

[1] EC-TYPE EXAMINATION CERTIFICATE

according to Directive 94/9/EC, Annex III

(Translation)



[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **IBExU13ATEX1155 U**

[4] Component: **Heater**
Type DH..A0... and DH..B0...

[5] Manufacturer: **ELMESS Thermosystemtechnik GmbH & Co. KG**

[6] Address: **Nordallee 1
29525 Uelzen
GERMANY**

[7] The design of the component mentioned under [4] and any acceptable variations thereto are specified in the schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, Notified Body number 0637 in accordance with article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that the component mentioned under [4] has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of components intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The test results are recorded in the test report IB-13-3-077 of 14 January 2015.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012+A11:2013, EN 60079-1:2007, EN 60079-7:2007, EN 60079-11:2012 and EN 60079-31:2014.

[10] The sign „U“ placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This certificate may only be used as a basis for the certification of an equipment or protective system.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified component. If applicable, further requirements of this directive apply to the manufacture and supply of this component.

[12] The marking of the component mentioned under [4] shall include the following:

| | | |
|----------------------------|----|---------------------------|
| II 2G Ex d e IIB/IIC Gb | or | II 2G Ex db eb IIB/IIC |
| II 2G Ex d IIB/IIC Gb | or | II 2G Ex db IIB/IIC |
| II 2G Ex d e ib IIB/IIC Gb | or | II 2G Ex db eb ib IIB/IIC |
| II 2G Ex d ib IIB/IIC Gb | or | II 2G Ex db ib IIB/IIC |
| II 2D Ex tb IIIC Db | or | II 2D Ex tb IIIC |
| II 2D Ex tb ib IIIC Db | or | II 2D Ex tb ib IIIC |

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Authorised for certifications
-Explosion protection-

By order

(Dr. Wagner)

Annex



- Seal -
(ID no. 0637)

Freiberg, 14 January 2015

Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

[13] **Annex**

[14] **to the EC-TYPE EXAMINATION CERTIFICATE IBExU13ATEX1155 U**

[15] **Description of the component**

The Heaters type DH..A0... and DH..B0... serve for the direct or indirect heating of non-flammable fluids or non-explosive gases under operating conditions. They are intended for installation in containers (Tank, flow pipe, machine, metal body e.g.).

The Heaters consist of a flameproof enclosure and a terminal compartment in type of protection increased safety. The flameproof enclosures are made of grey cast iron or they consist of a welded construction from 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 also as electric terminal compartment with direct cable entry.

The Heater enclosures can be complemented with suitable and certified Ex e or Ex i terminal boxes, which are fixed to a holder (i. e. pipe or clamp ring) with the heater enclosure.

Technical data:

Heating circuit

- Rated voltage: max. 800 V
- Nominal voltage: max. 690 V AC / DC
- Rated current: max. 63 A (DH..B03, DH..B03St and DH..B03V)
max. 35 A (DH..A01, DH..A02 and DH..B01)
- Connection cross-section: max. 25 mm² (DH..B03, DH..B03St and DH..B03V)
max. 6 mm² (DH..A01 , DH..A02 , DH..B01)

Control circuit

- Rated voltage: 440 V AC / 250 V DC
- Rated current: max. 16 A
- Connection cross-section: max. 6 mm²

- IP-Degree of protection acc. to EN 60529: max. IP 66
- Property class of the fastening screws: 8.8

- 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)
- Max. service temperature in the enclosure: +80 °C

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

[16] **Test report**

The test results are recorded in the test report IB-13-3-077 of 14 January 2015.
The test and information documents are part of the test report and listed there.

Summary of the test results

The Heaters type DH..A0... and DH..B0... fulfil as component the requirements of explosion protection for equipment of Group II, Category 2G, type of protection flameproof enclosure „d“ or flameproof enclosure „d“ in combination with increased safety „e“ and intrinsic safety „ib“ and Category 2D, type of protection dust ignition protection by enclosure „tb“.

[17] **Special conditions for safe use**

- The thermal parameters of the Heaters type DH..A0... and DH..B0... have to be determined by additional tests in the context of the specific installation of the Heater in accordance with the ambient conditions and as required with the corresponding temperature controllers, temperature limiters and possibly with additional monitoring devices. At this, the temperature class of the Heater has to be determined and certified separately.
- The maximum service temperature on ex-relevant components (seals, cable bushings, connection terminals) must not exceed 80 °C. At use in the reduced temperature range of < -20 °C up to -60 °C the cable gland and the connection cables must be suitable for the appropriate operating temperature.
- 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.
- The cables specified by the manufacturer in the operating instruction have to be used in the design with direct flameproof cable entry (without terminal compartment). The corresponding requirements in EN 60079-14, Paragraph 10.6.2 have to be noticed at own selection of the cable glands and the connection cable. When operating at minimum ambient temperatures of < -20 °C, also explosion pressures > 20 bar can occur in the terminal compartment of the Heater type DH..A0..., depending on the design. Relevant information is contained in the manufacturer specification for the respective Heater.
- Unused openings for cable entries have to be closed durably with suitable screw plugs, which are confirmed for explosion protection in the corresponding type of protection.
- Repairs of the flameproof joints must be made in compliance with the constructive specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN 60079-1.
- The sensors of the temperature limiters shall be positioned so as to account for phase failure in three-phase systems.
- Flowing media may be monitored in addition by means of a flow controller, which will maintain a minimum throughput.
- Liquids may only be heated if an adequate cover is guaranteed. This requirement can be accounted for by providing level switches or similar safety measures.
- Function or reliability tested designs according to the relevant requirements have to be used as safety devices for temperature, flow, level e.g..
- When use in explosive dust atmospheres, dust accumulations on the hot surfaces have to be avoided by suitable measures.

[18] **Essential Health and Safety Requirements**

Confirmed by compliance with standards (see [9]).

By order

Freiberg, 14 January 2015



(Dr. Wagner)