

I. Product Features

- Through the China Classification Society CCS certification.
- Unique dew-proof and waterproof design, high stability, strong corrosion resistance.
- This product is composed of circuit board, sensor and other important components.

II. Uses

Designed for the ship industry, suitable for all kinds of cabin pressure, liquid level measurement, China Classification Society CCS certification products, has been widely used in the ship industry.

III. Technical parameters

Main parameters:

1. Output form: 4mA~20mA
2. Power supply: DC 24V (12V~32V)
3. Measurement range:
 - H/P type pressure Range (0~60)MPa 0.5 level
 - Range (0~5) MPa 0.2 level
 - (The minimum range of the sensor is 5kPa)
 - L type liquid level Range (0~300)m
 - (The minimum range is 0.5m)
4. Accuracy: 0.5 level
 - 0.2 level
5. Medium temperature: -20°C~70°C
6. Ambient temperature: -20°C~60°C
7. Response time: ≤50ms
8. Load capacity: (DC 24V): Current type ≤500Ω
9. Reproducibility: ±0.1%F·S
10. Annual long-term stability: ±0.1%F·S
11. Nonlinear: ±0.2%F·S
12. Thermal zero temperature drift per degree: ±0.03%F·S
13. Overload pressure: 2 times the range
14. Electrical connection:
 - H type large Horsman joint
 - L type cable link
 - P type terminal
15. Measurement media: Oil and water are compatible with 316 stainless steel.
16. Explosion proof mark: Exia II CT6 Ga
17. Protection level: H type IP54
 - L type IP68
 - P type IP66

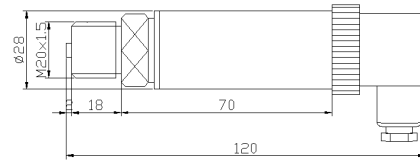
Working conditions:

Avoid installation in environments with mechanical vibration and strong electromagnetic interference.

Shape and Dimensions:



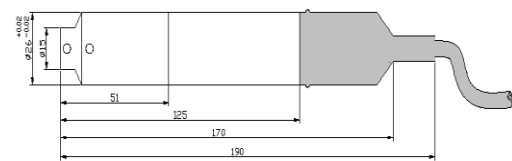
H type Marine pressure transmitter shape (JYB-K*-H**)



H type Marine pressure transmitter size



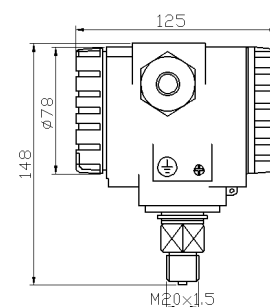
L type Marine level transmitter shape (JYB-K*-L**)



L type Marine level transmitter size



P type Marine pressure transmitter shape (JYB-K*-P**)



P type Marine pressure transmitter size

IV. Installation

H/P type Marine pressure transmitter:

1. Ensure that the transmitter is installed perpendicular to the ground. During the installation process, the wrench should be used to tighten the transmitter from the hexagonal nut at the bottom of the transmitter to avoid directly rotating the upper part of the transmitter.
2. When measuring the pressure with fast changing

speed, a pressure buffer device should be installed at the outlet of the connection between the transmitter and the measured medium to avoid the instantaneous pulse high pressure directly impacting the measuring element of the transmitter, resulting in the failure of the transmitter.

L type Marine level transmitter:

1.The transmitter can be installed vertically, tilt or horizontally in the tank, tank, should ensure to avoid sediment and other impurities buried or blocked transmitter probe part.

2.In the case of large medium fluctuations, measures should be taken to fix the transmitter probe part

3.In addition to power supply and signal transmission, the air conduction cable also plays a key role in atmospheric compensation. When installing, it should be avoided to lock the cable too tightly or bend at an acute Angle to prevent the air duct from being blocked or broken.

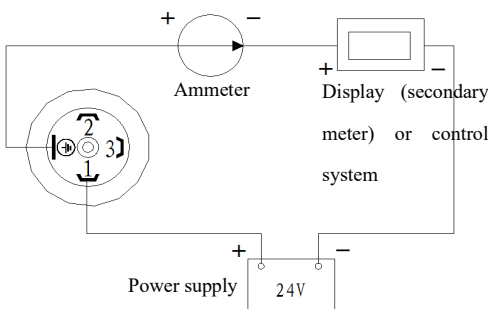
4.The shell is vertically installed on the bracket above or near the tank, while ensuring sun protection and ventilation, and the installation position is easy to connect and debug.

V. Wiring

(This wiring diagram is a schematic, the site wiring to the actual product shall prevail)

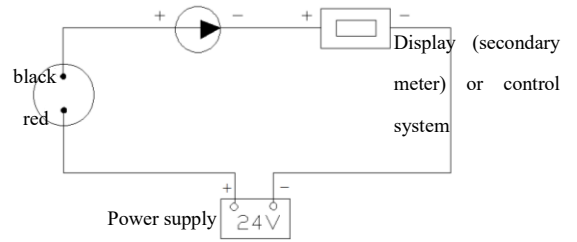
Two-wire 4mA ~ 20mA current output wiring diagram (JYB-K*-HA*)

- 1: Power +
- 2: Empty
- 3: Shield ground
- ⊕: Current output



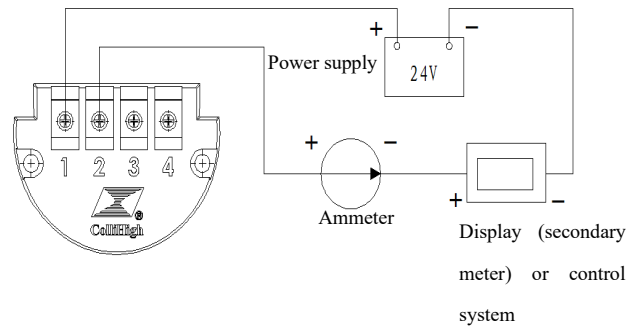
Two-wire 4mA ~ 20mA current output wiring diagram (JYB-K*-LA*):

- Red line: Power +
- Black line: Power -
- Yellow line: Shield ground



Two-wire current 4mA ~ 20mA output wiring diagram (JYB-K*-PA*)

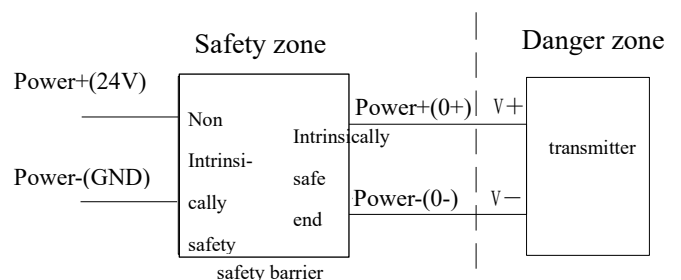
- 1: Power +
- 2: Current output
- 3: Empty
- 4: Shield ground



1.Please note that when installing the transmitter, the selected cable should not be lower than the protection level of the transmitter. At the same time, to ensure the protection level, the diameter of the cable should be 5mm ~ 6mm.

2.The cable should be connected correctly according to the wiring diagram. If shielding cable is used, the shielding layer should be connected to the shielding ground end, and ensure reliable connection.

Explosion proof transmitter and safety barrier wiring diagram



Explosion-proof grade: Exia II CT6 Ga

VI. Trial run

To ensure that the transmitter can work properly with stability and accuracy, the pressure should be tested before Power on and preheat for 15min.

VII. Safety instructions

1. During the installation process, ensure that the transmitter is tightened firmly before it can be powered on for measurement; Disconnect the power supply before disassembly.

2. For explosion-proof workplaces, the cable can be installed in dangerous situations and energized for measurement after it is connected, so as to avoid live operation in dangerous situations.

3. Incorrect operation will cause serious personal injury and significant material loss.

4. Because this product is an explosion-proof product, special attention should be paid to the following points during use:

(1).The ambient temperature of the product is: $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$. The temperature range of the measuring medium is between -20°C and 70°C .

(2).The intrinsic safety parameters of this product are: $U_i=30\text{V}$ $I_i=100\text{mA}$ $P_i=0.75\text{W}$ $C_i=23\mu\text{F}$ $L_i=2.4\text{mH}$.

(3).The safety system composed of the product and the safety gate must meet the requirements of Article 12.2.5.1 of GB3836.15-2000. The safety gate shall be placed in a safe place. The system wiring must comply with the requirements of the operating instructions of the product and the safety gate, and the wiring terminals shall not be connected wrong.

(4).The connection cable between the product and the safety gate should be a two-core or three-core shielded cable (must have an insulation sheath), and the shielding layer is reliably grounded in the safety zone. Cable routing should be as far as possible to eliminate the influence of electromagnetic interference.

(5).The user shall not replace the parts of the product by himself, and shall work with the company to solve the problems in operation to avoid dangerous accidents.

(6).When the user needs to solder the cable core to the connector or the pin of the plug, the insulation sheath should be added to ensure that the creepage distance between the bare conductor and the electrical distance between different potentials is greater than 2mm. After the cable assembly is completed, each core wire must be able to withstand 500V AC effective value, lasting 1 minute voltage test, no breakdown and flicker phenomenon occurs. If the transmitter is shipped with a connecting cable (no longer than 2 meters), the extension of the cable must pass through the explosion-proof junction box.

(7).The liquid level transmitter is supplied with a

permanent connection cable (no longer than 300 meters), and the extension of the cable must pass through the explosion-proof junction box.

(8).The installation, use and maintenance of the product shall comply with the relevant provisions of the product manual, GB3836.15-2010 "Electrical equipment for explosive gas environment Part 15: Electrical installation in dangerous places (excluding coal mine)" and GB50058-1992 "design Code for Electrical equipment in explosive and fire dangerous environment".

(9).Do not install the transmitter in icy medium, otherwise it will damage the transmitter.

(10).This product is an electronic product, and it will cause environmental pollution when scrapped. It should follow the relevant standards of national electronic devices when scrapped.

VIII. Product maintenance and troubleshooting

If there is a fault in the transmitter, please contact our after-sales service. Please attach the following information when you need to send the transmitter back to our company for maintenance after confirming the problem:

- Scene environment description;
- Fault phenomenon;
- Description of the measurement medium and its physico-chemical properties;

When the transmitter needs to be repaired or calibrated, please be sure to clean up the residual media before sending it back, especially materials that are harmful to human health, such as corrosive, toxic, carcinogenic or radioactive materials.

Common fault analysis and elimination

Failure phenomenon	Cause Analysis	Exclusion method
The transmitter has no output signal	The transmitter is not powered Wiring error	Power the transmitter correctly according to the wiring diagram
Output irregular jump at constant pressure or liquid level	The ground end of the transmitter housing is not grounded The radio frequency interference is strong in the field	Use shielded cables and the shield is grounded The ground end of the transmitter housing is reliably connected to the ground

	No shielded cable is used	
The transmitter is not immersed in the measuring medium or not exposed to pressure but the output is not zero corresponding to the output value	The transmitter is not operating in its required environment	Move the transmitter to work in the specified environment or take measures to make the environment conform to the requirements
The transmitter output does not match the measured pressure or level height	The supply voltage is not correct External load is too large	Make the supply voltage DC 24V Adjust external load

If the failure phenomenon does not fall into the above scope, please contact our after-sales service.

IX. Maintenance

Only use neutral reagents to clean the transmitter, avoid the use of corrosive reagents cleaning, such as acid, alkaline solvents, household detergents, etc.

The transmitter is a precision instrument and should be stored in a dry and ventilated indoor environment to avoid direct sunlight.

X. Cautions

1. Please check whether the package is in good condition, and check whether the transmitter model is consistent with the products you choose.

2. Confirm whether the power supply output voltage is correct; The positive and negative of the power supply correspond to the positive and negative wiring of the product; The maximum pressure of the pressure source is within the range of the product;

3. Avoid high voltage power supply touching the metal housing of the transmitter.

4. When installing the pressure transmitter, the transmitter should be tightened with a wrench from the bottom nut to avoid directly rotating the upper part of the transmitter.

5. In the installation of high pressure measurement, a pressure buffer device should be connected at the outlet of the connection between the sensor and the measured medium to avoid the instantaneous pulse high pressure directly impacting the measuring element of the sensor, resulting in sensor failure.

6. Sensor is a precision device, users in the use of please do not disassemble, not to touch the diaphragm, so as not to cause damage to the product.

7. Please avoid the cable of the liquid level transmitter being scratched by a knife or other sharp metal objects, resulting in water damage to the transmitter.

8. Please avoid flooding of the cable connection head of the liquid level transmitter (where the warning sign is posted), causing water in the ventilation line and causing water damage to the transmitter.

9. Ordinary stainless steel pressure transmitter is not waterproof, in order to prevent water from the terminal, into the line hole, potentiometer empty, etc., can not be used in the wet environment such as water.

10. Please keep the verification certificate and qualification certificate, and return it with the product during maintenance.

11. This product is an electronic product, scrap will produce pollution, scrap should follow the relevant national standards of electronic products;

Packing list:

1. Pressure or level transmitter	1 set
2. Instructions for use	1 serving
3. Certificate of Conformity	1 serving
4. The liquid level cable is installed with a right Angle bracket (L level only)	1 set
5. Top seal Teflon gasket (M20X1.5 and G1/2 threads are standard, other non-standard threads are not available) (H/P pressure only)	1 pc