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 CML 19.0130**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2019-12-09)
Date of Issue:	2021-08-19		
Applicant:	**Heat Trace Limited** Mere's Edge, Chester Road, Helsby, Frodsham, Cheshire, WA6 0DJ **United Kingdom**		
Equipment:	**Powerheat AHT Heating Cables**		
Optional accessory:			
Type of Protection:	**Electrical Resistance Trace Heating Cable "Ex 60079-30-1"**		
Marking:	Ex 60079-30-1 IIC T6…T1 Gb Ex 60079-30-1 IIIC T85°C…T450°C Db IP67 Withstand temp range: -40°C to +500°C		

Approved for issue on behalf of the IECEx Certification Body: **A C Smith**

Position: **Managing Director**

Signature: (for printed version)

Date: 2021-08-19

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.

Certificate issued by:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom

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Date of issue: 2021-08-19 Issue No: 1

Manufacturer: **Heat Trace Limited**
Mere's Edge, Chester Road, Helsby, Frodsham, Cheshire, WA6 0DJ
United Kingdom

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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC/IEEE 60079-30-1:2015 Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements
Edition:1.0

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 Reports:

GB/CML/ExTR19.0146/00 GB/CML/ExTR21.0055/00

Quality Assessment Report:

GB/CML/QAR19.0027/04

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

The Powerheat AHT Heating Cables are constant power trace heating cables that are used to protect against freezing or maintain temperatures. The cables are rated at up to 200 W/m on a supply voltage up to 277 V. They comprise two insulated parallel bus wires, around which is wrapped a layer of mica and the glass insulation tape. A resistance wire is spiralled over the core, which is notched at intervals so that the resistance wire connects to the bus wire underneath. A further layer of mica and glass tape insulation is extruded over the top of the resistance wire. The insulation is covered with an aluminium outer jacket, and can have a further, optional, chemical resistant outer jacket.

Refer to Certificate Annex for full description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: NO

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1

This issue introduces the following changes:

1. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the document previously listed, IEC 60079-30-1:2007 Ed. 1, is replaced by IEC/IEEE 60079-30-1:2015 Ed. 1.0; as a result, the markings of the equipment were updated.
2. To assess and permit a change to upper limit of the maximum Withstand Temperature.

Annex:

IECEx CML 19.0130 Iss. 1 Certificate Annex_1.pdf

Annexe to:	**IECEx CML 19.0130 Issue 1**
Applicant:	**Heat Trace Limited**
Apparatus:	**Powerheat AHT Heating Cables**

Description

The Powerheat AHT Heating Cables are constant power trace heating cables that are used to protect against freezing or maintain temperatures. The cables are rated at up to 200 W/m on a supply voltage up to 277 V. They comprise two insulated parallel bus wires, around which is wrapped a layer of mica and the glass insulation tape. A resistance wire is spiralled over the core, which is notched at intervals so that the resistance wire connects to the bus wire underneath. A further layer of mica and glass tape insulation is extruded over the top of the resistance wire. The insulation is covered with an aluminium outer jacket, and can have a further, optional, chemical resistant outer jacket.

The heating cables are cut to length to form a unit that is terminated at each end with a seal kit. The equipment is designed to be connected to a supply by means of suitable certified cable entries and junction boxes in accordance with the manufacturer's installation instructions. Additional earthing of the outer jacket may also be achieved by the use of a P clip arrangement. The minimum installation temperature of the heating cables is -40°C. The maximum surface temperature is dependent on the maximum permissible workpiece temperature as shown in the following tables.

Table A (*)		Maximum permissible workpiece temperature					
Maximum surface temperature:		T6	T5	T4	T3	T2	T1
Product type	Nominal output (W/m)	85°C	100°C	135°C	200°C	300°C	450°C
AHT	10	34	50	100	188	290	340
	15	-	36	71	160	289	350
	30	-	11	28	100	246	323
	50	-	-	-	39	178	276
	100	-	-	-	-	48	140
	150	-	-	-	-	-	36
	200	-	-	-	-	-	7

Unit 1, Newport Business Park
New Port Road
Ellesmere Port
CH65 4LZ

T +44 (0) 151 559 1160
E info@cmlex.com

www.cmlex.com

Company Reg No. 8554022 VAT No. GB163023642

Table B (#)		Maximum Permissible Workpiece Temperature					
Maximum surface temperature:		T6	T5	T4	T3	T2	T1
Product type	Nominal output (W/m)	85°C	100°C	135°C	200°C	300°C	450°C
AHT	10	40	60	110	190	290	340
	50	-	-	-	-	206	295
	100	-	-	-	-	82	176
	150	-	-	-	-	-	38

Table A: Stabilised design system or Protective System

Table B: Protective system with Heat Trace 'Powermatch' power controller (where a temperature controller is used to limit the maximum surface temperature, it shall comply with EN / IEC/IEEE 60079-30-1:2015 Ed.1.0, clause 4.5.3).

The heating cable meet the requirements for degree of protection IP67.

Conditions of Manufacture

The following are conditions of manufacture:

i. An electric strength test of 2 U + 1000 V rms shall be applied between the conductors and the outer, metallic braid/jacket as appropriate for 60 seconds as required by clause 5.1.2 of IEC 60079-30-1.
ii. An electric strength test of the polymeric sheath (over jacket) used for corrosion resistance shall be carried out in accordance with the requirements of IEC 60079-30-1 clause 5.2.1.
iii. The manufacturer shall verify the output rating for each cable manufactured in accordance with IEC 60079-30-1 clause 5.2.2.

Specific Conditions of Use

None.