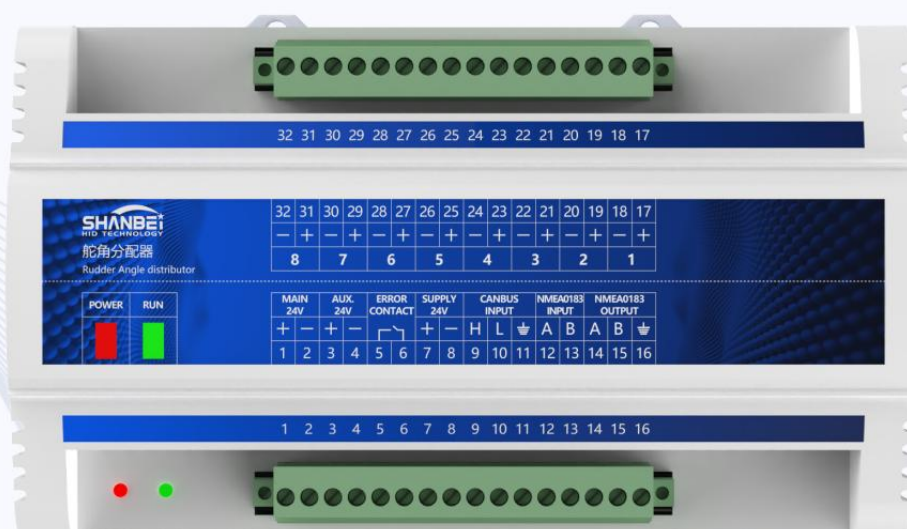


# WDI-8AO

## Rudder angle distributor

### User manual



# User notice

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## ► Disclaimer

**Warning:** Before using this product, please refer to the important safety information in the user manual and review all warnings, limitations and disclaimers.

This product is no substitute for proper training and careful seamanship. Proper installation and proper use of the equipment is the responsibility of the owner to avoid accidents, personal injury or property damage. The user of this product is solely responsible for compliance with maritime safety practices.

The owner is solely responsible for installing and using the equipment in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for compliance with maritime safety navigation practices.

This document represents the product at the time of release. Ningbo SHANBEI Technology Co., Ltd. reserves the right to change product specifications at any time without prior notice. If you need any further assistance, please contact your nearest dealer.

## ► Governing language

This Statement, any instruction manuals, user guides and other Product-related information (documentation) may be or have been translated into another language (translation). If there is any conflict between any translated version of the document, the Chinese version of the document will be the official version of the document.

## ► Copyright

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## ► Cautions

- 1 Do not place the equipment at will without fixing it, so as to avoid serious damage when it is dropped due to turbulence or other factors during the voyage.
- 2 Do not use any power adapter that is not equipped with this product. Otherwise, the device may not work due to the different circuit design, or the performance may be affected or even damaged.
- 3 Do not disassemble the equipment. If the maintenance engineer is not authorized by the company to disassemble the equipment, the free warranty will be lost.
- 4 During use or cleaning, avoid any liquid or other objects falling into the equipment to avoid circuit damage or short circuit.
- 5 Do not place the device and its accessories in an environment prone to humidity or direct sunlight. Keep the device in a dry environment.
- 6 In case of hardware failure (such as damage to the machine shell or foreign matter falling into the machine, etc.), please stop using the machine immediately and contact the dealer in time.
- 7 The company shall not assume any legal or other liability for any maritime accident, monetary loss or loss of interests that occurs on vessels using this equipment.

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# 1 Introduction

## 1.1 Overview

The WDI-8AO rudder Angle distributor is used to process the rudder Angle signal of the rudder Angle feedback or rudder Angle transmitter, send it to each indicator, and at the same time power the rudder Angle feedback, send the actual rudder Angle signal to the VDR as the NMEA0183 signal. The product adopts engineering plastic shell, beautiful and generous, DIN35 guide rail installation, dual power supply, 8 analog output channels, and system fault alarm output.

The product has the following characteristics:

- 1. Rich interfaces, up to 8 indicators;
- 2. Dual power supply, isolated channel, stable and reliable.

Base customization item		
Output mode	A	4~20mA output, 8 channels isolated (default)
	V	±10V output, 8-way isolation

Table 1.1

## 1.2 Product appearance

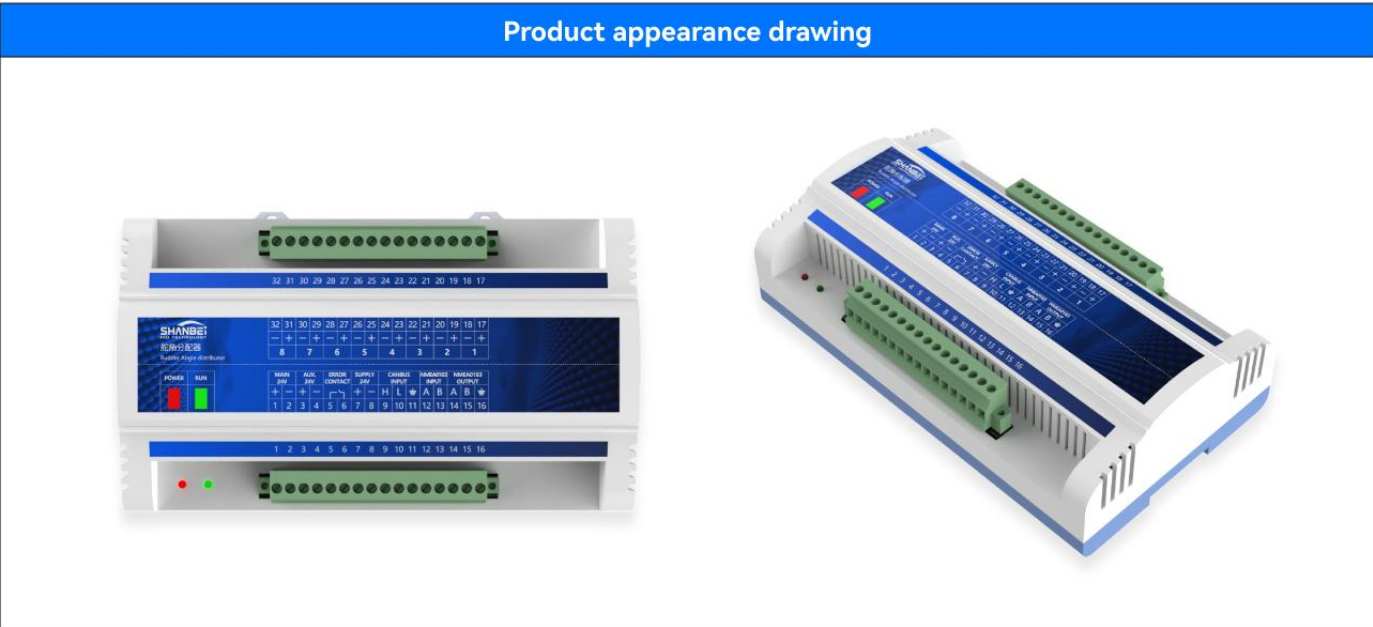


Figure 1.1

## 1.3 Product composition

Number	Name	Quantity
1	Rudder Angle distributor	1
2	Certificate of conformity	1
3	Warranty card	1
4	Specification	1

Table 1.2

# 1 Introduction

## 1.4 Product size drawing

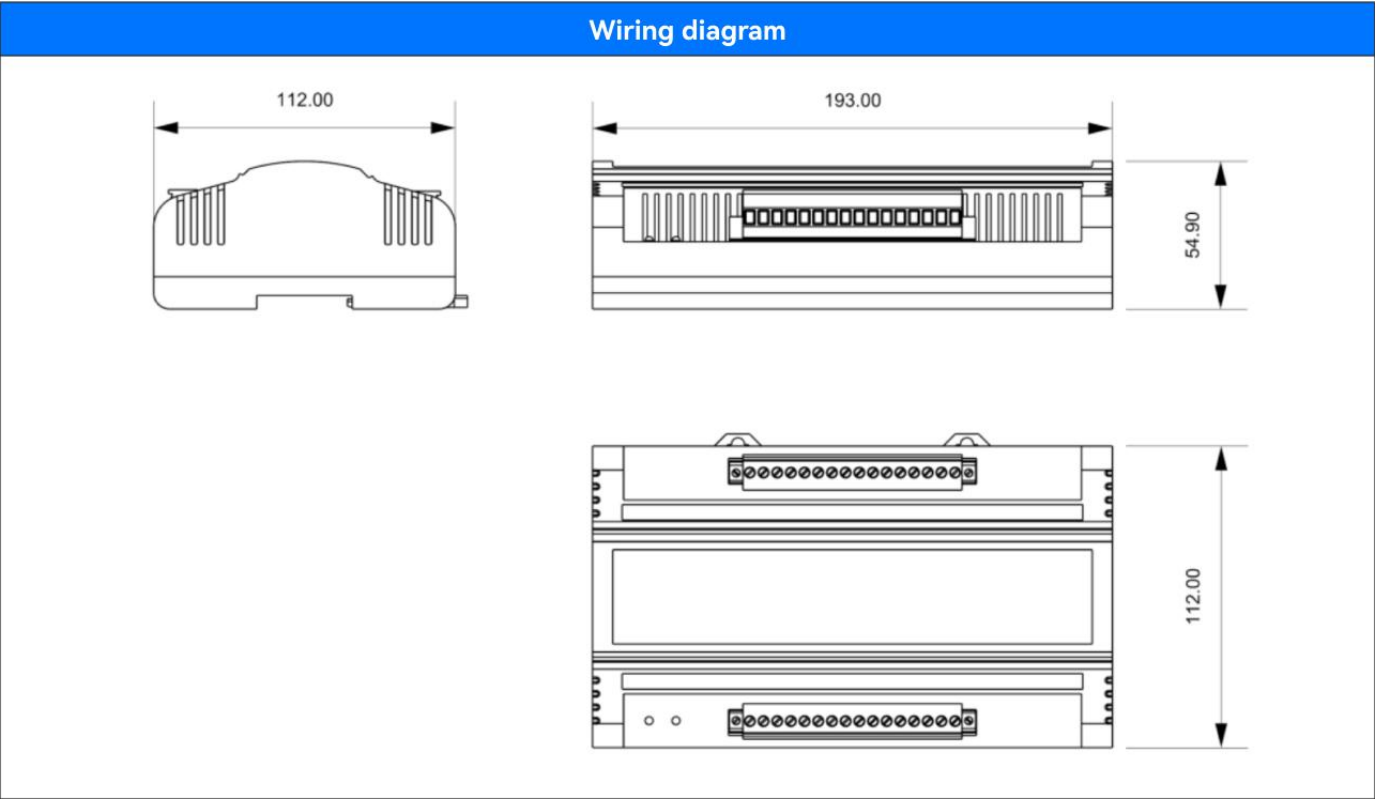


Figure 1.2

## 1.5 Product wiring diagram

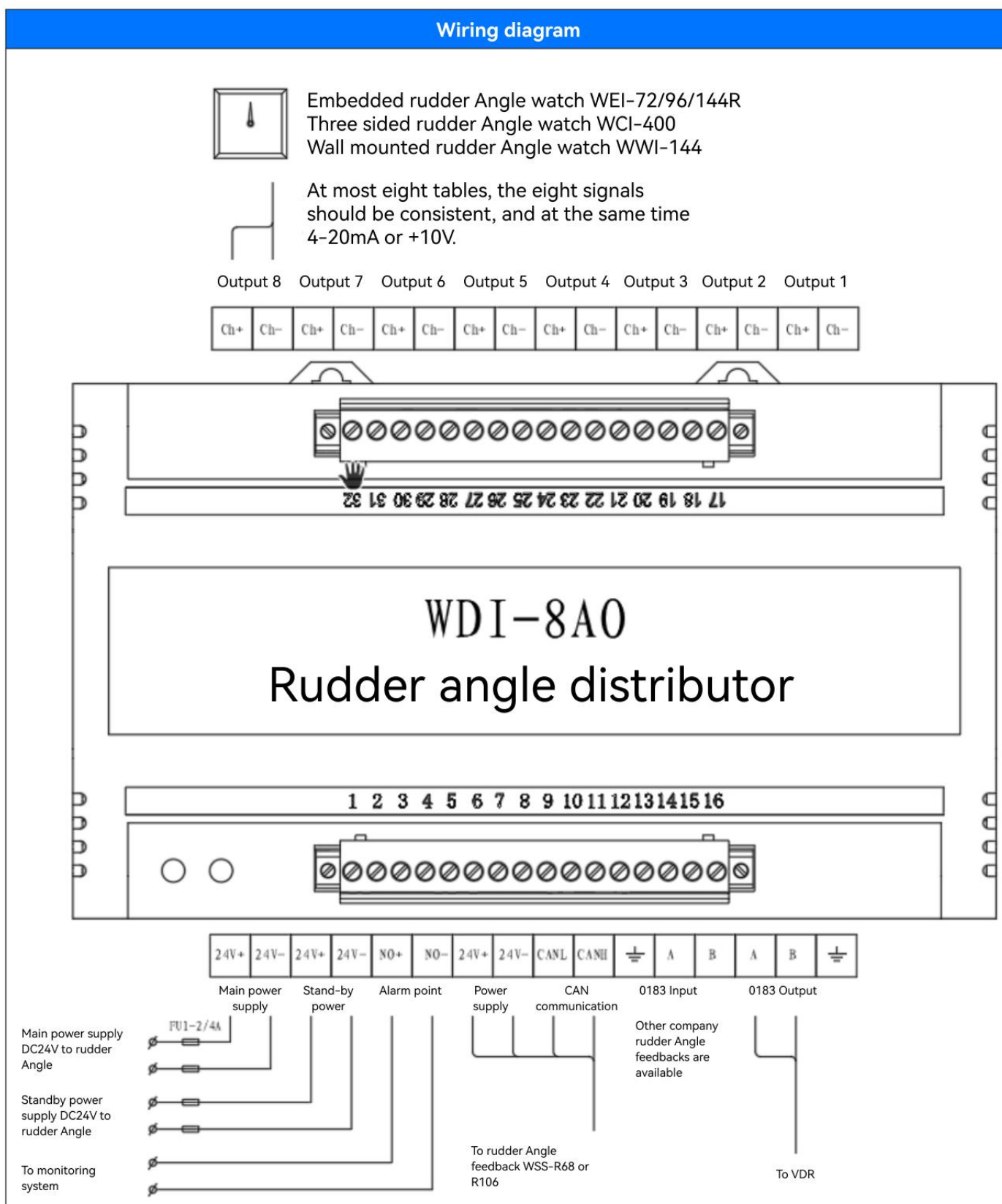


Figure 1.3

## 2 Technical parameter

### 2.1 Product basic parameter

Supply voltage	Dual DC24V power supply
Rudder Angle feedback signal	1 CAN or 1 RS485
Indicator signal	8 channels 4~20mA(or $\pm 10V$ )
VDR output	1 NMEA0183
Alarm output	1 Normally open contact
24V power output	Route 1, $\leq 5W$

Table 2.1

### 2.2 Terminal specification

Terminal	ID	Feature	Terminal	ID	Feature
1	+	MAIN 24V	17	+	OUTPUT 1
2	-		18	-	
3	+	AUX. 24V	19	+	OUTPUT 2
4	-		20	-	
5	Fault alarm normally open contact		21	+	OUTPUT 3
6			22	-	
7	+	SUPPLY 24V	23	+	OUTPUT 4
8	-		24	-	
9	H	CANBUS INPUT	25	+	OUTPUT 5
10	L		26	-	
11	Grounding		27	+	OUTPUT 6
12	A	NMEA0183 INPUT	28	-	
13	B		29	+	OUTPUT 7
14	A	NMEA0183 OUTPUT	30	-	
15	B		31	+	
16	Grounding		32	-	

Table 2.2

### 3 Installation instructions

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1. Select a suitable position on the inner bottom plate of the driver console and fix it horizontally with DIN35 guide rail; As shown in Figure 3.1, the main body of the rudder Angle distributor is installed on the mounting plate B and fixed on the guide rail through bayonet A to ensure stability and reliability.

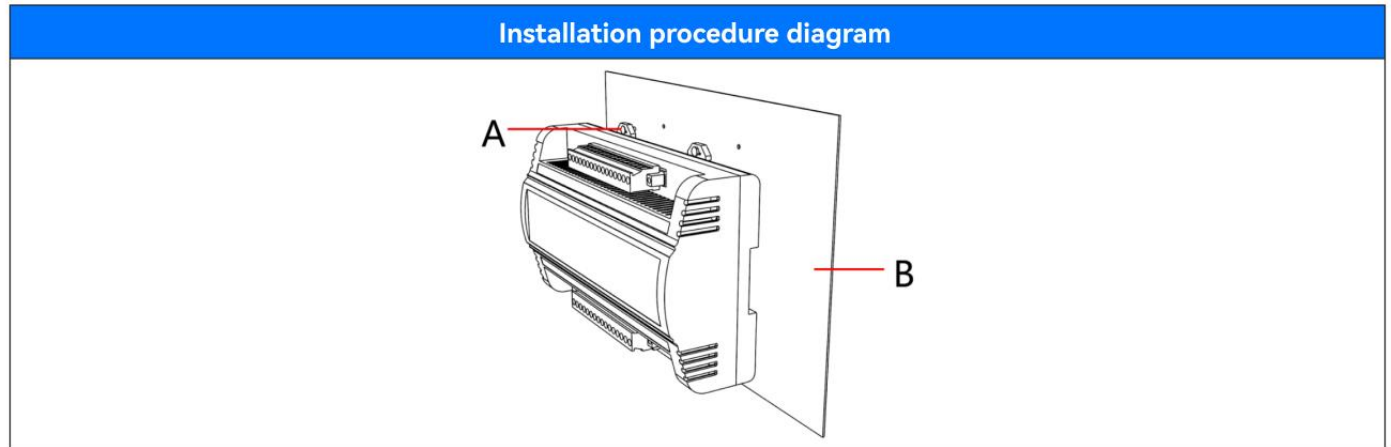


Figure 3.1

2. It is recommended that the distance between the upper and lower cable slots be at least 200mm. It is recommended that 0.5 to 1 square cable be connected and that a cord end terminal be used to connect the cable.



# 4 Instructions and precautions for use

## 4.1 Instructions for use

1. Switch on the power supply and connect the cables as shown in Figure 2.4. The power indicator is on.
2. If the feedback works properly, send the rudder Angle data to the distributor, and the RUN indicator light flashes at this time, the distributor will convert the rudder Angle signal into 4~20mA or  $\pm 10V$ , and send it to each indicator.
3. When the system fails, such as rudder Angle data loss, normally open alarm contact P5/P6 is closed.
4. The product can output the rudder Angle data in standard 0183 format, as shown in Figure 4.1.

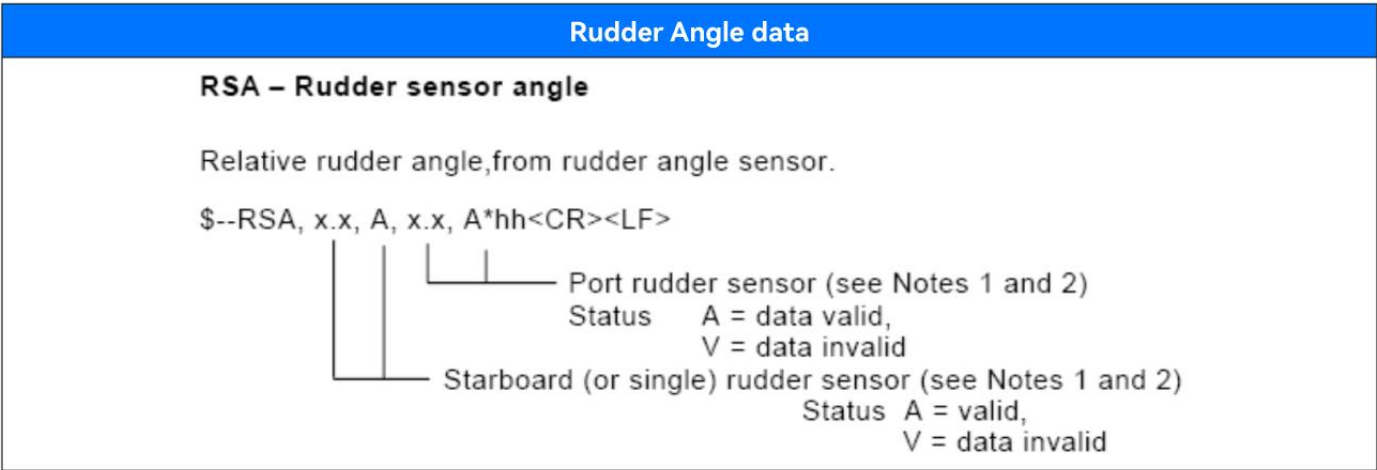


Figure 4.1

## 4.2 Matters needing attention

1. The maximum distance between the indicator and the distributor shall not exceed 300 meters.
2. If the CAN bus communication feedback, the maximum distance between the feedback and the distributor is not more than 500 meters, if the 0183 output feedback, and the maximum distance between the distributor is not more than 300 meters.
3. The system adopts dual power supply, any damage can be automatically switched to another one.

## 5 Fault analysis and elimination

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This product has been put into operation since the use, basically no fault, with our statistics, the after-sales problem is basically due to wiring errors, resulting in normal use, in addition, there is no technical fault. Customers in the use of the process, if you find technical problems, please promptly communicate with our technical personnel.

## **6 Safety protection and accident handling**

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### **6.1 Safety protection devices and precautions**

1. The important position of this product has been tightened seal processing at the factory, shall not be disassembled without permission, if the seal is damaged, any product quality problems are borne by the buyer.
2. Once the product fails to operate normally, please stop using and disconnect the power supply immediately, and contact our after-sales service engineer for a solution.

### **6.2 Troubleshooting procedures and methods**

1. In the process of use, there is an unsolvable fault problem, contact our after-sales service engineer.
2. During the warranty period, if the fault occurs due to the product itself, we will provide a complete replacement product and send it to the buyer for free replacement. And provide technical support; If the fault is not caused by the product itself, we can provide two options of complete replacement products and on-site services, which are selected by the buyer. All costs are borne by the recipient.
3. If the warranty period is exceeded and the fault occurs, we can provide two service options that can completely replace the product or replace some parts of the product, which are selected by the buyer. The required cost shall be borne by the purchaser.

# 7 Maintenance and repair

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## 7.1 Daily maintenance and maintenance

In the daily non-use state, attention should be paid to the maintenance of this product. Through maintenance, maintenance can improve the service life of the product, the specific maintenance and maintenance methods are as follows:

1. Wipe the surface of the product regularly with a dry rag to ensure that the outside of the product is clean and tidy.

## 7.2 Operation precautions

1. Stop using the device when there is a problem. Contact our after-sales engineer.
2. The input voltage shall be carried out in strict accordance with the wiring instructions. Failure to operate according to the regulations will result in product failure or other major accidents, which shall be borne by the buyer.

## 7.3 Long-term maintenance and maintenance

Long-term placement, maintenance maintenance methods, and daily maintenance, maintenance methods are the same.



## **8 Transportation, storage and warranty**

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### **8.1 Transportation precautions**

Physical damage to the product caused by violent shaking and collision should be avoided during transportation.

### **8.2 Storage precautions**

Room temperature, dry, cool environment.

### **8.3 Warranty period**

The warranty period of this product is 12 months from the date of receipt of the goods by the buyer. Based on the date of receipt of documents for express delivery or the date of receipt of invoice.

## 9 Other

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### 9.1 Phone number of the after-sales engineer

Contact: Mr.Xu

Tel: 18067343163

### 9.2 Company information

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