IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

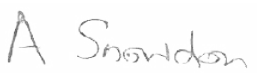
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx CML 19.0132X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2019-12-09)
Date of Issue:	2023-01-04		
Applicant:	**Heat Trace Limited** Mere's Edge, Chester Road, Helsby, Frodsham, Cheshire, WA6 0DJ **United Kingdom**		
Equipment:	**HTS2FM and HTS2FAM, and HTS3FM and HTS3FAM Ranges of Series Resistance Heating Tapes**		
Optional accessory:			
Type of Protection:	**Trace Heating "60079-30-1"**		
Marking:	Ex 60079-30-1 IIC T6…T1 Gb Ex 60079-30-1 IIIC T85°C…T450°C Db Withstand temp range: -40°C to +200°C Minimum Installation Temperature -40°C		

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

Position: **Certification Manager**

Signature: (for printed version)



Date: (for printed version) 2023-01-04

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United Kingdom

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Date of issue: 2023-01-04 Issue No: 1

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

Manufacturing locations:

Heat Trace Limited
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Bredbury
Stockport, SK6 2RF
United Kingdom

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

Heat Trace Limited
Mere's Edge
Chester Road
Helsby
Cheshire
Helsby WA6 0DJ
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/ExTR19.0146/00 GB/CML/ExTR22.0272/00

Quality Assessment Report:

GB/CML/QAR19.0027/05

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

The HTS2FM and HTS2FAM, and HTS3FM and HTS3FAM ranges of series resistance heating tapes are rated at 600 VAC at 50 Hz and up to 50 W/m. They use either two (HTS2FM) or three (HTS3FM) copper or aluminium heating conductors (foils); that are insulated in silicone rubber, covered with a tinned copper/nickel plated copper braid, or aluminium jacket, and an option to have a silicone rubber or fluoropolymer (MFA/PFA) outer jacket for corrosion protection.

Refer to Annex for full description and conditions of manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to Annex for specific conditions of use.

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

This issue introduced the following modifications:

1. Introduction of alternative braid option.
2. To recognise a change to the trademark.
3. To recognise additional manufacturing locations.
4. Amendments to formatting and typographical errors in product description.

Annex:

Certificate Annex IECEx CML 19.0132X Issue 1.pdf

Annexe to:	**IECEx CML 19.0132X, Issue 1**
Applicant:	**Heat Trace Limited**
Apparatus:	**HTS2FM and HTS2FAM, and HTS3FM and HTS3FAM Ranges of Series Resistance Heating Tapes**

Description

The HTS2FM and HTS2FAM, and HTS3FM and HTS3FAM ranges of series resistance heating tapes are rated at 600 VAC at 50 Hz and up to 50 W/m. They use either two (HTS2FM) or three (HTS3FM) copper or aluminium heating conductors (foils); that are insulated in silicone rubber, covered with a tinned copper/nickel plated copper braid, or aluminium jacket, and an option to have a silicone rubber or fluoropolymer (MFA/PFA) outer jacket for corrosion protection.

Note, the 3-foil version is marked HTS3FM which applies when all three foils are energised, however, if two foils are energised, it is referred to as the HTS2FM.

The nomenclature for the product is as follows:

Heat Trace Ltd HTS***V**M-**WXYY** 600VAC

Longline Tape

Type:

Available Part No's:	HTS	***V**	M	-	**W**	**X**	**YY**600VAC(3Phase)

Options: HTS Heating Tape Type (no options available)

* No. of foils
(2) Two (Three foils present in the construction, but only two are energised)
(3) Three (Three foils present in construction, and all three are energised)

V (F) Copper foil
(FA) Aluminium foil

M Multiple Foils configuration

W Continuous conductive covering
(C) Tinned Copper Braid
(A) Aluminium Jacket
(N) Nickel Plated Copper Braid

X Optional Outer Jacket Materials Available
(F) Fluoropolymer (MFA/PFA)
(S) Silicone Rubber

YY Conductor Cross Sectional Area
For copper conductor:
(0.2) 0.2mm^2
to
(1.6) 1.6mm^2
For aluminium conductor:
(0.6) 0.6mm^2
to
(2.4) 2.4mm^2
600VAC (3 phase) Rated/Maximum voltage (at 50Hz)

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Company Reg No. 8554022 VAT No. GB163023642

The power output is determined by the resistance of the foil; therefore, the foil thickness is altered to provide the required power output.

The temperature class is dependent on the maximum pipe temperature.

HTS3FM							
Product types	Nominal output (W/m)	Maximum permissible workpiece temperature (°C)					
		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
HTS3FM-C HTS3FM-A HTS3FM-N	10	47	66	107	181	200	200
	20		32	75	157	191	191
	30			41	132	163	163
	40				108	133	133
	50				76	97	97
HTS3FM-CS HTS3FM-AS HTS3FM-NS	10	57	73	112	181	200	200
	20	37	53	93	166	180	180
	30		31	73	152	157	157
	40			51	127	127	127
	50			27	92	92	92
HTS3FM-CF HTS3FM-AF HTS3FM-NF	10	57	73	112	181	192	192
	20	37	53	93	166	177	177
	30		31	73	152	165	165
	40			51	127	127	127
	50			27	92	92	92

HTS3FAM							
Product types	Nominal output (W/m)	Maximum permissible workpiece temperature (°C)					
		T6 (85°C)	T5 (100°C)	T4 (135°C)	T3 (200°C)	T2 (300°C)	T1 (450°C)
HTS3FAM-C HTS3FAM-A HTS3FAM-N	10	47	66	107	181	200	200
	20		32	75	157	191	191
	30			41	132	163	163
	40				108	133	133
	50				76	97	97
HTS3FAM-CS HTS3FAM-AS HTS3FAM-NS	10	57	73	112	181	200	200
	20	37	53	93	166	180	180
	30		31	73	152	157	157
	40			51	127	127	127
	50			27	92	92	92
HTS3FAM-CF HTS3FAM-AF HTS3FAM-NF	10	57	73	112	181	192	192
	20	37	53	93	166	177	177
	30		31	73	152	165	165
	40			51	127	127	127
	50			27	92	92	92

The manufacturer declared parameters for the heating foils are listed below:

Ambient temperature range:	-40°C to +60°C
Process temperature range (Maintain Temperature):	See tables above
Maximum Continuous Exposure Temperature (Power On):	+200°C
Maximum Permissible Exposure Temperature (Power Off):	+200°C
Maximum Withstand Temperature:	+200°C
Minimum Installation Temperature:	-40°C
Maximum Voltage:	See part no. breakdown above
Rated Power Output:	See part no. breakdown above
Minimum Bend Radius:	75mm
Braid Coverage:	>70%
Braid Thickness:	0.5mm
Earth Braid Resistance:	18.2Ω/km
Cable Length:	up to 2Km

SK/HTS3FM – Inline splice kit between two heating tapes

This splice construction involves the joining of two HTS2FM or HTS3FM heating tapes, with each conductor wrapped in self-amalgamating tape and crimped together in a tin-plated crimp. The connection of the heating tapes is made in a silicone rubber tube, that is filled and sealed with a RTV silicone sealant, which holds two RTV slotted bushes in place (one at each end) where the insulation of the heating tapes pass through an elongated oval slot. The electrical bonding is achieved by the braid of the heating foils, which are connected externally to the silicone with a tin-plated copper crimp.

TK/HTS3FM/6 and TK/HTS3FM/10 – Termination kit between heating tape and cold lead

The construction and material specifications of this splice is similar to that of the inline splice between two heating tapes, with both the heating cable and cold lead conductors wrapped in self-amalgamating tape and crimped together in a tin-plated crimp. The connection is made in a silicone rubber tube, that is filled and sealed with a RTV silicone sealant, which holds two RTV slotted bushes in place (one at each end) where the insulation of the heating tapes pass through an elongated oval slot and a round slot for the cold lead. The electrical bonding is achieved by the braid of the heating foils, which are connected externally to the silicone with a tin-plated copper crimp.

TK/HTS3FM/16 – Termination kit for HTS3FM between heating tape and cold lead

This splice construction involves the joining of HTS2FM or HTS3FM heating tapes with a cold lead, with each of the conductors wrapped in self-amalgamating tape and crimped together in a tin-plated crimp. The connection of the heating tapes is made in a silicone rubber mould that is filled and sealed with an RTV silicone sealant. The electrical bonding is achieved by the braid of the heating foils, which are connected externally to the silicone with a tin-plated copper crimp.

Conditions of Manufacture

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

i. An electric strength test of 2U+1000 V shall be applied, for each heater manufactured, between the conductors and the outer braid or jacket as appropriate for 60 seconds as required by clause 5.1.2 of IEC/IEEE 60079-30-1.

ii. An electric strength test of the over jacket used for corrosion resistance shall be carried out in accordance with the requirements of IEC/IEEE 60079-30-1 clause 5.2.1.

iii. The manufacturer shall verify the output rating for each cable manufactured in accordance with IEC/IEEE 60079-30-1 clause 5.2.2.

Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

i. The heaters shall be installed in suitable certified terminal boxes, via suitable certified terminals and cables.

ii. Suitable cold leads shall be selected by the end user.

iii. Testing for outdoor exposure in accordance with IEC/IEEE 60079-30-1 Clause 5.1.16 was not conducted. Therefore, the heating tapes and splices (permitted by this certificate) shall not be exposed to UV light, or a combination of UV light and moisture in service.