EMC32Z

Ether CAT 总线控制器使用手册

Ether CAT Ether CAT controller user manual User's Manual
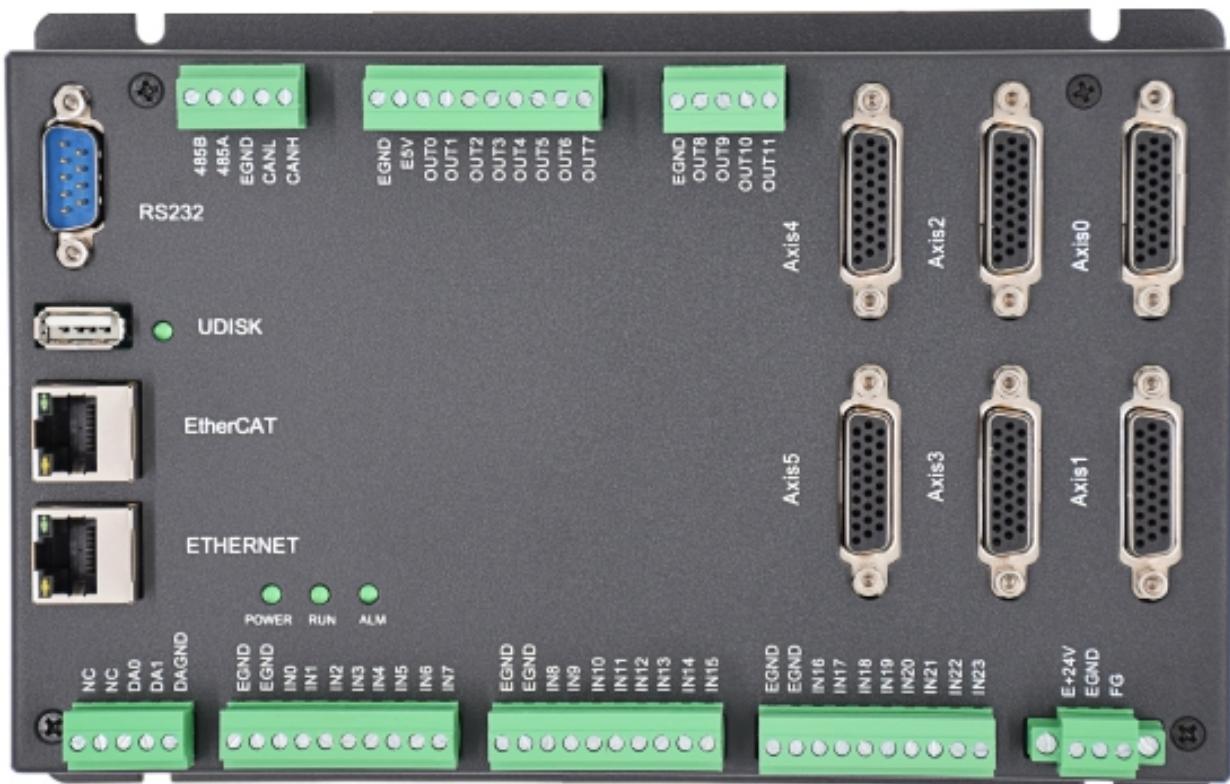
摩川技术(深圳）有限公司

Moschon Technology（Shenzhen）Co．，Ltd.

该产品由深圳市泰奇科智能技术有限公司独家发行，版权所有！

目录

前言/Foreword

感谢您使用本公司总线控制器。

Thank you for using our bus controller.

在使用本产品前，请务必仔细阅读本手册，了解必要的安全信息、注意事项以及操作方法等。错误的操作可能引发极其严重的后果。

Before using this product, please read this manual carefully to understand the necessary safety information, precautions, and operation methods.Incorrect operation can have extremely serious consequences.

本产品的设计和制造不具备保护人身安全免受机械系统威胁的能力，请用户在机械系统设计和制造过程中考虑安全防护措施，防止因不当的操作或产品异常造成事故。

This product is designed and manufactured without the ability to protect personal safety from mechanical system threats. Users are advised to consider safety precautions during mechanical system design and manufacturing to prevent accidents caused by improper operation or product abnormalities.

由于产品的改进，手册内容可能变更，恕不另行通知。用户对产品的任何改装我公司将不承担任何责任。

阅读时，请注意手册中的以下标示：

Due to product improvements, the contents of this manual are subject to change without notice. Our company will not be responsible for any modification of the product by the user.

When reading, please pay attention to the following signs in the manual:

⚠️ 注意：提醒您注意文字中的要点。

⚠️ 小心：表示错误的操作可能导致人身伤害和设备损坏。

本产品经过国家强制 **3C** 认证，**CE** 认证，**ROHS** 认证

This product has passed the national mandatory 3C certification, CE certification, ROHS certification
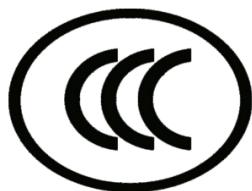
1 概述/Overview

1.1 产品介绍/Product Introduction

　　EMC32Z 系列控制器支持最多达 32 轴直线插补、任意圆弧插补、空间圆弧、 螺旋插补、电子凸轮、电子齿轮、同步跟随、虚拟轴设置等；采用优化的网络通 讯协议可以实现实时的运动控制。 单个电脑最多支持达 256 个 EMC 控制器同时链接。

　　EMC32Z series controller supports up to 32-axis LINEAR interpolation, arbitrary circular interpolation, spatial arc, spiral interpolation, electronic cam, electronic gear, synchronous following, virtual axis setting, etc. , communication Protocol can realize real-time motion control. A single computer can support up to 256 simultaneous EMC controllers.

1.2 特性/Characteristics

● 最多达 32 轴运动控制(6 脉冲轴+ECAT 轴/编码器轴/虚拟轴)
Up to 32 axis motion control (6 pulse axis + ECAT axis/encoder axis/virtual axis)
● 脉冲输出模式:方向/脉冲或双脉冲
Pulse output mode: Directional/pulse or double pulse
● ECAT 最快 250us 的刷新周期
The fastest refresh cycle for ECAT is 250 us
● 支持编码器位置测量，可以配置为手轮输入模式
Support encoder position measurement, can be configured for hand wheel input mode
● 每轴最大输出脉冲频率 10MHz
Maximum output pulse frequency per shaft 10 Mhz
● 通过 CAN 总线，最多可扩展到 4096 个隔离输入或输出口
With CAN bus, it CAN be extended to 4096 isolated i/o ports
● 轴正负限位信号口/原点信号口可以随意配置为任何输入口
The axis positive and negative limit signal port/origin signal port can be randomly configured as any input port
● 输出口最大输出电流可达 300mA,可直接驱动部分电磁阀
The maximum output current can reach 300MA, which can drive part of solenoid valve directly
● U 盘接口、RS485 接口、以太网接口
USB interface, RS485 interface, ethernet interface
● 支持最多达 16 轴直线插补、任意空间圆弧插补、螺旋插补、样条插补
Support up to 16-axis LINEAR interpolation, arbitrary space arc interpolation, spiral interpolation, spline interpolation
● 支持电子凸轮、电子齿轮、位置锁存、同步跟随、虚拟轴等功能
Support Electronic Cam, electronic gear, position latching, synchronous follow, virtual axis and other functions
● 支持硬件比较输出(HW_PSWITCH2),硬件定时器,运动中精准输出
Hardware comparison output (HW) , hardware timer, precise output in motion is supported
● 支持脉冲闭环，螺距补偿等功能
Support Pulse closed-loop, Pitch Compensation and other functions
● 支持 ZBasic 多文件多任务编程
Support Zbasic multi-file multi-task programming
● 多种程序加密手段，保护客户的知识产权
A variety of encryption procedures to protect the intellectual property rights of customers

● 掉电检测，掉电存储
Power-down detection, power-down storage

1.3 连接配置/Connection configuration

　　EMC32Z 系列运动控制器支持以太网，EtherCAT，U 盘，CAN，串口，485，232 等通讯接口，通过 CAN 总线可以连接各个扩展模块，从而扩展输入输 出点数或运动轴(CAN 总线两端需要并接 120 欧姆的电阻)。 运动控制器支持 U 盘保存或读取数据。

　　The EMC32Z series motion controller supports Ethernet, EtherCAT, USB, CAN, serial port, 485,232 and other communication interfaces, the number of points or the moving shaft (120 ohms of resistance is required at both ends of the CAN bus). The motion controller supports a USB drive to save or read data.
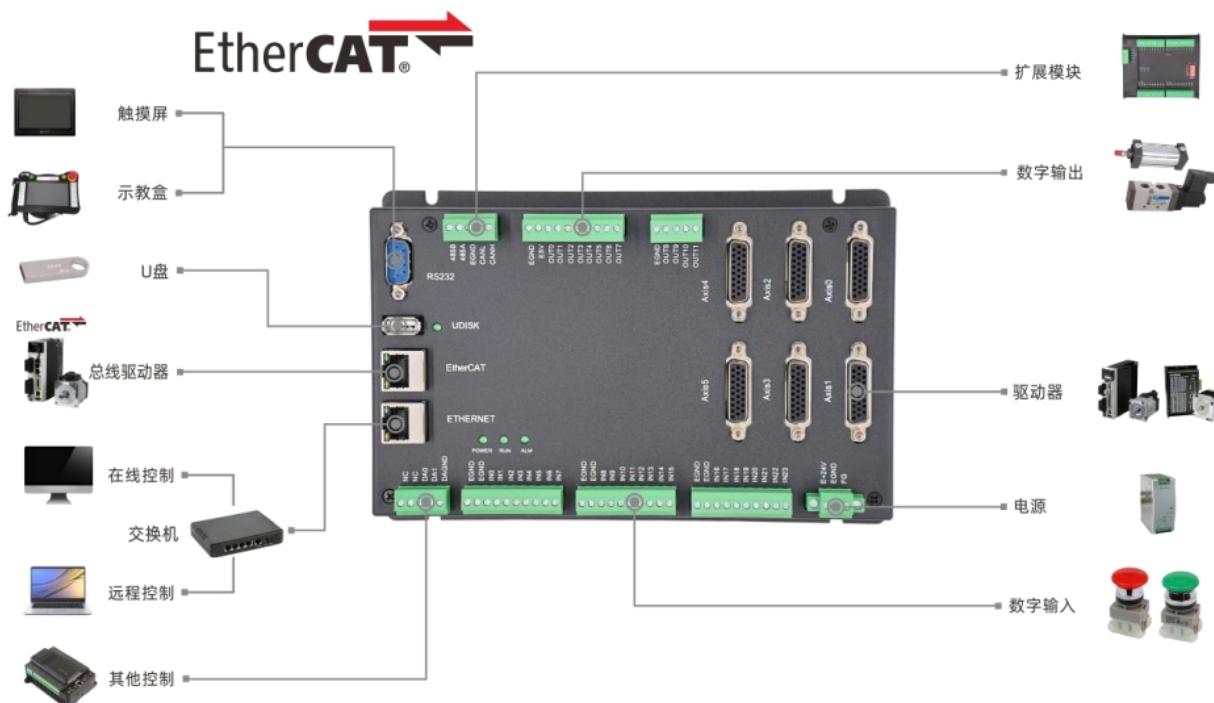
1.4　安装和编程/Installation and programming

　　EMC 控制器通过 Moschon 开发环境来调试，Moschon 是一个很方便的编程、 编译和调试环境。 Moschon 可以通过串口、485、USB 或以太网与控制器建立连接。应用程序可以使用 VC,VB，VS， C++Builder，C#,等软件来开发。调试时可以 把 Moschon 软件同时连接到控制器，程序运行时需要动态库 emotion.dll。

　　The EMC controller is debugged through the Moschon development environment, which is a convenient programming, compilation, and debugging environment. Moschon can connect to the controller via serial port, 485, USB, or Ethernet. Application Program can use VC, VB, VS, c + + Builder, c # , and other software to develop. When debugging Moschon software can be connected to the Controller at the same time, the program needs dynamic library emotion. Dll.
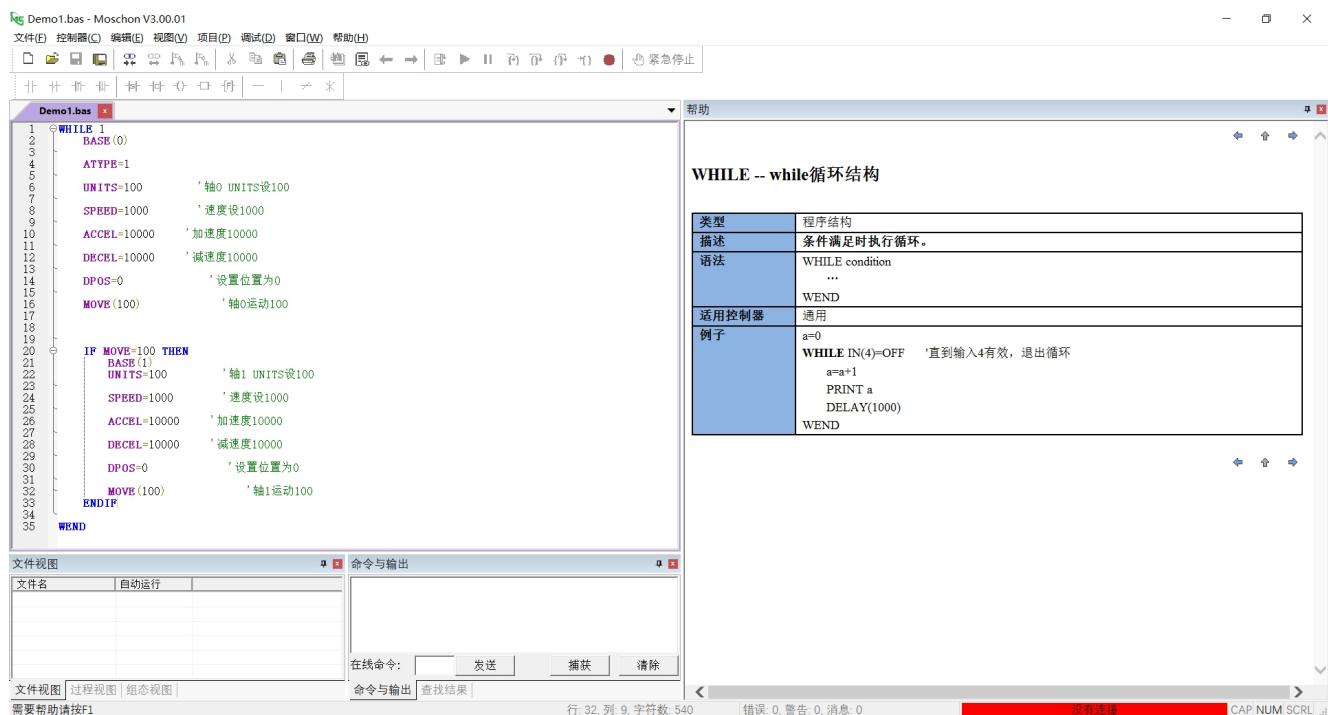
2 硬件描述 /Hardware description

2.1 EMC32Z 系列型号规格/EMC32Z series model specification

型号 Model number	EMC32Z
基本轴数 Number of basic axes	16
最多扩展轴数 Maximum number of extended axes	32
基本轴类型 BASIC AXIS type	ECAT/6 脉冲脉冲轴 ECAT/6 pulse axis
内部 IO 数 INTERNAL IO number	24 进 12 出（带过流保护），另外每脉冲轴有 1 进 1 出 24 in 12 out (with over current protection), plus 1 in 1 out per pulse shaft
最多扩展 IO 数 Maximum number of extended Io	512 进 512 出 512 In, 512 out
PWM 数 PWM number	2（输出频率 1M） 2(Output Frequency 1M)
内部 ADDA 数 Internal Adda number	2 路 DA（0-10V） Route 2 DA（0-10V）
最多扩展 AD/DA EXTEND AD/DA at most	256 路 AD，128 路 DA 256 Ad, 128 DA
脉冲位数 Number of pulses	64
编码器位数	64

Encoder digit	
速度加速度位数 Number of bits of acceleration	64
脉冲最高速率 Maximum pulse rate	10Mhz
每轴运动缓冲数 Number of buffers per shaft	512
数组空间 Array space	320000
程序空间 Program space	2000MByte
Flash 空间 Flash space	256MByte
电源输入 Power input	24V 直流输入（功耗 10W 内，不用风扇散热），IO 口负载没有计算在内 24V DC input (power consumption within 10W, no fan cooling)，Io port load is not included
通讯接口 Communication interface	RS232,RS485,以太网，U 盘，CAN,Ether CAT RS232, RS485, Ethernet, USB, CAN, Ether CAT
外形尺寸 Contour dimension	205*123.25mm

注/Note：

1.控制器带 6 路脉冲和 6 路编码器，前 6 轴可以选择使用脉冲或 ECAT

The controller has 6-channel pulses and 6-channel encoders, and the Front 6-axis can choose to use pulses or ECAT

2.轴 6/7/8/9/10/11 可以配置为编码器，从而映射到轴 0-5 的编码器

The shaft 6/7/8/9/10/11 can be configured as an encoder, thus mapping to the shaft 0-5 encoder

3.通用输入输出 2 个 pwm 功能，通过 ATYPE 来设置

GENERAL-PURPOSE INPUT/OUTPUT 2 pwm features, set via ATYPE

4.EMC 系列支持正运动 XPLC 的功能，可以通过网络来做组态显示

EMC series supports the function of positive motion XPLC, and can do configuration display through network

2.1.1 订货信息

型号 Model number	规格描述 Specification
EMC32Z	16轴，点位，直线，圆弧，电子凸轮，连续轨迹运动，机械手指令。 16-axis, point position, straight line, ARC, electronic cam, continuous track motion, manipulator command. Ether CAT bus

2.2 EMC32Z 接线/EMC32Z connection
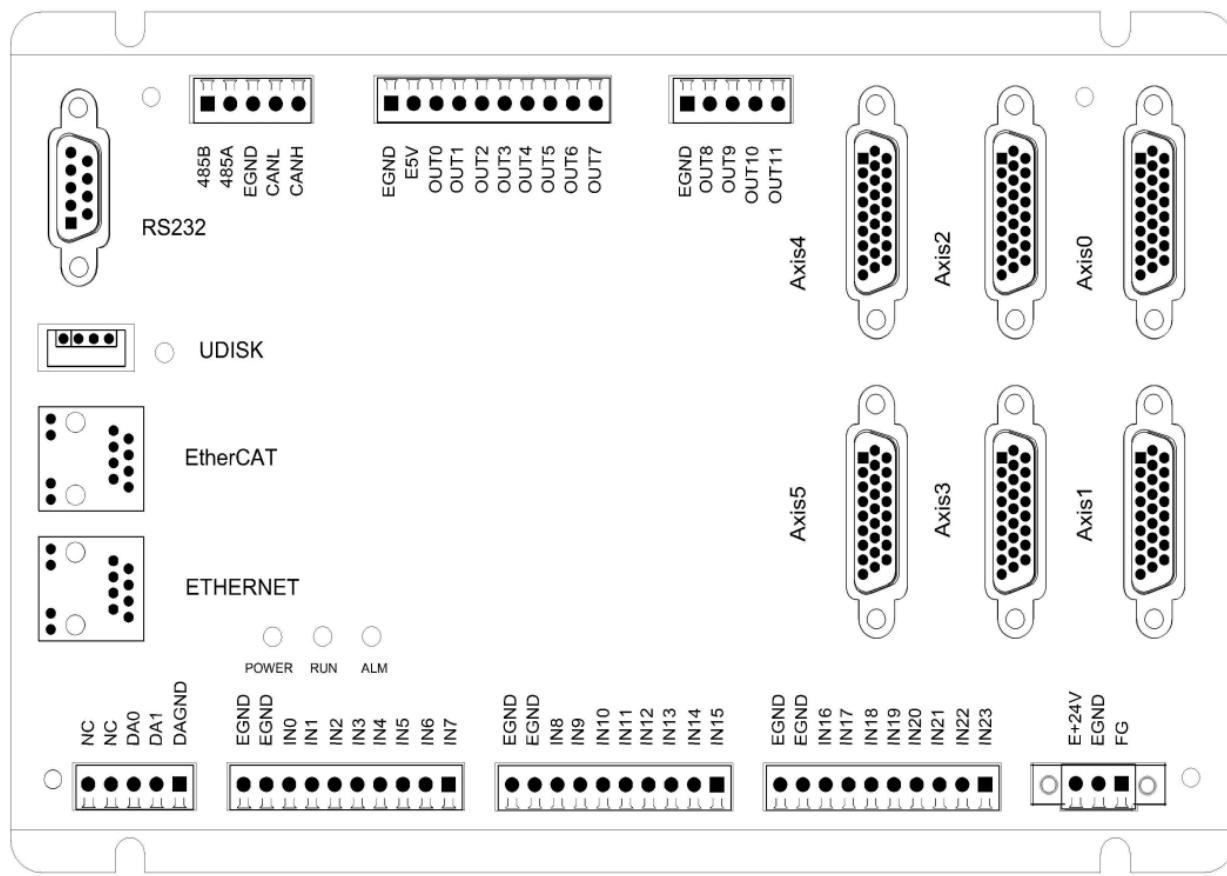
注：
1. EMC432 具有 32 个轴，最多达 32 个虚拟轴。EMC432 可以通过扩展模块来扩展轴。
2. EMC432 板上自带 24 个通用输入口，12 个通用输出口（每轴另带 1 个输入口，1 个输出口），2 个 0-10V DA。
3. EMC432 带 1 个 RS232 串口，1 个 RS485,1 个以太网接口。
4. EMC432 带一个 CAN 总线接口，支持通过 ZCAN 协议来连接扩展模块。
5. EMC432 带一个 U 盘接口。

Note:
1. The EMC432 has 32 axes and up to 32 virtual axes. The EMC432 can extend the shaft by extending the module.
2. EMC432 board with 24 general-purpose input, 12 general-purpose output (one additional input and one output per shaft) , 20-10v Da.
3. EMC432 WITH 1 RS232 serial port, 1 RS485,1 Ethernet interface.
4. The EMC432 comes with a CAN bus interface that supports connecting extension modules through the ZCAN protocol.
5. EMC432 WITH A USB port.

2.2.1 电源接口 CN16/Power Interface CN16

EMC32Z 系列控制器采用单电源供电，MIO 扩展卡采用双电源供电。5V 轴和编码器接口采用内部电源，IO 采用外部电源;MIO 扩展模块扩展出来的轴和编码器采用外部电源。

The EMC32Z series controller is powered by single power supply, and the MIO expansion card is powered by double power supply. 5v Shaft and encoder interface using internal power, Io using external power; MIO expansion module expansion of the shaft and encoder using external power.

针脚号 Stitch number	名称 Name	说明 Account for
1	E+24V	外部电源 24V 输入 External Power 24V input
2	EGND	外部电源地 External Power source
3	FG/EARTH	安规地/屏蔽层 Ground/shielding layer
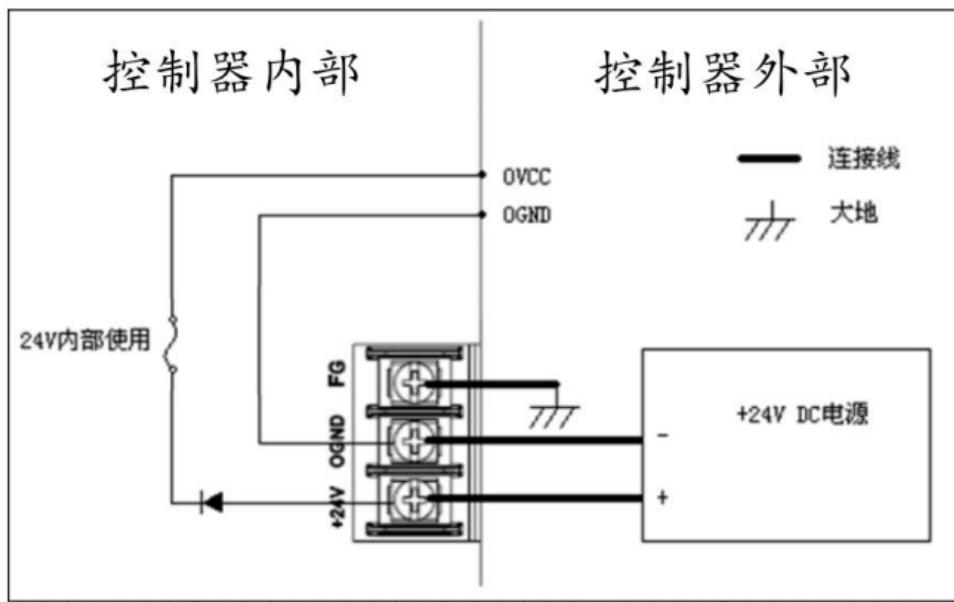
2.2.2 通讯接口 CN17/COM INTERFACE CN17

CAN 总线上链接多个控制器时，需要在最两边控制器的 CANL 与 CANH 端并接 120 欧姆的电阻。
EMC 系列的通讯接口采用外部 24V 电源，与其他控制器或触摸屏连接时要留意。
CAN 总线通讯双方必须保证对应 GND 连上或是控制器和扩展模块用同一个电源。EMC32Z/16Z 控制器和扩展模块用不同电源供电时：控制器电源 EGND 要连接扩展模块电源的 GND，否则可能烧坏 CAN。
（接线参考见第三章扩展模块）

When multiple controllers are linked on the CAN bus, a 120 ohm resistor is required at the CANL and Canh ends of the most two-sided controller.

The communication interface of EMC series adopts external 24V power supply, be careful when connecting with other controller or touch screen.

Both sides of the CAN bus communication must ensure that the corresponding GND is connected or that the controller and the extension module use the same power supply. When the emc32z16z

controller and the extension module are powered by a different power source: the Controller Power Supply, the EGND, is connected to the extension module power GND , otherwise it may burn out the CAN. (for wiring, see the extension module in Chapter 3.)

针脚号 Stitch number	名称 Name	说明 Account for
1	485B	485-
2	485A	485+
3	EGND	外部电源地 External power source
4	CANL	CAN 差分数据- Can differential data -
5	CANH	CAN 差分数据+ CAN difference data

2.2.3 RS232 接口 /RS232 interface
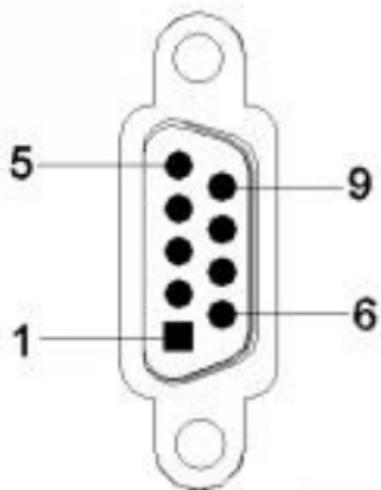
RS232 接口。其 9pin 引脚定义如下：
RS232 interface. The 9pin pin is defined as follows:

针脚号 Stitch number	名称 Name	说明 Account for
2	RXD	接收数据引脚 Data receiving pin
3	TXD	发送数据引脚 Send Data Pin
5	EGND	电源地 Power source
9	E5V	电源 5V 输出，可用于对文本屏供电（500mA 以下） Power Supply 5V output, can be used to power the text screen (500mA below)

注：与电脑连接需要使用双母头的交叉线
Note: The computer connection requires the use of a double-header cross-line

2.2.4 通用输入信号/Universal input signal
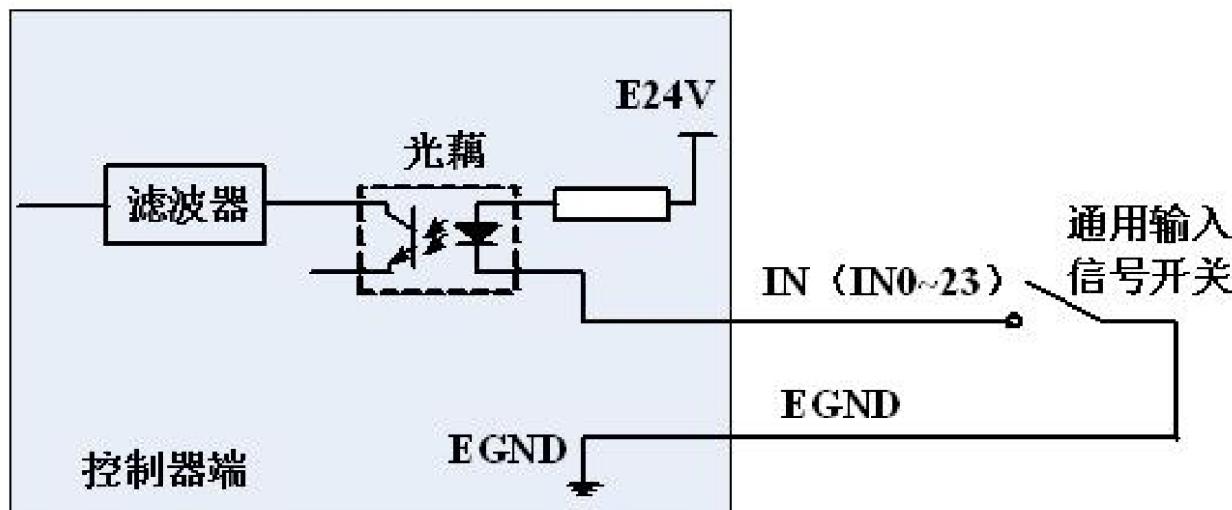
注：每轴信号里面有 1 个通用输入口，见轴接口描述
Note: There are 1 general purpose input ports in each shaft signal, see shaft interface description

2.2.4.1 输入 0-7/Enter 0-7

针脚号 Stitch number	名称 Name	说明 Account for	缺省功能 Default function
1	EGND	外部电源地 External power source	
2	EGND	外部电源地 External power source	
3	IN0	输入 0 Inputting0	锁存 A,锁存 B Latching A, latching B
4	IN1	输入 1 Inputting1	
5	IN2	输入 2 Inputting2	
6	IN3	输入 3 Inputting3	
7	IN4	输入 4 Inputting4	
8	IN5	输入 5 Inputting5	
9	IN6	输入 6 Inputting6	

10	IN7	输入 7 Inputting7	

注:输入 0 与输入 1 同时具有锁轴输入 A 与锁存输入 B 的功能
Note: Input 0 and Input 1 have the function of lock shaft input a and Lock Latch Input B

2.4.4.2 输入 8-15/Enter 8-15

针脚号 Stitch number	名称 Name	说明 Account for	缺省功能 Default function
1	EGND	外部电源地 External power source	
2	EGND	外部电源地 External power source	
3	IN8	输入 8 Inputting8	
4	IN9	输入 9 Inputting9	
5	IN10	输入 10 Inputting10	
6	IN11	输入 11 Inputting11	
7	IN12	输入 12 Inputting12	
8	IN13	输入 13 Inputting13	
9	IN14	输入 14 Inputting14	
10	IN15	输入 15 Inputting15	

2.4.4.3 输入 16-23/Enter 16-23

针脚号 Stitch number	名称 Name	说明 Account for	缺省功能 Default function
1	EGND	外部电源地 External power source	
2	EGND	外部电源地 External power source	
3	IN16	输入 16 Inputting16	

4	IN17	输入 17 Inputting17	
5	IN18	输入 18 Inputting18	
6	IN19	输入 19 Inputting19	
7	IN20	输入 20 Inputting20	
8	IN21	输入 21 Inputting21	
9	IN22	输入 22 Inputting22	
10	IN23	输入 23 Inputting23	

2.2.5 通用输出 CN10/General purpose output CN10

每轴信号里面另有个不带电流放大的通用输出口，见抽接口描述

There are other general-purpose outputs without current amplification in each axis of the signal, as described in the extraction interface

输出电路
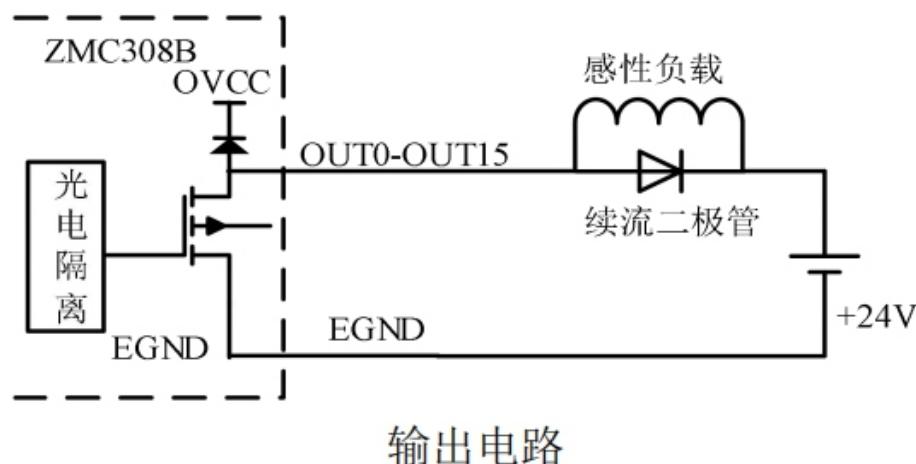
输出 0-7：
Output0-7：

针脚号 Stitch number	名称 Name	说明 Account for
1	EGND	外部电源地 External power source
2	E5V	外部 5V 电源输出 External 5V power output
3	OUT0	输出 0,PWM0 Output 0, PWM0
4	OUT1	输出 1，PWM1 Output 1, PWM1

5	OUT2		输出 2 Output2
6	OUT3		输出 3 Output3
7	OUT4		输出 4 Output4
8	OUT5		输出 5 Output5
9	OUT6		输出 6 Output6
10	OUT7		输出 7 Output7

注：OUT1 具有 PWM 的功能，当 PWM 关闭时为通用输出
Note: OUT1 has the PWM function, when PWM shuts down for the general output

输出 8-11：
Output8-11：

针脚号 Stitch number	名称 Name	说明 Account for
1	EGND	外部电源地 External power source
2	OUT8	输出 8 Output8
3	OUT9	输出 9 Output9
4	OUT10	输出 10 Output10
5	OUT11	输出 11 Output11

2.2.6 ADDA 信号 /Adda signal

EMC32Z 内部 DA 采用了内部电源
The internal DA of the EMC32Z uses an internal power suppl

| 针脚号 Stitch number	名称 Name	说明 Account for
1	NC	备用 Stand by
2	NC	备用 Stand by
3	DA0	0-10V 模拟输出口 0 0-10V analog output 0
4	DA1	0-10V 模拟输出口 1 0-10V analog output 1
5	DAGND	内部电源模拟地 Internal power supply analog

2.2.7 U 盘接口信号/USB INTERFACE SIGNAL

针脚号 Stitch number	名称 Name	说明 Account for
1	V	内部+5V 电源 Internal 5V power supply
2	D-	差分数据 D- Differential Data D -
3	D+	差分数据 D+ Differential Data D +
4	GND	内部电源地 Internal power source

2.2.8 轴接口信号/Shaft interface signal

　　提供了 0V 和+5V 输出，可以为编码器提供 5V 电源，轴使用前，要通过 ATYPE 参数来配置轴的使用方式。
　　0V and 5V output are provided, and 5V power supply can be provided for the encoder. Before using the shaft, the use mode of the shaft should be configured by the ATYPE parameter.

2.2.8.1 轴 1-26/Axis1-26
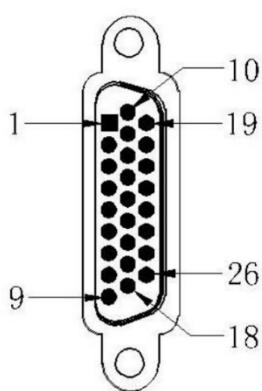
针脚号 Stitch number	名称 Name	说明 Account for
1	EGND	外部电源地 External power source
2	IN24-29/ALM	通用输入，建议做驱动报警 Universal input, recommended to do driver alarm

3	OUT12 17…/ENABLE	通用输出，建议驱动使能 Universal output, recommended driver enable
4	EA-	编码器输入 Encoder input
5	EB-	编码器输入 Encoder input
6	EZ-	编码器输入 Encoder input
7	+5V	内部电源+5V 输出 Internal power supply 5V output
8	备用	备用 Stand by
9	DIR+	伺服或步进方向输出 Servo or step direction output
10	GND	内部电源地 Internal power source
11	PUL-	伺服或步进脉冲输出 Servo or step pulse output
12	备用	备用 Stand by
13	GND	内部电源地 Internal power source
14	OVCC	外部 E+24V 输出（建议仅供伺服IO） External E 24V output (recommended for servo IO only)
15	备用	备用 Stand by
16	备用	备用 Stand by
17	EA+	编码器输入 Encoder input
18	EB+	编码器输入 Encoder input
19	EZ+	编码器输入 Encoder input
20	GND	内部电源地 Internal power source
21	GND	内部电源地 Internal power source
22	DIR-	伺服或步进方向输出 Servo or step direction output
23	PUL+	伺服或步进脉冲输出 Servo or step pulse output
24	GND	内部电源地

|		Internal power source
25	备用	备用 Stand by
26	备用	备用 Stand by

## 2.2.8.2 低速差分脉冲口和编码器接线参考/Low-speed differential pulse port and encoder wiring reference
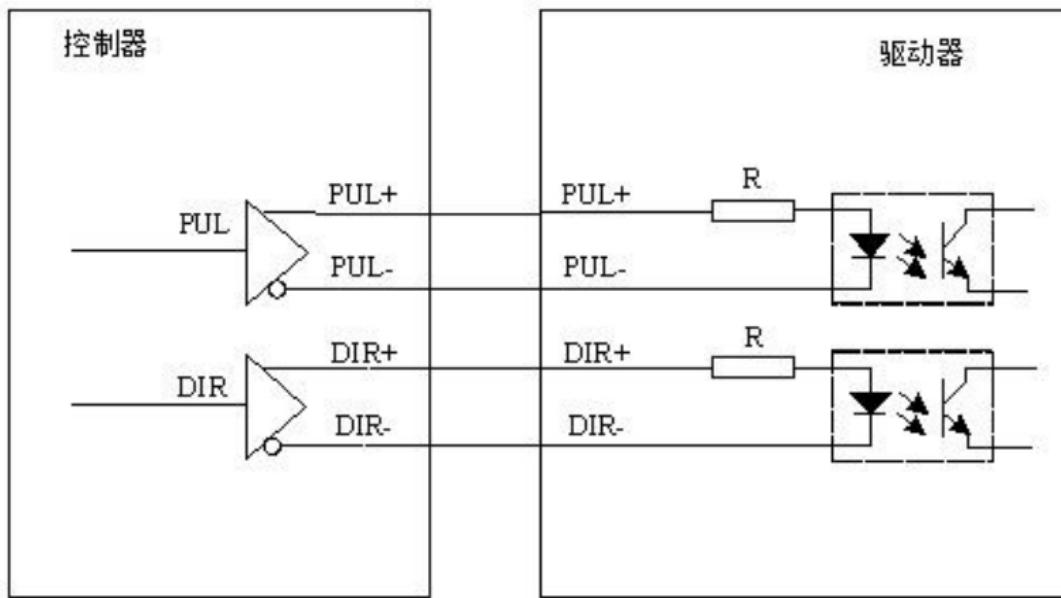
差分连接方式
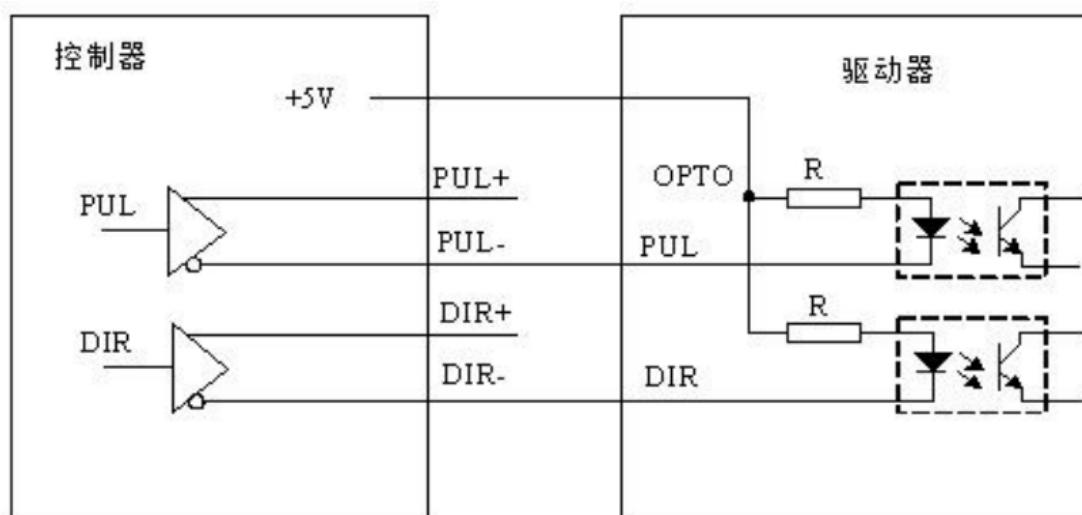
单端连接方式
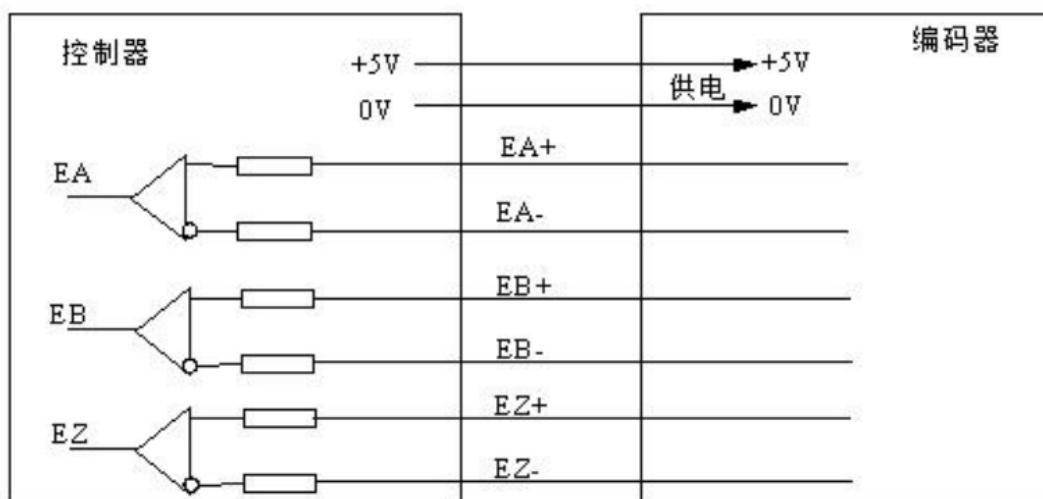
编码器连接方式

EMC32Z 控制器和松下 A5 伺服驱动器低速差分脉冲口接线参考
Reference for low-speed differential pulse interface for EMC32Z controller and Panasonic A5 servo driver
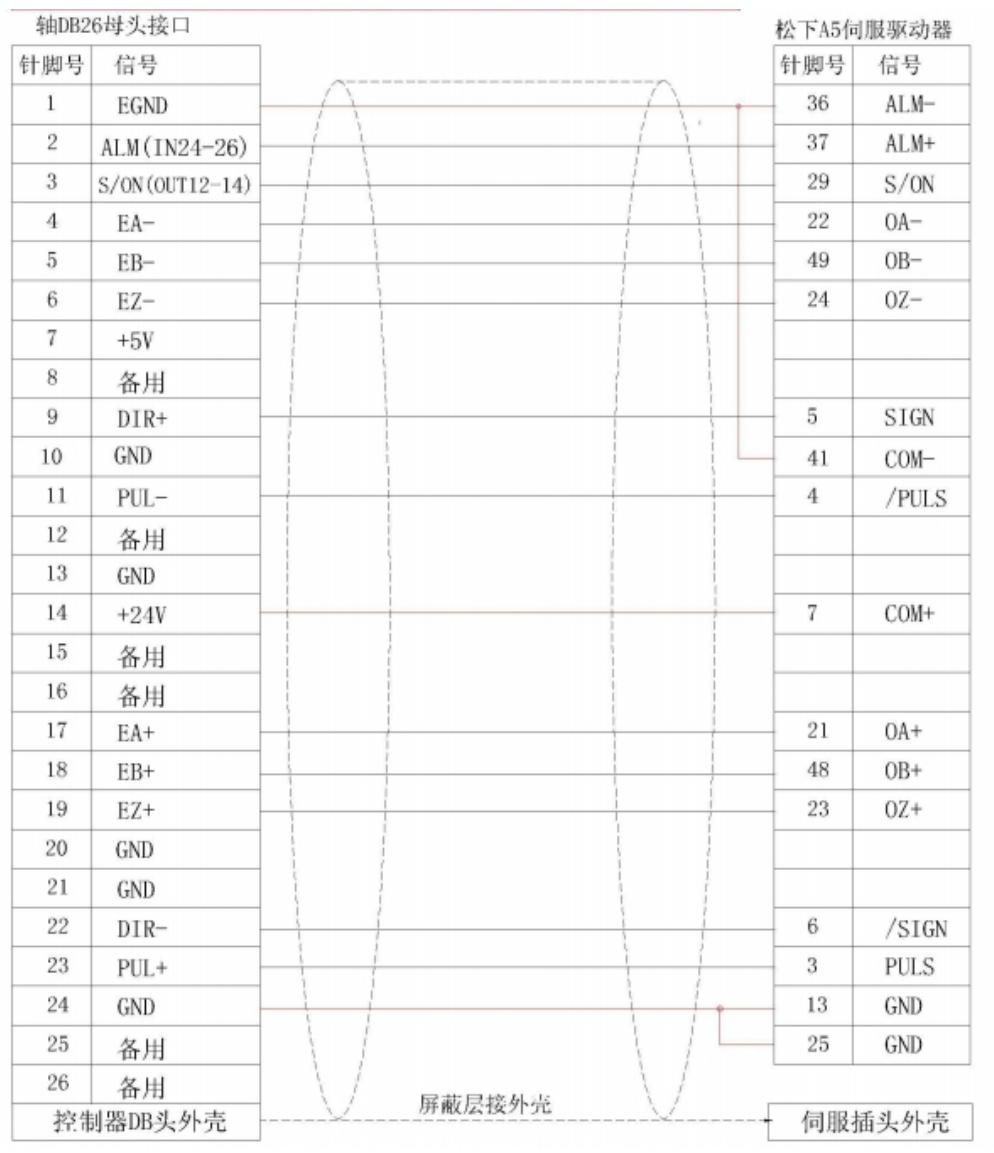
| 轴DB26母头接口				松下A5伺服驱动器	
针脚号	信号			针脚号	信号
1	EGND			36	ALM-
2	ALM(IN24-26)			37	ALM+
3	S/ON(OUT12-14)			29	S/ON
4	EA-			22	OA-
5	EB-			49	OB-
6	EZ-			24	OZ-
7	+5V				
8	备用				
9	DIR+			5	SIGN
10	GND			41	COM-
11	PUL-			4	/PULS
12	备用				
13	GND				
14	+24V			7	COM+
15	备用				
16	备用				
17	EA+			21	OA+
18	EB+			48	OB+
19	EZ+			23	OZ+
20	GND				
21	GND				
22	DIR-			6	/SIGN
23	PUL+			3	PULS
24	GND			13	GND
25	备用			25	GND
26	备用				
控制器DB头外壳		屏蔽层接外壳		伺服插头外壳	

注：如果接了高速差分脉冲口或者编码器必须把控制器 24 脚 GND 和驱动器 13.25 脚 GND 连接起来。

Note: If a high speed differential pulse port or encoder is connected, the controller 24 GND must be connected to the driver 13.25 GND .

2.2.8.3 高速差分脉冲口和编码器接线参考

速度满足要求时优先使用低速差分脉冲口，使用高速差分脉冲接口时务必将控制器内部数字地连到驱动器高速脉冲口参考地。

The low-speed differential pulse port is preferred when the speed meets the requirement, and the high-speed differential pulse port must be digitally connected to the driver's high-speed pulse port reference when using the high-speed differential pulse interface.
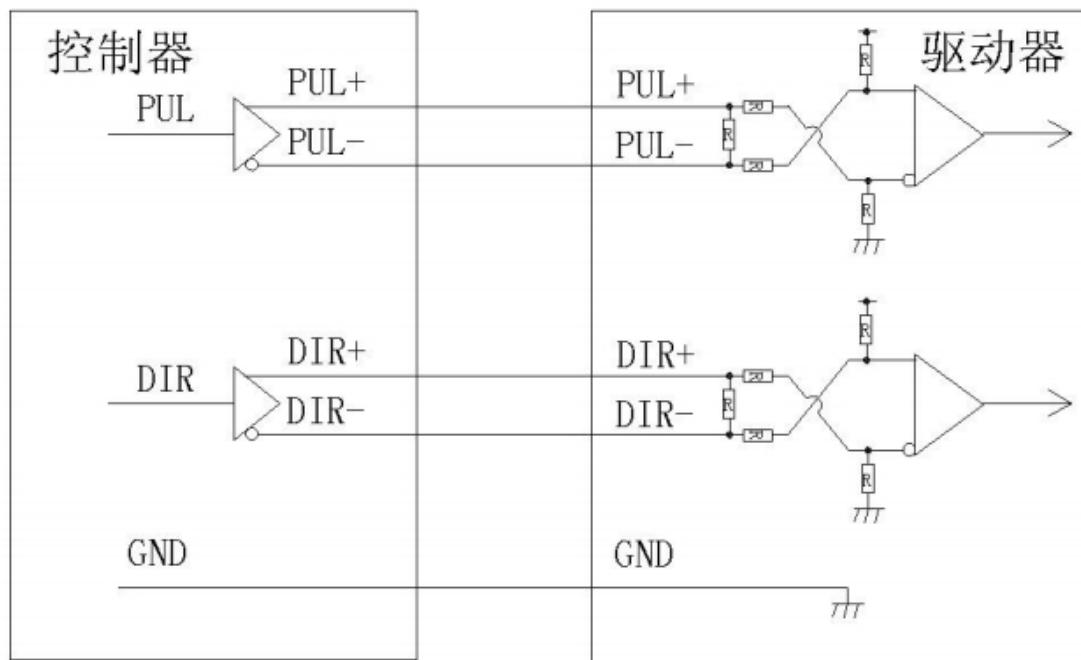
差分高速脉冲口连接方式

注：如果接了高速差分脉冲口或者编码器必须把控制器 24 脚 GND 和驱动器 13.25 脚 GND 连接起来。

Note: If a high speed differential pulse port or encoder is connected, the controller 24 GND must be connected to the driver 13.25 GND .

EMC32Z 控制器和松下 A5 伺服驱动器高速差分脉冲口接线参考
Reference for high-speed differential pulse interface of EMC32Z controller and Panasonic A5 servo driver

轴DB26母头接口

针脚号	信号
1	EGND
2	ALM(IN24-26)
3	S/ON(OUT12-14)
4	EA-
5	EB-
6	EZ-
7	+5V
8	备用
9	DIR+
10	GND
11	PUL-
12	备用
13	GND
14	+24V
15	备用
16	备用
17	EA+
18	EB+
19	EZ+
20	GND
21	GND
22	DIR-
23	PUL+
24	GND
25	备用
26	备用

控制器DB头外壳

松下A5伺服驱动器

| 针脚号	信号
36	ALM-
37	ALM+
29	S/ON
22	OA-
49	OB-
24	OZ-
46	SIGN
41	COM-
45	/PULS
7	COM+
21	OA+
48	OB+
23	OZ+
47	/SIGN
44	PULS
13	GND
25	GND

伺服插头外壳

屏蔽层接外壳

3 扩展模块/ Extension Module

3.1 扩展模块 CAN 总线、输入输出、电源接线参考/Extension module CAN bus, input and output, power connection reference

　　CAN 总线上链接多个 MIO 扩展模块时，需要在最末端的 MIO 扩展模块 CANL 与 CANH 端并 接一个 120 欧姆的电阻。
　　EMC4 系列控制器采用单电源供电，MIO 扩展卡采用双电源供电，使用时将 IO 板的两路电源接到一路电源即可。EMC32Z 控制器和 MIO 扩展模块用不同电源供电时：控制器电源 EGND 要 连接扩展模块电源的 GND，否则可能烧坏 CAN。

　　When multiple MIO extension modules are linked on the CAN bus, a 120 ohm resistor is connected to the Terminal Mio Extension Module CANL and Canh.

EMC4 series controller is powered by single power supply, MIO EXPANSION CARD is powered by double power supply. When in use, two power supply of IO board can be connected to one power supply. When the EMC32Z controller and the MIO extension module are powered by a different power source: the Controller Power Supply, Egnd, is connected to the extension module power GND , otherwise it may burn out the CAN.
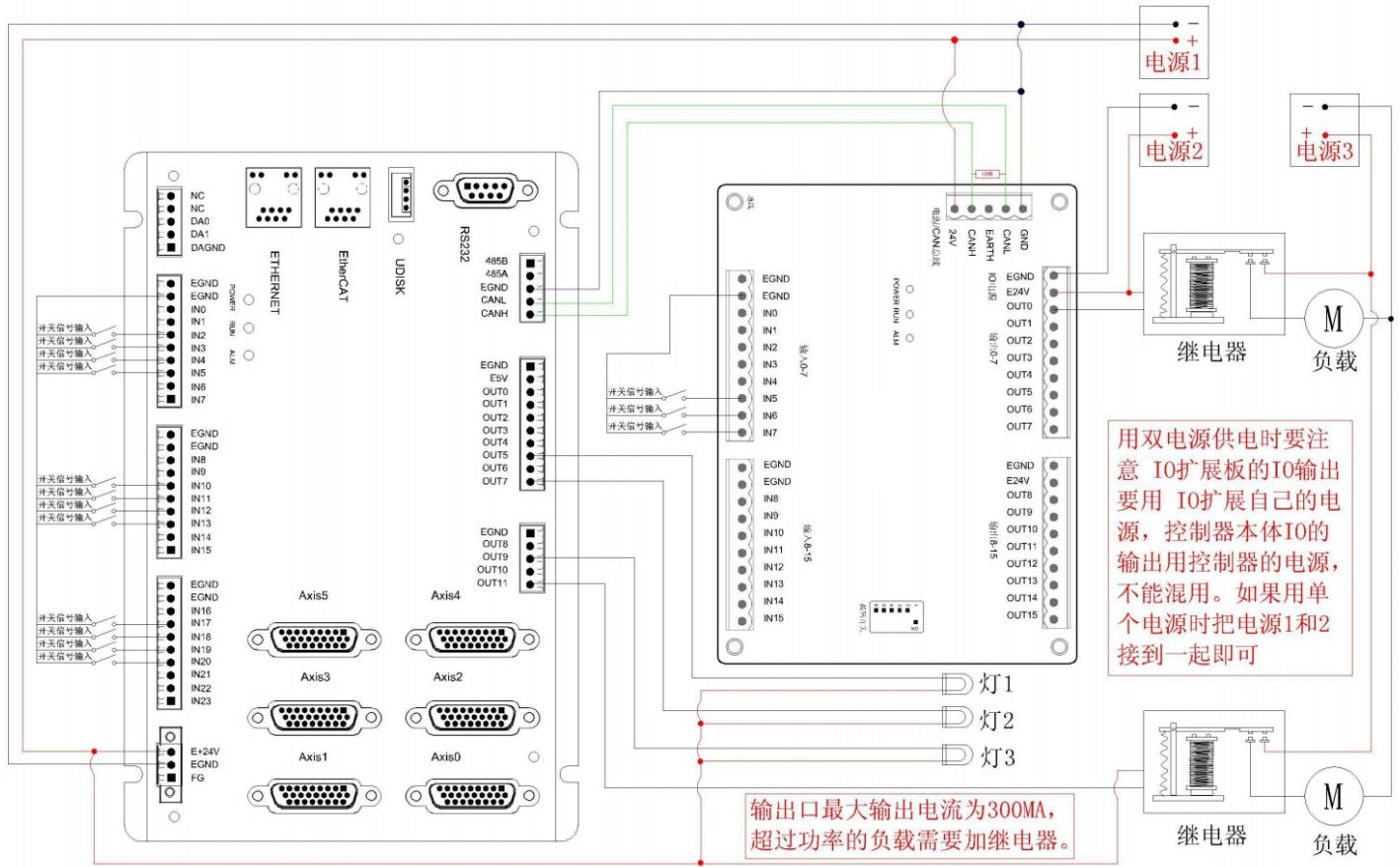
4 硬件安装/Hardware installation

4.1 EMC32Z 安装/EMC32Z installation
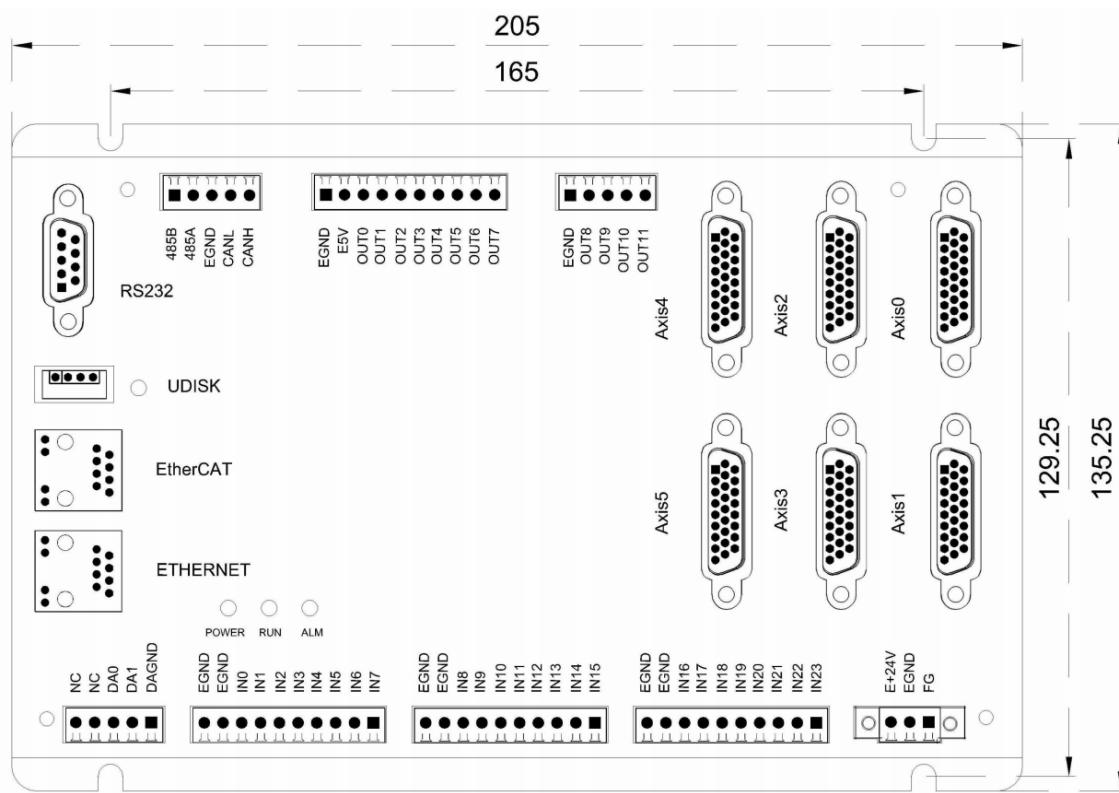
单位/Unit：mm
安装孔直径/Diameter of mounting hole 4.5mm

5 常见问题/Frequently asked questions

问题 Questions	解决问题的建议 Advice on how to solve a problem
电机不转动 Motor not turning	确认控制器的 ATYPE 有配置正确 Verify that the controller's ATYPE is configured correctly
	确认脉冲发送方式和驱动器的输入脉冲方式是否匹配 Verify that the pulse mode is matched to the driver's input pulse mode
	确认是否有硬件限位，软件限位，ALM 信号起作用 Verify that the hardware, software, and ALM signals are active
	可以用测试软件进行测试，观察脉冲计数等是否正常 Can use the test software to test, observe whether the pulse count is normal or not
控制器已经正常工作，正常发出脉冲，但电机不转动 The controller is working properly, sending out pulses normally, but the motor is not turning	检查驱动器和电机之间的连接是否正确，驱动器与控制器之间的接线是否接触良好 Check that the connection between the drive and the motor is correct and that the wiring between the drive and the controller is in good contact
	确保驱动器工作正常，没有出现报警 Make sure the drive is working properly and there is no alarm

电机可以转动，但工作不正常 The motor can turn, but it doesn't work properly	检查设置减速度和速度是否超过了设备极限 Check that the deceleration setting and the speed limit of the equipment are exceeded
	检查输出脉冲频率是否超过了驱动器的接收极限 Check if the output pulse frequency exceeds the receiving limit of the driver
	检查控制器和驱动器是否正确接地，抗干扰措施是否做好 Check the controller and driver are properly grounded, anti-interference measures are done
	脉冲和方向信号输出端光电隔离电路中使用的限流电阻过大，工作电流偏小 The current limiting resistance used in the photoelectric isolation circuit at the output of pulse and direction signals is too large and the working current is too small
能够控制电机，但电机出现振荡或是过冲 Can control the motor, but the motor oscillates or overshoots	可能是驱动器参数设置不当，检查驱动器参数设置 Drive parameter settings may be incorrect. Check drive parameter settings
	应用软件中加减速时间和运动速度设置不合理 The setting of acceleration and deceleration time and motion speed is unreasonable in application software
能够控制电机，但工作时，回原点定位不准 Can control the motor, but work, back to the origin location is not accurate	原点信号开关是否工作正常 Whether the origin signal switch is working properly
	原点信号是否受到干扰 If the origin signal is being jammed
限位信号不起作用 The Stop Signal's not working	限位传感器工作不正常 The limit sensor is not working properly
	限位传感器信号受到干扰 The limit sensor signal is jammed
扩展模块连接不上，扩展模块警告灯亮 The extension module is not connected. The extension module warning light is on	检查120欧姆电阻是否有安装在两端 Check that the 120 ohm resistor is installed at both ends
	检查是否有多个扩展模块采用同样的ID Check to see if multiple extension modules have the same ID
输入口检测不到信号 No signal detected at the input port	检查IO电源有无供给 Check the IO power supply
	检查信号电平是否与输入口匹配 Check if the signal level matches the input port
	检查输入口编号是否与IO板的ID相匹配 Check that the input port number matches the IO board ID
输出口操作时没有反应 There is no response at the output port	检查IO电源有无供给，IO板上也要供电源 Check the IO power supply, IO board to power
	检查输入口编号是否与IO板的ID相匹配 Check that the input port number matches the IO board ID
控制器网口连接不上 The controller network interface is not connected	网口的灯是否点亮？ Is the light on at the net port?
	是否采用直连网线且电脑不支持自动交叉？ Do you use a direct line and the computer does not support

	automatic crossover?
	控制器 IP 地址是否被修改？ Has the controller Ip address been modified?
	PC 的网卡 IP 地址是否与控制器一个网段？ Is the IP address of the PC's network card a network segment with the controller?
控制器串口连接不上 The serial port of the controller is not connected	串口参数是否被运行程序修改，可以通过？*SETCOM 查看当前的所有串口配置 Is The serial port parameter modified by the running program and can be passed? * SETCOM looks at all current serial port configurations

6 保修及售后服务 /Warranty and after-sales service

请保留好包装箱以便运输、储存或需要退回本公司维修时使用。一年保修期：
Please keep the packing box for transportation, storage or need to return to the company for maintenance.One year warranty period:
来自本驱动器使用一年内因为产品自身的原因造成的损坏，负责保修。
From the use of this drive within one year because of the product itself caused by the damage, responsible for the warranty.

不在保修之列：/Not covered by warranty:
不恰当的接线、电源电压和用户外围配置造成的损坏。/Damage caused by improper wiring, power supply voltage and user peripheral configuration.
无本公司书面授权条件下，用户擅自对产品进行更改。/Without the written authorization of the company, users make changes to the products without authorization.
超出电气和环境的要求使用。/Use beyond electrical and environmental requirements.

驱动器序列编号被撕下或无法辨认。/The drive serial number has been torn off or is unreadable.
外壳被明显破坏。/The outer shell was visibly damaged.
不可抗拒的灾害。/An irresistible disaster.6.2 售后服务 /Aftersales Service
添加微信或者拨打电话

（+86）18926788846
Email：Tech@TQKTEC.COM
您拨打电话之前，请先记录以下信息：
Before you call, please record the following information:
故障现象/Fault phenomenon
产品型号和序列号/Product model and serial number
安装日期或者生产日期/Installation date or production date