



EU-TYPE EXAMINATION CERTIFICATE

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2 Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014
3 EU-Type Examination Certificate Number: **CSANe 25ATEX1234X** Issue: **0**
4 Equipment: **Portable Gas Detector or Combustible Gas Detector BTYQ-E110 and BM-E110**
5 Manufacturer: **Hanwei Electronics Group Corporation**
6 Address: **No. 169, Xuesong Road
National Hi-Tech Zone
Zhengzhou 450001
China**

7 This product and any acceptable variation thereto, is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., Notified Body No. 2813 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in item 16.2.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-28:2015

Where additional criteria beyond those given here have been used, they are listed in item 18 in the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed in item 17 of this certificate.

11 This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product, these are not covered by this certificate.

12 The marking of the product shall include the following (additional marking is provided in the Schedule as a part of item 15, if applicable):



II 1G

When with NDIR sensor:

Ex ia op is IIC T4 Ga

When without NDIR sensor:

Ex ia IIC T4 Ga

-20°C ≤ Tamb ≤ 55°C

Signed: M Halliwell
Title: Senior Director of Operations
Date: 22 December 2025



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13

SCHEDULE

14 EU-Type Examination Certificate Number: CSANe 25ATEX1234X Issue: 0

15 **Description:**

BTYQ-E110 and BM-E110 are portable single gas detectors and for a continuous display of gas concentration. These two models are identical and they are designed to be intrinsically safe.

The gas detector is powered by a rechargeable Li-ion battery whose rating is 3.7Vdc/1050mAh. The enclosure is constructed from PC covered partially covered with TPE. The gas detector is provided with one sensor socket which can support EC sensor, NDIR sensor and PID sensor. The front has an LCD display and four buttons for users to operate functions and change settings. The back of the enclosure is equipped with a metallic alligator clip. There are three status LEDs, audible alarm and vibration alarm.

Internally, the electronics consist of a battery pack, a main printed circuit board, a power printed circuit board and a sensor printed circuit board. The battery pack and power printed circuit board are completely encapsulated except for the connectors that are connected with main board.

The gas detector has no electrical connections while in the hazardous area. It may be charged in the non-hazardous area only: $U_m = 6.5Vdc$, $I_m = 2A$.

The BTYQ-E110 and BM-E110 have been tested to comply with IP67 and IP66 in accordance with the EN/IEC 60529.

16 **Drawings and documents:**

16.1 **Technical documents:**

Refer to Certificate Annex.

16.2 **Associated reports and certificate history:**

Issue	Date	Report number	Comment
0	22 December 2025	R80215950A	The release of the prime certificate.

17 **Specific conditions of use (denoted by "X" after the certificate number):**

17.1 The product shall only be charged in safe area using a charger approved as SELV or Class 2 equipment against IEC 62368 or an equivalent IEC standard.

17.2 Any Data transfer devices via the contact ports shall be approved as SELV or Class 2 equipment against IEC 62368 or an equivalent IEC standard. The maximum voltage U_m from the device shall not exceed 5VDC.

18 **Essential health and safety requirements of Annex II (EHSRs):**

The relevant EHSRs that are not addressed by the standards listed in item 9 of this certificate have been identified and conformity of the product demonstrated in the reports listed in item 16.2.

19 **Remarks and additional information:**

The use of this certificate is subject to the regulations applicable to holders of CSA Group Netherlands B.V. certificates.

Compliance of the product with the applicable safety requirements of the relevant industrial standards has not been verified and is not covered by this certificate.





19.1 **Conditions of manufacture:**

- 19.1.1 The product incorporates previously certified sensor, certified under IECEx CSAE 22.0071U and CSANe 22ATEX1158U, IECEx CSAE 23.0039U and CSANe 23ATEX1151U. It is therefore the responsibility of Hanwei Electronics Group Corporation to continually monitor the status of the certification associated with this device. Hanwei Electronics Group Corporation shall inform CSA of any modifications to the device that may impinge upon the explosion safety design of the product.



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Certificate Annexe

Document History

Issue – 0

Documents Introduced or Revised

Drawing	Sheets	Rev.	Date (Stamp)	Title
HKJ-BTYQ-E110-001	1 of 1	V1.00	15 Oct 25	General Assembly Drawing
HKJ-BTYQ-E110-001-003	1 of 1	V1.00	15 Oct 25	Key
HKJ-BTYQ-E110-001-004	1 of 1	V1.00	15 Oct 25	Waterproof breathable membrane
HKJ-BTYQ-E110-001-005	1 of 1	V1.00	15 Oct 25	Buzzer seal ring
HKJ-BTYQ-E110-001-006	1 of 1	V1.00	15 Oct 25	Back label
HKJ-BTYQ-E110-001-001	1 of 1	V1.00	15 Oct 25	Top cover
HKJ-BTYQ-E110-001-002	1 of 1	V1.00	15 Oct 25	Bottom cover
HKJ-BTYQ-E110-003-001	1 to 3	V1.00	15 Oct 25	SCH-BTYQ-E110-Main Board
HKJ-BTYQ-E110-002-001	1 to 3	V1.00	15 Oct 25	BOM-BTYQ-E110-MainBoard
HKJ-BTYQ-E110-004-001	1 to 7	V1.00	15 Oct 25	PCB_Layout-BTYQ-E110 Main Board
HKJ-BTYQ-E110-003-002	1 of 1	V1.00	15 Oct 25	SCH-BTYQ-E110-Power Board
HKJ-BTYQ-E110-002-002	1 of 1	V1.00	15 Oct 25	BOM-BTYQ-E110-Power Board
HKJ-BTYQ-E110-004-002	1 to 5	V1.00	15 Oct 25	PCB_Layout-BTYQ-E110 Power Board
HKJ-BTYQ-E110-003-003	1 of 1	V1.00	15 Oct 25	SCH-BTYQ-E110-Sensor Board-NDIR/PID Sensor
HKJ-BTYQ-E110-003-005	1 of 1	V1.00	15 Oct 25	SCH-E110-Sensor Board-Toxic Gas O2 Sensor
HKJ-BTYQ-E110-002-003	1 of 1	V1.00	15 Oct 25	BOM-BTYQ-E110-Sensor Board-NDIR Sensor
HKJ-BTYQ-E110-002-004	1 of 1	V1.00	15 Oct 25	BOM-BTYQ-E110-Sensor Board-PID Sensor
HKJ-BTYQ-E110-002-005	1 of 1	V1.00	15 Oct 25	BOM-BTYQ-E110-Sensor Board-Toxic Gas Sensor
HKJ-BTYQ-E110-002-006	1 of 1	V1.00	15 Oct 25	BOM-BTYQ-E110-Sensor Board-O2 Sensor
HKJ-BTYQ-E110-004-003	1 to 5	V1.00	15 Oct 25	PCB_Layout-BTYQ-E110 Sensor Board-NDIR/PID Sensor
HKJ-BTYQ-E110-004-004	1 to 5	V1.00	15 Oct 25	PCB_Layout-BTYQ-E110 Sensor Board-Toxic Gas/O2 Sensor
HKJ-BTYQ-E110-003-009	1 of 1	V1.00	15 Oct 25	SCH-BTYQ-E110-Battery Board
HKJ-BTYQ-E110-002-007	1 of 1	V1.00	15 Oct 25	BOM-Battery Protection Board
HKJ-BTYQ-E110-004-005	1 to 5	V1.00	15 Oct 25	PCB_Layout-BTYQ-E110-Battery Board
HKJ-BTYQ-E110-003-008	1 of 1	V1.00	15 Oct 25	SCH-E110-Block Diagram-NDIR Sensor
HKJ-BTYQ-E110-003-009	1 of 1	V1.00	15 Oct 25	SCH-E110-Block Diagram-Toxic Gas O2 Sensor
HKJ-BTYQ-E110-003-010	1 of 1	V1.00	13 Nov 25	SCH-E110-Block Diagram-PID Sensor
HKJ-BTYQ-E110-003-007	1 of 1	V1.00	13 Nov 25	Wire List-BTYQ-E110
HKJ-BTYQ-E110-003-006	1 to 3	V1.00	13 Nov 25	Sensor List-BTYQ-E110
HKJ-BTYQ-E110-003-011	1 of 1	V1.00	13 Nov 25	LCD module information-BTYQ-E110

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