



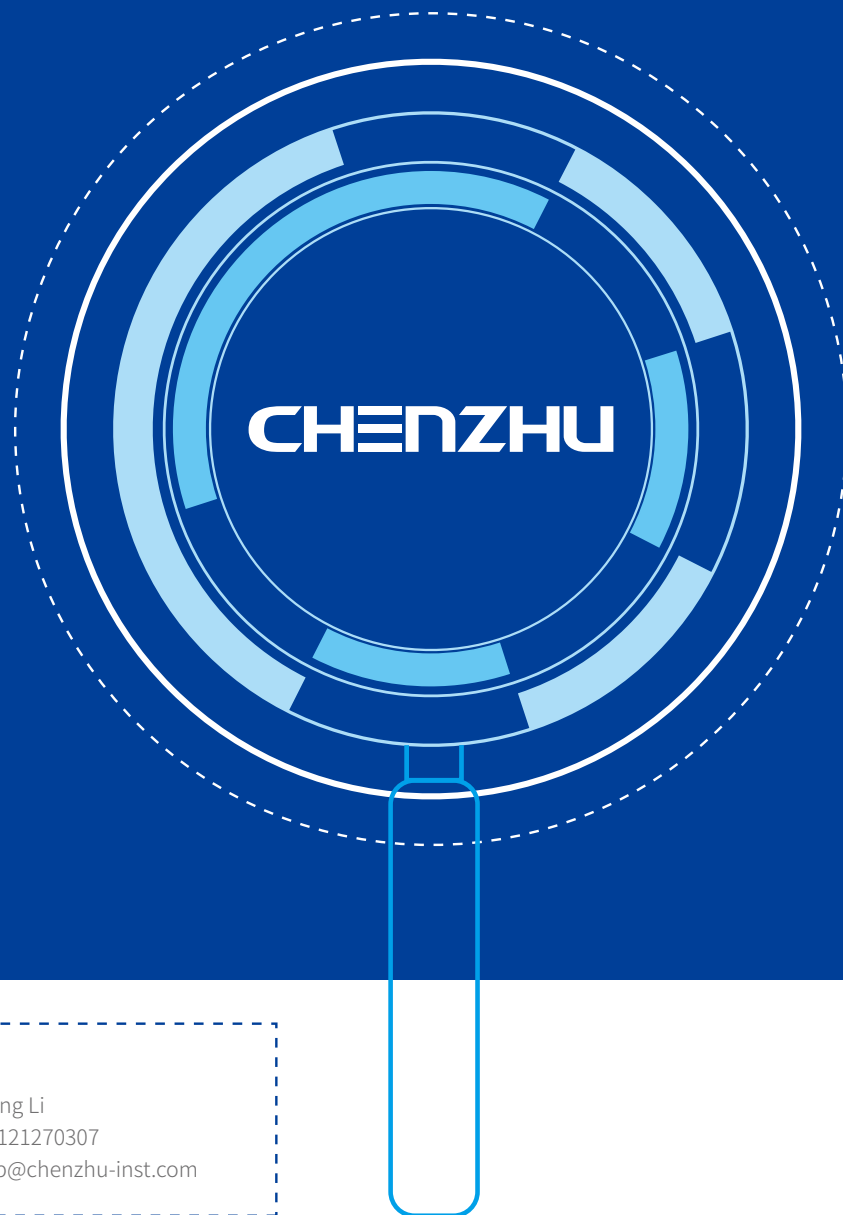
## SELECTION GUIDE

GS5000-EX Range  
Isolated Barrier






# Looking for Agent !

If you are interested to be our agent in your market,  
we will be your strong backup.



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6	Digital Input
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## CHENZHU COMPANY OVERVIEW



Shanghai Chenzhu Instrument Co.,Ltd. was founded in April, 2002, who was originated from Shanghai Institute of Process Automation Instrumentation. CHENZHU is a professional company with core expertise of R&D, manufacturing and sale service of high quality safety products, such as isolated barriers, signal conditioners, surge protective devices, safety relays etc.



Experience

**23+**  
Years



Foundation

**2002**  
Since



Sales volume

**4,000,000**  
Pcs



Applications

**4000+**  
Projects

## R&D Strength

Based on ISO/IEC/GB standards, CHENZHU has established the professional laboratory which is applied up to 70 test capabilities and verification items in CHENZHU's safety electrical products' development process.



R&D Team

**28%**

Work Force



R&D Investment

**12%**

of Sale Revenue



Innovation

**110+**

Patents



Testing Facility

**70+**

Capabilities

## Smart Factory

CHENZHU factory is continually driven by lean management and flexible production. By our strict quality examination, CHENZHU ensures the production meets the design specification and satisfies our customers.



Factory

**2500m<sup>2</sup>**

In total



Max Cap.

**1,000,000pcs**

Year



Lean Production

**10+**

Years' experience



**EXPLOSION PROTECTION  
CERTIFICATE OF CONFORMITY**

Cert NO.GYB19.1097

This is to certify that the product

**Isolated barrier**

manufactured by **SHANGHAI CHENZHU INSTRUMENT CO., LTD.**  
(Address: Floor 7-8, Building 6, No. 201, Minyi Road, Songjiang District, Shanghai, P.R. China)

which model is **GS5000-EX Series**

Ex marking **[Ex ia Ga] IIC  
[Ex iaD]  
[Ex ib Gb] IIC (GS5031-EX 和 GS5032-EX)  
[Ex ibD] (GS5031-EX 和 GS5032-EX)**

product standard **Q31/0117000327C005-2017**

drawing number **GS5011-EX.0-4.2, GS5012-EX.0-3.4, GS5013-EX.0-3.4,  
GS5019-EX.0-3.4, GS5023-EX.0-4.2, GS5024-EX.0-3.3,  
GS5035-EX.0-3.4, GS5036-EX.0-3.2, GS5038-EX.0-3.2,  
GS5045-EX.0-4.2, GS5067-EX.0-4.2, GS5071-EX.0-4.3,  
GS5072-EX.0-3.4, GS5076-EX.0-3.5, GS5079-EX.0-3.5,  
GS5111-EX.0-3.2, GS5031-EX.0-3.3, GS5032-EX.0-3.3,  
GS5073-EX.RTD.0-3.1, GS5073-EX.TC.0-3.1**

has been inspected and certified by NEPSI, and that it conforms to GB 3836.1-2010, GB 3836.4-2010, GB 3836.20-2010, GB 12476.1-2013, GB

This Approval shall remain in force until **2024.02.17**

Remarks **1. Conditions for safe use are specified in the instructions.  
2. Model designation is specified in the attachment to this certificate.  
3. Intrinsic safety parameters specified in the attachment to this certificate.**

**Director**   
**National Supervision and Inspection Centre for  
Explosion Protection and Safety of Instrumentation**  
Issued Date **2019.02.18**



This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

103 Cao Bao Road  
Shanghai 200233, China

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Tel: +86 21 64368180  
Fax: +86 21 64844580

ExBn05



Code and standards: GB3836.0-2010 Explosive atmospheres  
- Part 0: Equipment - General requirements  
GB3836.4-2010 Explosive atmospheres  
- Part 4: Equipment protection by intrinsic safety "i"

Certificate authority: NEPSI

GS5000-EX range isolated barriers apply precision electrical signal detection and galvanic isolation transmission technology, combined with reliable immunity and intrinsic safe circuit design, to achieve stable and reliable transmission of intrinsically safe explosion-proof circuit signals. The product performance is stable, which can be reliably matched with mainstream field apparatus and control systems.

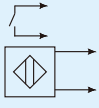



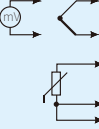
- 3-way isolation with max.dielectric strength  $\geq 2500V$  AC
- High reliability and strong EMC performance MTBF>2,000,000h
- Ultra-thin structure with low power dissipation design for high packing density
- High Conversion Accuracy better than 0.05% F.S..

The image shows a green industrial signal isolator module with multiple terminal blocks. Callouts include: a pie chart showing 'Input', 'Output', and 'Power supply' sections; a circular inset of the terminal block; a circular inset of the internal PCB; and the HART Communication Foundation logo.



# Selection Guide

## GS5000-EX Range

Field instrument	Application	Module No.	Channels	Hazardous Side Signal	Control Side Signal	Features	Page
	Digital Input	GS5011-EX	1/1	Dry contact switch proximity switch input	Relay contact output  Transistor output	Independent powered Configurable	6
		GS5012-EX	2/2				
		GS5111-EX	1/2				
		GS5013-EX	1/1				
		GS5019-EX	2/2				
	Digital Output	GS5023-EX	1/1	Drive current at 45mA Output voltage $\geq 12V$	Wet contact input	Loop powered	8
		GS5024-EX	2/2				
	Analog Input	GS5031-EX	1/1	2-wire or 3-wire transmitter Current source input	Passive 4~20mA HART 0/4~20mA 0/1~5V HART	Loop powered Independent powered	9 10
		GS5032-EX	2/2				
		GS5045-EX	1/1				
		GS5035-EX	1/2				
		GS5036-EX	2/2				
	Analog Output	GS5067-EX	1/1	0/4~20mA output HART	0/4~20mA input HART	Independent powered	11
		GS5038-EX	2/2				
	Temperature Converters	GS5071-EX	1/1	2-wire or 3-wire RTD TC or mV signal input 2-wire or 3-wire RTD TC or mV signal input	0~20mA, 4~20mA 0~5V, 1~5V output	Independent powered Configurable	12 14 15
		GS5072-EX	1/1				
		GS5076-EX	1/2				
		GS5079-EX	2/2				
		GS5076-EX.TC	1/2				
		GS5079-EX.TC	2/2				

### Configuration Accessory

Configuration Tool: USBCOM-MINI



Software: Easyconfig





1/1:GS5011-EX  
 2/2:GS5012-EX  
 1/2:GS5111-EX

Digital input, relay output isolated barriers, transfer digital signals (dry contact or NAMUR proximity switch) from hazardous area to safe area. Each channel can be provided to select phase reversal and to enable line fault detection. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption: (Supply voltage: 24V; Output energized) :**  
 ≤30mA (GS5011-EX)  
 ≤40mA (GS5012-EX/GS5111-EX)

**Safe-area Relay Output:**

Response Time:≤10ms  
 Contact loading:250V AC,2A or 30V DC,2A  
 Load Type:resistive load

**Hazardous-area Input:**

Signal:Dry contact or NAMUR proximity switch  
 Open-circuit Voltage:≈8V  
 Short-circuit Current:≈8mA

**Input and Output Characteristics (Normal phase)**

If field switch closes or input loop current >2.1mA, output relay will be energized, with yellow LED ON.

If field switch closes or input loop current <1.2mA, output relay will be de-energized, with yellow LED OFF.

**Function of the DIP Switch:**

Sta.	K1(OUT1), K3(OUT2)	K2(OUT1), K4(OUT2)
ON	Inverted phase	LFD enabled
OFF	Normal phase	LFD disenabled

Note:Switch input (I) needs the K2 and K4 to be set to OFF state, without line fault (breakage, short-circuit) detection. When using line fault (breakage, short-circuit) detection function, resistances must be fitted: 22kΩ in parallel with switch,

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part ≥2500V AC

Between power supply part and output part ≥500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part ≥100MΩ

Between power supply part and output part ≥100MΩ

**Weight:**Approx. 100g

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:**Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch、 temperature switches、 liquid level switches, etc.)

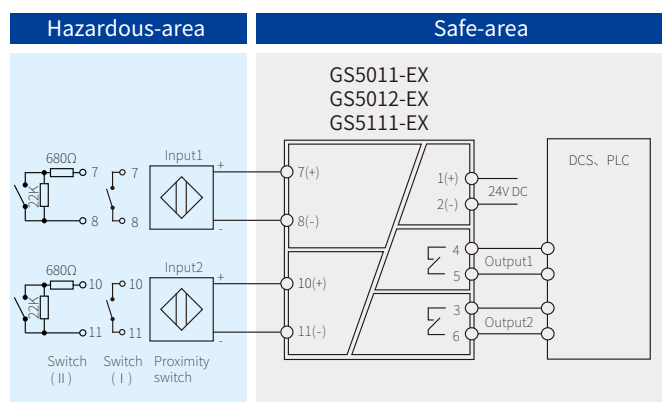


Dimensions:

114.5mm×99mm×12.5mm (GS5011-EX)

114.5mm×99mm×17.5mm (GS5012-EX/GS5111-EX)

## Connection



Note: a) GS5011-EX only contains input1, output1;  
 b) GS5111-EX only contains input1, output1, output2;  
 c) GS5012-EX only contains input1, input2 and output1, output2.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:**Um=250V

**Intrinsic Safety Parameters:**

Terminals (7、8) , (10、11)

$U_o=10.5V$ ,  $I_o=14mA$ ,  $P_o=37mW$

II C: $C_o=2.4\mu F$ ,  $L_o=165mH$

\*II B: $C_o=16.8\mu F$ ,  $L_o=495mH$

II A: $C_o=75.0\mu F$ ,  $L_o=1000mH$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]

# Digital Input

1/1:GS5013-EX  
2/2:GS5019-EX

Digital input, transistor output isolated barriers, transfer digital signals(dry contact or NAMUR proximity switch) from hazardous area to safe area. Each channel can be provided to select phase reversal and to enable the line fault detection. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption:** (Supply voltage:24V, transistor energized)

≤40mA (GS5013-EX)

≤60mA (GS5019-EX)

**Safe-area Output:**

Digital output:4.5V≤V<sub>H</sub>≤12V, V<sub>L</sub>≤0.5V

Drive current≤10mA, Load resistance≥1kΩ

Transistor collector output:

V<sub>H</sub>=V<sub>cc</sub>;V<sub>L</sub>≤2.5V (On-state current=10mA, V<sub>cc</sub>=24V)

Max.Rated Current≤40mA, Load resistance:2kΩ≤R<sub>L</sub>≤20kΩ

Transistor Emitter Output:

V<sub>H</sub>≥V<sub>cc</sub>-2.5V V<sub>L</sub>≤0.5V (On-state current=10mA, V<sub>cc</sub>=24V)

Max.Rated Current≤40mA, Load resistance:2kΩ≤R<sub>L</sub>≤10kΩ

Note: "V<sub>cc</sub>" refers to the supply voltage at the output, V<sub>cc</sub>≤40V

**Hazardous-area Input:**

Signal: Dry contact or NAMUR proximity switch input, frequency≤5kHz

Open-circuit Voltage:≈8V

Short-circuit Current:≈8mA

**Input and Output Characteristics (Normal phase) :**

If field switch closes or input loop current>2.1mA, output transistor will be energized, with yellow LED ON.

If field switch closes or input loop current<1.2mA, output transistor will be de-energized, with yellow LED OFF.

Sta.	K1(OUT1), K3(OUT2)	K2(OUT1), K4(OUT2)
ON	Inverted phase	LFD enabled
OFF	Normal phase	LFD disabled

Note: Switch input (I) needs the K2 and K4 to be set to OFF, without line fault (breakage) detection. When using line fault (breakage) detection function, resistances must be fitted: 10kΩ in parallel with switch, See Switch (II), K2 and K4 are set to ON.

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Ambient Temperature:**-20°C~+60°C

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part≥2500V AC

Between power supply part and output part≥500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part≥100MΩ

Between power supply part and output part≥100MΩ

**Weight:**Approx. 150g

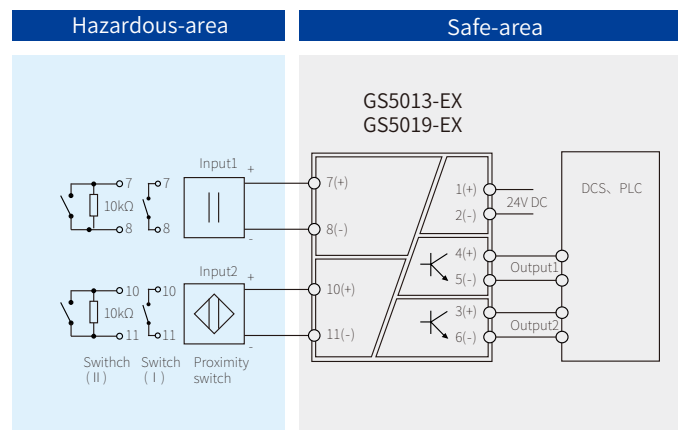
**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:**Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch、temperature switches、liquid level switches, etc.)



Dimensions:114.5mm×99mm×17.5mm

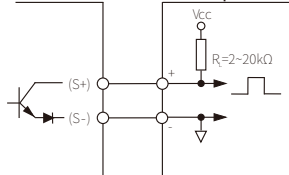
## Connection



Note: a) GS5013-EX only contains input1, output1.

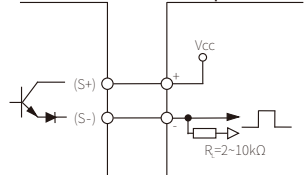
### Application 1:

#### Transistor Collector Output



### Application 2:

#### Transistor Emitter Output



## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:**U<sub>m</sub>=250V

**Intrinsic Safety Parameters:**

Terminals (7、8), (10、11)

U<sub>o</sub>=10.5V, I<sub>o</sub>=14mA, P<sub>o</sub>=37mW

II C:C<sub>o</sub>=2.4μF, L<sub>o</sub>=165mH

\*II B:C<sub>o</sub>=16.8μF, L<sub>o</sub>=495mH

II A:C<sub>o</sub>=75.0μF, L<sub>o</sub>=1000mH

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]

1/1:GS5023-EX  
2/2:GS5024-EX

Digital output isolated barriers, control the 12V/45mA power supply to hazardous area. This product is suitable for driving IS devices such as solenoid valves, LED and some other low-power loads located in the hazardous area. The input and output are each galvanically isolated, and this product is loop powered.

## Specification

**Loop Supply Voltage (U<sub>e</sub>)** :20~35V DC

**Current Consumption (Supply voltage: 24V; output: 45mA)** :

≤75mA (GS5023-EX)

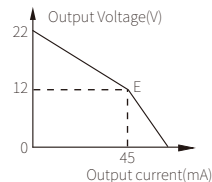
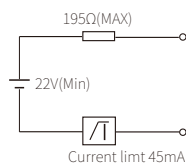
≤160mA (GS5024-EX)

**Hazardous-area Output:**

Open-circuit Voltage:22V~24V

Output voltage at 45mA:≥12V

Equivalent Output Circuit:      Output Characteristic:



**Response Time:**≤20ms

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part≥2500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part≥100MΩ

**Weight:**Approx. 100g

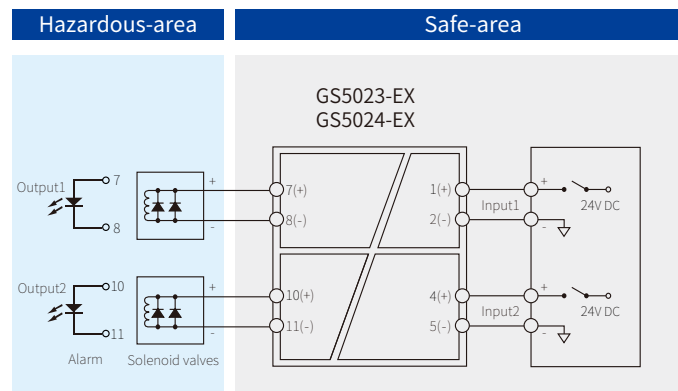
**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:**Solenoid valves, LED.



Dimensions:114.5mm×99mm×12.5mm

## Connection



Note: a) GS5023-EX only contains input1, output1;

b) GS5024-EX only contains input1, input2 and output1, output2.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:**U<sub>m</sub>=250V

**Intrinsic Safety Parameters:**

Terminals (7、8), (10、11)

U<sub>0</sub>=25V, I<sub>0</sub>=140mA, P<sub>0</sub>=875mW

II C:C<sub>0</sub>=0.11μF, L<sub>0</sub>=1.32mH

\*II B:C<sub>0</sub>=0.84μF, L<sub>0</sub>=3.96mH

II A:C<sub>0</sub>=2.97μF, L<sub>0</sub>=10.56mH

\*II B Intrinsic Safety Parameters are also suitable for dust explosion protection[Ex iaD]

# Analog Input(Loop Powered)

1/1:GS5031-EX  
2/2:GS5032-EX



These products can work as AI isolated barriers to provide a separate power to the transmitter located in the hazardous area and transfer the current from hazardous area to safe area. They can also work as AO isolated barriers to transfer current signal from the safe area to the hazardous area and drive devices like actuator in field. It allows bi-directional transmission of HART communication signals. The input and output are each galvanically isolated, and these products are loop powered.



Dimensions:114.5mm×99mm×17.5mm

## Specification

**Loop Supply Voltage (U<sub>e</sub>):**20~30V DC

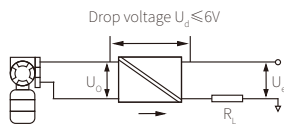
**Application 1 (AI) :**

**Safe-area Output:**

Current:4~20mA, HART digital signal  
HART Communication Load Resistance  $R_L \geq 250\Omega$

**Hazardous-area Input:**

Current:4~20mA, HART digital signal  
Supply Voltage: $U_o \geq U_e - R_L \times 0.02 - 6$



**Output Accuracy:**0.4%F.S.

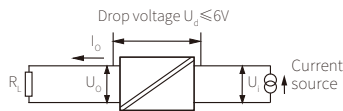
**Application 2 (AO) :**

**Safe-area Input:**

Current:4~20mA, HART digital signal

**Hazardous-area Output:**

Current:4~20mA, HART digital signal  
Load Resistance: $R_L \leq (U_i - 6) / 0.02$   
HART Communication Load Resistance  $R_L \geq 250\Omega$



**Output Accuracy:**0.2%F.S.

**Temperature Drift:**0.01%F.S./°C

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Ambient Temperature:**-20°C~+60°C

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part  $\geq 2500V$  AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part  $\geq 100M\Omega$

**Weight:**Approx. 150g

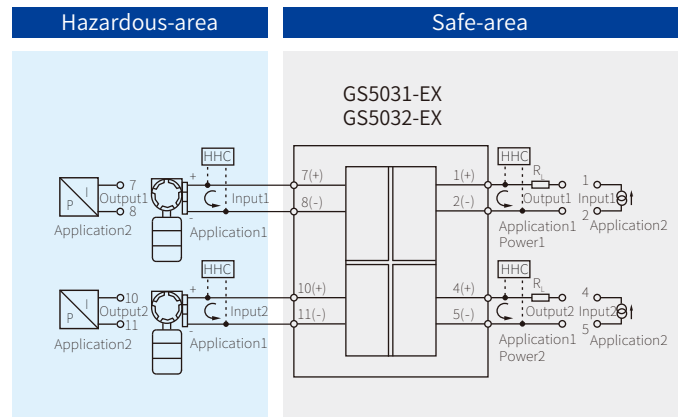
**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone1 IIC and zone21 IIIC.

**Suitable Field Apparatus:**

2-wire (HART) transmitter (Application 1)

2-wire valve positioner, electrical converter (Application 2)

## Connection



Note: a) GS5031-EX only contains CH1;  
b) GS5032-EX contains CH1 and CH2;  
c) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;  
d) HHC (HART Hand Held Communicator) used in the hazardous area must get the explosion-proof certificate.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ib Gb] II C [Ex ibD]

**Maximum Voltage:** $U_m = 250V$

**Intrinsic Safety Parameters:**

Terminals (7、8), (10、11)

$U_o = 23.1V$ ,  $I_o = 29mA$ ,  $P_o = 670mW$

II C:  $C_o = 0.096\mu F$ ,  $L_o = 0.5mH$

\* II B:  $C_o = 0.288\mu F$ ,  $L_o = 1.5mH$

II A:  $C_o = 0.528\mu F$ ,  $L_o = 4.0mH$

\* II B Intrinsic Safety Parameters are also suitable for dust explosion protection [Ex iaD]

1/1:GS5045-EX  
 1/2:GS5035-EX  
 2/2:GS5036-EX



Analog input isolated barriers, provide isolated power supplies for transmitters which located in hazardous area. Transfer the 4~20mA signal from hazardous area to safe area. It also allows bi-directional transmission of HART communication signals. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption (Supply voltage: 24V; output: 20mA) :**

- ≤65mA (GS5045-EX)
- ≤75mA (GS5035-EX)
- ≤100mA (GS5036-EX)

**Safe-area Output:**

Current:0/4~20mA, HART digital signal

Load Resistance:

- $R_L \leq 550\Omega$  (GS5045-EX)
- $R_L \leq 300\Omega$  (GS5035-EX, GS5036-EX)

HART Communication Load Resistance: $R_L \geq 250\Omega$

Voltage:0/1~5V, HART digital signal

Load Resistance: $R_L \geq 330k\Omega$

Note:Customers need specify current or voltage output when ordering.

**Hazardous-area Input:**

Current:0/4~20mA, HART digital signal

Distribution:

- Open-circuit Voltage:≤28V
- Voltage at 20mA:≥15.5V
- Normal working current:≤25mA

**Output Accuracy:**0.1%F.S. (Typical:0.05%F.S.)

**Temperature Drift:**0.005%F.S./°C

**Response Time (0~90%) :**≤2ms

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part≥2500V AC

Between power supply part and output part≥500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part≥100MΩ

Between power supply part and output part≥100MΩ

**Weight:**Approx. 150g

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

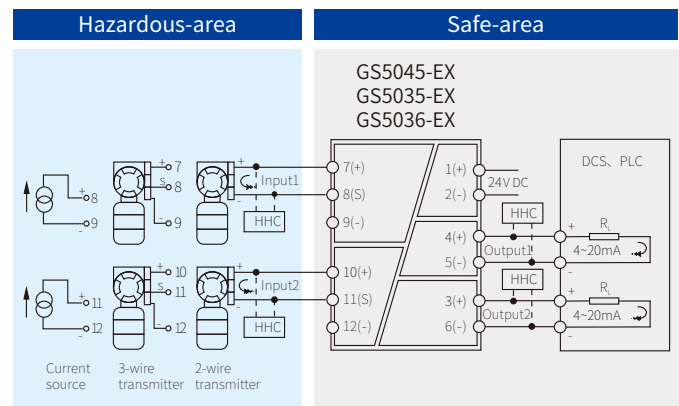
**Suitable Field Apparatus:**2-wire (HART) transmitter, 3-wire transmitter, current source.

Dimensions:

114.5mm×99mm×12.5mm (GS5045-EX)

114.5mm×99mm×17.5mm (GS5035-EX/GS5036-EX)

## Connection



- Note: a) GS5045-EX only contains input1, output1;  
 b) GS5035-EX only contains input1, output1, output2;  
 c) GS5036-EX contains input1, input2 and output1, output2;  
 d) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;  
 e) HHC (HART Hand Held Communicator) used in the hazardous area must get the explosion-proof certificate.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:** $U_m=250V$

**Intrinsic Safety Parameters:**

Terminals (7, 8, 9), (10, 11, 12)

$U_o=28V$ ,  $I_o=93mA$ ,  $P_o=651mW$

II C: $C_o=0.083\mu F$ ,  $L_o=4.2mH$

\*II B: $C_o=0.65\mu F$ ,  $L_o=12.6mH$

II A: $C_o=2.15\mu F$ ,  $L_o=33.6mH$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]

# Analog Output

1/1:GS5067-EX  
2/2:GS5038-EX

Analog output isolated barriers transfer the 4~20mA signal from safe area to hazardous area to drive field devices, such as valve positioners and electrical converters. It also allows bi-directional transmission of HART communication signals. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption (Supply voltage: 24V; output: 20mA) :**  
 $\leq 50\text{mA}$  (GS5067-EX)  
 $\leq 75\text{mA}$  (GS5038-EX)

### Safe-area Input:

Current:0/4~20mA, HART digital signal  
 Voltage drop: $\leq 2\text{V}$

### Hazardous-area Output:

Current:0/4~20mA, HART digital signal  
 Load Resistance: $R_L \leq 800\Omega$   
 HART Communication Load Resistance: $R_L \geq 250\Omega$   
 Voltage:0/1~5V, HART digital signal  
 Load Resistance: $R_L \geq 330\text{k}\Omega$

Note:Customers need specify current or voltage output when ordering.

**Output Accuracy:**0.1%F.S. (Typical:0.05%F.S.)

**Temperature Drift:**0.005%F.S./°C

**Response Time (0~90%) :** $\leq 2\text{ms}$

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

### Dielectric Strength:

Between non-intrinsically safe part and intrinsically safe part $\geq 2500\text{V AC}$   
 Between power supply part and output part $\geq 500\text{V AC}$

### Insulation Resistance:

Between non-intrinsically safe part and intrinsically safe part $\geq 100\text{M}\Omega$   
 Between power supply part and output part $\geq 100\text{M}\Omega$

**Weight:**Approx. 100g (GS5067-EX) , Approx. 150g (GS5038-EX)

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:**2-wire valve positioner, electrical converter, etc.

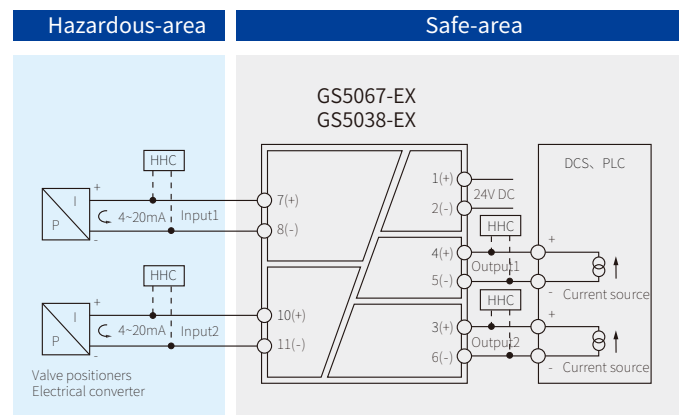


Dimensions:

114.5mm×99mm×12.5mm (GS5067-EX)

114.5mm×99mm×17.5mm (GS5038-EX)

## Connection



Note: a) GS5067-EX only contains input1, output1;  
 b) GS5038-EX contains input1, input2 and output1, output2;  
 c) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;  
 d) HHC (HART Hand Held Communicator) used in the hazardous area must get the explosion-proof certificate.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:** $U_m=250\text{V}$

### Intrinsic Safety Parameters:

Terminals (7、8), (10、11)

$U_o=28\text{V}$ ,  $I_o=93\text{mA}$ ,  $P_o=651\text{mW}$

II C: $C_o=0.083\mu\text{F}$ ,  $L_o=4.2\text{mH}$

\*II B: $C_o=0.65\mu\text{F}$ ,  $L_o=12.6\text{mH}$

II A: $C_o=2.15\mu\text{F}$ ,  $L_o=33.6\text{mH}$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]

## 1/1:GS5071-EX

RTD input isolated barriers, convert RTD signals in hazardous area into current or voltage signals and output to safe area. It can be configured by computer. The product needs an independent power supply and galvanic isolation among power supply, input and output.



Dimensions:114.5mm×99mm×12.5mm

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption (Supply voltage: 24V; output: 20mA) :**≤35mA

**Safe-area Output:**

Current output:0~20mA/4~20mA;Load Resistance: $R_L \leq 300\Omega$

Voltage output:0~5V/1~5V;Load Resistance: $R_L \geq 20k\Omega$

Note:Customers need specify current or voltage output when ordering.

**Hazardous-area Input:**

Input signal:Pt100、Cu50、Cu100

**Input Signal Monitoring:**

Input	Output	Indicating
Overrange	20.8mA	LED H flashing
Underrange	3.8mA	LED L flashing
Line breakage	20.8mA	LED H and LED L flashing simultaneously
Line shorted	3mA	LED H and LED L flashing simultaneously

**Temperature Drift:**0.01%F.S./°C

**Response Time (0~90%) :**≤1s

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part  $\geq 2500V$  AC

Between power supply part and output part  $\geq 500V$  AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part  $\geq 100M\Omega$

Between power supply part and output part  $\geq 100M\Omega$

**Weight:**Approx. 100g

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:**2-wire or 3-wire RTD

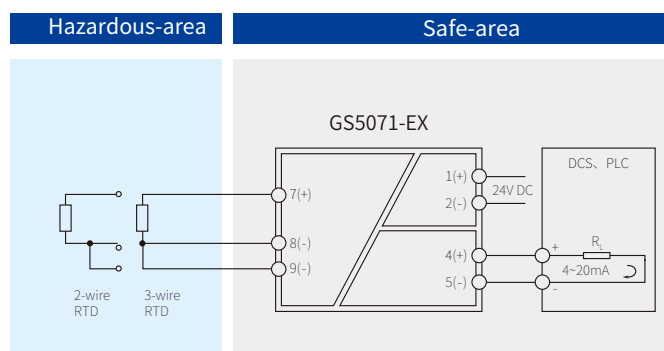
## Input Signal and Range

	Type	Range	Min.Span	Accuracy
RTD	Pt100	-200°C~+850°C	20°C	0.2°C / 0.1%
	Cu50	-50°C~+150°C	20°C	0.2°C / 0.1%
	Cu100	-50°C~+150°C	20°C	0.2°C / 0.1%

Note:1、The “%” of conversion accuracy is relative to its range. Take the larger value between the relative error and the absolute error when applying.

2、Allow a maximum wire resistance of 50Ω/line for RTD input (3-wire).

## Connection



## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:** $U_m=250V$

**Intrinsic Safety Parameters:**

Terminals (7、8、9)

$U_o=8.5V$ ,  $I_o=20mA$ ,  $P_o=43mW$

II C: $C_o=6.5\mu F$ ,  $L_o=3.6mH$

\*II B: $C_o=60\mu F$ ,  $L_o=10.8mH$

II A: $C_o=1000\mu F$ ,  $L_o=28.8mH$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]

# Temperature Converter

1/1:GS5072-EX

TC/mV input isolated barriers, convert TC/mV signals in hazardous area into current or voltage signals and output to safe area. It integrates CJC function in terminal and can be configured by computer. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption (Supply voltage: 24V; output: 20mA) :**≤35mA

**Safe-area Output:**

Output Current:0~20mA/4~20mA;Load Resistance: $R_L \leq 300\Omega$

Output Voltage:0~5V/1~5V;Load Resistance: $R_L \geq 20k\Omega$

Note:Customers need specify current or voltage output when ordering.

**Hazardous-area Input:**

Input signal:T、E、J、K、N、R、S、B (mV signal)

**Input Signal Monitoring :**

Input	Output	Indicating
Overrange	20.8mA	LED H flashing
Underrange	3.8mA	LED L flashing
Line breakage	20.8mA	LED H and LED L flashing simultaneously

**Temperature Drift:**0.01%F.S./°C

**CJC Error:**±1°C (Compensation range:-20°C~+60°C)

**Response Time (0~90%) :**≤1s

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part≥2500V AC

Between power supply part and output part ≥500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part≥100MΩ

Between power supply part and output part ≥100MΩ

**Weight:**Approx. 100g

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC

**Suitable Field Apparatus:**TC, mV signal

## Input Signal and Range

	Type	Range	Min.Span	Accuracy
TC	T	-200°C~+400°C	50°C	0.5°C / 0.1%
	E	-200°C~+900°C	50°C	0.5°C / 0.1%
	J	-200°C~+1200°C	50°C	0.5°C / 0.1%
	K	-200°C~+1372°C	50°C	0.5°C / 0.1%
	N	-200°C~+1300°C	50°C	0.5°C / 0.1%
	R	-40°C~+1768°C	500°C	1.5°C / 0.1%
	S	-40°C~+1768°C	500°C	1.5°C / 0.1%
	B	+320°C~+1820°C	500°C	1.5°C / 0.1%
mV signal		-100mV~+100mV	10mV	20μV / 0.1%

Note: 1、The “%” of conversion accuracy is relative to its range. Take the larger value between the relative error and the absolute error when applying.

2、When the thermocouple is input, the conversion accuracy does not include the CJC. For every 100Ω increase in the compensation wire, the cold junction error increases by 0.2°C.

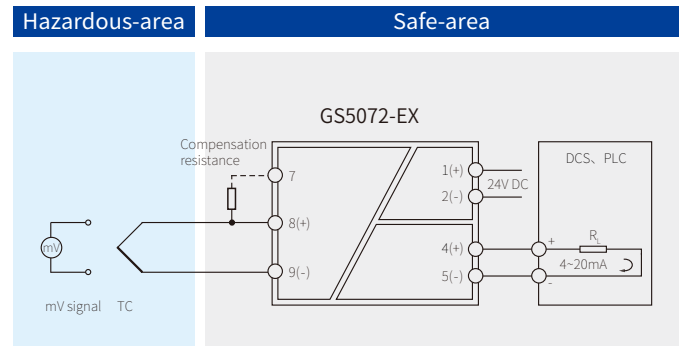
3、When the Type B thermocouple is input, the temperature range is required to be greater than 680 °C to ensure the accuracy index.

4、mV signal input needs to be customized.



Dimensions:114.5mm×99mm×17.5mm

## Connection



## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:**Um=250V

**Intrinsic Safety Parameters:**

Terminals (8、9)

$U_o=8.5V$ ,  $I_o=20mA$ ,  $P_o=43mW$

II C: $C_o=6.5\mu F$ ,  $L_o=3.6mH$

\*II B: $C_o=60\mu F$ ,  $L_o=10.8mH$

II A: $C_o=1000\mu F$ ,  $L_o=28.8mH$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]



1/2:GS5076-EX  
2/2:GS5079-EX

RTD input isolated barriers, convert RTD signals in hazardous area into current or voltage signals and output to safe area. It can be configured by computer. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption (Supply voltage: 24V; output: 20mA) :**≤55mA

**Safe-area Output:**

Output Current:0~20mA/4~20mA;Load Resistance: $R_L \leq 300\Omega$

Output Voltage:0~5V/1~5V;Load Resistance: $R_L \geq 20k\Omega$

Note:Customers need specify current or voltage output when ordering.

**Hazardous-area Input:**

Input signal:Pt100、Cu50、Cu100 (RTD)

**Input Signal Alarm:**

Input	Output	Indicating
Overrange	20.8mA	LED H flashing
Underrange	3.8mA	LED L flashing
Line breakage	20.8mA	LED H and LED L flashing simultaneously
Line shorted	3mA	LED H and LED L flashing simultaneously

**Temperature Drift:**0.01%F.S./°C

**Response Time (0~90%) :**≤1s

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part≥2500V AC

Between power supply part and output part ≥500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part≥100MΩ

Between power supply part and output part ≥100MΩ

**Weight:**Approx. 150g

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC

**Suitable Field Apparatus:**2-wire or 3-wire RTD

## Input Signal and Range

	Type	Range	Min.Span	Accuracy
RTD	Pt100	-200°C~+850°C	20°C	0.2°C/0.1%
	Cu50	-50°C~+150°C	20°C	0.2°C/0.1%
	Cu100	-50°C~+150°C	20°C	0.2°C/0.1%

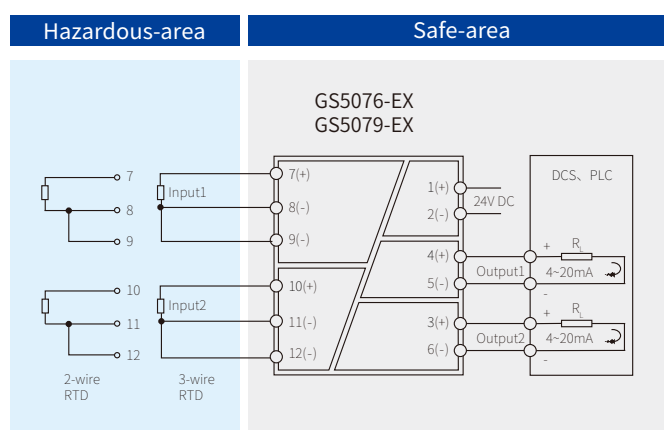
Note:1、The “%” of conversion accuracy is relative to its range. Take the larger value between the relative error and the absolute error when applying.

2、Allow a maximum wire resistance of 50Ω/line for RTD input (3-wire).



Dimensions:114.5mm×99mm×17.5mm

## Connection



Note: a) GS5076-EX only contains input1, output1, output2;  
b) GS5079-EX contains input1, input2 and output1, output2.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:**Um=250V

**Intrinsic Safety Parameters:**

Terminals (7、8、9), (10、11、12)

$U_o=8.5V$ ,  $I_o=20mA$ ,  $P_o=43mW$

II C: $C_o=6.5\mu F$ ,  $L_o=3.6mH$

\*II B: $C_o=60\mu F$ ,  $L_o=10.8mH$

II A: $C_o=1000\mu F$ ,  $L_o=28.8mH$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]

# Temperature Converter

1/2:GS5076-EX.TC  
2/2:GS5079-EX.TC

TC/mV input isolated barriers, convert TC/mV signals in hazardous area into current or voltage signals and output to safe area. It integrates CJC function in terminals and can be configured by computer. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

**Supply Voltage:**20~35V DC

**Current Consumption (Supply voltage: 24V; output: 20mA) :**≤55mA

**Safe-area Output:**

Output Current:0~20mA/4~20mA;Load Resistance: $R_L \leq 300\Omega$

Output Voltage:0~5V/1~5V;Load Resistance: $R_L \geq 20k\Omega$

Note:Customers need specify current or voltage output when ordering.

**Hazardous-area Input:**

Input signal:T、E、J、K、N、R、S、B (mV signal)

**Input Signal Monitoring:**

Input	Output	Indicating
Overrange	20.8mA	LED H flashing
Underrange	3.8mA	LED L flashing
Line breakage	20.8mA	LED H and LED L flashing simultaneously

**Temperature Drift:**0.01%F.S./°C

**Response Time (0~90%) :**≤1s

**Power Supply Protection:**Power supply reverse protection

**EMC:**According to IEC 61326-1 (GB/T 18268)

**Dielectric Strength:**

Between non-intrinsically safe part and intrinsically safe part≥2500V AC

Between power supply part and output part ≥500V AC

**Insulation Resistance:**

Between non-intrinsically safe part and intrinsically safe part≥100MΩ

Between power supply part and output part ≥100MΩ

**Weight:**Approx. 150g

**Suitable Location:**Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:**TC, mV signal

## Input Signal and Range

	Type	Range	Min.Span	Accuracy
TC	T	-200°C~+400°C	50°C	0.5°C / 0.1%
	E	-200°C~+900°C	50°C	0.5°C / 0.1%
	J	-200°C~+1200°C	50°C	0.5°C / 0.1%
	K	-200°C~+1372°C	50°C	0.5°C / 0.1%
	N	-200°C~+1300°C	50°C	0.5°C / 0.1%
	R	-40°C~+1768°C	500°C	1.5°C / 0.1%
	S	-40°C~+1768°C	500°C	1.5°C / 0.1%
	B	+320°C~+1820°C	500°C	1.5°C / 0.1%
mV signal		-100mV~+100mV	10mV	20uV / 0.1%

Note: 1、The “%” of conversion accuracy is relative to its range. Take the larger value between the relative error and the absolute error when applying.

2、Allow a maximum wire resistance of 50Ω/line for RTD input(3-wire).

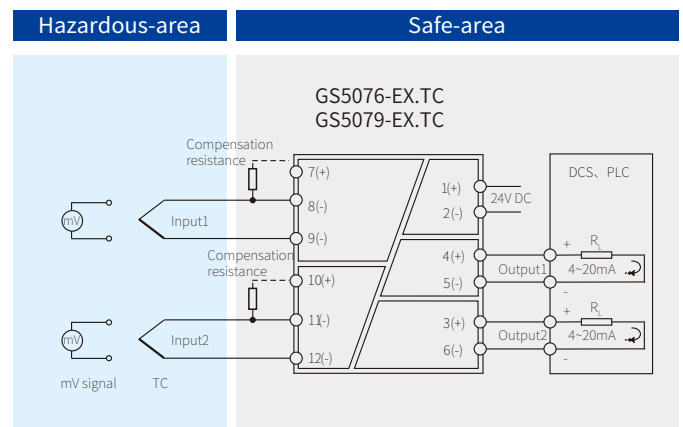
3、When the thermocouple is input, the conversion accuracy does not include the CJC.

4、When the Type B thermocouple is input, the temperature range is required to be greater than 680 °C to ensure the accuracy index.



Dimensions:114.5mm×99mm×17.5mm

## Connection



Note: a) GS5076-EX.TC only contains input1, output1, output2;  
b) GS5079-EX.TC contains input1, input2 and output1, output2.

## Explosion-proof Certificate

**Certificate Authority:**NEPSI (China)

**Ex Marking:**[Ex ia Ga] II C [Ex iaD]

**Maximum Voltage:** $U_m=250V$

**Intrinsic Safety Parameters:**

Terminals (7、8、9), (10、11、12)

$U_o=8.5V$ ,  $I_o=20mA$ ,  $P_o=43mW$

II C: $C_o=6.5\mu F$ ,  $L_o=3.6mH$

\*II B: $C_o=60\mu F$ ,  $L_o=10.8mH$

II A: $C_o=1000\mu F$ ,  $L_o=28.8mH$

\*II B Intrinsic safety parameters are also suitable for dust explosion protection[Ex iaD]



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