



TYPE APPROVAL CERTIFICATE

Certificate No:
TAE00000TU
Revision No:
2

This is to certify:

That the Electric Heating Cable

with type designation(s)
BTV, QTVR

Issued to

nVent Thermal LLC
Houston, TX, USA

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

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

Type	Rated voltage (V)	Temp. class (°C)	Power [W/m] @ref. temp.	Suitable for Hazardous areas
BTV	110/120, 230/240/277	T6		Yes (see page 2)
QTVR	110/120, 230/240/277	T4		Yes (see page 2)

Issued at **Hamburg** on **2021-03-01**

for **DNV**

This Certificate is valid until **2026-02-28**.

DNV local station: **Long Beach**

Approval Engineer: **Maik Gagern**

.....
Arne Schaarmann
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Type: BTV and QTVR

Construction:	BTV	QTVR
Conductors:	1,2 mm ² stranded copper	1,4 mm ² stranded copper (10 and 15QTVR) 2,3 mm ² stranded copper (20QTVR)
Heating element:	Self-regulating conductive core	Self-regulating conductive core
Inner sheath:	Modified polyolefin insulation	Fluoropolymer insulation
Metal covering:	Tinned copper braid	Tinned copper braid
Outer sheath:	Fluoropolymer jacket	Fluoropolymer jacket

Type	Voltage	W/m at 10°C
3 BTV1-CT	110/120	9,3
5 BTV1-CT	110/120	15,6
8 BTV-1-CT	110/120	25,3
10 BTV1-CT	110/120	31,7
3 BTV2-CT	230/240/277	9,3
5 BTV2-CT	230/240/277	15,6
8 BTV-2-CT	230/240/277	25,3
10 BTV2-CT	230/240/277	31,7
10 QTVR1-CT	110/120	37,5
15 QTVR1-CT	110/120	51,2
20 QTVR1-CT	110/120	63,3
10 QTVR2-CT	230/240/277	37,5
15 QTVR2-CT	230/240/277	51,2
20 QTVR2-CT	230/240/277	63,3

	BTV, QTVR
Connection system:	C25-21, C25-100, JBU-100-E/L-EP, JBS-100-A/E/L-EP, JBM-100-A/E/L-EP C-150-E.
Penetration kit:	IEK-25-04
Splice kit:	S-20 (BTV), S-20 (QTVR), S-150
End seal kit:	E-20, E-100, E-100-L, E-150
Tee kit:	T-100

Application/Limitation

Manufacturers instructions to be followed when relevant. Please observe special conditions for safe use given in EC-type examination certificate.

Note: All details about electrical explosion protection mentioned in this certificate are for information only. For relevant binding information the corresponding Certificate of Conformity with regard to electrical explosion protection, issued by a recognised Authority, shall be observed.

Maximum surface temperature is determined by cable design and use referring to the concept of stabilized design as described in IEC IEEE 60079-30-1. nVent Thermal verified engineering software such as TraceCalc software to be used to assure that maximum allowable sheath temperatures are adequately below the auto-ignition temperature of the gases in the area. The user of the software should be experienced with the design of heat tracing applications.

Applications where Ex certified equipment is required will in general be subject to approval case by case based on documentation as required in DNV Rules.

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

Catalogue data sheets BTV and QVTR from manufacturer.
RAYCHEM-DS-EU1380-BTV-EN
RAYCHEM-DS-EU1381-QVTR-EN

SGS Certificates: SGS20ATEX0048X, dated 23.10.2020
SGS20ATEX0050X, dated 23.10.2020

IECEX Certificates: IECEX BAS 06.0043X and IECEX BAS 06.0045X dated 26.10.2020

PTB ATEX Certificates: PTB 20 ATEX 1008 U (JBS-100-xx-x, JBM-100-xx-x, JBU-100-xx-x, T-100)
PTB 09 ATEX 1060 U Iss1 (E-100-E)

SIRA ATEX Certificate: SIRA 14 ATEX3015X (E-100-L)

IECEX PTB Certificates: IECEX PTB 20.0014U (JBXXX-XX)
IECEX PTB 09.0038U (E-100-E)

IECEX SIRA Certificate: IECEX SIR 14.0007X (E-100-L)

Marking of product

Product marking: nVent Thermal LLC - Type designation-Voltage
QVTR : II 2 GD Ex 60079-30-1 eb IIC T4 Gb or Ex 60079-30-1 eb mb IIC T4 Gb T_{min} -60°C
Ex 60079-30-1 tb IIIC T130°C or Ex 60079-30-1 mb tb IIIC T130°C
BTV: II 2 GD Ex 60079-30-1 eb IIC T6 Gb or Ex 60079-30-1 eb mb IIC T6 Gb T_{min} -60°C
Ex 60079-30-1 tb IIIC T80°C Db or Ex 60079-30-1 mb tb IIIC T80°C Db
(* and ** See schedule in the corresponding Certificate of Conformity)

Periodical assessment

The scope of the retention/renewal survey 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 survey 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.

Survey to be performed at least every second year.

END OF CERTIFICATE