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 17.0084**

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Certificate history:
Issue 2 (2021-08-19)
Issue 1 (2019-11-01)
Issue 0 (2017-10-06)

Status: **Current**

Issue No: 3

Date of Issue: 2022-06-29

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

Equipment: **Powerheat PHT Constant Power Heating Cable**

Optional accessory:

Type of Protection: **Electrical Resistance Trace Heating Cable "Ex 60079-30-1"**

Marking: Ex 60079-30-1 IIC T* Gb

Ex 60079-30-1 IIIC T*°C Db

Ta = -40°C to +285°C

IP 67

* Temperature Class is determined by the process/workpiece temperature. See product description for Temperature Class

Approved for issue on behalf of the IECEx Certification Body: **L A Brisk**

Position: **Certification Officer**

Signature: (for printed version)

Date: (for printed version) 2022-06-29

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

IECEx Certificate of Conformity

Certificate No.: **IECEx CML 17.0084**

Date of issue: 2022-06-29 Issue No: 3

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

Manufacturing locations:

Heat Trace Limited
Mere's Edge
Chester Road
Helsby
Cheshire
WA6 0DJ
United Kingdom

Heat Trace Limited
Cromwell Road
Bredbury
Stockport, SK6 2RF
United Kingdom

Heat Trace Limited
Unit 9 Southside
Bredbury Industrial Estate
Bredbury
Stockport SK6 2SP
United Kingdom

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 Edition:7.0 — Explosive atmospheres - Part 0: Equipment - General requirements

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

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/ExTR17.0120/00
GB/CML/ExTR19.0201/00
GB/CML/ExTR21.0055/00
GB/CML/ExTR22.0087/00

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 PHT 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 70 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 then 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 wires underneath. A further layer of mica and glass tape insulation is extruded over the top of the resistance wire. The insulation is covered with a fluoropolymer jacket, metallic braid and can have a further, optional, chemical resistant fluoropolymer 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. Minor editorial changes to the marking drawings
2. Change to the drawing numbers

Issue 2

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. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, the document previously listed, IEC 60079-0:2011 Ed. 6, is replaced by IEC 60079-0:2017 Ed. 7.
3. The product description was amended to update the certificate numbers of the end and powered end seals from Sira 12ATEX3157U and IECEx SIR 11.0137X to CML 19ATEX3390U and IECEx CML 19.0133U.

Issue 3

This issue introduces the following changes:

1. Introduction of alternative braid options with new product references
2. Correction from previous assessment to include additional manufacturing locations
3. Additional conditions of manufacture added to make corrections from previous assessment

Annex:

Certificate Annex IECEx CML 17.0084 Issue 3.pdf

Annexe to:	**IECEx CML 17.0084 Issue 3**
Applicant:	**Heat Trace Limited**
Apparatus:	**Powerheat PHT Heating Cables**

Description

The Powerheat PHT 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 70 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 then 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 wires underneath. A further layer of mica and glass tape insulation is wrapped over the top of the resistance wire. The insulation is covered with a fluoropolymer jacket, metallic braid and can have a further, optional, chemical resistant fluoropolymer outer jacket.

The heating cables are cut to length to form a unit that is terminated at each end with a seal kit. The heaters are designed to be used with BES4, BPS4, HES2 and HPS2 end and powered end seals, covered by certificates IECEx CML 19.0133U and CML 19ATEX3390U, and connected to a supply by means of suitable certified cable entries and junction boxes in accordance with the manufacturer's installation instructions.

When the following end and powered end seals are used, the following limiting temperatures apply:

End/ powered end seal type	**Limiting temperature range**
HES2	-40°C to +105°C
HPS2	-40°C to +90°C
BES4 and BPS4 (with standard RTV)	-40°C to +180°C
BES4 and BPS4 (with high temperature RTV)	-40°C to +250°C

The Temperature Class is dependent on the workpiece temperature (temperature of the process pipework), the maximum workpiece temperatures per Temperature Class are detailed in the following tables.

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PHT-N (without outer fluoropolymer jacket)

Workpiece Temperatures						
Output	**T6 (T85°C)**	**T5 (T100°C)**	**T4 (T135°C)**	**T3 (T200°C)**	**T2 (T300°C)**	**T1 (T450°C)**
Maximum sheath temperature	**80°C**	**95°C**	**130°C**	**195°C**	**200°C**	**200°C**
10 W/m	43	60	100	181	275	275
20 W/m	2	19	61	148	250	250
30 W/m	-	-	25	114	234	234
40 W/m	-	-	5	80	209	209
50 W/m	-	-	-	49	186	186
60 W/m	-	-	-	26	159	159
70 W/m	-	-	-	-	125	125

PHT-NF (with outer fluoropolymer jacket)

Workpiece Temperatures						
Output	**T6 (T85°C)**	**T5 (T100°C)**	**T4 (T135°C)**	**T3 (T200°C)**	**T2 (T300°C)**	**T1 (T450°C)**
Maximum sheath temperature	**80°C**	**95°C**	**130°C**	**195°C**	**200°C**	**200°C**
10 W/m	39	59	106	186	275	275
20 W/m	-	3	67	160	256	256
30 W/m	-	-	20	133	243	243
40 W/m	-	-	-	101	231	231
50 W/m	-	-	-	64	201	201
60 W/m	-	-	-	27	180	180
70 W/m	-	-	-	-	147	147

Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
ii. An electric strength test of 2 U+1000V rms shall be applied between the conductors and the outer braid or sheath as appropriate for 60 seconds in accordance with the requirements of EN 60079-30-1:2017 clause 5.1.2.
iii. The manufacturer shall verify the output rating for each cable manufactured in accordance with the requirements of EN 60079-30-1:2017 clause 5.2.2.
iv. The manufacturer shall demonstrate, through their quality program, the thermal safety of the trace heating cable with respect to time in accordance with the requirements of EN 60079-30-1:2017 clause 5.1.12

Specific Conditions of Use

None.

The heaters consist of the following Ex components:-

Item Description	Manufacturer Info	Ex Markings	Ex Certificate(s)	Standards
BES4, BES5, HES2 End Termination Kits / Power Seal Kits	Heat Trace Limited	Ex 60079-30-1 IIC Gb Ex 60079-30-1 IIIC Db IP67	IECEx CML 19.0133U	IEC 60079-0:2017 Ed.7.0 IEC 60079-30-1:2015 Ed.1.0