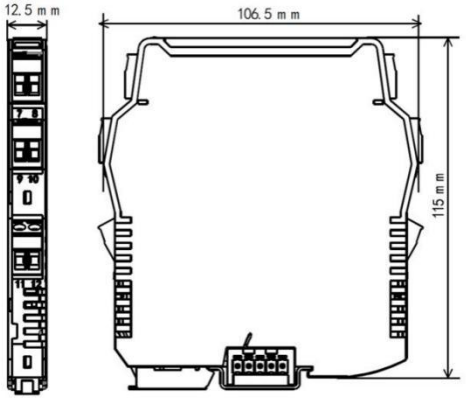
Overall Dimension

Overall dimension（L×H×W）106.5mm×115mm×12.5mm



Install

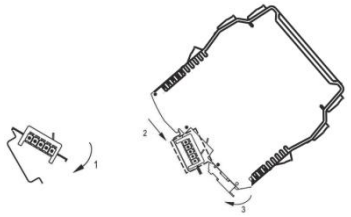
The isolated safety barrier shall be installed in a safe place, and at the same time, it shall comply with GB3836.13-2013 “Explosive Atmosphere Part 13: Equipment Repair,Maintenance,Repair and Transformation”, GB/T33836.15-2017 ”Explosive Atmosphere Part 15: Design, Selection and Installation of Electrical Devices”, GB/T3836.15-2017 “Explosive Atmosphere Part 16: Inspection and Maintenance of Electrical Devices", Relevant provisions of GB15577-2018 “Safety Code for Dust Explosion Protection" and GB50257-2014 ”Code for Construction and Acceptance of Electrical Installations in Explosive and Fire Hazard Atmospheres in Electrical Installation Engineering”

The isolated safety barrier adopts DIN35mm guide rail installation method, and the installation steps are as follows

1） Clamp the bus power socket on the rail (if there is no power bus power supply function, this step is omitted).

2) Clamp the upper end of the instrument on the guide rail;

3)Push the bottom of the instrument into the guide rail.

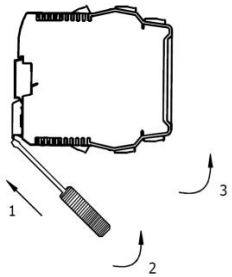


Dismantle

（1)Use a screwdriver (knife width ≤6mm) to insert the metal latch at the lower end of the instrument;

（2） Push the screwdriver up and pry the metal clip down;

（3） Pull the instrument up and out of the guide rail.



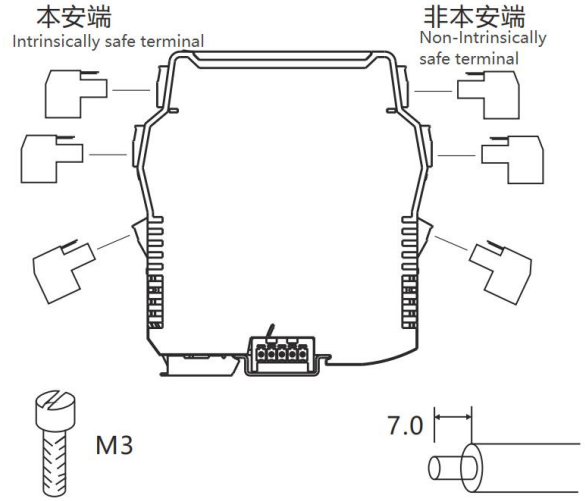
Wiring

1) The instrument wiring adopts removable terminal blocks, which is convenient for use. The intrinsically safe end (blue plug) is the signal terminal leading to the dangerous side, and the non-intrinsically safe end (green plug) is the signal terminal leading to the safe side.

2) Intrinsically safe wires with blue marks shall be selected for the wiring on the intrinsically safe side. The soft copper sectional area of the wire must be greater than 0.5, mm ² The insulation strength shall be greater than 500V.

3) The wiring conductors at the intrinsically safe end and the non-intrinsically safe end of the isolated safety barrier shall be laid separately in the trunking, with protective sleeves.

4)The exposed length of the wire is about 7mm, which is locked by M3 screw (the power bus plug terminal is locked by M2 screw).



Maintenance

1)Before the power-on commissioning of the isolated safety barrier, the model and explosion-proof grade of the isolated safety barrier must be checked again to see whether they are consistent with the design and use environment, and the wiring between the safety side and the dangerous side, as well as the polarity of their power supply and signal, must be checked again to see whether they are correct.

2)Strictly use a megger to test the insulation between the terminals of the isolated safety barrier. If you want to check the insulation of the system line, you should first disconnect all the isolated safety barrier wiring, otherwise it will cause the internal fast fuse to blow.

3)The products have been strictly inspected and quality controlled before leaving the factory. In case of any abnormal operation, please contact the nearest agent or directly contact the technical support hotline.

4)Within 36 months from the date of delivery, any product quality problem during normal use shall be repaired by our company free of charge.

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TS-S1SJ- EX(1 IN/1 OUT)
TS-S2SJ- EX(1 IN/2 OUT)
TS-S5SJ- EX(2 IN/2 OUT)

Isolated Safety Barrier Instructions

NOTICE

- Please check the product packaging, product label model, specifications are consistent with the order contract;
- Please read this manual carefully before installation and use. If you have any questions, please contact our technical support hotline;
- The product need to installed in a safe place;
- 24V DC power supply for instrument, 220V AC power supply is strictly prohibited;
- It is strictly prohibited to disassemble and assemble the instrument without permission to prevent instrument failure or failure.
- The Company reserves the right to change the product without prior notice to the user. In case of any discrepancy between the contents of the instructions and the website, samples and other materials, the instructions shall prevail.
- Please scan the code for more product information and configuration software.

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Profile

TS-SXSJ-EX series switch value input, relay output isolated safety barrier, receiving switch or proximity switch input from hazardous area, and transmitting it to safe area relay output through safety barrier isolation. Each channel can be independently set as input and output in-phase or reverse phase control. At the same time, it has input line fault detection alarm indication function. The product needs independent power supply and adopts DIN35mm standard guide rail independent installation mode (optional bus power supply function); The input and output power supplies are three-isolated, and the input channels cannot be isolated.

SELECTION TABLE				
TS-S	X	X	X	Instructions
Channel	1			1 IN / 1 OUT
	2			1 IN / 2 OUT
	3			2IN / 2 OUT
Input Signal		S		Dry node or NAMUR type proximity switch
Output Signal			J	Relay contacts

Main Technical Parameters

Number of Channels: 1 IN/1 OUT(TS-S1SJ-EX)
1 IN/2 OUT(TS-S2SJ-EX)
1 IN/2 OUT(TS-S5SJ-EX)
Supply voltage:15~36V,DC(Typical value24VDC)
Consumption current:(24V power supply,When the relay is on)
≤20mA(TS-S1SJ-EX,1 IN/1OUT)
≤35mA(TS-S5SJ-EX,1 IN/2OUT,2 IN/2OUT)
Output characteristics of safety relay:
Response time:≤10mS
Driving ability:250VAC,2A or 30V,DC,2A
Load type:Resistive load
Hazardous side input:
Signal:Dry node or NAMUR type proximity switch
Open-circuit voltage:≈8V
short-circuit current:≈8mA
Input and output characteristics (set as in-phase control):
When the field switch is closed or the input circuit current is>2.1mA, the input relay is closed and the channel indicator is green.
The field switch is closed or the input circuit current is less than 1.2mA, the output relay is open, and the channel indicator light is off.
Switch setting function:

Status	K1(Output1),K3(Output2)	K2(Output1),K4(Output2)
ON	Input and output phase inversion	Wired fault detection function
OFF	Input and output in phase	Wireless fault detection function

Note:Switch input (I), K2 and K4 should be set to the OFF state, and there is no line fault (open circuit, short circuit) detection function. If wire fault (open circuit, short circuit) detection function is required, 22K Ω resistance should be connected in parallel at both ends of the switch, and 680 Ω resistance should be connected in series. See switch (II), and K2 and K4 should be set to the ON state. When line fault occurs, the indicator light of the corresponding channel will be displayed in red.

Electromagnetic compatibility:EMC Accord with IEC61326-1(GB/T18268)
IEC61326-3-1
Insulation strength:
Non-intrinsically safe terminal~Intrinsically safe terminal≥2500VAC
Power~Intrinsically safe terminal≥500VAC
Insulation resistance:
Non-intrinsically safe terminal~Intrinsically safe terminal≥100MΩ
Power~Intrinsically safe terminal≥100MΩ
Applicable place:Installed in a safe place, it can be connected with intrinsically safe instruments in hazardous areas such as Zone 0, Zone 1, IIA, IIB, IIC, T4-T6
Applicable field equipment:Field equipment such as dry contact or NAMUR proximity switch input according to DIN19234 standard (including intrinsically safe pressure switch, temperature switch and liquid level switch).

Use environment

(1)The surrounding environment shall be free of strong vibration, impact, large current, spark and other electromagnetic induction effects. The use environment shall not contain harmful substances that can corrode metal and plastic parts, and shall not contain flammable and explosive substances.
(2)Working temperature:-20℃~+60℃
(3)Storage temperature：-40℃~+80℃
(4)Relative humidity:10%~90%RH

Safety certification

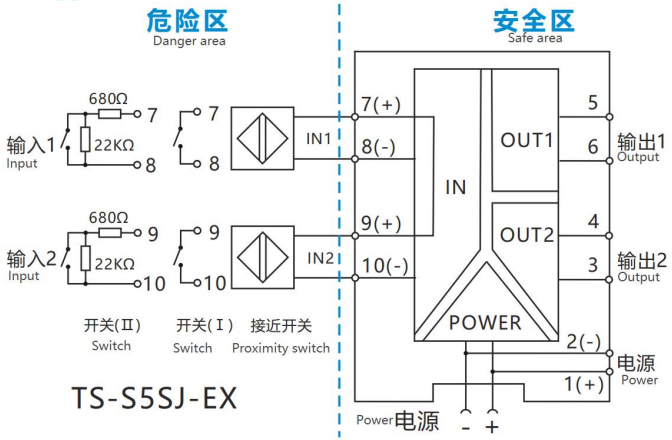
Certification of national explosion-proof safety supervision and inspection station for instruments and meters.
Certification standards：GB3836.1,GB3836.4
Explosion-proof sign:[Exia Ga]IIC
Max voltage:Um=250V
Authentication parameters:(7.8.9.10 Between terminals)
Uo=10.5V,I0=14mA,Po=37mW,IIC:Co=2.4μF，Lo=70mH

Pay attention to the following requirements when using the maximum external capacitance (Co) and inductance (Lo) values:
(1) For circuits containing only distributed inductance and capacitance, such as distributed capacitance and inductance of cables, the maximum allowable external capacitance and inductance values are the allowable values of Co and Lo in the certification parameters.
(2) For the circuit combined with cables, when the intrinsically safe circuit contains the maximum inductance less than 1% of the allowable value in the certification parameters or the maximum capacitance less than 1% of the allowable value in the certification parameters, the maximum allowable external capacitance and inductance values are the allowable values of Co and Lo in the certification parameters.
(3) For inductive and capacitive combined circuits, when the inductance and capacitance are greater than 1% of the allowable values of Co and Lo in the certification parameters (excluding cables), the maximum allowable external capacitance and inductance values are 50% of the allowable values of Co and Lo in the certification parameters.

Intrinsically safe explosion-proof circuit system

The isolated safety barrier and the on-site intrinsically safe instrument are connected to form an intrinsically safe explosion-proof circuit (intrinsically safe circuit). The system must be confirmed before use.
1）The explosion-proof grade of the on-site intrinsically safe instrument shall conform to the use environment, and it shall be the instrument with the explosion-proof certification issued by the national authorized explosion-proof product certification authority.
2）The respective certification parameters between the isolated safety barrier and the on-site intrinsically safe instrument are clear and comply with the requirements of Section 12，2，5 of GB/T3836.15.

Application



TS-S1SJ-EX Only include input 1 and output 1 part
TS-S2SJ-EX Only include input 1 part
Note:The bus power supply function is optional. The customer needs to specify it when ordering and purchase the bus power supply module additionally.