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 17.0048X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2020-04-01		
Applicant:	**Hanwei Electronics Group Corporation** No.169,Xuesong Road,National Hi-Tech Zone,Zhengzhou 450001, **China**		
Equipment:	**Gas Detector**		
Optional accessory:	BX616		
Type of Protection:	**ia or db ia**		
Marking:	Ex ia IIC T4 Ga or Ex db ia IIC T4 Gb EPL Ga(without catalytic reaction sensor) or EPL Gb(with catalytic reaction sensor)		

Approved for issue on behalf of the IECEx Certification Body: **Dipl. -Ing. Klauspeter Graffi**

Position: **Head of Certification Body**

Signature: (for printed version)

Date: 2020-04-01

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.
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Certificate issued by:

TUV Rheinland Industrie Service GmbH
Am Grauen Stein
51105 Cologne
Germany

TÜVRheinland

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Manufacturer: **Hanwei Electronics Group Corporation**
No.169,Xuesong Road,National Hi-Tech Zone,Zhengzhou 450001,
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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
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/ExTR17.0048/00

Quality Assessment Report:

NL/CNEX/QAR20.0001/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The enclosure of the gas detector BX616 is made from plastic material PC-110(+)+TPE,which are antistatic materials.It is powered by one Lithium-ion Polymer battery FRT-FB101S02-1800mAh (capacity: 1800mAh,Max internal resistance:200mΩ),which has a maximum open circuit voltage of 4.2V,and the maximum constant discharge current is 0.9A.

Note1:The battery,power board and transfer board are encapsulated together completely.

Note2:The Lithium battery meet the requirements of UL1642(IEC 60079-11,clause 7.4),refer to UL file number MH12210,date Jan 02nd, 2003,total 1page.

The gas detector is used to detect the gas concentration of oxygen and combustible gases(CO and H2S).

The equipment contains the following main features,

-adjustable 2-level alarms(STEL alarm and TWA alarm)

-data uploading

-self-test when power on

-self-diagnostic and auto-correction function

-100,000 records storage capacity

-calibration point adjustable

There are four sensor are used in this gas detector,they are one catalytic reaction sensor(model 4P75C CiTipeL) and three electrochemical sensors(model 4CFC CiTiceL,4HSC CiTiceL and 4OXV CiTiceL).

The catalytic reaction sensor(Sira 01ATEX1205X and IECEx SIR 04.0013X) was certified by ExCB Sira with Ex marking "Ex d IIC T4 Gb"(Ta=-20°C~+55°C/1.5W).This sensor only be used in Zone 1 with explosive gas atmosphere of IIC.In this case,the fully Ex marking of this gas detector is "Ex db ia IIC T4 Gb".

When the catalytic reaction sensor not used in the circuit,the gas detector can be used in zone 0.

In this case,the fully Ex marking of this gas detector is "Ex ia IIC T4 Ga".

The electrical parts of this equipment are comprised of power board,transient protection circuit,transfer board,battery and main board,and the external protection circuit of battery is one part of power board.

The transient protection circuit contains USB protection board(data processing purpose) and adapter protection board(charging purpose).

The transient protection circuit is located between AC adapter and gas detector,the whole transient protection circuit is encapsulated by sealing material SYLGARD™160 Silicone Elastomer.

The power board and transfer board are encapsulated by sealing material SYLGARD™160 Silicone Elastomer also.

A conformal coating is applied to main board.

The electrical circuits are designed in accordance with type of protection "ia",except that the catalytic reaction sensor with type of protection "db" as mentioned above.

The adapter is used for charging purpose,and it is located and used in the non-hazardous area only.

The transient protection design of the external charging circuit and data processing circuit are considered in accordance with the intrinsic safety also.

Only the adapter type TEKA018-0652000XX is used,which was approved by safety standard IEC 61558-1:2005+A1 and IEC 61558-2-16:2009+A1,refer to certificate no.DE 2-021805,date 18.05.2017.

Electrical data

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Um=7.48V(Charger output)

Ui:4.2V

Ii:1.08A

Environmental data

EPL Ga(without catalytic reaction sensor) or EPL Gb(with catalytic reaction sensor)

Tamb:-20°C ~+50°C

IP Rating:IP66

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
2. WARNING – DO NOT CHARGE THE BATTERY IN HAZARDOUS LOCATION
3. WARNING – USE ONLY FRT-FB101S02-1800mAh BATTERIES
4. USE ONLY TEKA018-0652000XX AC adapter for charging purpose
5. User are not permitted to open the enclosure of this gas detector,including replace the battery.
6. The gas detector needs to protected from impacts with high impact energy.
7. The gas detector are not permitted exposure to light for a long term directly,under the extreme situations,for example,the strong sunlight,the gas detector should be used with additional protection.
8. The gas detector is portable equipment,charging through normal handling of hand-held equipment is not considered to lead to a prolific charge generating mechanism.
   Under certain extreme circumstances,the plastic enclosure may store an ignition-capable level of electrostatic charge.Therefore,the user/installer shall implement precautions to prevent the build-up of electrostatic charge,e.g.locate the equipment where a charge-generating mechanism is unlikely to present and clean with a damp cloth.
9. If a footwear is used for this equipment,a anti-static material shall be applied.
10. The H_2S electro-chemical sensor and CO electro-chemical sensor are intended use in explosive atmosphere with gas concentration are not exceed 100ppm and 1000ppm respectively.
11. When the catalytic reaction sensor intended use in the circuit,the gas detector can be used in zone 1 with EPL Gb only.