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 CSA 20.0006X**

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Certificate history:

Status: **Current**

Issue No: 4

Issue 3 (2025-03-26)
Issue 2 (2021-07-08)
Issue 1 (2021-04-17)
Issue 0 (2020-06-12)

Date of Issue: 2025-10-29

Applicant: **Thermon Inc**
100 Thermon Dr
San Marcos, TX 78667
United States of America

Equipment: **K-Profile Trace Heating Cable**

Optional accessory: Integral components: ET-8C, TBX-4LC, SK-SX

Type of Protection: **Ex 60079-30-1**

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

Ex 60079-30-1 IIIC T* Db

*T3 for EPL Gb; T200°C for EPL Db for USX 3-1, 3-2, 6-1, 6-2, 9-1, 9-2, 12-1, 12-2, 15-2
*215°C (T2) for EPL Gb; T215°C for EPL Db; for USX 15-1, 20-1
*230°C (T2) for EPL Gb; T230°C for EPL Db; for USX 20-2

*T3 for EPL Gb; T200°C for EPL Db for HTSX 3-1, 3-2, 6-1, 6-2, 9-1, 9-2, 10-4,12-1, 12-2, 15-2, 15-4
*215°C (T2) for EPL Gb; T215°C for EPL Db; for HTSX 15-1, 20-1
*230°C (T2) for EPL Gb; T230°C for EPL Db; for HTSX 20-2, 20-4

*T6 to T3 for EPL Gb; T85°C to T200°C for EPL Db for KSX

Approved for issue on behalf of the IECEx Certification Body: **Dave Magee**

Position: **Senior Director of Operations**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

CSA Group
178 Rexdale Boulevard
Toronto, Ontario M9W IR3
Canada

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Certificate No.: **IECEx CSA 20.0006X**

Date of issue: 2025-10-29

Manufacturer:
Thermon Inc
100 Thermon Drive
San Marcos, Texas 78666
United States of America

Manufacturing locations:

Thermon Inc
100 Thermon Drive
San Marcos, Texas 78666
United States of America

Thermon India Private Ltd.
GAT No: 796 & 800/1, Dingrajwadi
Road Koregaon Bhima, Tal.- Shirur
Pune
Maharashtra 412 216
India

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:

CA/CSA/ExTR20.0014/00
CA/CSA/ExTR20.0014/01
CA/CSA/ExTR20.0014/02
CA/CSA/ExTR20.0014/03

Quality Assessment Reports:

NL/DEK/QAR19.0011/05
NL/DEK/QAR25.0015/00

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

Electric parallel self-regulating heating cable, catalogue designation "USX", “HTSX” and “KSX”, for tracing of metal or non-metallic pipes or vessels, with fluoropolymer (PFA) core, a nickel-plated copper braid, and a fluoropolymer (PFA) overjacket and can be optionally supplied with a tinned copper braid and a fluoropolymer overjacket (FEP). The products are twin-lead parallel circuit self-regulating heating cables that produce heat inversely proportional to pipe temperature. The cables are rated at 3 to 20 Watts per foot (10 to 66 Watts per meter) and has the following temperature ratings:

HTSX:

Ambient Temperature Range: -60ºC to +55ºC
Maximum Maintain Temperature: 150ºC*
Maximum Exposure Temperature: 204ºC (Intermittent Power-off)
Maximum Withstand Temperature: 250ºC**
* Maximum Maintain Temperature for voltages 380-480Vac is limited to 121℃
** Maximum Withstand Temperature for voltages 380-480Vac is limited to 204℃

USX:

Ambient Temperature Range: -60ºC to +55ºC
Maximum Maintain Temperature: 240ºC
Maximum Exposure Temperature: 250ºC (Intermittent Power-off)
Maximum Withstand Temperature: 250ºC

KSX:

Ambient Temperature Range: -60ºC to +55ºC
Maximum Maintain Temperature: 121ºC
Maximum Exposure Temperature: 121ºC (Intermittent Power-off)
Maximum Withstand Temperature: 121ºC
The maximum rated voltage is 480Vac. Temperature class for K-profile trace heating cable is as followed:

USX:

- T3 for EPL Gb; T200℃ for EPL Db for USX 3-1, 3-2, 6-1, 6-2, 9-1, 9-2, 12-1, 12-2, 15-2
- 215℃ (T2) for EPL Gb; T215℃ for EPL Db; for USX 15-1, 20-1
- 230℃ (T2) for EPL Gb; T230℃ for EPL Db; for USX 20-2

HTSX:

- T3 for EPL Gb; T200℃ for EPL Db for HTSX 3-1, 3-2, 6-1, 6-2, 9-1, 9-2, 10-4,12-1, 12-2, 15-2, 15-4
- 215℃ (T2) for EPL Gb; T215℃ for EPL Db; for HTSX 15-1, 20-1
- 230℃ (T2) for EPL Gb; T230℃ for EPL Db; for HTSX 20-2, 20-4

KSX:

- T6 to T3 for EPL Gb*;
- T85℃ to T200℃ for EPL Db*;

*Stabilized Design

See the table in the annex for the rated voltage and nominal power of the model numbers.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Heating cable systems must be installed using the manufacturer’s suitably rated accessory kits in accordance with the applicable instructions.
2. For insulated externally heated surfaces, lower T- class systems may be obtained by utilizing stabilized design of a trace heating system using methods described in IEC 60079-30-2, using CompuTrace Electric Heat Tracing Design Software or by Thermon Engineering. The system design parameters, including the resulting T-class, shall be retained as a record of system documentation for each stabilized system design for as long as the system is in use. The parameters in the system documentation shall be checked during commissioning of the system.

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Equipment (continued):

Conditions of Manufacture

The Manufacturer shall comply with the following:

1. On 100% of production, each supplied length of USX, HTSX and KSX Heating cable, whether in bulk or individually fabricated items, shall be subjected to an A.C. potential while immersed in water 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 immersing in water, the heating cables may be subjected to a dry spark test with a minimum test voltage of 3000 Vac that has a substantially sinusoidal waveform at 2500Hz to 3500Hz. For a 3000Hz supply, the rate of travel of the Heating Cable through the dry test device, in meters per second, shall not be more than 3.3 times the length of the electrode measured in centimetres.
2. On 100% of production, the output rating for each manufactured length of USX, HTSX and KSX parallel trace heater shall be verified for linearity of power output through continuous or statistical test methods. The test measurement criteria shall be established or correlated to the output verification test specified in IEC/IEEE 60079-30-1:2015:2015, Clause 5.1.10. If statistical methods are used, the results shall represent a total product reliability of 95% or greater. The power output shall show that the power output is measured and is within the manufacturer's declared tolerances with a 95% confidence level.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 1 – this Issue introduced the following changes:

1. Variation to include the HTSX and KSX self-regulating cable models and increase the rated voltage of the HTSX self-regulating cable model to 480Vac, from 277 Vac.

Issue 2 – this Issue introduced the following changes:

1. Update of the certificate to correct the QAR link. There is no change to the product and there was no upissue of the ExTR necessary

Issue 3 – this Issue introduced the following changes:

1. Addition of Specific Condition of Use, resulting in suffix “X” added to certificate number
2. Update of label drawings

Issue 4 – this Issue introduced the following changes:

1. To add the following manufacturing location: Thermon India Private Ltd., GAT No: 796 & 800/1, Dingrajwadi Road Koregaon Bhima,Tal.-Shirur Pune, Maharashtra, 412 216, India.

Annex:

IECEx CSA 20.0006X Annexe Issue 4.pdf

EQUIPMENT (continued)

The table below shows the rated voltage and nominal power for the model numbers in this certificate:

Model No	Rated Voltage Vac	Nominal Power W/m(W/ft) at 10°C
USX 3-1	110-120	10 (3)
USX 6-1	110-120	20 (6)
USX 9-1	110-120	30 (9)
USK 12-1	110-120	39 (12)
USX 15-1	110-120	49 (15)
USX 20-1	110-120	66 (20)
USX 3-2	208-277	10 (3)
USX 6-2	208-277	20 (6)
USX 9-2	208-277	30 (9)
USX 12-2	208-277	39 (12)
USX 15-2	208-277	49 (15)
USX 20-2	208-277	66 (20)
HTSX 3-1	110-120	10 (3)
HTSX 6-1	110-120	20 (6)
HTSX 9-1	110-120	30 (9)
HTSX 12-1	110-120	39 (12)
HTSX 15-1	110-120	49 (15)
HTSX 20-1	110-120	66 (20)
HTSX 3-2	208-277	10 (3)
HTSX 6-2	208-277	20 (6)
HTSX 9-2	208-277	30 (9)
HTSX 12-2	208-277	39 (12)
HTSX 15-2	208-277	49 (15)
HTSX 20-2	208-277	66 (20)
HTSX 10-4	380-480	33 (10)
HTSX 15-4	380-480	49 (15)
HTSX 20-4	380-480	66 (20)
KSX 5-1	110-120	17 (5)
KSX 10-1	110-120	33 (10)
KSX 15-1	110-120	49 (15)
KSX 20-1	110-120	66 (20)
KSX 5-2	208-277	17 (5)
KSX 10-2	208-277	33 (10)
KSX 15-2	208-277	49 (15)
KSX 20-2	208-277	66 (20)

K-Profile Self-Regulating cable uses the following integral components to create a trace heating system:

Integral Component	Description	Min. Installation Temp.	Max. Exposure Temp. (power off)*
ET-8C	Certified End Termination (Certificate: IECEx CSA 20.0005U)	-60°C	230°C
TBX-4LC	Certified Power Connection Termination (Certificate: IECEx CSA 20.0005U)	-60°C	230°C
SK-SX	Splice Connection Kit which includes Metallic Covers, GR-SX-M Grommets (material: silicone rubber), wire crimps and RTV	-60°C	250°C

*Maximum exposure temperature of the K-Profile trace heating system is 230°C when used with ET-8C. TBX-4LC integral components and 240°C when used with SK-SX connection kit.

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