

# Isolated Barrier

GS8568-EX

GYB18.1156  
IECEx CQM14.0048



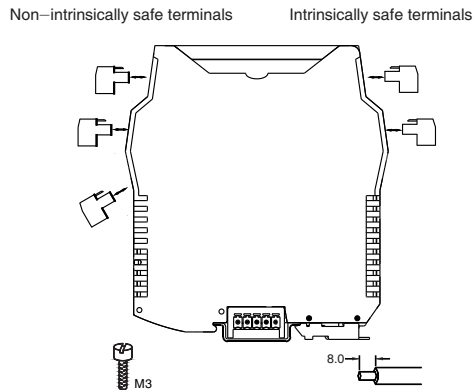
Please read the instruction manual carefully before use the product, and please safekeeping.

## Caution

- Please check whether the product type on the package accords to the ordering contract;
- Read this manual carefully before installation or using. If there is something unclear, please dial technic support hotline-400 881 0780;
- Isolated barrier should be located in the safe area;
- Supply voltage is 24VDC, 220VAC is forbidden;
- Users are not allowed to dismantle or repair the barrier otherwise it will induce malfunction.

## Connections

- (1). This barrier adopts knock-down connector with screw terminals. The intrinsically safe (IS for short) terminals (blue plugs) should be connected to hazardous area devices and the non-IS ones (green plugs) to the safe area devices.
- (2). Choose for the hazardous area the blue-marked wires. Its minimum cross section area should be 0.5 mm<sup>2</sup>, and minimum dielectric strength should be 500V.
- (3). The wirings in safe area and hazardous area must be separated, and both have protection bushes.
- (4). A length of 8mm bared wire is locked by the M3 bolt. See as shown below.



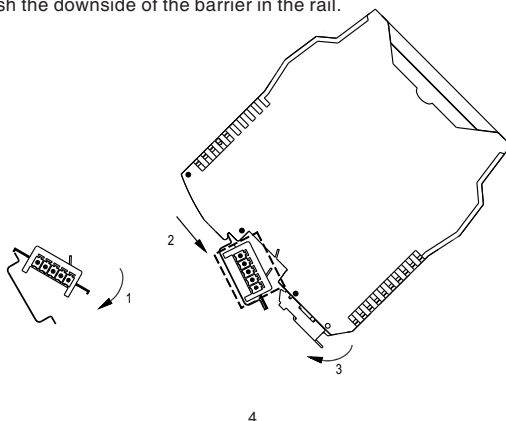
## Installation

The isolated barrier should be located at safe area, according to the related requirements in IEC60079-14(EN60079-14), IEC60079-17(EN60079-17), IEC60079-19(EN60079-19), IEC60079-25(EN60079-25), GB15577, GB12476 and GB50257.

GS8500-EX series isolated barrier are designed for mounting on 35mm DIN guide rail.

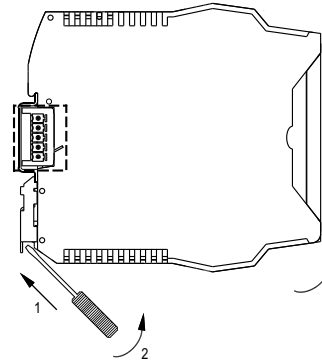
Installation according to the following steps:

- (1). First make the bus-powered outlet locked into the guide rail; (If no bus-powered function, omit this step);
- (2). Make the upside of the barrier locked into the guide rail;
- (3). Push the downside of the barrier in the rail.



## Disassembly

- (1). Insert a screwdriver (its edge length ≤ 6mm) into the downside metal lock of the barrier;
- (2). Push the screwdriver upwards, then prize the metal lock downwards;
- (3). Take the barrier out of the guide rail.



## Maintenance

- (1). Before using, please check again whether the module's Ex-proof rating accords to the operation conditions, and also wiring and polarity are correct.
- (2). It is disallowable to test insulativity among the terminals with a megameter. If necessary, the wires must be cut off before testing, or the internal fuse would blow.
- (3). Every product has been test strictly before leaving factory. If users find any abnormality in the module, please contact the nearest agent or our company.
- (4). In 5 years from the delivery date, if the product works improperly during normal operation, we will repair or replace it without payment.

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## Summarize

Operation side(HART) isolated barrier(2 channels), accepts 4~20mA signal form safe area to drive valve positioners and other executive mechanisms in hazardous area, also allows bi-directional transmission of HART communication signals. The product needs an independent power supply. Input circuit,output circuit and power supply are each galvanically isolated.

## Specification

**Number of channels:** 2

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

**Current consumption:** ≤80mA(at 24Vdc supply,20mA output)

**Safe-area input:**

Current: 0/4~20mA, HART digital signal  
Voltage drop: ≤2V

**Hazardous-area output:**

Current: 0/4~20mA, HART digital signal  
Load resistance:  $R_L \leq 800\Omega$   
Load resistance:  $R_L \geq 250\Omega$ (HART)

Voltage: 0/1~5V; Load resistance:  $R_L \geq 330k\Omega$

Note: Users can specify current or voltage output when ordering.

**Transfer accuracy:** 0.1%F.S.

**Temperature drift:** 0.005%F.S./°C

**Response time:** Reach 90% of final value in 2ms

**Power supply protection:** Protect the barrier form reverse supply voltage destroy.

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

**Dielectric strength:**

Between non-intrinsically safe part and intrinsically safe part  $\geq 2500VAC$   
Between power supply part and non-intrinsically safe part  $\geq 500VAC$

**Insulation resistance:**

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

**Weight:** Approx.135g

**Suitable location:** Mounting in non-hazardous area, and connected to the IS apparatus in zone 0 hazardous area.

**Suitable IS apparatus:**

2-wire valve positioner, electric converter

## Operation Conditions

(1). The air should not contain any medium corrupting the coat of chrome,nickel and silver.Moreover,violent quiver and impact or any cause of electromagnetic induction (such as big current or spark,etc.)must be avoided when using.

(2). Operating temperature: -20°C~+60°C

(3). Storage temperature: -40°C~+80°C

(4). Relative humidity: 10%~90%

## Intrinsic Safety Description

**National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation(NEPSI)**

**Compliance with standard:** IEC60079-0(EN60079-0)  
IEC60079-11(EN60079-11)  
IEC60079-26(EN60079-26)  
GB12476.1 and GB12476.4

**Ex-marking:** [Ex ia Ga] IIC  
[Ex iaD]

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

**Intrinsic safety parameter:** (9,10;12,13 terminals)

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

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

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

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

Note: \*IIB parameters also applicable for combustible dust atmospheres [Ex iaD]

Largest external capacitance ( $C_o$ ) and inductance ( $L_o$ ) numerical attention when using the following requirements:

(1) For distributed inductance and capacitance e.g. as in a cable, allow the values of capacitance and inductance;

(2) For circuits containing up to 1 % inductance or up to 1% capacitance with a cable, allow the values of capacitance and inductance;

(3) For connection of the combined inductance and capacitance where both are greater than 1% of the allowed value (excluding the cable), allow up to 50% each of the values of capacitance and inductance.

## Intrinsic Safety Explosion Protection Loop System

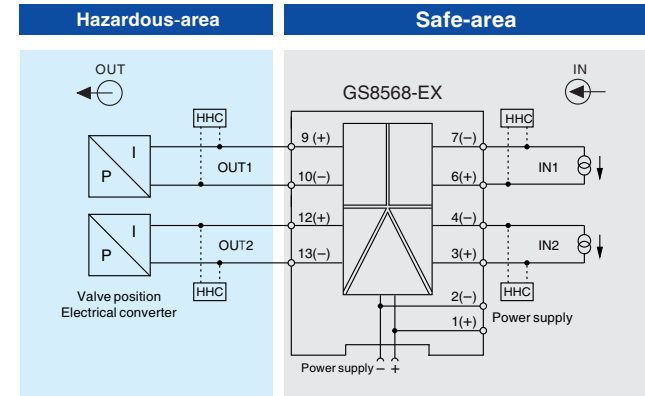
Special requirements have to be confirmed before using the intrinsically safe explosion loop system(intrinsically circuit) which connected by isolated barrier and intrinsically safe apparatus in field:

(1) The explosion level of intrinsically safe apparatus should meet the requirements of operation conditions. The apparatus should pass the explosion protection test and get the certificate by state-authorized explosion-proof product certification bodies.

(2) The intrinsic safety parameters of isolated barrier and intrinsically safe apparatus both are sure, and comply with 12.2.5 of GB 3836.15-2000.

(3)If any parameters are unclear, the system has to be confirmed by state-authorized explosion-proof product certification bodies.

## Application



Note: 1. It is not allowed to use HHC (HART hand-held communicator) in hazardous area and safe area at the same time.

2. HHC (HART hand-held communicator) used in hazardous area must have an EX certification.

## Safety-related Application(SIL2)



Functional Safety Type Approved  
www.tuv.com  
ID 00000000

**SIL 2**  
**IEC 61508**

1.These models have been assessed for using in IEC61508 functional safety applications.

2.Failure rates and safety-related parameters refer to the certificate.

## Dimensions

118.9mm×106.0mm×17.5mm

