

BONENG



中文

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MX 三相交流
永磁伺服马达
&AX伺服驱动
器使用手册

MX Three-Phase
AC Permanent
Magnet Servo
Motor & AX Servo
Drives Use Manual

EN

09/2026

伺服马达

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伺服马达

1 概述

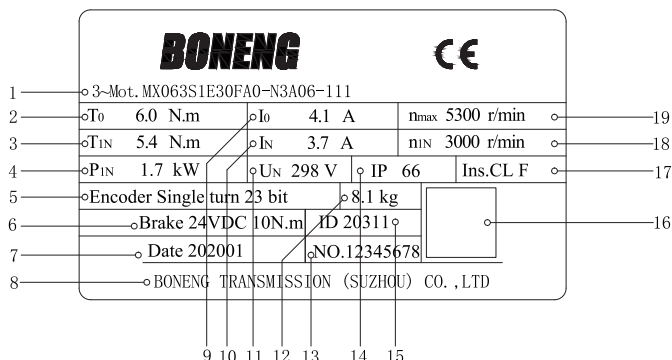
1.1 说明

本说明书为我司MX系列伺服马达的随机文件。其中介绍了马达的启动、储运、安装、使用、维护的要求和注意事项，使用维护人员必须认真仔细阅读此说明书。认真审阅马达上的铭牌、标牌、警示牌等。使用单位应对操作人员进行专业培训后，方能上岗作业。

△注意：

为保证设备安全和正确安装、操作和维护，请务必遵守本说明书的相关条款。负责安装操作或维护设备的人员应注意相关说明，忽视说明将会使质保失效。

1.2 铭牌信息



- | | |
|-------------|----------|
| 1. 马达型号 | 11. 反电势 |
| 2. 100K静止转矩 | 12. 重量 |
| 3. 100K额定转矩 | 13. 出厂编号 |
| 4. 额定功率 | 14. 防护等级 |
| 5. 编码器参数 | 15. 马达ID |
| 6. 制动器参数 | 16. 二维码 |
| 7. 生产日期 | 17. 绝缘等级 |
| 8. 公司名称 | 18. 额定转速 |
| 9. 静止电流 | 19. 最大转速 |
| 10. 额定电流 | |

2 一般要求

2.1 基础检查

- ◆ 收货后立即检验马达有无外部损伤，检验所有的铭牌数据；
- ◆ 用手旋转马达转轴检测马达空载状况，如果马达装有锁定装置，注意将其打开；
- ◆ 带制动器的马达应通电看其制动器能否动作。

2.2 绝缘性能检测

- ◆ 马达初次使用前绕组有可能受潮，需要测量其对地绝缘电阻

△注意：

测量后绕组要立即放电，避免电击。

2.3 启动方式

- ◆ 按照此说明书及驱动器说明书将马达和驱动器进行正确接线；
- ◆ 进行通电前的检查，检查无误后才能驱动器上电；
- ◆ 驱动器接通电源后进行驱动器及马达各项参数设定及整定；
- ◆ 马达启动后观察马达、传动装置、机械设备及驱动器面运行数据是否正常，若有异常现象应立即停机，查明故障并排除后方可重新启动。

△注意：

马达不容许直接连接工频电网使用。

2.4 启动前检查

2.4.1 机械连接检查

启动前请按照以下事项进行检查确认：

- ◆ 如果轴伸使用了滑键，确保滑键不会被甩出；
- ◆ 确保马达正确装配和对中；
- ◆ 确保马达转子顺利旋转，没有摩擦声；
- ◆ 确保马达运行条件与铭牌数据相一致；
- ◆ 确保所有固定螺栓、连接元件和电气接口都已拧紧且正确固定；

◆ 确保传动元件根据其类型进行了正确调节匹配。如：联轴器对中且平衡，如果有皮带，皮带张力经过正确调整，如果有齿轮，齿面间隙、齿尖间隙以及径向间隙经过正确调整。

2.4.2 电气检查

- ◆ 确保电力、信号、接地和屏蔽线连接良好；
- ◆ 确保制动器连接和功能正常；
- ◆ 确保驱动器参数设定同马达铭牌和参数一致；
- ◆ 确保驱动器对马达的保护设备和马达的容许运行条件和参数一致。

△注意：

马达运行时应监控其运行转速和电流情况，防止其超出马达铭牌及样本技术数据所容许的范围。

3 旋转方向

从马达的驱动端观察转轴，逆时针旋转定义为正方向，当需要其反方向旋转时需将驱动器端的马达连接动力电缆中的任两相马达动力线对调。

4 运行条件

4.1 运行环境

- ◆ 高度不超过海拔1000m；
- ◆ 允许的环境温度在 $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ ；
- ◆ 所允许的相对湿度： $-15^{\circ}\text{C} \leq T \leq 20^{\circ}\text{C}$ ：100%； $20^{\circ}\text{C} < T \leq 30^{\circ}\text{C}$ ：95%； $30^{\circ}\text{C} < T \leq 40^{\circ}\text{C}$ ：55%。

4.2 安全运行条件

- ◆ 马达应由熟悉相关安全要求的专业人员安装、接线和调试；
- ◆ 安装时必须有安全装置以防止事故发生，安装的位置也必须符合规定。

5 管理

5.1 货物验收

伺服系统由多个部件组装或分装在一起。收货后请当场检查货物是否与随附货物单证相一致。如果发现货物不全，请立即索赔，超过时限的索赔，我司将不予受理。

5.2 搬运和储存

5.2.1 搬运

请使用合适的抓取装置进行搬运和安装，搬运和安装过程应注意：

- ◆ 起重设备、地面输送机械和抓取装置必须符合规定；
 - ◆ 马达的重量标注在马达铭牌上，请注意起重设备的承载能力；
 - ◆ 不可通过功率连接器、信号连接器或者编码器模块来提升或搬运马达；
- 在大型马达端盖上配有吊环或者用于安装吊环的螺纹孔，请使用吊环搬运马达。

5.2.2 储存

如果马达没有使用，请将马达储存在合适的环境中，马达储存时应注意：

- ◆ 马达都应保存在室内，要求干燥、防震、防尘的环境中；
- ◆ 无保护的马达表面（轴伸端部和法兰）应该采取防锈措施；
- ◆ 定期检查马达，用手转动转轴，防止接触腐蚀或其他问题。

6 电气连接

6.1 概述

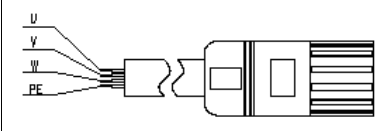
- ◆ 马达上的功率连接器和信号连接器可以在一定范围内旋转，需要旋转时可使用配套的母插来旋转连接器，使用母插辅助旋转时母插必须完全插入，以免损坏插针；
- ◆ 马达只能和配置的驱动器在正确的电气连接和参数设置下才能正常工作；
- ◆ 按照使用的方式、承载的电压和电流来选择正确的连接电缆；
- ◆ 确保连接器的密封性和密封面，以确保符合防护等级；
- ◆ 使用时需要给连接电缆套上保护头，防止电缆被扭转、拉伸、挤压和弯曲，连接器不允许持续受力。

△注意：

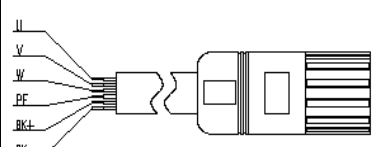
- ◆ 触电危险，请遵守电气设备工作规范，只允许由专业人员安装驱动器和连接器。
- ◆ 马达含有静电元器件，请采取防静电措施。

6.2 动力信号电缆连接

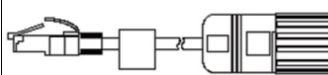
◆ 不带制动动力电缆

	接线定义	
	U相引线	棕色
	V相引线	黑色
	W相引线	蓝色
	PE引线	黄绿色

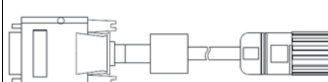
◆ 带制动动力电缆

	接线定义	
	U相引线	棕色
	V相引线	黑色
	W相引线	蓝色
	BK+ (制动器+) 相印线	橙色
	BK- (制动器-) 相印线	紫色
	PE引线	黄绿色

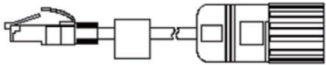
◆ 伺服信号线 (Biss-C编码器, 适配于CM53驱动器)

	线芯定义	连接器针脚		颜色
		水晶头	航空插头	
	DC	7	1	橙色
	GND	8	2	橙白色
	VB	电池盒 (红)	3	蓝色
	GND	电池盒 (黑)	4	蓝白色
	SD+	5	5	棕白色
	SD-	4	6	棕色
	MA+	3	15	绿色
	MA-	6	16	绿白色
	屏蔽层		17 (不接)	

◆ 伺服信号线 (Biss-C编码器, 适配于CM55驱动器)

	线芯定义	连接器针脚		颜色
		DB15	航空插头	
	VCC	4	1	橙色
	GND	7	2	橙白色
	VB	电池盒 (红)	3	蓝色
	GND	电池盒 (黑)	4	蓝白色
	SD+	1	5	棕白色
	SD-	8	6	棕色
	MA+	2	15	绿色
	MA-	3	16	绿白色
	屏蔽层		17 (不接)	

◆ 伺服信号线(RS485编码器,适配于CM53/CM55驱动器)

	线芯定义	连接器针脚		颜色
		水晶头	航空插头	
	VCC	7	1	橙色
	GND	8	2	橙白色
	VB	电池盒(红)	3	蓝色
	GND	电池盒(黑)	4	蓝白色
	SD+	5	5	棕白色
	SD-	4	6	棕色
	KTY84+	1	15	绿色
	KTY84-	2	16	绿白色
	屏蔽层		17 (不接)	

7 维护

7.1 概述

马达定期的细心维护和检修必不可少,这有助于及时地发现和排除故障,以防这些故障造成任何损害。马达维护应注意:

- ◆ 定期检修马达;
- ◆ 保持马达清洁,空气流通;
- ◆ 定期检查轴伸的密封圈,如有必要及时更换;
- ◆ 定期检查安装连接状况和安装螺钉;
- ◆ 通过监听异常噪声、温度监测等检查轴承运行情况;
- ◆ 如有异常发生,应立即停机,检查原因并及时排除。

△注意:

根据使用工况不同建议马达维护检修周期为3个月、6个月和一年等

7.2 轴承润滑与更换

7.2.1 润滑

马达配置封闭式轴承,免维护。

7.2.2 更换

轴承属于易损件,达到特定的运行小时后必须更换。对于中等的负载状况约 25000个小时后必须更换轴承。

当运行条件相当良好时,如低速或中等转速、低轴承温度、低轴向力/径向力或者低振动负载条件下,更换期限可以适当延长。在恶劣的运行条件中,如以 n_{max} 恒速运行、剧烈振动、碰撞、经常待机运行时,轴承更换期限会缩短,最大幅度为50%。

7.3 编码器更换

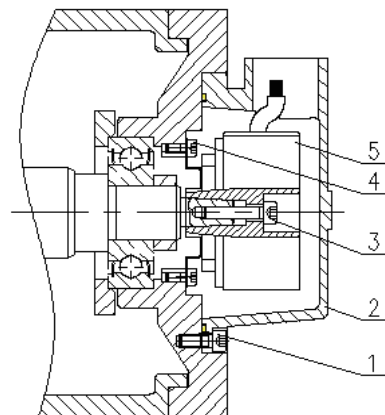
MX系列伺服马达编码器连接结构可以很方便的进行拆装。

1. 编码器拆卸

- ◆ 断开马达电源;
- ◆ 拆下编码器盖安装螺栓“1”,取下编码器罩“2”;
- ◆ 拆下编码器轴向固定螺栓“3”;
- ◆ 拆下编码器弹片固定螺栓“4”;
- ◆ 将编码器“5”轻轻用力拔出。

2. 编码器安装

- ◆ 对准编码器轴孔和马达尾轴,将编码器“5”轻轻推入;
- ◆ 调整编码器弹片固定孔;
- ◆ 以2~3Nm的扭矩拧紧编码器紧弹片固定螺栓“4”;
- ◆ 以2~3Nm的扭矩拧紧编码器轴向固定螺栓“3”固定好编码器;
- ◆ 以2~3Nm的扭矩拧紧编码器罩安装螺栓“1”将编码器罩“2”装回,编码器更换完成。



编码器连接示意图

8 马达常见故障与维修方法

常见故障	原因	维修方法
马达无法 起动	过载堵转	降低负载
	驱动器故障报错	检查动力线和信号线连接/检查驱动器参数设置
马达加速 缓慢	过载	降低负载
	驱动器参数 设置不合理	检查驱动器参数设置
	动力线中某一相 在接通后断开	检查驱动器和动力线 连接以及航插连接/ 检查绕组电阻
	定子绕组中出线匝 间短路或相间短路	确定绕组电阻和绝缘电 阻,并联系厂家进行维修
起动时发 出隆隆声	动力线的某一相 在接通后断开	检查驱动器和动力线 连接以及航插连接/ 检查绕组电阻
	定子绕组中出线匝 间短路或相间短路	确定绕组电阻和绝缘电 阻,并联系厂家进行维修
运行时发 出隆隆声	过载	降低负载
	动力线的某一相 在接通后断开	检查驱动器和动力线 连接以及航插连接/ 检查绕组电阻
	定子绕组中出线匝 间短路或相间短路	确定绕组电阻和绝缘电 阻,并联系厂家进行维修
空载运行时 马达过热	冷却风的通风 被异物阻挡	清除阻碍物, 保证冷却风自由通风
负载运行时 马达过热	过载	降低负载
	动力线的某一相 在接通后断开	检查驱动器和动力线 连接以及航插连接/ 检查绕组电阻
	冷却风的通风 被异物阻挡	清除阻碍物, 保证冷却风自由通

常见故障	原因	维修方法
运行不平 稳	马达动力电缆和信 号电缆屏蔽不充分	检查屏蔽和接地情况/ 检查周围附近是否存在 干扰源
	线路中有虚接	重新锁紧动力及信号航 插/检查驱动器和动力 及信号电缆连接
	驱动器增益 设置不合理	重新合理设置 驱动器的增益
刺耳的 摩擦声, 运行噪音	旋转部件打滑	确定原因, 修整部件
	电机内部有异物	联系厂商修理
	轴承损坏	联系厂商修理
径向振动	转子失衡	拆开转子, 重新平衡转子
	转子不圆, 轴弯曲	联系厂商修理
	校准不佳	校准设备, 联查联轴器
	相连设备失衡	重新平衡相连设备
轴向振动	齿轮箱运行不平稳	使齿轮箱正常运行
	校准不佳	校准设备, 联查联轴器
	相连设备失衡	重新平衡相连设备
	齿轮箱运行不平稳	使齿轮箱正常运行

伺服驱动器

9 驱动器安装与尺寸

9.1 安装环境

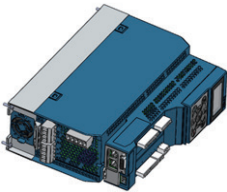
环境温度	-10~+50℃（未冻结）
环境湿度	95%以下（无凝露）
存放温度	-40~+70℃
周围环境	室内, 无腐蚀性气体, 无易燃气体, 无易燃粉尘
海拔	无降容: 1000m以下
	有降容: 1000m~4000m
防护等级	IP20
污染等级	适用于污染等级2的环境

9.2 安装方式

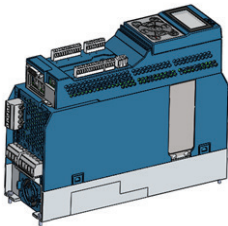
驱动器应按如下图 (a) 垂直安装, (b) (c) 安装方式不正确。



(a)



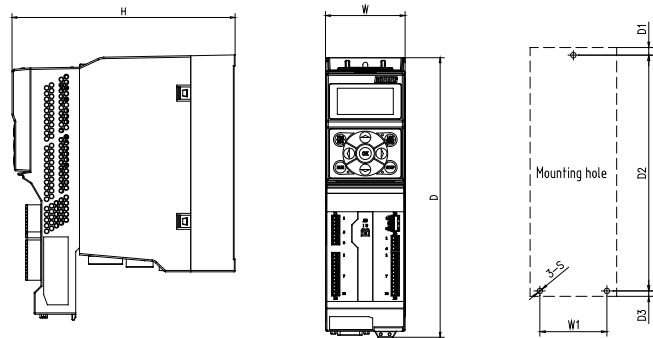
(b)



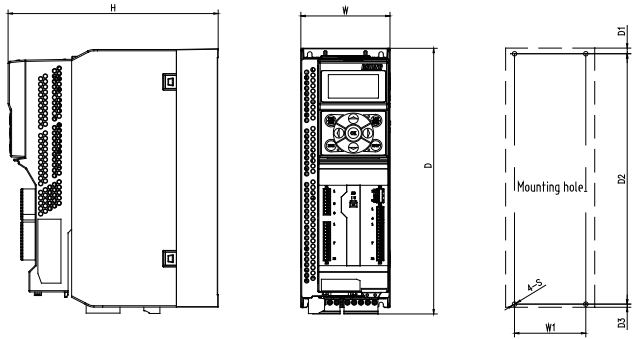
(c)

9.3 整机外形尺寸及安装尺寸

9.3.1 PM26+CM55+OP25

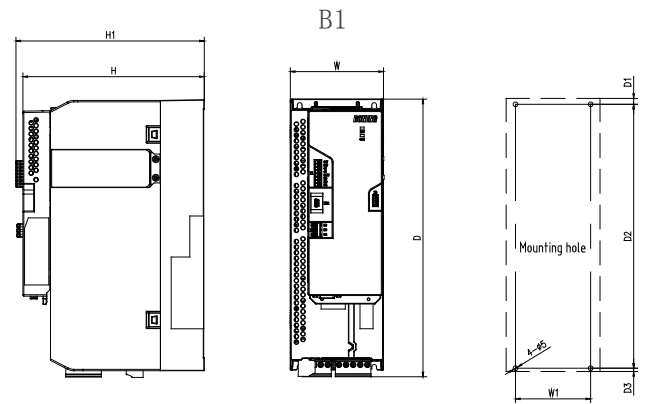
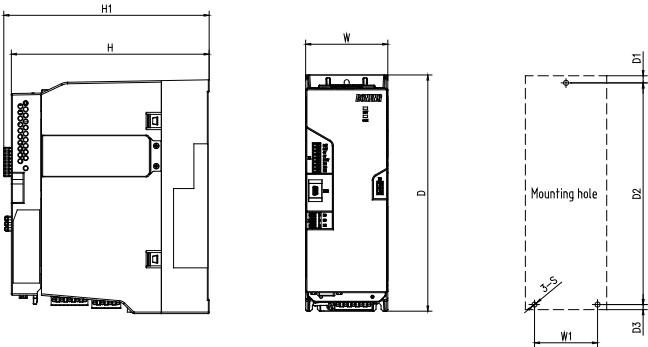


B1



B2~B6

机型	W	H	D	W1	D1	D2	D3	S
B1	80	236.5	281	62	7	218	5	5（3颗M4螺丝， 安装扭矩2.5Nm）
B2	100	236.5	298	80	6	281	4	5（4颗M4螺丝， 安装扭矩2.5Nm）
B3	140	236.5	363	120	7	343	5	6（4颗M5螺丝， 安装扭矩3.5Nm）
B4	200	268.5	473	170	7	430	7	6（4颗M5螺丝， 安装扭矩6Nm）
B6	305	388.5	757	273	14	727	9	9（4颗M8螺丝， 安装扭矩25Nm）



B2~B6

机型	W	H	D	H1	W1	D1	D2	D3	S
B1	80	194.6	230	202	62	7	218	5	5 (3颗M4螺丝, 安装扭矩2.5Nm)
B2	100	194.6	298	202	80	6	281	4	5 (4颗M4螺丝, 安装扭矩2.5Nm)
B3	140	194.6	363	202	120	7	343	5	6 (4颗M5螺丝, 安装扭矩3.5Nm)
B4	200	237	473	/	170	7	430	7	6 (4颗M5螺丝, 安装扭矩6Nm)
B6	305	357.5	757	/	273	14	727	9	9 (4颗M8螺丝, 安装扭矩25Nm)

10 控制模块

10.1 CM55控制模块

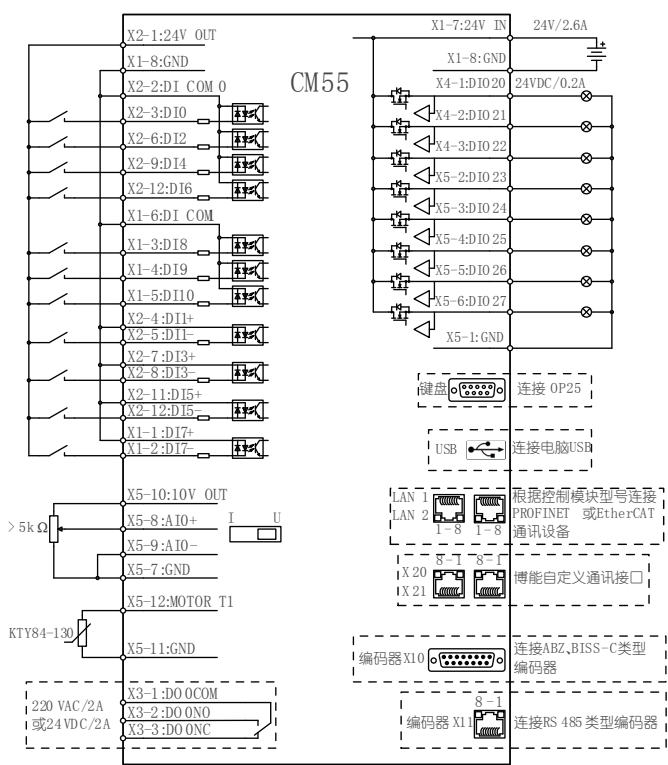
10.1.1 端子技术数据

功能	技术数据
总线接口	AX-CM55-PA-PE •支持PROFINET、DriveLink •RJ45接口
	AX-CM55-EA-PE •支持EtherCAT、DriveLink •RJ45接口
工作电源	功率模块供电 •由功率模块提供 •数字量输入/输出端子作为输出使用时需外接24V电源
	外部端子供电 •电压范围：DC 20.8V~28.8V •最大电流：2.6A
输出电源	+24V输出 •电压范围：DC 18V~26.8V •最大电流：200mA
	+10V输出 •电压范围：DC 9.5V~10.5V •最大电流：40mA
	DB15接口 编码器电源 •电压：DC 5V或DC 24V •最大电流：350mA
	RJ45接口 编码器电源 •电压：DC 5V •最大电流：200mA
数字量输入	11个 (DI0~DI10) •DI1、DI3、DI5、DI7为差分输入，其余为单端类型 •DI0、DI2、DI4、DI6 共公共端子DICOM0 •DI8、DI9、DI10 共公共端子DICOM1 •电气隔离 •支持Source和Sink模式 •电压：DC 24V、AC 36V •“1”信号电压：>11V •“0”信号电压：<5V •24V典型电流：4mA •响应时间：6ms (含软件滤波)
数字量输出	1个继电器 (DO0) •电压：DC 24V、AC 220V •连续电流：2A •切换电流：2A •触点类型：1常开1常闭

数字量	8个	•电压：最大DC 30V
输入/输出	(DI020~DI027)	•电流：输出最大200mA， 24V输入典型4mA
		•频率：最大100Hz
		•输入“1”信号电压：>15V
		•输入“0”信号电压：<5V
		•非电气隔离
		•外部供电端子需接24V
模拟量	1个 (AI0)	•差分输入
输入		•拨码开关切换 电压和电流模式
		•电压型支持 -10V~+10V、0V~10V
		•电流型支持 0mA~20mA、4mA~20mA
		•电流型内阻250Ω
		•响应时间:2ms(含软件滤波)
		•精度：±1%
温度	2个	•分别位于端子X5和X11
传感器		•支持KTY84-130、PTC
编码器	ABZ	•支持24V的单端信号、 5V和24V的差分信号
信号输入		•输入频率:最大250kHz
		•断线侦测:仅支持差分类型
		•最大长度:5V差分类型100m 24V开集极类型50m 24V推挽类型100m 24V差分类型300m
	BISS-C	•波特率：最大4Mbps
		•最大长度：500kbps时100m
	RS485	•波特率：最大2.5Mbps
		•最大长度：500kbps时100m
USB接口	1个	•USB 2.0
		•Mini-B
键盘接口	支持0P25	•可直接安装或外引安装

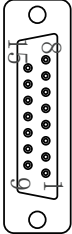
注意：控制端子外接设备时，必须注意端子的电压，
电流规格，以免损坏变频器

10.1.2 配线图



10.1.4 编码器接口信号定义

a) 编码器接口 (X10) 信号定义

	引脚	信号名称	信号说明
	1	DB15_SSI_DA+	BISS-C的数据+
	2	DB15_SSI_CK+	BISS-C的时钟+
	3	DB15_SSI_CK-	BISS-C的时钟-
	4	DB15_PWR	编码器电源 (5V或24V)
	5	DB15_PWR	编码器电源 (5V或24V)
	6	DB15_VS+	编码器电源 侦测输入
	7	DB15_0V	电源地
	8	DB15_SSI_DA-	BISS-C的数据-
	9	DB15_VS-	编码器电源 侦测输入接地
	10	DB15_Z+	增量式信号Z+
	11	DB15_Z-	增量式信号Z-
	12	DB15_B-	增量式信号B-
	13	DB15_B+	增量式信号B+
	14	DB15_A-	增量式信号A-
	15	DB15_A+	增量式信号A+

b) 编码器接口 (X11) 信号定义

	引脚	信号名称	信号说明
	1	RJ45_TEMP+	KTY84-130 或PTC输入
	2	RJ45_TEMP-	KTY84-130 或PTC接地
	3	RJ45_CK+	BISS-C信号CK+
	4	RJ45_DA-	RS485信号B或 BISS-C信号DA-
	5	RJ45_DA+	RS485信号A或 BISS-C信号DA+
	6	RJ45_CK-	BISS-C信号CK-
	7	RJ45_5V	编码器电源 (5V)
	8	RJ45_0V	编码器电源地

10.1.5 通讯接口信号定义

a) PROFINET接口信号定义

	引脚	信号名称	信号说明
	1	TXP	以太网发送数据+
	2	TXN	以太网发送数据-
	3	RXP	以太网接收数据+
	4	预留, 未占用	-
	5	预留, 未占用	-
	6	RXP	以太网接收数据-
	7	预留, 未占用	-
	8	预留, 未占用	-

b) EtherCAT接口信号定义

	引脚	信号名称	信号说明
	1	TXP	以太网发送数据+
	2	TXN	以太网发送数据-
	3	RXP	以太网接收数据+
	4	预留, 未占用	-
	5	预留, 未占用	-
	6	RXP	以太网接收数据-
	7	预留, 未占用	-
	8	预留, 未占用	-

c) DriveLink接口信号定义

	引脚	信号名称	信号说明
	1	CANH	CANH信号
	2	CANL	CANL信号
	3	预留, 未占用	-
	4	预留, 未占用	-
	5	预留, 未占用	-
	6	预留, 未占用	-
	7	预留, 未占用	-
	8	预留, 未占用	-

10.2 CM53控制模块

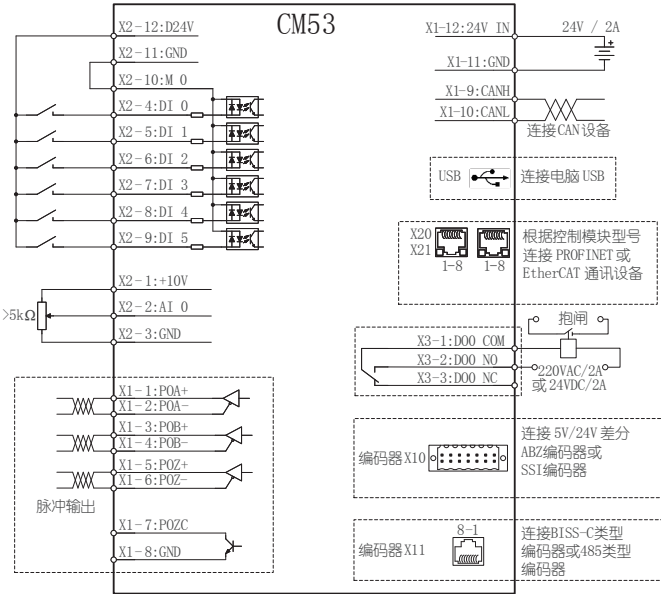
10.2.1 端子技术数据

功能	技术数据
总线接口	AX-CM53-PA-PE • 支持PROFINET、DriveLink • RJ45接口

功能	技术数据	
工作电源	功率模块供电	• DC 24V/1.0A
	外部端子供电	• 电压范围: DC 20.8 ... 28.8V • 最大电流: 1.0A
输出电源	+24V输出	• 电压范围: DC 18V ... 26.8V • 最大电流: 100mA
	+10V输出	• 电压范围: DC 9.5V ... 10.5V • 最大电流: 10mA
数字量输入	6个	• DI0、DI1 ... DI5共公共端子M0 • 电气隔离 • 支持Source和Sink模式 • 电压: DC 24V、AC 36V • “1”信号电压: >11V • “0”信号电压: <5V • 24V典型电流: 4mA • 响应时间: 6ms (含软件滤波)
数字量输出	1个继电器 (D00)	• 电压: DC 24V、AC 220V • 连续电流: 2A • 切换电流: 2A • 触点类型: 1常开1常闭
脉冲输出	3个 (POA~POZ)	• 电压: DC 5V • 电流: 最大20mA • 频率: 最大2MHz • 差分输出 • Z相支持开集电极输出
模拟量输入	1个 (AI0)	• 电子开关切换电压和电流模式 • 电压型支持0V ... 10V • 电流型支持0mA ... 20mA, 4mA ... 20mA • 电流型内阻500Ω • 响应时间: 2ms (含软件滤波) • 精度: ±1%
温度传感器	1个	• 位于RJ45编码器端子X11 • 支持KTY84-130、PTC
编码器信号输入	ABZ	• 支持24V或5V的差分信号 • 输入频率: 最大250kHz • 最大长度: 100m • 断线侦测功能
	SSI	• 支持5V的差分信号 • 波特率: 最大1Mbps
	BISS-C	• 波特率: 最大2Mbps • RJ45接口 • 最大长度: 500kbps时50m

功能	技术数据	
	RS485	• 波特率: 最大2.5Mbps • 最大长度: 500kbps时50m
USB接口	1个	• USB 2.0 • Type-C
键盘显示	支持	• 数码管和机械按键

10.2.2 配线图



10.2.3 插拔端子信号定义

	引脚	信号名称	信号说明
X1	1	CANH	CAN通信差分高线
	2	CANL	CAN通信差分低线
	3	POA+	脉冲输出A相+
	4	POA-	脉冲输出A相-
	5	PAB+	脉冲输出B相+
	6	POB-	脉冲输出B相-
	7	POZ+	脉冲输出Z相+
	8	POZ-	脉冲输出Z相-
	9	POZC	脉冲输出 (开集电极)
	10	GND	输入电源地
	11	GND	输入电源地
	12	24V VIN	输入电源DC24V

10.2.4 编码器接口信号定义

a) 编码器接口 (X10) 信号定义

引脚	信号名称	信号说明
1	A+	增量式编码器信号A+
2	A-	增量式编码器信号A-
3	B+	增量式编码器信号B+
4	B-	增量式编码器信号B-
5	Z+	增量式编码器信号Z+
6	Z-	增量式编码器信号Z-
7	5V_VS+	编码器电源 (5V/0.2A)
8	0V	编码器电源地
9	24V_VS+	编码器电源 (24V/0.2A)
10	0V	编码器电源地
11	SSI_CK+	SSI编码器信号CK+
12	SSI_CK-	SSI编码器信号CK-
13	SSI_DA+	SSI编码器信号DA+
14	SSI_DA-	SSI编码器信号DA-

b) 编码器接口 (X11) 信号定义

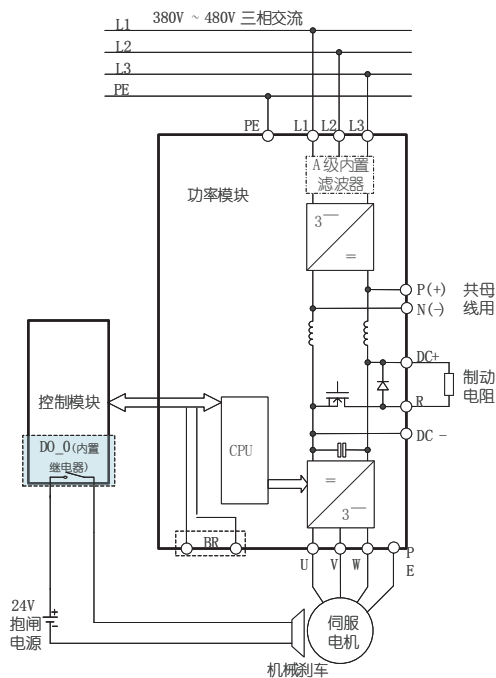
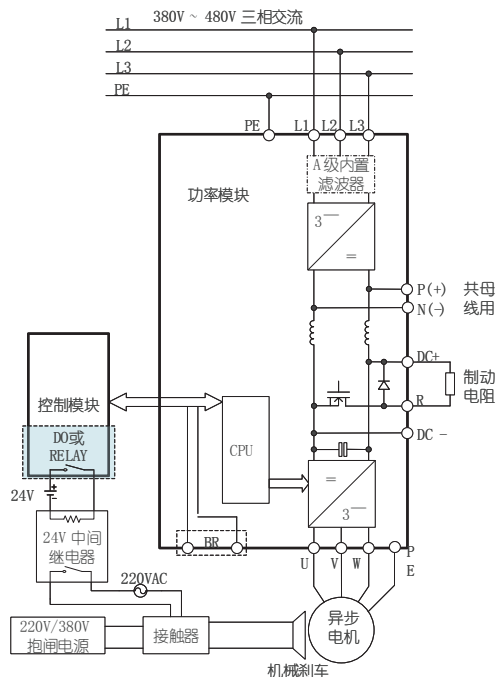
引脚	信号名称	信号说明
1	RJ45_TEMP+	KTY84-130或PTC输入
2	RJ45_TEMP-	KTY84-130或PTC接地
3	RJ45_CK+	BISS-C信号CK+
4	RJ45_DA-	RS485信号B或BISS-C信号DA-
5	RJ45_DA+	RS485信号A或BISS-C信号DA+
6	RJ45_CK-	BISS-C信号CK-
7	RJ45_5V	编码器电源 (5V)
8	RJ45_0V	编码器电源地

10.2.5 通讯接口信号定义

a) PROFINET接口信号定义

引脚	信号名称	信号说明
1	RJ45_TEMP+	KTY84-130或PTC输入
2	RJ45_TEMP-	KTY84-130或PTC接地
3	RJ45_CK+	BISS-C信号CK+
4	RJ45_DA-	RS485信号B或BISS-C信号DA-
5	RJ45_DA+	RS485信号A或BISS-C信号DA+
6	RJ45_CK-	BISS-C信号CK-
7	RJ45_5V	编码器电源 (5V)
8	RJ45_0V	编码器电源地

10.3 功率单元配线图



10.3.1 主回路端子说明及功能描述

名称	端子定义	功能描述
	安全保护接地端子	安全保护接地端子，每台机器标配两个PE端子，供进线及马达接地。
L1/L2/L3	主回路电源输入端子	三相交流输入端子，与电网连接 (380V~480V, 47~63HZ)。
DC+	母线正端子	直流母线正端子。
R	制动电阻接线端子	内置制动单元，和DC+外接制动电阻实现制动功能。
DC-	母线负端子	和DC+共同外接设备实现共直流母线功能。
U/V/W	驱动器动力输出端子	三相交流输出端子，接三相电机
BR	机械刹车控制端子	接24V中继，用以控制电机抱闸，仅配合CM 55时可用，或直接使用端子的24V继电器控制抱闸)

11 伺服驱动器调试

11.1 驱动器参数修改

博能驱动器参数设置可以通过PC端上位机软件Boneng Drivesoft 100 和驱动器本体附带键盘 (OP25) 两种方式实现。

Boneng Drivesoft 100软件或键盘与驱动器连接成功后，驱动器端的参数实时传输至上位机或键盘显示；在上位机软件中修改的参数值也会实时生效并在驱动器中进行存储。

驱动器参数包括普通参数和扩展参数，通过设置参数【A04.02：参数访问级别】以显示不同级别的参数。驱动器应用功能中有部分功能为扩展功能，其参数在扩展参数级别方可显示，对这部分参数进行修改前，请先将A04.02设置为【2：扩展参数】。

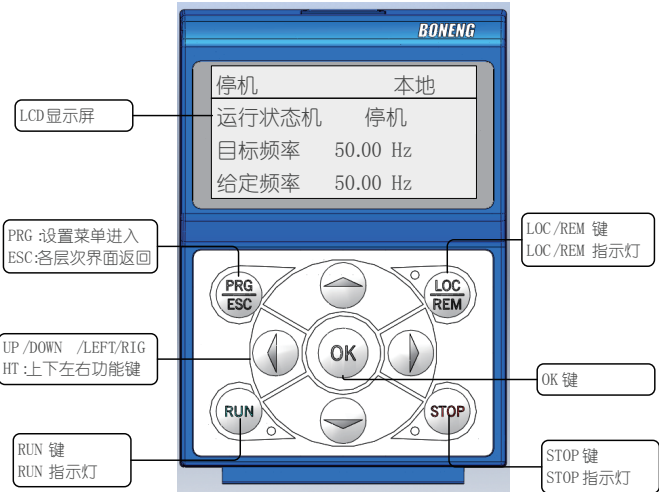
11.2 上位机及操作面板说明

11.2.1 上位机说明

博能驱动器使用PC端上位机软件Boneng DriveSoft 100进行辅助调试，调试软件请在博能官网进行下载，下载地址：https://www.boneng.com/product_AX.htm

11.2.2 OP25面板操作说明

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



1. 按键功能

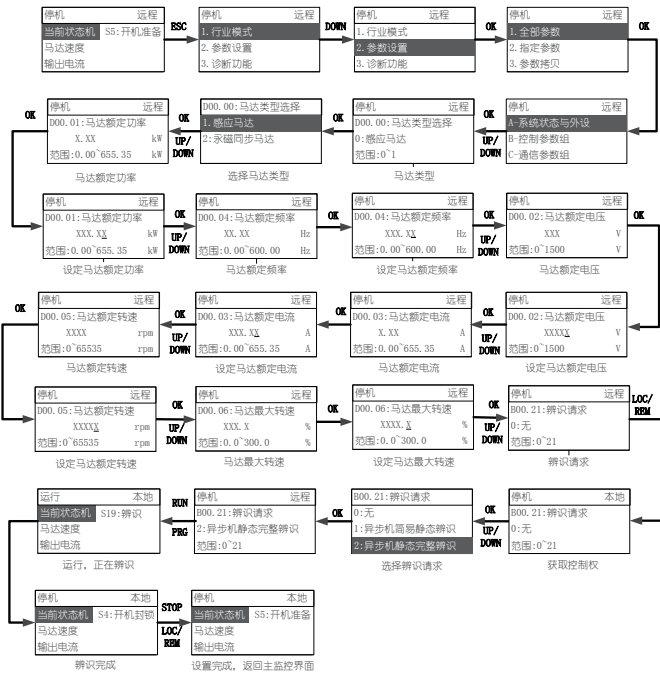
按键	名称	功能
PRG/ESC	编程键/返回键	主监控界面时，按此键进入功能选择界面；其他界面，按此键返回上一级界面或状态
LOC/REM	本地/远程键	获取或放弃键盘控制权
STOP	停止键	运行状态时，按此键可用于停止运行操作；停机状态时按此键可复位故障状态
RUN	运行键	在键盘操作方式下，用于运行操作
▲	递增键	数据或功能码的递增
▼	递减键	数据或功能码的递减

按键	名称	功能
▶	右移位键	在修改参数时，可以循环向右选择参数的修改位
◀	左移位键	在修改参数时，可以循环向左选择参数的修改位
OK	确认键	逐级进入菜单画面、设定参数确认

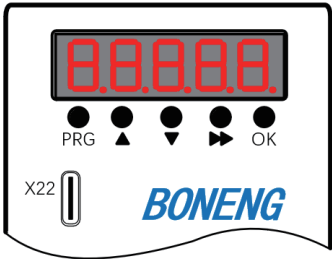
2. 面板显示切换方法

驱动器的操作面板采用多级菜单结构进行参数设置等操作，界面采用4行中文显示，非常直观且便于操作。在参数设置界面状态下，通过上下按键可以依次循环查看该组功能码。按OK键，进入参数设置界面。

举例：设置异步马达参数并进行异步马达参数辨识操作，如下操作流程：

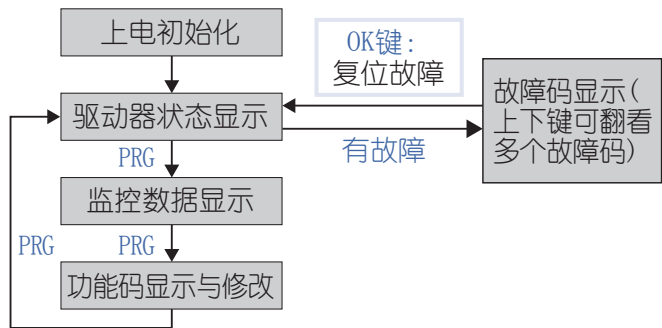


11.2.3 CM53数码管与按键说明



按键	按键名称	功能
PRG	编程/返回	主监控界面时，按此键进入功能选择界面；其他界面，按此键返回上一级界面或状态。
▲	递增键	数据或功能码的递增。
▼	递减键	数据或功能码的递减。
▶▶	右移位键	对5位数码管进行选择,在修改参数时,可以循环向右选择参数的修改位。
OK	确认键	设定参数确认,故障显示页面按确认键,复位故障。

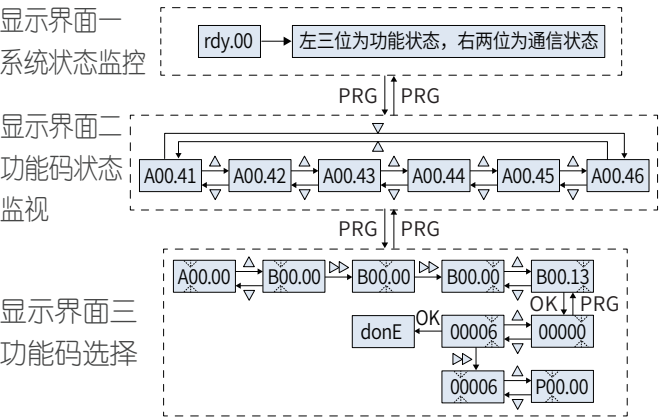
面板显示与按键操作说明：



1. 驱动器状态显示界面显示驱动器当前状态，有如下几种状态：

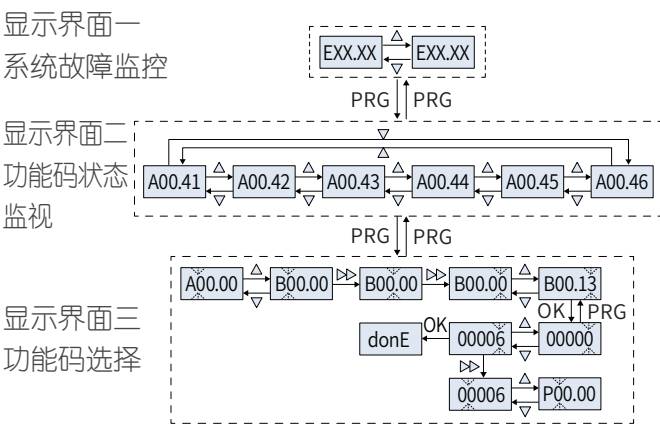
显示	名称	表示含义
88988	Rdy:满足运行条件	驱动器可运行，等待使能信号。
88888	Nrd:开机封锁	驱动器未准备好，不满足运行条件。
80888	Run:运行中	驱动器正在运行。
80888	Tun:电机参数辨识中	正在对电机进行参数辨识。
88888	Off:减速停机中	电机处于制动状态。
88888 88888	总线通信报文	PROFINET通信报文类型: 0: 报文无效; 1: 标准报文1; 2: 标准报文3; 3: 西门子102报文; 4: 西门子105报文; 5: 西门子111报文; 6: 西门子352报文;
88888 88888	总线通信状态	字符显示总线通讯状态: 0: 未建立通讯; A: AR建立; C: DCP请求; E: 通讯故障; P: 过程通信建立;
88888 88888	总线通信报文	EtherCAT通信报文类型: 0: 模式未定义; 1: PP模式; 2: 不支持; 3: PV模式; 4: PT模式; 5: 不支持; 6: 原点回归模式; 7: 不支持; 8: CSP模式; 9: CSV模式; 10: CST模式;
88888 88888	总线通信状态	字符显示总线通信状态: 0: 无意义; 1: init; 2: PRE_OP; 4: SAFE_OP; 8: OP;

2. 功能码显示与修改界面操作流程如下所示：
当驱动器无故障时



如果选择互联参数，光标移到数码管最高位按△可选择参数互联，按▽可取消参数互联

当驱动器存在故障时，显示界面一改变，显示界面二和三不变。



如果选择互联参数，光标移到数码管最高位按△可选择参数互联，按▽可取消参数互联

当驱动第一次启动且没有故障时，AN 驱动器面板会自动显示界面一。按下PRG，面板会显示参数A00. 41。此时，如果按下增加/减少键，面板将在 A00. 41 和 A00. 46 之间循环。按下PRG，面板将进入功能码选择界面。使用右键和增减键可以选择需要修改或查看的功能码参数。按“OK”键。功能码的当前参数显示在面板上。

11.3 马达参数配置

AX驱动器可以支持变频和伺服两种控制模式，在不同模式下可支持的马达类型如下表所示：

马达类型	博能永磁同步马达	其他厂家永磁同步马达	异步马达 (感应马达)
驱动模式			
伺服模式	支持	不支持	支持
变频模式	支持	支持同步马达 (不带编码器 /带ABZ编码器)	支持

注：(1) 驱动器的控制模式可在功能码A04. 14中配置，驱动器出厂默认为伺服模式。

(2) 工作在变频模式（仅调试或扭矩控制，不支持定位）时，可支持不带编码器的同步马达或者带ABZ编码器的同步马达。

(3) 伺服模式且匹配同步马达时，仅支持博能自家伺服电机，伺服模式且匹配异步马达时，可支持ABZ编码器或厂家指定的绝对值编码器

11.3.1 博能永磁同步马达

使用AX驱动器驱动博能永磁同步马达时，可通过设置马达编号（功能码A04. 16）快速设置马达参数。马达编号请在MX永磁同步马达铭牌中查找。博能MX永磁同步马达铭牌如下图所示：

1	3-Mot. MX063S1E30FA0-N3A06-111	19	
2	T ₀ 6.0 N.m	18	
3	T _{IN} 5.4 N.m	17	
4	P _{IN} 1.7 kW	16	
5	Encoder Single turn 23 bit	15	
6	Brake 24VDC 10N.m	14	
7	Date 202001	13	
8	BONENG TRANSMISSION (SZ) CO., LTD	12	
		11	
		10	
		9	
		8	
		7	
		6	
		5	
		4	
		3	
		2	
		1	

1. 马达型号
2. 静止转矩(100K)
3. 额定转矩(100K)
4. 额定功率
5. 编码器参数
6. 制动器参数
7. 生产日期
8. 公司名称
9. 静止电流
10. 额定电流
11. 额定转速下的感应线电压
12. 重量
13. 出厂编号
14. 防护等级
15. 马达ID
16. 二维码
17. 绝缘等级
18. 额定转速
19. 最大转速

伺服马达 ID

- 1: 不带制动, 380V
- 2: 带制动, 380V
- 3: 不带制动, 220V
- 4: 带制动, 220V
- 5: 不带制动, 非标
- 6: 带制动, 非标

- 0: RS485绝对值23位编码器 (1623)
- 1: BISS-C编码器 (1222)
- 2: RS485绝对值17位编码器 (1617)
- 3:
- 4:

- 0: 028机座 (380V), 040机座 (220V);
- 1: 036机座 (380V), 060机座 (220V);
- 2: 048机座 (380V), 080机座 (220V);
- 3: 063机座 (380V), 110机座 (220V);
- 4: 080机座 (380V), 130机座 (220V);
- 5: 100机座 (380V), 180机座 (220V);
- 6: 132基座 (380V)

电机功率编号

电机编号 (12) 说明

在使用AX驱动器驱动博能永磁同步电机时，驱动器可自动获取电机编号，并根据获取到的电机编号自动配置马达参数，获取到的电机编号在功能码A04. 17显示。

注：AX-CM55驱动器仅在软件版本号（功能码A02. 00）为5. 20或6. 20（CM55-PN版本5. 20，CM55-EC版本6. 20）及以上版本中支持此功能，其他版本需在功能码A04. 16中手动设置电机编号，电机编号请在MX永磁同步马达铭牌中查找。电机编号设置完成后，请查看并确认D组马达参数是否已更新，完成后务必将驱动器重新上电。

注：博能驱动器驱动博能永磁同步马达时，只需要设置电机编号，无需进行马达参数辨识。

（一）马达基本参数设置

马达基本参数需查询电机铭牌后，手动在D组基本参数组和编码器参数组设置。

博能MP系列三相异步马达铭牌如下:

2	3	4	5	6	1
BONENG 三相异步马达 MP112L4B0FC3					
112L-4	B5	IP55	Im.F	S1	
4	380/650	50	Hz	A	r/min
	480/650	60	7.3	1450	1755
				Δ /Y	
				0.82	0.82
				0.82	0.82
				88.6%	89.5%
				IE3	IE3
7	Q/32067 LOK2-2020		56 kg	Date 202001	NO.12345678
博能传动(苏州)有限公司					
8	9	10	11	12	13
14	15	16	17	18	19
20	21	22	23	24	25

- | | | |
|---------|----------|----------|
| 1. 马达系列 | 8. 额定功率 | 15. 效率 |
| 2. 机座号 | 9. 额定电压 | 16. 能效等级 |
| 3. 安装方式 | 10. 额定频率 | 17. 重量 |
| 4. 防护等级 | 11. 额定电流 | 18. 出厂日期 |
| 5. 绝缘等级 | 12. 额定转速 | 19. 出厂编号 |
| 6. 工作制 | 13. 接法 | |
| 7. 企业标准 | 14. 功率因数 | |

更多博能异步电机说明见博能官方网站。

（二）马达详细参数辨识

为实现更高性能的矢量控制，可对异步马达参数进行辨识。

在输入马达基本参数后,可使用【异步机简易静态辨识】、【异步机静态完整辨识】、【异步机动态完整辨识】对马达参数进行辨识,以获取更准确的马达参数。

功能码	功能码名称	单位	范围	说明
B00. 21	辨识请求	-	[0, 3]	异步马达参数辨识时, 请根据需求选择以下选项: 1: 异步机简易静态辨识 2: 异步机静态完整辨识 3: 异步机动态完整辨识

参数辨识模式的区别如下表所示，请根据实际应用场景选择：

模式	使用条件	辨识参数	注意事项
1: 异步机简易静态辨识	马达静止	定子电阻	若马达辨识时不允许旋转, 请使用方式2, 如使用方式3, 请确保马达与负载机械分离, 运行无危险; 若马达连接负载, 辨识结果可能会不够准确
		转子电阻	
		漏感抗	
2: 异步机静态完整辨识	马达静止	互感抗	
3: 异步机动态完整辨识	马达运转	空载电流	

马达参数辨识步骤如下:

1. 根据实际马达信息，正确设置D组马达基本参数；
2. 根据驱动器控制模式、系统机械状态等条件选择参数辨识模式（设置功能码B00.21）；
3. 若使用上位机软件调试：请在侧边栏中打开“控制面板”进行马达参数辨识：控制面板->取得本地控制权限->选择辨识模式->启动运行，见下图：



注：使用控制面板后，需放弃本地控制权限，才可关闭控制面板继续使用上位机的功能码控制启停。

若使用OP25面板调试：按下RUN即开始参数辨识，如过程中想终止辨识请按STOP键。如辨识中误按STOP键，需要重新配置辨识请求后再次按RUN键进行辨识。辨识结束后面板将显示STOP状态。

4. 辨识结束后，以下参数辨识结果将自动保存。

功能码	功能码名称	单位	范围	说明
D01.00	异步马达定子电阻	Ω	[0.000, 65.535]	异步 马达 参数
D01.01	异步马达转子电阻	Ω	[0.000, 65.535]	
D01.02	异步马达漏感抗	mH	[0.00, 655.35]	
D01.03	异步马达互感抗	mH	[0.0, 6553.5]	
D01.04	异步马达空载电流	A	[0.00, 655.35]	

11.3.3 其他同步马达

(一) 其他同步马达参数配置

在使用其他厂家同步马达时，需按照电机厂家提供的参数设置驱动器D组参数，参数设置完毕后务必对马达参数进行辨识，以获取更准确的马达参数。

(二) 其他同步马达参数辨识

AX驱动器工作在伺服模式下时，同步马达仅支持博能伺服马达；当使用变频模式驱动同步马达时，请务必正确输入马达参数。在输入马达基本参数后，可使用【同步机不带编码器辨识】、【同步机带编码器辨识】对马达参数进行辨识，以获取更准确的马达参数。

功能码	功能码名称	单位	范围	说明
B00.21	辨识请求	-	[0, 21]	同步马达参数辨识时，请根据需求选择以下选项
				11:同步机不带编码器辨识
				12:同步机带编码器辨识
				21:编码器零点校正

参数辨识模式的区别如下表所示，请根据实际应用场合选择：

模式	使用条件	辨识参数	注意事项
11：同步机不带编码器辨识	马达运转	定子电阻	马达运转的使用条件下，辨识前请确保马达与负载机械分离，运行无危险；若马达连接负载，辨识结果可能会不够准确
		D轴电感	
		Q轴电感	
		马达反电动势	
12：同步机带编码器辨识	马达运转	编码器安装角	
13：编码器零点校正	马达运转	编码器方向	
		编码器零点电机编号	

马达参数辨识步骤如下：

- 1. 根据当前马达选择，正确设置D组马达基本参数；
- 2. 根据驱动器控制模式、系统机械状态等条件选择参数辨识模式（设置功能码B00.21）；
- 3. 若使用上位机软件调试：请在侧边栏中打开“控制面板”进行马达参数辨识：控制面板->取得本地控制权限->选择辨识模式->启动运行，见下图：



若使用OP25面板调试：按下RUN即开始参数辨识，如过程中想终止辨识请按STOP键，辨识结束后面板将显示STOP状态。

4. 辨识结束后，以下参数辨识结果将自动保存。在知道马达准确参数的前提下（A04.17有电机编号，P10.30显示零点位置）可以不进行辨识，手动输入参数。

功能码	功能码名称	单位	范围	说明
D01.10	同步马达定子电阻	Ω	[0.000, 65.535]	同步马达参数
D01.11	同步马达D轴电感	mH	[0.00, 655.35]	
D01.12	同步马达Q轴电感	mH	[0.00, 655.35]	
D01.13	同步马达反电动势	V	[0, 65535]	
D02.10	编码器零点位置角	°	[0.0, 359.9]	电机控制相关的编码器安装角度
D02.10	输入AB相序	-	[0, 1]	电机控制相关的编码器方向
A04.17	伺服电机存储电机编号	-	-	从马达中读取到的马达编号

矢量控制的性能易受马达参数的影响，获取准确的马达参数是实现高性能矢量控制的关键。在知道准确马达参数的前提下可以手动输入。不准确的马达参数可能导致马达无法正常运行或运行效果不理想。

11.4 试运行

试运行前请根据马达参数配置章节确定A04. 17功能码的电机编号是否与电机铭牌上马达ID（章节11. 2. 1马达铭牌编号15处数据）一致并确保带抱闸的伺服马达的抱闸已正确配置并能正常打开。试运行时使用点动运行确认伺服电机是否可以正常旋转。

可以通过操作面板或者上位机配置功能码，实现启动JOG功能，其中根据控制方式可以分为速度点动和位置点动，启动后电机根据设定的指令数或者运行速度进行转动。

11.4.1 速度点动

速度点动是伺服驱动器在速度控制下的试运行功能，使马达按设置的运行速度持续运行。

速度点动功能配置流程：

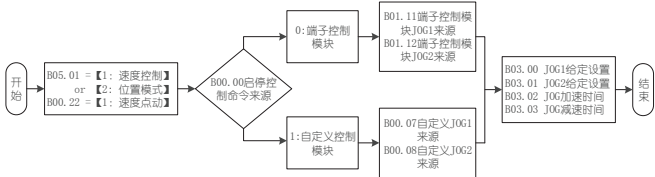


图11-1 速度点动功能配置流程图

表11-1 速度点动监控变量相关功能码

功能码	功能码名称	单位	范围	说明
F01. 14	点动运行有效	-	[0, 1]	显示点动运行状态： 0：未运行点动任务； 1：点动运行中。
F01. 34	点动运行无效	-	[0, 1]	与P01. 14状态相反。
F06. 05	给定速度	4096 △ 100% 额定转速	[-32768, 32767]	显示给定速度当前值； 该值为标定值:4096 对应马达额定转速
F06. 06	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值； 该值为标定值:4096 对应马达额定转速

11.4.2 位置点动

位置点动是伺服驱动器在位置控制下的试运行功能，使电机按照设置的位置指令数及最大运行速度运行。位置点动功能配置流程：

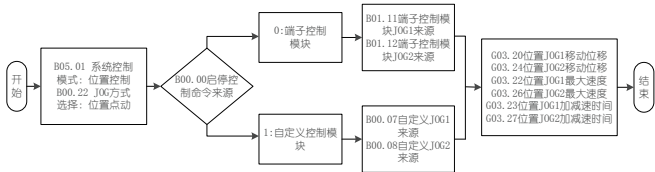


图11-2 位置点动功能配置流程图

表11-2 位置点动监控变量相关功能码

功能码	功能码名称	单位	范围	说明
F01. 14	点动运行有效	-	[0, 1]	显示点动运行状态： 0：未运行点动任务； 1：点动运行中。
F01. 34	点动运行无效	-	[0, 1]	与P01. 14状态相反。
F06. 05	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示给定速度当前值； 该值为标定值:4096 对应马达额定转速。

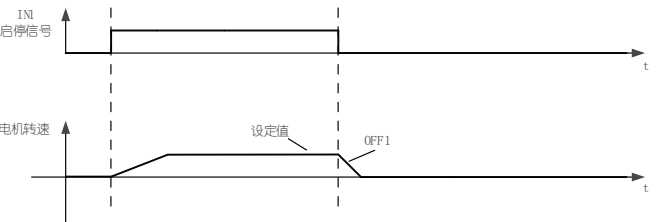
12 驱动器运行控制

12.1 启停控制

有六种通过DI端子或互联参数输入控制马达的启动，停止和方向，分别对应B01.01控制方式的6个选项；另外也可以通信直接控制启停。

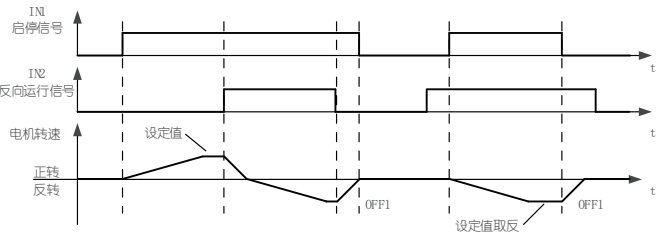
● 1. IN1启动

IN1控制马达的启动和停止，马达的旋转方向由当前的驱动器输出端接线相序决定。



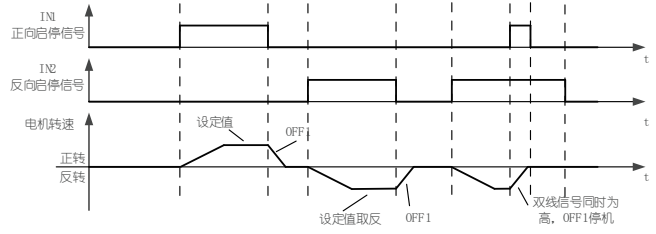
● 2. IN1启动，IN2方向

IN1控制启动和停止，IN2控制方向。



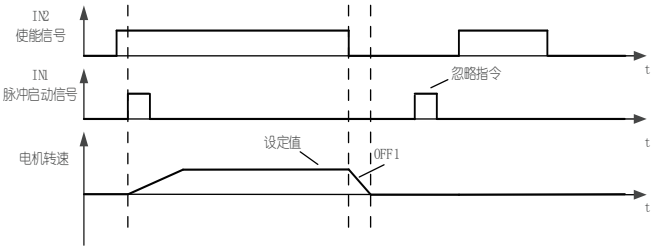
● 3. IN1正向启动，IN2反向启动：

IN1控制正向启动和停止，IN2控制反向启动和停止。



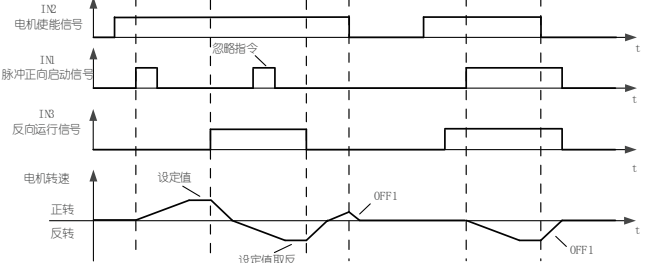
● 4. IN1上升沿启动，IN2停止：

IN2接收到低电平马达启动被禁止；当IN2接收高电平时，IN1接收到的信号由低变高，马达启动。



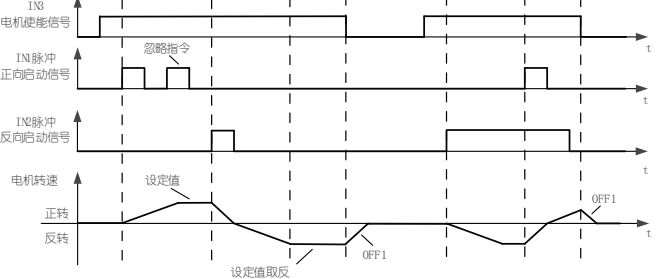
● 5. IN1上升沿启动，IN2停止，IN3方向：

IN2接收到低电平马达启动被禁止；当IN2接收高电平时，IN1接收到的信号由低变高时马达启动。IN3接收高电平时，速度反向。



● 6. IN1上升沿正向启动，IN2上升沿反向启动，IN3停止：

IN3接收到低电平马达启动被禁止。IN3接收高电平时，IN1接收的信号由低变高时，马达正向启动，IN2接收的信号由低变高时，马达反向启动。



相关设定参数如下：

表12-1 启停控制功能码

功能码	功能码名称	单位	范围	说明
B01.01	端子控制命令1方式	-	0:无效 1:IN1启动 2:IN1启动, IN2方向 3:IN1正向启动, IN2反向启动 4:IN1上升沿启动, IN2停止 5:IN1上升沿启动, IN2停止, IN3方向 6:IN1上升沿正向启动, IN2上升沿反向启动: IN3停止	端子控制命令1设置
B01.02	端子控制命令1输入IN1	-	0:无效 1:保留 2~9:DI0~DI7 10:预留 其他:二进制互联参数	
B01.03	端子控制命令1输入IN2	-	0:无效 1:保留 2~9:DI0~DI7 10:预留 其他:二进制互联参数	
B01.04	端子控制命令1输入IN3	-	0:无效 1:保留 2~9:DI0~DI7 10:预留 其他:二进制互联参数	

注：如果B01.00设置为1（端子控制命令2），相关设定参数参考B01.06~B01.10。

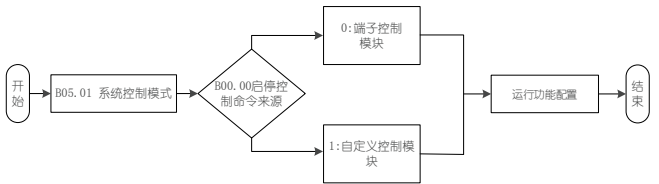


图12-1 启停控制模块流程图

可以通过相关功能码查看指令输入情况

表12-2 DI端子监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P00.02	多功能数字输入DI0	-	[0, 1]	显示DI0端子当前值
P00.03	多功能数字输入DI1	-	[0, 1]	显示DI1端子当前值
...	...	-	[0, 1]	...
P00.12	多功能数字输入DI10	-	[0, 1]	显示DI10端子当前值

12.2 速度控制

12.2.1 速度控制使用流程



图12-2 速度控制流程图

12.2.2 速度目标值设定

精准系列伺服驱动器通过B02.00选择速度设定来源。

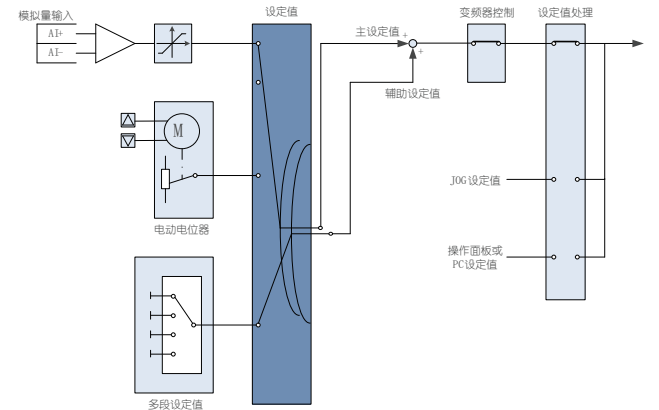


图12-3 目标速度设定

主设定值的来源可以是：

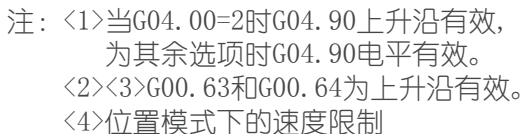
- 驱动器的模拟量输入
- 驱动器的现场总线接口
- 驱动器内电位器
- 驱动器多段值
- 互联到P组参数

上述来源也可以是辅助设定值或者附加设定值的来源。

表12-4 斜坡函数发生器相关功能码

功能码	功能码名称	单位	范围	说明
B02.01	斜坡时间选择1	—	0:无效 1:保留 2-9:DI0-DI7 10:预留 其他:二进制互联参数	设置斜坡函数目标值
B02.02	斜坡时间选择2	—	0:无效 1:保留 2-9:DI0-DI7 10:预留 其他:二进制互联参数	设置斜坡函数目标值
B04.02 -B04.09	斜坡加减速时间	S	[0.0, 1000.0]	设置斜坡函数加减速时间
B04.10 -B04.17	S曲线时间	S	[0.00, 20.00]	设置S曲线时间

12.3.1 位置控制功能图



注意：在运行定位过程中，禁止去使能。否则驱动器会报故障“定位中使能丢失”（详见7. 故障）。

12.3.2 电子齿轮比设定

为建立电机位置指令（编码器单位）与输入位置指令（指令单位）的比例关系，引入电子齿轮比功能。
通过设置电子齿轮比的数值，可设定输入驱动器1个指令单位时电机旋转或者移动的实际位移。
注：输入位置指令为上位装置给驱动器的指令。

电子齿轮比：

$$\frac{B}{A} = \frac{\text{电机编码器分辨率}}{\text{负载轴转 1 圈所需的位置指令}} * \frac{\text{电机旋转 n 圈}}{\text{负载旋转 m 圈}}$$

驱动器电子齿轮比设置范围：

$$\frac{0.01 * \text{编码器分辨率}}{10000} \leq \frac{B}{A} \leq \frac{4000 * \text{编码器分辨率}}{10000}$$

例如：博能同步伺服电机配置的编码器分辨率可查看功能码D02.22。

CM55电子齿轮比设置方法：

通过G00.04马达旋转1圈的位置指令数来设置电子齿轮比数值，此时驱动器电子齿轮比的数值为：
$$\frac{\text{编码器分辨率}}{G00.04}$$

当设置G00.04为0时，电子齿轮比1生效，电子齿轮比1的数值可以由通过G00.06电子齿轮比1（分子）和G00.08电子齿轮比1（分母）进行设置。

表12-5 电子齿轮比相关功能码

电子齿轮比生效组数	G00.04 马达转1圈的位置指令	G00.06 电子齿轮比1（分子）	G00.08 电子齿轮比1（分母）	电子齿轮比处理
G00.04生效	1~1048576	无作用	无作用	指令脉冲输入 → 编码器分辨率 G00.04设定值 → 位置指令
电子齿轮比1生效	0	1~1073741824	1~1073741824	指令脉冲输入 → G00.06设定值 G00.08设定值 → 位置指令

表12-6 电子齿轮比配置结果相关功能码

功能码	功能码名称	单位	范围	说明
P14.34	电子齿轮比分子	-	[-2147483648, 2147483647]	显示电子齿轮比分子当前值
P14.36	电子齿轮比分母	-	[-2147483648, 2147483647]	显示电子齿轮比分母当前值

12.3.3 位置来源选择

位置指令来源分为三种：1：脉冲指令，2：多段位置指令，3：实时通讯数据给定，驱动器通过这三种位置指令实现对电机的位置控制，可通过位置指令来源（G00.00）进行配置，可通过系统运行模式，可通过位置目标值（P14.66）查看位置指令当前目标值。

1. 脉冲指令功能(G00.00=1)

CM55可通过X10接口（DB15）接收来自上位控制器的脉冲指令，从而实现对电机的定位控制。接收脉冲的最大频率为200kHz，支持4种脉冲输入形式，可通过参数G00.16选择。

表12-7 脉冲形态说明表

G00.22 旋转方向	G00.16 脉冲形态设置	信号	正转脉冲示意图	反转脉冲示意图
0	0:脉冲+方向 正逻辑	PULSE (A相)		
		SIGN (B相)		
	1:脉冲+方向 负逻辑	PULSE (A相)		
		SIGN (B相)		
1	2:A相+B相 四倍频	A相		
		B相		
	3: CW+CCW	CW (A相)		
		CCW (B相)		

驱动器可接收脉冲指令最大频率及最小时间宽度如下图所示:

表12-8 脉冲指令规格

接线方式	最大频率	最小时间宽度/us					
		t1	t2	t3	t4	t5	t6
差分接线 (推荐)	200kHz	2.5	2.5	2.5	5	2.5	2.5
单端接线	200kHz	2.5	2.5	2.5	5	2.5	2.5

注: CM55-X10 (DB15) 接口作为脉冲信号输入接口时, 可支持5V和24V脉冲输入。其中, 24V输入时可支持单端和差分两种接法, 5V输入时仅支持差分接法。

单端接线方式如下图:

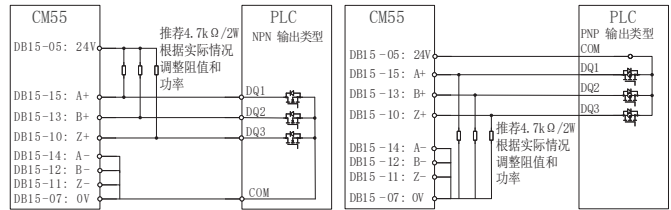


图12-5 单端接线方式图

脉冲指令配置流程图:



图12-6 脉冲指令功能配置流程图

表12-9 脉冲指令控制变量相关功能码

功能码	功能码名称	单位	范围	说明
G00.00	位置指令来源	-	0:00 1:脉冲指令 2:多段位置指令给定 3:实时通讯数据给定	选择位置指令为脉冲指令
G00.04	马达旋转1圈的位置指令数	p/r	[0, 1048576]	配置电子齿轮比
G00.16	指令脉冲形态	-	0:脉冲+方向, 正逻辑 1:脉冲+方向, 负逻辑 2:A相+B相, 四倍频 3: CW+CCW	选择脉冲指令形态
G00.22	马达旋转方向选择	S	0:以CCW方向为正转方向 1:以CW方向为正转方向	选择马达正转方向

表12-10 脉冲指令监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.02	运行	-	[0, 1]	显示电机运行状态
P06.06	马达转速	4096 ≙ 100% 额定转速	[-32768, 32767]	显示马达实际转速值; 该值为标定值:4096 对应马达额定转速。

其他位置控制相关监控功能码见表12-26

2. 多段位置指令功能 (G00.00=2)

驱动器具有多段位置指令运行功能，该功能是指通过参数配置在伺服驱动器内部设置16段位置指令，并且每段指令的位移、最大运行速度、加减速时间均可设置，各段之间的间隔时间也可设置。

各段指令间的衔接方式可以通过多段位置运行方法（G04.00）进行设置，分别为单次运行结束停机、循环运行、多段位置给定值选择切换运行、顺序运行。

G04.00四种运行模式中，在G04.00=0、1、3时，如果在运行过程中关闭多段位置指令使能，伺服放弃本段未完成的位移并停机，停机减速时间为当前运行段的加减速时间，当重新使能多段位置指令时，伺服按照余量处理方式（G04.06）中所选择的方式，选择对应段运行。

G04.00=2时，如果在运行过程中关闭多段位置指令使能，伺服不会马上停止运行，会继续执行本段未完成的位移。

（1）单次运行结束停机 (G04.00=0)

按照位移指令终点段数选择（G04.05）设置的数值，从第1段开始，到所设置的段数，运行1轮。

（2）循环运行 (G04.00=1)

按照位移指令终点段数选择（G04.05）设置的数值，从第1段开始，到所设置的段数，循环运行。

（3）多段位置给定值选择切换运行 (G04.00=2)

伺服内部设置16段位置指令，通过4位二进制选择位的不同组合，可以从16段位置中选择一个设定值。

表12-11 多段设定值对应表

G04.01	G04.02	G04.03	G04.04	多段设定值
0	0	0	0	
1	0	0	0	
0	1	0	0	
...				
1	1	1	1	第16段

（4）顺序运行 (G04.00=3)

运行段间无等待时间，其运动轨迹由“起始段选择（G04.09）”与“终点段选择（G04.05）”共同定义：若 G04.09 设定为 0，电机自第 1 段启动，顺序运行至终点段后自动停止（执行单次顺序逻辑）；若 G04.09 设定为 非 0 数值，电机在完成首轮（第 1 段至终点段）运行后，将立即跳转至该设定数值对应的起始段，随后在“起始段”与“终点段”之间执行闭环循环运行。

多段位置指令功能配置流程：



图12-7 多段位置指令功能配置流程图

表12-12 多段位置指令监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.02	运行	-	[0, 1]	显示电机运行状态
P06.06	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值；该值为标定值：4096 对应马达额定转速。

其他位置控制相关监控功能码见表12-26

3. 实时通讯数据给定 (G00.00=3)

该功能的位置指令来源、目标速度、加减速时间，均来自于通讯下发，需搭配PLC使用。

表12-13 实际位置指令监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.02	运行	-	[0, 1]	显示电机运行状态
P06.06	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值；该值为标定值：4096 对应马达额定转速。

其他位置控制相关监控功能码见表12-26

12.3.4 位置指令禁止

脉冲指令输入禁止来源（G00.18）使能后，驱动器不响应外部脉冲位置指令，但可以响应内部位置指令。
位置指令输入禁止来源（G00.19）使能后，驱动器不响应所有的位置指令。可通过接入DI端子或者二进制互联参数来控制位置指令禁止功能。

表12-14 位置指令禁止监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.02	运行	-	[0, 1]	显示电机运行状态
P06.06	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值；该值为标定值:4096对应马达额定转速。

其他位置控制相关监控功能码见表12-26

12.3.5 位置指令方向设置

可以通过马达旋转方向选择（G00.22），选择以哪种旋转方向为正。位置指令方向切换命令来源（G00.01）在电机停止运行时对当前位置指令方向进行切换，位置指令方向切换后，再次运行位置指令时有效。
注：当位置指令来源（G00.00=1）为脉冲指令时，位置指令方向切换命令来源（G00.01）无效。

表12-15 位置指令方向配置表

G00.22马达旋转方向选择	G00.01位置指令方向切换命令来源	位置指令设置	实际电机旋转方向
0	0	正	逆时针
0	1	正	顺时针
0	0	负	顺时针
0	1	负	逆时针
1	0	正	顺时针
1	1	正	逆时针
1	0	负	逆时针
1	1	负	顺时针

表12-16 位置指令方向切换监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.12	速度正向	-	[0, 1]	显示电机旋转方向
P01.32	速度负向	-	[0, 1]	显示电机旋转方向
P06.06	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值；该值为标定值:4096对应马达额定转速。

其他位置控制相关监控功能码见表12-26

12.3.6 位置指令滤波

位置指令滤波是指对经过电子齿轮比分频或者倍频后的位置指令进行滤波，其中包括平均值滤波和一阶低通滤波。

表12-17 位置指令滤波监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P06.06	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值；该值为标定值:4096对应马达额定转速。
P14.18	脉冲指令输入计数	-	[-21474 83648, 2 1474836 47]	显示位置指令对应的速度当前值

12.3.7 定位完成/接近

位置偏差为位置指令与指令反馈的差值。
位置偏差=位置指令计数器-反馈脉冲计数器
当位置偏差满足定位完成输出条件时（G00.24），可以认定位置控制模式下定位完成，此时驱动器输出定位完成信号，当位置偏差小于定位接近阈值时，驱动器输出定位接近信号。

各阈值之间大小关系为：定位完成阈值的绝对值<定位接近阈值的绝对值<位置偏差过大阈值的绝对值
定位完成窗口时间：当定位完成信号持续时间达到所设置的窗口时间时，驱动器输出定位完成信号。
定位完成保持时间：当驱动器输出定位完成信号时，该信号有效保持的时间。

表12-18 定位完成/接近配置变量相关功能码

功能码	功能码名称	单位	范围	说明
G00.24	定位完成输出条件	-	0:位置偏差绝对值小于定位完成阈值时输	设置斜坡函数目标值
			1:位置偏差绝对值小于定位完成阈值且位置指令滤波后的指令为0时输出	
			2:位置偏差绝对值小于定位阈值且滤波前的位置指令为0时输出	
			3:位置偏差绝对值小于定位完成阈值且位置指令滤波为0时输出，至少保持定位完成保持时间有效	
G00.25	定位完成阈值	p/r	[1, 65535]	-
G00.26	定位接近阈值	p/r	[1, 65535]	-
G00.27	定位完成窗口时间	m s	[0, 3000]	定位完成输出时间条件阈值
G00.28	定位完成窗口时间	m s	[0, 3000]	输出完成距离下次检测时间

表12-19 定位完成/接近监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.38	定位完成标志	-	[0, 1]	显示定位完成标志 当前值0:定位未完成 1:定位已完成
P01.39	定位接近标志	-	[0, 1]	显示定位接近标志当前值 0:未到达定位接近阈值 1:已到达定位接近阈值
P14.16	位置偏差(指令单位)	p	[-2147483648, 2147483647]	显示位置偏差计数器当前值
P14.74	全闭环位置偏差计数器	p	[-2147483648, 2147483647]	显示全闭环位置偏差计数器当前值

其他位置控制相关监控功能码见表12-26

下图为该功能时序图

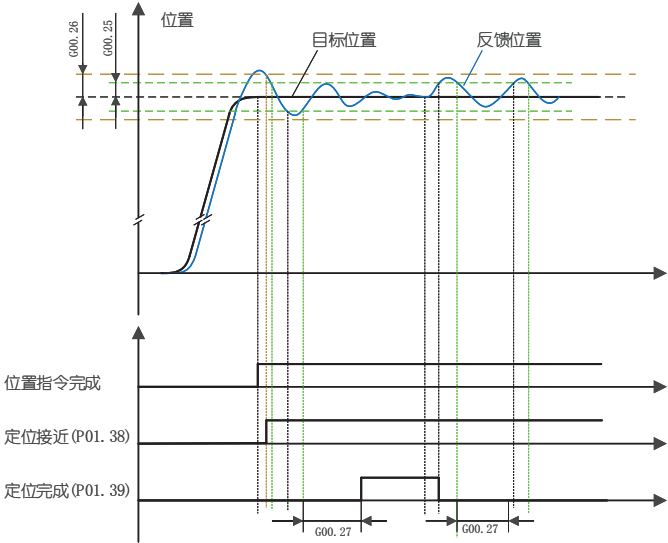


图12-8定位接近/完成功能时序图

12.3.8 位置偏差清除

位置偏差为位置指令与编码器反馈指令的差值，实际体现在电机运行时驱动器发出位置指令与电机实际运行位置指令存在偏差。

位置偏差清除功能是指当驱动器满足某些的条件时，将位置偏差清零。该功能可选择自动和手动两种使能方式，用户可通过功能码G00.20，选择位置偏差清除的具体方式，其中，自动清除包括“伺服OFF1停机后清除位置偏差”、“发生故障时清除位置偏差”，手动清除则需要选择“位置偏差清除命令清除位置偏差”。当G00.20选择手动清除时需要配合G00.21功能码配置触发该功能的DI端子，或者选用其他互联参数。

位置偏差=位置指令-位置反馈

表12-20 位置偏差清除配置变量相关功能码

功能码	功能码名称	单位	范围	说明
G00.20	位置偏差清除动作选择	-	0:伺服OFF1停机后清除位置偏差 1:发生故障时清除位置偏差 2:位置偏差清除命令清除位置偏差	选择位置偏差清除动作触发条件
G00.21	位置偏差清除命令来源选择	-	0:无效 1:有效 2-10:DI0-DI8 其他:二进制互联参数	可选择DI端子或其他互联参数作为来源。

表12-21 位置偏差清除监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P14.16	位置偏差(指令单位)	p	[-2147483648, 2147483647]	显示位置偏差计数器当前值

12.3.9 原点回零功能

当驱动器采用位置模式控制时，需要找到一参考点，该点称之为原点。原点为机械原点，可以用原点开关或限位开关确定原点所处的位置。

零点为运行完原点复归功能后，电机运行到的目标点，零点位置为原点位置+机械原点偏移量（G00.50）。原点回零功能是指在位置模式时，伺服电机主动查找原点，完成零点定位的功能。

原点回归模式

(1) 正向回零，减速点和原点均为原点开关（G00.45=0）

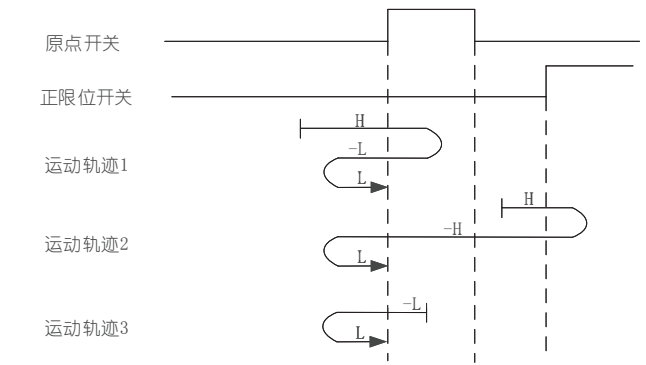


图12-9 原点回零功能图

运动轨迹1：电机开始运动时原点开关（减速点）信号无效，全过程未触发正向限位开关。

运动轨迹2：电机开始运动时原点开关（减速点）信号无效，过程中触发正向限位开关有效。

运动轨迹3：电机开始运动时原点开关（减速点）信号有效，全过程未触发正向限位开关。

H代表高速搜索原点开关的速度，L代表低速搜索原点开关的速度。

(2) 正向回零，减速点和原点为正向限位开关
(G00.45=6)

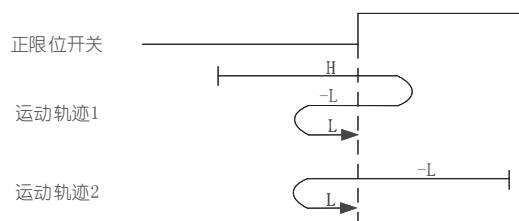


图12-10 原点回零功能图

运动轨迹1：电机开始运动时限位开关（原点和减速点）信号无效。

运动轨迹2：电机开始运动时限位开关（原点和减速点）信号有效。

H代表高速搜索原点开关的速度，L代表低速搜索原点开关的速度。

反向回零选项仅是设置电机初始运行方向与上述相反，其运行原理与上述相同。

当机械原点偏移量（G00.50）不为0时机械原点偏移量是原点回归后坐标（G00.52=0、2）。该模式为：原点复归执行完成后，电机马上停止转动，并认定目前电机所在位置为零点位置+偏移量（指令单位）。

机械原点偏移量是原点回归后相对偏移量

（G00.52=1、3）。该模式为：在原点复归执行完成后，电机从零点位置继续运行偏移量长度，到达位置后，电机停止。

表12-22 原点回零配置变量相关功能码

功能码	功能码名称	单位	范围	说明
G00.43	原点回归使能控制	-	0:关闭原点回归功能 1:原点回归命令来使能原点回归功能 2:预留 3:上电后立即启动原点回归功能 4:立即进行原点回归 5:预留 6:将当前位置设为零点	选择位置指令为脉冲指令
G00.44	原点回归命令来源选择	-	0:无效 1:有效 2-10:DI0-DI8 其他:二进制互联参数	功能触发来源
G00.45	原点回归模式	-	0:正向回零，减速点和原点均为原点开关 1:反向回零，减速点和原点均为原点开关 2-5:预留 6:正向回零，减速点、原点为正向限位开关 7:反向回零，减速点、原点为反限位开关	回零方式选择
G00.46	高速搜索原点开关信号的速度	rmp	[0, 3000]	-
G00.47	低速搜索原点开关信号的速度	rmp	[0, 1000]	-

功能码	功能码名称	单位	范围	说明
G00.48	搜索原点时的加减速时间	m s	[0, 1000]	—
G00.49	限定查找原点的时间	m s	[0, 655351]	—
G00.50	机械原点偏移量	p	[-1073741824, 1073741823]	—
G00.52	原点偏移量及遇限处理方式选择	—	0: 机械原点偏移量是原点回归后坐标，遇到限位重新触发原点回归使能后反向找原点 1: 机械原点偏移量是原点回归后相对偏移量，遇到限位重新触发原点回归使能后反向找原点 2: 机械原点偏移量是原点回归后坐标，遇到限位自动反向找零 3: 机械原点偏移量是原点回归后相对偏移量，遇到限位自动反向找零	—
G00.53	原点开关来源选择	—	0: 无效 1: 有效 2-10: DI0-DI8 其他: 二进制互联参数	原点开关位置触发信号可选用DI端子与其他二进制互联参数
G00.54	机械原点偏移量来源选择	—	0: 原点偏执设定值 其他: 模拟互联参数	—

表12-23 原点回零监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P01.02	马达转速	4096 △ 100% 额定转速	[-32768, 32767]	显示马达实际转速值；该值为标定值:4096对应马达额定转速。
P01.12	速度正向	—	[0, 1]	显示电机旋转方向
P01.32	速度负向	—	[0, 1]	显示电机旋转方向
P01.87	正向限位开关已激活	—	[0, 1]	显示正向限位开关状态
P01.88	负向限位开关已激活	—	[0, 1]	显示负向限位开关状态
P01.89	原点回归运行中	—	[0, 1]	显示原点回归运行状态
P01.90	参考点已设置	—	[0, 1]	显示原点设置完成状态

原点回零功能配置流程较长，所涉及功能码也较多，下图为具体流程。

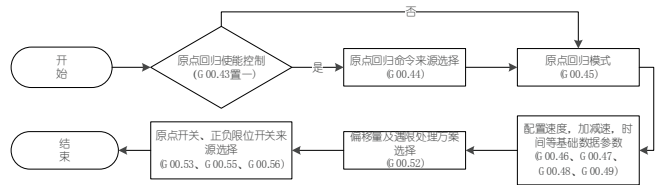


图12-11 原点回零功能功能实操流程

12.3.10 速度限制设置

对电机速度的限制进行设置，以马达0为例。

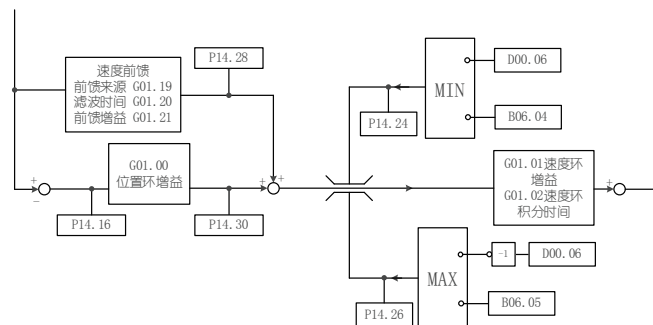


图12-12 速度限制设置功能图

说明：对B06.04和B06.05取绝对值后的数值分别与D00.06作比较，分别取最小值为电机的正向和反向的最大转速。

表12-24 电机转速限制监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P14.24	位置控制下最大正向速度	rmp	[-2147483648, 2147483647]	显示正向最大允许速度
P14.26	位置控制下最大反向速度	rmp	[-2147483648, 2147483647]	显示反向最大允许速度

12.3.11 全闭环位置控制

全闭环位置控制是通过外部位移传感器直接检测执行机构的位置作为反馈值进行位置控制，这样可以减小中间传动过程对最终定位的影响。

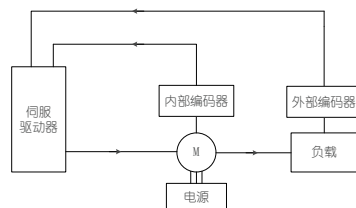


图12-13 全闭环位置控制功能图

(1) 设置外部编码器旋转方向

使用速度模式，使负载按某一固定方向运行，观察电机编码器反馈数值（监控参数P14.14）和负载编码器反馈数值（监控参数P14.12），若马达转速的正负与编码器反馈数值增加值的正负一致，则保持功能码外部编码器使用方式（G05.01）设置值不变；如果正负不一致，则将功能码外部编码器使用方式（G05.01）设置值取反。

(2) 设置位置反馈编码器分辨率

在参数G05.06中设置位置反馈编码器参数。该参数表示负载每运动一个行程位置反馈编码器的反馈值增量。对于旋转编码器，该参数设置为编码器分辨率；对于滚珠丝杠+直线编码器，该参数设置为丝杠每导程编码器反馈值的增量。其他直线运动机构类似。

(3) 设置全闭环位置偏差过大阈值（G05.08）

马达编码器反馈与负载编码器当前位置的偏差，该偏差值是编码器单位（负载编码器）。通过设置全闭环位置偏差过大阈值（G05.08），将位置偏差控制在合理的范围之内。

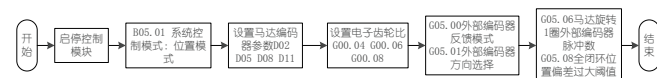


图12-14 全闭环位置控制设置流程图

表12-25 全闭环位置控制监控变量相关功能码

功能码	功能码名称	单位	范围	说明
P14. 12	位置编码器反馈 (Enc2)	位置编码器单位	[-2147483648, 2147483647]	显示负载编码器实际反馈值
P14. 14	电机编码器反馈 (Enc2)	电机编码器单位	[-2147483648, 2147483647]	显示电机编码器实际反馈值
P14. 74	全闭环位置偏差计数器	p	[-2147483648, 2147483647]	显示全闭环位置偏差数值

其他位置控制相关监控功能码见表12-23

表12-26 位置控制监控参数（功能码）

功能码	功能码名称	单位	范围	说明
P14. 08	位置指令滤波输出低	-	[-2147483648, 2147483647]	显示位置指令滤波后输出值，低32位。
P14. 10	位置指令滤波输出高	-	[-2147483648, 2147483647]	显示位置指令滤波后输出值，高32位。
P14. 12	位置编码器反馈 (Enc2)	-	[-2147483648, 2147483647]	显示用于位置闭环控制的编码器反馈脉冲计数值，32位
P14. 14	电机编码器反馈(Enc1)	-	[-2147483648, 2147483647]	显示电机编码器反馈脉冲计数值，32位。
P14. 18	脉冲指令输入计数	p	[-2147483648, 2147483647]	显示位置控制器接收到的位置指令总数，32位。
P14. 20	位置指令(指令单位)	-	[-2147483648, 2147483647]	显示位置环输入的位置指令总数，32位。驱动器使能时，为位置指令总数；驱动器停机时，跟随位置反馈值
P14. 22	位置反馈(指令单位)	-	[-2147483648, 2147483647]	显示实时位置反馈值，指令单位，32位。
P14. 28	速度前馈补偿值	-	[-2147483648, 2147483647]	显示速度前馈输出值，32位，0. 0001rpm。
P14. 30	位置环P计算输出值	-	[-2147483648, 2147483647]	显示位置环P计算输出值，32位，0. 0001rpm。
P14. 32	位置环总输出值（实际值）	-	[-2147483648, 2147483647]	显示位置环的输出数值，32位，0. 0001rpm

12.4 转矩控制

12.4.1 转矩模式设定值

精准系列伺服驱动器通过B02.03选择转矩给定值来源。

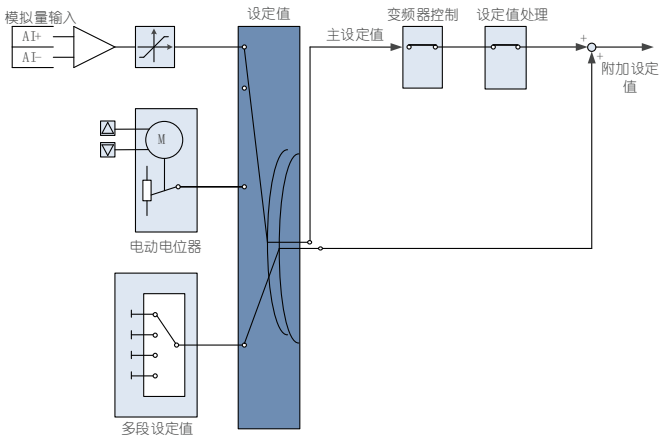


图12-15 转矩设定值来源图

转矩主设定值的来源可以是：

- 驱动器的模拟量输入
- 驱动器的现场总线接口
- 驱动器内电位器
- 驱动器多段值
- 互联到P组参数

上述来源也可以是附加转矩设定值的来源。

表12-27 速度目标值配置相关功能码

功能码	功能码名称	单位	范围	说明
B02.03	转矩控制 转矩设定 值选择	-	0:00 1:多段设定值2 2: AI0 3~5 : 预留 6: 多段值给定 7: 电动电位计 8: 预留 9: 总线适配器 A-PZD3 10: 总线适配 器B-PZD3 其他: 模拟量 互联参数	设置转矩 设定值来 源
B02.04	转矩控制 转矩给定 斜坡时间	s	[0.00, 10.00]	设置转矩 斜坡给定 斜坡时间
B02.05	转矩控制 转矩给定 滤波时间	s	[0.00, 10.00]	设置转矩 给定滤波 时间
B02.09	附加转矩 给定选择	-	0:00 1: 数字设定 其他: 模拟量 互联参数	设置附加 转矩给定 选择
B02.10	附加转矩 给定1数 字设定	%	[-400, 400]	设置附加 转矩数字 给定

12. 4. 2 转矩模式限制值设定值

转矩模式中需要配置转矩设定值限制以及速度限制。

表12-28 速度限制以及转矩限制配置相关功能码

功能码	功能码名称	单位	范围	说明
B02. 06	转矩控制正向速度限制来源	-	0: 00 1: 多段设定值 2: AI0 3~5: 预留 6: 多段值给定 7: 电动电位计 8: 预留	设置正向速度限制来源
B02. 07	转矩控制反向速度限制来源	-	9: 总线适配器A-PZD2 10: 总线适配器B-PZD2 其他: 模拟量互联参数	设置反向速度限制来源
B02. 08	转矩控制速度限制值斜坡时间	s	[0. 00, 10. 00]	设置速度限制斜坡时间
B06. 08	转矩上极限给定数字设定	%	[0. 0, 400. 0]	设置转矩上极限给定数字值
B06. 09	转矩下极限给定数字设定	%	[-400, 0]	设置转矩下极限给定数字值

功能码	功能码名称	单位	范围	说明
B06. 10	转矩上极限给定选择	-	0: 00 1: 400. 0%/(-400. 0%) 2: AI0 3~5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9: 总线适配器A-PZD2 10: 总线适配器B-PZD2	设置转矩上极限给定选择
B06. 11	转矩下极限给定选择	-	其他: 模拟量互联参数	设置转矩下极限给定选择

12. 4. 3 转矩控制使用流程



图12-16 转矩控制使用流程图

12.5 混合控制模式

12.5.1 功能描述

控制模式切换功能是指在伺服为使能，状态机运行状态为“运行”时，伺服驱动器可以在所选的两种控制模式之间进行切换。

12.5.2 参数配置

1. 通过上位机功能码B05.01（系统控制模式），选择需所需控制模式。
2. 选项0~2，不可实现控制模式切换功能。
3. 选项4~6，可通过控制功能码B05.18（控制模式切换）是否有效来实现所选两种控制模式的切换。

表12-29 控制模式设置表

参数设定		当前实际生效的控制模式
B05. 18（控制模式切换）设置值		
B05. 01系统控制模式	B05. 18控制模式切换	
0：速度控制	－	速度控制
1：转矩控制	－	转矩控制
2：位置控制	－	位置控制
4：转矩控制<->速度控制	无效	转矩控制
4：转矩控制<->速度控制	有效	速度控制
5：速度控制<->位置控制	无效	速度控制
5：速度控制<->位置控制	有效	位置模式
6：转矩控制<->位置控制	无效	转矩模式
6：转矩控制<->位置控制	有效	位置模式

12.6 马达控制限制及保护

12.6.1 抑制带功能

该功能通过设置上下限频率范围，构成某转速禁止运行段，其目的为防止电机长期在某个转速范围内运行

表12-30 抑制带功能配置相关功能码

功能码	功能码名称	单位	范围	说明
B06.00	跳跃频率1下限	%	[0, Z]	该四个参数范围具有相关性，关系为： $0 < Z < Y < X < 600$
B06.01	跳跃频率1上限	%	[Z, Y]	
B06.02	跳跃频率2下限	%	[Y, X]	
B06.03	跳跃频率2上限	%	[X, 600]	

注：其中 $0 < Z < Y < X < 600$

参数配置过程

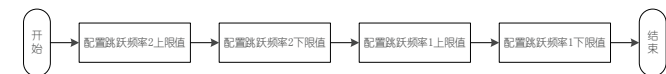


图12-17 抑制带功能配置图

功能具体过程：

当目标转速突变为某组上下限内，也就是抑制带内，则会升/降到阈值处停止，然后以该转速运行。下图为抑制带下限为10%，上限为20%的速度曲线。

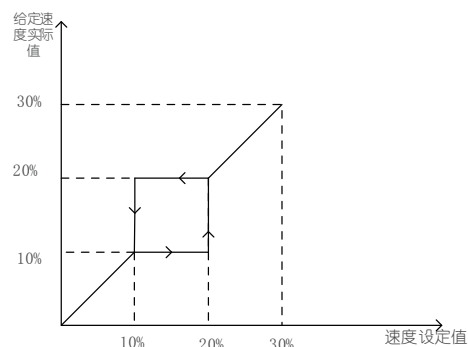


图12-18 抑制带功能转速曲线图

12.6.2 速度限制功能

速度限制功能给出轴运动过程中的速度上限值，用于将轴的速度限制在符合工艺要求的范围内。

表12-31 速度限制功能配置相关功能码

功能码	功能码名称	单位	范围	说明
B06.04	正向极限速度	%	[0, 600]	—
B06.05	反向极限速度	%	[-600, 0]	—
B06.06	正向转速限幅选择	—	0:00 1: 600%/-600% 2: AIO 3/4/5: 预留 6: 多段值给定 7: 电动电位计 8: 预留	—
B06.07	反向转速限幅选择	—	9/10: 总线适配器 其他: 模拟量互联参数	—

正向运动给定速度上限=MIN(B06.04, B06.06)
反向运动给定速度上限=MIN(B06.05, B06.07)

12.6.3 转矩限制功能

转矩限制功能是指由于在一些工况下要求转矩不能过大，因此驱动器应根据不同场合设置不同极值，并且可将数字给定的极限速度预先设置较大值，用于限制最大转矩，特定过程可选择其他变量参数为限幅选择，可使得过程转矩速限幅实时改变，满足特殊要求。

设置功能码：

表12-32 转矩限制功能配置相关功能码

功能码	功能码名称	单位	范围	说明
B06.08	转矩上极限给定数字设定	%	[0, 400]	—
B06.09	转矩下极限给定数字设定	%	[-400, 0]	—
B06.10	转矩上极限给定选择	—	0:00 1: 400%/-400% 2: AIO 3~5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9~10: 总线适配器	—
B06.11	转矩下极限给定选择	—	其他: 模拟量互联参数	—
B06.12	矢量控制转矩限幅设定值	%	[0, 300]	—
B06.13	抱闸打开前转矩限幅	%	[0, 200]	—
B06.14	矢量控制转矩限幅来源	—	0: 矢量控制转矩限幅设定值(B06.12) 其他: 模拟量互联参数	—
B06.15	转矩限制到达阈值范围	%	[0, 100]	转矩到达检测的单边偏差带宽。

电动状态下给定转矩绝对值上限=MIN(B06.08, B06.10, B06.12, B06.14)
发电状态下给定转矩绝对值上限=MIN(B06.09, B06.11, B06.12, B06.14)

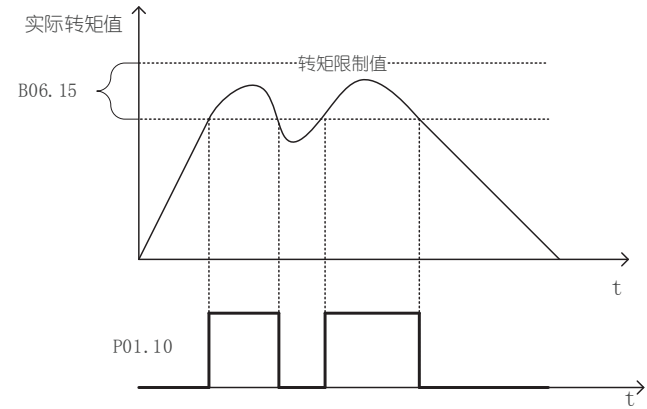
监测功能码：

表12-33 转矩限制功能监控相关功能码

功能码	功能码名称	单位	范围	说明
P01.10	转矩 / 电流达限幅	-	[0, 1]	0：未达限幅 1：达到限幅

其中，B06.13为抱闸打开前转矩限幅，如果转矩过大，会造成抱闸装置的磨损甚至破坏，因此该值应当小于抱闸所能承受转矩。

B06.15为转矩限制到达范围，当|输出转矩 - 转矩限制值|<B06.15时，则判定电机转矩受限，P01.10置1。



注：电动状态下：转矩限制值为 MIN (B06.08、B06.10、B06.12、B06.14)
发电状态下：转矩限制值为 MIN(B06.09、B06.11、B06.12、B06.14)

图12-19 转矩受限时序图

12.6.4 过速度保护功能

功能描述

速度超限是指电机转速超出允许的最大转速。该功能打开后，驱动器实时检测速度状态，当处于速度超限状态且时间到达设定值时驱动报警并强制停机。当电机实际转速值大于‘马达最大转速值（1）+B06.28设定值’且时长超过B06.29设定值则故障被激活且驱动器停机。设置B06.29检测时间等于0则关闭速度超限检测功能。

相关功能码如下：

表12-34 速度超限保护配置相关功能码

功能码	功能码名称	单位	范围	说明
B06.28	速度超限检测阈值	%	[0, 50]	保护功能启动速度阈值
B06.29	速度超限检测时间	s	[0, 60]	保护功能启动时间阈值

注：B06.28数值为最大转速百分比。
(1)：D00.06/D03.06/D06.06/D09.06，均为马达最大转速值，其中D09.06为扩展参数，具体生效参数由A04.05与A04.06决定(A04.06为扩展参数)，默认生效参数为D00.06

12.6.5 速度到达判断功能

驱动器实时监控马达运行速度，如果实际转速(P13.00)与速度目标值(B06.04)的差值小于速度到达阈值(B06.30)且满足速度到达检测时间(B06.31)，则速度到达标志(P01.06)置1，否则置0。

表12-35 速度到达判断功能相关功能码

功能码	功能码名称	单位	范围	说明
B06.30	速度到达阈值	%	[0, 100]	
B06.31	速度到达检测时间	s	[0, 600]	

表12-36 监控功能码

功能码	功能码名称	单位	范围	说明
P01.08	速度到达	-	[0, 1]	0:转速未到达 1:转速到达

12.6.6 速度比较功能

使能时马达反馈速度 (P13.00) 大于速度比较值 (B06.32) 且满足检测时间 (B06.34)，速度比较值到达 (P01.09) 置1，马达反馈速度 (P13.00) 小于 {速度比较值 (B06.32) - 速度比较值滞环宽度 (B06.33)} 且保持速度比较值检测时间 (B06.34)，速度比较值到达 (P01.09) 置0。

表12-37 速度比较功能相关功能码

功能码	功能码名称	单位	范围	说明
B06.32	速度到达检测时	%	[0, 600]	
B06.33	速度到达滞环宽度	%	[0, 100]	
B06.34	速度到达检测时间	s	[0, 600]	

表12-38 监控功能码

功能码	功能码名称	单位	范围	说明
P01.09	速度比较值达到	-	[0, 1]	0:速度比较值到达 1:转速比较值未到达

12.6.7 马达过温保护功能

实时监视电机温度，当马达温度高于B06.41所设置警告值时，故障码48被激活进行警告，当马达温度高于B06.40所设置保护值时，故障码47被激活并停机。涉及到的功能码如下：

表12-39 马达过温保护功能配置相关功能码

功能码	功能码名称	单位	范围	说明
B06.39	马达温度检测方式	-	0：禁止检测 1：KTY84	-
B06.40	马达温度过温保护值	℃	[0, 300]	-
B06.41	马达温度过温警告值	℃	[0, 300]	-

监测功能码：

表12-40 马达过温保护功能监控相关功能码

功能码	功能码名称	单位	范围	说明
P01.73	马达过温保护标志	-	[0, 1]	0：马达温度未到保护值； 1：马达温度已到保护值
P01.74	马达过温警告标志	-	[0, 1]	0：马达温度未到警告值； 1：马达温度已到警告值

12.6.8 停机频率判断功能

由于某些工况可能不允许电机直接减速到静止状态，因此可设定停机频率阈值，速度到达设定阈值以下则可判定马达转速符合停机要求，保持该阈值速度运行满足停机延迟时间可直接停机。

表12-41 零速判断功能配置相关功能码

功能码	功能码名称	单位	范围	说明
B05.29	停机频率设定	Hz	[0, 10]	
B05.30	停机延时时间	s	[0, 100]	

12.7 抱闸控制功能

12.7.1 描述

电机抱闸是指在电机停止工作时，通过保护装置使得电机的转子能够稳定地停在所需的位置上，而不会因为负载的惯性或摩擦阻力等原因继续转动。电机抱闸由电磁系、弹簧和摩擦片等部件组成。而抱闸控制功能可配置抱闸参数包括打开来源，打开比较值来源，打开阈值等一系列参数，通过配置，使得抱闸适应多种工况。

12.7.2 涉及功能码

表12-42 抱闸控制配置相关功能码

功能码	功能码名称	单位	范围	说明
F04.00	抱闸功能选择	-	0:无抱闸 1:有抱闸不带检测信息 2:有抱闸带检测信息	-
F04.01	抱闸打开反馈检测时间	s	[0, 10]	给出指令到检测指令是否生效时间间隔
F04.02	抱闸闭合反馈检测时间	s	[0, 10]	
F04.03	抱闸打开命令来源	-	0: 无效 1: 有效 2-10: DI0-DI8 其他: 二进制互联参数	可选择DI端子或者其他二进制互联参数作为抱闸打开命令来源
F04.04	抱闸打开比较值来源	-	0:00 其他: 模拟量互联参数	选择一模拟互联参数作为抱闸打开比较值
F04.05	抱闸打开比较阈值	%	[0, 200]	-

功能码	功能码名称	单位	范围	说明
F04.06	抱闸打开延迟时间	s	[0, 10]	到达阈值到发出指令的延迟时间
F04.07	抱闸闭合转速阈值	%	[0, 200]	-
F04.08	抱闸闭合延迟时间	s	[0, 10]	到达阈值到发出指令的延迟时间
F04.09	强制抱闸闭合命令来源	-	0: 无效 1: 有效 2~10: DI0~DI8 其他: 二进制互联参数	可选择DI端子或者其他二进制互联参数作为强制抱闸闭合的触发来源
F04.10	抱闸反馈点来源	-	0: 抱闸电流反馈标志 1: 保留 2~9: DI端子 10: 保留 其他: 二进制互联参数	-
F04.12	抱闸闭合比较值来源	-	0:00 其他: 模拟量互联参数	选择一模拟互联参数作为抱闸闭合比较值
F04.13	抱闸打开电机电流比较阈值	%	[0, 200]	。 -
F04.16	抱闸打开机械动作时间	s	[0.00, 10.00]	抱闸制动动作所需时间
F04.17	抱闸关闭机械动作时间	s	[0.00, 10.00]	

表12-43 抱闸控制功能监控相关功能码

功能码	功能码名称	单位	范围	参数说明
P01.38	定位完成标志	-	[0, 1]	0: 未定位完成 1: 定位完成
P01.39	定位接近标志	-	[0, 1]	0: 定位未接近 1: 定位接近

12.7.3 抱闸功能各个参数时序图

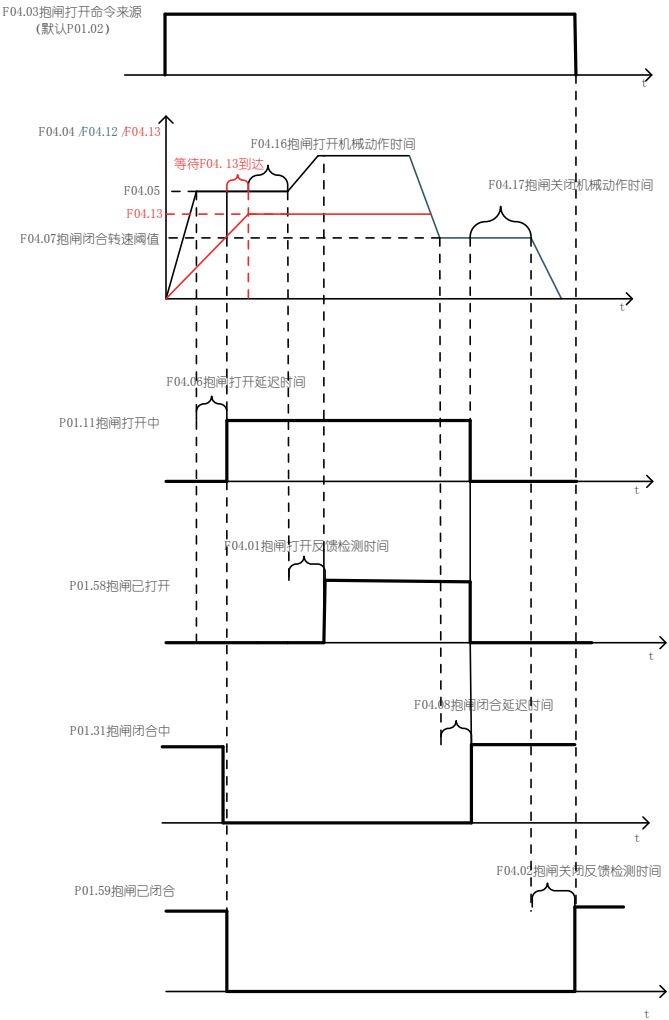


图12-20 速度控制正常停机抱闸

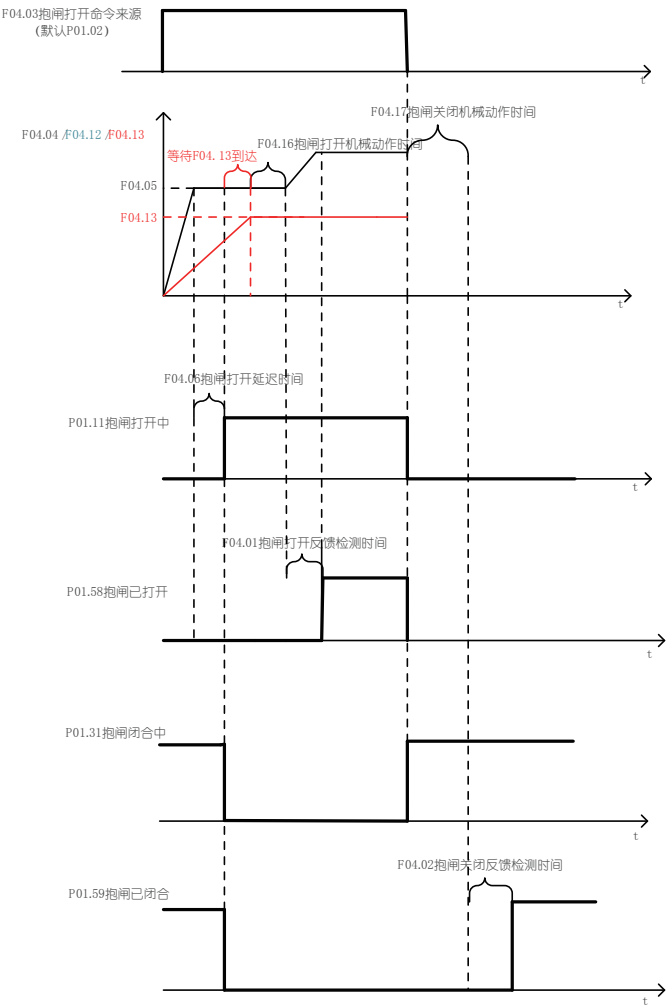


图12-21 速度控制故障停机抱闸

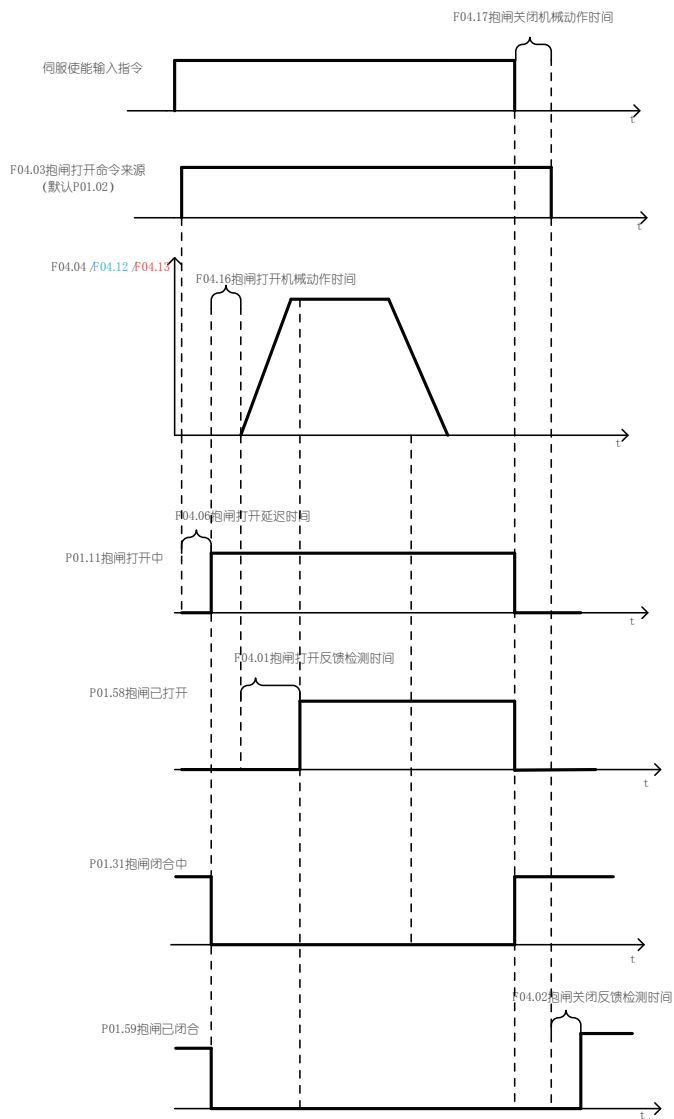


图12-22 位置控制正常停机抱闸

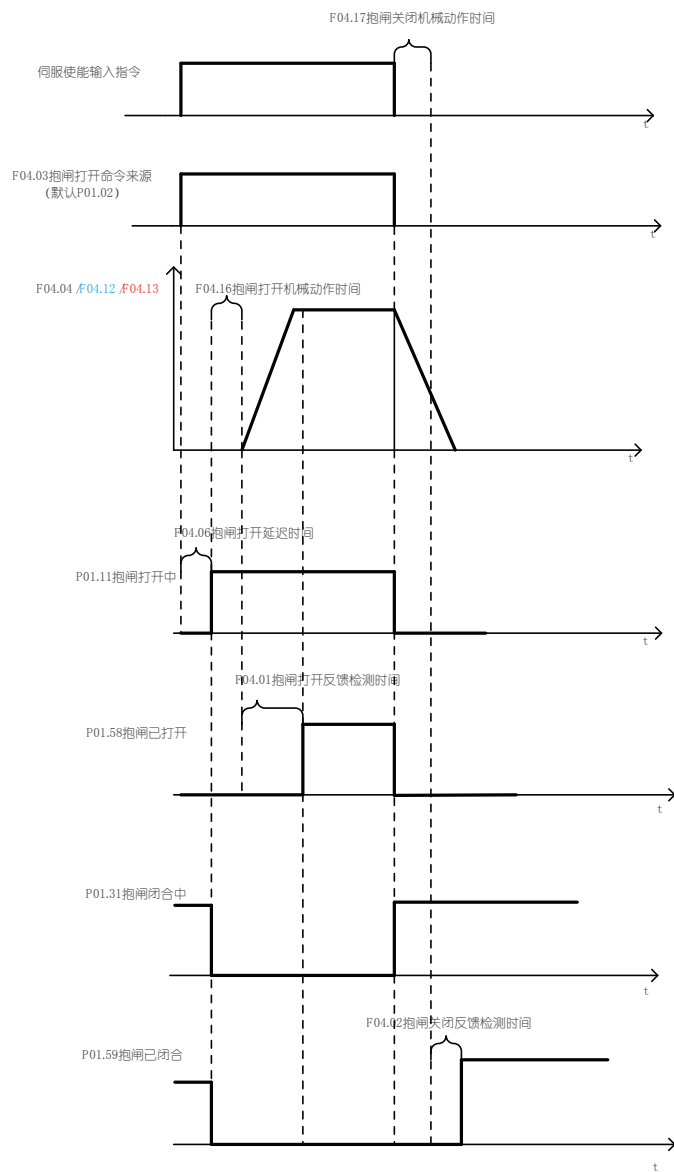


图12-23 位置控制故障停机抱闸

12.8 异常处理功能

故障源消除后需要进行故障复位，故障复位后驱动器退出故障状态；
警告源消除后驱动器会自动复位，无需手动执行故障复位。

12.8.1 故障复位

1. 通过功能码进行故障复位

通过功能码B00.05自定义故障来源1，B00.13故障复位来源2，可进行故障复位操作。
注：这两个功能码为上升沿有效。

2. 通过控制面板

故障复位操作流程如下。



注：使用控制面板后，需放弃本地控制权限，才可关闭控制面板继续使用上位机的功能码控制启停。

12.8.2 故障自动复位

如开启该功能，当驱动器检测到故障时，将激活的故障码送于当前人机交互界面并且停机，然后将该故障复位。涉及功能码如下：

表12-44 故障自动复位配置相关功能码

功能码	功能码名称	单位	范围	说明
E00.10	故障自动复位功能	-	0：无效 1：有效	-
E00.11	故障复位次数重置时间	s	[0, 3600]	已复位次数清零时间
E00.12	故障复位间隔时间	s	[0, 600]	允许两次故障复位最短时间
E00.13	故障自复位最大允许次数	次	[0, 5]	E00.11时间内允许复位次数
E00.14	不可复位异常码1	-	[0, 65535]	被选定的不可复位异常码被激发时，该功能无效
E00.15	不可复位异常码2	-	[0, 65535]	范围：0-56号所有故障码

故障自动复位功能时序图

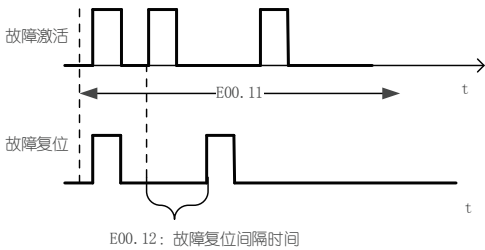


图12-24 故障自动复位时序图

由上图所示，当开启该功能时，E00.11时间开始生效，在E00.11所设置时间段内产生故障时，经过E00.12时间后对故障进行复位。

12.8.3 自动重启功能

自动重启功能是在故障复位后生效的。如由于特殊情况电机未减速到零速，还需运用到“转速追踪”功能进行启动。涉及功能码如下：

表12-45 故障复位自动重启功能配置相关功能码

功能码	功能码名称	单位	范围	说明
E00. 23	自动复位后重启功能	—	0：无效	—
			1：有效	
E00. 24	允许重启的异常来源	—	0：指定异常码允许重启	—
			1：指定异常码不允许重启	
E00. 25	指定的异常码1	—	[0, 65535]	设置特殊处理的故障码
E00. 26	指定的异常码2	—	[0, 65535]	

12.8.4 异常特殊处理设置功能

由于驱动器有多种类故障，驱动器一般默认出现故障时会自由停机，但再某些情况之下，某些故障，自由停机比较危险，则需要紧急制动停机，或者有时无需停机。因此，用户可以采用该功能对个别故障触发后的应对方式进行修改。涉及功能码如下：

表12-46 异常特殊处理配置相关功能码

功能码	功能码名称	单位	范围	说明
E00. 36	异常级别修改异常码1	—	[0, 65535]	需修改应对方式的异常码0-56
E00. 38	异常级别修改异常码2	—	[0, 65535]	其中0为无故障
E00. 37	异常1动作级别配置	—	0:自由停机 1:紧急停机 2:停机方式停机	E00. 36/E00. 38 异常码应对方式
E00. 39	异常2动作级别配置	—	3:警告 4:无异常处理	

12.9 自由功能块与工艺功能块

自由功能块是独立于驱动器控制功能的模块，包含逻辑运算、算术运算、字位转换模块。通过这些运算可对输入信号做简单的处理，可以更好的适配各种复杂的工况，部分的代替PLC的功能。

功能块名称	功能块数量	输入接口个数	说明
逻辑与模块	4	4	每个模块后两输入端口为扩展参数 ⁽¹⁾
逻辑非模块	8	1	其中四个模块为扩展参数
逻辑或模块	4	4	每个模块有两输入端口为扩展参数
逻辑异或模块	4	4	其中第一个模块有两输入端口为扩展参数，其余三个均为扩展参数
逻辑延时模块	4	1	—
加法模块	4	4	其中，每个模块有两输入端口为扩展参数
减法模块	2	2	—
乘法模块	2	4	其中，每个模块有两输入端口为扩展参数
除法模块	2	2	—
绝对值模块	2	1	—
比较模块	3	2	—
限制模块	2	1	该模块均在扩展参数里
一阶低通滤波模块	2	1	—
数据选择器模块	2	4	一个模块为扩展参数
位转字模块	2	16	—
字转位模块	2	1	—
过程PID模块	1	—	部分参数为扩展参数
抱闸模块	1	—	部分参数为扩展参数
防摇摆模块	1	—	—

(1). 扩展参数的设置方法请参考章节【11.1. 驱动器参数修改】。

12.9.1 逻辑运算模块

1. 逻辑“与”模块

逻辑“与”模块将所有输入信号的状态执行逻辑“与”操作，并将结果输出。AX驱动器中包含4组逻辑“与”模块，每个模块有4路输入接口，每个输入信号可以是任意的二进制互联参数，逻辑“与”运算规则：所有输入均为1时输出为1，反之输出为0，逻辑“与”模块示意图如下：

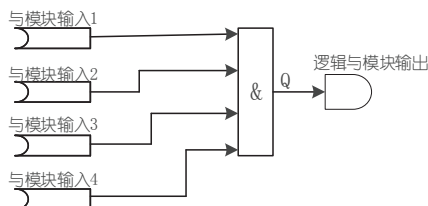


图12-25 ‘与’模块示意图

当不使用某一个接口时，可将其参数设置为“1：无效”，则此接口的输入值始终为1。例如只有两路输入信号需要进行逻辑“与”运算，当使用逻辑“与”模块A时，可在逻辑“与”模块A的输入接口1、2中选择这两个信号，而将输入接口3、4设置为“1：无效”。

表12-47 逻辑‘与’模块相关功能码

功能码	功能码名称	单位	范围	说明
F00.00 F00.05 F00.10 F00.15	与模块 A/B/C/D输入1	-	0:00 其他：二进制 互联参数	-
F00.01 F00.06 F00.11 F00.16	与模块 A/B/C/D输入2	-	0:00 其他：二进制 互联参数	-
F00.02 F00.07 F00.12 F00.17	与模块 A/B/C/D输入3	-	0:00 其他：二进制 互联参数	-
F00.03 F00.08 F00.13 F00.18	与模块 A/B/C/D输入4	-	0:00 其他：二进制 互联参数	-
P03.00 P03.01 P03.02 P03.03	与模块 A/B/C/D输出	-	[0, 1]	0: 逻辑0 1: 逻辑1

2. 逻辑“非”模块

逻辑“非”模块将所有输入信号的状态执行逻辑“非”操作，并将结果输出。AX驱动器中包含6组逻辑“非”模块，每个模块有1路输入接口，每个输入信号可以是任意的二进制互联参数，逻辑“非”模块运算规则：当输入为1时，输出为0，输入为0时，输出为1。逻辑“非”模块示意图如下：

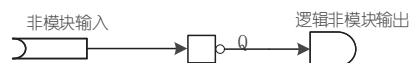


图12-26 ‘非’模块示意图

逻辑“非”模块未使用时，一般默认为“1：无效”状态，输出为逻辑0。

相关功能码

表12-48 逻辑‘非’模块相关功能码

功能码	功能码名称	单位	范围	说明
F00.20 F00.22 F00.24 F00.26 F00.28 F00.30 F00.32 F00.34	逻辑非模块 A/B/C/D/E/ F/G/H输入	-	0:0 其他：二进制 互联参数	-
P03.04 P03.05 P03.06 P03.07 P03.08 P03.09 P03.10 P03.11	逻辑非模块 A/B/C/D/E/ F/G/H输出	-	[0, 1]	0: 逻辑0 1: 逻辑1

3. 逻辑“或”模块

逻辑“或”模块将所有输入信号的状态执行逻辑“或”操作，并将结果输出。AX驱动器中包含4组逻辑“或”模块，每个模块有4路输入接口，每个输入信号可以是任意的二进制互联参数，逻辑“或”模块运算规则：当输入有一个为1时，输出为1，反之输出为0。逻辑“或”模块示意图如下：

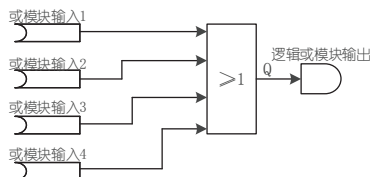


图12-27 ‘或’模块示意图

当不使用某一个接口时，可将其参数设置为“0：无效”，则此接口的输入值始终为0。例如只有两路输入信号需要进行逻辑“或”运算，当使用逻辑“或”模块A时，可在逻辑“或”模块A的输入接口1、2中选择这两个信号，而将输入接口3、4设置为“0：无效”。

相关功能码

表12-49 逻辑‘或’模块相关功能码

功能码	功能码名称	单位	范围	说明
F00.36 F00.41 F00.46 F00.51	逻辑或模块 A/B/C/D 输入1	-	0:0 其他：二进制 互联参数	-
F00.37 F00.42 F00.47 F00.52	逻辑或模块 A/B/C/D 输入2	-	0:0 其他：二进制 互联参数	-
F00.38 F00.43 F00.48 F00.53	逻辑或模块 A/B/C/D 输入3	-	0:0 其他：二进制 互联参数	-
F00.39 F00.44 F00.49 F00.54	逻辑或模块 A/B/C/D 输入4	-	0:0 其他：二进制 互联参数	-
P03.12 P03.13 P03.14 P03.15	逻辑或模块 A/B/C/D 输出	-	[0, 1]	0：逻辑0 1：逻辑1

4. 逻辑“异或”模块

逻辑“异或”模块将所有输入信号的状态执行逻辑“异或”操作，并将结果输出。AX驱动器中包含4组逻辑“异或”模块，每个模块有4路输入接口，每个输入信号可以是任意的二进制互联参数，逻辑“异或”模块四输入端子按序号开始和后一个进行‘异或’运算，将其结果与后面端子继续进行异或运算，以此类推，输出最终结果，‘异或’逻辑运算规则：当且仅当两输入不同时，输出为1，反正输出为0。逻辑异或模块示意图如下：

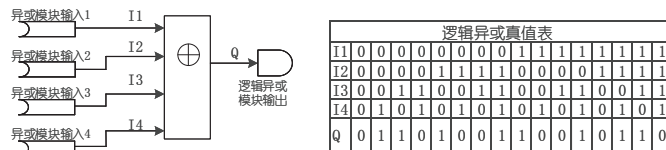


图12-28 ‘异或’模块示意图

当不使用某一个接口时，可将其参数设置为“0：无效”，则此接口的输入值始终为0。例如只有两路输入信号需要进行逻辑“异或”运算，当使用逻辑“异或”模块A时，可在逻辑“异或”模块A的输入接口1、2中选择这两个信号，而将输入接口3、4设置为“0：无效”。

相关功能码

表12-50 逻辑‘异或’模块相关功能码

功能码	功能码名称	单位	范围	说明
F00.56 F00.61 F00.66 F00.71	逻辑异或模块 A/B/C/D 输入1	-	0:0 其他：二进制 互联参数	-
F00.57 F00.62 F00.67 F00.72	逻辑异或模块 A/B/C/D 输入2	-	0:0 其他：二进制 互联参数	-
F00.58 F00.63 F00.68 F00.73	逻辑异或模块 A/B/C/D 输入3	-	0:0 其他：二进制 互联参数	-
F00.59 F00.64 F00.69 F00.74	逻辑异或模块 A/B/C/D 输入4	-	0:0 其他：二进制 互联参数	-
P03.16 P03.17 P03.18 P03.19	逻辑异或模块 A/B/C/D 输出	-	[0, 1]	0：逻辑0 1：逻辑1

5. 逻辑延时模块

逻辑延时模块将所有输入信号的状态执行延时操作，并将结果输出。AX驱动器中包含4组逻辑延时模块，每个模块有1路输入接口，每个输入信号可以是任意的二进制互联参数；可通过参数设置功能为开通延时或关断延时以及延时时间。当输入接口的数值改变后，输出参数的数值保持原值不变，直到所设置的延时时间到后改变。逻辑延时模块示意图如下：

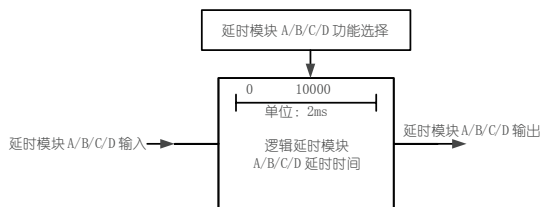


图12-29 延时模块示意图

该模块可通过参数“逻辑延时模块功能选择”确定延时方式。未使用该模块时，其输入参数默认为“0：无效”，其输出也为逻辑0。

相关功能码

表12-51 逻辑延时模块相关功能码

功能码	功能码名称	单位	范围	说明
F00.76 F00.79 F00.82 F00.85	逻辑延时模块 A/B/C/D 输入	-	0:0 其他：二进制互联参数	-
F00.77 F00.80 F00.83 F00.86	逻辑延时模块 A/B/C/D 功能选择	-	0：开通延时 1：关断延时 2：双向延时	开通延时：由0置1延时输出 关断延时：由1置0延时输出 双向延时：电平跳转均延时输出
F00.78 F00.81 F00.84 F00.87	逻辑延时模块 A/B/C/D 延时时间	N*2ms	[0, 1000]	最大延时时间为 1000*2ms=20s
P03.20 P03.21 P03.22 P03.23	逻辑延时模块 A/B/C/D 输出	-	[0, 1]	0：逻辑0 1：逻辑1

12.9.2 算数运算模块

1. 加法模块

算数运算加法模块将所有输入参数进行相加操作，并将结果输出。AX驱动器中包含3组加法模块，每个模块有4路输入接口，每个输入信号可以是任意的16位模拟量互联参数，但输出的结果需在规定的数字范围之内，如超出范围，则会输出溢出信号，算数运算加法模块示意图如下：

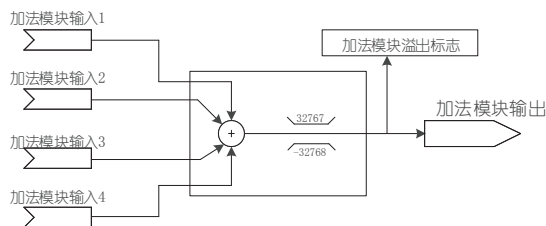


图12-30 加法模块示意图

当不使用某一个接口时，可将其参数设置为“0：0”，则此接口的输入值始终为0。

相关功能码

表12-52 加法模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.00 F01.05 F01.10 F01.15	加法模块 A/B/C 输入 1	-	0:0 其他：二进制互联参数	-
F01.01 F01.06 F01.11 F01.16	加法模块 A/B/C 输入 2	-	0:0 其他：二进制互联参数	-
F01.02 F01.07 F01.12 F01.17	加法模块 A/B/C 输入 3	-	0:0 其他：二进制互联参数	-
F01.03 F01.08 F01.13 F01.18	加法模块 A/B/C 输入 4	-	0:0 其他：二进制互联参数	-
P03.36 P03.37 P03.38	加法模块 A/B/C 溢出标志	-	[0, 1]	0：未溢出 1：溢出
P08.00 P08.01 P08.02	加法模块 A/B/C 输出	-	[-32768, 32767]	四参数相加结果

2. 减法模块

算数运算减法模块将两个输入参数进行相减操作，并将结果输出。AX驱动器中包含2组减法模块，每个模块有2路输入接口：分别表示被减数和减数。每个输入信号可以是任意的16位模拟量互联参数，但输出的结果需在规定的数字范围之内，如超出范围，则会输出溢出信号，算数运算减法模块示意图如下：

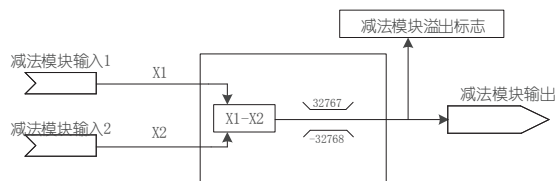


图12-31 减法模块示意图

相关功能码

表12-53 减法模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.15	减法模块 A/B输入1	—	0:0 其他：二进制 互联参数	被减数参数
F01.18				
F01.16	减法模块 A/B输入2	—	0:0 其他：二进制 互联参数	减数参数
F01.19				
P03.39	减法模块 A/B溢出标志	—	[0, 1]	0：未溢出 1：溢出
P03.40				
P08.04	减法模块 A/B输出	—	[-32768, 32767]	两参数相减结果
P08.05				

3. 乘法模块

算数运算乘法模块将所有输入参数进行相乘操作，并将结果输出。AX驱动器中包含2组乘法模块，每个模块有4路输入接口，每个输入信号可以是任意的16位模拟量互联参数，但输出的结果需在规定的数字范围之内，如超出范围，则会输出溢出信号。

乘法模块每个模块另外有一个32位的输出显示，其输出范围为[-2147483648, 2147483647]。算数运算乘法模块示意图如下：

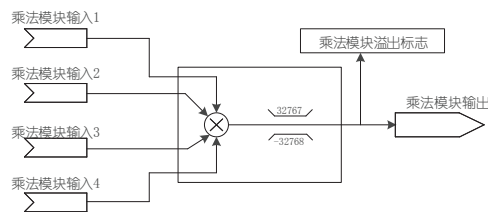


图12-32 乘法模块示意图

当不使用某一个接口时，可将其参数设置为“0: 1”，则此接口的输入值始终为1。例如只有两路输入参数需要进行乘法算数运算，当使用乘法模块A时，可在乘法模块A的输入接口1、2中选择这两个参数，而将输入接口3、4设置为“0: 1”。

相关功能码

表12-54 乘法模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.21	乘法模块 A/B输入1	—	0:0 其他：二进制 互联参数	0：数值1
F01.26				
F01.22	乘法模块 A/B输入2	—	0:0 其他：二进制 互联参数	0：数值1
F01.27				
F01.23	乘法模块 A/B输入3	—	0:0 其他：二进制 互联参数	0：数值1
F01.28				
F01.24	乘法模块 A/B输入4	—	0:0 其他：二进制 互联参数	0：数值1
F01.29				
P03.41	乘法模块 A/B溢出标志	—	[0, 1]	0：未溢出 1：溢出
P03.42				
P08.08	乘法模块 A/B输出	—	[-32768, 32767]	四参数相乘结果
P08.09				
P08.44	乘法模块 A/B输出 (32位)	—	[-2147483648, 2147483647]	乘法模块 32位输出 结果
P08.46				

4. 除法模块

算数运算除法模块将输入参数进行相除操作，并将结果输出。AX驱动器中包含2组除法模块，每个模块有2路输入接口，分别表示被除数与除数。每个输入信号可以是任意的模拟量互联参数，但除数要求为16位有符号数（范围为[-32768, 32767]）。输出的结果需在规定的数字范围之内，如超出范围，则会输出溢出信号，算数运算除法模块示意图如下：

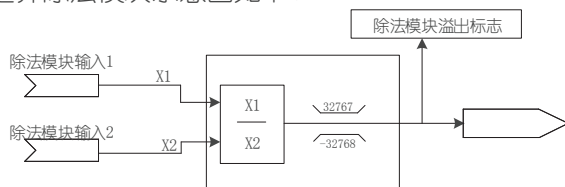


图12-33 除法模块示意图

当不使用某一个接口时，其参数默认为“0:1”，则此接口的输入值始终为1。除法操作的结果以商和余数的形式输出。

相关功能码

表12-55 除法模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.31	除法模块A/B除数输入	-	0:0 其他：二进制 互联参数	0：数值1
F01.34				
F01.32	除法模块A/B被除数输入	-	0:0 其他：二进制 互联参数	0：数值1
F01.35				
P03.43	除法模块A/B溢出标志	-	[0, 1]	0：未溢出 1：溢出
P03.44				
P08.12	除法模块A/B输出	-	[-32768, 32767]	输入参数相除结果
P08.15				
P08.14	除法模块余数	-	[-32768, 32767]	输入参数相除余数
P08.17				

5. 绝对值模块

算数运算绝对值模块将输入参数进行取绝对值操作，并将结果输出。AX驱动器中包含2组绝对模块，每个模块有1路输入接口，输入信号可以是任意的16位模拟量互联参数。绝对值模块要求输入量为16位有符号数（范围为[-32768, 32767]），若输入值超过范围，则仅取输入值的低16位作为有符号数输入。算数运算绝对值模块示意图如下：

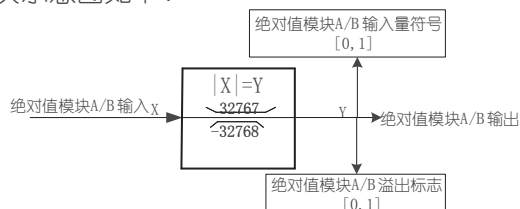


图12-34 绝对值模块示意图

绝对值模块会输出绝对值模块输入量符号，用以表明输入参数的正负符号。

相关功能码

表12-56 绝对值模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.37	绝对值模块A/B输入	-	0:0 其他：二进制 互联参数	-
F01.39				
P03.32	绝对值模块A/B输入量符号	-	[0, 1]	0:输入为正 1:输入为负
P03.33				
P08.24	绝对值模块A/B输出	-	[-32768, 32767]	-
P08.25				

6. 比较模块

算数运算比较模块将输入参数进行比较，并将结果输出。AX驱动器中包含4组比较模块，每个模块有2路输入接口，输入信号可以是任意的16位模拟量互联参数，输出为二进制参数作为比较的标志来表明比较结果，算数运算比较模块示意图如下：

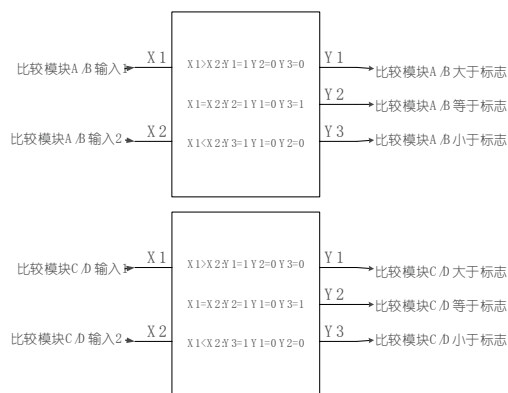


图12-35 比较值模块示意图

该模块将输入两参数比较大小，然后通过输出二进制大于/等于/小于标志参数，显示其参数大小。

相关功能码

表12-57 比较模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.41 F01.44 F01.73 F01.76	比较模块A/B/C/D输入1	-	0:0 其他：二进制 互联参数	-
F01.42 F01.45 F01.74 F01.77	比较模块A/B/C/D输入2	-	0:0 其他：二进制 互联参数	-
P03.24 P03.27 P03.47 P03.50	比较模块A/B/C/D大于标志	-	[0, 1]	当满足输入1大于输入2时置1
P03.25 P03.28 P03.48 P03.51	比较模块A/B/C/D等于标志	-	[0, 1]	当满足输入1等于输入2时置1
P03.26 P03.29 P03.49 P03.52	比较模块A/B/C/D小于标志	-	[0, 1]	当满足输入1小于输入2时置1

7. 限制模块

算数运算限制模块将输入参数进行限制，并将结果输出。AX驱动器中包含2组限制模块，每个模块有1路输入接口，输入信号可以是任意的16位模拟量互联参数，输出结果为限制后的参数，算数运算限制模块示意图如下：

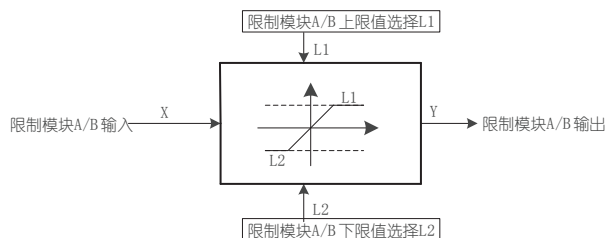


图12-36 绝对值模块示意图

该模块可将驱动器中参数进行限制输出，当其他功能模块需要应用某参数，而该参数范围大于所用功能时，可开启此功能，将参数限制在特定范围之内。

相关功能码

表12-58 限制模块相关功能码

功能码	功能码名称	单位	范围	说明
F01.47 F01.51	限制值模块A/B输入	-	0:0 其他：二进制 互联参数	-
F01.48 F01.52	限制值模块A/B上限值选择	-	0:0 其他：二进制 互联参数	限制来源
F01.49 F01.53	限制值模块A/B下限值选择	-	0:0 其他：二进制 互联参数	
P08.28 P08.29	限制模块A/B输出	-	[-32768, 32767]	-

8. 一阶低滤波模块

一阶低滤波模块将输入参数进行滤波，并将结果输出。AX驱动器中包含2组滤波模块，每个模块有1路输入接口，输入信号可以是任意的16位模拟量互联参数，输出结果为滤波后的数值，一阶低滤波模块示意图如下：

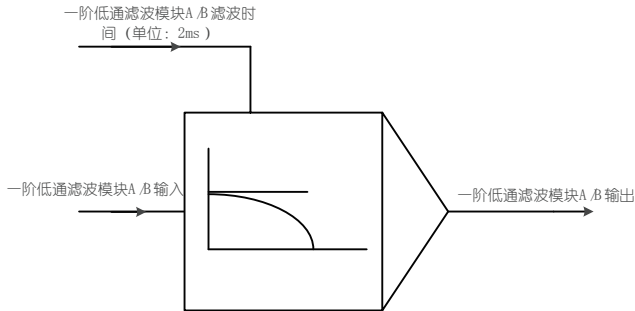


图12-37 一阶低滤波示意图

该模块可对输入参数进行一阶低通滤波，通过配置滤波时间设置好截止频率，输出是将输入中高频成分滤掉后的结果。

相关功能码

表12-59 一阶低滤波模块

功能码	功能码名称	单位	范围	说明
F01.55	一阶低滤波模块A/B输入	—	0:0 其他：二进制互联参数	
F01.58				
F01.56	一阶低滤波模块A/B滤波时间	N*2ms	[0, 20000]	该参数为一阶低通滤波器截止频率相关参数,关系为: $T=\frac{1}{2\pi\omega_c}$
F01.59				
P08.32	一阶低滤波模块A/B输出	—	[-32768, 32767]	
P08.33				

9. 数据选择器

数据选择器根据选择命令从所有输入信号中选择某一个作为输出。AX驱动器中包含2组数据选择器，每个模块有4路输入接口和2个选择命令接口，每个输入信号可以是任意的16位模拟量互联参数，选择命令可以设置为任意的二进制量。数据选择器示意图如下：

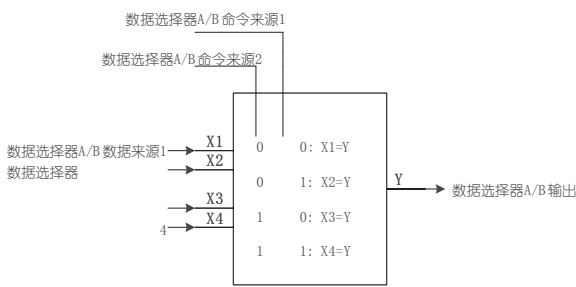


图12-38 绝对值模块示意图

数据选择器通过参数“数据选择器命令来源1”和“数据选择器命令来源2”来组成两位的二进制数字来进行数据选择。数据选择器输出逻辑表如下：

表12-60 数据选择器说明

选择命令		数据选择器输出结果
数据选择器命令来源1 状态值	数据选择器命令来源2 状态值	
0	0	数据选择器A/B数据来源1
0	1	数据选择器A/B数据来源2
1	0	数据选择器A/B数据来源3
1	1	数据选择器A/B数据来源4

相关功能码

表12-61 数据选择器相关功能码

功能码	功能码名称	单位	范围	说明
F01.63	数据选择器 A/B 数据来源1	-	0:0	
F01.69			其他：二进制互联参数	
F01.64	数据选择器 A/B 数据来源2	-	0:0	
F01.70			其他：二进制互联参数	
F01.65	数据选择器 A/B 数据来源3	-	0:0	
F01.71			其他：二进制互联参数	
F01.66	数据选择器 A/B 数据来源4	-	0:0	
F01.72			其他：二进制互联参数	
F01.61	数据选择器 A/B 命令来源1	-	0:00 1:01 2-9: DI0-DI7 10: 预留	为二进制 bit0 位
F01.67			其他：二进制互联参数	
F01.62	数据选择器 A/B 命令来源2	-	0:00 1:01 2-9: DI0-DI7 10: 预留	为二进制 bit1 位
F01.68			其他：二进制互联参数	
P08.41	数据选择器 A/B 输出	-	[-32768, 32767]	
P08.42				

12.9.3 字位转换模块

1. 字转位功能

字转位模块将输入的十进制参数进行二进制转换操作，并将结果输出。AX驱动器中包含4组字转位模块，每个模块有1路输入接口，输入参数可以是任意的16位模拟量互联参数，字转位功能块将输入值的每一位按照二进制数据输出。相关功能码如下：

表12-62 字转位功能相关功能码

功能码	功能码名称	单位	范围	说明
F02.00	字转位功能 A/B/C/D 输入选择	-	0:0 其他：二进制互联参数	十进制输入参数 可输出范围位 [-32768, 32767]
F02.02				
F02.04				
F02.06				
P04.00	字转位功能 A/B/C/D 输出 bit0	-	[0, 1]	0:0 1:1
P04.16				
P04.32				
P04.48				
P04.01	字转位功能 A/B/C/D 输出 bit1	-	[0, 1]	0:0 1:2
P04.17				
P04.33				
P04.49				
P04.02	字转位功能 A/B/C/D 输出 bit2	-	[0, 1]	0:0 1:4
P04.18				
P04.34				
P04.50				
P04.03	字转位功能 A/B/C/D 输出 bit3	-	[0, 1]	0:0 1:8
P04.19				
P04.35				
P04.51				
P04.04	字转位功能 A/B/C/D 输出 bit4	-	[0, 1]	0:0 1:16
P04.20				
P04.36				
P04.52				

功能码	功能码名称	单位	范围	说明
P04. 05	字转位功能 A/B/C/D输出bit5	—	[0, 1]	0:0 1:32
P04. 21				
P04. 37				
P04. 53				
P04. 06	字转位功能 A/B/C/D输出bit6	—	[0, 1]	0:0 1:64
P04. 22				
P04. 38				
P04. 54				
P04. 07	字转位功能 A/B/C/D输出bit7	—	[0, 1]	0:0 1:128
P04. 23				
P04. 39				
P04. 55				
P04. 08	字转位功能 A/B/C/D输出bit8	—	[0, 1]	0:0 1:256
P04. 24				
P04. 40				
P04. 56				
P04. 09	字转位功能 A/B/C/D输出bit9	—	[0, 1]	0:0 1:512
P04. 25				
P04. 41				
P04. 57				
P04. 10	字转位功能 A/B/C/D输出bit10	—	[0, 1]	0:0 1:1024
P04. 26				
P04. 42				
P04. 58				

功能码	功能码名称	单位	范围	说明
P04. 11	字转位功能 A/B/C/D输出bit11	—	[0, 1]	0:0 1:2048
P04. 27				
P04. 43				
P04. 59				
P04. 12	字转位功能 A/B/C/D输出bit12	—	[0, 1]	0:0 1:4096
P04. 28				
P04. 44				
P04. 60				
P04. 13	字转位功能 A/B/C/D输出bit13	—	[0, 1]	0:0 1:8192
P04. 29				
P04. 45				
P04. 61				
P04. 14	字转位功能 A/B/C/D输出bit14	—	[0, 1]	0:0 1:16384
P04. 30				
P04. 46				
P04. 62				
P04. 15	字转位功能 A/B/C/D输出bit15	—	[0, 1]	0:0 1:~32768
P04. 31				
P04. 47				
P04. 63				

2. 位转字功能

位转字功能将输入的16个二进制值按照由低到高的顺序组合成为一个16位的数值输出。AX驱动器中包含4组字转位模块，每个模块有16路输入接口，输入参数可以是任意的二进制互联参数，输出一个16位数值。相关功能码如下：

表12-63 位转字功能相关功能码

功能码	功能码名称	单位	范围	说明
F02. 08	位转字功能 A/B/C/D- bit00选择	-	0:0 其他：二 进制互联 参数	0:0 1:1
F02. 25				
F02. 42				
F02. 59				
F02. 09	位转字功能 A/B/C/D- bit01选择	-	0:0 其他：二 进制互联 参数	0:0 1:2
F02. 26				
F02. 43				
F02. 60				
F02. 10	位转字功能 A/B/C/D- bit02选择	-	0:0 其他：二 进制互联 参数	0:0 1:4
F02. 27				
F02. 44				
F02. 61				
F02. 11	位转字功能 A/B/C/D- bit03选择	-	0:0 其他：二 进制互联 参数	0:0 1:8
F02. 28				
F02. 45				
F02. 62				
F02. 12	位转字功能 A/B/C/D- bit04选择	-	0:0 其他：二 进制互联 参数	0:0 1:16
F02. 29				
F02. 46				
F02. 63				
F02. 13	位转字功能 A/B/C/D- bit05选择	-	0:0 其他：二 进制互联 参数	0:0 1:32
F02. 30				
F02. 47				
F02. 64				

功能码	功能码名称	单位	范围	说明
F02. 13	位转字功能 A/B/C/D- bit05选择	-	0:0 其他：二 进制互联 参数	0:0 1:32
F02. 30				
F02. 47				
F02. 64				
F02. 14	位转字功能 A/B/C/D- bit06选择	-	0:0 其他：二 进制互联 参数	0:0 1:64
F02. 31				
F02. 48				
F02. 65				
F02. 15	位转字功能 A/B/C/D- bit07选择	-	0:0 其他：二 进制互联 参数	0:0 1:128
F02. 32				
F02. 49				
F02. 66				
F02. 16	位转字功能 A/B/C/D- bit08选择	-	0:0 其他：二 进制互联 参数	0:0 1:256
F02. 33				
F02. 50				
F02. 67				
F02. 17	位转字功能 A/B/C/D- bit09选择	-	0:0 其他：二 进制互联 参数	0:0 1:512
F02. 34				
F02. 51				
F02. 68				
F02. 18	位转字功能 A/B/C/D- bit10选择	-	0:0 其他：二 进制互联 参数	0:0 1:1024
F02. 35				
F02. 52				
F02. 69				
F02. 19	位转字功能 A/B/C/D- bit11选择	-	0:0 其他：二 进制互联 参数	0:0 1:2048
F02. 36				
F02. 53				
F02. 70				
F02. 20	位转字功能 A/B/C/D- bit12选择	-	0:0 其他：二 进制互联 参数	0:0 1:4096
F02. 37				
F02. 54				
F02. 71				

功能码	功能码名称	单位	范围	说明
F02.21	位转字功能 A/B/C/D-bit13选择	-	0:0 其他: 二进制互联参数	0:0 1:8192
F02.38				
F02.55				
F02.72				
F02.22	位转字功能 A/B/C/D-bit14选择	-	0:0 其他: 二进制互联参数	0:0 1:16384
F02.39				
F02.56				
F02.73				
F02.23	位转字功能 A/B/C/D-bit15选择	-	0:0 其他: 二进制互联参数	0:0 1:-32768
F02.40				
F02.57				
F02.74				
P08.36	位转字模块 A/B/C/D 输出	-	[-32768, 32767]	十进制输出参数
P08.37				
P08.38				
P08.				

12.9.4 过程PID模块

该功能可对各种给定量进行PID调节输出，在某些特殊工况下，所用给定量难以满足要求驱动电机时，可利用这一模块对该给定量进行PID调节控制。从而输出满足要求的参数进行驱动电机。示意图如下：

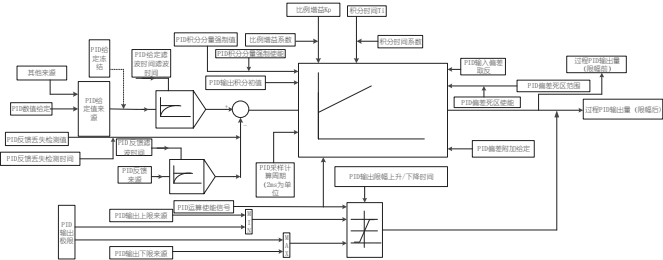


图12-39 过程PID模块示意图

基础参数配置相关功能码
表12-64 过程PID模块基础参数配置相关功能码

功能码	功能码名	单位	范围	说明
F03.00	PID功能生效信号	-	0: 无效 1: 有效 2-9: DI0-DI7 10: 预留 其他: 二进制互联参数	功能使能
F03.01	PID运算使能信号	-	0:00 1:01 2-9: DI0-DI7 10: 预留 其他: 二进制互联参数	PID运算使能
F03.03	PID采样计算周期	2ms	[1, 20]	N*2ms
F03.04	PID给定值来源	-	0: F03.05 1: 多段设定值1 2: AIO 3, 4, 5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9, 10: 总线适配器	-
F03.05	PID数值给定	%	[-600, 600]	-
F03.07	PID给定滤波时间	ms	[0, 60000]	-

功能码	功能码名	单位	范围	说明
F03.08	PID反馈源来源	-	0:00 1: 多段设定值1 2: AI0 3,4,5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9, 10: 总线适配器	-
F03.09	PID反馈滤波时间	ms	[0, 60000]	-
F03.11	比例增益KP	-	[0.00, 625.00]	-
F03.12	比例增益系数	-	0: 100% 1: 多段设定值1 2: AI0 3,4,5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9, 10: 总线适配器	-
F03.13	积分时间Ti	ms	[0, 60000]	-
F03.14	积分时间系数	-	[0, 10]	-

高级参数配置相关功能码

表12-65 过程PID模块高级参数配置相关功能码

功能码	功能码名称	单位	范围	说明
F03.02	PID输入偏差取反	-	[0, 1]	0: 正方向 (输出值*1) 1: 反方向 (输出值*-1)
F03.06	PID给定冻结	-	[0, 10000]	固定给定来源选择端子
F03.10	PID偏差附加给定	-	0:00 1: 多段设定值1 2: AI0 3,4,5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9, 10: 总线适配器	-
F03.17	PID输出积分初值	-	0: 100% 1: 多段设定值1 2: AI0 3,4,5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9, 10: 总线适配器	-
F03.19	PID积分分量强制使能	-	[0, 10]	积分分量强制给定使能选择端子

功能码	功能码名称	单位	范围	说明
F03. 20	PID积分分量强制值	-	0:00 1: 多段设定值1 2: AIO 3, 4, 5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9,10:总线适配器	-
F03. 21	PID输出极限	%	[0. 0, 600. 0]	-
F03. 22	PID输出上限来源	-	0: 100% 1: 多段设定值1 2: AIO 3, 4, 5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9,10:总线适配器	-
F03. 23	PID输出下限来源	-	0: 0% 1: 多段设定值1 2: AIO 3, 4, 5: 预留 6: 多段值给定 7: 电动电位计 8: 预留 9,10:总线适配器	-
F03. 24	PID输出限幅上升/下降时间	s	[0. 00, 100. 00]	-
F03. 25	PID偏差死区使能	-	[0, 1]	偏差值响应范围使能

功能码	功能码名称	单位	范围	说明
F03. 26	PID偏差死区范围	%	[0. 0, 100. 0]	偏差值相应范围
F03. 27	PID反馈丢失检测值	%	[0. 0, 100, 0]	反馈值丢失检测范围
F03. 28	PID反馈丢失检测时间	s	[0. 0, 60. 0]	反馈值丢失检测时间

功能码	功能码名称	单位	范围	说明
P09. 00	过程PID输出量(限幅后)	-	[-32768, 32767]	-
P09. 01	过程PID输出量(限幅前)	-	[-32768, 32767]	-
P09. 02	过程PID比例输出	-	[-32768, 32767]	-
P09. 03	过程PID积分输出	-	[-32768, 32767]	-
P09. 04	过程PID微分输出	-	[-32768, 32767]	-
P09. 05	过程PID给定量	-	[-32768, 32767]	-
P09. 06	过程PID反馈量	-	[-32768, 32767]	-
P09. 07	过程PID偏差量	-	[-32768, 32767]	-
P09. 08	过程PID无附加值前偏差量	-	[-32768, 32767]	-

13 驱动器故障与处理

序号	故障名称	子码	子码含义	解决对策
1	过流	1	U相过流	1. 重新设置参数，参数辨识[1]后运行
		2	V相过流	
		3	UV两相过流	
		4	W相硬件过流	2. 适当增长加速时间
		5	UW两相过流	
		6	VW两相过流	
		7	UVW三相过流	3. 若不再报过流，则继续检查电机原因；若继续报过流，则排查驱动器硬件
		8	制动管硬件过流	
		9	U相VCE短路	
		10	V相VCE短路	4. 若对地电阻为零或很小，请联系电机厂家检查电机问题；此外测量三相绕组阻值是否接近
		11	UV两相VCE短路	
		12	W相VCE短路	
		13	UW两相VCE短路	5. 若存在电机线缆破损或短接情况，需分开短接的线缆，并保证可靠绝缘
		14	VW两相VCE短路	
		15	过流异常	
		16	过流异常	6. 等电机完全停止后再启动；设置为减速停机（B05.32=1）
2	直流过压	1	检测到母线电压超过阈值	7. 安装合适的制动电阻
				8. 联系厂家更换驱动器
				9. 更换PM
				10. 恢复出厂值，重新设定参数
				1. 重新设置参数，参数辨识后运行
				2. 若不再过压，适当增大B04.03；如果不能增大减速时间，可配置制动电阻
				3. 增大加速时间B04.02；配置制动电阻
				4. 安装合适的制动电阻
				5. 排查输入电源的问题

序号	故障名称	子码	子码含义	解决对策
				6. 修改A03.03，对电压进行校准；若无法校准，则可能驱动器内部检测模块异常，请联系售后或厂家，寻求技术支持
				7. 更换大功率驱动器
				8. 更换编码器
3	直流欠压	1	运行中检测到母线电压低于阈值(A03.21)	1. 确认电源范围，确认输入端接线牢固可靠
				2. 正确设置A03.21
				3. 修改A03.03，对电压进行校准；若无法校准，则可能驱动器内部检测模块异常，请联系售后或厂家，寻求技术支持
				4. 若接触器不吸合，更换PM确认
5	驱动器过载	1	检测到电流值大于驱动器额定电流(A02.06)超出过载允许时间	1. 电流检测系数正常情况下应为100%±5%左右，若明显偏离，检查机型（A03.00）设置是否与铭牌一致；若电流无法校准，驱动器内部检测模块异常，请联系厂家
				2. 重新设置参数，参数辨识后运行
				3. 排除机械堵转
				4. 降低载波频率，或更换更大功率驱动器
				5. 等电机完全停止后再启动；设置为减速停机（B05.32=1）
				6. 适当减小B07.15

序号	故障名称	子码	子码含义	解决对策
				7. 查看电机铭牌，确认接法 8. 根据负载情况采取相应措施，使启动时负载不至于过大 9. 更换大容量驱动器
6	马达过载	1	检测到电流值大于马达额定电流(D00.03)超出过载允许时间	1. 电流检测系数正常情况下应为100%±5%左右，若明显偏离，检查机型(A03.00)设置是否与铭牌一致；若电流无法校准，驱动器内部检测模块异常，请联系厂家 2. 正确设置D00.03 3. 重新设置参数，参数辨识后运行 4. 排除机械堵转 5. 等电机完全停止后再启动；设置为减速停机(B05.32=1) 6. 减小B07.15 7. 查看电机铭牌，确认接法 8. 根据负载情况采取相应措施，使启动时负载不至于过大
7	输入缺相	1	检测到母线电压异常波动，输入端缺相	1. 确保输入接线正确可靠 2. 确保输入电源稳定
8	输出缺相	1	U相输出缺相	1. 参数按电机铭牌参数设置
		2	V相输出缺相	2. 确认输出端子接紧;确认电机电缆没有断开
		3	W相输出缺相	3. 电流检测系数正常情况下应为100%±5%左右，若明显偏离，检
		4	FVC控制输出缺相	
		5	三相输出严重不平衡	

序号	故障名称	子码	子码含义	解决对策
		6	定子电阻辨识输出缺相	查机型(A03.00)设置是否与铭牌一致；若电流无法校准，驱动器内部检测模块异常，请联系厂家
		7	SVC控制输出缺相	4. 请联系电机厂家，更换电机 5. 更新PM
9	驱动器过温	1	检测到驱动器(37Kw及以下机型)IGBT温度超过阈值	1. 清除异物，关闭风扇调速功能(B06.48=0)，风扇仍然不转，联系厂家更换风扇 更改正确的机型值
		2	检测到驱动器(37Kw以上机型)IGBT-U相温度超过阈值	2. 清理风道
		3	检测到驱动器(37Kw以上机型)IGBT-V相温度超过阈值	3. 可适当降低驱动器载波频率，打开配电柜门散热，增大配电柜进出风口风量
		4	检测到驱动器(37Kw以上机型)IGBT-W相温度超过阈值	5. 更换PM
11	电流零漂错误	1	U相电流零漂偏大	1. 电流检测系数正常情况下应为100%±5%左右，若明显偏离，检查机型(A03.00)设置是否与铭牌一致；若电流无法校准，驱动器内部检测模块异常，请联系厂家
		2	V相电流零漂偏大	2. 更换PM
		3	W相电流零漂偏大	3. 检查是否启用了ST0功能，如果启用了ST0功能检查ST0端子电压是否正常

序号	故障名称	子码	子码含义	解决对策
12	对地短路故障	1	对地短路时U相过流	1. 更换驱动器 2. 更换线缆 3. 若电阻为零或很小, 则是电机异常, 请更换电机
		2	对地短路时V相过流	
		4	对地短路时W相过流	
		5	对地短路电流超过阈值	
		6	对地短路时过压	
13	马达调谐故障	1	动态调谐异常	1. 设置正确参数 2. 保证输出端接线可靠 3. 子码4-6表示编码器信号异常, 保证编码器接线和参数正确 4. 更换PM
		2	静态调谐失败	
		3	同步机磁极位置辨识调压模式超时	
		4	编码器异常	
		5	Z信号错误	
		6	接收不到z信号	
14	编码器异常	1	动态调谐异常	1. 查看P11.30 I/O板识别号的十位上数值, 1:RJ45接口支持BISS-C/485编码器。0:RJ45接口仅支持485编码器。 2. 确认编码器参数设置正确, 线缆连接正确 3. 规范走线, 使用带屏蔽层的线缆, 编码器屏蔽层接地
		2	闭环动态调谐时编码器未接	
		3	闭环动态调谐时编码器测速不吻合	
		9	闭环运行时编码器断线	
		8	ABZ中A相断线	
		10	寸动运行超时	
		11	ABZ中B相断线	4. 正确设置电机参数 5. 子码3可能因为电机堵转, 确认运行后电机是否转起来, 排除堵转情况 6. 检查编码器接线是否正常, 是否出现了脱落虚断等情况
		12	ABZ中AB相断线	
		13	ABZ中Z相断线	
		14	ABZ中AZ相断线	
		15	ABZ中BZ相断线	
		16	ABZ全部断线	
		16	通讯编码器断线	

序号	故障名称	子码	子码含义	解决对策
15	矢量失速报警	1	速度在外力作用下被反向, 超过设定时间 (B06.59)	1. 重新设置参数, 参数辨识后运行 2. 重新设置编码器相关参数
		2	反馈速度与设定速度偏差 (B06.61) 过大, 超过设定时间 (B06.60)	3. 确认负载特性, 调整B08组参数; 根据负载情况考虑是否需要更换大功率电机 4. 正确设置检测参数
16	FPGA读写错误	1	FPGA数据读写错误	更换PM
17	驱动电源故障	1	驱动电源故障	更换PM
		3	对地短路检测时驱动电源故障	
18	一级电源故障	1	24V一级电源电压偏低	更换PM
19	CM与PM通信异常	1	CM无应答	1. 确保CM与PM可靠连接 2. 更换CM 3. 更换PM
		2	CM无应答	
		3	CM无应答	
		4	CM无应答	
20	PM-EEPROM故障	1	写参数个数超限	若重新上电仍报故障, 联系厂家更换PM
		2	读参数个数超限	
		3	单次读超时	
		4	单次写超时	
		5	读地址越界	
		6	写地址越界	
21	PM机型设置错误	1	机型设置小于最小值	1. 正确设置机型 2. 更换PM
		3	机型设置大于最大值	
22	逐波限流故障	1	U相逐波限流故障	1. 增长加速时间 2. 重新设置参数, 参数辨识后运行 3. 若不再报过流, 则继
		2	V相逐波限流故障	

序号	故障名称	子码	子码含义	解决对策
22	逐波限流故障	3	W相逐波限流故障	续检查电机原因；若继续报过流，则排查驱动器硬件 4. 若对地电阻为零或很小，请联系电机厂家检查电机问题；线间电阻主要测量三相阻值是否接近
		16	异常故障	5. 若存在电机线缆破损或短接情况，需分开短接线缆，并保证可靠绝缘 6. 更换PM
23	整流桥过热	1	整流桥温度超过90°（仅18.5Kw及以上机型检测）	1. 清除异物，关闭风扇调速功能(B06.48=0)，风扇仍然不转，联系厂家更换风扇 2. 更改正确的机型值 3. 清理风道 4. 可适当降低驱动器载波频率，打开配电柜门散热，增大配电柜进出风口风量 5. 更换PM
24	STO故障	1	ST01端子为低电平	1. 使开关不触发ST0功能 2. 确保接线可靠或更换接线端子
		2	ST02端子为低电平	3. 更换24V开关电源 4. 单独使用一个开关电源，避免因与其他设备共用同一个电源导致的干扰
		3	ST01端子和ST02端子均为低电平	5. 联系售后或厂家寻求技术支持
				1. 安装合适的制动电阻 2. 清除异物，关闭风扇调速功能(B06.48=0)，

序号	故障名称	子码	子码含义	解决对策
25	制动管过热	1	制动管温度超过85℃（仅45Kw及以上机型检测）	风扇仍然不转，联系厂家更换风扇 3. 更改正确的机型值 4. 清理风道 5. 可适当降低驱动器载波频率，打开配电柜门散热，增大配电柜进出风口风量 6. 更换PM
26	伺服初始位置错误	1	UVW编码器初始位置检测错误	1. 确认编码器参数设置正确，线缆连接正确 2. 规范走线，使用带屏蔽层的线缆，编码器屏蔽层接地；重新连接或更换编码器线缆 3. 改为VF模式，故障复位后，写入电机ID做零点校正。 4. 辨识零点，保证伺服零点位置正确；按照正确电机相序接线；设置适合的参数避免伺服运行时振动过大
		2	绝对值编码器通讯异常	
		3	绝对值编码器初始位置未校正	
		4	绝对值编码器初始位置检测超时	
		5	绝对值编码器零点矫正数据读写出错	
		6	绝对值编码器初始位置矫正失败	
		8	电机动力线相序错误引起的零点位置辨识错误	
		9	电机飞车故障	
		10	电机堵转引起的零点位置辨识错误	
33	驱动器预过载(警告)	1	驱动器过载前警告	处理方法参考5驱动器过载故障

序号	故障名称	子码	子码含义	解决对策
34	马达过载(警告)	1	马达过载前警告	处理方法参考6马达过载故障
35	通信异常	1	通过博能上位机控制驱动器运行时CM模块与上位机通信中断	1. 检查RS485转USB线缆/USB线缆是否断开或者损坏 2. 换根RS485转USB线缆/USB线缆重新连接看是否能够通讯上 3. 若更换RS485转USB线缆/USB线缆仍然通讯不上则联系售后或厂家寻求技术支持
		2	OP键盘获取本地控制权后CM模块与OP键盘通信中断	1. 检查CM模块与OP键盘是否松动，重新拔插后是否能够通讯上 2. 若是采用延长线连接的OP键盘，检查延长线是否松动或损坏 3. 更换OP键盘或者CM模块看是否能够通讯上，若更换后能够正常通讯则说明其中一个损坏，则联系售后或厂家寻求技术支持
		3	Modbus控制时在功能码C02.04设置的时间内没有进行交互	1. 检查Modbus线缆是否断开或者损坏 2. 检查相应PLC等控制器程序是否正确，交互间隔是否在功能码C02.04设置的时间内 3. 联系售后或厂家寻求技术支持
		5	Canopen通信断线	1. 检查主站是否关闭 检查通信线缆是否断开或损坏，接头是否松动。

序号	故障名称	子码	子码含义	解决对策
35	通信异常	5	Canopen通信断线	3. 检查通信线缆与强电之间走线距离，需要间隔50cm左右走线，驱动器设备需要正常接地 4. 检查通信线缆线长是否超过波特率支持最大长度，可降低波特率尝试，并检查通信线缆阻值是否为60Ω，终端电阻是否正常连接 5. 联系售后或厂家寻求技术支持
		6	DriveLink通讯故障	1. 接收数据超时，检查C08.31接收数据超时设置时间是否合理。(C08.31=0为关闭该故障) 2. 节点设置冲突，检测各个驱动器的功能码C08.03 DriveLink节点地址，避免出现相同地址。
		7	PROFINET通信断线	1. 检查是否由于之前PLC断电导致 2. 检查网线是否断开或损坏，网线接头是否松动，推荐使用标准PROFINET网线，带屏蔽层，并保证驱动器正常接地，电机动力线屏蔽层连接驱动器 3. 检查PLC支持最大PROFINET从站数量，根据从站数量调整合适的通信周期

序号	故障名称	子码	子码含义	解决对策
		7	PROFINET 通信断线	4. 在使用IRT模式的情况下，需确保IRT设备优先连接PLC，RT设备连接至IRT设备后端，并使用支持IRT模式的交换机 5. 联系售后或厂家寻求技术支持
		10	EtherCAT 通讯异常	连上PLC后查看C06.06查看提示信息，根据提示信息联系售后或厂家。
36	参数设置错误	8	EC通讯，回原模式对象字典0x6098设置了驱动器不支持的回原模式	1. 检测是否配置的启动参数是不支持的回原模式 2. 检查PLC回原配置界面配置了驱动器不支持的回原模式
37	马达速度超限	1	马达实际运行速度超过马达最大速度且大于B06.28设置的超限阈值且保持B06.29设定时间。(B06.28是基于D00.06马达最大转速的百分比)	1. 检查B06.28/B06.29参数是否设置过于小，导致检测过于灵敏 检查是否有外部设备带着马达旋转 3. 功能码D组电机参数是否设置正确。 4. 联系售后或厂家寻求技术支持
38	马达速度偏差大	1	马达实际运行速度与设定值相差范围超过B06.30设置值且保持B06.31设定时间	1. 检查B06.30/B06.31参数是否设置过于小，导致检测过于灵敏 2. 检查是否有外部设备带着马达旋转，或马达所带负载过重。 3. 检查抱闸是否正常且及时打开。 4. 联系售后或厂家寻求技术支持

序号	故障名称	子码	子码含义	解决对策
39	重新上电	1	1. 设备允许最大时间到 2. 修改了需要重新上电的功能码	1. 对驱动器控制部分和驱动部分断电，等待驱动器的指示灯或数码管全部熄灭后再上电。 2. 联系售后或厂家寻求技术支持。
		2	PN通讯相关参数更改	1. 重新上电
40	PID反馈丢失	1	PID反馈数据丢失	1. 检查PID反馈输入信号 2. 联系售后或厂家寻求技术支持
41	外部故障	1	外部故障有输入信号	1. 检查外部输入信号
		2	外部故障有输入信号	1. 检查外部输入信号
42	外部警告(警告)	1	外部警告有输入信号	1. 检查外部输入信号
		2	外部警告有输入信号	1. 检查外部输入信号
43	预驱动失败	1	运行命令产生时没有检测到母线电压	1. 检查外部电压供电是否正常 2. 联系售后或厂家寻求技术支持
44	控制板异常	1	ARM芯片类型识别错误	1. 重新上电看是否正常 2. 需使用x.11(A02.00)及其以上版本程序 3. 联系售后或厂家寻求技术支持
		2	ARM芯片主频配置失败	1. 重新上电看是否正常 2. 联系售后或厂家寻求技术支持
		3	控制板中IO板异常	1. IO板与控制板不匹配，更换IO板。 2. IO板与控制板连接异常，检查连接状态。

序号	故障名称	子码	子码含义	解决对策
45	抱闸控制异常	1	F04.00选择2:有抱闸带反馈信息,在打开抱闸完成,经过F04.01抱闸打开反馈检测时间后,F04.10抱闸打开反馈信号为低电平	1. 若没有接抱闸反馈电路则F04.00选择抱闸不带反馈信息。 2. 接了抱闸反馈电路则检查电路是否接错,抱闸是否正常。 3. 抱闸机械动作时间或者抱闸反馈检测时间设置过短,小于实际时间。 4. 联系售后或厂家寻求技术支持
		2	F04.00选择了有抱闸带反馈信息,在关闭抱闸完成,经过F04.02抱闸闭合反馈检测时间后,F04.10抱闸打开反馈信号为高电平	1. 若没有接抱闸反馈电路则F04.00选择抱闸不带反馈信息 2. 接了抱闸反馈电路则检查电路是否接错,抱闸是否正常 3. 抱闸机械动作时间或者抱闸反馈检测时间设置过短,小于实际时间。 4. 联系售后或厂家寻求技术支持
46	控制板电压异常	1	PM的24V供电电源电压过高	1. 测量PM的24V供电电压是否超过30V 2. 联系售后或厂家寻求技术支持
		2	CM板子上的外部24V电源供电电压过高	1. 检测外部供电电压是否超过30V 2. 联系售后或厂家寻求技术支持
		3	PM或者外部24V电源供电电压过低	1. 检测PM的24V或者外部24V电源电压是否低于17V 2. 联系售后或厂家寻求技术支持

序号	故障名称	子码	子码含义	解决对策
46	控制板电压异常	4	3.3V电压过高	1. 联系售后或厂家寻求技术支持
		5	3.3V电压过低	1. 联系售后或厂家寻求技术支持
		6	抱闸继电器短路,通过的电流大于F04.15设置值	1. 检测抱闸继电器电路
47	马达温度异常	1	1. 马达温度高于B06.40马达温度过温保护值。 2. 未接马达温度传感器	1. 检查马达温度是否正常 2. 检查B06.40设置的马达温度过温保护值是否合理 3. 检查热敏电阻是否正常 4. 联系售后或厂家寻求技术支持
		2	1. 马达温度传感器短接 2. 马达当前温度低于-40℃	1. 检查温度传感器接线是否正常 2. 更换电机或更换温度传感器
48	马达温度警告(警告)	1	马达温度大于B06.41设置的马达温度过温警告值	1. 检查马达温度是否正常 2. 检查B06.41设置的马达温度过温警告值是否合理 3. 检查热敏电阻是否正常
49	AI断线故障	1	当AI0类型选择4~20ma时电流小于A07.20设置值且保持A07.22断线检测延时时间	1. 检查AI0电路是否正确 2. 检查是否有外部电流输入 3. 检查A07.20设置值是否正确 4. 联系售后或厂家寻求技术支持
		2	当AI1类型选择4~20ma时电	1. 检查AI1电路是否正确 2. 检查是否有外部电流

序号	故障名称	子码	子码含义	解决对策
			流小于A07. 21 设置值且保持 A07. 23断线检测 延时时间	输入 3. 检查A07. 21设置值是否 正确 4. 联系售后或厂家寻求 技术支持
50	电容侧 风扇故障 (警告)	1	电容侧风扇故障	1. 检测电容侧风扇是否 正常运行 2. 联系售后或厂家寻求 技术支持
51	ROM故障 (CM- EEPROM 故障)	1	上电自检 EEPROM中所存 参数值不在设定 范围内	1. 若在升级完首次上电 后报出, 可执行全部 参数复位后, 重新上 电。 2. 联系售后或厂家寻求 技术支持
		2	ARM与EEPROM 交互超时	1. 联系售后或厂家寻求 技术支持
		3	升级后,EEPROM 写入默认值, 回读校验出现 错误。(错误 个数大于5)	1. 可重新上电, 若还故 障, 则是EEPROM元件 存在问题 2. 联系售后或厂家寻求 技术支持
		4	写EEPROM次数 超过1000	1. 恢复故障即可
		5	字库版本不正 确	1. 烧录正确的字库
52	位置 偏差过大	1	马达目标位置 和实际位置偏 差超过位置偏 差过大阈值 G03. 03。	1. 确认运行时电机抱闸 是否已经打开 2. 检查速度限制值和转 矩限制值设置是否过 小 3. 减小目标速度、增大 加减速时间 4. 检查马达所带负载是 否过大 5. 进行电机参数辨识, 获取更准确的电机参

序号	故障名称	子码	子码含义	解决对策
				数(博能伺服马达无需 辨识) 6. 调整控制环路刚性和 设置准确的惯量比; 7. 联系售后或厂家, 寻 求技术支持
53	全闭 环位置偏 差过大	1	马达编码器与 负载编码器的 偏差超过 G05. 08全闭环 位置过大阈值 (负载编码器 单位)	1. 检查负载段编码器是 否正常工作且安装牢 固 2. 检查G05组的齿轮比和 外部编码器方向是否 正确 3. 负载是否过重, 可调 整刚性和设置准确的 惯量比。 4. 联系售后或厂家寻求 技术支持
54	到达正 向极限 位置 (警告)	1	正向限位开关 被触发	1. 检查是否到达正向限 位, 若到达限位可反 向运行, 限位不触发 后, 警告自动复位。 2. 检查正向限位接线 3. 联系售后或厂家寻求 技术支持
55	到达负 向极限 位置 (警告)	1	负向限位开关 被触发	1. 检查是否到达负向限 位, 若到达限位可反 向运行, 限位不触发 后, 警告自动复位。 2. 检查负向限位接线 3. 联系售后或厂家寻求 技术支持
56	定位 中使能丢 失	1	马达执行位置 指令时驱动器 使能信号丢失	1. 确保马达执行位置指 令过程中驱动器为使 能状态。 2. 检查使能信号来源是 否可靠 3. 执行故障复位

序号	故障名称	子码	子码含义	解决对策
57	马达编码错误	使用CM55的RJ45接口出现该故障时先检查本项	驱动器的I0板RJ45接口不支持该编码器, 查看P11. 30 I0板识别号的十位上数值	1: RJ45接口支持BISS-C/485编码器。 0: RJ45接口仅支持485编码器。
		1	电机中无电机ID, 编码器线没有连接好。	1. 将功能码A04.16设置为正确的马达编号后, 进行编码器零点校正。 2. 检查编码器接线或更换马达 3. 联系售后或厂家寻求技术支持
		2	马达储存的编号中左数第4、5位错误	1. 检查马达编号与马达功率是否匹配 2. 设置好正确马达编号后, 进行编码器零点校正 3. 联系售后或厂家寻求技术支持
		3	马达储存的编号中第3位错误	1. 检查马达编号与马达机座号是否匹配 2. 设置好正确马达编号后, 进行编码器零点校正 3. 联系售后或厂家寻求技术支持
		4	马达储存的编号中左数第2位错误	1. 检查马达编号与实际的编码类型是否一致 2. 设置好正确马达编号后, 进行编码器零点校正
		5	马达储存的编号中左数第1位错误	1. 检查马达是否带有抱闸, 正确写入电机编号 2. 设置好正确马达编号后, 进行编码器零点校正

序号	故障名称	子码	子码含义	解决对策
58	固定挡块在监视窗口外	1	轴位置脱离监控窗口	1. 确定转矩限幅是否符合要求 2. 确定G03. 41监控窗口设定值是否过小 3. 联系售后或厂家, 寻求技术支持。
59	未到达固定停止点(可配置为故障或警告)	1	给定位置已经运行完, 但未找到固定停止点	1. 确定固定停止点在给定位置指令运行范围内。 2. 联系售后或厂家, 寻求技术支持。
60	原点回归错误	1	寻找原点时间超出G00. 49限定查找原点的时间	1. 检查原点开关是否可以正常触发 2. 确定回原速度可以在限定时间内触发原点 3. 检查限定查找原点时间G00.49设置值是否合理 4. 联系售后或厂家寻求技术支持
61	绝对值编码器异常	1	马达编码器信号异常	1. 检查编码器或编码器线是否受到外接干扰 2. 检查编码器线是否连接异常
		2	马达编码器编码器反馈速度值超过D02. 25设置的阈值且连续次数超过D02.26设置值。	1. 检查编码器或编码器线是否受到外接干扰。 2. D02. 25阈值是否设置过小。
		3	开启全闭环后外部编码器编码器反馈速度值超过D02. 25设置的阈值且连续次数超过D02. 26设置值	1. 检查编码器或编码器线是否受到外接干扰。 2. D02.25阈值是否设置过小。

序号	故障名称	子码	子码含义	解决对策
63	编码器电池电压低(警告)	1	编码器电池电压低于报警阈值(3.2V)	1. 检查电池盒电池接线可靠 2. 确保电池盒中电池电压有效 3. 更换电池 4. 联系售后或厂家寻求技术支持
64	编码器电池失效	1	编码器电池电压低于故障阈值(3.0V)	1. 检查电池接线或更换电池 2. 将D02.21置1执行编码器故障复位，重新上电，原点会丢失。如需原点，需要重新回原。 3. 联系售后或厂家寻求技术支持
65	编码器多圈数据错误	1	编码器多圈数据溢出	1. 手动将多圈计数值清零(D02.21置1)，重新上电,原点会丢失。如需原点,需要重新回原。 2. 联系售后或厂家寻求技术支持
		2	多圈编码器主电源和备份电源均断电后，驱动器重新上电后报该故障。	1. 执行故障复位操作，复位后多圈值恢复为初始值(0或±1)，重新上电。如需原点，需要重新回原。 2. 联系售后或厂家，寻求技术支持
66	参考点未设置	1	在执行绝对位置指令时未设定原点	1. 进行回原操作，确定原点。 2. 联系售后或厂家寻求技术支持
67	编码器设备错误	1	SSI编码器故障	1. 检查SSI编码器接线 2. 根据编码器文档检查编码器产生故障位原因。

14 其他

说明：产品会不断的改进，参数及内容可能会修改，如有需要请登录博能官网下载最新资料或联系厂家。

附录1 脉冲指令输入实例

例子一：西门子S7-1200控制CM55

(1) 西门子S7-1200与CM55接线

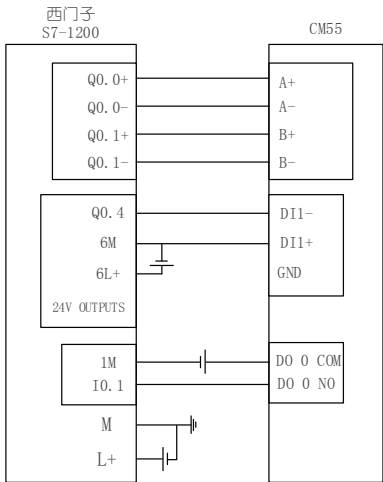


图1 S7-1200与CM55接线图

注：图中A+和A-为脉冲输入端子，B+和B-为脉冲方向输入端子，DI1+和DI1-为伺服使能端子，DO0 COM和DO0 NO为发送驱动器就绪信号端子。

(2) PLC配置

a) 通过添加工艺对象中的轴，配置PLC输出脉冲形态

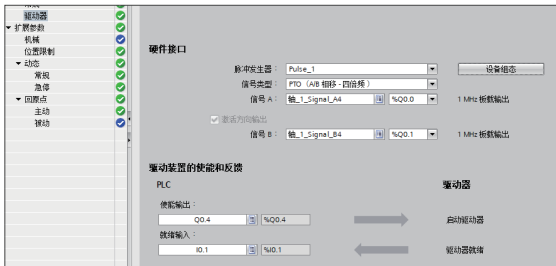


图2 组态轴配置图

Q0.4为PLC发给CM55的启动信号，I0.1为驱动器发给PLC的驱动器就绪信号。

b) 配置电机每圈脉冲数



图3 组态轴配置图

如果CM55上位机功能码 G00.04≠0.
电机每转的脉冲数 = G00.04马达旋转1圈的位置指令数
如果CM55上位机功能码 G00.04=0.

电机每圈的脉冲数 = $\frac{\text{编码器分辨率}}{\text{G00.06 电子齿轮比 1 (分子)}} \times \text{G00.08 电子齿轮比 1 (分母)}$

c) 使用MC_Power功能块实现对CM55驱动器的使能。

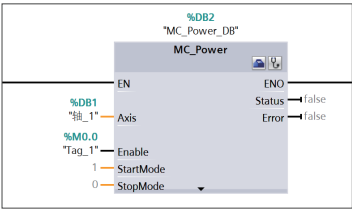


图4 PLC功能块配置

d) 使用MC_MoveRelative功能块，实现PLC对CM55发送脉冲。

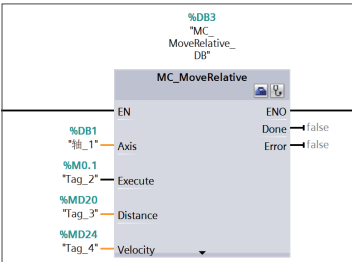


图5 PLC功能块配置

表1 脉冲指令功能配置表

功能码	功能码名称	功能码设定值
B00. 00	启停控制命令来源	端子控制模块
B01. 00	端子控制命令1/2	端子控制命令1
B01. 01	端子控制命令1方式	IN1启动
B01. 03	端子控制命令1输入 IN1	DI1
G00. 00	位置指令来源	脉冲指令
G00. 04	马达旋转1圈的位置指令数	500
G00. 16	指令脉冲形态	A相+B相，4倍频
G00. 22	马达旋转方向选择	以CCW方向为正转方向

附录2 总线控制使用说明

profinet通讯与ethercat通讯的相关资料和说明
详见https://www.boneng.com/product_AX.htm

附录3 功能码列表

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A:系统状态与外设					
A00组:状态监视					
A00. 00	当前状态机	S0:未初始化 S1:初始化 S2:上电检测 S3:故障 S4:开机封锁 S5:开机准备 S6:预驱动 S7:运行准备 S8:去磁等待 S9:运行前检测 S10:预励磁 S11:速度搜索 S12:运行 S13:OFF1停机 S14:OFF3停机 S15:启动直流制动 S16:自检准备 S17:自检 S18:辨识准备 S19:辨识 S20:恢复出厂值 S21:参数下载 S22:点动运行 S23:点动停机 S24:运行允许停机 S25:停机直流制动 S26:停机直流制动等待 S27:故障停机 S28:马达参数计算 S29:速度转矩控制切换 S30:退热等待	0	0x2000	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A00.01	目标频率	-327.68~327.67	0.00	0x2001	Hz
A00.02	给定频率	-327.68~327.67	0.00	0x2002	Hz
A00.03	马达频率	-327.68~327.67	0.00	0x2003	Hz
A00.04	目标速度	-32768~32767	0	0x2004	rpm
A00.05	给定速度	-32768~32767	0	0x2005	rpm
A00.06	马达转速	-32768~32767	0	0x2006	rpm
A00.07	输出电压	0~380.0	0	0x2007	V
A00.08	输出电流	0.00~655.35	0.00	0x2008	A
A00.09	输出功率	-327.68~327.67	0.00	0x2009	kW
A00.10	转矩模式 给定转矩	-300.0~300.0	0.0	0x200a	%
A00.11	输出转矩	-300.0~300.0	0.0	0x200b	%
A00.14	直流母线 电压	0.0~1000.0	0.0	0x200e	V
A00.15	散热器温 度	-40~150	0	0x200f	℃
A00.16	DI状态	0x00~0xFFFF	0x00	0x2010	-
A00.17	DO状态	0x00~0xFFFF	0x00	0x2011	-
A00.18	整流桥温 度	0~120	0	0x2012	℃
A00.19	同步频率	-327.68~327.67	0.00	0x2013	Hz
A00.20	编码器频 率	-327.68~327.67	0.00	0x2014	Hz
A00.21	当前位置 反馈值(指令单位)	-32768~32767	0	0x2015	p
A00.22	制动管温度	-32768~32767	0	0x2016	℃
A00.25	自定义显 示1	0:0 其它:模拟量互 联参数	0	0x2019	-
A00.26	自定义显 示2	-32768~32767	0	0x201a	-
A00.27	自定义显 示3	0~65535	0	0x201b	-
A00.28	自定义显 示4	-32768~32767	0	0x201c	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A00.41	开机显示 选择1	0:当前状态机 1:目标频率 2:给定频率 3:马达频率 4:目标速度	1	0x2029	-
A00.42	开机显示 选择2	5:给定速度 6:马达转速 7:输出电压 8:输出电流 9:输出功率	3	0x202a	-
A00.43	开机显示 选择3	10:给定转矩 11:输出转矩 12:系统预约 13:系统预约 14:直流母线电 压	8	0x202b	-
A00.44	开机显示 选择4	15:散热器温度 16:DI状态 17:DO状态 18:整流桥温度	11	0x202c	-
A00.45	开机显示 选择5	19:同步频率 20:编码器频率 21:预留 22:预留 23:预留 24:预留	14	0x202d	-
A00.46	开机显示 选择6	25:用户自定义1 26:用户自定义2 27:用户自定义3 28:用户自定义4	9	0x202e	-
A00.50	用户自定 义1数据 来源	0:0 其它:模拟量互 联参数	0	0x2032	-
A00.51	用户自定 义2数据 来源		0	0x2033	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A00. 52	用户自定义3数据来源	0:0 其它:模拟量互 联参数	0	0x2034	-
A00. 53	用户自定义4数据来源		0	0x2035	-
A01组:预留					
A01. 00	当前故障 码1	0:无故障 1:过流 2:直流过压 3:直流欠压 4:速度搜索失败 5:驱动器过载 6:马达过载 7:输入缺相 8:输出缺相 9:驱动器过温 10:PWM发波异常 11:电流零漂错误 12:对地短路故障 13:马达调谐故障 14:编码器异常 15:矢量失速报警 16:FPGA读写错误 17:驱动电源故障 18:一级电源故障 19:CM与PM通信异常 20:PM-EEPROM故障 21:PM机型设置 错误 22:逐波限流故障 23:整流桥过热 24:STO故障 25:制动管过热 26:伺服初始位 置错误	0	0x2100	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A01. 00	当前故障 码1	27:PM故障27 28:PM故障28 29:PM故障29 30:PM故障30 31:PM故障31 32:PM故障32 33:驱动器预过 载 34:马达预过载 35:通信异常 36:参数设置异 常 37:马达速度超 限 38:预约 39:重新上电 40:PID反馈丢失 41:外部故障 42:外部警告 43:预驱动失败 44:控制板异常 45:抱闸控制异 常 46:控制板电压 异常 47:马达温度异 常 48:马达温度警 告 49:AI断线故障 50:电容侧风扇 故障 51:CM-EEPROM故 障 52:位置偏差过 大	0	0x2100	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A01.00	当前故障码1	53:全闭环位置偏差过大	0	0x2100	-
		54:到达正向极限位置			
		55:到达负向极限位置			
		56:定位中使能丢失			
		57:马达编码错误			
		58:固定挡块在监视窗口外			
		59:未到达固定停止点			
		60:原点回归错误			
		61:绝对值编码器异常			
		62:制动电阻过热			
		63:编码器电池电压低			
		64:编码器电池失效			
		65:编码器多圈数据溢出			
		66:参考点未设置			
		67:编码器设备错误			
A01.01	当前故障码1子码	0~65535	0	0x2101	-
A01.02	当前故障码2	0~67对应故障码编号	0	0x2102	-
A01.03	当前故障码2子码	0~65535	0	0x2103	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A01.04	当前故障码3	0~67对应故障码编号	0	0x2104	-
A01.05	当前故障码3子码	0~65535	0	0x2105	-
A01.06	当前故障码4	0~67对应故障码编号	0	0x2106	-
A01.07	当前故障码4子码	0~65535	0	0x2107	-
A01.08	当前故障码5	0~67对应故障码编号	0	0x2108	-
A01.09	当前故障码5子码	0~65535	0	0x2109	-
A01.10	当前故障码6	0~67对应故障码编号	0	0x210a	-
A01.11	当前故障码6子码	0~65535	0	0x210b	-
A01.12	当前警告码1	0:无警告 1:过流 2:直流过压 3:直流欠压 4:速度搜索失败 5:驱动器过载 6:马达过载 7:输入缺相 8:输出缺相 9:驱动器过温 10:PWM发波异常 11:电流零漂错误 12:对地短路故障 13:马达调谐故障 14:编码器异常 15:矢量失速报警 16:FPGA读写错误 17:驱动电源故障 18:一级电源故障 19:CM与PM通信异常	0	0x210c	-

功能码	名称	设定范围	出厂 值	通信 地址	单位 (5bit)
A01. 12	当前警告 码1	20:PM-EEPROM故障	0	0x210c	—
		21:PM机型设置错误			
		22:逐波限流故障			
		23:整流桥过热			
		24:ST0故障			
		25:制动管过热			
		26:伺服初始位置错误			
		27:PM故障27			
		28:PM故障28			
		29:PM故障29			
		30:PM故障30			
		31:PM故障31			
		32:PM故障32			
		33:驱动器预过载			
		34:马达预过载			
		35:通信异常			
		36:参数设置异常			
		37:马达速度超限			
		38:预约			
		39:重新上电			
		40:PID反馈丢失			
		41:外部故障			
		42:外部警告			
		43:预驱动失败			
		44:控制板异常			
		45:抱闸控制异常			
		46:控制板电压异常			
		47:马达温度异常			
		48:马达温度警告			
		49:AI断线故障			
		50:电容侧风扇故障			
		51:CM-EEPROM故障			

功能码	名称	设定范围	出厂 值	通信 地址	单位 (5bit)
A01. 12	当前警告 码1	52:位置偏差过大	0	0x210c	—
		53:全闭环位置偏差过大			
		54:到达正向极限位置			
		55:到达负向极限位置			
		56:定位中使能丢失			
		57:马达编码错误			
		58:固定挡块在监视窗口外			
		59:未到达固定停止点			
		60:原点回归错误			
		61:绝对值编码器异常			
		62:制动电阻过热			
		63:编码器电池电压低			
		64:编码器电池失效			
		65:编码器多圈数据溢出			
		66:参考点未设置			
		67:编码器设备错误			
A01. 13	当前警告 码1子码	0~65535	0	0x210d	—
A01. 14	当前警告 码2	0~67对应警告码 编号	0	0x210e	—
A01. 15	当前警告 码2子码	0~65535	0	0x210f	—
A01. 16	当前警告 码3	0~67对应警告码 编号	0	0x2110	—
A01. 17	当前警告 码3子码	0~65535	0	0x2111	—

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
A01. 18	当前警告码4	0~67对应警告码编号	0	0x2112	-
A01. 19	当前警告码4子码	0~65535	0	0x2113	-
A01. 20	当前警告码5	0~67对应警告码编号	0	0x2114	-
A01. 21	当前警告码5子码	0~65535	0	0x2115	-
A01. 22	当前警告码6	0~67对应警告码编号	0	0x2116	-
A01. 23	当前警告码6子码	0~65535	0	0x2117	-
A02组:驱动器信息					
A02. 00	CM-ARM软件版本号	0. 00~655. 35	0. 00	0x2200	-
A02. 01	CM-FPGA版本号	0. 00~655. 35	0. 00	0x2201	-
A02. 02	PM-DSP软件版本号	0. 00~655. 35	0. 00	0x2202	-
A02. 03	PM-FPGA版本号	0. 00~655. 35	0. 00	0x2203	-
A02. 04	PM功率单元额定功率	0. 00~655. 35	0. 00	0x2204	kW
A02. 06	PM功率单元额定电流	0. 00~655. 35	0. 00	0x2206	A
A02. 07	功能码版本号	0. 00~655. 35	0. 00	0x2207	-
A02. 08	CM版本发布时间	0x00~0xFFFF	0x00	0x2208	-
A02. 09	速度环版本号	0. 00~655. 35	0. 00	0x2209	-
A03组:驱动器配置与保护					
A03. 08	载波频率设定	0:1KHz 1:2KHz 2:4KHz 3:6KHz 4:8KHz	2	0x2308	-

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
A03. 09	负载模式选择	0:轻载 1:重载	0	0x2309	-
A03. 13	DPWM切换频率	1. 00Hz~60. 00Hz	8.00	0x230d	Hz
A03. 16	死区补偿使能	0:禁止 1:死区补偿方法1 2:死区补偿方法2	0	0x2310	-
A03. 17	逐波限流使能	0:禁止 1:使能	1	0x2311	-
A03. 19	输入缺相检测	0:禁止 1:允许	0	0x2313	-
A03. 20	制动电阻动作点	60. 0%~100. 0%	700.0	0x2314	V
A03. 21	软件欠压点	85. 0%~150. 0%	100	0x2315	%
A03. 28	STO安全功能使能	0:禁止 1:使能	0	0x231c	-
A04组:系统应用与环境设定					
A04. 00	参数复位模式	0:无效 1:机型参数, 马达参数, 故障记录不复位 2:马达参数, 故障记录不复位 3:全部参数复位 4:清除故障记录	0	0x2400	-
A04. 01	参数复位	0:取消 1:确认	0	0x2401	-
A04. 02	参数访问级别	0:普通参数 1:扩展参数 2:专家参数 3:厂家参数	0	0x2402	-
A04. 03	厂家密码	0~65535	0	0x2403	-
A04. 05	马达选择来源0	0:0 1:1 2:DI0 3:DI1	0	0x2405	-

功能码	名称	设定范围	出厂 值	通信 地址	单位 (5bit)
		4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留			
A04. 06	马达选择 来源1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联 参数	0	0x2406	—
A04. 10	键盘控制 权禁止	0:禁止 1:允许	0	0x240a	—
A04. 11	用户密码	0~65535	0	0x240b	—
A04. 14	驱动器驱 动模式选 择		1	0x240e	—
A04. 16	设置伺服 电机编号	0~29199	0	0x2410	—
A04. 17	伺服电机 编号显示	0~65535	0	0x2411	—
A04. 30	程序执行 时间复位	0:无效 1:有效	0	0x241e	—
A04. 31	驱动器系 统复位功能	0:关闭 1:开启	0	0x241f	—
A04. 32	驱动器系 统复位执行	0:取消 1:确认	0	0x2420	—

功能码	名称	设定范围	出厂 值	通信 地址	单位 (5bit)
A05组:数字量输入					
A05. 00	DI物理状态 值	0x00~0xFFFF	0x00	0x2500	—
A05. 02	DI处理后状 态值	0x00~0xFFFF	0x00	0x2502	—
A05. 04	DI强制功能 选择	0x00~0xFFFF	0x00	0x2504	—
A05. 06	DI强制选择 值	0x00~0xFFFF	0x00	0x2506	—
A05. 08	DI0开通延时	0. 0~6553. 5	0. 00	0x2508	s
A05. 09	DI0关断延时	0. 0~6553. 5	0. 00	0x2509	s
A05. 10	DI1开通延时	0. 0~6553. 5	0. 00	0x250a	s
A05. 11	DI1关断延时	0. 0~6553. 5	0. 00	0x250b	s
A05. 12	DI2开通延时	0. 0~6553. 5	0. 00	0x250c	s
A05. 13	DI2关断延时	0. 0~6553. 5	0. 00	0x250d	s
A05. 14	DI3开通延时	0. 0~6553. 5	0. 00	0x250e	s
A05. 15	DI3关断延时	0. 0~6553. 5	0. 00	0x250f	s
A05. 16	DI4开通延时	0. 0~6553. 5	0. 00	0x2510	s
A05. 17	DI4关断延时	0. 0~6553. 5	0. 00	0x2511	s
A05. 18	DI5开通延时	0. 0~6553. 5	0. 00	0x2512	s
A05. 19	DI5关断延时	0. 0~6553. 5	0. 00	0x2513	s
A05. 20	DI6开通延时	0. 0~6553. 5	0. 00	0x2514	s
A05. 21	DI6关断延时	0. 0~6553. 5	0. 00	0x2515	s
A05. 22	DI7开通延时	0. 0~6553. 5	0. 00	0x2516	s
A05. 23	DI7关断延时	0. 0~6553. 5	0. 00	0x2517	s
A05. 24	DI8开通延时	0. 0~6553. 5	0. 00	0x2518	s
A05. 25	DI8关断延时	0. 0~6553. 5	0. 00	0x2519	s
A05. 26	DI9开通延时	0. 0~6553. 5	0. 00	0x251a	s
A05. 27	DI9关断延时	0. 0~6553. 5	0. 00	0x251b	s
A05. 28	DI10开通延 时	0:低电平有效 1:高电平有效 2:上升沿有效	0. 00	0x251c	s
A05. 29	DI10关断延 时	3:下降沿有效 4:上升下降沿 均有效	0. 00	0x251d	s

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
A06组: 数字量输出					
A06. 00	D0信号源状态值	0x00~0xFFFF	0x00	0x2600	—
A06. 01	D0处理后状态值	0x00~0xFFFF	0x00	0x2601	—
A06. 02	D00的输出功能选择	0: 低电平 1: 高电平 2: 运行准备好 3: 运行允许 4: 运行中 5: 比较值到达 6: 速度为负向 7: 零速运行 8: 过速度 9: 警告 10: 故障 其它: 二进制互联参数	4	0x2602	—
A06. 09	D00开通延时	0. 0~6553. 5	0. 00	0x2609	s
A06. 10	D00关断延时	0. 0~6553. 5	0. 00	0x260a	s
A07组: 模拟量输入					
A07. 00	AI输入值(V,mA)	-20.000~20.000	0.000	0x2700	—
A07. 01	AI输入比例	-600.0%~600.0%	0. 0	0x2701	%
A07. 04	AI类型	0: -10~10V 1: 0~10V 2: -20~20mA 3: 0~20mA 4: 4~20mA	0	0x2704	—
A07. 06	AI曲线最小输入值(V, mA)	-20.000~20.000	-10.000	0x2706	—
A07. 07	AI曲线最小输入比例	-600.0%~600.0%	-100.0	0x2707	%
A07. 08	AI曲线最大输入值(V, mA)	-20.000~20.000	10.000	0x2708	—
A07. 09	AI曲线最大输入比例	-600.0%~600.0%	100.0	0x2709	%

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
A07. 14	AI低于最小输入设定时输出选择	0:最小输入比例 1:0. 0%	0	0x270e	—
A07. 15	AI滤波时间	0~10000	10	0x270f	ms
A07. 19	AI过零阈值	0. 0%~1. 0%	0. 5	0x2713	%
A07. 20	AI断线检测阈值	0~4. 000mA	0.000	0x2714	mA
A07. 22	AI断线检测延时	0~1. 00s	0. 00	0x2716	s
A07. 24	AI断线检测使能	0:禁止 1:使能	0	0x2718	—
A08组:预留					
A09组:脉冲输入					
A09. 30	增量编码器计数清零选择	0:禁止 1:使能 其它:二进制互联参数	0	0x291e	—
A10组:双向数字量输入输出					
A10. 00	DI020功能配置	0:数字量输入 1:数字量输出	0	0x2a00	—
A10. 01	DI021功能配置		0	0x2a01	—
A10. 02	DI022功能配置		0	0x2a02	—
A10. 03	DI023功能配置		0	0x2a03	—
A10. 04	DI024功能配置		0	0x2a04	—
A10. 05	DI025功能配置		0	0x2a05	—
A10. 06	DI026功能配置		0	0x2a06	—
A10. 07	DI027功能配置		0	0x2a07	—
A10. 10	DIO作为DI物理状态值	0x00~0xFFFF	0x00	0x2a0a	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A10.11	DIO作为DI处理后状态值	0x00~0xFFFF	0x00	0x2a0b	—
A10.12	DIO作为DI强制功能选择	0x00~0xFFFF	0x00	0x2a0c	—
A10.13	DIO作为DI强制值	0x00~0xFFFF	0x00	0x2a0d	—
A10.14	DI020作为D0信号来源选择	0:低电平 1:高电平 2:运行准备好 3:运行允许 4:运行中 5:比较值到达 6:速度为负向 7:零速运行 8:过速度 9:警告 10:故障 其它:二进制互 联参数	0	0x2a0e	—
A10.15	DI021作为D0信号来源选择		0	0x2a0f	—
A10.16	DI022作为D0信号来源选择		0	0x2a10	—
A10.17	DI023作为D0信号来源选择		0	0x2a11	—
A10.18	DI024作为D0信号来源选择		0	0x2a12	—
A10.19	DI025作为D0信号来源选择		0	0x2a13	—
A10.20	DI026作为D0信号来源选择		0	0x2a14	—
A10.21	DI027作为D0信号来源选择		0	0x2a15	—
A10.24	DIO作为D0信号源状态值	0x00~0xFFFF	0x00	0x2a18	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
A10.25	DIO作为D0处理后状态值	0x00~0xFFFF	0x00	0x2a19	—
A10.26	DI020开通延时时间	0.00~655.35	0.00	0x2a1a	s
A10.27	DI020关断延时时间	0.00~655.35	0.00	0x2a1b	s
A10.28	DI021开通延时时间	0.00~655.35	0.00	0x2a1c	s
A10.29	DI021关断延时时间	0.00~655.35	0.00	0x2a1d	s
A10.30	DI022开通延时时间	0.00~655.35	0.00	0x2a1e	s
A10.31	DI022关断延时时间	0.00~655.35	0.00	0x2a1f	s
A10.32	DI023开通延时时间	0.00~655.35	0.00	0x2a20	s
A10.33	DI023关断延时时间	0.00~655.35	0.00	0x2a21	s
A10.34	DI024开通延时时间	0.00~655.35	0.00	0x2a22	s
A10.35	DI024关断延时时间	0.00~655.35	0.00	0x2a23	s
A10.36	DI025开通延时时间	0.00~655.35	0.00	0x2a24	s
A10.37	DI025关断延时时间	0.00~655.35	0.00	0x2a25	s
A10.38	DI026开通延时时间	0.00~655.35	0.00	0x2a26	s
A10.39	DI026关断延时时间	0.00~655.35	0.00	0x2a27	s
A10.40	DI027开通延时时间	0.00~655.35	0.00	0x2a28	s
A10.41	DI027关断延时时间	0.00~655.35	0.00	0x2a29	s

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B:控制参数组					
B00组:系统控制命令设置					
B00.00	启停控制命令来源	0:端子控制模块 1:自定义控制模块	1	0x3000	—
B00.01	自定义启停命令(OFF1)来源	0:无效 1:保留 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数	0	0x3001	—
B00.02	自定义输出使能(OFF2)来源1	0:有效 1:无效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	1	0x3002	—
B00.03	自定义快速停机(OFF3)来源1	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数	1	0x3003	—
B00.04	自定义运行允许来源	0:运行不允许 1:运行允许 2:DI0 3:DI1 4:DI2	1	0x3004	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数			
B00.05	自定义故障复位来源1	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x3005	—
B00.06	自定义速度命令取反来源	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数	0	0x3006	—
B00.07	自定义JOG1来源	0:无效 1:保留 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x3007	—
B00.08	自定义JOG2来源	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数	0	0x3008	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B00. 09	输出使能 (OFF2) 来源2	0:有效 1:无效 2:DI0	1	0x3009	—
B00. 10	输出使能 (OFF2) 来源3	3:DI1 4:DI2 5:DI3 6:DI4	1	0x300a	—
B00. 11	快速停机 (OFF3) 来源2	7:DI5 8:DI6 9:DI7	1	0x300b	—
B00. 12	快速停机 (OFF3) 来源3	10:预留 其它:二进制互 联参数	1	0x300c	—
B00. 13	故障复位 来源2	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x300d	—
B00. 14	故障复位 来源3	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	0	0x300e	—
B00. 15	斜坡函数 发生器 (RFG) 禁 止来源	0:RFG禁止有效 1:RFG禁止无效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	1	0x300f	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B00. 16	斜坡函数 发生器 (RFG) 暂 停来源	0:RFG暂停有效 1:RFG暂停无效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	1	0x3010	—
B00. 17	斜坡函数 发生器 (RFG) 给 定置0来源	0:RFG给定置0有 效 1:RFG给定置0无 效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	1	0x3011	—
B00. 21	辨识请求	0:无 1:异步机简易静 态辨识 2:异步机静态完 整辨识 3:异步机动态完 整辨识 4:预留	0	0x3015	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B00. 21	辨识请求	5:预留 6:预留 7:预留 8:预留 9:预留 10:预留 11:同步机不带编码器辨识 12:同步机带编码器辨识 13:预留 14:预留 15:预留 16:预留 17:预留 18:预留 19:预留 20:惯量辨识 21:编码器零点校正	0	0x3015	-
B00. 22	JOG方式选择	0:速度点动 1:位置点动	0	0x3016	-
B00. 23	OFF1停机方式	0:自由停机 1:减速停机	1	0x3017	-
B00. 24	OFF3停机时间	0.0s~1000.0s	1.0	0x3018	s
B00. 25	OFF3停机方式	0:减速停机 1:最大能力停机(预留)	0	0x3019	-
B01组:端子控制模块					
B01. 00	端子控制命令1/2选择	0:端子控制命令1 1:端子控制命令2 2:DI0 3:DI1 4:DI2 5:DI3	0	0x3100	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数			
B01. 01	端子控制命令1方式	0:无效 1:IN1启动 2:IN1启动, IN2方向 3:IN1正向启动, IN2反向启动 4:IN1P启动, IN2停止 5:IN1P启动, IN2停止, IN3方向 6:IN1P正向启动, IN2P反向启动, IN3停止	1	0x3101	-
B01. 03	端子控制命令1输入IN1	0:无效 1:保留 2:DI0 3:DI1 4:DI2	0	0x3103	-
B01. 04	端子控制命令1输入IN2	5:DI3 6:DI4 7:DI5 8:DI6	0	0x3104	-
B01. 05	端子控制命令1输入IN3	9:DI7 10:预留 其它:二进制互联参数	0	0x3105	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B01.06	端子控制 命令2方 式		0	0x3106	—
B01.08	端子控制 命令2输 入IN1		0	0x3108	—
B01.09	端子控制 命令2输 入IN2		0	0x3109	—
B01.10	端子控制 命令2输 入IN3		0	0x310a	—
B01.11	端子控制 模块JOG1 来源		0	0x310b	—
B01.12	端子控制 模块JOG2 来源		0	0x310c	—
B02组:速度与转矩给定值设置					
B02.00	速度控制 主速度选 择		1	0x3200	—
B02.01	速度控制 辅速度选 择		0	0x3201	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B02.02	附加速度 给定选择	6:多段值给定 7:电动电位器 8:预留 9:总线适配器 A-PZD2 10:预留 其它:模拟量互 联参数	0	0x3202	—
B02.03	转矩控制 转矩设定 选择	0:0 1:多段设定值2 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位器 8:预留 9:总线适配器 A-PZD3 10:预留 其它:模拟量互 联参数	0	0x3203	—
B02.04	转矩控制 转矩给定 斜坡时间	0~10.00	0.00	0x3204	s
B02.05	转矩控制 转矩给定 滤波时间	0~10.00	0.00	0x3205	s
B02.06	转矩控制 正向速度 限制来源	0:0 1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位器	2101	0x3206	—
B02.07	转矩控制 反向速度 限制来源		2105	0x3207	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		8:预留 9:总线适配器 A-PZD2 10:预留 其它:模拟量互 联参数			
B02.08	转矩控制 速度限制 值斜坡时 间	0~10.00	0.00	0x3208	s
B02.09	附加转矩 给定选择	0:0 1:数字设定 其它:模拟量互 联参数	0	0x3209	-
B02.10	附加转矩 给定数字 设定	-400.0%~400.0%	0.0	0x320a	%
B03组:其他命令源设定方式					
B03.00	JOG1给定 设置	1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计	1	0x3300	-
B03.01	JOG2给定 设置	8:预留 9:总线适配器 A-PZD2 10:预留 其它:模拟量互 联参数	2328	0x3301	-
B03.02	JOG加速 时间	0.0~1000.0	10.0	0x3302	s
B03.03	JOG减速 时间	0.0~1000.0	10.0	0x3303	s
B03.04	电动电位 器计功能	0:禁止 1:掉电清除	1	0x3304	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B03.05	电动电位器 计初始值	-600.0~600.0	0.0	0x3305	%
B03.06	电动电位器 斜坡时间	0.0~1000.0	10.0	0x3306	s
B03.07	电动电位器 计最小值	-600.0~600.0	0.0	0x3307	%
B03.08	电动电位器 计最大值	-600.0~600.0	100.0	0x3308	%
B03.09	电动电位器 计增加来源 选择	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x3309	-
B03.10	电动电位器 计下降来源 选择	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x330a	-
B03.11	多段给定值	-600.0~600.0	0.0	0x330b	%
B03.12	多段给定值 选择1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x330c	-
B03.13	多段给定值 选择2	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x330d	-
B03.14	多段给定值 选择3	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x330e	-
B03.15	多段给定值 选择4	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x330f	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B03. 16	多段设定值1	-600.0~600.0	10.0	0x3310	%
B03. 17	多段设定值2	-600.0~600.0	40.0	0x3311	%
B03. 18	多段设定值3	-600.0~600.0	70.0	0x3312	%
B03. 19	多段设定值4	-600.0~600.0	100.0	0x3313	%
B03. 20	多段设定值5	-600.0~600.0	-10.0	0x3314	%
B03. 21	多段设定值6	-600.0~600.0	-40.0	0x3315	%
B03. 22	多段设定值7	-600.0~600.0	-70.0	0x3316	%
B03. 23	多段设定值8	-600.0~600.0	-100.0	0x3317	%
B03. 24	多段设定值9	-600.0~600.0	0.0	0x3318	%
B03. 25	多段设定值10	-600.0~600.0	0.0	0x3319	%
B03. 26	多段设定值11	-600.0~600.0	0.0	0x331a	%
B03. 27	多段设定值12	-600.0~600.0	0.0	0x331b	%
B03. 28	多段设定值13	-600.0~600.0	0.0	0x331c	%
B03. 29	多段设定值14	-600.0~600.0	0.0	0x331d	%
B03. 30	多段设定值15	-600.0~600.0	0.0	0x331e	%
B03. 31	多段设定值16	-600.0~600.0	0.0	0x331f	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B04组:斜坡函数发生器					
B04. 00	加减速时间选择1	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x3400	-
B04. 01	加减速时间选择2	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x3401	-
B04. 02	加速时间1	0.0~1000.0	5.0	0x3402	s
B04. 03	减速时间1	0.0~1000.0	5.0	0x3403	s
B04. 04	加速时间2	0.0~1000.0	5.0	0x3404	s
B04. 05	减速时间2	0.0~1000.0	5.0	0x3405	s
B04. 06	加速时间3	0.0~1000.0	5.0	0x3406	s
B04. 07	减速时间3	0.0~1000.0	5.0	0x3407	s
B04. 08	加速时间4	0.0~1000.0	5.0	0x3408	s
B04. 09	减速时间4	0.0~1000.0	5.0	0x3409	s
B04. 10	S曲线开始时间1	0.00~20.00	0.00	0x340a	s
B04. 11	S曲线结束时间1	0.00~20.00	0.00	0x340b	s
B04. 12	S曲线开始时间2	0.00~20.00	0.00	0x340c	s
B04. 13	S曲线结束时间2	0.00~20.00	0.00	0x340d	s
B04. 14	S曲线开始时间3	0.00~20.00	0.00	0x340e	s
B04. 15	S曲线结束时间3	0.00~20.00	0.00	0x340f	s
B04. 16	S曲线开始时间4	0.00~20.00	0.00	0x3410	s

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B04. 17	S曲线结束 时间4	0.00~20.00	0.00	0x3411	s
B04. 20	RFG强制输 出使能	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x3414	-
B04. 21	RFG强制设 定值	0:0 其它:模拟量 互联参数	0	0x3415	-
B04. 22	RFG启动延 时时间	0.0~1000.0	0.0	0x3416	s
B04. 23	RFG输出滤 波时间	0.00~10.00	0.00	0x3417	s
B04. 40	加速时间来 源	0:加减速时 间设定值	0	0x3428	-
B04. 41	减速时间来 源	其它:模拟量 互联参数	0	0x3429	-
B05组: 马达控制选择					
B05. 00	马达控制方 式	0:VF 1:SVC 2:FVC	2	0x3500	-
B05. 01	系统控制模 式	0:速度控制 1:转矩控制 2:位置控制 3:预留 4:转矩控制 <->速度控制	0	0x3501	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		5:速度控制 <->位置控制 6:转矩控制 <->位置控制			
B05. 02	正速度允许	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	1	0x3502	-
B05. 03	负速度允许	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	1	0x3503	-
B05. 04	马达启动方 式	0:直接启动 1:预励磁启 动 2:转速追踪 启动 3:直流制动 启动	0	0x3504	-
B05. 06	预励磁时间 设定	0.00s~100.00 s	0.00	0x3506	s
B05. 09	直流制动电 流	0.0%~100.0%(100.0%对应马 达额定电流)	50.0	0x3509	%
B05. 10	启动时直流 制动时间	0.00s~100.00 s	0.00	0x350a	s
B05. 11	停机时直流 制动时间	0.00s~100.00 s	0.00	0x350b	s
B05. 12	停机直流制 动起始速度	0.0~3000.0 rpm	0	0x350c	rpm

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B05.13	转速追踪模式	0:从停机频率搜索 1:从额定频率搜索 2:从最大频率开始搜索	0	0x350d	-
B05.14	转速追踪速度搜索时间	0.0~120.0s	25.0	0x350e	s
B05.15	转速追踪电流百分比	0~100%	50	0x350f	%
B05.16	转速追踪最小频率限制	0.00%~50.00%	2.00	0x3510	Hz
B05.17	转速追踪切换等待时间	0~6000	250	0x3511	ms
B05.18	系统控制模式切换指令来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互联参数	0	0x3512	-
B05.28	零速判断值	0~300	2	0x351c	rpm
B05.29	停机频率设定	0.0~3000.0rpm	0.01	0x351d	Hz
B05.30	停机延时时间	0.00s~100.00s	0.00	0x351e	s
B05.32	OFF1停机方式	0:自由停机 1:减速停机	1	0x3520	-
B05.33	OFF3停机时间	0.0s~1000.0s	1.0	0x3521	s
B05.34	OFF3停机方式	0:减速停机 1:最大能力停机(预留)	0	0x3522	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B06组:马达控制限制及保护					
B06.04	正向极限速度数字设定	0.0%~600.0%	600.0	0x3604	%
B06.05	反向极限速度数字设定	-600.0%~0.0%	-600.0	0x3605	%
B06.06	正向转速限幅选择	0:数字设定值(B06.04) 1:600.0% 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A-PZD2 10:预留	0	0x3606	-
B06.07	反向转速限幅选择	其它:模拟量互联参数 0:数字设定值(B06.05) 1:-600.0% 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A-PZD2 10:预留 其它:模拟量互联参数	0	0x3607	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B06.08	转矩上极限 给定数字设定	0.0%~400.0%	300.0	0x3608	%
B06.09	转矩下极限 给定数字设定	-400.0%~0.0%	-300.0	0x3609	%
B06.10	转矩上极限 给定选择	0:数字设定值 (B06.08) 1:600.0% 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器 A-PZD2 10:预留 其它:模拟量 互联参数	0	0x360a	-
B06.11	转矩下极限 给定选择	0:数字设定值 (B06.09) 1:-600.0% 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器 A-PZD2 10:预留 其它:模拟量 互联参数	0	0x360b	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B06.12	矢量控制转 矩限幅设定 值	0.0%~200.0%	300.0	0x360c	%
B06.13	抱闸打开前 转矩限幅	0.0%~200.0%	180.0	0x360d	%
B06.14	矢量控制转 矩限幅来源	0:矢量控制转 矩限幅设定值 (B06.12) 其它:模拟量 互联参数	0	0x360e	-
B06.15	转矩限制到 达阈值范围	0.0~100.0	5.0	0x360f	%
B06.25	马达过载软 件保护选择	0:禁止 1:允许	1	0x3619	-
B06.26	马达过载软 件保护增益	20%~1000%	100	0x361a	%
B06.27	马达过载预 警系数	50%~100%	80	0x361b	%
B06.28	速度超限检 测阈值	0.0%~50.0%(100.0%相对马 达额定转速)	20.0	0x361c	%
B06.29	速度超限检 测时间	0.0S:不检测 0.1S~60.0S	0.0	0x361d	s
B06.30	速度到达阈 值	0.0%~100.0%(100.0%相对马 达额定转速)	3.0	0x361e	%
B06.31	速度到达检 测时间	0.0:不检测 0.1s~600.0s	0.00	0x361f	s
B06.32	速度比较值	0.0%~600.0%(100.0%相对马 达额定转速)	100.0	0x3620	%
B06.33	速度比较值 滞环宽度	0.0%~B06.32(100.0%相对马 达额定转速)	3.0	0x3621	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B06.34	速度比较值 检测时间	0.0:不检测 0.1s~600.0s	3.00	0x3622	s
B06.37	输出缺相检测	0:禁止 1:允许	1	0x3625	—
B06.38	马达温度检测方式 (X11)	0:禁止检测 1:KTY84 2:PTC	0	0x3626	—
B06.39	马达温度检测方式 (X5)	0:禁止检测 1:KTY84 2:PTC	0	0x3627	—
B06.40	马达温度过温保护值	-40~250	130	0x3628	℃
B06.41	马达温度过温警告值	-40~250	110	0x3629	℃
B06.48	风扇随温调速功能使能	0:禁止 1:使能	0	0x3630	—
B06.59	矢量失速1 检测时间	0~5000ms	500	0x363b	ms
B06.60	矢量失速2 检测时间	0~5000ms	500	0x363c	ms
B06.61	矢量失速2 检测系数	0~100%	80	0x363d	%
B06.62	异步机SVC 控制模式	0:控制模式1 1:控制模式2	0	0x363e	—
B06.63	同步机SVC 控制模式	0:控制模式1 1:控制模式2	0	0x363f	—
B06.64	矢量控制滑 差补偿系数	50~200	100	0x3640	%
B07组:VF控制					
B07.00	VF模式选择	0:VF曲线 1:VF分离	0	0x3700	—
B07.01	VF曲线选择	0:直线VF 1:多点VF 2:平方V/F 3:1.5次V/F	0	0x3701	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B07.02	多点VF曲线 频率点1	0.0~B07.04	2.00	0x3702	Hz
B07.03	多点VF曲线 电压点1	0.0~B07.04	20	0x3703	V
B07.04	多点VF曲线 频率点2	B07.02~B07.06	20.00	0x3704	Hz
B07.05	多点VF曲线 电压点2	B07.02~B07.06	152	0x3705	V
B07.06	多点VF曲线 频率点3	B07.04~D00.04	40.00	0x3706	Hz
B07.07	多点VF曲线 电压点3	B07.05~380.0	304	0x3707	V
B07.10	过流抑制使 能(I _{max})	0:无效 1:有效	1	0x370a	—
B07.11	过流抑制调 频增益(I _{max})	0~100	30	0x370b	%
B07.12	过流抑制点 (I _{max})	0~200	150	0x370c	%
B07.15	VF手动加速 转矩提升	0%~250%	1.0	0x370f	%
B07.16	VF转矩提升 截止频率	0.00~50.00	50.00	0x3710	Hz
B07.17	VF转差补偿 系数	0.0%~300.0%	0.0	0x3711	%
B07.20	VF振荡抑制 模式	0:无效 1:有效	1	0x3714	—
B07.21	VF振荡抑制 增益	0~100%	10	0x3715	%
B07.28	过压抑制使 能(V _{dc_max})	0:禁止 1:使能	0	0x371c	—
B07.29	过压抑制调压 增益(V _{dc_max})	20.0~300.0V	125	0x371d	%
B07.34	欠压抑制使 能(V _{dc_min})	0:禁止 1:使能	0	0x3722	—
B07.35	欠压抑制调压 增益(V _{dc_min})	1.0~30.0Hz	85	0x3723	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B08组:速度调节器					
B08.02	速度环低速Kp	0.00~20.00	10.0	0x3802	—
B08.03	速度环低速Ti	1~65535ms	1.00	0x3803	s
B08.04	速度环高速Kp	0.00~20.00	10.0	0x3804	—
B08.05	速度环高速Ti	1~65535ms	2.00	0x3805	s
B08.11	速度环切换低频频率	0.0~400.0%	5.00	0x380b	Hz
B08.12	速度环切换高频频率	0.0~400.0%	10.00	0x380c	Hz
B08.25	编码器反馈速度滤波时间	0~1000ms	2	0x3819	ms
B08.26	估计速度环滤波时间	0~1000ms	35	0x381a	ms
B09组:电流调节器					
B09.04	电流环比例系数	1%~1000%	100	0x3904	%
B09.05	电流环积分系数	1%~1000%	100	0x3905	%
B10组:同步机控制参数					
B10.00	同步机磁极位置辨识方法	0:方法0 1:方法1 2:方法2 3:方法3 4:方法4	1	0x3a00	—
B10.01	同步机磁极位置辨识电流	0~200	50	0x3a01	—
B10.02	同步机磁极位置计算方法	0:方法0 1:方法1	0	0x3a02	—
B10.03	强制初始位置检测使能	0:禁止 1:使能1 2:使能2	0	0x3a03	—
B10.04	Z信号矫正使能	0:禁止 1:使能	1	0x3a04	—
B10.05	DQ轴电感辨识方法	0~65535	0	0x3a05	—
B10.06	弱磁系数	0~65535	1200	0x3a06	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B10.07	同步机低速励磁电流	0.0~6553.5	3.0	0x3a07	%
B10.08	同步机IF/VF选择	0~65535	0	0x3a08	—
B10.09	磁链幅值补偿系数	0~65535	100	0x3a09	—
B10.10	弱磁区转矩衰减系数	0.00~50.00	0.20	0x3a0a	Hz
B10.11	同步机解耦系数	0~65535	100	0x3a0b	—
B10.12	SVC截止频率	0~65535	100	0x3a0c	—
B10.13	IF电流幅值	0~65535	60	0x3a0d	—
B10.14	反电势系数	0~65535	30	0x3a0e	—
B10.15	速度系数	0~65535	40	0x3a0f	—
B10.16	滤波系数	0~65535	100	0x3a10	—
B10.17	相位补偿使能	0~65535	1	0x3a11	—
B10.18	SVC速度滤波系数	0~65535	100	0x3a12	—
B11组:马达模型及其它					
B11.12	监控通道1	0.0%~400.0%	207	0x3b0c	—
B11.13	监控通道2	0:传统积分 1:位置式积分	209	0x3b0d	—
B11.14	监控通道3	0:禁止 1:使能	210	0x3b0e	—
B11.15	监控通道4	0.0~100.0%	211	0x3b0f	—
B11.17	重载限速电动机频率上限	0:VM滤波 1:CM1 2:CM2	1200	0x3b11	—
B11.18	重载限速发电频率上限	0:模式0 1:模式1 2:模式2	800	0x3b12	—
B11.36	重载限速使能	0.0%~400.0%	1	0x3b24	—
B11.39	性能调试参数	0~65535	0	0x3b27	—
B11.93	CM与PM交互数据监控选择0	0~511	0	0x3b5d	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
B11. 94	CM与PM交互数据监控选择1	0~511	269	0x3b5e	—
B11. 95	CM与PM交互数据监控选择2	0~511	270	0x3b5f	—
B11. 96	CM与PM交互数据监控选择3	0~511	271	0x3b60	—
C:通信参数组					
C00组:现场总线适配器A					
C00. 00	总线适配器配套总线类型	0:无 1:Modbus (预留) 2:CanOpen (预留) 3:ProfibusDP (预留) 4:PROFINET 5:EtherCAT 6:Ether-Net (预留)	0	0x4000	—
C00. 01	通讯故障后的数据处理方式	0:数据保持 1:数据清零	1	0x4001	—
C00. 02	PZD输出1	0:0 其他:模拟量互联参数	0	0x4002	—
C00. 03	PZD输出2		0	0x4003	—
C00. 04	PZD输出3		0	0x4004	—
C00. 05	PZD输出4		0	0x4005	—
C00. 06	PZD输出5		0	0x4006	—
C00. 07	PZD输出6		0	0x4007	—
C00. 08	PZD输出7		0	0x4008	—
C00. 09	PZD输出8		0	0x4009	—
C00. 10	PZD输出9		0	0x400a	—
C00. 11	PZD输出10		0	0x400b	—
C00. 12	PZD输出11		0	0x400c	—
C00. 13	PZD输出12		0	0x400d	—
C00. 14	PZD输出13		0	0x400e	—
C00. 15	PZD输出14		0	0x400f	—
C00. 16	PZD输出15		0	0x4010	—
C00. 17	PZD输出16		0	0x4011	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C00. 18	PZD输出1通讯基值	0~65535	0	0x4012	—
C00. 19	PZD输出2通讯基值	0~65535	0	0x4013	—
C00. 20	PZD输出3通讯基值	0~65535	0	0x4014	—
C00. 21	PZD输出4通讯基值	0~65535	0	0x4015	—
C00. 22	PZD输出5通讯基值	0~65535	0	0x4016	—
C00. 23	PZD输出6通讯基值	0~65535	0	0x4017	—
C00. 24	PZD输出7通讯基值	0~65535	0	0x4018	—
C00. 25	PZD输出8通讯基值	0~65535	0	0x4019	—
C00. 26	PZD输出9通讯基值	0~65535	0	0x401a	—
C00. 27	PZD输出10通讯基值	0~65535	0	0x401b	—
C00. 28	PZD输出11通讯基值	0~65535	0	0x401c	—
C00. 29	PZD输出12通讯基值	0~65535	0	0x401d	—
C00. 30	PZD输出13通讯基值	0~65535	0	0x401e	—
C00. 31	PZD输出14通讯基值	0~65535	0	0x401f	—
C00. 32	PZD输出15通讯基值	0~65535	0	0x4020	—
C00. 33	PZD输出16通讯基值	0~65535	0	0x4021	—
C00. 34	PZD输入1通讯基值	0~65535	0	0x4022	—
C00. 35	PZD输入2通讯基值	0~65535	0	0x4023	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C00. 36	PZD输入3通讯基值	0~65535	0	0x4024	—
C00. 37	PZD输入4通讯基值	0~65535	0	0x4025	—
C00. 38	PZD输入5通讯基值	0~65535	0	0x4026	—
C00. 39	PZD输入6通讯基值	0~65535	0	0x4027	—
C00. 40	PZD输入7通讯基值	0~65535	0	0x4028	—
C00. 41	PZD输入8通讯基值	0~65535	0	0x4029	—
C00. 42	PZD输入9通讯基值	0~65535	0	0x402a	—
C00. 43	PZD输入10通讯基值	0~65535	0	0x402b	—
C00. 44	PZD输入11通讯基值	0~65535	0	0x402c	—
C00. 45	PZD输入12通讯基值	0~65535	0	0x402d	—
C00. 46	PZD输入13通讯基值	0~65535	0	0x402e	—
C00. 47	PZD输入14通讯基值	0~65535	0	0x402f	—
C00. 48	PZD输入15通讯基值	0~65535	0	0x4030	—
C00. 49	PZD输入16通讯基值	0~65535	0	0x4031	—
C00. 50	PZD输出1数据显示	0x00~0xFFFF	0x00	0x4032	—
C00. 51	PZD输出2数据显示	0x00~0xFFFF	0x00	0x4033	—
C00. 52	PZD输出3数据显示	0x00~0xFFFF	0x00	0x4034	—
C00. 53	PZD输出4数据显示	0x00~0xFFFF	0x00	0x4035	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C00. 54	PZD输出5数据显示	0x00~0xFFFF	0x00	0x4036	—
C00. 55	PZD输出6数据显示	0x00~0xFFFF	0x00	0x4037	—
C00. 56	PZD输出7数据显示	0x00~0xFFFF	0x00	0x4038	—
C00. 57	PZD输出8数据显示	0x00~0xFFFF	0x00	0x4039	—
C00. 58	PZD输出9数据显示	0x00~0xFFFF	0x00	0x403a	—
C00. 59	PZD输出10数据显示	0x00~0xFFFF	0x00	0x403b	—
C00. 60	PZD输出11数据显示	0x00~0xFFFF	0x00	0x403c	—
C00. 61	PZD输出12数据显示	0x00~0xFFFF	0x00	0x403d	—
C00. 62	PZD输出13数据显示	0x00~0xFFFF	0x00	0x403e	—
C00. 63	PZD输出14数据显示	0x00~0xFFFF	0x00	0x403f	—
C00. 64	PZD输出15数据显示	0x00~0xFFFF	0x00	0x4040	—
C00. 65	PZD输出16数据显示	0x00~0xFFFF	0x00	0x4041	—
C00. 66	PZD输入1数据显示	0x00~0xFFFF	0x00	0x4042	—
C00. 67	PZD输入2数据显示	0x00~0xFFFF	0x00	0x4043	—
C00. 68	PZD输入3数据显示	0x00~0xFFFF	0x00	0x4044	—
C00. 69	PZD输入4数据显示	0x00~0xFFFF	0x00	0x4045	—
C00. 70	PZD输入5数据显示	0x00~0xFFFF	0x00	0x4046	—
C00. 71	PZD输入6数据显示	0x00~0xFFFF	0x00	0x4047	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C00.72	PZD输入7数据 显示	0x00~0xFFFF	0x00	0x4048	—
C00.73	PZD输入8数据 显示	0x00~0xFFFF	0x00	0x4049	—
C00.74	PZD输入9数据 显示	0x00~0xFFFF	0x00	0x404a	—
C00.75	PZD输入10数 据显示	0x00~0xFFFF	0x00	0x404b	—
C00.76	PZD输入11数 据显示	0x00~0xFFFF	0x00	0x404c	—
C00.77	PZD输入12数 据显示	0x00~0xFFFF	0x00	0x404d	—
C00.78	PZD输入13数 据显示	0x00~0xFFFF	0x00	0x404e	—
C00.79	PZD输入14数 据显示	0x00~0xFFFF	0x00	0x404f	—
C00.80	PZD输入15数 据显示	0x00~0xFFFF	0x00	0x4050	—
C00.81	PZD输入16数 据显示	0x00~0xFFFF	0x00	0x4051	—
C00.82	双字PZD组合 方式	0:低地址为 低位 1:高地址为 低位	1	0x4052	—
C00.83	字转位PZD来 源选择	1~16	1	0x4053	—
C00.84	通讯修改值保 存	0:不保存 1:保存	0	0x4054	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C01组:预留					
C02组:预留					
C03组:预留					
C04组:预留					
C05组:PROFINET通讯设置					
C05.00	报文类型	0: 报文无效 1: 标准报文 1, PZD-2/2 2: 标准报文 3, PZD-5/9 3: 西门子报文 102, PZD-6/10 4: 西门子报文 105, PZD-10/10 5: 西门子报文 111, PZD-12/12 6: 西门子报文 352, PZD-6/6	0	0x4500	—
C05.01	通信状态	0: 未建立通信 1: AR建立 2: 过程数据通信 3: 烧录中 4: 生命信号丢失 5: AR建立错误 6: 恢复出厂参数中 7: 通信超时 8: 总线适配器超16 9: PZD超26	0	0x4501	—
C05.02	附加报文 1类型	0: 报文无效 1: 附加报文 750, PZD-3/1 2: 附加报文 4, PZD-4/4 3: 附加报文 8, PZD-8/8 4: 附加报文 14, PZD-14/14	0	0x4502	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C05.03	诊断信息有效	0:无效 1:有效	1	0x4503	—
C05.04	软件版本号	0~65535	0	0x4504	—
C05.05	通信错误代码	0~100	0	0x4505	—
C05.06	Send Clock	0~65535	0	0x4506	us
C05.07	心跳监控容忍值	0~65535	10	0x4507	—
C05.08	同步抖动	0~65535	0	0x4508	—
C05.09	最大同步抖动	0~65535	0	0x4509	—
C05.10	特殊功能选择	0:无效 1:烧录模式 2:通信参数恢复出厂	0	0x450a	—
C05.11	PROFIdrive状态机	0:Power On 1:Idle 2:S1:Switching On Inhibited 3:S2:Ready For Switching On 4:S3:Switched On 5:S4:Operation 6:S41:Pos Operation 7:S42:Pos Jog 8:S421:Pos JogPos0k 9:S43:Pos Brake Max 10:S441:Pos Home Run 11:S442:Pos	0	0x450b	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C05.11	PROFIdrive状态机	Home Ready 12:S451:Pos TrvTask Act 13:S452:Pos TrvTask Brake 14:S453:Pos TrvTask Inter-mediate 15:Ramp Stop 16:Quick Stop 17:ERROR	0	0x450b	—
C05.12	编码器状态机	0:Idle 1:SD1:Normal Operation 2:SD2:Error Acknowledgement 3:SD3:Error 4:SD4:Reference value 5:SD5:Wait Reference Mark 6:SD6:Unused 7:SD7:Set Home Position 8:SD8:Unused 9:SD9:Unused 10:SD10:Wait Measured Value 11:SD11:Load Measured Value 12:SD12:Parking 13:SD13:Parking Error 14:SD14:Parking Error Ack 15:Error	0	0x450c	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C05.13	Tdc_Tsc	0~100	0	0x450d	—
C05.14	心跳状态机	0:Idle	0	0x450e	—
		1:C-LS0			
		2:C-LS1			
		3:C-LS2			
		4:C-LS3			
		5:C-LS4			
		6:C-LS5			
		7:C-LS6			
		8:C-LS7			
		9:C-LS8			
		10:C-LS9			
		11:C-LS10			
		12:C-LS11			
		13:C-LS12			
		14:C-LS13			
		15:C-LS14			
		16:C-LS15			
		17:D-LS0			
		18:D-LS1			
		19:D-LS2			
		20:D-LS3			
		21:D-LS4			
		22:D-LS5			
		23:D-LS6			
		24:D-LS7			
		25:D-LS8			
		26:D-LS9			
		27:D-LS10			
		28:D-LS11			
		29:D-LS12			
		30:D-LS13			
		31:D-LS14			
		32:D-LS15			
		33:Operation			

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C05.15	1和352报文模式	0:标准报文 1:自定义报文	0	0x450f	—
C05.16	Input Reduction Ratio	0~65535	0	0x4510	—
C05.17	Output Reduction Ratio	0~65535	0	0x4511	—
C05.28	附加可配PZD输入地址	0:PZD1 1:PZD2 2:PZD3 3:PZD4 4:PZD5 5:PZD6 6:PZD7 7:PZD8	0	0x451c	—
		8:PZD9 9:PZD10 10:PZD11 11:PZD12 12:PZD13 13:PZD14 14:PZD15 15:PZD16			
C05.29	附加可配PZD输出地址		0	0x451d	—
C05.30	750转矩基值	0~65535	16384	0x451e	—
C05.31	1和352速度基值	0~65535	16384	0x451f	—
C05.32	105位置环增益(Kp)来源选择	0:驱动内部参数设定 1:PLC	0	0x4520	—
C05.37	附加报文2类型	0:报文无效 1:附加报文4, PZD-4/4 2:附加报文8, PZD-8/8 3:附加报文14, PZD-14/14	0	0x4525	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C05.38	实际IP地址1	0~255	0	0x4526	—
C05.39	实际IP地址2	0~255	0	0x4527	—
C05.40	实际IP地址3	0~255	0	0x4528	—
C05.41	实际IP地址4	0~255	0	0x4529	—
C05.42	实际子网掩码1	0~255	0	0x452a	—
C05.43	实际子网掩码2	0~255	0	0x452b	—
C05.44	实际子网掩码3	0~255	0	0x452c	—
C05.45	实际子网掩码4	0~255	0	0x452d	—
C05.46	切换至转矩模式	0:无效 1:通过Stw1.14生效	0	0x452e	—
C05.50	实际MAC地址1	0x00~0xFFFF	0x00	0x4532	—
C05.51	实际MAC地址2	0x00~0xFFFF	0x00	0x4533	—
C05.52	实际MAC地址3	0x00~0xFFFF	0x00	0x4534	—
C05.53	Tdc	0~65535	0	0x4535	us
C05.54	Ti	0~65535	0	0x4536	us
C05.55	To	0~65535	0	0x4537	us
C05.56	Cacf	0~65535	0	0x4538	—
C05.57	调试参数1	0x00~0xFFFF	0x00	0x4539	—
C05.58	调试参数2	0x00~0xFFFF	0x00	0x453a	—
C05.59	调试参数3	0~65535	0	0x453b	—
C05.60	调试参数4	0~65535	0	0x453c	—
C05.61	调试参数5	0~65535	0	0x453d	—
C06组:EtherCAT通讯设置					
C06.00	EtherCAT从站站点正名	0~65535	0	0x4600	—
C06.01	EtherCAT从站站点别名	0~65535	0	0x4601	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C06.02	EtherCAT同步中断丢失允许次数	4~20	4	0x4602	—
C06.03	EtherCAT同步检测机制	0:禁止 1:使能	0	0x4603	—
C06.04	博能控制器功能块	0:无 1:变频模式功能块	0	0x4604	—
C06.06	错误帮助	0:无 1:XML文件缺失,联系厂家 2:重新连接,非正常情况下退出OP 3:断电上电,CSP插补丢失 4:XML文件不匹配,检查主站从站XML版本 5:未检测到驱动器通讯输入网口有设备接入,检查通讯线连接是否正常 6:功能码输入对象字典没有处理函数 7:功能码输入对象字典没有索引 8:C06.45值错误,输入对象字典索引错误 9:C06.46值错误,输入对象字典索引错误	0	0x4606	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C06.06	错误帮助	10:C06.47值错误,存入对象字典数据区不对 11:等待从站初始化完成才可操作 12:任务取消或停止位生效 13:模式选择错误 14:PP加减速度设置错误 15:读EEPROM错误 16:监控参数类型选择错误 17:监控参数地址选择错误 18:监控参数长度选择错误 19:运行状态退出OP	0	0x4606	—
C06.07	XML版本号	0x00~0xFFFF	0x00	0x4607	—
C06.13	EC 通信状态	0:无 1:Init 2:PreOp 3:异常 4:SafeOp 5:异常 6:异常 7:异常 8:OP 9:异常 10:异常 11:异常 12:异常	0x00	0x460d	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C06.13	EC 通信状态	13:异常 14:异常 15:异常 16:异常 17:异常 18:异常 19:异常 20:异常	0x00	0x460d	—
C06.14	前一次EC故障记录	0x00~0xFFFF	0x00	0x460e	—
C06.15	前二次EC故障记录	0x00~0xFFFF	0x00	0x460f	—
C06.16	前三次EC故障记录	0x00~0xFFFF	0x00	0x4610	—
C06.17	同步故障发生位置记录	0x00~0xFFFF	0x00	0x4611	—
C06.18	FSA	0x00~0xFFFF	0x00	0x4612	—
C06.21	当前操作模式	0:NA 1:PPMode 2:None 3:PVMode 4:PTMode 5:None 6:HmMode 7:None 8:CSPMode 9:CSVMode 10:CSTMode	0	0x4615	—
C06.22	指定操作模式		0	0x4616	—
C06.31	探针1触发信号选择	0:无效 1:DI0 2:DI1 3:DI2 4:DI3 5:DI4 6:DI5 7:DI6 8:DI7 9:DI8 10:DI9 11:DI10 12:Z信号	0	0x461f	—
C06.32	探针2触发信号选择		0	0x4620	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C06. 35	0x6098回零方式	0~65535	35	0x4623	—
C06. 42	监控数据类型	0~65535	0	0x462a	—
C06. 43	监控数据地址	0~65535	0	0x462b	—
C06. 44	监控数据长度	0~65535	0	0x462c	—
C06. 45	对象字典索引号	0x00~0xFFFF	0x6060	0x462d	—
C06. 46	对象字典子索引	0x00~0xFFFF	0x00	0x462e	—
C06. 47	在数据区显示	0x00~0xFFFF	0x00	0x462f	—
C06. 48	数据0	-1073741824~1073741824	0	0x4630	—
C06. 49	数据0	-1073741824~1073741824	0	0x4631	—
C06. 50	数据1	-1073741824~1073741824	0	0x4632	—
C06. 51	数据1	-1073741824~1073741824	0	0x4633	—
C06. 52	数据2	-1073741824~1073741824	0	0x4634	—
C06. 53	数据2	-1073741824~1073741824	0	0x4635	—
C06. 54	数据3	-1073741824~1073741824	0	0x4636	—
C06. 55	数据3	-1073741824~1073741824	0	0x4637	—
C06. 56	数据4	-1073741824~1073741824	0	0x4638	—
C06. 57	数据4	-1073741824~1073741824	0	0x4639	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C08. 00	DriveLink功能	0:关闭 1:使能	0	0x4800	—
C08. 03	DriveLink节点地址	1~8	1	0x4803	—
C08. 12	发送周期	2ms~65535ms	2	0x480c	ms
C08. 14	发送数据1	0:无效 其他:模拟量 互联参数	0	0x480e	—
C08. 15	发送数据1比例系数	-600.0~600.0	100.0	0x480f	%
C08. 16	发送数据2	0:无效 其他:模拟量 互联参数	0	0x4810	—
C08. 17	发送数据2比例系数	-600.0~600.0	100.0	0x4811	%
C08. 18	发送数据3	0:无效 其他:模拟量 互联参数	0	0x4812	—
C08. 19	发送数据3比例系数	-600.0~600.0	100.0	0x4813	%
C08. 20	发送数据4	0:无效 其他:模拟量 互联参数	0	0x4814	—
C08. 21	发送数据4比例系数	-600.0~600.0	100.0	0x4815	%
C08. 22	发送数据5	0:无效 其他:模拟量 互联参数	0	0x4816	—
C08. 23	发送数据5比例系数	-600.0~600.0	100.0	0x4817	%
C08. 24	发送数据6	0:无效 其他:模拟量 互联参数	0	0x4818	—
C08. 25	发送数据6比例系数	-600.0~600.0	100.0	0x4819	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C08. 26	发送数据7	0:无效 其他:模拟量 互联参数	0	0x481a	—
C08. 27	发送数据7 比例系数	-600.0~600.0	100.0	0x481b	%
C08. 28	发送数据8	0:无效 其他:模拟量 互联参数	0	0x481c	—
C08. 29	发送数据8 比例系数	-600.0~600.0	100.0	0x481d	%
C08. 31	接收数据超时设置	0.00~655.35s	0.00	0x481f	s
C08. 32	接收数据1 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x4820	—
C08. 33	接收数据1 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x4821	—
C08. 34	接收数据1 比例系数	-600.0%~600.0%	100.0	0x4822	%
C08. 35	接收数据2 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点	0	0x4823	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		5:5节点 6:6节点 7:7节点 8:8节点			
C08. 36	接收数据2 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x4824	—
C08. 37	接收数据2 比例系数	-600.0%~600.0%	100.0	0x4825	%
C08. 38	接收数据3 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x4826	—
C08. 39	接收数据3 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x4827	—
C08. 40	接收数据3 比例系数	-600.0%~600.0%	100.0	0x4828	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C08.41	接收数据4 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x4829	-
C08.42	接收数据4 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x482a	-
C08.43	接收数据4 比例系数	-600.0%~600.0%	100.0	0x482b	%
C08.44	接收数据5 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x482c	-
C08.45	接收数据5 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x482d	-
C08.46	接收数据5 比例系数	-600.0%~600.0%	100.0	0x482e	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C08.47	接收数据6 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x482f	-
C08.48	接收数据6 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x4830	-
C08.49	接收数据6 比例系数	-600.0%~600.0%	100.0	0x4831	%
C08.50	接收数据7 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x4832	-
C08.51	接收数据7 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x4833	-
C08.52	接收数据7 比例系数	-600.0%~600.0%	100.0	0x4834	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
C08.53	接收数据8 节点选择	0:无效 1:1节点 2:2节点 3:3节点 4:4节点 5:5节点 6:6节点 7:7节点 8:8节点	0	0x4835	—
C08.54	接收数据8 数据选择	0:第1个数据 1:第2个数据 2:第3个数据 3:第4个数据 4:第5个数据 5:第6个数据 6:第7个数据 7:第8个数据	0	0x4836	—
C08.55	接收数据8 比例系数	-600.0%~600.0%	100.0	0x4837	%
D: 马达参数组					
D00组: 马达0基本参数					
D00.00	马达类型选择	0:感应马达 1:永磁同步马达	1	0x5000	—
D00.01	马达额定功率	0.00~655.35kW	3.00	0x5001	kW
D00.02	马达额定电压	0~1500V	250	0x5002	V
D00.03	马达额定电流	0.0~6553.5A	6.40	0x5003	A
D00.04	马达额定频率	0.0~600.00Hz	300.00	0x5004	Hz
D00.05	马达额定转速	0~65535rpm	1400	0x5005	rpm
D00.06	马达最大转速	0.0%~600.0% 额定转速	110.0	0x5006	%
D00.07	马达最小转速	0.0%~600.0% 额定转速	0.0	0x5007	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D00.09	马达极对数	1~360	2	0x5009	—
D00.10	马达额定转矩	0.01~655.35Nm 0:VF	0.90	0x500a	N.m
D00.16	马达控制方式	1:SVC 2:FVC	2	0x5010	—
D01组: 马达0高级参数					
D01.00	异步马达定子电阻	0.000~6.5535ohm	3.024	0x5100	Ω
D01.01	异步马达转子电阻	0.000~6.5535ohm	1.769	0x5101	Ω
D01.02	异步马达漏感抗	0.000~65.535mH	10.39	0x5102	mH
D01.03	异步马达互感抗	0.00~655.35mH	181.8	0x5103	mH
D01.04	异步马达空载电流	0.0~6553.5A	3.84	0x5104	A
D01.10	同步马达定子电阻	0.001~65.535ohm	14.680	0x510a	Ω
D01.11	同步马达D轴电感Ld	0.01~655.35mH	33.20	0x510b	mH
D01.12	同步马达Q轴电感Lq	0.01~655.35mH	38.20	0x510c	mH
D01.13	同步马达反电动势	0.01~655.35mV/rpm	218	0x510d	V
D01.14	同步马达转动惯量Jm	0.01~655.35kgcm ²	0.15	0x510e	kg.cm ²
D01.25	异步马达转动惯量Jm	0~65535	19	0x5119	kg.cm ²
D02组: 马达0编码器参数					
D02.00	编码器类型	0:无效类型 1:普通式/省线式ABZ编码器(DB15) 2:预留(旋变) 3:预留(省线) 4:BISS-C通信	5	0x5200	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		编码器(1222) 5:RS485通信 编码器(1623) 6:SSI通信编 码器			
D02. 01	输入AB相序	0:正向 1:反向	0	0x5201	-
D02. 03	输入接口类 型	0:差分 1:单端	0	0x5203	-
D02. 04	增量式编码 器线数	0~1048576	1024	0x5204	-
D02. 06	SSI编码器 编码方式	0:自然二进制码 1:格雷码	0	0x5206	-
D02. 07	SSI编码器 通讯波特率	125~4000	1000	0x5207	kHz
D02. 08	SSI编码器 单圈位数	8~31	21	0x5208	-
D02. 09	SSI编码器 多圈位数	0~31	0	0x5209	-
D02. 10	编码器零点 位置角	0.0~359.9°	0.0	0x520a	°
D02. 13	速度反馈PG 断线检测时间	0.0:不动作 0.1s~10.0s	500	0x520d	ms
D02. 17	DB15增量编 码器电源选择	0:5V 1:24V	0	0x5211	-
D02. 18	绝对值编码 器类型	0:单圈绝对值 编码器 1:多圈绝对值 编码器	0	0x5212	-
D02. 19	绝对值编码 器多圈计数 位数	1~16	12	0x5213	-
D02. 20	设置当前位 置为原点	0:无效 1:有效 其它:二进制 互联参数	0	0x5214	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D02. 21	绝对值编码 器复位使能	0:无效 1:清除编码 器多圈计数 与故障信息	0	0x5215	-
D02. 22	编码器分辨 率	0~1073741824	0	0x5216	p/r
D02. 23	编码器分辨 率	0~1073741824	0	0x5217	p/r
D02. 24	编码器多圈 溢出故障屏 蔽	0:不屏蔽 1:屏蔽	0	0x5218	-
D02. 25	编码器反馈 超速警告阈 值	0~65535	10000	0x5219	rpm
D02. 26	允许编码器 反馈连续超 速次数	1~65535	1	0x521a	-
D03组:马达1基本参数					
D03. 00	马达类型选择	0:感应马达 1:永磁同步 马达	1	0x5300	-
D03. 01	马达额定功率	0.00~655.35kW	3.00	0x5301	kW
D03. 02	马达额定电压	0~1500V	250	0x5302	V
D03. 03	马达额定电流	0.0~6553.5A	6.40	0x5303	A
D03. 04	马达额定频率	0.0~600.00Hz	300.00	0x5304	Hz
D03. 05	马达额定转速	0~65535rpm	1400	0x5305	rpm
D03. 06	马达最大转速	0.0%~600.0% 额定转速	110.0	0x5306	%
D03. 07	马达最小转速	0.0%~600.0% 额定转速	0.0	0x5307	%
D03. 09	马达极对数	1~360	2	0x5309	-
D03. 10	马达额定转 矩	0.01~655.35Nm	0.90	0x530a	N.m
D03. 16	马达控制方 式	0:VF 1:SVC 2:FVC	2	0x5310	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D04组: 马达1高级参数					
D04. 00	异步马达定子电阻	0. 000~6. 5535 ohm	3. 024	0x5400	Ω
D04. 01	异步马达转子电阻	0. 000~6. 5535 ohm	1. 769	0x5401	Ω
D04. 02	异步马达漏感抗	0. 000~65. 535 mH	10. 39	0x5402	mH
D04. 03	异步马达互感抗	0. 00~655. 35 mH	181. 8	0x5403	mH
D04. 04	异步马达空载电流	0. 0~6553. 5A	3. 84	0x5404	A
D04. 10	同步马达定子电阻	0. 001~65. 535 ohm	14.680	0x540a	Ω
D04. 11	同步马达D轴电感Ld	0. 01~655. 35 mH	33. 20	0x540b	mH
D04. 12	同步马达Q轴电感Lq	0. 01~655. 35 mH	38. 20	0x540c	mH
D04. 13	同步马达反电动势	0. 01~655. 35 mV/rpm	218	0x540d	V
D04. 14	同步马达转动惯量Jm	0. 01~655. 35 kgcm ²	0. 15	0x540e	kgcm ²
D04. 25	异步马达转动惯量Jm	0~65535	19	0x5419	kgcm ²
D05组: 马达1编码器参数					
D05. 00	编码器类型	0:无效类型 1:普通式/省线式ABZ编码器 (DB15) 2:预留(旋变) 3:预留(省线) 4:BISS-C通信编码器 (1222) 5:RS485通信编码器 (1623) 6:SSI通信编码器	5	0x5500	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D05. 01	输入AB相序	0:正向 1:反向	0	0x5501	-
D05. 03	输入接口类型	0:差分 1:单端	0	0x5503	-
D05. 04	增量式编码器线数	0~1048576	1024	0x5504	-
D05. 06	SSI编码器编码方式	0:自然二进制码 1:格雷码	0	0x5506	-
D05. 07	SSI编码器通讯波特率	125~4000	1000	0x5507	kHz
D05. 08	SSI编码器单圈位数	8~31	21	0x5508	-
D05. 09	SSI编码器多圈位数	0~31	0	0x5509	-
D05. 10	编码器零点位置角	0. 0~359. 9°	0. 0	0x550a	°
D05. 13	速度反馈PG断线检测时间	0. 0:不动作 0. 1s~10. 0s	500	0x550d	ms
D05. 17	DB15增量编码器电源选择	0:5V 1:24V	0	0x5511	-
D05. 18	绝对值编码器类型	0:单圈绝对值编码器 1:多圈绝对值编码器	0	0x5512	-
D05. 19	绝对值编码器多圈计数位数	1~16	12	0x5513	-
D05. 20	设置当前位置为原点	0:无效 1:有效 其它:二进制互联参数	0	0x5514	-
D05. 21	绝对值编码器复位使能	0:无效 1:清除编码器多圈计数与故障信息	0	0x5515	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D05.22	编码器分辨率	0~1073741824	0	0x5516	p/r
D05.23	编码器分辨率	0~1073741824	0	0x5517	p/r
D05.24	编码器多圈溢出故障屏蔽	0:不屏蔽 1:屏蔽	0	0x5518	-
D05.25	编码器反馈超速警告阈值	0~65535	10000	0x5519	rpm
D05.26	允许编码器反馈连续超速次数	1~65535	1	0x551a	-
D06组: 马达2基本参数					
D06.00	马达类型选择	0:感应马达 1:永磁同步马达	1	0x5600	-
D06.01	马达额定功率	0.00~655.35kW	3.00	0x5601	kW
D06.02	马达额定电压	0~1500V	250	0x5602	V
D06.03	马达额定电流	0.0~6553.5A	6.40	0x5603	A
D06.04	马达额定频率	0.0~600.00Hz	300.00	0x5604	Hz
D06.05	马达额定转速	0~65535rpm	1400	0x5605	rpm
D06.06	马达最大转速	0.0%~600.0% 额定转速	110.0	0x5606	%
D06.07	马达最小转速	0.0%~600.0% 额定转速	0.0	0x5607	%
D06.09	马达极对数	1~360	2	0x5609	-
D06.10	马达额定转矩	0.01~655.35Nm	0.90	0x560a	N.m
D06.16	马达控制方式	0:VF 1:SVC 2:FVC	2	0x5610	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D07组: 马达2高级参数					
D07.00	异步马达定子电阻	0.000~6.5535ohm	3.024	0x5700	Ω
D07.01	异步马达转子电阻	0.000~6.5535ohm	1.769	0x5701	Ω
D07.02	异步马达漏感抗	0.000~65.535mH	10.39	0x5702	mH
D07.03	异步马达互感抗	0.00~655.35mH	181.8	0x5703	mH
D07.04	异步马达空载电流	0.0~6553.5A	3.84	0x5704	A
D07.10	同步马达定子电阻	0.001~65.535ohm	14.680	0x570a	Ω
D07.11	同步马达D轴电感Ld	0.01~655.35mH	33.20	0x570b	mH
D07.12	同步马达Q轴电感Lq	0.01~655.35mH	38.20	0x570c	mH
D07.13	同步马达反电动势	0.01~655.35mV/rpm	218	0x570d	V
D07.14	同步马达转动惯量Jm	0.01~655.35kgcm ²	0.15	0x570e	kg.cm2
D07.25	异步马达转动惯量Jm	0~65535	19	0x5719	kg.cm2
D08组: 马达2编码器参数					
D08.00	编码器类型	0:无效类型 1:普通式/省线式ABZ编码器(DB15) 2:预留(旋变) 3:预留(省线) 4:BISS-C通信编码器(1222) 5:RS485通信编码器(1623) 6:SSI通信编码器	5	0x5800	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D08.01	输入AB相序	0:正向 1:反向	0	0x5801	—
D08.03	输入接口类型	0:差分 1:单端	0	0x5803	—
D08.04	增量式编码器线数	0~1048576	1024	0x5804	—
D08.06	SSI编码器编码方式	0:自然二进制码 1:格雷码	0	0x5806	—
D08.07	SSI编码器通讯波特率	125~4000	1000	0x5807	kHz
D08.08	SSI编码器单圈位数	8~31	21	0x5808	—
D08.09	SSI编码器多圈位数	0~31	0	0x5809	—
D08.10	编码器零点位置角	0.0~359.9°	0.0	0x580a	°
D08.13	速度反馈PG断线检测时间	0.0:不动作 0.1s~10.0s	500	0x580d	ms
D08.17	DB15增量编码器电源选择	0:5V 1:24V	0	0x5811	—
D08.18	绝对值编码器类型	0:单圈绝对值编码器 1:多圈绝对值编码器	0	0x5812	—
D08.19	绝对值编码器多圈计数位数	1~16	12	0x5813	—
D08.20	设置当前位置为原点	0:无效 1:有效 其它:二进制互联参数	0	0x5814	—
D08.21	绝对值编码器复位使能	0:无效 1:清除编码器多圈计数与故障信息	0	0x5815	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D08.22	编码器分辨率	0~1073741824	0	0x5816	p/r
D08.23	编码器分辨率	0~1073741824	0	0x5817	p/r
D08.24	编码器多圈溢出故障屏蔽	0:不屏蔽 1:屏蔽	0	0x5818	—
D08.25	编码器反馈超速警告阈值	0~65535	10000	0x5819	rpm
D08.26	允许编码器反馈连续超速次数	1~65535	1	0x581a	—
D09组: 马达3基本参数					
D09.00	马达类型选择	0:感应马达 1:永磁同步马达	1	0x5900	—
D09.01	马达额定功率	0.00~655.35kW	3.00	0x5901	kW
D09.02	马达额定电压	0~1500V	250	0x5902	V
D09.03	马达额定电流	0.0~6553.5A	6.40	0x5903	A
D09.04	马达额定频率	0.0~600.00Hz	300.00	0x5904	Hz
D09.05	马达额定转速	0~65535rpm	1400	0x5905	rpm
D09.06	马达最大转速	0.0%~600.0% 额定转速	110.0	0x5906	%
D09.07	马达最小转速	0.0%~600.0% 额定转速	0.0	0x5907	%
D09.09	马达极对数	1~360	2	0x5909	—
D09.10	马达额定转矩	0.01~655.35Nm	0.90	0x590a	N.m
D09.16	马达控制方式	0:VF 1:SVC 2:FVC	2	0x5910	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D10组: 马达3高级参数					
D10.00	异步马达定子电阻	0.000~6.5535 ohm	3.024	0x5a00	Ω
D10.01	异步马达转子电阻	0.000~6.5535 ohm	1.769	0x5a01	Ω
D10.02	异步马达漏感抗	0.000~65.535 mH	10.39	0x5a02	mH
D10.03	异步马达互感抗	0.00~655.35 mH	181.8	0x5a03	mH
D10.04	异步马达空载电流	0.0~6553.5A	3.84	0x5a04	A
D10.10	同步马达定子电阻	0.001~65.535 ohm	14.680	0x570a	Ω
D10.11	同步马达D轴电感Ld	0.01~655.35 mH	33.20	0x5a0b	mH
D10.12	同步马达Q轴电感Lq	0.01~655.35 mH	38.20	0x5a0c	mH
D10.13	同步马达反电动势	0.01~655.35 mV/rpm	218	0x5a0d	V
D10.14	同步马达转动惯量Jm	0.01~655.35 kg·cm ²	0.15	0x5a0e	kg·cm ²
D10.25	异步马达转动惯量Jm	0~65535	19	0x5a19	kg·cm ²
D11组: 马达3编码器参数					
D11.00	编码器类型	0:无效类型 1:普通式/省线式ABZ编码器(DB15) 2:预留(旋变) 3:预留(省线) 4:BISS-C通信编码器(1222) 5:RS485通信编码器(1623) 6:SSI通信编码器	5	0x5b00	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D11.01	输入AB相序	0:正向 1:反向	0	0x5b01	-
D11.03	输入接口类型	0:差分 1:单端	0	0x5b03	-
D11.04	增量式编码器线数	0~1048576	1024	0x5b04	-
D11.06	SSI编码器编码方式	0:自然二进制码 1:格雷码	0	0x5b06	-
D11.07	SSI编码器通讯波特率	125~4000	1000	0x5b07	kHz
D11.08	SSI编码器单圈位数	8~31	21	0x5b08	-
D11.09	SSI编码器多圈位数	0~31	0	0x5b09	-
D11.10	编码器零点位置角	0.0~359.9°	0.0	0x5b0a	°
D11.13	速度反馈PG断线检测时间	0.0:不动作 0.1s~10.0s	500	0x5b0d	ms
D11.17	DB15增量编码器电源选择	0:5V 1:24V	0	0x5b11	-
D11.18	绝对值编码器类型	0:单圈绝对值编码器 1:多圈绝对值编码器	0	0x5b12	-
D11.19	绝对值编码器多圈计数位数	1~16	12	0x5b13	-
D11.20	设置当前位置为原点	0:无效 1:有效 其它:二进制互联参数	0	0x5b14	-
D11.21	绝对值编码器复位使能	0:无效 1:清除编码器多圈计数与故障信息	0	0x5b15	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
D11. 22	编码器分辨率	0~1073741824	0	0x5b16	p/r
D11. 23	编码器分辨率	0~1073741824	0	0x5b17	p/r
D11. 24	编码器多圈溢出故障屏蔽	0:不屏蔽 1:屏蔽	0	0x5b18	—
D11. 25	编码器反馈超速警告阈值	0~65535	10000	0x5b19	rpm
D11. 26	允许编码器反馈连续超速次数	1~65535	1	0x5b1a	—
E:故障保护与记录					
E00组:故障处理配置					
E00. 00	外部故障1来源	0:无效 1:有效 2:DI0 3:DI1	0	0x6000	—
E00. 01	外部故障2来源	4:DI2 5:DI3 6:DI4	0	0x6001	—
E00. 02	外部警告1来源	7:DI5 8:DI6 9:DI7	0	0x6002	—
E00. 03	外部警告2来源	10:预留 其它:二进制 互联参数	0	0x6003	—
E00. 10	故障自动复位功能	0:无效 1:有效	0	0x600a	—
E00. 11	故障自复位次数重置时间	0. 0~3600. 0s	180. 0	0x600b	s
E00. 12	故障自复位间隔时间	0. 0~600. 0s	30. 0	0x600c	s
E00. 13	故障自复位最大允许次数	0~5	5	0x600d	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E00. 14	不可自复位异常码1	0:无效 1:过流 2:直流过压 3:直流欠压 4:速度搜索失败 5:驱动器过载 6:马达过载 7:输入缺相 8:输出缺相 9:驱动器过温 10:PWM发波异常 11:电流零漂错误 12:对地短路故障 13:马达调谐故障 14:编码器异常 15:矢量失速报警 16:FPGA读写错误 17:驱动电源故障 18:一级电源故障 19:CM与PM通信异常 20:PM-EEPROM故障 21:PM机型设置错误 22:逐波限流故障 23:整流桥过热 24:STO故障 25:制动管过热 26:伺服初始位置错误 27:PM故障27 28:PM故障28 29:PM故障29 30:PM故障30 31:PM故障31	0	0x600e	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E00. 14	不可自复位异常码1	32:PM故障 33:驱动器预过载 34:马达预过载 35:通信异常 36:参数设置异常 37:马达速度超限 38:预约 39:重新上电 40:PID反馈丢失 41:外部故障 42:外部警告 43:预驱动失败 44:控制板异常 45:抱闸控制异常 46:控制板电压异常 47:马达温度异常 48:马达温度警告 49:AI断线故障 50:电容侧风扇故障 51:CM-EEPROM故障 52:位置偏差过大 53:全闭环位置偏差过大 54:到达正向极限位置 55:到达负向极限位置 56:定位中使能丢失 57:马达编码错误 58:固定挡块在监视窗口外 59:未到达固定停止点 60:原点回归错误 61:绝对值编码器异常	0	0x600e	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E00. 14	不可自复位异常码1	62:制动电阻过热 63:编码器电池电压低 64:编码器电池失效 65:编码器多圈数据溢出 66:参考点未设置 67:编码器设备错误	0	0x600e	—
E00. 15	不可自复位异常码2	0~67对应无效码编号	0	0x600f	—
E00. 16	不可自复位异常码3	0~67对应无效码编号	0	0x6010	—
E00. 23	自动复位后重启功能	0:无效 1:有效	0	0x6017	—
E00. 25	允许重启的异常码1	0~67对应无效码编号	0	0x6019	—
E00. 26	允许重启的异常码2	0~67对应无效码编号	0	0x601a	—
E00. 27	允许重启的异常码3	0~67对应无效码编号	0	0x601b	—
E00. 28	允许重启的异常码4	0~67对应无效码编号	0	0x601c	—
E00. 29	允许重启的异常码5	0~67对应无效码编号	0	0x601d	—
E00. 36	异常1动作级别对应的异常码	0~67对应无效码编号	0	0x6024	—
E00. 37	异常1动作级别配置	0:自由停机(OFF2) 1:紧急停机(OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6025	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E00. 38	异常2动作 级别对应的 异常码	0~67对应无效码 编号	0	0x6026	—
E00. 39	异常2动作 级别配置	0:自由停机 (OFF2) 1:紧急停机 (OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6027	—
E00. 40	异常3动作 级别对应的 异常码	0~67对应无效码 编号	0	0x6028	—
E00. 41	异常3动作 级别配置	0:自由停机 (OFF2) 1:紧急停机 (OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6029	—
E00. 42	异常4动作 级别对应的 异常码	0~67对应无效码 编号	0	0x602a	—
E00. 43	异常4动作 级别配置	0:自由停机 (OFF2) 1:紧急停机 (OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x602b	—
E00. 44	异常5动作 级别对应的 异常码	0~67对应无效码 编号	0	0x602c	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E00. 45	异常5动作 级别配置	0:自由停机 (OFF2) 1:紧急停机 (OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x602d	—
E00. 46	异常6动作 级别对应的 异常码	0~67对应无效码 编号	0	0x602e	—
E00. 47	异常6动作 级别配置	0:自由停机 (OFF2) 1:紧急停机 (OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x602f	—
E00. 48	异常7动作 级别对应的 异常码	0~67对应无效码 编号	0	0x6030	—
E00. 49	异常7动作 级别配置	0:自由停机 (OFF2) 1:紧急停机 (OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6031	—
E00. 50	异常8动作 级别对应的 异常码	0~67对应无效码 编号	0	0x6032	—
E00. 51	异常8动作 级别配置	0:自由停机 (OFF2) 1:紧急停机(OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6033	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E00.52	异常9动作级别对应的异常码	0~67对应无效码编号	0	0x6034	—
E00.53	异常9动作级别配置	0:自由停机(OFF2) 1:紧急停机(OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6035	—
E00.54	异常10动作级别对应的异常码	0~67对应无效码编号	0	0x6036	—
E00.55	异常10动作级别配置	0:自由停机(OFF2) 1:紧急停机(OFF3) 2:OFF1方式停机 3:警告(不停机) 4:无响应	0	0x6037	—
E00.58	故障记录储存模式	0:相同最新故障记录更新 1:相同最新故障记录不更新	0	0x603a	—
E01组:最新故障及故障数据记录					
E01.00	故障码1	0~67对应故障码编号	0	0x6100	—
E01.01	故障码1子码	1~16	0	0x6101	—
E01.02	故障码2	0~67对应故障码编号	0	0x6102	—
E01.03	故障码2子码	1~16	0	0x6103	—
E01.08	故障辅助信息1	0~67对应故障码编号	0	0x6108	—
E01.09	故障辅助信息2	1~16	0	0x6109	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E01.10	故障时散热器温度	-32768~32767	0	0x610a	℃
E01.11	故障PM控制字	0x00~0xFFFF	0x00	0x610b	—
E01.12	故障速度	-300.00~300.00Hz	0.0	0x610c	Hz
E01.13	故障电流	0.0~6553.5A	0.00	0x610d	A
E01.14	故障母线电压	0.0~800.0V	0.0	0x610e	V
E01.15	故障时给定速度	-300.0%~300.0%	0.00	0x610f	Hz
E01.16	故障控制字1	0x00~0xFFFF	0x00	0x6110	—
E01.17	故障状态字1	0x00~0xFFFF	0x00	0x6111	—
E01.18	故障前运行时长-时	0~65535	0	0x6112	h
E01.19	故障前运行时长-秒	0~65535	0	0x6113	s
E01.20	故障前累计运行时间-时	0~29	0	0x6114	h
E01.21	故障前累计运行时间-秒	0~300°	0	0x6115	s
E01.22	故障输出电压	0~6553.5V	0	0x6116	V
E01.24	故障时整流桥温度	-32768~32767	0	0x6118	℃
E02组:前一次故障及故障数据记录					
E02.00	故障码1	0~67对应故障码编号	0	0x6200	—
E02.01	故障码1子码	1~16	0	0x6201	—
E02.02	故障码2	0~67对应故障码编号	0	0x6202	—
E02.03	故障码2子码	1~16	0	0x6203	—
E02.08	故障辅助信息1	0~67对应故障码编号	0	0x6208	—
E02.09	故障辅助信息2	1~16	0	0x6209	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E02.10	故障时散热器温度	-32768~32767	0	0x620a	℃
E02.11	故障PM控制字	0x00~0xFFFF	0x00	0x620b	-
E02.12	故障速度	-300.00 ~300.00Hz	0.0	0x620c	Hz
E02.13	故障电流	0.0~6553.5A	0.00	0x620d	A
E02.14	故障母线电压	0.0~800.0V	0.0	0x620e	V
E02.15	故障时给定速度	-300.0 ~300.0%	0.00	0x620f	Hz
E02.16	故障控制字1	0x00~0xFFFF	0x00	0x6210	-
E02.17	故障状态字1	0x00~0xFFFF	0x00	0x6211	-
E02.18	故障前运行时长-时	0~65535	0	0x6212	h
E02.19	故障前运行时长-秒	0~65535	0	0x6213	s
E02.20	故障前累计运行时间-时	0~29	0	0x6214	h
E02.21	故障前累计运行时间-秒	0~300°	0	0x6215	s
E02.22	故障输出电压	0~6553.5V	0	0x6216	V
E02.24	故障时整流桥温度	-32768~32767	0	0x6218	℃
E03组:前两次故障及故障数据记录					
E03.00	故障码1	0~67对应故障码编号	0	0x6300	-
E03.01	故障码1子码	1~16	0	0x6301	-
E03.02	故障码2	0~67对应故障码编号	0	0x6302	-
E03.03	故障码2子码	1~16	0	0x6303	-
E03.08	故障辅助信息1	0~67对应故障码编号	0	0x6308	-
E03.09	故障辅助信息2	1~16	0	0x6309	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E03.10	故障时散热器温度	-32768~32767	0	0x630a	℃
E03.11	故障PM控制字	0x00~0xFFFF	0x00	0x630b	-
E03.12	故障速度	-300.00 ~300.00Hz	0.0	0x630c	Hz
E03.13	故障电流	0.0~6553.5A	0.00	0x630d	A
E03.14	故障母线电压	0.0~800.0V	0.0	0x630e	V
E03.15	故障时给定速度	-300.0 ~300.0%	0.00	0x630f	Hz
E03.16	故障控制字1	0x00~0xFFFF	0x00	0x6310	-
E03.17	故障状态字1	0x00~0xFFFF	0x00	0x6311	-
E03.18	故障前运行时长-时	0~65535	0	0x6312	h
E03.19	故障前运行时长-秒	0~65535	0	0x6313	s
E03.20	故障前累计运行时间-时	0~29	0	0x6314	h
E03.21	故障前累计运行时间-秒	0~300°	0	0x6315	s
E03.22	故障输出电压	0~6553.5V	0	0x6316	V
E03.24	故障时整流桥温度	-32768~32767	0	0x6318	℃
E04组:前三次故障及故障数据记录					
E04.00	故障码1	0~67对应故障码编号	0	0x6400	-
E04.01	故障码1子码	1~16	0	0x6401	-
E04.02	故障码2	0~67对应故障码编号	0	0x6402	-
E04.03	故障码2子码	1~16	0	0x6403	-
E04.08	故障辅助信息1	0~67对应故障码编号	0	0x6408	-
E04.09	故障辅助信息2	1~16	0	0x6409	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E04.10	故障时散热器温度	-32768~32767	0	0x640a	℃
E04.11	故障PM控制字	0x00~0xFFFF	0x00	0x640b	-
E04.12	故障速度	-300.00~300.00Hz	0.0	0x640c	Hz
E04.13	故障电流	0.0~6553.5A	0.00	0x640d	A
E04.14	故障母线电压	0.0~800.0V	0.0	0x640e	V
E04.15	故障时给定速度	-300.0~300.0%	0.00	0x640f	Hz
E04.16	故障控制字1	0x00~0xFFFF	0x00	0x6410	-
E04.17	故障状态字1	0x00~0xFFFF	0x00	0x6411	-
E04.18	故障前运行时长-时	0~65535	0	0x6412	h
E04.19	故障前运行时长-秒	0~65535	0	0x6413	s
E04.20	故障前累计运行时间-时	0~29	0	0x6414	h
E04.21	故障前累计运行时间-秒	0~300°	0	0x6415	s
E04.22	故障输出电压	0~6553.5V	0	0x6416	V
E04.24	故障时整流桥温度	-32768~32767	0	0x6418	℃
E05组:前四次故障及故障数据记录					
E05.00	故障码1	0~67对应故障码编号	0	0x6500	-
E05.01	故障码1子码	1~16	0	0x6501	-
E05.02	故障码2	0~67对应故障码编号	0	0x6502	-
E05.03	故障码2子码	1~16	0	0x6503	-
E05.08	故障辅助信息1	0~67对应故障码编号	0	0x6508	-
E05.09	故障辅助信息2	1~16	0	0x6509	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E05.10	故障时散热器温度	-32768~32767	0	0x650a	℃
E05.11	故障PM控制字	0x00~0xFFFF	0x00	0x650b	-
E05.12	故障速度	-300.00~300.00Hz	0.0	0x650c	Hz
E05.13	故障电流	0.0~6553.5A	0.00	0x650d	A
E05.14	故障母线电压	0.0~800.0V	0.0	0x650e	V
E05.15	故障时给定速度	-300.0~300.0%	0.00	0x650f	Hz
E05.16	故障控制字1	0x00~0xFFFF	0x00	0x6510	-
E05.17	故障状态字1	0x00~0xFFFF	0x00	0x6511	-
E05.18	故障前运行时长-时	0~65535	0	0x6512	h
E05.19	故障前运行时长-秒	0~65535	0	0x6513	s
E05.20	故障前累计运行时间-时	0~29	0	0x6514	h
E05.21	故障前累计运行时间-秒	0~300°	0	0x6515	s
E05.22	故障输出电压	0~6553.5V	0	0x6516	V
E05.24	故障时整流桥温度	-32768~32767	0	0x6518	℃
E06组:前五次故障及故障数据记录					
E06.00	故障码1	0~67对应故障码编号	0	0x6600	-
E06.01	故障码1子码	1~16	0	0x6601	-
E06.02	故障码2	0~67对应故障码编号	0	0x6602	-
E06.03	故障码2子码	1~16	0	0x6603	-
E06.08	故障辅助信息1	0~67对应故障码编号	0	0x6608	-
E06.09	故障辅助信息2	1~16	0	0x6609	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
E06.10	故障时散热器温度	-32768~32767	0	0x660a	℃
E06.11	故障PM控制字	0x00~0xFFFF	0x00	0x660b	-
E06.12	故障速度	-300.00 ~300.00Hz	0.0	0x660c	Hz
E06.13	故障电流	0.0~6553.5A	0.00	0x660d	A
E06.14	故障母线电压	0.0~800.0V	0.0	0x660e	V
E06.15	故障时给定速度	-300.0 ~300.0%	0.00	0x660f	Hz
E06.16	故障控制字1	0x00~0xFFFF	0x00	0x6610	-
E06.17	故障状态字1	0x00~0xFFFF	0x00	0x6611	-
E06.18	故障前运行时长-时	0~65535	0	0x6612	h
E06.19	故障前运行时长-秒	0~65535	0	0x6613	s
E06.20	故障前累计运行时间-时	0~29	0	0x6614	h
E06.21	故障前累计运行时间-秒	0~300°	0	0x6615	s
E06.22	故障输出电压	0~6553.5V	0	0x6616	V
E06.24	故障时整流桥温度	-32768~32767	0	0x6618	℃
E07组:最新警告异常码记录					
E07.00	故障码1	0~67对应警告码编号	0	0x6700	-
E07.01	故障码1子码	1~16	0	0x6701	-
E07.02	故障码2	0~67对应警告码编号	0	0x6702	-
E07.03	故障码2子码	1~16	0	0x6703	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F:自由功能块与工艺参数组					
F00组:逻辑运算模块					
F00.00	与模块A输入1	1:无效 其它:二进制 互联参数	0	0x7000	-
F00.01	与模块A输入2		0	0x7001	-
F00.02	与模块A输入3		0	0x7002	-
F00.03	与模块A输入4		0	0x7003	-
F00.05	与模块B输入1		0	0x7005	-
F00.06	与模块B输入2		0	0x7006	-
F00.07	与模块B输入3		0	0x7007	-
F00.08	与模块B输入4		0	0x7008	-
F00.10	与模块C输入1		0	0x700a	-
F00.11	与模块C输入2		0	0x700b	-
F00.12	与模块C输入3		0	0x700c	-
F00.13	与模块C输入4		0	0x700d	-
F00.15	与模块D输入1		0	0x700f	-
F00.16	与模块D输入2		0	0x7010	-
F00.17	与模块D输入3		0	0x7011	-
F00.18	与模块D输入4		0	0x7012	-
F00.20	非模块A输入	0:无效 其它:二进制 互联参数	0	0x7014	-
F00.22	非模块B输入		0	0x7016	-
F00.24	非模块C输入		0	0x7018	-
F00.26	非模块D输入		0	0x701a	-
F00.28	非模块E输入		0	0x701c	-
F00.30	非模块F输入		0	0x701e	-
F00.32	非模块G输入		0	0x7020	-
F00.34	非模块H输入		0	0x7022	-
F00.36	或模块A输入1		0	0x7024	-
F00.37	或模块A输入2		0	0x7025	-
F00.38	或模块A输入3		0	0x7026	-
F00.39	或模块A输入4		0	0x7027	-
F00.41	或模块B输入1		0	0x7029	-
F00.42	或模块B输入2		0	0x702a	-
F00.43	或模块B输入3		0	0x702b	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F00.44	或模块B输入4	0:无效 其它:二进制 互联参数 数	0	0x702c	-
F00.46	或模块C输入1		0	0x702e	-
F00.47	或模块C输入2		0	0x702f	-
F00.48	或模块C输入3		0	0x7030	-
F00.49	或模块C输入4		0	0x7031	-
F00.51	或模块D输入1		0	0x7033	-
F00.52	或模块D输入2		0	0x7034	-
F00.53	或模块D输入3		0	0x7035	-
F00.54	或模块D输入4		0	0x7036	-
F00.56	异或模块A输入1		0	0x7038	-
F00.57	异或模块A输入2		0	0x7039	-
F00.58	异或模块A输入3		0	0x703a	-
F00.59	异或模块A输入4		0	0x703b	-
F00.61	异或模块B输入1		0	0x703d	-
F00.62	异或模块B输入2		0	0x703e	-
F00.63	异或模块B输入3		0	0x703f	-
F00.64	异或模块B输入4		0	0x7040	-
F00.66	异或模块C输入1		0	0x7042	-
F00.67	异或模块C输入2		0	0x7043	-
F00.68	异或模块C输入3		0	0x7044	-
F00.69	异或模块C输入4		0	0x7045	-
F00.71	异或模块D输入1		0	0x7047	-
F00.72	异或模块D输入2		0	0x7048	-
F00.73	异或模块D输入3		0	0x7049	-
F00.74	异或模块D输入4		0	0x704a	-
F00.76	延时模块A输入		0	0x704c	-
F00.77	延时模块A功能选择	0:开通延时 1:关断延时 2:双向延时	0	0x704d	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F00.78	延时模块A延迟时间 (N*2ms)	0~10000ms	0	0x704e	-
F00.79	延时模块B输入	0:无效 其它:二进制 互联参数	0	0x704f	-
F00.80	延时模块B功能选择	0:开通延时 1:关断延时 2:双向延时	0	0x7050	-
F00.81	延时模块B延迟时间 (N*2ms)	0~10000ms	0	0x7051	-
F00.82	延时模块C输入	0:无效 其它:二进制 互联参数	0	0x7052	-
F00.83	延时模块C功能选择	0:开通延时 1:关断延时 2:双向延时	0	0x7053	-
F00.84	延时模块C延迟时间 (N*2ms)	0~10000ms	0	0x7054	-
F00.85	延时模块D输入	0:无效 其它:二进制 互联参数	0	0x7055	-
F00.86	延时模块D功能选择	0:开通延时 1:关断延时 2:双向延时	0	0x7056	-
F00.87	延时模块D延迟时间 (N*2ms)	0~10000ms	0	0x7057	-
F01组:算术运算模块					
F01.00	加法模块A输入1	0:0 其它:模拟量 互联参数	0	0x7100	-
F01.01	加法模块A输入2		0	0x7101	-
F01.02	加法模块A输入3		0	0x7102	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F01. 03	加法模块A输入4	0:0 其它:模拟量 互联参数	0	0x7103	—
F01. 05	加法模块B输入1		0	0x7105	—
F01. 06	加法模块B输入2		0	0x7106	—
F01. 07	加法模块B输入3		0	0x7107	—
F01. 08	加法模块B输入4		0	0x7108	—
F01. 10	加法模块C输入1		0	0x710a	—
F01. 11	加法模块C输入2		0	0x710b	—
F01. 12	加法模块C输入3		0	0x710c	—
F01. 13	加法模块C输入4		0	0x710d	—
F01. 15	减法模块A输入1		0	0x710f	—
F01. 16	减法模块A输入2	0:0 其它:模拟量 互联参数	0	0x7110	—
F01. 18	减法模块B输入1		0	0x7112	—
F01. 19	减法模块B输入2		0	0x7113	—
F01. 21	乘法模块A输入1		0	0x7115	—
F01. 22	乘法模块A输入2		0	0x7116	—
F01. 23	乘法模块A输入3		0	0x7117	—
F01. 24	乘法模块A输入4		0	0x7118	—
F01. 26	乘法模块B输入1		0	0x711a	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F01. 27	乘法模块B输入2	0:1 其它:模拟量 互联参数	0	0x711b	—
F01. 28	乘法模块B输入3		0	0x711c	—
F01. 29	乘法模块B输入4		0	0x711d	—
F01. 31	除法模块A除数输入		0	0x711f	—
F01. 32	除法模块A被除数输入		0	0x7120	—
F01. 34	除法模块B除数输入		0	0x7122	—
F01. 35	除法模块B被除数输入	0:0 其它:模拟量 互联参数	0	0x7123	—
F01. 37	绝对值模块A输入		0	0x7125	—
F01. 39	绝对值模块B输入		0	0x7127	—
F01. 41	比较模块A输入1		0	0x7129	—
F01. 42	比较模块A输入2		0	0x712a	—
F01. 44	比较模块B输入1		0	0x712c	—
F01. 45	比较模块B输入2		0	0x712d	—
F01. 47	限制模块A输入		0	0x712f	—
F01. 48	限制模块A上限值选择		0	0x7130	—
F01. 49	限制模块A下限值选择		0	0x7131	—
F01. 51	限制模块B输入	0:0 其它:模拟量 互联参数	0	0x7133	—
F01. 52	限制模块B上限值选择		0	0x7134	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F01.53	限制模块B下限值选择	0:0 其它:模拟量	0	0x7135	—
F01.55	一阶低通滤波模块A输入	互联参数	0	0x7137	—
F01.56	一阶低通滤波模块A滤波时间(N*2ms)	0~20000ms	0	0x7138	—
F01.58	一阶低通滤波模块B输入	0:0 其它:模拟量 互联参数	0	0x713a	—
F01.59	一阶低通滤波模块B滤波时间(N*2ms)	0~20000ms	0	0x713b	—
F01.61	数据选择器A命令来源1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x713d	—
F01.62	数据选择器A命令来源2	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x713e	—
F01.63	数据选择器A数据来源1	0:0 1:多段设定值1	0	0x713f	—
F01.64	数据选择器A数据来源2	2:AI0 3:预留	0	0x7140	—
F01.65	数据选择器A数据来源3	4:预留 5:预留	0	0x7141	—
F01.66	数据选择器A数据来源4	6:多段值给定 7:电动电位器 8:预留	0	0x7142	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		9:总线适配器A-PZD2 10:预留 其它:模拟量 互联参数			
F01.67	数据选择器B命令来源1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x7143	—
F01.68	数据选择器B命令来源2	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x7144	—
F01.69	数据选择器B数据来源1	0:0 1:多段设定值1 2:AI0	0	0x7145	—
F01.70	数据选择器B数据来源2	3:预留 4:预留 5:预留 6:多段值给定	0	0x7146	—
F01.71	数据选择器B数据来源3	7:电动电位器 8:预留 9:总线适配器A-PZD2	0	0x7147	—
F01.72	数据选择器B数据来源4	10:预留 其它:模拟量 互联参数	0	0x7148	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F01. 73	比较模块C输入1	0:0 其它:模拟量 互联参数	0	0x7149	—
F01. 74	比较模块C输入2		0	0x714a	—
F01. 76	比较模块D输入1		0	0x714c	—
F01. 77	比较模块D输入2		0	0x714d	—
F01. 81	自定义数据输入1	-32768~32767	0	0x7151	—
F01. 82	自定义数据输入2	-32768~32767	0	0x7152	—
F01. 83	自定义数据输入3	-32768~32767	0	0x7153	—
F01. 84	自定义数据输入4	-32768~32767	0	0x7154	—
F02组: 字位转换模块					
F02. 00	字转位功能A输入选择	0:0 其它:模拟量 互联参数	0	0x7200	—
F02. 02	字转位功能B输入选择		0	0x7202	—
F02. 08	位转字功能A-Bit00选择	0:0 其它:二进制 互联参数	0	0x7208	—
F02. 09	位转字功能A-Bit01选择		0	0x7209	—
F02. 10	位转字功能A-Bit02选择		0	0x720a	—
F02. 11	位转字功能A-Bit03选择		0	0x720b	—
F02. 12	位转字功能A-Bit04选择		0	0x720c	—
F02. 13	位转字功能A-Bit05选择		0	0x720d	—
F02. 14	位转字功能A-Bit06选择		0	0x720e	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F02. 15	位转字功能A-Bit07选择	0:0 其它:二进制 互联参数	0	0x720f	—
F02. 16	位转字功能A-Bit08选择		0	0x7210	—
F02. 17	位转字功能A-Bit09选择		0	0x7211	—
F02. 18	位转字功能A-Bit10选择		0	0x7212	—
F02. 19	位转字功能A-Bit11选择		0	0x7213	—
F02. 20	位转字功能A-Bit12选择		0	0x7214	—
F02. 21	位转字功能A-Bit13选择		0	0x7215	—
F02. 22	位转字功能A-Bit14选择		0	0x7216	—
F02. 23	位转字功能A-Bit15选择		0	0x7217	—
F02. 25	位转字功能B-Bit00选择		0	0x7219	—
F02. 26	位转字功能B-Bit01选择		0	0x721a	—
F02. 27	位转字功能B-Bit02选择		0	0x721b	—
F02. 28	位转字功能B-Bit03选择		0	0x721c	—
F02. 29	位转字功能B-Bit04选择		0	0x721d	—
F02. 30	位转字功能B-Bit05选择		0	0x721e	—
F02. 31	位转字功能B-Bit06选择		0	0x721f	—
F02. 32	位转字功能B-Bit07选择		0	0x7220	—
F02. 33	位转字功能B-Bit08选择		0	0x7221	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F02. 34	位转字功能 B-Bit09选择	0:0 其它:二进制 互联参数	0	0x7222	—
F02. 35	位转字功能 B-Bit10选择		0	0x7223	—
F02. 36	位转字功能 B-Bit11选择		0	0x7224	—
F02. 37	位转字功能 B-Bit12选择		0	0x7225	—
F02. 38	位转字功能 B-Bit13选择		0	0x7226	—
F02. 39	位转字功能 B-Bit14选择		0	0x7227	—
F02. 40	位转字功能 B-Bit15选择		0	0x7228	—
F03组:过程PID模块					
F03. 00	PID功能生效 信号	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x7300	—
F03. 01	PID运算使能 信号	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	1	0x7301	—
F03. 02	PID输入偏差 取反	0:不取反 1:取反	0	0x7302	—
F03. 04	PID给定值来 源	0:F03. 05 1:多段设定值 1 2:AI0 3:预留 4:预留	0	0x7304	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器 A-PZD2 10:预留 其它:模拟量 互联参数			
F03. 05	PID数值给定	-600.0~600.0%	0. 0	0x7305	%
F03. 06	PID给定冻结	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x7306	-
F03. 07	PID给定滤波 时间	0~60000ms	0	0x7307	ms
F03. 08	PID反馈来源	0:0 1:多段设定值 1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器	0	0x7308	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		A过程数据2 10:总线适配器B过程数据2 其它:模拟量 互联参数			
F03. 09	PID反馈滤波时间	0~60000ms	0	0x7309	ms
F03. 10	PID偏差附加给定	0:0 1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A过程数据2 10:总线适配器B过程数据2 其它:模拟量 互联参数	0	0x730a	-
F03. 11	比例增益KP	0.00~125.00	1.00	0x730b	-
F03. 12	比例增益系数	0:100.0% 1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A过程数据2	0	0x730c	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		10:总线适配器B过程数据2 其它:模拟量 互联参数			
F03. 13	积分时间Ti	0~60000ms	10	0x730d	ms
F03. 14	积分时间系数	0:100.0% 1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定	0	0x730e	-
F03. 17	PID输出积分初值	7:电动电位计 8:预留 9:总线适配器A过程数据2 10:总线适配器B过程数据2 其它:模拟量 互联参数	0	0x7311	-
F03. 19	PID积分分量强制使能	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x7313	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F03.20	PID积分分量强制值	0:0 1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A过程数据2 10:总线适配器B过程数据2 其它:模拟量互 联参数	0	0x7314	-
F03.21	PID输出极限	0.0~600.0	100.0	0x7315	%
F03.22	PID输出上限来源	0:100% 1:多段设定值1 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A过程数据2 10:总线适配器B过程数据2 其它:模拟量互 联参数	0	0x7316	-
F03.23	PID输出下限来源	0:0% 1:多段设定值1 2:AI0 3:预留	0	0x7317	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		4:预留 5:预留 6:多段值给定 7:电动电位计 8:预留 9:总线适配器A过程数据2 10:总线适配器B过程数据2 其它:模拟量互 联参数			
F03.24	PID输出限幅上升/下降时间	0.00~100.00	0.00	0x7318	s
F03.25	PID偏差死区使能	0:禁止 1:使能	0	0x7319	-
F03.26	PID偏差死区范围	0.0~100.0	0.0	0x731a	%
F03.27	PID反馈丢失检测值	0.0~100.0	0.0	0x731b	%
F03.28	PID反馈丢失检测时间	0.0~60.0	0.0	0x731c	s
F04组:抱闸控制					
F04.00	抱闸功能选择	0:无抱闸 1:有抱闸不带检测信息 2:有抱闸带检测信息	0	0x7400	-
F04.01	抱闸打开反馈检测时间	0.00~10.00s	0.00	0x7401	s
F04.02	抱闸闭合反馈检测时间	0.00~10.00s	0.00	0x7402	s
		0:无效 1:有效 2:DI0 3:DI1			

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F04. 03	抱闸打开命令来源	4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	1102	0x7403	—
F04. 04	抱闸打开比较值来源	0:0 其它:模拟量互 联参数	2311	0x7404	—
F04. 05	抱闸打开比较阈值	0.0~200.0%	0.0	0x7405	%
F04. 06	抱闸打开延迟时间	0.00~10.00s	0.00	0x7406	s
F04. 07	抱闸闭合转速阈值	1.0~200.0%	0.0	0x7407	%
F04. 08	抱闸闭合延迟时间	0.00~10.00s	0.00	0x7408	s
F04. 09	强制抱闸闭合命令来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	0	0x7409	—
		0:抱闸电流反 馈标志 1:保留			

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F04. 10	抱闸反馈点来源	2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:保留 其它:二进制互 联参数	0	0x740a	—
F04. 12	抱闸闭合比较值来源	0:0 其它:模拟量互 联参数	2301	0x740c	—
F04. 13	抱闸打开马达电流比较 阈值	1.0~200.0%	0.0	0x740d	%
F04. 14	PM抱闸输出 电源选择	0:5V 1:12V 2:24V	2	0x740e	—
F04. 16	抱闸打开机 械动作时间	0.00~10.00	0.50	0x7410	s
F04. 17	抱闸关闭机 械动作时间	0.00~10.00	0.50	0x7411	s
F04. 18	变频再启动 抱闸控制	0:抱闸不动作 1:抱闸动作	0	0x7412	—
F04. 19	低速掉电防 溜功能	0:禁止 1:使能	0	0x7413	—
F04. 21	变频再启动 等待时间	0.00~10.00	0.00	0x7415	s
F05组:预留					
F06组:预留					
F07组:预留					
F08组:提升控制模块					
		0:禁止 1:允许			

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F08.00	防摇摆使能	2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	0	0x7800	—
F08.01	防摇机构选 择	0:行走 1:提升	0	0x7801	—
F08.02	防摇最大摆 长	0.10m~100.00m	100.00	0x7802	m
F08.03	防摇最小摆 长	0.10m~100.00m	0.10	0x7803	m
F08.04	防摇最小转 速	0.0%~100.0%	0.0	0x7804	%
F08.05	摆长计算强 制使能	0:禁止 1:使能	0	0x7805	—
F08.06	防摇加减速 时间	0.0s~1000.0s	3.0	0x7806	s
F08.07	防摇动作速 度差值	0.0~100.0	20.0	0x7807	%
F08.08	目标频率滤 波时间	0.00~10.00	0.00	0x7808	s
F08.17	摆长来源选 择	0:设定值有效 (F08.18) 1:AI0 其它:模拟量互 联参数	0	0x7811	—
F08.18	固定摆长设 定值	1.00m~90.00m	9.00	0x7812	m
F08.19	摆长修正值	0.00m~10.00m	0.00	0x7813	m
F08.20	摆长基值	1.00m~100.00m	100.00	0x7814	m

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F08.21	实际摆长	1.00m~100.00m	1.00	0x7815	m
F08.22	摇摆周期	0.0s~20.0s	0.0	0x7816	s
F08.25	摆长手动清 零	0:禁止 1:允许	0	0x7819	—
F08.26	电机一圈摆 长变化长度	0.1mm~6000.0mm	6.7	0x781a	mm
F08.27	提升编码器 反馈高	0~65535	0	0x781b	—
F08.28	提升编码器 反馈低	0~65535	0	0x781c	—
F08.29	摆长计算方 向取反	0:禁止 1:允许	0	0x781d	—
F08.30	摆长计算方 式选择	0:由F08.26设 定 1:由F08.31~32 计算设定	0	0x781e	—
F08.31	防摇机械减 速比	0.0~6553.5	70.0	0x781f	—
F08.32	防摇卷扬机 直径	0.000~65.535	0.300	0x7820	m
F08.33	防摇滑轮组 倍率	0.0~6553.5	2.0	0x7821	—
F08.65	寸动功能使 能	0:禁止 1:允许 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x7841	—
F08.66	寸动使能来 源	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制互 联参数	0	0x7842	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
F08.67	寸动距离	0.10mm~20.00mm	2.00	0x7843	mm
F08.68	机械减速比	0.01~300.00	100.0	0x7844	—
F08.69	卷扬机直径	0.01m~10.00m	0.500	0x7845	m
F08.70	寸动速度来源	0:设定值有效 (F08.71) 1:AI0 2:AI1 3:HPI0 4:HPI1 其它:模拟量互 联参数	0	0x7846	—
F08.71	寸动速度	1.00Hz~5.00Hz	3.00	0x7847	Hz
F08.72	寸动加减速 时间	0.0~1000.0	5.0	0x7848	s
G:定位模式参数组					
G00组:位置控制参数					
G00.00	位置指令来源	0:0 1:脉冲指令 2:多段位置指 令给定 3:实时通讯数 据给定	2	0x8000	—
G00.01	位置指令方 向切换命令 来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 其它:二进制互 联参数	0	0x8001	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G00.02	位置指令平 均值滤波时 间	0.0~128.0ms	0.0	0x8002	ms
G00.03	位置指令一 阶低通滤波 时间	0.0~6553.5ms	0.0	0x8003	ms
G00.04	马达旋转1 圈的位置指 令数	0~1048576P/r	0	0x8004	p/r
G00.05	马达旋转1 圈的位置指 令数	0~1048576P/r	0	0x8005	p/r
G00.06	电子齿轮比 1 (分子)	1~1073741824P/r	1	0x8006	p/r
G00.07	电子齿轮比 1 (分子)	1~1073741824P/r	1	0x8007	p/r
G00.08	电子齿轮比 1 (分母)	1~1073741824P/r	1	0x8008	p/r
G00.09	电子齿轮比 1 (分母)	1~1073741824P/r	1	0x8009	p/r
G00.16	指令脉冲形 态	0:脉冲+方向, 正逻辑 1:脉冲+方向, 负逻辑 2:A相+B相, 4 倍频 3:CW+CCW	2	0x8010	—
G00.18	脉冲指令输 入禁止来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6	0	0x8012	—
G00.19	位置指令输 入禁止来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6	0	0x8013	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		9:DI7 10:DI8 其它:二进制 互联参数			
G00. 20	位置偏差清除动作选择	0:伺服OFF1停机后清除位置偏差 1:发生故障时清除位置偏差 2:位置偏差清除命令清除位置偏差	0	0x8014	-
G00. 21	位置偏差清除命令来源选择	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 其它:二进制 互联参数	0	0x8015	-
G00. 22	马达旋转方向选择	0:以CCW方向为正转方向 1:以CW方向为正转方向	0	0x8016	-
G00. 24	定位完成输出条件	0:位置偏差到达阈值时输出 1:位置偏差到达阈值且滤波后的位置指令为0时输出 2:位置偏差到	0	0x8018	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		达阈值且滤波前的位置指令为0时输出 3:位置偏差到达阈值且位置指令滤波为0时输出,保持定位完成保持时间有效			
G00. 25	定位完成阈值	1~65535P/r	1000	0x8018	p/r
G00. 26	定位接近阈值	1~65535P/r	65535	0x8019	p/r
G00. 27	定位完成窗口时间	0~30000ms	1	0x801a	ms
G00. 28	定位完成保持时间	0~30000ms	1	0x801b	ms
G00. 43	原点回归使能控制	0:关闭原点回归功能 1:原点回归命令(G00. 44)触发执行 2:预留 3:上电后立即启动原点回归 4:立即进行原点回归 5:预留 6:将当前位置设为零点	0	0x801c	-
G00. 44	原点回归启动命令来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3	0	0x802b	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 其它:二进制 互联参数			
G00. 45	原点回归模式	0:正向回零, 减速点和原点 均为原点开关 1:反向回零, 减速点和原点 均为原点开关 2:预留 3:预留 4:预留 5:预留 6:正向回零,减 速点、原点为 正向限位开关 7:反向回零,减 速点、原点为 反向限位开关	0	0x802d	-
G00. 46	高速搜索原点开关信号的速度	0~3000rpm	100	0x802e	rpm
G00. 47	低速搜索原点开关信号的速度	0~1000rpm	10	0x802f	rpm
G00. 48	搜索原点时的加减速时间	0~1000ms	1000	0x8030	ms
G00. 49	限定查找原点的时间	0~65535ms	65535	0x8031	ms
G00. 50	机械原点偏移量	-1073741824~ 1073741824	0	0x8032	p

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G00. 51	机械原点偏移量	-1073741824~ 1073741824	0	0x8033	p
G00. 52	原点偏移量及遇限处理方式选择	0:偏移量是原点开关位置 1:偏移量是原点回归后轴相对偏移量 2:偏移量是原点开关位置,遇到限位自动反向找零 3:偏移量是原点回归后轴相对偏移量,遇到限位自动反向找零	2	0x8034	-
G00. 53	原点开关来源选择	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 其它:二进制 互联参数	0	0x8035	-
G00. 54	机械原点偏移量来源选择	0:原点偏置设定值(G00. 50) 其它:模拟量 互联参数	0	0x8036	-
		0:无效 1:有效 2:DI0			

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G00.55	正限位命令来源选择	3:DI1 4:DI2 5:DI3 6:DI4 7:DI5	0	0x8037	-
G00.56	负限位命令来源选择	8:DI6 9:DI7 10:DI8 其它:二进制 互联参数	0	0x8038	-
G00.57	实际位移指令类型	0:相对位置 1:绝对位置	0	0x8039	-
G00.58	实际位移指令来源选择	0:0 1:直接设定值 (G00.59) 其它:模拟量 互联参数	0	0x803a	-
G00.59	实际位移指令直接设定值	-1073741824~ 1073741824	0	0x803b	um
G00.60	实际位移指令直接设定值	-1073741824~ 1073741824	0	0x803c	um
G00.61	实际位移最大速度来源选择	0:25.0% 1:多段设定值 2:AI0 3:预留 4:预留 5:预留 6:多段值给定 7:电动电位器 8:预留 9:总线适配器 A过程数据2 10:总线适配	0	0x803d	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		器B过程数据2 其它:模拟量 互联参数			
G00.62	实际位移加减速时间	0~65535	10	0x803e	ms
G00.63	新位置指令状态来源选择	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 其它:二进制 互联参数	0	0x803f	-
G00.64	实际位置指令更新命令来源选择	0:0 1:直接设定值 (G00.59) 其它:模拟量 互联参数	0	0x8040	-
G00.65	负载每行程的位移增量	1~65535	1000	0x8041	nm
G00.66	编码器位置反馈模式选择	0:增量位置模式 1:绝对位置模式	1	0x8042	-
G00.71	增量式编码器当前位置存储功能	0:无效 1:有效	0	0x8047	-
G00.74	模态轴选择	0:线性轴 1:旋转轴(模态轴)	0	0x804a	-
G00.75	模态补偿范围	1~2147483647	360000	0x804b	p
G00.76	模态补偿范围	1~2147483647	360000	0x804c	p
G00.77	绝对定位运行方向	0:按最短距离 1:正方向	0	0x804d	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		2:负方向 3:使用外部给定方向			
G00.78	绝对定位正向来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x804e	-
G00.79	绝对定位负向来源	7:DI5 8:DI6 9:DI7 10:DI8 其它:二进制互联参数	0	0x804f	-
G01组:伺服增益参数					
G01.00	第1位置环增益	0.0~2000.0Hz	39.0	0x8100	Hz
G01.01	第1速度环增益	0.1~2000.0Hz	25.0	0x8101	Hz
G01.02	第1速度环积分时间常数	0.15~512.00ms	31.83	0x8102	ms
G01.13	负载转动惯量比	0.00~120.00	0.00	0x810d	-
G01.20	速度前馈滤波时间参数	0.00~64.00ms	0.50	0x8114	ms
G01.21	速度前馈增益	0.0~100.0%	0.0	0x8115	%
G01.22	转矩前馈选择	0:无转矩前馈 1:内部转矩前馈	1	0x8116	-
G01.23	转矩前馈滤波时间参数	0.00~64.00ms	1.00	0x8117	ms
G01.24	转矩前馈增益	0.00~64.00ms	0.0	0x8118	%

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G01.31	PDF控制系数	0.0~100.0%	0.0	0x811f	%
G01.32	转矩滤波时间常数	0.00~30.00ms	0.00	0x8120	ms
G02组:自动调整参数					
G02.00	自调整模式选择	0:参数自整定无效,手工调节参数 1:参数自整定标准模式,刚性表自动调节增益参数	1	0x8200	-
G02.01	刚性等级选择	0~31	12	0x8201	-
G02.16	第1组陷波器中心频率	50~4000Hz	4000	0x8210	Hz
G02.17	第1组陷波器宽度等级	0~20	2	0x8211	-
G02.18	第1组陷波器衰减等级	0~99	25	0x8212	-
G02.19	第2组陷波器中心频率	50~4000Hz	4000	0x8213	Hz
G02.20	第2组陷波器宽度等级	0~20	2	0x8214	-
G02.21	第2组陷波器衰减等级	0~99	25	0x8215	-
G02.22	第3组陷波器中心频率	50~4000Hz	4000	0x8216	Hz
G02.23	第3组陷波器宽度等级	0~20	2	0x8217	-
G02.24	第3组陷波器衰减等级	0~99	25	0x8218	-
G02.28	陷波共振频率辨识结果	0~4000Hz	4000	0x821c	Hz
G02.31	转矩扰动补偿增益	-100.0%~100.0%	0	0x821f	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G02. 32	转矩扰动观测器滤波时间	0. 00~25. 00ms	10. 00	0x8220	ms
G02. 36	离线数据来源	0:性能数据采样 1:功能数据采样 2:保留	0	0x8224	-
G02. 45	低频振动模型频率选择	0:手动设置振动频率 1:自动辨识振动频率	0	0x822d	-
G02. 46	低频共振频率	1. 0~100. 0Hz	100. 0	0x822e	Hz
G02. 47	低频振动滤波宽度	0~10	2	0x822f	-
G02. 48	伺服低频振动位置偏差判断阈值	1~1000p	5	0x8230	p
G03组:伺服专用功能参数					
G03. 03	位置偏差故障最小阈值(圈)	1~1073741824	0. 60	0x8303	-
G03. 04	位置偏差阈值比例系数	1~1073741824	0. 100	0x8304	%
G03. 13	软限位设置 软限位最大值	0:不使能软限位 1:使能软限位	0	0x830d	-
G03. 14	软限位最大值	-2147483648~2147483647	2147483647	0x830e	p
G03. 15	软限位最小值	-2147483648~2147483647	2147483647	0x830f	p
G03. 16	软限位最小值	-2147483648~2147483647	-2147483647	0x8310	p
G03. 17	位置JOG1移动位移	-2147483648~2147483647	-2147483647	0x8311	p

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G02. 32	转矩扰动观测器滤波时间	0. 00~25. 00ms	10. 00	0x8220	ms
G02. 36	离线数据来源	0:性能数据采样 1:功能数据采样 2:保留	0	0x8224	-
G02. 45	低频振动模型频率选择	0:手动设置振动频率 1:自动辨识振动频率	0	0x822d	-
G02. 46	低频共振频率	1. 0~100. 0Hz	100. 0	0x822e	Hz
G02. 47	低频振动滤波宽度	0~10	2	0x822f	-
G02. 48	伺服低频振动位置偏差判断阈值	1~1000p	5	0x8230	p
G03组:伺服专用功能参数					
G03. 03	位置偏差故障最小阈值(圈)	1~1073741824	0. 60	0x8303	-
G03. 04	位置偏差阈值比例系数	1~1073741824	0. 100	0x8304	%
G03. 13	软限位设置 软限位最大值	0:不使能软限位 1:使能软限位	0	0x830d	-
G03. 14	软限位最大值	-2147483648~2147483647	2147483647	0x830e	p
G03. 15	软限位最大值	-2147483648~2147483647	2147483647	0x830f	p
G03. 16	软限位最小值	-2147483648~2147483647	-2147483647	0x8310	p
G03. 17	软限位最小值	-2147483648~2147483647	-2147483647	0x8311	p

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G03. 20	位置JOG1移动位移	0~1	10000	0x8314	p
G03. 21	位置JOG1移动位移	0~1	10000	0x8315	p
G03. 22	位置JOG1最大速度	0~1	200	0x8316	rpm
G03. 23	位置JOG1加速减速时间	0~1	10	0x8317	ms
G03. 24	位置JOG2移动位移	0~1	10000	0x8318	p
G03. 25	位置JOG2移动位移	0~1	10000	0x8319	p
G03. 26	位置JOG2最大速度	0~1	200	0x831a	rpm
G03. 27	位置JOG2加速减速时间	0~1	10	0x831b	ms
G03. 29	EPOS任务取消命令来源	0:无效 1:有效 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x831d	-
G03. 30	EPOS任务暂停命令来源	7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x831e	-
G03. 31	EPOS最大速度	0~1	30000	0x831f	1000L U/min
G03. 32	EPOS最大速度	0~1	30000	0x8320	1000L U/min
G03. 33	EPOS最大加速度	0~1	100	0x8321	1000L U/s2

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G03. 34	EPOS最大加速度	0~1	100	0x8322	1000L U/s2
G03. 35	EPOS最大减速度	0~1	100	0x8323	1000L U/s2
G03. 36	EPOS最大减速度	0~1	100	0x8324	1000L U/s2
G03. 37	EPOS任务取消减速度倍率	0~1	100.0	0x8325	%
G03. 38	固定停止点功能激活来源	0:无效 1:有效 2:PN-STW2.8 其它:二进制 互联参数	2	0x8326	-
G03. 39	固定停止点最大跟随误差	0~1	1000	0x8327	p
G03. 40	固定停止点最大跟随误差	0~1	0	0x8328	p
G03. 41	固定停止点监控窗口	0~1	100	0x8329	p
G03. 42	固定停止点未到达报警配置	0:警告(不停机) 1:故障(停机)	0	0x832a	-
G04组:多段位置功能参数					
G04. 00	多段位置运行方式	0:单次运行结束停机 (G04. 05进行段数选择) 1:循环运行 (G04. 05进行段数选择) 2:多段位置给定值选择切换运行 3:顺序运行	0	0x8400	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
		(G04.05进行 段数选择)			
G04.01	多段位置给 定值选择1	0:0 1:1 2:DI0	0	0x8401	-
G04.02	多段位置给 定值选择2	3:DI1 4:DI2 5:DI3	0	0x8402	-
G04.03	多段位置给 定值选择3	6:DI4 7:DI5 8:DI6	0	0x8403	-
G04.04	多段位置给 定值选择4	9:DI7 10:预留 其它:二进制 互联参数	0	0x8404	-
G04.05	位移指令终 点段数选择	1~16	1	0x8405	-
G04.06	余量处理方 式	0:继续运行没 走完的段 1:从第1段重 新开始运行	0	0x8406	-
G04.07	段间等待时 间单位	0:ms 1:s	0	0x8407	-
G04.08	位移指令类 型选择	0:相对位移指 令 1:绝对位移指 令	0	0x8408	-
G04.09	顺序运行起 始段选择	0~16	0	0x8409	-
G04.10	第1段移动 位移	-1073741824 ~1073741824 (指令单位)	10000	0x840a	p
G04.11	第1段移动 位移	-1073741824 ~1073741824 (指令单位)	10000	0x840b	p

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04.12	第1段位移 最大运行速 度	1~6000rpm	200	0x840c	rpm
G04.13	第1段位移 加减速时间	0~65535ms(s)	10	0x840d	ms
G04.14	第1段位移 完成后等待 时间	0~10000ms(s)	10	0x840e	-
G04.15	第2段移动 位移	-1073741824 ~1073741824 (指令单位)	10000	0x840f	p
G04.16	第2段移动 位移	-1073741824 ~1073741824 (指令单位)	10000	0x8410	p
G04.17	第2段位移 最大运行速 度	1~6000rpm	200	0x8411	rpm
G04.18	第2段位移 加减速时间	0~65535ms(s)	10	0x8412	ms
G04.19	第2段位移 完成后等待 时间	0~10000ms(s)	10	0x8413	-
G04.20	第3段移动 位移	-1073741824 ~1073741824 (指令单位)	10000	0x8414	p
G04.21	第3段移动 位移	-1073741824 ~1073741824 (指令单位)	10000	0x8415	p
G04.22	第3段位移 最大运行速 度	1~6000rpm	200	0x8416	rpm
G04.23	第3段位移 加减速时间	0~65535ms(s)	10	0x8417	ms
G04.24	第3段位移 完成后等待 时间	0~10000ms(s)	10	0x8418	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04. 25	第4段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8419	p
G04. 26	第4段移动位移	-1073741824~1073741824 (指令单位)	10000	0x841a	p
G04. 27	第4段位移最大运行速度	1~6000rpm	200	0x841b	rpm
G04. 28	第4段位移加减速时间	0~65535ms (s)	10	0x841c	ms
G04. 29	第4段位移完成后等待时间	0~10000ms (s)	10	0x841d	-
G04. 30	第5段移动位移	-1073741824~1073741824 (指令单位)	10000	0x841e	p
G04. 31	第5段移动位移	-1073741824~1073741824 (指令单位)	10000	0x841f	p
G04. 32	第5段位移最大运行速度	1~6000rpm	200	0x8420	rpm
G04. 33	第5段位移加减速时间	0~65535ms (s)	10	0x8421	ms
G04. 34	第5段位移完成后等待时间	0~10000ms (s)	10	0x8422	-
G04. 35	第6段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8423	p
G04. 36	第6段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8424	p

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04. 37	第6段位移最大运行速度	1~6000rpm	200	0x8425	rpm
G04. 38	第6段位移加减速时间	0~65535ms (s)	10	0x8426	ms
G04. 39	第6段位移完成后等待时间	0~10000ms (s)	10	0x8427	-
G04. 40	第7段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8428	p
G04. 41	第7段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8429	p
G04. 42	第7段位移最大运行速度	1~6000rpm	200	0x842a	rpm
G04. 43	第7段位移加减速时间	0~65535ms (s)	10	0x842b	ms
G04. 44	第7段位移完成后等待时间	0~10000ms (s)	10	0x842c	-
G04. 45	第8段移动位移	-1073741824~1073741824 (指令单位)	10000	0x842d	p
G04. 46	第8段移动位移	-1073741824~1073741824 (指令单位)	10000	0x842e	p
G04. 47	第8段位移最大运行速度	1~6000rpm	200	0x842f	rpm
G04. 48	第8段位移加减速时间	0~65535ms (s)	10	0x8430	ms

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04. 49	第8段位移完成后等待时间	0~10000ms (s)	10	0x8431	-
G04. 50	第9段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8432	p
G04. 51	第9段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8433	p
G04. 52	第9段位移最大运行速度	1~6000rpm	200	0x8434	rpm
G04. 53	第9段位移加减速时间	0~65535ms (s)	10	0x8435	ms
G04. 54	第9段位移完成后等待时间	0~10000ms (s)	10	0x8436	-
G04. 55	第10段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8437	p
G04. 56	第10段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8438	p
G04. 57	第10段位移最大运行速度	1~6000rpm	200	0x8439	rpm
G04. 58	第10段位移加减速时间	0~65535ms (s)	10	0x843a	ms
G04. 59	第10段位移完成后等待时间	0~10000ms (s)	10	0x843b	-
G04. 60	第11段移动位移	-1073741824~1073741824 (指令单位)	10000	0x843c	p

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04. 61	第11段移动位移	-1073741824~1073741824 (指令单位)	10000	0x843d	p
G04. 62	第11段位移最大运行速度	1~6000rpm	200	0x843e	rpm
G04. 63	第11段位移加减速时间	0~65535ms (s)	10	0x843f	ms
G04. 64	第11段位移完成后等待时间	0~10000ms (s)	10	0x8440	-
G04. 65	第12段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8441	p
G04. 66	第12段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8442	p
G04. 67	第12段位移最大运行速度	1~6000rpm	200	0x8443	rpm
G04. 68	第12段位移加减速时间	0~65535ms (s)	10	0x8444	ms
G04. 69	第12段位移完成后等待时间	0~10000ms (s)	10	0x8445	-
G04. 70	第13段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8446	p
G04. 71	第13段移动位移	-1073741824~1073741824 (指令单位)	10000	0x8447	p
G04. 72	第13段位移最大运行速度	1~6000rpm	200	0x8448	rpm

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04. 71	第13段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x8447	p
G04. 72	第13段位移最大运行速度	1~6000rpm	200	0x8448	rpm
G04. 73	第13段位移加减速时间	0~65535ms (s)	10	0x8449	ms
G04. 74	第13段位移完成后等待时间	0~10000ms (s)	10	0x844a	-
G04. 75	第14段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x844b	p
G04. 76	第14段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x844c	p
G04. 77	第14段位移最大运行速度	1~6000rpm	200	0x844d	rpm
G04. 78	第14段位移加减速时间	0~65535ms (s)	10	0x844e	ms
G04. 79	第14段位移完成后等待时间	0~10000ms (s)	10	0x844f	-
G04. 80	第15段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x8450	p
G04. 81	第15段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x8451	p
G04. 82	第15段位移最大运行速度	1~6000rpm	200	0x8452	rpm

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G04. 83	第15段位移加减速时间	0~65535ms (s)	10	0x8453	ms
G04. 84	第15段位移完成后等待时间	0~10000ms (s)	10	0x8454	-
G04. 85	第16段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x8455	p
G04. 86	第16段移动位移	-1073741824 ~1073741824 (指令单位)	10000	0x8456	p
G04. 87	第16段位移最大运行速度	1~6000rpm	200	0x8457	rpm
G04. 88	第16段位移加减速时间	0~65535ms (s)	10	0x8458	ms
G04. 89	第16段位移完成后等待时间	0~10000ms (s) 0:0	10	0x8459	-
G04. 90	多段位置使能来源选择	1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:预留 其它:二进制 互联参数	0	0x845a	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G05组:全闭环功能参数					
G05. 00	位置控制反馈位置来源	0:马达内部编码器 1:普通式ABZ编码器(DB15) 2:预留(旋变) 3:预留(省线) 4:BISS-C通信编码器(1222) 5:RS485通信编码器(1623) 6:SSI通信编码器	0	0x8500	-
G05. 01	外部编码器方向选择	0:不取反 1:取反	0	0x8501	-
G05. 04	齿轮比-负载转数	0~1	1	0x8504	-
G05. 05	齿轮比-马达转数	0~1	1	0x8505	-
G05. 06	负载每行程的负载编码器增量	0~1073741824	10000	0x8506	p
G05. 07	负载每行程的负载编码器增量	0~1073741824	10000	0x8507	p
G05. 08	全闭环位置偏差过大阈值	0~1073741824	10000	0x8508	p
G05. 09	全闭环位置偏差过大阈值	0~1073741824	10000	0x8509	p
G05. 16	全闭环位置偏差计数器	0:自然二进制码 1:格雷码	0	0x8510	-
G05. 17	全闭环位置偏差计数器	125~4000	1000	0x8511	kHz

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
G05. 18	内部编码器反馈脉冲计数器	8~31	21	0x8512	-
G05. 19	内部编码器反馈脉冲计数器	0~31	0	0x8513	-
P:互联参数组					
P00组:硬件状态(二进制互联)					
P00. 00	逻辑0	0	0	0xe000	-
P00. 01	逻辑1	1	1	0xe001	-
P00. 02	多功能数字输入DI0	0~1	0	0xe002	-
P00. 03	多功能数字输入DI1	0~1	0	0xe003	-
P00. 04	多功能数字输入DI2	0~1	0	0xe004	-
P00. 05	多功能数字输入DI3	0~1	0	0xe005	-
P00. 06	多功能数字输入DI4	0~1	0	0xe006	-
P00. 07	多功能数字输入DI5	0~1	0	0xe007	-
P00. 08	多功能数字输入DI6	0~1	0	0xe008	-
P00. 09	多功能数字输入DI7	0~1	0	0xe009	-
P00. 10	多功能数字输入DI8	0~1	0	0xe00a	-
P00. 11	多功能数字输入DI9	0~1	0	0xe00b	-
P00. 12	多功能数字输入DI10	0~1	0	0xe00c	-
P00. 23	多功能数字输入DI0取反	0~1	0	0xe017	-
P00. 24	多功能数字输入DI1取反	0~1	0	0xe018	-
P00. 25	多功能数字输入DI2取反	0~1	0	0xe019	-
P00. 26	多功能数字输入DI3取反	0~1	0	0xe01a	-
P00. 27	多功能数字输入DI4取反	0~1	0	0xe01b	-
P00. 28	多功能数字输入DI5取反	0~1	0	0xe01c	-
P00. 29	多功能数字输入DI6取反	0~1	0	0xe01d	-
P00. 30	多功能数字输入DI7取反	0~1	0	0xe01e	-

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
P00.31	多功能数字输入DI8取反	0~1	0	0xe01f	-
P00.32	多功能数字输入DI9取反	0~1	0	0xe020	-
P00.33	多功能数字输入DI10取反	0~1	0	0xe021	-
P00.50	多功能数字输出D00	0~1	0	0xe032	-
P00.57	多功能数字输出D00取反	0~1	0	0xe039	-
P00.64	双向端子DI020输入信号	0~1	0	0xe040	-
P00.65	双向端子DI021输入信号	0~1	0	0xe041	-
P00.66	双向端子DI022输入信号	0~1	0	0xe042	-
P00.67	双向端子DI023输入信号	0~1	0	0xe043	-
P00.68	双向端子DI024输入信号	0~1	0	0xe044	-
P00.69	双向端子DI025输入信号	0~1	0	0xe045	-
P00.70	双向端子DI026输入信号	0~1	0	0xe046	-
P00.71	双向端子DI027输入信号	0~1	0	0xe047	-
P00.72	双向端子DI020输出信号	0~1	0	0xe048	-
P00.73	双向端子DI021输出信号	0~1	0	0xe049	-
P00.74	双向端子DI022输出信号	0~1	0	0xe04a	-
P00.75	双向端子DI023输出信号	0~1	0	0xe04b	-
P00.76	双向端子DI024输出信号	0~1	0	0xe04c	-

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
P00.77	双向端子DI025输出信号	0~1	0	0xe04d	-
P00.78	双向端子DI026输出信号	0~1	0	0xe04e	-
P00.79	双向端子DI027输出信号	0~1	0	0xe04f	-
P00.80	双向端子DI020输入信号取反	0~1	0	0xe050	-
P00.81	双向端子DI021输入信号取反	0~1	0	0xe051	-
P00.82	双向端子DI022输入信号取反	0~1	0	0xe052	-
P00.83	双向端子DI023输入信号取反	0~1	0	0xe053	-
P00.84	双向端子DI024输入信号取反	0~1	0	0xe054	-
P00.85	双向端子DI025输入信号取反	0~1	0	0xe055	-
P00.86	双向端子DI026输入信号取反	0~1	0	0xe056	-
P00.87	双向端子DI027输入信号取反	0~1	0	0xe057	-
P00.88	双向端子DI020输出信号取反	0~1	0	0xe058	-
P00.89	双向端子DI021输出信号取反	0~1	0	0xe059	-
P00.90	双向端子DI022输出信号取反	0~1	0	0xe05a	-
P00.91	双向端子DI023输出信号取反	0~1	0	0xe05b	-
P00.92	双向端子DI024输出信号取反	0~1	0	0xe05c	-
P00.93	双向端子DI025输出信号取反	0~1	0	0xe05d	-
P00.94	双向端子DI026输出信号取反	0~1	0	0xe05e	-

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
P00.95	双向端子DI027输出信号取反	0~1	0	0xe05f	—
P01组:系统控制字与状态(二进制互联)					
P01.00	开机准备好	0~1	0	0xe100	—
P01.01	运行准备好	0~1	0	0xe101	—
P01.02	运行	0~1	0	0xe102	—
P01.03	故障状态	0~1	0	0xe103	—
P01.04	输出使能(OFF2)无效	0~1	0	0xe104	—
P01.05	快速停机(OFF3)无效	0~1	0	0xe105	—
P01.06	速度到达	0~1	0	0xe106	—
P01.07	警告状态	0~1	0	0xe107	—
P01.08	转速输出偏差过大	0~1	0	0xe108	—
P01.09	速度比较值到达	0~1	0	0xe109	—
P01.10	转矩/电流达限幅	0~1	0	0xe10a	—
P01.11	抱闸打开命令状态	0~1	0	0xe10b	—
P01.12	速度正向	0~1	0	0xe10c	—
P01.13	IGBT运行	0~1	0	0xe10d	—
P01.14	点动运行有效	0~1	0	0xe10e	—
P01.15	预励磁启动	0~1	0	0xe10f	—
P01.16	开启直流制动	0~1	0	0xe110	—
P01.18	转矩控制有效	0~1	0	0xe112	—
P01.20	开机未准备好	0~1	0	0xe114	—
P01.21	运行未准备好	0~1	0	0xe115	—
P01.22	未运行	0~1	0	0xe116	—
P01.23	无故障	0~1	0	0xe117	—
P01.24	输出禁止(OFF2)	0~1	0	0xe118	—
P01.25	OFF3有效	0~1	0	0xe119	—
P01.26	速度未到达	0~1	0	0xe11a	—
P01.27	无警告	0~1	0	0xe11b	—
P01.28	转速输出偏差正常	0~1	0	0xe11c	—
P01.29	速度比较值未到达	0~1	0	0xe11d	—
P01.30	转矩/电流未到限幅	0~1	0	0xe11e	—
P01.31	抱闸闭合中	0~1	0	0xe11f	—
P01.32	速度负向	0~1	0	0xe120	—
P01.33	IGBT封锁	0~1	0	0xe121	—
P01.34	点动运行无效	0~1	0	0xe122	—

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
P01.35	预励磁完成	0~1	0	0xe123	—
P01.36	直流制动结束	0~1	0	0xe124	—
P01.38	定位完成标志	0~1	0	0xe126	—
P01.39	定位接近标志	0~1	0	0xe127	—
P01.41	RFG输出禁止	0~1	0	0xe129	—
P01.42	RFG暂停	0~1	0	0xe12a	—
P01.43	RFG输入禁止	0~1	0	0xe12b	—
P01.44	RFG加速	0~1	0	0xe12c	—
P01.45	RFG减速	0~1	0	0xe12d	—
P01.46	RFG恒速	0~1	0	0xe12e	—
P01.48	Vdc_min激活	0~1	0	0xe130	—
P01.49	Vdc_max激活	0~1	0	0xe131	—
P01.50	给定转矩达到上限幅	0~1	0	0xe132	—
P01.51	给定转矩达到下限幅	0~1	0	0xe133	—
P01.52	输出转矩达到限幅	0~1	0	0xe134	—
P01.58	抱闸已打开	0~1	0	0xe13a	—
P01.59	抱闸已闭合	0~1	0	0xe13b	—
P01.60	抱闸无法打开	0~1	0	0xe13c	—
P01.61	抱闸无法闭合	0~1	0	0xe13d	—
P01.62	马达预过载状态	0~1	0	0xe13e	—
P01.63	零速给定运行	0~1	0	0xe13f	—
P01.64	直流母线带电标志	0~1	0	0xe140	—
P01.65	马达速度为零	0~1	0	0xe141	—
P01.66	PID功能生效	0~1	0	0xe142	—
P01.67	PID运算使能	0~1	0	0xe143	—
P01.68	PID作用方向	0~1	0	0xe144	—
P01.69	PID给定冻结使能	0~1	0	0xe145	—
P01.70	PID积分分量强制使能	0~1	0	0xe146	—
P01.71	PID偏差死区使能	0~1	0	0xe147	—
P01.72	PID饱和状态	0~1	0	0xe148	—
P01.73	马达过温保护标志	0~1	0	0xe149	—
P01.74	马达过温警告标志	0~1	0	0xe14a	—
P01.75	马达选择bit0	0~1	0	0xe14b	—
P01.76	马达选择bit1	0~1	0	0xe14c	—
P01.77	加减速时间选择1	0~1	0	0xe14d	—
P01.78	加减速时间选择2	0~1	0	0xe14e	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P01.79	多段速给定选择1	0~1	0	0xe14f	—
P01.80	多段速给定选择2	0~1	0	0xe150	—
P01.81	多段速给定选择3	0~1	0	0xe151	—
P01.82	多段速给定选择4	0~1	0	0xe152	—
P01.84	抱闸反馈标志	0~1	0	0xe154	—
P01.85	RFG运行标志	0~1	0	0xe155	—
P01.87	正向限位开关已激活	0~1	0	0xe157	—
P01.88	负向限位开关已激活	0~1	0	0xe158	—
P01.89	原点回归运行中	0~1	0	0xe159	—
P01.90	参考点已设置	0~1	0	0xe15a	—
P01.91	位置指令完成	0~1	0	0xe15b	—
P01.92	已到达固定停止点	0~1	0	0xe15c	—
P01.93	防摇摆使能标志	0~1	0	0xe15d	—
P01.94	防摇摆速度锁存标志	0~1	0	0xe15e	—
P02组:FBA与故障标志(二进制互联)					
P02.00	总线适配器A输入 .PZD1.0	0~1	0	0xe200	—
P02.01	总线适配器A输入 .PZD1.1	0~1	0	0xe201	—
P02.02	总线适配器A输入 .PZD1.2	0~1	0	0xe202	—
P02.03	总线适配器A输入 .PZD1.3	0~1	0	0xe203	—
P02.04	总线适配器A输入 .PZD1.4	0~1	0	0xe204	—
P02.05	总线适配器A输入 .PZD1.5	0~1	0	0xe205	—
P02.06	总线适配器A输入 .PZD1.6	0~1	0	0xe206	—
P02.07	总线适配器A输入 .PZD1.7	0~1	0	0xe207	—
P02.08	总线适配器A输入 .PZD1.8	0~1	0	0xe208	—
P02.09	总线适配器A输入 .PZD1.9	0~1	0	0xe209	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P02.10	总线适配器A输入 .PZD1.10	0~1	0	0xe20a	—
P02.11	总线适配器A输入 .PZD1.11	0~1	0	0xe20b	—
P02.12	总线适配器A输入 .PZD1.12	0~1	0	0xe20c	—
P02.13	总线适配器A输入 .PZD1.13	0~1	0	0xe20d	—
P02.14	总线适配器A输入 .PZD1.14	0~1	0	0xe20e	—
P02.15	总线适配器A输入 .PZD1.15	0~1	0	0xe20f	—
P02.16	总线适配器A输入 .PZDx.0	0~1	0	0xe210	—
P02.17	总线适配器A输入 .PZDx.1	0~1	0	0xe211	—
P02.18	总线适配器A输入 .PZDx.2	0~1	0	0xe212	—
P02.19	总线适配器A输入 .PZDx.3	0~1	0	0xe213	—
P02.20	总线适配器A输入 .PZDx.4	0~1	0	0xe214	—
P02.21	总线适配器A输入 .PZDx.5	0~1	0	0xe215	—
P02.22	总线适配器A输入 .PZDx.6	0~1	0	0xe216	—
P02.23	总线适配器A输入 .PZDx.7	0~1	0	0xe217	—
P02.24	总线适配器A输入 .PZDx.8	0~1	0	0xe218	—
P02.25	总线适配器A输入 .PZDx.9	0~1	0	0xe219	—
P02.26	总线适配器A输入 .PZDx.10	0~1	0	0xe21a	—
P02.27	总线适配器A输入 .PZDx.11	0~1	0	0xe21b	—

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
P02. 28	总线适配器A输入 . PZDx. 12	0~1	0	0xe21c	-
P02. 29	总线适配器A输入 . PZDx. 13	0~1	0	0xe21d	-
P02. 30	总线适配器A输入 . PZDx. 14	0~1	0	0xe21e	-
P02. 31	总线适配器A输入 . PZDx. 15	0~1	0	0xe21f	-
P02. 32	Modbus通讯启停命令	0~1	0	0xe220	-
P02. 33	Modbus通讯点动启停	0~1	0	0xe221	-
P02. 34	Modbus通讯自由停车	0~1	0	0xe222	-
P02. 35	Modbus通讯故障复位	0~1	0	0xe223	-
P02. 50	DriveLink. PZD1. 0	0~1	0	0xe232	-
P02. 51	DriveLink. PZD1. 1	0~1	0	0xe233	-
P02. 52	DriveLink. PZD1. 2	0~1	0	0xe234	-
P02. 53	DriveLink. PZD1. 3	0~1	0	0xe235	-
P02. 54	DriveLink. PZD1. 4	0~1	0	0xe236	-
P02. 55	DriveLink. PZD1. 5	0~1	0	0xe237	-
P02. 56	DriveLink. PZD1. 6	0~1	0	0xe238	-
P02. 57	DriveLink. PZD1. 7	0~1	0	0xe239	-
P02. 58	DriveLink. PZD1. 8	0~1	0	0xe23a	-
P02. 59	DriveLink. PZD1. 9	0~1	0	0xe23b	-
P02. 60	DriveLink. PZD1. 10	0~1	0	0xe23c	-
P02. 61	DriveLink. PZD1. 11	0~1	0	0xe23d	-
P02. 62	DriveLink. PZD1. 12	0~1	0	0xe23e	-
P02. 63	DriveLink. PZD1. 13	0~1	0	0xe23f	-
P02. 64	DriveLink. PZD1. 14	0~1	0	0xe240	-
P02. 65	DriveLink. PZD1. 15	0~1	0	0xe241	-
P03组:逻辑算术模块(二进制互联)					
P03. 00	与模块A输出	0~1	0	0xe300	-
P03. 01	与模块B输出	0~1	0	0xe301	-
P03. 02	与模块C输出	0~1	0	0xe302	-
P03. 03	与模块D输出	0~1	0	0xe303	-
P03. 04	非模块A输出	0~1	0	0xe304	-
P03. 05	非模块B输出	0~1	0	0xe305	-
P03. 06	非模块C输出	0~1	0	0xe306	-

功能码	名称	设定范围	出厂值	通信地址	单位(5bit)
P03. 07	非模块D输出	0~1	0	0xe307	-
P03. 08	非模块E输出	0~1	0	0xe308	-
P03. 09	非模块F输出	0~1	0	0xe309	-
P03. 10	非模块G输出	0~1	0	0xe30a	-
P03. 11	非模块H输出	0~1	0	0xe30b	-
P03. 12	或模块A输出	0~1	0	0xe30c	-
P03. 13	或模块B输出	0~1	0	0xe30d	-
P03. 14	或模块C输出	0~1	0	0xe30e	-
P03. 15	或模块D输出	0~1	0	0xe30f	-
P03. 16	异或模块A输出	0~1	0	0xe310	-
P03. 17	异或模块B输出	0~1	0	0xe311	-
P03. 18	异或模块C输出	0~1	0	0xe312	-
P03. 19	异或模块D输出	0~1	0	0xe313	-
P03. 20	延时模块A输出	0~1	0	0xe314	-
P03. 21	延时模块B输出	0~1	0	0xe315	-
P03. 22	延时模块C输出	0~1	0	0xe316	-
P03. 23	延时模块D输出	0~1	0	0xe317	-
P03. 24	比较模块A大于标志	0~1	0	0xe318	-
P03. 25	比较模块A等于标志	0~1	0	0xe319	-
P03. 26	比较模块A小于标志	0~1	0	0xe31a	-
P03. 27	比较模块B大于标志	0~1	0	0xe31b	-
P03. 28	比较模块B等于标志	0~1	0	0xe31c	-
P03. 29	比较模块B小于标志	0~1	0	0xe31d	-
P03. 30	除法模块A被除数为0	0~1	0	0xe31e	-
P03. 31	除法模块B被除数为0	0~1	0	0xe31f	-
P03. 32	绝对值模块A输入量符号	0~1	0	0xe320	-
P03. 33	绝对值模块B输入量符号	0~1	0	0xe321	-
P03. 34	绝对值模块A溢出标志	0~1	0	0xe322	-
P03. 35	绝对值模块B溢出标志	0~1	0	0xe323	-
P03. 36	加法模块A溢出标志	0~1	0	0xe324	-
P03. 37	加法模块B溢出标志	0~1	0	0xe325	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P03.38	加法模块C溢出标志	0~1	0	0xe326	—
P03.39	减法模块A溢出标志	0~1	0	0xe327	—
P03.40	减法模块B溢出标志	0~1	0	0xe328	—
P03.41	乘法模块A溢出标志	0~1	0	0xe329	—
P03.42	乘法模块B溢出标志	0~1	0	0xe32a	—
P03.43	除法模块A溢出标志	0~1	0	0xe32b	—
P03.44	除法模块B溢出标志	0~1	0	0xe32c	—
P03.47	比较模块C大于标志	0~1	0	0xe32f	—
P03.48	比较模块C等于标志	0~1	0	0xe330	—
P03.49	比较模块C小于标志	0~1	0	0xe331	—
P03.50	比较模块D大于标志	0~1	0	0xe332	—
P03.51	比较模块D等于标志	0~1	0	0xe333	—
P03.52	比较模块D小于标志	0~1	0	0xe334	—
P04组: 字位转换模块(二进制互联)					
P04.00	字转位功能A输出bit0	0~1	0	0xe400	—
P04.01	字转位功能A输出bit1	0~1	0	0xe401	—
P04.02	字转位功能A输出bit2	0~1	0	0xe402	—
P04.03	字转位功能A输出bit3	0~1	0	0xe403	—
P04.04	字转位功能A输出bit4	0~1	0	0xe404	—
P04.05	字转位功能A输出bit5	0~1	0	0xe405	—
P04.06	字转位功能A输出bit6	0~1	0	0xe406	—
P04.07	字转位功能A输出bit7	0~1	0	0xe407	—
P04.08	字转位功能A输出bit8	0~1	0	0xe408	—
P04.09	字转位功能A输出bit9	0~1	0	0xe409	—
P04.10	字转位功能A输出bit10	0~1	0	0xe40a	—
P04.11	字转位功能A输出bit11	0~1	0	0xe40b	—
P04.12	字转位功能A输出bit12	0~1	0	0xe40c	—
P04.13	字转位功能A输出bit13	0~1	0	0xe40d	—
P04.14	字转位功能A输出bit14	0~1	0	0xe40e	—
P04.15	字转位功能A输出bit15	0~1	0	0xe40f	—
P04.16	字转位功能B输出bit0	0~1	0	0xe410	—
P04.17	字转位功能B输出bit1	0~1	0	0xe411	—
P04.18	字转位功能B输出bit2	0~1	0	0xe412	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P04.19	字转位功能B输出bit3	0~1	0	0xe413	—
P04.20	字转位功能B输出bit4	0~1	0	0xe414	—
P04.21	字转位功能B输出bit5	0~1	0	0xe415	—
P04.22	字转位功能B输出bit6	0~1	0	0xe416	—
P04.23	字转位功能B输出bit7	0~1	0	0xe417	—
P04.24	字转位功能B输出bit8	0~1	0	0xe418	—
P04.25	字转位功能B输出bit9	0~1	0	0xe419	—
P04.26	字转位功能B输出bit10	0~1	0	0xe41a	—
P04.27	字转位功能B输出bit11	0~1	0	0xe41b	—
P04.28	字转位功能B输出bit12	0~1	0	0xe41c	—
P04.29	字转位功能B输出bit13	0~1	0	0xe41d	—
P04.30	字转位功能B输出bit14	0~1	0	0xe41e	—
P04.31	字转位功能B输出bit15	0~1	0	0xe41f	—
P05组: 预留					
P06组: 运行状态与外设(模拟量互联)					
P06.00	当前状态机	0~65535	0	0xe600	—
P06.01	目标频率	0~65535	0	0xe601	—
P06.02	给定频率	0~65535	0	0xe602	—
P06.03	输出频率	0~65535	0	0xe603	—
P06.04	目标速度	0~65535	0	0xe604	—
P06.05	给定速度	0~65535	0	0xe605	—
P06.06	马达转速	0~65535	0	0xe606	—
P06.07	输出电压	0~65535	0	0xe607	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P06.08	输出电流	0~65535	0	0xe608	—
P06.09	输出功率	0~65535	0	0xe609	—
P06.10	转矩模式转矩设定值	0~65535	0	0xe60a	—
P06.11	输出转矩	0~65535	0	0xe60b	—
P06.12	转矩电流	0~65535	0	0xe60c	—
P06.14	直流母线电压(V)	0~65535	0.0	0xe60e	V
P06.15	散热器温度(℃)	0~65535	0	0xe60f	℃
P06.16	编码器反馈频率	-32768~32767	0	0xe610	—
P06.17	VF分离电压给定	-32768~32767	0	0xe611	—
P06.18	马达温度(X5,℃)	-32768~32767	0	0xe612	℃
P06.19	马达温度(X11,℃)	-32768~32767	0	0xe613	℃
P06.30	AI0输入比例(Q12)	-32768~32767	0	0xe61e	—
P06.36	DI输入的物理状态	-32768~32767	0	0xe624	—
P07组:通信(模拟量互联)					
P07.00	总线适配器A输入. PZD1	0~65535	0	0xe700	—
P07.01	总线适配器A输入. PZD2	0~65535	0	0xe701	—
P07.02	总线适配器A输入. PZD3	0~65535	0	0xe702	—
P07.03	总线适配器A输入. PZD4	0~65535	0	0xe703	—
P07.04	总线适配器A输入. PZD5	0~65535	0	0xe704	—
P07.05	总线适配器A输入. PZD6	0~65535	0	0xe705	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P07.06	总线适配器A输入. PZD7	0~65535	0	0xe706	—
P07.07	总线适配器A输入. PZD8	0~65535	0	0xe707	—
P07.08	总线适配器A输入. PZD9	0~65535	0	0xe708	—
P07.09	总线适配器A输入. PZD10	0~65535	0	0xe709	—
P07.10	总线适配器A输入. PZD11	0~65535	0	0xe70a	—
P07.11	总线适配器A输入. PZD12	0~65535	0	0xe70b	—
P07.12	总线适配器A输入. PZD13	0~65535	0	0xe70c	—
P07.13	总线适配器A输入. PZD14	0~65535	0	0xe70d	—
P07.14	总线适配器A输入. PZD15	0~65535	0	0xe70e	—
P07.15	总线适配器A输入. PZD16	0~65535	0	0xe70f	—
P07.50	DriveLink. PZD1	-32768~32767	0	0xe732	—
P07.51	DriveLink. PZD2	-32768~32767	0	0xe733	—
P07.52	DriveLink. PZD3	-32768~32767	0	0xe734	—
P07.53	DriveLink. PZD4	-32768~32767	0	0xe735	—
P07.54	DriveLink. PZD5	-32768~32767	0	0xe736	—
P07.55	DriveLink. PZD6	-32768~32767	0	0xe737	—
P07.56	DriveLink. PZD7	-32768~32767	0	0xe738	—
P07.57	DriveLink. PZD8	-32768~32767	0	0xe739	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P07.60	总线适配器 A输入. PZD 1+2	0x80000000~ 0x7FFFFFFF	0x00	0xe73c	—
P07.61	总线适配器 A输入. PZD 1+2	0x80000000~ 0x7FFFFFFF	0x00	0xe73d	—
P07.62	总线适配器 A输入. PZD 2+3	0x80000000~ 0x7FFFFFFF	0x00	0xe73e	—
P07.63	总线适配器 A输入. PZD 2+3	0x80000000~ 0x7FFFFFFF	0x00	0xe73f	—
P07.64	总线适配器 A输入. PZD 3+4	0x80000000~ 0x7FFFFFFF	0x00	0xe740	—
P07.65	总线适配器 A输入. PZD 3+4	0x80000000~ 0x7FFFFFFF	0x00	0xe741	—
P07.66	总线适配器 A输入. PZD 4+5	0x80000000~ 0x7FFFFFFF	0x00	0xe742	—
P07.67	总线适配器 A输入. PZD 4+5	0x80000000~ 0x7FFFFFFF	0x00	0xe743	—
P07.68	总线适配器 A输入. PZD 5+6	0x80000000~ 0x7FFFFFFF	0x00	0xe744	—
P07.69	总线适配器 A输入. PZD 5+6	0x80000000~ 0x7FFFFFFF	0x00	0xe745	—
P07.70	总线适配器 A输入. PZD 6+7	0x80000000~ 0x7FFFFFFF	0x00	0xe746	—
P07.71	总线适配器 A输入. PZD 6+7	0x80000000~ 0x7FFFFFFF	0x00	0xe747	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P07.72	总线适配器 A输入. PZD 7+8	0x80000000~ 0x7FFFFFFF	0x00	0xe748	—
P07.73	总线适配器 A输入. PZD 7+8	0x80000000~ 0x7FFFFFFF	0x00	0xe749	—
P07.74	总线适配器 A输入. PZD 8+9	0x80000000~ 0x7FFFFFFF	0x00	0xe74a	—
P07.75	总线适配器 A输入. PZD 8+9	0x80000000~ 0x7FFFFFFF	0x00	0xe74b	—
P07.76	总线适配器 A输入. PZD 9+10	0x80000000~ 0x7FFFFFFF	0x00	0xe74c	—
P07.77	总线适配器 A输入. PZD 9+10	0x80000000~ 0x7FFFFFFF	0x00	0xe74d	—
P07.78	总线适配器 A输入. PZD 10+11	0x80000000~ 0x7FFFFFFF	0x00	0xe74e	—
P07.79	总线适配器 A输入. PZD 10+11	0x80000000~ 0x7FFFFFFF	0x00	0xe74f	—
P07.80	总线适配器 A输入. PZD 11+12	0x80000000~ 0x7FFFFFFF	0x00	0xe750	—
P07.81	总线适配器 A输入. PZD 11+12	0x80000000~ 0x7FFFFFFF	0x00	0xe751	—
P07.82	总线适配器 A输入. PZD 12+13	0x80000000~ 0x7FFFFFFF	0x00	0xe752	—
P07.83	总线适配器 A输入. PZD 12+13	0x80000000~ 0x7FFFFFFF	0x00	0xe753	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P07. 84	总线适配器A 输入. PZD 13+14	0x80000000~ 0x7FFFFFFF	0x00	0xe754	—
P07. 85	总线适配器A 输入. PZD 13+14	0x80000000~ 0x7FFFFFFF	0x00	0xe755	—
P07. 86	总线适配器A 输入. PZD 14+15	0x80000000~ 0x7FFFFFFF	0x00	0xe756	—
P07. 87	总线适配器A 输入. PZD 14+15	0x80000000~ 0x7FFFFFFF	0x00	0xe757	—
P07. 88	总线适配器A 输入. PZD 15+16	0x80000000~ 0x7FFFFFFF	0x00	0xe758	—
P07. 89	总线适配器A 输入. PZD 15+16	0x80000000~ 0x7FFFFFFF	0x00	0xe759	—
P08组:自由功能模块(模拟量互联)					
P08. 00	加法模块A输 出	0~65535	0	0xe800	—
P08. 01	加法模块B输 出	0~65535	0	0xe801	—
P08. 02	加法模块C输 出	0~65535	0	0xe802	—
P08. 04	减法模块A输 出	0~65535	0	0xe804	—
P08. 05	减法模块B输 出	0~65535	0	0xe805	—
P08. 08	乘法模块A输 出	0~65535	0	0xe808	—
P08. 09	乘法模块B输 出	0~65535	0	0xe809	—
P08. 12	除法模块A输 出	0~65535	0	0xe80c	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P08. 14	除法模块A余 数	0~65535	0	0xe80e	—
P08. 15	除法模块B输 出	0~65535	0	0xe80f	—
P08. 17	除法模块B余 数	0~65535	0	0xe811	—
P08. 24	绝对值模块A 输出	0~65535	0	0xe818	—
P08. 25	绝对值模块B 输出	0~65535	0	0xe819	—
P08. 28	限制模块A输 出	0~65535	0	0xe81c	—
P08. 29	限制模块B输 出	0~65535	0	0xe81d	—
P08. 32	一阶低通滤 波模块A输出	0~65535	0	0xe820	—
P08. 33	一阶低通滤 波模块B输出	0~65535	0	0xe821	—
P08. 36	位转字模块A 输出	0~65535	0	0xe824	—
P08. 37	位转字模块B 输出	0~65535	0	0xe825	—
P08. 38	位转字模块C 输出	0~65535	0	0xe826	—
P08. 39	位转字模块D 输出	0~65535	0	0xe827	—
P08. 41	数据选择器A 输出	-32768 ~32767	0	0xe829	—
P08. 42	数据选择器B 输出	-32768 ~32767	0	0xe82a	—
P08. 44	乘法模块A输 出(32位)	-2147483648 ~2147483647	0	0xe82c	—
P08. 45	乘法模块A输 出(32位)	-2147483648 ~2147483647	0	0xe82d	—
P08. 46	乘法模块B输 出(32位)	-2147483648 ~2147483647	0	0xe82e	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P08.47	乘法模块B输出(32位)	-2147483648~2147483647	0	0xe82f	-
P09组:工艺应用(模拟量互联)					
P09.00	过程PID输出量(限幅后)	0~65535	0	0xe900	-
P09.01	过程PID输出量(限幅前)	0~65535	0	0xe901	-
P09.02	过程PID比例输出	0~65535	0	0xe902	-
P09.03	过程PID积分输出	0~65535	0	0xe903	-
P09.04	过程PID微分输出	0~65535	0	0xe904	-
P09.05	过程PID给定量	0~65535	0	0xe905	-
P09.06	过程PID反馈量	0~65535	0	0xe906	-
P09.07	过程PID偏差值	0~65535	0	0xe907	-
P09.08	过程PID无附加值前偏差值	0~65535	0	0xe908	-
P09.25	摆长长度	-32768~32767	0	0xe919	-
P09.27	寸动功能位置设定值	-2147483648~2147483647	0	0xe91b	-
P09.28	寸动功能位置设定值	-2147483648~2147483647	0	0xe91c	-
P10组:性能内部变量(模拟量互联)					
P10.00	M轴给定电流	0~65535	0	0xea00	-
P10.01	M轴反馈电流	0~65535	0	0xea01	-
P10.02	T轴给定电流	0~65535	0	0xea02	-
P10.03	T轴反馈电流	0~65535	0	0xea03	-
P10.04	给定频率	0~65535	0	0xea04	-
P10.05	反馈频率	0~65535	0	0xea05	-
P10.06	同步频率	0~65535	0	0xea06	-
P10.07	编码器频率	0~65535	0	0xea07	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P10.10	M轴给定电压	0~65535	0	0xea0a	-
P10.11	T轴给定电压	0~65535	0	0xea0b	-
P10.19	CRC校验计数	0~65535	0	0xea13	-
P10.26	监控通道1	0~65535	0	0xea1a	-
P10.27	监控通道2	0~65535	0	0xea1b	-
P10.28	监控通道3	0~65535	0	0xea1c	-
P10.29	监控通道4	0~65535	0	0xea1d	-
P10.30	伺服零点位置	0~65535	0	0xea1e	-
P10.32	性能状态机	0~65535	0	0xea20	-
P10.33	U相电流	0~65535	0	0xea21	-
P11组:功能内部变量(模拟量互联)					
P11.00	固定值0%	0~65535	0	0xeb00	-
P11.01	固定值100%	0~65535	0	0xeb01	-
P11.02	固定值200%	0~65535	0	0xeb02	-
P11.03	自定义数据输出1	0~65535	0	0xeb03	-
P11.04	自定义数据输出2	0~65535	0	0xeb04	-
P11.05	固定值-100%	0~65535	0	0xeb05	-
P11.06	固定值-200%	0~65535	0	0xeb06	-
P11.07	自定义数据输出3	0~65535	0	0xeb07	-
P11.08	自定义数据输出4	0~65535	0	0xeb08	-
P11.09	CM交互数据监控值0	-32768~32767	0	0xeb09	-
P11.10	CM交互数据监控值1	0~65535	0	0xeb0a	-
P11.11	CM交互数据监控值2	0~65535	0	0xeb0b	-
P11.12	CM交互数据监控值3	0~65535	0	0xeb0c	-
P11.13	CM监控数据0	0~65535	0	0xeb0d	-
P11.14	CM监控数据1	0~65535	0	0xeb0e	-
P11.15	CM监控数据2	0~65535	0	0xeb0f	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P11.16	CM监控数据3	0~65535	0	0xeb10	—
P11.17	CM监控数据4	0~65535	0	0xeb11	—
P11.18	FPGA接收误码计数器	0~65535	0	0xeb12	—
P11.19	FPGA发送无响应计数器	0~65535	0	0xeb13	—
P11.30	IO板识别号	0~65535	0	0xeb1e	—
P11.38 -PN	PN控制字 STW1	0x00~0xFFFF	0x00	0xeb26	—
P11.38 -EC	控制字6040	0~65535	0	0xeb26	—
P11.39 -PN	PN状态字 ZSW1	0x00~0xFFFF	0x00	0xeb27	—
P11.39 -EC	状态字6041	0~65535	0	0xeb27	—
P11.40 -PN	PN控制字 STW2	0x00~0xFFFF	0x00	0xeb28	—
P11.40 -EC	EC内部控制字	0~65535	0	0xeb28	—
P11.41	PN状态字 ZSW2	0x00~0xFFFF	0x00	0xeb29	—
P11.42	PN控制字 G1_STW	0x00~0xFFFF	0x00	0xeb2a	—
P11.43	PN状态字 G1_ZSW	0x00~0xFFFF	0x00	0xeb2b	—
P11.45	伺服控制中断源	0~65535	0	0xeb2d	—
P11.48	CM存储机型	0~65535	0	0xeb30	—
P11.49	工厂测试模式已激活	0~65535	0	0xeb31	—
P11.55	CM监控变量5 (KB错误计数器)	0~65535	0	0xeb37	—
P11.57	CM监控变量7 (EPM错误地址)	0x00~0xFFFF	0x00	0xeb39	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P11.58	CM监控变量8 (EPM错误值)	0~65535	0	0xeb3a	—
P11.60	CM程序执行时间	0~65535	0	0xeb3c	—
P11.61	CM程序执行周期	0~65535	0	0xeb3d	—
P11.62	CM程序最大时间	0~65535	0	0xeb3e	—
P11.63	CM程序最大周期	0~65535	0	0xeb3f	—
P11.64	Hwi负载率	0~65535	0	0xeb40	—
P11.67	CPU负载率	0~65535	0	0xeb43	—
P11.68	PN控制字 POS_STW1	0x00~0xFFFF	0x00	0xeb44	—
P11.69	PN状态字 POS_ZSW1	0x00~0xFFFF	0x00	0xeb45	—
P11.70	PN控制字 POS_STW2	0x00~0xFFFF	0x00	0xeb46	—
P11.71	PN状态字 POS_ZSW2	0x00~0xFFFF	0x00	0xeb47	—
P11.72	AxisStateMachine	0~65535	0	0xeb48	—
P11.73	EposALwordLo	0x00~0xFFFF	0x00	0xeb49	—
P11.74	EposALwordHi	0x00~0xFFFF	0x00	0xeb4a	—
P11.76	CM监控变量9	0x00~0xFFFF	0x00	0xeb4c	—
P11.77	CM监控变量10	0x00~0xFFFF	0x00	0xeb4d	—
P11.78	CM监控变量11	0x00~0xFFFF	0x00	0xeb4e	—
P11.79	CM监控变量12	0x00~0xFFFF	0x00	0xeb4f	—
P11.80	CM监控变量13	0x00~0xFFFF	0x00	0xeb50	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P11.81	CM监控变量14	0~65535	0	0xeb51	—
P11.82	CM监控变量15	0~65535	0	0xeb52	—
P11.83	固定停止点状态监控	0x00~0xFFFF	0x00	0xeb53	—
P11.84	CM程序单次执行最小时间	0~65535	0	0xeb54	—
P11.85	CM程序最小调用周期	0~65535	0	0xeb55	—
P12组:系统控制与状态(模拟量互联)					
P12.00	当前状态机	0~65535	0	0xec00	—
P12.01	当前马达	0~65535	0	0xec01	—
P12.02	当前RFG斜坡选择	0~65535	0	0xec02	—
P12.03	当前报警代码	0~65535	0	0xec03	—
P12.04	当前报警子码	0~65535	0	0xec04	—
P12.05	控制字1	0x00~0xFFFF	0x00	0xec05	—
P12.06	控制字2	0x00~0xFFFF	0x00	0xec06	—
P12.07	状态字1	0x00~0xFFFF	0x00	0xec07	—
P12.08	状态字2	0x00~0xFFFF	0x00	0xec08	—
P12.09	端子启停控制字	0~65535	0x00	0xec09	—
P12.10	OP启停控制字	0x00~0xFFFF	0x00	0xec0a	—
P12.11	PC启停控制字	0x00~0xFFFF	0x00	0xec0b	—
P12.12	自定义启停控制字	0x00~0xFFFF	0x00	0xec0c	—
P12.13	Panel给定值	0~65535	0	0xec0d	—
P12.14	PC给定值	0~65535	0	0xec0e	—
P12.15	机械频率辨识增益给定	0.0~100.0	0.0	0xec0f	—
P12.16	DI状态	0x00~0xFFFF	0x00	0xec10	—
P12.17	DO状态	0x00~0xFFFF	0x00	0xec11	—
P12.18	抱闸状态字	0x00~0xFFFF	0x00	0xec12	—
P12.19	抱闸状态字2	0x00~0xFFFF	0x00	0xec13	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P12.20	模拟量输入AI(mV, mA)	-32768~32767	0	0xec14	—
P12.27	DB15输出电压(V)	0~65535	0.0	0xec1b	V
P12.30	温度传感器电压检测(X5, mV)	0~65535	0	0xec1e	—
P12.31	PM24V电压(V)	0~65535	0.0	0xec1f	V
P12.32	外部24v电压(V)	0~65535	0.0	0xec20	V
P12.34	ST0状态字	0x00~0xFFFF	0x00	0xec22	—
P12.35	状态字B	0x00~0xFFFF	0x00	0xec23	—
P12.36	RFG运行控制字	0x00~0xFFFF	0x00	0xec24	—
P12.37	位置控制内部状态字0	0x00~0xFFFF	0x00	0xec25	—
P12.40	多段速度当前段	1~16	1	0xec28	—
P12.41	多段位置当前段	1~16	1	0xec29	—
P12.45	本次上电时长-时	0~65535	0	0xec2d	h
P12.46	本次上电时长-秒	0~65535	0	0xec2e	s
P12.47	本次运行时长-时	0~65535	0	0xec2f	h
P12.48	本次运行时长-秒	0~65535	0	0xec30	s
P12.49	累计运行时间-时	0~65535	0	0xec31	h
P12.50	累计运行时间-秒	0~65535	0	0xec32	s
P12.51	电机编码器干扰计数器	0~65535	0	0xec33	—
P12.52	位置编码器干扰计数器	0~65535	0	0xec34	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P13组:系统给定与反馈(模拟量互联)					
P13.00	马达实际速度	0~65535	0	0xed00	—
P13.01	马达最终设定速度	0~65535	0	0xed01	—
P13.02	主速度给定	0~65535	0	0xed02	—
P13.03	辅速度给定	0~65535	0	0xed03	—
P13.04	正反转限制前速度给定	0~65535	0	0xed04	—
P13.05	限幅前速度给定	0~65535	0	0xed05	—
P13.06	限幅后速度给定	0~65535	0	0xed06	—
P13.07	最小速度限制后速度给定	0~65535	0	0xed07	—
P13.08	RFG输入速度给定	0~65535	0	0xed08	—
P13.09	RFG输出速度给定	0~65535	0	0xed09	—
P13.10	附加速度给定	0~65535	0	0xed0a	—
P13.11	CM给定速度	0~65535	0	0xed0b	—
P13.12	RFG模块输入值	0~65535	0	0xed0c	—
P13.15	正向速度限制值	0~65535	0	0xed0f	—
P13.16	负向速度限制值	0~65535	0	0xed10	—
P13.17	编码器反馈速度	0~65535	0	0xed11	—
P13.20	键盘控制速度给定	0~65535	0	0xed14	—
P13.21	PC控制速度给定	0~65535	0	0xed15	—
P13.22	电动电位计输出	0~65535	0	0xed16	—
P13.23	多段设定选择输出	0~65535	0	0xed17	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P13.24	多段设定值1	0~65535	0	0xed18	—
P13.25	多段设定值2	0~65535	0	0xed19	—
P13.26	多段设定值3	0~65535	0	0xed1a	—
P13.27	多段设定值4	0~65535	0	0xed1b	—
P13.28	多段设定值5	0~65535	0	0xed1c	—
P13.29	多段设定值6	0~65535	0	0xed1d	—
P13.30	多段设定值7	0~65535	0	0xed1e	—
P13.31	多段设定值8	0~65535	0	0xed1f	—
P13.32	多段设定值9	0~65535	0	0xed20	—
P13.33	多段设定值10	0~65535	0	0xed21	—
P13.34	多段设定值11	0~65535	0	0xed22	—
P13.35	多段设定值12	0~65535	0	0xed23	—
P13.36	多段设定值13	0~65535	0	0xed24	—
P13.37	多段设定值14	0~65535	0	0xed25	—
P13.38	多段设定值15	0~65535	0	0xed26	—
P13.39	多段设定值16	0~65535	0	0xed27	—
P13.40	RFG加速度	0~65535	0	0xed28	—
P13.41	转矩给定值	-32768 ~32767	0	0xed29	—
P13.42	附加转矩给定值	-32768 ~32767	0	0xed2a	—
P13.43	转矩控制速度上限值	-32768 ~32767	0	0xed2b	—
P13.44	转矩控制速度下限值	-32768 ~32767	0	0xed2c	—
P13.45	DeltaVelocity (AC4/DSC) -PN	-2147483648 ~2147483647	0	0xed2d	—
P13.45	PV目标速度 -EC 60FF	-32768 ~32767	0	0xed2d	—
P13.46	DeltaVelocity (AC4/DSC) -PN	-2147483648 ~2147483647	0	0xed2e	—
P13.46	EC转矩上限给定值	-32768 ~32767	0	0xed2e	—
P13.47	NIST_B -PN	-2147483648 ~2147483647	0	0xed2f	—

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P13. 47 -EC	EC转矩下限给定值	-32768 ~32767	0	0xed2f	-
P13. 48 -PN	NIST_B	-2147483648 ~2147483647	0	0xed30	-
P13. 48 -EC	EC加速时间设定值	0~65535	0	0xed30	-
P13. 49 -PN	MDI_VELOCITY/G1_XIST2	-2147483648 ~2147483647	0	0xed31	-
P13. 49 -EC	EC减速时间设定值	0~65535	0	0xed31	-
P13. 50 -PN	MDI_VELOCITY/G1_XIST2	-2147483648 ~2147483647	0	0xed32	-
P13. 50 -EC	EC正向速度限制值	-32768 ~32767	0	0xed32	-
P13. 51 -PN	MDI_TAR-POS/XERR	-2147483648 ~2147483647	0	0xed33	-
P13. 51 -EC	EC负向速度限制值	-32768 ~32767	0	0xed33	-
P13. 52 -PN	MDI_TAR-POS/XERR	-2147483648 ~2147483647	0	0xed34	-
P13. 52 -EC	EC附加转矩给定值	-32768 ~32767	0	0xed34	-
P13. 53	XIST_A/KPC	-2147483648 ~2147483647	0	0xed35	-
P13. 54	XIST_A/KPC	-2147483648 ~2147483647	0	0xed36	-
P13. 55	111AccTime(msTo1000RPM)/G1_XIST1	-2147483648 ~2147483647	0	0xed37	-
P13. 56	111AccTime(msTo1000RPM)/G1_XIST1	-2147483648 ~2147483647	0	0xed38	-
P13. 57	111DecTime(msTo1000RPM)/NSOLL_B	-2147483648 ~2147483647	0	0xed39	-
P13. 58	111DecTime(msTo1000RPM)/NSOLL_B	-2147483648 ~2147483647	0	0xed3a	-
P13. 58	实际位置6064(指令单位)	-2147483648 ~2147483647	0	0xed3a	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P13. 59 -PN	111CancelTime/DeltaPosCmd(DSC)	-2147483648 ~2147483647	0	0xed3b	-
P13. 59 -EC	实际位置6064(指令单位)	-2147483648 ~2147483647	0	0xed3b	-
P13. 60 -PN	111CancelTime/DeltaPosCmd(DSC)	-2147483648 ~2147483647	0	0xed3c	-
P13. 60 -EC	实际速度606C(指令单位)	-2147483648 ~2147483647	0	0xed3c	-
P13. 61 -PN	111VelocityCmd(RPM)/DeltaG1xist1	-2147483648 ~2147483647	0	0xed3d	-
P13. 61 -EC	实际速度606C	-2147483648 ~2147483647	0	0xed3d	-
P13. 62 -PN	111VelocityCmd(RPM)/DeltaG1xist1	-2147483648 ~2147483647	0	0xed3e	-
P13. 62 -EC	PP目标速度6081	-2147483648 ~2147483647	0	0xed3e	-
P13. 63	PP目标速度6081	-2147483648 ~2147483647	0	0xed3f	-
P13. 64	同步抖动(125/3000us)	-32768 ~32767	0	0xed40	-
P13. 65	目标位置607A	-2147483648 ~2147483647	0	0xed41	-
P13. 66	CSP目标位置细分值	-2147483648 ~2147483647	0	0xed42	-
P13. 67	PROFIdrive转矩限幅(102/105)	-32768 ~32767	0	0xed43	-
P13. 68	EC通讯故障码	0~65535	0	0xed44	-
P13. 69	EC前一次通讯故障码	0~65535	0	0xed45	-
P13. 70	EC监控数据0	-2147483648 ~2147483647	0	0xed46	-
P13. 71	EC监控数据0	-2147483648 ~2147483647	0	0xed47	-
P13. 72	EC监控数据1	-2147483648 ~2147483647	0	0xed48	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P13. 73	EC监控数据2	-2147483648 ~2147483647	0	0xed49	-
P13. 74	回原触发	0~65535	0	0xed4a	-
P13. 75	转矩输出上限	-32768 ~32767	0	0xed4b	-
P13. 76	转矩输出下限	-32768 ~32767	0	0xed4c	-
P13. 84	总线速度设定	0~65535	0	0xed54	rpm
P13. 85	总线加速时间 设定	0~65535	0	0xed55	ms
P13. 86	总线减速时间 设定	0~65535	0	0xed56	rpm
P14组: 伺服32位监控变量(模拟量互联)					
P14. 04	绝对位置累计 值低(Enc1)	-2147483648 ~2147483647	0	0xee04	-
P14. 05	绝对位置累计 值低(Enc1)	-2147483648 ~2147483647	0	0xee05	-
P14. 06	绝对位置累计 值高(Enc1)	-2147483648 ~2147483647	0	0xee06	-
P14. 07	绝对位置累计 值高(Enc1)	-2147483648 ~2147483647	0	0xee07	-
P14. 08	位置指令滤波 输出低	-2147483648 ~2147483647	0	0xee08	-
P14. 09	位置指令滤波 输出低	-2147483648 ~2147483647	0	0xee09	-
P14. 10	位置指令滤波 输出高	-2147483648 ~2147483647	0	0xee0a	-
P14. 11	位置指令滤波 输出高	-2147483648 ~2147483647	0	0xee0b	-
P14. 12	位置编码器反 馈(Enc2)	-2147483648 ~2147483647	0	0xee0c	-
P14. 13	位置编码器反 馈(Enc2)	-2147483648 ~2147483647	0	0xee0d	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P14. 14	电机编码器反 馈(Enc1)	-2147483648 ~2147483647	0	0xee0e	-
P14. 15	电机编码器反 馈(Enc1)	-2147483648 ~2147483647	0	0xee0f	-
P14. 16	位置偏差(指 令单位)	-2147483648 ~2147483647	0	0xee10	-
P14. 17	位置偏差(指 令单位)	-2147483648 ~2147483647	0	0xee11	-
P14. 18	脉冲指令输入 计数	-2147483648 ~2147483647	0	0xee12	-
P14. 19	脉冲指令输入 计数	-2147483648 ~2147483647	0	0xee13	-
P14. 20	位置指令(指 令单位)	-2147483648 ~2147483647	0	0xee14	-
P14. 21	位置指令(指 令单位)	-2147483648 ~2147483647	0	0xee15	-
P14. 22	位置反馈(指 令单位)	-2147483648 ~2147483647	0	0xee16	-
P14. 23	位置反馈(指 令单位)	-2147483648 ~2147483647	0	0xee17	-
P14. 24	位置控制正向 速度限制值(rpm)	-2147483648 ~2147483647	0	0xee18	rpm
P14. 25	位置控制正向 速度限制值(rpm)	-2147483648 ~2147483647	0	0xee19	rpm
P14. 26	位置控制反向 速度限制值(rpm)	-2147483648 ~2147483647	0	0xee1a	rpm
P14. 27	位置控制反向 速度限制值(rpm)	-2147483648 ~2147483647	0	0xee1b	rpm
P14. 28	速度前馈补偿 值	-2147483648 ~2147483647	0	0xee1c	-
P14. 29	速度前馈补偿 值	-2147483648 ~2147483647	0	0xee1d	-
P14. 30	位置环P计算 输出值	-2147483648 ~2147483647	0	0xee1e	-
P14. 31	位置环p计算 输出值	-2147483648 ~2147483647	0	0xee1f	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P14. 32	位置环总输出 值(实际值)	-2147483648 ~2147483647	0	0xee20	-
P14. 33	位置环总输出 值(实际值)	-2147483648 ~2147483647	0	0xee21	-
P14. 34	电子齿轮比分 子	-2147483648 ~2147483647	0	0xee22	-
P14. 35	电子齿轮比分 子	-2147483648 ~2147483647	0	0xee23	-
P14. 36	电子齿轮比分 母	-2147483648 ~2147483647	0	0xee24	-
P14. 37	电子齿轮比分 母	-2147483648 ~2147483647	0	0xee25	-
P14. 38	速度环32位监 控0	-2147483648 ~2147483647	0	0xee26	-
P14. 39	速度环32位监 控0	-2147483648 ~2147483647	0	0xee27	-
P14. 40	速度环32位监 控1	-2147483648 ~2147483647	0	0xee28	-
P14. 41	速度环32位监 控1	-2147483648 ~2147483647	0	0xee29	-
P14. 42	速度环32位监 控2	-2147483648 ~2147483647	0	0xee2a	-
P14. 43	速度环32位监 控2	-2147483648 ~2147483647	0	0xee2b	-
P14. 44	速度环32位监 控3	-2147483648 ~2147483647	0	0xee2c	-
P14. 45	速度环32位监 控3	-2147483648 ~2147483647	0	0xee2d	-
P14. 46	速度环32位监 控4	-2147483648 ~2147483647	0	0xee2e	-
P14. 47	速度环32位监 控4	-2147483648 ~2147483647	0	0xee2f	-
P14. 48	速度环32位监 控5	-2147483648 ~2147483647	0	0xee30	-
P14. 49	速度环32位监 控5	-2147483648 ~2147483647	0	0xee31	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P14. 50	速度环32位监 控6	-2147483648 ~2147483647	0	0xee32	-
P14. 51	速度环32位监 控6	-2147483648 ~2147483647	0	0xee33	-
P14. 52	速度环32位监 控7	-2147483648 ~2147483647	0	0xee34	-
P14. 53	速度环32位监 控7	-2147483648 ~2147483647	0	0xee35	-
P14. 62	双字监控A	-2147483648 ~2147483647	0	0xee3e	-
P14. 63	双字监控A	-2147483648 ~2147483647	0	0xee3f	-
P14. 64	双字监控B	-2147483648 ~2147483647	0	0xee40	-
P14. 65	双字监控B	-2147483648 ~2147483647	0	0xee41	-
P14. 66	位置目标设定 值	-2147483648 ~2147483647	0	0xee42	-
P14. 67	位置目标设定 值	-2147483648 ~2147483647	0	0xee43	-
P14. 68	位置给定增量	-2147483648 ~2147483647	0	0xee44	-
P14. 69	位置给定增量	-2147483648 ~2147483647	0	0xee45	-
P14. 70	位置指令对应 的速度(rpm)	-2147483648 ~2147483647	0	0xee46	-
P14. 71	位置指令对应 的速度(rpm)	-2147483648 ~2147483647	0	0xee47	-
P14. 72	电机位置偏差 计数器	-2147483648 ~2147483647	0	0xee48	-
P14. 73	电机位置偏差 计数器	-2147483648 ~2147483647	0	0xee49	-
P14. 74	全闭环位置偏 差计数器	-2147483648 ~2147483647	0	0xee4a	-
P14. 75	全闭环位置偏 差计数器	-2147483648 ~2147483647	0	0xee4b	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P14. 76	双字监控C	-2147483648 ~2147483647	0	0xee4c	-
P14. 77	双字监控C	-2147483648 ~2147483647	0	0xee4d	-
P14. 78	双字监控D	-2147483648 ~2147483647	0	0xee4e	-
P14. 79	双字监控D	-2147483648 ~2147483647	0	0xee4f	-
P14. 80	位置偏差阈值 (指令单位)	0~ 4294967295	0	0xee50	-
P14. 81	位置偏差阈值 (指令单位)	0~ 4294967295	0	0xee51	-
P14. 84	DB15脉冲输入 计数	-2147483648 ~2147483647	0	0xee54	-
P14. 85	DB15脉冲输入 计数	-2147483648 ~2147483647	0	0xee55	-
P15组: 伺服监控变量(模拟量互联)					
P15. 00	位置环给定增 量(指令单位)	-32768 ~32767	0	0xef00	-
P15. 01	位置环反馈增 量	-32768 ~32767	0	0xef01	-
P15. 02	速度环16位监 控0	-32768 ~32767	0	0xef02	-
P15. 03	速度环16位监 控1	-32768 ~32767	0	0xef03	-
P15. 04	速度环16位监 控2	-32768 ~32767	0	0xef04	-
P15. 05	速度环16位监 控3	-32768 ~32767	0	0xef05	-
P15. 06	速度指令Q15	-32768 ~32767	0	0xef06	-
P15. 07	速度反馈Q15	-32768 ~32767	0	0xef07	-
P15. 08	转矩指令Q12	-32768 ~32767	0	0xef08	-

功能码	名称	设定范围	出厂值	通信地址	单位 (5bit)
P15. 09	速度环16位监 控7	-32768 ~32767	0	0xef09	-
P15. 10	马达编码器旋 转圈数(r)	-32768 ~32767	0	0xef0a	-
P15. 11	马达编码器单 圈值(p)	-2147483648 ~2147483647	0	0xef0b	-
P15. 12	马达编码器单 圈值(p)	-2147483648 ~2147483647	0	0xef0c	-
P15. 13	ABZ编码器脉 冲增量(p)	-32768 ~32767	0	0xef0d	-
P15. 14	ABZ编码器脉 冲输入计数(p)	-32768 ~32767	0	0xef0e	-
P15. 15	当前实际位置 1_低(指令单位)	-32768 ~32767	0	0xef0f	-
P15. 16	当前实际位置 1_高(指令单位)	-32768 ~32767	0	0xef10	-
P15. 17	当前实际位置 2_低(指令单位)	0~65535	0	0xef11	-
P15. 18	当前实际位置 2_高(指令单位)	-32768 ~32767	0	0xef12	-
P15. 20	位置编码器圈 数	-32768 ~32767	0	0xef14	-
P15. 21	位置编码器单 圈值(p)	-2147483648 ~2147483647	0	0xef15	-
P15. 22	位置编码器单 圈值(p)	-2147483648 ~2147483647	0	0xef16	-
P15. 25	DB15脉冲输入 计数_低(p)	0~65535	0	0xef19	-
P15. 26	DB15脉冲输入 计数_高(p)	-32768 ~32767	0	0xef1a	-

售后服务

售后服务请按以下步骤提交售后流程。

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Chapter 1 Servo motor

1 Overview

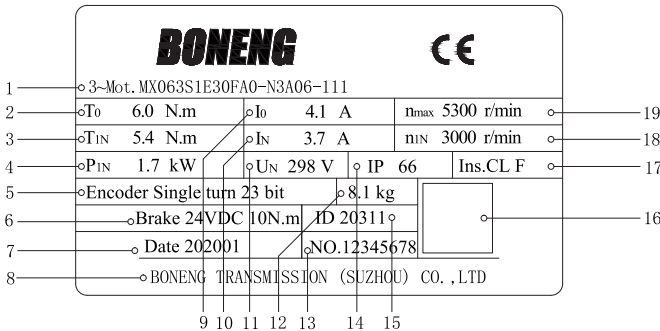
1.1 Explanation

This manual is the accompanying document for our company's MX series servo motors. It explains the requirements and precautions for starting, storage, transportation, installation, use, and maintenance of the motor. Users and maintenance personnel must read this manual carefully. Pay close attention to the nameplate, signs, and warning labels on the motor. The operating unit should provide professional training to the operators before they start working.

△ Note:

To ensure the safety of the equipment and its proper installation, operation, and maintenance, be sure to follow the relevant provisions in this manual. Anyone responsible for installing, operating, or maintaining the equipment should pay attention to the instructions; ignoring them will void the warranty.

1.2 Nameplate Information



- | | |
|-----------------------|----------------------|
| 1. Motor model | 11. Back EMF |
| 2. 100K static torque | 12. Weight |
| 3. 100K rated torque | 13. Serial Number |
| 4. Rated power | 14. Protection Level |
| 5. Encoder parameters | 15. Motor ID |
| 6. Brake parameters | 16. QR Code |
| 7. Production date | 17. Insulation Class |
| 8. Company name | 18. Rated Speed |
| 9. Quiescent current | 19. Maximum Speed |
| 10. Rated current | |

2 General Requirements

2.1 Basic Check

- ◆ Immediately check the motor for any external damage after receiving it, and inspect all the nameplate data;
- ◆ Rotate the motor shaft by hand to check the motor's no-load condition. If the motor has a locking device, make sure to unlock it;
- ◆ For motors with brakes, power them on to see if the brake operates.

2.2 Insulation Performance Testing

- ◆ Before using the motor for the first time, the windings might be damp, so you need to check its insulation resistance to the ground.

△ Note:

After measuring, you should immediately discharge the winding to avoid electric shock.

2.3 Starting Method

- ◆ Follow this manual and the driver manual to wire the motor and driver correctly;
- ◆ Perform a pre-power-on inspection; only after confirming everything is correct can the driver be powered on;
- ◆ After the driver is powered on, perform various parameter settings and tuning of the driver and motor;
- ◆ After starting the motor, observe whether the motor, transmission device, mechanical equipment, and driver surface operating data are normal. If abnormal phenomena are found, stop the machine immediately, identify and resolve the fault, and only restart the machine.

△ Note:

The motor can't be connected directly to the mains power supply.

2.4 Pre-Start Check

2.4.1 Mechanical Connection Check

Please check and confirm the following items before starting:

- ◆ If the shaft uses a sliding key, make sure the sliding key won't fly out;
- ◆ Make sure the motor is properly assembled and aligned;
- ◆ Make sure the motor rotor rotates smoothly without any friction noise;
- ◆ Make sure the motor operating conditions match the nameplate data;
- ◆ Make sure all mounting bolts, connecting parts, and electrical interfaces are tightened and properly secured;
- ◆ Make sure the drive components are properly adjusted and matched according to their type. For example: couplings should be aligned and balanced, belts should have the correct tension, and if there are gears, the tooth clearance, tip clearance, and radial clearance should all be properly adjusted.

2.4.2 Electrical Inspection

- ◆ Make sure the power, signal, ground, and shielding wires are well connected;
- ◆ Make sure the brake connections and functions are working properly;
- ◆ Make sure the drive settings match the motor nameplate and parameters;
- ◆ Make sure the drive's motor protection and the motor's allowable operating conditions and parameters are consistent.

⚠ Note:

When the motor is running, you should keep an eye on its speed and current to make sure it doesn't go beyond the limits allowed by the motor nameplate and sample technical data.

3 Rotation Direction

Looking at the motor shaft from the drive end, counterclockwise rotation is defined as the positive direction. When it needs to rotate in the opposite direction, you need to swap any two of the motor power lines in the power cable connected to the motor at the drive end.

4 Operating Conditions

4.1 Operating Environment

- ◆ Altitude not exceeding 1000m;
- ◆ Allowed ambient temperature: $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$;
- ◆ Permissible relative humidity: $-15^{\circ}\text{C} \leq T \leq 20^{\circ}\text{C}$: 100%; $20^{\circ}\text{C} < T \leq 30^{\circ}\text{C}$: 95%; $30^{\circ}\text{C} < T \leq 40^{\circ}\text{C}$: 55%.

4.2 Safe Operating Conditions

- ◆ The motor should be installed, wired, and tested by professionals who are familiar with the relevant safety requirements;
- ◆ Safety devices must be in place during installation to prevent accidents, and the installation location must also comply with regulations.

5 Management

5.1 Goods Acceptance

The servo system is assembled or partially assembled from multiple components. Please check on the spot after receiving the goods to see if they match the accompanying documents. If any items are missing, please claim immediately; claims made after the deadline will not be accepted by our company.

5.2 Handling and Storage

5.2.1 Handling

Please use the appropriate lifting devices for handling and installation, and pay attention to the following during the handling and installation process:

- ◆ Lifting equipment, ground conveyor machinery, and grabbing devices must comply with regulations;
- ◆ The weight of the motor is marked on the motor nameplate, so please pay attention to the lifting capacity of your equipment;
- ◆ Do not lift or move the motor using the power connector, signal connector, or encoder module;
- ◆ Large motor end covers are equipped with lifting rings or threaded holes for installing lifting rings—please use the lifting rings to move the motor.

5.2.2 Storage

If the motor isn’ t being used, store it in a suitable environment. When storing the motor, keep in mind:

- ◆ Motors should be kept indoors in a dry, shock-proof, and dust-free environment;
- ◆ Unprotected motor surfaces (like the shaft ends and flanges) should have anti-rust measures;
- ◆ Check the motor regularly and rotate the shaft by hand to prevent corrosion or other issues.

6 Electrical Connections

6.1 Overview

- ◆ The power and signal connectors on the motor can rotate within a certain range. If rotation is needed, you can use the matching female plug to rotate the connector. When using the female plug to assist rotation, it must be fully inserted to avoid damaging the pins.
- ◆ The motor can only work properly with the configured driver under the correct electrical connections and parameter settings.
- ◆ Choose the right connecting cable based on how it will be used and the voltage and current it will carry.
- ◆ Make sure the connectors are sealed properly and the sealing surfaces are intact to meet the protection rating.
- ◆ When in use, put protective caps on the connect-

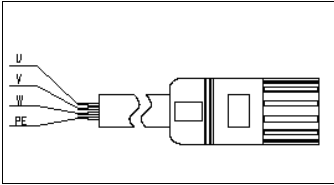
ing cables to prevent twisting, stretching, squeezing, or bending. The connectors should not bear continuous stress.

⚠ Note:

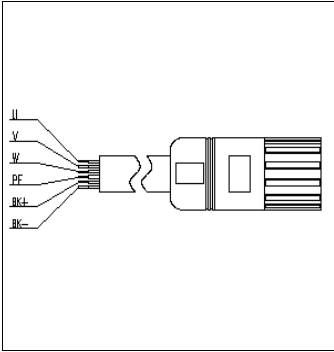
- ◆ Risk of electric shock. Please follow electrical equipment work standards. Only professionals are allowed to install the driver and connectors.
- ◆ The motor contains static-sensitive components, so please take anti-static precautions.

6.2 Power Signal Cable Connection

- ◆ Power cable without brake

	Wiring Definition	
	U-phase lead	Brown
	V-phase lead	black
	W-phase lead	Blue
	PE lead	yellow-green

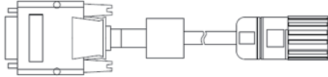
- ◆ Power Cable with Brake

	Wiring Definition	
	U-phase lead	Brown
	V-phase lead	black
	W-phase lead	Blue
	BK (brake) Alignment line	Orange
	BK-(Brake-)Phase Marking Line	Purple
	PE lead	yellow-green

◆ Servo signal cable (Biss-C encoder, compatible with CM53 driver)

	Wire Core Defin- ition	Connector pin		Color
		crystal head	Aviati- on plug	
	DC	7	1	Orange
	GND	8	2	Orange and white
	VB	Battery case(red)	3	Blue
	GND	Battery case (black)	4	blue and white
	SD+	5	5	Brownish-white color
	SD-	4	6	brown
	MA+	3	15	Green
	MA-	6	16	green and white
	Shielding layer		17 (Not connected)	

◆ Servo signal cable (Biss-C encoder, compatible with CM55 driver)

	Wire Core Defin- ition	Connector pin		Color
		DB15	Aviati- on plug	
	VCC	4	1	Orange
	GND	7	2	Orange and white
	VB	Battery case(red)	3	Blue
	GND	Battery case (black)	4	blue and white
	SD+	1	5	Brownish-white color
	SD-	8	6	brown
	MA+	2	15	Green
	MA-	3	16	green and white
	Shielding layer		17 (Not connected)	

◆ Servo signal cable (RS485 encoder, compatible with CM53/CM55 drivers)

	Wire Core Defin- ition	Connector pin		Color
		crystal head	Aviati- on plug	
	VCC	7	1	Orange
	GND	8	2	Orange and white
	VB	Battery case(red)	3	Blue
	GND	Battery case (black)	4	blue and white
	SD+	5	5	Brownish-white color
	SD-	4	6	brown
	KTY84+	1	15	Green
	KTY84-	2	16	green and white
	Shielding layer		17 (Not connected)	

7 Maintenance

7.1 Overview

Regular careful maintenance and inspection of the motor are essential, as they help detect and fix problems in time to prevent any damage. When maintaining the motor, pay attention to:

- ◆ Regularly maintain the motor;
- ◆ Keep the motor clean and ensure proper airflow;
- ◆ Regularly check the shaft seal, and replace it promptly if necessary;
- ◆ Regularly inspect the installation and mounting screws;
- ◆ Check the bearing operation by listening for unusual noises and monitoring temperature;
- ◆ If anything abnormal happens, stop the machine immediately, find out the cause, and fix it promptly.

△ Note:

Depending on usage conditions, it's recommended to service the motor every 3 months, 6 months, or a year.

7.2 Bearing Lubrication and Replacement

7.2.1 Lubrication

The motor is equipped with sealed bearings, maintenance-free.

7.2.2 Replacement

Bearings are wear parts and must be replaced after a certain number of operating hours. For moderate load conditions, bearings need to be replaced after about 25,000 hours.

When operating conditions are fairly good, such as at low or medium speeds, low bearing temperature, low axial/radial force, or low vibration load, the replacement interval can be appropriately extended. Under harsh operating conditions, like running constantly at $n_{\max}$ speed, severe vibrations, impacts, or frequent standby operations, the bearing replacement interval will shorten, with a maximum reduction of 50%.

7.3 Replacing the Encoder

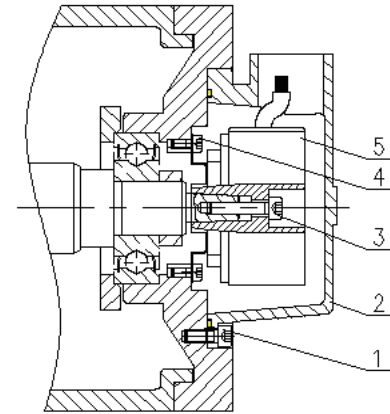
The encoder connection structure of the MX series servo motor is easy to assemble and disassemble.

1. Encoder Disassembly

- ◆ Disconnect the motor power;
- ◆ Remove the encoder cover mounting bolts “1” and take off the encoder cover “2” ;
- ◆ Remove the encoder axial fixing bolt “3” ;
- ◆ Remove the encoder spring clip fixing bolt “4” ;
- ◆ Gently pull out the encoder “5” .

2. Encoder Installation

- ◆ Align the encoder shaft hole with the motor tail shaft and gently push the encoder “5” in;
- ◆ Adjust the encoder spring clip mounting hole;
- ◆ Tighten the encoder spring clip mounting bolt “4” with a torque of 2~3 Nm;
- ◆ Tighten the encoder axial fixing bolt “3” with a torque of 2~3 Nm to secure the encoder;
- ◆ Tighten the encoder cover mounting bolt “1” with a torque of 2~3 Nm to reinstall the encoder cover “2” . Encoder replacement is complete.



Encoder connection diagram

8 Common Motor Faults and Maintenance Methods

Common problems	Reason	Repair method
The motor won't start	Overload Stall	Reduce the load
	Driver failure error	Check the power lines and signal line connections / Check the driver parameter settings
The motor is accelerating slowly	Overload	Reduce the load
	The driver parameters are set unreasonably	Check the drive settings
	One phase in the power line disconnects after being turned on	Check the driver and power line connections as well as the aviation plug connections / check the winding resistance
	Short circuit between turns or phases in the stator winding	Check the winding resistance and insulation resistance, and contact the manufacturer for repairs

Common problems	Reason	Repair method
It makes a rumbling noise when starting	One phase of the power line disconnects after being turned on	Check the driver and power line connections as well as the aviation plug connections / check the winding resistance
	Short circuit between turns or phases in the stator winding	Check the winding resistance and insulation resistance, and contact the manufacturer for repairs
Makes a rumbling noise when running	Overload	Reduce the load
	One phase of the power line disconnects after being turned on	Check the driver and power line connections, as well as the pilot plug connections / check winding resistance
	Short circuit between turns or phases in the stator winding	Check the winding resistance and insulation resistance, and contact the manufacturer for repairs
The motor overheats when running idle	The cooling fan's airflow is blocked by foreign objects	Clear any obstacles to ensure the cooling air can flow freely
The motor overheats when under load	Overload	Reduce the load
	A phase of the power line disconnects after being connected ...	Check the driver and power line connections as well as the aviation plug connections / check the winding resistance
	The cooling fan's airflow is blocked by foreign objects	Clear any obstructions to make sure the cooling air flows freely.

Common problems	Reason	Repair method
Runs unevenly	The motor power cables and signal cables aren't shielded well enough	Check the shielding and grounding, and see if there are any sources of interference nearby
	There's a loose connection in the circuit	Retighten the power and signal aviation plugs / check the connections of the driver and power and signal cables
	The driver gain setting is unreasonable	Reset the driver's gain properly
Harsh rubbing sound, operating noise	Rotating part slipping	Identify the cause and fix the parts
	There's a foreign object inside the motor	Contact the manufacturer for repairs
	Bearing damage	Contact the manufacturer for repairs
Radial vibration	Rotor imbalance	Take apart the rotor and rebalance it
	The rotor is not round, and the shaft is bent	Contact the manufacturer for repairs
	Poor calibration	Calibrate the equipment, check the couplings together
	Connected device imbalance	Rebalance connected devices
	The gearbox isn't running smoothly	Make the gearbox run normally
Axial vibration	Poor calibration	Calibrate the equipment, check the couplings together
	Connected device imbalance	Rebalance connected devices
	The gearbox isn't running smoothly	Make the gearbox run normally

Chapter 2 Servo driver

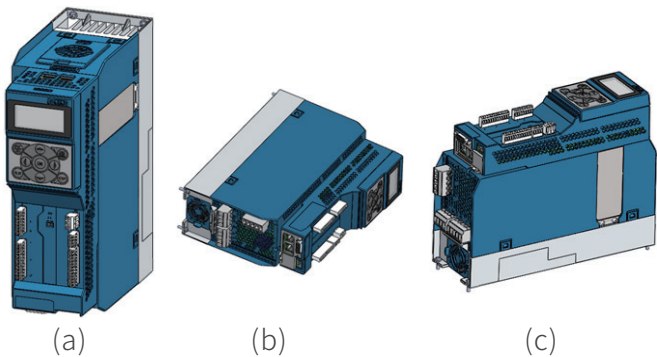
9 Driver installation and dimensions

9.1 Installation environment

Environmental temperature	-20°C ~ +50°C (unfrozen)
Ambient humidity	Less than 95% (no condensation)
Storage temperature	-40°C ~ +70°C
Surrounding environment	Indoor, no corrosive gases, no flammable gases, no flammable dust
Altitude	No capacity reduction: below 1000m Capacity reduction: 1000m~4000m
Protection level	IP20
Class of pollution	Suitable for environments with pollution level 2

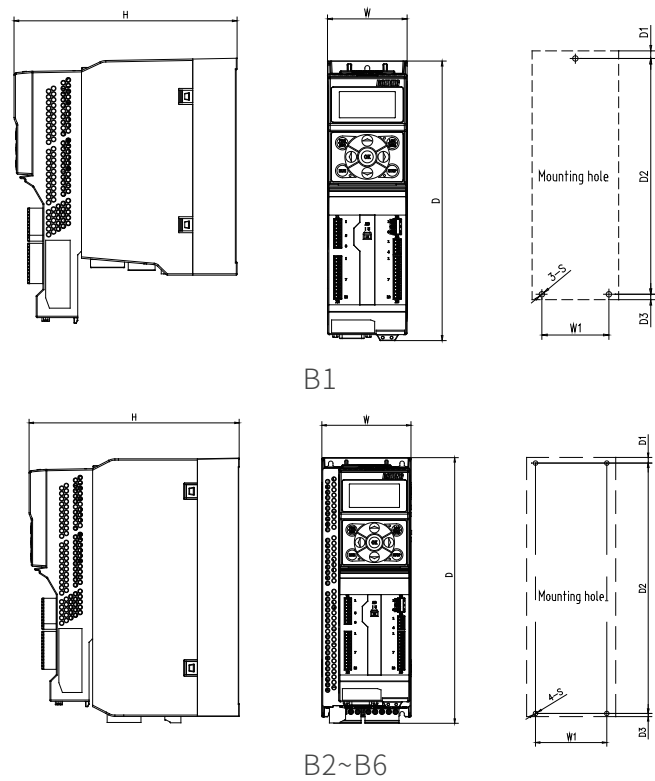
9.2 Installation method

The driver should be installed vertically as shown in (a), (b) (c) the installation method is incorrect.

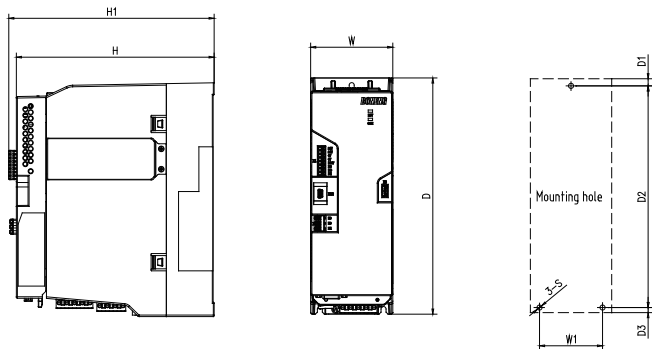


9.3 Overall dimensions and installation dimensions of the machine

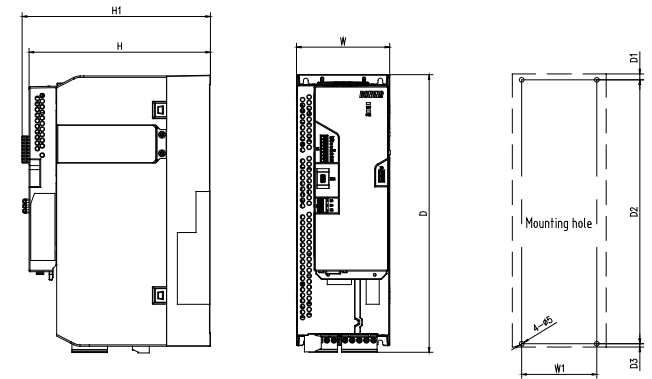
9.3.1 PM26+CM55+OP25



Model	W	H	D	W1	D1	D2	D3	S
B1	80	236.5	281	62	7	218	5	5 (3XM4 screws, installation torque 2.5Nm)
B2	100	236.5	298	80	6	281	4	5 (4XM4 screws, installation torque 2.5Nm)
B3	140	236.5	363	120	7	343	5	6 (4XM5 screws, installation torque 3.5Nm)
B4	200	268.5	473	170	7	430	7	6 (4XM5 screws, installation torque 6.5Nm)
B6	305	388.5	757	273	14	727	9	9 (4XM8 screws, installation torque 25Nm)



B1



B2~B6

Model	W	H	D	H1	W1	D1	D2	D3	S
B1	80	194.6	230	202	62	7	218	5	5 (3XM4 screws, installation torque 2.5Nm)
B2	100	194.6	298	202	80	6	281	4	5 (4XM4 screws, installation torque 2.5Nm)
B3	140	194.6	363	202	120	7	343	5	6 (4XM5 screws, installation torque 3.5Nm)
B4	200	237	473	/	170	7	430	7	6 (4XM5 screws, installation torque 6Nm)
B6	305	357.5	757	/	273	14	727	9	9 (4XM8 screws, installation torque 25Nm)

10 Control module

10.1 CM55 Control module

10.1.1 Terminal data

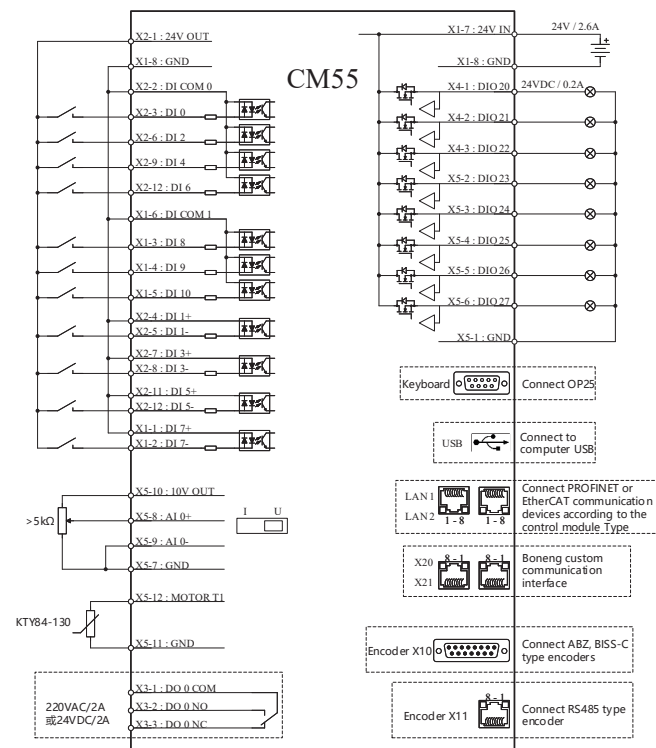
Function		Technical data
Bus interface	AX-CM55-PA-PE	• Support PROFINET、DriveLink • RJ45 interface
	AX-CM55-EA-PE	• Support EtherCAT、DriveLink • RJ45 interface
Power supply	Power module supply	• Powered by power • When digital input/output terminals are used as outputs, they require 24V power supply from external terminals
	External terminal supply	• Voltage range: DC 20.8 ... 28.8V • Max current: 2.6A
Power output	+24V output	• Voltage range: DC 18V ... 26.8V • Max current: 200mA
	+10V output	• Voltage range: DC 9.5V ... 10.5V • Max current: 40mA
	DB15 encoder	• Voltage: DC 5V or DC • Max current: 350mA
	RJ45 encoder	• Voltage: DC 5V • Max current: 200mA

Digital input	11 channels (DI0 ~DI10)	• DI1、DI3、DI5、DI7 are differential inputs, the rest are single inputs • DI0、DI2、DI4、DI6 shared terminal DICOM0 • DI8、DI9、DI10 shared terminal DICOM1 • Electrical isolation • Supports both Source and Sink modes • Voltage: DC 24V、AC 36V • "1" signal voltage: >11V • "0" signal voltage: <5V • 24V type current: 4mA • Response time: 6ms (with software filter)
Digital output	1 relay (DO0)	• Voltage: DC 24V、AC • Continuous current: 2A • Switching current: 2A • Contact type: 1 NO and 1 NC
Digital input/output	8 channels (DIO20 ~ DIO27)	• Voltage: Max DC 30V • current: Max output 200mA, 24V typical input 4mA • Frequency: Max 100Hz • Input "1" signal voltage: >15V • Input "0" signal voltage: <5V • Non-electrical isolation • External terminal require 24V power supply.

Analog input	1 channel (AI0)	• Differential input • DIP switch for switching between voltage and current modes • Voltage input range: -10V ... +10V、0V ... 10V • Current input range: 0mA...20mA、4mA...20mA • Response time: 2ms (with software filter) • Accuracy: $\pm 1\%$
Temperature sensor	2 channels	• Located at terminals X5 and X11 • Support KTY84-130、PTC
Encoder signal input	ABZ	• Supports 24V single-ended signals, and differential signals at 5V and 24V • Line break detection: Only supported for differential types • Max cable length: 5V differential type: 100m 24V open collector type: 50m 24V push-pull type: 100m 24V differential type: 300m
	RS485	• Baud rate: Max 4Mbps • Max cable length: 100m at 500kbps
	BISS-C	• Baud rate: Max 2.5Mbps • Max cable length: 100m at 500kbps
USB interface	1 channel	• USB 2.0 • Mini-B
Keyboard interface	Support OP25	• Direct installation or external installation

Note: When connecting external devices to the control terminals, please pay attention to the voltage and current specifications of the terminals to avoid damaging the control module.

10.1.2 Wiring diagram



10.1.3 Definition of terminal signals

Terminal	Pin	Name
X1	1	DI7+
	2	DI7-
	3	DI8
	4	DI9
	5	DI10
	6	DI COM1
	7	24V IN
	8	GND

X2	1	24VOUT
	2	DICOM0
	3	DI0
	4	DI1+
	5	DI1-
	6	DI2
	7	DI3+
	8	DI3-
	9	DI4
	10	DI5+
	11	DI5-
	12	DI6

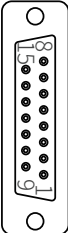
Terminal	Pin	Name
X3	1	DOCOM
	2	DONO
	3	DONC

X4	1	DI020
	2	DI021
	3	DI022
	4	GND

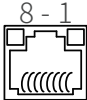
X5	1	GND
	2	DIO23
	3	DIO24
	4	DIO25
	5	DIO26
	6	DIO27
	7	GND
	8	AIO+
	9	AIO-
	10	10VOUT
	11	GND
	12	MOTOR T1

10.1.4 Definition of Encoder Interface signals

a) Definition of Encoder Interface (X10) Signals

	Pin	Name	Instructions
	1	DB15_SSI_DA+	BISS-C Data +
	2	DB15_SSI_CK+	BISS-C Clock +
	3	DB15_SSI_CK-	BISS-C Clock -
	4	DB15_PWR	Encoder power supply (5V or 24V)
	5	DB15_PWR	Encoder power supply (5V or 24V)
	6	DB15_VS+	Encoder power supply detection +
	7	DB15_0V	Power supply ground
	8	DB15_SSI_DA-	BISS-C Data -
	9	DB15_VS-	Encoder power supply detection -
	10	DB15_Z+	Incremental encoder signal Z+
	11	DB15_Z-	Incremental encoder signal Z-
	12	DB15_B-	Incremental encoder signal B-
	13	DB15_B+	Incremental encoder signal B+
	14	DB15_A-	Incremental encoder signal A-
	15	DB15_A+	Incremental encoder signal A+

b)Definition of Encoder Interface (X10) Signals

	Pin	Name	Instructions
	1	RJ45_TEMP+	KTY84-130 or PTC input
	2	RJ45_TEMP-	KTY84-130 or PTC ground
	3	RJ45_CK+	BISS-C signal CK
	4	RJ45_DA-	RS485 signal B or BISS-C signal DA-
	5	RJ45_DA+	RS485 signal A or BISS-C signal DA
	6	RJ45_CK-	BISS-C signal CK-
	7	RJ45_5V	Encoder power (5V)
	8	RJ45_0V	Encoder power ground

10.1.5 Definition of communication interface signal

a)Definition of PROFINET Interface Signals

	Pin	Name	Instructions
	1	TXP	Ethernet data transmission +
	2	TXN	Ethernet data transmission -
	3	RXP	Ethernet data reception +
	4	NC	—
	5	NC	—
	6	RXP	Ethernet data reception -
	7	NC	—
	8	NC	—

b)Definition of EtherCAT Interface Signals

	Pin	Name	Instructions
	1	TXP	Ethernet data transmission +
	2	TXN	Ethernet data transmission -
	3	RXP	Ethernet data reception +
	4	NC	—
	5	NC	—
	6	RXP	Ethernet data reception -
	7	NC	—
	8	NC	—

c) Definition of DriveLink Interface Signals

	Pin	Name	Instructions
	1	CANH	CANH signal
	2	CANL	CANL signal
	3	NC	—
	4	NC	—
	5	NC	—
	6	NC	—
	7	NC	—
	8	NC	—

10.2 CM51 Control Module

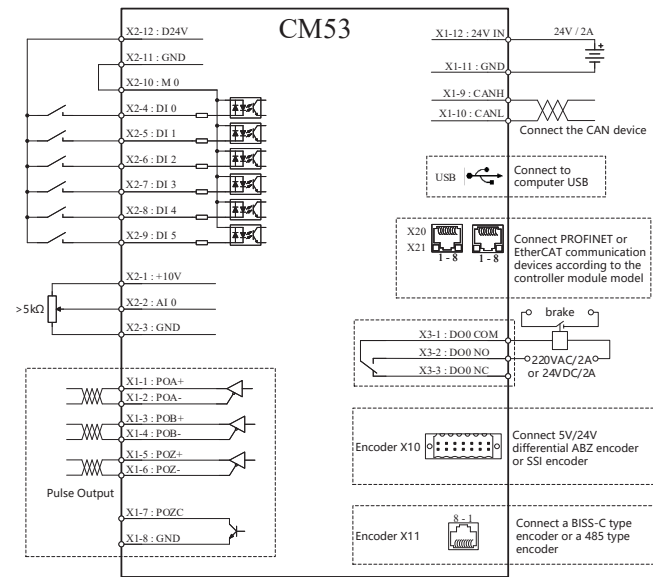
10.2.1 Technical data

Functions	Technical data	
Bus interface	AX-CM53-PA-PE	• PROFINET, DriveLink bus • RJ45 interface
Power supply	By power module	• DC 24V/1.0A
	By external terminals	• Voltage range: DC 20.8~28.8V • Maximum current: 1.0A
Power output	+24V output	• Voltage range: DC 18V ... 26.8V • Maximum current: 100mA
	+10V output	• Voltage range: DC 9.5V ... 10.5V • Maximum current: 10mA
Digital input	6	• Single inputs: DI0、DI1 ... DI5 share M0 • Electrical isolation • Support Source and Sink mode • Voltage: DC 24V, AC 36V • Level “1” voltage: >11V • Level “0” voltage: <5V • 24V typical current: 4mA • Response time: 6ms (Including software filter)
Digital output	1 relay (DO0)	• Voltage: DC 24V、AC 220V • Continuous current: 2A • Switching current: 2A • Contact type: 1 normally open and 1 close

Functions	Technical data	
Pulse output	3 (POA ~ POZ)	• Voltage: DC 5V • Current: Maximum 20mA • Frequency: Maximum 2MHz • Differential output • Z-phase supports open collector output
Analog input	1 (AI0)	• Electronic switch to choose voltage and current mode • Voltage range(voltage mode): 0V ~ 10V • Current range(current mode): 0mA ~ 20mA, 4mA ~ 20mA • Internal resistance in current mode: 500Ω • response time: 2ms (including software filter) • Precision: ±1%
Temperature sensor	1	• Respectively at the X11 • Support KTY84-130、PTC
Encoder interface	ABZ	• 24V or 5V differential signal • Input frequency: 250kHz maximum • Maximum wire length: 100m • Disconnection detection
	SSI	• 5V differential signal • Baud rate: 1Mbps maximum
	BISS-C	• Baud rate: 2 Mbps maximum • RJ45 interface • Maximum wire length: 50m at 500kbps
	RS485	• Baud rate: 2.5 Mbps maximum • Maximum wire length: 50m at 500kbps

Functions	Technical data	
USB interface	1	• USB 2.0 • Type-C
Keyboard display	support	• LED segment displays and mechanical buttons

10.2.2 Wiring diagram



	Pin	Singal name	Signal Description
X2	1	+10V	Output power DC 10V/10mA
	2	AI0	Analog input channel 0
	3	GND	Analog input ground
	4	DI0	Digital input channel 0
	5	DI1	Digital input channel 1
	6	DI2	Digital input channel 2
	7	DI3	Digital input channel 3
	8	DI4	Digital input channel 4
	9	DI5	Digital input channel 5
	10	M0	Digital input common
	11	GND	Input power ground
	12	24V OUT	Output power DC 24V/0.1A

	Pin	Singal name	Signal Description
X3	1	COM	Relay common terminal
	2	NO	Relay normally open contact
	3	NC	Relay normally closed contact

10.2.3 Plugable terminal signals

a) CM53 Plug-in Terminal Signal Definition

	Pin	Singal name	Signal Description
X1	1	CANH	CAN Communication Differential High Line
	2	CANL	CAN Communication Differential Low Line
	3	POA+	Pulse Output Phase A
	4	POA-	Pulse Output Phase A-
	5	PAB+	Pulse Output Phase B
	6	POB-	Pulse Output Phase B-
	7	POZ+	Pulse Output Phase Z
	8	POZ-	Pulse Output Phase Z-
	9	POZC	Pulse Output (Open Collector)
	10	GND	Input Power Ground
	11	GND	Input Power Ground
	12	24V VIN	Input Power DC 24V

10.2.4 Encoder interface signals

a) Encoder interface (X10) sinnals

	Pin	Singal name	Signal discription
X10	1	A+	Incremental encoder signal A
	2	A-	Incremental encoder signal A-
	3	B+	Incremental encoder signal B
	4	B-	Incremental encoder signal B-
	5	Z+	Incremental encoder signal Z
	6	Z-	Incremental encoder signal Z-
	7	5V_VS+	Encoder power supply (5V/0.2A)
	8	0V	Encoder power ground
	9	24V_VS+	Encoder power supply (24V/0.2A)
	10	0V	Encoder power ground
	11	SSI_CK+	SSI encoder signal CK
	12	SSI_CK-	SSI encoder signal CK-
	13	SSI_DA+	SSI encoder signal DA
	14	SSI_DA-	SSI encoder signal DA-

b) Encoder interface (X11) signals

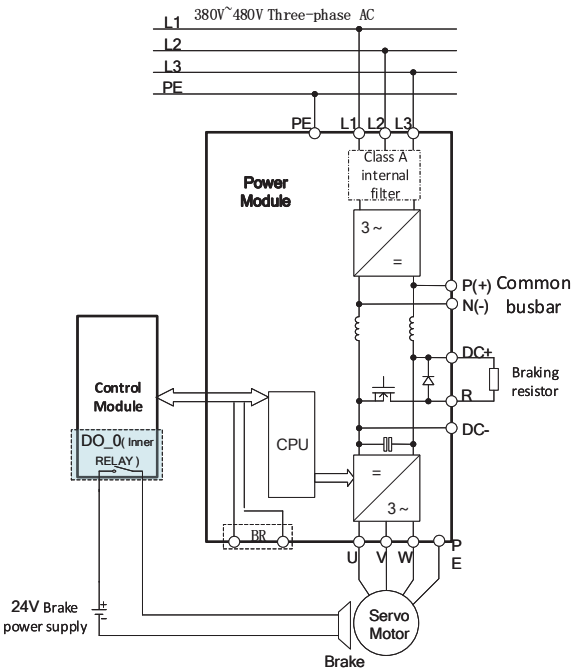
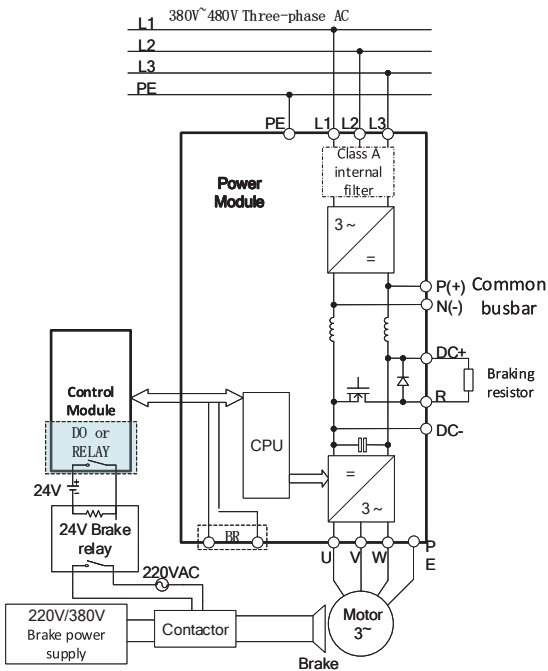
Pin	Signal name	Signal description
1	RJ45_TEMP+	KTY84-130 or PTC input
2	RJ45_TEMP-	KTY84-130 or PTC ground
3	RJ45_CK+	BISS-C signal CK
4	RJ45_DA-	RS485 signal B or BISS-C signal DA-
5	RJ45_DA+	RS485 signal A or BISS-C signal DA
6	RJ45_CK-	BISS-C signal CK-
7	RJ45_5V	Encoder power (5V)
8	RJ45_0V	Encoder power ground

10.2.5 PROFINET interface signals

a) PROFINET Interface Signal Definition

Pin	Name	Instructions
1	RJ45_TEMP+	KTY84-130 or PTC input
2	RJ45_TEMP-	KTY84-130 or PTC ground
3	RJ45_CK+	BISS-C signal CK
4	RJ45_DA-	RS485 signal B or BISS-C signal DA-
5	RJ45_DA+	RS485 signal A or BISS-C signal DA
6	RJ45_CK-	BISS-C signal CK-
7	RJ45_5V	Encoder power (5V)
8	RJ45_0V	Encoder power ground

10.3 PM26 Wiring diagram



10.3.1 Description of the main circuit terminals and function description

Designation	Terminal definition	Functional description
	Safety protective earth terminal	Safety protection earth terminals, each machine is equipped with two PE terminals as standard, for incoming line and motor connected to earth.
L1/L2/L3	Line supply input terminal	Three-phase AC input terminals, connected to the power grid. (380V~480V,47~63HZ)
DC+	Busbar positive terminal	DC busbar positive terminals.
R	Brake resistance terminal	Built-in brake unit and DC+ external brake resistance for braking function.
DC-	Busbar negative terminal	And DC+ common external device to achieve common DC bus function.
U/V/W	Driver power output terminal	Three-phase AC output terminal, connected to three-phase motor.
BR	Mechanical brake control terminal	Connect 24V relay to control the motor brake, (available only with CM55, or directly use the terminal 24V relay to control the brake).

11 Servo drive commission

11.1 Modifying Drive Parameters

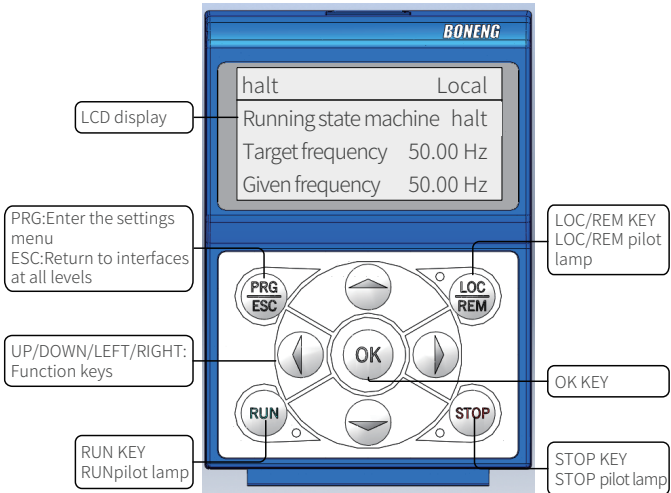
Boneng drive parameters can be set through the PC of the upper computer software Boneng Drivesoft 100 and the driver body with the keyboard (OP25) two ways to achieve. After the Boneng Drivesoft 100 software or keyboard is successfully connected to the drive, the parameters on the drive end are transmitted to the local computer or keyboard in real time. Parameter values modified in the upper computer software take effect in real time and are stored in the drive.

Drive parameters include common parameters and extended parameters. You can set parameter [A04.02: Parameter access level] to display parameters of different levels. Some of the application functions of the drive are extended functions, and their parameters are displayed only at the extended parameter level. Before modifying these parameters, set A04.02 to [2: extended parameter].

11.2 Description of upper computer and operation panel.

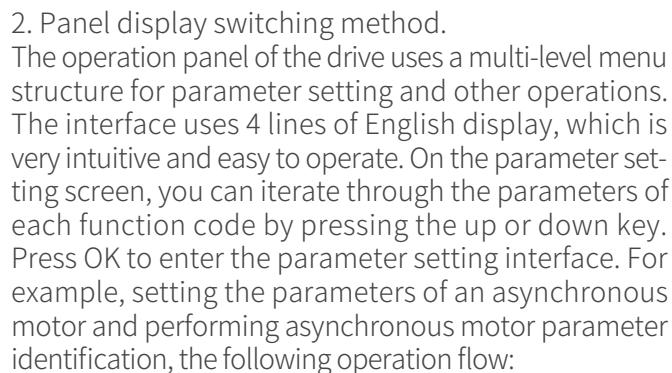
11.2.1 Description of the Host Computer
Boneng AX-series servo Drivescan be commissioned through the PC softwre BonengDriveSoft100, which can be downloaded from Boneng official website: https://www.boneng.com/product_AX.htm.

11.2.2 OP25 Panel Operation Instructions
With AX series servo drives, an operation panel is provided for parameters adjustment, status monitoring, and start/stop control, shown as follows:



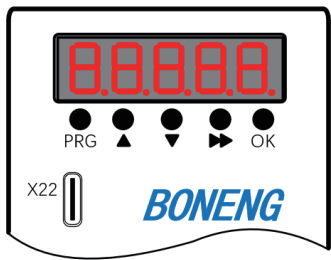
Note: An optional extension cable is required for AX-CM51 to connect with OP25.

Keys	name	function
PRG/ESC	Programm /escape key	In the startup page, press this key to enter the function list page; in other pages, use this key to escape to previous menu.
LOC/REM	Local/Re -mote key	Switch between Local (Keyboard control) and Remote mode.
STOP	Stop key	While the drive is running, press this key to stop it; otherwise, acknowledge/reset the fault.
RUN	Run key	In Local mode (keyboard control), press RUN key to run drive.
	Up/Add Key	- Navigates to the next item - Increases a value
	Down/ Minus key	- Navigates to the previous item; - Decreases a value.
	Right shift key	Moves the cursor to next right digit for single digit editing, including the digit of positive/negative sign.
	Left shift key	Moves the cursor to next left digit for single digit editing, including the digit of positive/negative sign.
OK	Confirm key	- Confirms selection or input; - Enters sub menu.



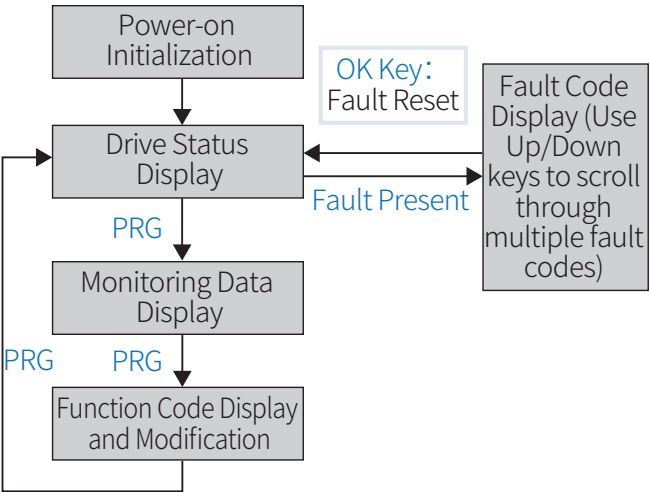
11.2.3 CM53 Digital Display and Button Instructions

Digital display and function buttons:



Key	Key Name	Function
PRG	Program/Return	In the Main Monitoring Interface, pressing this key enters the Function Selection Interface; in other interfaces, pressing this key returns to the previous interface or state.
▲	Increase Key	Increases data or function code
▼	Decrease Key	Decreases data or function code
▶▶	Right Shift Key	Selects the 5-digit digital tube cyclically; shifts parameter modification bit rightward during parameter editing.
OK	Confirm Key	Confirms parameter settings; resets faults when pressed on the fault display page.

Panel Display and Keypad Operation Instructions:



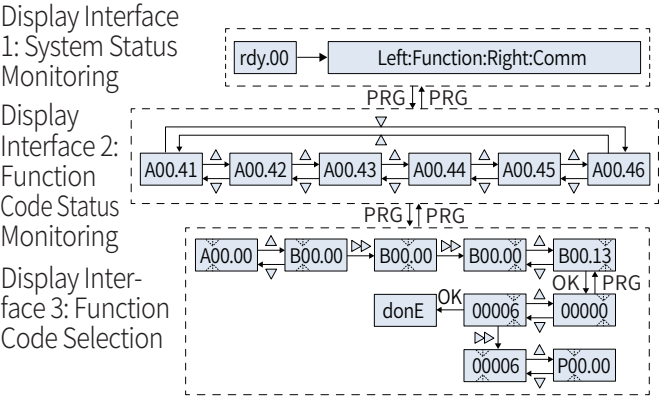
1. Drive Status Display Interface displays the current status of the drive, with the following possible statuses:

Display	Name	Description
	Rdy: Drive	Drive is ready for operation, waiting for enable signal.
	Nrd: Power-on Blocked	Drive not ready, condition not met for operation.
	Run: Running	Drive is running.
	Tun: Motor Parameter Identification	Motor parameter identification in progress.
	Off: Deceleration Stop	Motor is in braking state.
	Bus Communication Message	PROFINET Communication Message Types: 0: Message Invalid; 1: Standard Message 1; 2: Standard Message 3; 3: Siemens 102 Message; 4: Siemens 105 Message; 5: Siemens 111 Message; 6: Siemens 352 Message;
	Bus Communication Status	Character Display for Bus Communication Status: 0: Communication Not Established; A: AR Established; C: DCP Request; E: Communication Fault; P: Process Communication Established;
	Bus Communication Message	EtherCAT Communication Message Types: 0: No mode set; 1: PP Mode; 2: Not supported; 3: PV Mode; 4: PT mode;

Display	Name	Description
		5: Not supported; 6: Home Return Mode; 7: Not supported; 8: CSP Mode; 9: CSV Mode; 10: CST Mode;
	Bus Communication Status	Character displays bus communication status: 0: It has no meaning; 1: init; 2: PRE_OP; 4: SAFE_OP; 8: OP;

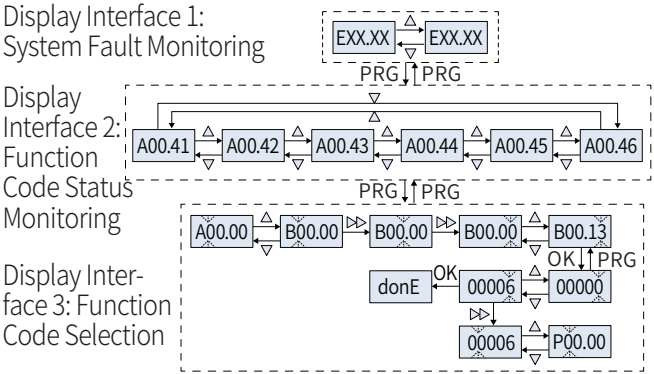
2. Function Code Display and Modification Interface operational workflow is as follows:

When the drive is fault-free



If selecting parameter linking, move the cursor to the highest digit of the digital display. Press Δ to link parameters, and press ∇ to cancel.

When the driver malfunctions, display interface one changes, while display interfaces two and three remain unchanged.



If selecting parameter linking, move the cursor to the highest digit of the digital display. Press Δ to select parameter linking, and press ∇ to cancel.

When the drive is started for the first time and there are no faults, the AN drive panel will automatically display Display Interface 1. Press [PRG] and the panel will display parameter A00.41. At this point, pressing the Up/Down keys will cycle the display between A00.41 and A00.46. Press [PRG] to enter the function code selection interface. Use the Right key and Up/Down keys to select the function code parameter to be modified or viewed. Press [OK] to display the current parameter value of the function code on the panel.

11.3 Motor parameter configuration

The AX drive can support two control modes: variable frequency and servo. The types of motors that can be supported in different modes are shown in the table below:

Motor type	Boneng permanent magnet synchronous motor	Other manufacturers of permanent magnet synchronous motors	Asynchronous motor (induction motor)
Drive mode			
Servo mode	support	Not supported	support
Variable frequency mode	support	Supports synchronous motors (without encoder /with ABZ encoder)	support

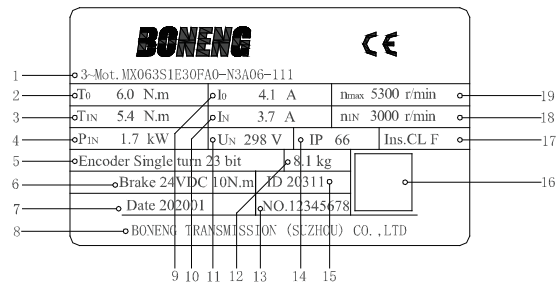
Note: (1) The control mode of the drive can be configured in function code A04.14, and the drive defaults to servo mode at the factory.

(2) When working in variable frequency mode (only debugging or torque control, not positioning), it can support synchronous motors without encoders or synchronous motors with ABZ encoders.

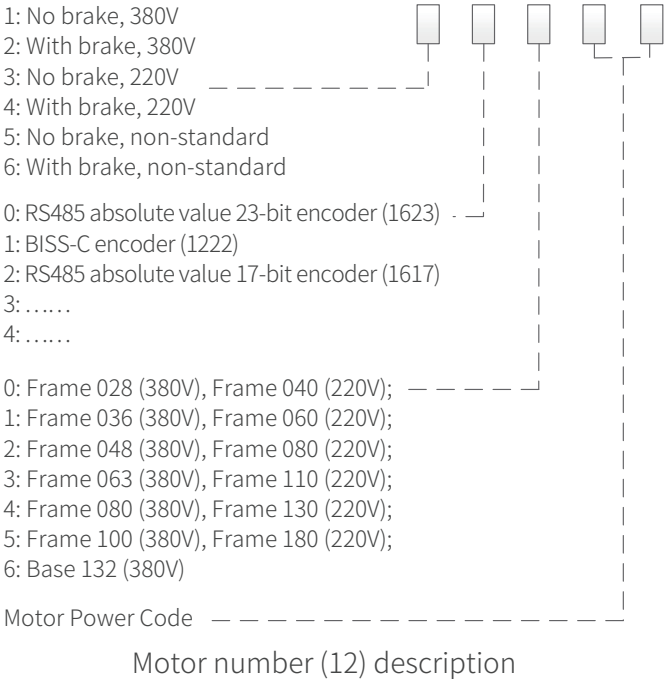
(3) When matching a synchronous motor in servo mode, only Boneng's own servo motor is supported. When matching asynchronous motors in servo mode, ABZ encoder and absolute value encoder specified by the manufacturer can be supported.

11.3.1 Boneng permanent magnet synchronous motor

When driving the BONENG permanent magnet synchronous motor with an AX drive, you can quickly set the motor parameters by setting the motor number (function code A0.16). The motor number can be found on the MX permanent magnet synchronous motor nameplate. The MX permanent magnet synchronous motor nameplate is shown in the following figure:



- 1.Motor model
- 2.Static torque (100K)
- 3.Rated torque (100K)
- 4.Rated power
- 5.Encoder parameters
- 6.Brake parameters
- 7.Production date
- 8.Company name
- 9.Static current
- 10.Rated current
- 11.Induction line voltage at rated speed
- 12.Weight
- 13.Factory number
- 14.Protection level
- 15.Motor ID
- 16.QR code
17. Insulation level
- 18.Rated speed
- 19.Maximum speed



When using an AX drive to drive a Boneng permanent magnet synchronous motor, the drive can automatically obtain the motor number and configure the motor parameters based on the obtained motor number. The obtained motor number is displayed in function code A04.17.

Note: The AX-CM55 drive only supports this function in software version numbers (function code A02.00) of 5.20 or 6.20 (CM55-PN version 5.20, CM55-EC version 6.20) and above. Other versions require manual setting of the motor number in function code A04.16. Please find the motor number on the MX permanent magnet synchronous motor nameplate. After setting the motor number, please check and confirm whether the parameters of Group D motor have been updated. After completion, be sure to power on the drive again.

Note: When the Boneng drive drives the Boneng permanent magnet synchronous motor, only the motor number needs to be set, without the need for motor parameter identification.

11.3.2 Ordinary three-phase asynchronous motor

(1) Basic motor parameter settings

After checking the motor nameplate, the basic parameters of the motor need to be manually set in the D group basic parameter group and encoder parameter group.

The nameplate of the Boneng MP series three-phase asynchronous motor is as follows:

2	3	4	5	6	1
BONENG 三相异步电动机 MP112L4B40FC3					
112L4	B5	IP55	Ins F	S1	
kW	V _N	Hz	I _N	n/n ₀	Conn
4	380/400	50	8.4/9.9	1450	△/Y
	440	60	7.3	1755	△
			56 kg	Date 202001	
Q/328507	LOCK-2020				NO.12345678
博能传动(苏州)有限公司					
8	9	10	11	17	12
13	18	14	15	19	16

1. Motor series
2. Base number
- 3.Installation method
- 4.Protection level
5. Insulation level
6. Working system
7. Enterprise standard
8. Rated power
9. Rated voltage
10. Rated frequency
11. Rated current
12. Rated speed
13. Connection method
14. Power factor
15. Efficiency
16. Energy efficiency level
17. Weight
18. Production date
19. Factory number

For more information on Boneng asynchronous motors, please refer to the official website of Boneng.

(2) Identification of detailed motor parameters

To achieve higher performance vector control, the parameters of asynchronous motors can be identified. After inputting the basic parameters of the motor, the motor parameters can be identified using 【Simple Static Identification of Asynchronous Machine】, 【Static Complete Identification of Asynchronous Machine】, and 【Dynamic Complete Identification of Asynchronous Machine】 to obtain more accurate motor parameters.

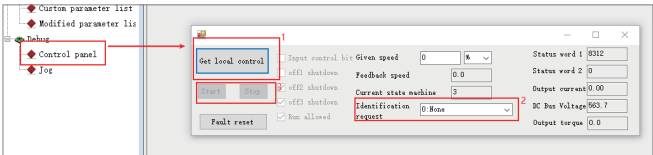
Function code	Function code name	unit	range	explain
B00.21	Identification request	-	[0,3]	When identifying asynchronous motor parameters, please choose the following options according to your needs:1:Simple Static Identification of Asynchronous Machines 2:Static complete identification of asynchronous machines 3:Dynamic complete identification of asynchronous machines

The differences in parameter identification modes are shown in the table below. Please choose according to the actual application scenario:

Mode	Usage conditions	Identification parameters	matters needing attention
1:Simple Static Identification of Asynchronous Machines	Motor stationary	stator resistance rotor resistance	If rotation is not allowed during motor identification, please use method 2. If using method 3, please ensure that the motor is separated from the load machinery and operates without danger;
2:Static complete identification of asynchronous machines	Motor stationary	leak inductance mutual inductance no-load current	If the motor is connected to a load, the identification results may not be accurate enough.
3:Dynamic complete identification of asynchronous machines	Motor operation		

The steps for identifying motor parameters are as follows:

1. Set the basic parameters of Group D motor correctly based on actual motor information.
2. Select parameter identification mode (set function code B00.21) based on drive control mode, system mechanical status, and other conditions.
3. If debugging using upper computer software: Please open the "Control Panel" in the sidebar for motor parameter identification: Control Panel ->Get Local Control Permissions ->Select Identification Mode ->Start Running, as shown in the following figure:



Note: After using the control panel, you need to give up the local control permission to close the control panel and continue to use the function code of the host computer to control the start and stop.

If using the OP25 panel for debugging: Press RUN to start parameter identification. If you want to terminate identification during the process, press STOP. If the STOP key is incorrectly pressed during identification, you need to reconfigure the identification request and press the RUN key again. After the identification is completed, the panel will display the STOP status.

4.After the identification is completed, the following parameter identification results will be automatically saved.

Function code	Function code name	unit	range	explain
D01.00	IM stator resistance	Ω	[0.000,65.535]	Asynchronous motor parameters
D01.01	IM rotor resistance	Ω	[0.000,65.535]	
D01.02	IM leakage inductance	mH	[0.00,655.35]	
D01.03	IM mutual inductance	mH	[0.0,6553.5]	
D01.04	IM no-load current	A	[0.00,655.35]	

11.3.3 Other synchronous motors

(1) Other synchronous motor parameter configuration.

When using synchronous motors from other manufacturers, the drive group D parameters should be set according to the parameters provided by the motor manufacturer. After parameter setting, the motor parameters must be identified to obtain more accurate motor parameters.

(2) Identification of other synchronous motor parameters .

When the AX drive operates in servo mode, the synchronous motor only supports the Boneng servo motor; When using frequency conversion mode to drive a synchronous motor, please make sure to input the motor parameters correctly. After inputting the basic parameters of the motor, the motor parameters can be identified using 【synchronous machine without encoder identification】 or 【synchronous machine belt encoder identification】 to obtain more accurate motor parameters.

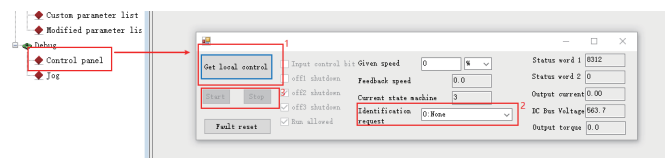
Function code	Function code name	unit	range	explain
B00.21	Identification request	-	[0,21]	When identifying synchronous motor parameters, please choose the following options according to your needs: 11:Synchronous machine without encoder identification 12:Synchronous machine belt encoder identification 21:Encoder zero correction

The differences in parameter identification modes are shown in the table below. Please choose according to the actual application scenario:

Mode	Usage conditions	Identification parameters	matters needing attention
11:Synchronous machine without encoder identification	Motor operation	stator resistance D-axis inductance Q-axis inductance Motor back electromotive force	Under the operating conditions of the motor, please ensure that the motor is separated from the load machinery before identification and that there is no danger during operation; If the motor is connected to a load, the identification results may not be accurate enough.
12:Synchronous machine belt encoder identification	Motor operation	Encoder installation angle Encoder direction	
21:Encoder zero correction	Motor operation	Encoder zero point Motor number	

The steps for identifying motor parameters are as follows:

1. Based on the current motor selection, correctly set the basic parameters of Group D motor;
2. Select parameter identification mode (set function code B00.21) based on drive control mode, system mechanical status, and other conditions;
3. If debugging using upper computer software: Please open the "Control Panel" in the sidebar for motor parameter identification: Control Panel ->Get Local Control Permissions ->Select Identification Mode ->Start Running, as shown in the following figure:



If using OP25 panel debugging: Press RUN to start parameter identification. If you want to terminate

identification during the process, press STOP. After identification is completed, the panel will display the STOP status.

4.After the identification is completed, the following parameter identification results will be automatically saved. On the premise of knowing the accurate parameters of the motor (A04.17 has the motor number, P10.30 shows the zero position), it is possible to manually input the parameters without identification.

Function code	Function code name	unit	range	explain
D01.10	IM stator resistance	Ω -	[0.000,65.535]	Synchronous motor parameters.
D01.11	IM D-axis inductance Ld	mH	[0.00,655.35]	
D01.12	IM Q-axis inductance Lq	mH	[0.00,655.35]	
D01.13	IM back EMF	V	[0,65535]	
D02.10	Encoder zero POS angle	°	[0.0,359.9]	Encoder installation angle related to motor control.
D02.10	Input AB phase sequence	-	[0,1]	Encoder direction related to motor control.
A04.17	Servo motor storage motor number	-	-	The motor number read from the motor.

The performance of vector control is easily affected by motor parameters, and obtaining accurate motor parameters is the key to achieving high-performance vector control. It can be manually inputted with accurate motor parameters. Inaccurate motor parameters may cause the motor to malfunction or have unsatisfactory performance.

11.4 Trial operation

Before trial operation, check whether the motor number of the A04.17 function code is consistent with the motor number on the motor nameplate (Motor nameplate data 15 in section 11.3.1) according to the motor Parameter configuration section. Ensure that the brake of the servo motor with brake is correctly configured and can be opened normally. During the trial run, use the point operation to confirm whether the servo motor can rotate normally. The JOG function can be started by configuring function codes on the operation panel or upper computer. According to the control method, it can be divided into speed jog and position jog. After starting, the motor rotates according to the set number of instructions or operating speed.

11.4.1 Speed Jogging

Speed jog is a trial run function of a servo drive under speed control, which allows the motor to continuously run at the set operating speed. Speed jog function configuration process:

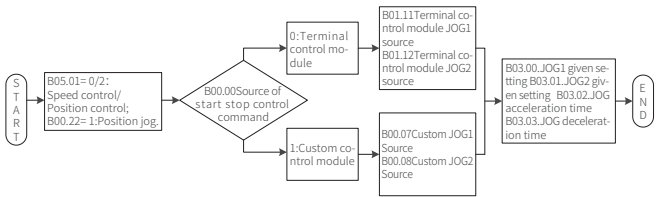


Figure 11-1 Speed jog function configuration flowchart

Table 11-1 Function codes related to speed jog monitoring variables

Function code	Function code name	unit	range	explain
P01.14	Jog operation valid	-	[0,1]	Display jog operation status: 0: jog is not running; 1: jog is running.
P01.34	Inching not in effect	-	[0,1]	Contrary to the state of P01.14.

Function code	Function code name	unit	range	explain
P06.05	Given speed	4096 $\triangleq$ 100% Rated speed	[-32768, 32767]	Display the current value of the given speed; This value is the calibration value: 4096 corresponds to the rated motor speed.
P06.06	Motor speed	4096 $\triangleq$ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.

11.4.2 Position Jogging

Position jog is a trial operation function of a servo drive under position control, which allows the motor to run according to the set number of position commands and maximum operating speed. Position jog function configuration process:

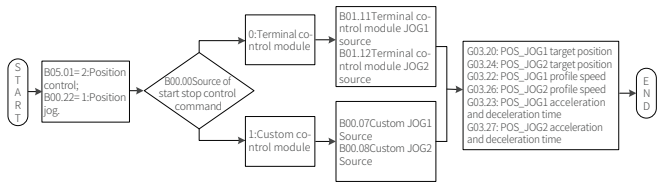


Figure 11-2 Position jog function configuration flowchart

Table 11-2 Function codes related to position jog monitoring variables

Function code	Function code name	unit	range	explain
P01.14	Jog operation valid	-	[0,1]	Display jog operation status: 0: jog is not running; 1: jog is running.
P01.34	Inching not in effect	-	[0,1]	Contrary to the state of P01.14.

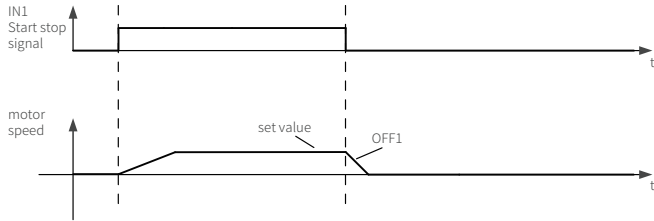
Function code	Function code name	unit	range	explain
P06.06	Motor speed	4096 $\triangle$ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.

12 Drive operation control

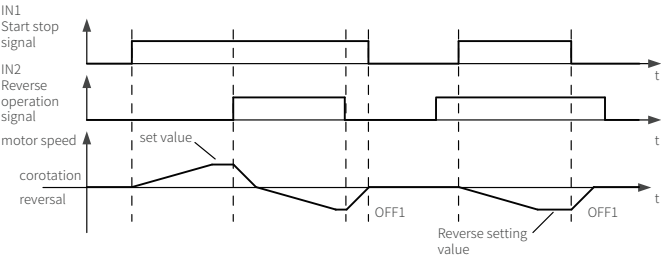
12.1 Start stop control

There are six ways to control the start, stop, and direction of the motor through DI terminals or inter-connected parameter inputs, corresponding to the six options of B01.01 control method; Additionally, communication can be used to directly control start stop.

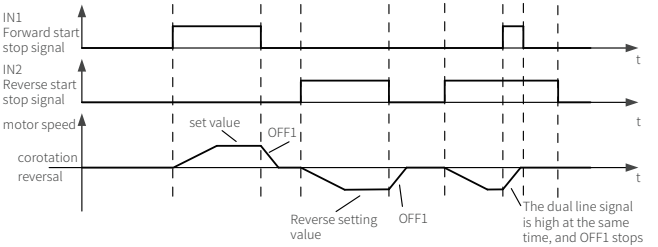
- 1.IN1 start:
- IN1 controls the start and stop of the motor, and the direction of motor rotation is determined by the current phase sequence of the drive output terminal wiring.



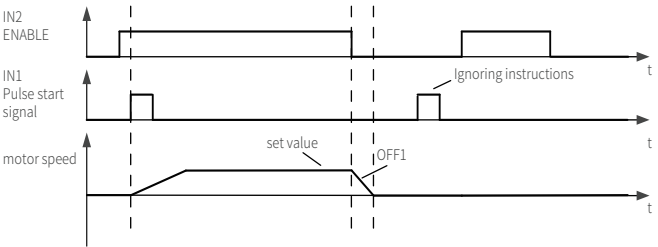
- 2.IN1 start, IN2 direction:
- IN1 controls start and stop, IN2 controls direction.



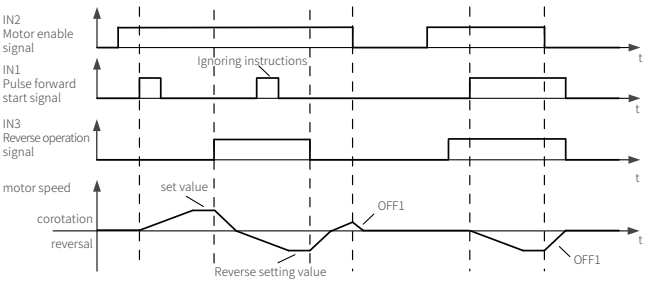
- 3.IN1 forward start, IN2 reverse start:
- IN1 controls forward start and stop, IN2 controls reverse start and stop.



- 4.IN1 rising edge start, IN2 stop:
- IN2 receives low-level motor start disabled,When IN2 receives high voltage, thesignal received by IN1 changes from low to high, and the motor starts.

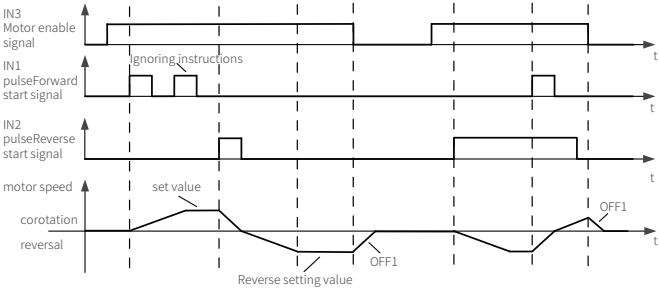


- 5.IN1 rising edge starts, IN2 stops, IN3 direction:
- IN2 receives low-level motor start and is prohibit- ed, When IN2 receives high voltage, the motor starts when IN1 receives a signal that changes from low to high. IN3 receives high voltage, with reverse speed.



- 6.IN1 starts in the forward direction on the rising edge, IN2 starts in the reverse direction on the rising edge, IN3 stops:
- IN3 receives a low-level motor start that is pro- hibited. When IN3 receives a high signal, the motor

starts forward when IN1 detects a rising edge and in reverse when IN2 detects a rising edge.high. IN3 receives high voltage, with reverse speed.



The relevant setting parameters are as follows:

Table 12-1 Start stop control function codes

Function code	Function code name	unit	range	explain
B01.01	Terminal control command 1 mode	-	0:Invalid 1:IN1 starts 2:IN1 start, IN2 direction 3:IN1 starts forward, IN2 starts reverse 4:IN1P starts, IN2 stops 5:IN1P start, IN2 stop, IN3 direction 6:IN1P starts forward, IN2P starts reverse, IN3 stops	Terminal control command 1 settings
B01.02	System reservation	-	0:Edge 1:Level (reserved)	
B01.03	Terminal Ctrl command 1 input 1	-	0: Invalid 1: Reserved 2-9: DI0~DI7 10: Reserved Other: Binary interconnection parameters	
B01.04	Terminal Ctrl command 1 input 2	-	0: Invalid 1: Reserved 2-9: DI0~DI7 10: Reserved Other: Binary interconnection parameters	

Note: If B01.00 is set to 1 (terminal control command 2), refer to B01.06~B01.10 for relevant setting parameters.
Configuration flowchart of start stop control module.

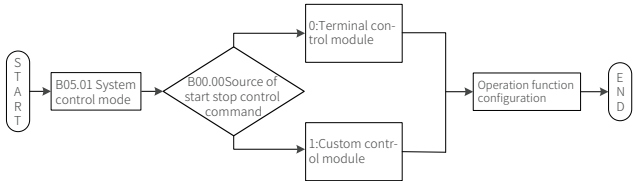


Figure 12-1 Start stop control module flowchart

Command input status can be viewed through relevant function codes.

Table 12-2 Function codes related to DI terminal monitoring variables

Function code	Function code name	unit	range	explain
P00.02	Multifunctional DI0	-	[0,1]	Display the current value of the DI0 terminal
P00.03	Multifunctional DI1	-	[0,1]	Display the current value of the DI1
...	...	-	[0,1]	...
P00.12	Multifunctional DI10	-	[0,1]	Display the current value of the DI10

12.2 Speed control

12.2.1 Speed control usage process



Figure 12-2 Speed control flowchart

12.2.2 Setting of Speed Target Values

The precision series servo drive selects the speed setting source via B02.00.

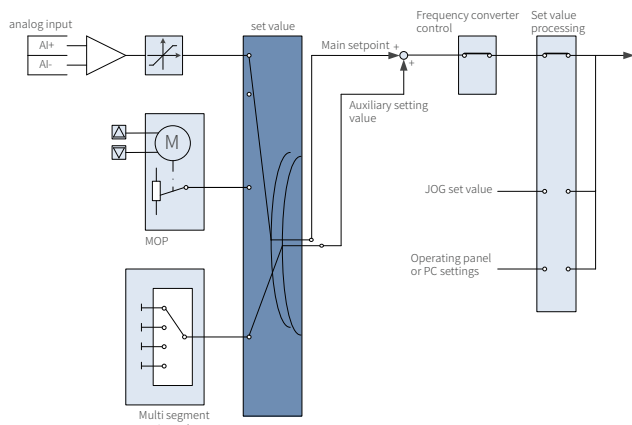


Figure 12-3 Target Speed Setting

The source of the main set value can be:

- Analog input of the drive
- Fieldbus interface of the drive
- Potentiometer inside the drive
- Drive multi segment value
- Interconnect to P group parameters

The above sources can also be sources of auxiliary or additional set values.

Table 12-3 Function codes related to speed target value configuration

Function code	Function code name	unit	range	explain
B02.00	Speed Ctrl main setting SEL	-	0:0 1:Multi-stage setting value 1 2:AI0 3:Reserved 4:Reserved	Select the source for setting the main speed setting value.
B02.01	Speed Ctrl AUX setting SEL	-	5:Reserved 6:Multi-segment value given 7:Electric potentiometer 8:Reserved	Select the source for setting the auxiliary speed setting value.
B02.02	Additional speed reference	-	9:Bus Adapter A-PZD2 10:Bus Adapter B-PZD2 Others:Analog interconnection	Set additional speed setting value source selection.

12.2.3 Acceleration and deceleration slope setting

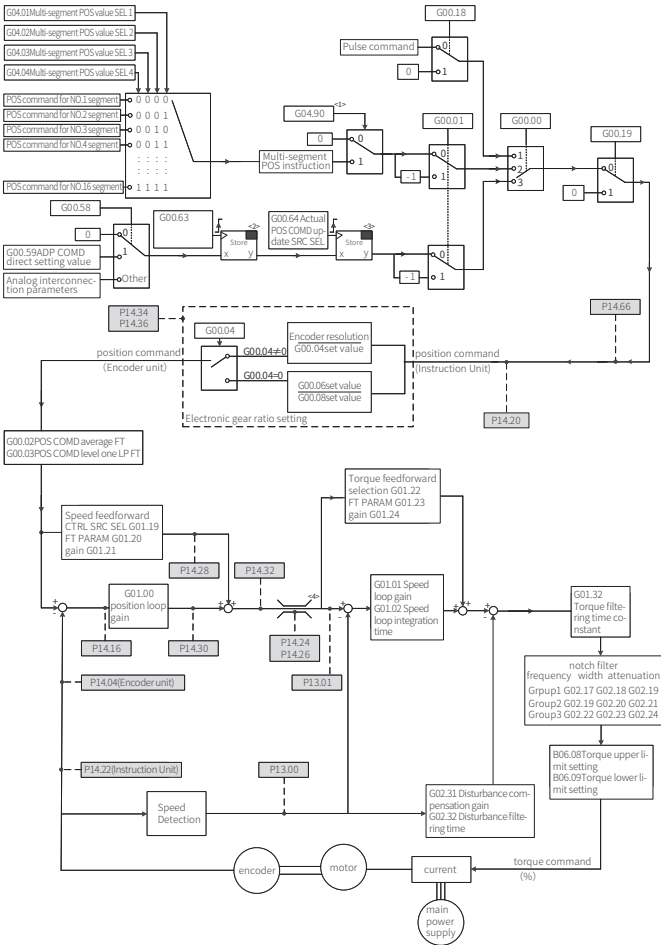
The speed trajectory from the current value to the target value can be adjusted by setting the ramp deceleration time and the S-curve in the process of acceleration and deceleration.

Table 12-4 Function codes related to ramp function generators

Function code	Function code name	unit	range	explain
B04.00	RFG ramp time selection 1	-	0: Invalid 1: Reserved 2-9: DI0~DI7 10: Reserved	Set the objective value of the slope function.
B04.01	RFG ramp time selection 2	-	Other: Binary interconnection parameters	Set the objective value of the slope function.
B04.02-B04.09	Ramp acceleration and deceleration time	s	[0.0,1000.0]	Set ramp function acceleration and deceleration time.
B04.10-B04.17	S-curve time	s	[0.00,20.00]	Set S-curve time.

12.3 Position control

12.3.1 Position control function diagram



notes:<1>When G04.00=2, the rising edge of G04.90 is effective, and when other options are available, the G04.90 level is effective.

<2><3>G00.63 and G00.64 are effective rising edges.

<4>Speed limit in position mode

Figure 12-4 Position Control Function Diagram

Attention: During the positioning process, it is prohibited to enable it. Otherwise, the drive will report a fault "Lost Enable in Positioning" (see 7. Fault for details).

12.3.2 Electronic gear ratio setting

In order to establish the proportional relationship between the motor position instruction (encoder unit) and the input position instruction (instruction unit), the electronic gear ratio function is introduced. By setting the electronic gear ratio, you can determine the actual displacement of motor rotation or movement when one instruction unit is input to the drive. driveNote: The input position command is the instruction given by the upper device to the drive.

Electronic gear ratio:

$$\frac{B}{A} = \frac{\text{Motor encoder resolution}}{\text{Position command required for one revolution of the load shaft}} * \frac{\text{Motor rotates } n \text{ turns}}{\text{Load rotation } m \text{ turns}}$$

Drive electronic gear ratio setting range:

$$\frac{0.01 * \text{Encoder resolution}}{10000} \leq \frac{B}{A} \leq \frac{4000 * \text{Encoder resolution}}{10000}$$

For example, the encoder resolution of the Boneng synchronous servo motor configuration can be viewed in function code D02.22.

CM55 electronic gear ratio setting method: Set the electronic gear ratio value through G00.04 (The number of position instructions for the motor to rotate 1 turn) . At this time, the value of the drive's

electronic gear ratio is $\frac{\text{Encoder resolution}}{\text{G00.04}}$

if G00.04 is set to 0, electronic gear ratio 1 takes effect, and the value of electronic gear ratio 1 can be set by using G00.06 electronic gear ratio 1 (numerator) and G00.08 electronic gear ratio 1 (denominator).

Table 12-5 Electronic gear ratio related function codes

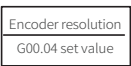
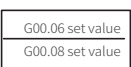
Number of effective groups for electronic gear ratio	Position command for G00.04 motor to rotate 1 revolution	G00.06 Electronic gear ratio 1 (numerator)	G00.08 Electronic gear ratio 1 (denominator)	Electronic gear ratio processing
G00.04 effective	1~1048576	No effect	No effect	Command pulse input →  position command
Electronic gear ratio 1 takes effect	0	1~10737 41824	1~10737 41824	Command pulse input →  position command

Table 12-6 Function codes related to electronic gear ratio configuration results

Function code	Function code name	unit	range	explain
P14.34	CMX/CDV numerator	-	[-2147483648, 2147483647]	Display the current value of electronic gear ratio numerator.
P14.36	CMX/CDV denominator	-	[-2147483648, 2147483647]	Display the current value of the electronic gear ratio denominator.

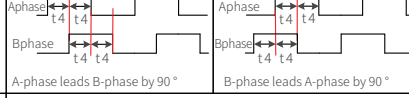
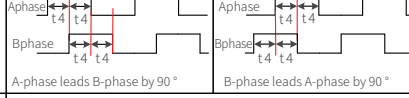
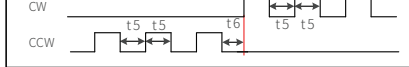
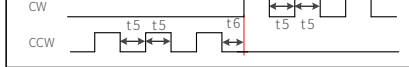
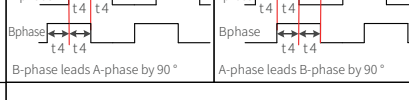
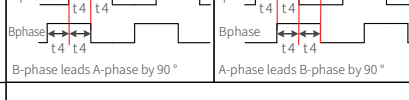
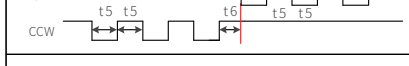
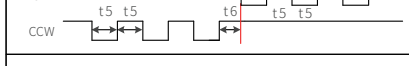
12.3.3 Location Source Selection

There are three types of position command sources: 1. Pulse command, 2. Multi segment position command, and 3. Communication given. The drive controls the position of the motor through these three position commands, which can be configured through the position command source (G00.00), checked through the system operation mode, and the current target value of the position command can be viewed through the position target value (P14.66).

1. Pulse command function (G00.00=1).
CM55 can receive pulse commands from the upper

computer through the X10 interface (DB15) to achieve positioning control of the motor. The maximum frequency for receiving pulses is 200kHz, supporting 4 types of pulse input forms, which can be selected through parameter G00.16.

Table 12-7 Pulse Pattern Description Table

G00.22 Motor rotation direction SEL	G00.16 COMD pulse shape	signal	Schematic diagram of forward pulse	Reverse pulse schematic diagram
0	0: Pulse + direction, positive logic	PULSE (Aphase) SIGN (Bphase)		
	1: Pulse + direction, negative logic	PULSE (Aphase) SIGN (Bphase)		
	2: A phase + B phase, 4 times frequency	Aphase Bphase		
	3: CW+CCW	CW (Aphase) CCW (Bphase)		
1	0: Pulse + direction, positive logic	PULSE (Aphase) SIGN (Bphase)		
	1: Pulse + direction, negative logic	PULSE (Aphase) SIGN (Bphase)		
	2: A phase + B phase, 4 times frequency	Aphase Bphase		
	3: CW+CCW	CW (Aphase) CCW (Bphase)		

The drive can receive the maximum frequency and minimum time width of pulse instructions as shown in the figure below:

Table 12-8 Pulse Command Specifications

Connection	Maximum frequency	Minimum time width/us					
		t1	t2	t3	t4	t5	t6
Differential wiring (recommended)	200kHz	2.5	2.5	2.5	5	2.5	2.5
Single ended wiring	200kHz	2.5	2.5	2.5	5	2.5	2.5

Note: CM55-X10(DB15) interface as a pulse signal input interface, can support 5V and 24V pulse input. Among them, single-ended and differential connections can be supported for 24V input, and only differential connections are supported for 5V input.

The single-ended wiring method is as shown in the figure below:

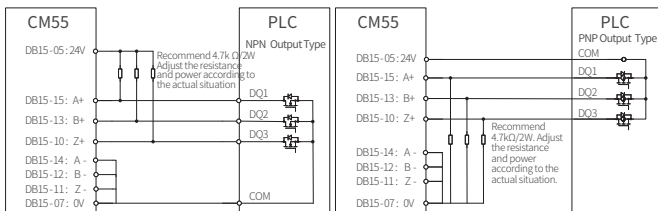


Figure 12-5 Single-Ended Wiring Diagram

Pulse Command Configuration Flowchart:

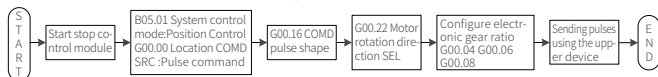


Figure 12-6 Flow Chart of Instruction Function Configuration

Table 12-9 Function codes related to pulse command control variables

Function code	Function code name	unit	range	explain
G00.00	Location COMD SRC	-	0: 0 1: Pulse command 2: Multi-segment position command given 3: Actual position command given	Select position command as pulse command
G00.04	Number of POS COMD for turn COMD	p/r	[0,1048576]	Configure electronic gear ratio

Function code	Function code name	unit	range	explain
G00.16	COMD pulse shape	-	0: Pulse + direction, positive logic 1: Pulse + direction, negative logic 2: A phase + B phase, 4 times frequency 3: CW+CCW	Select pulse command form
G00.22	Motor rotation direction SEL	S	0: Take the CCW direction as the forward rotation direction 1: Take the CW direction as the forward rotation direction	Select pulse command form

Table 12-10 Pulse Command Monitoring Variable Related Function Codes

Function code	Function code name	unit	range	explain
P01.02	Run	-	[0,1]	Display the operating status of the motor.
P06.06	Motor speed	4096 $\triangleq$ 100% SPEED	[-32768, 32767]	Display the actual speed value of the motor; This value is the calibration value: 4096 corresponds to the rated speed of the motor.

The monitoring function codes related to other position control are shown in Table 12-26.

2. Multi segment position command function (G00.00=2).

The drive has a multi segment position command operation function, which refers to setting 16 position commands inside the servo drive through parameter configuration. The displacement, maximum operating speed, acceleration and deceleration time of each command segment can be set, and the interval time between each segment can also be set.

The way in which instructions are linked can be set using the multi-segment positioning operation method (G0.004), which includes options for stopping

the machine at the end of a single run, running in a loop, switching between different multi-segment positioning values, and running in sequence. Among the four operating modes of G04.00, when G04.00=0, 1, and 3, if the multi segment position command is disabled during operation, the servo will abandon the unfinished displacement of this segment and stop. The deceleration time of the stop is the acceleration and deceleration time of the current operating segment. When the multi segment position command is enabled again, the servo will select the corresponding segment to run according to the method selected in the margin processing method (G04.06).

When G04.00=2, if the multi segment position command is disabled during operation, the servo will not immediately stop running and will continue to execute the unfinished displacement of this segment.

(1) Stop at the end of a single run (G04.00=0).

According to the position command, select the value set by the end segment number (G04.05), and run one round from the first segment to the set number of segments.

(2) Circular operation (G04.00=1) .

According to the displacement instruction endpoint segment number selection (G04.05), start from the first segment and cycle through to the set segment number.

(3) Multiple segment position given value selection switching operation (G04.00=2).

The servo is equipped with 16 position commands internally, and different combinations of 4-bit binary selection bits can be used to select a set value from the 16 position segments.

Table 12-11 Corresponding Table of Multi segment Setting Values

G04.01	G04.02	G04.03	G04.04	Multi segment setting value
0	0	0	0	
1	0	0	0	
0	1	0	0	
...				
1	1	1	1	Paragraph 16

(4) Sequential operation (G04.00=3).

There' s no waiting time between segments, and the motion path is defined by both the 'Start Segment Selection (G04.09)' and 'End Segment Selection (G04.05)': if G04.09 is set to 0, the motor starts from segment 1 and runs sequentially to the end segment, then stops automatically (executes a single sequence). If G04.09 is set to a non-zero value, after finishing the first run (from segment 1 to the end segment), the motor will immediately jump to the start segment corresponding to that value, and then run in a closed loop between the 'start segment' and 'end segment'.

Multi segment position command function configuration process:

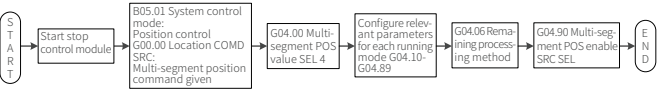


Figure 12-7 PLC Control CM55 Configuration Flowchart

Table 12-12 Function codes related to monitoring variables for multi segment position commands

Function code	Function code name	unit	range	explain
P01.02	Run	-	[0,1]	Display motor operating status
P06.06	Motor speed	4096△ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.

Other position control related monitoring function codes are shown in Table 12-26.

3. Communication given (G00.00=3).

The position command source, target speed, and acceleration/deceleration time of this function are all issued through communication and need to be used in conjunction with PLC.

Table 12-13 Function codes related to monitoring variables for actual position commands

Function code	Function code name	unit	range	explain
P01.02	Run	-	[0,1]	Display motor operating status
P06.06	Motor speed	4096△ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.

Other position control related monitoring function codes are shown in Table 12-26.

12.3.4 Position command prohibition

After enabling the pulse command input prohibition source (G00.18), the drive does not respond to external pulse position commands, but can respond to internal position commands.
When the position command input prohibition source (G00.19) is enabled, the drive does not respond to all position commands. The position command prohibition function can be controlled by connecting DI terminals or binary interconnection parameters.

Table 12-14 Function codes related to position commands prohibiting monitoring variables

Function code	Function code name	unit	range	explain
P01.02	Run	-	[0,1]	Display motor operating status
P06.06	Motor speed	4096△ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.

Other position control related monitoring function codes are shown in Table 12-26.

12.3.5 Position command direction setting

You can choose which direction of rotation is positive by selecting the motor rotation direction (G00.22). The source of the position command direction switch command (G00.01) switches the current position command direction when the motor stops running. After the position command direction switch, it is effective when running the position command again.
Note: When the source of the position command (G00.00=1) is a pulse command, the direction switching command source of the position command (G00.01) is invalid.

Table 12-15 Position Command Direction Configuration Table

G00.22 Motor Rotation Direction Selection	Source of G00.01 position command direction switching command	Setting of position instructions	Actual motor rotation direction
0	0	Forward	Counterclockwise rotation
0	1	Forward	Clockwise rotation
0	0	reverse	Clockwise rotation
0	1	reverse	Counterclockwise rotation
1	0	Forward	Clockwise rotation
1	1	Forward	Counterclockwise rotation
1	0	reverse	Counterclockwise rotation
1	1	reverse	Clockwise rotation

Table 12-16 Function codes related to position command direction switching monitoring variables

Table 12-16 Position Command Direction Switch
Monitoring Variable Related Function Codes

Function code	Function codename	unit	range	explain
P01.12	Positive speed forward	-	[0,1]	Display the direction of motor rotation
P01.32	Negative speed speed	-	[0,1]	Display the direction of motor rotation
P06.06	Motor speed	4096 $\triangleq$ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.

Other position control related monitoring function codes are shown in Table 12-26

12.3.6 Position command filtering

Position instruction filtering refers to filtering the position instructions that have been divided or multiplied by electronic gear ratio, including average filtering and first-order low-pass filtering.

Table 12-17 Function codes related to position command filtering and monitoring variables

Function code	Function codename	unit	range	explain
P06.06	Motor speed	4096 $\triangleq$ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed.
P14.18	Pulse INSTR input count	-	[-21474 83648, 2 147483 647]	Display the current speed value corresponding to the position command.

12.3.7 Positioning completion/approach

The positional deviation is the difference between the positional instruction and the instruction feedback. Position deviation=Position instruction counter - Feedback pulse counter.

if the position deviation meets the output conditions for positioning completion (G00.24), it can be considered that positioning is completed in position control mode. At this time, the drive outputs a positioning completion signal. if the position deviation is less than the positioning approaching threshold, the drive outputs a positioning approaching signal.

The size relationship between each threshold is: absolute value of positioning completion threshold<absolute value of positioning approaching threshold<absolute value of position deviation too large threshold.

Positioning completion window time: When the duration of the positioning completion signal reaches the set window time, the drive outputs the positioning completion signal.

Positioning completion holding time: When the drive outputs the positioning completion signal, the time that the signal is effectively held .

Table 12-18 Function codes related to positioning completion/proximity configuration variables

Function code	Function code name	unit	range	explain
G00.24	POS complete output COND	-	0: Output when the absolute value of the position deviation is less than the positioning completion threshold. 1: Output when the absolute value of the position deviation is less than the positioning completion threshold and the filtered command of the position command is 0. 2: Output when the absolute value of the position deviation is less	Set ramp function target value

Function code	Function code name	unit	range	explain
G00.24	POS complete output COND	-	than the positioning completion threshold and the position command before filtering is 0. 3: Output when the absolute value of the position deviation is less than the positioning completion threshold and the position command filter is 0, at least keep the positioning completion hold time valid.	Set ramp function target value
G00.25	POS Completion Threshold	p/r	[1,65535]	-
G00.26	POS close to the threshold	p/r	[1,65535]	-
G00.27	POS close to the threshold	ms	[0, 3000]	Positioning completion output time condition threshold.
G00.28	POS completion hold time	ms	[0, 3000]	Output completion time to next detection time.

Table 12-19 Function codes related to positioning completion/proximity monitoring variables

Function code	Function code name	unit	range	explain
P01.38	Positioning complete sign	-	[0,1]	Display the current value of the positioning completion flag. 0: Positioning incomplete 1: Positioning completed.

Function code	Function code name	unit	range	explain
P01.39	Locate approach sign	-	[0,1]	Display the current value of the positioning proximity flag. 0: Positioning proximity threshold not reached 1: Positioning proximity threshold reached.
P14.16	POS deviation (INSTR unit)	p	[-2147483 648,21474 83647]	Display the current value of the position deviation counter.
P14.74	FCL POS deviation CNTR	p	[-2147483 648,21474 83647]	Display the current value of the full closed-loop position deviation counter.

Other position control related monitoring function codes are shown in Table 12-26.

The following diagram shows the timing diagram of this function.

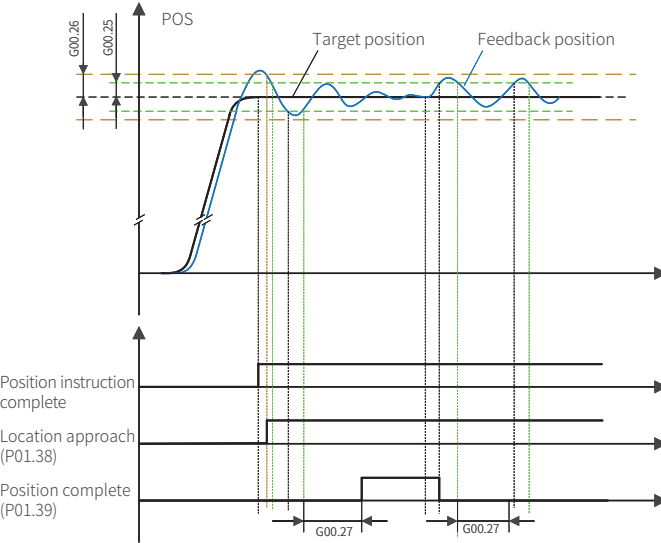


Figure 12-8 Positioning approach/completion function timing diagram

12.3.8 Clearance of positional deviation

The position deviation is the difference between the position command and the encoder feedback command, which is actually reflected in the deviation between the the deviation between the position instruction issued by the drive and the actual running position instruction of the motor when the motor is running driveThe position deviation clearing function refers to resetting the position deviation to zero when the drive meets certain conditions. This function can be enabled in two ways: automatic and manual. You can use function code G00.20 to select a position deviation clearing mode. Among these methods, Automatic clearing includes "clearing position deviation after servo OFF 1 stops" and "clearing position deviation when a fault occurs". For manual clearing, you need to select "clearing position deviation command to clear position deviation". When G00.20 selects manual clearing, it is necessary to configure the DI terminal that triggers this function in conjunction with the G00.21 function code, or choose other interconnection parameters. Position deviation=Position command - Position feedback.

Table 12-20 Function codes related to position deviation clearing configuration variables

Function code	Function code name	unit	range	explain
G00.20	POS deviation clear action SRC	-	0: Clear position deviation after servo OFF1 stop 1: Clear position deviation when fault occurs 2: Position deviation clear command to clear position deviation	Select the triggering conditions for the position deviation clearing action.
G00.21	POS deviation clear COMD SRC SEL	-	0: Invalid 1: Valid 2-10: DI0~DI8 Other: Binary interconnection parameters	DI terminals or other interconnection parameters can be selected as sources.

Table 12-21 Position Deviation Clearing Monitoring Variable Related Function Codes

Function code	Function code name	unit	range	explain
P14.16	POS deviation (INSTR unit)	p	[-2147483648, 2147483647]	Display the current value of the position deviation counter.

12.3.9 Zero return function

When the drive adopts position mode control, it is necessary to find a reference point, which is called the origin. The origin is the mechanical origin, and the position of the origin can be determined by the origin switch or limit switch. The zero point is the target point that the motor reaches after completing the origin reset function, and the zero point position is the origin position+mechanical origin offset (G00.50). The function of the origin return to zero means that in the position mode, the servo motor actively finds the origin and completes the zero position.Origin regression mode.
(1) Return to zero in the positive direction, the deceleration point and the origin are the origin switches (G00.45=0).

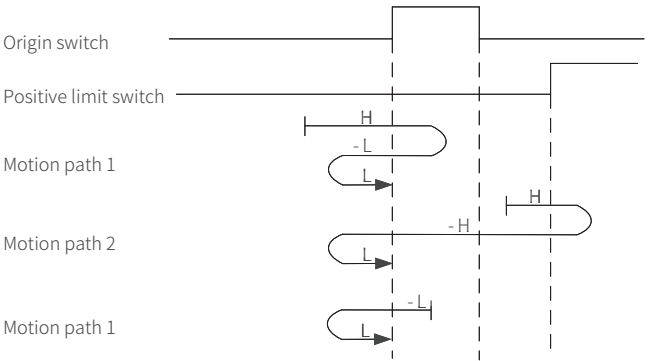


Figure 12-9 Motor return to zero running trajectory and running speed diagram

Motion trajectory 1: When the motor starts moving, the origin switch (deceleration point) signal is invalid, and the forward limit switch is not triggered throughout the entire process.

Motion trajectory 2: When the motor starts moving, the origin switch (deceleration point) signal is invalid, and the forward limit switch is triggered during the process to be effective.

Motion trajectory 3: When the motor starts moving, the origin switch (deceleration point) signal is valid, and the forward limit switch is not triggered throughout the entire process.

H represents the speed of the high-speed search origin switch, and L represents the speed of the low-speed search origin switch.

(2)Return to zero in the positive direction, the deceleration point and the origin are the positive limit switches (G00.45=6)

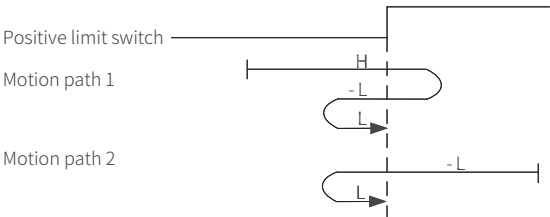


Figure 12-10 Motor return to zero running trajectory and running speed diagram

Motion trajectory 1: When the motor starts to move, the limit switch (origin and deceleration point) signals are invalid. Motion trajectory 2: When the motor starts to move, the limit switch (origin and deceleration point) signal is effective.

H represents the speed of the high-speed search origin switch, and L represents the speed of the low-speed search origin switch.

The reverse return to zero option only sets the initial running direction of the motor opposite to the Return to zero in the positive direction, and its operating principle is the same as above. When the mechanical origin offset (G00.50) is not 0, the mechanical origin offset is the coordinate after origin regression (G00.52=0,2). This mode is: after the execution of the origin reset is completed, the motor immediately stops rotating and the current position of the motor is recognized as the zero position+offset (command unit).

The mechanical origin offset is the relative offset after origin regression (G00.52=1, 3). This mode is: after the execution of the origin reset is completed, the motor continues to run the offset length from the zero position, and when it reaches the position, the motor stops.

Table 12-22 Function codes related to zero origin configuration variables

Function code	Function code name	unit	range	explain
G00.43	Origin return enable control	-	0: Turn off the origin return function. 1: Origin return command (G00.44) to enable origin return function. 2: Reserve 3: Start the origin return immediately after power-on. 4: Return to origin immediately. 5: Reserve 6: Set the current position as the zero point.	The position selection command is a pulse command
G00.44	Origin return COMD SRC SEL	-	0: Invalid 1: Valid 2-10: DI0~DI8 Other: Binary interconnection parameters.	Function trigger source
G00.45	Return to origin mode	-	0: Return to zero in the positive direction, the deceleration point and the origin are the origin switches. 1: Reverse zero return, deceleration point and origin are both origin switches. 2-5: Reserved 6: Return to zero in the positive direction, the deceleration point and the origin are the positive limit switches. 7: Reverse zero return, the deceleration point	Zero return method selection.

Function code	Function code name	unit	range	explain
			and the origin are the reverse limit switches.	
G00.46	Speed of high-speed find origin	rmp	[0,3000]	-
G00.47	Speed of low-speed find origin	rmp	[0,1000]	-
G00.48	Search origin for ACC /DEC time	ms	[0,1000]	-
G00.49	Limit the time to find origin	ms	[0,655351]	-
G00.50	Machine origin offset	p	[-1073741824, 1073741823]	-
G00.52	OO and limit PRO method SEL	-	0: The offset of the mechanical origin is the coordinate after the origin return. When the limit is encountered, the origin return is re-triggered and the origin is reversed to find the origin. 1: The offset of the mechanical origin is the relative offset after the origin return. When the limit is encountered, the origin return is re-triggered and the origin is reversed to find the origin. 2: The offset of the mechanical origin is the coordinate after the origin return, and it will automatically find the zero in the	-

Function code	Function code name	unit	range	explain
			reverse direction when it encounters the limit. 3: The offset of the mechanical origin is the relative offset after the origin return, and it will automatically find the zero in the reverse direction when it encounters the limit.	
G00.53	Origin switch SRC SEL	-	0: Invalid 1: Valid 2-10: DI0~DI8 Other: Binary interconnection parameters.	Trigger signal of origin switch position. DI terminals can be selected for interconnection with other binary parameters
G00.54	MECH origin offset source SELE	-	0: origin offset set value (G00.50) Others: Analog interconnection parameters	-

Table 12-23 Function codes related to origin return to zero monitoring variables

Function code	Function code name	unit	range	explain
P01.02	Motor speed	4096 $\triangleq$ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed..
P01.12	Positive speed	-	[0,1]	Display the direction of motor rotation.
P01.32	Negative speed	-	[0,1]	Display the direction of motor rotation.

Function code	Function code name	unit	range	explain
P01.02	Motor speed	4096 $\triangleq$ 100% Rated speed	[-32768, 32767]	Display the actual motor speed value; This value is the calibration value: 4096 corresponds to the rated motor speed..
P01.12	Positive speed	-	[0,1]	Display the direction of motor rotation.
P01.32	Negative speed	-	[0,1]	Display the direction of motor rotation.
P01.87	Positive limit switch activated	-	[0,1]	Display the status of the forward limit switch.
P01.88	Negative limit switch activated	-	[0,1]	Display the negative limit switch status.
P01.89	Return to origin is running	-	[0,1]	Display the running status of origin regression.
P01.90	Reference point is set	-	[0,1]	Display the completion status of origin setting.

The configuration process of the origin return to zero function is relatively long and involves many function codes. The specific process is shown in the following figure.

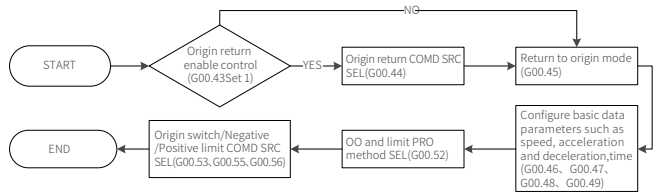


Figure 12-11 Operational Process of Zero Point Return Function

12.3.10 Speed limit setting

Set the speed limit for the motor, taking motor 0 as an example.

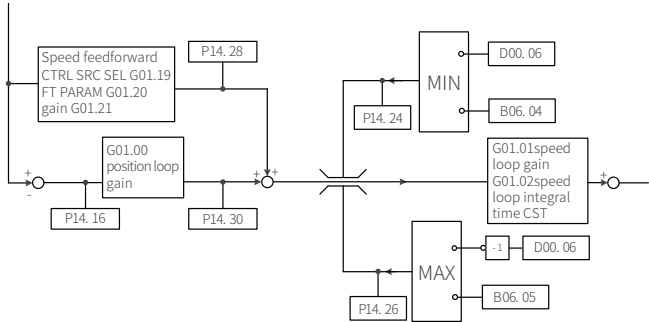


Figure 12-12 Speed Limit Setting Function Diagram

Explanation: The values of B06.04 and B06.05 after taking absolute values are compared with D00.06, and take the minimum values as the maximum forward and reverse speeds of the motor.

Table 12-24 Function codes related to motor speed limit monitoring variables

Function code	Function code name	unit	range	explain
P14.24	MAX forward speed under POS CTRL	rmp	[-2147483648, 2147483647]	Display the maximum allowable speed in the forward direction.
P14.26	MAX reverse speed under POS CTRL	rmp	[-2147483648, 2147483647]	Display maximum allowable reverse speed.

12.3.11 Full closed-loop position control

The full closed-loop position control is to directly detect the position of the actuator through an external displacement sensor as a feedback value, which can reduce the influence of the intermediate transmission process on the final positioning.

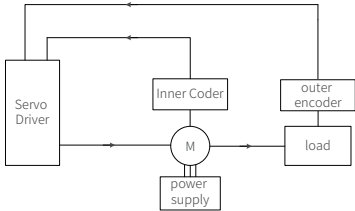


Figure 12-13 Full closed-loop position control structure diagram

(1) Set the rotation direction of the external encoder. You can use speed mode to run the load in a fixed direction, observe the feedback value of the motor encoder (Monitoring parameter P14.14) and the feedback value of the load encoder (Monitoring parameter P14.12). If the positive or negative of the motor speed is consistent with the increase in the feedback value of the encoder, keep the set value of the external encoder usage method (G05.01) of the function code unchanged; If the positive and negative values are inconsistent, the function code External encoder Usage Mode (G05.01) setting is reversed.

(2) Set the position feedback encoder resolution. Set the position feedback encoder parameters in parameter G05.06. This parameter represents the increment of the feedback value of the position feedback encoder for each stroke of the load movement. For rotary encoders, this parameter is set to the encoder resolution; For ball screw + linear encoders, this parameter is set to the increment of the encoder feedback value per lead of the lead screw. Other linear motion mechanisms are similar.

(3) Set the threshold for excessive position deviation in the full closed-loop system (G05.08).

The motor encoder feeds back the deviation from the current position of the load encoder, which is the encoder unit (load encoder). The position deviation is controlled within a reasonable range by setting the full closed-loop position deviation threshold (G05.08).

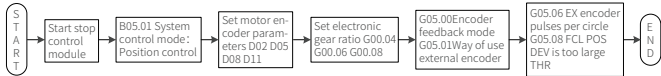


Figure 12-14 Flow Chart of Full Closed Loop Position Control Setting

Table 12-25 Functional codes related to fully closed-loop position control monitoring variables

Function code	Function code name	unit	range	explain
P14.12	POS encoder feedback (Pe2)	Encoder unit (external encoder)	[-2147483648, 2147483647]	Displays load encoder feedback values
P14.14	Motor encoder feedback (Pe1)	Encoder unit (Motor encoder)	[-2147483648, 2147483647]	Display motor encoder current feedback value drive.
P14.74	FCL POS deviation CNTR	p	[-2147483648, 2147483647]	Display the value of full closed-loop position deviation.

Other position control related monitoring function codes are shown in Table 12-23

Table 12-26 Position control monitoring parameters

Function code	Function code name	unit	range	explain
P14.08	POS INSTR filter output low	-	[-2147483648, 2147483647]	Display position command counter low current value.
P14.10	POS INSTR filter output high	-	[-2147483648, 2147483647]	Display position command counter high current value.
P14.12	POS encoder feedback (Pe2)	-	[-2147483648, 2147483647]	Display feedback pulse counter low current value.
P14.14	Motor encoder feedback (Pe1)	-	[-2147483648, 2147483647]	Display feedback pulse counter high current value.

Function code	Function code name	unit	range	explain
P14.18	Pulse INSTR input count	p	[-2147483648, 2147483647]	Display the number of pulses corresponding to the position.
P14.20	POS INSTR (INSTR unit)	p	[-2147483648, 2147483647]	Display the pulse value received by the drive from the upper device.
P14.22	POS feedback (INSTR unit)	p	[-2147483648, 2147483647]	Display the speed command value sent by the drive.
P14.28	Speed FDFW compensation value	p	[-2147483648, 2147483647]	Display speed feedforward output values.
P14.30	Speed FDFW compensation value	-	[-2147483648, 2147483647]	Display position loop P calculation output value.
P14.32	POS loop total output value (AV)	-	[-2147483648, 2147483647]	Display position loop P calculation output value.

12.4 Torque control

12.4.1 Torque mode setting value

AX-series servo Drivesdrive selects the source of the torque set value through B02.03.

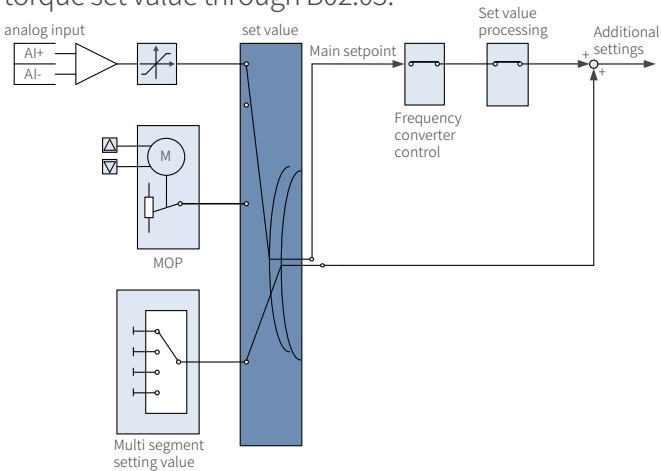


Figure 12-15 Source diagram of torque setting values

The source of the main torque setting value can be:

- Analog input of the drive
- Fieldbus interface of the drive
- Potentiometer inside the drive
- Drive multi segment value
- Interconnect to P group parameters

The above sources can also be sources of additional torque setting values.

Table 12-27 Function codes related to speed target value configuration

Function code	Function code name	unit	range	explain
B02.03	Torque Ctrl torque setting SEL	-	0:0 1:Multi-stage setting value 2 2:AI0 3:Reserved 4:Reserved 5:Reserved 6:Multi-segment value given 7:Electric potentiometer 8:Reserved 9:Bus Adapter A-PZD3 10:Bus Adapter B-PZD3 Others:Analog interconnection	Set torque setting value source.
B02.04	Torque Ctrl ramp time	s	[0.00,10.00]	Set torque ramp for given ramp time.
B02.05	Torque Ctrl filtering time	s	[0.00,10.00]	Set torque given filtering time.
B02.09	Additional torque setting 1 SEL	-	0:0 1:Digital setting Others:Analog interconnection parameters	Set additional torque setting selection.

Function code	Function code name	unit	range	explain
B02.10	Additional torque setting 1 SEL	%	[-400,400]	Set additional torque numerical settings.

12.4.2 Torque mode limit setting value

Torque setting limits and speed limits need to be configured in torque mode.

Table 12-28 Function codes related to speed limit and torque limit configuration

Function code	Function code name	unit	range	explain
B02.06	Torque Ctrl forward speed limit	-	0:0 1:Multi-stage setting value 1 2:AI0 3:Reserved 4:Reserved 5:Reserved 6:Multi-segment value given	Set forward speed limit source.
B02.07	Torque Ctrl reverse speed limit	-	7:Electric potentiometer 8:Reserved 9:Bus Adapter A-PZD2 10:Bus Adapter B-PZD2 Others:Analog interconnection	Set reverse speed limit source.
B02.08	Torque Ctrl the speed ramp time	s	[0.00,10.00]	Set speed limit ramp time.
B06.08	Torque upper limit setting	%	[0.0,400.0]	Set torque upper limit given numerical value.
B06.09	Torque lower limit setting	%	[-400,0]	Set the torque lower limit given numerical value.

Function code	Function code name	unit	range	explain
B06.10	Selection of torque upper limit	-	0:0 1:400.0% 2:AI0	Set torque upper limit given selection.
B06.11	Selection of torque lower limit	-	3:Reserved 4:Reserved	Set torque lower limit given selection.

12.4.3 Torque Control Usage Process

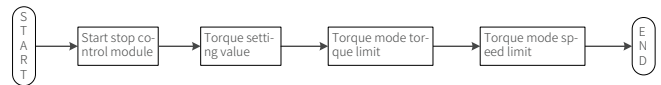


Figure 12-16 Flow Chart of Torque Control Setting

12.5 Hybrid control mode

12.5.1 Function Description

The control mode switching function refers to the ability of the servo drive to switch between the two selected control modes when the servo is enabled and the state machine is running.

12.5.2 Function code configuration instructions

1. Select the desired control mode through the upper computer function code B05.01 (system control mode).
2. Option 0 to 2 cannot achieve control mode switching function.
3. Options 4-6 can switch between the two selected control modes by controlling whether function code B05.18 (control mode switching) is effective.

Table 12-29 Control Mode Settings Table

Parameter settings B05.18 (Control Mode Switching) Setting Value		The current effective control mode
B05.01 System control mode	B05.18 Control mode switch	
0:Speed control	-	Speed control
1:Torque control	-	Torque control
2:Position control	-	Position control
4:Torque control <=> Speed control	Invalid	Torque control
4:Torque control <=> Speed control	Valid	Speed control
5:Speed control <=> Position control	Invalid	Speed control
5:Speed control <=> Position control	Valid	Position control
6:Torque control <=> Position control	Invalid	Torque control
6:Torque control <=> Position control	Valid	Position control

12.6 Motor Control Limitations and Protection

12.6.1 Inhibition band function

This function forms a certain speed prohibition section by setting the upper and lower frequency ranges, with the purpose of preventing the motor from operating within a certain speed range for a long time.

Table 12-30 Function codes related to suppression band function configuration

Function code	Function code name	unit	range	explain
B06.00	Lower limit of jump frequency 1	%	[0,Z]	The four parameter ranges have correlation, and the relationship is: $0 < Z < Y < X < 600$.
B06.01	Upper limit of jump frequency 1	%	[Z,Y]	
B06.02	Lower limit of jump frequency 2	%	[Y,X]	
B06.03	Upper limit of jump frequency 2	%	[X,600]	

Note: Among them, $0 < Z < Y < X < 600$.

Parameter configuration process.

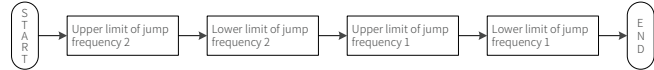


Figure 12-17 Configuration diagram of suppression band function

Function specific process:

When the target speed changes to a set of limit bands, it will rise/drop to a threshold and stop, and then run at that speed. Below is a velocity curve with a lower limit of 10% and an upper limit of 20%.

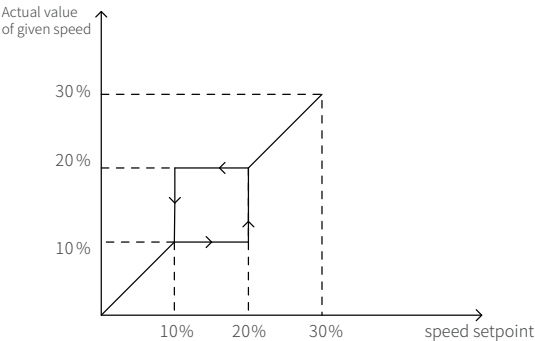


Figure 12-18 Speed curve of suppression band function

12.6.2 Speed limit function

The speed limit function provides the upper limit value of the speed of the shaft during the movement, which is used to limit the speed of the shaft within the range that meets the process requirements.

Table 12-31 Speed Limit Function Configuration Related Function Codes

Function code	Function code name	unit	range	explain
B06.04	Forward limit speed	%	[0,600]	-
B06.05	Reverse limit speed	%	[-600,0]	-
			0:0 1:600.0% 2:A10 3:Reserved 4:Reserved	

Function code	Function code name	unit	range	explain
B06.06	SEL of forward speed limit	-	5:Reserved 6:Multi-segment value given 7:Electric potentiometer 8:Reserved 9:Bus Adapter A-PZD2	-
B06.07	SEL of reverse speed limit	-	10:Bus Adapter B-PZD2 Others:Analog interconnection parameters	-

Upper limit of given speed for forward motion =MIN (B06.04, B06.06).
Upper limit of given speed for reverse motion =MIN (B06.05, B06.07).

12.6.3 Torque limiting function

The torque limitation function refers to the requirement that the torque should not be too large under certain working conditions. Therefore, the drive should set different extreme values according to different situations, and the limit speed given by the number can be pre-set with a larger value for limiting the maximum torque, and other variable parameters can be selected for the specific process as the limiting choice, which can make the process torque speed limiting change in real time to meet special requirements. Set function code:

Table 12-32 Torque Limit Function Configuration Related Function Codes

Function code	Function code name	unit	range	explain
B06.08	Torque upper limit setting	%	[0,400]	-
B06.09	Torque lower limit setting	%	[-400,0]	-

Function code	Function code name	unit	range	explain
B06.10	Selection of torque upper limit	-	0:0 1:400.0% 2:AIO 3:Reserved 4:Reserved 5:Reserved 6:Multi-segment value given 7:Electric potentiometer	-
B06.11	Selection of torque lower limit	-	8:Reserved 9:Bus Adapter A-PZD2 10:Bus Adapter B-PZD2 Others:Analog interconnection parameters	-
B06.12	Vector control torque limit	%	[0,300]	-
B06.13	Torque limit before brake open	%	[0,200]	-
B06.14	Vector control torque limit SOUR	-	0:Vector control torque limit set value(B06.12) Others:Analog interconnection parameters	-
B06.15	Output TORQ limit judgment THRE	%	[0,100]	-

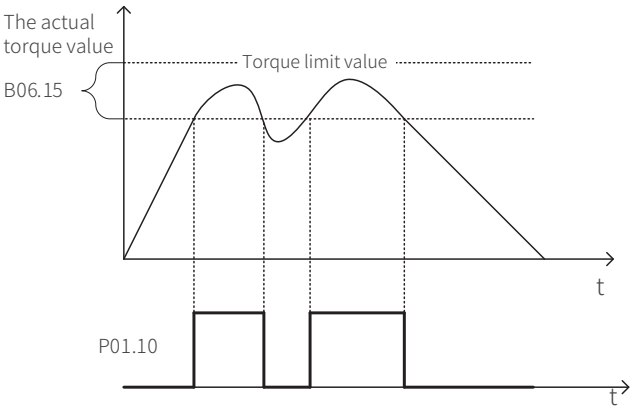
Upper limit of absolute value of given torque in electric state =MIN(B06.08, B06.10, B06.12, B06.14).
Upper limit of absolute value of given torque in power generation state =MIN(B06.09, B06.11, B06.12, B06.14))
Monitoring function code:

Table 12-33 Torque Limit Function Monitoring Related Function Codes

Function code	Function code name	unit	range	explain
P01.10	Torque/current reach limit	-	[0,1]	0:Not reaching the limit 1:Reaching limit amplitude

Among them, B06.13 is the torque limit before the brake is opened. If the torque is too large, it will cause wear and even damage to the brake device. Therefore, this value should be less than the torque that the brake can withstand.

B06.15 is Torque limit reach range. When | Output torque -- torque limitationvalue |<B06.15, it is determined that the motor torque is limited, and P01.10 is set to 1.



Note: In electric state: torque limit value is MIN (B06.08, B06.10, B06.12, B06.14)
In power generation state: torque limit value is MIN(B06.09, B06.11, B06.12, B06.14)

Figure 12-19 Torque limited timing diagram

12.6.4 Overspeed protection function

Speed overrun means that the motor speed exceeds the maximum allowable speed. After the function is turned on, the driver detects the speed status in real time, and when it is in the speed limit state and the time reaches the set value, the driver alarms and forces the stop. When the actual motor speed value is greater than the 'motor maximum speed value (1) +B06.28 set-point' and the duration exceeds the B06.29 setpoint,

the fault is activated and the drive stops. If B06.29 Detection time is set to 0, the speed overrun detection function is disabled. Related function codes are as follows:

Table 12-34 Function codes related to overspeed protection configuration

Function code	Function code name	unit	range	explain
B06.28	Overspeed detection value	%	[0,50]	Protection function activation speed threshold.
B06.29	Overspeed detection time	s	[0,60]	Protection function activation time threshold.

Note: The value of B06.28 is the maximum speed percentage.

(1) : D00.06 / D03.06 / D06.06 / D09.06, both for maximum speed motor, including D09.06 to extension parameter, the specific effect parameters determined by A04.05 and A04.06 (A04.06 for extended parameters), the default for D00.06 effect parameter.

12.6.5 Speed arrival detection feature

The drive monitors the motor's running speed in real time. If the difference between the actual speed (P13.00) and the target speed (B06.04) is less than the speed reach threshold (B06.30) and meets the speed reach detection time (B06.31), the speed reached flag (P01.06) is set to 1; otherwise, it's set to 0.

Table 12-35 Speed arrival judgment function related function codes

Function code	Function code name	unit	range	explain
B06.30	Speed reaches threshold	%	[0,100]	
B06.31	Time when speed reaches detection	s	[0,600]	

Table 12-36 Monitoring function code

Function code	Function code name	unit	range	explain
P01.08	Speed output DEV is too large	-	[0,1]	0:Speed output deviation normal. 1:Excessive speed output deviation.

12.6.6 Speed Comparison Function

When enabled, if the motor feedback speed (P13.00) is greater than the speed comparison value (B06.32) and the detection time (B06.34) is satisfied, the speed comparison value reached (P01.09) is set to 1. If the motor feedback speed (P13.00) is less than {speed comparison value (B06.32) - speed comparison hysteresis width (B06.33)} and the speed comparison value detection time (B06.34) is maintained, the speed comparison value reached (P01.09) is set to 0.

Table 12-37 Function codes related to speed comparison

Function code	Function code name	unit	range	explain
B06.32	Speed comparison value	%	[0,600]	
B06.33	Speed comparison value hysteresis width	%	[0,100]	
B06.34	Speed comparison value detection time	s	[0,600]	

Table 12-38 Monitoring function code

Function code	Function code name	unit	range	explain
P01.09	Speed comparison value reached	-	[0,1]	0: Comparison value not reached. 1: Comparison value reached.

12.6.7 Motor over temperature protection function

Real time monitoring of motor temperature. When the motor temperature is higher than the warning value set by B06.41, fault code 48 is activated for warning. When the motor temperature is higher than the protection value set by B06.40, fault code 47 is activated and the machine stops. The functional codes involved are as follows:

Table 12-39 Function codes related to motor over temperature protection function configuration

Function code	Function code name	unit	range	explain
B06.39	Motor TEMP detection method(X5)	-	0:No detection 1:KTY84 2:PTC	-
B06.40	Motor TEMP over TEMP PROT value	°C	[0,300]	-
B06.41	Motor TEMP warning value	°C	[0,300]	-

Monitoring function code:

Table 12-40 Function codes related to monitoring of motor over temperature protection function

Function code	Function code name	unit	range	explain
P01.73	Motor over TEMP protection mark	-	[0,1]	0: The motor temperature has not reached the protection value. 1: The motor temperature has reached the protection value.
P01.74	Motor over TEMP warning sign	-	[0,1]	0: The motor temperature has not reached the warning value. 1: The motor temperature has reached the warning value.

12.6.8 Downtime Frequency Detection Feature

Because some operating conditions may not allow the motor to slow down to a complete stop directly, you can set a shutdown frequency threshold. When the speed drops below this threshold, the motor speed is considered to meet the shutdown requirements. If you maintain this threshold speed for the shutdown delay time, the motor can be stopped directly.

Table 12-41Function code related to downtime frequency judgment

Function code	Function code name	unit	range	explain
B05.29	Shutdown frequency setting	HZ	[0,10.00]	
B05.30	Shutdown delay time	s	[0,100.00]	

12.7 Holding brake control function

12.7.1 Description

Motor holding brake refers to the use of a protective device to ensure that the rotor of the motor can stably stop at the desired position when the motor stops working, and will not continue to rotate because of the inertia or friction resistance of the load.The motor brake is composed of electromagnetic system, spring, and friction plate components. The holding brake control function can configure a series of parameters, including opening source, opening comparison value source, opening threshold, etc. Through configuration, the holding brake can adapt to various working conditions.

12.7.2 Function codes involved

Table 12-42 Function codes related to brake control configuration

Function code	Function code name	unit	range	explain
F04.00	Holding brake FUNC select	-	0: No brake. 1: With brake without detection information. 2: There is brake belt detection information.	-
F04.01	Brake open FDBK test time	s	[0,10]	The time interval between giving instructions and detecting whether instructions are effective.
F04.02	Brake closing FDBK test time	s	[0,10]	
F04.03	Brake open command SRC	-	0: Invalid 1: Valid 2~10: DI0~DI8 Others: Binary interconnection parameters	DI terminals or other binary interconnection parameters can be selected as the source of the brake opening command.
F04.04	Brake open comparison SRC	-	0: 0 Others: Analog interconnection parameters	Select an analog interconnection parameter as the holding brake opening comparison value.
F04.05	Brake open comparison THR	%	[0,200]	-
F04.06	Holding brake open delay	s	[0,10]	Delay time from reaching threshold to issuing instruction.

Function code	Function code name	unit	range	explain
F04.07	Brake closing speed THR	%	[0,200]	-
F04.08	Holding brake close delay	s	[0,10]	Delay time from reaching threshold to issuing instruction.
F04.09	Uncon close brake command SRC	-	0: Invalid 1: Valid 2~10: DI0~DI8 Others: Binary interconnection parameters	DI terminals or other binary interconnection parameters can be selected as the trigger source for forced brake closure.
F04.10	Brake feedback point SRC	-		-
F04.12	Brake close FDBK point SRC(rsvd)	-	0: 0 Others: Analog interconnection parameters	Select an analog interconnection parameter as the holding brake closing comparison value..
F04.13	Brake close comparison SRC	%	[0,200]	-
F04.16	Brake opening speed pause time	s	[0.00,10.00]	The time required for holding brake action.
F04.17	Brake closing speed pause time	s	[0.00,10.00]	

Table 12-43 Function codes related to monitoring of brake control function

Function code	Function code name	unit	range	explain
P01.38	Positioning complete sign	-	[0,1]	0: Unfinished localization. 1: Positioning completed.
P01.39	Locate approach sign	-	[0,1]	0: Positioning not close. 1: Positioning proximity.

12.7.3 Timing diagram of various parameters of the brake function

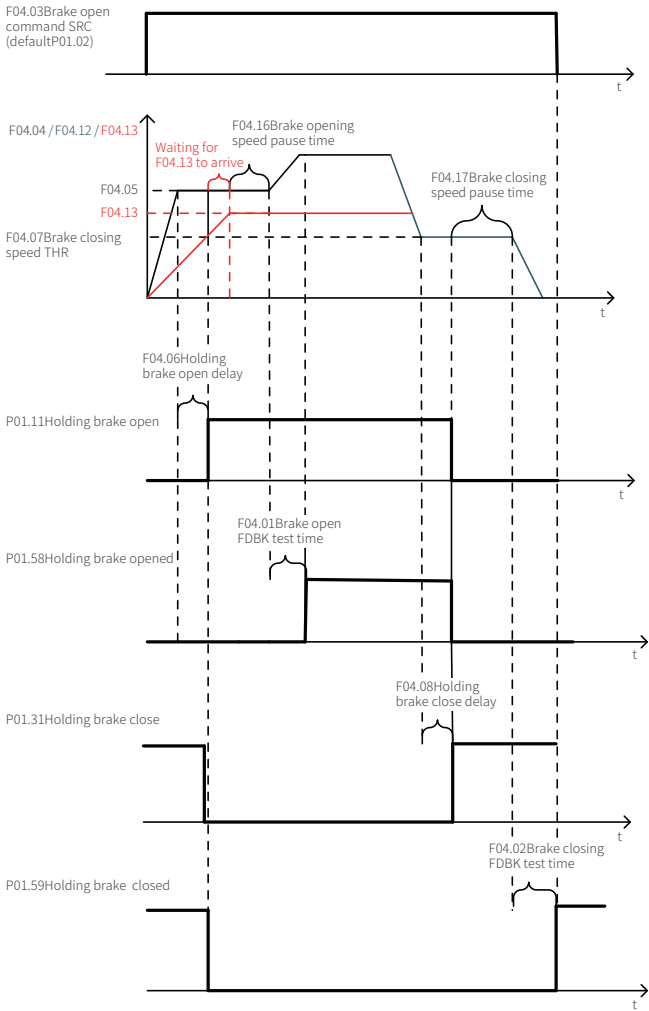


Figure 12-20 Speed control normal shutdown holding brake

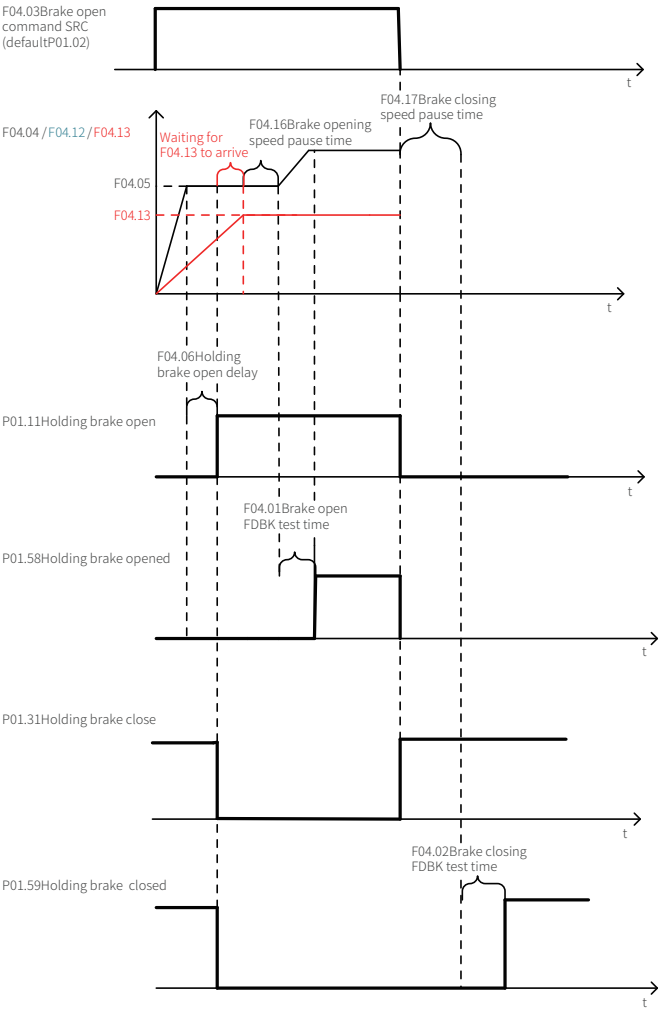


Figure 12-21 Speed control malfunction shutdown brake

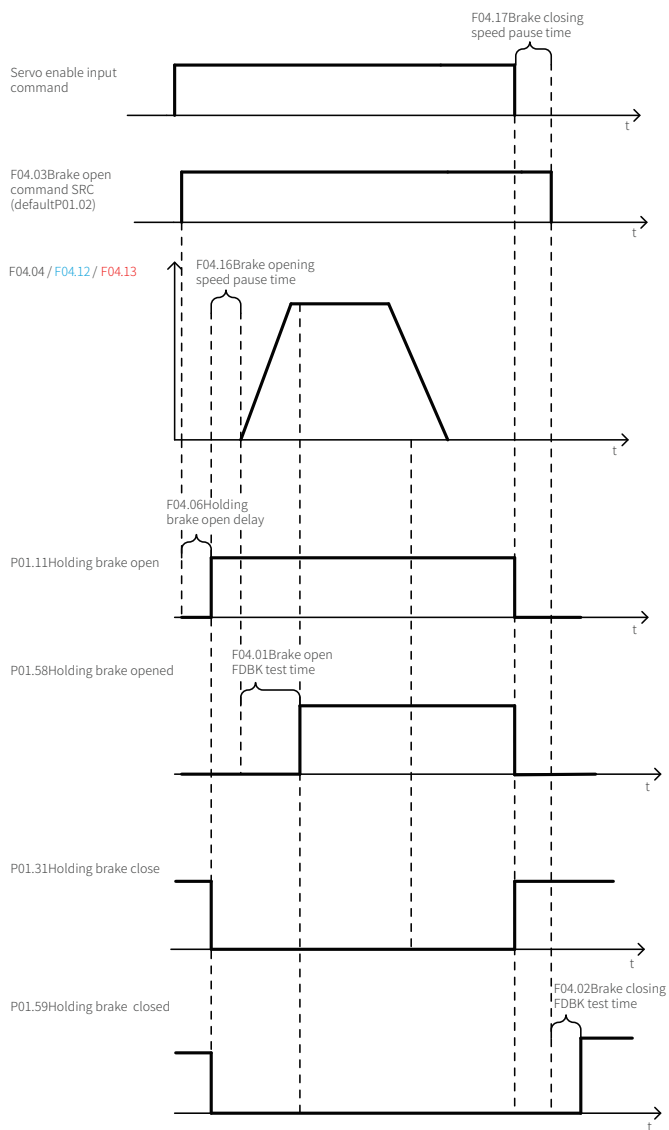


Figure 12-22 Position control normal shutdown holding brake

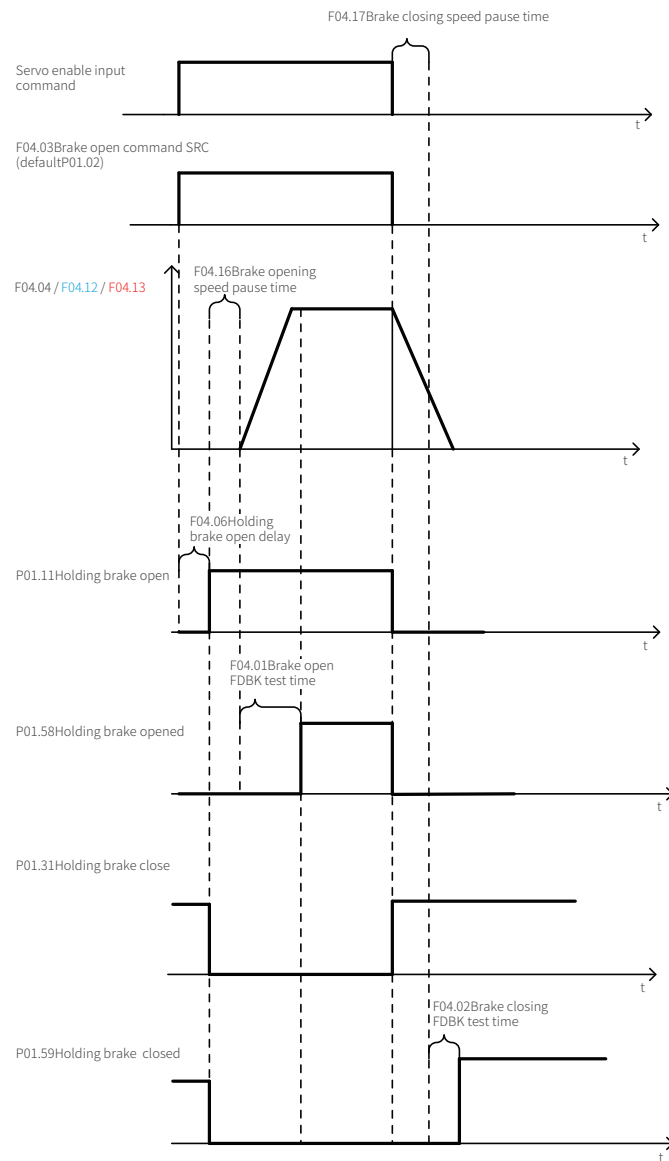


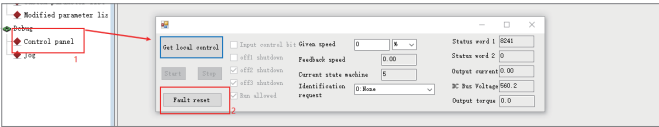
Figure 12-23 Position control failure shutdown brake

12.8 Exception handling function

After the fault source is eliminated, the drive needs to be reset. After the fault is reset, the drive exits the fault state. After the warning source is eliminated, the drive will automatically reset without the need for manual fault reset.

12.8.1 Fault reset

- 1. Fault reset through function code.
You can use function code B00.05 to define fault reset source 1 and B00.13 fault reset source 2 to reset faults. Note: These two function codes are valid for rising edges.
- 2. Use the control panel
The fault reset operation process is as follows.



Note: After using the control panel, local control permissions must be relinquished in order to close the control panel and continue using the function code of the upper computer to control start stop.

12.8.2 Automatic fault reset

If this function is enabled, when the drive detects a fault, the activated fault code will be sent to the current human-computer interaction interface and the machine will be shut down, and then the fault will be reset. The functional codes involved are as follows:

Table 12-44 Function codes related to fault automatic reset configuration

Function code	Function code name	unit	range	explain
E00.10	Fault automatic reset function	-	0: Invalid 1: Valid	-
E00.11	Fault reset times Reset time	s	[0,3600]	Reset count reset time.

Function code	Function code name	unit	range	explain
E00.12	Fault reset interval time	s	[0,600]	Allow the shortest time for two fault resets.
E00.13	Fault reset times	-	[0,5]	Number of resets allowed in the time specified in E00.11.
E00.14	Unresettable exception code 1	-	[0,65535]	When the selected non resettable exception code is triggered, this function is invalid.
E00.15	Unresettable exception code 2	-	[0,65535]	Scope: All fault codes from 0 to 56.

Fault automatic reset function timing diagram:

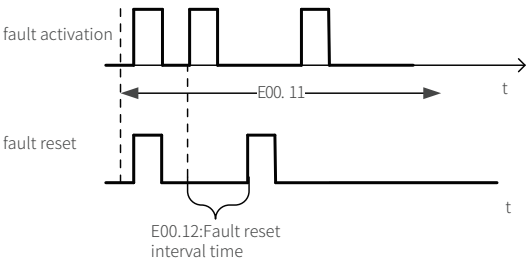


Figure 12-24 Fault automatic reset timing diagram

As shown in the above figure, when this function is enabled, the time set in function code E00.11 takes effect. When a fault occurs within the time period set by E00.11, it will be reset after E00.12 time.

12.8.3 Automatic restart function

The automatic restart function takes effect after the fault is reset. If the motor does not slow down to zero speed due to special circumstances, the "speed tracking" function needs to be used to start. Involving function codes:

Table 12-45 Fault Reset Automatic Restart Function Configuration Related Function Codes

Function code	Function code name	unit	range	explain
E00.23	Restart FUNC after AUTO reset	-	0:Invalid. 1:Valid.	-
E00.24	EXEP sources that allow restarts	-	0:Specify exception code to allow restart. 1:The specified exception code does not allow restart.	-
E00.25	Specified EXC code 1	-	[0,65535]	Set special handling fault codes.
E00.26	Specified EXC code 2	-	[0,65535]	

12.8.4 Exception special handling setting function

Because the drive has many kinds of faults, the drive will generally stop freely when the fault occurs by default, but in some cases, due to some faults, the free stop is more dangerous, so the need for emergency braking stop, or no stop.drive Therefore, users can use this function to modify the response methods after individual faults are triggered
Involving function codes.

Table 12-46 Exception Special Handling Configuration Related Function Codes

Function code	Function code name	unit	range	explain
E00.36	EXC level MOD EXC code 1	-	[0,65535]	This function code is used to configure the exception code (0-56) that needs to modify the response mode. 0 indicates no fault
E00.38	EXC level MOD EXC code 2	-	[0,65535]	

Function code	Function code name	unit	range	explain
E00.37	EXC level of EXC code 1	-	0: Free stop (OFF2) 1: Emergency shutdown (OFF3) 2: Stop mode stop(OFF1) 3: Warning 4: No exception handling	E00.36/E00.38 Exception Code Response Method.
E00.39	EXC level of EXC code 2	-		

12.9 Free Function Block and Process Function Block

Free function block is a module independent of driver control function, including logic operation, arithmetic operation, word and bit conversion module. Through these operations, the input signal can be simply processed, which can better adapt to various complex conditions and partially replace the function of PLC.

Function module name	Number of functional modules	Number of input interfaces	Explain
Logical AND module	4	4	The last two input ports of each module are expansion parameters ⁽¹⁾
Logic NOT module	8	1	Four of the modules are extension parameters
Logical OR module	4	4	Each module has two input ports for expansion parameters
Logical XOR module	4	4	The first module has two input ports for extension parameters, and the other three are extension parameters
Logic delay module	4	1	-
Addition module	4	4	Each module has two input ports for expansion parameters

Function module name	Number of functional modules	Number of input interfaces	Explain
Subtraction module	2	2	-
Multiplication module	2	4	Each module has two input ports for expansion parameters.
Division module	2	2	-
Absolute value module	2	1	-
Comparison module	3	2	-
Restriction module	2	1	The module is in the extension parameter
First order low-pass filtering module	2	1	-
Data selector	2	4	A module is an extension parameter
Word transposition function	2	16	-
Bit to word conversion function	2	1	-
Process PID module	1	-	Some parameters are extended parameters
Brake module	1	-	Some parameters are extended parameters
Anti-sway module	1	-	-

(1). For details about how to set extension parameters, see section 11.1. Modifying Drive Parameters.

12.9.1 Logic Operation Module

1. Logical AND module

The logical "and" module performs a logical "and" operation on the state of all input signals and outputs the result. AX driver contains 4 groups of logic "and" module, each module has 4 input interfaces, each input signal can be any binary interconnection parameters, logic "and" operation rules: all inputs are 1 output is 1, and the opposite output is 0, logic "and" module schematic diagram is as follows:

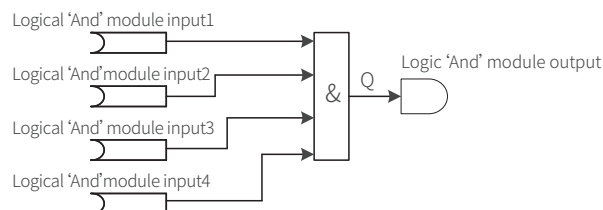


Figure 12-25 Schematic diagram of logical AND module

When a certain interface is not used, its parameter can be set to "1: Invalid", and the input value of this interface will always be 1. For example, if only two input signals require logical AND operation, when using logical AND module A, these two signals can be selected in input interfaces 1 and 2 of logical AND module A, and input interfaces 3 and 4 can be set to "1: Invalid".

Table 12-47 Logic and Module Related Function Codes

Function code	Function code name	unit	range	explain
F00.00 F00.05 F00.10 F00.15	Logic AND module A/B/C/D input 1	-	1:Invalid Others:Binary interconnection parameters.	-
F00.01 F00.06 F00.11 F00.16	Logic AND module A/B/C/D input 2	-	1:Invalid Others:Binary interconnection parameters.	-
F00.02 F00.07 F00.12 F00.17	Logic AND module A/B/C/D input 3	-	1:Invalid Others:Binary interconnection parameters.	-
F00.03 F00.08 F00.13 F00.18	Logic AND module A/B/C/D input 4	-	1:Invalid Others:Binary interconnection parameters.	-
P03.00 P03.01 P03.02 P03.03	Logic AND module A /B/C/D output	-	[0, 1]	0: Logic 0 1: Logic 1

2.Logic NOT module

The logical "not" module performs a logical "not" operation on the state of all input signals and outputs the result. AX driver contains 6 groups of logical "not" modules, each module has 1 input interface, each input signal can be any binary interconnection parameters, logic "not" module operation rules: when the input is 1, the output is 0, when the input is 0, the output is 1. The logical "Not" module diagram is as follows:

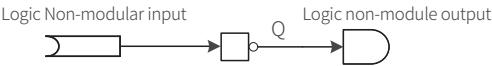


Figure 12-26 Schematic diagram of logical 'non' module

When the logic "not" module is not in use, it generally defaults to the "1: invalid" state and outputs logic 0. Related function codes:

Table 12-48 Logic 'Non' Module Related Function Codes

Function code	Function code name	unit	range	explain
F00.20 F00.22 F00.24 F00.26 F00.28 F00.30 F00.32 F00.34	Logic NOT module A/B/C/D/E/ F/G/H input	-	0:Invalid Others:Binary interconnection parameters	-
P03.04 P03.05 P03.06 P03.07 P03.08 P03.09 P03.10 P03.11	Logic NOT module A/B/C/D/E/ F/G/H output	-	[0, 1]	0: Logic 0 1: Logic 1

3.Logical OR module

The logical "or" module performs a logical "or" operation on the state of all input signals and outputs the result. AX driver contains 4 groups of logical "or" modules, each module has 4 input interfaces, each input signal can be any binary interconnection parameters, logic "or" module operation rules: when the input has a 1, the output is 1, and the other output is 0. The logical "or" module diagram is as follows:

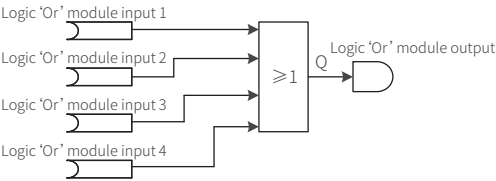


Figure 12-27 Schematic diagram of logical OR module

When a certain interface is not used, its parameter can be set to "0: invalid", and the input value of this interface will always be 0. For example, if only two input signals require logical OR operation, when using logical OR module A, these two signals can be selected in input interfaces 1 and 2 of logical OR module A, and input interfaces 3 and 4 can be set to "0: invalid". Related function codes:

Table 12-49 Logic OR Module Related Function Codes

Function code	Function code name	unit	range	explain
F00.36 F00.41 F00.46 F00.51	Logic OR module A/B/C/D input 1	-	0:Invalid Others:Binary interconnection parameters.	-
F00.37 F00.42 F00.47 F00.52	Logic OR module A/B/C/D input 2	-	0:Invalid Others:Binary interconnection parameters.	-
F00.38 F00.43 F00.48 F00.53	Logic OR module A/B/C/D input 3	-	0:Invalid Others:Binary interconnection parameters.	-
F00.39 F00.44 F00.49 F00.54	Logic OR module A/B/C/D input 4	-	0:Invalid Others:Binary interconnection parameters.	-
P03.12 P03.13 P03.14 P03.15	Logic OR module A output	-	[0, 1]	0: Logic 0 1: Logic 1

4.Logical XOR module

The logical "XOR" module performs logical "XOR" operations on the states of all input signals and outputs the results. AX driver contains 4 groups of logic "XOR" module, each module has 4 input interfaces, each input signal can be any binary interconnection parameters, logic "XOR" module four input terminals according to the serial number and the last one to carry out "XOR" operation, the result and the rear terminal continue to carry out XOR operation, and so on, output the final result, The XOR logic operation rule: Dangdang and only if the two inputs are different, the output is 1, and the output is 0 anyway. The logical XOR module diagram is as follows:

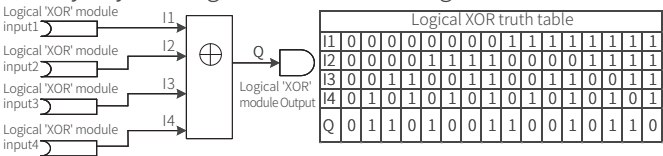


Figure 12-28 Schematic diagram of logical XOR module

When a certain interface is not used, its parameter can be set to "0: invalid", and the input value of this interface will always be 0. For example, if only two input signals require logical XOR operation, when using logical XOR module A, these two signals can be selected in input interfaces 1 and 2 of logical XOR module A, and input interfaces 3 and 4 can be set to "0: invalid".

Related function codes:

Table 12-50 Logic XOR Module Related Function Codes

Function code	Function code name	unit	range	explain
F00.56 F00.61 F00.66 F00.71	Logic XOR module A/B/C/D input 1	-	0:Invalid Others:Binary interconnection parameters.	-
F00.57 F00.62 F00.67 F00.72	Logic XOR module A/B/C/D input 1	-	0:Invalid Others:Binary interconnection parameters.	-
F00.58 F00.63 F00.68 F00.73	Logic XOR module A/B/C/D input 1	-	0:Invalid Others:Binary interconnection parameters.	-
F00.59 F00.64 F00.69 F00.74	Logic XOR module A/B/C/D input 1	-	0:Invalid Others:Binary interconnection parameters.	-
P03.16 P03.17 P03.18 P03.19	Logic XOR module A output	-	[0,1]	0: Logic 0 1: Logic 1

5. Logic delay module

The logic delay module performs delay operations on the states of all input signals and outputs the results. The AX drive contains four sets of logic delay modules, each with one input interface, and each input signal can be any binary interconnection parameter; You can use the function code to set whether the function is enabled and the delay time. When the value of the input interface changes, the value of the output parameter remains unchanged until the set delay time is reached and then changes. The schematic diagram of the logic delay module is as follows:

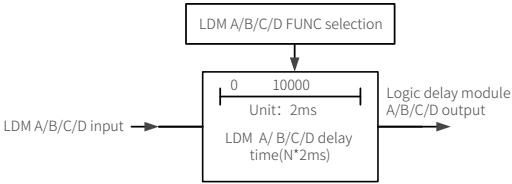


Figure 12-29 Schematic diagram of logic delay module

This module can determine the delay method through the parameter "Logic Delay Module Function Selection". When the module is not used, its input parameters default to "0: invalid", and its output is also logical 0.

Related function codes:

Table 12-51 Logic Delay Module Related Function Codes

Function code	Function code name	unit	range	explain
F00.76 F00.79 F00.82 F00.85	LDM A/B/C/D input	-	0:Invalid Others:Binary interconnection parameters.	-
F00.77 F00.80 F00.83 F00.86	LDM A/B/C/D FUNC selection	-	0	Opening delay: set from 0 to 1 delay output Turn off delay: delayed output from 1 to 0 Bidirectional delay: Level jump delay output.
F00.78 F00.81 F00.84 F00.87	LDM A/B/C/D delay time (N*2ms)	N*2ms	[0,1000]	The maximum delay time is 1000*2ms=20s.
P03.20 P03.21 P03.22 P03.23	Logic delay module A/B/C/D output	-	[0,1]	0: Logic 0 1: Logic 1

12.9.2 Arithmetic operation module

1. Addition module

The arithmetic addition module adds all input parameters and outputs the result. The AX drive contains three sets of addition modules, each with four input interfaces. Each input signal can be any 16 bit analog interconnection parameter, but the output result must be within the specified digital range. If it exceeds the range, an overflow signal will be output. The schematic diagram of the arithmetic operation addition module is as follows:

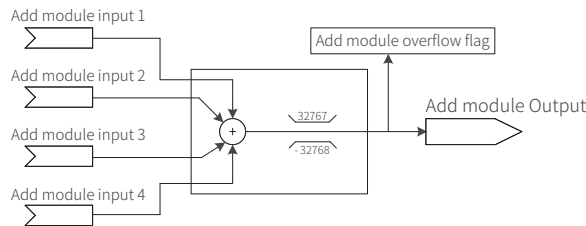


Figure 12-30 Schematic diagram of the addition module

When a certain interface is not used, its parameter can be set to "0:0", and the input value of this interface is always 0. Related function codes:

Table 12-52 Addition Module Related Function Codes

Function code	Function code name	unit	range	explain
F01.00 F01.05 F01.10 F01.15	ADD module A /B/ C input 1	-	0:0 Others:Analog interconnection parameters.	-
F01.01 F01.06 F01.11 F01.16	ADD module A /B/ C input 2	-	0:0 Others:Analog interconnection parameters.	-
F01.02 F01.07 F01.12 F01.17	ADD module A /B/ C input 3	-	0:0 Others:Analog interconnection parameters.	-
F01.03 F01.08 F01.13 F01.18	ADD module A /B/ C input 4	-	0:0 Others:Analog interconnection parameters.	-
P03.36 P03.37 P03.38	Overflow flag: addition A/B/C	-	[0,1]	0: No overflow 1: Overflow
P08.00 P08.01 P08.02	ADD module A/B/C output	-	[-32768,32767]	Four parameter addition result

2. Subtraction module

The arithmetic subtraction module subtracts two input parameters and outputs the result. The AX drive contains 2 sets of subtraction modules, each with 2 input interfaces: representing the minuend and subtracted numbers, respectively. Each input signal can be any 16 bit analog interconnection parameter, but the output result must be within the specified digital range. If it exceeds the range, an overflow signal will be output. The schematic diagram of the arithmetic subtraction module is as follows:

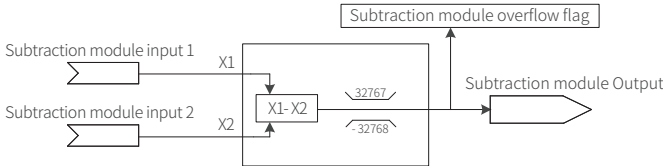


Figure 12-31 Schematic diagram of subtraction module
Related function codes:

Table 12-53 Subtraction Module Related Function Codes

Function code	Function code name	unit	range	explain
F01.15 F01.18	SUB module A/B input 1	-	0:0 Others:Analog interconnection parameters.	Subtrahend Parameter.
F01.16 F01.19	SUB module A/B input 2	-	0:0 Others:Analog interconnection parameters.	Minuend Parameter.
P03.39 P03.40	Overflow flag:subtraction A/B	-	[0,1]	0: No overflow 1: Overflow
P08.04 P08.05	SUB module A/B output	-	[-32768,32767]	Subtraction result of two parameters.

3. Multiplication module

The arithmetic multiplication module multiplies all input parameters and outputs the result. The AX drive contains 2 sets of multiplication modules, each with 4 input interfaces. Each input signal can be any 16 bit analog interconnection parameter, but the output result must be within the specified digital range. If it exceeds the range, an overflow signal will be output. The multiplication module has an additional 32-bit output display for each module, with an output range of [-2147483648, 2147483647]. The schematic diagram of the arithmetic multiplication module is as follows:

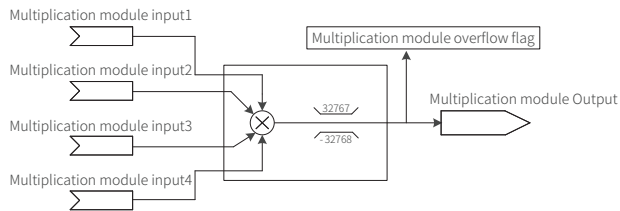


Figure 12-32 Schematic diagram of multiplication module

When a certain interface is not used, its parameter can be set to "0:1", and the input value of this interface is always 1. For example, if only two input parameters need to be multiplied, when using multiplication module A, these two parameters can be selected in input interfaces 1 and 2 of multiplication module A, and input interfaces 3 and 4 can be set to "0:1". Related function codes:

Table 12-54 Multiplication Module Related Function Codes

Function code	Function code name	unit	range	explain
F01.21 F01.26	MUL module A/B input 1	-	0:1 Others:Analog interconnection parameters.	0: Value 1
F01.22 F01.27	MUL module A/B input 2	-	0:1 Others:Analog interconnection parameters.	0: Value 1
F01.23 F01.28	MUL module A/B input 3	-	0:1 Others:Analog interconnection parameters.	0: Value 1
F01.24 F01.29	MUL module A/B input 4	-	0:1 Others:Analog interconnection parameters.	0: Value 1
P03.41 P03.42	Overflow flag:multiplication A/B	-	[0,1]	0: No overflow 1: Overflow
P08.08 P08.09	MUL module A/B output	-	[-32768,32767]	Multiplication result of four parameters.
P08.44 P08.46	Mul-block A/B output (32 bits)	-	[-2147483648, 2147483647]	Multiplication module 32-bit output result.

4. Division module

The arithmetic division module divides the input parameters and outputs the result. The AX drive contains two sets of division modules, each with two input interfaces, representing the dividend and divisor, respectively. Each input signal can be any analog interconnection parameter, but the divisor is required to be a 16 bit signed number (range [-32768, 32767]). The output result must be within the specified numerical range. If it exceeds the range, an overflow signal will be output. The schematic diagram of the arithmetic division module is as follows:

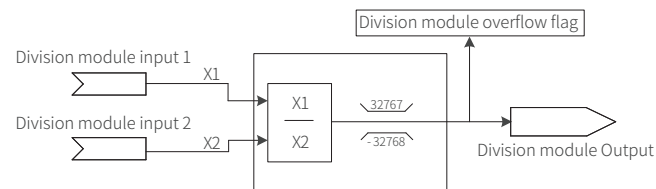


Figure 12-33 Schematic diagram of division module

When a certain interface is not used, its parameter defaults to "0:1", and the input value of this interface is always 1. The result of the division operation is output in the form of quotient and remainder. Related function codes:

Table 12-55 Function codes related to division module

Function code	Function code name	unit	range	explain
F01.31 F01.34	DIV module A /Bdivisor input	-	0:1 Others:Analog interconnection parameters.	0: Value 1
F01.32 F01.35	DIV module A dividend input	-	0:1 Others:Analog interconnection parameters.	0: Value 1
P03.43 P03.44	Overflow flag:divide module A/B	-	[0,1]	0: No overflow 1: Overflow
P08.12 P08.15	DIV module A /Boutput	-	[-32768,32767]	Input parameter division result.
P08.14 P08.17	DIV module A remainder	-	[-32768,32767]	Input parameter division remainder.

5. Absolute value module

The arithmetic absolute value module outputs the absolute value of the input parameter as the result. The AX drive contains two sets of absolute modules, each with one input interface, and the input signal can be any 16 bit analog interconnection parameter. The absolute value module requires an input quantity of 16 signed digits (ranging from [-32768, 32767]). If the input value exceeds the range, only the lower 16 digits of the input value are taken as signed digits for input. The schematic diagram of the absolute value module for arithmetic operations is as follows:

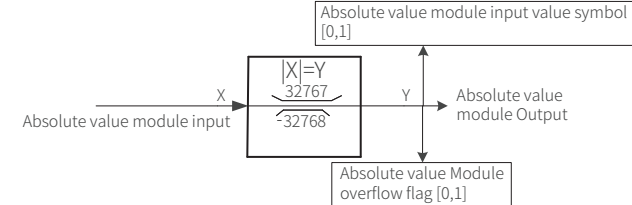


Figure 12-34 Schematic diagram of absolute value module

The absolute value module will output the input quantity symbol of the absolute value module to indicate the positive and negative signs of the input parameters.

Related function codes:

Table 12-56 Absolute Value Module Related Function Codes

Function code	Function code name	unit	range	explain
F01.37 F01.39	AVA module A/B input	-	0:0 Others:Analog interconnection parameters.	-
P03.32 P03.33	Symbol of ABS module A/B input	-	[0,1]	0: Input is positive. 1: Input is negative.
P08.24 P08.25	AVA module A/B output	-	[-32768,32767]	-

6. Comparison module

The arithmetic comparison module compares input parameters and outputs the result of the comparison The AX drive contains 4 sets of comparison modules, each with 2 input interfaces. The input signal can be any 16 bit analog interconnection parameter, and the output is a binary parameter as a comparison symbol to indicate

the comparison result. The schematic diagram of the arithmetic operation comparison module is as follows:

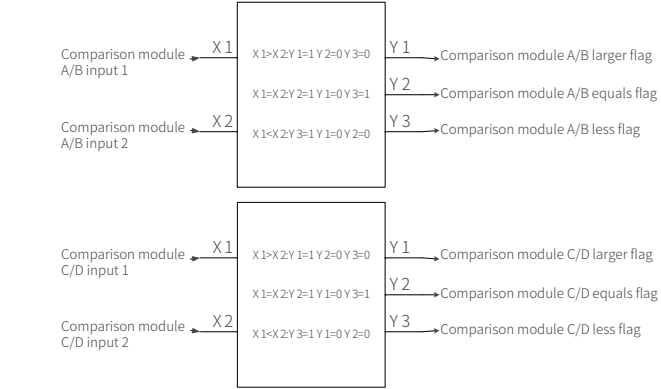


Figure 12-35 Schematic diagram of comparison module

This module will compare the sizes of two input parameters and display their parameter sizes by outputting binary greater than/equal to/less than flag parameters.

Related function codes:

Table 12-57 Comparison Module Related Function Codes

Function code	Function code name	unit	range	explain
F01.41 F01.44 F01.73 F01.76	Comparison module A/B/C/D input 1	-	0:0 Others:Analog interconnection parameters.	-
F01.42 F01.45 F01.74 F01.77	Comparison module A/B/C/D input 2	-	0:0 Others:Analog interconnection parameters.	-
P03.24 P03.27 P03.47 P03.50	Comparison module A/B/C/D larger flag	-	[0,1]	Set 1 when in- put 1 is greater than input 2.
P03.25 P03.28 P03.48 P03.51	Comparison module A/B/C/D equals flag	-	[0,1]	Set 1 when in- put 1 equals input 2.
P03.26 P03.29 P03.49 P03.52	Comparison module A/B/C/D less flag	-	[0,1]	Set 1 when in- put 1 is less than input 2.

7. Restriction module

The arithmetic operation restriction module restricts the input parameters and outputs the results. The AX drive contains two sets of restriction modules, each with one input interface. The input signal can be any 16 bit analog interconnection parameter, and the output result is the restricted parameter. The schematic diagram of the arithmetic operation restriction module is as follows:

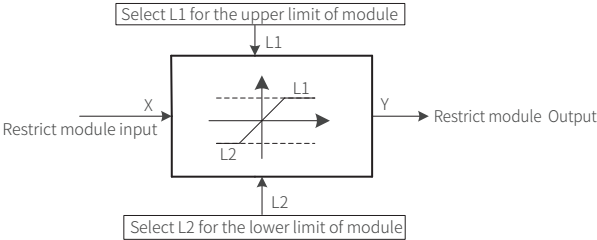


Figure 12-36 Schematic diagram of restriction module

This module can limit the output of parameters in the drive. When other functional modules need to apply a certain parameter and the parameter range is greater than the function used, this function can be enabled to limit the parameter to a specific range.

Related function codes:

Table 12-58 Function codes related to restriction modules

Function code	Function code name	unit	range	explain
F01.47 F01.51	LIM module A/B input	-	0:0 Others:Analog interconnection parameters.	-
F01.48 F01.52	LIM module A/B upper limit select	-	0:0 Others:Analog interconnection parameters.	Restricted sources
F01.49 F01.53	LIM module A/B lower limit select	-	0:0 Others:Analog interconnection parameters.	
P08.28 P08.29	LIM module A/B output	-	[-32768,32767]	

8. First order low-pass filtering module

The first-order low-pass filtering module filters the input parameters and outputs the results. The AX drive contains two sets of filtering modules, each with one input interface. The input signal can be any 16 bit analog interconnection parameter, and the output result is the filtered value. The schematic diagram of the first-order low-pass filtering module is as follows:

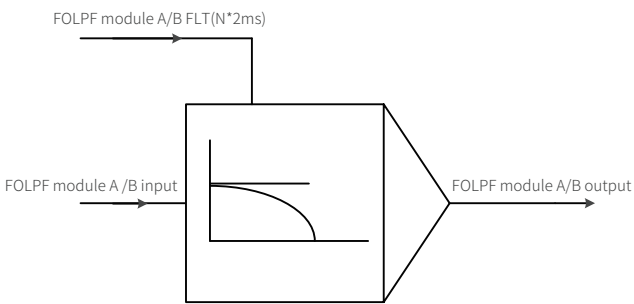


Figure 12-37 Schematic diagram of first-order low-pass filtering

This module can perform first-order low-pass filtering on input parameters. By configuring the filtering time and setting the cutoff frequency, the output result is to filter out the high-frequency component in the input.

Related function codes:

Table 12-59 First order low-pass filtering module

Function code	Function code name	unit	range	explain
F01.55 F01.58	FOLPF module A/Binput	-	0:0 Others:Analog interconnection parameters.	
F01.56 F01.59	FOLPF module A/B FLT (N*2ms)	N* 2ms	[0,20000]	This parameter is a first-order low-pass filter cutoff frequency related parameter, with the relationship: $T = \frac{1}{2\pi\omega_c}$
P08.32 P08.33	FOLPF module A/B output	-	[-32768, 32767]	

9. Data selector

The data selector selects one of all input signals as the output based on the selection command. The AX drive contains 2 sets of data selectors, each module has 4 input interfaces and 2 selection command interfaces. Each input signal can be any 16 bit analog interconnection parameter, and the selection command can be set to any binary quantity. The schematic diagram of the data selector is as follows:

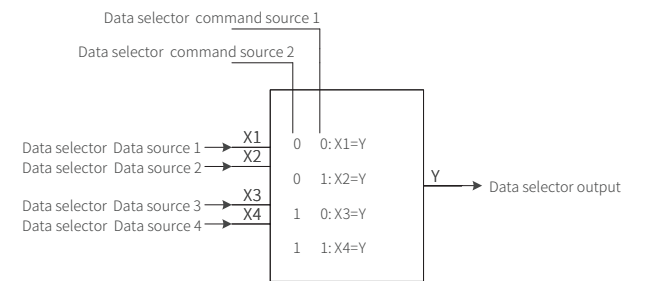


Figure 12-38 Schematic diagram of data selector

The data selector uses parameters "Data selector command source 1" and "Data selector command source 2" to form a two digit binary number for data selection. The output logic table of the data selector is as follows:

Table 12-60 Data Selectors Description

Select Command		Data selector output result
Data selector command source 1 status value	Data selector command source 2 status value	
0	0	Data selector A/B Data source 1
0	1	Data selector A/B Data source 2
1	0	Data selector A/B Data source 3
1	1	Data selector A/B Data source 4

Related function codes

Table 12-61 Function codes related to data selectors

Function code	Function code name	unit	range	explain
F01.63 F01.69	Data selector A/B data source 1	-	0:0 1: Multi-stage setting value 1 2: AI0	
F01.64 F01.70	Data selector A/B data source 2	-	3-5: Reserve 6: Multi-segment value given 7: Electric potentiometer	
F01.65 F01.71	Data selector A/B data source 3	-	8: Reserve 9: Bus adapter A-PZD2	
F01.66 F01.72	Data selector A/B data source 4	-	10: Bus adapter B-PZD2 Others:Analog interconnection parameters.	
F01.61 F01.67	Data selector A/B command SRC 1	-	0:0 1:1 2~9:DI0~DI7 10:Reserve Others:Binary interconnection parameters.	For binary bit0 bits
F01.62 F01.68	Data selector A/B command SRC 2	-	0:0 1:1 2~9:DI0~DI7 10:Reserve Others:Binary interconnection parameters.	For binary bit1 bit
P08.41 P08.42	Data selector A output	-	[-32768,32767]	

12.9.3 Word conversion module

1.Word transposition function

Word transposition module converts the input decimal parameter to binary and outputs the result.The AX drive contains four sets of word index modules, each with one input interface. The input parameters can be any 16 bit analog interconnection parameter. The word index function block outputs each bit of the input value as binary data. The relevant function codes are as follows:

Table 12-62 Function Codes Related to Word Indexing
Function

Function code	Function code name	unit	range	explain
F02.00 F02.02 F02.04 F02.06	WTB FUNC A/B/C/D inp- ut selection	-	0:0 Others:An- alog inter- connection parameters	Decimal inp- ut parameters Output range bit [-32768,32767]
P04.00 P04.16 P04.32 P04.48	WTB function A/B/C/D out- put bit0	-	[0,1]	0:0 1:1
P04.01 P04.17 P04.33 P04.49	WTB function A/B/C/D out- put bit1	-	[0,1]	0:0 1:2
P04.02 P04.18 P04.34 P04.50	WTB function A/B/C/D out- put bit2	-	[0,1]	0:0 1:4
P04.03 P04.19 P04.35 P04.51	WTB function A/B/C/D out- put bit3	-	[0,1]	0:0 1:8
P04.04 P04.20 P04.36 P04.52	WTB function A/B/C/D out- put bit4	-	[0,1]	0:0 1:16
P04.05 P04.21 P04.37 P04.53	WTB function A/B/C/D out- put bit5	-	[0,1]	0:0 1:32
P04.06 P04.22 P04.38 P04.54	WTB function A/B/C/D out- put bit6	-	[0,1]	0:0 1:64
P04.07 P04.23 P04.39 P04.55	WTB function A/B/C/D out- put bit7	-	[0,1]	0:0 1:128
P04.08 P04.24 P04.40 P04.56	WTB function A/B/C/D out- put bit8	-	[0,1]	0:0 1:256

Function code	Function code name	unit	range	explain
P04.09 P04.25 P04.41 P04.57	WTB function A/B/C/D out- put bit9	-	[0,1]	0:0 1:512
P04.10 P04.26 P04.42 P04.58	WTB function A/B/C/D out- put bit10	-	[0,1]	0:0 1:1024
P04.11 P04.27 P04.43 P04.59	WTB function A/B/C/D out- put bit11	-	[0,1]	0:0 1:2048
P04.12 P04.28 P04.44 P04.60	WTB function A/B/C/D out- put bit12	-	[0,1]	0:0 1:4096
P04.13 P04.29 P04.45 P04.61	WTB function A/B/C/D out- put bit13	-	[0,1]	0:0 1:8192
P04.14 P04.30 P04.46 P04.62	WTB function A/B/C/D out- put bit14	-	[0,1]	0:0 1:16384
P04.15 P04.31 P04.47 P04.63	WTB function A/B/C/D out- put bit15	-	[0,1]	0:0 1:-32768

2. Bit to word conversion function
The bit-to-word function combines 16 input binary values in order of lowest to highest into a 16-bit numeric output. AX drive contains 4 groups of bit-to-word modules, each module has 16 input interfaces, input parameters can be any binary inter-connection parameters, output a 16-bit value. Related function codes are as follows:drive.

Table 12-63 Function Codes Related to Bit-to-Word Conversion

Function code	Function code name	unit	range	explain
F02.08 F02.25 F02.42 F02.59	BTW FUNC A/B/C/D-Bit00 selection	-	0:0 Others:Binary inte- rconnection para- meters	0:0 1:1

Function code	Function code name	unit	range	explain
F02.09 F02.26 F02.43 F02.60	BTW FUNC A/B/C/D-Bit01 selection	-	0:0	0:0 1:2
F02.10 F02.27 F02.44 F02.61	BTW FUNC A/B/C/D-Bit02 selection	-	Others:Binary interconnection parameters	0:0 1:4
F02.11 F02.28 F02.45 F02.62	BTW FUNC A/B/C/D-Bit03 selection	-	0:0	0:0 1:8
F02.12 F02.29 F02.46 F02.63	BTW FUNC A/B/C/D-Bit04 selection	-	Others:Binary interconnection parameters	0:0 1:16
F02.13 F02.30 F02.47 F02.64	BTW FUNC A/B/C/D-Bit05 selection	-	0:0	0:0 1:32
F02.14 F02.31 F02.48 F02.65	BTW FUNC A/B/C/D-Bit06 selection	-	Others:Binary interconnection parameters	0:0 1:64
F02.15 F02.32 F02.49 F02.66	BTW FUNC A/B/C/D-Bit07 selection	-	0:0	0:0 1:128
F02.16 F02.33 F02.50 F02.67	BTW FUNC A/B/C/D-Bit08 selection	-	Others:Binary interconnection parameters	0:0 1:256
F02.17 F02.34 F02.51 F02.68	BTW FUNC A/B/C/D-Bit09 selection	-	0:0	0:0 1:512
F02.18 F02.35 F02.52 F02.69	BTW FUNC A/B/C/D-Bit10 selection	-	Others:Binary interconnection parameters	0:0 1:1024
F02.19 F02.36 F02.53 F02.70	BTW FUNC A/B/C/D-Bit11 selection	-	0:0	0:0 1:2048

Function code	Function code name	unit	range	explain
F02.20 F02.37 F02.54 F02.71	BTW FUNC A/B/C/D-Bit12 selection	-	Others:Binary interconnection parameters	0:0 1:4096
F02.21 F02.38 F02.55 F02.72	BTW FUNC A/B/C/D-Bit13 selection	-	0:0	0:0 1:8192
F02.22 F02.39 F02.56 F02.73	BTW FUNC A/B/C/D-Bit14 selection	-	Others:Binary interconnection parameters	0:0 1:16384
F02.23 F02.40 F02.57 F02.74	BTW FUNC A/B/C/D-Bit15 selection	-	0:0	0:0 1:32768
P08.36 P08.37 P08.38 P08.	BTW function A/B/C/D output	-	[-32768,32767]	Decimal output parameter

12.9.4 Process PID module

This function can be used to PID control all kinds of feed quantity. In some special conditions, when the used feed quantity is difficult to meet the requirements to drive the motor, this module can be used to PID control the feed quantity. Thus output the required parameters to drive the motor. The diagram is as follows:

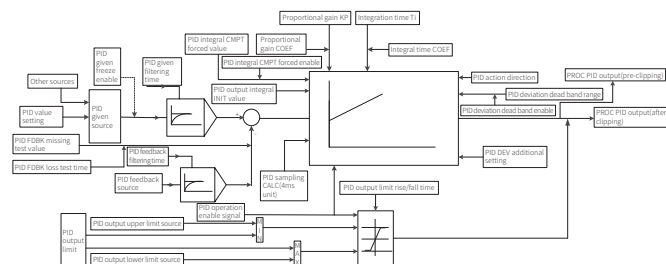


Figure 12-39 Schematic diagram of process PID module

Basic parameter configuration related function codes:

Table 12-64 Function codes related to basic parameter configuration of process PID module

Function code	Function code name	unit	range	explain
F03.00	PID FUNC valid signal	-	0:Invalid 1:Valid 2~9:DI0~DI7 10:Reserve Others:Binary interconnection parameters.	Functional Enabling
F03.01	PID operation enable signal	-	0:0 1:1 2~9:DI0~DI7 10:Reserve Others:Binary interconnection parameters	PID operation enable
F03.03	PID sampling CALC (4ms unit)	2ms	[1,20]	N*2ms
F03.04	PID given source	-	0:F03.05 1: Multi-stage setting value 1 2: AI0 3,4,5: Reserve 6: Multi-segment value given 7: Motorized potentiometer 8: Reserve 9: Bus adapter A-PZD2 10: Bus adapter B-PZD2 Others:Analog interconnection parameters.	-
F03.05	PID value setting	%	[-600,600]	-
F03.07	PID given filtering time	ms	[0,60000]	-

Function code	Function code name	unit	range	explain
F03.08	PID feedback source	-	0:0 1: Multi-stage setting value 1 2: AI0 3-5: Reserve 6: Multi-segment value given 7: Motorized potentiometer 8: Reserve 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters.	-
F03.09	PID feedback filtering time	ms	[0,60000]	-
F03.11	Proportional gain KP	-	[0.00,625.00]	-
F03.12	Proportional gain COEF	-	0:100.0% 1: Multi-stage setting value 1 2: AI0 3-5: Reserve 6: Multi-segment value given 7: Motorized potentiometer 8: Reserve 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters.	-
F03.13	Integration time Ti	ms	[0,60000]	-
F03.14	Integral time COEF	-	[0,10]	-

Advanced parameter configuration related function codes:

Table 12-65 Function codes related to advanced parameter configuration of process PID module

Function code	Function code name	unit	range	explain
F03.02	PID action direction	-	[0,1]	0: Positive direction (output value * 1) 1: Reverse direction (output value * -1)
F03.06	PID given freeze enable	-	[0,10000]	Fixed given source selection terminal
F03.10	PID DEV additional setting	-	0:0 1: Multi-stage setting value 1 2: AI0 3-5: Reserve 6: Multi-segment value given 7: Motorized potentiometer	-
F03.17	PID output integral INIT value	-	8: Reserve 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters.	-
F03.19	PID integral CMPT forced enable	-	[0,10]	The integral component is forcibly given to enable the selection of terminals

Function code	Function code name	unit	range	explain
F03.20	PID integral CMPT forced value	-	0:0 1: Multi-stage setting value 1 2: AI0 3-5: Reserve 6: Multi-segment value given 7: Motorized potentiometer	-
F03.22	PID output upper limit source	-	8: Reserve 9: Bus adapter A process data 10: Bus adapter B process data 2 Others:Analog interconnection parameters.	-
F03.21	PID output limit	%	[0.0,600.0]	-
F03.23	PID output lower limit source	-	0:0% 1: Multi-stage setting value 1 2: AI0 3-5: Reserve 6: Multi-segment value given 7: Motorized potentiometer 8: Reserve 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters.	-
F03.24	PID output limit rise/fall time	s	[0.00,100.00]	-
F03.25	PID deviation dead band enable	-	[0,1]	Deviation value response range enable.

Function code	Function code name	unit	range	explain
F03.26	PID deviation dead band range	%	[0.0,100.0]	Deviation value corresponding range.
F03.27	PID FDBK missing test value	%	[0.0,100.0]	Feedback value loss detection range.
F03.28	PID FDBK loss test time	s	[0.0,60.0]	Feedback value loss detection time.

Monitoring function code:

Table 12-66 Process PID Module Monitoring Function Codes

Function code	Function code name	unit	range	explain
P09.00	PROC PID output (after clipping)	-	[-32768,32767]	-
P09.01	PROC PID output (pre-clipping)	-	[-32768,32767]	-
P09.02	Process PID proportional output	-	[-32768,32767]	-
P09.03	Process PID integral output	-	[-32768,32767]	-
P09.04	Process PID differential output	-	[-32768,32767]	-
P09.05	Process PID given value	-	[-32768,32767]	-
P09.06	Process PID feedback value	-	[-32768,32767]	-
P09.07	Process PID deviation value	-	[-32768,32767]	-
P09.08	Process PID DEV before added	-	[-32768,32767]	-

13 Fault and Warning list

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
1	Overcurrent	1	U-phase overcurrent	1.Reset parameters and run after parameter auto-tuning [1]. 2. Appropriately increase the acceleration time. 3.If the overcurrent fault no longer occurs, continue to check the motor; if it persists, troubleshoot the drive hardware. 4.If the resistance to ground is zero or very low, contact the motor manufacturer to check the motor; additionally, measure whether the resistances of the three-phase windings are approximately equal. 5.If the motor cable is damaged or short-circuited, separate the short-circuited cables and ensure reliable insulation. 6.Wait until the motor comes to a complete stop before restarting; set to deceleration stop (B05.32=1). 7.Install a suitable braking resistor. 8.Contact the manufacturer to replace the drive. 9.Replace the PM. 10.Restore factory defaults and reset parameters.
		2	V-phase overcurrent	
		3	UV two-phase overcurrent	
		4	W-phase hardware overcurrent	
		5	UW two-phase overcurrent	
		6	VW two-phase overcurrent	
		7	UWV three-phase overcurrent	
		8	Braking transistor hardware overcurrent	
		9	U-phase VCE short circuit	
		10	V-phase VCE short circuit	
		11	UV two-phase VCE short circuit	
		12	W-phase VCE short circuit	
		13	UW two-phase VCE short circuit	
		14	VW two-phase VCE short circuit	
		15	Overcurrent fault	
		16	Overcurrent fault	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
2	DC over-voltage	1	Detected DC bus voltage exceeding threshold	1.Reset parameters and run after parameter auto-tuning. 2.If the overvoltage no longer occurs, appropriately increase B04.03; if the deceleration time cannot be increased, configure a braking resistor. 3.Increase the acceleration time B04.02; configure a braking resistor. 4.Install a suitable braking resistor. 5.Troubleshoot input power supply issues. 6.Modify A03.03 to calibrate the voltage; if calibration fails, the internal detection module of the drive may be abnormal. Contact after-sales service or the manufacturer for technical support. 7.Replace with a higher-power drive. 8.Replace the encoder.
3	DC under-voltage	1	DC bus voltage detected below threshold during operation (A03.21)	1.Confirm the power supply voltage range and ensure the input terminal wiring is secure and reliable. 2.Set A03.21 correctly. 3.Modify A03.03 to calibrate the voltage; if calibration fails, the internal detection module of the drive may be abnormal. Contact after-sales service or the manufacturer for technical support. 4.If the contactor does not engage, replace the PM to verify.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
5	Drive over-load	1	Detected current exceeding drive rated current (A02.06) beyond allowable overload time	1.The current detection coefficient should normally be around $100\% \pm 5\%$. If it deviates significantly, check if the model setting (A03.00) matches the nameplate. If the current cannot be calibrated, the internal detection module of the drive is abnormal; contact the manufacturer. 2.Reset parameters and run after parameter auto-tuning. 3.Eliminate mechanical stalling. 4.Reduce the carrier frequency, or replace with a higher-power drive. 5.Wait until the motor comes to a complete stop before restarting; set to deceleration stop (B05.32=1). 6.Appropriately reduce B07.15. 7.Check the motor nameplate to confirm the wiring configuration. 8.Take appropriate measures according to the load conditions to ensure the load is not too heavy during startup. 9.Replace with a higher-capacity drive.
				1.The current detection coefficient should normally be around $100\% \pm 5\%$. If it deviates significantly, check if the model setting (A03.00) matches the nameplate. If the current cannot be calibrated, the

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
6	Motor overload	1	Detected current exceeding motor rated current (D00.03) beyond allowable overload time	internal detection module of the drive is abnormal; contact the manufacturer. 2.Set D00.03 correctly. 3.Reset parameters and run after parameter auto-tuning. 4.Eliminate mechanical stalling. 5.Wait until the motor comes to a complete stop before restarting; set to deceleration stop (B05.32=1). 6.Reduce B07.15. 7.Check the motor nameplate to confirm the wiring configuration. 8.Take appropriate measures according to the load conditions to ensure the load is not too heavy during startup.
7	Input phase loss	1	Abnormal DC bus voltage fluctuation detected, input phase loss	1.Ensure the input wiring is correct and reliable. 2.Ensure the input power supply is stable.
8	Output phase loss	1	U-phase output phase loss	1.Set parameters according to the motor nameplate. 2.Ensure the output terminals are tightly connected; ensure the motor cable is not disconnected. 3.The current detection coefficient should normally be around $100\% \pm 5\%$. If it deviates significantly, check if the model setting (A03.00) matches the nameplate. If the current cannot be calibrated, the internal detection module
		2	V-phase output phase loss	
		3	W-phase output phase loss	
		4	Output phase loss during FVC control	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
8	Output phase loss	5	Severe three-phase output imbalance	of the drive is abnormal; contact the manufacturer. 4.Contact the motor manufacturer to replace the motor. 5.Update the PM.
		6	Output phase loss during stator resistance identification	
		7	Output phase loss during SVC control	
9	Drive overtemperature	1	Drive IGBT temperature detected exceeding threshold (37kW and below models)	1.Remove foreign objects and disable the fan speed control function (B06.48=0). If the fan still does not rotate, contact the manufacturer to replace the fan. 2.Change to the correct model value. 3.Clean the air ducts. 4.Appropriately reduce the drive carrier frequency, open the electrical cabinet door for heat dissipation, and increase the airflow at the inlet and outlet of the cabinet. 5.Replace the PM.
		2	Drive IGBT U-phase temperature detected exceeding threshold (above 37 kW models)	
		3	Drive IGBT V-phase temperature detected exceeding threshold (above 37 kW models)	
		4	Drive IGBT W-phase temperature detected exceeding threshold (above 37 kW models)	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
11	Current zero-drift error	1	Excessive U-phase current zero drift	1.The current detection coefficient should normally be around $100\% \pm 5\%$. If it deviates significantly, check if the model setting (A03.00) matches the nameplate. If the current cannot be calibrated, the internal detection module of the drive is abnormal; contact the manufacturer. 2.Replace the PM. 3.Check if the STO function is enabled. If enabled, check if the voltage at the STO terminals is normal.
		2	Excessive V-phase current zero drift	
		3	Excessive W-phase current zero drift	
12	Short-to-ground fault	1	U-phase over-current during short to ground	1.Replace the drive. 2.Replace the cable. 3.If the resistance is zero or very low, the motor is abnormal; replace the motor.
		2	V-phase over-current during short to ground	
		4	W-phase over-current during short to ground	
		5	Short-to-ground current exceeding threshold	
		6	Overvoltage during short to ground	
13	Motor auto-tuning fault	1	Dynamic tuning fault	1.Set the correct parameters. 2.Ensure the output terminal wiring is reliable. 3.Sub-codes 4-6 indicate encoder signal
		2	Static tuning failure	
		3	Timeout during synchronous motor magnet-	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
13	Motor auto-tuning fault	3	ic pole position identification in voltage regulation mode	abnormality,Ensure the encoder wiring and parameters are correct. 4.Replace the PM.
		4	Encoder fault	
		5	Z-signal error	
		6	No Z-signal received	
14	Encoder fault	1	Dynamic tuning fault: Encoder not connected during closed-loop dynamic tuning	1.Check the tens digit value of the I/O board ID in P11.30.1: RJ45 interface supports BiSS-C/RS485 encoders.0: RJ45 interface only supports RS485 encoders. 2.Confirm that the encoder parameters and cable connections are correct. 3.Route cables according to standards, use shielded cables, and ground the encoder shield. 4.Set the motor parameters correctly. 5.Sub-code 3 may be caused by motor stalling,Confirm whether the motor rotates after running,Eliminate stalling conditions. 6.Check if the encoder wiring is normal and if there are any loose or false connections.
		2	Encoder measured speed mismatch during closed-loop dynamic tuning	
		3	Encoder disconnected during closed-loop operation	
		9	Phase A wire break in ABZ encoder	
		8	Jog operation timeout	
		10	Phase B wire break in ABZ encoder	
		11	Phase A and B wire break in ABZ encoder	
		12	Phase Z wire break in ABZ encoder	
		13	Phase A and Z wire break in ABZ encoder	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
		14	Phase B and Z wire break in ABZ encoder	
		15	All-phase wire break in ABZ encoder	
		16	Communication encoder wire break	
15	Vector control stall alarm	1	Speed reversed by external force exceeding the set time (B06.59)	1.Reset parameters and run after parameter auto-tuning. 2.Reset encoder-related parameters. 3.Confirm the load characteristics and adjust the parameters in group B08; consider whether to replace with a higher-power motor based on the load conditions. 4.Set the detection parameters correctly.
		2	Excessive deviation between feedback speed and reference speed (B06.61) exceeding the set time (B06.60)	
16	FPGA read/write error	1	FPGA data read/write error	Replace the PM.
17	Drive power supply fault	1	Drive power supply fault	Replace the PM.
		3	Drive power supply fault during short-to-ground detection	
18	Primary power supply fault	1	24V primary power supply undervoltage	Replace the PM.
19	CM and PM communication	1	CM no response	1.Ensure a reliable connection between the CM and PM.
		2	CM no response	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
19	Communication fault	3	CM no response	2.Replace the CM. 3.Replace the PM.
		4	CM no response	
20	PM EEPROM fault	1	Write parameter count exceeds limit	If the fault persists after a power cycle, contact the manufacturer to replace the PM.
		2	Read parameter count exceeds limit	
		3	Single read timeout	
		4	Single write timeout	
		5	Read address out of bounds	
		6	Write address out of bounds	
21	PM model setting error	1	Model setting below minimum value	1.Set the correct model. 2.Replace the PM.
		3	Model setting exceeds maximum value	
22	Cycle-by-cycle current limiting fault	1	U-phase cycle-by-cycle current limiting fault	1.Increase the acceleration time. 2.Reset parameters and run after parameter auto-tuning. 3.If the overcurrent fault no longer occurs, continue to check the motor; if it persists, troubleshoot the drive hardware. 4.If the resistance to ground is zero or very low, contact the motor manufacturer to check the motor; for line-to-line resistance, mainly measure whether the three-phase resistance
		2	V-phase cycle-by-cycle current limiting fault	
		3	W-phase cycle-by-cycle current limiting fault	
		16	System fault	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
				es are approximately equal. 5.If the motor cable is damaged or short-circuited, separate the short-circuited cables and ensure reliable insulation. 6.Replace the PM.
23	Rectifier bridge overtemperature	1	Rectifier bridge temperature exceeds 90°C (detected only on 18.5kW and above models)	1.Remove foreign objects and disable the fan speed control function (B06.48=0). If the fan still does not rotate, contact the manufacturer to replace the fan. 2.Change to the correct model value. 3.Clean the air ducts. 4.Appropriately reduce the drive carrier frequency, open the electrical cabinet door for heat dissipation, and increase the airflow at the inlet and outlet of the cabinet. 5.Replace the PM.
24	STO fault	1	STO1 terminal at low level	1.Ensure the switch does not trigger the STO function. 2.Ensure reliable wiring or replace the wiring terminals. 3.Replace the 24V switching power supply. 4.Use a dedicated switching power
		2	STO2 terminal at low level	
		3	Both STO1 and STO2 terminals at low level	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
				supply to avoid interference caused by sharing the same power supply with other equipment. 5.Contact after-sales service or the manufacturer for technical support.
25	Braking transistor overtemperature	1	Braking transistor temperature exceeds 85°C (detected only on 45kW and above models)	1.Install a suitable braking resistor. 2.Remove foreign objects and disable the fan speed control function (B06.48=0). If the fan still does not rotate, contact the manufacturer to replace the fan. 3.Change to the correct model value. 4.Clean the air ducts. 5.Appropriately reduce the drive carrier frequency, open the electrical cabinet door for heat dissipation, and increase the airflow at the inlet and outlet of the cabinet. 6.Replace the PM.
26	Servo initial position error	1	UVW encoder initial position detection error	1.Confirm that the encoder parameters and cable connections are correct. 2.Route cables according to standards, use shielded cables, and ground the encoder shield;
		2	Absolute encoder communication fault	
		3	Absolute encoder initial position not calibrated	

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
26	Servo initial position error	4	Absolute encoder initial position detection timeout	reconnect or replace the encoder cable. 3.Switch to V/F mode. After clearing the fault, write the motor ID and perform zero calibration. 4.Calibrate the zero point to ensure the correct servo zero position; wire according to the correct motor phase sequence; set appropriate parameters to avoid excessive vibration during servo operation.
		5	Absolute encoder zero calibration data read/write error	
		6	Absolute encoder initial position calibration failure	
		8	Zero position identification error caused by incorrect motor power cable phase sequence	
		9	Motor runaway fault	
		10	Zero position identification error caused by motor stall	
33	Drive pre-overload (Warning)	1	Drive Overload Pre-warning	Troubleshooting: Refer to 5. Drive overload fault
34	Motor pre-overload (Warning)	1	Motor Overload Pre-Warning	Troubleshooting: Refer to 6. Motor overload fault.
		1	CM module communication with host PC interrupted during BONENG host PC control	① Check if the RS485-to-USB cable / USB cable is disconnected or damaged. ② Replace the RS485-to-USB cable /

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
35	Communication fault			USB cable and reconnect to see if communication can be established. ③ If communication still fails after replacing the cable, contact after-sales service or the manufacturer for technical support.
		2	CM module communication with OP keypad interrupted after OP keypad acquires local control	① Check if the CM module and OP keypad are loose; unplug and replug them to see if communication can be established. ② If the OP keypad is connected via an extension cable, check if the extension cable is loose or damaged. ③ Replace the OP keypad or CM module to see if communication can be established. If communication is restored after replacement, it indicates one of them is damaged; contact after-sales service or the manufacturer for technical support.
		3	No communication interaction within the time set by parameter C02.04 during Modbus control	① Check if the Modbus cable is disconnected or damaged. ② Check if the program of the corresponding PLC or controller is correct, and whether the communication interval is within the time set by parameter C02.04.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
35	Comm- unica- tion fault			③ Contact after-sales service or the manufacturer for technical support.
		5	CANopen communication disconnected	① Check if the master station is turned off. ② Check if the communication cable is disconnected or damaged, and if the connectors are loose. ③ Check the routing distance between the communication cable and high-voltage power cables; a separation of about 50 cm is required, and the drive equipment must be properly grounded. ④ Check if the communication cable length exceeds the maximum length supported by the baud rate; try reducing the baud rate, check if the cable impedance is 60Ω, and ensure the termination resistor is properly connected. ⑤ Contact after-sales service or the manufacturer for technical support.
		6	DriveLink communication fault	① Data reception timeout: Check if the data reception timeout time set by C08.31 is reasonable. (Setting C08.31 = 0 disables this fault.) ② Node setting conflict: Check the DriveLink node address set by parameter C08.03 for each drive to avoid duplicate addresses.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
35	Comm- unica- tion fault	7	PROFINET communication disconnected	① Check if it was caused by a previous PLC power failure. ② Check if the Ethernet cable is disconnected or damaged, and if the connectors are loose. Standard shielded PROFINET cables are recommended. Ensure the drive is properly grounded and the shield of the motor power cable is connected to the drive. ③ Check the maximum number of PROFINET slave stations supported by the PLC, and adjust the communication cycle accordingly. ④ When using IRT mode, ensure IRT devices are connected to the PLC first, RT devices are connected downstream of the IRT devices, and an IRT-supported switch is used. ⑤ Contact after-sales service or the manufacturer for technical support.
		10	EtherCAT communication fault	Connect to the PLC and check the prompt message in C06.06; contact after-sales service or the manufacturer based on the prompt message.
		8	EtherCAT communication: Un-	① Check if the configured startup parameter is an unsupported homing mode.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
36	Parameter setting error	8	supported homing mode set in object dictionary 0x6098	② Check if an unsupported homing mode is configured in the PLC homing configuration interface.
37	Motor overspeed	1	Motor actual speed exceeds motor maximum speed and is greater than the over-limit threshold set by B06.28 for the duration set by B06.29. (B06.28 is a percentage based on D00.06 motor maximum speed)	① Check if parameters B06.28/B06.29 are set too small, causing overly sensitive detection. ② Check if any external device is driving the motor to rotate. ③ Check if the motor parameters in parameter group D are set correctly. ④ Contact after-sales service or the manufacturer for technical support.
38	Excessive motor speed deviation	1	Deviation between motor actual speed and reference speed exceeds the value set by B06.30 for the duration set by B06.31	① Check if parameters B06.30/B06.31 are set too small, causing overly sensitive detection. ② Check if any external device is driving the motor to rotate, or if the motor load is too heavy. ③ Check if the brake operates normally and releases in time. ④ Contact after-sales service or the manufacturer for technical support.
			① Maximum allowed device time	① Power off the control and power sections of the drive, wait until all indica-

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
39	Power cycle required	1	reached ② A parameter requiring power cycle has been modified	tor lights or digital displays on the drive are completely off, and then power it on again. ② Contact after-sales service or the manufacturer for technical support.
		2	PROFINET communication-related parameters changed	① Power cycle the drive.
40	PID feedback loss	1	PID feedback data lost	① Check the PID feedback input signal. ② Contact after-sales service or the manufacturer for technical support.
41	External fault	1	External fault input signal active	① Check the external input signal.
		2	External fault input signal active	① Check the external input signal.
42	External warning (Warning)	1	External warning input signal active	① Check the external input signal.
		2	External warning input signal active	① Check the external input signal.
43	Gate drive failure	1	DC bus voltage not detected when run command is issued	① Check if the external power supply voltage is normal. ② Contact after-sales service or the manufacturer for technical support.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
44	Control board fault	1	ARM chip type identification error	① Power cycle the drive to see if it returns to normal. ② Firmware version x.11 (A02.00) or above is required. ③ Contact after-sales service or the manufacturer for technical support.
		2	ARM chip clock frequency configuration failure	① Power cycle the drive to see if it returns to normal. ② Contact after-sales service or the manufacturer for technical support.
		3	I/O board fault in control board	① The I/O board does not match the control board; replace the I/O board. ② The connection between the I/O board and the control board is abnormal; check the connection status.
45	Brake control fault	1	F04.00 set to 2: Brake with feedback enabled; after brake release completed and F04.01 brake release feedback detection time elapsed, F04.10 brake release feedback signal is low	① If no brake feedback circuit is connected, set F04.00 to brake without feedback. ② If a brake feedback circuit is connected, check if the circuit is wired correctly and if the brake operates normally. ③ The brake mechanical action time or brake feedback detection time is set too short, which is less than the actual time. ④ Contact after-sales service or the manufacturer for technical support.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
45	Brake control fault	2	F04.00 set to brake with feedback enabled; after brake engagement completed and F04.02 brake engagement feedback detection time elapsed, F04.10 brake release feedback signal is high	① If no brake feedback circuit is connected, set F04.00 to brake without feedback. ② If a brake feedback circuit is connected, check if the circuit is wired correctly and if the brake operates normally. ③ The brake mechanical action time or brake feedback detection time is set too short, which is less than the actual time. ④ Contact after-sales service or the manufacturer for technical support.
46	Control board voltage fault	1	PM 24V power supply overvoltage	① Measure if the PM 24V power supply voltage exceeds 30V. ② Contact after-sales service or the manufacturer for technical support.
		2	External 24V power supply overvoltage on CM board	① Check if the external power supply voltage exceeds 30V. ② Contact after-sales service or the manufacturer for technical support.
		3	PM or external 24V power supply undervoltage	① Check if the PM 24V or external 24V power supply voltage is below 17V. ② Contact after-sales service or the manufacturer for technical support.
		4	3.3V overvoltage	① Contact after-sales service or the manufacturer for technical support.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
		5	3.3V under-voltage	① Contact after-sales service or the manufacturer for technical support.
		6	Brake relay short circuit; current exceeds the value set by F04.15	① Check the brake relay circuit.
47	Motor temperature fault	1	① Motor temperature exceeds B06.40 motor overtemperature protection value. ② Motor temperature sensor not connected	① Check if the motor temperature is normal. ② Check if the motor overtemperature protection value set by B06.40 is reasonable. ③ Check if the thermistor is normal. ④ Contact after-sales service or the manufacturer for technical support.
		2	① Motor temperature sensor short-circuited ② Current motor temperature below -40°C	① Check if the temperature sensor wiring is normal. ② Replace the motor or the temperature sensor.
48	Motor temperature warning (Warning)	1	Motor temperature exceeds B06.41 motor overtemperature warning value	① Check if the motor temperature is normal. ② Check if the motor overtemperature warning value set by B06.41 is reasonable. ③ Check if the thermistor is normal.
			When AI0 type is set to 4–20 mA	① Check if the AI0 circuit is correct.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
49	AI wire-break fault	1	current is below the value set by A07.20 for the wire-break detection delay time set by A07.22	② Check if there is external current input. ③ Check if the value set by A07.20 is correct. ④ Contact after-sales service or the manufacturer for technical support.
		2	When AI1 type is set to 4–20 mA, current is below the value set by A07.21 for the wire-break detection delay time set by A07.23	① Check if the AI1 circuit is correct. ② Check if there is external current input. ③ Check if the value set by A07.21 is correct. ④ Contact after-sales service or the manufacturer for technical support.
50	Capacitor-side fan fault (Warning)	1	Capacitor-side fan fault	① Check if the capacitor-side fan is running normally. ② Contact after-sales service or the manufacturer for technical support.
51	ROM fault (CM EEPROM fault)	1	Parameter values stored in EEPROM out of valid range during power-on self-test	① If this fault occurs upon the first power-on after an upgrade, perform a full parameter reset and then power cycle the drive. ② Contact after-sales service or the manufacturer for technical support.
		2	ARM and EEPROM communication timeout	① Contact after-sales service or the manufacturer for technical support.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
51	ROM fault (CM EEPROM fault)	3	After up-grade, default values written to EEPROM; read-back verification error occurred. (Error count exceeds 5)	① Power cycle the drive; if the fault persists, there is an issue with the EEPROM component. ② Contact after-sales service or the manufacturer for technical support.
		4	EEPROM write count exceeds 1000	① Clear the fault.
		5	Font library version incorrect	① Flash the correct font library.
52	Excessive position deviation	1	Deviation between motor target position and actual position exceeds excessive position deviation threshold G03.03.	① Confirm if the motor brake is released during operation. ② Check if the speed limit and torque limit values are set too small. ③ Reduce the target speed and increase the acceleration/deceleration time. ④ Check if the motor load is too heavy. ⑤ Perform motor parameter auto-tuning to obtain more accurate motor parameters (not required for BONENG servo motors). ⑥ Adjust the control loop stiffness and set an accurate inertia ratio. ⑦ Contact after-sales service or the manufacturer for technical support.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
53	Excessive full closed-loop position deviation	1	Deviation between motor encoder and load encoder exceeds G05.08 full closed-loop excessive position threshold (in load encoder units)	① Check if the load-side encoder is working normally and installed securely. ② Check if the gear ratio in group G05 and the external encoder direction are correct. ③ Check if the load is too heavy; adjust the stiffness and set an accurate inertia ratio. ④ Contact after-sales service or the manufacturer for technical support.
54	Forward limit position reached (Warning)	1	Forward limit switch triggered	① Check if the forward limit is reached. If so, run in the reverse direction; the warning will auto-reset once the limit is no longer triggered. ② Check the forward limit wiring. ③ Contact after-sales service or the manufacturer for technical support.
55	Reverse limit position reached (Warning)	1	Reverse limit switch triggered	① Check if the reverse limit is reached. If so, run in the forward direction; the warning will auto-reset once the limit is no longer triggered. ② Check the reverse limit wiring. ③ Contact after-sales service or the manufacturer for technical support.
56		1	Drive enable signal lost during	① Ensure the drive is enabled during the execution of the motor posi-

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
56	Enable signal lost during positioning	1	motor position command execution	tion command. ② Check if the source of the enable signal is reliable. ③ Perform a fault reset.
57	Motor encoding error		If this fault occurs when using the RJ45 interface on the CM55 module, check this item first.	
			Drive I/O board RJ45 interface does not support this encoder; check the tens digit of P11.30 I/O board ID number	1: RJ45 interface supports BiSS-C/RS485 encoders. 0: RJ45 interface only supports RS485 encoders.
		1	No motor ID found in motor; encoder cable not properly connected.	① Set parameter A04.16 to the correct motor ID, and then perform encoder zero calibration. ② Check the encoder wiring or replace the motor. ③ Contact after-sales service or the manufacturer for technical support.
		2	4th and 5th digits from left in motor stored ID number are incorrect	① Check if the motor ID matches the motor power rating. ② After setting the correct motor ID, perform encoder zero calibration. ③ Contact after-sales service or the manufacturer for technical support.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
57	Motor encoding error	3	3rd digit in motor stored ID number is incorrect	① Check if the motor ID matches the motor frame size. ② After setting the correct motor ID, perform encoder zero calibration. ③ Contact after-sales service or the manufacturer for technical support.
		4	2nd digit from left in motor stored ID number is incorrect	① Check if the motor ID matches the actual encoder type. ② After setting the correct motor ID, perform encoder zero calibration.
		5	1st digit from left in motor stored ID number is incorrect	① Check if the motor is equipped with a brake, and write the correct motor ID. ② After setting the correct motor ID, perform encoder zero calibration.
58	Fixed stop outside monitoring window	1	Axis position outside monitoring window	① Confirm if the torque limit meets the requirements. ② Confirm if the monitoring window value set by G03.41 is too small. ③ Contact after-sales service or the manufacturer for technical support.
59	Fixed stop not reached (Confi	1	Target position travel completed, but fixed stop not found	① Confirm that the fixed stop is within the travel range of the given position command. ② Contact after-sales

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
	gurable as fault or warning)			service or the manufacturer for technical support.
60	Homing error	1	Homing time exceeds the limit set by G00.49	① Check if the home switch can be triggered normally. ② Ensure the homing speed can trigger the home position within the time limit. ③ Check if the homing time limit set by G00.49 is reasonable. ④ Contact after-sales service or the manufacturer for technical support.
61	Absolute encoder fault	1	Motor encoder signal fault	① Check if the encoder or encoder cable is subjected to external interference. ② Check if the encoder cable connection is abnormal.
		2	Motor encoder feedback speed exceeds the threshold set by D02.25 for consecutive times exceeding the value set by D02.26.	① Check if the encoder or encoder cable is subjected to external interference. ② Check if the threshold of D02.25 is set too small.
		3	External encoder feedback speed exceeds the threshold	① Check if the encoder or encoder cable is subjected to external interference.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
			set by D02.25 for consecutive times exceeding the value set by D02.26 after full closed-loop is enabled	② Check if the threshold of D02.25 is set too small.
63	Encoder battery voltage low (Warning)	1	Encoder battery voltage below alarm threshold (3.2V)	① Check if the battery wiring in the battery box is reliable. ② Ensure the battery voltage in the battery box is valid. ③ Replace the battery. ④ Contact after-sales service or the manufacturer for technical support.
64	Encoder battery failure	1	Encoder battery voltage below fault threshold (3.0V)	① Check the battery wiring or replace the battery. ② Set D02.21 to 1 to perform an encoder fault reset, and then power cycle the drive. The home position will be lost. If a home position is required, homing must be performed again. ③ Contact after-sales service or the manufacturer for technical support.
			Encoder multi-turn data overflow	① Manually clear the multi-turn count value (set D02.21 to 1) and power cycle the drive.

No.	Fault name	sub-code	Sub-code Description	Troubleshooting
65	Encoder multi-turn data error	1		The home position will be lost. If a home position is required, homing must be performed again. ② Contact after-sales service or the manufacturer for technical support.
		2	Fault triggered after drive is re-powered when both main power and backup power of multi-turn encoder were disconnected.	① Perform a fault reset. After the reset, the multi-turn value will be restored to its initial value (0 or ± 1), then power cycle the drive. If a home position is required, homing must be performed again. ② Contact after-sales service or the manufacturer for technical support.
66	Reference point not set	1	Home position not set when executing absolute positioning command	① Perform the homing operation to establish the home position. ② Contact after-sales service or the manufacturer for technical support.
67	Encoder device error	1	SSI encoder fault	① Check the SSI encoder wiring. ② Check the cause of the encoder fault bit according to the encoder documentation.

14 other

Note: The product will continue to improve, parameters and content may be modified, if necessary, please log in Boneng official website to download the latest information or contact the manufacturer.

Appendix 1 Pulse instruction input example

Example 1: Siemens S7-1200 controls CM55

(1) Siemens S7-1200 connects to CM55

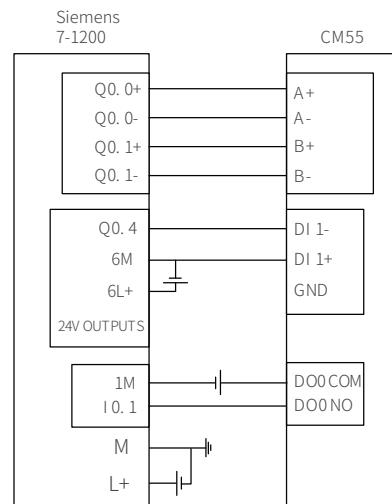


Figure 1 Connection diagram between the S7-1200 and the CM55

Note: In the figure, A+ and A- are pulse input terminals, B+ and B- are pulse direction input terminals, DI1+ and DI1- are servo enable terminals, DIO23 and X5-1:GND is the sending driver ready signal terminal, Function code A10.17 DIO23 as a DO signal source Select 4: Running.

(2) PLC configuration

a) Configure the PLC output pulse pattern by adding axes in the process object.

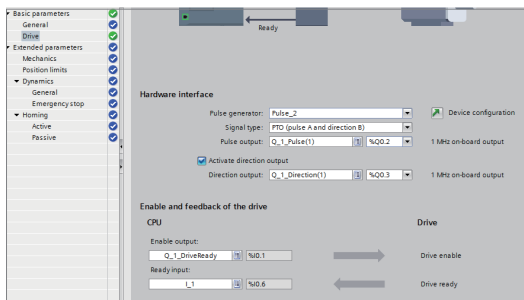


Figure 2 Configuration axis configuration diagram

Q0.4 is the start signal sent by PLC to CM55, and I0.1 is the driver ready signal sent by the driver to PLC.

b) Configure the number of motor pulses per turn.

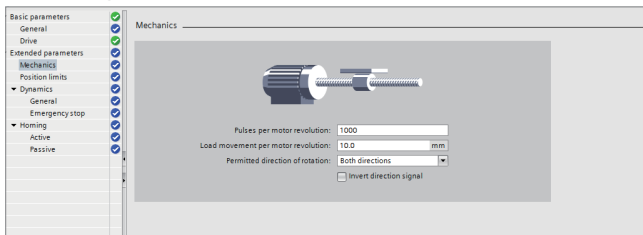


Figure 3 Configuration axis configuration diagram

If the CM55 host function code G00.04 ≠ 0. The number of pulses per revolution of the motor = G00.04 the number of position instructions for the motor to rotate 1 turn.

If CM55 host computer function code G00.04=0.

The number of pulses per turn = $\frac{\text{Encoder resolution}}{\text{G00.06 Electronic Gear ratio 1 (molecular)}} \times \text{G00.08 Electronic gear ratio 1 (denominator)}$

c) The CM55 drive is enabled using the MC_Power function block.

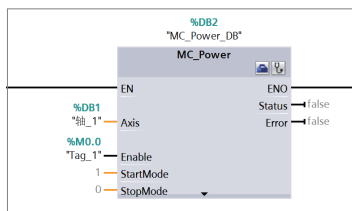


Figure 4 PLC function block configuration

d) Using MC_MoveRelative function block, PLC can send pulse to CM55.

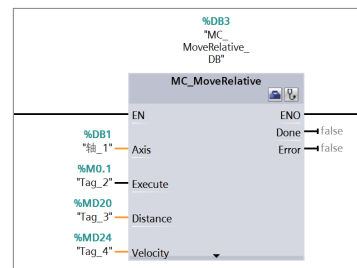


Figure 5 PLC function block configuration

Pulse command function configuration

Table 1 Pulse instruction function configuration table

Function code	Function code name	Function code set value
B00.00	Source of the start/stop control command	Terminal control module
B01.00	Terminal control command 1/2	Terminal control command 1
B01.01	Terminal control command 1 mode	IN1 start
B01.03	Terminal Control command 1 Enter IN1	DI1
G00.00	Location instruction source	Pulse command
G00.04	The number of position instructions for the motor to rotate 1 turn	500
G00.16	Command pulse pattern	Phase A + phase B, four times the frequency
G00.22	Motor rotation direction selection	The direction of CCW is positive

Appendix 2 Bus control instruction

profinet communication and ethercat communication related information and description.

See details https://www.boneng.com/product_AX.htm.

Appendix 3 Function codes

Function code	Name	Range	Factory value	Communication address	Unit
A: System status and Peripherals					
A00: Status Monitor and SET					
A00.00	Current state machine	S0: Uninitialized S1: Initialization S2: Power-on detection S3: Fault S4: Boot lock S5: Boot prepare S6: Pre-drive S7: Ready to run S8: Demagnetization waiting S9: Check before running S10: Pre-excitation S11: Speed search S12: Run S13: OFF1 downtime S14: OFF3 downtime S15: Start DC braking S16: Self-test preparation S17: Self-test S18: Identification preparation S19: Identify S20: Restore factory defaults S21: Parameter download S22: Jog operation S23: Jog stop S24: Running allows downtime S25: DC braking at stop S26: Downtime DC braking waiting	0	0x2000	-

Function code	Name	Range	Factory value	Communication address	Unit
		S27: Fault shutdown S28: Motor parameter calculation S29: Speed torque control switching S30: Antipyretic wait			
A00.01	Target frequency	-327.68 ~327.67	0.00	0x2001	Hz
A00.02	Given frequency	-327.68 ~327.67	0.00	0x2002	Hz
A00.03	Motor frequency	-327.68 ~327.67	0.00	0x2003	Hz
A00.04	Target speed	-32768 ~32767	0	0x2004	rpm
A00.05	Given speed	-32768 ~32767	0	0x2005	rpm
A00.06	Motor rotating speed	-32768 ~32767	0	0x2006	rpm
A00.07	Output voltage	0~380.0	0	0x2007	V
A00.08	Output current	0~6553.5	0.00	0x2008	A
A00.09	Output power	0~655.35	0.00	0x2009	kW
A00.10	Torque mode Set torque	0~300.00	0.0	0x200a	%
A00.11	Output torque	0~300.00	0.0	0x200b	%
A00.14	DC bus voltage	0~1000.0	0.0	0x200e	V
A00.15	Radiator temperature	-40~150	0	0x200f	°C
A00.16	DI state	0~65535	0x00	0x2010	-
A00.17	DO state	0~65535	0x00	0x2011	-

Function code	Name	Range	Factory value	Communication address	Unit
A00.18	Rectifier bridge temperature	0~120	0	0x2012	°C
A00.19	Synchronize frequency	-327.68~327.67	0.00	0x2013	Hz
A00.20	Encoder frequency	-327.68~327.67	0.00	0x2014	Hz
A00.21	Current POS FDK (instruction)	-32768~32767	0	0x2015	p
A00.22	Brake tube temperature	-32768~32767	0	0x2016	°C
A00.25	Custom display 1	0:0 Others:Analog interconnection parameters	0	0x2019	-
A00.26	Custom display 2	-32768~32767	0	0x201a	-
A00.27	Custom display 3	0~65535	0	0x201b	-
A00.28	Custom display 4	-32768~32767	0	0x201c	-
A00.41	Select 1 for startup display	0:Current state machine 1:Target frequency	1	0x2029	-
A00.42	Select 2 for startup display	2:Given frequency	3	0x202a	-
A00.43	Select 3 for startup display	3:Motor frequency 4:Target speed	8	0x202b	-
A00.44	Select 4 for startup display	5:Given speed 6:Motor rotating speed	11	0x202c	-
A00.45	Select 5 for startup display	7:Output voltage 8:Output current	14	0x202d	-

Function code	Name	Range	Factory value	Communication address	Unit
A00.46	Select 6 for startup display	9:Output power 10:Given torque 11:Output torque 12:System reservation 13:System reservation 14:DC bus voltage 15:Radiator temperature 16:DI state 17:DO state 18:Rectifier bridge temperature 19:Synchronize frequency 20:Encoder frequency 21:Rsvd. 22:Rsvd. 23:Rsvd. 24:Rsvd. 25>User defined 1 26>User defined 2 27>User defined 3 28>User defined 4	9	0x202e	-
A00.50	User-defined 1 Data source	0:0 Others:Analog interconnection parameters	0	0x2032	-
A00.51	User-defined 2 Data source		0	0x2033	-
A00.52	User-defined 3 Data source		0	0x2034	-
A00.53	User-defined 4 Data source		0	0x2035	-

Function code	Name	Range	Factory value	Communication address	Unit
A01:Reservation					
A01.00	Current fault code 1	0:No fault 1:OverCurr 2:DC OverV 3:DC UnderV 4:Speed match fail 5:Driver over-load 6:Motor over-load 7:Input phase loss 8:Output phase loss 9:Driver over-heat 10:PWM wave warn 11:Zero-Crossing Err 12:Ground short 13:Motor tune fault 14:Enc fault 15:Vector stall alarm 16:FPGA read/write Err 17:Low power SUP voltage 18:Primary power fault 19:CM-PM-Comm fault 20:PM-EEPROM fault 21:PM model setting Err 22:WbW current limiting fault 23:Bridge over-heat 24:STO fault	0	0x2100	-

Function code	Name	Range	Factory value	Communication address	Unit
A01.00	Current fault code 1	25:Brake coil overheat 26:Servo initial POS Err 27:PM fault 27 28:PM fault 28 29:PM fault 29 30:PM fault 30 31:PM fault 31 32:PM fault 32 33:Drive pre-overload 34:Motor pre-overload 35:Communication Fault 36:Parameter set Fault 37:Mot speed overlimit 38:Mot speed Dev large 39:Power reset 40:PID Feed Loss 41:ExtFault 42:ExtWarn 43:Pre-drive failure 44:CM anomaly 45:Brake control fault 46:Control board Volt warn 47:Mot TEMP fault 48:Mot TEMP warn 49:AI line break fault 50:Cap fan fault 51:CM-EEPROM fault 52:POS Dev too large	0	0x2100	-

Function code	Name	Range	Factory value	Communication address	Unit
A01.00	Current fault code 1	53:Full closed-loop POS Dev too large 54:Reached POS limit POS 55:Reached negative limit POS 56:Enabled loss during positioning 57:Mot coding Err 58:Fixed stop outside of monitor window 59:Fixed stop not reach 60:Homing error 61:ABS ENC warn 62:Brak R overheat 63:Low Enc battery V 64:Enc battery fault 65:Enc multi-turn Overf 66:Reference point not set 67:Encoder device error	0	0x2100	-
A01.01	Current fault code 1 subcode	0~65535	0	0x2101	-
A01.02	Current fault code 2	0 ~ 67: indicates the fault code number	0	0x2102	-
A01.03	Current fault code 2 subcode	0~65535	0	0x2103	-
A01.04	Current fault code 3	0 ~ 67: indicates the fault code number	0	0x2104	-

Function code	Name	Range	Factory value	Communication address	Unit
A01.05	Current fault code 3 subcode	0~65535	0	0x2105	-
A01.06	Current fault code 4	0 ~ 67: indicates the fault code number	0	0x2106	-
A01.07	Current fault code 4 subcode	0~65535	0	0x2107	-
A01.08	Current fault code 5	0 ~ 67: indicates the fault code number	0	0x2108	-
A01.09	Current fault code 5 subcode	0~65535	0	0x2109	-
A01.10	Current fault code 6	0 ~ 67: indicates the fault code number	0	0x210a	-
A01.11	Current fault code 6 subcode	0~65535	0	0x210b	-
A01.12	Current warning code 1	0 ~ 67: indicates the warning code number	0	0x210c	-
A01.13	Current warning code 1 subcode	0~65535	0	0x210d	-
A01.14	Current warning code 2	0 ~ 67: indicates the warning code number	0	0x210e	-
A01.15	Current warning code 2 subcode	0~65535	0	0x210f	-
A01.16	Current warning code 3	0 ~ 67 indicates the warning code number	0	0x2110	-
A01.17	Current warning code 3 subcode	0~65535	0	0x2111	-
A01.18	Current warning code 4	0 ~ 66: indicates the warning code number	0	0x2112	-

Function code	Name	Range	Factory value	Communication address	Unit
A01.19	Current warning code 4 subcode	0~65535	0	0x2113	-
A01.20	Current warning code 5	0 ~ 67: indicates the warning code number	0	0x2114	-
A01.21	Current warning code 5 subcode	0~65535	0	0x2115	-
A01.22	Current warning code 6	0 ~ 67: indicates the warning code number	0	0x2116	-
A01.23	Current warning code 6 subcode	0~65535	0	0x2117	-
A02:Drive Information					
A02.00	CM-ARM software version number	0.00~655.35	0.00	0x2200	-
A02.01	CM-FPGA version number	0.00~655.35	0.00	0x2201	-
A02.02	PM-DSP software version number	0.00~655.35	0.00	0x2202	-
A02.03	PM-FPGA version number	0.00~655.35	0.00	0x2203	-
A02.04	PM power unit rated power	0.00~655.35	0.00	0x2204	kW
A02.06	PM power unit rated current	0.00~655.35	0.00	0x2206	A
A02.07	Function code version number	0.00~655.35	0.00	0x2207	-
A02.08	CM version release time	0~65535	0x00	0x2208	-

Function code	Name	Range	Factory value	Communication address	Unit
A02.09	Speed ring version number	0.00~655.35	0.00	0x2209	-
A03:Drive configuration and protection					
A03.08	CF setting	0:1KHz 1:2KHz 2:4KHz 3:6KHz 4:8KHz	2	0x2308	-
A03.09	Load mode selection	0: Light load 1: Overload	0	0x2309	-
A03.13	DPWM switching frequency	0.0Hz~600.0Hz	8.00	0x230d	Hz
A03.16	DT compensation enable	0:Forbidden 1:Dead time compensation method 1 2:Dead time compensation method 2	1	0x2310	-
A03.17	Per-wave current limit enable	0:Forbidden 1:Enable	1	0x2311	-
A03.19	Input phase loss detection	0:Forbidden 1:Enable	0	0x2313	-
A03.20	Braking resistor operating point	60.0%~100.0%	700.0	0x2314	V
A03.21	Software undervoltage point	85.0%~150.0%	100	0x2315	%
A03.28	STO security function	0:Disable 1:Enable	0	0x231c	-
A04:System and Environment SET					
		0:Invalid 1:Model parameters, motor parameters,			

Function code	Name	Range	Factory value	Communication address	Unit
A04.00	Parameter reset mode	fault record no longer 2:Motor parameters, fault record no longer 3:All parameters reset to factory 4:Clear record parameters	0	0x2400	-
A04.01	Parameter reset	0:Cancel 1:Confirm	0	0x2401	-
A04.02	Parameter access level	0:Common parameters 1:Extension parameters 2:Experts parameters 3:Manufacturer of parameters	0	0x2402	-
A04.03	Manufacturer of password	0~65535	0	0x2403	-
A04.05	Motor select source 0	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd.	0	0x2405	-
A04.06	Motor select source 1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5	0	0x2406	-

Function code	Name	Range	Factory value	Communication address	Unit
		8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters			
A04.10	Keyboard control prohibited	0:Forbidden 1:Enable	0	0x240a	-
A04.11	User password	0~65535	0	0x240b	-
A04.14	Drive mode selection	0:Frequency conversion mode 1:Servo mode	1	0x240e	-
A04.16	Set servo motor ID	0~29199	0	0x2410	-
A04.17	Servo motor storage ID	0~65535	0	0x2411	-
A04.30	System reservation	0	0	0x241e	-
A04.31	System reservation	0	0	0x241f	-
A04.32	System reservation	0	0	0x2420	-
A05:Digital Input					
A05.00	DI physical state value	0x0~0xFFFF	0x00	0x2500	-
A05.02	Status value after DI processing	0x0~0xFFFF	0x00	0x2502	-
A05.04	DI forced function selection	0x0~0xFFFF	0x00	0x2504	-
A05.06	DI force select value	0x0~0xFFFF	0x00	0x2506	-
A05.08	DI0 turn-on delay	0.0~6553.5	0.00	0x2508	s
A05.09	DI0 off delay	0.0~6553.5	0.00	0x2509	s
A05.10	DI1 turn-on delay	0.0~6553.5	0.00	0x250a	s
A05.11	DI1 off delay	0.0~6553.5	0.00	0x250b	s

Function code	Name	Range	Factory value	Communication address	Unit
A05.12	DI2 turn-on delay	0.0~6553.5	0.00	0x250c	s
A05.13	DI2 off delay	0.0~6553.5	0.00	0x250d	s
A05.14	DI3 turn-on delay	0.0~6553.5	0.00	0x250e	s
A05.15	DI3 off delay	0.0~6553.5	0.00	0x250f	s
A05.16	DI4 turn-on delay	0.0~6553.5	0.00	0x2510	s
A05.17	DI4 off delay	0.0~6553.5	0.00	0x2511	s
A05.18	DI5 turn-on delay	0.0~6553.5	0.00	0x2512	s
A05.19	DI5 off delay	0.0~6553.5	0.00	0x2513	s
A05.20	DI6 turn-on delay	0.0~6553.5	0.00	0x2514	s
A05.21	DI6 off delay	0.0~6553.5	0.00	0x2515	s
A05.22	DI7 turn-on delay	0.0~6553.5	0.00	0x2516	s
A05.23	DI7 off delay	0.0~6553.5	0.00	0x2517	s
A05.24	DI8 turn-on delay	0.0~6553.5	0.00	0x2518	s
A05.25	DI8 off delay	0.0~6553.5	0.00	0x2519	s
A05.26	DI9 turn-on delay	0.0~6553.5	0.00	0x251a	s
A05.27	DI9 off delay	0.0~6553.5	0.00	0x251b	s
A05.28	DI10 turn-on delay	0:Active low 1:Active high 2:Rising edge effectiveness 3:Falling edge effectiveness	0.00	0x251c	s
A05.29	DI10 turn-off delay	4:Both rising and falling edges are valid	0.00	0x251d	s
A06:Digital Output					
A06.00	DO signal source status value	0x0~0xFFFF	0x00	0x2600	-
A06.01	Status value after DO processing	0x0~0xFFFF	0x00	0x2601	-

Function code	Name	Range	Factory value	Communication address	Unit
A06.02	DO0 output function selection	0:Low level 1:High level 2:Ready to run 3:Run allowed 4:Running 5:Arrival of comparison value 6:Speed is negative 7:Run at zero speed 8:Overspeed 9:Warn 10:Fault Others:Binary interconnection parameters	4	0x2602	-
A06.09	DO0 turn-on delay	0.0~6553.5	0.00	0x2609	s
A06.10	DO0 turn-off delay	0.0~6553.5	0.00	0x260a	s
A07:Analog Input					
A07.00	AI0 input value	- 20.000 ~20.000	0.000	0x2700	-
A07.01	AI0 input scale	- 600.0% ~600.0%	0.0	0x2701	%
A07.04	AI0 type	0:-10~10V 1:0~10V 2:-20~20mA 3:0~20mA 4:4~20mA	0	0x2704	-
A07.06	AI0 curve minimum input value	- 20.000 ~20.000	-10.000	0x2706	-
A07.07	AI0 curve minimum input ratio	- 600.0% ~600.0%	-100.0	0x2707	%
A07.08	AI0 curve maximum input value	-20.000 ~20.000	10.000	0x2708	-

Function code	Name	Range	Factory value	Communication address	Unit
A07.09	AI0 curve maximum input ratio	- 600.0% ~600.0%	100.0	0x2709	%
A07.14	AI below MIN input setting SEL	0:Minimum input scale 1:0.0%	0	0x270e	-
A07.15	AI0 filter time	0~10000	10	0x270f	ms
A07.19	AI zero-crossing threshold	0.0%~1.0%	0.5	0x2713	%
A07.20	AI0 DCN detection threshold	0~4.000mA	0.000	0x2714	mA
A07.22	AI0 DCN detection delay	0~1.00s	0.00	0x2716	s
A07.24	AI DCN detection enable	0:Forbidden 1:Enable	0	0x2718	-
A08:Reservation					
A09:Pulse Input					
A09.30	Incr-encoder count clear SELE	0:Disable 1:Enable Others:Binary interconnection parameters	0	0x291e	-
A10:BI Digital Input and Output					
A10.00	DIO20 function configuration	0:Digital input 1:Digital output	0	0x2a00	-
A10.01	DIO21 function configuration		0	0x2a01	-
A10.02	DIO22 function configuration		0	0x2a02	-
A10.03	DIO23 function configuration		0	0x2a03	-

Function code	Name	Range	Factory value	Communication address	Unit
A10.04	DIO24 function configuration	0:Digital input 1:Digital output	0	0x2a04	-
A10.05	DIO25 function configuration		0	0x2a05	-
A10.06	DIO26 function configuration		0	0x2a06	-
A10.07	DIO27 function configuration		0	0x2a07	-
A10.10	DIO as DI physical state value	0x00~0xFFFF	0x00	0x2a0a	-
A10.11	SV after DIO is processed as DI	0x00~0xFFFF	0x00	0x2a0b	-
A10.02	DIO as DI mandatory function SEL	0x00~0xFFFF	0x00	0x2a0c	-
A10.03	DIO as DI mandatory value	0x00~0xFFFF	0x00	0x2a0d	-
A10.14	DIO20 is selected as DO SS	0:Low level 1:High level 2:Ready to run 3:Run allowed 4:Running 5:Arrival of comparison value 6:Speed is negative 7:Run at zero speed 8:Overspeed 9:Warn 10:Fault Others:Binary interconnection parameters	0	0x2a0e	-
A10.15	DIO21 is selected as DO SS		0	0x2a0f	-
A10.16	DIO22 is selected as DO SS		0	0x2a10	-
A10.17	DIO23 is selected as DO SS		0	0x2a11	-
A10.18	DIO24 is selected as DO SS		0	0x2a12	-

Function code	Name	Range	Factory value	Communication address	Unit
A10.19	DIO25 is selected as DO SS		0	0x2a13	-
A10.20	DIO26 is selected as DO SS		0	0x2a14	-
A10.21	DIO27 is selected as DO SS		0	0x2a15	-
A10.24	DIO as DO SS status value	0x00~0xFFFF	0x00	0x2a18	-
A10.25	DIO as SV after DO processing	0x00~0xFFFF	0x00	0x2a19	-
A10.26	DIO20 activation delay time	0.00~655.35	0.00	0x2a1a	s
A10.27	DIO20 turn-off delay time	0.00~655.35	0.00	0x2a1b	s
A10.28	DIO21 activation delay time	0.00~655.35	0.00	0x2a1c	s
A10.29	DIO21 turn-off delay time	0.00~655.35	0.00	0x2a1d	s
A10.30	DIO22 activation delay time	0.00~655.35	0.00	0x2a1e	s
A10.31	DIO22 turn-off delay time	0.00~655.35	0.00	0x2a1f	s
A10.32	DIO23 activation delay time	0.00~655.35	0.00	0x2a20	s
A10.33	DIO23 turn-off delay time	0.00~655.35	0.00	0x2a21	s
A10.34	DIO24 activation delay time	0.00~655.35	0.00	0x2a22	s

Function code	Name	Range	Factory value	Communication address	Unit
A10.35	DIO24 turn-off delay time	0.00~655.35	0.00	0x2a23	s
A10.36	DIO25 activation delay time	0.00~655.35	0.00	0x2a24	s
A10.37	DIO25 turn-off delay time	0.00~655.35	0.00	0x2a25	s
A10.38	DIO26 activation delay time	0.00~655.35	0.00	0x2a26	s
A10.39	DIO26 turn-off delay time	0.00~655.35	0.00	0x2a27	s
A10.40	DIO27 activation delay time	0.00~655.35	0.00	0x2a28	s
A10.41	DIO27 turn-off delay time	0.00~655.35	0.00	0x2a29	s
B:Control parameters					
B00:System Ctrl and SET					
B00.00	Start-stop Ctrl command source	0:Terminal control module 1:Custom control module	1	0x3000	-
B00.01	Custom start/stop CMD (OFF1) SRC	0:Invalid 1:Rsvd. 2:DIO 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3001	-

Function code	Name	Range	Factory value	Communication address	Unit
B00.02	Custom Enable (OFF2) SRC 1	0:Valid 1:Invalid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	1	0x3002	-
B00.03	Custom Quick stop (OFF3)SRC 1	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1	0x3003	-
B00.04	Custom run allowed origins	0:Run not allowed 1:Run allowed 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1	0x3004	-
B00.05	Custom fault reset source 1	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x3005	-
B00.06	Custom speed command negate SRC	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3006	-

Function code	Name	Range	Factory value	Communication address	Unit
B00.07	Custom JOG1 source	0:Invalid 1:Rsvd. 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5	0	0x3007	-
B00.08	Custom JOG2 source	8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3008	-
B00.09	OFF2 source 2	0:Valid 1:Invalid 2:DI0 3:DI1	1	0x3009	-
B00.10	OFF2 source 3	4:DI2 5:DI3 6:DI4	1	0x300a	-
B00.11	OFF3 source 2	7:DI5 8:DI6 9:DI7 10:Rsvd.	1	0x300b	-
B00.12	OFF3 source 3	Others:Binary interconnection parameters	1	0x300c	-
B00.13	Fault reset source 2	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x300d	-
B00.14	Fault reset source 3	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x300e	-

Function code	Name	Range	Factory value	Communication address	Unit
B00.07	Custom JOG1 source	0:Invalid 1:Rsvd. 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x3007	-
B00.08	Custom JOG2 source	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3008	-
B00.09	OFF2 source 2	0:Valid 1:Invalid 2:DI0 3:DI1	1	0x3009	-
B00.10	OFF2 source 3	4:DI2 5:DI3 6:DI4	1	0x300a	-
B00.11	OFF3 source 2	7:DI5 8:DI6 9:DI7	1	0x300b	-
B00.12	OFF3 source 3	10:Rsvd. Others:Binary interconnection parameters	1	0x300c	-
B00.13	Fault reset source 2	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x300d	-
B00.14	Fault reset source 3	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x300e	-

Function code	Name	Range	Factory value	Communication address	Unit
B00.15	RFG inhibit source	0:RFG prohibition in valid 1:RFG prohibition is invalid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1	0x300f	-
B00.16	RFG pause source	0:RFG suspension in valid 1:RFG suspension is invalid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1	0x3010	-
B00.17	RFG sets the position to 0 SRC	0:RFG given set to 0 is valid 1:RFG given set to 0 is invalid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1	0x3011	-

Function code	Name	Range	Factory value	Communication address	Unit
B00.21	Identification request	0:None 1:Simple Static Identification of Asynchronous Machines 2:Static complete identification of asynchronous machines 3:Dynamic complete identification of asynchronous machines 4~10:Rsvd. 11:Synchronous machine without encoder identification 12:Synchronous machine belt encoder identification 13~19:Rsvd. 20:Inertia identification 21:Encoder zero correction	0	0x3015	-
B00.22	JOG method selection	0:Speed jog 1:Position jog	0	0x3016	-
B00.23	OFF1 stop mode	0: Free stop 1: Decelerate to stop	1	0x3017	-
B00.24	OFF3 down-time	0.0s~1000.0s	1.0	0x3018	s
B00.25	OFF3 stop mode	0: Decelerate to stop 1: Maximum capacity shutdown (Rsvd.)	0	0x3019	-

Function code	Name	Range	Factory value	Communication address	Unit
B01:Terminal Control Module					
B01.00	Terminal Ctrl command 1/2 SEL	0:Terminal control command 1 1:Terminal control command 2 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3100	-
B01.01	Terminal control command 1 mode	0:Invalid 1:IN1 starts 2:IN1 start, IN2 direction 3:IN1 starts forward, IN2 starts reverse 4:IN1P starts, IN2 stops 5:IN1P start, IN2 stop, IN3 direction 6:IN1P starts forward, IN2P starts reverse, IN3 stops	1	0x3101	-
B01.03	Terminal Ctrl command 1 input 1	0:Invalid 1:Rsvd. 2:DI0 3:DI1 4:DI2	0	0x3103	-
B01.04	Terminal Ctrl command 1 input 2	5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd.	0	0x3104	-
B01.05	Terminal Ctrl command 1 input 3	Others:Binary interconnection parameters	0	0x3105	-

Function code	Name	Range	Factory value	Communication address	Unit
B01.06	Terminal control command2 mode	0:Invalid 1:IN1 starts 2:IN1 start, IN2 direction 3:IN1 starts forward, IN2 starts reverse 4:IN1P starts, IN2 stops 5:IN1P start, IN2 stop, IN3 direction 6:IN1P starts forward, IN2P starts reverse, IN3 stops	0	0x3106	-
B01.08	Terminal Ctrl command 2 input 1	0:Invalid 1:Rsvd.	0	0x3108	-
B01.09	Terminal Ctrl command 2 input 2	2:DI0 3:DI1 4:DI2	0	0x3109	-
B01.10	Terminal Ctrl command 2 input 3	5:DI3 6:DI4 7:DI5 8:DI6	0	0x310a	-
B01.11	Terminal Ctrl module JOG1 SRC	9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x310b	-
B01.12	Terminal Ctrl module JOG2 SRC		0	0x310c	-
B02:Setting of speed and torque setpoints					
B02.00	Speed control Main speed SEL	0:0 1:Multi-stage setting value 1 2:AIO	1	0x3200	-
B02.01	Speed Ctrl AUX speed SEL	3:Rsvd. 4:Rsvd. 5:Rsvd.	0	0x3201	-
B02.02	Append speed given selection	6:Multi-segment value given 7:Electric potentiometer	0	0x3202	-

Function code	Name	Range	Factory value	Communication address	Unit
		8:Rsvd. 9:Bus Adapter A-PZD2 10:Rsvd. Others:Analog interconnection parameters			
B02.03	Torque Ctrl torque setting SEL	0:0 1:Multi-stage setting value 2 2:AIO 3:Rsvd. 4:Rsvd. 5:Rsvd. 6:Multi-segment value given 7:Electric potentiometer 8:Rsvd. 9:Bus Adapter A-PZD3 10:Bus Adapter B-PZD3 Others:Analog interconnection parameters	0	0x3203	-
B02.04	Torque Ctrl ramp time	0~10.00	0.00	0x3204	s
B02.05	Torque Ctrl filtering time	0~10.00	0.00	0x3205	s
B02.06	Torque Ctrl forward speed limit	0:0 1:Multi-stage setting value 1 2:AIO 3:Rsvd. 4:Rsvd. 5:Rsvd.	2101	0x3206	-
B02.07	Torque Ctrl reverse speed limit	6:Multi-segment value given 7:Electric potentiometer 8:Rsvd. 9:Bus Adapter	2105	0x3207	-

Function code	Name	Range	Factory value	Communication address	Unit
		A-PZD2 10:Rsvd. Others:Analog interconnection parameters			
B02.08	Torque Ctrl the speed ramp time	0~10.00	0.00	0x3208	s
B02.09	Additional torque source	0:0 1:Digital setting Others:Analog interconnection parameters	0	0x3209	-
B02.10	Additional torque fixed value	- 400.0% ~400.0%	0.0	0x320a	%
B03:Others of Command SRC SET					
B03.00	JOG1 given setting	0:0 1:Multi-stage setting value 1 2:AIO 3:Rsvd. 4:Rsvd. 5:Rsvd. 6:Multi-segment value given	1	0x3300	-
B03.01	JOG2 given setting	7:Electric potentiometer 8:Rsvd. 9:Bus Adapter A-PZD2 10:Rsvd. Others:Analog interconnection parameters	2328	0x3301	-
B03.02	JOG acceleration time	0.0~1000.0	10.0	0x3302	s
B03.03	JOG deceleration time	0.0~1000.0	10.0	0x3303	s
B03.04	Electric potentiometer function	0:Forbidden 1:Power-down clear	1	0x3304	-

Function code	Name	Range	Factory value	Communication address	Unit
B03.05	Electric POT initial value	-600.0~600.0	0.0	0x3305	%
B03.06	Electric POT ramp time	0.0~1000.0	10.0	0x3306	s
B03.07	Minimum value of electric POT	-600.0~600.0	0.0	0x3307	%
B03.08	Maximum value of electric POT	-600.0~600.0	100.0	0x3308	%
B03.09	Electric POT adds source SEL	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3309	-
B03.10	SEL of drop SRC of ELEC POT		0	0x330a	-
B03.11	Multisegment given value	-600.0~600.0	0.0	0x330b	%
B03.12	Multisegment given value SEL 1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x330c	-
B03.13	Multisegment given value SEL 2		0	0x330d	-
B03.14	Multisegment given value SEL 3		0	0x330e	-
B03.15	Multisegment given value SEL 4		0	0x330f	-

Function code	Name	Range	Factory value	Communication address	Unit
B03.16	Multisegment set point 1	-600.0~600.0	10.0	0x3310	%
B03.17	Multisegment set point 2	-600.0~600.0	40.0	0x3311	%
B03.18	Multisegment set point 3	-600.0~600.0	70.0	0x3312	%
B03.19	Multisegment set point 4	-600.0~600.0	100.0	0x3313	%
B03.20	Multisegment set point 5	-600.0~600.0	-10.0	0x3314	%
B03.21	Multisegment set point 6	-600.0~600.0	-40.0	0x3315	%
B03.22	Multisegment set point 7	-600.0~600.0	-70.0	0x3316	%
B03.23	Multisegment set point 8	-600.0~600.0	-100.0	0x3317	%
B03.24	Multisegment set point 9	-600.0~600.0	0.0	0x3318	%
B03.25	Multisegment set point 10	-600.0~600.0	0.0	0x3319	%
B03.26	Multisegment set point 11	-600.0~600.0	0.0	0x331a	%
B03.27	Multisegment set point 12	-600.0~600.0	0.0	0x331b	%
B03.28	Multisegment set point 13	-600.0~600.0	0.0	0x331c	%
B03.29	Multisegment set point 14	-600.0~600.0	0.0	0x331d	%

Function code	Name	Range	Factory value	Communication address	Unit
B03.30	Multisegment set point 15	-600.0~600.0	0.0	0x331e	%
B03.31	Multisegment set point 16	-600.0~600.0	0.0	0x331f	%
B04:Ramp Function Generator					
B04.00	RFG ramp time selection Bit0	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x3400	-
B04.01	RFG ramp time selection Bit1		0	0x3401	-
B04.02	RFG ramp-up time setpoint 1	0.0~1000.0	5.0	0x3402	s
B04.03	RFG ramp-down time setpoint 1	0.0~1000.0	5.0	0x3403	s
B04.04	RFG ramp-up time setpoint 2	0.0~1000.0	5.0	0x3404	s
B04.05	RFG ramp-down time setpoint 2	0.0~1000.0	5.0	0x3405	s
B04.06	RFG ramp-up time setpoint 3	0.0~1000.0	5.0	0x3406	s
B04.07	RFG ramp-down time setpoint 3	0.0~1000.0	5.0	0x3407	s
B04.08	RFG ramp-up time setpoint 4	0.0~1000.0	5.0	0x3408	s

Function code	Name	Range	Factory value	Communication address	Unit
B04.09	RFG ramp-down time setpoint 4	0.0~1000.0	5.0	0x3409	s
B04.10	RFG initial rounding-off time 1	0.00~20.00	0.00	0x340a	s
B04.11	RFG final rounding-off time 1	0.00~20.00	0.00	0x340b	s
B04.12	RFG initial rounding-off time 2	0.00~20.00	0.00	0x340c	s
B04.13	RFG final rounding-off time 2	0.00~20.00	0.00	0x340d	s
B04.14	RFG initial rounding-off time 3	0.00~20.00	0.00	0x340e	s
B04.15	RFG final rounding-off time 3	0.00~20.00	0.00	0x340f	s
B04.16	RFG initial rounding-off time 4	0.00~20.00	0.00	0x3410	s
B04.17	RFG final rounding-off time 4	0.00~20.00	0.00	0x3411	s
B04.20	RFG forced output enable	0:Invalid 1:Valid 2~9:DI0~DI7 10:rsvd Others:Binary interconnection parameters	0	0x3414	-
B04.21	RFG Mandatory Setpoint	0:0 Others:Binary interconnection parameters	0	0x3415	-
B04.22	RFG start delay time	0.0~1000.0	0.0	0x3416	s

Function code	Name	Range	Factory value	Communication address	Unit
B04.23	RFG output filter time	0.00~10.00	0.00	0x3417	s
B04.40	Slope acceleration time source	0:Ramp-up time fixed setpoint Others:Analog interconnection parameters	0	0x3428	-
B04.41	Slope deceleration time source	0:Ramp-down time fixed setpoint Others:Analog interconnection parameters	0	0x3429	-
B05:Motor Control Selection					
B05.00	Motor control method	0:VF 1:SVC 2:FVC	0	0x3500	-
B05.01	System control mode	0:Speed control 1:Torque control 2:Position control 3:Rsvd. 4:Torque control<->Speed control 5:Speed control<->Position control 6:Torque control<->Position control	0	0x3501	-
B05.02	Positive speed allowed	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd.	1	0x3502	-
B05.03	Negative speed allowed	Others:Binary interconnection parameters	1	0x3503	-

Function code	Name	Range	Factory value	Communication address	Unit
B05.04	Motor start method	0:Direct start 1:Pre-excitation start 2:Speed tracking starts 3: DC braking start	0	0x3504	-
B05.06	Pre-excitation time setting	0.00s~100.00s	0.00	0x3506	s
B05.09	DC braking current	0.0%~100.0% (100.0% corresponds to the rated current of the motor)	50.0	0x3509	%
B05.10	DC braking time at startup	0.00s~100.00s	0.00	0x350a	s
B05.11	DC braking time at stop	0.00s~100.00s	0.00	0x350b	s
B05.12	DC braking INIT speed at stop	0.0~3000.0rpm	0	0x350c	rpm
B05.13	Speed tracking mode	0: Search from stop frequency 1: Search from rated frequency 2: Search from the maximum frequency	0	0x350d	-
B05.14	Speed tracking speed search time	0.0~120.0s	25.0	0x350e	s
B05.15	Speed tracking CUR percentage	0~100%	50	0x350f	%
B05.16	Speed tracking MIN-FRQ limit	0.00%~50.00%	2.00	0x3510	Hz
B05.17	RPM tracking switch time	0~6000	250	0x3511	ms

Function code	Name	Range	Factory value	Communication address	Unit
B05.18	System control mode SWIT source	0:Invalid 1:Valid 2~9:DI0~DI7 10:rsvd Others:Binary interconnection parameters	0	0x3512	-
B05.28	System reservation	0~300	2	0x351c	rpm
B05.29	Zero speed judgment value	0.0~3000.0rpm	0.01	0x351d	Hz
B05.30	Zero speed stop delay time	0.00s~100.00s	0.00	0x351e	s
B05.32	OFF1 stop mode	0:Free stop 1:Decelerate to stop	1	0x3520	-
B05.33	OFF3 downtime	0.0s~1000.0s	1.0	0x3521	s
B05.34	OFF3 stop mode	0:Decelerate to stop 1:Maximum capacity shutdown (reserved)	0	0x3522	-
B06:Motor Limit and Protection					
B06.04	Positive limit speed setting	0.0%~600.0%	600.0	0x3604	%
B06.05	Reverse limit speed setting	-600.0%~0.0%	-600.0	0x3605	%
B06.06	SEL of forward speed limit	0:Digital setting value (B06.04) 1:600.0% 2:AIO 3:Rsrd. 4:Rsrd. 5:Rsrd. 6:Multi-segment value given 7:Electric pot-	0	0x3606	-

Function code	Name	Range	Factory value	Communication address	Unit
		entiometer 8:Rsvd. 9:Bus Adapter A-PZD2 10:Rsvd. Others:Analog interconnection parameters			
B06.07	SEL of reverse speed limit	0:Digital setting value (B06.05) 1:-600.0% 2:AI0 3:Rsvd. 4:Rsvd. 5:Rsvd. 6:Multi-segment value given 7:Electric potentiometer 8:Rsvd. 9:Bus Adapter A-PZD2 10:Rsvd. Others:Analog interconnection parameters	0	0x3607	-
B06.08	Torque upper limit setting	0.0%~600.0%	300.0	0x3608	%
B06.09	Torque lower limit setting	-600.0%~0.0%	-300.0	0x3609	%
B06.10	Selection of torque upper limit	0:Digital setting value (B06.08) 1:600.0% 2:AI0 3:Rsvd. 4:Rsvd. 5:Rsvd. 6:Multi-segment value given 7:Electric potentiometer	0	0x360a	-

Function code	Name	Range	Factory value	Communication address	Unit
		8:Rsvd. 9:Bus Adapter A-PZD2 10:Rsvd. Others:Analog interconnection parameters			
B06.11	Selection of torque lower limit	0:Digital setting value (B06.08) 1:600.0% 2:AI0 3:Rsvd. 4:Rsvd. 5:Rsvd. 6:Multi-segment value given 7:Electric potentiometer	0	0x360b	-
B06.12	Vector control torque limit	0.0%~200.0%	300.0	0x360c	%
B06.13	Torque limit before brake open	0.0%~200.0%	180.0	0x360d	%
B06.14	Vector control torque limit set value(SOUR)	0:Vector control torque limit set value(B06.12) Others:Analog interconnection parameters	0	0x360e	-
B06.15	Torque limit reach range	0.0~100.0	5.0	0x360f	%
B06.25	Motor overload PROT FUNC	0:Forbidden 1:Allow	1	0x3619	-
B06.26	Motor overload PROT FUNC gain	20%~1000%	100	0x361a	%
B06.27	Motor overload warning factor	50%~100%	80	0x361b	%

Function code	Name	Range	Factory value	Communication address	Unit
B06.28	Speed over-run detection TH	0.0%~50.0% (100.0% relative to motor rated speed)	20.0	0x361c	%
B06.29	Speed over-run detection time	0.0S:Do not test 0.1S~60.0S	0.0	0x361d	s
B06.30	Excessive speed DEV test value	0.0%~100.0% (100.0% relative to motor rated speed)	3.0	0x361e	%
B06.31	Excessive speed DEV test time	0.0:Do not test 0.1s~600.0s	0.00	0x361f	s
B06.32	Speed reaches detection value	0.0%~600.0% (100.0% relative to motor rated speed)	100.0	0x3620	%
B06.33	Speed reaches hysteresis width	0.0%~B06.32 (100.0% relative to motor rated speed)	3.0	0x3621	%
B06.34	Speed reaches detection time	0.0:No detection 0.1s~600.0s	3.00	0x3622	s
B06.37	Output phase loss detection	0:Forbidden 1:Allow	1	0x3625	-
B06.38	Motor TEMP detection method(X11)	0:No detection 1:KTY84 2:PTC	0	0x3626	-
B06.39	Motor TEMP detection method(X5)	0:No detection 1:KTY84 2:PTC	0	0x3627	-
B06.40	Motor TEMP over TEMP PROT value	0~300	130	0x3628	°C
B06.41	Motor TEMP warning value	0~300	110	0x3629	°C

Function code	Name	Range	Factory value	Communication address	Unit
B06.48	Fan speed regulation function	0: Forbidden 1: Enable	0	0x3630	-
B06.59	Vector stall 1 detection time	0~5000ms	500	0x363b	ms
B06.60	Vector stall 2 detection time	0~5000ms	500	0x363c	ms
B06.61	Vector stall 2 detection COEF	0~100%	80	0x363d	%
B06.62	ASYN machine SVC control mode	0:Control mode 1 1:Control mode 2	0	0x363e	-
B06.63	SYNC machine SVC control mode	0:Control mode 1 1:Control mode 2	0	0x363f	-
B06.64	Vector Ctrl slip COMP COEF	50~200	100	0x3640	%
B07:VF Control					
B07.00	VF mode selection	0:VF curve 1:VF separation	0	0x3700	-
B07.01	VF curve selection	0:Linear VF 1:Multi-point VF 2:Square V/F 3:1.5 times V/F	0	0x3701	-
B07.02	Multipoint VF curve: FRQ point 1	0.0~B07.04	2.00	0x3702	Hz
B07.03	Multipoint VF curve: Volt point1	0.0~B07.04	20	0x3703	V
B07.04	Multipoint VF curve: FRQ point 2	B07.02~B07.06	20.00	0x3704	Hz
B07.05	Multipoint VF curve: Volt point 2	B07.02~B07.06	152	0x3705	V

Function code	Name	Range	Factory value	Communication address	Unit
B07.06	Multipoint VF curve: FRQ point 3	B07.04~D00.04	40.00	0x3706	Hz
B07.07	Multipoint VF curve: Volt point3	B07.05~380.0	304	0x3707	V
B07.10	Overcurrent SUPPR Enable (Imax)	0:Invalid 1:Valid	1	0x370a	-
B07.11	Overcurrent SUPPR FM gain (Imax)	0~100	30	0x370b	%
B07.12	Overcurrent SUPPR point (Imax)	0~200	150	0x370c	%
B07.15	VF manual torque boost	0%~250%	1.0	0x370f	%
B07.16	VF torque lifting cut-off FRQ	0.00~50.00	50.00	0x3710	Hz
B07.17	VF slip compensation coefficient	0.0%~300.0%	0.0	0x3711	%
B07.20	VF oscillation suppression mode	0:Invalid 1:Valid	1	0x3714	-
B07.21	VF oscillation suppression gain	0~100%	10	0x3715	%
B07.28	OV SUPPR enable (Vdc_max)	0:Forbidden 1:Enable	0	0x371c	-
B07.29	OV SUPPR voltage gain (Vdc_max)	20.0~300.0V	125	0x371d	%
B07.34	UV SUPPR enable (Vdc_min)	0:Forbidden 1:Enable	0	0x3722	-
B07.35	UV SUPPR voltage gain (Vdc_min)	1.0~30.0Hz	85	0x3723	%

Function code	Name	Range	Factory value	Communication address	Unit
B08:Speed Regulator					
B08.02	Speed Ring Low Speed Kp	0.00~20.00	10.0	0x3802	-
B08.03	Speed Ring Low Speed Ti	1~65535ms	1.00	0x3803	s
B08.04	Speed Ring High Speed Kp	0.00~20.00	10.0	0x3804	-
B08.05	Speed Ring High Speed Ti	1~65535ms	2.00	0x3805	s
B08.11	Speed loop switch:low FRQ	0.0~400.0%	5.00	0x380b	Hz
B08.12	Speed loop switch:high FRQ	0.0~400.0%	10.00	0x380c	Hz
B08.25	Encoder FDBK speed filter time	0~1000ms	2	0x3819	ms
B08.26	EST speed loop filter time	0~1000ms	35	0x381a	ms
B09:Current Regulator					
B09.04	CUR loop scaling factor	1%~1000%	100	0x3904	%
B09.05	CUR loop integral COEF	1%~1000%	100	0x3905	%
B10.00	Magnetic pole POS ID method	0: Method 0 1: Method 1 2: Method 2 3: Method 3 4: Method 4	1	0x3a00	-
B10.01	PMSM:pole position ID current	0	50	0x3a01	-
B10.02	Magnetic pole position CALC	0:Method 0 1:Method 1	0	0x3a02	-

Function code	Name	Range	Factory value	Communication address	Unit
B10.03	Force initial POS test enable	0:Forbidden 1:Enable 1 2:Enable 2	0	0x3a03	-
B10.04	Z signal correction enable	0:Forbidden 1:Enable	1	0x3a04	-
B10.05	DQ axis inductance ID method	0~65535	0	0x3a05	-
B10.06	Weak magnetic coefficient	0~65535	1200	0x3a06	-
B10.07	SYNC machine low excitation CUR	0.0~6553.5	3.0	0x3a07	%
B10.08	Synchronizer IF/VF selection	0~65535	0	0x3a08	-
B10.09	Flux amplitude COMP COEF	0~65535	100	0x3a09	-
B10.10	Weak zone torque damping COFF	0.00~50.00	0.20	0x3a0a	Hz
B10.11	PMSM decoupling COEF	0~65535	100	0x3a0b	-
B10.12	SVC cutoff frequency	0~65535	100	0x3a0c	-
B10.13	IF current amplitude	0~65535	60	0x3a0d	-
B10.14	Back potential coefficient	0~65535	30	0x3a0e	-
B10.15	Coefficient of velocity	0~65535	40	0x3a0f	-
B10.16	Coefficient of filtering	0~65535	100	0x3a10	-
B10.17	Phase compensation is enabled	0~65535	1	0x3a11	-

Function code	Name	Range	Factory value	Communication address	Unit
B10.18	SVC velocity filtering COFF	0~65535	100	0x3a12	-
B11:Motor Model and Others					
B11.12	Monitoring channel 1	0.0%~400.0%	207	0x3b0c	-
B11.13	Monitoring channel 2	0:Traditional points 1:Positional integration	209	0x3b0d	-
B11.14	Monitoring channel 3	0:Forbidden 1:Enable	210	0x3b0e	-
B11.15	Monitoring channel 4	0.0~100.0%	211	0x3b0f	-
B11.17	Heavy load: freq-lmt monitoring	0:VM filtering 1:CM1 2:CM2	1200	0x3b11	-
B11.18	Heavy load: freq-lmt regenerate	0:Mode 0 1:Mode 1 2:Mode 2	800	0x3b12	-
B11.36	Heavy load speed limit enable	0.0%~400.0%	1	0x3b24	-
B11.39	Reserved	0~65535	0	0x3b27	-
B11.93	Interactive data monitor SEL 0	0~511	0	0x3b5d	-
B11.94	Interactive data monitor SEL 1	0~511	269	0x3b5e	-
B11.95	Interactive data monitor SEL 2	0~511	270	0x3b5f	-
B11.96	Interactive data monitor SEL 3	0~511	271	0x3b60	-
C:Communication parameters					
C00:Fieldbus Adapter As					
		0: None 1: Modbus (Rsvd.)			

Function code	Name	Range	Factory value	Communication address	Unit
C00.00	Bus adapter supporting bus type	2:CanOpen(Rsvd.) 3:ProfibusDP (Rsvd.) 4:PROFINET 5:EtherCAT 6:EtherNet (Rsvd.)	0	0x4000	-
C00.01	Data handling after COMM fault	0:Data hold 1:Data clear	1	0x4001	-
C00.02	PZD output 1	0:0 Others:Analog interconnection parameters	0	0x4002	-
C00.03	PZD output 2		0	0x4003	-
C00.04	PZD output 3		0	0x4004	-
C00.05	PZD output 4		0	0x4005	-
C00.06	PZD output 5		0	0x4006	-
C00.07	PZD output 6		0	0x4007	-
C00.08	PZD output 7		0	0x4008	-
C00.09	PZD output 8		0	0x4009	-
C00.10	PZD output 9		0	0x400a	-
C00.11	PZD output 10		0	0x400b	-
C00.12	PZD output 11		0	0x400c	-
C00.13	PZD output 12		0	0x400d	-
C00.14	PZD output 13		0	0x400e	-
C00.15	PZD output 14		0	0x400f	-
C00.16	PZD output 15		0	0x4010	-
C00.17	PZD output 16		0	0x4011	-

Function code	Name	Range	Factory value	Communication address	Unit
C00.18	PZD output 1 COMM base value	0~65535	0	0x4012	-
C00.19	PZD output 2 COMM base value	0~65535	0	0x4013	-
C00.20	PZD output 3 COMM base value	0~65535	0	0x4014	-
C00.21	PZD output 4 COMM base value	0~65535	0	0x4015	-
C00.22	PZD output 5 COMM base value	0~65535	0	0x4016	-
C00.23	PZD output 6 COMM base value	0~65535	0	0x4017	-
C00.24	PZD output 7 COMM base value	0~65535	0	0x4018	-
C00.25	PZD output 8 COMM base value	0~65535	0	0x4019	-
C00.26	PZD output 9 COMM base value	0~65535	0	0x401a	-
C00.27	PZD output 10 COMM base value	0~65535	0	0x401b	-
C00.28	PZD output 11 COMM base value	0~65535	0	0x401c	-
C00.29	PZD output 12 COMM base value	0~65535	0	0x401d	-
C00.30	PZD output 13 COMM base value	0~65535	0	0x401e	-
C00.31	PZD output 14 COMM base value	0~65535	0	0x401f	-

Function code	Name	Range	Factory value	Communication address	Unit
C00.32	PZD output 15 COMM base value	0~65535	0	0x4020	-
C00.33	PZD output 16 COMM base value	0~65535	0	0x4021	-
C00.34	PZD input 1 COMM base value	0~65535	0	0x4022	-
C00.35	PZD input 2 COMM base value	0~65535	0	0x4023	-
C00.36	PZD input 3 COMM base value	0~65535	0	0x4024	-
C00.37	PZD input 4 COMM base value	0~65535	0	0x4025	-
C00.38	PZD input 5 COMM base value	0~65535	0	0x4026	-
C00.39	PZD input 6 COMM base value	0~65535	0	0x4027	-
C00.40	PZD input 7 COMM base value	0~65535	0	0x4028	-
C00.41	PZD input 8 COMM base value	0~65535	0	0x4029	-
C00.42	PZD input 9 COMM base value	0~65535	0	0x402a	-
C00.43	PZD input 10 COMM base value	0~65535	0	0x402b	-
C00.44	PZD input 11 COMM base value	0~65535	0	0x402c	-
C00.45	PZD input 12 COMM base value	0~65535	0	0x402d	-

Function code	Name	Range	Factory value	Communication address	Unit
C00.46	PZD input 13 COMM base value	0~65535	0	0x402e	-
C00.47	PZD input 14 COMM base value	0~65535	0	0x402f	-
C00.48	PZD input 15 COMM base value	0~65535	0	0x4030	-
C00.49	PZD input 16 COMM base value	0~65535	0	0x4031	-
C00.50	PZD output 1 data display	0~0xFFFF	0x00	0x4032	-
C00.51	PZD output 2 data display	0~0xFFFF	0x00	0x4033	-
C00.52	PZD output 3 data display	0~0xFFFF	0x00	0x4034	-
C00.53	PZD output 4 data display	0~0xFFFF	0x00	0x4035	-
C00.54	PZD output 5 data display	0~0xFFFF	0x00	0x4036	-
C00.55	PZD output 6 data display	0~0xFFFF	0x00	0x4037	-
C00.56	PZD output 7 data display	0~0xFFFF	0x00	0x4038	-
C00.57	PZD output 8 data display	0~0xFFFF	0x00	0x4039	-
C00.58	PZD output 9 data display	0~0xFFFF	0x00	0x403a	-
C00.59	PZD output 10 data display	0~0xFFFF	0x00	0x403b	-

Function code	Name	Range	Factory value	Communication address	Unit
C00.60	PZD output 11 data display	0~0xFFFF	0x00	0x4036	-
C00.61	PZD output 12 data display	0~0xFFFF	0x00	0x4037	-
C00.62	PZD output 13 data display	0~0xFFFF	0x00	0x4038	-
C00.63	PZD output 14 data display	0~0xFFFF	0x00	0x4039	-
C00.64	PZD output 15 data display	0~0xFFFF	0x00	0x403a	-
C00.65	PZD output 16 data display	0~0xFFFF	0x00	0x403b	-
C00.66	PZD input 1 data display	0~0xFFFF	0x00	0x403c	-
C00.67	PZD input 2 data display	0~0xFFFF	0x00	0x403d	-
C00.68	PZD input 3 data display	0~0xFFFF	0x00	0x4044	-
C00.69	PZD input 4 data display	0~0xFFFF	0x00	0x4045	-
C00.70	PZD input 5 data display	0~0xFFFF	0x00	0x4046	-
C00.71	PZD input 6 data display	0~0xFFFF	0x00	0x4047	-
C00.72	PZD input 7 data display	0~0xFFFF	0x00	0x4048	-
C00.73	PZD input 8 data display	0~0xFFFF	0x00	0x4049	-
C00.74	PZD input 9 data display	0~0xFFFF	0x00	0x404a	-
C00.75	PZD input 10 data display	0~0xFFFF	0x00	0x404b	-
C00.76	PZD input 11 data display	0~0xFFFF	0x00	0x404c	-

Function code	Name	Range	Factory value	Communication address	Unit
C00.77	PZD input 12 data display	0~0xFFFF	0x00	0x404d	-
C00.78	PZD input 13 data display	0~0xFFFF	0x00	0x404e	-
C00.79	PZD input 14 data display	0~0xFFFF	0x00	0x404f	-
C00.80	PZD input 15 data display	0~0xFFFF	0x00	0x4050	-
C00.81	PZD input 16 data display	0~0xFFFF	0x00	0x4051	-
C00.82	Two-word PZD combination mode	0:The low address is the low 1:The high address is the low	1	0x4052	-
C00.83	Word translation PZD source SELE	1~16	1	0x4053	-
C00.84	System Reservation	0	0	0x4054	-
C01:Reservation					
C02:Reservation					
C03:Reservation					
C04:Reservation					
C05:PROFINET COMM SET					
C05.00	Message type	0:The message is invalid 1:Standard message 1,PZD-2/2 2:Standard message 3,PZD-5/9 3:Siemens telegram 102, PZD-6/10 4:Siemens telegram 105, PZD-10/10 5:Siemens telegram 111, PZD-12/12 6:Siemens telegram 352, PZD-6/6	0	0x4500	-

Function code	Name	Range	Factory value	Communication address	Unit
C05.01	Communication status	0:Communication not established 1:AR establishment 2:Process data communication 3:Burning 4:Loss of life signal 5:AR build error 6:Restoring factory parameters 7:Communication timeout 8:The bus adapter exceeds 16 9:PZD exceeds 26	0	0x4501	-
C05.02	Supplementary telegram type 1	0:Invalid packet 1:Additional packet 750,PZD-3/1 2:Additional packet 4,PZD-4/4 3:Additional message 8,PZD-8/8 4:Indicates additional packet 14,PZD-14/14	0	0x4502	-
C05.03	Diagnostic information is valid	0:Invalid 1:Valid	1	0x4503	-
C05.04	Software version	0~65535	0	0x4504	-

Function code	Name	Range	Factory value	Communication address	Unit
C05.05	Communication error code	0~100	0	0x4505	-
C05.06	Send Clock	0~65535	0	0x4506	us
C05.07	Heartbeat MON tolerance value	0~65535	10	0x4507	-
C05.08	Sync jitter	0~65535	0	0x4508	-
C05.09	Maximum sync jitter	0~65535	0	0x4509	-
C05.10	Special function selection	0:Invalid 1:Burning mode 2:The communication parameters are restored to the factory	0	0x450a	-
C05.11	PROFI drive state machine	0:Power On 1:Idle 2:S1:Switching On Inhibited 3:S2:Ready For Switching On 4:S3:Switched On 5:S4:Operation 6:S41:Pos Operation 7:S42:Pos Jog 8:S421:Pos JogPosOk 9:S43:Pos Brake Max 10:S441:Pos Home Run 11:S442:Pos Home Ready 12:S451:Pos TrvTask Act 13:S452:Pos TrvTask Brake 14:S453:Pos TrvTask Intermediate	0	0x450b	-

Function code	Name	Range	Factory value	Communication address	Unit
		15:Ramp Stop 16:Quick Stop 17:ERROR			
C05.12	Encoder state machine	0:Idle 1:SD1:Normal Operation 2:SD2:Error Acknowledgement 3:SD3:Error 4:SD4:Reference value 5:SD5:Wait Reference Mark 6:SD6:Unused 7:SD7:Set Home Position 8:SD8:Unused 9:SD9:Unused 10:SD10:Wait Measured Value 11:SD11:Load Measured Value 12:SD12:Parking 13:SD13:Parking Error 14:SD14:Parking Error Ack 15:Error	0	0x450c	-
C05.13	Tdc_Tsc	0~100	0	0x450d	-
		0:Idle 1:C-LS0 2:C-LS1 3:C-LS2 4:C-LS3 5:C-LS4 6:C-LS5 7:C-LS6 8:C-LS7 9:C-LS8 10:C-LS9 11:C-LS10 12:C-LS11 13:C-LS12			

Function code	Name	Range	Factory value	Communication address	Unit
C05.14	Heartbeat state machine	14:C-LS13 15:C-LS14 16:C-LS15 17:D-LS0 18:D-LS1 19:D-LS2 20:D-LS3 21:D-LS4 22:D-LS5 23:D-LS6 24:D-LS7 25:D-LS8 26:D-LS9 27:D-LS10 28:D-LS11 29:D-LS12 30:D-LS13 31:D-LS14 32:D-LS15 33:Operation	0	0x450e	-
C05.15	1 and 352 message mode	0:Standard message 1:Custom message	0	0x450f	-
C05.16	Input Reduction Ratio	0~65535	0	0x4510	-
C05.17	Output Reduction Ratio	0~65535	0	0x4511	-
C05.28	ADDTCONFIG PZD input ADDR	0~15:PZD1~PZD16	0	0x451c	-
C05.29	ADDTCONFIG PZD output ADDR		0	0x451d	-
C05.30	750 torque base value	0~65535	16384	0x451e	-
C05.31	1 and 352 velocity base values	0~65535	16384	0x451f	-

Function code	Name	Range	Factory value	Communication address	Unit
C05.32	105 position control gain(Kp)	0:Drive internal parameter setting 1:PLC	0	0x4520	-
C05.37	Type of additional packet 2	0:Invalid packet 1:Indicates additional packet 4,PZD-4/4 2:Additional message 8,PZD-8/8 3:Indicates additional packet 14,PZD-14/14	0	0x4525	-
C05.38	Actual IP address 1	0~255	0	0x4526	-
C05.39	Actual IP address 2	0~255	0	0x4527	-
C05.40	Actual IP address 3	0~255	0	0x4528	-
C05.41	Actual IP address 4	0~255	0	0x4529	-
C05.42	Actual subnet mask 1	0~255	0	0x452a	-
C05.43	Actual subnet mask 2	0~255	0	0x452b	-
C05.44	Actual subnet mask 3	0~255	0	0x452c	-
C05.45	Actual subnet mask 4	0~255	0	0x452d	-
C05.46	Switch to torque mode	0:Invalid 1: Effective thorough Stw1.14	0	0x452e	-
C05.50	Actual MAC address 1	0~0XFFFF	0x00	0x4532	-
C05.51	Actual MAC address 2	0~0XFFFF	0x00	0x4533	-
C05.52	Actual MAC address 3	0~0XFFFF	0x00	0x4534	-
C05.53	Tdc	0~65535	0	0x4535	us
C05.54	Ti	0~65535	0	0x4536	us

Function code	Name	Range	Factory value	Communication address	Unit
C05.55	To	0~65535	0	0x4537	us
C05.56	Cacf	0~65535	0	0x4538	-
C05.57	Debug parameter 1	0~0XFFFF	0x00	0x4539	-
C05.58	Debug parameter 2	0~0XFFFF	0x00	0x453a	-
C05.59	Debug parameter 3	0~65535	0	0x453b	-
C05.60	Debug parameter 4	0~65535	0	0x453c	-
C05.61	Debug parameter 5	0~65535	0	0x453d	-
C06:EtherCAT COMM SET					
C06.00	EtherCAT slave site name	0~65535	0	0x4600	-
C06.01	EtherCAT slave site alias	0~65535	0	0x4601	-
C06.02	EtherCAT INT loss time	4~20	4	0x4602	-
C06.03	EtherCAT SYNC detection MECH	0:Forbidden 1:Enable	0	0x4603	-
C06.04	Boneng Controller function block	0:None 1:BoNeng Freq function block	0	0x4604	-
C06.06	Error help	0:None 1:XML are missing, contact the manufacturer 2:Reconnect, enter the OP under abnormal conditions 3:CSP interpolation is lost 4:XML file does not match,check the master-slave XML version	0	0x4606	-

Function code	Name	Range	Factory value	Communication address	Unit
C06.06	Error help	5:No other device is connected, check whether the device connection is correct 6:The function code input object dictionary has no handler functions 7:The function code input object dictionary has no index 8:C06.45 value is wrong, and the input object dictionary index is incorrect 9:C06.46 value is wrong, and the input object dictionary subindex is incorrect 10:C06.47 value is wrong, and Stored object dictionary data area error 11:Wait for slave initialization to complete before operation 12:Halt or Task cancel 13:The mode selection in motion is incorrect 14:PP acceleration and deceleration settings are incorrect	0	0x4606	-

Function code	Name	Range	Factory value	Communication address	Unit
		15:Read EEPROM error 16:Monitor Pargram Type 17:Monitor Pargram Address 18:Monitor Pargram Length 19:Exit OP while running			
C06.07	XML version number	0x00~0xFFFF	0x00	0x4607	-
C06.13	EC communication status	0:none 1:Init 2:PreOp 3>Error 4:SafeOp 5>Error 6>Error 7>Error 8:OP 9>Error 10>Error 11>Error 12>Error 13>Error 14>Error 15>Error 16>Error 17>Error 18>Error 19>Error 20>Error	0x00	0x460d	-
C06.14	Comm Error Record0	0x00~0xFFFF	0x00	0x460e	-
C06.15	Comm Error Record1	0x00~0xFFFF	0x00	0x460f	-
C06.16	Comm Error Record2	0x00~0xFFFF	0x00	0x4610	-
C06.17	Sync Error occurred Record	0x00~0xFFFF	0x00	0x4611	-

Function code	Name	Range	Factory value	Communication address	Unit
C06.18	FSA	0x00~0xFFFF	0x00	0x4612	-
C06.21	current operating mode	0:NA 1:PPMode 2:None 3:PVMode 4:PTMode 5:None	0	0x4615	-
C06.22	Specify mode of operation	6:HmMode 7:None 8:CSPMode 9:CSVMode 10:CSTMode	0	0x4616	-
C06.31	Probe 1 trigger signal selection	0:invalid 1~10:DI0~DI9 12:Z signal	0	0x461f	-
C06.32	Probe 2 trigger signal selection		0	0x4620	-
C06.35	0x6098 return to zero mode	0~65535	35	0x4623	-
C06.42	Monitor data Type	0~65535	0	0x462a	-
C06.43	Monitor data Address	0~65535	0	0x462b	-
C06.44	Monitor data Length	0~65535	0	0x462c	-
C06.45	Object dictionary index number	0x00~0xFFFF	0x6060	0x462d	-
C06.46	Object dictionary sub-index	0x00~0xFFFF	0x00	0x462e	-
C06.47	Display in data area	0x00~0xFFFF	0x00	0x462f	-
C06.48	Data 0	-1073741824 ~1073741824	0	0x4630	-
C06.49	Data 0		0	0x4631	-
C06.50	Data 1		0	0x4632	-
C06.51	Data 1		0	0x4633	-
C06.52	Data 2		0	0x4634	-

Function code	Name	Range	Factory value	Communication address	Unit
C06.53	Data 2	-1073741824 ~1073741824	0	0x4635	-
C06.54	Data 3		0	0x4636	-
C06.55	Data 3		0	0x4637	-
C06.56	Data 4		0	0x4638	-
C06.57	Data 4		0	0x4639	-
C07:Reservation					
C08:DriveLink COMM SET					
C08.00	DriveLink function	0:Close 1:Enable	0	0x4800	-
C08.03	DriveLink node address	1~8	1	0x4803	-
C08.12	Send cycle	2ms~65535ms	2	0x480c	ms
C08.14	Send data 1	0:Invalid Others:Analog interconnection parameters	0	0x480e	-
C08.15	Send data 1 scale factor	-600.0~600.0	100.0	0x480f	%
C08.16	Send data 2	0:Invalid Others:Analog interconnection parameters	0	0x4810	-
C08.17	Send data 2 scale factor	-600.0~600.0	100.0	0x4811	%
C08.18	Send data 3	0:Invalid Others:Analog interconnection parameters	0	0x4812	-
C08.19	Send data 3 scale factor	-600.0~600.0	100.0	0x4813	%
C08.20	Send data 4	0:Invalid Others:Analog interconnection parameters	0	0x4814	-
C08.21	Send data 4 scale factor	-600.0~600.0	100.0	0x4815	%
C08.22	Send data 5	0:Invalid Others:Analog interconnection parameters	0	0x4816	-

Function code	Name	Range	Factory value	Communication address	Unit
C08.23	Send data 5 scale factor	-600.0~600.0	100.0	0x4817	%
C08.24	Send data 6	0:Invalid Others:Analog interconnection parameters	0	0x4818	-
C08.25	Send data 6 scale factor	-600.0~600.0	100.0	0x4819	%
C08.26	Send data 7	0:Invalid Others:Analog interconnection parameters	0	0x481a	-
C08.27	Send data 7 scale factor	-600.0~600.0	100.0	0x481b	%
C08.28	Send data 8	0:Invalid Others:Analog interconnection parameters	0	0x481c	-
C08.29	Send data 8 scale factor	-600.0~600.0	100.0	0x481d	%
C08.31	Receive data timeout setting	0.00~655.35s	0.00	0x481f	s
C08.32	Receive data 1 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x4820	-
C08.33	Receive data 1 data selection	0:The first data 1:The second data 2:The third data 3:4th data 4:5th data 5:6th data 6:7th data 7:8th data	0	0x4821	-
C08.34	Receive data 1 scale factor	-600.0%~600.0%	100.0	0x4822	%
C08.35	Receive data 2 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x4823	-

Function code	Name	Range	Factory value	Communication address	Unit
C08.36	Receive data 2 data selection	0~7:The first data~8th data	0	0x4824	-
C08.37	Receive data 2 scale factor	-600.0%~600.0%	100.0	0x4825	%
C08.38	Receive data 3 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x4826	-
C08.39	Receive data 3 data selection	0~7:The first data~8th data	0	0x4827	-
C08.40	Receive data 3 scale factor	-600.0%~600.0%	100.0	0x4828	%
C08.41	Receive data 4 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x4829	-
C08.42	Receive data 4 data selection	0~7:The first data~8th data	0	0x482a	-
C08.43	Receive data 4 scale factor	-600.0%~600.0%	100.0	0x482b	%
C08.44	Receive data 5 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x482c	-
C08.45	Receive data 5 data selection	0~7:The first data~8th data	0	0x482d	-
C08.46	Receive data 5 scale factor	-600.0%~600.0%	100.0	0x482e	%
C08.47	Receive data 6 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x482f	-
C08.48	Receive data 6 data selection	0~7:The first data~8th data	0	0x4830	-
C08.49	Receive data 6 scale factor	-600.0%~600.0%	100.0	0x4831	%

Function code	Name	Range	Factory value	Communication address	Unit
C08.50	Receive data 7 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x4832	-
C08.51	Receive data 7 data selection	0~7:The first data~8th data	0	0x4833	-
C08.52	Receive data 7 scale factor	-600.0%~600.0%	100.0	0x4834	%
C08.53	Receive data 8 node selection	0:Invalid 1~8: 1 Node~8Node	0	0x4835	-
C08.54	Receive data 8 data selection	0~7:The first data~8th data	0	0x4836	-
C08.55	Receive data 8 scale factor	-600.0%~600.0%	100.0	0x4837	%
D:Motor parameters					
D00:Motor 0 Basic PARAMs					
D00.00	Motor type selection	0:Induction motor 1:Permanent magnet synchronous motor	1	0x5000	-
D00.01	Motor rated power	0.00~655.35kW	3.00	0x5001	kW
D00.02	Motor rated voltage	0~1500V	250	0x5002	V
D00.03	Motor rated current	0.0~6553.5A	6.40	0x5003	A
D00.04	Motor rated frequency	0.0~600.00Hz	300.00	0x5004	Hz
D00.05	Motor rated speed	0~65535rpm	1400	0x5005	rpm
D00.06	Motor MAX speed	0.0%~600.0% rated speed	110.0	0x5006	%
D00.07	Motor MIN speed	0.0%~600.0% rated speed	0.0	0x5007	%
D00.09	Motor pole pairs	1~360	2	0x5009	-

Function code	Name	Range	Factory value	Communication address	Unit
D00.10	Motor rated torque	0.01~655.35Nm	0.90	0x500a	N.m
D00.16	Motor control method	0:VF 1:SVC 2:FVC	2	0x5010	-
D01:Motor 0 Identified PARAMs					
D01.00	IM stator resistance	0.000~6.5535ohm	3.024	0x5100	Ω
D01.01	IM rotor resistance	0.000~6.5535ohm	1.769	0x5101	Ω
D01.02	IM leakage inductance	0.000~65.535mH	10.39	0x5102	mH
D01.03	IM mutual inductance	0.00~655.35mH	181.8	0x5103	mH
D01.04	IM no-load current	0.0~6553.5A	3.84	0x5104	A
D01.10	IM stator resistance	0.001~65.535ohm	14.680	0x510a	Ω
D01.11	IM D-axis inductance Ld	0.01~655.35mH	33.20	0x510b	mH
D01.12	IM Q-axis inductance Lq	0.01~655.35mH	38.20	0x510c	mH
D01.13	IM back EMF	0.01~655.35mV/rpm	218	0x510d	V
D01.14	IM moment of inertia Jm	0.01~655.35kgcm^2	0.15	0x510e	kg.c m2
D01.25	IM moment of inertia Jm	0~65535	19	0x5119	kg.c m2
D02:Motor 0 Encoder PARAMs					
D02.00	Encoder type	0:Invalid type 1:Ordinary/Wire-saving ABZ encoder (DB15) 2:rsvd(resolver) 3:rsvd(province line) 4:BISS-C communication encoder (1222) 5:RS485 comm-	5	0x5200	-

Function code	Name	Range	Factory value	Communication address	Unit
		unication encoder (1623) 6:SSI Communication Encoder			
D02.01	Input AB phase sequence	0:Positive 1:Reverse	0	0x5201	-
D02.03	Input interface type	0:Differential 1:Single-ended	0	0x5203	-
D02.04	Incremental encoder lines	0~1048576	1024	0x5204	-
D02.06	SSI Encoder Code-type	0:Natural binary code 1:Gray code	0	0x5206	-
D02.07	SSI Encoder baud rate	125~4000	1000	0x5207	kHz
D02.08	SSI-Enc sigle Res (bit)	8~31	21	0x5208	-
D02.09	SSI-Enc multiturn Res (bit)	0~31	0	0x5209	-
D02.10	Encoder zero POS angle	0.0~359.9°	0.0	0x520a	°
D02.13	Speed FDBK lose time	0.0:No action 0.1s~10.0s	500	0x520d	ms
D02.17	DB15 encoder power supply SEL	0:5V 1:24V	0	0x5211	-
D02.18	Absolute encoder type	0:Single-turn absolute encoder 1:Multi-turn absolute encoder	0	0x5212	-
D02.19	Absolute Multi-Turn Enc Count	1~16	12	0x5213	-
D02.20	Encoder position reset source	0:Invalid 1:Valid Others:Binary	0	0x5214	-

Function code	Name	Range	Factory value	Communication address	Unit
		interconnection parameters			
D02.21	Absolute Enc Reset Enable	0:Invalid 1:Clear encoder multi-turn count and fault information	0	0x5215	-
D02.22	Encoder resolution	0~1073741824	0	0x5216	p/r
D02.23	Encoder resolution Encoder	0~1073741824	0	0x5217	p/r
D02.24	Multi-turn falut valid	0: Valid 1:Invalid	0	0x5218	-
D02.25	Encoder Fd-bk-Overspd Warn Thr	0~65535	10000	0x5219	rpm
D02.26	Encoder Fd-bk-Overspd Allow Cnt	1~65535	1	0x521a	-
D03:Motor 1 Basic PARAMs					
D03.00	Motor type selection	0:Induction motor 1:Permanent magnet synchronous motor	1	0x5300	-
D03.01	Motor rated power	0.00~655.35kW	3.00	0x5301	kW
D03.02	Motor rated voltage	0~1500V	250	0x5302	V
D03.03	Motor rated current	0.0~6553.5A	6.40	0x5303	A
D03.04	Motor rated frequency	0.0~600.00Hz	300.00	0x5304	Hz
D03.05	Motor rated speed	0~65535rpm	1400	0x5305	rpm
D03.06	Motor MAX speed	0.0%~600.0% rated speed	110.0	0x5306	%
D03.07	Motor MIN speed	0.0%~600.0% rated speed	0.0	0x5307	%

Function code	Name	Range	Factory value	Communication address	Unit
D03.09	Motor pole pairs	1~360	2	0x5309	-
D03.10	Motor rated torque	0.01~655.35Nm	0.90	0x530a	N.m
D03.16	Motor control method	0:VF 1:SVC 2:FVC	0	0x5310	-
D04:Motor 1 Identified PARAMs					
D04.00	IM stator resistance	0.000~6.5535 ohm	3.024	0x5400	Ω
D04.01	IM rotor resistance	0.000~6.5535 ohm	1.769	0x5401	Ω
D04.02	IM leakage inductance	0.000~65.535 mH	10.39	0x5402	mH
D04.03	IM mutual inductance	0.00~655.35 mH	181.8	0x5403	mH
D04.04	IM no-load current	0.0~6553.5A	3.84	0x5404	A
D04.10	IM stator resistance	0.001~65.535 ohm	14.680	0x540a	Ω
D04.11	IM D-axis inductance Ld	0.01~655.35 mH	33.20	0x540b	mH
D04.12	IM Q-axis inductance Lq	0.01~655.35 mH	38.20	0x540c	mH
D04.13	IM back EMF	0.01~655.35 mV/rpm	218	0x540d	V
D04.14	IM moment of inertia Jm	0.01~655.35 kgcm ²	0.15	0x540e	kg.c m ²
D04.25	IM moment of inertia Jm	0	19	0x5419	kg.c m ²
D05:Motor 1 Encoder PARAMs					
		0:Invalid type 1:Ordinary/wire-saving ABZ encoder(DB15) 2:rsvd(resolver) 3:rsvd(province line) 4:BISS-C communication encoder (1222)			

Function code	Name	Range	Factory value	Communication address	Unit
D05.00	Encoder type	5:RS485 communication encoder (1623) 6:SSI Communication Encoder	5	0x5500	-
D05.01	Input AB phase sequence	0:Positive 1:Reverse	0	0x5501	-
D05.03	Input interface type	0:Differential 1:Single-ended	0	0x5503	-
D05.04	Incremental encoder lines	0~1048576	1024	0x5504	-
D05.06	SSI Encoder Code-type	0:Natural binary code 1:Gray code	0	0x5506	-
D05.07	SSI Encoder baud rate	125~4000	1000	0x5507	kHz
D05.08	SSI-Enc sigle Res (bit)	8~31	21	0x5508	-
D05.09	SSI-Enc multiturn Res (bit)	0~31	0	0x5509	-
D05.10	Encoder zero POS angle	0.0~359.9°	0.0	0x550a	°
D05.13	Speed FDBK lose time	0.0:No action 0.1s~10.0s	500	0x550d	ms
D05.17	DB15 encoder power supply SEL	0:5V 1:24V	0	0x5511	-
D05.18	Absolute encoder type	0:Single-turn absolute encoder 1:Multi-turn absolute encoder	0	0x5512	-
D05.19	Absolute Multi-Turn Enc Count	1~16	12	0x5513	-

Function code	Name	Range	Factory value	Communication address	Unit
D05.20	Encoder position reset source	0:Invalid 1:Valid Others:Binary interconnection parameters	0	0x5514	-
D05.21	Absolute Enc Reset Enable	0:Invalid 1:Clear encoder multi-turn count and fault information	0	0x5515	-
D05.22	Encoder resolution	0~1073741824	0	0x5516	p/r
D05.23	Encoder resolution	0~1073741824	0	0x5517	p/r
D05.24	Encoder Multi-turn falut valid	0: Valid 1:Invalid	0	0x5518	-
D05.25	Encoder Fd-bk-Overspd Warn Thr	0~65535	10000	0x5519	rpm
D05.26	Encoder Fd-bk-Overspd Allow Cnt	1~65535	1	0x551a	-
D06:Motor 2 Basic PARAMs					
D06.00	Motor type selection	0:Induction motor 1:Permanent magnet synchronous motor	1	0x5600	-
D06.01	Motor rated power	0.00~655.35kW	3.00	0x5601	kW
D06.02	Motor rated voltage	0~1500V	250	0x5602	V
D06.03	Motor rated current	0.0~6553.5A	6.40	0x5603	A
D06.04	Motor rated frequency	0.0~600.00Hz	300.00	0x5604	Hz
D06.05	Motor rated speed	0~65535rpm	1400	0x5605	rpm
D06.06	Motor MAX speed	0.0%~600.0% rated speed	110.0	0x5606	%

Function code	Name	Range	Factory value	Communication address	Unit
D06.07	Motor MIN speed	0.0%~600.0% rated speed	0.0	0x5607	%
D06.09	Motor pole pairs	1~360	2	0x5609	-
D06.10	Motor rated torque	0.01~655.35Nm	0.90	0x560a	N.m
D06.16	Motor control method	0:VF 1:SVC 2:FVC	0	0x5610	-
D07:Motor 2 Identified PARAMs					
D07.00	IM stator resistance	0.000~6.5535 ohm	3.024	0x5700	Ω
D07.01	IM rotor resistance	0.000~6.5535 ohm	1.769	0x5701	Ω
D07.02	IM leakage inductance	0.000~65.535 mH	10.39	0x5702	mH
D07.03	IM mutual inductance	0.00~655.35 mH	181.8	0x5703	mH
D07.04	IM no-load current	0.0~6553.5A	3.84	0x5704	A
D07.10	IM stator resistance	0.001~65.535 ohm	14.680	0x570a	Ω
D07.11	IM D-axis inductance Ld	0.01~655.35 mH	33.20	0x570b	mH
D07.12	IM Q-axis inductance Lq	0.01~655.35 mH	38.20	0x570c	mH
D07.13	IM back EMF	0.01~655.35 mV/rpm	218	0x570d	V
D07.14	IM moment of inertia Jm	0.01~655.35 kgcm^2	0.15	0x570e	kg·cm ²
D07.25	IM moment of inertia Jm	0~65535	19	0x5719	kg·cm ²
D08:Motor 2 Encoder PARAMs					
		0:Invalid type 1:Ordinary/wire-saving ABZ encoder (DB15) 2:rsvd(resolver) 3:rsvd(province line)			

Function code	Name	Range	Factory value	Communication address	Unit
D08.00	Encoder type	4:BISS-C communication encoder (1222) 5:RS485 communication encoder (1623) 6:SSI Communication Encoder	5	0x5800	-
D08.01	Input AB phase sequence	0:Positive 1:Reverse	0	0x5801	-
D08.03	Input interface type	0:Differential 1:Single-ended	0	0x5803	-
D08.04	Incremental encoder lines	0~1048576	1024	0x5804	-
D08.06	SSI Encoder Code-type	0:Natural binary code 1:Gray code	0	0x5806	-
D08.07	SSI Encoder baud rate	125~4000	1000	0x5807	kHz
D08.08	SSI-Enc sigle RES (bit)	8~31	21	0x5808	-
D08.09	SSI-Enc multiturn RES (bit)	0~31	0	0x5809	-
D08.10	Encoder zero POS angle	0.0~359.9°	0.0	0x580a	°
D08.13	Speed FDBK lose time	0.0:No action 0.1s~10.0s	500	0x580d	ms
D08.17	DB15 encoder power supply SEL	0:5V 1:24V	0	0x5811	-
D08.18	Absolute encoder type	0:Single-turn absolute encoder 1:Multi-turn absolute encoder	0	0x5812	-

Function code	Name	Range	Factory value	Communication address	Unit
D08.19	Absolute Multi-Turn Enc Count	0	12	0x5813	-
D08.20	Encoder position reset source	0:Invalid 1:Valid Others:Binary interconnection parameters	0	0x5814	-
D08.21	Absolute Enc Reset Enable	0:Invalid 1:Clear encoder multi-turn count and fault information	0	0x5815	-
D08.22	Encoder resolution	0~1073741824	0	0x5816	p/r
D08.23	Encoder resolution	0~1073741824	0	0x5817	p/r
D08.24	Encoder Multi-turn falut valid	0: Valid 1:Invalid	0	0x5818	-
D08.25	Encoder Fd-bk-Overspd Warn Thr	0~65535	10000	0x5819	rpm
D08.26	Encoder Fd-bk-Overspd Alow Cnt	1~65535	1	0x581a	-
D09:Motor 3 Basic PARAMs					
D09.00	Motor type selection	1:Permanent magnet synchronous motor	1	0x5900	-
D09.01	Motor rated power	0.00~655.35kW	3.00	0x5901	kW
D09.02	Motor rated voltage	0~1500V	250	0x5902	V
D09.03	Motor rated current	0.0~6553.5A	6.40	0x5903	A
D09.04	Motor rated frequency	0.0~600.00Hz	300.00	0x5904	Hz
D09.05	Motor rated speed	0~65535rpm	1400	0x5905	rpm

Function code	Name	Range	Factory value	Communication address	Unit
D09.06	Motor MAX speed	0.0%~600.0% rated speed	110.0	0x5906	%
D09.07	Motor MIN speed	0.0%~600.0% rated speed	0.0	0x5907	%
D09.09	Motor pole pairs	1~360	2	0x5909	-
D09.10	Motor rated torque	0.01~655.35Nm	0.90	0x590a	N.m
D09.16	Motor control method	0:VF 1:SVC 2:FVC	2	0x5910	-
D10:Motor 3 Identified PARAMs					
D10.00	IM stator resistance	0.000~6.5535 ohm	3.024	0x5a00	Ω
D10.01	IM rotor resistance	0.000~6.5535 ohm	1.769	0x5a01	Ω
D10.02	IM leakage inductance	0.000~65.535 mH	10.39	0x5a02	mH
D10.03	IM mutual inductance	0.00~655.35 mH	181.8	0x5a03	mH
D10.04	IM no-load current	0.0~6553.5A	3.84	0x5a04	A
D10.10	IM stator resistance	0.001~65.535 ohm	14.680	0x5a0a	Ω
D10.11	IM D-axis inductance Ld	0.01~655.35 mH	33.20	0x5a0b	mH
D10.12	IM Q-axis inductance Lq	0.01~655.35 mH	38.20	0x5a0c	mH
D10.13	IM back EMF	0.01~655.35 mV/rpm	218	0x5a0d	V
D10.14	IM moment of inertia Jm	0.01~655.35 kgcm ²	0.15	0x5a0e	kg.cm ²
D10.25	IM moment of inertia Jm	0~65535	19	0x5a19	kg.cm ²
D11:Motor 3 Encoder PARAMs					
		0:Invalid type 1:Ordinary / wire-saving ABZ encoder (DB15) 2:rsvd(resolver)			

Function code	Name	Range	Factory value	Communication address	Unit
D11.00	Encoder type	3:rsvd(province line) 4:BISS-C communication encoder (1222) 5:RS485 communication encoder (1623) 6:SSI Communication Encoder	5	0x5b00	-
D11.01	Input AB phase sequence	0:Positive 1:Reverse	0	0x5b01	-
D11.03	Input interface type	0:Differential 1:Single-ended	0	0x5b03	-
D11.04	Incremental encoder lines	0~1048576	1024	0x5b04	-
D11.06	SSI Encoder Code-type	0:Natural binary code 1:Gray code	0	0x5b06	-
D11.07	SSI Encoder baud rate	125~4000	1000	0x5b07	kHz
D11.08	SSI-Enc sigle RES (bit)	8~31	21	0x5b08	-
D11.09	SSI-Enc multiturn RES (bit)	0~31	0	0x5b09	-
D11.10	Encoder zero POS angle	0.0~359.9°	0.0	0x5b0a	°
D11.13	Speed FDBK lose time	0.0:No action 0.1s~10.0s	500	0x5b0d	ms
D11.17	DB15 encoder power supply SEL	0:5V 1:24V	0	0x5b11	-
D11.18	Absolute encoder type	0:Single-turn absolute encoder 1:Multi-turn absolute encoder	0	0x5b12	-

Function code	Name	Range	Factory value	Communication address	Unit
D11.19	Absolute Multi-Turn Enc Count	0~16	12	0x5b13	-
D11.20	Encoder position reset source	0:Invalid 1:Valid Others:Binary interconnection parameters	0	0x5b14	-
D11.21	Absolute Enc Reset Enable	0:Invalid 1:Clear encoder multi-turn count and fault information	0	0x5b15	-
D11.22	Encoder resolution	0~1073741824	0	0x5b16	p/r
D11.23	Encoder resolution	0~1073741824	0	0x5b17	p/r
D11.24	Encoder Multi-turn fault valid	0: Valid 1:Invalid	0	0x5b18	-
D11.25	Encoder Fd-bk-Overspd Warn Thr	0~65535	10000	0x5b19	rpm
D11.26	Encoder Fd-bk-Overspd Allow Cnt	1~65535	1	0x5b1a	-
E:Fault configure and Record					
E00:Fault Handling					
E00.00	External fault 1 source	0: Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x6000	-
E00.01	External fault 2 source		0	0x6001	-
E00.02	External Warning 1 Source		0	0x6002	-
E00.03	External Warning 2 Source		0	0x6003	-

Function code	Name	Range	Factory value	Communication address	Unit
E00.10	Fault automatic reset function	0:Invalid 1:Valid	0	0x600a	-
E00.11	Fault reset times Reset time	0.0~3600.0s	180.0	0x600b	s
E00.12	Fault reset interval time	0.0~600.0s	30.0	0x600c	s
E00.13	Fault reset times	0~5	5	0x600d	-
E00.14	Unresettable exception code 1	0:Invalid 1:OverCurr 2:DC OverV 3:DC UnderV 4:Speed match fail 5:Driver overload 6:Motor overload 7:Input phase loss 8:Output phase loss 9:Driver overheat 10:PWM wave warn 11:Zero-Crossing Err 12:Ground short 13:Motor tune fault	0	0x600e	-
E00.15	Unresettable exception code 2	14:Enc fault 15:Vector stall alarm 16:FPGA read/write Err 17:Driver power fault 18:Primary power fault 19:CM-PMCo-	0	0x600f	-
E00.16	Unresettable exception code 3		0	0x6010	-

Function code	Name	Range	Factory value	Communication address	Unit
		mm fault 20:PM-EEPROM fault 21:PM model setting Err 22:WbW current limiting fault 23:Bridge over-heat 24:STO fault 25:Brake coil overheat 26:Servo initial POS Err 27:PM fault 27 28:PM fault 28 29:PM fault 29 30:PM fault 30 31:PM fault 31 32:PM fault 32 33:Drive pre-overload 34:Motor pre-overload 35:Communication Fault 36:Parameter set Fault 37:Mot speed overlimit 38:Mot speed Dev large 39:Power reset 40:PID Feed Loss 41:ExtFault 42:ExtWarn 43:Pre-drive failure 44:IO board ID fault 45:Brake control fault 46:Control board Volt warn			

Function code	Name	Range	Factory value	Communication address	Unit
		47:Mot TEMP fault 48:Mot TEMP warn 49:Al line break fault 50:Cap fan fault 51:CM-EEPROM fault 52:POS Dev too large 53:Full closed-loop POS Dev too large 54:Reached POS limit POS 55:Reached negative limit POS 56:Enabled loss during positioning 57:Mot coding Err 58:Fixed stop outside of monitor window 59:Fixed stop not reach 60:Homing error 61:STO warn 62:Brak R over-heat 63:Low Enc battery V 64:Enc battery fault 65:Enc multi-turn Overf 66:Reference point not set			
E00.23	Restart FUNC after AUTO reset	0:Invalid 1:Valid	0	0x6017	-

Function code	Name	Range	Factory value	Communication address	Unit
E00.25	Specified EXC code 1	0~67:indicates the fault code number	0	0x6019	-
E00.26	Specified EXC code 2	0~67:indicates the fault code number	0	0x601a	-
E00.27	Specified EXC code 3	0~67:indicates the fault code number	0	0x601b	-
E00.28	Specified EXC code 4	0~67:indicates the fault code number	0	0x601c	-
E00.29	Specified EXC code 5	0~67:indicates the fault code number	0	0x601d	-
E00.36	EXC level MOD EXC code 1	0~67:indicates the fault code number	0	0x6024	-
E00.37	EXC level of EXC code 1	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No responseg	0	0x6025	-
E00.38	EXC level MOD EXC code 2	0~67:indicates the fault code number	0	0x6026	-
E00.39	EXC level of EXC code 2	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No responseg	0	0x6027	-
E00.40	EXC level MOD EXC code 3	0~67:indicates the fault code number	0	0x6028	-

Function code	Name	Range	Factory value	Communication address	Unit
E00.41	EXC level of EXC code 3	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No responseg	0	0x6029	-
E00.42	EXC level MOD EXC code 4	0~67:indicates the fault code number	0	0x602a	-
E00.43	EXC level of EXC code 4	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No responseg	0	0x602b	-
E00.44	EXC level MOD EXC code 5	0~67:indicates the fault code number	0	0x602c	-
E00.45	EXC level of EXC code 5	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No responseg	0	0x602d	-
E00.46	EXC level MOD EXC code 6	0~67:indicates the fault code number	0	0x602e	-
E00.47	EXC level of EXC code 6	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay	0	0x602f	-

Function code	Name	Range	Factory value	Communication address	Unit
		running) 4:No response			
E00.48	EXC level MOD EXC code 7	0~67:indicates the fault code number	0	0x6030	-
E00.49	EXC level of EXC code 7	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No response	0	0x6031	-
E00.50	EXC level MOD EXC code 8	0~67:indicates the fault code number	0	0x6032	-
E00.51	EXC level of EXC code 8	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No response	0	0x6033	-
E00.52	EXC level MOD EXC code 9	0~67:indicates the fault code number	0	0x6034	-
E00.53	EXC level of EXC code 9	0:Coast down (OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No response	0	0x6035	-
E00.54	EXC level MOD EXC code 10	0~67:indicates the fault code number	0	0x6036	-
		0:Coast down			

Function code	Name	Range	Factory value	Communication address	Unit
E00.55	EXC level of EXC code 10	(OFF2) 1:Quick stop (OFF3) 2:OFF mode stop 3:Warning (stay running) 4:No response	0	0x6037	-
E00.58	Fault Record Storage Mode	0:Overwrite latest identical fault record 1:Do not overwrite latest identical fault record	0	0x603a	-
E01:Latest Faults and Records					
E01.00	Fault code 1	0~67:indicates the fault code number	0	0x6100	-
E01.01	Fault code 1 subcode	1~16	0	0x6101	-
E01.02	Fault code 2	0~67:indicates the fault code number	0	0x6102	-
E01.03	Fault code 2 subcode	1~16	0	0x6103	-
E01.08	Fault code 5	0~67:indicates the fault code number	0	0x6108	-
E01.09	Fault code 5 subcode	1~16	0	0x6109	-
E01.10	Fault heat-sink TEMP	-32768~32767	0	0x610a	°C
E01.11	PM-control word record	0~65535	0x00	0x610b	-
E01.12	Fault speed	-300.00~300.00Hz	0.0	0x610c	Hz
E01.13	Fault current	0.0~6553.5A	0.00	0x610d	A
E01.14	Fault bus voltage	0.0~800.0V	0.0	0x610e	V

Function code	Name	Range	Factory value	Communication address	Unit
E01.15	Fault setting speed	-300.0%~300.0%	0.00	0x610f	Hz
E01.16	Fault control word 1	0~65535	0x00	0x6110	-
E01.17	Fault control word 2	0~65535	0x00	0x6111	-
E01.18	Run time before fail - hour	0~65535	0	0x6112	h
E01.19	Run time before fail - minute	0~65535	0	0x6113	s
E01.20	AMU run time before fail - hour	0~29	0	0x6114	h
E01.21	AMU run time before fail - sec	0~300°	0	0x6115	s
E01.22	Fault output voltage	0~6553.5V	0	0x6116	V
E01.24	Fault bridge TEMP	-32768~32767	0	0x6118	°C
E02:Previous Faults and Records					
E02.00	Fault code 1	0~67:indicates the fault code number	0	0x6200	-
E02.01	Fault code 1 subcode	1~16	0	0x6201	-
E02.02	Fault code 2	0~67:indicates the fault code number	0	0x6202	-
E02.03	Fault code 2 subcode	1~16	0	0x6203	-
E02.08	Fault code 5	0~67:indicates the fault code number	0	0x6208	-
E02.09	Fault code 5 subcode	1~16	0	0x6209	-
E02.10	Fault heat-sink TEMP	-32768~32767	0	0x620a	°C

Function code	Name	Range	Factory value	Communication address	Unit
E02.11	PM-control word record	0~65535	0x00	0x620b	-
E02.12	Fault speed	-300.00~300.00Hz	0.0	0x620c	Hz
E02.13	Fault current	0.0~6553.5A	0.00	0x620d	A
E02.14	Fault bus voltage	0.0~800.0V	0.0	0x620e	V
E02.15	Fault setting speed	-300.0~300.0%	0.00	0x620f	Hz
E02.16	Fault control word 1	0~65535	0x00	0x6210	-
E02.17	Fault control word 2	0~65535	0x00	0x6211	-
E02.18	Run time before fail - hour	0~65535	0	0x6212	h
E02.19	Run time before fail - minute	0~65535	0	0x6213	s
E02.20	AMU run time before fail - hour	0~29	0	0x6214	h
E02.21	AMU run time before fail - sec	0~300°	0	0x6215	s
E02.22	Fault output voltage	0~6553.5V	0	0x6216	V
E02.24	Fault bridge TEMP	-32768~32767	0	0x6218	°C
E03:Pre-2 Faults and Records					
E03.00	Fault code 1	0~67: indicates the fault code number	0	0x6300	-
E03.01	Fault code 1 subcode	1~16	0	0x6301	-
E03.02	Fault code 2	0~67: indicates the fault code number	0	0x6302	-

Function code	Name	Range	Factory value	Communication address	Unit
E03.03	Fault code 2 subcode	1~16	0	0x6303	-
E03.08	Fault code 5	0~67: indicates the fault code number	0	0x6308	-
E03.09	Fault code 5 subcode	1~16	0	0x6309	-
E03.10	Fault heat-sink TEMP	-32768~32767	0	0x630a	°C
E03.11	PM-control word record	0~65535	0x00	0x630b	-
E03.12	Fault speed	-300.00~300.00 Hz	0.0	0x630c	Hz
E03.13	Fault current	0.0~6553.5A	0.00	0x630d	A
E03.14	Fault bus voltage	0.0~800.0V	0.0	0x630e	V
E03.15	Fault setting speed	-300.0~300.0%	0.00	0x630f	Hz
E03.16	Fault control word 1	0~65535	0x00	0x6310	-
E03.17	Fault control word 2	0~65535	0x00	0x6311	-
E03.18	Run time before fail - hour	0~65535	0	0x6312	h
E03.19	Run time before fail - minute	0~65535	0	0x6313	s
E03.20	AMU run time before fail - hour	0~29	0	0x6314	h
E03.21	AMU run time before fail - sec	0~300°	0	0x6315	s
E03.22	Fault output voltage	0~6553.5V	0	0x6316	V
E03.24	Fault bridge TEMP	-32768~32767	0	0x6318	°C

Function code	Name	Range	Factory value	Communication address	Unit
E04:Pre-3 Faults and Records					
E04.00	Fault code 1	0~67: indicates the fault code number	0	0x6400	-
E04.01	Fault code 1 subcode	1~16	0	0x6401	-
E04.02	Fault code 2	0~67: indicates the fault code number	0	0x6402	-
E04.03	Fault code 2 subcode	1~16	0	0x6403	-
E04.08	Fault code 5	0~67: indicates the fault code number	0	0x6408	-
E04.09	Fault code 5 subcode	1~16	0	0x6409	-
E04.10	Fault heat-sink TEMP	-32768~32767	0	0x640a	°C
E04.11	PM-control word record	0~65535	0x00	0x640b	-
E04.12	Fault speed	-300.00~300.00 Hz	0.0	0x640c	Hz
E04.13	Fault current	0.0~6553.5A	0.00	0x640d	A
E04.14	Fault bus voltage	0.0~800.0V	0.0	0x640e	V
E04.15	Fault setting speed	-300.0~300.0%	0.00	0x640f	Hz
E04.16	Fault control word 1	0~65535	0x00	0x6410	-
E04.17	Fault control word 2	0~65535	0x00	0x6411	-
E04.18	Run time before fail - hour	0~65535	0	0x6412	h
E04.19	Run time before fail - minute	0~65535	0	0x6413	s
E04.20	AMU run time before fail - hour	0~29	0	0x6414	h

Function code	Name	Range	Factory value	Communication address	Unit
E04.21	AMU run time before fail - sec	0~300°	0	0x6415	s
E04.22	Fault output voltage	0~6553.5V	0	0x6416	V
E04.24	Fault bridge TEMP	-32768~32767	0	0x6418	°C
E05:Pre-4 Faults and Records					
E05.00	Fault code 1	0~67: indicates the fault code number	0	0x6500	-
E05.01	Fault code 1 subcode	1~16	0	0x6501	-
E05.02	Fault code 2	0~67: indicates the fault code number	0	0x6502	-
E05.03	Fault code 2 subcode	1~16	0	0x6503	-
E05.08	Fault code 5	0~67: indicates the fault code number	0	0x6508	-
E05.09	Fault code 5 subcode	1~16	0	0x6509	-
E05.10	Fault heat-sink TEMP	-32768~32767	0	0x650a	°C
E05.11	PM-control word record	0~65535	0x00	0x650b	-
E05.12	Fault speed	-300.00~300.00 Hz	0.0	0x650c	Hz
E05.13	Fault current	0.0~6553.5A	0.00	0x650d	A
E05.14	Fault bus voltage	0.0~800.0V	0.0	0x650e	V
E05.15	Fault setting speed	-300.0~300.0%	0.00	0x650f	Hz
E05.16	Fault control word 1	0~65535	0x00	0x6510	-
E05.17	Fault control word 2	0~65535	0x00	0x6511	-

Function code	Name	Range	Factory value	Communication address	Unit
E05.18	Run time before fail - hour	0~65535	0	0x6512	h
E05.19	Run time before fail - minute	0~65535	0	0x6513	s
E05.20	AMU run time before fail - hour	0~29	0	0x6514	h
E05.21	AMU run time before fail - sec	0~300°	0	0x6515	s
E05.22	Fault output voltage	0~6553.5V	0	0x6516	V
E05.24	Fault bridge TEMP	-32768~32767	0	0x6518	°C
E06:Pre-5 Faults and Records					
E06.00	Fault code 1	0~67: indicates the fault code number	0	0x6600	-
E06.01	Fault code 1 subcode	1~16	0	0x6601	-
E06.02	Fault code 2	0~67: indicates the fault code number	0	0x6602	-
E06.03	Fault code 2 subcode	1~16	0	0x6603	-
E06.08	Fault code 5	0~67: indicates the fault code number	0	0x6608	-
E06.09	Fault code 5 subcode	1~16	0	0x6609	-
E06.10	Fault heat-sink TEMP	-32768~32767	0	0x660a	°C
E06.11	PM-control word record	0~65535	0x00	0x660b	-
E06.12	Fault speed	-300.00~300.00 Hz	0.0	0x660c	Hz
E06.13	Fault current	0.0~6553.5A	0.00	0x660d	A

Function code	Name	Range	Factory value	Communication address	Unit
E06.14	Fault bus voltage	0.0~800.0V	0.0	0x660e	V
E06.15	Fault setting speed	-300.0~300.0%	0.00	0x660f	Hz
E06.16	Fault control word 1	0~65535	0x00	0x6610	-
E06.17	Fault control word 2	0~65535	0x00	0x6611	-
E06.18	Run time before fail - hour	0~65535	0	0x6612	h
E06.19	Run time before fail - minute	0~65535	0	0x6613	s
E06.20	AMU run time before fail - hour	0~29	0	0x6614	h
E06.21	AMU run time before fail - sec	0~300°	0	0x6615	s
E06.22	Fault output voltage	0~6553.5V	0	0x6616	V
E06.24	Fault bridge TEMP	-32768~32767	0	0x6618	°C
E07:Lastest Warning Code Records					
E07.00	Warning code 1	0~67: indicates the Warning code number	0	0x6700	-
E07.01	Warning code 1 subcode	1~16	0	0x6701	-
E07.02	Warning code 2	0~67: indicates the Warning code number	0	0x6702	-
E07.03	Warning code 2 subcode	1~16	0	0x6703	-

Function code	Name	Range	Factory value	Communication address	Unit
F:Free module parameters					
F00:Logic Operation Module					
F00.00	Logic AND module A input 1	1:Invalid Others:Binary interconnection parameters	0	0x7000	-
F00.01	Logic AND module A input 2	1:Invalid Others:Binary interconnection parameters	0	0x7001	-
F00.02	Logic AND module A input 3	1:Invalid Others:Binary interconnection parameters	0	0x7002	-
F00.03	Logic AND module A input 4	1:Invalid Others:Binary interconnection parameters	0	0x7003	-
F00.05	Logic AND module B input 1	1:Invalid Others:Binary interconnection parameters	0	0x7005	-
F00.06	Logic AND module B input 2	1:Invalid Others:Binary interconnection parameters	0	0x7006	-
F00.07	Logic AND module B input 3	1:Invalid Others:Binary interconnection parameters	0	0x7007	-
F00.08	Logic AND module B input 4	1:Invalid Others:Binary interconnection parameters	0	0x7008	-
F00.10	Logic AND module C input 1	1:Invalid Others:Binary interconnection parameters	0	0x700a	-
F00.11	Logic AND module C input 2	1:Invalid Others:Binary interconnection parameters	0	0x700b	-

Function code	Name	Range	Factory value	Communication address	Unit
F00.12	Logic AND module C input 3	1:Invalid Others:Binary interconnection parameters	0	0x700c	-
F00.13	Logic AND module C input 4	1:Invalid Others:Binary interconnection parameters	0	0x700d	-
F00.15	Logic AND module D input 1	1:Invalid Others:Binary interconnection parameters	0	0x700f	-
F00.16	Logic AND module D input 2	1:Invalid Others:Binary interconnection parameters	0	0x7010	-
F00.17	Logic AND module D input 3	1:Invalid Others:Binary interconnection parameters	0	0x7011	-
F00.18	Logic AND module D input 4	1:Invalid Others:Binary interconnection parameters	0	0x7012	-
F00.20	Logic NOT module A input	1:Invalid Others:Binary interconnection parameters	0	0x7014	-
F00.22	Logic NOT module B input	0:Invalid Others:Binary interconnection parameters	0	0x7016	-
F00.24	Logic NOT module C input	0:Invalid Others:Binary interconnection parameters	0	0x7018	-
F00.26	Logic NOT module D input	0:Invalid Others:Binary interconnection parameters	0	0x701a	-

Function code	Name	Range	Factory value	Communication address	Unit
F00.28	Logic NOT module E input	0:Invalid Others:Binary interconnection parameters	0	0x701c	-
F00.30	Logic NOT module F input	0:Invalid Others:Binary interconnection parameters	0	0x701e	-
F00.32	Logic NOT module G input	0:Invalid Others:Binary interconnection parameters	0	0x7020	-
F00.34	Logic NOT module H input	0:Invalid Others:Binary interconnection parameters	0	0x7022	-
F00.36	Logic OR module A input 1	0:Invalid Others:Binary interconnection parameters	0	0x7024	-
F00.37	Logic OR module A input 2	0:Invalid Others:Binary interconnection parameters	0	0x7025	-
F00.38	Logic OR module A input 3	0:Invalid Others:Binary interconnection parameters	0	0x7026	-
F00.39	Logic OR module A input 4	0:Invalid Others:Binary interconnection parameters	0	0x7027	-
F00.41	Logic OR module B input 1	0:Invalid Others:Binary interconnection parameters	0	0x7029	-
F00.42	Logic OR module B input 2	0:Invalid Others:Binary interconnection parameters	0	0x702a	-

Function code	Name	Range	Factory value	Communication address	Unit
F00.43	Logic OR module B input 3	0:Invalid Others:Binary interconnection parameters	0	0x702b	-
F00.44	Logic OR module B input 4	0:Invalid Others:Binary interconnection parameters	0	0x702c	-
F00.46	Logic OR module C input 1	0:Invalid Others:Binary interconnection parameters	0	0x702e	-
F00.47	Logic OR module C input 2	0:Invalid Others:Binary interconnection parameters	0	0x702f	-
F00.48	Logic OR module C input 3	0:Invalid Others:Binary interconnection parameters	0	0x7030	-
F00.49	Logic OR module C input 4	0:Invalid Others:Binary interconnection parameters	0	0x7031	-
F00.51	Logic OR module D input 1	0:Invalid Others:Binary interconnection parameters	0	0x7033	-
F00.52	Logic OR module D input 2	0:Invalid Others:Binary interconnection parameters	0	0x7034	-
F00.53	Logic OR module D input 3	0:Invalid Others:Binary interconnection parameters	0	0x7035	-
F00.54	Logic OR module D input 4	0:Invalid Others:Binary interconnection parameters	0	0x7036	-

Function code	Name	Range	Factory value	Communication address	Unit
F00.56	Logic XOR module A input 1	0:Invalid Others:Binary interconnection parameters	0	0x7038	-
F00.57	Logic XOR module A input 2	0:Invalid Others:Binary interconnection parameters	0	0x7039	-
F00.58	Logic XOR module A input 3	0:Invalid Others:Binary interconnection parameters	0	0x703a	-
F00.59	Logic XOR module A input 4	0:Invalid Others:Binary interconnection parameters	0	0x703b	-
F00.61	Logic XOR module B input 1	0:Invalid Others:Binary interconnection parameters	0	0x703d	-
F00.62	Logic XOR module B input 2	0:Invalid Others:Binary interconnection parameters	0	0x703e	-
F00.63	Logic XOR module B input 3	0:Invalid Others:Binary interconnection parameters	0	0x703f	-
F00.64	Logic XOR module B input 4	0:Invalid Others:Binary interconnection parameters	0	0x7040	-
F00.66	Logic XOR module C input 1	0:Invalid Others:Binary interconnection parameters	0	0x7042	-
F00.67	Logic XOR module C input 2	0:Invalid Others:Binary interconnection parameters	0	0x7043	-

Function code	Name	Range	Factory value	Communication address	Unit
F00.68	Logic XOR module C input 3	0:Invalid Others:Binary interconnection parameters	0	0x7044	-
F00.69	Logic XOR module C input 4	0:Invalid Others:Binary interconnection parameters	0	0x7045	-
F00.71	Logic XOR module D input 1	0:Invalid Others:Binary interconnection parameters	0	0x7047	-
F00.72	Logic XOR module D input 2	0:Invalid Others:Binary interconnection parameters	0	0x7048	-
F00.73	Logic XOR module D input 3	0:Invalid Others:Binary interconnection parameters	0	0x7049	-
F00.74	Logic XOR module D input 4	0:Invalid Others:Binary interconnection parameters	0	0x704a	-
F00.76	LDM A input	0:Invalid Others:Binary interconnection parameters	0	0x704c	-
F00.77	LDM A FUNC selection	0:Turn-on delay 1:Turn off delay 2:Two-way delay	0	0x704d	-
F00.78	LDM A delay time (N*2ms)	0~10000ms	0	0x704e	-
F00.79	LDM B input	0:Invalid Others:Binary interconnection parameters	0	0x704f	-

Function code	Name	Range	Factory value	Communication address	Unit
F00.80	LDM B FUNC selection	0:Turn-on delay 1:Turn off delay 2:Two-way delay	0	0x7050	-
F00.81	LDM B delay time (N*2ms)	0~10000ms	0	0x7051	-
F00.82	LDM C input	0:Invalid Others:Binary interconnection parameters	0	0x7052	-
F00.83	LDM C FUNC selection	0:Turn-on delay 1:Turn off delay 2:Two-way delay	0	0x7053	-
F00.84	LDM C delay time (N*2ms)	0~10000ms	0	0x7054	-
F00.85	LDM D input	0:Invalid Others:Binary interconnection parameters	0	0x7055	-
F00.86	LDM D FUNC selection	0:Turn-on delay 1:Turn off delay 2:Two-way delay	0	0x7056	-
F00.87	LDM D delay time (N*2ms)	0~10000ms	0	0x7057	-
F01:Arithmetic Operation Module					
F01.00	ADD module A input 1	0:0 Others:Analog interconnection parameters	0	0x7100	-
F01.01	ADD module A input 2	0:0 Others:Analog interconnection parameters	0	0x7101	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.02	ADD module A input 3	0:0 Others:Analog interconnection parameters	0	0x7102	-
F01.03	ADD module A input 4	0:0 Others:Analog interconnection parameters	0	0x7103	-
F01.05	ADD module B input 1	0:0 Others:Analog interconnection parameters	0	0x7105	-
F01.06	ADD module B input 2	0:0 Others:Analog interconnection parameters	0	0x7106	-
F01.07	ADD module B input 3	0:0 Others:Analog interconnection parameters	0	0x7107	-
F01.08	ADD module B input 4	0:0 Others:Analog interconnection parameters	0	0x7108	-
F01.10	ADD module C input 1	0:0 Others:Analog interconnection parameters	0	0x710a	-
F01.11	ADD module C input 2	0:0 Others:Analog interconnection parameters	0	0x710b	-
F01.12	ADD module C input 3	0:0 Others:Analog interconnection parameters	0	0x710c	-
F01.13	ADD module C input 4	0:0 Others:Analog interconnection parameters	0	0x710d	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.15	SUB module A input 1	0:0 Others:Analog interconnection parameters	0	0x710f	-
F01.16	SUB module A input 2	0:0 Others:Analog interconnection parameters	0	0x7110	-
F01.18	SUB module B input 1	0:0 Others:Analog interconnection parameters	0	0x7112	-
F01.19	SUB module B input 2	0:0 Others:Analog interconnection parameters	0	0x7113	-
F01.21	MUL module A input 1	0:1 Others:Analog interconnection parameters	0	0x7115	-
F01.22	MUL module A input 4	0:1 Others:Analog interconnection parameters	0	0x7116	-
F01.23	MUL module A input 1	0:1 Others:Analog interconnection parameters	0	0x7117	-
F01.24	MUL module A input 2	0:1 Others:Analog interconnection parameters	0	0x7118	-
F01.26	MUL module B input 3	0:1 Others:Analog interconnection parameters	0	0x711a	-
F01.27	MUL module B input 4	0:1 Others:Analog interconnection parameters	0	0x711b	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.28	MUL module B input 1	0:1 Others:Analog interconnection parameters	0	0x711c	-
F01.29	MUL module B input 2	0:1 Others:Analog interconnection parameters	0	0x711d	-
F01.31	DIV module A divisor input	0:1 Others:Analog interconnection parameters	0	0x711f	-
F01.32	DIV module A dividend input	0:1 Others:Analog interconnection parameters	0	0x7120	-
F01.34	DIV module B divisor input	0:1 Others:Analog interconnection parameters	0	0x7122	-
F01.35	DIV module B dividend input	0:1 Others:Analog interconnection parameters	0	0x7123	-
F01.37	AVA module A input	0:0 Others:Analog interconnection parameters	0	0x7125	-
F01.39	AVA module B input	0:0 Others:Analog interconnection parameters	0	0x7127	-
F01.41	CMP module A input 1	0:0 Others:Analog interconnection parameters	0	0x7129	-
F01.42	CMP module A input 2	0:0 Others:Analog interconnection parameters	0	0x712a	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.44	CMP module B input 1	0:0 Others:Analog interconnection parameters	0	0x712c	-
F01.45	CMP module B input 2	0:0 Others:Analog interconnection parameters	0	0x712d	-
F01.47	LIM module A input	0:0 Others:Analog interconnection parameters	0	0x712f	-
F01.48	LIM module A upper limit select	0:0 Others:Analog interconnection parameters	0	0x7130	-
F01.49	LIM module A lower limit select	0:0 Others:Analog interconnection parameters	0	0x7131	-
F01.51	LIM module B input	0:0 Others:Analog interconnection parameters	0	0x7133	-
F01.52	LIM module B upper limit SEL	0:0 Others:Analog interconnection parameters	0	0x7134	-
F01.53	LIM module B lower limit SEL	0:0 Others:Analog interconnection parameters	0	0x7135	-
F01.55	FOLPF module A input	0:0 Others:Analog interconnection parameters	0	0x7137	-
F01.56	FOLPF module A FLT (N*2ms)	0~20000ms	0	0x7138	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.58	FOLPF module B input	0:0 Others:Analog interconnection parameters	0	0x713a	-
F01.59	FOLPF module B FLT (N*2ms)	0~20000ms	0	0x713b	-
F01.61	Data selector A command SRC 1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x713d	-
F01.62	Data selector A command SRC 2	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x713e	-
F01.63	Data selector A data source 1	0:0 1: Multi-stage setting value 1 2: AI0	0	0x713f	-
F01.64	Data selector A data source 2	3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given	0	0x7140	-
F01.65	Data selector A data source 3	7: Electric potentiometer 8: Rsvd. 9: Bus adapter A-PZD2 10: Rsvd.	0	0x7141	-
F01.66	Data selector A data source 4	Others:Analog interconnection parameters	0	0x7142	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.67	Data selector B command SRC 1	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7	0	0x7143	-
F01.68	Data selector B command SRC 2	10:Rsvd. Others:Binary interconnection parameters	0	0x7144	-
F01.69	Data selector B data source 1	0:0 1: Multi-stage setting value 1 2: AI0	0	0x7145	-
F01.70	Data selector B data source 2	3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given	0	0x7146	-
F01.71	Data selector B data source 3	7: Electric potentiometer 8: Rsvd. 9: Bus adapter A-PZD2 10: Rsvd.	0	0x7147	-
F01.72	Data selector B data source 4	Others:Analog interconnection parameters	0	0x7148	-
F01.73	Compare module C input 1	0:0 Others:Analog interconnection parameters	0	0x7149	-
F01.74	Compare module C input 2	0:0 Others:Analog interconnection parameters	0	0x714a	-

Function code	Name	Range	Factory value	Communication address	Unit
F01.76	Compare module D input 1	0:0 Others:Analog interconnection parameters	0	0x714c	-
F01.77	Compare module D input 2	0:0 Others:Analog interconnection parameters	0	0x714d	-
F01.81	Custom data entry 1	-32768~32767	0	0x7151	-
F01.82	Custom data entry 2	-32768~32767	0	0x7152	-
F01.83	Custom data entry 3	-32768~32767	0	0x7153	-
F01.84	Custom data entry 4	-32768~32767	0	0x7154	-
F02:Word Bit Conversion Module					
F02.00	WTB FUNC A input selection	0:0 Others:Analog interconnection parameters	0	0x7200	-
F02.02	WTB FUNC B input selection	0:0 Others:Analog interconnection parameters	0	0x7202	-
F02.08	BTW FUNC A-Bit00 selection	0:0 Others:Analog interconnection parameters	0	0x7208	-
F02.09	BTW FUNC A-Bit01 selection	0:0 Others:Analog interconnection parameters	0	0x7209	-
F02.10	BTW FUNC A-Bit02 selection	0:0 Others:Analog interconnection parameters	0	0x720a	-

Function code	Name	Range	Factory value	Communication address	Unit
F02.11	BTW FUNC A-Bit03 selection	0:0 Others:Analog interconnection parameters	0	0x720b	-
F02.12	BTW FUNC A-Bit04 selection	0:0 Others:Analog interconnection parameters	0	0x720c	-
F02.13	BTW FUNC A-Bit05 selection	0:0 Others:Analog interconnection parameters	0	0x720d	-
F02.14	BTW FUNC A-Bit06 selection	0:0 Others:Analog interconnection parameters	0	0x720e	-
F02.15	BTW FUNC A-Bit07 selection	0:0 Others:Analog interconnection parameters	0	0x720f	-
F02.16	BTW FUNC A-Bit08 selection	0:0 Others:Analog interconnection parameters	0	0x7210	-
F02.17	BTW FUNC A-Bit09 selection	0:0 Others:Analog interconnection parameters	0	0x7211	-
F02.18	BTW FUNC A-Bit10 selection	0:0 Others:Analog interconnection parameters	0	0x7212	-
F02.19	BTW FUNC A-Bit11 selection	0:0 Others:Analog interconnection parameters	0	0x7213	-
F02.20	BTW FUNC A-Bit12 selection	0:0 Others:Analog interconnection parameters	0	0x7214	-

Function code	Name	Range	Factory value	Communication address	Unit
F02.21	BTW FUNC A-Bit13 selection	0:0 Others:Analog interconnection parameters	0	0x7215	-
F02.22	BTW FUNC A-Bit14 selection	0:0 Others:Analog interconnection parameters	0	0x7216	-
F02.23	BTW FUNC A-Bit15 selection	0:0 Others:Analog interconnection parameters	0	0x7217	-
F02.25	BTW FUNC B-Bit00 selection	0:0 Others:Analog interconnection parameters	0	0x7219	-
F02.26	BTW FUNC B-Bit01 selection	0:0 Others:Analog interconnection parameters	0	0x721a	-
F02.27	BTW FUNC B-Bit02 selection	0:0 Others:Analog interconnection parameters	0	0x721b	-
F02.28	BTW FUNC B-Bit03 selection	0:0 Others:Analog interconnection parameters	0	0x721c	-
F02.29	BTW FUNC B-Bit04 selection	0:0 Others:Analog interconnection parameters	0	0x721d	-
F02.30	BTW FUNC B-Bit05 selection	0:0 Others:Analog interconnection parameters	0	0x721e	-
F02.31	BTW FUNC B-Bit06 selection	0:0 Others:Analog interconnection parameters	0	0x721f	-

Function code	Name	Range	Factory value	Communication address	Unit
F02.32	BTW FUNC B-Bit07 selection	0:0 Others:Analog interconnection parameters	0	0x7220	-
F02.33	BTW FUNC B-Bit08 selection	0:0 Others:Analog interconnection parameters	0	0x7221	-
F02.34	BTW FUNC B-Bit09 selection	0:0 Others:Analog interconnection parameters	0	0x7222	-
F02.35	BTW FUNC B-Bit10 selection	0:0 Others:Analog interconnection parameters	0	0x7223	-
F02.36	BTW FUNC B-Bit11 selection	0:0 Others:Analog interconnection parameters	0	0x7224	-
F02.37	BTW FUNC B-Bit12 selection	0:0 Others:Analog interconnection parameters	0	0x7225	-
F02.38	BTW FUNC B-Bit13 selection	0:0 Others:Analog interconnection parameters	0	0x7226	-
F02.39	BTW FUNC B-Bit14 selection	0:0 Others:Analog interconnection parameters	0	0x7227	-
F02.40	BTW FUNC B-Bit15 selection	0:0 Others:Analog interconnection parameters	0	0x7228	-

Function code	Name	Range	Factory value	Communication address	Unit
F03:Process PID Module					
E03.00	PID FUNC valid signal	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4	0	0x7300	-
E03.01	PID operation enable signal	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1	0x7301	-
E03.02	PID action direction	0:No inversion 1:Inversion	0	0x7302	-
E03.04	PID given source	0:F03.05 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A-PZD2 10: Rsvd. Others:Analog interconnection parameters	0	0x7304	-
E03.05	PID value setting	-600.0~600.0%	0.0	0x7305	%
E03.06	PID given freeze enable	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3	0	0x7306	-

Function code	Name	Range	Factory value	Communication address	Unit
		6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters			
E03.07	PID given filtering time	0~60000ms	0	0x7307	ms
E03.08	PID feedback source	0:0 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters	0	0x7308	-
E03.09	PID feedback filtering time	0~60000ms	0	0x7308	-
E03.10	PID DEV additional setting	0:0 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segm-	0	0x730a	-

Function code	Name	Range	Factory value	Communication address	Unit
		ent value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters			
E03.11	Proportional gain KP	0.00~125.00	1.00	0x730b	-
E03.12	Proportional gain COEF	0:100.0% 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters	0	0x730c	-
E03.13	Integration time Ti	0~60000ms	10	0x730d	ms
E03.14	Integration time COEF	0:100.0% 1: Multi-stage setting value 1 2: AI0 3: Rsvd.	0	0x730e	-

Function code	Name	Range	Factory value	Communication address	Unit
E03.17	Integration time Ti	4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters	0	0x7311	-
E03.19	PID integral CMPT forced enable	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x7313	-
E03.20	PID integral CMPT forced value	0:0 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2	0	0x7314	-

Function code	Name	Range	Factory value	Communication address	Unit
		10: Bus adapter B process data 2 Others:Analog interconnection parameters			
E03.21	PID output limit	0.0~600.0	100.0	0x7315	%
E03.22	PID output upper limit source	0:100.0% 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others:Analog interconnection parameters	0	0x7316	-
E03.23	PID output lower limit source	0:0% 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Motorized potentiometer 8: Rsvd. 9: Bus adapter A process data 2	0	0x7317	-

Function code	Name	Range	Factory value	Communication address	Unit
		10: Bus adapter B process data 2 Others:Analog interconnection parameters			
E03.24	PID output limit rise/fall time	0.00~100.00	0.00	0x7318	s
E03.25	PID deviation dead band enable	0: Forbidden 1: Enable	0	0x7319	-
E03.26	PID deviation dead band range	0.0~100.0	0.0	0x731a	%
E03.27	PID FDBK missing test value	0.0~100.0	0.0	0x731b	%
E03.28	PID FDBK loss test time	0.0~60.0	0.0	0x731c	s
F04:Holding Brake Control					
E04.00	Holding brake FUNC select	0: No brake 1: With brake without detection information 2: There is brake belt detection information	0	0x7400	-
E04.01	Brake open FDBK test time	0.00~10.00s	0.00	0x7401	s
E04.02	Brake closing FDBK test time	0.00~10.00s	0.00	0x7402	s
		0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2			

Function code	Name	Range	Factory value	Communication address	Unit
E04.03	Brake open comm- and SRC	5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	1102	0x7403	-
E04.04	Brake open comparison SRC	0:0 Others:Analog interconnection parameters	2311	0x7404	-
E04.05	Brake open comparison THR	0.0~200.0%	0.0	0x7405	%
E04.06	Holding brake open delay	0.00~10.00s	0.00	0x7406	s
E04.07	Brake closing speed THR	1.0~200.0%	0.0	0x7407	%
E04.08	Holding brake close delay	0.00~10.00s	0.00	0x7408	s
F04.09	Uncon close brake command SRC	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x7409	-
F04.10	Brake feedback point SRC	7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x740a	-
E04.12	Brake close comparison SRC	0:0 Others:Analog interconnection parameters	2301	0x740c	-

Function code	Name	Range	Factory value	Communication address	Unit
F04.13	Brake open CURR comparison THR	1.0~200.0%	0.0	0x740d	%
F04.14	Volt-level of PM-brake-terminal	0:5V 1:12V 2:24V	2	0x740e	-
F04.16	Brake opening speed pause time	0.00~10.00	0.50	0x7410	s
F04.17	Brake closing speed pause time	0.00~10.00	0.50	0x7411	s
F04.18	Rsvd.	0	0	0x7412	-
F04.19	Low SPD power FAIL anti-skid	0:Disable 1:Enable	0	0x7413	-
F04.21	VFD Rst Wait Time	0.00~10.00	0	0x7415	s
F05:Reservation					
F06:Reservation					
F07:Reservation					
F08:Lifting Control Module					
F08.00	Anti-sway function enabled	0:Forbid 1:Allow 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x7800	-
F08.01	Anti-Sway Mode Selection	0:Travel 1:Hoist	0	0x7801	-

Function code	Name	Range	Factory value	Communication address	Unit
F08.02	Anti-sway MAX swing length	0.10m~100.00m	100.00	0x7802	m
F08.03	Anti-sway MIN swing length	0.10m~100.00m	0.10	0x7803	m
F08.04	Force Sway Len Calc Enable	0.0%~100.0%	0.0	0x7804	%
F08.05	Force Enable Pendulum Len Calc	0:Forbid 1:Allow	0	0x7805	-
F08.06	Anti-Sway Acc/Dec Time	0.0s~1000.0s	3.0	0x7806	s
F08.07	Anti-sway adjustment speed DIFF	0.0~100.0	20.0	0x7807	%
F08.08	Target FRE change filter time	0.00~10.00	0.00	0x7808	s
F08.17	Lift pendulum length SRCE SELE	0:Valid setpoint(F08.18) 1:AIO Others:Analog interconnection parameters	0	0x7811	-
F08.18	Pendulum length setting value	1.00m~90.00m	9.00	0x7812	m
F08.19	Pendulum length offset	0.00m~10.00m	0.00	0x7813	m
F08.20	Pendulum Length Base Value	1.00m~100.00m	100.00	0x7814	m
F08.21	Actual pendulum length	1.00m~100.00m	1.00	0x7815	m
F08.22	Swing cycle	0.0s~20.0s	0.0	0x7816	s

Function code	Name	Range	Factory value	Communication address	Unit
F08.25	Manual Reset Pendulum Len	0:Forbid 1:Allow	0	0x7819	-
F08.26	Sway Len Change per Rev	0.1mm~6000.0mm	6.7	0x781a	mm
F08.27	Lift encoder count high	0~65535	0	0x781b	-
F08.28	Lift encoder count low	0~65535	0	0x781c	-
F08.29	Lift feedback pulse back	0:Forbid 1:Allow	0	0x781d	-
F08.30	Sway Len Calc Type Selection	0:Set by F08.26 1:Calculated and set by F08.31~C32	0	0x781e	-
F08.31	Anti-Sway Gear Ratio	0.0~6553.5	70.0	0x781f	-
F08.32	Anti-Sway Drum Diameter	0.000~65.535	0.300	0x7820	m
F08.33	Anti-Sway Rope Reeving	0.0~6553.5	2.0	0x7821	-
F08.65	Inch function enable	0:Forbid 1:Allow 2:DIO 3:D11 4:D12 5:D13 6:D14 7:D15 8:D16 9:D17 10: Rsvd. Others:Binary interconnection parameters	0	0x7841	-
F08.66	Inch enabling source		0	0x7842	-

Function code	Name	Range	Factory value	Communication address	Unit
F08.67	Inch distance	0.10mm~20.00mm	2.00	0x7843	mm
F08.68	Mechanical deceleration ratio	0.01~300.00	100.0	0x7844	-
F08.69	Winder diameter	0.01m~10.00m	0.500	0x7845	m
F08.70	Inch speed source	0:The set value is valid (F08.71) 1:AI0 2:AI1 3:HPI0 4:HPI1 Others: Analog quantity interconnection parameters	0	0x7846	-
F08.71	Inch speed	1.00Hz~5.00Hz	3.00	0x7847	Hz
F08.72	Inch Accel/Decel Time	0.0~1000.0	5.0	0x7848	s
G:Positioning parameters					
G00:Position Control PARAMs					
G00.00	Location COMD SRC	0:0 1:Pulse command 2:Multi-segment position command given 3:Communication given data	2	0x8000	-
G00.01	POS COMD DIRE switching COMD SRC	0: Invalid 1: Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 Others:Binary interconnection parameters	0	0x8001	-

Function code	Name	Range	Factory value	Communication address	Unit
G00.02	POS COMD average FT	0.0~128.0ms	0.0	0x8002	ms
G00.03	POS COMD level one LP FT	0.0~6553.5ms	0.0	0x8003	ms
G00.04	Pos comm- and per motor Rev.	0~1048576P/r	0	0x8004	p/r
G00.05	Pos comm- and per motor Rev.	0~1048576P/r	0	0x8005	p/r
G00.06	Electronic gear ratio 1 (MOL)	1~1073741824 P/r	1	0x8006	p/r
G00.07	Electronic gear ratio 1 (MOL)	1~1073741824 P/r	1	0x8007	p/r
G00.08	Electronic gear ratio 1 (DEN)	1~1073741824 P/r	1	0x8008	p/r
G00.09	Electronic gear ratio 1 (DEN)	1~1073741824 P/r	1	0x8009	p/r
G00.16	COMD pulse shape	0: Pulse + direction, positive logic 1: Pulse + direction, negative logic 2: A phase + B phase, 4 times frequency 3: CW+CCW	2	0x8010	-
G00.18	Pulse COMD input prohibition SRC	0: Invalid 1: Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8	0	0x8012	-
G00.19	POS COMD input prohibited SRC	Others:Binary interconnection parameters	0	0x8013	-

Function code	Name	Range	Factory value	Communication address	Unit
G00.20	POS deviation clear action SRC	0: Clear position deviation after servo OFF1 stop 1: Clear position deviation when fault occurs 2: Position deviation clear command to clear position deviation	0	0x8014	-
G00.21	POS deviation clear CMD SRC SEL	0: Invalid 1: Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 Others:Binary interconnection parameters	0	0x8015	-
G00.22	Motor rotation direction SEL	0: Take the CCW direction as the forward rotation direction 1: Take the CW direction as the forward rotation direction	0	0x8016	-
G00.24	POS complete output COND	0:Position error in tolerance zone 1:Condition 1st with filtered position command is 0 2:Condition 1st with position command before filter is 0 3:Condition 2st, maintain a hold time	0	0x8018	-

Function code	Name	Range	Factory value	Communication address	Unit
G00.25	POS Completion	1~65535P/r	1000	0x8019	p/r
G00.26	Threshold POS close to the threshold	1~65535P/r	65535	0x801a	p/r
G00.27	POS Completion Window Time	0~30000ms	1	0x801b	ms
G00.28	POS completion hold time	0~30000ms	1	0x801c	ms
G00.43	Origin return enable control	0: Turn off the origin return function 1: External command (G00.44) to start homing 2: Rsvd. 3: Start the origin return immediately after power-on 4: Return to origin immediately 5: Rsvd. 6: Set the current position as the zero point	0	0x802b	-
G00.44	Origin return CMD SRC SEL	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 Others:Binary interconnection parameters	0	0x802c	-

Function code	Name	Range	Factory value	Communication address	Unit
G00.45	Return to origin mode	0:Homing on positive home switch 1:Homing on negative home switch 2~5:Rsvd. 6:Homing on positive limit switch 7:Homing on negative limit switch	0	0x802d	-
G00.46	Speed of high-speed find origin	0~3000rpm	100	0x802e	rpm
G00.47	Speed of low-speed find origin	0~1000rpm	10	0x802f	rpm
G00.48	Search origin for ACC/DEC time	0~1000ms	1000	0x8030	ms
G00.49	Limit the time to find origin	0~65535ms	65535	0x8031	ms
G00.50	Machine origin offset	-1073741824~1073741824	0	0x8032	p
G00.51	Machine origin offset	-1073741824~1073741824	0	0x8033	p
G00.52	OO and limit PRO method SEL	0:Offset is location of home switch. 1:Offset is move distance. 2:Offset is location of home switch. LMT Switch start a new contrary work. 3:Offset is move distance.LMT	2	0x8034	-

Function code	Name	Range	Factory value	Communication address	Unit
		Switch start a new contrary work.			
G00.53	Origin switch SRC SEL	0: Invalid 1: Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 Others:Binary interconnection parameters	0	0x8035	-
G00.54	MECH origin offset source SELE	0:origin offset set value (G00.50) Others:Analog interconnection parameters	0	0x8036	-
G00.55	Positive limit COMD SRC SEL	0: Invalid 1: Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 Others:Binary interconnection parameters	0	0x8037	-
G00.56	Negative limit COMD SRC SEL	0: Invalid 1: Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:DI8 Others:Binary interconnection parameters	0	0x8038	-
G00.57	ADP COMD type	0: Relative position 1: Absolute position	0	0x8039	-

Function code	Name	Range	Factory value	Communication address	Unit
G00.58	ADP COMD SRC SEL	0:0 1: Direct setting value (G00.59) Others: Analog interconnection parameters	0	0x803a	-
G00.59	ADP COMD direct setting value	-1073741824 ~1073741824	0	0x803b	um
G00.60	ADP COMD direct setting value	-1073741824 ~1073741824	0	0x803c	um
G00.61	ADP maximum speed SRC SEL	0:25.0% 1: Multi-stage setting value 1 2: AI0 3: Rsvd. 4: Rsvd. 5: Rsvd. 6: Multi-segment value given 7: Electric potentiometer 8: Rsvd. 9: Bus adapter A process data 2 10: Bus adapter B process data 2 Others: Analog interconnection parameters	10	0x803d	-
G00.62	ADP ACC and DEC time	0~65535	0	0x802e	ms
G00.63	New POS COMD status SRC SEL	0:Invalid 1:Valid 2~10:DI0~DI8 Others: Binary interconnection parameters	0	0x802f	-

Function code	Name	Range	Factory value	Communication address	Unit
G00.64	Actual POS COMD update SRC SEL	0:Invalid 1:Valid 2~10:DI0~DI8 Others: Binary interconnection parameters	0	0x8040	-
G00.65	Displacement per load stroke	1~65535	1000	0x8041	nm
G00.66	Encoder POS feedback mode SEL	0:Relative position 1:Absolute position	1	0x8042	-
G00.71	ABZ Enc. position store enable	0: Invalid 1: Valid	0	0x8047	-
G00.74	Modulo correction select	0:Linear Axis 1:Rotary Axis(Modulo correct)	0	0x804a	-
G00.75	Modulo corr range	1~2147483647	360000	0x804b	p
G00.76	Modulo corr range	1~2147483647	360000	0x804c	p
G00.77	Abs positioning direction	0:Through the shortest distance 1:In the positive direction 2:In the negative direction 3:Use external selection	0	0x804d	-
G00.78	Abs positive sel	0:Invalid 1:Valid 2~10:DI0~DI8 Others: Binary interconnection parameters	0	0x804e	-
G00.79	Abs negative sel	0:Invalid 1:Valid 2~10:DI0~DI8 Others: Binary interconnection parameters	0	0x804f	-

Function code	Name	Range	Factory value	Communication address	Unit
G01:Servo gain PARAMs					
G01.00	1st position loop gain	0.0~2000.0Hz	39.0	0x8100	Hz
G01.01	1st speed loop gain	0.1~2000.0Hz	25.0	0x8101	Hz
G01.02	1st speed loop integral time CST	0.15~512.00ms	31.83	0x8102	ms
G01.13	Load moment of inertia ratio	0.00~120.00	0.00	0x810d	-
G01.20	Speed feed-forward FT PARAM	0.00~64.00ms	0.50	0x8114	ms
G01.21	Speed feed forward gain	0.0~100.0%	0.0	0x8115	%
G01.22	Torque feedforward selection	0:No torque feed forward 1:Internal torque feedforward	1	0x8116	-
G01.23	Torque feedforward FT PARAM	0.00~64.00ms	1.00	0x8117	ms
G01.24	Torque feedforward gain	0.00~64.00ms	0.0	0x8118	%
G01.31	PDFF control factor	0.0~100.0%	0.0	0x811f	%
G01.32	Torque FT constant	0.00~30.00ms	0.00	0x8120	ms
G02:Automatically Adjust PARAMs					
G02.00	Self-adjustment mode selection	0:Set parameters manually 1:Use gain according to rigidity level and existing table	1	0x8200	-
G02.01	Rigidity level set	0~31	12	0x8201	-
G02.16	Group 1 notch filter FRQ	50~4000Hz	4000	0x8210	Hz

Function code	Name	Range	Factory value	Communication address	Unit
G02.17	Group 1 notch width class	0~20	2	0x8211	-
G02.18	Group 1 notch filter ATTE level	0~99	25	0x8212	-
G02.19	Group 2 notch filter FRQ	50~4000Hz	4000	0x8213	Hz
G02.20	Group 2 notch width class	0~20	2	0x8214	-
G02.21	Group 2 notch filter ATTE level	0~99	25	0x8215	-
G02.22	Group 3 notch filter FRQ	50~4000Hz	4000	0x8216	Hz
G02.23	Group 3 notch width class	0~20	2	0x8217	-
G02.24	Group 3 notch filter ATTE level	0~99	25	0x8218	-
G02.28	Notch resonance FRQ ID results	0~4000Hz	4000	0x821c	Hz
G02.31	Torque disturbance COMP gain	-100.0%~100.0%	0	0x821f	-
G02.32	Torque disturbance observer FT	0.00~25.00ms	10.00	0x8220	ms
G02.36	Offline data SOUR	0:performance data sampling 1:Function data sampling	0	0x8224	-
G02.45	Low FRQ vibration mode SEL	0:Manually set the vibration frequency 1:Automatic identification	0	0x822d	-

Function code	Name	Range	Factory value	Communication address	Unit
		of vibration frequency			
G02.46	Low FRQ resonant FRQ	1.0~100.0Hz	100.0	0x822e	Hz
G02.47	Low FEQ vibration filter width	0~10	2	0x822f	-
G02.48	Servo FRQ POS DEV judgment THR	1~1000p	5	0x8230	p
G03: Servo Dedicated FUNC PARAMs					
G03.03	POS error MIN fault value(r)	1~1073741824	0.60	0x8303	-
G03.04	POS error fault ratio	1~1073741824	0.100	0x8304	%
G03.13	Soft limit setting	0:Disable soft limit 1:Enable soft limit	0	0x830d	-
G03.14	Maximum soft limit	-2147483648 ~2147483647	2147483647	0x830e	p
G03.15	Maximum soft limit	-2147483648 ~2147483647	2147483647	0x830f	p
G03.16	Minimum soft limit	-2147483648 ~2147483647	-2147483647	0x8310	p
G03.17	Minimum soft limit	-2147483648 ~2147483647	-2147483647	0x8311	p
G03.20	POS JOG1 movement DP	0~1	10000	0x8314	p
G03.21	POS JOG1 movement DP	0~1	10000	0x8315	p
G03.22	POS JOG1 maximum speed	0~1	200	0x8316	rpm
G03.23	POS JOG1 ACC/DEC time	0~1	10	0x8317	ms

Function code	Name	Range	Factory value	Communication address	Unit
G03.24	POS JOG2 movement DP	0~1	10000	0x8318	p
G03.25	POS JOG2 movement DP	0~1	10000	0x8319	p
G03.26	POS JOG2 maximum speed	0~1	200	0x831a	rpm
G03.27	POS JOG2 ACC/DEC time	0~1	10	0x831b	ms
G03.29	EPOS task cancel command SOUR	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x831d	-
G03.30	EPOS task S U S P command SOUR	0:Invalid 1:Valid 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x831e	-
G03.31	EPOS maximum speed	0~1	30000	0x831f	1000 LU/min
G03.32	EPOS maximum speed	0~1	30000	0x8320	1000 LU/min
G03.33	EPOS maximum ACC	0~1	100	0x8321	1000 LU/s ²
G03.34	EPOS maximum ACC	0~1	100	0x8322	1000 LU/s ²
G03.35	EPOS maximum DEC	0~1	100	0x8323	1000 LU/s ²
G03.36	EPOS maximum DEC	0~1	100	0x8324	1000 LU/s ²
G03.37	EPOS mission cancel SPD MULTI	0~1	100.0	0x8325	%

Function code	Name	Range	Factory value	Communication address	Unit
G03.38	Activate the run fix stop point	0:Invalid 1:Valid 2:from PN-STW2.8 Others:Binary interconnection parameters	2	0x8326	-
G03.39	Fixed stop MAX following error	0~1	1000	0x8327	p
G03.40	Fixed stop MAX following error	0~1	0	0x8328	p
G03.41	Fixed stop monitoring window	0~1	100	0x8329	p
G03.42	Not reached fix point DSPY SELE	0:Warning (stay running) 1:Fault (stop)	0	0x832a	-
G04:Multi-segment POS FUNC PARAMs					
G04.00	Multi-stage POS operation mode	0:Single cycle (select segment through G04.05) 1:Cycle operation(select segment through G04.05) 2:Inner fixed positioning profile select 3:Sequence running(select segment through G04.05)	0	0x8400	-
G04.01	Multi-segment POS value SEL 1	0:0 1:1 2~9:DI0~DI7 10: Rsvd.	0	0x8401	-
G04.02	Multi-segment POS value SEL 2	Others:Binary interconnection parameters	0	0x8402	-

Function code	Name	Range	Factory value	Communication address	Unit
G04.03	Multi-segment POS value SEL 3		0	0x8403	-
G04.04	Multi-segment POS value SEL 4		0	0x8404	-
G04.05	SEL number of segments DP COMD	1~16	1	0x8405	-
G04.06	Remaining processing method	0: Continue to run the unfinished segment 1: Restart operation from segment 1	0	0x8406	-
G04.07	Waiting time unit	0:ms 1:s	0	0x8407	-
G04.08	SEL of DP COMD type	0: Relative displacement command 1: Absolute displacement command	0	0x8408	-
G04.09	SEQ operation start segment SEL	0~16	0	0x8409	-
G04.10	1st segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x840a	p
G04.11	1st segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x840b	p
G04.12	MAX speed of the 1st segment	1~6000rpm	200	0x840c	rpm
G04.13	1st stage DP ACC/DEC time	0~65535ms(s)	10	0x840d	ms
G04.14	Wait time after 1st segment	0~10000ms(s)	10	0x840e	-

Function code	Name	Range	Factory value	Communication address	Unit
G04.15	2st segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x840f	p
G04.16	2st segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8410	p
G04.17	2st DP maximum running speed	1~6000rpm	200	0x8411	rpm
G04.18	2nd stage DP ACC/DEC time	0~65535ms(s)	10	0x8412	ms
G04.19	Wait time after 2st segment	0~10000ms(s)	10	0x8413	-
G04.20	3rd segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8414	p
G04.21	3rd segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8415	p
G04.22	3rd DP maximum running speed	1~6000rpm	200	0x8416	rpm
G04.23	3rd stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8417	ms
G04.24	Wait time after 3rd segment	0~10000ms(s)	10	0x8418	-
G04.25	4th segment moving displacement	- 1073741824 ~1073741824 (command unit)	10000	0x8419	p
G04.26	4th segment moving displacement	- 1073741824 ~1073741824 (command unit)	10000	0x841a	p
G04.27	4th DP maximum running speed	1~6000rpm	200	0x841b	rpm
G04.28	4th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x841c	ms

Function code	Name	Range	Factory value	Communication address	Unit
G04.29	Wait time after 4th segment	0~10000ms(s)	10	0x841d	-
G04.30	5th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x841e	p
G04.31	5th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x841f	p
G04.32	5th DP maximum running speed	1~6000rpm	200	0x8420	rpm
G04.33	5th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8421	ms
G04.34	Wait time after 5th segment	0~10000ms(s)	10	0x8422	-
G04.35	6th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8423	p
G04.36	6th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8424	p
G04.37	6th DP maximum running speed	1~6000rpm	200	0x8425	rpm
G04.38	6th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8426	ms
G04.39	Wait time after 6th segment	0~10000ms(s)	10	0x8427	-
G04.40	7th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8428	p
G04.41	7th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8429	p
G04.42	7th DP maximum running speed	1~6000rpm	200	0x842a	rpm

Function code	Name	Range	Factory value	Communication address	Unit
G04.43	7th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x842b	ms
G04.44	Wait time after 7th segment	0~10000ms(s)	10	0x842c	-
G04.45	8th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x842d	p
G04.46	8th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x842e	p
G04.47	8th DP maximum running speed	1~6000rpm	200	0x842f	rpm
G04.48	8th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8430	ms
G04.49	Wait time after 8th segment	0~10000ms(s)	10	0x8431	-
G04.50	9th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8432	p
G04.51	9th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8433	p
G04.52	9th DP maximum running speed	1~6000rpm	200	0x8434	rpm
G04.53	9th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8435	ms
G04.54	Wait time after 9th segment	0~10000ms(s)	10	0x8436	-
G04.55	10th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8437	p
G04.56	10th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8438	p

Function code	Name	Range	Factory value	Communication address	Unit
G04.57	10th DP maximum running speed	1~6000rpm	200	0x8439	rpm
G04.58	10th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x843a	ms
G04.59	Wait time after 10th segment	0~10000ms(s)	10	0x843b	-
G04.60	11th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x843c	p
G04.61	11th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x843d	p
G04.62	11th DP maximum running speed	1~6000rpm	200	0x843e	rpm
G04.63	11th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x843f	ms
G04.64	Wait time after 11th segment	0~10000ms(s)	10	0x8440	-
G04.65	12th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8441	p
G04.66	12th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8442	p
G04.67	12th DP maximum running speed	1~6000rpm	200	0x8443	rpm
G04.68	12th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8444	ms
G04.69	Wait time after 12th segment	0~10000ms(s)	10	0x8445	-
G04.70	13th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8446	p

Function code	Name	Range	Factory value	Communication address	Unit
G04.71	13th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8447	p
G04.72	13th DP maximum running speed	1~6000rpm	200	0x8448	rpm
G04.73	13th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8449	ms
G04.74	Wait time after 13th segment	0~10000ms(s)	10	0x844a	-
G04.75	14th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x844b	p
G04.76	14th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x844c	p
G04.77	14th DP maximum running speed	1~6000rpm	200	0x844d	rpm
G04.78	14th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x844e	ms
G04.79	Wait time after 14th segment	0~10000ms(s)	10	0x844f	-
G04.80	15th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8450	p
G04.81	15th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8451	p
G04.82	15th DP maximum running speed	1~6000rpm	200	0x8452	rpm
G04.83	15th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8453	ms
G04.84	Wait time after 15th segment	0~10000ms(s)	10	0x8454	-

Function code	Name	Range	Factory value	Communication address	Unit
G04.85	16th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8455	p
G04.86	16th segment moving DP	- 1073741824 ~1073741824 (command unit)	10000	0x8456	p
G04.87	16th DP maximum running speed	1~6000rpm	200	0x8457	rpm
G04.88	16th stage stage DP ACC/DEC time	0~65535ms(s)	10	0x8458	ms
G04.89	Wait time after 16th segment	0~10000ms(s)	10	0x8459	-
G04.90	Multi-segment POS enable SRC SEL	0:0 1:1 2:DI0 3:DI1 4:DI2 5:DI3 6:DI4 7:DI5 8:DI6 9:DI7 10:Rsvd. Others:Binary interconnection parameters	0	0x845a	-
G05:Fully Closed Loop FUNC PARAMs					
G05.00	Encoder feedback mode	0: Motor internal encoder 1: Ordinary ABZ encoder (DB15) 2: Rsvd.(resolver) 3: Rsvd.(province line) 4: BISS-C communication encoder (1222) 5: RS485 communication en-	0	0x8500	-

Function code	Name	Range	Factory value	Communication address	Unit
		coder (1623) 6: SSI Communication Encoder			
G05.01	Way of use external encoder	0:No inversion 1:Inversion	0	0x8500	-
G05.04	System reservation	0~1	0	0x8500	-
G05.05	System reservation	0~1	0	0x8500	-
G05.06	EX encoder pulses per circle	0~1073741824	0	0x8500	-
G05.07	EX encoder pulses per circle	0~1073741824	0	0x8500	-
G05.08	FCL POS DEV is too large THR	0~1073741824	0	0x8500	-
G05.09	FCL POS DEV is too large THR	0~1073741824	0	0x8500	-
G05.16	SSI Encoder Encoding Method	0:Natural binary code 1:Gray code	0	0x8500	-
G05.17	SSI Encoder baud rate	125~4000	0	0x8500	-
G05.18	SSI - Encoder single Res. (bit)	8~31	0	0x8500	-
G05.19	SSI - Encoder multiturn Res.(bit)	0~31	0	0x8500	-
P:Interconnection parameters					
P00:Hardware Status(Binary connect)					
P00.00	Logic 0	0	0	0xe000	-
P00.01	Logic 1	1	1	0xe001	-
P00.02	Multifunctional DI0	0~1	0	0xe002	-

Function code	Name	Range	Factory value	Communication address	Unit
P00.03	Multifunctional DI1	0~1	0	0xe003	-
P00.04	Multifunctional DI2	0~1	0	0xe004	-
P00.05	Multifunctional DI3	0~1	0	0xe005	-
P00.06	Multifunctional DI4	0~1	0	0xe006	-
P00.07	Multifunctional DI5	0~1	0	0xe007	-
P00.08	Multifunctional DI6	0~1	0	0xe008	-
P00.09	Multifunctional DI7	0~1	0	0xe009	-
P00.10	Multifunctional DI8	0~1	0	0xe00a	-
P00.11	Multifunctional DI9	0~1	0	0xe00b	-
P00.12	Multifunctional DI10	0~1	0	0xe00c	-
P00.23	Multi-function DI0 inversion	0~1	0	0xe017	-
P00.24	Multi-function DI1 inversion	0~1	0	0xe018	-
P00.25	Multi-function DI2 inversion	0~1	0	0xe019	-
P00.26	Multi-function DI3 inversion	0~1	0	0xe01a	-
P00.27	Multi-function DI4 inversion	0~1	0	0xe01b	-
P00.28	Multi-function DI5 inversion	0~1	0	0xe01c	-
P00.29	Multi-function DI6 inversion	0~1	0	0xe01d	-
P00.30	Multi-function DI7 inversion	0~1	0	0xe01e	-
P00.31	Multi-function DI8 inversion	0~1	0	0xe01f	-
P00.32	Multi-function DI9 inversion	0~1	0	0xe020	-

Function code	Name	Range	Factory value	Communication address	Unit
P00.33	Multi-function DI10 inversion	0~1	0	0xe021	-
P00.50	Multi-function DO0	0~1	0	0xe032	-
P00.57	Multi-function DO0 inversion	0~1	0	0xe039	-
P00.64	BP DIO20 input signal	0~1	0	0xe040	-
P00.65	BP DIO21 input signal	0~1	0	0xe041	-
P00.66	BP DIO22 input signal	0~1	0	0xe042	-
P00.67	BP DIO23 input signal	0~1	0	0xe043	-
P00.68	BP DIO24 input signal	0~1	0	0xe044	-
P00.69	BP DIO25 input signal	0~1	0	0xe045	-
P00.70	BP DIO26 input signal	0~1	0	0xe046	-
P00.71	BP DIO27 input signal	0~1	0	0xe047	-
P00.72	BP DIO20 input signal	0~1	0	0xe048	-
P00.73	BP DIO21 input signal	0~1	0	0xe049	-
P00.74	BP DIO22 input signal	0~1	0	0xe04a	-
P00.75	BP DIO23 input signal	0~1	0	0xe04b	-
P00.76	BP DIO24 input signal	0~1	0	0xe04c	-
P00.77	BP DIO25 input signal	0~1	0	0xe04d	-
P00.78	BP DIO26 input signal	0~1	0	0xe04e	-
P00.79	BP DIO27 input signal	0~1	0	0xe04f	-
P00.80	BP DIO20 input signal inversion	0~1	0	0xe050	-

Function code	Name	Range	Factory value	Communication address	Unit
P00.81	BP DIO21 input signal inversion	0~1	0	0xe051	-
P00.82	BP DIO22 input signal inversion	0~1	0	0xe052	-
P00.83	BP DIO23 input signal inversion	0~1	0	0xe053	-
P00.84	BP DIO24 input signal inversion	0~1	0	0xe054	-
P00.85	BP DIO25 input signal inversion	0~1	0	0xe055	-
P00.86	BP DIO26 input signal inversion	0~1	0	0xe056	-
P00.87	BP DIO27 input signal inversion	0~1	0	0xe057	-
P00.88	BP DIO20 input signal inversion	0~1	0	0xe058	-
P00.89	BP DIO21 input signal inversion	0~1	0	0xe059	-
P00.90	BP DIO22 input signal inversion	0~1	0	0xe05a	-
P00.91	BP DIO23 input signal inversion	0~1	0	0xe05b	-
P00.92	BP DIO24 input signal inversion	0~1	0	0xe05c	-
P00.93	BP DIO25 input signal inversion	0~1	0	0xe05d	-
P00.94	BP DIO26 input signal inversion	0~1	0	0xe05e	-
P00.95	BP DIO27 input signal inversion	0~1	0	0xe05f	-
P01: System Ctrl Words and State(Binary connect)					
P01.00	Ready for start-up	0~1	0	0xe100	-
P01.01	Ready for run	0~1	0	0xe101	-
P01.02	Run	0~1	0	0xe102	-
P01.03	Fault activation	0~1	0	0xe103	-
P01.04	OFF2 invalid	0~1	0	0xe104	-
P01.05	OFF3 invalid	0~1	0	0xe105	-
P01.06	Boot block	0~1	0	0xe106	-

Function code	Name	Range	Factory value	Communication address	Unit
P01.07	Alarm activate	0~1	0	0xe107	-
P01.08	Speed output DEV is too large	0~1	0	0xe108	-
P01.09	Comparison value reached	0~1	0	0xe109	-
P01.10	Torque/current reach limit	0~1	0	0xe10a	-
P01.11	Holding brake open	0~1	0	0xe10b	-
P01.12	Positive speed	0~1	0	0xe10c	-
P01.13	IGBT operation	0~1	0	0xe10d	-
P01.14	Jog operation valid	0~1	0	0xe10e	-
P01.15	Pre-excitation start	0~1	0	0xe10f	-
P01.16	Open DC brake	0~1	0	0xe110	-
P01.18	Torque control in effect	0~1	0	0xe112	-
P01.20	Boot is not ready	0~1	0	0xe114	-
P01.21	Running is not ready	0~1	0	0xe115	-
P01.22	Not run	0~1	0	0xe116	-
P01.23	No fault	0~1	0	0xe117	-
P01.24	OFF2 in effect	0~1	0	0xe118	-
P01.25	OFF3 in effect	0~1	0	0xe119	-
P01.26	Boot is not blocked	0~1	0	0xe11a	-
P01.27	No alarm/Light fault	0~1	0	0xe11b	-
P01.28	Speed output DEV is normal	0~1	0	0xe11c	-
P01.29	Comparison value not reach	0~1	0	0xe11d	-
P01.30	Torque/current not reach limit	0~1	0	0xe11e	-
P01.31	Holding brake close	0~1	0	0xe11f	-
P01.32	Negative speed	0~1	0	0xe120	-

Function code	Name	Range	Factory value	Communication address	Unit
P01.33	IGBT blockade	0~1	0	0xe121	-
P01.34	Inching not in effect	0~1	0	0xe122	-
P01.35	Preexcitation complete	0~1	0	0xe123	-
P01.36	DC brake end	0~1	0	0xe124	-
P01.38	Positioning complete sign	0~1	0	0xe126	-
P01.39	Locate approach sign	0~1	0	0xe127	-
P01.41	RFG output inhibit	0~1	0	0xe129	-
P01.42	RFG pause	0~1	0	0xe12a	-
P01.43	RFG input inhibit	0~1	0	0xe12b	-
P01.44	RFG acceleration	0~1	0	0xe12c	-
P01.45	RFG deceleration	0~1	0	0xe12d	-
P01.46	RFG constant speed	0~1	0	0xe12e	-
P01.48	V d c _ m i n active	0~1	0	0xe130	-
P01.49	V d c _ m a x active	0~1	0	0xe131	-
P01.50	Reaching the upper torque limit	0~1	0	0xe132	-
P01.51	Reached lower torque limit	0~1	0	0xe133	-
P01.52	Output torque reaches limiter	0~1	0	0xe134	-
P01.58	Holding brake opened	0~1	0	0xe13a	-
P01.59	Holding brake closed	0~1	0	0xe13b	-
P01.60	Holding brake can not be opened	0~1	0	0xe13c	-
P01.61	Holding brake can not be closed	0~1	0	0xe13d	-

Function code	Name	Range	Factory value	Communication address	Unit
P01.62	Motor pre-overload state	0~1	0	0xe13e	-
P01.63	Zero speed given operation	0~1	0	0xe13f	-
P01.64	DC bus live mark	0~1	0	0xe140	-
P01.65	Motor speed is zero	0~1	0	0xe141	-
P01.66	PID function effective	0~1	0	0xe142	-
P01.67	PID operation enable	0~1	0	0xe143	-
P01.68	PID action direction	0~1	0	0xe144	-
P01.69	PID given freeze enable	0~1	0	0xe145	-
P01.70	Forced enable of PID integral	0~1	0	0xe146	-
P01.71	PID deviation dead band enable	0~1	0	0xe147	-
P01.72	PID saturation state	0~1	0	0xe148	-
P01.73	Motor over TEMP protection mark	0~1	0	0xe149	-
P01.74	Motor over TEMP warning sign	0~1	0	0xe14a	-
P01.75	Motor selection bit0	0~1	0	0xe14b	-
P01.76	Motor selection bit1	0~1	0	0xe14c	-
P01.77	RFG ramp time selection Bit 0	0~1	0	0xe14d	-
P01.78	RFG ramp time selection Bit 1	0~1	0	0xe14e	-
P01.79	Speed setpoint selection Bit 0	0~1	0	0xe14f	-
P01.80	Speed setpoint selection Bit 1	0~1	0	0xe150	-
P01.81	Speed setpoint selection Bit 2	0~1	0	0xe151	-
P01.82	Speed setpoint selection Bit 3	0~1	0	0xe152	-

Function code	Name	Range	Factory value	Communication address	Unit
P01.84	Holding brake control FDBK sign	0~1	0	0xe154	-
P01.85	RFG operation flag	0~1	0	0xe155	-
P01.87	Positive limit switch activated	0~1	0	0xe157	-
P01.88	Negative limit switch activated	0~1	0	0xe158	-
P01.89	Return to origin is running	0~1	0	0xe159	-
P01.90	Reference point is set	0~1	0	0xe15a	-
P01.91	Position instruction completion	0~1	0	0xe15b	-
P01.92	Fix stop point has been reached	0~1	0	0xe15c	-
P01.93	Anti-sway enable flag	0~1	0	0xe15d	-
P01.94	Anti-sway speed lock flag	0~1	0	0xe15e	-
P02:FBA and Fault Flag(Binary connect)					
P02.00	Bus adapter A input.PZD1.0	0~1	0	0xe200	-
P02.01	Bus adapter A input.PZD1.1	0~1	0	0xe201	-
P02.02	Bus adapter A input.PZD1.2	0~1	0	0xe202	-
P02.03	Bus adapter A input.PZD1.3	0~1	0	0xe203	-
P02.04	Bus adapter A input.PZD1.4	0~1	0	0xe204	-
P02.05	Bus adapter A input.PZD1.5	0~1	0	0xe205	-
P02.06	Bus adapter A input.PZD1.6	0~1	0	0xe206	-
P02.07	Bus adapter A input.PZD1.7	0~1	0	0xe207	-

Function code	Name	Range	Factory value	Communication address	Unit
P02.08	Bus adapter A input.PZD1.8	0~1	0	0xe208	-
P02.09	Bus adapter A input.PZD1.9	0~1	0	0xe209	-
P02.10	Bus adapter A input.PZD1.10	0~1	0	0xe20a	-
P02.11	Bus adapter A input.PZD1.11	0~1	0	0xe20b	-
P02.12	Bus adapter A input.PZD1.12	0~1	0	0xe20c	-
P02.13	Bus adapter A input.PZD1.13	0~1	0	0xe20d	-
P02.14	Bus adapter A input.PZD1.14	0~1	0	0xe20e	-
P02.15	Bus adapter A input.PZD1.15	0~1	0	0xe20f	-
P02.16	Bus adapter A input.PZDx.0	0~1	0	0xe210	-
P02.17	Bus adapter A input.PZDx.1	0~1	0	0xe211	-
P02.18	Bus adapter A input.PZDx.2	0~1	0	0xe212	-
P02.19	Bus adapter A input.PZDx.3	0~1	0	0xe213	-
P02.20	Bus adapter A input.PZDx.4	0~1	0	0xe214	-
P02.21	Bus adapter A input.PZDx.5	0~1	0	0xe215	-
P02.22	Bus adapter A input.PZDx.6	0~1	0	0xe216	-
P02.23	Bus adapter A input.PZDx.7	0~1	0	0xe217	-
P02.24	Bus adapter A input.PZDx.8	0~1	0	0xe218	-
P02.25	Bus adapter A input.PZDx.9	0~1	0	0xe219	-
P02.26	Bus adapter A input.PZDx.10	0~1	0	0xe21a	-
P02.27	Bus adapter A input.PZDx.11	0~1	0	0xe21b	-

Function code	Name	Range	Factory value	Communication address	Unit
P02.28	Bus adapter A input.PZDx.12	0~1	0	0xe21c	-
P02.29	Bus adapter A input.PZDx.13	0~1	0	0xe21d	-
P02.30	Bus adapter A input.PZDx.14	0~1	0	0xe21e	-
P02.31	Bus adapter A input.PZDx.15	0~1	0	0xe21f	-
P02.32	Modbus COMM start and stop COMD	0~1	0	0xe220	-
P02.33	Modbus COMM jog start and stop	0~1	0	0xe221	-
P02.34	Modbus COMM free stop	0~1	0	0xe222	-
P02.35	Modbus COMM fault reset	0~1	0	0xe223	-
P02.50	DriveLink.PZD1.0	0~1	0	0xe232	-
P02.51	DriveLink.PZD1.1	0~1	0	0xe233	-
P02.52	DriveLink.PZD1.2	0~1	0	0xe234	-
P02.53	DriveLink.PZD1.3	0~1	0	0xe235	-
P02.54	DriveLink.PZD1.4	0~1	0	0xe236	-
P02.55	DriveLink.PZD1.5	0~1	0	0xe237	-
P02.56	DriveLink.PZD1.6	0~1	0	0xe238	-
P02.57	DriveLink.PZD1.7	0~1	0	0xe239	-
P02.58	DriveLink.PZD1.8	0~1	0	0xe23a	-
P02.59	DriveLink.PZD1.9	0~1	0	0xe23b	-
P02.60	DriveLink.PZD1.10	0~1	0	0xe23c	-
P02.61	DriveLink.PZD1.11	0~1	0	0xe23d	-
P02.62	DriveLink.PZD1.12	0~1	0	0xe23e	-
P02.63	DriveLink.PZD1.13	0~1	0	0xe23f	-
P02.64	DriveLink.PZD1.14	0~1	0	0xe240	-
P02.65	DriveLink.PZD1.15	0~1	0	0xe241	-
P03:Logic arithmetic module(Binary connect)					
P03.00	Logic AND module A output	0~1	0	0xe300	-
P03.01	Logic AND module B output	0~1	0	0xe301	-

Function code	Name	Range	Factory value	Communication address	Unit
P03.02	Logic AND module C output	0~1	0	0xe302	-
P03.03	Logic AND module D output	0~1	0	0xe303	-
P03.04	Logic NOT module A output	0~1	0	0xe304	-
P03.05	Logic NOT module B output	0~1	0	0xe305	-
P03.06	Logic NOT module C output	0~1	0	0xe306	-
P03.07	Logic NOT module D output	0~1	0	0xe307	-
P03.08	Logic NOT module E output	0~1	0	0xe308	-
P03.09	Logic NOT module F output	0~1	0	0xe309	-
P03.10	Logic NOT module G output	0~1	0	0xe30a	-
P03.11	Logic NOT module H output	0~1	0	0xe30b	-
P03.12	Logic OR module A output	0~1	0	0xe30c	-
P03.13	Logic OR module B output	0~1	0	0xe30d	-
P03.14	Logic OR module C output	0~1	0	0xe30e	-
P03.15	Logic OR module D output	0~1	0	0xe30f	-
P03.16	Logic XOR module A output	0~1	0	0xe310	-
P03.17	Logic XOR module B output	0~1	0	0xe311	-
P03.18	Logic XOR module C output	0~1	0	0xe312	-
P03.19	Logic XOR module D output	0~1	0	0xe313	-
P03.20	Logic delay module A output	0~1	0	0xe314	-
P03.21	Logic delay module B output	0~1	0	0xe315	-

Function code	Name	Range	Factory value	Communication address	Unit
P03.22	Logic delay module C output	0~1	0	0xe316	-
P03.23	Logic delay module D output	0~1	0	0xe317	-
P03.24	Comparison module A larger flag	0~1	0	0xe318	-
P03.25	Comparison module A equals flag	0~1	0	0xe319	-
P03.26	Comparison module A less flag	0~1	0	0xe31a	-
P03.27	Comparison module B larger flag	0~1	0	0xe31b	-
P03.28	Comparison module B equals flag	0~1	0	0xe31c	-
P03.29	Comparison module B less flag	0~1	0	0xe31d	-
P03.30	Division A dividend equals 0	0~1	0	0xe31e	-
P03.31	Division B dividend equals 0	0~1	0	0xe31f	-
P03.32	Symbol of ABS module A input	0~1	0	0xe320	-
P03.33	Symbol of ABS module B input	0~1	0	0xe321	-
P03.34	Overflow flag: absolute value A	0~1	0	0xe322	-
P03.35	Overflow flag: absolute value B	0~1	0	0xe323	-
P03.36	Overflow flag: addition A	0~1	0	0xe324	-
P03.37	Overflow flag: addition B	0~1	0	0xe325	-
P03.38	Overflow flag: addition C	0~1	0	0xe326	-
P03.39	Overflow flag: subtraction A	0~1	0	0xe327	-
P03.40	Overflow flag: subtraction B	0~1	0	0xe328	-
P03.41	Overflow flag: multiplication A	0~1	0	0xe329	-

Function code	Name	Range	Factory value	Communication address	Unit
P03.42	Overflow flag:multiplication B	0~1	0	0xe32a	-
P03.43	Overflow flag:divide module A	0~1	0	0xe32b	-
P03.44	Overflow flag:divide module B	0~1	0	0xe32c	-
P03.47	Comparison module C larger flag	0~1	0	0xe32f	-
P03.48	Comparison module C equals flag	0~1	0	0xe330	-
P03.49	Comparison module C less flag	0~1	0	0xe331	-
P03.50	Comparison module D larger flag	0~1	0	0xe332	-
P03.51	Comparison module D equals flag	0~1	0	0xe333	-
P03.52	Comparison module D less flag	0~1	0	0xe334	-
P04:Word Bit Conversion Module(Binary connect)					
P04.00	WTB function A output bit0	0~1	0	0xe400	-
P04.01	WTB function A output bit1	0~1	0	0xe401	-
P04.02	WTB function A output bit2	0~1	0	0xe402	-
P04.03	WTB function A output bit3	0~1	0	0xe403	-
P04.04	WTB function A output bit4	0~1	0	0xe404	-
P04.05	WTB function A output bit5	0~1	0	0xe405	-
P04.06	WTB function A output bit6	0~1	0	0xe406	-
P04.07	WTB function A output bit7	0~1	0	0xe407	-
P04.08	WTB function A output bit8	0~1	0	0xe408	-
P04.09	WTB function A output bit9	0~1	0	0xe409	-
P04.10	WTB function A output bit10	0~1	0	0xe40a	-

Function code	Name	Range	Factory value	Communication address	Unit
P04.11	WTB function A output bit11	0~1	0	0xe40b	-
P04.12	WTB function A output bit12	0~1	0	0xe40c	-
P04.13	WTB function A output bit13	0~1	0	0xe40d	-
P04.14	WTB function A output bit14	0~1	0	0xe40e	-
P04.15	WTB function A output bit15	0~1	0	0xe40f	-
P04.16	WTB function B output bit0	0~1	0	0xe410	-
P04.17	WTB function B output bit1	0~1	0	0xe411	-
P04.18	WTB function B output bit2	0~1	0	0xe412	-
P04.19	WTB function B output bit3	0~1	0	0xe413	-
P04.20	WTB function B output bit4	0~1	0	0xe414	-
P04.21	WTB function B output bit5	0~1	0	0xe415	-
P04.22	WTB function B output bit6	0~1	0	0xe416	-
P04.23	WTB function B output bit7	0~1	0	0xe417	-
P04.24	WTB function B output bit8	0~1	0	0xe418	-
P04.25	WTB function B output bit9	0~1	0	0xe419	-
P04.26	WTB function B output bit10	0~1	0	0xe41a	-
P04.27	WTB function B output bit11	0~1	0	0xe41b	-
P04.28	WTB function B output bit12	0~1	0	0xe41c	-
P04.29	WTB function B output bit13	0~1	0	0xe41d	-
P04.30	WTB function B output bit14	0~1	0	0xe41e	-

Function code	Name	Range	Factory value	Communication address	Unit
P04.31	WTB function B output bit15	0~1	0	0xe41f	-
P05:(Reserved)					
P06:State and Peripheral(Analog connect)					
P06.00	Current state machine	0~65535	0	0xe600	-
P06.01	Target frequency	0~65535	0	0xe601	-
P06.02	Given frequency	0~65535	0	0xe602	-
P06.03	Output frequency	0~65535	0	0xe603	-
P06.04	Target speed	0~65535	0	0xe604	-
P06.05	Given speed	0~65535	0	0xe605	-
P06.06	Motor speed	0~65535	0	0xe606	-
P06.07	Output voltage	0~65535	0	0xe607	-
P06.08	Output current	0~65535	0	0xe608	-
P06.09	Output power	0~65535	0	0xe609	-
P06.10	Torque mode torque set-point	0~65535	0	0xe60a	-
P06.11	Output torque	0~65535	0	0xe60b	-
P06.12	System reservation	0~65535	0	0xe60c	-
P06.14	DC-link voltage(V)	0~65535	0.0	0xe60e	V
P06.15	Raduiator temperature(°C)	0~65535	0	0xe60f	°C
P06.16	Encoder feedback frequency	-32768~32767	0	0xe610	-
P06.17	VF separation voltage give	-32768~32767	0	0xe611	-
P06.18	Motor temperature(X5,°C)	-32768~32767	0	0xe612	°C
P06.19	Motor temperature(X11,°C)	-32768~32767	0	0xe613	°C
P06.30	AIO conversion result	-32768~32767	0	0xe61e	-

Function code	Name	Range	Factory value	Communication address	Unit
P06.36	Physical state of DI input	-32768~32767	0	0xe624	-
P07:Communication(Analog connect)					
P07.00	Bus adapter A input.PZD1	0~65535	0	0xe700	-
P07.01	Bus adapter A input.PZD2	0~65535	0	0xe701	-
P07.02	Bus adapter A input.PZD3	0~65535	0	0xe702	-
P07.03	Bus adapter A input.PZD4	0~65535	0	0xe703	-
P07.04	Bus adapter A input.PZD5	0~65535	0	0xe704	-
P07.05	Bus adapter A input.PZD6	0~65535	0	0xe705	-
P07.06	Bus adapter A input.PZD7	0~65535	0	0xe706	-
P07.07	Bus adapter A input.PZD8	0~65535	0	0xe707	-
P07.08	Bus adapter A input.PZD9	0~65535	0	0xe708	-
P07.09	Bus adapter A input.PZD10	0~65535	0	0xe709	-
P07.10	Bus adapter A input.PZD11	0~65535	0	0xe70a	-
P07.11	Bus adapter A input.PZD12	0~65535	0	0xe70b	-
P07.12	Bus adapter A input.PZD13	0~65535	0	0xe70c	-
P07.13	Bus adapter A input.PZD14	0~65535	0	0xe70d	-
P07.14	Bus adapter A input.PZD15	0~65535	0	0xe70e	-
P07.15	Bus adapter A input.PZD16	0~65535	0	0xe70f	-
P07.50	DriveLink. PZD1	-32768~32767	0	0xe732	-
P07.51	DriveLink. PZD2	-32768~32767	0	0xe733	-
P07.52	DriveLink. PZD3	-32768~32767	0	0xe734	-

Function code	Name	Range	Factory value	Communication address	Unit
P07.53	DriveLink.PZD4	-32768~32767	0	0xe735	-
P07.54	DriveLink.PZD5	-32768~32767	0	0xe736	-
P07.55	DriveLink.PZD6	-32768~32767	0	0xe737	-
P07.56	DriveLink.PZD7	-32768~32767	0	0xe738	-
P07.57	DriveLink.PZD8	-32768~32767	0	0xe739	-
P07.60	Bus adapter A input.PZD 1+2	0x80000000~0x7FFFFFFF	0x00	0xe73c	-
P07.61	Bus adapter A input.PZD 1+2	0x80000000~0x7FFFFFFF	0x00	0xe73d	-
P07.62	Bus adapter A input.PZD 2+3	0x80000000~0x7FFFFFFF	0x00	0xe73e	-
P07.63	Bus adapter A input.PZD 2+3	0x80000000~0x7FFFFFFF	0x00	0xe73f	-
P07.64	Bus adapter A input.PZD 3+4	0x80000000~0x7FFFFFFF	0x00	0xe740	-
P07.65	Bus adapter A input.PZD 3+4	0x80000000~0x7FFFFFFF	0x00	0xe741	-
P07.66	Bus adapter A input.PZD 4+5	0x80000000~0x7FFFFFFF	0x00	0xe742	-
P07.67	Bus adapter A input.PZD 4+5	0x80000000~0x7FFFFFFF	0x00	0xe743	-
P07.68	Bus adapter A input.PZD 5+6	0x80000000~0x7FFFFFFF	0x00	0xe744	-
P07.69	Bus adapter A input.PZD 5+6	0x80000000~0x7FFFFFFF	0x00	0xe745	-
P07.70	Bus adapter A input.PZD 6+7	0x80000000~0x7FFFFFFF	0x00	0xe746	-

Function code	Name	Range	Factory value	Communication address	Unit
P07.71	Bus adapter A input.PZD 6+7	0x80000000~0x7FFFFFFF	0x00	0xe747	-
P07.72	Bus adapter A input.PZD 7+8	0x80000000~0x7FFFFFFF	0x00	0xe748	-
P07.73	Bus adapter A input.PZD 7+8	0x80000000~0x7FFFFFFF	0x00	0xe749	-
P07.74	Bus adapter A input.PZD 8+9	0x80000000~0x7FFFFFFF	0x00	0xe74a	-
P07.75	Bus adapter A input.PZD 8+9	0x80000000~0x7FFFFFFF	0x00	0xe74b	-
P07.76	Bus adapter A input.PZD 9+10	0x80000000~0x7FFFFFFF	0x00	0xe74c	-
P07.77	Bus adapter A input.PZD 9+10	0x80000000~0x7FFFFFFF	0x00	0xe74d	-
P07.78	Bus adapter A input.PZD 10+11	0x80000000~0x7FFFFFFF	0x00	0xe74e	-
P07.79	Bus adapter A input.PZD 10+11	0x80000000~0x7FFFFFFF	0x00	0xe74f	-
P07.80	Bus adapter A input.PZD 11+12	0x80000000~0x7FFFFFFF	0x00	0xe750	-
P07.81	Bus adapter A input.PZD 11+12	0x80000000~0x7FFFFFFF	0x00	0xe751	-
P07.82	Bus adapter A input.PZD 12+13	0x80000000~0x7FFFFFFF	0x00	0xe752	-
P07.83	Bus adapter A input.PZD 12+13	0x80000000~0x7FFFFFFF	0x00	0xe753	-
P07.84	Bus adapter A input.PZD 13+14	0x80000000~0x7FFFFFFF	0x00	0xe754	-

Function code	Name	Range	Factory value	Communication address	Unit
P07.85	Bus adapter A input.PZD 13+14	0x80000000~0x7FFFFFFF	0x00	0xe755	-
P07.86	Bus adapter A input.PZD 14+15	0x80000000~0x7FFFFFFF	0x00	0xe756	-
P07.87	Bus adapter A input.PZD 14+15	0x80000000~0x7FFFFFFF	0x00	0xe757	-
P07.88	Bus adapter A input.PZD 15+16	0x80000000~0x7FFFFFFF	0x00	0xe758	-
P07.89	Bus adapter A input.PZD 15+16	0x80000000~0x7FFFFFFF	0x00	0xe759	-
P08:Free function Module(Analog connect)					
P08.00	ADD module A output	0~65535	0	0xe800	-
P08.01	ADD module B output	0~65535	0	0xe801	-
P08.02	ADD module C output	0~65535	0	0xe802	-
P08.04	SUB module A output	0~65535	0	0xe804	-
P08.05	SUB module B output	0~65535	0	0xe805	-
P08.08	MUL module A output	0~65535	0	0xe808	-
P08.09	MUL module B output	0~65535	0	0xe809	-
P08.12	DIV module A output	0~65535	0	0xe80c	-
P08.14	DIV module A remainder	0~65535	0	0xe80e	-
P08.15	DIV module B output	0~65535	0	0xe80f	-
P08.17	DIV module B remainder	0~65535	0	0xe811	-
P08.24	AVA module A output	0~65535	0	0xe818	-
P08.25	AVA module B output	0~65535	0	0xe819	-

Function code	Name	Range	Factory value	Communication address	Unit
P08.28	LIM module A output	0~65535	0	0xe81c	-
P08.29	LIM module B output	0~65535	0	0xe81d	-
P08.32	FOLPF module A output	0~65535	0	0xe820	-
P08.33	FOLPF module B output	0~65535	0	0xe821	-
P08.36	BTW function A output	0~65535	0	0xe824	-
P08.37	BTW function B output	0~65535	0	0xe825	-
P08.38	BTW function C output	0~65535	0	0xe826	-
P08.39	BTW function D output	0~65535	0	0xe827	-
P08.41	Data selector A output	-32768~32767	0	0xe829	-
P08.42	Data selector B output	-32768~32767	0	0xe82a	-
P08.44	Mul-block A output (32 bits)	-2147483648~2147483647	0	0xe82c	-
P08.45	Mul-block A output (32 bits)	-2147483648~2147483647	0	0xe82d	-
P08.46	Mul-block B output (32 bits)	-2147483648~2147483647	0	0xe82e	-
P08.47	Mul-block B output (32 bits)	-2147483648~2147483647	0	0xe82f	-
P09:Technology Utilization(Analog connect)					
P09.00	PROC PID output(after clipping)	0~65535	0	0xe900	-
P09.01	PROC PID output(pre-clipping)	0~65535	0	0xe901	-
P09.02	Process PID proportional output	0~65535	0	0xe902	-

Function code	Name	Range	Factory value	Communication address	Unit
P09.03	Process PID integral output	0~65535	0	0xe903	-
P09.04	Process PID differential output	0~65535	0	0xe904	-
P09.05	Process PID given value	0~65535	0	0xe905	-
P09.06	Process PID feedback value	0~65535	0	0xe906	-
P09.07	Process PID deviation value	0~65535	0	0xe907	-
P09.08	Process PID DEV before added	0~65535	0	0xe908	-
P09.25	Pendulum length	-32768 ~32767	0	0xe919	-
P09.27	System Reservation	-2147483648 ~2147483647	0	0xe91b	-
P09.28	System Reservation	-2147483648 ~2147483647	0	0xe91c	-
P10:PM Internal Variables(Analog connect)					
P10.00	Given current in axis M	0~65535	0	0xea00	-
P10.01	M-axis feedback current	0~65535	0	0xea01	-
P10.02	T-axis is given current	0~65535	0	0xea02	-
P10.03	T-axis feedback current	0~65535	0	0xea03	-
P10.04	Given frequency	0~65535	0	0xea04	-
P10.05	Frequency of feedback	0~65535	0	0xea05	-
P10.06	Frequency of SYNC	0~65535	0	0xea06	-
P10.07	Encoder frequency	0~65535	0	0xea07	-
P10.10	M axis set voltage	0~65535	0	0xea0a	-
P10.11	T axis set voltage	0~65535	0	0xea0b	-
P10.19	CRC check count	0~65535	0	0xea13	-

Function code	Name	Range	Factory value	Communication address	Unit
P10.26	PM Monitoring Channel 1	0~65535	0	0xea1a	-
P10.27	PM Monitoring Channel 2	0~65535	0	0xea1b	-
P10.28	PM Monitoring Channel 3	0~65535	0	0xea1c	-
P10.29	PM Monitoring Channel 4	0~65535	0	0xea1d	-
P10.30	Servo zero position	0~65535	0	0xea1e	-
P10.32	PM state machine	0~65535	0	0xea20	-
P10.33	U phase current	0~65535	0	0xea21	-
P11:CM Internal Variables(Analog connect)					
P11.00	Fixed value 0%	0~65535	0	0xeb00	-
P11.01	Fixed value 100%	0~65535	0	0xeb01	-
P11.02	Fixed value 200%	0~65535	0	0xeb02	-
P11.03	Custom data output 1	0~65535	0	0xeb03	-
P11.04	Custom data output 2	0~65535	0	0xeb04	-
P11.05	Fixed value -100%	0~65535	0	0xeb05	-
P11.06	Fixed value -200%	0~65535	0	0xeb06	-
P11.07	Custom data output 3	0~65535	0	0xeb07	-
P11.08	Custom data output 4	0~65535	0	0xeb08	-
P11.09	CM interactive data monitor 0	-32768 ~32767	0	0xeb09	-
P11.10	CM interactive data monitor 1	0~65535	0	0xeb0a	-
P11.11	CM interactive data monitor 2	0~65535	0	0xeb0b	-
P11.12	CM interactive data monitor 3	0~65535	0	0xeb0c	-
P11.13	CM monitor date 0	0~65535	0	0xeb0d	-
P11.14	CM monitor date 1	0~65535	0	0xeb0e	-

Function code	Name	Range	Factory value	Communication address	Unit
P11.15	CM monitor date 2	0~65535	0	0xeb0f	-
P11.16	CM monitor date 3	0~65535	0	0xeb10	-
P11.17	CM monitor date 4	0~65535	0	0xeb11	-
P11.18	FPGA receive error counter	0~65535	0	0xeb12	-
P11.19	FPGA send non-response counter	0~65535	0	0xeb13	-
P11.30	Id of the I/O board	0~65535	0	0xeb1e	-
P11.38	PN control word STW1	0x00~0xFFFF	0x00	0xeb26	-
P11.38	Control word 6040	0~65535	0	0xeb26	-
P11.39	PN control word STW2	0x00~0xFFFF	0x00	0xeb27	-
P11.39	Status word 6041	0~65535	0	0xeb27	-
P11.40	PN control word STW3	0x00~0xFFFF	0x00	0xeb28	-
P11.40	EC internal control word	0~65535	0	0xeb28	-
P11.41	PN control word STW4	0x00~0xFFFF	0x00	0xeb29	-
P11.42	PN control word G1_STW	0x00~0xFFFF	0x00	0xeb2a	-
P11.43	PN control word G1_ZSW	0x00~0xFFFF	0x00	0xeb2b	-
P11.45	System reservation	0~65535	0	0xeb2d	-
P11.48	CM storage model	0~65535	0	0xeb30	-
P11.49	Factory test mode activated	0~65535	0	0xeb31	-
P11.55	CM monitor 5(KB error counter)	0~65535	0	0xeb37	-
P11.57	CM monitor 7(EPM wrong address)	0x00~0xFFFF	0x00	0xeb39	-

Function code	Name	Range	Factory value	Communication address	Unit
P11.58	CM monitor 8(EPM wrong value)	0~65535	0	0xeb3a	-
P11.60	CM program execution time	0~65535	0	0xeb3c	-
P11.61	CM program execution cycle	0~65535	0	0xeb3d	-
P11.62	CM program max time	0~65535	0	0xeb3e	-
P11.63	CM program max time	0~65535	0	0xeb3f	-
P11.64	Hwi load rate	0~65535	0	0xeb40	-
P11.67	CPU load rate	0~65535	0	0xeb43	-
P11.68	PN control word POS_STW1	0x00~0xFFFF	0x00	0xeb44	-
P11.69	PN status word POS_ZSW1	0x00~0xFFFF	0x00	0xeb45	-
P11.70	PN control word POS_STW2	0x00~0xFFFF	0x00	0xeb46	-
P11.71	PN status word POS_ZSW2	0x00~0xFFFF	0x00	0xeb47	-
P11.72	AxisStateMachine	0~65535	0	0xeb48	-
P11.73	EposALword	0x00~0xFFFF	0x00	0xeb49	-
P11.74	System reservation	0x00~0xFFFF	0x00	0xeb4a	-
P11.76	CM Monitor Variable 9	0x00~0xFFFF	0x00	0xeb4c	-
P11.77	CM Monitor Variable 10	0x00~0xFFFF	0x00	0xeb4d	-
P11.78	CM Monitor Variable 11	0x00~0xFFFF	0x00	0xeb4e	-
P11.79	CM Monitor Variable 12	0x00~0xFFFF	0x00	0xeb4f	-
P11.80	CM Monitor Variable 13	0x00~0xFFFF	0x00	0xeb50	-
P11.81	CM Monitor Variable 14	0~65535	0	0xeb51	-
P11.82	CM Monitor Variable 15	0~65535	0	0xeb52	-

Function code	Name	Range	Factory value	Communication address	Unit
P11.83	Fixed stop point status monitor	0x00~0xFFFF	0x00	0xeb53	-
P11.84	System Reservation	0~65535	0	0xeb54	-
P11.85	System Reservation	0~65535	0	0xeb55	-
P12: System Control and State (Analog connect)					
P12.00	Current state machine	0~65535	0	0xec00	-
P12.01	Current motor	0~65535	0	0xec01	-
P12.02	Current RFG slope selection	0~65535	0	0xec02	-
P12.03	Current fault	0~65535	0	0xec03	-
P12.04	Current fault subcode	0~65535	0	0xec04	-
P12.05	Control word 1	0~65535	0x00	0xec05	-
P12.06	Control word 2	0~65535	0x00	0xec06	-
P12.07	State word 1	0~65535	0x00	0xec07	-
P12.08	State word 2	0~65535	0x00	0xec08	-
P12.09	Terminal start-stop Ctrl word	0~65535	0x00	0xec09	-
P12.10	OP start-stop control word	0~65535	0x00	0xec0a	-
P12.11	PC start-stop control word	0~65535	0x00	0xec0b	-
P12.12	Custom start-stop control word	0~65535	0x00	0xec0c	-
P12.13	Panel given value	0~65535	0	0xec0d	-
P12.14	PC given value	0~65535	0	0xec0e	-
P12.15	FRA Amplitude	0.0~100.0	0.0	0xec0f	-
P12.16	DI state	0~65535	0x00	0xec10	-
P12.17	DO state	0~65535	0x00	0xec11	-
P12.18	Brake status word	0~65535	0x00	0xec12	-
P12.19	Brake status word 2	0x00~0xFFFF	0x00	0xec13	-
P12.20	Analog input AI0 (mV)	-32768~32767	0	0xec14	-
P12.27	DB15 Output Voltage (V)	0~65535	0.0	0xec1b	V

Function code	Name	Range	Factory value	Communication address	Unit
P12.30	TEMP Sensor Voltage(X5,mV)	0~65535	0	0xec1e	-
P12.31	PM24V Voltage (V)	0~65535	0.0	0xec1f	V
P12.32	External 24v voltage (V)	0~65535	0.0	0xec20	V
P12.34	STO status word	0~65535	0x00	0xec22	-
P12.35	Status word B	0~65535	0x00	0xec23	-
P12.36	RFG Run control word	0x00~0xFFFF	0x00	0xec24	-
P12.37	POS CTRL internal status word 0	0~65535	0x00	0xec25	-
P12.40	Fixed speed setpoint selection	1~16	1	0xec28	-
P12.41	Multi-POS setpoint selection	1~16	1	0xec29	-
P12.45	power-on duration - hour	0~65535	0	0xec2d	h
P12.46	Power-on duration - minute	0~65535	0	0xec2e	s
P12.47	Run duration - hour	0~65535	0	0xec2f	h
P12.48	Run duration - minute	0~65535	0	0xec30	s
P12.49	Cumulative run-time - hour	0~65535	0	0xec31	h
P12.50	Cumulative elapsed time - minute	0~65535	0	0xec32	s
P12.51	Motor Enc Interf-Warn Counter	0~65535	0	0xec33	-
P12.52	Load Enc Interf-Warn Counter	0~65535	0	0xec34	-
P13: System Setting and Feedback (Analog connect)					
P13.00	Motor actual speed	0~65535	0	0xed00	-
P13.01	Motor final set speed	0~65535	0	0xed01	-
P13.02	Main speed given	0~65535	0	0xed02	-
P13.03	Auxiliary speed given	0~65535	0	0xed03	-

Function code	Name	Range	Factory value	Communication address	Unit
P13.04	A given value of velocity	0~65535	0	0xed04	-
P13.05	Speed reference before limit	0~65535	0	0xed05	-
P13.06	Speed given after limit	0~65535	0	0xed06	-
P13.07	Speed given after minimum limit	0~65535	0	0xed07	-
P13.08	RFG input speed given	0~65535	0	0xed08	-
P13.09	RFG output speed given	0~65535	0	0xed09	-
P13.10	Additional speed given	0~65535	0	0xed0a	-
P13.11	CM given speed	0~65535	0	0xed0b	-
P13.12	RFG module input value	0~65535	0	0xed0c	-
P13.15	Positive maximum speed	0~65535	0	0xed0f	-
P13.16	Reverse maximum speed	0~65535	0	0xed10	-
P13.17	Encoder FDBK speed	0~65535	0	0xed11	-
P13.20	Keyboard control speed given	0~65535	0	0xed14	-
P13.21	PC control speed given	0~65535	0	0xed15	-
P13.22	Motor potentiometer output	0~65535	0	0xed16	-
P13.23	Multi-segment setting SEL output	0~65535	0	0xed17	-
P13.24	Multi-stage setting value 1	0~65535	0	0xed18	-
P13.25	Multi-stage setting value 2	0~65535	0	0xed19	-
P13.26	Multi-stage setting value 3	0~65535	0	0xed1a	-
P13.27	Multi-stage setting value 4	0~65535	0	0xed1b	-

Function code	Name	Range	Factory value	Communication address	Unit
P13.28	Multi-stage setting value 5	0~65535	0	0xed1c	-
P13.29	Multi-stage setting value 6	0~65535	0	0xed1d	-
P13.30	Multi-stage setting value 7	0~65535	0	0xed1e	-
P13.31	Multi-stage setting value 8	0~65535	0	0xed1f	-
P13.32	Multi-stage setting value 9	0~65535	0	0xed20	-
P13.33	Multi-stage setting value 10	0~65535	0	0xed21	-
P13.34	Multi-stage setting value 11	0~65535	0	0xed22	-
P13.35	Multi-stage setting value 12	0~65535	0	0xed23	-
P13.36	Multi-stage setting value 13	0~65535	0	0xed24	-
P13.37	Multi-stage setting value 14	0~65535	0	0xed25	-
P13.38	Multi-stage setting value 15	0~65535	0	0xed26	-
P13.39	Multi-stage setting value 16	0~65535	0	0xed27	-
P13.40	RFG acceleration	0~65535	0	0xed28	-
P13.41	Torque setting value	-32768~32767	0	0xed29	-
P13.42	Additional torque: setting value	-32768~32767	0	0xed2a	-
P13.43	Torque control speed UPL value	-32768~32767	0	0xed2b	-
P13.44	Torque control speed LOL value	-32768~32767	0	0xed2c	-
P13.45	DeltaVelocity (AC4/DSC)	-2147483648~2147483647	0	0xed2d	-
P13.45	PV target speed 60FF	-32768~32767	0	0xed2d	-
P13.46	DeltaVelocity (AC4/DSC)	-2147483648~2147483647	0	0xed2e	-

Function code	Name	Range	Factory value	Communication address	Unit
P13.46	Torque UpLimit Given value	-32768 ~32767	0	0xed2e	-
P13.47	NIST_B	-2147483648 ~2147483647	0	0xed2f	-
P13.47	Torque DownLimit Given value	-32768 ~32767	0	0xed2f	-
P13.48	NIST_B	-2147483648 ~2147483647	0	0xed30	-
P13.48	Acceleration Time Given value	0~65535	0	0xed30	-
P13.49	MDI_VELOCITY/G1_XIST2	-2147483648 ~2147483647	0	0xed31	-
P13.49	Deceleration Time Given value	0~65535	0	0xed31	-
P13.50	MDI_VELOCITY/G1_XIST2	-2147483648 ~2147483647	0	0xed32	-
P13.50	Velocity UpLimit Given value	-32768 ~32767	0	0xed32	-
P13.51	MDI_TARPOS/XERR	-2147483648 ~2147483647	0	0xed33	-
P13.51	Velocity DownLimit Given value	-32768 ~32767	0	0xed33	-
P13.52	MDI_TARPOS/XERR	-2147483648 ~2147483647	0	0xed34	-
P13.52	Additional torque Given value	-32768 ~32767	0	0xed34	-
P13.53	XIST_A/KPC	-2147483648 ~2147483647	0	0xed35	-
P13.54	XIST_A/KPC	-2147483648 ~2147483647	0	0xed36	-
P13.55	111AccTime (msTo1000RPM)/G1_XIST1	-2147483648 ~2147483647	0	0xed37	-

Function code	Name	Range	Factory value	Communication address	Unit
P13.56	111AccTime (msTo1000RPM)/G1_XIST1	-2147483648 ~2147483647	0	0xed38	-
P13.57	111DecTime (msTo1000RPM)/NSOLL_B	-2147483648 ~2147483647	0	0xed39	-
P13.58	111DecTime (msTo1000RPM)/NSOLL_B	-2147483648 ~2147483647	0	0xed3a	-
P13.58	Actual location 6064 (INSTR unit)	-2147483648 ~2147483647	0	0xed3a	-
P13.59	111CancelTime/DeltaPosCmd(DSC)	-2147483648 ~2147483647	0	0xed3b	-
P13.59	Actual location 6064 (INSTR unit)	-2147483648 ~2147483647	0	0xed3b	-
P13.60	111CancelTime/DeltaPosCmd(DSC)	-2147483648 ~2147483647	0	0xed3c	-
P13.60	Actual velocity 606C (INSTR unit)	-2147483648 ~2147483647	0	0xed3c	-
P13.61	111VelocityCmd(RPM)/DeltaG1Xist1	-2147483648 ~2147483647	0	0xed3d	-
P13.61	Actual velocity 606C	-2147483648 ~2147483647	0	0xed3d	-
P13.62	111VelocityCmd(RPM)/DeltaG1Xist1	-2147483648 ~2147483647	0	0xed3e	-
P13.62	PP target speed 6081	-2147483648 ~2147483647	0	0xed3e	-
P13.63	PP target speed 6081	-2147483648 ~2147483647	0	0xed3f	-
P13.64	PROFIdrive monitoring 12	-32768 ~32767	0	0xed40	-
P13.65	Target Position 607A	-2147483648 ~2147483647	0	0xed41	-

Function code	Name	Range	Factory value	Communication address	Unit
P13.66	CSP Target Position divide value	-2147483648~2147483647	0	0xed42	-
P13.67	PROFIdrive Torque LIMT (102/105)	-32768~32767	0	0xed43	-
P13.68	Comm Error ALcode	0~65535	0	0xed44	-
P13.69	Comm Error ALcode Record	0~65535	0	0xed45	-
P13.70	Monitoring data 0	-2147483648~2147483647	0	0xed46	-
P13.71	Monitoring data 0	-2147483648~2147483647	0	0xed47	-
P13.72	Monitoring data 1	-2147483648~2147483647	0	0xed48	-
P13.73	Monitoring data 1	-2147483648~2147483647	0	0xed49	-
P13.74	System Reservation	0~65535	0	0xed4a	-
P13.75	Upper torque limit	-32768~32767	0	0xed4b	-
P13.76	Lower torque limit	-32768~32767	0	0xed4c	-
P13.84	Bus speed Settings	0~65535	0	0xed54	rpm
P13.85	Bus acceleration time Settings	0~65535	0	0xed55	ms
P13.86	Bus deceleration time Settings	0~65535	0	0xed56	rpm
P14: Servo 32bit Variable(Analog connect)					
P14.04	Position feedback(Encoder, L)	-2147483648~2147483647	0	0xee04	-
P14.05	Position feedback(Encoder, L)	-2147483648~2147483647	0	0xee05	-

Function code	Name	Range	Factory value	Communication address	Unit
P14.06	Position feedback(Encoder, H)	-2147483648~2147483647	0	0xee06	-
P14.07	Position feedback(Encoder, H)	-2147483648~2147483647	0	0xee07	-
P14.08	Position setpoint filtered(L)	-2147483648~2147483647	0	0xee08	-
P14.09	Position setpoint filtered(L)	-2147483648~2147483647	0	0xee09	-
P14.10	Position setpoint filtered(H)	-2147483648~2147483647	0	0xee0a	-
P14.11	Position setpoint filtered(H)	-2147483648~2147483647	0	0xee0b	-
P14.12	Position encoder feedback	-2147483648~2147483647	0	0xee0c	-
P14.13	Position encoder feedback	-2147483648~2147483647	0	0xee0d	-
P14.14	Motor encoder feedback	-2147483648~2147483647	0	0xee0e	-
P14.15	Motor encoder feedback	-2147483648~2147483647	0	0xee0f	-
P14.16	Tracking error	-2147483648~2147483647	0	0xee10	-
P14.17	Tracking error	-2147483648~2147483647	0	0xee11	-
P14.18	Input pulse command count	-2147483648~2147483647	0	0xee12	-
P14.19	Input pulse command count	-2147483648~2147483647	0	0xee13	-
P14.20	Position setpoint	-2147483648~2147483647	0	0xee14	-

Function code	Name	Range	Factory value	Communication address	Unit
P14.21	Position set-point	-2147483648~2147483647	0	0xee15	-
P14.22	Position feedback	-2147483648~2147483647	0	0xee16	-
P14.23	Position feedback	-2147483648~2147483647	0	0xee17	-
P14.24	Speed limit positive	-2147483648~2147483647	0	0xee18	rpm
P14.25	Speed limit positive	-2147483648~2147483647	0	0xee19	rpm
P14.26	Speed limit negative	-2147483648~2147483647	0	0xee1a	rpm
P14.27	Speed limit negative	-2147483648~2147483647	0	0xee1b	rpm
P14.28	Speed FDFW compensation value	-2147483648~2147483647	0	0xee1c	-
P14.29	Speed FDFW compensation value	-2147483648~2147483647	0	0xee1d	-
P14.30	Position regulator output	-2147483648~2147483647	0	0xee1e	-
P14.31	Position regulator output	-2147483648~2147483647	0	0xee1f	-
P14.32	Position control total output	-2147483648~2147483647	0	0xee20	-
P14.33	Position control total output	-2147483648~2147483647	0	0xee21	-
P14.34	C M X / C D V numerator	-2147483648~2147483647	0	0xee22	-
P14.35	C M X / C D V numerator	-2147483648~2147483647	0	0xee23	-
P14.36	C M X / C D V denominator	-2147483648~2147483647	0	0xee24	-
P14.37	C M X / C D V denominator	-2147483648~2147483647	0	0xee25	-

Function code	Name	Range	Factory value	Communication address	Unit
P14.38	Speed loop 32-bit MON 0	-2147483648~2147483647	0	0xee26	-
P14.39	Speed loop 32-bit MON 0	-2147483648~2147483647	0	0xee27	-
P14.40	Speed loop 32-bit MON 1	-2147483648~2147483647	0	0xee28	-
P14.41	Speed loop 32-bit MON 1	-2147483648~2147483647	0	0xee29	-
P14.42	Speed loop 32-bit MON 2	-2147483648~2147483647	0	0xee2a	-
P14.43	Speed loop 32-bit MON 2	-2147483648~2147483647	0	0xee2b	-
P14.44	Speed loop 32-bit MON 3	-2147483648~2147483647	0	0xee2c	-
P14.45	Speed loop 32-bit MON 3	-2147483648~2147483647	0	0xee2d	-
P14.46	Speed loop 32-bit MON 4	-2147483648~2147483647	0	0xee2e	-
P14.47	Speed loop 32-bit MON 4	-2147483648~2147483647	0	0xee2f	-
P14.48	Speed loop 32-bit MON 5	-2147483648~2147483647	0	0xee30	-
P14.49	Speed loop 32-bit MON 5	-2147483648~2147483647	0	0xee31	-
P14.50	Speed loop 32-bit MON 6	-2147483648~2147483647	0	0xee32	-
P14.51	Speed loop 32-bit MON 6	-2147483648~2147483647	0	0xee33	-
P14.52	Speed loop 32-bit MON 7	-2147483648~2147483647	0	0xee34	-
P14.53	Speed loop 32-bit MON 7	-2147483648~2147483647	0	0xee35	-
P14.62	Two-word monitor A	-2147483648~2147483647	0	0xee3e	-
P14.63	Two-word monitor A	-2147483648~2147483647	0	0xee3f	-
P14.64	Two-word monitor B	-2147483648~2147483647	0	0xee40	-
P14.65	Two-word monitor B	-2147483648~2147483647	0	0xee41	-

Function code	Name	Range	Factory value	Communication address	Unit
P14.66	Target position	-2147483648~2147483647	0	0xee42	-
P14.67	Target position	-2147483648~2147483647	0	0xee43	-
P14.68	Position command increment	-2147483648~2147483647	0	0xee44	-
P14.69	Position command increment	-2147483648~2147483647	0	0xee45	-
P14.70	position IN-STR to Speed (rpm)	-2147483648~2147483647	0	0xee46	-
P14.71	position INSTR to Speed (rpm)	-2147483648~2147483647	0	0xee47	-
P14.72	Motor position deviation	-2147483648~2147483647	0	0xee48	-
P14.73	Motor position deviation	-2147483648~2147483647	0	0xee49	-
P14.74	FCL POS deviation CNTR	-2147483648~2147483647	0	0xee4a	-
P14.75	FCL POS deviation CNTR	-2147483648~2147483647	0	0xee4b	-
P14.76	Two-word monitor C	-2147483648~2147483647	0	0xee4c	-
P14.77	Two-word monitor C	-2147483648~2147483647	0	0xee4d	-
P14.78	Two-word monitor D	-2147483648~2147483647	0	0xee4e	-
P14.79	Two-word monitor D	-2147483648~2147483647	0	0xee4f	-
P14.80	POS ERR threshold (inst unit)	0~4294967295	0	0xee50	-
P14.81	POS ERR threshold (inst unit)	0~4294967295	0	0xee51	-

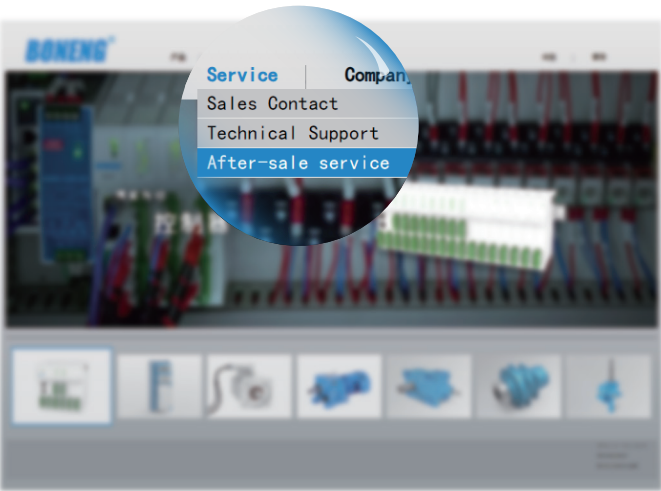
Function code	Name	Range	Factory value	Communication address	Unit
P14.84	Pulse input count(DB15)	-2147483648~2147483647	0	0xee54	-
P14.85	Pulse input count(DB15)	-2147483648~2147483647	0	0xee55	-
P15:Servo monitor(Analog connect)					
P15.00	POS loop given increment	-32768~32767	0	0xef00	-
P15.01	POS loop FDBK increment	-32768~32767	0	0xef01	-
P15.02	Speed loop 16-bit monitoring 0	-32768~32767	0	0xef02	-
P15.03	Speed loop 16-bit monitoring 1	-32768~32767	0	0xef03	-
P15.04	Speed loop 16-bit monitoring 2	-32768~32767	0	0xef04	-
P15.05	Speed loop 16-bit monitoring 3	-32768~32767	0	0xef05	-
P15.06	Speed instruction Q15	-32768~32767	0	0xef06	-
P15.07	Speed feedback Q15	-32768~32767	0	0xef07	-
P15.08	Torque instruction Q15	-32768~32767	0	0xef08	-
P15.09	Speed loop 16-bit monitoring 7	-32768~32767	0	0xef09	-
P15.10	Encoder turns count(M)	-32768~32767	0	0xef0a	-
P15.11	Encoder single turn position(M)	-2147483648~2147483647	0	0xef0b	-
P15.12	Encoder single turn position(M)	-2147483648~2147483647	0	0xef0c	-

Function code	Name	Range	Factory value	Communication address	Unit
P15.13	ABZ Encoder Pulse Increment(p)	-32768 ~32767	0	0xef0d	-
P15.14	ABZ encoder pulse count	-32768 ~32767	0	0xef0e	-
P15.15	Current ABS P O S low (CMD unit)	-32768 ~32767	0	0xef0f	-
P15.16	Current ABS P O S high (CMD unit)	-32768 ~32767	0	0xef10	-
P15.17	Actual position L	0~65535	0	0xef11	-
P15.18	Actual position H	-32768 ~32767	0	0xef12	-
P15.20	Encoder turns count(P)	-32768 ~32767	0	0xef14	-
P15.21	Encoder single turn position(P)	-2147483648 ~2147483647	0	0xef15	-
P15.22	Encoder single turn position(P)	-2147483648 ~2147483647	0	0xef16	-
P15.25	Pulse input count L(DB 15)	0~65535	0	0xef19	-
P15.26	Pulse input count H(DB 15)	-32768 ~32767	0	0xef1a	-

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