



DQD 507 Rev 2018-11-12
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Certificate of Compliance

Certificate: 2547790

Master Contract: 256470

Project: 70215669

Date Issued: 2019-05-30

Issued To: Eltherm Production GmbH
Ernst-Heinkel-Str. 6-10
Burbach, Nordrhein-Westfalen, 57299
Germany

Attention: Peter Schmidt

The products listed below are eligible to bear the CSA Mark shown



Issued by: Amir Kianimanesh
Amir Kianimanesh

PRODUCTS

CLASS - C287201 - HEATERS Cable and Cable Sets

CLASS - C287281 - HEATERS Cable and Cable Sets - Certified to US Standards

Ordinary Locations:

Self-Regulating heating cable systems for pipe tracing applications, Type ELSR, for pipe & vessel tracing, usages G, WS in Canada, rated 3W/ft to 20W/ft (at reference temperature table below), 120Vac or 240Vac.

Self-Regulating heating cable systems, Type ELSR-HA, for pipe & vessel tracing, usages GS in Canada, rated 3W/ft to 20W/ft (at reference temperature table below), up to 277Vac.

CLASS - C287801 - HEATERS Cable and Cable Sets - For Hazardous Locations



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Hazardous Locations:

Class I Zone 1 Ex e IIC Gb;

Self-Regulating heating cable systems, Type ELSR, for pipe & vessel tracing, usages G, WS in Canada, rated 3W/ft to 20W/ft (at reference temperature tabled below), 120Vac or 240Vac, with Termination Kits: Power Termination Kits, ELVB-SREx, ELVB-SRAN, ELVB-SRAH and End Termination Kits EL-ECH and EL-ECN. With stand-off Ex-It for separate junction box.

Class I, Div. 2, Groups A, B, C, D; Class II, Div. 2, Groups E, F, G; Class III;

Self-Regulating heating cable systems, Type ELSR, for pipe & vessel tracing, usages G, WS in Canada, rated 3W/ft to 20W/ft (at reference temperature tabled below), 120Vac or 240Vac, with Termination Kits: Power Termination Kits ELVB-SREx, ELVB-SRAN, ELVB-SRAH and End Termination Kits EL-ECH and EL-ECN.

Class I, Div. 1 & 2, Groups B*, C, D; Class II, Div. 1 & 2, Groups E, F, G; Class III;

Self-Regulating heating cable systems, Type ELSR, for pipe & vessel tracing, usages G, WS in Canada, rated 3W/ft to 20W/ft (at reference temperature tabled below), 120Vac or 240Vac, with Termination Kit EL-HAZELECT (* not included when enclosure GECTT is being used).

CLASS - C287881 - HEATERS Cable and Cable Sets - For Hazardous Locations- Certified to US Standards

Hazardous Locations:

Class I Zone 1 Ex e IIC Gb;

Self-Regulating heating cable systems, Type ELSR, for pipe & vessel tracing, usages G, WS in Canada, rated 3W/ft to 20W/ft (at reference temperature tabled below), 120Vac or 240Vac, with Termination Kits: Power Termination Kits, ELVB-SREx, ELVB-SRAN, ELVB-SRAH and End Termination Kits EL-ECH and EL-ECN. With stand-off Ex-It for separate junction box.

Class I, Div. 2, Groups A, B, C, D; Class II, Div. 2, Groups E, F, G; Class III;

Self-Regulating heating cable systems, Type ELSR, for pipe & vessel tracing, usages G, WS in Canada, rated 3W/ft to 20W/ft (at reference temperature tabled below), 120Vac or 240Vac, with Termination Kits: Power Termination Kits ELVB-SREx, ELVB-SRAN, ELVB-SRAH and End Termination Kits EL-ECH and EL-ECN.

ELSR Heating Cables:



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Cat. Designation	Power Output (W/ft)	Max. V ac	Min. Install. Temp.	Shield type / Jacket	max. continuous operating temperature	max. continuous exposure temperature
ELSR-NA-3-1 AO	3@5°C /41°F	120	-45°C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-3-1 BO	3@5°C /41°F	120	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-3-1 BOT	3@5°C /41°F	120	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-3-1 BOT	3@5°C /41°F	120	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-NA-5-1 AO	5@5°C /41°F	120	-45C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-5-1 BO	5@5°C /41°F	120	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-5-1 BOT	5@5°C /41°F	120	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-5-1 BOT	5@5°C /41°F	120	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-NA-7-1 AO	7@5°C /41°F	120	-45C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-7-1 BO	7@5°C /41°F	120	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-7-1 BOT	7@5°C /41°F	120	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-7-1 BOT	7@5°C /41°F	120	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-NA-4-2 AO	4@5°C /41°F	240	-45C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-4-2 BO	4@5°C /41°F	240	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-4-2 BOT	4@5°C /41°F	240	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-4-2 BOT	4@5°C /41°F	240	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-NA-6-2 AO	6@5°C /41°F	240	-45C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-6-2 BO	6@5°C /41°F	240	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-6-2 BOT	6@5°C /41°F	240	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-6-2 BOT	6@5°C /41°F	240	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-NA-8-2 AO	8@5°C /41°F	240	-45C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-8-2 BO	8@5°C /41°F	240	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-8-2 BOT	8@5°C /41°F	240	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-8-2 BOT	8@5°C /41°F	240	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-NA-10-2 AO	10@5°C /41°F	240	-45C	aluminum foil / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-10-2 BO	10@5°C /41°F	240	-45C	braid / PP	60°C / 140°F	80°C / 176°F
ELSR-NA-10-2BOT	10@5°C /41°F	240	-25C	braid / PVDF	60°C / 140°F	80°C / 176°F
ELSR-NA-10-2BOT	10@5°C /41°F	240	-45C	braid / ECTFE	60°C / 140°F	80°C / 176°F
ELSR-HA-3-1 BOT	3@10°C / 50°F	120	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-7-1 BOT	7@10°C / 50°F	120	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-10-1 BOT	10@10°C / 50°F	120	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-15-1 BOT	15@10°C / 50°F	120	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-20-1 BOT	20@10°C / 50°F	120	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-3-2 BOT	3@10°C / 50°F	240	-60C	braid / PFA	120°C / 248°F	200°C / 392°F



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ELSR-HA-7-2 BOT	7@10°C / 50°F	240	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-10-2 BOT	10@10°C / 50°F	240	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-15-2 BOT	15@10°C / 50°F	240	-60C	braid / PFA	120°C / 248°F	200°C / 392°F
ELSR-HA-20-2 BOT	20@10°C / 50°F	240	-60C	braid / PFA	120°C / 248°F	200°C / 392°F

Heating cables are permitted for use with the following accessories:

Accessories	ELSR-HA (-GS)	ELSR-HA (-WS)	ELSR-NA (-WS)	ELSR-HA Ex Zone 1	ELSR-HA Ex Div 2	ELSR-NA Ex Zone 1	ELSR-NA Ex Div 2	ELSR-HA Class I, II, III Div 2	ELSR-NA Class I, II, III Div 2	ELSR-HA Class I, GP B,C,D Class II, GP E,F,G Class III Div. 1 & 2	ELSR-NA... BOT Class I, GP B*,C,D Class II, GP E,F,G Class III Div. 1 & 2
End Termination Kit EL-ECH-Ex (with Silicone End Cap EL-ECH, red)	-	+	-	+	+	-	-	+	-	-	-
End Termination Kit EL-ECSH	+	-	-	+	+	-	-	+	-	-	-
End Termination Kit EL-ECN-Ex (with Silicone End Cap EL-ECN, transparent)		-	+	-	-	+	+	-	+	-	-
Power Termination Kit Ex ELVB-SREx-20 BR HT (with gland Peppers A8F 20R M20)		+	+	+	+	+	+	+	+	-	-



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Accessories	ELSR-HA (-GS)	ELSR-HA (-WS)	ELSR-NA (-WS)	ELSR-HA Ex Zone 1	ELSR-HA Ex Div 2	ELSR-NA Ex Zone 1	ELSR-NA Ex Div 2	ELSR-HA Class I, II, III Div 2	ELSR-NA Class I, II, III Div 2	ELSR-HA Class I, GP B,C,D Class II, GP E,F,G Class III Div. 1 & 2	ELSR-NA... BOT Class I, GP B*,C,D Class II, GP E,F,G Class III Div. 1 & 2
Power Termination Kit Ex ELVB-SREx-3/4 BR HT (with gland Peppers A8F 20R 3/4")		+	+	+	+	+	+	+	+	-	-
Power Termination Kit ELVB-SRAH-3/4 ST (with gland Thomas & Betts 2238)		+	+	-	-	-	-	-	-	-	-
Power Termination Kit ELVB-SRAN-3/4 ST (with gland Thomas & Betts 2239)		+	+	-	-	-	-	-	-	-	-
Heater Entry Kit EL-HAZELECT		+	+	+	+	+	+	+	+	(CANADA ONLY)	(CANADA ONLY)
Power Termination Kit EL-SPN 16		-	+	-	-	+	+	-	+	-	-
Cable gland Beisit N12712 Beisit 1/2" NPT		-	+(CANADA ONLY)	-	-	-	-	-	-	-	-
Cable gland Beisit N3418 Beisit 3/4" NPT		-	+(CANADA ONLY)	-	-	-	-	-	-	-	-
Power termination kit ELVB-SREx-It (to be used with stand-off Ex-It only)	-	-	-	+	-	+	-	-	-	-	-



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Accessories	ELSR- HA (-GS)	ELSR- HA (-WS)	ELSR- NA (-WS)	ELSR- HA Ex Zone 1	ELSR- HA Ex Div 2	ELSR- NA Ex Zone 1	ELSR- NA Ex Div 2	ELSR- HA Class I, II, III Div 2	ELSR- NA Class I, II, III Div 2	ELSR-HA Class I, GP B,C,D Class II, GP E,F,G Class III Div. 1 & 2	ELSR-NA- ... BOT Class I, GP B*,C,D Class II, GP E,F,G Class III Div. 1 & 2
Ex-It-NA stand-off for separate junction box	-	-	-	+	-	+	-	-	-	-	-

* Not included when enclosure GECTT is being used.

CONDITIONS OF ACCEPTABILITY

When ELSR NA Heating cables are assembled with the Type EL-SPN 16 Field Splice Connection Kit the minimum installation temperature is limited to -25°C (-13°F)

APPLICABLE REQUIREMENTS

- CAN/CSA-C22.2 No 130-16 - Requirements for Resistance Heating Cables and Heating Device Sets
- CAN/CSA 60079-7:12 - Electrical Apparatus for Explosive Gas Atmospheres – Part 7: Increased Safety “e”
- CAN/CSA 60079-0-15 - Electrical Apparatus for Explosive Gas Atmospheres – Part 0:General Requirements
- IEC/IEEE 60079-30-1:2015 - Explosive Atmospheres – Part 30-1: electrical resistance trace heating – General and testing requirements (as a guide)

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.



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Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

a) Heating Cable: The following shall be legibly and durably ink printed on the outer jacket of the heating cable:

Ordinary Locations:

- Manufacturer's name or trademark or Master Contract Number “256470”;
- Catalogue number designation or manufacturer's product type identification;
- The word “PARALLEL”, and the usage marking (from CSA Std. C22.2 No. 130-16);
- Serial Number or Date Code;
- The rated voltage
- The rated power output in watts per linear meter (or foot) and the specified temperature for that output;
- The maximum permissible steady state current; and
- The CSA Monogram*

* Ordinary Locations heating cables are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Hazardous Locations:

- Manufacturer's name or trademark or Master Contract Number “256470”;
- Catalogue number designation or manufacturer's product type identification;
- The word “PARALLEL”, and the usage marking (from CSA Std. C22.2 No. 130-16);
- Serial Number or Date Code;
- The rated voltage ();
- The rated power output in watts per linear meter (or foot) and the specified temperature for that output;
- The maximum permissible steady state current;
- The Class (es) and, where appropriate, Division(s) and Group(s) of hazardous locations rating (e.g., Class I, Division 2, Groups A, B, C, and D);
- The temperature code (e.g., T6) or the maximum sheath temperature of the heating device; and
- CSA Monogram



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When including 'Zones' rating on the heating cable/heating cable set (the equipment shall be legibly marked on a main part on the exterior of the equipment and shall be visible prior to the installation of the equipment):

- The symbol Ex;
- The symbol for the type of protection used;
- The symbol of the Group of the electrical apparatus;
- CSA Monogram, along with the year of Certification and Certificate/Project number (ie. 13. 2547790).

b) Kit Markings:

The cartons or containers and the instructions of all connection and termination kits shall be clearly marked with the following information:

- a) The manufacturer's name, or trademark, or Master Contract No. "256470";
- b) The catalogue number, reference number, or model;
- c) Intended use (i.e., FOR USE WITH _____(Manufacturer)_____ MODEL (type, series, or designation) HEATING CABLE ONLY);
- d) The words "SEE INSTALLATION INSTRUCTIONS" and any applicable notices, warnings, or directions to the user;
- e) The maximum permissible steady-state current;
- f) The rated voltage;
- g) Maximum temperature continuous exposure;
- h) When required by Clause 4.6.1 (of CSA Std. 130-16), the words "Temperature at the point of connection to branch circuit conductors may exceed 60 °C"; and
- i) The CSA Monogram.

Additional Kit Markings for Hazardous Locations:

- The Class (es) and, where appropriate, Division(s) and Group(s) of hazardous locations rating (e.g., Class I, Division 2, Groups A, B, C, and D);
- The temperature code (e.g., T6) or the maximum sheath temperature of the heating device;

When including 'Zones' rating on the heating cable/heating cable set (the equipment shall be legibly marked on a main part on the exterior of the equipment and shall be visible prior to the installation of the equipment):

- The symbol Ex;
- The symbol for the type of protection used;
- The symbol of the Group of the electrical apparatus;
- CSA Monogram, along with the year of Certification and Certificate/Project number - "13.2547790".

c) Packaging Marking:



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The original carton, container, spool, or reel in or on which the heating device or heating device set leaves the factory shall be clearly marked with the following information:

- a) The manufacturer's name, trademark, or Master Contract Number "256470";
- b) The catalogue number, reference number, or model;
- c) The month and year of manufacture, date code, applicable serial number, or equivalent;
- d) The words "Refer to installation instructions", or equivalent wording, and any applicable notices, warnings, and directions to the installer;
- e) The warning "CAUTION: a ground fault protection device must be used with this heating device" and "ATTENTION: ce produit doit être utilisé avec une protection de mise à la terre";
- f) The maximum voltage for which the heating device or heating device set is intended;
- g) The maximum rated current;
- h) The rated output of the device expressed in watts per unit length at a reference temperature;
- i) The words "heating cable set", and usage as shown in Table 1 (CSA Std. 130-16);
- j) The manufacturer's declared minimum installation temperature; and
- k) The CSA Monogram*.

* Ordinary Locations heating cables are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Additional Package Marking for Hazardous Locations Heating Cable Sets:

- The Class (es) and, where appropriate, Division(s) and Group(s) of hazardous locations rating (e.g., Class I, Division 2, Groups A, B, C, and D);
- The temperature code (e.g., T6) or the maximum sheath temperature of the heating device;

When including 'Zones' rating on the heating cable/heating cable set (the equipment shall be legibly marked on a main part on the exterior of the equipment and shall be visible prior to the installation of the equipment):

- The symbol Ex;
- The symbol for the type of protection used;
- The symbol of the Group of the electrical apparatus;
- CSA Monogram, along with the year of Certification and Certificate/Project number (ie. 13. 2547790).

d) Installation Instructions:

The manufacturer shall provide complete instructions for the installation and maintenance of the heating device and a statement that the heating device set must be installed in accordance with applicable codes. Instructions shall also include caution or warning notices that are specific to the heating device and its intended use. Instructions shall include the following:

- a) Applicable ground fault protection requirements, when a ground fault protection device is not



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provided with the heating device;

- b) Any restrictions that the heating portion of the heating device set shall not touch, cross over, or overlap itself;
- c) Restrictions relating to the minimum spacing between adjacent heating devices, e.g., spiral turns around the pipe;
- d) The recommended location of any temperature control sensor(s);
- e) Restrictions regarding clearances from combustible surfaces;
- f) The minimum bending radius of each flexible heating device;
- g) The manufacturer's minimum recommended installation temperature;
- h) Recommended attachment methods;
- i) An explanation of the attribute and application markings for the heating device or heating device set;
- j) Recommended inspection and test procedures;
- k) The minimum installation temperature for the heating device or heating device set;
- l) Restrictions on permissible thickness and material (or insulation factor) of thermal insulation;
- m) Explanation of specific application(s) and intended use;
- n) A list of the components of the heating device set;
- o) The maximum length of the heating device;
- p) The recommended size of the over-current protective device;
- q) The order, preparation, and method of assembling all components; and
- r) The CSA Monogram*.
- s) Legible instructions shall be provided pertaining to the risk of fire, electric shock, or injury to persons associated with the use, operation, user-maintenance and storage, and grounding of the set.
- t) The instructions shall include, but are not limited to, the directions and information necessary to cover the mechanical and electrical limitations of a set and the intended installation maintenance, operation, and use of the set.
- u) The installation instructions for trace heating intended for use in commercial applications shall comply with the design requirements specified in IEEE/IEC 60079-30-1 and IEEE/IEC 60079-30-2.
- v) Caution: consult the trace heating system documentation prior to maintenance/repair/modification.
- w) After completion of the repair, test the heating circuit and each affected earth fault device.
- x) In the event of an earth fault or over current interruption, the device shall not be reset until the case of the trip has been investigated by qualified personnel.
- y) Upon completion of maintenance/repair/modification, the insulation resistance of the trace heater shall be measured and recorded after installation and shall not be less than 20MΩ.

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Additional Installation Instructions requirements for Hazardous Locations:

- The Class (es) and, where appropriate, Division(s) and Group(s) of hazardous locations rating (e.g. Class I, Division 2, Groups A, B, C, and D);
- The temperature code (e.g., T6) or the maximum sheath temperature of the heating device;
- The statement “Suitable for use with” (or equivalent) and a listing of applicable heating devices, or a listing of applicable connection fittings;
- The statement “Bond the metallic braid, sheath, or equivalent electrically conductive material of the heating device to a suitable grounding (earth) terminal;
- “De-energize before installation or servicing.”;
- “Each heating device branch circuit or each heating device shall have ground fault equipment protection.”;

When including ‘Zones’ rating on the heating cable/heating cable set:

- The symbol Ex;
- The symbol for the type of protection used;
- The symbol of the Group of the electrical apparatus;
 - CSA Monogram, along with the year of Certification and Certificate/Project number (ie. 13. 2547790).



Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
70215669	2019-05-30	Update to report 256470 2547790 to include alternate higher profile standoff (IP65 when used with IP65 rated enclosure); zones only rating.
70194739	2018-12-13	Addition of 277V ac rating for ELSR-HA (usages GS), and addition of EL-ECSH End Cap/Termination (for use with heating cable usages GS).
70086982	2018-04-06	Update to the latest applicable standards and standards edition and introduction of the Ordinary location cable glands; the Beisit 1/2" NPT and the Beisit 3/4" NPT, for use with the ELSR-NA-XX trace heating cables.
70049417	2016-06-22	Variation to CSA certificate 2547790 with the scope to Introduce a splice connection kit.
70009329	2015-08-20	Inclusion of alternate jacket of ECTFE, rated up to -40C, for heating cable ELSR-NA-...-BOT, assessment of ELSR heating cables for Div. 1, and inclusion of Div. 1 power termination/splice/end seal kit EL-HAZELECT (pat no. 09CA051).
0002642335	2014-03-28	Retesting XLPE insulating material long term IR testing
0002547790	2013-09-18	Self Regulating Heating Cable systems Original Certification