



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**



(3) EC-type-examination Certificate Number:

PTB 08 ATEX 1017 X

(4) Equipment: Heater, type DHF

(5) Manufacturer: ELMESS GmbH

(6) Address: Uelzen, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 08-16157.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006

EN 60079-1:2004

EN 60079-7:2003

EN 61241-0:2007

EN 61241-1:2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex d and de IIB / IIC T6 – T1

II 2 D Ex tD A21 IP66 T80 – T440

Zertifizierungsstelle Explosionsschutz

Braunschweig, June 5, 2008

By order:

Dr.-Ing. U. Klaus
Direktor und Professor



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SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 1017 X

(15)

Description of equipment

The heater, type DHF... , is used for direct or indirect heating of liquids inside the potentially explosive areas of zones 1 and 2, and of zones 21 and 22, respectively.

Technical data

Main circuits*

Conductor size, max.	95mm ² , in compliance with heater enclosure
Rated voltage, max.	690 V
Rated current, max.	160 A (consideration given to DIN VDE 0298)

Control circuits*

Rated voltage, max:	440 V AC	250 V DC
Rated current max.	16 A AC1	0.25 A DC

Ambient temperatures *

- 20 ... + 40 °C (standard)
- 60 ... + 60 °C (special version)

* Maximum values; depending, among other things, on conductor size, enclosure heating rate, ambient temperature, components/elements used

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Special conditions for safe use

1. Repairs of the flameproof joints may only be made by the manufacturer or on behalf of the manufacturer and on his own responsibility. Repair in compliance with the values in tables 1 and 2 of EN 60079-1 is not accepted.
2. The thermal routine test for definition of the temperature class is performed by the manufacturer or on behalf of the manufacturer and on his own responsibility.

Factors to be considered include the specific local and operating conditions (e.g. installed position, ambient temperature, self-heating rate, heat conduction) as well as the maximum permissible working temperatures of the components/elements used.

3. In potentially explosive atmospheres, the surface temperature of the heated systems must not exceed the limit temperature of the assigned temperature class (heat conduction to be considered).


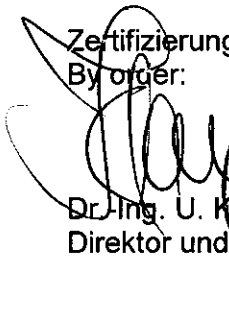
4. The sensors of the temperature limiters must be positioned so that phase failure in three-phase systems will be accounted for.
5. When heating liquids, sufficient cover must be provided. To comply with this condition, a level monitoring unit or comparable protection features may be installed.
6. For flowing media, an additional monitoring feature (flow controller) may be required, which is to safeguard minimum throughputs.
7. Due consideration must above all be given to safety features when heating closed systems.
8. The design of safety devices used (temperature, level, etc.) must have been tested for function and reliability on the basis of the relevant rules and regulations.
9. The operating instructions provided by the manufacturer must be observed.

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

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