Certificate no.:
**TAE000057X**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**that the Electric Power Cable**

with type designation(s)
**CEU83/DC-VFD**

issued to
## Jiangsu Jiangyang Special Cable Co., Ltd.
**Yangzhou**, **China**

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)** | **0,6/1** |
| **Temp. class (°C)** | **90** |

Issued at **Hamburg** on **2026-03-10**

This Certificate is valid until **2031-03-09**.

for **DNV**

DNV local unit: **Nanjing NB & CMC**

Approval Engineer: **Carsten Hunsalz**

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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 USD 300 000.

## Product description

Type: CEU83/DC-VFD

Construction:

Conductor: Plain or tinned, stranded copper Class 2 or Class 5
Insulation: EPR
Inner sheath: TMPU
Armour / braid: Copper tape and copper/tinned-copper wire braid
Outer sheath: TMPU

CEU83/DC-VFD Class 2

| Number of cores x conductor cross-section | Overall diameter nom. |
|---|---|
| $mm^2$ | mm |
| 3×1,5 | 13,7 |
| 3×2,5 | 14,8 |
| 3×4 | 16,0 |
| 3×6 | 17,5 |
| 3×10 | 19,7 |
| 3×16 | 22,2 |
| 3×25 | 25,9 |
| 3×35 | 28,6 |
| 3×50 | 32,5 |
| 3×70 | 36,8 |
| 3×95 | 42,2 |
| 3×120 | 46,5 |
| 3×150 | 51,2 |
| 3×185 | 56,7 |
| 3×240 | 63,5 |
| 3×300 | 70,2 |

| Number of cores x conductor cross-section | Overall diameter nom. |
|---|---|
| $mm^2$ | mm |
| 3×2,5+3×1 | 17,2 |
| 3×4+3×1,5 | 18,6 |
| 3×6+3×2,5 | 20,2 |
| 3×10+3×4 | 22,7 |
| 3×16+3×6 | 25,2 |
| 3×25+3×6 | 27,8 |
| 3×35+3×6 | 29,3 |
| 3×50+3×10 | 33,5 |
| 3×70+3×16 | 38,2 |
| 3×95+3×16 | 42,0 |
| 3×120+3×25 | 47,3 |
| 3×150+3×25 | 51,0 |
| 3×185+3×35 | 56,6 |
| 3×240+3×50 | 63,4 |
| 3×300+3×50 | 70,1 |
| | |

CEU83/DC-VFD Class 5

| Number of cores x conductor cross-section | Overall diameter nom. |
|---|---|
| $mm^2$ | mm |
| 3×1,5 | 13,7 |
| 3×2,5 | 14,8 |
| 3×4 | 16,2 |
| 3×6 | 17,7 |
| 3×10 | 19,7 |
| 3×16 | 22,7 |
| 3×25 | 26,7 |
| 3×35 | 29,7 |
| 3×50 | 34,2 |
| 3×70 | 39,2 |
| 3×95 | 44,7 |
| 3×120 | 48,6 |
| 3×150 | 53,5 |
| 3×185 | 59,0 |
| 3×240 | 66,7 |
| 3×300 | 73,3 |

| Number of cores x conductor cross-section | Overall diameter nom. |
|---|---|
| $mm^2$ | mm |
| 3×2,5+3×1 | 17,0 |
| 3×4+3×1,5 | 18,6 |
| 3×6+3×2,5 | 20,2 |
| 3×10+3×4 | 22,7 |
| 3×16+3×6 | 25,7 |
| 3×25+3×6 | 28,1 |
| 3×35+3×6 | 30,0 |
| 3×50+3×10 | 35,2 |
| 3×70+3×16 | 40,1 |
| 3×95+3×16 | 44,6 |
| 3×120+3×25 | 49,2 |
| 3×150+3×25 | 53,4 |
| 3×185+3×35 | 58,9 |
| 3×240+3×50 | 66,6 |
| 3×300+3×50 | 73,2 |
| | |

## Application/Limitation

General power and VFD cable

## Type Approval documentation

## Tests carried out

| Standard | Release | General description | Limitation |
|---|---|---|---|
| DNV-CP-0399 | 2021-08 | Class Programme Electric cables | |
| IEC 60092-350 | 2020-01 | General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications | |
| IEC 60092-353 | 2024-06 | Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV | |
| 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. | Insulation EPR |
| EN 50363-10-2 | 2005-11 | Insulating, sheathing and covering materials for low voltage energy cables Part 10-2: Miscellaneous sheathing compounds – Thermoplastic polyurethane | Inner/outer sheath TMPU |
| IEC 60332-1-2 | 2025-06 | Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame | |
| IEC 60754-1 | 2019-11 | Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content | Low Halogen:<br><0,5% Halogen |
| IEC 60754-2 | 2019-11 | Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity | Halogen free:<br>pH > 4,3<br>Conductivity < 10µS/mm |
| IEC 60684-2 | 2025-05 | Clause 47.2 Methods of determination of low levels of fluorine | HF max 0,1% |

## Marking of product

Example:

Jiangsu Jiangyang Special Cable Co., Ltd. - CEU83/DC-VFD - 0,6/1kV - size - Lot no.

## 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