Certificate no.:
TAE00004U9

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electric Power Cable

with type designation(s)
eta plus – ELC Cable – Uo/U 1,8/3.0 kV – 2x1x2,5mm2 – Special cable for BWTS

issued to
eta plus electronic gmbh
Nürtingen, Baden-Württemberg, Germany

is found to comply with
DNV 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.

Rated voltage (kV)	**1,8/3**
Temp. class (°C)	**90**

Issued at **Høvik** on **2024-01-11**

This Certificate is valid until **2029-01-10**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Carsten Hunsalz**

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

UV system cable for water sterilization on ships eta plus – ELC Cable – Uo/U 1,8/3.0 kV – 2x1x2,5mm2

Construction:

Rated voltage:	1,8/3 kV
Maximum operating conductor temperature:	90° C
Conductor:	Stranded copper, class 5
Insulation:	XLPE
Screening:	Plain or tinned copper wire
Outer sheath:	SHF1

No. of cores (pair):	Nominal cross section mm²
2 x 1	2,5

Ampacity:	
	100 kHz ≤ 12 A
	200 kHz ≤ 3 A

Application/Limitation

UV system cables for water sterilization on ships

Temperature window for transport and fixed installation: -40°C to +80°C

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 60228	2004-11	Conductors of insulated cables	
UL Style		30091	
IEC 60092-353	2016-09	Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV	partly
IEC 60092-360	2021-01	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	partly
IEC 60332-1-2	2015-07	Tests on eletric cables under fire conditions. Test for vertical flame propagation for a single insulated wire or cable.	

Marking of product

"sequential length in meters" eta plus – ELC Cable – Uo/U 1,8/3.0 kV – 2x1x2,5mm2 – Special cable for BWTS – Art.No. 8110 – YY/WW – DNV TAE00004U9

Periodical assessment

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

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to 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.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE