Certificate no.:
TAE0000530

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electric Power Cable

with type designation(s)
CJPJ85/NC, CJPJ95/NC, CJPF86/NC, CJPF96/NC, CBPJPJ85/NC, CBPJPF86/NC 0,6/1 and 1,8/3

issued to
Guangzhou OUSSEA Photoelectric Transmission Technology Inc., Ltd.
Guangzhou, Guangdong Province, 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 and 1,8/3**
Temp. class (°C)	**90**

Issued at **Hamburg** on **2025-10-09**
This Certificate is valid until **2030-10-08**.
DNV local unit: **China South NB**

for **DNV**

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 USD 300 000.

Product description

Type: CJPJ85/NC, CJPJ95/NC, CJPF86/NC, CJPF96/NC 0,6/1kV and 1,8/3kV
CBPJPJ85/NC, CBPJPF86/NC VFD cables 0,6/1kV and 1,8/3kV

Conductor: Tinned, stranded copper class 2 or class 5
Insulation: Mica tape + XLPE
Inner sheath: PF - (SHF1) or PJ - (SHF2)
Armour / braid: 8 - Tinned copper wire braid
9 - Galvanized steel wire braid (not for single core cables when not non-magnetic)
Outer sheath: 5 - (SHF2) or 6 - (SHF1)

CJPJ85/95/NC, CJPF86/96/NC 0,6/1kV

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
1x1	8,0
1x1,5	8,2
1x2,5	8,7
1x4	9,2
1x6	9,8
1x10	10,9
1x16	12,1
1x25	14,5
1x35	15,9
1x50	17,6
1x70	19,8
1x95	22,0
1x120	24,1
1x150	26,3
1x185	28,9
1x240	32,0
1x300	35,5
2x1	11,3
2x1,5	11,9
2x2,5	13,5
2x4	14,7
2x6	15,9
2x10	18,1
2x16	20,4
2x25	24,3
2x35	27,1
2x50	30,4
2x70	35,5
2x95	39,8
2x120	43,9
2x150	48,3
2x185	53,5
3(2+E)x1	11,8
3(2+E)x1,5	12,5
3(2+E)x2,5	14,2
3(2+E)x4	15,4
3(2+E)x6	16,8
3(2+E)x10	19,1
3(2+E)x16	21,7

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3(2+E)x25	25,9
3(2+E)x35	28,9
3(2+E)x50	32,5
3(2+E)x70	37,9
3(2+E)x95	42,6
3(2+E)x120	47,0
3(2+E)x150	51,7
3(2+E)x185	57,3
3(2+E)x240	64,2
4(3+E)x1	12,8
4(3+E)x1,5	14,0
4(3+E)x2,5	15,3
4(3+E)x4	16,7
4(3+E)x6	18,3
4(3+E)x10	20,9
4(3+E)x16	23,7
4(3+E)x25	28,5
4(3+E)x35	31,8
4(3+E)x50	36,3
4(3+E)x70	41,8
4(3+E)x95	47,0
4(3+E)x120	52,0
4(3+E)x150	57,3
4(3+E)x185	63,6
5(4+E)x1	14,3
5(4+E)x1,5	15,1
5(4+E)x2,5	16,6
5(4+E)x4	18,1
5(4+E)x6	19,9
5(4+E)x10	22,7
5(4+E)x16	25,9
5(4+E)x25	31,2
5(4+E)x35	35,5
5(4+E)x50	39,9
5(4+E)x70	46,0
5(4+E)x95	51,9
5(4+E)x120	57,4
5(4+E)x150	63,3
5(4+E)x185	70,4

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
6x1	14,6
7x1	15,3
10x1	18,8
12x1	19,4
14x1	20,3
16x1	21,3
19x1	22,4
24x1	25,9
27x1	26,4
30x1	27,4
33x1	28,4
37x1	29,4
6x1,5	15,5
7x1,5	16,2
10x1,5	20,1
12x1,5	20,7
14x1,5	21,6
16x1,5	22,8
19x1,5	23,9
24x1,5	27,7
27x1,5	28,3
30x1,5	29,3
33x1,5	30,4
37x1,5	31,6
6x2,5	17,0
7x2,5	17,9
10x2,5	22,3
12x2,5	23,0
14x2,5	24,0
16x2,5	25,3
19x2,5	26,6
24x2,5	31,0
27x2,5	31,7
30x2,5	32,8
33x2,5	34,1
37x2,5	35,9

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
6x4	18,6
7x4	19,6
10x4	24,6
12x4	25,4
14x4	26,6
16x4	28,0
19x4	29,5
24x4	35,0
27x4	35,7
30x4	37,0
33x4	38,5
37x4	40,0

CJPJ85/95/NC, CJPF86/96/NC 1,8/3kV

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
1x10	14,3
1x16	15,5
1x25	17,0
1x35	18,4
1x50	19,8
1x70	21,9
1x95	24,0
1x120	25,9
1x150	27,6
1x185	29,8
1x240	32,7
1x300	36,0

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
2x10	24,0
2x16	26,3
2x25	29,3
2x35	32,1
2x50	35,5
2x70	39,6
2x95	43,9
2x120	47,5
2x150	51,0
2x185	55,3
2x240	61,2
2x300	66,7

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x10	25,5
3x16	28,1
3x25	31,3
3x35	34,3
3x50	37,9
3x70	42,3
3x95	47,0
3x120	50,9
3x150	54,7
3x185	59,3
3x240	65,7
3x300	71,7

CBPJPJ85/NC, CBPJPF86/NC VFD cables 0,6/1kV

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x1	12,7
3x1,5	13,9
3x2,5	15,1
3x4	16,4
3x6	17,8
3x10	20,0
3x16	22,7
3x25	26,9
3x35	29,7
3x50	33,5
3x70	38,9
3x95	43,5
3x120	48,0
3x150	52,6
3x185	58,3
3x240	65,5
3x300	71,4

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x1+3x0,5	13,8
3x1,5+3x0,5	14,4
3x2,5+3x1	15,7
3x4+3x1,5	16,9
3x6+3x2,5	18,4
3x10+3x4	20,6
3x16+3x6	23,3
3x25+3x6	27,5
3x35+3x6	30,3
3x50+3x10	34,1
3x70+3x16	39,5
3x95+3x16	44,1
3x120+3x25	48,5
3x150+3x25	53,2
3x185+3x35	58,9
3x240+3x50	66,1

CBPJPJ85/NC, CBPJPF86/NC VFD cables 1,8/3kV

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x10	26,3
3x16	29,1
3x25	32,2
3x35	35,7
3x50	38,9
3x70	43,3
3x95	48,0
3x120	51,9
3x150	55,6
3x185	60,2
3x240	66,6
3x300	72,5

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x10+3x4	26,9
3x16+3x6	29,6
3x25+3x6	32,8
3x35+3x6	36,3
3x50+3x10	39,5
3x70+3x16	43,9
3x95+3x16	48,5
3x120+3x25	52,5
3x150+3x25	56,1
3x185+3x35	60,8
3x240+3x50	67,1

Application/Limitation

General power and lighting. Control.

This type of cable is fire resistant in accordance with IEC Publication 60331.

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Fire resistant. Flame retardant Cat. A. Halogen free. Low smoke.

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.	
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.	
IEC 60332-3-22	2018-07	Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A	Charred portion of sample does not exceed 2,5m above bottom edge of burner.
IEC 60331-1	2018-03	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830ºC for cables rated up to and including 0,6/1 kV with an overall diameter exceeding 20 mm	For cables with an overall diameter exceeding 20 mm, 120 min.
IEC 60331-2	2018-03	Fire resistance / Circuit integrity – Test for method for fire with shock at temperature of at least 830ºC for cables rated up to and including 0,6/1 kV with an overall diameter not exceeding 20mm	For cables with an overall diameter not exceeding 20 mm, 120 min.
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: <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: pH > 4,3 Conductivity < 10µS/mm
IEC 60684-2	2011-08	Clause 45.2 Methods of determination of low levels of fluorine	HF max 0,1%
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance >60%

Marking of product

Example:

Guangzhou OUSSEA Photoelectric Transmission Technology Inc., Ltd. - CJPJ85/NC - 1,8/3kV - size -
IEC 60332-3-22 – IEC 60331-1/2 - 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