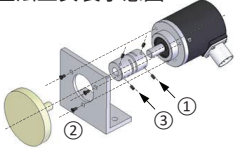


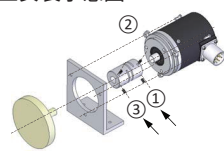
轴型编码器安装:

A型/C型法兰安装示意图



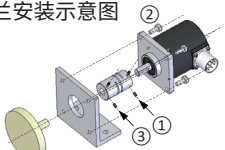
- ① 将联轴器安装到编码器
- ② 将编码器安装到支架
- ③ 将联轴器套装于被测轴上

B型法兰安装示意图



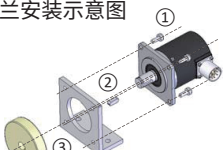
- ① 将联轴器安装到编码器
- ② 将编码器通过偏心器安装到支架上
- ③ 将联轴器套装于被测轴上

D型法兰安装示意图



- ① 将联轴器安装到编码器
- ② 将编码器安装到支架上
- ③ 将联轴器套装于被测轴上

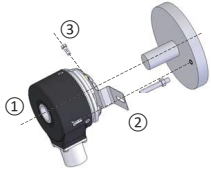
M型法兰安装示意图



- ① 将编码器安装到支架上
- ② 将键装入键槽
- ③ 将编码器安装到电机上

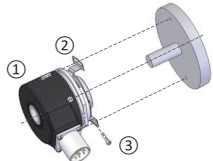
轴套型编码器安装:

单翼弹簧片安装示意图



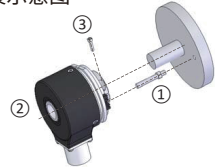
- ① 将编码器套装于电机上
 - ② 固定弹簧片
 - ③ 紧固编码器锁圈螺丝
- 注: 产品安装要以弹簧片本身不发生任何形变为标准

双翼弹簧片安装示意图



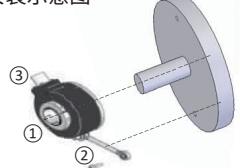
- ① 将编码器套装于电机上
 - ② 固定弹簧片
 - ③ 紧固编码器锁圈螺丝
- 注: 产品安装要以弹簧片本身不发生任何形变为标准

挡销安装示意图



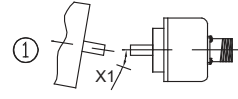
- ① 将挡销安装于电机或者支架上
- ② 将编码器通过挡销套装于被测轴上, 确保挡销尾端面与支撑槽底有0.8 mm的余量
- ③ 紧固编码器锁圈螺丝

拐臂安装示意图

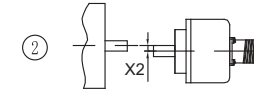


- ① 将编码器套装于被测轴上
 - ② 固定方向扭矩臂
 - ③ 紧固编码器锁圈螺丝
- 注: 产品正确安装时拐臂不能与编码器外壳接触

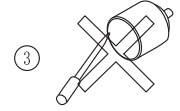
安装注意事项:



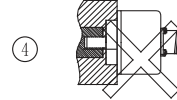
编码器与被测物体轴之间的角度偏差 $X1 < 1.5^\circ$ 。



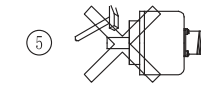
编码器与驱动输出轴之间的径向偏差 $X2 < 0.1 \text{ mm}$ 。



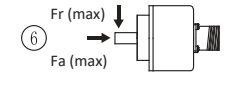
禁止局部或部分拆卸或改装编码器。



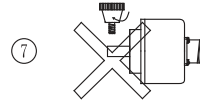
编码器与外部连接需要避免刚性连接。



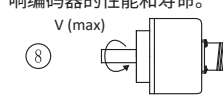
编码器是高精度仪器, 安装时严禁敲击和磕碰, 安装或使用不当会影响编码器的性能和寿命。



安装时注意编码器允许的轴向/径向最大负载, 严禁超过最大值。



禁止对编码器轴进行打磨、切割、钻孔等任何加工处理。



注意不要超过编码器的极限转速, 否则可能出现信号丢失。

电气参数:

接口类型	CANopen Profile DSP406 with additional function CAN HIGH-Speed to ISO/DIS 11898, Basic and Full-CAN; CAN SPECIFICATION 2.0B
供电电压	10 ... 30 V DC

端子配置:

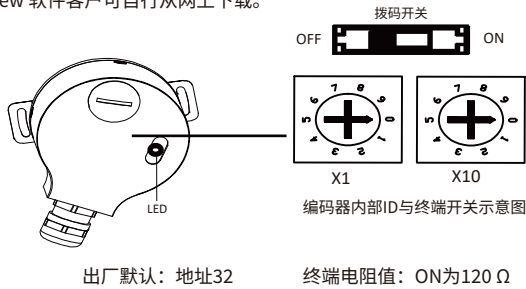
直接出线线序定义

信号	0V	+Ub	CAN_H	CAN_L	屏蔽
色标	白	棕	绿	灰	⚡

注: 组态文件需从官网下载, 不同系列匹配的组态文件如下:
EAM58-CAND: ElcoCAM58.eds

参数设置:

编码器出厂波特率设置为250K, 通信ID:拨码开关设定为NODE ID=32, 循环时间为100ms, 可通过PcanView软件进行参数设置, PcanView 软件客户可自行从网上下载。



一. 注意事项:

1. 本编码器通讯速率可通过上位机进行设置。

编码器可调波特率范围如下:

1 Mbps, 800 Kbps, 500 Kbps, 250 Kbps, 125 Kbps, 100 Kbps, 50 Kbps, 20 Kbps

2. 编码器ID, 拨码开关设置, 当拨码开关设置为99时, 上位机所设置的ID生效, 数值为其它值时, 编码器拨码开关当前读值为CAM通讯ID, 当拨码开关为0时, 编码器NOEID=32。

3. 编码器分辨率用户可通过上位机进行设置, 原则上单圈分辨率在满足小于等于8192的情况下可任意设置 (不能等于0), 多圈分辨率原则上满足小于等于4096的情况下取值必须满足2的N次幂, 当多圈分辨率为2的0次幂时, 编码器可作为单圈编码器使用。

4. 编码器出厂默认顺时针旋转, 码值递增。

5. 编码器默认需要上位机的启动信息, 编码器才可上传位置信息。

6. 编码器上传位置信息周期为100 ms, 此上传周期可通过上位机软件更改, 取值范围 (0~50000), 当取值大于5000时, 系统自动修改为100 ms。

7. Vendor Id = 0x0000003f

8. 编码器上电发送注册信息后, 自动进入操作模式, 周期性上传编码器位置信息, 此功能也可通过上位机设置为编码器需接收到上位机启动信息后在周期性上传编码器位置信息。

9. 参数存储及恢复出厂设置显示:

- (1). 上位机控制编码器存储当前参数时, 编码器LED灯会点亮红色, 说明编码器正在存储数据。
- (2). 上位机控制编码器恢复出厂设备时, 编码器LED灯会点亮红色, 说明编码器正在恢复EEPROM中的数据。

10. 通讯故障显示:

编码器在正常使用中, 因通信线缆及其他通信设备的故障而引起的编码器无法正常上传数据, 编码器信号指示灯LED将红色常亮, 当通信恢复正常时, LED红灯灭绿灯亮。

二. 编码器参数设置说明:

编码器以地址32为例, 换成十六进制为20, 加上600 (寄存器) 所以为620

注意: object 6000h 操作参数定义:

Bit 0: Code sequence; Standard: Bit = 0

Bit=0 (顺时针) Bit=1 (逆时针)

Bit1: 预留; Bit2: Scaling function

Bit=0 (分辨率4096*8192)

Bit=1 (分辨率等于用户设定分辨率值)

● 恢复出厂设置

帧ID (Hex):	固定	620	发送
数据 (Hex):	固定	23 11 10 01 6c 6f 61 64	停止

回复: 60 11 10 01 00 00 00 00 代表发送成功, 否则修改失败。

注意: 此产品恢复出厂设置后, 产品默认地址为32, 总分辨率为与产品型号一致

● 修改分辨率

先设定单圈分辨率, 再设定总分辨率

● 单圈分辨率修改 (当object6000的bit2=1时此寄存器有效) (例: 4096=00001000)

帧ID (Hex):	固定	620	发送
数据 (Hex):	固定	23 01 60 00 00 10 00 00	停止

单圈部分

其中23字节代码, 6001为寄存器, 中间00为子寄存器, 后4个字节为输入数据, 所有八个字节的输入为由低位到高位填写。

回复: 60 01 60 00 00 00 00 00 代表发送成功, 否则修改失败。

● 总分辨率修改 (当object6000的bit2=1时此寄存器有效) (例: 4096/4096=01000000)

帧ID (Hex):	固定	620	发送
数据 (Hex):	固定	23 02 60 00 00 00 00 01	停止

总分辨率

回复: 60 02 60 00 00 00 00 00 代表发送成功, 否则修改失败。

● 修改产品计数方向:(当object6000的bit2=1时此寄存器有效)

04(顺时针) 05 (逆时针)

帧ID (Hex):	固定	620	发送
数据 (Hex):	固定	23 00 60 00 04 00 00 00	停止

回复: 60 00 60 00 00 00 00 00 代表发送成功, 否则修改失败。

- 修改ID参数

以地址 NODE-ID=0X50为例（可修改ID范围0--99十进制）

帧ID (Hex) :	固定	620	发送
数据 (Hex) :	固定	2f 01 30 00 <u>50</u> 00 00 00	停止

回复: 60 01 30 00 00 00 00 00 代表发送成功, 否则修改失败。

- 波特率修改参数

以Baud=3 250K为例

帧ID (Hex) :	固定	620	发送
数据 (Hex) :	固定	2f 00 30 00 <u>03</u> 00 00 00	停止

回复: 60 00 30 00 00 00 00 00 代表发送成功, 否则修改失败。

通信波特率参数如下:

Buad=0 ...1Mbps Buad=1 ...800Kbps Buad=2 ...500Kbps Buad=3 ...250Kbps
 Buad=4 ...125Kbps Buad=5 ...100Kbps Buad=6 ...50Kbps Buad=7 ...20Kbps

- 产品设置预置值

以预置值为0为例

帧ID (Hex) :	固定	620	发送
数据 (Hex) :	固定	23 03 60 00 00 00 00 00 <small>低位在前高位在后</small>	停止

回复: 60 03 60 00 00 00 00 00 代表发送成功, 否则修改失败。

此设定值可以为0, 也可以是小于完整分辨率的任意数值。

以预置值为100为例: 100 (00000064)

帧ID (Hex) :	固定	620	发送
数据 (Hex) :	固定	23 03 60 00 <u>64</u> 00 00 00	停止

回复: 60 03 60 00 00 00 00 00 代表发送成功, 否则修改失败。

- 保存修改参数

帧ID (Hex) :	固定	620	发送
数据 (Hex) :	固定	23 10 10 01 73 61 76 65	停止

回复: 60 10 10 01 00 00 00 00 代表发送成功, 否则修改失败。当保存参数时编码器LED指示灯闪红灯。

- 启动heartbeat 报文周期

例如500ms

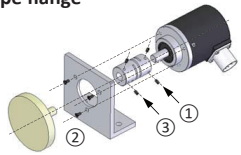
帧ID (Hex) :	固定	620	发送
数据 (Hex) :	固定	2b 17 10 00 <u>f4 01</u> 00 00	停止

回复: 60 17 10 00 00 00 00 00 代表发送成功, 否则修改失败。

注意: 编码器进行参数修改后都要对修改后的参数进行保存, 并对编码器进行重新供电, 参数修改完成。

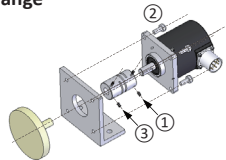
ENCODER INSTALLATION

A/C type flange



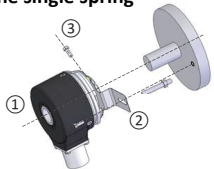
- ① Install coupling onto the encoder
- ② Install encoder onto the stand
- ③ Install the coupling onto the motor shaft

D type flange



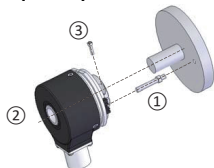
- ① Install coupling onto the encoder
- ② Install encoder onto the stand
- ③ Install the coupling onto the motor shaft

Standard hollow shaft encoders equipped with the single spring



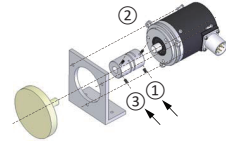
- ① Install the encoder on the motor
- ② Fasten the spring
- ③ Tighten the screws on encoder

Standard hollow shaft encoders equipped with torque stop



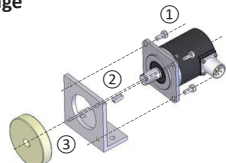
- ① Install the torque stop on the motor or bracket
- ② Install the encoder on the measured shaft via torque stop. Make sure there is 0.8 mm gap between the end side of the torque and the support trench
- ③ Tighten the screws on encoder

B type flange



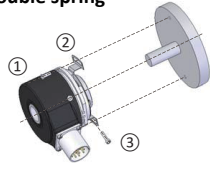
- ① Install coupling onto the encoder
- ② Install encoder onto the stand via eccentricizer
- ③ Install the coupling onto the motor shaft

M type flange



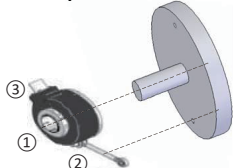
- ① Install encoder onto the stand
- ② Install the key into the keyslot
- ③ Install encoder onto the motor

Standard hollow shaft encoders equipped with the double spring



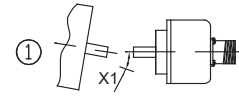
- ① Install the encoder on the motor
- ② Fasten the spring
- ③ Tighten the screws on encoder

Standard hollow shaft encoders equipped with universal torque arm

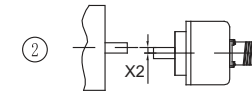


- ① Install the encoder on the motor
- ② Fasten the universal torque arm
- ③ Tighten the screws on encoder

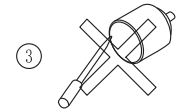
INSTALLATION ATTENTION



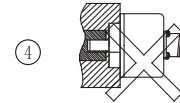
The angle deviation between the encoder and shaft is $X1 < 1.5^\circ$.



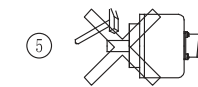
The radial deviation between the encoder and shaft is $X2 < 0.1 \text{ mm}$.



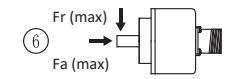
No modification.



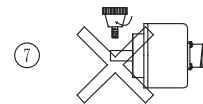
Don't use rigid connection between encoder and flange.



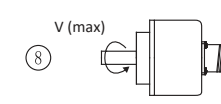
No hammer and impact.



Axial and radial load not beyond the limit.



No machining to the shaft. (Inc. skiving, sawing, drilling)



Not beyond $V(\text{max})$, otherwise signal will be lost.

ELECTRICAL PARAMETERS

Interface type	CANopen Profile DSP406 with additional function CAN HIGH-Speed to ISO/DIS 11898, Basic and Full-CAN; CAN SPECIFICATION 2.0B
Supply voltage	10 ... 30 V DC

TERMINAL ASSIGNMENT

Signal and wire color:

Signal	0V	+Ub	CAN_H	CAN_L	SHD
Color	WH	BN	GN	GY	\perp

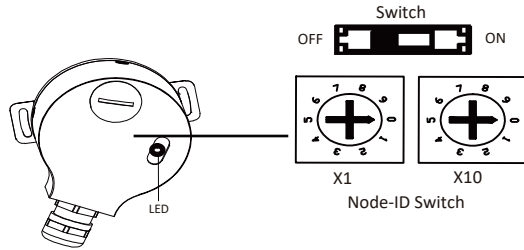
Note: Configuration files need be downloaded from official website, the different series match different configuration files as follows:
EAM58-CAND: ElcoCAM58.eds

Parameter setting:

Factory Reset:

Baud Rate: 250 K Node-ID: 32 Cycle Time:100 ms

Modified parameter by PcanView software, please download PcanView software online independently.



Default: Add. 32 Terminal Resistance: 120 Ω

Notes:

- Baud rate could be changed by upper computer within the specified range (include 1 Mbps, 800 Kbps, 500 Kbps, 250 Kbps, 125 Kbps, 100 Kbps, 50 Kbps, 20 Kbps).
- Node ID could be changed from '01' to '99'. But if Node-ID is set '00', Node-ID is back to '32'.
- The encoder resolution could be modified by the user through the upper computer. In principle, the single-turn resolution can be set arbitrarily from 1 to 8192 (but not equal to 0). For the multi-turn resolution, under the condition of less than or equal to 4096, the value must be a power of 2 (2ⁿ). when the multi-turn resolution is 2ⁿ, the encoder can be used as a single-turn encoder.
- The encoder direction is clock-wise and the counting order is ascending numerical sort in Factory reset.
- The encoder could upload the position automatically to computer.
- The cycle time of uploading is 100 ms. It could be changed from '0' ms to '50000' ms by computer. If it exceed '50000' ms, the cycle time will back to 100 ms.
- Vendor Id =0x0000003f.
- The encoder enter operation mode automatically and send the position periodically after 'logon'.
- The LED indicator
 - During the encoder is saving parameter or data, the LED indicator is 'Red'.
 - During the encoder is change back to 'factory reset', the LED indicator is 'Red'.
- Error

When the encoder disconnection or communication lost, the LED indicator turns to 'Red'. After trouble shooting, the LED indicator turns to 'Green'.

Setting Description:

For example:

Node-ID is 32, change it to 20 in hexadecimal, the register ID is 600, so ID is 620 object 6000h

Bit 0: Code sequence; Standard: Bit = 0

Bit=0 (CW) Bit=1 (CCW)

Bit1: reserved; Bit2: Scaling function

Bit=0 (Resolution: 4096*8192)

Bit=1 (resolution equal to user-set resolution)

• Factory reset

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 11 10 01 6c 6f 61 64	Stop

Reply: 60 11 10 01 00 00 00 00 means that the sending is successful, otherwise the modification fails.

Note: After restoring to factory settings, default address is 32, total resolution is same as model.

• Set resolution

Set the single-turn resolution first, then the total resolution.

• Set single-turn resolution (object6000h bit2=1)(e.g. 4096=00001000)

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 01 60 00 00 10 00 00	Stop

single-turn

23 is the byte code, 6001 is the register, the middle 00 is the sub-register, the last 4 bytes are the input data, and all 8 bytes of input are filled in from low to high.

Reply: 60 01 60 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

• Set total resolution (object6000h bit2=1) (e.g. 4096/4096=01000000)

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 02 60 00 00 00 00 01	Stop

total resolution

Reply: 60 02 60 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

• Modify the counting direction (object6000h bit2=1)

04(CW); 05(CCW)

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 00 60 00 04 00 00 00	Stop

Reply: 60 00 60 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

- **Modify NODE-ID**

e.g. NODE-ID=0X50 (The ID range decimal 0--99)

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	2f 01 30 00 <u>50</u> 00 00 00	Stop

Reply: 60 01 30 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

- **Modify baud rate**

e.g. Baud=3 250K

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	2f 00 30 00 <u>03</u> 00 00 00	Stop

Reply: 60 00 30 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

Note:

Baud=0 ...1 Mbps Baud=1 ...800 Kbps Baud=2 ...500 Kbps Baud=3 ...250 Kbps
 Baud=4 ...125 Kbps Baud=5 ...100 Kbps Baud=6 ...50 Kbps Baud=7 ...20 Kbps

- **Preset value**

e.g. preset value=0

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 03 60 00 <u>00 00 00 00</u>	Stop

Reply: 60 03 60 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

The preset value can be 0 or any value less than the full resolution.

e.g. preset value=100(00000064)

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 03 60 00 <u>64 00 00 00</u>	Stop

Reply: 60 03 60 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

- **Storage parameter**

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	23 10 10 01 73 61 76 65	Stop

Reply: 60 10 10 01 00 00 00 00 means that the sending is successful, otherwise the modification fails.

During storage parameter, the LED indicator is flash on 'Red'.

- **Cycle time of heartbeat**

e.g. heartbeat=500ms

ID (Hex) :	Fixed	620	Send
Data (Hex) :	Fixed	2b 17 10 00 <u>f4 01</u> 00 00	Stop

Reply: 60 17 10 00 00 00 00 00 means that the sending is successful, otherwise the modification fails.

Attention: After modifying the parameters of the encoder, it is necessary to save the modified parameters and then re-power the encoder. Once this is done, the parameter modification is complete.