



[1] **EU-TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment or protective systems
intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU13ATEX1124 X** | Issue 1

[4] Product: **Heating Cable System**
Type: ELK-AG-N 2.5 Ex

[5] Manufacturer: eltherm production GmbH

[6] Address: Ernst-Heinkel-Straße 6-10
57299 Burbach
GERMANY

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report IB-16-3-089.

[9] Compliance with the essential health and safety requirements has been assured by compliance with: EN 60079-0:2012+A11:2013, EN 60079-7:2015, EN 60079-30-1:2007 and EN 60079-31:2014 except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.

[11] This EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

 **II 2G Ex eb IIC T6...T3 Gb**
 **II 2D Ex tb IIC TX Db**
-60 °C / -32 °C ≤ Tp ≤ „holding temperature“

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By order

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- Seal -
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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.

Freiberg, 2016-12-22

[13]

Schedule

[14]

Certificate number IBExU13ATEX1124 X | Issue 1**[15] Description of product**

The Heating Cable System ELK-AG-N 2.5 Ex is installed in the Ex-area and serves as electrical heat tracing on apparatus, vessels or similar, in areas where occasionally an explosive atmosphere of gas, vapours or dust may occur. The protection against exceeding the limit temperature has to be ensured by using a temperature monitoring system with the help of controller and limiter or stabilized layout.

The following components are part of the system. They can be used optionally and in different combinations:

Heating conductors	type ELKM-AG-N
Connection sleeve (optional)	type Ex-Con 22/4
Connection sleeve (optional)	type Ex-Con 25/7
Connection sleeve (optional)	type Ex-Con 22/4 Si

Technical data:

ambient temperature: -32 °C up to +50 °C
-60 °C up to +50 °C (only when using connection sleeve
Ex-Con 22/4 Si)

maximum service temperature: +170 °C (operating mode)
+200 °C (switched off)

degree of protection: IP65 (except heating conductors)

Maximum holding temperature:

Temperature class	up to 10 A	up to 15 A	up to 20 A
T6	60 °C	45 °C	25 °C
T5	75 °C	60 °C	40 °C
T4	110 °C	95 °C	75 °C
T3	170 °C	155 °C	135 °C
dust	TX - 10 K	TX - 15 K	TX - 20 K

TX: maximum surface temperature in explosive dust atmosphere

Electrical data:

Max. voltage: 550 V

Max. current: 20 A

Max. current density of heating cable: 30 A/mm²

Variations compared to EC Type Examination Certificate:***Variation 1***

The minimum ambient temperature permitted is -60 °C when using the connection sleeve Ex-Con 22/4 Si.

Variation 2

The heating cable system complies with the requirements of the current standards.

[16] Test report

The test results are recorded in the confidential test report IB-16-3-089 of 2016-12-22.

The test documents are part of the test report and they are listed there.

Summary of the test results

The Heating cable system type ELK-AG-N 2.5 Ex fulfils the requirements of explosion protection for equipment of Group II, Category 2G, in type of protection Increased Safety "e" and Category 2D in type of protection protection by enclosures "tb".

[17] **Specific conditions of use**

- The determination of temperature class of each heating circuit has to be done by the manufacturer. The manufacturer uses the technical data as operating current, ambient temperature range as well as type of temperature control (controlled or stabilized design according to IEC 60079-30-2).
- The temperature limitation has to be carried out in controlled or stabilized design according to IEC 60079-30-2.
- The service temperature range of used devices and components has to be considered.
- The heating wires and connection sleeves (type Ex-Con 22/4) are suitable only for areas of low mechanical pressure.
- The connection sleeves (type Ex-Con 22/4 and Ex-con 25/7) have to be installed protected from light.
- The free cable ends have to be connected outside of the hazardous area or in a suitable for category 2G or 2D and separately certified enclosure according to a type of protection, listed in IEC 60079-0, Clause 1.
- The manual of manufacturer has to be observed.
- The manufacturer provides all required information for the installation of this system in the operating manual. This includes also information about the required skills of the service staff.
- The installation has to be carried out by the manufacturer or a specialized company for erecting electrical units in explosive atmospheres.
- The connection and the position of cable should be done in accordance with the advises in the manual. The allowed cable diameters and torques should be noted. The minimum creepage distance of 10 mm has to be checked.

[18] **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None

[19] **Drawings and Documents**

The documents are listed in the test report.

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