



Certificate no.:
TAE000051C

TYPE APPROVAL CERTIFICATE

This is to certify:

that the High Voltage Cable

with type designation(s)

CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC, CJPJ85/SC-VFD, CJPF86/SC-VFD

issued to

Yangzhou Zhongda 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)	3,6/6	6/10	8,7/15	12/20	18/30
Temp. class (°C)	90				

Issued at **Hamburg** on **2025-02-14**

This Certificate is valid until **2030-02-13**.

for **DNV**

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

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, CJPJ85/SC-VFD, CJPF86/SC-VFD
Conductor:	Stranded copper conductor (class 2)
Insulation:	Semi-conducting compound XLPE
Screen:	Semi-conducting compound Copper tape layer
Inner sheath:	PF - (SHF1) or PJ - (SHF2)
Armour / braid:	8 - Tinned copper wire braid 9 - Galvanized steel wire braid (not for single core cables)
Outer sheath:	5 - (SHF2) or 6 - (SHF1)

CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC 3,6/6

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
1×10	19,5
1×16	20,5
1×25	21,6
1×35	22,3
1×50	23,4
1×70	25,2
1×95	27,0
1×120	28,4
1×150	29,9
1×185	32,0
1×240	35,4
1×300	38,0
1×400	41,7
1×500	45,9
1×630	49,7

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×10	35,5
3×16	37,6
3×25	40,1
3×35	42,6
3×50	45,4
3×70	49,7
3×95	53,6
3×120	56,9
3×150	60,5
3×185	64,8
3×240	70,8
3×300	76,6

CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC 6/10

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
1×16	21,4
1×25	23,1
1×35	24,1
1×50	25,5
1×70	27,2
1×95	29,1
1×120	30,5
1×150	32,9
1×185	34,4
1×240	37,5
1×300	40,4
1×400	43,8
1×500	45,7
1×630	49,3

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×16	42,3
3×25	44,9
3×35	47,4
3×50	50,2
3×70	54,7
3×95	58,5
3×120	61,5
3×150	65,6
3×185	69,6
3×240	75,0
3×300	80,5

CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC 8,7/15

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
1×25	25,2
1×35	26,4
1×50	27,4
1×70	29,8
1×95	31,8
1×120	33,2
1×150	35,4
1×185	37,2
1×240	39,8
1×300	42,4
1×400	45,8
1×500	48,8
1×630	52,8

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25	49,8
3×35	52,1
3×50	54,5
3×70	59,4
3×95	63,9
3×120	66,9
3×150	70,8
3×185	74,4
3×240	80,6
3×300	85,7

CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC 12/20

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
1×35	28,6
1×50	29,8
1×70	32,0
1×95	34,0
1×120	35,4
1×150	37,6
1×185	39,4
1×240	42,2
1×300	44,6
1×400	48,0
1×500	51,2
1×630	55,2

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×35	56,9
3×50	59,4
3×70	64,3
3×95	68,6
3×120	71,6
3×150	75,7
3×185	79,5
3×240	85,3
3×300	90,7

CJPJ85/SC, CJPJ95/SC, CJPF86/SC, CJPF96/SC 18/30

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
1×50	35,8
1×70	38,2
1×95	40,0
1×120	41,6
1×150	43,2
1×185	45,0
1×240	47,8
1×300	50,4
1×400	53,8
1×500	56,8
1×630	60,8

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×50	71,6
3×70	76,5
3×95	81,0
3×120	84,0
3×150	87,9
3×185	91,9
3×240	97,7
3×300	103,1

CJPJ85/SC-VFD, CJPJ86/SC-VFD 3,6/6

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25	39,6
3×35	42,2
3×50	44,6
3×70	49,7
3×95	54,0
3×120	56,8
3×150	60,8
3×185	64,7
3×240	71,1
3×300	77,5

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25+3×10	49,8
3×35+3×10	51,5
3×50+3×10	53,0
3×70+3×16	58,3
3×95+3×16	61,2
3×120+3×25	64,9
3×150+3×25	67,7
3×185+3×35	72,2
3×240+3×50	78,2
3×300+3×50	82,7

CJPJ85/SC-VFD, CJPJ86/SC-VFD 6/10

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25	44,6
3×35	47,1
3×50	49,7
3×70	54,6
3×95	58,9
3×120	61,7
3×150	65,7
3×185	69,6
3×240	75,6
3×300	80,9

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25+3×10	56,4
3×35+3×10	58,3
3×50+3×10	60,0
3×70+3×16	64,9
3×95+3×16	68,0
3×120+3×25	71,9
3×150+3×25	74,5
3×185+3×35	79,0
3×240+3×50	84,7
3×300+3×50	88,6

CJPJ85/SC-VFD, CJPJ86/SC-VFD 8,7/15

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25	50,1
3×35	52,5
3×50	55,0
3×70	60,0
3×95	64,2
3×120	67,2
3×150	71,1
3×185	75,1
3×240	80,9
3×300	86,3

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×25+3×10	64,0
3×35+3×10	65,7
3×50+3×10	67,4
3×70+3×16	72,5
3×95+3×16	75,6
3×120+3×25	79,3
3×150+3×25	81,9
3×185+3×35	86,4
3×240+3×50	92,3
3×300+3×50	96,0

CJPJ85/SC-VFD, CJPJ86/SC-VFD 12/20

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×35	57,4
3×50	60,0
3×70	64,7
3×95	69,2
3×120	72,2
3×150	76,0
3×185	80,1
3×240	85,8
3×300	91,2

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×35+3×10	72,5
3×50+3×10	74,2
3×70+3×16	79,3
3×95+3×16	82,2
3×120+3×25	86,1
3×150+3×25	88,9
3×185+3×35	93,2
3×240+3×50	98,9
3×300+3×50	102,8

CJPJ85/SC-VFD, CJPJ86/SC-VFD 18/30

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×50	72,2
3×70	77,1
3×95	81,4
3×120	84,4
3×150	88,4
3×185	92,3
3×240	98,0
3×300	103,4

Number of cores x conductor cross-section	Overall diameter nom.
mm ²	mm
3×50+3×10	91,2
3×70+3×16	96,3
3×95+3×16	99,2
3×120+3×25	103,1
3×150+3×25	105,9
3×185+3×35	110,2
3×240+3×50	115,9
3×300+3×50	119,8

Type Approval documentation

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2020-01	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-354	2020-02	Electrical installations in ships - Part 354: Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (U _m = 7,2 kV) up to 30 kV (U _m = 36 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 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:

Yangzhou Zhongda Cable Co., Ltd - CJPJ85/SC – 6/10kV – 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