

WCI-370

Rudder panoramic indicator

User manual



User notice

► 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 WCI-370 three-sided rudder Angle indicator is mounted on the cockpit ceiling to indicate the direction and Angle of the ship's rudder Angle. The digital CAN bus interface has the advantages of long communication distance and strong anti-interference ability. The product uses a long life,LED lamp analog scale, 1 LED lamp per degree Angle, indicating the accuracy of 1°, using a three-digit digital tube to display the rudder Angle value, the display accuracy of 0.1 degrees.

The product design has 3 large viewing areas to ensure that the user can quickly read the indicator value from any Angle in the range of 250° and a distance of 5m. The product has a luminous function to ensure normal reading of data in dim environments, and a remote dimming module can be dimmed at the driver's console position. The product has the advantages of high accuracy, rapid response, simple and generous, stable and reliable, and the product has the following characteristics:

- 1. No moving rotating parts;
- 2. Simple and reliable, digital transmission, stable communication.

Base customization item		
Rudder Angle signal input	C	CAN bus (default)
	V	±10V

Table 1.1

1.2 Product appearance

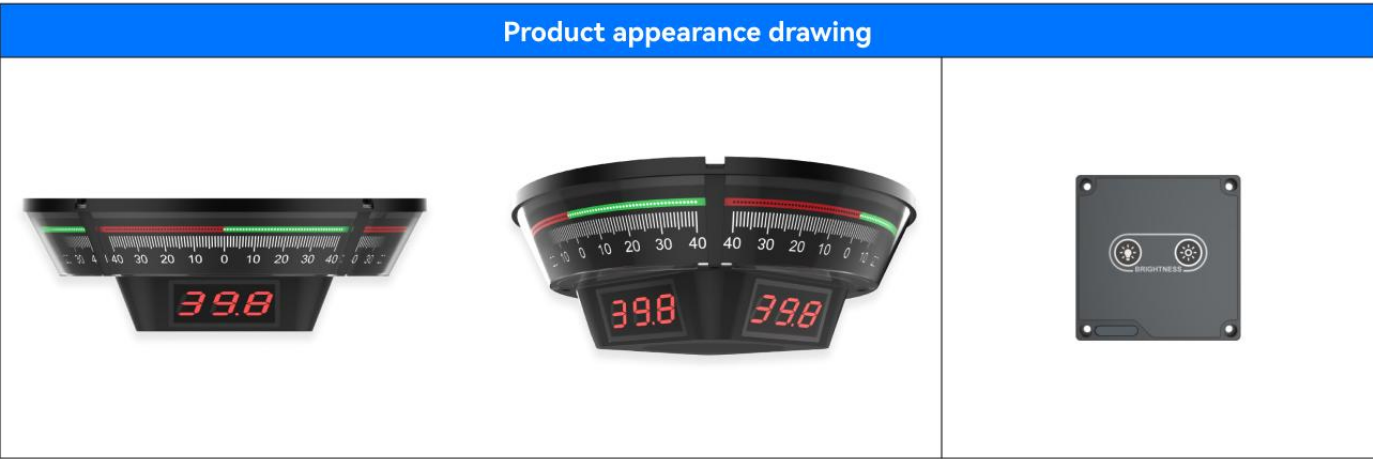


Figure 1.1

1.3 Product composition

Number	Name	Quantity
1	Three rudder Angle indicator	1
2	Dimmers, screws and other mounting accessories	1
3	Certificate of conformity	1
4	Warranty card	1
5	Specification	1

Table 1.2

1 Introduction

1.4 Product size drawing

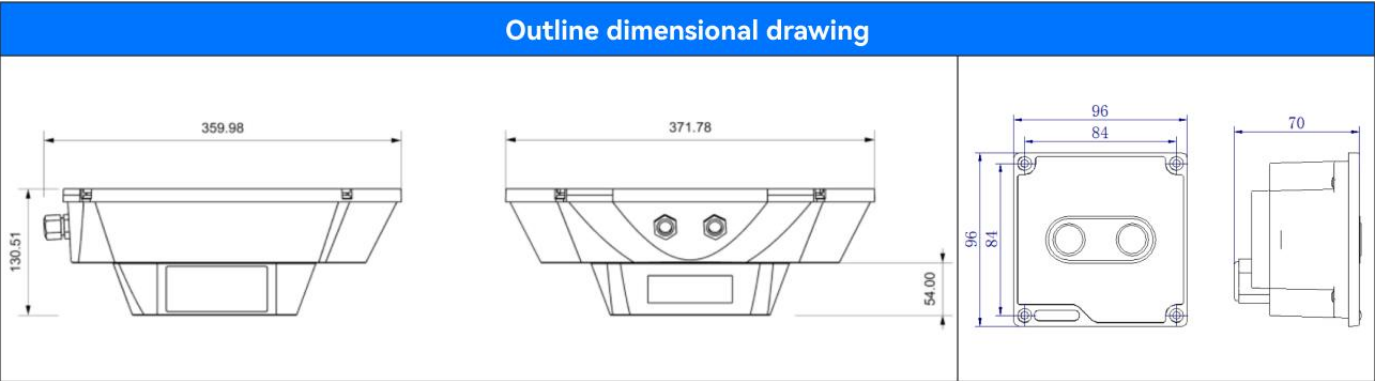


Figure 1.2

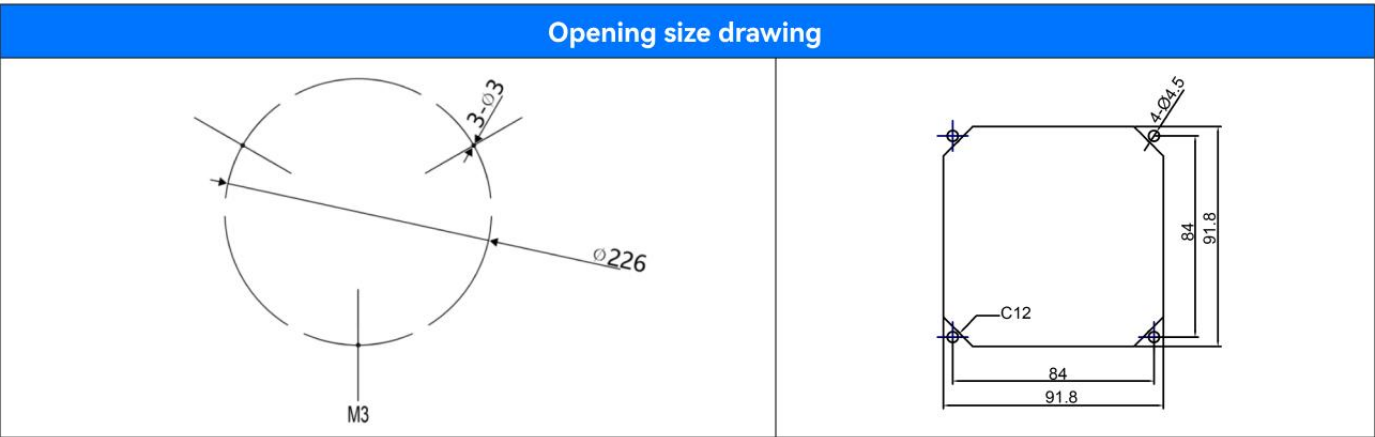


Figure 1.3

1.5 Product wiring diagram

1. If the rudder Angle feedback device CAN directly output CAN signals, such as WSS-270C, WSS-R106C and WSS-R68 of Scallop Technology, it is directly connected through the CAN bus, and the wiring method is shown in Figure 1.4.

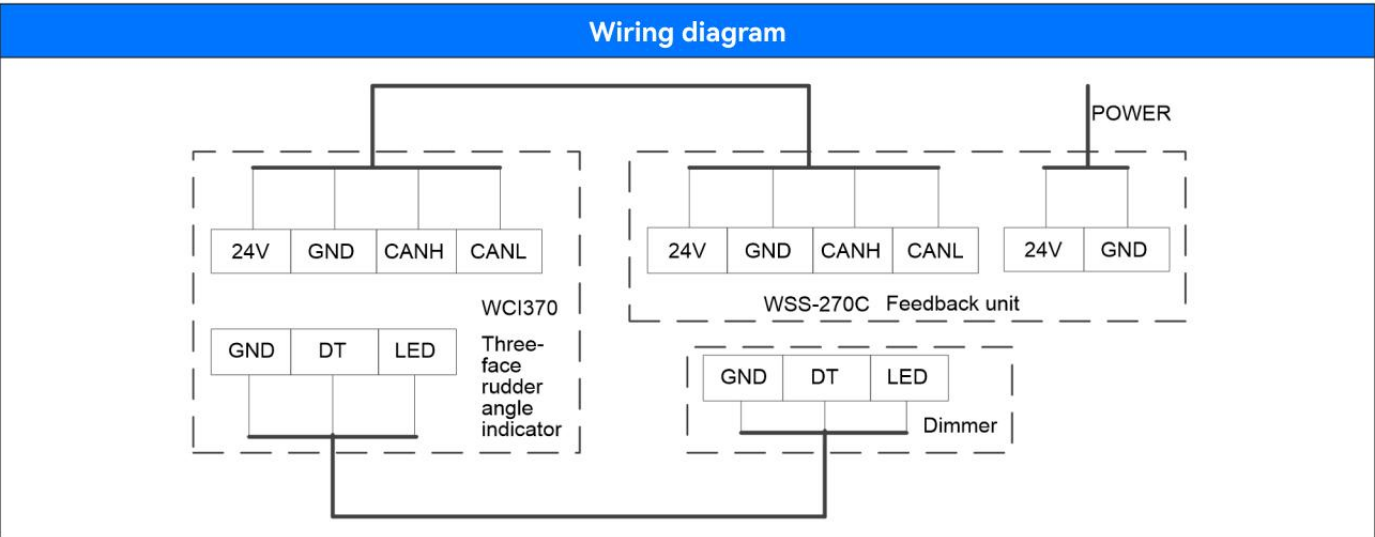


Figure 1.4

1 Introduction

2. If the rudder Angle signal is of other specifications, the $\pm 10V$ signal input can be achieved through the signal conversion module, and the wiring is shown in Figure 1.5. For example, Scallop Technology's WDI-8AO rudder Angle distributor can output 8 channels of $\pm 10V$ rudder Angle signals.

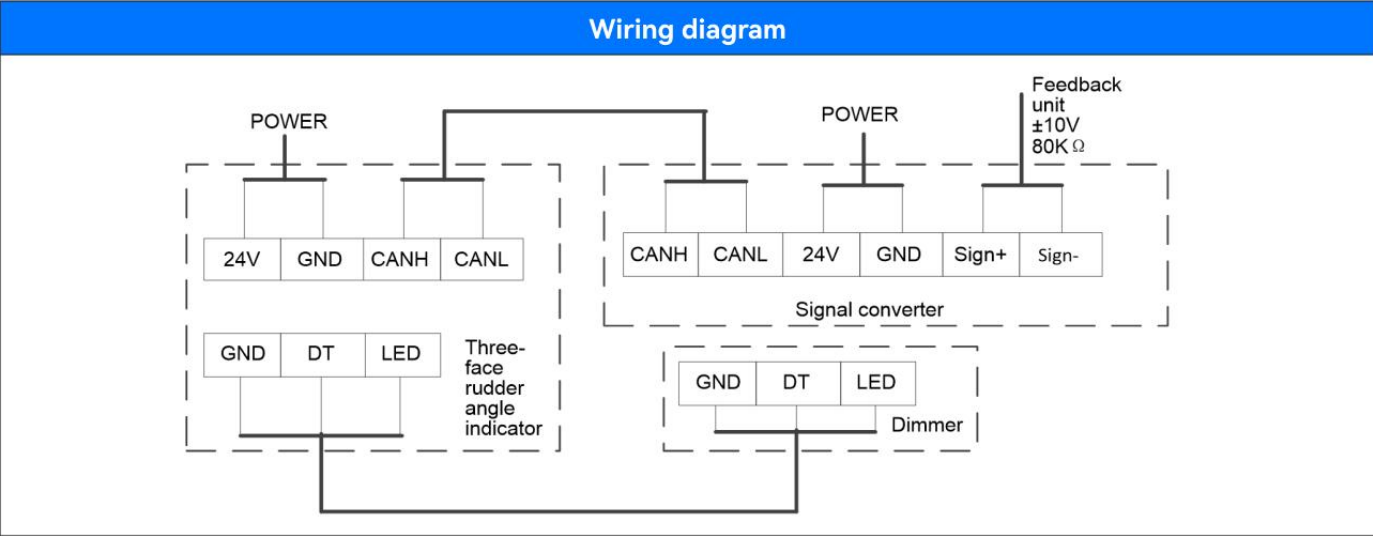


Figure 1.5

2 Technical parameter

2.1 Product basic parameter

Supply voltage	18~26VDC
Power dissipation	<5W
Indicating accuracy	1°
Display accuracy	0.1°
Dimension	370*115mm
Weight	2kg
Indication area	3*70°
Input signal	CAN2.0 or ±10V
IP lever	IP40
Operating temperature	0~55°C
Storage temperature	-20~70°C

Table 2.1

2.2 Communication protocol

WCI-370 three-plane rudder Angle indicator adopts CAN bus communication: 29-bit extended data frame, frame ID: 0x02099827; Baud rate: 100K;

The rudder Angle is calculated as follows:

1. Positive Angle

For example, CAN receives data: 01 02 03 04 05 06 07 08. The last six bytes are not used

The calculation is as follows: $(256+6) * 0.1 = 26.2^\circ$

2. Negative Angle

For example, CAN receives FE 98 03 04 05 06 07 08. The last six bytes are not used

Calculation: $(-360) * 0.1 = -36^\circ$

3 Installation instructions

3.1 Embedded installation

1. As shown in Figure 3.1, install the top cover A on the cabin ceiling and tighten screw B.

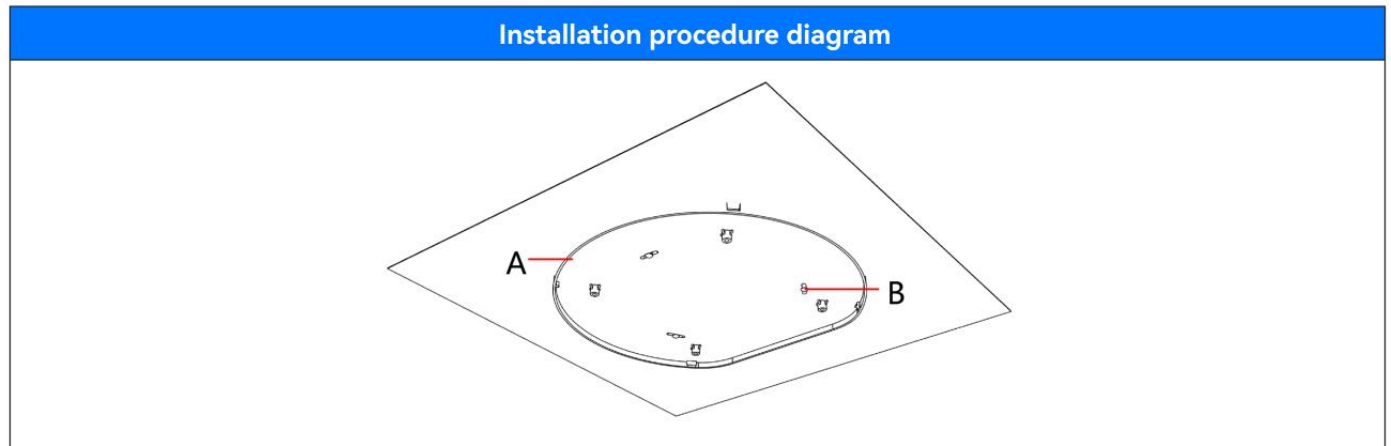


Figure 3.1

2. Route the rudder Angle signal cable and the dimming signal cable through the waterproof connector on the shell, and connect the cable to the wiring terminal on the circuit board according to the wiring instructions. Finally, as shown in FIG. 3.2, the main body of the three-sided rudder indicator should be upward and fastened to the card slot of the C top cover, and screws should be fastened to the D screw hole to ensure stability and reliability.

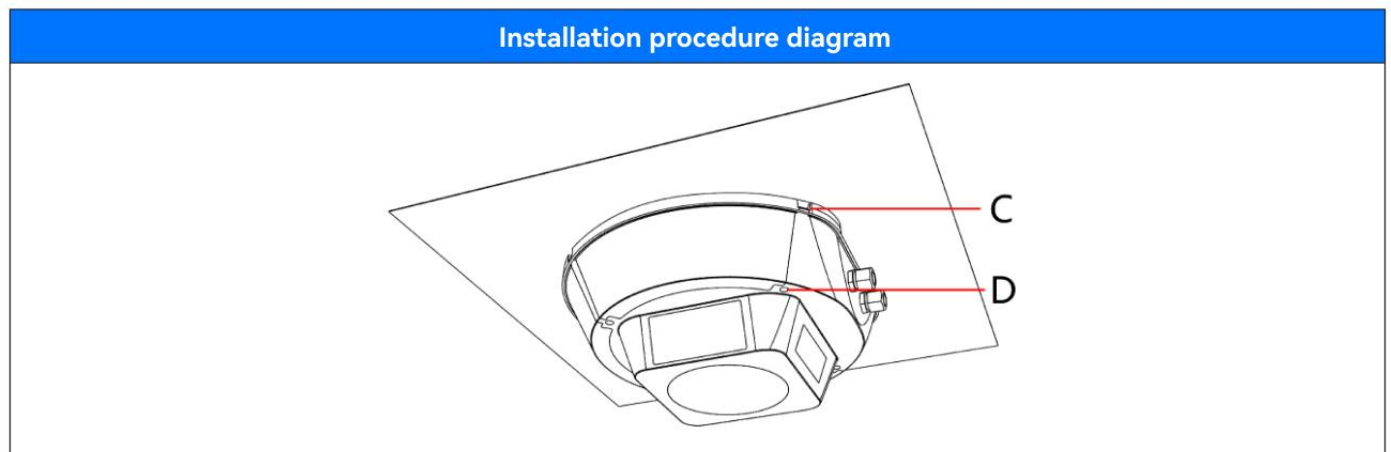


Figure 3.2

3. Install the dimming module on the driving table, and install the signal conversion module (if any) in the bridge.

4 Instructions and precautions for use

4.1 Instructions for use

1. Identify the content of the indicating area to obtain parameters, one is scale display, the other is digital display.
2. Adjust the brightness of the display area by rotating the dimmer.

5 Fault analysis and elimination

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

6.1 Safety protection devices and precautions

1. In the important position of this product, the fastening seals have been processed before leaving the factory, and shall not be disassembled without permission. If the seals are damaged, any product quality problems will be 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

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. Please stop using the device when data problems occur. 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

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

9.1 Phone number of the after-sales engineer

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9.2 Company information

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