

Isolated Barrier

GS8596-EX.0
GS8596-EX.1
GS8596-EX.2
GS8596-EX.3

GYB15.1676



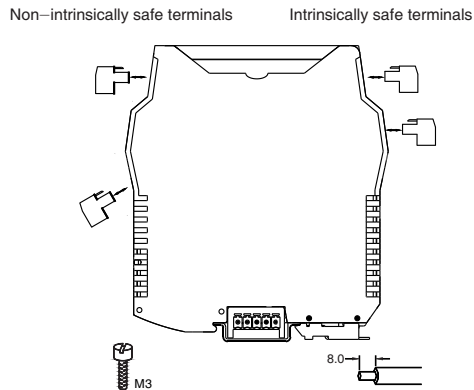
Please read the instruction manual carefully before use the product, and please safekeeping.

⚠ 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 mm², 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.



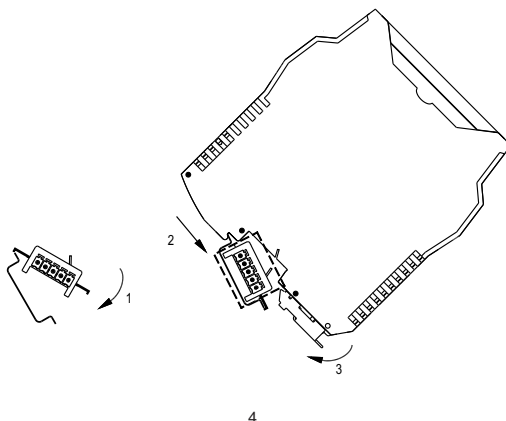
■ Installation

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

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

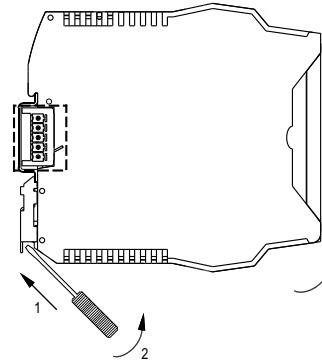
Installation according to the following steps:

- (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

Isolated barrier, converts the RS-485 digital signal generated by the field instruments into RS-232 digital signal and outputs it in isolatedly, realizes the bi-direction communication between hazardous area and safe area, and provides isolated power supply for field instruments. The product needs an independent power supply, input circuit,output circuit and power supply are each galvanically isolated.

Specification

Number of channels: 1

Supply voltage: 20~35V DC

Current consumption:

≤30mA(GS8596-EX.0: at 24V DC supply, without distribution voltage)

≤120mA(GS8596-EX.1: at 24V DC supply, 8V/50mA, 9V/50mA, 12V/50mA distribution voltage)

≤140mA(GS8596-EX.2: at 24V DC supply, 5V/100mA, 6V/100mA distribution voltage)

≤140mA(GS8596-EX.3: at 24V DC supply, with general distribution voltage)

Safe-area output:

Signal: RS-232 digital signal

Signal level rules: standard RS-232 logic level

Transmission delay: ≤10us

Signal transmission rate: ≤56kbps

Transmission control mode: Half duplex

Hazardous-area input:

Signal: RS-485 digital signal

Signal level rules: standard RS-485 difference level

Drive ability: Can take up to 32 transceivers

Distribution voltage: 5V/100mA, 6V/100mA, 8V/50mA, 9V/50mA, 12V/50mA, general, None

Distribution voltage error: ±10%

General function of the DIP Switch:

Available 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: Protect the barrier from reverse supply voltage destroy.

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

Dielectric strength:

Between non-intrinsically safe part and intrinsically safe part≥2500VAC

Between power supply part and non-intrinsically safe part≥500VAC

Insulation resistance:

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

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

Weight: Approx.150g

Suitable location: Mounting in safe area, be connected with IS apparatus in Zone 0/1/2, II C, II B, II A, T4~T6 hazardous area.

Suitable IS apparatus:

With RS-485/RS-422 communication interface device

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%

Safety Certificates

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

Compliance with standard: GB3836.1、GB3836.4、GB3836.20

Ex-marking: [Ex ia Ga] IIC

maximum voltage: Um=250V

Intrinsic safety parameter:(9,10 terminals)

Uo=6.6V, Io=65mA, Po=110mW

IIC : Co=22μF , Lo=8mH

IIB : Co=500μF , Lo=24mH

IIA : Co=1000μF, Lo=64mH

GS8596-EX.1 (12,13 terminals)

Uo=23.1V, Io=187mA, Po=1.08W

IIC : Co=0.1μF , Lo=0.8mH

IIB : Co=1.0μF , Lo=2.4mH

IIA : Co=3.6μF , Lo=6.4mH

GS8596-EX.2、GS8596-EX.3(12,13 terminals)

Uo=15.9V, Io=325mA, Po=1.30W

IIC : Co=0.46μF , Lo=0.25mH

IIB : Co=2.80μF , Lo=0.75mH

IIA : Co=11.3μF , Lo=2.0mH

Largest external capacitance (Co) and inductance (Lo) 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

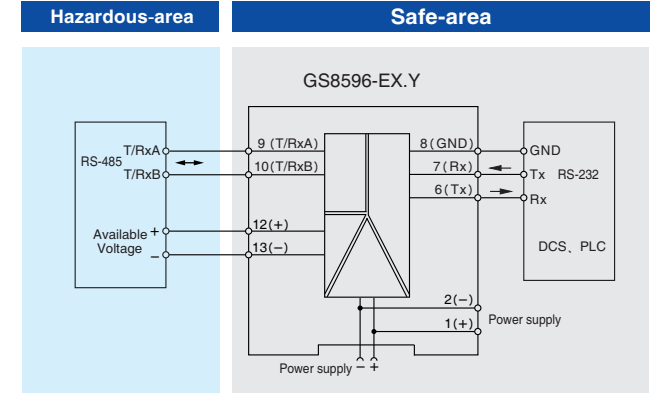
Special requirements have to be confirmed before using the intrinsically safe explosion loop system(intrinsically circuit) which connected by isolated barrier and intrinsically safe apparatus in field:

(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



Notes:

1. GS8596-EX.0 without distribution voltage, not contains distribution side.
2. GS8596-EX.1 with 8V/9V/12V、50mA distribution voltage.
3. GS8596-EX.2 with 5V/5V、100mA distribution voltage.
4. GS8596-EX.3 with general distribution voltage.

Dimensions

118.9mm×106.0mm×17.5mm

