



# 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](http://www.iecex.com)

Certificate No.: **IECEx TUR 19.0077X** Page 1 of 3 [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: **Digital Input Isolated Safety Barrier, Model name: PHD-11TF-27(1 in 1 out), PHD-12TF-277(1 in 2 out), PHD-22TF-2727(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:

\_\_\_\_\_  
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**Germany**





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Date of issue: 2021-03-01

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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/ExTR19.0077/00](#)

Quality Assessment Report:

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



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Certificate No.: **IECEx TUR 19.0077X**

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Date of issue: 2021-03-01

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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Safety Barrier DI 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 printing transformer PCB board.

Same PCB main board used for all models.

## **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 be protected from impacts with high impact energy.

3. Ta: -20°C to +60°C.

4. I.S Parameters

Um=250V

Uo=10.5V

Io=15mA

Po=39.4mW

Co=1.7µF

Lo=150mH

Intrinsically safe output:

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

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

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

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

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

## **Annex:**

[DE-IECEx\\_TUR\\_19.0077X\\_00\\_Attachment\\_2020-05-27.pdf](#)



Attachment to Certificate IECEX TUR 19.0077 X

**Device:** **Digital Input Isolated Safety Barrier**

PHD-11TF-27(1 in 1 out)  
PHD-12TF-277(1 in 2 out)  
PHD-22TF-2727(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

Digital Input Isolated Safety Barrier

PHD-11TF-27(1 in 1 out)  
PHD-12TF-277(1 in 2 out)  
PHD-22TF-2727(2 in 2 out)

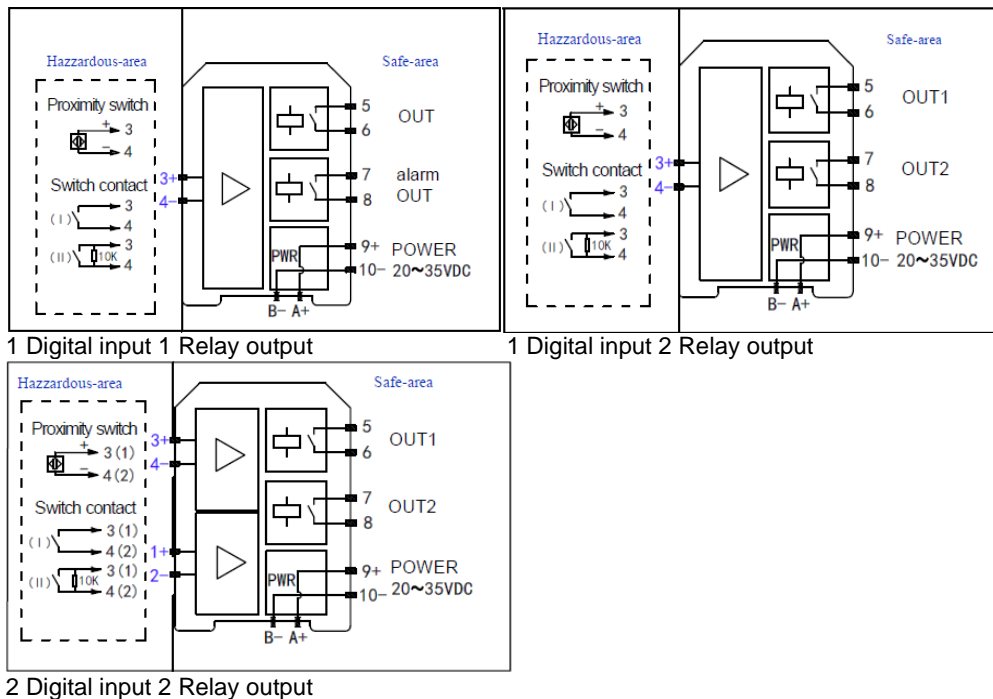
##### Description:

The DI series safety barriers are belong to isolated type.A power supply of 20VDC to 35VDC is infallible isolated by a printing transformer model PMHGQ-01b which is protected by a fuse of 50mA.Then the transformer output an infallible voltage to intrinsically safe circuit.After voltage-limitation by three Zener diodes connected in parallel, and following current-limitation by an infallible resistor,this I.S circuit deliver an defined power supply to intrinsically safe equipment in the hazardous area.

##### Main features for the safety barrier:

1. Digital input isolated safety barrier are used to switching Digital signal input in hazardous area into Relay contact signals to safety area.The input can be,"Proximity switch/Switch contact",and the output contacts set "Normally open/Normally closed" stated transition selectable switches and optional alarm output Relay contacts.The intrinsic safety circuits of safety barrier deliver an infallible power energy to sensors which are located in hazardous area.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 signal status indicator(Red and Yellow) display Red when the alarm occurs and display yellow when the output Relay operating.
4. The safety barrier used as associated apparatus and resided in non-hazardous area only.
5. The safety barrier was made of non-metallic material SABIC flame retardant PC 940A.

Fig.1 for Terminal Electrical Connections:



Technical parameters:

Electrical data

Power supply: 20VDC~35VDC

I.S Parameters:

Um=250V

Uo=10.5V

Io=15mA

Po=39.4mW

Co=1.7μF

Lo=150mH

Intrinsically safe output:

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

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

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

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;

Test duration: 1Min.

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