus line voltage; seeking factory service; seeking factory service;
2	power on repeat indication[ ]	Bad contact wiring between drive board and control board; control board related apparatus damaged; Too low power grid voltage; Drive board switch power supply problems;	pull and insert the main board pin socket again; seeking factory service; check power grid voltage; seeking factory service;
3	power on indicate “Err23” alarm	Motor or output wire grounding short circuit; Frequency converter damaged;	use meter measure insulation of motor and output wire; seeking factory service;
4	power on indication normal, indicate “[]” after running and	Fan damaged or blocked; outer control terminal wiring short circuit;	Renewal fan; solve the outer short circuit failure; seeking factory service;
5	Frequently report Err14（module overheat）failure	Too high carriage frequency setting; Fan damaged or air channel blocked. Apparatus in frequency converter damaged（thermocouple or others）;	Reduce carriage frequency（po-15）; Renewal fan and clean air channel; seeking factory service;
6	Motor not running after frequency converter running	Not connect motor wire well; Error frequency converter parameter setting（motor parameter）; Bad contact between drive board and control board wire; Drive board failure;	Confirm the wire between frequency converter and motor; Renewal motor or solve the mechanical failure; check and reset motor parameters;
7	Frequency converter frequently report over current and over voltage	Incorrect motor parameter setting; unsuitable accelerate and moderate time; Load wave;	Reset motor parameter or process motor tune; set suitable accelerate and moderate time; seeking factory service;
8	power on indication 8.8.8.8.8	The relate apparatus on control board damaged;	Renewal control board;