

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Power Cable**

with type designation(s)

MPRXCX & MPRXCX FLEXISHIP & MPRXCX EMC & MPRXCX EMC FLEXISHIP 0,6/1 kV

Issued to

Nexans Deutschland GmbH**Mönchengladbach Nordrhein-Westfalen, Germany**

is found to comply with

DNV GL 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 GL.****Rated voltage (kV) 0,6/1****Temp. class (°C) 90**Issued at **Hamburg** on **2017-11-16**for **DNV GL**This Certificate is valid until **2022-11-15**.DNV GL local station: **Essen**Approval Engineer: **Carsten Hunsalz**

Oliver Darley
Head of Section

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.



Product description

Type: MPRXCX & MPRXCX FLEXISHIP & MPRXCX EMC & MPRXCX FLEXISHIP
 EMC 0,6/1 kV
 Conductors: Plain or tinned, stranded copper class 2 or class 5
 Core insulation: XLPE
 Inner covering: Lapped or extruded
 Metal covering: Plain or tinned copper braid and/or copper polyester tape
 Outer sheath: SHF1

Number of cores x conductor cross- section	Overall Diameter Min.	Overall Diameter Max.
	mm	mm
MPRXCX	lapped inner covering	
1 x 1,5	6,0	7,0
1 x 2,5	6,4	7,6
1 x 4	7,0	8,2
1 x 6	7,2	8,4
1 x 10	8,2	9,6
1 x 16	9,4	11,0
1 x 25	11,0	13,0
1 x 35	12,0	14,0
1 x 50	13,5	15,5
1 x 70	15,5	18,0
1 x 95	18,5	21,0
1 x 120	20,5	23,0
1 x 150	22,5	25,0
1 x 185	24,5	27,5
1 x 240	27,5	31,0
1 x 300	30,0	33,5
2 x 1,5	9,0	10,5
2 x 2,5	9,8	11,5
2 x 4	11,0	13,0
2 x 6	11,5	13,5
2 x 10	14,0	16,0
2 x 16	16,0	18,5
2 x 25	19,5	22,5
2 x 35	22,0	24,5
2 x 50	24,0	27,0
2 x 70	28,0	31,5
2 x 95	31,5	35,0
2 x 120	35,5	39,5
3 x 1,5	9,4	11,0
3 x 2,5	10,0	12,0
3 x 4	11,5	13,5
3 x 6	12,5	14,5
3 x 10	14,5	17,0
3 x 16	17,0	19,5
3 x 25	21,0	23,5
3 x 35	23,0	26,0

Number of cores x conductor cross- section	Overall Diameter Min.	Overall Diameter Max.
	mm	mm
3 x 50	26,0	29,0
3 x 70	30,0	33,5
3 x 95	33,5	37,5
3 x 120	38,0	42,0
3 x 150	42,0	46,5
3 x 185	46,5	51,5
3 x 240	52,5	58,0
3 x 70*	20,0	23,0
3 x 95*	22,0	25,0
3 x 120*	25,0	28,0
4 x 1,5	10,0	12,0
4 x 2,5	11,5	13,0
4 x 4	12,5	15,0
4 x 6	14,0	16,0
4 x 10	16,0	18,5
4 x 16	19,0	21,5
4 x 25	23,0	26,0
4 x 35	25,5	28,5
4 x 50	28,5	32,0
4 x 70	33,0	37,0
4 x 95	38,0	42,0
4 x 120	42,0	46,5
4 x 150	46,5	51,5
4 x 185	52,0	57,0
4 x 240	59,0	64,5
5 x 4	14,5	16,5
5 x 6	15,0	17,5
5 x 10	17,5	20,0
5 x 16	20,5	23,5
5 x 25	25,5	28,5
5 x 35	28,0	31,5
5 x 50	31,5	35,0
5 x 70	37,5	41,5
5 x 95	42,0	46,5
5 x 120	46,5	51,5

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Number of cores x conductor cross-section	Overall Diameter Min.	Overall Diameter Max.
mm ²	mm	mm
5 x 1,5	11,0	13,0
7 x 1,5	12,0	14,0
10 x 1,5	15,5	17,5
12 x 1,5	16,0	18,0
14 x 1,5	16,5	19,0
16 x 1,5	17,5	20,0
19 x 1,5	18,5	21,0
23 x 1,5	20,5	23,0
24 x 1,5	21,5	24,5
27 x 1,5	22,0	24,5
30 x 1,5	22,5	25,5
33 x 1,5	23,5	26,5
37 x 1,5	24,5	27,5
48 x 1,5	28,0	31,5
61 x 1,5	30,5	34,0
5 x 2,5	12,0	14,5
7 x 2,5	14,0	16,0
10 x 2,5	17,5	20,0
12 x 2,5	18,0	20,5
14 x 2,5	19,0	21,5
19 x 2,5	21,0	23,5
24 x 2,5	24,5	27,5
27 x 2,5	25,0	28,0
37 x 2,5	28,0	31,5
MPRXCX	extruded	inner covering
1 x 1,5	6,8	8,0
1 x 2,5	7,4	8,6
1 x 4	8,0	9,2
1 x 6	8,2	9,6
1 x 10	9,2	10,5
1 x 16	10,0	12,0
1 x 25	12,0	14,0
1 x 35	13,0	15,0
1 x 50	15,0	17,0
1 x 70	17,0	19,0
1 x 95	19,5	22,0
1 x 120	21,5	24,5
1 x 150	24,0	26,5
1 x 185	26,0	29,0
1 x 240	29,0	32,5
1 x 300	32,0	35,5
2 x 1,5	10,0	11,5
2 x 2,5	10,5	12,5
2 x 4	12,0	14,0
2 x 6	12,5	14,5
2 x 10	15,0	17,5

Number of cores x conductor cross-section	Overall Diameter Min.	Overall Diameter Max.
mm ²	mm	mm
2 x 16	17,5	20,0
2 x 25	21,0	24,0
2 x 35	23,0	26,0
2 x 50	25,5	29,0
3 x 1,5	10,0	12,0
3 x 2,5	11,0	13,0
3 x 4	12,5	14,5
3 x 6	13,5	15,5
3 x 10	16,0	18,0
3 x 16	18,5	21,0
3 x 25	22,0	25,0
3 x 35	24,5	27,5
3 x 50	27,5	30,5
3 x 70	32,0	35,5
3 x 95	35,5	39,5
3 x 120	40,5	45,0
3 x 150	45,0	49,5
3 x 185	49,0	54,0
3 x 240	55,5	61,0
3 x 70*	29,0	32,5
3 x 95*	32,5	36,5
3 x 120*	36,5	40,5
4 x 1,5	11,0	13,0
4 x 2,5	12,5	14,5
4 x 4	13,5	16,0
4 x 6	15,0	17,5
4 x 10	17,5	19,5
4 x 16	20,0	22,5
4 x 25	24,5	27,5
4 x 35	27,0	30,5
4 x 50	30,0	33,5
4 x 70	35,0	39,0
4 x 95	40,0	44,0
4 x 120	45,0	49,5
4 x 150	49,0	54,0
5 x 4	15,5	18,0
5 x 6	16,5	19,0
5 x 10	18,5	21,0
5 x 16	22,0	25,0
5 x 25	27,0	30,0
5 x 35	30,0	33,5
5 x 50	33,5	37,0
5 x 70	39,5	43,5
5 x 95	44,5	49,0

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Number of cores x conductor cross-section	Overall Diameter Min.	Overall Diameter Max.
mm ²	mm	mm
5 x 120	49,5	55,0
5 x 1,5	12,0	14,0
7 x 1,5	13,0	15,0
12 x 1,5	17,0	19,5
19 x 1,5	19,5	22,5
24 x 1,5	23,0	26,0
27 x 1,5	23,5	26,5
37 x 1,5	26,0	29,5
5 x 2,5	13,0	15,5
7 x 2,5	15,0	17,5
12 x 2,5	19,0	21,5
19 x 2,5	22,5	25,0
24 x 2,5	26,0	29,5
27 x 2,5	26,5	30,0
37 x 2,5	29,5	33,0
MPRXCX	FLEXISHIP	lapped inner covering
1 x 1,5	6,0	7,0
1 x 2,5	6,4	7,6
1 x 4	6,8	8,0
1 x 6	7,4	8,6
1 x 10	8,6	9,8
1 x 16	10,0	11,5
1 x 25	11,5	13,5
1 x 35	12,5	14,5
1 x 50	14,5	17,0
1 x 70	16,5	19,0
1 x 95	18,5	21,0
1 x 120	20,5	23,0
1 x 150	23,0	25,5
1 x 185	24,5	27,5
1 x 240	28,5	31,5
1 x 300	30,0	33,5
2 x 1,5	9,2	11,0
2 x 2,5	10,0	12,0
2 x 4	11,0	13,0
2 x 6	12,0	14,0
2 x 10	14,5	17,0
2 x 16	17,5	20,0
2 x 25	21,0	23,5
2 x 35	23,0	25,5
2 x 50	26,5	29,5
3 x 1,5	9,6	11,5
3 x 2,5	10,0	12,0

Number of cores x conductor cross-section	Overall Diameter Min.	Overall Diameter Max.
mm ²	mm	mm
3 x 4	11,5	13,5
3 x 6	12,5	14,5
3 x 10	15,5	17,5
3 x 16	18,5	21,0
3 x 25	22,0	24,5
3 x 35	24,0	27,0
3 x 50	28,0	31,0
3 x 70	32,0	35,5
3 x 95	36,5	40,5
3 x 120	40,5	45,0
3 x 150	45,5	50,5
3 x 185	50,0	55,0
3 x 240	58,0	64,0
3 x 70*	27,0	30,5
3 x 95*	30,5	34,0
3 x 120*	34,5	38,0
4 x 1,5	10,0	12,0
4 x 2,5	11,5	13,0
4 x 4	12,5	14,5
4 x 6	14,5	16,5
4 x 10	17,0	19,0
4 x 16	20,5	23,0
4 x 25	24,0	27,0
4 x 35	26,5	29,5
4 x 50	31,0	34,5
4 x 70	35,5	39,5
4 x 95	41,5	45,5
4 x 120	45,0	49,5
4 x 150	51,0	56,0
5 x 4	14,0	16,5
5 x 6	15,5	18,0
5 x 10	18,5	21,0
5 x 16	22,5	25,0
5 x 25	26,5	30,0
5 x 35	29,5	32,5
5 x 50	34,0	38,0
5 x 70	40,0	44,0
5 x 95	45,5	50,5
5 x 120	50,0	55,0
5 x 1,5	11,5	13,0
7 x 1,5	12,0	14,0
12 x 1,5	16,5	18,5
19 x 1,5	19,0	21,5
27 x 1,5	22,5	25,0
37 x 1,5	25,0	28,5

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Number of cores x conductor cross-section	Overall Diameter Min.	Overall Diameter Max.
mm ²	mm	mm
5 x 2,5	12,5	14,5
7 x 2,5	14,0	16,0
12 x 2,5	18,0	20,5
19 x 2,5	21,0	24,0
27 x 2,5	25,5	28,5
37 x 2,5	28,5	32,0
MPRXCX	FLEXISHIP	extruded inner covering
1 x 1,5	7,0	8,2
1 x 2,5	7,4	8,6
1 x 4	7,8	9,2
1 x 6	8,4	9,6
1 x 10	9,6	11,0
1 x 16	11,0	12,5
1 x 25	12,5	14,5
1 x 35	13,5	15,5
1 x 50	16,0	18,0
1 x 70	18,0	20,0
1 x 95	20,0	22,5
1 x 120	21,5	24,5
1 x 150	24,0	27,0
1 x 185	26,5	29,5
1 x 240	30,0	33,5
1 x 300	32,0	35,5
2 x 1,5	10,0	12,0
2 x 2,5	11,0	13,0
2 x 4	12,0	14,0
2 x 6	13,0	15,0
2 x 10	16,0	18,0
2 x 16	19,0	21,5
2 x 25	22,0	25,0
2 x 35	24,0	27,0
2 x 50	28,0	31,5
3 x 1,5	10,5	12,5
3 x 2,5	11,5	13,5
3 x 4	12,5	14,5
3 x 6	13,5	16,0
3 x 10	16,5	19,0
3 x 16	20,0	22,5
3 x 25	23,5	26,5
3 x 35	25,5	29,0
3 x 50	30,0	33,5
3 x 70	34,5	38,5
3 x 95	39,0	43,0
3 x 120	43,5	48,0

Number of cores x conductor cross-section	Overall Diameter Min.	Overall Diameter Max.
mm ²	mm	mm
3 x 150	48,5	53,5
3 x 185	53,5	58,5
3 x 240	61,0	67,5
3 x 70*	29,0	32,0
3 x 95*	32,5	36,0
3 x 120*	36,0	40,0
4 x 1,5	11,0	13,0
4 x 2,5	12,5	14,5
4 x 4	13,5	16,0
4 x 6	15,5	18,0
4 x 10	18,0	20,5
4 x 16	22,0	25,0
4 x 25	26,0	29,0
4 x 35	28,5	32,0
4 x 50	33,0	37,0
4 x 70	38,0	42,0
4 x 95	43,5	48,0
4 x 120	47,5	52,0
4 x 150	53,5	59,0
5 x 4	15,5	18,0
5 x 6	17,0	19,5
5 x 10	19,5	22,5
5 x 16	24,0	27,0
5 x 25	28,5	32,0
5 x 35	31,5	35,0
5 x 50	36,5	40,5
5 x 70	42,5	47,0
5 x 95	48,0	53,0
5 x 120	52,5	58,0
5 x 1,5	12,0	14,5
7 x 1,5	13,0	15,0
12 x 1,5	17,5	20,0
19 x 1,5	20,0	22,5
27 x 1,5	23,5	26,5
37 x 1,5	26,5	30,0
5 x 2,5	13,5	15,5
7 x 2,5	15,0	17,5
12 x 2,5	19,0	22,0
19 x 2,5	22,5	25,5
27 x 2,5	27,0	30,0
37 x 2,5	30,0	33,5

Number of cores x conductor cross-section mm ²	Overall Diameter Min. mm	Overall Diameter Max. mm
MPRXCX EMC	FLEXISHIP	extruded inner covering
1 x 120	22,5	25,5
1 x 150	25,0	28,0
1 x 185	22,5	30,0
1 x 240	25,5	34,5
1 x 300	28,0	36,0
3 x 120	45,0	49,5
3 x 150	50,0	55,0
3x70 + 3x16	36,5	40,5
3x95 + 3x16	40,0	44,5
3x120 + 3x25	45,0	49,5
3x150 + 3x25	50,0	55,0
MPRXCX EMC	FLEXISHIP	lapped inner covering
1 x 16	9,0	12,0
1 x 25	10,5	14,0
1 x 35	11,5	15,0
1 x 50	13,5	17,5
1 x 70	15,5	19,5
1 x 95	17,0	22,0

Number of cores x conductor cross-section mm ²	Overall Diameter Min. mm	Overall Diameter Max. mm
3 x 10	16,0	18,5
3 x 16	19,5	22,0
3 x 25	23,0	26,0
3 x 35	25,0	28,5
3 x 50	29,0	32,5
3 x 70	33,5	37,0
3 x 95	38,0	42,0
3x70 + 3x16	34,0	38,0
3x95 + 3x16	38,0	42,0
3x120 + 3x25	42,5	47,0
3x150 + 3x25	47,5	52,0
4 x 10	17,5	20,0
4 x 16	21,5	24,0
4 x 25	25,5	29,0
4 x 35	28,0	31,0
4 x 50	32,5	36,0
4 x 70	37,0	41,0
4 x 95	42,5	47,0

* Sector shaped

Application/Limitation

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.

General power and lighting.

Flame retardant in bunch Cat. A. Halogen free. Low smoke.

MPRXCX EMC & MPRXCX EMC FLEXISHIP for Variable Frequency Drives.

Type Approval documentation

Data sheets: [Dimension of MPRXCX 0,6/1 kV dated 2009-02-16](#)
[Dimension of MPRXCX 0,6/1 kV dated 2009-02-16](#)
[Dimension of MPRXCX EMC 0,6/1 kV dated 2009-02-16](#)
[Dimension of MPRXCX FLEXISHIP 0,6/1 kV dated 2009-02-16](#)
[Dimension of MPRXCX FLEXISHIP 0,6/1 kV dated 2009-02-16](#)
[Dimension of MPRXCX EMC FLEXISHIP 0,6/1 kV dated 2009-02-16](#)
[Dimension of MPRXCX EMC FLEXISHIP 0,6/1 kV dated 2009-02-16](#)

Tests carried out

Standard	Release	General description	Limitation
IEC 60092-350	2014-08	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications	
IEC 60092-353	2016-09	Electrical installations in ships – Part 353: Power cables for rated voltages 1 kV and 3 kV	

Standard	Release	General description	Limitation
IEC 60092-360	2014-04	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 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 60332-3-22	2009-02	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	2011-11	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	2011-11	Test on gases evolved during combustion of materials from cables – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH 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	2013-07 2013-09	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke Light transmittance >60%

Marking of product

NEXANS MPRXCX or MPRXCX FLEXISHIP or MPRXCX EMC or MPRXCX EMC FLEXISHIP – size – 0,6/1 kV – 90C – IEC 60092-353 – IEC 60332-3-22- CE(Symbol) Order-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