

Isolated Barrier

AM1011EX

GYB15.1144



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.

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

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



Summarize

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. 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) \leq 30mA
Safe area output relay signal:
 Response time: \leq 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.

Function of the switch setting:

Sta.	K1	K2
ON	Reverse	LFD enable
OFF	In-phase	LFD disable

Note: Switch(I), K2 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, 22k Ω in parallel with switch, 680 Ω in series with switch, see Switch (II), K2 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 \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 Ω

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

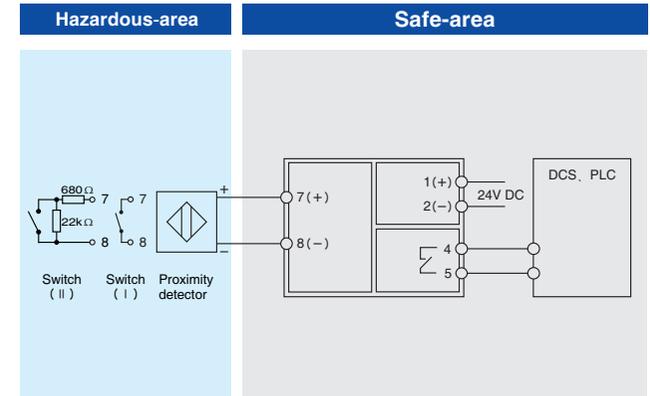
Weight: Approx. 100g

Suitable location: Mounting in non-hazardous area, and connected to the IS 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.)

Application



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: $U_m=250V$

Intrinsic safety parameter: (7,8,terminals)

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

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

IIB : $C_o=16.8\mu F$, $L_o=495mH$

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

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.

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)".

Isolated Barrier

AM1012EX

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Summarize

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. The power part, the input part and the output part are isolated from each other.

Specification

Number of channels: 2
Supply voltage: 20~35V DC
Current consumption: (at 24Vdc supply, 20mA output) \leq 40mA
Safe area output relay signal:
 Response time: \leq 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.

Function of the switch setting:

Sta.	K1, K3	K2, K4
ON	Reverse	LFD enable
OFF	In-phase	LFD disable

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, 22k Ω in parallel with switch, 680 Ω in series with switch, see Switch (II), K2, K4 set to ON state.

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 \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 Ω

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

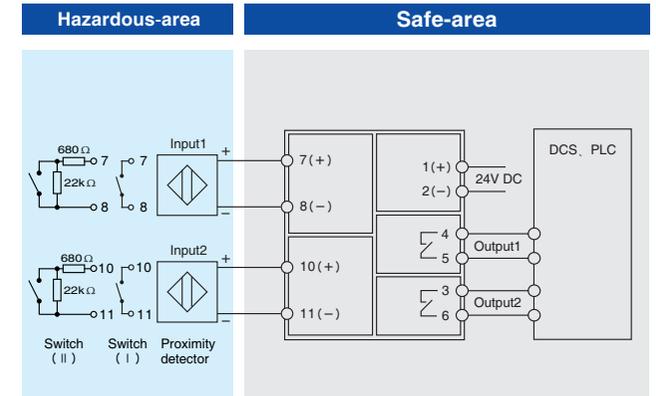
Weight: Approx. 150g

Suitable location: Mounting in non-hazardous area, and connected to the IS 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.)

Application



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: $U_m=250V$

Intrinsic safety parameter: (7,8;10,11 terminals)

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

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

IIB : $C_o=16.8\mu F$, $L_o=495mH$

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

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.

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)".

Isolated Barrier

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Summarize

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. The power part, the input part and the output part are isolated from each other.

Specification

Number of channels: 1/2
Supply voltage: 20~35V DC
Current consumption: (at 24Vdc supply, 20mA output) \leq 40mA
Safe area output relay signal:
 Response time: \leq 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.

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Function of the switch setting:

Sta.	K1, K3	K2, K4
ON	Reverse	LFD enable
OFF	In-phase	LFD disable

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, 22k Ω in parallel with switch, 680 Ω 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 \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 Ω

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

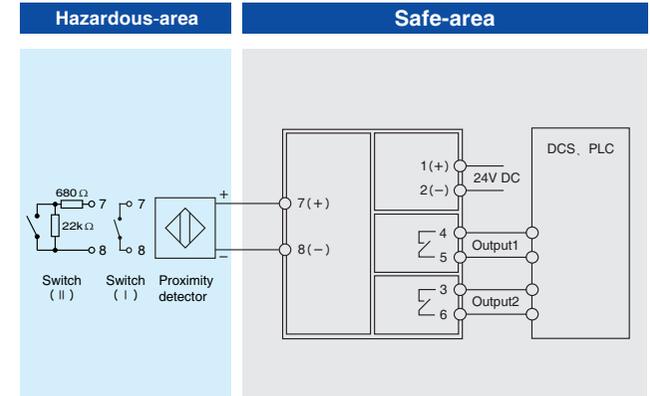
Weight: Approx. 150g

Suitable location: Mounting in non-hazardous area, and connected to the IS 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.)

Application



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: (7,8 terminals)

Uo=10.5V, Io=14mA, Po=37mW

IIC : Co=2.4 μ F, Lo=165mH

IIB : Co=16.8 μ F, Lo=495mH

IIA : Co=75.0 μ F, 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.

Installation

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Isolated Barrier

AM1021EX

GYB15.1144



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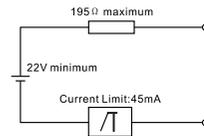
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Summarize

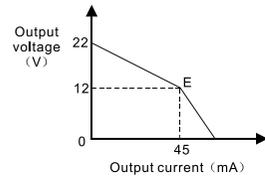
Isolated Barrier is a loop powered module which enables intrinsically safe devices, such as solenoid valves or alarm transmitters, and some other low-power loads, located in the hazardous area to be controlled from the safe area. The input and the output are electrically isolated from each other. Allow the control switch to connect directly to the either side of power supply circuit.

Specification

- Number of channels:** 1
- Supply voltage:** 20~35V DC
- Current consumption:** (at 24Vdc supply, 45mA output) ≤ 75 mA
- Hazardous-area output:**
Equivalent output circuit



Minimum output voltage



Open-circuit voltage: 22V to 24V
 Minimum output voltage: ≥ 12 V at 45mA

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 ≥ 2500 VAC

Insulation resistance:

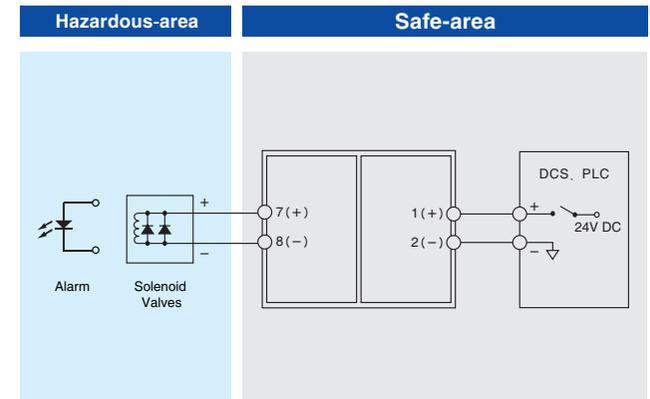
Between non-intrinsically safe part and intrinsically safe part ≥ 100 MΩ

Weight: Approx. 100g

Suitable IS apparatus:

Solenoid valves, alarm and so on

Application



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: $U_m = 250$ V

Intrinsic safety parameter: (7,8,terminals)

$U_o = 25$ V, $I_o = 140$ mA, $P_o = 875$ mW

IIC : $C_o = 0.11$ μF, $L_o = 1.32$ mH

IIB : $C_o = 0.84$ μF, $L_o = 3.96$ mH

IIA : $C_o = 2.97$ μF, $L_o = 10.56$ mH

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;
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Installation

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Isolated Barrier

AM1022EX

GYB15.1144



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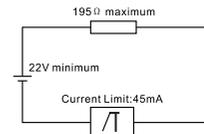
Summarize

Isolated Barrier is a loop powered module which enables intrinsically safe devices, such as solenoid valves or alarm transmitters, and some other low-power loads, located in the hazardous area to be controlled from the safe area. The input and the output are electrically isolated from each other. Allow the control switch to connect directly to the either side of power supply circuit.

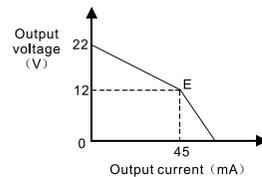
Specification

- Number of channels:** 2
- Supply voltage:** 20~35V DC
- Current consumption:** (at 24Vdc supply, 45mA output) ≤ 160 mA
- Hazardous-area output:**

Equivalent output circuit



Minimum output voltage



Open-circuit voltage: 22V to 24V
 Minimum output voltage: ≥ 12 V at 45mA

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 ≥ 2500 VAC

Insulation resistance:

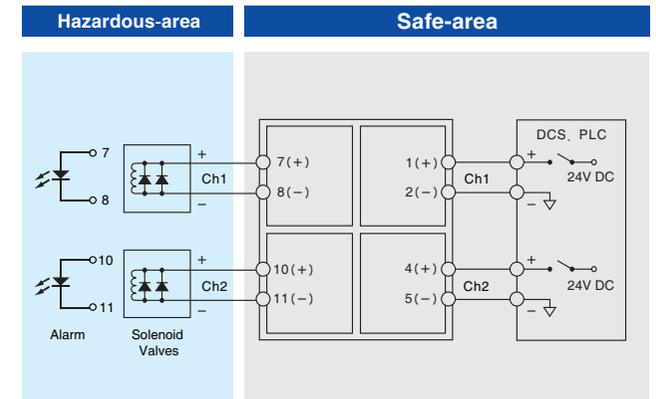
Between non-intrinsically safe part and intrinsically safe part ≥ 100 MΩ

Weight: Approx. 100g

Suitable IS apparatus:

Solenoid valves, alarm and so on

Application



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: $U_m=250$ V

Intrinsic safety parameter: (7,8;10,11 terminals)

$U_o=25$ V, $I_o=140$ mA, $P_o=875$ mW

IIC : $C_o=0.11$ μF, $L_o=1.32$ mH

IIB : $C_o=0.84$ μF, $L_o=3.96$ mH

IIA : $C_o=2.97$ μF, $L_o=10.56$ mH

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Installation

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Isolated Barrier

AM1031EX

GYB15.1144



⚠ Caution

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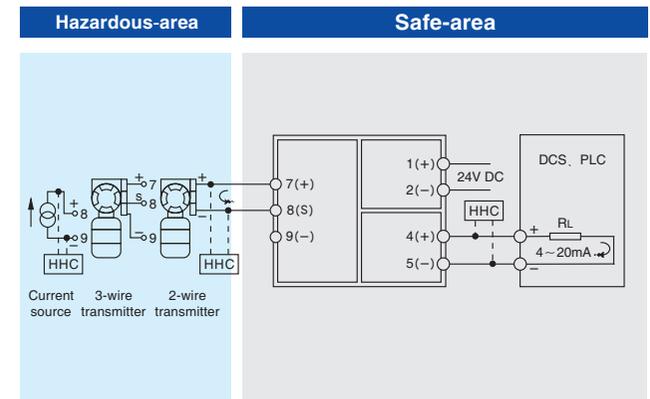
■ Summarize

2-wire HART transmitter, 3-wire transmitter, current source input isolated barrier, provide isolated dc supplies for transmitters which located in hazardous area. Transfer 4~20mA signal(or current source signal) which generated by the transmitter form hazardous area to safe area separately, 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:** 1
Supply voltage: 20~35V DC
Current consumption: (at 24Vdc supply,20mA output) ≤ 65mA
Safe-area output:
 Current: 0/4~20mA, HART digital signal
 Load resistance ≤ 550Ω
 Load resistance ≥ 250Ω (HART)
 Voltage: 0/1~5V, HART digital signal
 Load resistance ≥ 300kΩ
 Note: Users can specify current or voltage output when ordering.
- Hazardous-area input:**
 Current: 0/4~20mA, HART digital signal
 Available voltage: Open circuit voltage: ≤ 28V
 Voltage: ≥ 15.5V at 20mA
 Normal working current: ≤ 25mA
- 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)
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

■ 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.

■ 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: (7,8,9,terminals)

Uo=28V, Io=93mA, Po=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 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.

■ 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)".

Isolated Barrier

AM1032EX

GYB15.1144



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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 Songjiang New Industrial Park, Shanghai 201612, P.R. China
 Production license number: X06-014-00557



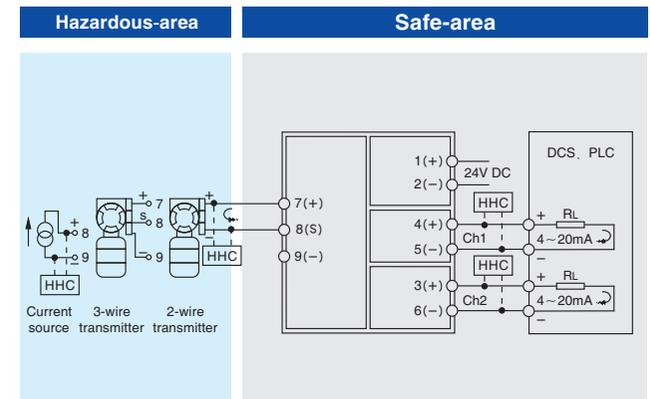
Summarize

2-wire HART transmitter, 3-wire transmitter, current source input isolated barrier, provide isolated dc supplies for transmitters which located in hazardous area. Transfer 4~20mA signal(or current source signal) which generated by the transmitter form hazardous area to safe area separately, 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:** 1/2
- Supply voltage:** 20~35V DC
- Current consumption:** (at 24Vdc supply,20mA output) ≤75mA
- Safe-area output:**
 - Current: 0/4~20mA, HART digital signal
 - Load resistance ≤300Ω
 - Load resistance ≥250Ω (HART)
 - Voltage: 0/1~5V, HART digital signal
 - Load resistance ≥330kΩ
 - Note: Users can specify current or voltage output when ordering.
- Hazardous-area input:**
 - Current: 0/4~20mA, HART digital signal
 - Available voltage: Open circuit voltage: ≤28V
 - Voltage: ≥15.5V at 20mA
 - Normal working current: ≤25mA
- 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)
- 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 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

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.

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: (7,8,9,terminals)

Uo=28V, Io=93mA, Po=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 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.

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)".

Isolated Barrier

AM1041EX

GYB15.1144



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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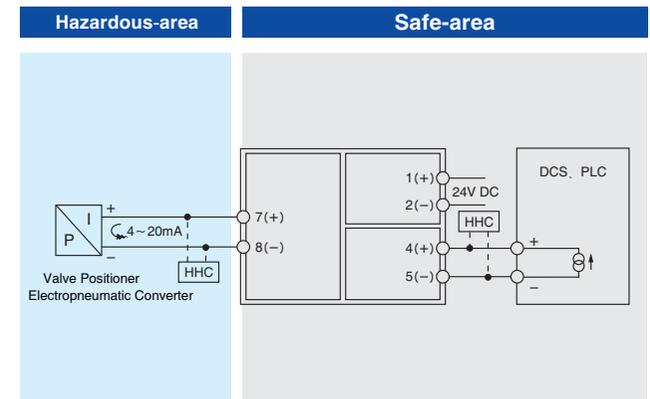
Summarize

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 positioner, electric converter and so on. The analog value can be overlaid 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) ≤ 50mA
- 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 ≤ 800Ω
 - Load resistance ≥ 250Ω (HART)
 - Voltage: 0/1~5V, HART digital signal
 - Load resistance ≥ 300kΩ
- 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 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. 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

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.

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: (7,8, terminals)

Uo=28V, Io=93mA, Po=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 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.

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)".

Isolated Barrier

AM1051EX

GYB15.1144



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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 Songjiang New Industrial Park, Shanghai 201612, P.R. China
 Production license number: X06-014-00557



AM1051EX.11(S)E-3.0/17.03

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-end-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: ≤ 35mA (at 24V DC supply, 20mA signal output)
Safe-area output:

Current: 4~20mA; Load resistance: $R_L \leq 300\Omega$
 Voltage: 1~5V; Load resistance: $R_L \geq 20k\Omega$
 (Note: output current: load resistance: $R_L \leq 550\Omega$,
 Current consumption: ≤ 50mA, need to customized)

Hazardous-area input:

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

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

3. When B type TC signal input, the temperature range lower limit should be greater than 680°C. 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.
 (Notes: breakage alarm current < 4mA or other special requirements, be customized).

Temperature drift: 0.01% F.S./°C

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 ≥ 100MΩ

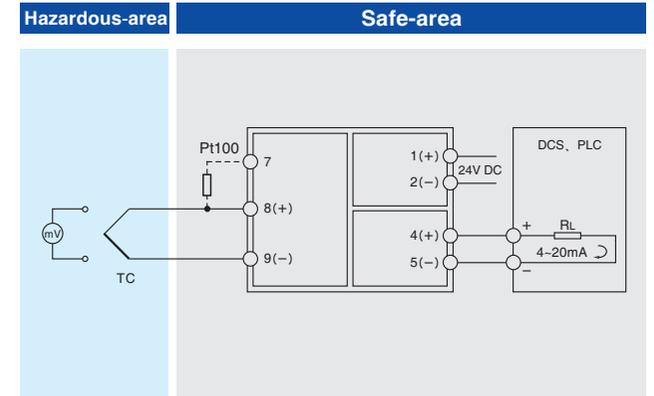
Between power supply part and non-intrinsically safe part ≥ 100MΩ

Weight: Approx. 100g

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

Suitable IS apparatus: T, E, J, K, N, R, S, B and mV signal

Application



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: $U_m = 250V$

Intrinsic safety parameter: (7, 8, 9, terminals)

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

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

IIB : $C_o = 60\mu F$, $L_o = 10.8mH$

IIA : $C_o = 100\mu F$, $L_o = 28.8mH$

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.

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)".

Isolated Barrier

AM1052EX

GYB15.1144



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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 Songjiang New Industrial Park, Shanghai 201612, P.R. China
 Production license number: X06-014-00557



AM1052EX.11(S)E-3.0/17.03

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-end-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: 1/2
Supply voltage: 20~35V DC
Current consumption: ≤ 55mA (at 24V DC supply, 20mA signal output)
Safe-area output:
 Current: 4~20mA; Load resistance: $R_L \leq 300\Omega$
 Voltage: 1~5V; Load resistance: $R_L \geq 20k\Omega$
 (Note: output current: load resistance: $R_L \leq 550\Omega$,
 Current consumption: ≤ 75mA, need to customized)

Hazardous-area input:

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

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

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

Alarm indication:

Under lower limit, LED is flashing, display yellow, output current is around 3.8mA.

Exceed upper limit, LED is flashing, display red, output current is around 20.8mA.

Breakage, LED is flashing, display yellow and red alternately, output current is around 20.8mA.

(Notes: breakage alarm current < 4mA or other special requirements, be customized).

Temperature drift: 0.01% F.S./°C

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 ≥ 100MΩ

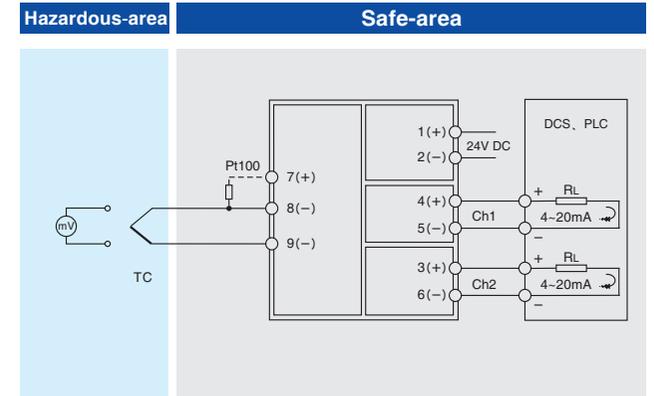
Between power supply part and non-intrinsically safe part ≥ 100MΩ

Weight: Approx. 150g

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

Suitable IS apparatus: T, E, J, K, N, R, S, B and mV signal

Application



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: $U_m = 250V$

Intrinsic safety parameter: (7, 8, 9, terminals)

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

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

IIB : $C_o = 60\mu F$, $L_o = 10.8mH$

IIA : $C_o = 100\mu F$, $L_o = 28.8mH$

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.

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)".

Isolated Barrier

AM1061EX

GYB15.1144



⚠ 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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 Production license number: X06-014-00557



AM1061EX.11(S)E-3.0/16.5

■ Summarize

Solated barrier, can convert signals from 2-wire, 3-wire RTDS signal mounted in hazardous area into 0/4~20mA current or 0/1~5V voltage. It can be configured by PC. Its 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: ≤35mA (at 24V DC supply, 20mA signal output)
Safe-area output:
 Current: 4~20mA; Load resistance: $R_L \leq 300\Omega$
 Voltage: 1~5V; Load resistance: $R_L \geq 20k\Omega$
 (Note: output current: load resistance: $R_L \leq 550\Omega$,
 Current consumption: ≤50mA, need to customized)
Hazardous-area input:

Signal type	Signal Range	Min. span	Accuracy
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. % 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.
 (Note: disconnection alarm current < 4mA or other special requirements, need to be customized).

Temperature drift: 0.01%F.S./°C

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:

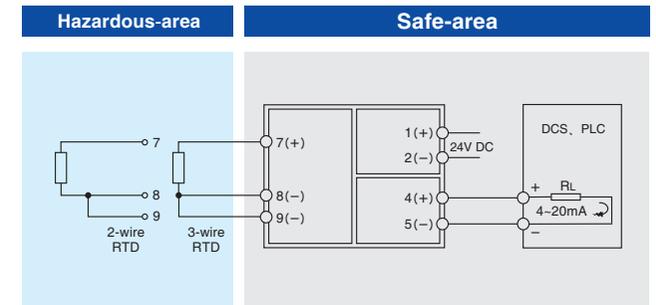
Between non-intrinsically safe part and intrinsically safe part ≥ 100MΩ
 Between power supply part and non-intrinsically safe part ≥ 100MΩ

Weight: Approx. 110g

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

Suitable IS apparatus: Pt100, Cu50, Cu100

■ Application



Note: terminals 8 and 9 must be connected when 2-wire RTD inputs.

■ 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: $U_m = 250V$

Intrinsic safety parameter: (7, 8, 9, terminals)

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

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

IIB : $C_o = 60\mu F$, $L_o = 10.8mH$

IIA : $C_o = 100\mu F$, $L_o = 28.8mH$

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.

■ 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)".

Isolated Barrier

AM1062EX

GYB15.1144



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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 Production license number: X06-014-00557



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Summarize

Isolated barrier, can convert signals from 2-wire, 3-wire RTDS signal mounted in hazardous area into 0/4~20mA current or 0/1~5V voltage. It can be configured by PC. Its 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: 1/2
Supply voltage: 20~35V DC
Current consumption: ≤ 55mA (at 24V DC supply, 20mA signal output)
Safe-area output:
 Current: 4~20mA; Load resistance: $R_L \leq 300\Omega$
 Voltage: 1~5V; Load resistance: $R_L \geq 20k\Omega$
 (Note: output current: load resistance: $R_L \leq 550\Omega$,
 Current consumption: ≤ 50mA, need to customized)

Hazardous-area input:

Signal type	Signal Range	Min. span	Accuracy
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. % 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 is flashing, display yellow, output current is around 3.8mA.

Exceed upper limit, LED is flashing, display red, output current is around 20.8mA.

Break line, LED is flashing, display yellow and red alternately, output current is around 20.8mA.

Short circuit, LED is flashing, display yellow and red alternately, output current is around 3mA.

(Note: disconnection alarm current < 4mA or other special requirements, need to be customized).

Temperature drift: 0.01% F.S./°C

Response time: Reach 90% of final value in 1s

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

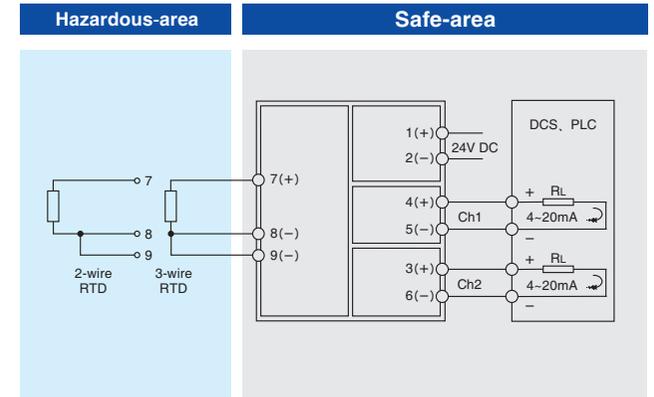
Between power supply part and non-intrinsically safe part ≥ 100MΩ

Weight: Approx. 150g

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

Suitable IS apparatus: Pt100, Cu50, Cu100

Application



Note: terminals 8 and 9 must be connected when 2-wire RTD inputs.

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: $U_m = 250V$

Intrinsic safety parameter: (7, 8, 9, terminals)

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

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

IIB : $C_o = 60\mu F$, $L_o = 10.8mH$

IIA : $C_o = 100\mu F$, $L_o = 28.8mH$

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.

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)".