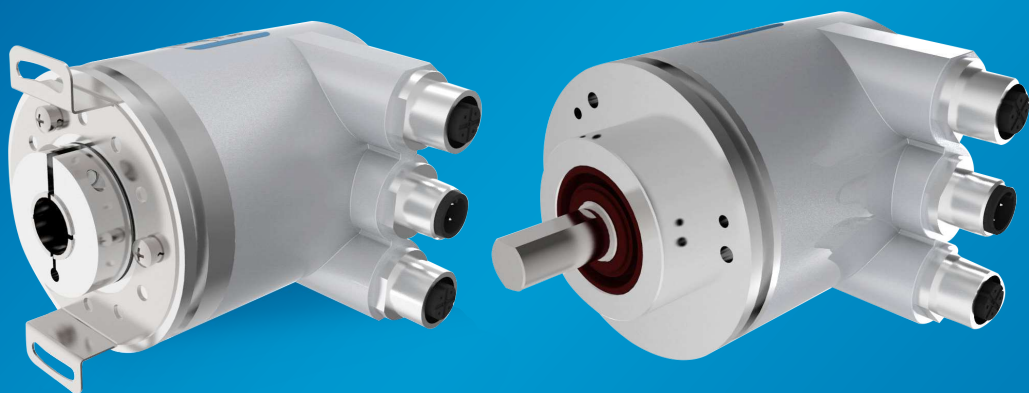


## 安装操作说明

Installation operation instructions



## 绝对值编码器 Absolute Encoder NCCA58系列 series

本安装说明全面涵盖以上系列：

请注意，图示可能与实际产品的型号、材料、颜色和接头类型上发生差异。

This installation guide covers all of the above series:

Please note that the illustration may differ from the actual product model, material, color, and connector type.

## 目录 List of contents

1、受伤风险 Risk of bodily injury.....	3
2、损坏产品的风险 Risk of damage to the product .....	4
3、产品部件 Parts of the product .....	5
4、机械安装 Mechanical installation.....	6
5、电气安装 Electrical installation .....	8
6、故障处理 Troubleshooting .....	11
7、证书 Certificate .....	12
8、技术参数 Specification parameter .....	13
9、附件 Accessories .....	20



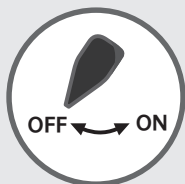
本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series , not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

## 1、受伤风险 Risk of bodily injury

安装前注意事项 Important before mounting begins:



**人身伤害危险**  
Risk of bodily injury



**关闭电源**  
Switch off the power.



**确保机器处于停机状态。**  
**本产品安装在旋转部件上，在运动状态下操作可能导致人身伤害。**

Make sure the machine is at a standstill. The product is to be mounted on a rotating part that can cause bodily injury when in motion.

## 2、损坏产品的风险 Risk of damage to the product

本产品为精密测量仪器，应由有经验的人员小心操作。  
以下警告适用于，产品在超出技术规范极限值情况下使用。

The product is a precision measuring instrument. It should be handled with care, by experienced person-nel.  
The warnings below apply in the event of effects outside the limit values stated in the product's data sheet.



### 产品损坏风险 Risk of damage to the product



#### 极限温度下

If it is exposed to extreme temperatures



#### 轴上作用力过大

If the shaft is exposed to high mechanical forces



#### 短路或供电电压过高

By short-circuits or an excessively high supply voltage



#### 剧烈振动或冲击

If it is exposed to powerful vibrations or shock



#### 遭受敲打，撞击或其他物理损坏。

By impacts or knocks or other physical damage.



#### 电子产品被接触时的静电放电

By ESD discharges if the electronics are touched

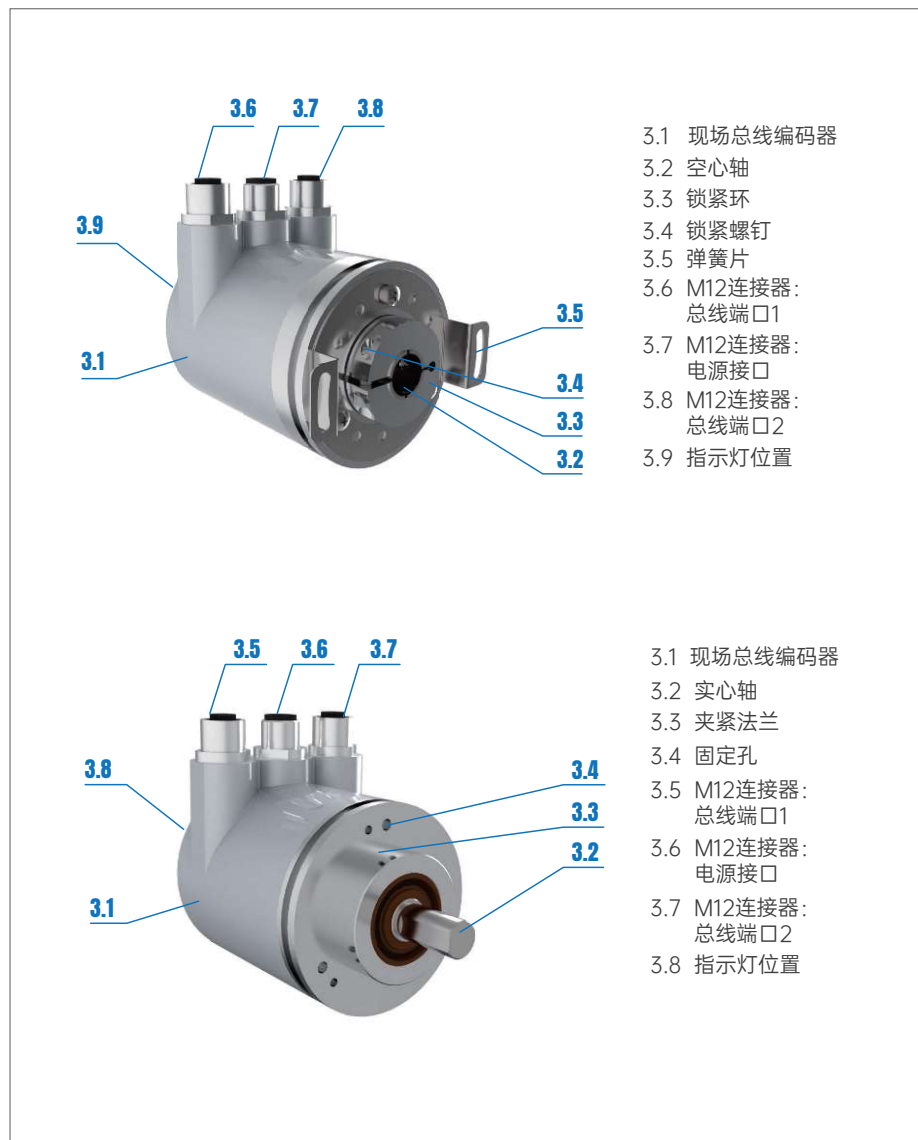


#### 潮湿或化学液体腐蚀（不要竖直安装电缆）

By moisture or chemical fluids (do not install cable pointing upwards)



## 3、产品部件 Parts of the product



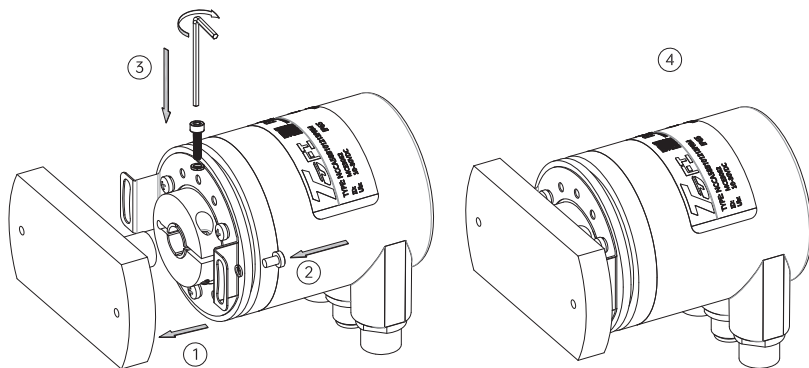
- 3.1 现场总线编码器
- 3.2 空心轴
- 3.3 锁紧环
- 3.4 锁紧螺钉
- 3.5 弹簧片
- 3.6 M12连接器：  
总线端口1
- 3.7 M12连接器：  
电源接口
- 3.8 M12连接器：  
总线端口2
- 3.9 指示灯位置

- 3.1 现场总线编码器
- 3.2 实心轴
- 3.3 夹紧法兰
- 3.4 固定孔
- 3.5 M12连接器：  
总线端口1
- 3.6 M12连接器：  
电源接口
- 3.7 M12连接器：  
总线端口2
- 3.8 指示灯位置

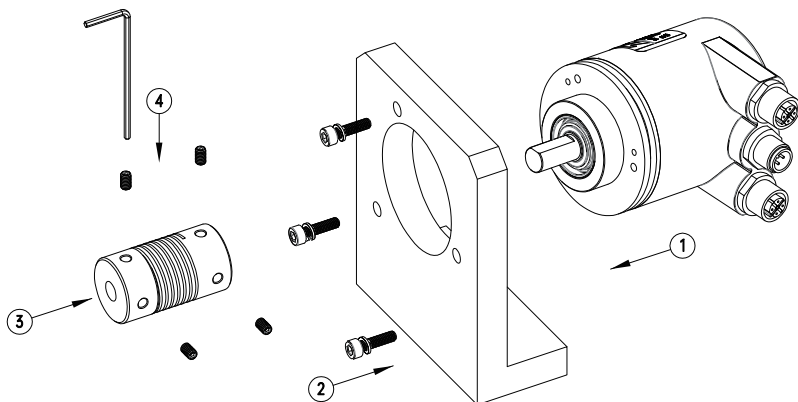


## 4、机械安装 Mechanical mounting

盲孔轴安装示意图



实心轴安装示意图



 **机械安装注意事项** Mechanical installation precautions:

驱动轴的径向跳动应尽可能不超过0.02mm，防止出现角度误差。跳动会引起振动，从而缩短设备的使用寿命。

The radial runout of the drive shaft should not exceed 0.2mm, if at all possible, to prevent an angle error. Runouts can cause vibrations, which can shorten the service life of the device.

保持传动轴和编码器轴的清洁，远离任何润滑油和油渍。

Keep the drive shaft and encoder shaft clean, away from any lubricating oil and oil stains.

轴承在任何情况下不允许加入润滑油。

Bearings are not allowed to add lubricating oil under any circumstances.

严禁任何外部物体碰触联轴器。

No external objects are allowed to touch the coupling.



本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

## 5、电气安装 Electrical mounting

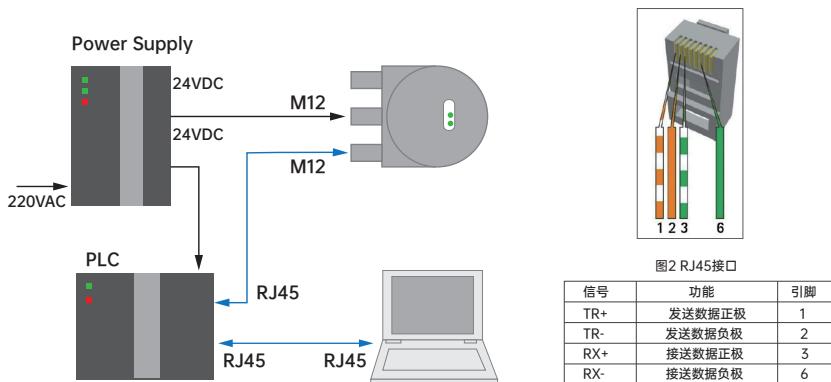
电缆出线应避免同潮湿或化学液体腐蚀方向

The cable outlet should avoid the direction of moisture or chemical liquid corrosion



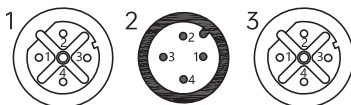
安装示意图

Installation diagram



## 电气连接

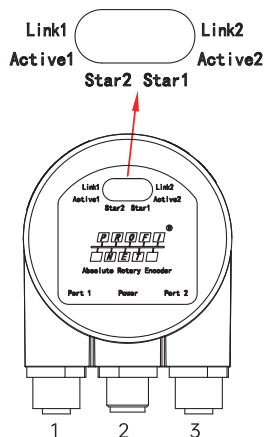
● 信号	连接器	端子号
TX+	1	1
RX+	1	2
TX-	1	3
RX-	1	4
+Ub	2	1
GND	2	3
TX+	3	1
RX+	3	2
TX-	3	3
RX-	3	4



## 电气连接

● LED	颜色	说明
Link1	绿	Port1连接以太网指示灯
Active1	黄	Port1数据传输指示灯
Link2	绿	Port2连接以太网指示灯
Active2	黄	Port2数据传输指示灯
Stat 1	绿	状态灯、详见下表
Stat 2	红	状态灯、详见下表

● Stat1	Stat2	说明
暗	暗	无电源
亮	亮	以太网未连接
亮	闪	参数故障
亮	暗	数据交换正常



 **电气安装注意事项** Electrical installation precautions

将所有导线视为带电线路，必须对所有未使用的导线做绝缘处理。

Treat all wires as live. Any wires not in use must be insulated.

更换坏的编码器时，请勿将新旧编码器部件相互结合。

Do not combine old encoder parts with new ones, when replacing a worn out encoder.

如果产品有接地带，必须确保良好接地。

If the product comes with an earthing strap,

使用时，请不要超过额定电压范围，如施加额定电压以上的电压时，会引起仪器故障和烧毁

Do not use the product in excess of the rated voltage. Applying voltages beyond the rated voltage range may cause the product to break or burn.

高压线和动力线并行走线时，会因感应而发生误动作或故障，所以请分开走线。

Avoid wiring the product's cables parallel to power lines or high-voltage lines. Doing so may cause the product to malfunction due to induction or may cause the damage the product.

使用电源如发生浪涌，请在电源间接上浪涌吸收器，为了避免干扰，请尽量在短距离之内连线。

If surge occurs in the power supply. Connect a surge absorber between the power supply terminals to absorb the surge. minimize the wiring length to prevent the product from being affected by noise, etc.

在接通电源或切断电源时，容易发生错误脉冲，所以请在接通电源1秒后，及切断电源1秒前使用。

Since improper pulses may occur when the power is turned on or off, use the devices connected to this product at least 1.0 seconds before or after the power is turned on or off.

请严格按照编码器接线表中规定的定义接线，需注意电源线极性，以避免引起仪器烧损。

Be careful when wiring, such as being careful with the polarities of the power supply. Incorrect wiring may break or burn the product

请不要拆卸、修理、改造本产品。

Never disassemble, repair nor tamper with the product



## 6、故障处理 Troubleshooting



### 问题一：PLC接收不到数据？

Q1: PLC Unable to Receive Data?

1、检查线路连接是否良好。

Check if the cable connections are good.

2、检查线序是否与编码器标签上的接线表一致。

Verify if the wire sequence matches the wiring diagram on the encoder label.

3、检查供电是否正确。

Inspect if the power supply is correct.

4、检查PLC配置。

Examine the PLC configuration.

5、排除上述原因后，更换编码器。

After ruling out the above reasons, replace the encoder.



### 问题二：PLC接收到数据乱跳？

Q2: PLC Receiving Erratic Data?

1、检查线路连接是否良好。

Check if the cable connections are good.

2、检查线序是否与编码器标签上的接线表一致。

Verify if the wire sequence matches the wiring diagram on the encoder label.

3、检查供电是否正确。

Inspect if the power supply is correct.

4、排除干扰带来的影响。

Eliminate interference that may be causing the issue.

5、排除上述原因后，更换编码器。

After ruling out the above reasons, replace the encoder.



### 问题三：用于测量位置变化与实际相反？

Q3: When Measuring Position, the Change in Position is Opposite to Actual?

检查编码器计数方向是否与设计相反。

Check if the encoder's counting direction is opposite to the design.



### 问题四：编码器显示零点与实际物理零点不一致？

Q4: Encoder Displaying Zero Point Inconsistent with Actual Physical Zero?

1、编码器未在物理零点置零，写入QD地址重新设置计数零点。

The encoder may not have been zeroed at the physical zero point. Write to QD address to reset count zero point.

2、编码器主轴联轴器松脱，重新锁紧。

The encoder's main shaft coupling may be loose. Tighten it securely.



## 7、证书 Certificate

产品的符合性声明、证书和最新操作指南请浏览[www.tofi-tech.com](http://www.tofi-tech.com)，可搜索产品型号查看具体产品详情。

For the conformity declaration, certificates and the latest operation guidelines of the product, please visit [www.tofi-tech.com](http://www.tofi-tech.com). You can search by product model to view the detailed information of the specific product.



本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

## 绝对值编码器NCCA58系列

## 8、技术参数 Specification parameter

## 8.1 机械参数 Mechanical parameter

轴径 Shaft diameter	盲孔轴 Blind hollow shaft $\varnothing 10$ 、 $\varnothing 12$ 、 $\varnothing 14$ 、 $\varnothing 15\text{mm}$ 实心轴 Solid shaft $\varnothing 6$ 、 $\varnothing 10\text{mm}$
主体材料 Material	铝合金 Aluminum alloy
壳体材料 Shell material	铝合金 Aluminum alloy
轴向负载 Axial loading	$\leq 40\text{N}$
径向负载 Radial load	$\leq 80\text{N}$
轴承寿命 Bearing life	$10^9$ 转 turn
旋转速度 Rotary speed	6000RPM
抗冲击性 Shock resistance	100g, 6ms
抗振动性 Vibration resistance	10g, 10...2000Hz
防护等级 Protection grade	IP67
工作温度 Working temperature	$-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$
存储温度 Storage temperature	$-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$
连接方式 Connection	以太网: 插座, M12, 4针, D编码; 电源: 插头, M12, 4针, A编码 Ethernet: 2×M12, 4pin, D-code; Power supply: 1×M12, 4pin, A-code

## 8.2 电气参数 Electrical parameter

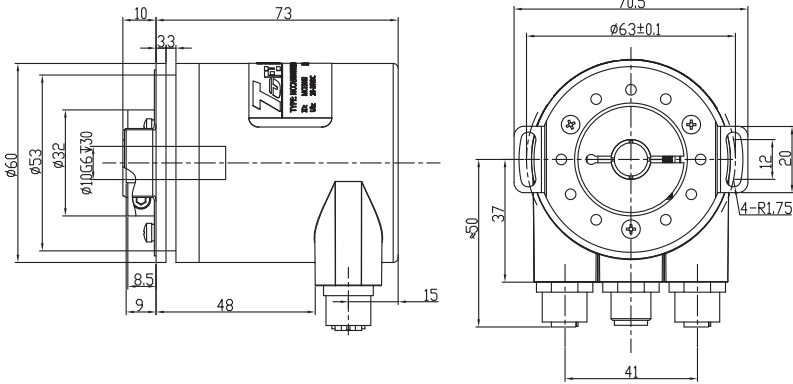
通讯接口 Interface	PROFINET IO
设备通讯 Equipment communication	RT
工作电压 Supply voltage	10-30VDC
消耗电流 Power consumption(no load)	$< 200\text{mA}$
传输速率 Transfer rate	10/100Mbit
输出码制 Code	二进制 Binary
单圈分辨率 Single turn resolution	16bit/ 65536
多圈分辨率 Multiturn resolution	14bit/ 16384
输出驱动器 Output driver	Ethernet
启动时间 Startup time	$< 250\text{ms}$
接口周期时间 Interface cycle time	$> 1\text{ms}$
功耗 Power consumption	$< 2\text{W}$
编程功能 Programming function	预设值设置、预制计数方向、IP 地址 Resolution、Default setting、Prestat counting direction、IP address
抗干扰 Anti-interference	EN61000-6-2
发射干扰 Launch interference	EN61000-6-4
接口电路保护 Circuit protection	浪涌保护、反极性保护、ESD 保护 Surge protection、Reverse polarity protection、ESD protection



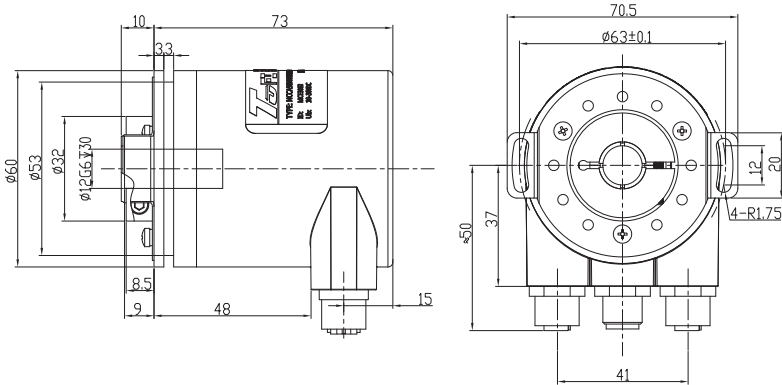
本安装说明仅适用于NCCA58系列绝对值编码器产品, 如果违反原设计用途使用产品, 用户需自行承担风险。如有更改, 恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

8.2 机械图 Dimensions

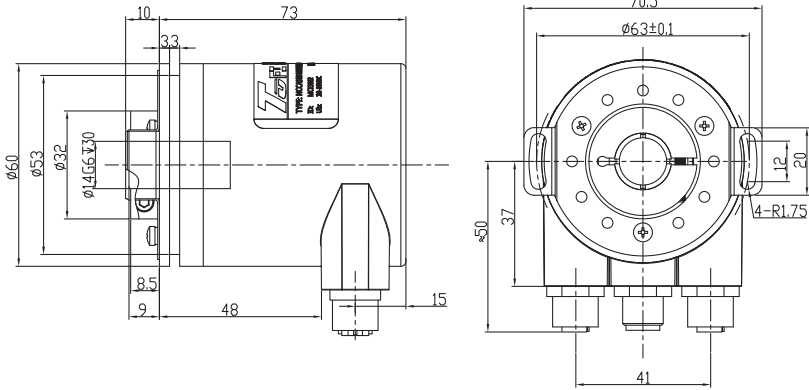
NCCA58B10



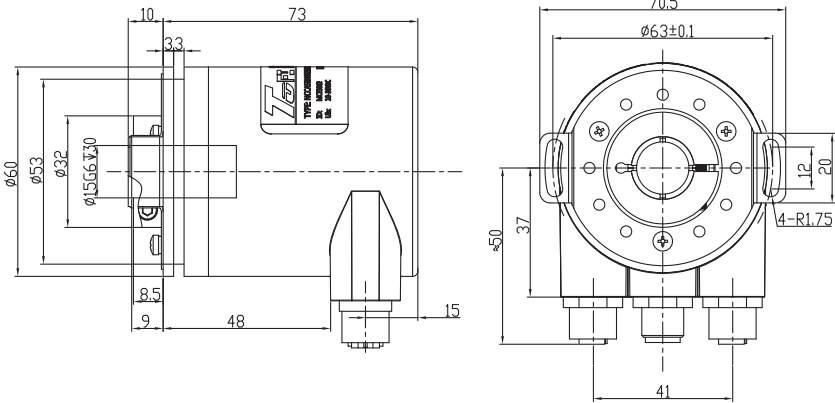
NCCA58B12



NCCA58B14

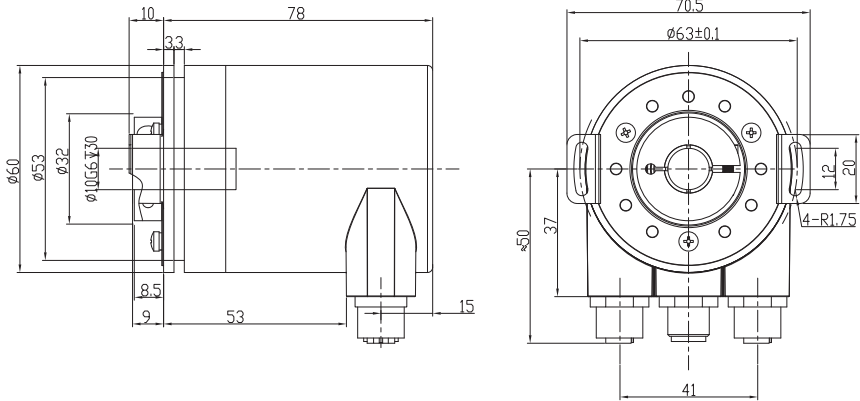


NCCA58B15

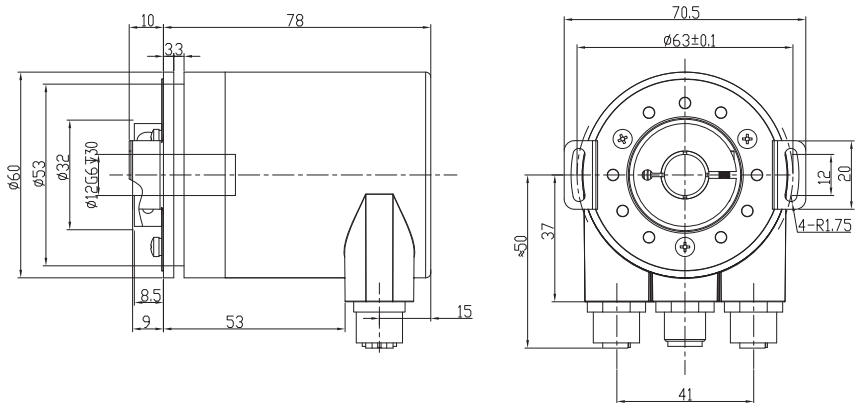


本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

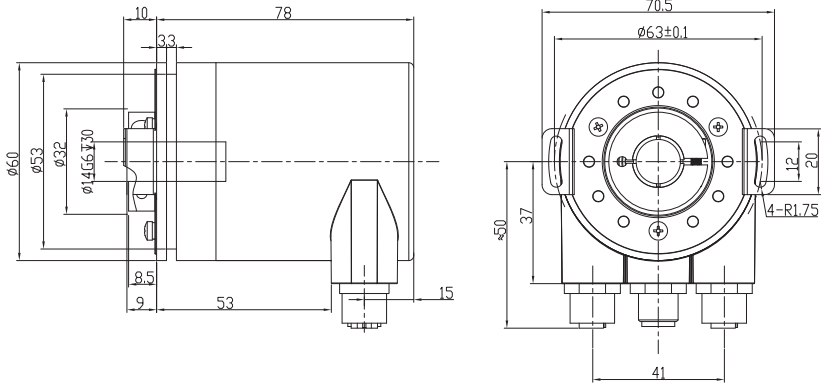
NCCA5801B10



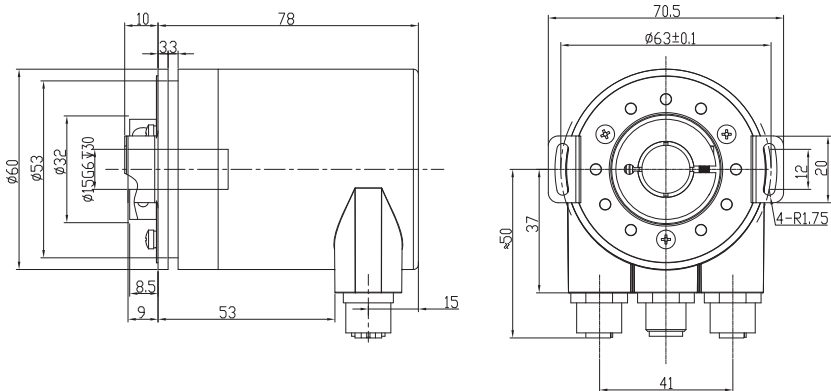
NCCA5801B12



NCCA5801B14

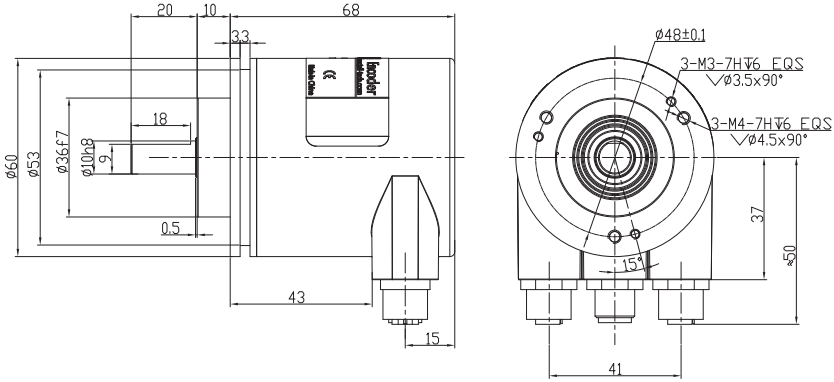


NCCA5801B15

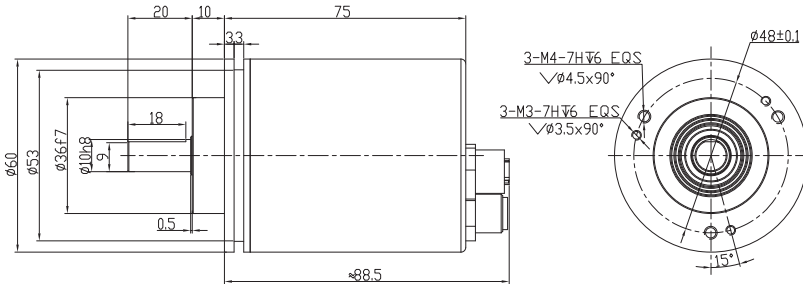


本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

NCCA58S10 (径向出线)

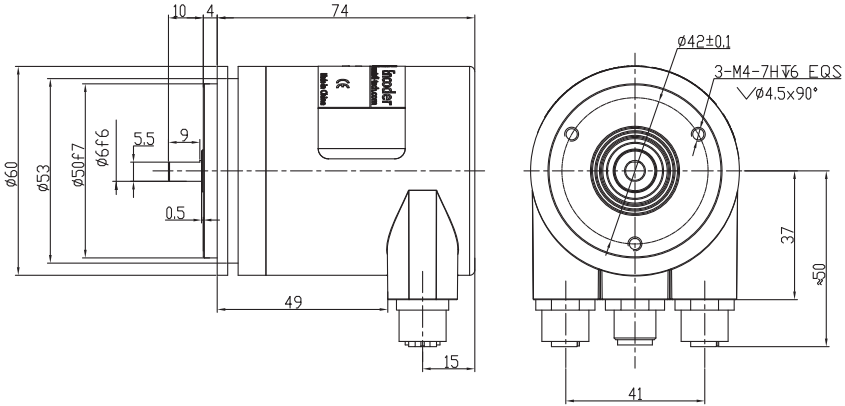


NCCA58S10 (轴向出线)



本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

NCCA5801S6



本安装说明仅适用于NCCA58系列绝对值编码器产品，如果违反原设计用途使用产品，用户需自行承担风险。如有更改，恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.

## 9、附件 Accessories

	<b>联轴器</b> 型号 (常规) : 8215 10-10		<b>偏心连接器</b> 型号 (常规) : 8531 (注: 使用至少三个固定偏心器来安装编码器)
	<b>RJ45连接器 (选配)</b> 型号: 9118		
	<b>信号插头</b> 型号 (常规) : 9204-1B		
	<b>接插件和电缆</b> <b>型号: 9204-1B/X-20.001</b> A头: 信号插头, M12, 4针, 直头, D编码, 塑料外壳 B头: 裸线端, X米电缆, 绿色, 4芯以太网线, Ø6.5		
	<b>电源插座</b> 型号 (常规) : 9204B		
	<b>接插件和电缆</b> <b>型号: 9204B/X-22.002</b> A头: 电源插座, M12, 4针, 直头, A编码, 塑料外壳 B头: 裸线端, X米电缆, 灰色, 4芯双绞屏蔽线2*2*0.25mm <sup>2</sup> , Ø6.8		
	<b>信号插头</b> 型号 (常规) : 9204-1MB		
	<b>接插件和电缆</b> <b>型号: 9204-1MB/X-20.001</b> A头: 信号插座, M12, 4针, 直头, D编码, 金属外壳 B头: 裸线端, X米电缆, 绿色, 4芯以太网线, Ø6.5		
	<b>电源插座</b> 型号 (常规) : 9204MB		
	<b>接插件和电缆</b> <b>型号: 9204MB/X-22.002</b> A头: 电源插座, M12, 4针, 直头, A编码, 金属外壳 B头: 裸线端, X米电缆, 灰色, 4芯双绞屏蔽线2*2*0.25mm <sup>2</sup> , Ø6.8		



**连接电缆**

型号: 9204-1B / X-20.001 / RJ45-PN

A头: 信号插头, M12, 4针, 直头, D编码, 塑料外壳

B头: RJ45连接器, X米电缆, 绿色, 4芯以太网线, Ø6.5

\*适用于编码器与PLC之间通讯

**连接电缆**

型号: 9204-1MB / X-20.001 / RJ45-PN

A头: 信号插头, M12, 4针, 直头, D编码, 金属外壳

B头: RJ45连接器, X米电缆, 绿色, 4芯以太网线, Ø6.5

\*适用于编码器与PLC之间通讯

**连接电缆**

型号: 9204-1MB / X-20.001 / 9204-1MB

A头: 信号插头, M12, 4针, 直头, D编码, 金属外壳, X米电缆, 绿色, 4芯以太网线, Ø6.5

B头: 信号插头, M12, 4针, 直头, D编码, 金属外壳, X米电缆, 绿色, 4芯以太网线, Ø6.5

\*适用于编码器与编码器之间通讯

**连接电缆**

型号: C-M124DZ-XVS / RJ45-PN

A头: 注塑成型式, 信号插头, M12, 4针, 直头, D编码, 塑料外壳

B头: 注塑成型式, RJ45连接器, X米电缆, 绿色, 4芯以太网线, Ø6.5

\*适用于编码器与PLC之间通讯

**带插座的连接电缆**型号: C-M124AZ-XV<sup>1</sup>

A头: 注塑成型式, 电源插座, M12, 4针, 直头, A编码, 塑料外壳

B头: 裸线端, X米电缆, 黑色, 4芯电缆0.25mm<sup>2</sup>, Ø4.5\*角标<sup>1</sup>: 无: 无屏蔽线 S: 带屏蔽线

## 更多产品信息

了解更多产品信息, 请访问 [www.tofi-tech.com](http://www.tofi-tech.com)

根据产品的不同, 提供以下信息:

- 选型资料 (数据表)
- 安装操作手册
- 通讯手册 (软件手册)
- CAD (2D)、STEP (3D)
- 证书



本安装说明仅适用于NCCA58系列绝对值编码器产品, 如果违反原设计用途使用产品, 用户需自行承担风险。如有更改, 恕不另行通知。  
Instructions in these mounting instructions apply to products from NCCA58 series, not for the system as a whole. If products are used in a way for which they are not intended, this is at the user's own risk. Subject to change without notice.



## 维护 Maintenance

NCCA58系列绝对值编码器免维护，如损坏，则无维修选项。

The NCCA58 series absolute encoder are maintenance-free, with no repair options if damaged.



## 废弃处理 Disposal

必须根据当地有效的现行废弃物废弃处理规定，安全环保地废弃处理无法再使用的设备。

Equipment that is no longer usable must be disposed of safely and environmentally in accordance with local waste disposal regulations currently in force.



编码器  
传感器

托菲传感技术（上海）股份有限公司

TOFI Sensing Technology (Shanghai) Co.,Ltd

Floor 8th, Building 2, No.1422, Shuidian Road, Hongkou District

Tel: +86 21 65311020

E-mail: tofi@tofi-tech.com

Internet: [www.tofi-tech.com](http://www.tofi-tech.com)

