



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx TUR 19.0076X** Page 1 of 4 [Certificate history:](#)
Status: **Current** Issue No: 0
Date of Issue: 2021-03-01
Applicant: **Beijing Pinghe Chuangye Technology Development Co., Ltd.**
Room 206, A
25 Yongxing Road
Daxing District biological pharmaceutical industry base
Beijing
China
Equipment: **Analog Input Isolated safety Barrier, Model name: PHD-11TD-21(1 in 1 out), PHD-12TD-211(1 in 2 out), PHD-22TD-2121(2 in 2 out)**
Optional accessory:
Type of Protection: **Equipment protection by intrinsic safety "i"**
Marking: [Ex ia Ga] IIC

Approved for issue on behalf of the IECEx
Certification Body:

Dipl. -Ing. Klauspeter Graffi

Position:

Head of Certification Body

Signature:
(for printed version)

Date:

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



Certificate issued by:

TUV Rheinland Industrie Service GmbH
Am Grauen Stein
51105 Cologne
Germany





IECEx Certificate of Conformity

Certificate No.: **IECEx TUR 19.0076X**

Page 2 of 4

Date of issue: 2021-03-01

Issue No: 0

Manufacturer: **Beijing Pinghe Chuangye Technology Development Co., Ltd.**
Room 206, A
25 Yongxing Road
Daxing District biological pharmaceutical industry base
Beijing
China

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/TUR/ExTR19.0076/00](#)

Quality Assessment Report:

[DE/TUR/QAR20.0015/00](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx TUR 19.0076X**

Page 3 of 4

Date of issue: 2021-03-01

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Safety Barrier AI series to be designed and constructed with type of protection "ia" for gas group IIC.Ex marking "[Ex ia Ga] IIC" to be expected under Ta: "-20°C to +60°C".

The safety barrier used as associated apparatus and located in non-hazardous area only.

The electronic circuits are comprised of main PCB board and two printing transformer PCB boards.

Same PCB main board used for model PHD-11TD-21 and model PHD-12TD-211, and the model PHD-22TD-2121 use different PCB main board.

The AI series safety barriers are belong to isolated type. The power supply circuits are infallible isolated by a printing transformer model PMBYQ-01b which is protected by a fuse of 125mA/50mA, and the I.S circuits and Non I.S circuits are separated by other printing transformer model PMHGQ-01b which is protected by a fuse of 50mA. Then the transformer output an infallible voltage to intrinsically safet circuit, after voltage-limitation and current-limitation, this I.S circuit deliver an infallible power supply to intrinsically safe equipment in the hazardous area.

More details see annex.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. User are not permitted to open the enclosure of Safety Barrier during normal operation.
2. The Safety Barrier needs to protected from impacts with high impact energy.
3. Ta: -20°C to +60°C.

4. I.S Parameters

Intrinsically safety output:

1 in 1 out (Terminal 1+, Terminal 2-)

1 in 2 out (Terminal 1+, Terminal 2-)

I.S Parameters:

Um=250 V

Uo=3.5 V

Io=0 mA (or negligible)

Po=0 mW (or negligible)

Co=100 µF

Lo=0 mH (or negligible)

1 in 1 out (Terminal 3+, Terminal 4-)

1 in 2 out (Terminal 3+, Terminal 4-)

I.S Parameters:

Um=250 V

Uo=28 V

Io=93 mA

Po=650 mW

Co=0.05 µF

Lo=2.4mH

Intrinsically safety output:

2 in 2 out (Terminal 1+ and Terminal 2-, Terminal 3+ and Terminal 4-)

I.S Parameters:

Um=250 V

Uo=28 V

Io=93 mA

Po=650 mW

Co=0.05 µF

Lo=2.4 mH

5. Terminal wiring method shall be observed according to the instruction.

6. The requirements of electrical connections between associated apparatus and intrinsical safety equipment shall be observed in accordance with IEC 60079-25.

Annex:



IECEx Certificate of Conformity

Certificate No.: **IECEx TUR 19.0076X**

Page 4 of 4

Date of issue: 2021-03-01

Issue No: 0

[DE-IECEx_TUR_19.0076X_00_Attachment_2020-06-22.pdf](#)



Attachment to Certificate IECEX TUR 19.0076 X

Device: **Analog Input Isolated Safety Barrier**
PHD-11TD-21(1 in 1 out)
PHD-12TD-211(1 in 2 out)
PHD-22TD-2121(2 in 2 out)

Manufacturer: **Beijing Pinghe Chuangye Technology Development Co., Ltd.**

Address: **Room 206, A, 25 Yongxing Road,Daxing District biological pharmaceutical industry base,Beijing, P.R. China.**

General product information:

Subject and type

Analog Input Isolated Safety Barrier
PHD-11TD-21(1 in 1 out)
PHD-12TD-211(1 in 2 out)
PHD-22TD-2121(2 in 2 out)

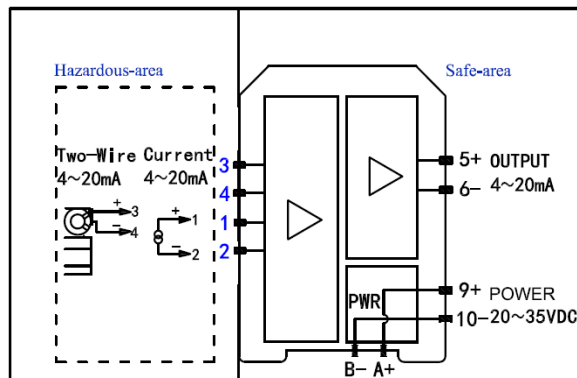
Description:

The AI series safety barriers are belong to isolated type.The power supply circuits are infallible isolated by a printing transformer model PMBYQ-01b which is protected by a fuse of 125mA/250mA,and the I.S circuits and Non I.S circuits are separated by other printing transformer model PMHGQ-01b which is protected by a fuse of 50mA. Then the transformer output an infallible voltage to intrinsically safet circuit,after voltage-limitation and current-limitation,this I.S circuit deliver an infallible power supply to intrinsically safe equipment in the hazardous area.

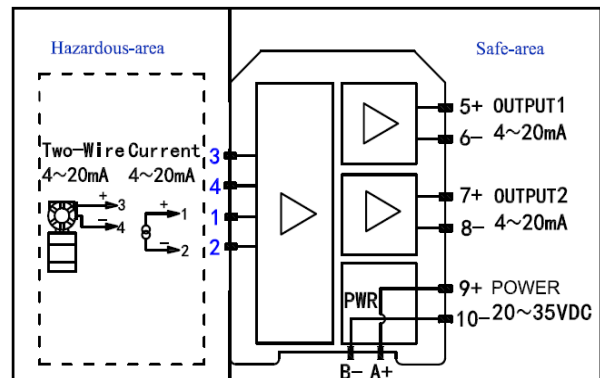
Main features for the safety barrier:

1. Analog input isolated safety barrier are used to deliver an intrinsically safe power supply with galvanically isolation to two wires(only for 2 in 2 out) or three wires transmitter which is located in the hazardous area.The transmitter output 4~20mA(1~5V) or could be a current source signal(for 1 in 1 out and 1 in 2 out) to safety area and support HART digital signal bidirectional transmission at the same time.The input circuits,output circuits and power supply of safety barrier are totally galvanically isolate.Refer to the Fig.1 for Terminal Electrical Connections.Refer to the Fig.1 for Terminal Electrical Connections.
2. The safety barrier is fed by an external power supply 20VDC to 35VDC.
3. The safety barrier used as associated apparatus and resided in non-hazardous area only.
4. The safety barrier was made of non-metallic material SABIC 940A with a RTI of 125,and CTI=2.

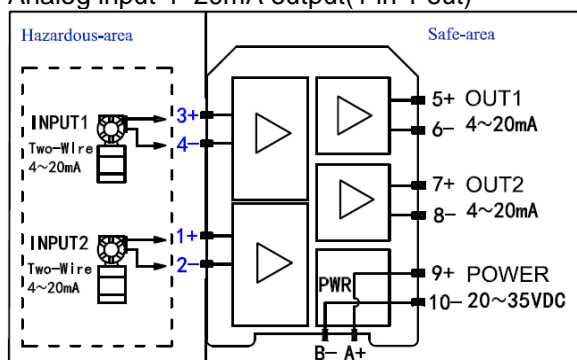
Fig.1 for Terminal Electrical Connections:



Analog input 4~20mA output(1 in 1 out)



Analog input 4~20mA output(1 in 2 out)



Analog input 4~20mA output(2 in 2 out)

Technical parameters:

Electrical data

Power supply: 20VDC~35VDC

Intrinsically safety output:

1 in 1 out (Terminal 1+, Terminal 2-)

1 in 2 out (Terminal 1+, Terminal 2-)

I.S Parameters:

Um=250 V

Uo=3.5 V

Io=0 mA (or negligible)

Po=0 mW (or negligible)

Co=100 µF

Lo=0 mH (or negligible)

1 in 1 out (Terminal 3+, Terminal 4-)

1 in 2 out (Terminal 3+, Terminal 4-)

I.S Parameters:

Um=250 V

Uo=28 V

Io=93 mA

Po=650 mW

Co=0.05 µF

Lo=2.4mH



Attachment to Certificate
IECEx TUR 19.0076 X
Revision 0

Intrinsically safety output:

2 in 2 out (Terminal 1+ and Terminal 2-, Terminal 3+ and Terminal 4-)

I.S Parameters:

Um=250 V

Uo=28 V

Io=93 mA

Po=650 mW

Co=0.05 μ F

Lo=2.4 mH

Environmental data

Tamb:-20°C ~+60°C

IP Rating:IP20

Routine test at manufacturer:

Dielectric strength test should be performed in accordance with IEC 60079-11 Cl.11.2,

a)2500VAC Between input winding and output winding;

b)1000VAC Between all the windings and the magnetic core;

c)1500V Between each winding which supplies an intrinsically safe circuit and any other output winding;

Test duration: 1Min.

No insulation breakdown between windings or between any winding and the magnetic core.