

1 EU-TYPE EXAMINATION CERTIFICATE



2 Equipment or Protective systems intended for use in Potentially
Explosive Atmospheres - Directive 2014/34/EU

3 EU-Type Examination Certificate No: FM15ATEX0046X

4 Equipment or protective system:
(Type Reference and Name) ELK-MI Series Mineral Insulated Heating Cable
Systems

5 Name of Applicant: eltherm production GmbH

6 Address of Applicant: Ernst-Heinkel Str 6-10
Burbach
57299 Germany

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

3052972 dated 15th January 2016

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0:2012 + A11:2013, EN 60079-1:2014, EN 60079-7:2015 + A1:2018, EN 60079-31:2014,
EN 60079-30-1:2017, EN 60529:1991 + A1:2000 + A2:2013

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

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:



II 2 G Ex 60079-30-1 db eb IIC T6...T1 Gb Ta = -60°C to +60°C

II 2 D Ex 60079-30-1 tb IIIC T85°C...T450°C Db Ta = -60°C to +60°C; IP64



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Nicholas Ludlam
Deputy Certification Manager, FM Approvals Ltd.

Issue date: 29th August 2018

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to EU-Type Examination Certificate No. FM15ATEX0046X

13 Description of Equipment or Protective System:

The updated ELK-MI series trace heaters consist of a single or twin core series heater, connected to mineral insulated cold leads (1.5 mm² - up to 6 mm² copper conductor) by means of a laser welded splice. Outer materials are stainless steel 1.4541 (AISI 321), alloy 600 and alloy 825. The free end of the cold lead is potted and fitted with a flexible lead for power connection and a lead for earthing; cross section is same as cold lead. A compression ring stainless steel gland 1.4404 (AISI 316L) threaded either M20 x1.5, M25 x1.5, ½"NPT or ¾"NPT is fitted at the end of each cold lead and prevented from possible loss by the potted end seal.

ELK-MI trace heaters are supplied prefabricated and ready for installation. Each unit comes with an attached type plate bearing all required information / marking. Maximum permitted maintain temperatures are derived from a maximum sheath temperature determination by eltherm based on the calculation tool "eltherm designer" and are indicated on the type plate.

The model structure of the heating cable is shown below:

ELK-MI-a-b-c mineral insulated heating cable ELK-MI series

a = sheath material VA or AY600 or AY825

b = no of cables (blank or T for twin)

c = resistance (up to 36.1 ohm/m)

14 Specific Conditions of Use:

1. The ELK-MI series trace heating cables and integral splices shall have a minimum and maximum operating temperature range of -60°C to +700°C (for AY825/AY825-T); -60°C to +565°C (for VA/VA-T, AY600/AY600-T). The potted end seals shall have a minimum and maximum operating temperature range of -60°C to +80°C.
2. The maximum surface temperature in or on the ELK-MI series Trace Heating System is limited to the maximum allowed values by means of controlled design or stabilized design in accordance with EN 60079-30-1.
 - a. For Stabilized Design -
The design information from eltherm GmbH and the calculation tool "eltherm designer version 2.0" shall be such that they ensure temperature stabilization at lower values than the specified maximum surface temperature class selected, T6...T1 or the corresponding maximum surface temperature of the specific gas for EPL Gb, or T85°C...T450°C for the specific dust or fibre for EPL Db.
 - b. For Control design -
The device applied as a temperature limiter for the controlled temperature design shall comply with the requirements of Clause 4.4.3.a) of EN 60079-30-1. The temperature sensors for temperature control or limitation shall be ATEX Certified and comply with the types of protections listed in Clause 1 of EN 60079-0 as EPL Gb or Db equipment.
3. The ELK-MI series trace heaters shall be installed in accordance with the manufacturer's instructions and connected using a suitably rated ATEX Certified junction box.
4. Notification shall be given that the design information shall be retained as a record of system documentation for each controlled design system for as long as the system is in use. The set point in the system documentation shall be checked during commissioning of the system.
5. A ground fault protection device must be used with this heating device.

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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SCHEDULE

to EU-Type Examination Certificate No. FM15ATEX0046X

16 Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
25 th January 2016	Original Issue.
29 th August 2018.	<u>Supplement 1:</u> Report Reference: - 3062064 dated 24 th August 2018. Description of the Change: Addition of Stainless Steel Alloys 600 & 825 as Sheath Material & Optional Single / Twin Cables; Certification standards & Ex ratings' markings updates & relevant documentation updates.

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