Installation

During installation, operation and maintenance, users shall comply with the relevant requirements of the product instruction manual, GB 50257-1996 "Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering", GB 3836.13-2013 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres", GB 3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)" and GB 3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)".

AM2000EX series isolated barriers are used in concert with AM2000EX series termination board, mounted on termination board. Install as follow:

(1) First make sure both sides of locks are under "Open", insert the instrument along the circular guide groove;
(2) After confirming the instrument is inserted in the end, tighten the lock down.

Disassembly

(1) Open up both sides of locks;
(2) Pull the instrument in the direction of the guide groove.

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 megamer. 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.

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;
- 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.
Digital signal input isolated barrier, can transfer the switch or proximity switch signal from hazardous area to safety area. This device has selectable line fault detect (LFD) indicating function and each channel of it can be setting output & input in-phase or reverse phase control mode. It need independent power supply.

### 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 standards: GB3836.1, GB3836.4 and GB3836.20
Ex-marking: [Ex ia Ga] IIC
maximum voltage: U≤250V
Intrinsic safety parameter: (1, 3, 2, 4 terminals)
U0 = 10.5V, I0 = 14mA, Po = 37mW
IIC: Co = 2.4μF, Lo = 165mH
IIB: Co = 16.8μF, Lo = 495mH
IIA: Co = 75.0μF, Lo = 1000mH
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
- **Safe-area**
  - Digital Input
  - Drive ability: 250V AC, 2A
  - Supply: 24V DC
  - Number of channels: 2
  - Signal types: resistive
  - Consumptions: (at 24Vdc supply, 20mA output) ≤ 45mA
  - Current: about 8mA
  - Voltage: about 8V

- **Hazardous-area**
  - Hazardous-area input:
    - Input signal: switch, proximity detector
    - Open circuit voltage: about 8V
    - Short circuit current: about 8mA
  - Hazardous-area output:
    - Switch closed/input loop-current: > 2.1mA, output relay is energized yellow LED ON.
    - Switch open/input loop-current: < 1.2mA, output relay is de-energized yellow LED OFF.

#### Specification
- Number of channels: 2
- Supply voltage: 20 ~ 35V DC
- Current consumption: (24V supply, 20mA output) ≤ 45mA
- Safe area output relay signal:
  - Response time: ≤ 10ms
- Drive ability: 250V AC, 2A or 30V DC, 2A
- Load type: resistive load
- Hazardous-area input:
  - Input signal: switch, proximity detector
  - Open circuit voltage: about 8V
  - Short circuit current: about 8mA
- Input/Output Characteristics:
  - Switch closed/input loop-current: > 2.1mA, output relay is energized yellow LED ON.
  - Switch open/input loop-current: < 1.2mA, output relay is de-energized yellow LED OFF.

#### Dimensions
110.0mm x 73.0mm x 12.5mm

Note: Switch(I), K2, K4 must be set to OFF state, no line fault (breakage, short circuit) detection; When using line fault (breakage, short circuit) detection function, resistors must be fitted, 22kΩ in parallel with switch, 680Ω in series with switch, see Switch (II), K2, K4 set to ON state.

Power supply protection: Protect the barrier form 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: > 500VDC
- Insulation resistance:
  - Between non-intrinsically safe part and intrinsically safe part: ≥ 100MΩ
  - Between power supply part and non-intrinsically safe part: ≥ 100MΩ
- Weight: Approx. 100g
- Suitable location: Mounting in non-hazardous area, and connected to the hazardous area of apparatus in zone 0 hazardous area.
- Suitable IS apparatus:
  - Compliance with DIN19234 of NAMUR proximity switches, switches and other field equipment (including: intrinsically safe pressure switches, temperature switches, level switches, etc.)
## Installation

During installation, operation and maintenance, users shall comply with the relevant requirements of the product instruction manual, GB 50257-1996 "code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering", GB 3836.13-2013 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres", GB 3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)" and GB 3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)"

AM2000EX series isolated barriers are used in concert with AM2000EX series termination board, mounted on termination board. Install as follow:

1. First make sure both sides of locks are under "Open"; insert the instrument along the circular guide groove;
2. After confirming the instrument is inserted in the end, tighten the lock down.

## 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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**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;
- 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.

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AM2031EX
GYB12.1279X

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Producer: SHANGHAI CHENZHU INSTRUMENT CO., LTD.
Add: Building 6, 201 Minyi Road, Caohejing Hi-Tech Park, Songjiang New Industrial Park, Shanghai 201612, P.R. China
Production license number: X06-014-00557
Isolated barrier transmits 4–20mA signals to the Ex area in an intrinsically safe manner. It accepts 4–20mA floating signals from a safe-area controller to drive a valve positioned, electric converter and so on. The analog value can be overlayed with digital (HART) communication signals on the Ex or non-Ex side and transmitted bidirectionally. The power part, the input part and the output part are isolated from each other.

### Specification

Number of channels: 1  
Supply voltage: 20–35V DC  
Current consumption: (at 24Vdc supply, 20mA output) < 45mA  
Safe-area input:  
- Current: 4–20mA, HART digital signal  
- Voltage drop: < 2V  
Hazardous-area output:  
- Current: 4–20mA, HART digital signal  
- Load resistance: < 800Ω  
- Load resistance: > 249Ω (HART)  
Transfer accuracy: 0.1%F.S.  
Temperature drift: 0.005%/F.S./℃  
Response time: Reach 90% of final value in 0.5ms  
Power supply protection: Protect the barrier form 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. 100g  
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, Electropneumatic 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℃ to 60℃  
3. Storage temperature: -40℃ to 80℃  
4. Relative humidity: 10%~90%

### Intrinsic safety description

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)  
Compliance with standard: GB3836.1, GB3836.4 and GB3836.20  
Ex-marking: [Ex ia Ga] IIC  
maximum voltage: Um=250V  
Intrinsic safety parameter: (1, 2 terminals)  
- Po=28V, Io=93mA, P=651mW  
- IIC: Co=0.083μF, Lo=4.2mH  
- IIB: Co=0.65μF, Lo=12.6mH  
- IIA: Co=2.15μF, Lo=33.6mH  
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 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 protection 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

#### Safe-area

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>24V DC Power supply</td>
</tr>
<tr>
<td>L2</td>
<td>An</td>
</tr>
<tr>
<td>L3</td>
<td>BN</td>
</tr>
<tr>
<td>L4</td>
<td>RL</td>
</tr>
</tbody>
</table>

#### Hazardous-area

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L5</td>
<td>HIC</td>
</tr>
<tr>
<td>L6</td>
<td>DC8, PLC</td>
</tr>
</tbody>
</table>

### Dimensions

110.0mm x 73.0mm x 12.5mm
Installation

During installation, operation and maintenance, users shall comply with the relevant requirements of the product instruction manual. GB 50257-1996 "code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering". GB 3836.13-2013 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres", GB 3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)" and GB 3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)".

AM2000EX series isolated barriers are used in concert with AM2000EX series termination board, mounted on termination board. Install as follow:

1. First make sure both sides of locks are under "Open", insert the instrument along the circular guide groove;
2. After confirming the instrument is inserted in the end, tighten the lock down.

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.

Disassembly

1. Open up both sides of locks;
2. Pull the instrument in the direction of the guide groove.

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;
- Isolated barrier should be located in the safe area;
- Supply voltage is 24V DC, 220V AC is forbidden;
- Users are not allowed to dismantle or repair the barrier otherwise it will induce malfunction.
Suitable apparatus
Weight: Approx. 100g
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

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℃~+60℃
3. Storage temperature: -40℃~+80℃
4. Relative humidity: 10%~90%

Intrinsic safety description
National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Compliance with standard: GB3836.1, GB3836.4 and GB3836.20
Ex-marking: [Ex ia Ga] iIC
maximum voltage: Um=250V
Intrinsic safety parameter: (1,2,3,4 terminals)
\[ U_{ic} = \frac{28V}{93mA}, P_{o} = 651mW \]
\[ I_{ic} \leq 0.083\mu F, L_{o} \leq 4.2mH \]
\[ I_{ib} \leq 0.65\mu F, L_{o} \leq 12.6mH \]
\[ I_{ia} \leq 2.15\mu F, L_{o} \leq 33.6mH \]
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 protection 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.

Specifications
Number of channels: 1
Supply voltage: 20~35V DC
Current consumption: (at 24Vdc supply, 20mA output) < 60mA
Safe-area output:
Current: 4~20mA, HART digital signal
Load resistance < 450Ω
Load resistance > 249Ω (HART)
Hazardous-area output:
Current: 4~20mA, HART digital signal
Available voltage: Open circuit voltage: ≤ 28V
Voltage: ≥ 16V at 20mA
Normal working current: ≤ 25mA
Transfer accuracy: 0.1% F.S.
Temperature drift: 0.005%/F.S./℃
Response time: Reach 90% of final value in 3ms
Power supply protection: Protect the barrier form 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. 100g
Suitable location: Mounting in non-hazardous area, and connected to the IS apparatus in zone 0 hazardous area.
Suitable IS apparatus:
- 2-wire HART transmitter, 3-wire transmitter, current source
- Load resistance

Application

Dimensions
110.0mm × 73.0mm × 12.5mm
Installation

During installation, operation and maintenance, users shall comply with the relevant requirements of the product instruction manual, GB 50257-1996 "Code for construction and acceptance of electric devices for explosion atmospheres and fire hazard electrical equipment installation engineering", GB 3836.13-2013 "Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul for apparatus used in explosive gas atmospheres", GB 3836.15-2000 "Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)" and GB 3836.16-2006 "Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)".

AM2000EX series isolated barriers are used in concert with AM2000EX series termination board, mounted on termination board. Install as follows:
(1) First make sure both sides of locks are under "Open", insert the instrument along the circular guide groove;
(2) After confirming the instrument is inserted in the end, tighten the lock down.

Disassembly

(1) Open up both sides of locks;
(2) Pull the instrument in the direction of the guide groove.

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 insulation 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.
**Summarize**

Isolated barrier, can convert thermocouple signal, millivolt signal mounted in hazardous area into 4~20mA current for driving a safe-area load. It's an intelligent instrument with the function of auto cold compensation, its measure range and thermocouple division are programmable through computer. This product need be supplied independently, and the power supply, input and output are isolated from each other.

**Specification**

Number of channels: 1
Supply voltage: 20~35V DC
Current consumption: ≤40mA (at 24V DC supply, 20mA signal output)

Safe-area output:
Current: 4~20mA, Load resistance: R ≤ 550Ω

Hazardous-area input:

<table>
<thead>
<tr>
<th>Signal type</th>
<th>Signal Range</th>
<th>Min. span</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>-200℃ ~ +400℃</td>
<td>50℃</td>
<td>0.5℃/0.1%</td>
</tr>
<tr>
<td>E</td>
<td>-200℃ ~ +900℃</td>
<td>50℃</td>
<td>0.5℃/0.1%</td>
</tr>
<tr>
<td>J</td>
<td>-200℃ ~ +1200℃</td>
<td>50℃</td>
<td>0.5℃/0.1%</td>
</tr>
<tr>
<td>K</td>
<td>-200℃ ~ +1372℃</td>
<td>50℃</td>
<td>0.5℃/0.1%</td>
</tr>
<tr>
<td>N</td>
<td>-200℃ ~ +1300℃</td>
<td>50℃</td>
<td>0.5℃/0.1%</td>
</tr>
<tr>
<td>R</td>
<td>-40℃ ~ +1768℃</td>
<td>500℃</td>
<td>1.5℃/0.1%</td>
</tr>
<tr>
<td>S</td>
<td>-40℃ ~ +1768℃</td>
<td>500℃</td>
<td>1.5℃/0.1%</td>
</tr>
<tr>
<td>B</td>
<td>+320℃ ~ +1820℃</td>
<td>500℃</td>
<td>1.5℃/0.1%</td>
</tr>
<tr>
<td>mV</td>
<td>–100mV ~ +100mV</td>
<td>10mV</td>
<td>20μV/0.1%</td>
</tr>
</tbody>
</table>

Note: 1% is related to the adjusted measurement range (the value to be applied is greater).

2. When TC signal input, the conversion accuracy does not include the cold junction compensation error, and the conductor resistance increasing per 100Ω, the cold junction compensation will add 0.2℃.

3. When B type TC signal input, the temperature range lower limit should be greater than 680℃. Then it can satisfy the precision index.

Alarm indication:
Under lower limit, LED L is flashing, output current is around 3.8mA.
Exceed upper limit, LED H is flashing, output current is around 20.8mA.
Breakage, both L and H are flashing, output current is around 20.8mA.

Temperature drift: 0.01%F.S./℃
Response time: Reach 90% of final value in 1s

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

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

**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℃~+60℃

3. Storage temperature: -40℃~+80℃

4. Relative humidity: 10%~90%

**Intrinsic safety description**

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Compliance with standard: GB3836.1, GB3836.4 and GB3836.20

Ex-marking: [Ex ia Ga] IIC

maximum voltage: Um = 250V

Intrinsic safety parameter: (1, 2 terminals)

- Uo = 8.5V, Io = 20mA, Po = 43mW
- IIC: Co = 6.5μF, Lo = 3.6mH
- IIB: Co = 60μμF, Lo = 10.8mH
- IIA: Co = 1000μμF, Lo = 28.8mH

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.

**Dimensions**

110.0mm×73.0mm×12.5mm
### Installation

During installation, operation and maintenance, users shall comply with the relevant requirements of the product instruction manual, GB 50257-1996 “Code for construction and acceptance of electric device for explosion atmospheres and fire hazard electrical equipment installation engineering”, GB 3836.13-2013 “Electrical apparatus for explosive gas atmospheres Part 13: Repair and overhaul of apparatus used in explosive gas atmospheres”, GB 3836.15-2000 “Electrical apparatus for explosive gas atmospheres Part 15: Electrical installations in hazardous areas (other than mines)” and GB 3836.16-2006 “Electrical apparatus for explosive gas atmospheres Part 16: Inspection and maintenance of electrical installation (other than mines)”. AM2000EX series isolated barriers are used in concert with AM2000EX series termination board, mounted on termination board. Install as follows:

1. First make sure both sides of locks are under “Open”, insert the instrument along the circular guide groove;
2. After confirming the instrument is inserted in the end, tighten the lock down.

### Disassembly

1. Open up both sides of locks;
2. Pull the instrument in the direction of the guide groove.

### 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 megometer. 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.

---

**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;
- 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.

---

**Producer**: SHANGHAI CHENZHU INSTRUMENT CO., LTD.
**Add**: Building 6, 201 Minyi Road, Caohejing Hi-Tech Park Songjiang New Industrial Park, Shanghai 201612, P.R. China
**Production license number**: X06-014-00557

**Entrust**: Hangzhou Hollysys Automation Co., Ltd.
**Add**: NO.19 street Economic & Technic Developing Zone, Hangzhou
**Post**: 310018
**Tel**: 0571-8163 3800
**Fax**: 0571-8163 3700
**http**: //www.hollysys.com

**AM2061EX GYB12.1279X**
Summary

Isolated barrier, can convert signals from 2-wire, 3-wire RTDS signal mounted in hazardous area into 4~20mA. It can be configured by PC. It's measure range and thermal resistance division are programmable through computer. This product need be supplied independently, and the power supply input and output are isolated from each other.

Specification

Number of channels: 1
Supply voltage: 20~35V DC
Current consumption: ≤40mA (at 24V DC supply, 20mA signal output)
Safe-area output:
Current: 4~20mA; Load resistance: RL<550Ω
Hazardous-area input:

<table>
<thead>
<tr>
<th>Signal type</th>
<th>Signal Range</th>
<th>Min. span</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt100</td>
<td>-200℃~+850℃</td>
<td>20℃</td>
<td>0.2℃/0.1%</td>
</tr>
<tr>
<td>Cu50</td>
<td>-50℃~+150℃</td>
<td>20℃</td>
<td>0.2℃/0.1%</td>
</tr>
<tr>
<td>Cu100</td>
<td>-50℃~+150℃</td>
<td>20℃</td>
<td>0.2℃/0.1%</td>
</tr>
</tbody>
</table>

Note: 1. % is related to the adjusted measurement range (the value to be applied is the greater). 2. RTD input, allow max wire resistance 50Ω (3-wire). Alarm indication:
Under lower limit, LED L is flashing, output current is around 3.8mA. Exceed upper limit, LED H is flashing, output current is around 20.8mA. Break line, both L and H are flashing, output current is around 20.8mA. Short circuit, both L and H are flashing, output current is around 3mA.
Temperature drift: 0.01%F.S./℃
Response time: Reach 90% of final value in 1s
Power supply protection: Protect the barrier  form 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 ≥100MQ
Between power supply part and non-intrinsically safe part ≥100MQ
Weight: Approx. 100g
Suitable location: Mounting in non-hazardous area, and connected to the IS apparatus in zone 0 hazardous area.
Suitable IS apparatus: Pt100, Cu50, Cu100

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℃~+60℃
(3). Storage temperature: -40℃~+80℃
(4). Relative humidity: 10%~90%

Intrinsic safety description

National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation (NEPSI)
Compliancy with standard: GB3836.1, GB3836.4 and GB3836.20
Ex-marking: [Ex ia Ga] IIC
maximum voltage: Um=250V
Intrinsic safety parameter: (1,2 terminals)
Uo=8.5V, Io=20mA, Po=43mW
IIC: Co=6.5μF, Lo=3.6mH
IBB: Co=60μF, Lo=10.8mH
IIA: Co=1000μF, Lo=28.8mH
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 protection 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

<table>
<thead>
<tr>
<th>Safe-area</th>
<th>Hazardous-area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: terminals 2 and 3 must be connected when 2-wire RTD inputs.

Dimensions

110.0mm x 73.0mm x 12.5mm