

WEI & WSI Instruments

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.

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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

WEI & WSI series instruments are newly developed digital instruments, installed on the bridge control console, used to display speed, rudder Angle, power, azimuth and other information. Among them, the WEI series electromagnetic induction bridge instrument uses a moving coil movement to measure the microampere current according to the principle of electromagnetic induction. WSI series stepper motor bridge instruments, driven by instrument motor, indicate accuracy up to 0.5, shorten response time and do not overshoot the pointer. Depending on the indication requirements, the pointer can be rotated 360° clockwise or counterclockwise. Transparent pointer can achieve self-lighting, easy night vision.

Dial with backlight, window using toughened glass, back cover using engineering plastic, with clear instructions, simple structure, high cost performance advantages, the product has the following characteristics:

- 1. High accuracy and stable data;
- 2. Reliable quality, support appearance and function customization, as shown in Table 1.1.

Base customization item		
Working principle	WEI	Magnetic induction type, 90° or 240° rotation Angle, accuracy 1.5°
	WSI	Stepper motor drive, 360° rotation Angle, accuracy 0.5°
Specification	72	Outline 72*72
	96	Outline 96*96
	144	Outline 144*144
Dial plate	R	Rudder Angle instrument
	P	Power instrument
	M	Rotational speed instrument
	F	Heading instrument
	A	Stern bearing instrument
Input signal	A	4 ~ 20mA current input
	V	±10V Voltage input

Table 1.1

1.2 Product appearance



Figure 1.1

1 Introduction

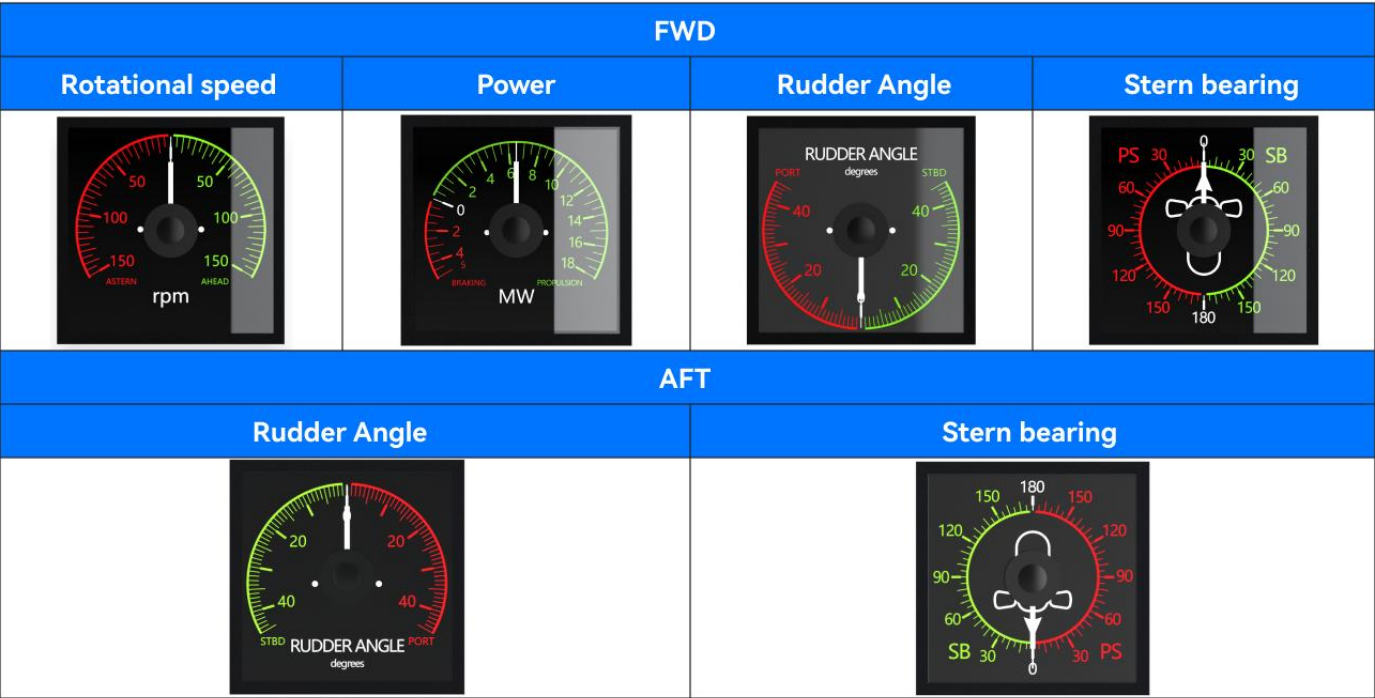


Figure 1.2

1.3 Product composition

Number	Name	Quantity
1	Instrument	1
2	Transparent protective cover, rubber pad and other accessories	1
3	Certificate of conformity	1
4	Warranty card	1
5	Specification	1

Table 1.2

1.4 Product size drawing

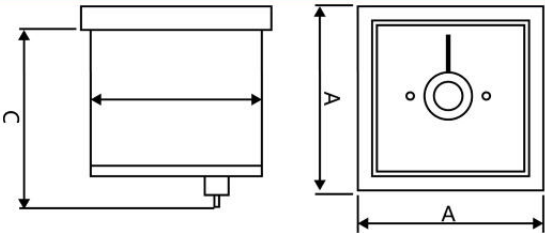
WEI series outline and mounting hole dimensions drawing	Model number	A Form	B Opening	C Depth
	72型	72	68	65
	96型	96	92	65
	144型	144	138	85

Figure 1.3

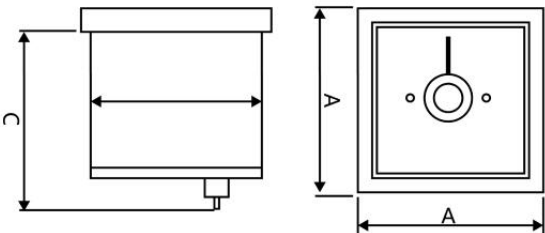
WSI series outline and mounting hole dimensions drawing	Model number	A Form	B Opening	C Depth
	72型	72	68	110
	96型	96	92	110
	144型	144	138	110

Figure 1.4

1 Introduction

1.5 Product wiring diagram

The product backlight adopts DC24V power supply, and other voltage levels are strictly prohibited. Remove the protective cover from the back of the meter and connect cables based on the following figure. Fork or round cord end terminals are recommended to ensure reliable cable connection. Tighten and reinstall the protective cover.

1. The WEI series has four wiring terminals, in which the input signal is connected to 2 and 5, and the power supply is connected to 8 and 11. If the backlight of the instrument needs to be adjusted, a dimmer (resistance value 250K) needs to be connected in series.

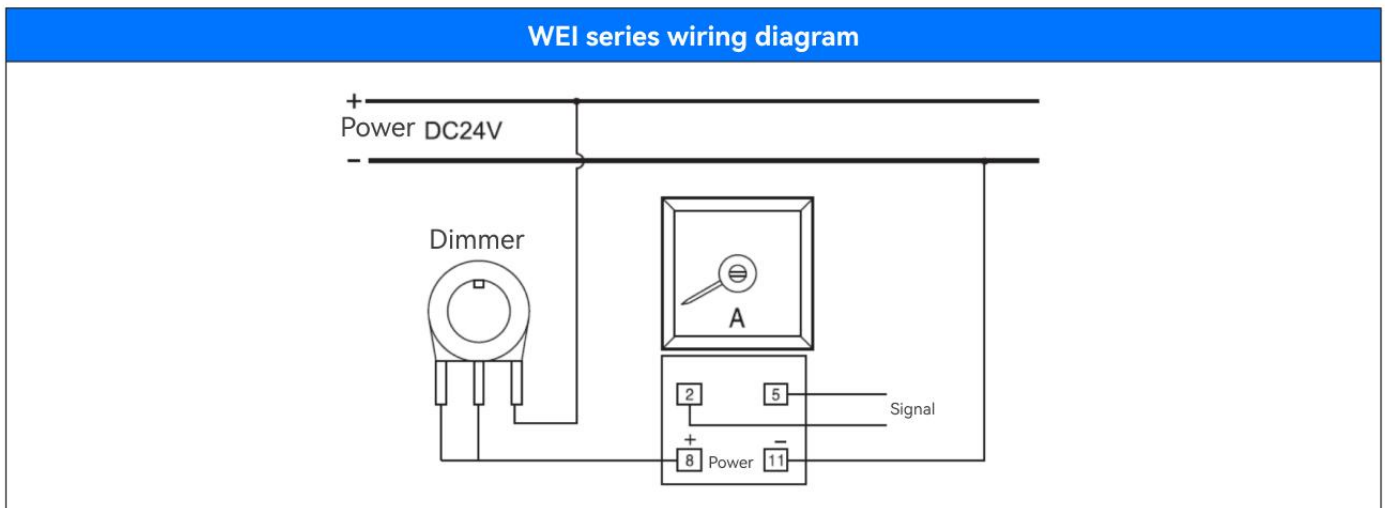


Figure1.5

2. WSI series has six wiring terminals, in which the power supply is supplied separately. If the backlight of the instrument needs to be adjusted, a dimmer (resistance value 250K) needs to be connected in series. If the dimming direction is opposite, 1/3 of the dimmer wiring should be replaced, as shown in Figure 1.6.

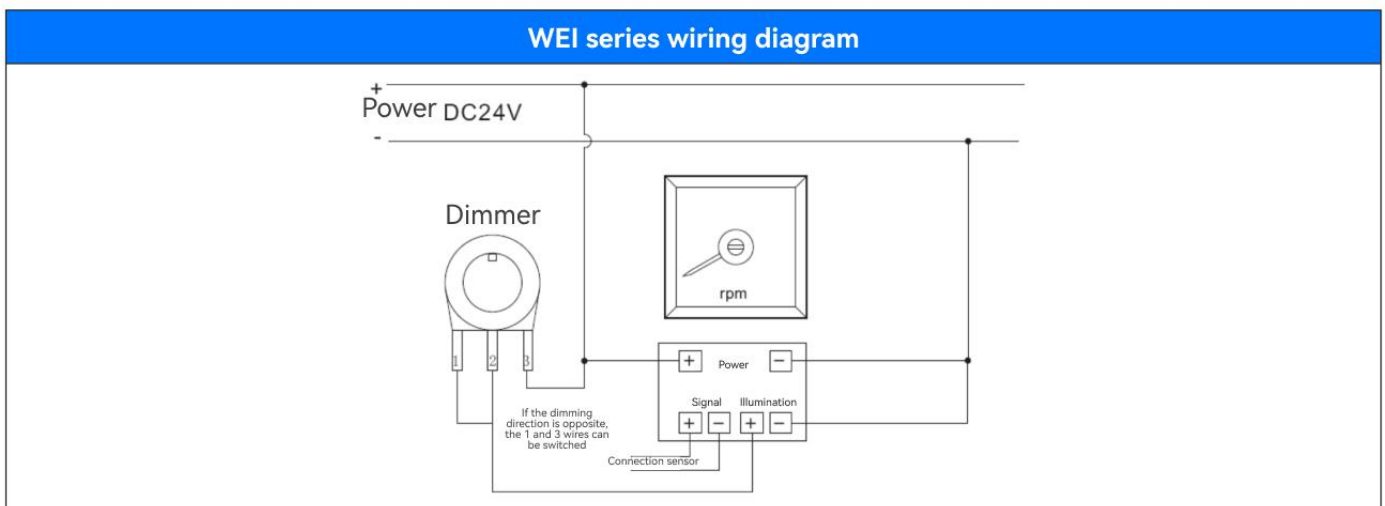


Figure 1.6

2 Technical parameter

2.1 Product basic parameter

Supply voltage	24VDC±20%
Power dissipation	<5W
Dial type	Speed, power, rudder Angle, bearing, etc
Indicated Angle	240° or 360°
Precision	Grade 0.5 or 1.5
Input signal	4~20mA or ±10V
Class of protection	Front panel IP52 (plus transparent protective cover IP56), rear shell IP20
Installation mode	Panel embedded
Dielectric strength level	AC2.5KV, 50Hz, 1min
Weight	430g
Operating temperature	-5~55°C
Vibration	<2g
Correspondence	Take the ±45° rudder Angle table as an example: 4mA corresponds to -45°, 12mA corresponds to 0°, and 20mA corresponds to 45° -10V corresponds to -45°, 0V corresponds to 0°, and 10V corresponds to 45°

Table 2.1

3 Installation instructions

3.1 Embedded installation

1. Open the hole in the predetermined position according to the size, remove the protective cover, and loosen the ejector nut;
2. As shown in Figure 3.1, put on the rubber gasket, install the instrument A to the mounting surface B through the ejector rod and nut, and tighten the nut to ensure secure.
3. Cover the transparent sealing cover to protect the front of the instrument.

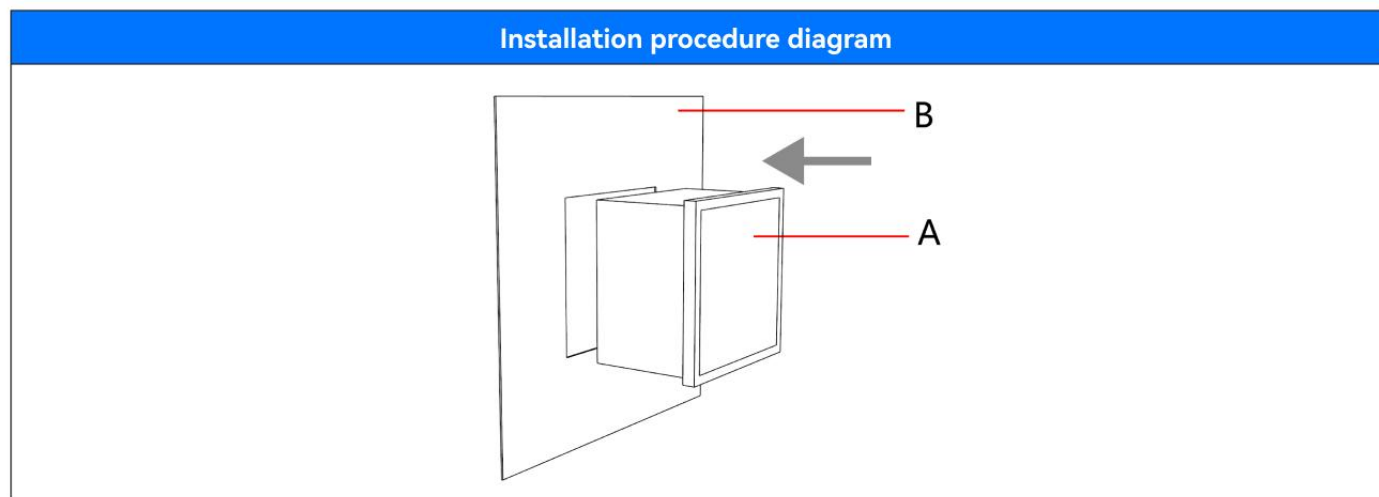


Figure3.1

4 Instructions and precautions for use

4.1 Instructions for use

1. With backlight function, it can collect DC0-10V voltage or DC4-20mA current signal, 360° indication, zero point and full point overlap, zero point can be set at 12 o'clock position, or set at 6 o'clock position.
2. The instrument has two analog input modes, in which input 1 corresponds to the indicator in the clockwise direction, input 2 corresponds to the indicator in the counterclockwise direction. Ordering is selecting one of the input methods.
3. With self-test function Press the button after the instrument to self-test, and the instrument will self-test when powered on.
4. For WEI electromagnetic induction products, if you find that the pointer indicates a deviation at zero, you can use a screw to fine-tune, but the maximum is not more than ± 5 degrees, otherwise it will damage the internal structure.

4.2 Matters needing attention

1. If it is not used according to the requirements in the instructions, the loss shall be borne by the user; Rated backlight voltage $\leq 24V$. If the backlight is damaged due to exceeding the rated voltage, the user shall bear the responsibility.
2. It is strictly prohibited to adjust the zero deviation beyond the range.
3. The product is a precision instrument, it is strictly prohibited to knock with heavy objects.

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. Stop using the device when the value of the instrument is not accurate. 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. Avoid high temperature exposure or low temperature freezing, which will cause irreversible damage to the damping parts and reduce the service life.

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

Contact: Mr.Xu

Tel: 18067343163

9.2 Company information

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