IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx FME 16.0005X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2016-08-30		
Applicant:	**eltherm production GmbH** Ernst-Heinkel-Straße 6-10 57299 Burbach, **Germany**		
Equipment:	**ELK-AG-Ex PFA Series Insulated Heating Cable and ELVB-AG-NA Integral Splice Kit**		
Optional accessory:			
Type of Protection:	**Increased Safety & Protection by Enclosure**		
Marking:	Ex e IIC T6...T2 Gb Ex tb III C T85°C...T300°C Db Ta = -60°C to +60°C		

Approved for issue on behalf of the IECEx Certification Body: **Nicholas Ludlam**

Position: **Deputy Certification Manager**

Signature: (for printed version) _____

Date: _____

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

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United Kingdom

FM Approvals
Member of the FM Global Group

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Certificate No.: **IECEx FME 16.0005X**

Date of issue: 2016-08-30 Issue No: 0

Manufacturer: **eltherm production GmbH**
Ernst-Heinkel-Straße 6-10 57299 Burbach
Germany

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-30-1:2007-01 Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements
Edition:1

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2006-07 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:4

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

GB/FME/ExTR16.0004/00

Quality Assessment Report:

FR/INE/QAR12.0007/02

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Refer to Annex 1 Document

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to Annex 1 Document

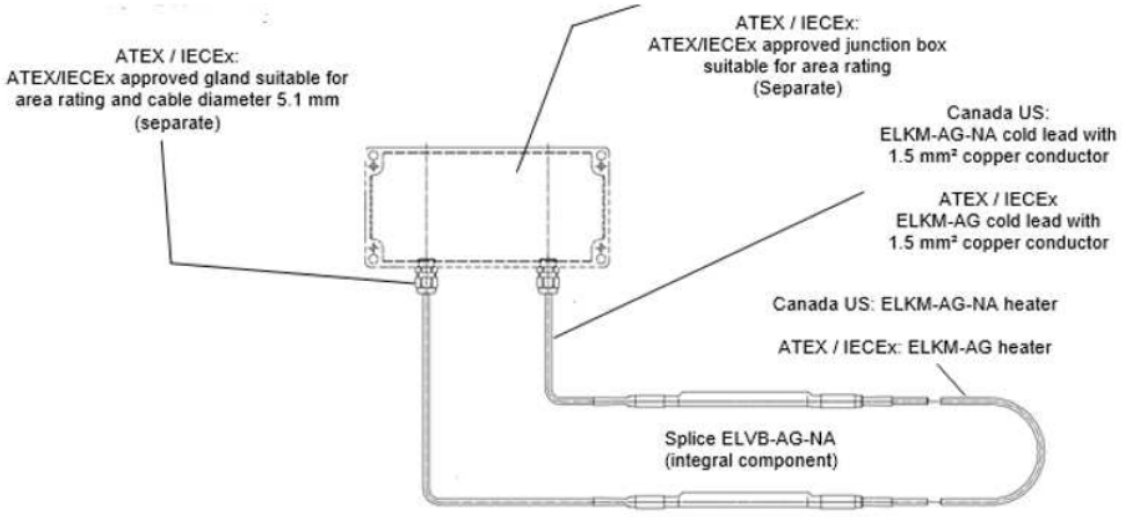
Annex:

Annex 1 to IECEx FME 16-0005X Issue 1.pdf

ExTR Reference Number.....:	GB/FME/ExTR16.0004/00
ExTR Free Reference Number .....:	Project ID 3052962

General product information:

ELK-AG-Ex heaters consist of a single core series heater ELKM-AG with PFA insulation, nickel plated copper braid and PFA outer jacket. The heater is connected to 1.5 mm² cold leads of the same design by integral, crimped splice in ELVB-AG-NA splice kit. The free end of the cold lead is to be connected to the power supply by means of separately certified junction boxes equipped with certified terminals and certified glands with suitable clamping range.



The technical data is shown below:

Material of conductor:	heater alloy, copper
Range of resistance:	8 Ohm/m to 0.0117 Ohm/m (0.0117 Ohm/m for Cold Lead)
Tolerance:	± 5%
Diameter of conductor:	from 0.4 mm to 1.6 mm depending on resistance
Outer diameter	from 3.9 mm to 5.1 mm depending on resistance
Insulation	PFA, thickness ≥ 0.8 mm
Sheath	PFA, thickness ≥ 0.6 mm
Bend radius	7.5 mm (ELKM-AG)
Nominal voltage	750 VAC
Nominal current	40 A
Protective covering	nickel plated copper braid
Resistance of protective coating	< 0.018 Ohm/m
Max. Exposure temp.	250°C
Min. installation temp.	-60°C

The specific models are as follows:

ELK-AG-Ex-a series PFA insulated heating cable and ELVB-AG-NA Splice Kit (0X81150)
a = resistance (up to 8 ohm/m); Maximum Voltage 750V ac; Maximum Current 40A

Routine tests:

1. On 100% of production, the thermal output rating for each shipped length of electric heating cable shall be verified by measurement of the dc resistance, conductance or current at a given voltage and temperature.
2. On 100% of production, each shipped length of heating cable shall be subjected to an a.c. potential equal to 2(E) + 1000 volts [or with a d.c. potential of 1.414(2E + 1000) volts] for a one minute duration, where 'E' equals the rated voltage. As an alternative to these tests, the heating cables may be subjected to a dry spark test at a minimum of 6000 Vac.

Specific Conditions for Safe Use

For ELK-AG-Ex System:

1. The ELK-AG-Ex-a series trace heating cables and integral splices shall have a minimum and maximum operating temperature range of -60°C to +250°C.
2. The maximum surface temperature in or on the ELK-AG-Ex series Trace Heating System is limited to the maximum allowed values by means of controlled design or stabilized design in accordance with IEC/IEEE 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…T2 or the corresponding maximum surface temperature of the specific gas for EPL Gb, or T85°C…T300°C for the specific dust or fiber 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 IEC/IEEE 60079-30-1. The temperature sensors for temperature control or limitation shall be IECEx Certified and comply with the types of protections listed in Clause 1 of IEC 60079-0 as EPL Gb or Db equipment.

3. The ELK-AG-Ex Trace heaters shall be installed in accordance with the manufacturer's instructions and connected in accordance with IEC 60079-14. The connections shall be made using a suitably rated IECEx Certified flameproof enclosure and gland “d” or a suitably rated IECEx Certified increased safety enclosure and gland “e” or in the case of dust installations using an IECEx Certified and suitably rated “tb” enclosure and gland.
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.

For ELVB-AG-NA Splice Kit:

1. This Splice Kit shall only be used with the eltherm GmbH ELKM-AG trace heaters and their corresponding Cold Leads.
2. Minimum installation temperature is -60°C.
3. Maximum exposure temperature is 250°C.
4. The Temperature class shall be T6…T2 or the corresponding maximum surface temperature of the specific gas for EPL Gb, or T85°C…T300°C for the specific dust or fiber for EPL Db.
5. A ground fault protection device must be used with this heating device.