



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 SIR 14.0007X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 6	Issue 5 (2020-05-21)
Date of Issue:	2021-09-29		Issue 4 (2019-04-16)
Applicant:	nVent Thermal LLC 899 Broadway Street Redwood City California 94063-3104 United States of America		Issue 3 (2017-08-02)
Equipment:	Type E-100-L-A & E-100-L-E Lighted End Seals		Issue 2 (2016-06-24)
Optional accessory:			Issue 1 (2015-08-27)
Type of Protection:	Increased Safety eb, Encapsulation mb and Dust tb		Issue 0 (2015-03-02)
Marking:	Ex eb mb IIC T* Gb Ex tb IIIC T***°C Db Ta = -40°C to +40°C The temperature class/maximum surface temperature is directly related to the associated process temperature and trace heating cable with which it is assembled, refer to Conditions of Manufacture for the appropriate equipment marking.		

Approved for issue on behalf of the IECEx
Certification Body:

N Jones

Position:

Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

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:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom





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Date of issue: 2021-09-29

Issue No: 6

Manufacturer: **nVent Thermal LLC**
899 Broadway Street
Redwood City
California 94063-3104
United States of America

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 60079-18:2017](#) Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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/CSAE/ExTR21.0098/00](#)
[GB/SIR/ExTR16.0144/00](#)
[GB/SIR/ExTR20.0095/00](#)

[GB/SIR/ExTR15.0058/00](#)
[GB/SIR/ExTR17.0153/00](#)

[GB/SIR/ExTR15.0233/00](#)
[GB/SIR/ExTR19.0116/00](#)

Quality Assessment Report:

[GB/BAS/QAR06.0030/09](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Lighted End Seals, Type E-100-L-A and Type E-100-L-E, are designed for pipe mounting and the termination of specified trace heating cable. They are rated at 100-277 V AC and incorporate encapsulated electronics, within an Ex e enclosure, that includes encapsulated LED lights for indication. The main body of the equipment is manufactured from moulded plastic; the upper sub assembly consists of the same moulded plastic material and a clear plastic lens through which the indicating light is visible. Internally, the electronics within the upper sub-assembly are fully encapsulated using a clear, setting gel. Both the lens sub-assembly and the main body sub assembly are coupled via threaded joints and O-seal. The O-seal is retained in a groove and is required to maintain degree of protection IP66. The Lighted End Seals are designed for use with the following range of Raychem Industrial Parallel Heating Cables: BTV, QTVR, XTV, KTV and VPL as per the table as shown in the Annexe:

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Some external parts of the system are non-conducting and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done with a damp cloth.
2. The maximum process temperature of the Lighted End Seals is limited to 150°C; this may be further limited by the type of heating cable that is being used, therefore. When fitting the Lighted End Seals, the user/installer shall take into account any restrictions that are applicable to the cable.
3. The supply circuit shall be protected by a fuse capable of withstanding a prospective short current of 1500 A.
4. The Lighted End Seals must be pipe mounted in a single orientation, with the gland entry adjacent to the process pipe, as per the manufacturer's installation instructions.



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Issue No: 6

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 6, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. The introduction of an alternate thermal fuse for Type E-100-L Lighted End Seals; alternates LEDs for Type E-100-L-E Lighted End Seals.
2. Manufacturer's drawings updates.

Annex:

[IECEX SIR 14.0007X Annex Issue 6.pdf](#)

Annexe to: IECEx SIR 14.0007X Issue 6

Applicant: nVent Thermal LLC

Apparatus: Type E-100-L-A & E-100-L-E Lighted End Seals



Heater type	Permitted Voltages (V)	Maximum process temperature (°C)	IECEX Certificate
BTV	Up to 277V AC	65°C	IECEX BAS 06.0043X
QTVR	Up to 277V AC	110°C	IECEX BAS 06.0045X
XTV	Up to 277V AC	121°C	IECEX BAS 06.0044X
KTV	Up to 277V AC	150°C	IECEX BAS 06.0046X
VPL	Up to 110V AC (VPL1) Up to 277V AC (VPL2)	150°C	IECEX BAS 06.0048X

Conditions of Manufacture

- i. Each unit of the Lighted End Seals shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition or failure of adhesion or softening.
- ii. The equipment shall be subjected to routine dielectric strength tests in accordance with the requirements of IEC 60079-7 Clause 6.1 and IEC 60079-18 Clause 8.2.4. The test shall be deemed as passed if no breakdown or arcing occurs during testing.
- iii. The equipment shall be marked with the temperature class/maximum surface temperature identical to the trace heating cable with which it is assembled.
- iv. The equipment is assembled with previously certified devices, it is the manufacturer's responsibility to monitor the original certification of these components and ensure that they continue to comply with the requirements of the latest editions of the standards; the manufacturer shall inform Sira of any modifications to the devices that may impinge upon the explosion safety design of their products. Additionally, any special conditions and routine testing should be applied as per the original certification.
- v. Heating cables used with the Lighted End Seals, E-100-L-A and E-100-L-E shall not exceed the following dimensions.

Cable	Width NOM-MAX (in. / mm)	Thickness NOM-MAX (in. / mm)
XTV	0.460-0.490 / 11.7-12.5	0.285-0.305 / 7.2-7.7
VPL	0.458 (nom) / 11.6 (nom)	0.322 (nom) / 8.17 (nom)
QTVR	0.550-0.610 / 14.0-15.5	0.200-0.245 / 5.1-6.2
KTV	0.550-0.610 / 14.0-15.5	0.300-0.335 / 7.6-8.5
BTV	0.605-0.645 / 15.37-16.38	0.215-0.255 / 5.47-6.47

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Annexe to: IECEx SIR 14.0007X Issue 6

Applicant: nVent Thermal LLC

Apparatus: Type E-100-L-A & E-100-L-E Lighted End Seals



Full certificate change history

Issue 1 – this Issue introduced the following changes:

1. Minor administrative drawing changes, these have no effect on compliance.
2. The introduction of an alternative green LED for E-100-L-E.
3. Drawing number 021815-3 was replaced with 9P000001920.
4. Drawing number 50-322-0001-S was replaced with 3500-1501.
5. Drawing number 50-322-0002-S was replaced with 3500-2501.

Issue 2 – this Issue introduced the following changes:

1. The company address has changed from 307 Constitution Drive, Menlo Park, California, 94025 to 899 Broadway Street, Redwood City, California 94063-3104.
2. The introduction of issue H of drawing 908080, which includes the following modifications:
 - Note 7 was removed from this drawing and transferred to drawing 908075.
 - Note 6 was added to state routine dielectric strength test requirements.
3. The introduction of issue G of drawing 908075, which includes the following modifications:
 - Note 16 was transferred to this drawing from drawing 908080.
 - Notes were renumbered.
4. The introduction of issue F of drawing 9P000001920, which includes the following modifications:
 - Address of manufacturer was changed from 'Menlo Park' to 'Redwood City'.
 - IEx and EAC mark and certificate numbers were added to the label.

Issue 3 – this Issue introduced the following change:

1. Drawing 9P000001920 has been updated with the following administrative changes:
 - The addition of an alternative certified label manufacture.
 - The addition of a qualified supplier of the label.

Issue 4 – this Issue introduced the following changes:

1. Recognition of name change, from Pentair Thermal Management LLC to nVent Thermal LLC.
2. The recognition of minor administrative modifications within the drawings.

Issue 5 – this Issue introduced the following changes:

1. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2011 Ed.6, IEC 60079-7:2006-07 Ed.4, IEC 60079-18:2009 Ed.3 and IEC 60079-31:2008 Ed.1, were replaced by IEC 60079-0:2017 Ed.7, IEC 60079-7:2017 Ed.5.1, IEC 60079-18:2017 Ed.4.1 and IEC 60079-31:2013 Ed.2, the markings were amended to recognise the new standards.
2. Update to ratings listed for clarity, no change to the heating cables.

Issue 6 – this Issue introduced the following changes:

1. The introduction of an alternate thermal fuse for Type E-100-L Lighted End Seals; alternates LEDs for Type E-100-L-E Lighted End Seals.
2. Manufacturer's drawings updates.

Date: 29 September 2021

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