



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 IBE 15.0003X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 2 [Issue 1 \(2019-01-17\)](#)
[Issue 0 \(2015-03-31\)](#)
Date of Issue: 2020-05-18
Applicant: **ELMESS Thermosystemtechnik GmbH & Co. KG**
Nordallee 1
29525 Uelzen
Germany
Equipment: **Heater for gases type DHG... and EHG..., Heater for liquids type DHF... and EHF...and Heater in solid body type DHK...and EHK...**
Optional accessory:
Type of Protection: **flameproof enclosure "d", increased safety "e", intrinsic safety "i", protection by enclosure "t"**
Marking: Ex db IIC or IIB or IIB+H2 T6...T1 Gb Ex tb IIIC T80 °C...T440 °C Db
Ex db I Mb Ex tb ib IIIC T80 °C...T440 °C Db
Ex db eb IIC or IIB or IIB+H2 T6...T1 Gb
Ex db eb ib IIC or IIB or IIB+H2 T6...T1 Gb
Ex db ib IIC or IIB or IIB+H2 T6...T1 Gb
Ex eb IIC or IIB T6...T1 Gb
Ex eb ib IIC or IIB T6...T1 Gb
For details concerning different enclosures see annex.

Approved for issue on behalf of the IECEx
Certification Body:

Alexander Henker

Position:

Deputy Head of department 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.
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Certificate issued by:

IBExU Institut für Sicherheitstechnik GmbH
Certification Body
Fuchsmühlenweg 7
09599 Freiberg
Germany





IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 15.0003X**

Page 2 of 4

Date of issue: 2020-05-18

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Manufacturer: **ELMESS Thermosystemtechnik GmbH & Co. KG**
Nordallee 1
29525 Uelzen
Germany

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 60079-1:2014-06 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

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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

Test Reports:

[DE/IBE/ExTR15.0003/00](#)

[DE/IBE/ExTR15.0003/01](#)

Quality Assessment Report:

[DE/EPs/QAR15.0011/04](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 15.0003X**

Page 3 of 4

Date of issue: 2020-05-18

Issue No: 2

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The heaters for gases, liquids and solids, type DHG..., DHF... and DHK... as well as EHG..., EHF... and EHK serve for direct heating, if installed in a solid body, or for indirect heating of under operating conditions non-explosive liquids or gases within hazardous areas of zones 1 and 2 or zones 21 and 22. They are intended for installation in containers (tanks, machines, flow pipe, metal body etc.) or for installation in rooms.

The heaters consist of a flameproof enclosure and a termination compartment in type of protection "increased safety". The flameproof enclosures are made of grey cast iron or they consist of a welded assembly made of steel or stainless steel.

The terminal compartment in type of protection "increased safety" may optionally be omitted at the welded enclosures. In this case the flameproof enclosure serves as electric terminal compartment with direct cable entry too.

It can be equipped with temperature limiting and temperature control devices as well as with switching and control devices or measuring sensors.

The heaters type EHG..., EHF... and EHK... consist of a connection housing in increased safety with attached pipe heating elements.

The heater enclosure can be complemented with suitable and certified Ex e or Ex i terminal boxes, which are fixed to a holder (e. g. pipe or clamp ring) with the heater enclosure. The composition of the protection symbol is based on the types of protection of components actually used.

Technical data:

Following is given a conclusion for all the certified heaters.

Heating circuit: AC/DC

- Rated voltage: max. 800 V
- Nominal voltage: max. 690 V
- Rated current: 20 A ... 630 A in dependence on the enclosure type
- Connection cross-section: 2,5...400 mm² in dependence on the enclosure type

Control circuit: AC/DC

- Rated voltage: max. 500 V AC / 250 V DC
- Rated current: max. 16 A AC / max. 0.25 A DC
- Connection cross-section: max. 6 mm²
- IP-Degree of protection to IEC 60529: max. IP66
- Property class of the fastening screws: 8.8 or A*-70 (type DH....)

Ambient temperature range:

- -20 °C up to +40 °C (standard)
- -40 °C up to +60 °C (special design grey cast iron)
- -50 °C up to +60 °C (special design steel)
- -60 °C up to +60 °C (special design stainless steel resp. brass)

service temperature in enclosure: +80 °C

The respective operating parameters for the design of the Flange heaters have to be taken from the name plate and the supplementary documentation.

Further details are specified in the operation manual as well as in the documents of the manufacturer which are part of the test report.

SPECIFIC CONDITIONS OF USE: YES as shown below:

see Annex



IECEx Certificate of Conformity

Certificate No.: **IECEx IBE 15.0003X**

Page 4 of 4

Date of issue: 2020-05-18

Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

- addition of electrical connection housings (types EH* *****-* , DH..M0... , DH..L0... , DH..C1...)
- optional use of an anti-condensation heater
- adaption of the type key
- conformity with current standards

Annex:

[IECEx_IBE_15.0003X-02 Annex.pdf](#)



IECEx Certificate of Conformity - Annex



Certificate No: IECEx IBE 15.0003X

Issue No: 2

Date of Issue: 2020-05-18

Page 1 of 2

Marking for different enclosures:

Heater type DH..A0... and DH..B0...

Ex db eb IIC or IIB T6...T1 Gb,
Ex db eb ib IIC or IIB T6...T1 Gb,
Ex tb IIIC T80 °C ... T440 °C Db,

Ex db IIC or IIB T6...T1 Gb,
Ex db ib IIC or IIB T6...T1 Gb
Ex tb ib IIIC T80 °C...T440 °C Db

Heater type DH..C1...

Ex db eb IIB + H2 or IIB T6...T1 Gb,
Ex db eb ib IIB + H2 or IIB T6...T1 Gb,
Ex tb IIIC T80 °C...T440 °C Db,

Ex db IIB + H2 or IIB T6...T1 Gb,
Ex db ib IIB + H2 or IIB T6...T1 Gb
Ex tb ib IIIC T80 °C...T440 °C Db

Heater type DH..L0...

Ex db IIC or IIB T6...T1 Gb
Ex db I Mb

Ex tb IIIC T80 °C...T440 °C Db

Heater type DH..M0...

Ex db IIC or IIB T6...T1 Gb

Ex tb IIIC T80 °C...T440 °C Db

Heater type EH....

Ex eb IIC or IIB T6...T1 Gb,
Ex eb ib IIC or IIB T6...T1 Gb,
Ex tb IIIC T80 °C...T440 °C Db,

Ex db eb IIC or IIB T6...T1 Gb,
Ex db eb ib IIC or IIB T6...T1 Gb
Ex tb ib IIIC T80 °C...T440 °C Db



IECEx Certificate of Conformity - Annex



Certificate No: IECEx IBE 15.0003X

Issue No: 2

Date of Issue: 2020-05-18

Page 2 of 2

SPECIFIC CONDITIONS OF USE:

- The heater must be operated in the specified mounting position and under the specified ambient temperature conditions. It should be ensured that the heat emission is evenly distributed and not obstructed operation of the heater.
- The heater may only be operated in conjunction with a protective system. All safety devices for temperature, flow, level etc. must be used in accordance with the relevant rules and regulations and has to be ex-certified equipment.
- If no protection temperature limiter is used by the manufacturer of the heater, the potential-free shutdown of the heater is the responsibility of the operator if the maximum temperature specified in the specification is exceeded.
- The position of the temperature sensors of the temperature limiters required for the explosion protection must include the changed operating conditions caused by a phase failure in three-phase systems.
- Heating of liquids is only allowed with enough liquid overlap. That can be fulfilled by level monitoring device or comparable protective measures.
- For flushing medium, additionally a flow monitoring device may be necessary to secure a minimum flow.
- When use in explosive dust atmospheres, adequate measures must be taken to prevent dust deposits on the heated part of the heaters and, in the case of coated enclosures, highly charging processes must be avoided.
- Repairs of the flameproof joints must be made in compliance with the constructive specifications provided by the manufacturer. A repair according to the values specified in tables 2 and 3 of IEC 60079-1 is not permitted.
- The heater is equipped as standard with cable gland by the manufacturer. The cable gland may be used only for fixed installation; the operating company has to ensure an appropriate clamping method.
- Cables specified by the manufacturer in the operating instructions have to be used in the heater design with direct Ex d cable entry (without Ex e connection box). If the supplied cable glands and cables are not being used the corresponding requirements in IEC 60079-14, Paragraph 10.6.2 have to be noticed. The direct cable glands in the heater enclosure DH..A0... have to be tested with 45 bar at minimum when used in explosion group IIC and below -20 °C.
- Unused openings for cable entries must be closed durably with suitable screw plugs, which are certified for explosion protection in the corresponding type of protection, IEC 60079-14 must be observed.
- For devices for EPL Mb, appropriate cable glands and connecting cables must be used.
- The maximum operating temperature on ex-relevant components (seals, cable bushings, connection terminals) must not exceed 80 °C. At operation with lower ambient temperature less than -20 °C down to -60 °C the cable gland and the connection cables must be suitable for the appropriate operating temperature.
- When using certified components or devices in type of protection intrinsic safety the special conditions contained in the respective certificate must be observed.
- The integration in the external potential equalization is made via the Ex e potential equalization terminal. If this is not available, potential equalization is carried out via the inlet connector, flange or adapter sleeve.
- The heaters can be used with an anti-condensation heater in the enclosure. This may only be operated when the (main) heater is not in operation.
- Only the screws specified by the manufacturer with a strength class of 8.8 or A*-70 may be used for closing the flameproof enclosures.
- The heaters can also be marked with the maximum surface temperature in °C instead of or in addition to the temperature class.