



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

Ex COMPONENT CERTIFICATE

Certificate No.: **IECEx TPS 22.0022U** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2022-09-19

Applicant: **Warom Technology Incorporated Company**
No.555, Baoqian Road, Jiading District, Shanghai, 201808
China

Ex Component: Explosion-proof Ammeters / Voltmeters - Type: BB8050 series

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Increased safety "eb", Encapsulation "mb"**

Marking: Ex eb IIC Gb (for Ammeters)
Ex eb mb IIC Gb (for Voltmeters)

Approved for issue on behalf of the IECEx
Certification Body:

Frank Zhu

Position:

Technical Certifier

Signature:
(for printed version)

Date:
(for printed version)

2022.09.20

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TÜV SÜD Product Service GmbH
Ridlerstr. 65
D-80339 Munich
Germany



Product Service



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Manufacturing locations: **Warom Technology Incorporated Company**
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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 component 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 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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 component listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/TPS/ExTR22.0025/00

Quality Assessment Report:

CN/CQM/QAR07.0003/11



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Ex Component(s) covered by this certificate is described below:

The Explosion-proof Ammeters / Voltmeters in concern are Ex Components and not intended to be used alone and require additional consideration when incorporated into equipment or system.

BB8050-A series explosion-proof ammeter is intended to be used in explosive gas atmosphere Zone 1 and Zone 2. It contains a coil and two terminals. They are protected by increased safety. BB8050-A external-attached type (X/1A, X/5A): external-attached by current transformer (it shall be used in conjunction with current transformer with a proper Explosion Protection type as specified in IEC 60079-0).

BB8050-V series explosion-proof voltmeter is intended to be used in explosive gas atmosphere Zone 1 and Zone 2. It contains resistors, a current fuse, a coil and two terminals. The resistors, the current fuse and the coil are protected by encapsulation, and the two terminals are protected by increased safety. BB8050-V external-attached type (X/100V, X/110V, X/120V): external-attached by voltage transformer (it shall be used in conjunction with voltage transformer with a proper Explosion Protection type as specified in IEC 60079-0).

Model designation:

BB8050-X1 (X2 - X3)

X1	A:Ammeter; V: Voltmeter
X2 - X3	Ammeter or voltmeter range

Model difference:

BB8050-A (□ - □)

No.	Model	Measuring Range	Consuming Power	Max. Overload Current
1	BB8050-A (0 - 40mA)	0~20mA/40mA	0.12W	100 mA /200 mA
2		4~20mA/40mA		
3	BB8050-A (0 - 1A)	0~1A	0.28W	5A
4	BB8050-A (0 - 5A)	0~5A	0.5W	25A

BB8050-V (□ - □)

No	Model	Measuring Scope	Power dissipation	Working current
1	BB8050-V (0 - 7.5V)	0~7.5V	1.58VA	210.74mA
2	BB8050-V (0 - 10V)	0~10V	2.13VA	212.82mA
3	BB8050-V (0 - 15V)	0~15V	1.98VA	132.31mA
4	BB8050-V (0 - 20V)	0~20V	2.19VA	109.50mA
5	BB8050-V (0 - 25V)	0~25V	2.20VA	87.98mA
6	BB8050-V (0 - 30V)	0~30V	2.10VA	70.06mA
7	BB8050-V (0 - 40V)	0~40V	2.30VA	57.40mA
8	BB8050-V (0 - 50V)	0~50V	2.28VA	45.70mA
9	BB8050-V (0 - 60V)	0~60V	2.16VA	35.93mA
10	BB8050-V (0 - 70V)	0~70V	1.98VA	28.30mA
11	BB8050-V (0 - 75V)	0~75V	2.10VA	27.95mA
12	BB8050-V (0 - 80V)	0~80V	2.24VA	27.94mA
13	BB8050-V (0 - 100V)	0~100V	2.45VA	24.48mA
14	BB8050-V (0 - 110V)	0~110V	2.14VA	19.50mA



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15	BB8050-V (0 - 120V)	0~120V	2.34VA	19.54mA
16	BB8050-V (0 - 132V)	0~132V	2.58VA	19.58mA
17	BB8050-V (0 - 150V)	0~150V	2.33VA	15.54mA
18	BB8050-V (0 - 200V)	0~200V	2.53VA	12.67mA
19	BB8050-V (0 - 220V)	0~220V	2.75VA	12.51mA
20	BB8050-V (0 - 250V)	0~250V	2.55VA	10.19mA
21	BB8050-V (0 - 300V)	0~300V	2.53VA	8.44mA
22	BB8050-V (0 - 400V)	0~400V	2.62VA	6.54mA
23	BB8050-V (0 - 450V)	0~450V	2.35VA	5.21mA
24	BB8050-V (0 - 500V)	0~500V	2.60VA	5.19mA
25	BB8050-V (0 - 600V)	0~600V	2.67VA	4.45mA

Technical data:

Normal atmospheric pressure	80kPa (0.8bar) to 110kPa (1.1bar)
Normal oxygen content	21%v/v
Altitude	≤2000m
Relative humidity	≤95%
Pollution degree (IEC 60664-1)	3

Routine tests:

100% routine test has to be done by manufacturer

1. Dielectric test. An AC voltage of 2640V r.m.s shall be applied between electric circuits and the enclosure, for a duration of 100ms. The test shall be deemed as passed if no breakdown or arcing occurs during testing.

2. Visual inspection. Each piece of the Component shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion (separation of any adhered parts) or softening.

SCHEDULE OF LIMITATIONS:

1. This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

2. Ambient temperature: -60°C to +80°C (temperature of the air or other media, in the immediate vicinity of the equipment or component). Maximum surface temperature: 100°C (highest temperature which is attained in service under the most adverse conditions (but within the specified tolerances) by any part or surface of Ex Component).

3. The products must be completely installed in an enclosure with degree of ingress protection of at least IP54 according to IEC 60079-0.

4. There are two terminals external to the Ex Component. The connections shall consist of a 2.5mm² wire, an M5×8 screw, a washer and a pressure lug. The tightening torque shall be 1.3±0.3Nm. The bare wire to be connected shall be about 20mm in length. After installation, the clearance of different poles shall be larger than 12mm and the creepage distance of different poles shall be larger than 25mm.

5. The Ex component can only be installed in equipment for indoors use and where it is protected from UV radiation.