Translation

(1) EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) No. of EC-Type Examination Certificate: **BVS 11 ATEX E 088 X**

(4) Equipment: **Heizung type EH* **** ****-T***

(5) Manufacturer: **ELMESS-Thermosystemtechnik GmbH & Co. KG**

(6) Address: **29525 Uelzen, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 test and assessment report BVS PP 11.2136 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2006 General requirements
EN 60079-1:2007 Flameproof enclosure
EN 60079-7:2007 Increased safety
EN 61241-0:2006 General requirements
EN 61241-1:2004 Protection by enclosure

(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 appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to 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 2G Ex e IIC T6-T1 or **II 2G Ex e IIB T6-T1**

resp.

II 2G Ex de IIC T6-T1 or **II 2G Ex de IIB T6-T1**

II 2D Ex tD A21 IP66 T80°C-T440°C

DEKRA EXAM GmbH
Bochum, dated 26.05.2011

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
Special services unit

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(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 11 ATEX E 088 X

(15) 15.1 Subject and type

Heater type EH*[1] **[2] ***[3] *[4] *[5] *[6]-T*[7]

[1]: Usable for heating medium
F : fluids
G : gases / air
K : heating element encapsulated with solid body

[2]: Design related to intended purpose

[3]: Type of separate certified flameproof terminal box
M0, A00, A0, B1, B2, B3, C4, C5, C7, G5

[4]: Type of enclosure material (optional)

[5]: D : Direct cable entry into the separate certified flameproof terminal box (optional)

[6]: Index number for rated power

[7]: Surface temperature
The surface temperature will be determined by the notified body or according to the process instructions by the manufacturer

15.2 Description

The heater type EH* ********-T* is used for a direct or an indirect heating of gases, liquids and solid bodies in areas endangered by explosive atmospheres for zone 1 and 2 respectively zone 21 and 22.

The electrical heater is suitable for a mounting into boxes, machines, tubes or canal systems.

The heater may only be used with safety systems, for example temperature-, flow-, level-, current- or insulation-control.

The heater consist of the a terminal box that could be designed in the type of protection flameproof enclosure or increased safety for use in areas endangered by gas or in type of protection "protection by enclosure" for use in areas endangered by dusts. Optionally the terminal boxes can already be certified as separate equipment. In this case the electrical and thermal ratings have to be taken into account.

Optionally a connection enclosure in type of protection increased safety or protection by enclosure can be installed directly below the terminal box. The connection between the two enclosures occurs with separate certified cable bushings that are suitable for this purpose. Alternatively the connection enclosure can be installed with a distance to the terminal box. In this case the connection between the two enclosures occurs with separate certified cable glands that are suitable for this purpose.

The connection box can optionally be filled up with sand or a potting compound.

15.3 Parameters

15.3.1 Electrical rating

Main circuit				
Rated voltage	max.		800	V
Rated current	max.		630	A
Size of conductor	max.		400	mm²
Control Circuit				
Rated voltage	max.	440	VAC / 250	VDC
Rated current	max.	16	A / 0,25	A

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15.3.2 Thermal ratings

Ambient temperature range	-60 °C up to +60 °C
Maximum temperature range for end caps of the heating elements	-60 °C up to +85 °C
Maximum temperature range for the sealing of the connection box	-60 °C up to +80 °C

(16) Test and assessment report
BVS PP 11.2136 EG as of 26.05.2011

(17) Special conditions for safe use

- The temperature class and surface temperature, a monitoring unit (level, flow rate) if applicable and further operating conditions (ambient temperature range, self heating, conduction of heat, mounting orientation, etc.) have to be fixed with the testing of the complete heating construction.
- The used safety devices for limiting the temperature, monitoring the flow rate and / or monitoring the level have to be suitable for this purpose and have to be certified.
- The heater with flow rate monitoring may only be used when the flow rate is above the minimum flow rate that was basis for the temperature measurement.
- The heater with level monitoring may only be used when the level is above the minimum level that was basis for the temperature measurement.
- In case of medium temperatures at the outgoing part that were higher than the temperature class of the heater, the thermal isolation has to be taken into account for the explosion protection measure.
  In addition to the surface temperature of the box, other parts (e.g. flange, nameplate, valves and accessories, etc.) that can be heated impermissible have to be part of the isolation or the thermal conductance have to be suppressed.
  The thermal isolation has to prevent the migration of gases and vapours of the surrounding environment to the hot parts.
  The thermal isolation is not part of this type examination.
- The positioning of the temperature sensors for the temperature limiter has to be carried out in such a way, that a failure of one phase is included
- The conditions of safe use of the separately certified equipment / components have to be taken into account

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We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 26.05.2011
BVS-Kir/Sch A 20100338

Certification body

Special services unit

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