



Certificate no.:
TAE0000532

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Electric Power Cable**

with type designation(s)

CJ85/NC, CJ86/NC, CJ95/NC, CJ96/NC, CBPJ85/NC, CBPJ86/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**.

for **DNV**

DNV local unit: **China South NB**

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:	CJ85/NC, CJ86/NC, CJ95/NC, CJ96/NC 0,6/1kV and 1,8/3kV CBPJ85/NC, CBJP86/NC VFD cables 0,6/1kV and 1,8/3kV
Conductor:	Tinned, stranded copper class 2 or class 5
Insulation:	Mica tape + XLPE
Inner covering:	Extruded for CJ95/NC and CJ96/NC types
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)

CJ85/NC, CJ86/NC 0,6/1kV

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
1x1	6,3
1x1,5	6,5
1x2,5	7,0
1x4	7,6
1x6	8,2
1x10	9,2
1x16	10,3
1x25	12,2
1x35	14,1
1x50	15,6
1x70	17,8
1x95	19,8
1x120	21,8
1x150	23,9
1x185	26,4
1x240	29,4
1x300	32,2
2x1	9,6
2x1,5	10,2
2x2,5	11,2
2x4	12,3
2x6	14,1
2x10	16,1
2x16	18,3
2x25	22,1
2x35	24,7
2x50	27,8
2x70	32,2
2x95	36,8
2x120	40,7
2x150	44,9
2x185	49,9
3(2+E)x1	10,1
3(2+E)x1,5	10,7
3(2+E)x2,5	11,9
3(2+E)x4	13,0
3(2+E)x6	14,9
3(2+E)x10	17,1
3(2+E)x16	19,5

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3(2+E)x25	23,5
3(2+E)x35	26,4
3(2+E)x50	29,8
3(2+E)x70	34,5
3(2+E)x95	39,4
3(2+E)x120	43,7
3(2+E)x150	48,2
3(2+E)x185	53,5
3(2+E)x240	60,1
4(3+E)x1	11,0
4(3+E)x1,5	11,7
4(3+E)x2,5	12,9
4(3+E)x4	14,8
4(3+E)x6	16,3
4(3+E)x10	18,7
4(3+E)x16	21,5
4(3+E)x25	26,0
4(3+E)x35	29,2
4(3+E)x50	33,0
4(3+E)x70	38,7
4(3+E)x95	43,7
4(3+E)x120	48,4
4(3+E)x150	53,5
4(3+E)x185	59,5
5(4+E)x1	11,9
5(4+E)x1,5	12,7
5(4+E)x2,5	14,6
5(4+E)x4	16,1
5(4+E)x6	17,8
5(4+E)x10	20,5
5(4+E)x16	23,6
5(4+E)x25	28,6
5(4+E)x35	32,2
5(4+E)x50	36,9
5(4+E)x70	42,8
5(4+E)x95	48,3
5(4+E)x120	53,6
5(4+E)x150	59,3
5(4+E)x185	65,9

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
6x1	12,3
7x1	12,9
10x1	16,8
12x1	17,4
14x1	18,2
16x1	19,2
19x1	20,2
24x1	23,5
27x1	24,1
30x1	24,9
33x1	25,9
37x1	26,9
6x1,5	13,1
7x1,5	14,3
10x1,5	18,0
12x1,5	18,6
14x1,5	19,5
16x1,5	20,6
19x1,5	21,6
24x1,5	25,3
27x1,5	25,8
30x1,5	26,8
33x1,5	27,9
37x1,5	28,9
6x2,5	15,1
7x2,5	15,9
10x2,5	20,1
12x2,5	20,7
14x2,5	21,8
16x2,5	23,0
19x2,5	24,2
24x2,5	28,4
27x2,5	29,0
30x2,5	30,1
33x2,5	31,3
37x2,5	32,6

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
6x4	16,6
7x4	17,6
10x4	22,3
12x4	23,0
14x4	24,2
16x4	25,6
19x4	27,0
24x4	31,7
27x4	32,4
30x4	33,6
33x4	35,0
37x4	37,0

CJ95/NC, CJ96//NC 0,6/1kV

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
1x1	8,5
1x1,5	8,8
1x2,5	9,3
1x4	9,8
1x6	10,5
1x10	11,5
1x16	12,6
1x25	15,0
1x35	16,3
1x50	17,9
1x70	20,0
1x95	22,5
1x120	24,5
1x150	26,6
1x185	29,5
1x240	32,5
1x300	35,4
2x1	11,8
2x1,5	12,4
2x2,5	13,5
2x4	15,1
2x6	16,3
2x10	18,3
2x16	20,6
2x25	24,8
2x35	27,4
2x50	31,0
2x70	35,3
2x95	40,4
2x120	44,3
2x150	48,5
2x185	53,4
3(2+E)x1	12,4
3(2+E)x1,5	13,0
3(2+E)x2,5	14,7
3(2+E)x4	15,9
3(2+E)x6	17,2
3(2+E)x10	19,4
3(2+E)x16	22,2

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
3(2+E)x25	26,2
3(2+E)x35	29,6
3(2+E)x50	32,9
3(2+E)x70	38,1
3(2+E)x95	43,0
3(2+E)x120	47,2
3(2+E)x150	51,8
3(2+E)x185	57,1
3(2+E)x240	63,6
4(3+E)x1	13,3
4(3+E)x1,5	14,5
4(3+E)x2,5	15,7
4(3+E)x4	17,1
4(3+E)x6	18,6
4(3+E)x10	21,0
4(3+E)x16	24,2
4(3+E)x25	29,1
4(3+E)x35	32,3
4(3+E)x50	36,6
4(3+E)x70	42,3
4(3+E)x95	47,3
4(3+E)x120	52,0
4(3+E)x150	57,1
4(3+E)x185	63,1
5(4+E)x1	14,7
5(4+E)x1,5	15,5
5(4+E)x2,5	16,9
5(4+E)x4	18,4
5(4+E)x6	20,1
5(4+E)x10	23,2
5(4+E)x16	26,3
5(4+E)x25	31,7
5(4+E)x35	35,3
5(4+E)x50	40,5
5(4+E)x70	46,3
5(4+E)x95	51,9
5(4+E)x120	57,2
5(4+E)x150	62,8
5(4+E)x185	69,5

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

[illegible]

CJ85/NC, CJ86/NC 1,8/3kV

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
1x10	12,0
1x16	13,1
1x25	15,1
1x35	16,4
1x50	17,8
1x70	19,7
1x95	21,8
1x120	23,5
1x150	25,2
1x185	27,2
1x240	30,0
1x300	32,7

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
2x10	21,7
2x16	24,0
2x25	26,8
2x35	29,5
2x50	32,2
2x70	36,6
2x95	40,7
2x120	44,2
2x150	47,5
2x185	51,6
2x240	57,2
2x300	62,5

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
3x10	23,2
3x16	25,6
3x25	28,7
3x35	31,5
3x50	34,5
3x70	39,2
3x95	43,6
3x120	47,4
3x150	51,0
3x185	55,4
3x240	60,5
3x300	66,2

CBPJ85/NC, CBJP86/NC VFD cables 0,6/1kV

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
3x1	10,5
3x1,5	11,2
3x2,5	12,4
3x4	14,1
3x6	15,5
3x10	17,5
3x16	20,1
3x25	24,1
3x35	26,8
3x50	30,4
3x70	35,0
3x95	40,0
3x120	44,2
3x150	48,6
3x185	54,0
3x240	61,0
3x300	66,6

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
3x1+3x0,5	11,1
3x1,5+3x0,5	11,7
3x2,5+3x1	12,9
3x4+3x1,5	14,6
3x6+3x2,5	16,0
3x10+3x4	18,1
3x16+3x6	20,7
3x25+3x6	24,7
3x35+3x6	27,4
3x50+3x10	30,9
3x70+3x16	35,6
3x95+3x16	40,5
3x120+3x25	44,8
3x150+3x25	49,2
3x185+3x35	54,6
3x240+3x50	61,5

CBPJ85/NC, CBJP86/NC VFD cables 1,8/3kV

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
3x10	23,6
3x16	26,2
3x25	29,2
3x35	32,0
3x50	35,0
3x70	39,8
3x95	44,2
3x120	48,0
3x150	51,5
3x185	55,9
3x240	61,9
3x300	67,5

Number of cores x conductor cross- section	Overall diameter nom.
mm ²	mm
3x10+3x4	24,1
3x16+3x6	26,7
3x25+3x6	29,7
3x35+3x6	32,6
3x50+3x10	35,6
3x70+3x16	40,3
3x95+3x16	44,8
3x120+3x25	48,5
3x150+3x25	52,0
3x185+3x35	56,4
3x240+3x50	62,5

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 Bundles 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 electric 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 830°C 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 830°C 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. - CJ85/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