

## Isolated Barrier

### GS8500-EX Series

### Catalogue ( 2022 )



【Factory video @Youtube】

CZYB-E03.03/2022.03

#### Headquarters

**SHANGHAI CHENZHU INSTRUMENT CO.,LTD.**

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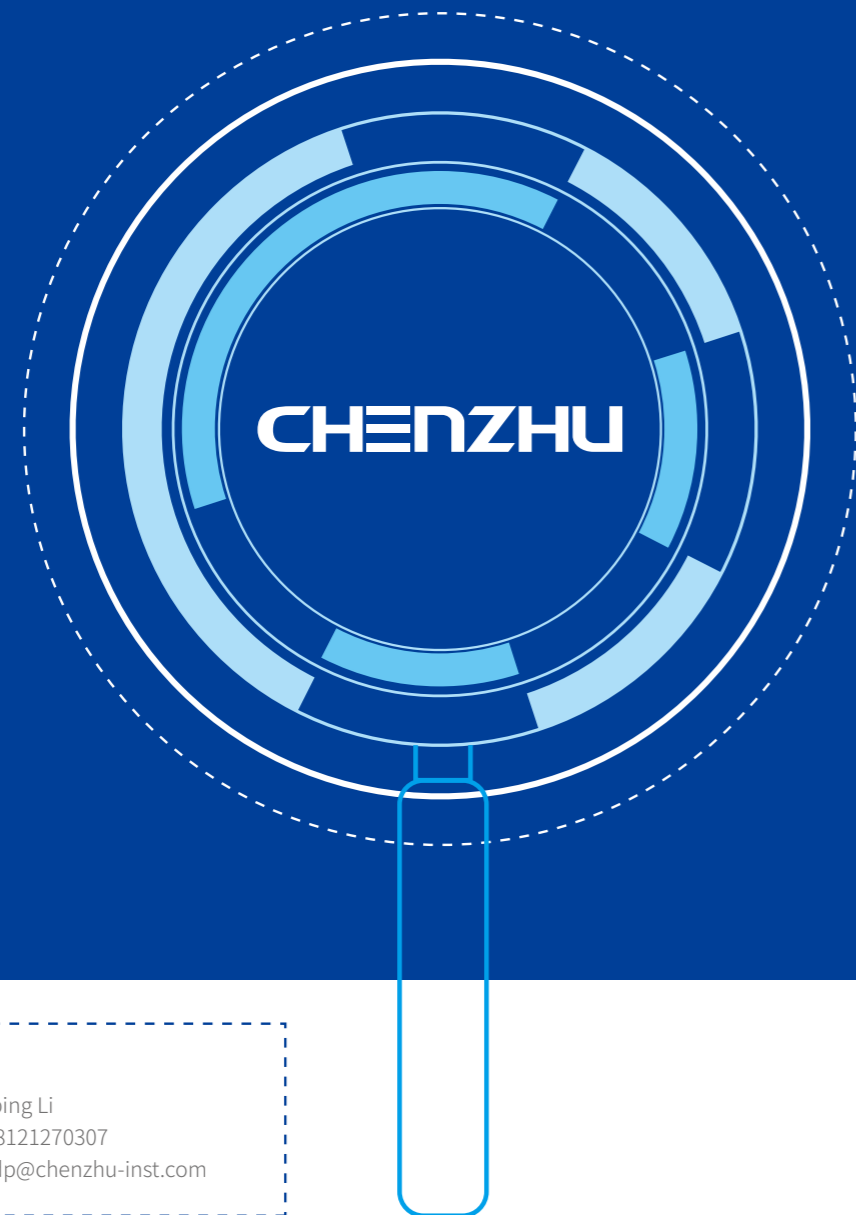


[www.en.chenzhu-inst.com](http://www.en.chenzhu-inst.com)



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**Contact:**

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Email: lidp@chenzhu-inst.com

## CHENZHU COMPANY OVERVIEW



CHENZHU's headquarter is located at Shanghai, China, with an area of 8500m<sup>2</sup>.

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.

## MANAGEMENT SYSTEMS



ISO9001



ISO14001



ISO45001



IECEx QUALITY ASSESSMENT

## 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

11%  
of Sale Revenue



Innovation

110+  
Patents



Testing Facility

80+  
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

3500m<sup>2</sup>  
In total



Max Cap.

2,000,000 pcs  
Year



Sales Volume

1,080,000 pcs  
In 2021



Lean Production

10+  
Years' experience



**Certificate**



Product Safety  
Functional Safety

www.tuv.com  
ID 060000000

**No.: 968/EZ 531.03/19**

<b>Product tested</b>	Isolated Barriers for safety-related applications	<b>Certificate holder</b>	SHANGHAI CHENZHU INSTRUMENT CO., LTD. Floor 7-8, Building 6, No. 201, Minyi Road, Songjiang District, Shanghai, 201612, P.R. China
<b>Type designation</b>	GS8512-EX, GS8523-EX, GS8535-EX, GS8536-EX, GS8547-EX, GS8567-EX, GS8568-EX		
<b>Codes and standards</b>	IEC 61508 Parts 1-7:2010 IEC 61326-3-1:2017	IEC 61298 Parts 1-3:2008	
<b>Intended application</b>	<p>GS8512-EX and GS8523-EX are intended to be used in safety-related applications and have the safety function to de-energize output(s) on demand. The safe state is the de-energized state.</p> <p>GS8535-EX, GS8536-EX, GS8547-EX, GS8567-EX and GS8568-EX are intended to be used in safety-related applications and have the safety function of repeating 4-20 mA current or converting the 4-20mA into 1-5V output voltage within the accuracy of ±2%.</p> <p>In case of a failure the output current is &lt; 3.6 mA or &gt; 21.5 mA.</p> <p>The barriers comply with the requirements of IEC 61508:</p> <p>GS8512-EX, GS8523-EX, GS8547-EX: IEC 61508 SC 3, SIL 3</p> <p>GS8535-EX, GS8536-EX, GS8567-EX, GS8568-EX: IEC 61508 SC 3, SIL 2</p>		
<b>Specific requirements</b>	The instructions of the associated Safety Manuals shall be considered.		
<b>Valid until</b>	2024-06-13		

The issue of this certificate is based upon an examination, whose results are documented in Report No. 968/EZ 531.03/19 dated 2019-06-13.  
This certificate is valid only for products which are identical with the product tested.

TÜV Rheinland Industrie Service GmbH  
Bereich Automation  
Funktionale Sicherheit  
Am Grauen Stein, 51105 Köln  
Köln, 2019-06-13



Dipl.-Ing. Gebhard Bouwer



**TÜVRheinland®**  
Precisely Right.

www.fs-products.com  
www.tuv.com



Code and standards: IEC61508-2010 Functional safety of electrical/electronic /programmable electronic safety-related systems

Certificate authority: TÜV Rheinland



**IECEx Certificate  
of Conformity**

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**  
IEC Certification System for Explosive Atmospheres  
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx SIR 21.0022X	Page 1 of 3	<a href="#">Certificate history</a>
Status:	Current	Issue No: 0	
Date of Issue:	2021-06-23		
Applicant:	SHANGHAI CHENZHU INSTRUMENT CO., LTD. Floor 7-8, Building 6, No. 201, Minyi Road, Songjiang District, Shanghai 201612, China		
Equipment:	GS8500-EX series safety barriers GS8512-EX.11, GS8512-EX.12, GS8512-EX.22, GS8523-EX, GS8523-EX.1, GS8547-EX, GS8567-EX, GS8572-EX, GS8572-EX.RTD, GS8572-EX.R, GS8572-EX.TC.		
Optional accessory:			
Type of Protection:	Intrinsically Safe ia		
Marking:	[Ex ia Ma] I [Ex ia Ga] IIC [Ex ia Da] IIC		

Approved for issue on behalf of the IECEx  
Certification Body:

Position:

Signature:  
(for printed version)

Date:

**Neil Jones**

Certification Manager



2021-06-23

1. This certificate and schedule may only be reproduced in full.  
2. This certificate is not transferable and remains the property of the issuing body.  
3. The status and authenticity of this certificate may be verified by visiting [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

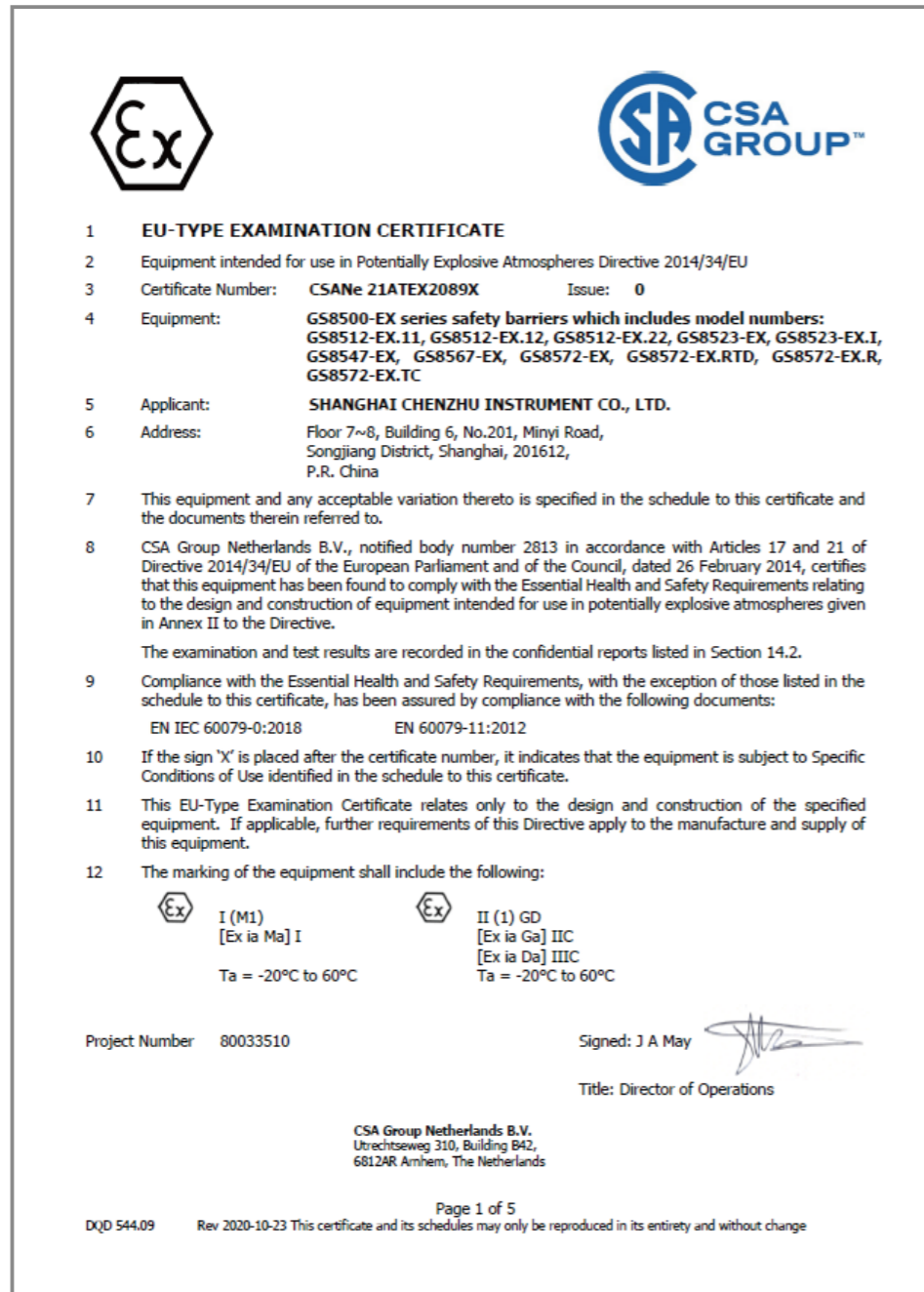
**SIRA Certification Service**  
CSA Group  
Unit 6, Hawarden Industrial Park  
Hawarden, Deeside, CH5 3US  
United Kingdom





Code and standards: IEC60079-0 Explosive atmospheres  
- Part 0: Equipment - General requirements  
IEC60079-11 Explosive atmospheres  
- Part 11: Equipment protection by intrinsic safety "i"

Certificate authority: Canadian Standards Association (CSA)



**EU-TYPE EXAMINATION CERTIFICATE**

Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

Certificate Number: **CSANe 21ATEX2089X** Issue: **0**

Equipment: **GS8500-EX series safety barriers which includes model numbers: GS8512-EX.11, GS8512-EX.12, GS8512-EX.22, GS8523-EX, GS8523-EX.I, GS8547-EX, GS8567-EX, GS8572-EX, GS8572-EX.RTD, GS8572-EX.R, GS8572-EX.TC**

Applicant: **SHANGHAI CHENZHU INSTRUMENT CO., LTD.**

Address: **Floor 7~8, Building 6, No.201, Minyi Road, Songjiang District, Shanghai, 201612, P.R. China**

This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.



Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012

If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

The marking of the equipment shall include the following:

 I (M1) [Ex ia Ma] I Ta = -20°C to 60°C	 II (1) GD [Ex ia Ga] IIC [Ex ia Da] IIIC Ta = -20°C to 60°C
--	--

Project Number 80033510 Signed: J A May  
Title: Director of Operations

CSA Group Netherlands B.V.  
Utrechtseweg 310, Building B42,  
6612AR Arnhem, The Netherlands

Page 1 of 5  
DQD 544.09 Rev 2020-10-23 This certificate and its schedules may only be reproduced in its entirety and without change



Code and standards: EN60079-0 Explosive atmospheres  
- Part 0: Equipment - General requirements  
EN60079-11 Explosive atmospheres  
- Part 11: Equipment protection by intrinsic safety "i"

Certificate authority: Canadian Standards Association (CSA)



**EXPLOSION PROTECTION  
CERTIFICATE OF CONFORMITY**

Cert NO.GYB21.4014X

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 **GS8567-EX, GS8547-EX, GS8523-EX, GS8523-EX.I, GS8512-EX.11, GS8512-EX.12, GS8512-EX.22**

Ex marking **[Ex ia Ma] I, Ex nA IIC T4 Gc, Ex nA nC IIC T4 Gc**  
(The corresponding relationship between model and Ex marking is specified in the attachment to this certificate)

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

drawing number **GS8547-EX.0-6.0, GS8523-EX.0-6.0, GS8523-EX.I.0-6.0, GS8512-EX.11.0-6.0, GS8512-EX.12.0-6.0, GS8512-EX.22.0-6.0, GS8567-EX.0-6.0**

has been inspected and certified by NEPSI, and that it conforms to **GB 3836.1-2010, GB 3836.4-2010, GB 3836.8-2014.**

This Approval shall remain in force until **2026.12.09**

Remarks  
1.The corresponding relationship between model and Ex marking is specified in the attachment to this certificate.  
2.Symbol "X" placed after the certification number denotes specific conditions of use, which are specified in the attachment to this certificate.  
3.Conditions for safe use are specified in the attachment to this certificate.  
4.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 **2021.12.10**  
This Certificate is valid for products compatible with the documents and samples approved by NEPSI.

103 Cao Bao Road Shanghai 200233, China  
http://www.nepsi.org.cn  
Tel: +86 21 64368180  
Email: info@nepi.org.cn  
Fax: +86 21 64844580



Code and standards:  
GB3836.1-2010 Explosive atmospheres - Part 1: Equipment - General requirements  
GB3836.4-2010 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
GB 3836.8-2014 Explosive atmospheres - Part 8: Equipment protection by type of protection "n"  
GB 3836.20-2010 Explosive atmospheres - Part 20: Equipment with equipment protection level(EPL)Ga  
GB12476.1-2013 Electrical apparatus for use in the presence of combustible dust  
- Part 1: General requirements  
GB12476.4-2010 Electrical apparatus for use in the presence of combustible dust  
- Part 4: protection by intrinsic safety "iD"  
Certificate authority: NEPSI



**CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION**

**SITIIAS**  
Worldwide Access

**CERTIFICATE NO: 2020322316000236**

**APPLICANT:** SHANGHAI CHENZHU INSTRUMENT CO., LTD.  
**ADDRESS:** Room 702, Building 5, No.518, Xinzhuang Road, Songjiang Hi-tech Park, Caohejing Development Park, Shanghai, P.R. China

**MANUFACTURER:** SHANGHAI CHENZHU INSTRUMENT CO., LTD.  
**ADDRESS:** Room 702, Building 5, No.518, Xinzhuang Road, Songjiang Hi-tech Park, Caohejing Development Park, Shanghai, P.R. China

**FACTORY:** SHANGHAI CHENZHU INSTRUMENT CO., LTD.  
**ADDRESS:** Building 2(26#), No. 301, Minqiang Road, Songjiang District, Shanghai, 201612, P.R. China

**PRODUCTNAME:** Isolated Barrier  
**SERIES/SPECIFICATION/MODEL:** GS8535-EX, GS8536-EX, GS8547-EX, GS8547-EX.L  
**STANDARDS:** GB 3836.1-2010, GB 3836.4-2010, GB 3836.8-2014, GB 12476.1-2013, GB 12476.4-2010

This is to certify that the above mentioned product(s) complies with the requirements of implementation rules for compulsory certification (REFNO. CNCA-C23-01:2019).

**Valid from:** December 22, 2021      **Valid until:** June 15, 2025  
**Date of original certification:** June 16, 2020

**The validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.**

This certificate is available through CNCA's website: [www.cnca.gov.cn](http://www.cnca.gov.cn)

**APPROVAL:** Guo Aihua

Shanghai Inspection and Testing Institute of Instruments and Automation Systems Co., Ltd.  
<http://www.sitias.com.cn>      Building 9, 103 Cao Bao Road, Shanghai 200233, China      Tel: +86 21 64510844

**s 0005467**



**Code and standards:**

- GB3836.1-2010 Explosive atmospheres - Part 1: Equipment - General requirements
- GB3836.4-2010 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
- GB 3836.8-2014 Explosive atmospheres - Part 8: Equipment protection by type of protection "n"
- GB12476.1-2013 Electrical apparatus for use in the presence of combustible dust - Part 1: General requirements
- GB12476.4-2010 Electrical apparatus for use in the presence of combustible dust - Part 4: protection by intrinsic safety "iD"

Certificate authority: SITIIAS



High reliability and strong EMC performance  
MTBF>2,000,000h

**SIL**  
**IEC61508**



Could be installed in Zone 2 ①



Ultra-thin structure with low power dissipation design for high packing density

**0.05%F.S.**

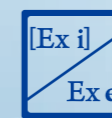
High-precision while low drift



Variety of specifications and models meet the requirement of end user

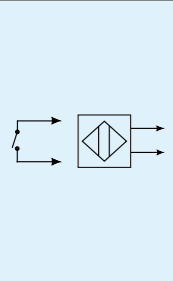
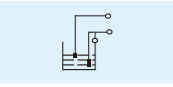
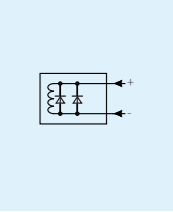
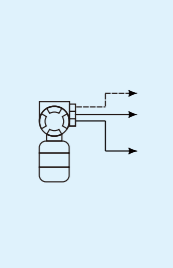
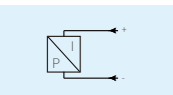
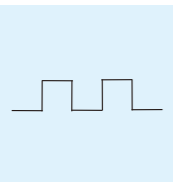
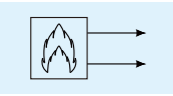
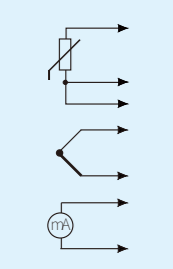


Flexible power mode, support DIN bus power and terminal power

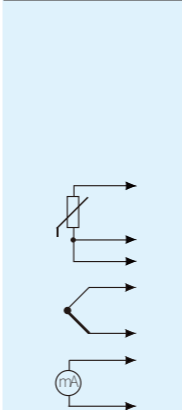
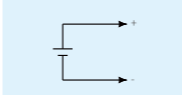
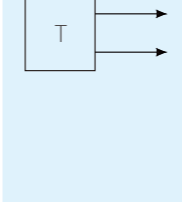
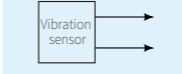
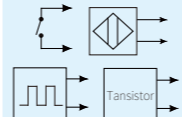


① Note: Please refer to the user manual for the special requirements of the isolated barrier installed in Zone 2.

# Selection Guide

Field instrument	Application	Module No.	Channels	Hazardous Side Signal	Control Side Signal	Features	Page
	Digital Input	GS8512-EX.11	1/1	Dry contact switch proximity switch input	Relay contact output	Independent powered SIL3	11
		GS8512-EX.12	1/2				12
		GS8512-EX.22	2/2				13
		GS8114-EX	4/4	Transistor output	Independent powered	14	
		GS8519-EX.11	1/1			15	
		GS8519-EX.12	1/2			15	
		GS8519-EX.22	2/2			15	
		GS8519-EX.12A	1/2		Independent powered LFD output	15	
	Electrical Level Input	GS8515-EX	1/2	Electrical level sensors Electrode input	Relay contact output	Independent powered LFD	16
	Digital Output	GS8521-EX	1/1	Drive current at 35mA Output voltage ≥ 12V	Dry contact input	Loop powered	17
		GS8523-EX	1/1				Drive current at 45mA Output voltage ≥ 12V
		GS8523-EX.I	1/1		Independent powered	19	
		GS8525-EX	1/1	Drive current at 60mA Output voltage ≥ 12V	Loop powered	20	
	Analog Input	GS8531-EX	1/1	2-wire transmitter input HART	4~20mA output HART	Loop powered	21
		GS8532-EX	2/2				21
		GS8535-EX	1/2	2-wire or 3-wire transmitter Current source input	0/4~20mA output	Independent powered	22
		GS8536-EX	2/2				23
		GS8547-EX	1/1	HART	0/1~5V output HART	Independent powered	24
		GS8549-EX	1/1			Independent powered	25
		GS8347-EX	1/3		4~20mA Relay contact Output	Configurable	26
	Analog Output	GS8567-EX	1/1	0/4~20mA output	0/4~20mA output	Independent powered	27
		GS8568-EX	2/2	HART	HART	SIL2	28
	Pulse Input	GS8552-EX.11	1/1	Voltage pulse, transistor Distribution voltage: 12V	5V/12V Voltage pulse, transistor	Independent powered	29
		GS8552-EX.22	2/2				29
		GS8554-EX.11	1/1	Voltage pulse, transistor Distribution voltage: 24V	12V/24V Voltage pulse, transistor	Independent powered	30
		GS8554-EX.22	2/2				30
		GS8556-EX	3/3	Encoder input	12V Voltage pulse	Independent powered	31
	Fire and Smoke Detector Input	GS8565-EX	1/1	Fire, smoke detector input	0~40mA output	Loop powered	32
		GS8566-EX	2/2				32
	Temperature Converters	GS8572-EX	1/1	2-wire or 3-wire RTD TC input	0~20mA, 4~20mA output	Independent powered Configurable	33
		GS8572-EX.RTD	1/1				33
		GS8572-EX.R	1/1	2-wire or 3-wire RTD input Potentiometer input	0~5V, 1~5V output	Independent powered	34
		GS8572-EX.TC	1/1				34
		GS8572-EX.SIL.RTD	1/1	2-wire or 3-wire RTD input TC input	4~20mA output	Independent powered Configurable	35
		GS8572-EX.SIL.TC	1/1				35
					1~5V output SIL2		

# Selection Guide

Field instrument	Application	Module No.	Channels	Hazardous Side Signal	Control Side Signal	Features	Page
	Temperature Converters	GS8576-EX	1/2	2-wire or 3-wire RTD TC input	0~20mA, 4~20mA output	Independent powered Configurable	36
		GS8576-EX.RTD	1/2				36
		GS8576-EX.TC	1/2	2-wire or 3-wire RTD input TC input	0~5V, 1~5V Output	Independent powered	36
		GS8576-EX.R	1/2				36
		GS8579-EX	2/2	2-wire or 3-wire RTD TC input	0~5V, 1~5V Output	Independent powered	36
		GS8579-EX.RTD	2/2				36
		GS8579-EX.TC	2/2	2-wire or 3-wire RTD input TC input	0~5V, 1~5V Output	Independent powered	36
		GS8579-EX.R	2/2				36
		GS8577-EX	1/1	2-wire or 3-wire RTD TC input	4~20mA output	Loop powered Configurable	37
		GS8577-EX.RTD	1/1				37
		GS8577-EX.TC	1/1	2-wire or 3-wire RTD input TC input	0~5V, 1~5V Output	Independent powered	37
		GS8578-EX	2/2				37
		GS8578-EX.RTD	2/2	2-wire or 3-wire RTD input TC input	0~5V, 1~5V Output	Independent powered	37
		GS8578-EX.TC	2/2				37
		GS8074-EX	1/1	60Ω~4000Ω	60Ω~4000Ω	1:1 input and output	38
GS8081-EX	1/1	-5mV~+60mV	-5mV~+60mV	Independent powered	39		
	Voltage Input	GS8589-EX.11	1/1	0~5V, 1~5V, 0~10V, 2~10V Distribution power: 10V/20mA, 15V/20mA, none	0~5V, 1~5V, 0~10V, 2~10V	Independent powered	40
		GS8589-EX.22	2/2				40
	Communication Input	GS8592-EX.3	1/1	RS-232	RS-232	Independent powered	41
		GS8595-EX.3	1/1				41
		GS8599-EX.3	1/1	RS-485 half duplex	RS-485 half duplex	Independent powered	42
		GS8591-EX.3	1/1				42
		GS8593-EX.3	1/1	RS-485 half duplex	RS-485 full duplex	Independent powered	43
		GS8596-EX.3	1/1				43
		GS8594-EX.3	1/1	RS-485 full duplex	RS-232	Independent powered	44
		GS8597-EX.3	1/1				44
		GS8598-EX.3	1/1	RS-485 half duplex Distribution power: 9V/140mA	RS-485 full duplex	Independent powered	45
		GS8593B-EX	1/1				45
		GS8590-EX.3	1/1	CAN	CAN	Independent powered	50
			Vibration Tansducer Input	GS8557-EX	1/1	-20V~-0.5V -10V~+10V	-20V~-0.5V -10V~+10V
GS8558-EX	1/1			52			
	Frequency Converter	GS8555-EX	1/1	Dry contact/proximity switch Voltage pulse Transistor input	0~20mA, 4~20mA output	Independent powered Configurable	54
		GS8355-EX	1/3				54
					0~5V, 1~5V SPST relay		55

1/1: GS8512-EX.11  
1/2: GS8512-EX.12  
2/2: GS8512-EX.22

Digital input, relay output isolated barrier, transfers 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; Output energized)  
≤30mA(GS8512-EX.11)  
≤40mA(GS8512-EX.12 / GS8512-EX.22)

### 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 disabled

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, 680Ω in series with switch. See Switch (II), K2 and K4 are set to ON state.

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

**EMC:** According to IEC 61326-1(GB/T 18268), IEC 61326-3-1

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 100g

**Suitable Location:** Mounting in safe area or zone2(for ec protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 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.)

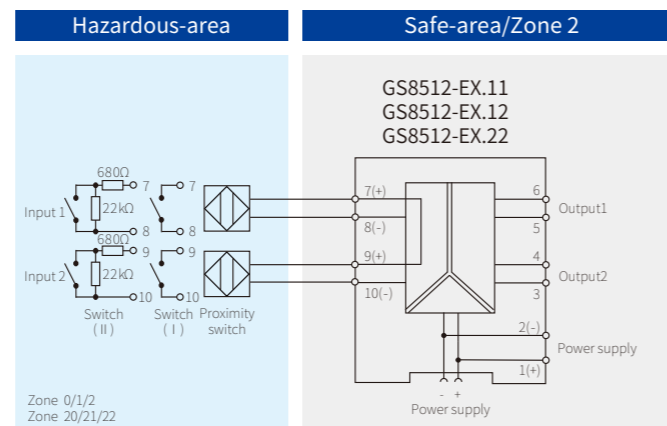
**SIL3**  
IEC61508



Dimensions: 118.9mm × 106.0mm × 12.5mm



## Connection



Note: a) GS8512-EX.11 only contains input1, output1;  
b) GS8512-EX.12 only contains input1, output1, output2;  
c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

Ex nA nC II C T4 Gc

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(7, 8; 9, 10 terminals):**

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

I: C<sub>o</sub>=95.0μF, L<sub>o</sub>=2380mH

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

3/3: GS8512-EX.33

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

## Specification

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

**Current Consumption:** ≤65mA(Supply voltage: 24V; Output energized)

### 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), K2(OUT2), K3(OUT3)
ON	Inverted phase
OFF	Normal phase

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**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.

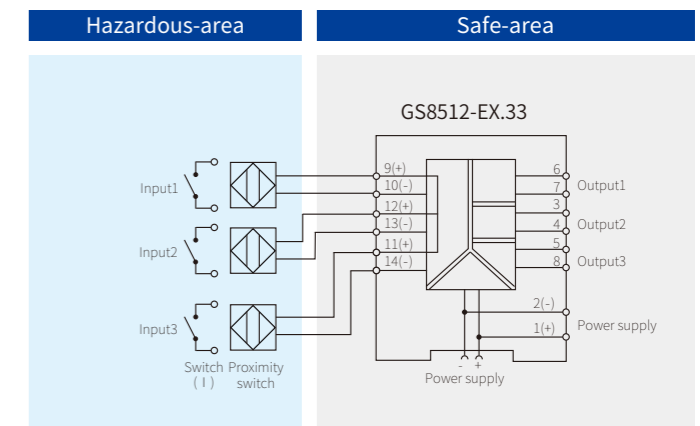
**Suitable Field Apparatus:** Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch, temperature switches, liquid level switches, etc.)



Dimensions: 118.9mm × 106.0mm × 17.5mm



## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9, 10; 12, 13; 11, 14 terminals):**

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]



## 4/4: GS8114-EX

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

### Specification

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

**Current Consumption:**  $\leq 75\text{mA}$ (Supply voltage: 24V; Output energized)

**Safe-area Relay Output:**

Response Time:  $\leq 20\text{ms}$

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:  $\approx 8\text{V}$

Short-circuit Current:  $\approx 8\text{mA}$

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

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

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

**Function of the DIP Switch:**

Sta.	K1(OUT1)	K2(OUT2)	K3(OUT3)	K4(OUT4)
ON	Corresponding channel inverted phase			
OFF	Corresponding channel normal phase			

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

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

**Ambient Temperature:**  $-20^{\circ}\text{C}\sim+60^{\circ}\text{C}$

**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. 150g

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

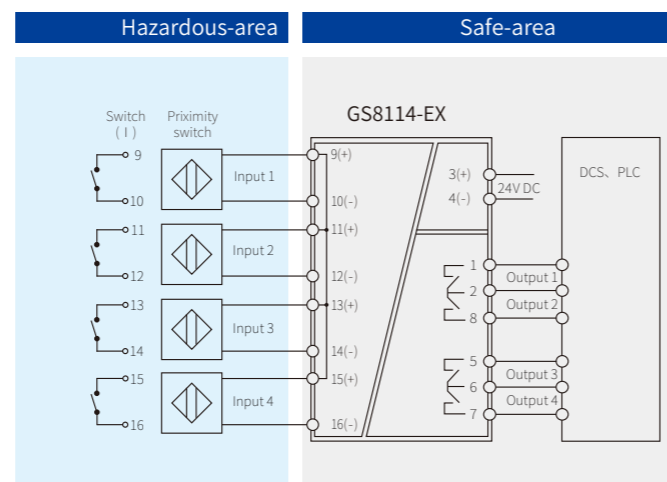
**Suitable Field Apparatus:** Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch, temperature switches, liquid level switches, etc.)



Dimensions: 114.5mm×99.0mm×22.5mm



### Connection



### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(9、10; 11、12; 13、14; 15、16 terminals):**

$U_o=10.5\text{V}$ ,  $I_o=14\text{mA}$ ,  $P_o=37\text{mW}$

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

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

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

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

## 1/1: GS8519-EX.11

## 1/2: GS8519-EX.12

## 2/2: GS8519-EX.22

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)

$\leq 40\text{mA}$ (GS8519-EX.11)

$\leq 60\text{mA}$ (GS8519-EX.12 / GS8519-EX.22)

**Safe-area Output:**

Digital Output:  $4.5\text{V}\leq V_H\leq 12\text{V}$ ,  $V_L\leq 0.5\text{V}$

Drive current  $\leq 10\text{mA}$ , Load resistance  $\geq 1\text{k}\Omega$

Transistor Collector Output:

$V_H=V_{CC}$ ;  $V_L\leq 2.5\text{V}$ (On-state current=10mA,  $V_{CC}=24\text{V}$ )

Max.Rated Current  $\leq 40\text{mA}$ , Load resistance:  $2\text{k}\Omega\leq R_L\leq 20\text{k}\Omega$

Transistor Emitter Output:

$V_H\geq V_{CC}-2.5\text{V}$ ;  $V_L\leq 0.5\text{V}$ (On-state current=10mA,  $V_{CC}=24\text{V}$ )

Max.Rated Current  $\leq 40\text{mA}$ , Load resistance:  $2\text{k}\Omega\leq R_L\leq 10\text{k}\Omega$

Note: "Vcc" refers to the supply voltage at the output,  $V_{CC}\leq 40\text{V}$

**Hazardous-area Input:**

Signal: Dry contact or NAMUR proximity switch input, frequency  $\leq 5\text{kHz}$

Open-circuit Voltage:  $\approx 8\text{V}$

Short-circuit Current:  $\approx 8\text{mA}$

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

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

If field switch closes or input loop current  $< 1.2\text{mA}$ , 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 state, without line fault (breakage, short-circuit) detection. When using line fault (breakage, short-circuit) detection function, resistances must be fitted:  $22\text{k}\Omega$  in parallel with switch,  $680\Omega$  in series with switch. See Switch (II), K2 and K4 are set to ON state.

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

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

**Ambient Temperature:**  $-20^{\circ}\text{C}\sim+60^{\circ}\text{C}$

**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  $\geq 100\text{M}\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact.

**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.

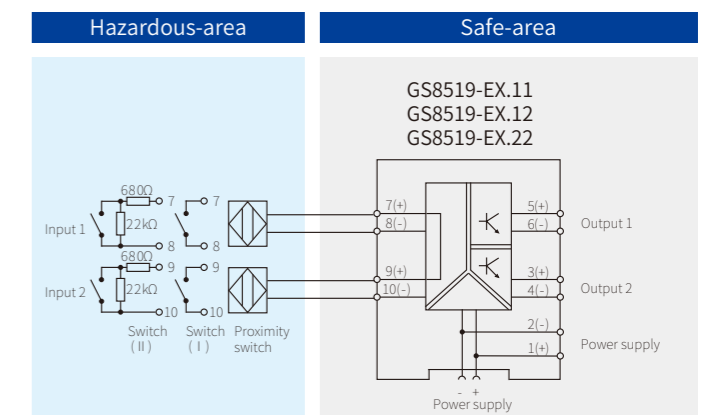
**Suitable Field Apparatus:** Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch, temperature switches, liquid level switches, etc.)



Dimensions: 118.9mm×106.0mm×12.5mm

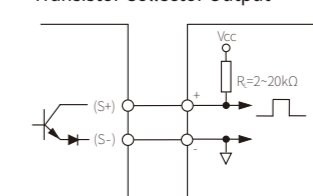


### Connection

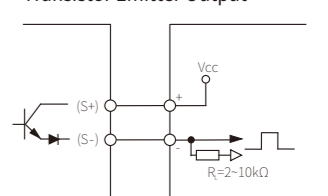


Note: a) GS8519-EX.11 only contains input2 and output2;  
b) GS8519-EX.12 only contains input1, output1, output2;  
c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

**Application 1:**  
Transistor Collector Output



**Application 2:**  
Transistor Emitter Output



### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(7、8; 9、10 terminals):**

$U_o=10.5\text{V}$ ,  $I_o=14\text{mA}$ ,  $P_o=37\text{mW}$

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

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

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

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



# Digital Output(Loop Powered)

1/1: GS8521-EX

Digital output isolated barriers, control the 12V/35mA 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 allow the control switch to directly connect to the either side of 24V DC power supply loop circuit.

## Specification

**Loop Supply Voltage (Ue):** 20~35V DC

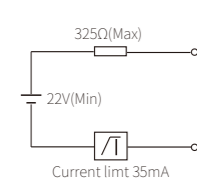
**Current Consumption:** ≤65mA(Supply voltage: 24V,output: 35mA)

**Hazardous-area Output:**

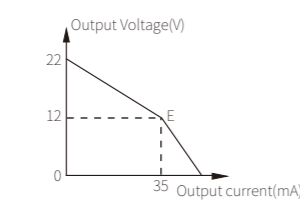
Open-circuit Voltage: 22V~24V

Output Voltage at 35mA: ≥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)

**Ambient Temperature:** -20°C~+60°C

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 100g

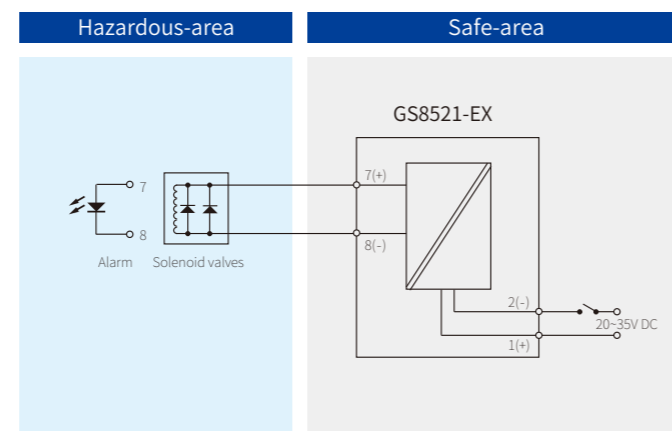
**Suitable Location:** Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 III C.

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



Dimensions: 118.9mm×106.0mm×12.5mm

## Connection



## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(7、8 terminals):**

U<sub>0</sub>=28V, I<sub>0</sub>=93mA, P<sub>0</sub>=651mW

II C: C<sub>0</sub>=0.083μF, L<sub>0</sub>=4.2mH

\*II B: C<sub>0</sub>=0.65μF, L<sub>0</sub>=12.6mH

II A: C<sub>0</sub>=2.15μF, L<sub>0</sub>=33.6mH

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

# Digital Output(Loop Powered)

1/1: GS8523-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(Ue):** 20~35V DC

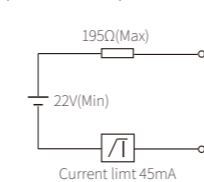
**Current Consumption:** ≤75mA(Supply voltage: 24V; output: 45mA)

**Hazardous-area Output:**

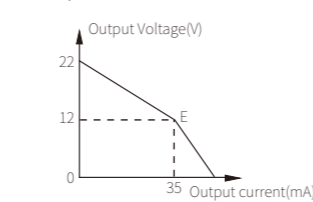
Open-circuit Voltage: 22V~24V

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), IEC 61326-3-1

**Ambient Temperature:** -20°C~+60°C

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 100g

**Suitable Location:** Mounting in safe area or zone 2 (for EC protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 III C.

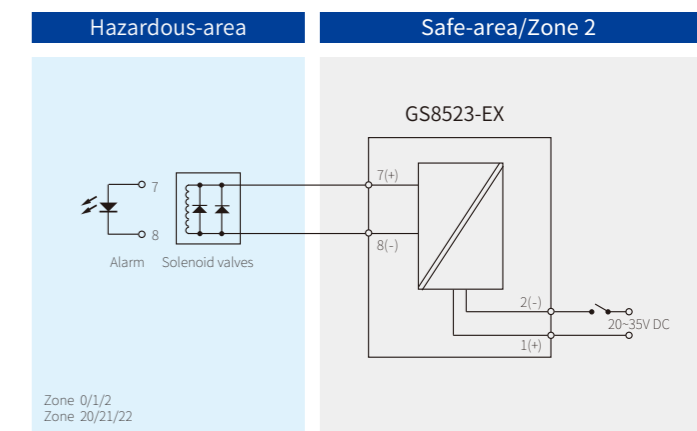
**Suitable Field Apparatus:** solenoid valves, LED.

SIL3  
IEC61508



Dimensions: 118.9mm×106.0mm×12.5mm

## Connection



## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

Ex nA IIC T4 Gc

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(7、8 terminals):**

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>=1.5mH

\*II B: C<sub>0</sub>=0.84μF, L<sub>0</sub>=4.5mH

II A: C<sub>0</sub>=2.97μF, L<sub>0</sub>=12.0mH

I: C<sub>0</sub>=4.87μF, L<sub>0</sub>=23mH

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

# Digital Output

1/1: GS8523-EX.I

Digital output isolated barrier, with 12V/45mA output to hazardous area, is controlled by switches and logic signal in the safe 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. This product needs independent power supply and galvanic isolation among power supply, input and output.

## Specification

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

**Current Consumption:** ≤80mA(Supply voltage: 24V; output: 45mA)

**Safe-area Input:**

If input switch or transistor is close, power the devices located in hazardous area.

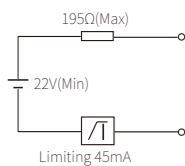
If input switch or transistor is open, stop powering the devices located in hazardous area.

**Hazardous-area Output:**

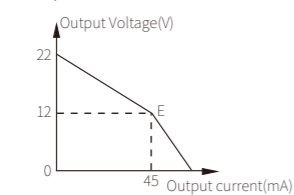
Open-circuit Voltage: 22V~24V

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)

**Ambient Temperature:** -20°C~+60°C

**Dielectric Strength:**

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

Between power supply part and input part ≥500V AC

**Insulation Resistance:**

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

Between power supply part and input part ≥100MΩ

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 100g

**Suitable Location:** Mounting in safe area or zone2(for ec protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 IIIC.

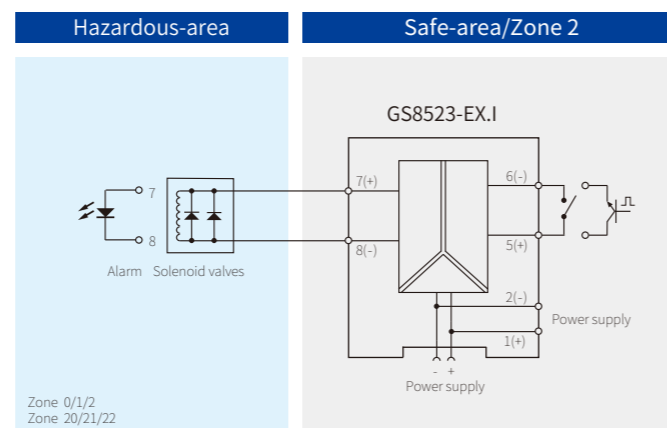
**Suitable Field Apparatus:** solenoid valves, LED.



Dimensions: 118.9mm×106.0mm×12.5mm



## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

Ex nA II C T4 Gc

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(7、 8 terminals):**

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>=1.5mH

\* II B: C<sub>0</sub>=0.84μF, L<sub>0</sub>=4.5mH

II A: C<sub>0</sub>=2.97μF, L<sub>0</sub>=12.0mH

I: C<sub>0</sub>=4.87μF, L<sub>0</sub>=23mH

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

# Digital Output(Loop Powered)

1/1: GS8525-EX

Digital output isolated barriers, control the 12V/60mA 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 allow the control switch to directly connect to the either side of 24V DC power supply loop circuit.

## Specification

**Loop Supply Voltage (Ue):** 20~35V DC

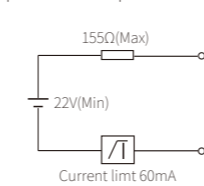
**Current Consumption:** ≤95mA(Supply voltage: 24V; output: 60mA)

**Hazardous-area Output:**

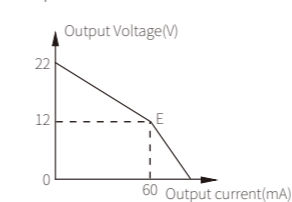
Open-circuit Voltage: 22V~24V

Output Voltage at 60mA: ≥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)

**Ambient Temperature:** -20°C~+60°C

**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

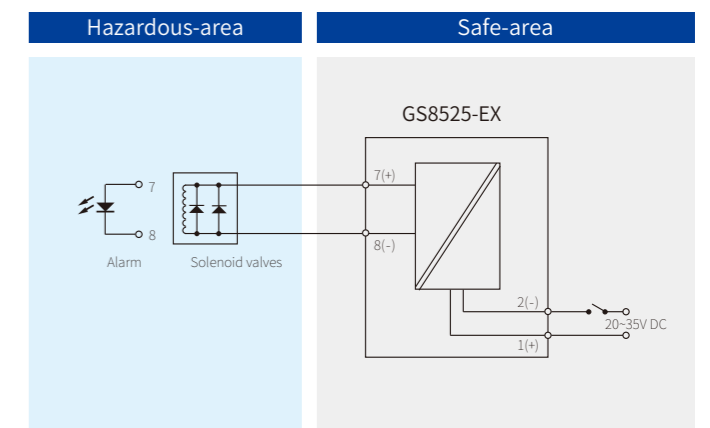
**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 100g

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

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

## Connection



## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

**Ex Marking:** [Ex ia Ga] II B

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(7、 8 terminals):**

U<sub>0</sub>=25V, I<sub>0</sub>=185mA, P<sub>0</sub>=1157mW

\* II B: C<sub>0</sub>=0.84μF, L<sub>0</sub>=4.5mH

II A: C<sub>0</sub>=1.36μF, L<sub>0</sub>=10.56mH

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



Dimensions: 118.9mm×106.0mm×12.5mm



# Analog Input(Loop Powered)

1/1: GS8531-EX  
2/2: GS8532-EX

These products can work as an AI isolated barrier to provide a separate power to the transmitter located in the hazardous area and transfer the current from hazardous area to safe area. It can also work as an AO isolated barrier 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.

## Specification

**Loop Supply Voltage (Ue):** 20~30V DC

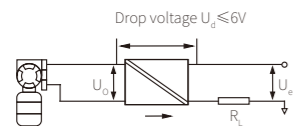
**Application 1(AI):**

**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.

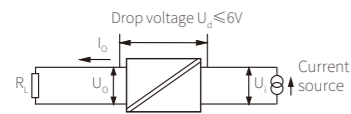
**Application 2(AO):**

**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  $\geq 100M\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact.

**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:**

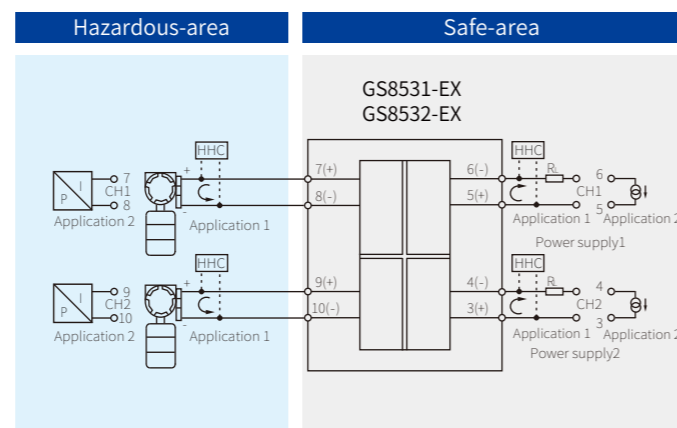
2-wire (HART) transmitter(Application 1)

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



Dimensions: 118.9mm×106.0mm×12.5mm

## Connection



Note: a) GS8531-EX only contains CH1;  
b) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;  
c) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex ibD]

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

**Intrinsic Safety Parameters(7、8、9、10 terminals):**

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

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 ibD]

# Analog Input

1/2: GS8535-EX

2-wire (HART) transmitter, 3-wire transmitter, current source input isolated barrier, provide isolated power supplies for transmitters which located in hazardous area. Transfer 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:**  $\leq 75mA$ (Supply voltage: 24V; output: 20mA)

**Safe-area Output:**

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

Load Resistance:  $R_L \leq 300\Omega$

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

Voltage: 0/1~5V

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

Output loop powered voltage  $U_e$ : 12~30V DC

Note: Customers need specify current(active or passive) or voltage output when ordering.

**Hazardous-area Input:**

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

Distribution:

Open-circuit Voltage:  $\leq 28V$

Voltage at 20mA:  $\geq 15.5V$

Normal working current:  $\leq 25mA$

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

**Temperature Drift:** 0.005%F.S./°C

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

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

**EMC:** According to IEC 61326-1(GB/T 18268), IEC 61326-3-1

**Ambient Temperature:** -20°C~+60°C

**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  $\geq 100M\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 110g

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

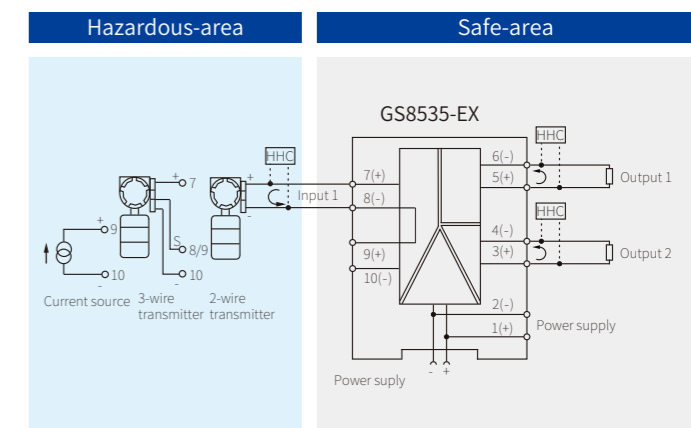
**Suitable Field Apparatus:** 2-wire (HART) transmitter, 3-wire transmitter, current source

SIL2  
IEC61508



Dimensions: 118.9mm×106.0mm×12.5mm

## Connection



Note: a) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;

b) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate;

c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(7、8/9、10 terminals):**

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

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]

**(9、10 terminals):**

$U_o=3.5V, C_o=100\mu F$

$U_i=20V, I_i=110mA$

## 2/2: GS8536-EX

2-wire (HART) transmitter, 3-wire transmitter, current source input isolated barrier, provide isolated power supplies for transmitters which located in hazardous area. Transfer 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:** ≤100mA(Supply voltage: 24V; output: 20mA)

#### Safe-area Output:

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

Load Resistance:  $R_L \leq 300\Omega$

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

Voltage: 0/1~5V

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

Output loop powered voltage  $U_e$ : 12~30V DC

Load Resistance:  $R_L \leq (U_e - 5)/0.02$

Note: Customers need specify current(active or passive) 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), IEC 61326-3-1

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 135g

**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.

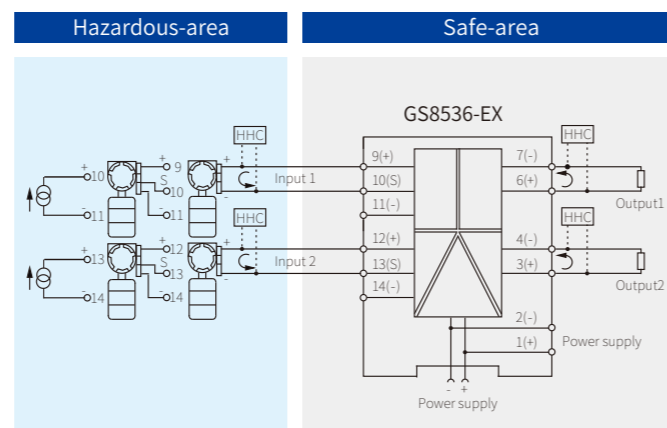
**SIL2**  
IEC61508



Dimensions: 118.9mm×106.0mm×17.5mm



### Connection



Note: a) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time.;

b) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate.

c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(9、10、11; 12、13、14 terminals):**

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

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]

(10、11; 13、14 terminals):

$U_o=1.2V, C_o=100\mu F$

$U_i=20V, I_i=110mA$

## 1/1: GS8547-EX

2-wire (HART) transmitter, 3-wire transmitter, current source input isolated barrier, provide isolated power supplies for transmitters which located in hazardous area. Transfer 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:** ≤65mA(Supply voltage: 24V; output: 20mA)

#### Safe-area Output:

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

Load Resistance:  $R_L \leq 550\Omega$

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

Voltage: 0/1~5V

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

Note: Customers need specify current output 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), IEC 61326-3-1

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 110g

**Suitable Location:** Mounting in safe area or zone2(for ec protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 IIIC.

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

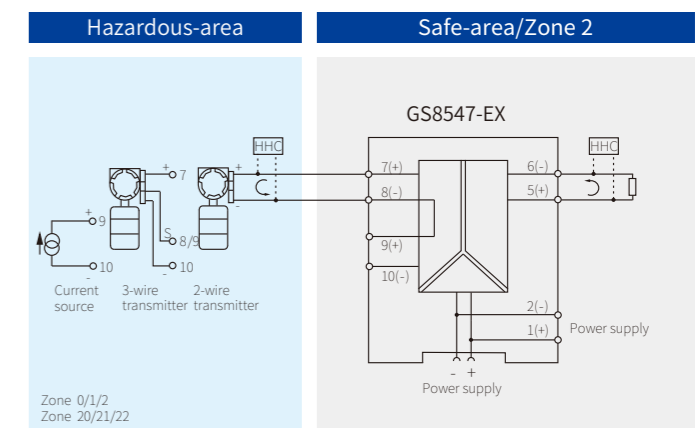
**SIL3**  
IEC61508



Dimensions: 118.9mm×106.0mm×12.5mm



### Connection



Note: a) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time.;

b) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate.

c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(7、8 / 9、10 terminals):**

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

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:  $C_o=2.15\mu F, L_o=32.8mH$

I:  $C_o=3.76\mu F, L_o=53.9mH$

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

## 1/1: GS8549-EX

2-wire (HART) transmitter, 3-wire transmitter, current source input isolated barrier, 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:** ≤70mA(Supply voltage: 24V; output: 20mA)

#### Safe-area Output:

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

Load Resistance:  $R_L \leq 550\Omega$

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

Voltage: 0/1~5V

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

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

#### Hazardous-area Input:

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

Distribution:

Open-circuit Voltage: ≤28V

Voltage at 20mA: ≥19V

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)

**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

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 110g

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

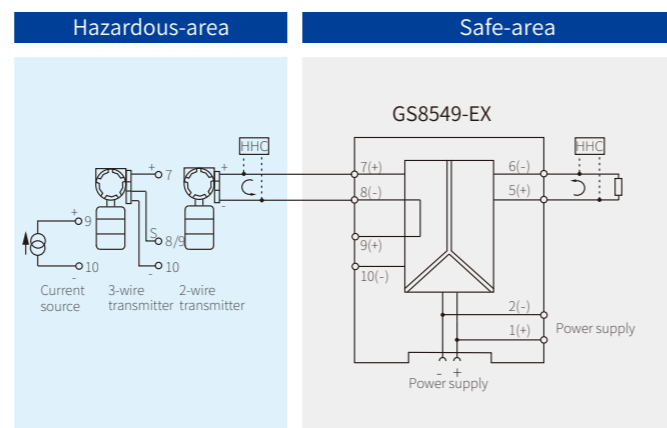
**Suitable Field Apparatus:** 2-wire (HART) transmitter, 3-wire transmitter, current source



Dimensions: 118.9mm×106.0mm×12.5mm



### Connection



Note: a) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time.;

b) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate.

c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

**Ex Marking:** [Ex ia Ga] II B

[Ex iaD]

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

**Intrinsic Safety Parameters(7、 8 / 9、 10 terminals):**

$U_o=28V, I_o=187mA, P_o=1310mW$

\*II B:  $C_o=0.65\mu F, L_o=4.5mH$

II A:  $C_o=2.15\mu F, L_o=12.0mH$

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

## 1/3: GS8347-EX

Analog input isolated barrier provides isolated power supplies for transmitters which located in hazardous area and transfer 4~20mA signal from hazardous area to safe area. This product controls two relay outputs to monitor the input. It also has a 4~20mA current or 1~5V voltage output and a 5-digit LCD display values. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:** ≤100mA(Supply voltage: 24V; Output: 20mA;

Relay: energized)

#### Safe-area Output:

Current: 4~20mA Load resistance:  $R_L \leq 300\Omega$

Voltage: 1~5V Load resistance:  $R_L \geq 35k\Omega$

(Note: Customers need to specify current output or voltage output when ordering)

#### Relay characteristics:

Response Time: ≤20ms

Contact loading: 250V AC,2A or 30V DC,2A

Load Type: resistive load

#### Hazardous-area Input:

Current: 4~20mA

Distribution:

Open-circuit Voltage: ≤26V

Voltage at 20mA: ≥16V

**Transmission Accuracy:** 0.1%F.S.

**Temperature Drift:** 0.005%F.S./°C

**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. 350g

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

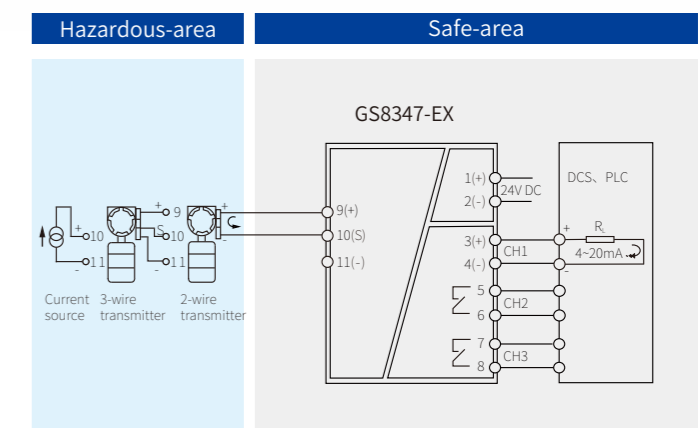
**Suitable Field Apparatus:** 2-wire or 3-wire transmitter, current source signal



Dimensions: 107.5mm×75.0mm×45mm



### Connection



### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(9、 10、 11 terminals):**

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

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]

## 1/1: GS8567-EX

Analog output isolated barrier transfer the 4~20mA signal from safe area to hazardous area to drive executive devices. 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:**  $\leq 55\text{mA}$ (Supply voltage: 24V; output: 20mA)

**Safe-area Input:**

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

Voltage drop:  $\leq 6\text{V}$

**Hazardous-area Output:**

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

Load Resistance:  $R_L \leq 800\Omega$

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

**Output Accuracy:** 0.1%F.S.

**Temperature Drift:** 0.005%F.S./°C

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

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

**Output short-circuit Alarm:**

When output load  $\leq 80\Omega$ , short-circuit alarm active, and output 0mA

**EMC:** According to IEC 61326-1(GB/T 18268), IEC 61326-3-1

**Ambient Temperature:** -20°C~+60°C

**Dielectric Strength:**

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

Between power supply part and input 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 input part  $\geq 100\text{M}\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 100g

**Suitable Location:** Mounting in safe area or zone2(for ec protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 III C.

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

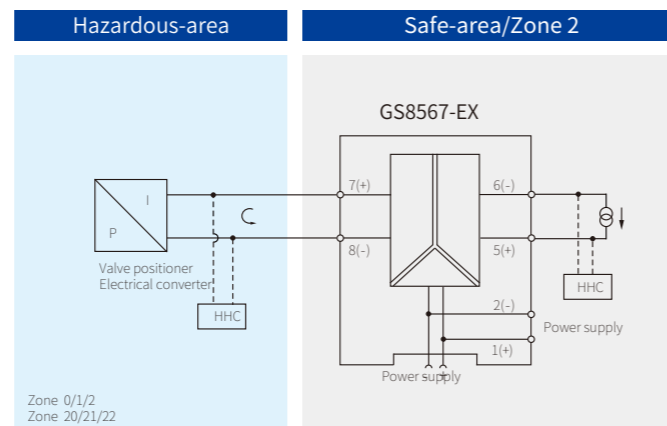
**SIL2**  
IEC61508



Dimensions: 118.9mm × 106.0mm × 12.5mm



### Connection



Note: a) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;

b) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate.

c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

Ex nA II C T4 Gc

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

**Intrinsic Safety Parameters(7、 8 terminals):**

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

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:  $C_o=2.15\mu\text{F}$ ,  $L_o=32.8\text{mH}$

I:  $C_o=3.76\mu\text{F}$ ,  $L_o=53.9\text{mH}$

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

## 2/2: GS8568-EX

Analog output isolated barrier transfer the 4~20mA signal from safe area to hazardous area to drive executive devices. 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:**  $\leq 80\text{mA}$ (Supply voltage: 24V; output: 20mA)

**Safe-area Input:**

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

Voltage drop:  $\leq 6\text{V}$

**Hazardous-area Output:**

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

Load Resistance:  $R_L \leq 800\Omega$

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

**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), IEC 61326-3-1

**Ambient Temperature:** -20°C~+60°C

**Dielectric Strength:**

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

Between power supply part and input 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 input part  $\geq 100\text{M}\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact.

**Weight:** Approx. 135g

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

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

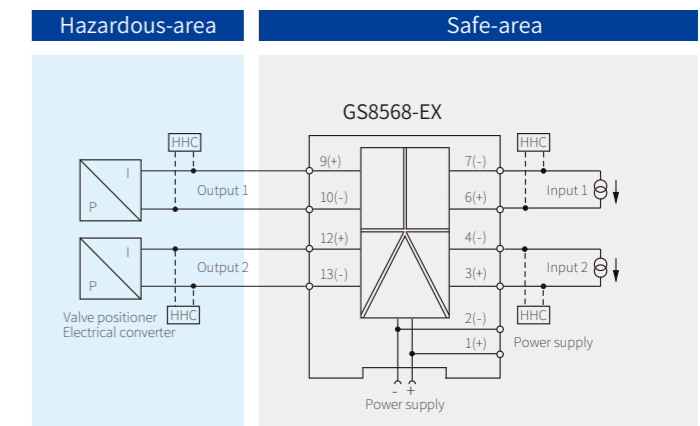
**SIL2**  
IEC61508



Dimensions: 118.9mm × 106.0mm × 17.5mm



### Connection



Note: a) Can't use HHC (HART Hand Held Communicator) in hazardous area and safe area at the same time;

b) HHC(HART Hand Held Communicator)used in the hazardous area must get the explosion-proof certificate.

c) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power supply accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(9、 10; 12、 13 terminals):**

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

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]





# Pulse Input

3/3: GS8556-EX

Pulse input and output isolated barriers transfer the voltage (V type), the complementary (F type) and the open collector (C type) output from the encoder in the hazardous area to safe area. Meanwhile, this product supplies power to the encoder in hazardous area. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

- Supply Voltage:** 20~35V DC
- Current Consumption:** ≤120mA (Supply voltage: 24V; Output: 12V voltage pulse; distribution voltage: 24V)
- Safe-area Output:**
  - Transistor Output: Supply voltage  $V_{cc} \leq 40V$ , Rated current  $\leq 40mA$
  - Transistor Collector Output:
    - $V_H = V_{cc}$ ;  $V_L \leq 2.5V$  (On-state current = 10mA,  $V_{cc} = 24V$ )
    - Load Resistance:  $2k\Omega \leq R_L \leq 20k\Omega$
  - Transistor Emitter Output:
    - $V_H \geq V_{cc} - 2.5V$ ;  $V_L \leq 0.5V$  (On-state current = 10mA,  $V_{cc} = 24V$ )
    - Load Resistance:  $2k\Omega \leq R_L \leq 20k\Omega$
- Voltage pulse Output:**
  - High Voltage:  $9V \leq V_H \leq 12V$
  - Low Voltage:  $V_L \leq 0.5V$
  - Load Resistance:  $R_L \geq 1k\Omega$ , Rated current  $\leq 10mA$

- Hazardous-area Input:**
  - Voltage pulse Input: High voltage  $V_H \geq 4V$ ; Low voltage  $V_L \leq 1V$
  - Frequency at voltage pulse output  $\leq 50kHz$
  - Frequency at transistor output  $\leq 20kHz$
- Transistor Input: NPN/PNP
  - Frequency at voltage pulse output  $\leq 20kHz$
  - Frequency at transistor output  $\leq 10kHz$
- (Input signal  $V_H \leq 12V$ , Duty ratio  $\geq 30\%$ )
- The input signal type can be set by the DIP switches:

Sta.	Input 1		Input 2		Input 3	
	K1	K2	K3	K4	K5	K6
Voltage pulse Input	OFF	OFF	OFF	OFF	OFF	OFF
Emitter (PNP) Input	ON	OFF	ON	OFF	ON	OFF
Collector (NPN) Input	OFF	ON	OFF	ON	OFF	ON

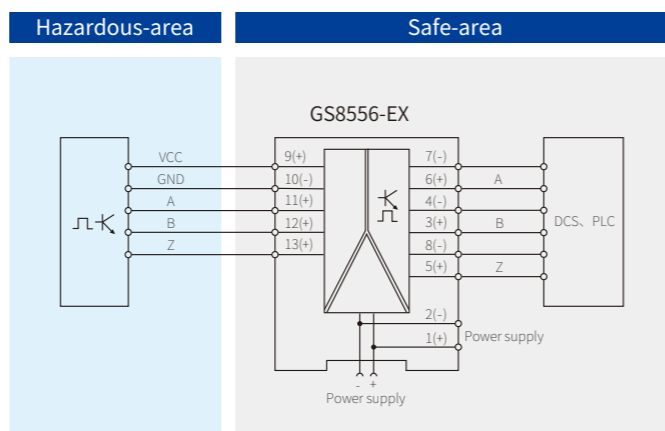
Distribution power: Open-voltage:  $\leq 26V$ ; Rated voltage:  $\geq 15.5V$  at 20mA  
 Note: a) K1 and K2 cannot be ON at the same time;  
 b) K3 and K4 cannot be ON at the same time;  
 c) K5 and K6 cannot be ON at the same time.

- Power Supply Protection:** Power supply reverse protection
- EMC:** According to IEC 61326-1(GB/T 18268)
- Ambient Temperature:**  $-20^\circ C \sim +60^\circ C$
- Dielectric Strength:**
  - Between non-intrinsically safe part and intrinsically safe part  $\geq 2500V$  AC
  - Between power supply part and output part  $\geq 1500V$  AC
- Structure:** GS8500 range structure customized by Phoenix Contact
- 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 pulse signal source,encoder



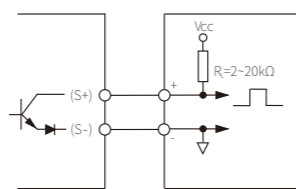
Dimensions: 118.9mm × 106.0mm × 17.5mm

## Connection

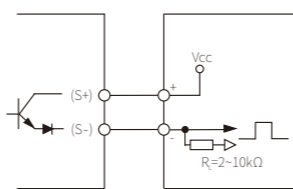


Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus accessories in additional.

### Application 1: Transistor Collector Output



### Application 2: Transistor Emitter Output



## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)  
**Ex Marking:** [Ex ia Ga] II C  
 [Ex iaD]

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

**Intrinsic Safety Parameters(9、10、11 terminals):**

$U_o = 28V, I_o = 111mA, P_o = 777mW$

II C:  $C_o = 0.083\mu F, L_o = 2.5mH$

\*II B:  $C_o = 0.65\mu F, L_o = 7.5mH$

II A:  $C_o = 2.15\mu F, L_o = 20.0mH$

**(11、10; 12、10; 13、10 terminals):**

$U_o = 13.65V, I_o = 7.5mA, P_o = 26mW$

II C:  $C_o = 0.7\mu F, L_o = 100mH$

\*II B:  $C_o = 5.0\mu F, L_o = 300mH$

II A:  $C_o = 18.1\mu F, L_o = 800mH$

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

# Fire and Smoke Detector Input(Loop Powered)

1/1: GS8565-EX  
 2/2: GS8566-EX

Fire detector input isolated barriers provide the fire and smoke detectors in hazardous area isolated power and transfer 0~40mA signal generated by detectors in the hazardous area to the safe area. This product acts as a smoke alarm and it is suitable for loop-powered DCS/PLC system.

## Specification

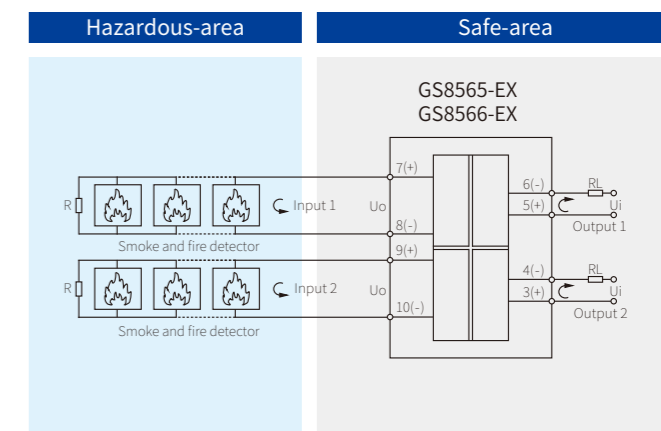
- Loop Supply Voltage ( $U_i$ ):** 20~30V DC
- Safe-area output:**
  - Current: 0~40mA
- Hazardous-area input:**
  - Current: 0~40mA
  - Distribution Voltage:
    - $U_o \geq U_i - (280 + R_i)I - 6(U_i \leq 24V)$
    - $U_o \geq 18 - (280 + R_i)I (U_i > 24V)$
  - Short-circuit Current:  $\leq 65mA$  (Supply voltage: 24V)
- Transmission Accuracy:** 0.2%F.S.
- Temperature Drift:** 0.01%F.S./ $^\circ C$  ( $0^\circ C \sim 60^\circ C$ )  
 0.02%F.S./ $^\circ C$  ( $-20^\circ C \sim 0^\circ C$ )
- Response Time(0~90%):**  $\leq 2ms$
- Power Supply Protection:** Power supply reverse protection
- EMC:** According to IEC 61326-1(GB/T 18268)
- Ambient Temperature:**  $-20^\circ C \sim +60^\circ C$
- Dielectric Strength:**
  - Between non-intrinsically safe part and intrinsically safe part  $\geq 2500V$  AC
  - Between channels  $\geq 1500V$  AC
- Insulation Resistance:**
  - Between non-intrinsically safe part and intrinsically safe part  $\geq 100M\Omega$
  - Between channels  $\geq 100M\Omega$

- Structure:** GS8500 range structure customized by Phoenix Contact
- 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:** Smoke, fire detector



Dimensions: 118.9mm × 106.0mm × 12.5mm

## Connection



Note: GS8565-EX only contains input1, output1;

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)  
**Ex Marking:** [Ex ia Ga] II C  
 [Ex iaD]

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

**Intrinsic Safety Parameters(7、8; 9、10 terminals):**

$U_o = 25.2V, I_o = 93mA, P_o = 586mW$

II C:  $C_o = 0.107\mu F, L_o = 4.2mH$

\*II B:  $C_o = 0.82\mu F, L_o = 12.6mH$

II A:  $C_o = 2.9\mu F, L_o = 33.6mH$

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

1/1: GS8572-EX(RTD, TC input)  
GS8572-EX.RTD(RTD input)  
GS8572-EX.R(Potentiometer input)

Temperature input isolated barriers, converter potentiometer/RTD/TC 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:**  $\leq$ 40mA(Supply voltage: 24V; Output: 20mA)
- Safe-area Output:**
  - Output Current: 0~20mA/4~20mA; Load resistance:  $R_L \leq 300\Omega$
  - Output Voltage: 0~5V/1~5V; Load resistance:  $R_L \geq 35k\Omega$
- (Customers need specify current output or voltage output when ordering)
- Hazardous-area Input:** Input Signal: please see the table 'Input Signal and Range'.
- Temperature Drift:** 0.01%F.S./ $^{\circ}C$
- CJC:**  $\pm 1^{\circ}C$ (Compensation range:  $-20^{\circ}C \sim +60^{\circ}C$ )
- Response Time(0~90%):**  $\leq 1s$
- Power Supply Protection:** Power supply reverse protection
- EMC:** According to IEC 61326-1(GB/T 18268)
- Ambient Temperature:**  $-20^{\circ}C \sim +60^{\circ}C$
- 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  $\geq 100M\Omega$
- Structure:** GS8500 range structure customized by Phoenix Contact
- Weight:** Approx.150g
- Suitable Location:** Mounting in safe area or zone2(for ec protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 IIIIC.
- Suitable Field Apparatus:** 2-wire or 3-wire RTD, TC, Potentiometer

## Input Signal and Range

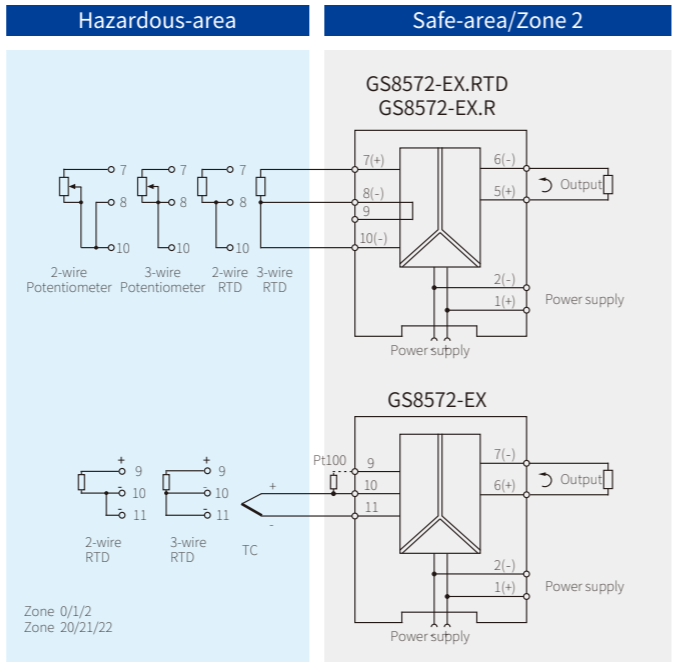
Type	Range	Min.Span	Accuracy
TC	T	$-200^{\circ}C \sim +400^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	E	$-200^{\circ}C \sim +900^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	J	$-200^{\circ}C \sim +1200^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	K	$-200^{\circ}C \sim +1372^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	N	$-200^{\circ}C \sim +1300^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	R	$-40^{\circ}C \sim +1768^{\circ}C$	$500^{\circ}C$ / 1.5% / 0.1%
	S	$-40^{\circ}C \sim +1768^{\circ}C$	$500^{\circ}C$ / 1.5% / 0.1%
RTD	B	$+320^{\circ}C \sim +1820^{\circ}C$	$500^{\circ}C$ / 1.5% / 0.1%
	Pt100	$-200^{\circ}C \sim +850^{\circ}C$	$20^{\circ}C$ / 0.2% / 0.1%
	Cu50	$-50^{\circ}C \sim +150^{\circ}C$	$20^{\circ}C$ / 0.2% / 0.1%
Potentiometer		$0k\Omega \sim 5k\Omega$	0.1%
		$0k\Omega \sim 10k\Omega$	0.1%

- Note: 1、The “%” of conversion accuracy is relative to its range. Take the larger value between the range error and the absolute error when applying.
- 2、Allow a maximum wire resistance of 50 $\Omega$ /line for RTD input(3-wire).
- 3、When the thermocouple is input, the conversion accuracy does not include the CJC. For every 100 $\Omega$  increase in the compensation wire, the cold junction error increases by 0.2 $^{\circ}C$ .
- 4、When the Type B thermocouple is input, the temperature range is required to be greater than 680 $^{\circ}C$  to ensure the accuracy index.
- 5、When the Type S thermocouple is input, the temperature measurement accuracy is 0.6% below 10 $^{\circ}C$ .



Dimensions:  
118.9mm × 106.0mm × 17.5mm(GS8572-EX)  
118.9mm × 106.0mm × 12.5mm(GS8572-EX.RTD/GS8572-EX.R)

## Connection



Note: a) 2-wire connection cannot eliminate conductor resistance and error will increase  
b) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)  
**Ex Marking:** [Ex ia Ga] II C  
[Ex iaD]  
Ex nA IIC T4 Gc

**Maximum Voltage:**  $U_m=250V$   
**Intrinsic Safety Parameters(7、8、9、10 terminals):**  
 $U_0=5.4V$ ,  $I_0=23mA$ ,  $P_0=32mW$   
II C:  $C_0=65\mu F$ ,  $L_0=65mH$   
\*II B:  $C_0=1000\mu F$ ,  $L_0=265mH$   
II A:  $C_0=1000\mu F$ ,  $L_0=535mH$   
I:  $C_0=1000\mu F$ ,  $L_0=880mH$

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

1/1: GS8572-EX.TC

Temperature input isolated barriers, converter TC/mV 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:**  $\leq$ 40mA (Supply voltage: 24V; Output: 20mA)
- Safe-area Output:**
  - Output Current: 0~20mA/4~20mA; Load resistance:  $R_L \leq 300\Omega$
  - Output Voltage: 0~5V/1~5V; Load resistance:  $R_L \geq 35k\Omega$
- (Customers need specify current output or voltage output when ordering)
- Hazardous-area Input:** Input Signal: please see the table 'Input Signal and Range'.
- Temperature Drift:** 0.01%F.S./ $^{\circ}C$
- CJC:**  $\pm 1^{\circ}C$ (Compensation range:  $-20^{\circ}C \sim +60^{\circ}C$ )
- Response Time(0~90%):**  $\leq 1s$
- Power Supply Protection:** Power supply reverse protection
- EMC:** According to IEC 61326-1(GB/T 18268)
- Ambient Temperature:**  $-20^{\circ}C \sim +60^{\circ}C$
- 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  $\geq 100M\Omega$
- Structure:** GS8500 range structure customized by Phoenix Contact
- Weight:** Approx.150g
- Suitable Location:** Mounting in safe area or zone2(for ec protection), and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 IIIIC.
- Suitable Field Apparatus:** TC, mV signal

## Input Signal and Range

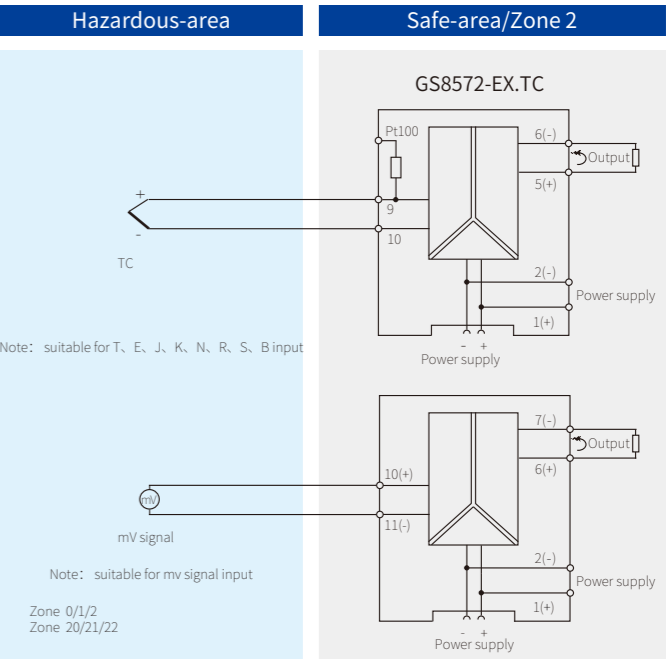
Type	Range	Min.Span	Accuracy
TC	T	$-200^{\circ}C \sim +400^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	E	$-200^{\circ}C \sim +900^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	J	$-200^{\circ}C \sim +1200^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	K	$-200^{\circ}C \sim +1372^{\circ}C$	$50^{\circ}C$ / 0.5% / 0.1%
	N	$-200^{\circ}C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

- Note: 1、The “%” of conversion accuracy is relative to its range. Take the larger value between the range error and the absolute error when applying.
- 2、When the thermocouple is input, the conversion accuracy does not include the CJC. For every 100 $\Omega$  increase in the compensation wire, the cold junction error increases by 0.2 $^{\circ}C$ .
- 3、When the Type B thermocouple is input, the temperature range is required to be greater than 680 $^{\circ}C$  to ensure the accuracy index.
- 4、When the Type S thermocouple is input, the temperature measurement accuracy is 0.6% below 10 $^{\circ}C$ .
- 5、mV signal input needs to be customized.



Dimensions:  
118.9mm × 106.0mm × 12.5mm(TC input)  
118.9mm × 106.0mm × 17.5mm(mV input)

## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)  
**Ex Marking:** [Ex ia Ga] II C  
[Ex iaD]  
Ex nA IIC T4 Gc

**Maximum Voltage:**  $U_m=250V$   
**Intrinsic Safety Parameters(9、10、11 terminals):**  
 $U_0=5.4V$ ,  $I_0=23mA$ ,  $P_0=32mW$   
II C:  $C_0=65\mu F$ ,  $L_0=65mH$   
\*II B:  $C_0=1000\mu F$ ,  $L_0=265mH$   
II A:  $C_0=1000\mu F$ ,  $L_0=535mH$   
I:  $C_0=1000\mu F$ ,  $L_0=880mH$

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

1/1: GS8572-EX.SIL.RTD(RTD input)  
GS8572-EX.SIL.TC(TC input)

Temperature input isolated barriers, converter RTD/TC signals in hazardous area into 4~20mA or 0/1~5V 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: ≤45mA(Supply voltage: 24V; Output: 20mA)  
Safe-area Output:

Output Current: 4~20mA; Load resistance: R<sub>L</sub> ≤ 300Ω  
Output Voltage: 1~5V; Load resistance: R<sub>L</sub> ≥ 35kΩ  
(Customers need specify current output or voltage output when ordering)

Hazardous-area Input:  
Input Signal: please see the table 'Input Signal and Range'.

Temperature Drift: 0.01%F.S./°C  
CJC: ±1°C(Compensation range: -20°C~+60°C)  
Response Time(0~90%): ≤1.2s  
Power Supply Protection: Power supply reverse protection  
EMC: According to IEC 61326-1(GB/T 18268), IEC 61326-3-1  
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

Structure: GS8500 range structure customized by Phoenix Contact

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, TC

Input Signal and Range

Table with columns: Type, Range, Min.Span, Accuracy. Rows for TC (T, E, J, K, N, R, S, B) and RTD (Pt100, Cu50, Cu100).

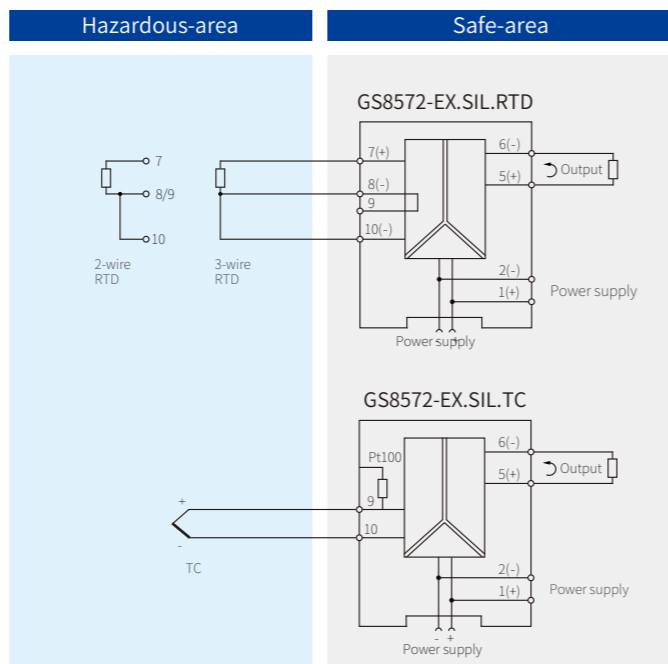
Note: 1、The "% of conversion accuracy is relative to its range. Take the larger value between the range error and the absolute error when applying. 2、Allow a maximum wire resistance of 50Ω/line for RTD input(3-wire). 3、When the thermocouple is input, the conversion accuracy does not include the CJC. 4、When the Type B thermocouple is input, the temperature range is required to be greater than 680 °C to ensure the accuracy index. 5、When the Type S thermocouple is input, the temperature measurement accuracy is 0.6% below 10°C.

SIL2  
IEC61508



Dimensions: 118.9mm×106.0mm×12.5mm

Connection



Note: a) 2-wire connection cannot eliminate conductor resistance and error will increase b) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

Explosion-proof Certificate

Certifying Authority: NEPSI(China)

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

Maximum Voltage: Um=250V

Intrinsic Safety Parameters(7、 8、 9、 10 terminals):

U<sub>o</sub>=6.6V, I<sub>o</sub>=10mA, P<sub>o</sub>=16.5mW  
II C: C<sub>o</sub>=6.5μF, L<sub>o</sub>=3.6mH  
\*II B: C<sub>o</sub>=60μF, L<sub>o</sub>=10.8mH  
II A: C<sub>o</sub>=1000μF, L<sub>o</sub>=28.8mH

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

1/2: GS8576-EX / GS8576-EX.RTD  
GS8576-EX.TC / GS8576-EX.R  
2/2: GS8579-EX / GS8579-EX.RTD  
GS8579-EX.TC / GS8579-EX.R

Temperature input isolated barriers, converter RTD/TC/mV/potentiometer signals in hazardous area into 0/4~20mA or 0/1~5V 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: ≤65mA(Supply voltage: 24V;Output: 20mA)  
Safe-area Output:

Output Current: 0~20mA/4~20mA; Load resistance: R<sub>L</sub> ≤ 300Ω  
Output Voltage: 0~5V/1~5V; Load resistance: R<sub>L</sub> ≥ 35kΩ  
(Customers need specify current output or voltage output when ordering.)

Hazardous-area Input:  
Input Signal: please see the table 'Input Signal and Range'.

Temperature Drift: 0.01%F.S./°C  
CJC: ±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)  
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

Structure: GS8500 range structure customized by Phoenix Contact

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, TC, mV signal, Potentiometer

Input Signal and Range

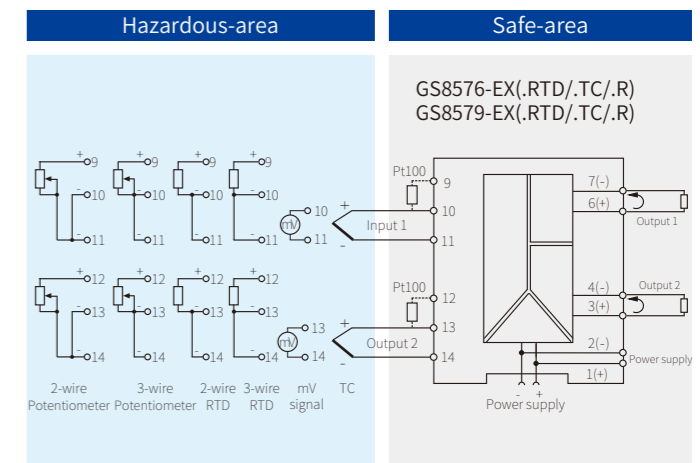
Table with columns: Type, Range, Min.Span, Accuracy. Rows for TC (T, E, J, K, N, R, S, B), mV signal, RTD (Pt100, Cu50, Cu100), and Potentiometer.

Note: 1、The "% of conversion accuracy is relative to its range. Take the larger value between the range 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. For every 100Ω increase in the compensation wire, the cold junction error increases by 0.2°C. 4、When the Type B thermocouple is input, the temperature range is required to be greater than 680 °C to ensure the accuracy index. 5、When the Type S thermocouple is input, the temperature measurement accuracy is 0.6% below 10°C. 6、mV signal input needs to be customized.



Dimensions: 118.9mm×106.0mm×17.5mm

Connection



Note: a) GS8576-EX only contains input1, output1, output2; b) GS8576-EX/GS8579-EX: RTD, TC input; c) GS8576-EX.RTD/GS8579-EX.RTD: RTD input; d) GS8576-EX.TC/GS8579-EX.TC: TC, mV input; e) GS8576-EX.R/GS8579-EX.R: Potentiometer input; f) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

Explosion-proof Certificate

Certifying Authority: NEPSI(China)

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

Maximum Voltage: Um=250V

Intrinsic Safety Parameters(9、 10、 11; 12、 13、 14 terminals):

U<sub>o</sub>=8.5V, I<sub>o</sub>=20mA, P<sub>o</sub>=43mW  
II C: C<sub>o</sub>=6.5μF, L<sub>o</sub>=3.6mH  
\*II B: C<sub>o</sub>=60μF, L<sub>o</sub>=10.8mH  
II A: C<sub>o</sub>=1000μF, L<sub>o</sub>=28.8mH

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

# Temperature Input(Loop Powered)

1/1: GS8577-EX  
GS8577-EX.RTD / GS8577-EX.TC  
2/2: GS8578-EX  
GS8578-EX.RTD / GS8578-EX.TC

Temperature input isolated barriers, converter RTD/TC/mV signals in hazardous area into 0/4~20mA or 0/1~5V signals and output to safe area. It can be configured by computer. The input and output are each galvanically isolated, and this product is loop powered.

## Specification

**Loop Supply Voltage (Ue):** 12~30V DC

**Safe-area Output:**

Output Current: 4~20mA

Load Resistance:  $R_L \leq (U_e - 12) / 0.021 \Omega$

**Hazardous-area Input:**

Input Signal: please see the table 'Input Signal and Range'.

**Temperature Drift:** 0.01%F.S./°C

**CJC:** ±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)

**Ambient Temperature:** -20°C~+60°C

**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

**Structure:** GS8500 range structure customized by Phoenix Contact

**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.

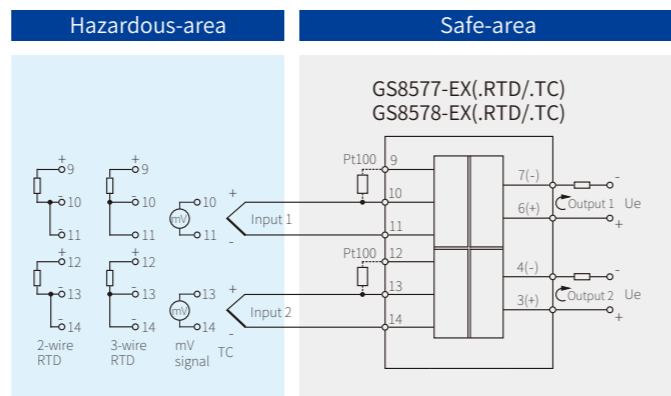
**Suitable Field Apparatus:** 2-wire or 3-wire RTD, TC, mV signal



Dimensions: 118.9mm×106.0mm×17.5mm



## Connection



Note: a) GS8577-EX only contains input1, output1.;  
b) GS8577-EX/GS8578-EX: RTD, TC input;  
c) GS8577-EX.RTD/GS8578-EX.RTD: RTD input;  
d) GS8577-EX.TC/GS8578-EX.TC: TC, mV input.

## 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%
mV signal	B	+320°C~+1820°C	500°C	1.5°C / 0.1%
		-100mV~+100mV	10mV	20uV / 0.1%
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 range 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. For every 100Ω increase in the compensation wire, the cold junction error increases by 0.2°C.  
4、When the Type B thermocouple is input, the temperature range is required to be greater than 680 °C to ensure the accuracy index.  
5、When the Type S thermocouple is input, the temperature measurement accuracy is 0.6% below 10°C.  
6、mV signal input needs to be customized.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10、11; 12、13、14 terminals):**

U<sub>0</sub>=8.5V, I<sub>0</sub>=20mA, P<sub>0</sub>=43mW

II C: C<sub>0</sub>=6.5μF, L<sub>0</sub>=3.6mH

\*II B: C<sub>0</sub>=60μF, L<sub>0</sub>=10.8mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=28.8mH

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

# Resistance Input

1/1: GS8074-EX

Resistance input and output isolated barriers, transfer 2-wire, 3-wire resistance signal to the safe-area output. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

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

**Current Consumption:** ≤25mA(Supply voltage: 24V)

**Safe-area Output:**

Output signal: 60Ω~4kΩ(With input 1: 1)

Current range: 0.5mA~3mA(Input resistance at 2kΩ~4kΩ, current<1mA)

**Hazardous-area Input:**

Input Signal: 2-wire, 3-wire resistance signal

Signal range: 60Ω~4kΩ

**Transmittion accuracy:** 0.1%F.S. or 0.2Ω(Take larger value)

**Temperature Drift:** 0.01%F.S./°C

**Response Time(0~90%):** ≤5ms

**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.100g

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

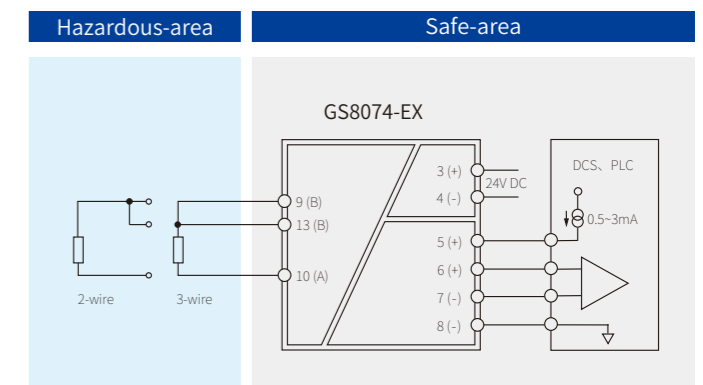
**Suitable Field Apparatus:** 2-wire or 3-wire RTD, resistance signal



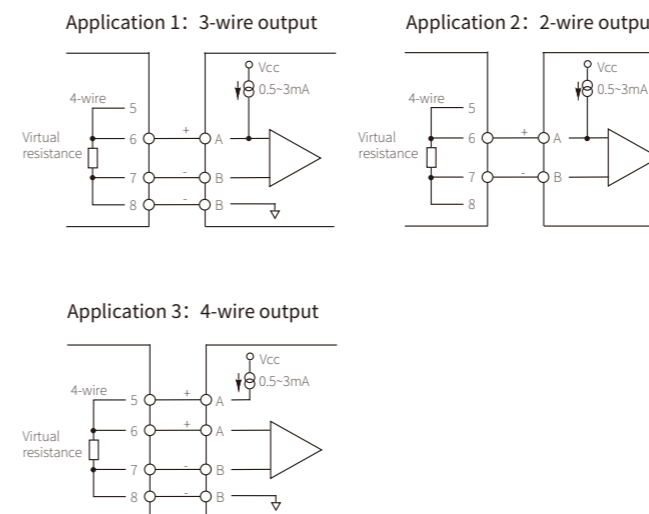
Dimensions: 114.5mm×99.0mm×22.5mm



## Connection



## Output connection



## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10、13、14、15 terminals):**

U<sub>0</sub>=11.7V, I<sub>0</sub>=60mA, P<sub>0</sub>=176mW

II C: C<sub>0</sub>=1.54μF, L<sub>0</sub>=9mH

\*II B: C<sub>0</sub>=10.3μF, L<sub>0</sub>=27mH

II A: C<sub>0</sub>=41.0μF, L<sub>0</sub>=72mH

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

1/1: GS8081-EX

mV signals input and output isolated barriers, transfer mV signals to the safe-area. The product needs an independent power supply and galvanic isolation among power supply, input and output. It is suitable for I/O cards with external CJC.

Specification

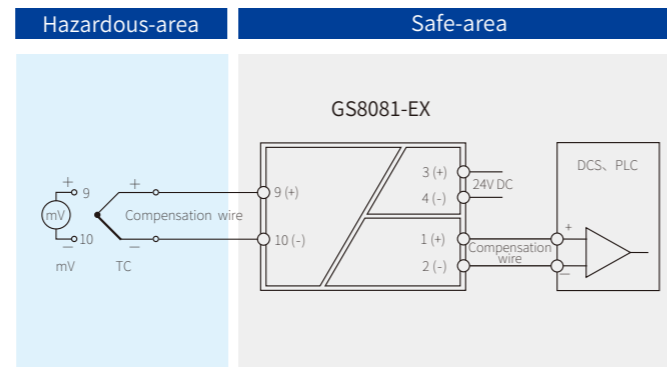
- Supply Voltage:** 20~35V DC
- Current Consumption:** ≤15mA(Supply voltage: 24V)
- Safe-area Output:**
  - Signal: -5mV~+60mV(Same with input 1: 1)
  - Internal impedance: <10Ω
- Hazardous-area Input:**
  - Signal: -5mV~+60mV
  - Internal impedance: >20MΩ
- Transmission Accuracy:** 0.03%F.S. or 18uV(Take larger value)
- Temperature Drift:** 0.01%F.S./°C
- Response Time(0~90%):** ≤5ms
- 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.100g
- Suitable Location:** Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.
- uitable field apparatus:** T, E, J, K, S, B, mV signal



Dimensions: 114.5mm×99.0mm×22.5mm



Connection



Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)  
**Ex Marking:** [Ex ia Ga] II C  
 [Ex iaD]  
**Maximum Voltage:** Um=250V  
**Intrinsic Safety Parameters(9、 10 terminals):**  
 U<sub>0</sub>=8.5V, I<sub>0</sub>=4mA, P<sub>0</sub>=8.5mW  
 II C: C<sub>0</sub>=6.5μF, L<sub>0</sub>=1000mH  
 \*II B: C<sub>0</sub>=60μF, L<sub>0</sub>=1000mH  
 II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=1000mH  
 \*II B Intrinsic Safety Parameters are also suitable for dust explosion protection[Ex iaD]

1/1: GS8589-EX.11  
 2/2: GS8589-EX.22

Voltage signal input isolated barriers; provide the isolated power to the field instrument, and transfer DC voltage in hazardous area to safe-area. The product needs an independent power supply and galvanic isolation among power supply, input and output.

Specification

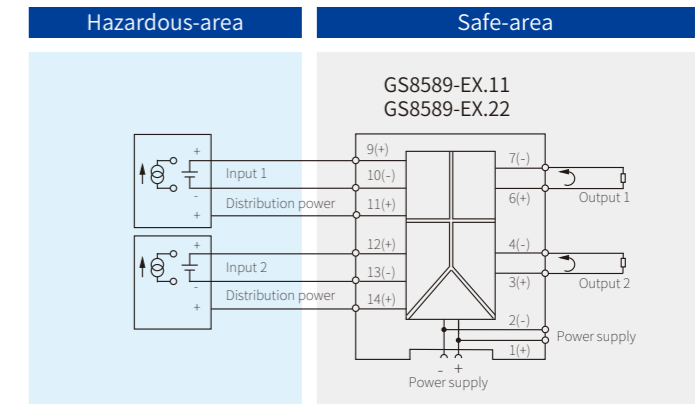
- Supply Voltage:** 20~35V DC
- Current Consumption:** (Supply voltage: 24V; Distribution power: 15V/20mA)
  - ≤100mA(GS8589-EX.11)
  - ≤130mA(GS8589-EX.22)
- Safe-area Output:**
  - Current: 0~20mA, 4~20mA
  - Load Resistance: R<sub>L</sub>≤300Ω
  - Voltage: 0~5V, 1~5V, 0~10V, 2~10V
  - Load resistance: R<sub>L</sub>≥35kΩ
- Hazardous-area Input:**
  - Voltage: 0~5V, 1~5V, 0~10V, 2~10V
  - Load Resistance: ≥300kΩ
  - Distribution power: 10V/20mA or 15V/20mA or none
  - Note: When the output of GS8589-EX.22 is current, the module do not support distribution power.
- Transmission Accuracy:** 0.1%F.S.
- Temperature Drift:** 0.01%F.S./°C
- Response Time(0~90%):** ≤0.1s
- 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
- Structure:** GS8500 range structure customized by Phoenix contact
- 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:** Voltage. current source output device



Dimensions: 118.9mm×106.0mm×17.5mm



Connection



Note: a) GS8589-EX.11 only contains input1 and output1  
 b) Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)  
**Ex Marking:** [Ex ia Ga] II C  
 [Ex iaD]  
**Maximum Voltage:** Um=250V  
**Intrinsic Safety Parameters(9、 10; 12、 13 terminals):**  
 U<sub>0</sub>=13.7V, I<sub>0</sub>=8mA, P<sub>0</sub>=28mW  
 II C: C<sub>0</sub>=0.79μF, L<sub>0</sub>=250mH  
 \*II B: C<sub>0</sub>=5.0μF, L<sub>0</sub>=750mH  
 II A: C<sub>0</sub>=18.1μF, L<sub>0</sub>=1000mH  
**(10、 11; 13、 14 terminals):**  
 U<sub>0</sub>=24.2V, I<sub>0</sub>=143.8mA, P<sub>0</sub>=870mW  
 II C: C<sub>0</sub>=0.09μF, L<sub>0</sub>=1.5mH  
 \*II B: C<sub>0</sub>=0.70μF, L<sub>0</sub>=4.5mH  
 II A: C<sub>0</sub>=2.33μF, L<sub>0</sub>=12mH  
 \*II B Intrinsic Safety Parameters are also suitable for dust explosion protection[Ex iaD]

# Communication Input

1/1: GS8592-EX.3

Communication signals input isolated barriers, realize the bi-direction communication of RS-232 digital signals between hazardous area and safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

- Supply Voltage:** 20~35V DC
- Current Consumption:**
  - ≤175mA(Supply voltage: 24V, distribution current: 100mA)
  - ≤120mA(Supply voltage: 24V, distribution current: 50mA)
- Safe-area:**
  - Signal: RS-232
  - Transmission delay: ≤10μs
  - Transmission rate: ≤56kbps

- Hazardous-area:**
  - Signal: RS-232
  - Distribution Power: 5V/100mA, 6V/100mA, 8V/50mA, 9V/50mA, 12V/50mA
  - Distribution Voltage Deviation: ±10%
  - Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	ON

- Power Supply Protection:** Power supply reverse protection
- EMC:** According to IEC 61326-1(GB/T 18268)

**Ambient Temperature:** -25°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

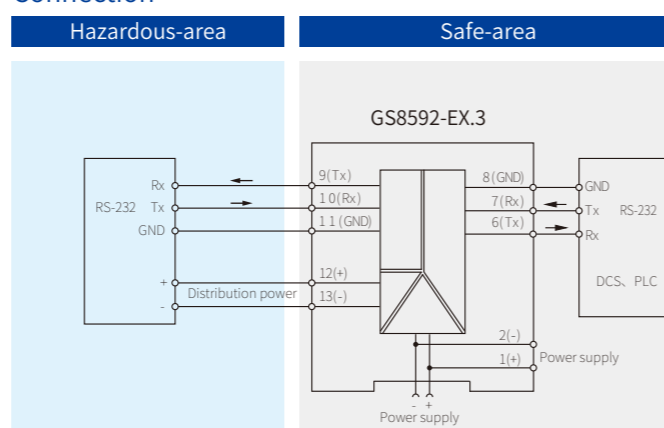
- Insulation Resistance:**
  - Between non-intrinsically safe part and intrinsically safe part ≥100MΩ
  - Between power supply part and output part ≥100MΩ

- Structure:** GS8500 range structure customized by Phoenix Contact
- 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:** With RS-232 communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm

## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

- Certifying Authority:** NEPSI(China)
- Ex Marking:** [Ex ia Ga] II C [Ex iaD]
- Maximum Voltage:** Um=250V
- Intrinsic Safety Parameters(9, 11; 10, 11 terminals):**
  - $U_o=11.7V, I_o=4.0mA, P_o=12mW$
  - (9, 10, 11 terminals):**
    - $U_o=23.5V, I_o=8.5mA, P_o=50mW$
    - II C:  $C_o=0.12μF, L_o=100mH$
    - \*II B:  $C_o=0.97μF, L_o=300mH$
    - II A:  $C_o=3.52μF, L_o=800mH$
  - (12, 13 terminals):**
    - $U_o=23.1V, I_o=187mA, P_o=1.08W$
    - II C:  $C_o=0.1μF, L_o=0.8mH$
    - \*II B:  $C_o=1.0μF, L_o=2.4mH$
    - II A:  $C_o=3.6μF, L_o=6.4mH$
- \*II B Intrinsic Safety Parameters are also suitable for dust explosion protection[Ex iaD]

# Communication Input

1/1: GS8595-EX.3

Communication signals input isolated barriers, realize the bi-direction communication between the RS-232 digital signals generated by the field instrument and the RS-485(full duplex) / RS-422 digital signals in the safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

- Supply Voltage:** 20~35V DC
- Current Consumption:**
  - ≤160mA(Supply voltage: 24V, distribution current: 100mA)
  - ≤120mA(Supply voltage: 24V, distribution current: 50mA)
- Safe-area:**
  - Signal: RS-485(full duplex) / RS-422 digital signals
  - Transmission delay: ≤10μs
  - Signal transmission rate: ≤56kbps
  - Drive ability: up to 32 transceivers

- Hazardous-area:**
  - Signal: RS-232
  - Distribution power: 5V/100mA, 6V/100mA, 8V/50mA, 9V/50mA, 12V/50mA
  - Distribution Voltage Deviation: ±10%
  - Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	ON

- Power Supply Protection:** Power supply reverse protection
- EMC:** According to IEC 61326-1(GB/T 18268)

**Ambient Temperature:** -25°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

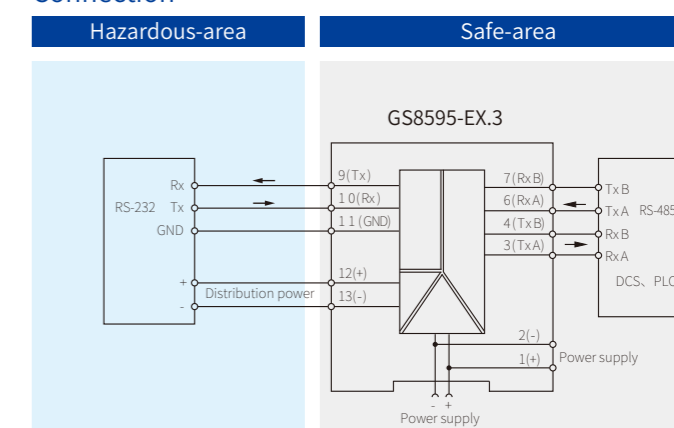
- Insulation Resistance:**
  - Between non-intrinsically safe part and intrinsically safe part ≥100MΩ
  - Between power supply part and output part ≥100MΩ

- Structure:** GS8500 range structure customized by Phoenix Contact
- 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:** With RS-232 communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm

## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

- Certifying Authority:** NEPSI(China)
- Ex Marking:** [Ex ia Ga] II C [Ex iaD]
- Maximum Voltage:** Um=250V
- Intrinsic Safety Parameters(9, 11; 10, 11 terminals):**
  - $U_o=11.7V, I_o=4.0mA, P_o=12mW$
  - (9, 10, 11 terminals):**
    - $U_o=23.5V, I_o=8.5mA, P_o=50mW$
    - II C:  $C_o=0.12μF, L_o=100mH$
    - \*II B:  $C_o=0.97μF, L_o=300mH$
    - II A:  $C_o=3.52μF, L_o=800mH$
  - (12, 13 terminals):**
    - $U_o=23.1V, I_o=187mA, P_o=1.08W$
    - II C:  $C_o=0.1μF, L_o=0.8mH$
    - \*II B:  $C_o=1.0μF, L_o=2.4mH$
    - II A:  $C_o=3.6μF, L_o=6.4mH$
- \*II B Intrinsic Safety Parameters are also suitable for dust explosion protection[Ex iaD]





## 1/1: GS8593-EX.3

Communication signals input isolated barriers, realize the bi-direction communication of RS-485(half duplex) digital signals between hazardous area and safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**

≤160mA(Supply voltage: 24V, Distribution current: 100mA)

≤120mA(Supply voltage: 24V, Distribution current: 50mA)

**Safe-area:**

Signal: RS-485(half duplex)

Transmission delay: ≤10μs

Signal transmission rate: ≤56kbps

Drive Ability: up to 32 transceivers

**Hazardous-area:**

Signal: RS-485(half duplex)

Distribution Power: 5V/100mA、6V/100mA、8V/50mA、9V/50mA、12V/50mA

Distribution Voltage Deviation: ±10%

Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	ON

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

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

**Ambient Temperature:** -25°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

Structure: GS8500 range structure customized by Phoenix Contact

**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.

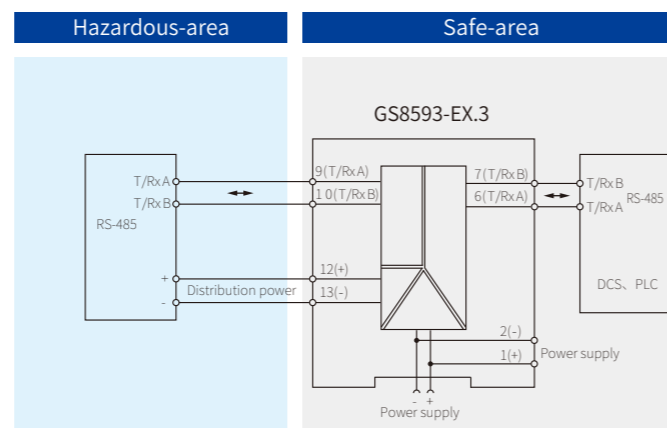
**Suitable Field Apparatus:** With RS-485 half duplex communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm



### Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10 terminals):**

U<sub>0</sub>=6.6V, I<sub>0</sub>=65mA, P<sub>0</sub>=110mW

II C: C<sub>0</sub>=22μF, L<sub>0</sub>=8mH

\*II B: C<sub>0</sub>=500μF, L<sub>0</sub>=24mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=64mH

**(12、13 terminals):**

U<sub>0</sub>=23.1V, I<sub>0</sub>=187mA, P<sub>0</sub>=1.08W

II C: C<sub>0</sub>=0.1μF, L<sub>0</sub>=0.8mH

\*II B: C<sub>0</sub>=1.0μF, L<sub>0</sub>=2.4mH

II A: C<sub>0</sub>=3.6μF, L<sub>0</sub>=6.4mH

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

## 1/1: GS8596-EX.3

Communication signals input isolated barriers, realize the bi-direction communication between the RS-485(half duplex) digital signals generated by the field instrument and the RS-232 digital signals in the safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**

≤160mA(Supply voltage: 24V, Distribution current: 100mA)

≤120mA(Supply voltage: 24V, Distribution current: 50mA)

**Safe-area:**

Signal: RS-232

Transmission delay: ≤10μs

Signal transmission rate: ≤56kbps

**Hazardous-area:**

Signal: RS-485(half duplex)

Distribution Power: 5V/100mA、6V/100mA、8V/50mA、9V/50mA、12V/50mA

Distribution Voltage Deviation: ±10%

Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	ON

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

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

**Ambient Temperature:** -25°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

Structure: GS8500 range structure customized by Phoenix Contact

**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.

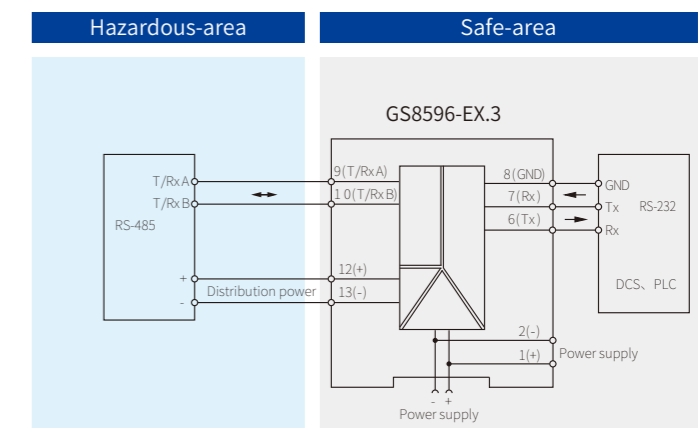
**Suitable Field Apparatus:** With RS-485 half duplex communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm



### Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10 terminals):**

U<sub>0</sub>=6.6V, I<sub>0</sub>=65mA, P<sub>0</sub>=110mW

II C: C<sub>0</sub>=22μF, L<sub>0</sub>=8mH

\*II B: C<sub>0</sub>=500μF, L<sub>0</sub>=24mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=64mH

**(12、13 terminals):**

U<sub>0</sub>=23.1V, I<sub>0</sub>=187mA, P<sub>0</sub>=1.08W

II C: C<sub>0</sub>=0.1μF, L<sub>0</sub>=0.8mH

\*II B: C<sub>0</sub>=1.0μF, L<sub>0</sub>=2.4mH

II A: C<sub>0</sub>=3.6μF, L<sub>0</sub>=6.4mH

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

## 1/1: GS8594-EX.3

Communication signals input isolated barriers, realize the bi-direction communication between the RS-485(full duplex) / RS-422 digital signals generated by the field instrument and the RS-232 digital signals in the safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**

≤160mA(Supply voltage: 24V, Distribution current: 100mA)

≤120mA(Supply voltage: 24V, Distribution current: 50mA)

**Safe-area:**

Signal: RS-232

Transmission delay: ≤10μs

Signal transmission rate: ≤56kbps

**Hazardous-area:**

Signal: RS-485(full duplex) / RS-422 digital signals

Distribution Power: 5V/100mA, 6V/100mA, 8V/50mA, 9V/50mA, 12V/50mA

Distribution Voltage Deviation: ±10%

Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	OFF	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	ON

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

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

**Ambient Temperature:** -25°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

**Structure:** GS8500 range structure customized by Phoenix Contact

**Weight:** Approx.150g

**Suitable Location:** Mounting in safe area, and connected to the IS

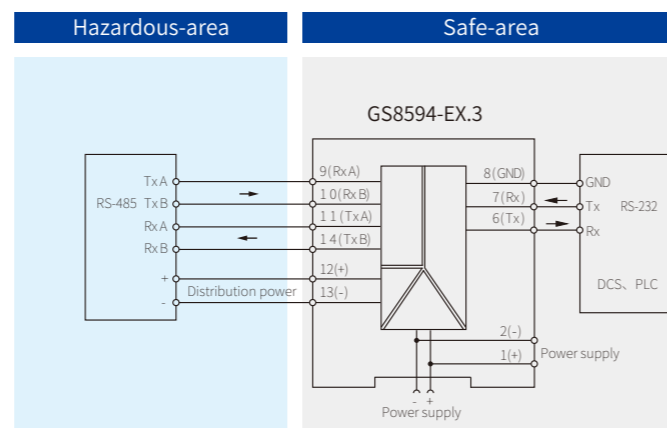
apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:** With RS-485 full duplex/RS-422 communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm

### Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10; 11、14 terminals):**

U<sub>0</sub>=6.6V, I<sub>0</sub>=65mA, P<sub>0</sub>=110mW

II C: C<sub>0</sub>=22μF, L<sub>0</sub>=8mH

\*II B: C<sub>0</sub>=500μF, L<sub>0</sub>=24mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=64mH

**(12、13 terminals):**

U<sub>0</sub>=23.1V, I<sub>0</sub>=187mA, P<sub>0</sub>=1.08W

II C: C<sub>0</sub>=0.1μF, L<sub>0</sub>=0.8mH

\*II B: C<sub>0</sub>=1.0μF, L<sub>0</sub>=2.4mH

II A: C<sub>0</sub>=3.6μF, L<sub>0</sub>=6.4mH

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

## 1/1: GS8597-EX.3

Communication signals input isolated barriers, realize the bi-direction communication between the RS-485(full duplex) / RS-422 digital signals generated by the field instrument and the RS-485(half duplex) digital signals in the safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**

≤160mA(Supply voltage: 24V, Distribution current: 100mA)

≤120mA(Supply voltage: 24V, Distribution current: 50mA)

**Safe-area:**

Signal: RS-485(half duplex)

Transmission delay: ≤10μs

Signal transmission rate: ≤56kbps

Drive Ability: up to 32 transceivers

**Hazardous-area:**

Signal: RS-485(full duplex) / RS-422 digital signals

Distribution Power: 5V/100mA, 6V/100mA, 8V/50mA, 9V/50mA, 12V/50mA

Distribution Voltage Deviation: ±10%

Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	ON

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

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

**Ambient Temperature:** -25°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

**Structure:** GS8500 range structure customized by Phoenix Contact

**Weight:** Approx.150g

**Suitable Location:** Mounting in safe area, and connected to the IS

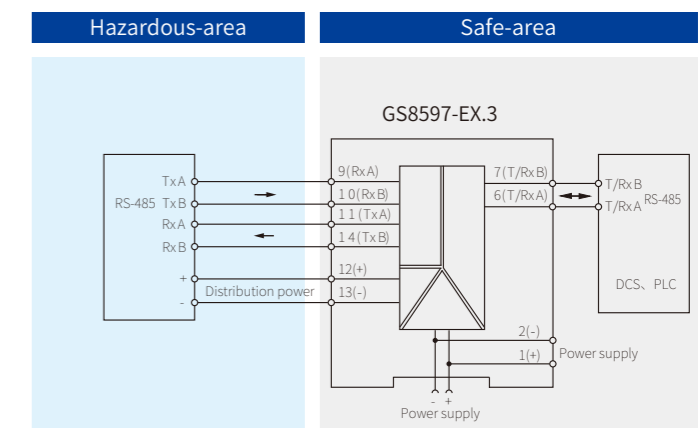
apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:** With RS-485 full duplex/RS-422 communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm

### Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10; 11、14 terminals):**

U<sub>0</sub>=6.6V, I<sub>0</sub>=65mA, P<sub>0</sub>=110mW

II C: C<sub>0</sub>=22μF, L<sub>0</sub>=8mH

\*II B: C<sub>0</sub>=500μF, L<sub>0</sub>=24mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=64mH

**(12、13 terminals):**

U<sub>0</sub>=23.1V, I<sub>0</sub>=187mA, P<sub>0</sub>=1.08W

II C: C<sub>0</sub>=0.1μF, L<sub>0</sub>=0.8mH

\*II B: C<sub>0</sub>=1.0μF, L<sub>0</sub>=2.4mH

II A: C<sub>0</sub>=3.6μF, L<sub>0</sub>=6.4mH

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

## 1/1: GS8598-EX.3

Communication signals input isolated barriers, realize the bi-direction communication of RS-485(full duplex) / RS-422 digital signals between hazardous area and safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**

≤160mA(Supply voltage: 24V, Distribution current: 100mA)

≤120mA(Supply voltage: 24V, Distribution current: 50mA)

**Safe-area:**

Signal: RS-485(full duplex) / RS-422 digital signals

Transmission delay: ≤10μs

Signal transmission rate: ≤56kbps

Drive Ability: up to 32 transceivers

**Hazardous-area:**

Signal: RS-485(full duplex) / RS-422 digital signals

Distribution Power: 5V/100mA, 6V/100mA, 8V/50mA, 9V/50mA, 12V/50mA

Distribution Voltage Deviation: ±10%

Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	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

**Structure:** GS8500 range structure customized by Phoenix Contact

**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.

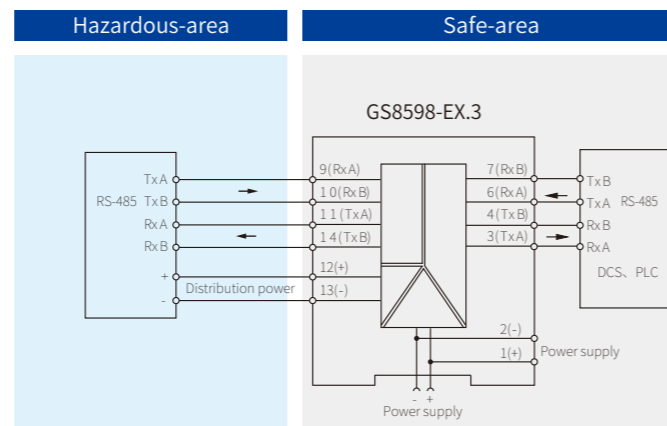
**Suitable Field Apparatus:** With RS-485 full duplex/RS-422 communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm



### Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10; 11, 14 terminals):**

U<sub>0</sub>=6.6V, I<sub>0</sub>=65mA, P<sub>0</sub>=110mW

II C: C<sub>0</sub>=22μF, L<sub>0</sub>=8mH

\*II B: C<sub>0</sub>=500μF, L<sub>0</sub>=24mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=64mH

**(12、13 terminals):**

U<sub>0</sub>=23.1V, I<sub>0</sub>=187mA, P<sub>0</sub>=1.08mW

II C: C<sub>0</sub>=0.1μF, L<sub>0</sub>=0.8mH

\*II B: C<sub>0</sub>=1.0μF, L<sub>0</sub>=2.4mH

II A: C<sub>0</sub>=3.6μF, L<sub>0</sub>=6.4mH

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

## 1/1: GS8593B-EX

Communication signals input isolated barriers, realize the bi-direction communication of RS-485(half duplex) digital signals between hazardous area and safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**

≤160mA(Supply voltage: 24V, Distribution power: 9V/140mA)

**Safe-area:**

Signal: RS-485(half duplex)

Transmission delay: ≤10μs

Signal transmission rate: ≤56kbps

Drive Ability: up to 32 transceivers

**Hazardous-area:**

Signal: RS-485(half duplex)

Distribution Power: Open-circuit voltage≤17V

Distribution voltage: 9V±10% at 140mA

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

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

**Ambient Temperature:** -25°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

**Structure:** GS8500 range structure customized by Phoenix Contact

**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.

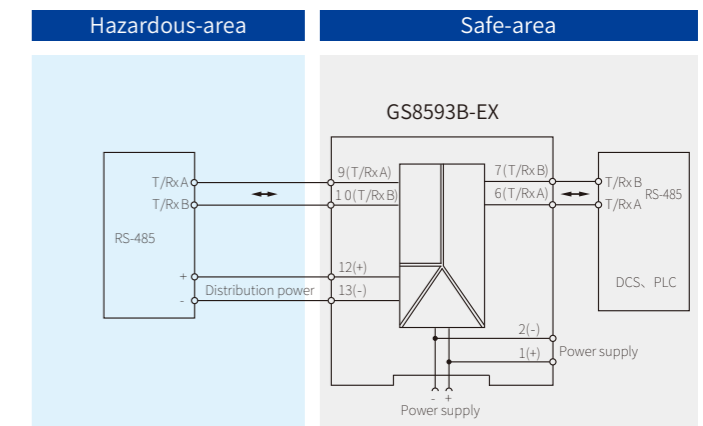
**Suitable Field Apparatus:** With RS-485 half duplex communication interface device



Dimensions: 118.9mm×106.0mm×17.5mm



### Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10 terminals):**

U<sub>0</sub>=6.6V, I<sub>0</sub>=65mA, P<sub>0</sub>=110mW

II C: C<sub>0</sub>=22μF, L<sub>0</sub>=8mH

\*II B: C<sub>0</sub>=500μF, L<sub>0</sub>=24mH

II A: C<sub>0</sub>=1000μF, L<sub>0</sub>=64mH

**(12、13 terminals):**

U<sub>0</sub>=17.22V, I<sub>0</sub>=430mA, P<sub>0</sub>=2.1mW

II C: C<sub>0</sub>=0.333μF, L<sub>0</sub>=151.7μH

\*II B: C<sub>0</sub>=1.93μF, L<sub>0</sub>=455.1μH

II A: C<sub>0</sub>=8.1μF, L<sub>0</sub>=1213.6μH

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

# Communication Input

1/1: GS8590-EX.3

Communication signals input isolated barriers, realize the bi-direction communication of CAN digital signals between hazardous area and safe area. It also provides isolated power supply for field instruments. The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

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

**Current Consumption:**

≤100mA(Supply voltage: 24V, Distribution power: 50mA)

≤140mA(Supply voltage: 24V, Distribution power: 5V/100mA or 6V/90mA)

**Safe-area:**

Signal: CAN digital signal

Transmission delay: ≤10μs

Signal transmission rate: ≤250kbps

Drive Ability: up to 8 transceivers

**Hazardous-area:**

Signal: CAN digital signal

Distribution Power: 5V/100mA、6V/100mA、8V/50mA、9V/50mA、12V/50mA

Distribution Voltage Deviation: ±10%

Function of the DIP Switches:

Distribution voltage	K1	K2	K3	K4
12V/50mA	OFF	OFF	OFF	OFF
9V/50mA	ON	OFF	OFF	OFF
8V/50mA	ON	ON	OFF	OFF
6V/100mA	ON	ON	ON	OFF
5V/100mA	ON	ON	ON	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

**Structure:** GS8500 range structure customized by Phoenix Contact

**Weight:** Approx.150g

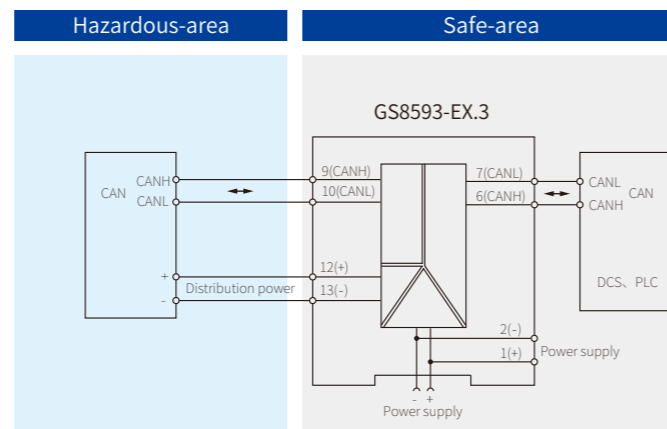
**Suitable Location:** Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:** With CAN communication interface device



Dimensions: 118.9mm × 106.0mm × 17.5mm

## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10 terminals):**

U<sub>o</sub>=6.6V, I<sub>o</sub>=334mA, P<sub>o</sub>=551mW

II C: C<sub>o</sub>=22μF, L<sub>o</sub>=0.25mH

\*II B: C<sub>o</sub>=500μF, L<sub>o</sub>=0.75mH

II A: C<sub>o</sub>=1000μF, L<sub>o</sub>=2.0mH

**(12、13 terminals):**

U<sub>o</sub>=23.1V, I<sub>o</sub>=187mA, P<sub>o</sub>=1.08W

II C: C<sub>o</sub>=0.1μF, L<sub>o</sub>=0.8mH

\*II B: C<sub>o</sub>=1.0μF, L<sub>o</sub>=2.4mH

II A: C<sub>o</sub>=3.6μF, L<sub>o</sub>=6.4mH

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

# Vibration Transducer

1/1: GS8557-EX

Vibration transducer input isolated barriers, provide isolated power supply for the transmitters in hazardous area and transfer the 1: 1 negative voltage signals, which vibration transducer outputs in hazardous area, to safe area. It can transmit AC and DC signals. This product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

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

**Current Consumption:**

≤65mA(Supply voltage: 24V, distribution current: 20mA)

**Safe-area Output:**

Signal: -20V~-0.5V

Load Resistance: R<sub>L</sub>≥20kΩ

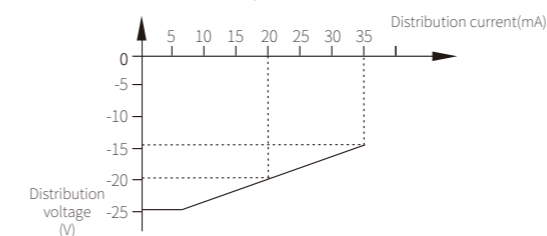
**Hazardous-area Input:**

Signal: -20V~-0.5V

Input impedance: 10kΩ

Distribution Power: Open-circuit voltage>-25V

Distribution Voltage: ≤-19.5V at 20mA



**DC Transmissiton accuracy:** <±50mV

**AC Transmissiton accuracy:**

0Hz~1kHz ±1%

1kHz~10kHz -2%~+1%

10kHz~20kHz -5%~+1%

**Phase response:** Less than 1us is equals to

-0.72° 200Hz

-2° 600Hz

-3.6° 1kHz

-36° 10kHz

-72° 20kHz

**Bandwidth(-3dB):** ≥50kHz

**Temperature Drift:** 0.01%/°C(-20°C~+60°C)

**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

**Structure:** GS8500 range structure customized by Phoenix Contact

**Weight:** Approx.100g

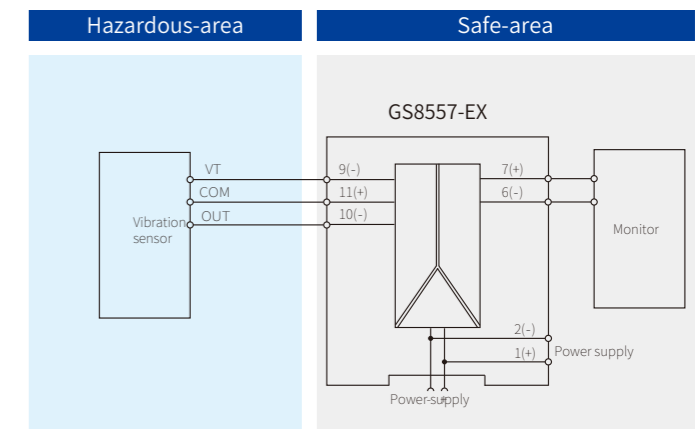
**Suitable Location:** Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone0 IIC and zone20 IIIC.

**Suitable Field Apparatus:** Vibration transducer、Negative voltage generator



Dimensions: 118.9mm × 106.0mm × 17.5mm

## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

**Maximum Voltage:** Um=250V

**Intrinsic Safety Parameters(9、10、11 terminals):**

U<sub>o</sub>=26.5V, I<sub>o</sub>=93mA, P<sub>o</sub>=687mW

II C: C<sub>o</sub>=0.095μF, L<sub>o</sub>=4.2mH

\*II B: C<sub>o</sub>=0.73μF, L<sub>o</sub>=12.6mH

II A: C<sub>o</sub>=2.45μF, L<sub>o</sub>=33.6mH

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

# Vibration Transducer

1/1: GS8558-EX

Vibration transducer input isolated barriers, transfer the 1: 1 voltage signals, which vibration transducer outputs in hazardous area, to safe area. It can transmit AC and DC signals. This product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

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

**Current Consumption:**  $\leq 40\text{mA}$

**Safe-area Output:**

Signal:  $-10\text{V}\sim+10\text{V}$

Load Resistance:  $R_L \geq 20\text{k}\Omega$

**Hazardous-area Input:**

Signal:  $-10\text{V}\sim+10\text{V}$

Internal impedance:  $10\text{k}\Omega$

**DC Transmissiton accuracy:**  $< \pm 0.2\% \text{F.S.}$

**AC Transmissiton accuracy:**

0Hz~600Hz  $\pm 0.2\% \text{F.S.}$

600Hz~10kHz  $-1.5\% \sim +0.2\% \text{F.S.}$

**Phase response :** Less than 1us is equals to

$-0.72^\circ$  200Hz

$-2^\circ$  600Hz

$-3.6^\circ$  1kHz

$-36^\circ$  10kHz

**Bandwidth(-3dB):**  $\geq 40\text{kHz}$

**Temperature Drift:**  $0.005\%/^\circ\text{C} (-20^\circ\text{C}\sim+60^\circ\text{C})$

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

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

**Ambient Temperature:**  $-20^\circ\text{C}\sim+60^\circ\text{C}$

**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  $\geq 100\text{M}\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact

**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.

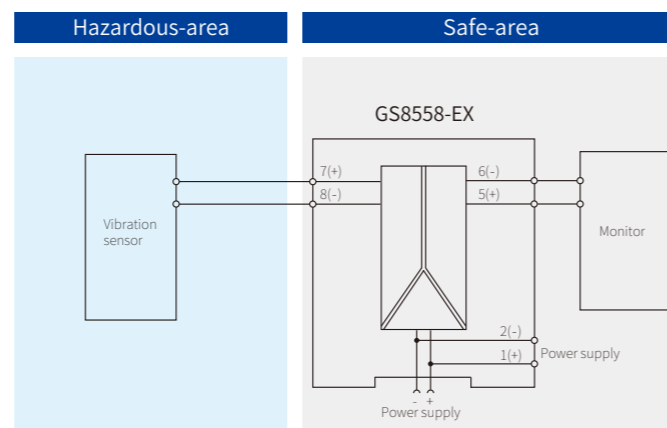
**Suitable Field Apparatus:** Vibration transducer



Dimensions: 118.9mm X 106.0mm X 12.5mm



## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(7、8 terminals):**

$U_o=1.2\text{V}$ ,  $I_o=0.2\text{mA}$ ,  $P_o=0.06\text{mW}$

II C:  $C_o=100\mu\text{F}$ ,  $L_o=100\text{mH}$

\*II B:  $C_o=300\mu\text{F}$ ,  $L_o=300\text{mH}$

II A:  $C_o=800\mu\text{F}$ ,  $L_o=800\text{mH}$

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

# Frequency Converters

1/1: GS8555-EX

Frequency converter isolated barrier, change the digital input signal in the hazardous area into a proportional free adjustable 0/4~20mA(or 0/1~5V) analog output signal and function as a trip alarm.The product needs an independent power supply and galvanic isolation among power supply, input and output.

## Specification

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

**Current Consumption:**  $\leq 60\text{mA}$ (Supply voltage: 24V, Output current: 20mA, Relay: energized)

**Safe-area Output:**

Current: 0~20mA, 4~20mA

Load resistance $\leq 400\Omega$

Voltage: 0~5V, 1~5V

Load resistance $\geq 330\text{k}\Omega$

(Note: Customers need to specify current output or voltage output when ordering)

**Safe-area Relay Characteristics:**

Response Time:  $\leq 20\text{ms}$

Contact Loading: 250V AC,2A or 30V DC,2A

Load Type: Resistive load

**Hazardous-area Input:**

Signal Type:

1)3-wire PNP/NPN Sensor Input:

Sensor Distribution: 14V, current $< 20\text{mA}$

Input Frequency: 0.1Hz~100kHz

2)Frequency Signal Input:

Input Frequency: 0.1Hz~100kHz

Max. Input Voltage: 30Vp-p

Min.Input voltage: $\sqrt{2}\text{V}$ , (2Hz~100KHz)  
 $\sqrt{2}\text{V}$ , (0.1Hz~100KHz)

3)Dry Contact or Proximity Switch Input:

Distribution Voltage:  $\approx 8\text{V}$ , Short-circuit current:  $\approx 8\text{mA}$

Input Frequency: 0.1Hz~100kHz

**Pulse Width:**  $\geq 2\mu\text{s}$

**Temperature Drift:** 0.1%F.S.

**Temperature Drift:** 0.01%F.S./ $^\circ\text{C}$

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

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

**Ambient Temperature:**  $-20^\circ\text{C}\sim+60^\circ\text{C}$

**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  $\geq 100\text{M}\Omega$

**Structure:** GS8500 range structure customized by Phoenix Contact

**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.

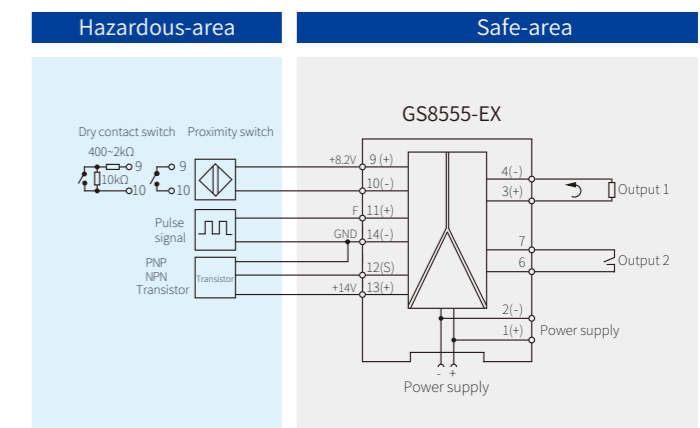
**Suitable Field Apparatus:** Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch、temperature switches、liquid level switches, etc.), voltage pulse, 3-wire PNP/NPN sensor output, incremental encoder.



Dimensions: 118.9mm X 106.0mm X 17.5mm



## Connection



Note: Bus-powered function is optional, if necessary please specified when ordering, and purchase bus power accessories in additional.

## Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

[Ex iaD]

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

**Intrinsic Safety Parameters(9、10 terminals):**

$U_o=10.5\text{V}$ ,  $I_o=14\text{mA}$ ,  $P_o=37\text{mW}$

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

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

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

**(11、14 terminals):**

$U_o=14\text{V}$ ,  $I_o=8\text{mA}$ ,  $P_o=28\text{mW}$

II C:  $C_o=0.73\mu\text{F}$ ,  $L_o=150\text{mH}$

\*II B:  $C_o=4.60\mu\text{F}$ ,  $L_o=450\text{mH}$

II A:  $C_o=17.0\mu\text{F}$ ,  $L_o=1000\text{mH}$

**(12、13、14 terminals):**

$U_o=17\text{V}$ ,  $I_o=330\text{mA}$ ,  $P_o=1.4\text{W}$

II C:  $C_o=0.375\mu\text{F}$ ,  $L_o=0.22\text{mH}$

\*II B:  $C_o=2.20\mu\text{F}$ ,  $L_o=0.66\text{mH}$

II A:  $C_o=9.0\mu\text{F}$ ,  $L_o=1.76\text{mH}$

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

## 1/3: GS8355-EX

Frequency converter isolated barriers, change the digital input signal in the hazardous area into a proportional free adjustable 0/4~20mA(or 0/1~5V) analog output signal and function as a trip alarm. The user can set the instrument parameters through the 3 buttons on the panel, and the 5-digit 7-segment LCD displays the measured value and the instrument parameter setting value. The product needs an independent power supply and galvanic isolation among power supply, input and output.

### Specification

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

**Current Consumption:**  $\leq 110\text{mA}$ (Supply voltage: 24V, Output current: 20mA, Relay: energized)

#### Safe-area Output:

Current: 0~20mA, 4~20mA  
Load resistance  $\leq 400\Omega$   
Voltage: 0~5V, 1~5V  
Load resistance  $\geq 330\text{k}\Omega$

(Note: Customers need to specify output signal when ordering)

#### Safe-area Relay Characteristics:

Response Time:  $\leq 20\text{ms}$   
Contact Loading: 250V AC, 2A or 30V DC, 2A  
Load Type: Resistive load

#### Hazardous-area Input:

Signal Type:  
1) 3-wire PNP/NPN Sensor Input:  
Sensor Distribution: 14V, Current  $< 20\text{mA}$   
Input Frequency: 0.1Hz~100kHz  
2) Frequency Signal Input:  
Input Frequency: 0.1Hz~100kHz  
Max. Input Voltage: 30Vp-p  
Min. Input voltage:  $\sqrt{2}V$ , (2Hz~100kHz)  
 $\sqrt{2}V$ , (0.1Hz~100kHz)  
3) Dry Contact or Proximity Switch Input:  
Distribution Voltage:  $\approx 8\text{V}$ , Short-circuit current:  $\approx 8\text{mA}$   
Input Frequency: 0.1Hz~100kHz

**Pulse Width:**  $\geq 2\mu\text{s}$

**Transmission Accuracy:** 0.1%F.S.

**Temperature Drift:** 0.01%F.S./ $^{\circ}\text{C}$

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

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

**Ambient Temperature:**  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$

#### 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. 350g

**Suitable Location:** Mounting in safe area, and connected to the IS apparatus in hazardous area up to zone 0 IIC and zone 20 IIIC.

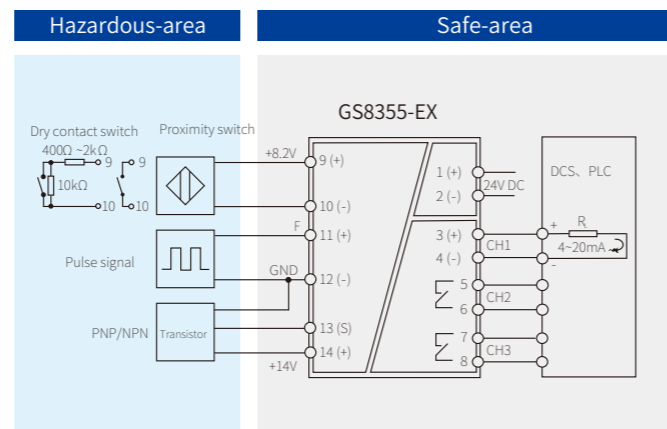
**Suitable Field Apparatus:** Dry contact or DIN19234 standard NAMUR proximity switch input field devices (including the intrinsically safe type pressure switch, temperature switches, liquid level switches, etc.), voltage pulse, 3-wire PNP/NPN sensor output, incremental encoder.



Dimensions: 107.5mm × 75.0mm × 45mm



### Connection



### Explosion-proof Certificate

**Certifying Authority:** NEPSI(China)

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

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

**Intrinsic Safety Parameters(9、10 terminals):**

$U_o=10.5\text{V}$ ,  $I_o=14\text{mA}$ ,  $P_o=37\text{mW}$

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

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

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

**(11、12 terminals):**

$U_o=14\text{V}$ ,  $I_o=8\text{mA}$ ,  $P_o=28\text{mW}$

II C:  $C_o=0.73\mu\text{F}$ ,  $L_o=150\text{mH}$

\*II B:  $C_o=4.60\mu\text{F}$ ,  $L_o=450\text{mH}$

II A:  $C_o=17.0\mu\text{F}$ ,  $L_o=1000\text{mH}$

**(13、14 terminals):**

$U_o=17\text{V}$ ,  $I_o=330\text{mA}$ ,  $P_o=1.4\text{W}$

II C:  $C_o=0.375\mu\text{F}$ ,  $L_o=0.22\text{mH}$

\*II B:  $C_o=2.20\mu\text{F}$ ,  $L_o=0.66\text{mH}$

II A:  $C_o=9.0\mu\text{F}$ ,  $L_o=1.76\text{mH}$

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

## Bus Connector



Number of Positions

Pitch

Normal voltage Un

Normal current In

Rated Surge Voltage

Suitable for 12.5mm Isolated Barrier

Bus connector  
(CZBPS-C-12.5)



5

3.81mm

150V

8A

2500V

Suitable for 17.5mm Isolated Barrier

Bus connector  
(CZBPS-C-17.5)



5

3.81mm

150V

8A

2500V

## Bus Connector Plug

Suitable for GS8500-EX Range



Male plug  
(CZBPS-F1)

Number of Positions

Pitch

Normal Voltage Un

Normal Current In

Rated Surge Voltage

Conductor Cross Section

Conductor Cross Section with Ferrules

5

3.81mm

160V

8A

2500V

0.14~1.5mm<sup>2</sup>

0.25~1.5mm<sup>2</sup>(without plastic sleeve)

0.25~0.5mm<sup>2</sup>(with plastic sleeve)

Female plug  
(CZBPS-B1)



5

3.81mm

160V

8A

2500V

0.14~1.5mm<sup>2</sup>

0.25~1.5mm<sup>2</sup>(without plastic sleeve)

0.25~0.5mm<sup>2</sup>(with plastic sleeve)

## Configuration Accessory

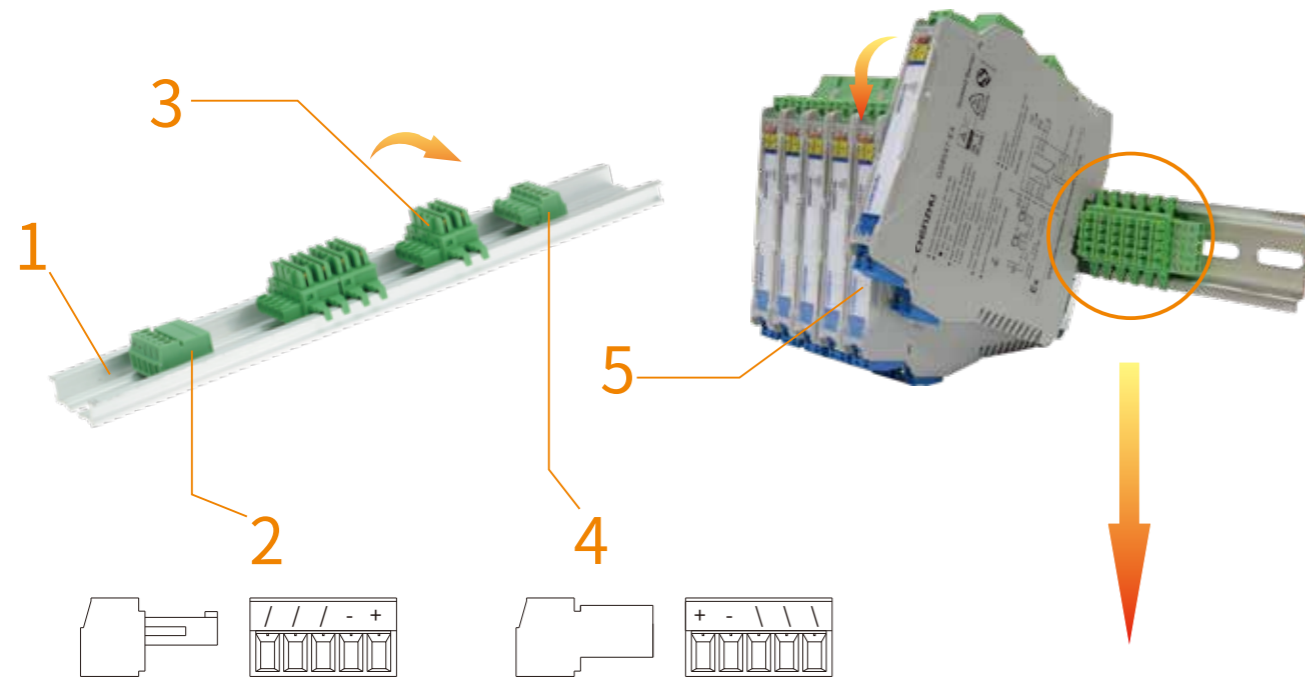
Configuration Tool: USBCOM-MINI



Software: Easyconfig

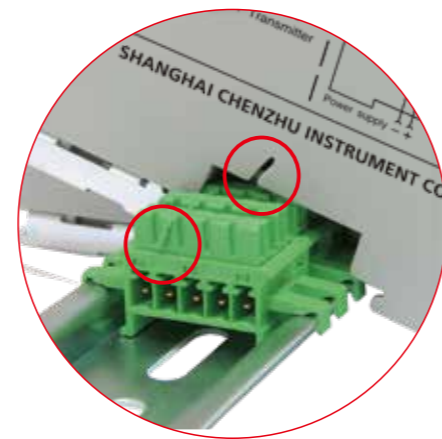


## Bus Powered Description



### Component:

- 1、DIN 35mm rail
- 2、Female plug
- 3、Bus connector
- 4、Male plug
- 5、Isolated barrier



### Instruction for Use:

1. Each isolated barrier is matched with a bus connector. The connectors can be spliced together. It is recommended to connect 8-16 connectors in a group.
2. A male plug and a female plug are required at the head and tail of each group of connectors.
3. The wire used in the bus power supply module has a length of about 8 mm for the ferrules or exposed wire. The exposed wires or ferrules should be fixed by M2 screws in the plug.
4. Bus connector has a pluggable error-proof function. Pay attention to the direction of the error-proof slot on the barrier housing when installing the isolated barrier to the bus connector.

