Certificate no.:
TAE0000531

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electric Power Cable

with type designation(s)
CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC, CBPJPJ85/SC, CBPJPF86/SC 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/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC 0,6/1kV and 1,8/3kV CBPJPJ85/SC, CBPJPF86/SC VFD cables 0,6/1kV and 1,8/3kV
Conductor:	Tinned, stranded copper class 2 or class 5
Insulation:	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/SC, CJPF86/96/SC 0,6/1kV

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
1x1	7,6
1x1,5	7,8
1x2,5	8,3
1x4	8,8
1x6	9,4
1x10	10,4
1x16	11,6
1x25	14,1
1x35	15,5
1x50	17,1
1x70	19,4
1x95	21,5
1x120	23,6
1x150	25,8
1x185	28,4
1x240	31,6
1x300	35,1
2x1	10,3
2x1,5	10,9
2x2,5	12,0
2x4	13,7
2x6	15,0
2x10	17,1
2x16	19,5
2x25	23,4
2x35	26,2
2x50	29,5
2x70	34,0
2x95	38,8
2x120	42,9
2x150	47,3
2x185	52,5
3(2+E)x1	10,8
3(2+E)x1,5	11,5
3(2+E)x2,5	12,6
3(2+E)x4	14,4
3(2+E)x6	15,8
3(2+E)x10	18,1
3(2+E)x16	20,7

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3(2+E)x25	24,9
3(2+E)x35	27,9
3(2+E)x50	31,4
3(2+E)x70	36,9
3(2+E)x95	41,5
3(2+E)x120	46,0
3(2+E)x150	50,7
3(2+E)x185	56,3
3(2+E)x240	63,2
4(3+E)x1	11,6
4(3+E)x1,5	12,3
4(3+E)x2,5	14,2
4(3+E)x4	15,6
4(3+E)x6	17,1
4(3+E)x10	19,7
4(3+E)x16	22,6
4(3+E)x25	27,3
4(3+E)x35	30,7
4(3+E)x50	35,2
4(3+E)x70	40,7
4(3+E)x95	45,9
4(3+E)x120	50,9
4(3+E)x150	56,2
4(3+E)x185	62,5
5(4+E)x1	12,4
5(4+E)x1,5	13,8
5(4+E)x2,5	15,3
5(4+E)x4	16,8
5(4+E)x6	18,6
5(4+E)x10	21,4
5(4+E)x16	24,6
5(4+E)x25	29,9
5(4+E)x35	33,7
5(4+E)x50	38,6
5(4+E)x70	44,8
5(4+E)x95	50,6
5(4+E)x120	56,1
5(4+E)x150	62,1
5(4+E)x185	69,1

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
6x1	12,8
7x1	13,9
10x1	16,9
12x1	17,4
14x1	18,2
16x1	19,1
19x1	20,0
24x1	23,0
27x1	23,5
30x1	24,3
33x1	25,2
37x1	26,1
6x1,5	14,1
7x1,5	14,8
10x1,5	18,2
12x1,5	18,7
14x1,5	19,5
16x1,5	20,5
19x1,5	21,5
24x1,5	24,9
27x1,5	25,4
30x1,5	26,3
33x1,5	27,2
37x1,5	28,2
6x2,5	15,7
7x2,5	16,4
10x2,5	20,3
12x2,5	21,0
14x2,5	21,9
16x2,5	23,1
19x2,5	24,2
24x2,5	28,1
27x2,5	28,7
30x2,5	29,7
33x2,5	30,9
37x2,5	32,0

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
6x4	17,3
7x4	18,2
10x4	22,7
12x4	23,4
14x4	24,5
16x4	25,8
19x4	27,1
24x4	31,6
27x4	32,3
30x4	33,5
33x4	35,3
37x4	36,6

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

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
1x10	13,9
1x16	15,1
1x25	16,6
1x35	18,0
1x50	19,4
1x70	21,4
1x95	23,6
1x120	25,4
1x150	27,1
1x185	29,3
1x240	32,2
1x300	35,5

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
2x10	23,0
2x16	25,4
2x25	28,4
2x35	31,2
2x50	34,0
2x70	38,6
2x95	42,9
2x120	46,6
2x150	50,1
2x185	54,3
2x240	60,3
2x300	65,8

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x10	24,5
3x16	27,0
3x25	30,3
3x35	33,3
3x50	36,9
3x70	41,3
3x95	45,9
3x120	49,9
3x150	53,6
3x185	58,3
3x240	64,7
3x300	70,6

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

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x1	11,6
3x1,5	12,3
3x2,5	13,9
3x4	15,3
3x6	16,6
3x10	19,0
3x16	21,5
3x25	25,7
3x35	28,8
3x50	32,2
3x70	37,6
3x95	42,3
3x120	46,7
3x150	51,6
3x185	57,0
3x240	64,6
3x300	70,5

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x1+3x0,5	12,2
3x1,5+3x0,5	12,9
3x2,5+3x1	14,4
3x4+3x1,5	15,9
3x6+3x2,5	17,2
3x10+3x4	19,5
3x16+3x6	22,0
3x25+3x6	26,2
3x35+3x6	29,4
3x50+3x10	32,8
3x70+3x16	38,2
3x95+3x16	42,9
3x120+3x25	47,3
3x150+3x25	52,2
3x185+3x35	57,6
3x240+3x50	65,2

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

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x10	25,4
3x16	27,8
3x25	31,0
3x35	34,2
3x50	37,6
3x70	42,1
3x95	46,7
3x120	50,7
3x150	54,5
3x185	59,0
3x240	65,5
3x300	71,4

Number of cores x conductor cross-section	Overall diameter nom.
mm^2	mm
3x10+3x4	26,0
3x16+3x6	28,4
3x25+3x6	31,6
3x35+3x6	35,3
3x50+3x10	38,2
3x70+3x16	42,6
3x95+3x16	47,3
3x120+3x25	51,3
3x150+3x25	55,1
3x185+3x35	59,5
3x240+3x50	66,1

Application/Limitation

General power and lighting. Control.

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.

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 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/SC - 1,8/3kV - size - IEC 60332-3-22 - 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