DNV·GL

Certificate No:
TAE00000SU

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Heating Cable

with type designation(s)
SRL, SRM/E, SRP, U series connection kit, RTES end seal kit

Issued to
Chromalox (Suzhou) Precision Heat and Control Co., Ltd
Wujiang Jiangsu Province, China

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

Self regulating heating Cable for gas Hazardous areas ref. IECEx certificate.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Type	Voltage (V)	Temp. class	Power [W/m] @ref. temp.	Ex area
SRL	120 and 208-277	65°C (T5 upto 5W/ft. T4 above 5W/ft)		Yes
SRM/E	120 and 208-277	150°C (T3 upto 15W/ft. T2 above 15W/ft)		Yes
SRP	120 and 208-277	110°C (T4)		Yes
U series connection kit				Yes
RTES end seal kit				Yes

This Certificate is valid until **2018-06-30**.

Issued at **Høvik** on **2015-12-03**

for **DNV GL**

DNV GL local station: **Shanghai**

Approval Engineer: **Ivar Bull**

Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Product description

Types: SRL, SRM/E and SRP Self regulating heating Cables:

Conductor:	Twin 16AWG copper bus wires
Conductor insulation:	Semiconductive polymer core matrix
Inner sheath:	High temperature fluorpolymer jacket
Braid:	Tinned copper braid
Outer sheath:	High temperature fluorpolymer jacket

Self regulating, Low temperature:

Type designation	Temp.class	Nominal power (W/ft)
SRL3	T5	3
SRL5	T5	5
SRL8	T4	8
SRL10	T4	10

Self regulating, Medium temperature:

Type designation	Temp.class	Nominal power (W/ft)
SRM/E 3	T3	3
SRM/E 5	T3	5
SRM/E 8	T3	8
SRM/E 10	T3	10
SRM/E 15	T3	15
SRM/E 20	T2	20

Self regulating, Process temperatures:

Type designation	Temp.class	Nominal power (W/ft)
SRP5	T4	5
SRP10	T4	10
SRP15	T4	15

The SRL, SRL/S, SRM/E, SRP and HWM Series cables are designed for use with the U Series Connection Kits (UPC and UPC-DE power connection kits, UMC, UMC-DE-B and UMC-DE-S multiple entry connection kits, UES end seal kit) and RTES end seal kit. Ingress protection: IP66.

Alternatively UPC & UPC enclosure (box) made of polyester from manufacturer ROSE Systemtechnik GmbH. Product Description: Empty enclosure of type 26. ******, made of polyester, which may be provided with flanges, a glass or plastic inspection window and an earth bolt compl. with off shore plate I angle.

Application/Limitation

The installation has to be done in accordance with the manufacturers installation instructions.

Heating cables are not to be installed in contact with woodwork or other combustible material. If installed close to such materials, a separation by means of a non-flammable material may be required.

Type Approval documentation

Tests carried out

IECStandard	Release	General description	Limitation
IEC 60079-0	2004	Explosive atmospheres - Part 0: Equipment - General requirement	
IEC 60079-7	2001	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"	
IEC 60079-30-1	2007	Explosive atmospheres - Part 30-1: Electrical resistance trace heating - General and testing requirements	
IEC 60079-30-2	2007	Explosive atmospheres - Part 30-2: Electrical resistance trace heating – Application guide for design, installation and maintenance.	

Marking of product

Chromalox – Type designation – Voltage – Lot No.

Periodical assessment

The scope of the Periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the Periodical assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Retention Periodical assessment shall be done at least every second year.

END OF CERTIFICATE