TFKable

Connecting globally

Marine and offshore cables

Leading producer of cables and cable systems

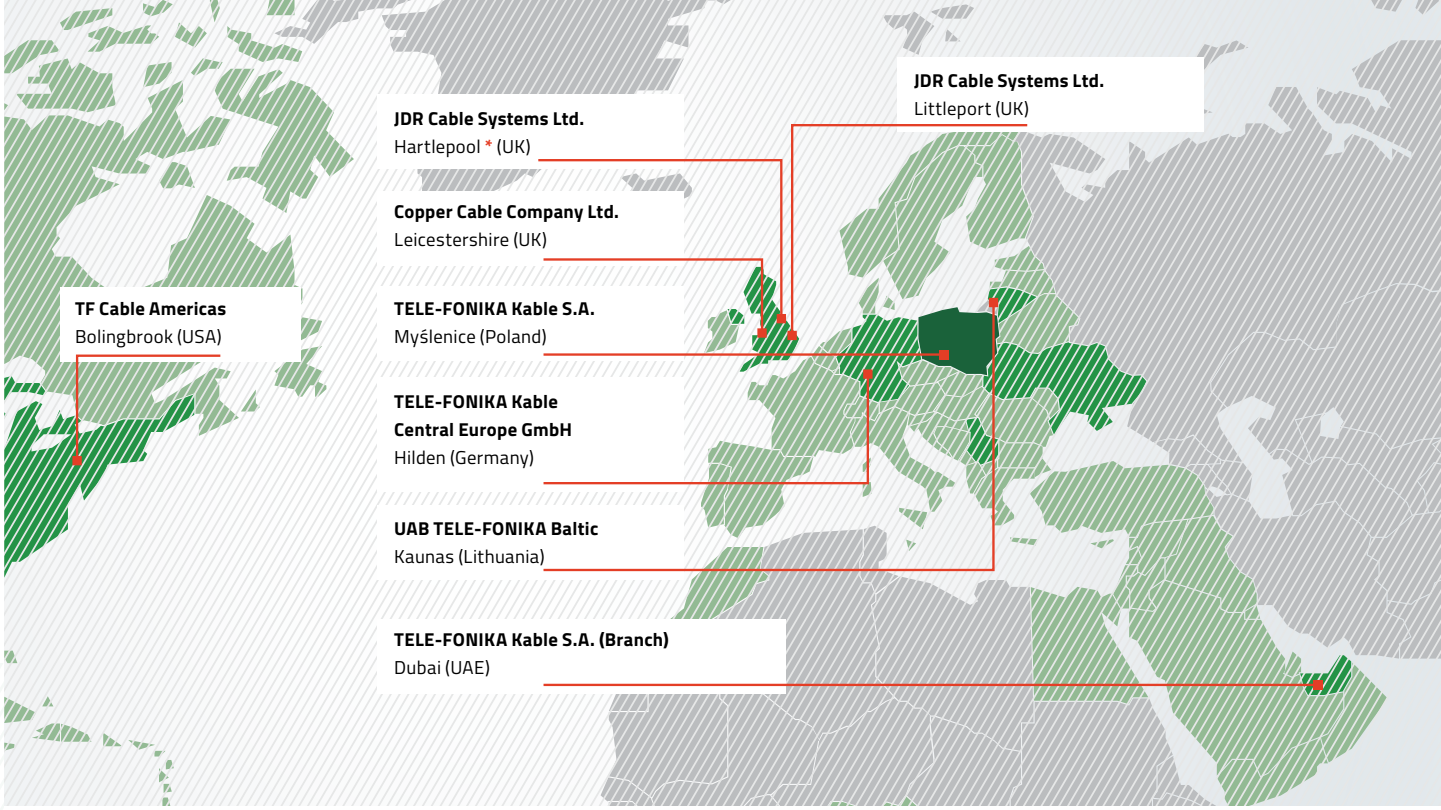
The TELE-FONIKA Kable Group has been present on the domestic and international cable industry market for more than 25 years. A stable development strategy based on market diversification enabled the strengthening of the position of our company among world's leading cable companies with significant development potential.

Services and products provided by TF Kable have numerous applications in the most important industry sectors – they include more than 25,000 proven standard constructions. Furthermore, they include specialty cables tailored to the individual needs of business partners.

Additionally, our production facilities (in Poland, Serbia and Ukraine), the Bukowno-Poland recycling plant and commercial companies (responsible for the geo-regional distribution of products) demonstrate a significant development potential. This is also true in the case of our modern fire test laboratory in Krakow-Wielicka plant, which performs several hundred flammability pre-tests annually, and a laboratory of high and extra high voltages in Bydgoszcz.

As a result of implementation of our growth strategy, in August 2017 TFKable Group acquired JDR Cable Systems Ltd, the leading manufacturer of subsea umbilicals and power cables to the global offshore energy industry.

In the world's harshest environments and ever-increasing water depths, JDR's world-leading products and services bring power and control to offshore oil, gas and renewable energy systems.



* JDR Cable Systems Ltd. **(Sales Representative)** United States. UK

Experience and competence of the TELE-FONIKA Kable Group

Global relations

Krakow-Wielicka plant – production of PVC or XLPE insulated 1 kV cables with copper or aluminium conductor, screened or armoured types, fire resistant and halogen free cables, overhead conductors as well as rubber insulated and/or rubber sheathed cables with voltage up to 30 kV for heavy industry, signaling and control cables for special applications

Krakow-Bieżanow plant – production of PCV or XLPE insulated copper wires and cables up to 1 kV, halogen free and fire resistant types and copper or silver-copper (Cu-Ag) overhead conductors for railway traction.

Bydgoszcz plant – the largest in Europe production center of medium, high and extra hight voltage cables with voltage up to 500 kV

Myślenice plant – production copper and fiber optic telecommunication cables, data telecommunication cables and automotive wires

Zajecar plant (Serbia) – production of low and medium voltage cables, signaling and control cables, telecommunication cables, as well as halogen-free cables and wires

Czernihov plant (Ukraine) – production of copper wires and cables up to 1 kV, fire resistant and flame retardant cables as well as insulated overhead aluminium conductors

Bukowno-Poland plant (recycling of cable waste) – with the recycling capacity of approx. 10 thousand tons of cable waste per year. This allows for the recovery of fractions from individual materials with purity of over 99.5%

Fire Test Laboratory in the Krakow-Wielicka production plant – equipped with special apparatus that enables to provide flame propagation test on bundled cables, smoke density test as well as circuit integrity test with water or mechanical shock, test for corrosive gases emission

Laboratory of High and Extra Voltages in the production plant in Bydgoszcz – equipped with 4 Faraday cages and research filed for qualification tests for cables and systems up to 500 kV

JDR Cable Systems – as a result of acquiring JDR Cable Systems Limited, TFKable has expanded its assets with two UK production facilities. JDR manufactures submarine power cables as well as subsea umbilical cables consisting of components for power distribution, data transfer, monitoring and remote control, of offshore facilities. Additionally, our sales portfolio has been extended by offshore installation and maintenance services, located in JDR's service centres in the United States, UK, ensuring constant support for our business partners

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Shipbuilding

Marine cables

Being offered by the TELE-FONIKA Kable since the early 90's, marine cables have always been held as an important product in cables portfolio. Years of experience, resulting from frequent contacts with European and Far Eastern shipyards, led to the development of light and compact cable designs characterised by high flexibility facilitating allow for easy installation in severely limited spaces.

The ability of being able to provide cables that can operate reliably in extreme conditions, to ensure the safety of those aboard sea vessels, is very important for our company. Therefore, all marine cables from our portfolio are halogen-free, flame retardant and do not emit harmful gases when burning. For example, for safety devices such as emergency power lighting escape routes, you can be assured that our fire resistant cables will provide the highest standards of safety and will continue to function in the harshest of environments.

Cable tests are carried our in state-of-the-art Fire Tests Laboratory (Kraków-Wielicka Plant) for testing in accordance with current international standards (IEC 60331 – Fire test for circuit integrity, IEC 60332 – Test for flame spread, IEC 61034 – Smoke density test, IEC 60754 – Gases emission test, etc.). Our Cable Design Engineers and Process Managers work continuously to develop our designs, which has resulted in the development of optimum low weight cables and minimal achievable outer diameter, ensuring ease of installation in the most challenging vessel installation projects.

To ensure that our products meet the highest quality standards, our cables are subjected to third party certification testing such as: Lloyd Register, Det Norske Veritas, Polski Rejestr Statków. Registro Italiano Navale; American Bureau of Shipping, ClassNK, Bureau Veritas.

You can be assured of performance when marine cables, manufactured by TELE-FONIKA Kable, are installed onboard the numerous naval vessels operating around the world.

Shipboard power cables

FLAMEBLOCKER

KONS 0.6/1 kV
Cu/LSOH

IEC 60092-353

Halogen-free switchboard wire

CONSTRUCTION

Conductors:	Stranded flexible bare or tinned copper class 5 acc. to IEC 60228
Insulation:	Halogen-free polyolefin compound type HF 90 acc. to IEC 60092-360
Colour of insulation:	Black, red, blue, white, green/yellow Other colors available on request

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Maximum short-circuit conductor temperature:	+250°C	
Minimum bending radius for cable with overall diameter (D):	D < 25 mm D > 25 mm	4 D 6 D

Fire performance

Flame retardant:	IEC 60332-1-2 (test for single cable)
Smoke emission:	IEC 61034-1 IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

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KONS 0.6/1 kV
Cu/LSOH

Applications

For fixed wiring in switchboards, control panels and other enclosures.

Approvals

DNV-GL, ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Approximate overall diameter	Approximate net weight of cables	Current rating in open air	Bare copper		Tinned copper	
				Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
n × mm²	**mm**	**kg/km**	**A**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**
1 × 0.75	2.5	12	14	26.0	33.2	26.7	34.1
1 × 1	2.6	14	18	19.5	24.9	20.0	25.5
1 × 1.5	2.9	19	23	13.3	17.0	13.7	17.5
1 × 2.5	3.6	30	40	7.98	10.2	8.21	10.47
1 × 4	4.1	44	51	4.95	6.3	5.09	6.49
1 × 6	4.6	62	52	3.30	4.2	3.39	4.32
1 × 10	6.0	105	72	1.91	2.4	1.95	2.49
1 × 16	7.1	159	96	1.21	1.5	1.24	1.58
1 × 25	8.7	244	127	0.78	0.995	0.795	1.014
1 × 35	9.9	337	157	0.554	0.706	0.565	0.720
1 × 50	11.8	479	196	0.386	0.492	0.393	0.501
1 × 70	13.6	664	242	0.272	0.347	0.277	0.353
1 × 95	16.1	879	293	0.206	0.263	0.210	0.268
1 × 120	17.2	1,103	339	0.161	0.205	0.164	0.209

FLAMEBLOCKER

NKOXS 0.6/1 kV
Cu/XLPE/LSOH

IEC 60092-353

Halogen-free shipboard power cables with cross-linked polyethylene insulation and halogen-free sheath

CONSTRUCTION

Conductors:	▪ Circular stranded bare or tinned copper class 2 (RM) 1 to 6 mm² ▪ Circular compacted stranded bare or tinned copper class 2 (RM) 10 to 300 mm² ▪ Circular stranded bare or tinned copper class 5 (RF) ▪ Sector compacted stranded class 2 (SM) 35 to 300 mm² or sector stranded flex (SF) 70 to 150 mm² Acc. to IEC 60092-350 and IEC 60228
Insulation:	≤ 35 mm2: cross-linked polyethylene XLPE acc. to IEC 60092-360 > 35 mm2: cross-linked polyolefin compound HF 90 acc. to IEC 60092-360
Inner covering:	Bedding tape or/and extruded layer special flame-retardant, halogen-free compound
Sheath:	Halogen-free thermoplastic compound type SHF 1 acc. to IEC 60092-360
Colour of sheath:	Black, grey or other agreed
Core identification:	

	Without green-yellow	**With green-yellow**
HD 308 S2:		
2-core:	Blue, brown	–
3-core:	Brown, black, grey	Green-yellow, blue, brown
4-core:	Blue, brown, black, grey	Green-yellow, brown, black, grey
5-core:	Blue, brown, black, grey, black	Green-yellow, blue, brown, black, grey
6 and more:	Numbered cores	Green-yellow, other cores numbered
	Other colors available on request	Other colors available on request

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

CHARACTERISTIC

Rated voltage $U_0/U/U_m$:	AC 0.6/1 (1.2) kV DC 0.9/1.5 kV	
Test voltage:	3.5 kV	
Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Maximum short-circuit conductor temperature:	+250°C	
Minimum bending radius for cable with overall diameter (D):	D ≤ 25 mm D > 25 mm	4 D 6 D

Fire performance

Flame retardant:	IEC 60332-1-2 IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-1 IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

For fixed marine installations in all areas and open deck in ships.

Approvals

DNV-GL, ABS, LR, PRS, BV, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

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NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
n × mm²	**mm**		**kg/km**	
1 × 1 RF	–	4.6	–	29
1 × 1 RM	–	4.7	–	31
1 × 1.5 RF	–	4.9	–	35
1 × 1.5 RM	–	5	–	37
1 × 2.5 RF	–	5.4	–	47
1 × 2.5 RM	–	5.4	–	49
1 × 4 RF	–	5.9	–	62
1 × 4 RM	–	5.9	–	65
1 × 6 RF	–	6.4	–	82
1 × 6 RM	–	6.5	–	87
1 × 10 RF	–	7.4	–	123
1 × 10 RM	–	7.2	–	126
1 × 16 RF	–	8.7	–	184
1 × 16 RM	–	8.4	–	188
1 × 25 RF	–	10.5	–	276
1 × 25 RM	–	10.3	–	289
1 × 35 RF	–	11.7	–	373
1 × 35 RM	–	11.6	–	389
1 × 50 RF	–	13.6	–	533
1 × 50 RM	–	13.1	–	527
1 × 70 RF	–	15.8	–	739
1 × 70 RM	–	14.8	–	738
1 × 95 RF	–	18.1	–	959
1 × 95 RM	–	17	–	1,000
1 × 120 RF	–	19.4	–	1,197
1 × 120 RM	–	18.6	–	1,243
1 × 150 RF	–	21.8	–	1,494
1 × 150 RM	–	20.6	–	1,532
1 × 185 RF	–	24.7	–	1,825
1 × 185 RM	–	22.9	–	1,907
1 × 240 RF	–	26.6	–	2,347
1 × 240 RM	–	25.8	–	2,458

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
1 × 300 RF	–	30.6	–	2,926
1 × 300 RM	–	28	–	3,053
2 × 1 RF	8	8.8	93	67
2 × 1 RM	8.1	8.9	96	70
2 × 1.5 RF	8.8	9.6	115	85
2 × 1.5 RM	8.9	9.7	120	88
2 × 2.5 RF	9.8	10.6	151	109
2 × 2.5 RM	9.8	10.6	154	113
2 × 4 RF	10.7	11.5	194	140
2 × 4 RM	10.8	11.6	202	147
2 × 6 RF	12.1	12.9	258	189
2 × 6 RM	12.1	12.9	269	198
2 × 10 RF	13.9	14.7	374	273
2 × 10 RM	13.6	14.4	374	279
2 × 16 RF	16.4	17.2	546	443
2 × 16 RM	15.8	16.6	541	447
2 × 25 RF	20.7	20.7	834	667
2 × 25 RM	20.4	20.4	852	690
2 × 35 RF	23	23	1,088	885
2 × 35 RM	22.7	22.7	1,110	912
2 × 50 RF	27	27	1,545	1,268
2 × 50 RM	25.9	25.9	1,494	1,239
3 × 1 RF	8.4	9.2	103	82
3 × 1 RM	8.6	9.4	108	86
3 × 1.5 RF	9.2	10	130	104
3 × 1.5 RM	9.4	10.2	136	109
3 × 2.5 RF	10.3	11.1	173	138
3 × 2.5 RM	10.3	11.1	179	143
3 × 4 RF	11.5	12.3	233	188
3 × 4 RM	11.6	12.4	245	199
3 × 6 RF	12.7	13.5	307	249
3 × 6 RM	12.8	13.6	322	263
3 × 10 RF	14.9	15.7	462	379

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
3 × 10 RM	14.6	15.4	467	389
3 × 16 RF	17.4	18.2	672	583
3 × 16 RM	16.8	17.6	676	595
3 × 25 RF	22.2	22.2	1,046	896
3 × 25 RM	21.8	21.8	1,079	933
3 × 35 RF	24.6	24.6	1,380	1,199
3 × 35 RM	24.3	24.3	1,419	1,242
3 × 50 RF	28.9	28.9	1,970	1,725
3 × 50 RM	27.7	27.7	1,922	1,695
3 × 70 RF	33.6	33.4	2,725	2,380
3 × 70 RM	31.4	31.2	2,655	2,356
3 × 70 SF	27.8	29.2	2,654	2,233
3 × 70 SM	26.3	27.7	2,563	2,217
3 × 95 RF	38.5	38.3	3,544	3,103
3 × 95 RM	36	35.8	3,581	3,198
3 × 95 SF	30.8	32.2	3,414	2,895
3 × 95 SM	29.6	31	3,465	3,000
3 × 120 RF	41.5	41.3	4,378	3,879
3 × 120 RM	39.7	39.5	4,449	3,991
3 × 120 SF	34.7	36.1	4,371	3,665
3 × 120 SM	32.7	34.1	4,340	3,747
3 × 150 RF	47.2	46.6	5,537	4,853
3 × 150 RM	44.5	43.9	5,534	4,931
3 × 150 SF	38.9	40.3	5,524	4,616
3 × 150 SM	36.8	38.2	5,424	4,639
3 × 185 RF	53.2	52.4	6,807	5,935
3 × 185 RM	49.4	48.6	6,870	6,117
3 × 240 RF	57.4	56.6	8,610	7,612
3 × 240 RM	55.8	55	8,858	7,919
4 × 1 RF	9.3	10.1	125	103
4 × 1 RM	9.4	10.2	130	107
4 × 1.5 RF	10	10.8	152	125
4 × 1.5 RM	10.1	10.9	160	132

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
4 × 2.5 RF	11.2	12	205	169
4 × 2.5 RM	11.2	12	213	176
4 × 4 RF	12.5	13.3	279	234
4 × 4 RM	12.6	13.4	294	247
4 × 6 RF	13.9	14.7	372	313
4 × 6 RM	14	14.8	392	332
4 × 10 RF	16.3	17.1	565	481
4 × 10 RM	15.9	16.7	573	494
4 × 16 RF	19.3	20.1	838	747
4 × 16 RM	18.6	19.4	846	761
4 × 25 RF	24.5	24.3	1,304	1,132
4 × 25 RM	24.1	23.9	1,351	1,183
4 × 35 RF	27.2	27.2	1,729	1,536
4 × 35 RM	26.8	26.8	1,782	1,597
4 × 50 RF	32	32	2,474	2,218
4 × 50 RM	30.6	30.6	2,421	2,185
4 × 70 RF	37.4	37.2	3,444	3,087
4 × 70 RM	35	34.8	3,376	3,062
4 × 70 SF	32.2	33.6	3,390	2,973
4 × 70 SM	30.2	31.6	3,296	2,949
4 × 95 RF	42.7	42.5	4,455	4,004
4 × 95 RM	39.9	39.7	4,538	4,139
4 × 95 SF	35.3	36.7	4,370	3,834
4 × 95 SM	33.8	35.2	4,457	3,974
4 × 120 RF	46.5	45.9	5,599	5,029
4 × 120 RM	44.5	43.9	5,715	5,192
4 × 120 SF	39.8	41.2	5,558	4,867
4 × 120 SM	37.9	39.3	5,597	4,989
4 × 150 RF	52.4	51.8	6,997	6,293
4 × 150 RM	49.4	48.8	7,037	6,407
4 × 150 SF	44.4	45.6	7,029	6,104
4 × 150 SM	42.2	43.4	6,940	6,141
4 × 185 RF	58.9	58.3	8,557	7,687

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NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
4 × 185 RM	54.7	54.1	8,710	7,957
4 × 240 RF	63.8	63	10,904	9,879
4 × 240 RM	62	61.2	11,266	10297
5 × 1 RF	10	10.8	147	123
5 × 1 RM	10.2	11	154	129
5 × 1.5 RF	10.8	11.6	181	152
5 × 1.5 RM	11	11.8	190	161
5 × 2.5 RF	12.3	13.1	251	214
5 × 2.5 RM	12.4	13.2	262	224
5 × 4 RF	13.6	14.4	337	289
5 × 4 RM	13.8	14.6	356	306
5 × 6 RF	15.4	16.2	459	397
5 × 6 RM	15.5	16.3	483	420
5 × 10 RF	18	18.8	698	610
5 × 10 RM	17.6	18.4	709	626
5 × 16 RF	21.4	22.2	1,039	913
5 × 16 RM	20.5	21.3	1,047	933
5 × 25 RF	26.8	26.8	1,609	1,380
5 × 25 RM	26.3	26.3	1,667	1,446
5 × 35 RF	30	30	2,154	1,875
5 × 35 RM	29.6	29.6	2,222	1,950
5 × 50 RF	35.5	35.3	3,111	2,705
5 × 50 RM	34	33.8	3,042	2,669
5 × 70 RF	41.3	41.1	4,305	3,764
5 × 70 RM	38.6	38.4	4,216	3,744
6 × 1.5 RF	11.9	12.7	217	186
6 × 1.5 RM	12.1	12.9	228	196
6 × 2.5 RF	13.3	14.1	294	253
6 × 2.5 RM	13.4	14.2	306	265
7 × 1 RF	10.8	11.6	174	149
7 × 1 RM	11	11.8	183	156
7 × 1.5 RF	11.9	12.7	223	192
7 × 1.5 RM	12.1	12.9	235	203

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Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
7 × 2.5 RF	13.3	14.1	306	265
7 × 2.5 RM	13.4	14.2	320	279
8 × 1.5 RF	12.6	13.4	247	214
8 × 1.5 RM	12.8	13.6	261	226
9 × 1.5 RF	13.7	14.5	292	244
9 × 1.5 RM	13.9	14.7	307	258
10 × 1 RF	13.6	14.4	250	209
10 × 1 RM	13.9	14.7	263	219
10 × 1.5 RF	15	15.8	320	270
10 × 1.5 RM	15.2	16	337	285
10 × 2.5 RF	16.9	17.7	441	374
10 × 2.5 RM	17	17.8	460	393
12 × 1 RF	14	14.8	275	236
12 × 1 RM	14.3	15.1	289	248
12 × 1.5 RF	15.4	16.2	353	306
12 × 1.5 RM	15.7	16.5	374	325
12 × 2.5 RF	17.6	18.4	500	438
12 × 2.5 RM	17.7	18.5	523	461
14 × 1.5 RF	16.2	17	394	346
14 × 1.5 RM	16.5	17.3	417	367
16 × 1 RF	15.6	16.4	347	306
16 × 1 RM	15.9	16.7	365	322
16 × 1.5 RF	17.2	18	448	398
16 × 1.5 RM	17.5	18.3	475	423
16 × 2.5 RF	19.5	20.3	629	563
16 × 2.5 RM	19.5	20.3	658	593
19 × 1 RF	16.4	17.2	387	344
19 × 1 RM	16.8	17.6	409	364
19 × 1.5 RF	18.1	18.9	503	451
19 × 1.5 RM	18.4	19.2	533	479
19 × 2.5 RF	20.7	21.5	720	652
19 × 2.5 RM	20.8	21.6	756	688
20 × 1 RF	17.3	18.1	435	384

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
20 × 1 RM	17.8	18.6	460	406
20 × 1.5 RF	19	19.8	554	492
20 × 1.5 RM	19.3	20.1	587	522
20 × 2.5 RF	21.7	22.5	791	709
20 × 2.5 RM	21.8	22.6	829	747
24 × 1 RF	19.1	19.9	491	433
24 × 1 RM	19.6	20.4	519	458
24 × 1.5 RF	21.2	22	638	568
24 × 1.5 RM	21.6	22.4	677	604
24 × 2.5 RF	24.3	25.1	914	822
24 × 2.5 RM	24.3	25.1	958	866
27 × 1 RF	19.5	20.3	529	473
27 × 1 RM	20	20.8	559	500
27 × 1.5 RF	21.6	22.4	689	622
27 × 1.5 RM	22	22.8	732	662
27 × 2.5 RF	24.8	25.6	992	904
27 × 2.5 RM	24.9	25.7	1,043	954
30 × 1 RF	20.4	21.2	582	525
30 × 1 RM	20.9	21.7	615	555
30 × 1.5 RF	22.4	23.2	747	678
30 × 1.5 RM	22.8	23.6	794	723
30 × 2.5 RF	25.9	26.7	1,091	1,002
30 × 2.5 RM	25.9	26.7	1,146	1,057
37 × 1 RF	21.9	22.7	683	623
37 × 1 RM	22.5	23.3	724	660
37 × 1.5 RF	24.3	25.1	895	822
37 × 1.5 RM	24.7	25.5	952	876
37 × 2.5 RF	27.9	28.7	1,296	1,201
37 × 2.5 RM	27.9	28.7	1,364	1,269

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Electrical data

Conductor class 2					Conductor class 5			
Bare copper		Tinned copper			Bare copper		Tinned copper	
Cross-section of conductor	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
	R_{20}	R_{90}	R_{20}	R_{90}	R_{20}	R_{90}	R_{20}	R_{90}
mm²	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**
1	18.1	23.1	18.2	23.2	19.5	24.9	20.0	25.5
1.5	12.1	15.4	12.2	15.6	13.3	17.0	13.7	17.5
2.5	7.41	9.45	7.56	9.64	7.98	10.2	8.21	10.47
4	4.61	5.88	4.70	5.99	4.95	6.3	5.09	6.49
6	3.08	3.93	3.11	3.97	3.30	4.2	3.39	4.32
10	1.83	2.33	1.84	2.35	1.91	2.4	1.95	2.49
16	1.15	1.47	1.16	1.48	1.21	1.5	1.24	1.58
25	0.727	0.927	0.734	0.936	0.78	0.995	0.795	1.014
35	0.524	0.668	0.529	0.675	0.554	0.706	0.565	0.720
50	0.387	0.493	0.391	0.499	0.386	0.492	0.393	0.501
70	0.268	0.342	0.270	0.344	0.272	0.347	0.277	0.353
95	0.193	0.249	0.195	0.249	0.206	0.263	0.210	0.268
120	0.153	0.195	0.154	0.196	0.161	0.205	0.164	0.209
150	0.124	0.158	0.126	0.161	0.129	0.164	0.132	0.168
185	0.0991	0.1264	0.100	0.128	0.106	0.135	0.108	0.138
240	0.0754	0.0961	0.0762	0.0972	0.0801	0.1021	0.0817	0.1042
300	0.0601	0.0766	0.0607	0.0774	0.0641	0.0817	0.0654	0.0834

Current ratings

Current ratings acc. to IEC 60092-352 based on ambient air temperature of 45°C

Nominal cross-sectional area	Insulation class temperature 90°C		
	1-core	2-cores	3-cores & 4-cores
mm²	**A**	**A**	**A**
1	18	15	13

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Nominal cross-sectional area	Insulation class temperature 90°C		
	1-core	2-cores	3-cores & 4-cores
1.5	23	20	16
2.5	40	26	21
4	51	34	28
6	52	44	36
10	72	61	50
16	96	82	67
25	127	108	89
35	157	133	110
50	196	167	137
70	242	206	169
95	293	249	205
120	339	288	237
150	389	331	272
185	444	377	311
240	522	444	365
300	601	511	421

Current ratings for more than 4-core cables:

Number of cores	Nominal cross-sectional area of conductor		
	1 mm²	**1.5 mm²**	**2.5 mm²**
	A	**A**	**A**
5	10.5	12	16
7	9	10	15
10	8	9	13
12	8	9	12
16	7	8	11
19	7	7	10
20	7	7	10
24	6	6.5	9.5
27	6	6.5	9
30	6	6	9
37	5	6	8

Correction factors for different ambient air temperatures

The ambient temperature of 45 °C, on which the current ratings are based, is considered as a standard value for the ambient air temperature, generally applicable for any kind of ship and for navigation in any climate.

Correction factors for various ambient air temperatures

Maximum conductor temperature	90 °C									
Ambient temperature °C	35	40	45	50	55	60	65	70	75	80
Correction factors	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Correction factors for cable grouping

Where more than six bunched cables on cable trays, in cable conduits, pipes or trunking are expected to operate simultaneously full rated capacity, a correction factor of 0.85 should be applied

Short circuit ratings

Cross-section in mm^2	Maximum short circuit current rating for 1 s, in kA	Maximum short circuit current rating for 3 s, in kA	Maximum short circuit current rating for 5 s, in kA
1	0.14	0.08	0.06
1.5	0.21	0.12	0.1
2.5	0.36	0.21	0.16
4	0.57	0.33	0.26
6	0.86	0.5	0.38
10	1.43	0.83	0.64
16	2.29	1.32	1.02
25	3.58	2.06	1.6

FLAMEBLOCKER
NKOXS 0.6/1 kV
Cu/XLPE/LSOH

Cross-section in mm^2	Maximum short circuit current rating for 1 s, in kA	Maximum short circuit current rating for 3 s, in kA	Maximum short circuit current rating for 5 s, in kA
35	5.01	2.89	2.24
50	7.15	4.13	3.2
70	10.01	5.78	4.48
95	13.59	7.84	6.08
120	17.16	9.91	7.67
150	21.45	12.38	9.59
185	26.46	15.27	11.83
240	34.32	19.81	15.35
300	42.9	24.77	19.19

For 0.6/1 kV cable and maximum normal operating temperature +90^{O}C, short circuit temperature up to 250^{O}C.

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC

Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

IEC 60092-353

Halogen-free shipboard power cables with cross-linked polyethylene insulation, halogen-free sheath and screen ensuring full electromagnetic compatibility (EMC)

CONSTRUCTION

Conductors:	▪ Circular stranded bare or tinned copper class 2 (RM) 1 to 6mm² ▪ Circular compacted stranded bare or tinned copper class 2 (RM) 10 to 300 mm² ▪ Circular stranded bare or tinned copper class 5 (RF) ▪ Sector shaped compacted stranded class 2 (SM) 35 to 300 mm² or sector stranded flex (SF) 70 to 150 mm² Acc. to IEC 60092-350 and IEC 60228	
Insulation:	≤ 35 mm²: cross-linked polyethylene XLPE acc. to IEC 60092-360 > 35 mm²: cross-linked polyolefin compound HF 90 acc. to IEC 60092-360	
Inner covering:	Bedding tape or/and extruded layer special flame-retardant, halogen--free compound	
Screen:	NKOXSekw: NKOXSekw EMC: Acc. to IEC 60092-350	Copper wire braiding Copper/polyester tape (coverage 100%) & copper wire braid
Sheath:	Halogen-free thermoplastic compound type SHF 1 acc. to IEC 60092-360	
Colour of sheath:	Black, grey or other agreed	
Core identification:		
	Without green-yellow	**With green-yellow**
HD 308 S2:		
2-core:	Blue, brown	–
3-core:	Brown, black, grey	Green-yellow, blue, brown
4-core:	Blue, brown, black, grey	Green-yellow, brown, black, grey
5-core:	Blue, brown, black, grey, black	Green-yellow, blue, brown, black, grey
6 and more:	Numbered cores	Green-yellow, other cores numbered
	Other colors available on request	Other colors available on request

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

CHARACTERISTIC

Rated voltage $U_0/U/U_m$:	AC 0.6/1 (1.2) kV DC 0.6/1.5 kV	
Test voltage:	3.5 kV	
Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Maximum short-circuit conductor temperature:	+250°C	
Minimum bending radius for:	NKOXSekw:	6 × D for cables with circular copper conductors and 8 × D for cables with sector shaped copper conductors
	NKOXSekw EMC:	8 × D
	D – overall diameter of the cable	

Fire performance

Flame retardant:	IEC 60332-1-2 IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-1 IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

For fixed marine installations. Available is also version with EMC (Electro Magnetic Compatibility) protection.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Approvals

DNV-GL, ABS, LR, PRS, BV, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
n × mm²		**mm**			**kg/km**	
1 × 1 RF	6.2	7	7.6	66	73	95
1 × 1 RM	6.3	7.1	7.7	68	75	97
1 × 1.5 RF	6.5	7.3	7.9	73	79	103
1 × 1.5 RM	6.6	7.4	8	75	81	105
1 × 2.5 RF	7	7.8	8.4	91	91	123
1 × 2.5 RM	7	7.8	8.4	93	93	125
1 × 4 RF	7.5	8.3	8.9	107	113	141
1 × 4 RM	7.5	8.3	8.9	110	116	144
1 × 6 RF	8	8.8	9.6	128	133	174
1 × 6 RM	8.1	8.9	9.7	133	138	180
1 × 10 RF	9.2	10	10.6	181	186	222
1 × 10 RM	9	9.8	10.4	184	188	223
1 × 16 RF	10.3	11.1	11.7	246	250	291
1 × 16 RM	10	10.8	11.4	250	254	294
1 × 25 RF	12.9	13.1	13.7	377	357	416
1 × 25 RM	12.7	12.9	13.5	390	370	428
1 × 35 RF	13.9	14.1	14.7	481	459	514
1 × 35 RM	13.8	14	14.6	496	474	528
1 × 50 RF	16.6	16.8	17.4	716	689	753
1 × 50 RM	16.1	16.3	16.9	688	663	744
1 × 70 RF	18.8	19	19.6	931	900	994
1 × 70 RM	17.8	18	18.6	926	897	966
1 × 95 RF	20.9	21.1	21.7	1,171	1,134	1,219
1 × 95 RM	19.8	20	20.6	1,208	1,174	1,253
1 × 120 RF	22.4	22.6	23.2	1,443	1,404	1,495

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
1 × 120 RM	21.6	21.8	22.4	1,467	1,429	1,536
1 × 150 RF	24.8	25	25.6	1,750	1,726	1,827
1 × 150 RM	23.6	23.8	24.4	1,784	1,742	1,838
1 × 185 RF	27.5	27.7	28.5	2,100	2,078	2,207
1 × 185 RM	25.7	25.9	26.7	2,175	2,129	2,247
1 × 240 RF	29.4	29.6	30.2	2,658	2,604	2,727
1 × 240 RM	28.6	28.8	29.4	2,766	2,714	2,833
1 × 300 RF	33.4	33.6	34.2	3,281	3,217	3,359
1 × 300 RM	30.8	31	31.6	3,369	3,312	3,441
2 × 1 RF	9	9.8	10.4	128	117	168
2 × 1 RM	9.1	9.9	10.5	131	119	172
2 × 1.5 RF	9.6	10.4	11	151	130	194
2 × 1.5 RM	9.7	10.5	11.1	156	133	198
2 × 2.5 RF	10.6	11.4	12	184	160	236
2 × 2.5 RM	10.6	11.4	12	188	163	240
2 × 4 RF	11.7	12.5	13.1	236	203	286
2 × 4 RM	11.8	12.6	13.2	244	210	303
2 × 6 RF	12.9	13.7	14.3	297	254	355
2 × 6 RM	12.9	13.7	14.3	307	264	365
2 × 10 RF	15.3	16.1	16.7	461	387	537
2 × 10 RM	15	15.8	16.4	462	392	537
2 × 16 RF	17.8	18.6	19.2	643	535	730
2 × 16 RM	17.2	18	18.6	641	543	706
2 × 25 RF	22.1	22.1	22.9	975	842	1,026
2 × 25 RM	21.8	21.8	22.6	974	846	1,044
2 × 35 RF	24.4	24.4	25.2	1,224	1,062	1,300
2 × 35 RM	24.1	24.1	24.9	1,246	1,089	1,322
2 × 50 RF	28.6	28.6	29.4	1,719	1,498	1,786
2 × 50 RM	27.5	27.5	28.3	1,643	1,439	1,737
3 × 1 RF	9.4	10.2	10.8	140	132	187
3 × 1 RM	9.6	10.4	11	150	135	193
3 × 1.5 RF	10	10.8	11.4	167	155	211

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
3 × 1.5 RM	10.2	11	11.6	173	160	218
3 × 2.5 RF	11.1	11.9	12.7	213	195	268
3 × 2.5 RM	11.1	11.9	12.7	219	200	273
3 × 4 RF	12.3	13.1	13.7	277	246	333
3 × 4 RM	12.4	13.2	13.8	289	265	345
3 × 6 RF	13.5	14.3	15.5	357	315	455
3 × 6 RM	13.6	14.4	15.6	372	329	471
3 × 10 RF	16.1	16.9	17.5	545	505	625
3 × 10 RM	15.8	16.6	17.2	552	514	630
3 × 16 RF	18.8	19.6	20.2	776	707	866
3 × 16 RM	18.2	19	19.6	781	720	869
3 × 25 RF	23.4	23.4	24.4	1,179	1,062	1,245
3 × 25 RM	23	23	24	1,212	1,099	1,277
3 × 35 RF	25.8	25.8	26.8	1,526	1,385	1,599
3 × 35 RM	25.5	25.5	26.5	1,566	1,428	1,638
3 × 50 RF	30.5	30.5	31.3	2,150	1,957	2,221
3 × 50 RM	29.3	29.3	30.1	2,105	1,926	2,173
3 × 70 RF	35.2	35	36.2	2,918	2,644	3,047
3 × 70 RM	33	32.8	34	2,856	2,619	2,949
3 × 70SF	31	30.8	32	2,913	2,466	3,001
3 × 70 SM	29.5	29.3	30.5	2,829	2,448	2,912
3 × 95 RF	39.9	39.7	41.1	3,733	3,380	3,895
3 × 95 RM	37.4	37.2	38.6	3,781	3,475	3,905
3 × 95SF	33.8	33.6	35	3,682	3,143	3,794
3 × 95 SM	32.6	32.4	33.8	3,738	3,248	3,846
3 × 120 RF	43.5	43.3	44.5	4,734	4,335	4,857
3 × 120 RM	41.7	41.5	42.7	4,760	4,394	4,930
3 × 120SF	38.3	38.1	39.3	4,773	4,067	4,880
3 × 120 SM	36.3	36.1	37.3	4,702	4,095	4,856
3 × 150 RF	49.2	48.6	50.2	5,916	5,365	6,055
3 × 150 RM	46.5	45.7	47.5	5,875	5,367	6,059
3 × 150SF	42.9	42.1	43.9	6,000	5,053	6,121

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
3 × 150 SM	40.8	40	41.8	5,859	5,024	5,973
3 × 185 RF	55	54.4	56.2	7,184	6,501	7,368
3 × 185 RM	51.2	50.6	52.4	7,218	6,630	7,388
3 × 240 RF	59.2	58.4	60.6	8,968	8,153	9,206
3 × 240 RM	57.6	56.8	59	9,220	8,460	9,443
4 × 1 RF	10.1	10.9	11.5	162	154	207
4 × 1 RM	10.2	11	11.6	167	158	212
4 × 1.5 RF	10.8	11.6	12.4	195	176	248
4 × 1.5 RM	10.9	11.7	12.5	202	183	255
4 × 2.5 RF	12.2	13	13.6	257	232	312
4 × 2.5 RM	12.2	13	13.6	264	239	320
4 × 4 RF	13.3	14.1	15.3	332	300	429
4 × 4 RM	13.4	14.2	15.4	346	313	444
4 × 6 RF	15.3	16.1	16.7	468	426	544
4 × 6 RM	15.4	16.2	16.8	487	464	564
4 × 10 RF	17.7	18.5	19.1	676	616	762
4 × 10 RM	17.3	18.1	18.7	685	629	750
4 × 16 RF	20.7	21.5	22.1	962	874	1,060
4 × 16 RM	20	20.8	21.4	973	893	1,048
4 × 25 RF	25.7	25.7	26.5	1,465	1,343	1,525
4 × 25 RM	25.3	25.3	26.1	1,512	1,393	1,571
4 × 35 RF	28.4	28.4	29.2	1,916	1,769	1,983
4 × 35 RM	28	28	28.8	1,971	1,830	2,037
4 × 50 RF	33.6	33.6	34.4	2,705	2,506	2,784
4 × 50 RM	32.2	32.2	33	2,653	2,471	2,728
4 × 70 RF	38.8	38.6	39.8	3,679	3,398	3,790
4 × 70 RM	36.4	36.2	37.4	3,615	3,368	3,718
4 × 70SF	35.2	35	36.2	3,670	3,210	3,799
4 × 70 SM	33.2	33	34.2	3,581	3,186	3,675
4 × 95 RF	44.7	44.5	45.7	4,864	4,507	4,991
4 × 95 RM	41.9	41.7	42.9	4,949	4,581	5,067
4 × 95SF	38.9	38.7	39.9	4,794	4,226	4,903

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
4 × 95 SM	37.4	37.2	38.4	4,885	4,365	4,989
4 × 120 RF	48.3	47.7	49.5	6,027	5,572	6,188
4 × 120 RM	46.3	45.7	47.5	6,095	5,678	6,301
4 × 120SF	43.6	43	44.8	6,041	5,289	6,185
4 × 120 SM	41.7	41.1	42.9	6,035	5,360	6,225
4 × 150 RF	54.2	53.6	55.4	7,468	6,904	7,649
4 × 150 RM	51.2	50.6	52.4	7,461	6,957	7,632
4 × 150SF	48.2	47.6	49.4	7,547	6,548	7,707
4 × 150 SM	46	45.4	47.2	7,418	6,584	7,570
4 × 185 RF	60.9	60.3	61.9	9,071	8,366	9,255
4 × 185 RM	56.7	56.1	57.7	9,207	8,603	9,368
4 × 240 RF	65.8	65	67	11,452	10,618	11,683
4 × 240 RM	64	63.2	65.2	11,800	11,010	12,025
5 × 1 RF	10.8	11.6	12.4	190	174	243
5 × 1 RM	11	11.8	12.6	197	186	250
5 × 1.5 RF	11.8	12.6	13.2	228	215	288
5 × 1.5 RM	12	12.8	13.4	243	223	298
5 × 2.5 RF	13.1	13.9	14.5	297	280	356
5 × 2.5 RM	13.2	14	14.6	316	289	366
5 × 4 RF	15	15.8	16.4	435	402	511
5 × 4 RM	15.2	16	16.6	454	419	530
5 × 6 RF	16.6	17.4	18.2	566	522	637
5 × 6 RM	16.7	17.5	18.3	591	546	662
5 × 10 RF	19.2	20	20.8	819	756	901
5 × 10 RM	18.8	19.6	20.4	812	772	912
5 × 16 RF	22.6	23.4	24	1,171	1,079	1,256
5 × 16 RM	21.7	22.5	23.1	1,163	1,099	1,265
5 × 25 RF	28.2	28.2	29	1,793	1,610	1,860
5 × 25 RM	27.7	27.7	28.5	1,852	1,675	1,917
5 × 35 RF	31.2	31.2	32	2,317	2,092	2,420
5 × 35 RM	30.8	30.8	31.6	2,386	2,167	2,459
5 × 50 RF	37.1	36.9	38.1	3,329	3,000	3,434

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
5 × 50 RM	35.6	35.4	36.6	3,236	2,935	3,366
5 × 70 RF	43.3	43.1	44.3	4,660	4,222	4,782
5 × 70 RM	40.6	40.4	41.6	4,530	4,149	4,644
6 × 1.5 RF	12.7	13.5	14.1	264	252	321
6 × 1.5 RM	12.9	13.7	14.3	275	262	333
6 × 2.5 RF	14.7	15.5	16.1	394	366	449
6 × 2.5 RM	14.8	15.6	16.2	406	378	481
7 × 1 RF	11.8	12.6	13.2	222	212	282
7 × 1 RM	12	12.8	13.4	237	219	291
7 × 1.5 RF	12.7	13.5	14.1	270	258	328
7 × 1.5 RM	12.9	13.7	14.3	282	269	340
7 × 2.5 RF	14.7	15.5	16.1	406	378	461
7 × 2.5 RM	14.8	15.6	16.2	420	392	494
8 × 1.5 RF	14	14.8	15.4	348	326	400
8 × 1.5 RM	14.2	15	15.6	362	339	415
9 × 1.5 RF	14.9	15.7	16.3	383	350	459
9 × 1.5 RM	15.1	15.9	16.5	399	364	475
10 × 1 RF	15	15.8	16.4	350	322	426
10 × 1 RM	15.3	16.1	16.7	363	333	439
10 × 1.5 RF	16.2	17	17.8	431	396	500
10 × 1.5 RM	16.4	17.2	18	448	411	518
10 × 2.5 RF	18.3	19.1	19.7	556	529	645
10 × 2.5 RM	18.4	19.2	19.8	576	548	664
12 × 1 RF	15.4	16.2	16.8	375	369	452
12 × 1 RM	15.7	16.5	17.1	389	381	468
12 × 1.5 RF	16.8	17.6	18.2	473	440	535
12 × 1.5 RM	17.1	17.9	18.5	493	459	557
12 × 2.5 RF	18.8	19.6	20.2	608	584	699
12 × 2.5 RM	18.9	19.7	20.3	631	607	722
14 × 1.5 RF	17.6	18.4	19	513	480	599
14 × 1.5 RM	17.9	18.7	19.3	536	502	623
16 × 1 RF	17	17.8	18.4	467	440	531

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
16 × 1 RM	17.3	18.1	18.7	486	457	550
16 × 1.5 RF	18.4	19.2	19.8	559	544	647
16 × 1.5 RM	18.7	19.5	20.1	585	569	675
16 × 2.5 RF	20.9	21.7	22.3	765	720	864
16 × 2.5 RM	20.9	21.7	22.3	794	749	893
19 × 1 RF	17.8	18.6	19.2	508	479	594
19 × 1 RM	18.2	19	19.6	529	518	617
19 × 1.5 RF	19.5	20.3	20.9	642	607	715
19 × 1.5 RM	19.8	20.6	21.2	672	635	747
19 × 2.5 RF	21.9	22.7	23.5	866	818	960
19 × 2.5 RM	22	22.8	23.6	902	854	996
20 × 1 RF	18.5	19.3	19.9	532	516	621
20 × 1 RM	19	19.8	20.4	575	538	647
20 × 1.5 RF	20.4	21.2	21.8	674	631	771
20 × 1.5 RM	20.7	21.5	22.1	706	661	804
20 × 2.5 RF	23.1	23.9	24.5	922	864	1,029
20 × 2.5 RM	23.2	24	24.6	959	901	1,067
24 × 1 RF	20.5	21.3	21.9	629	590	726
24 × 1 RM	21	21.8	22.4	657	634	756
24 × 1.5 RF	22.6	23.4	24	794	745	880
24 × 1.5 RM	23	23.8	24.4	833	782	920
24 × 2.5 RF	25.7	26.5	27.1	1086	1021	1,184
24 × 2.5 RM	25.7	26.5	27.1	1130	1,065	1,228
27 × 1 RF	20.9	21.7	22.3	668	630	766
27 × 1 RM	21.4	22.2	22.8	697	677	798
27 × 1.5 RF	23	23.8	24.4	846	799	933
27 × 1.5 RM	23.4	24.2	24.8	889	840	997
27 × 2.5 RF	26.2	27	27.6	1165	1,103	1,294
27 × 2.5 RM	26.3	27.1	27.7	1216	1,153	1,345
30 × 1 RF	21.6	22.4	23.2	711	692	823
30 × 1 RM	22.1	22.9	23.7	763	722	857
30 × 1.5 RF	23.8	24.6	25.2	904	876	1,014

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter			Approximate net weight of cables		
	Extruded bedding	Tape bedding	Extruded bedding EMC	Extruded bedding	Tape bedding	Extruded bedding EMC
30 × 1.5 RM	24.2	25	25.6	951	921	1,062
30 × 2.5 RF	27.1	27.9	28.5	1,252	1,219	1,384
30 × 2.5 RM	27.1	27.9	28.5	1,307	1,273	1,439
37 × 1 RF	23.3	24.1	24.7	842	801	950
37 × 1 RM	23.9	24.7	25.3	882	858	992
37 × 1.5 RF	25.7	26.5	27.1	1,071	1,021	1,169
37 × 1.5 RM	26.1	26.9	27.5	1,128	1,076	1,256
37 × 2.5 RF	29.3	30.1	30.7	1,499	1,432	1,610
37 × 2.5 RM	29.3	30.1	30.7	1,566	1,500	1,678

Electrical data

Conductor class 2					Conductor class 5			
Bare copper		Tinned copper			Bare copper		Tinned copper	
Cross-section of conductor	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
	R_{20}	R_{90}	R_{20}	R_{90}	R_{20}	R_{90}	R_{20}	R_{90}
mm²	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**
1	18.1	23.1	18.2	23.2	19.5	24.9	20.0	25.5
1.5	12.1	15.4	12.2	15.6	13.3	17.0	13.7	17.5
2.5	7.41	9.45	7.56	9.64	7.98	10.2	8.21	10.47
4	4.61	5.88	4.70	5.99	4.95	6.3	5.09	6.49
6	3.08	3.93	3.11	3.97	3.30	4.2	3.39	4.32
10	1.83	2.33	1.84	2.35	1.91	2.4	1.95	2.49
16	1.15	1.47	1.16	1.48	1.21	1.5	1.24	1.58
25	0.727	0.927	0.734	0.936	0.78	0.995	0.795	1.014
35	0.524	0.668	0.529	0.675	0.554	0.706	0.565	0.720
50	0.387	0.493	0.391	0.499	0.386	0.492	0.393	0.501
70	0.268	0.342	0.270	0.344	0.272	0.347	0.277	0.353
95	0.193	0.249	0.195	0.249	0.206	0.263	0.210	0.268

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Conductor class 2					Conductor class 5			
Bare copper		Tinned copper			Bare copper		Tinned copper	
Cross-section of conductor	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
	R_{20}	R_{90}	R_{20}	R_{90}	R_{20}	R_{90}	R_{20}	R_{90}
120	0.153	0.195	0.154	0.196	0.161	0.205	0.164	0.209
150	0.124	0.158	0.126	0.161	0.129	0.164	0.132	0.168
185	0.0991	0.1264	0.100	0.128	0.106	0.135	0.108	0.138
240	0.0754	0.0961	0.0762	0.0972	0.0801	0.1021	0.0817	0.1042
300	0.0601	0.0766	0.0607	0.0774	0.0641	0.0817	0.0654	0.0834

Current ratings for more than 4-core cables:

Number of cores	Nominal cross-sectional area of conductor		
	1 mm²	**1.5 mm²**	**2.5 mm²**
	A	**A**	**A**
5	10.5	12	16
7	9	10	15
10	8	9	13
12	8	9	12
16	7	8	11
19	7	7	10
20	7	7	10
24	6	6.5	9.5
27	6	6.5	9
30	6	6	9
37	5	6	8

Correction factors for different ambient air temperatures

The ambient temperature of 45°C, on which the current ratings are based, is considered as a standard value for the ambient air temperature, generally applicable for any kind of ship and for navigation in any climate.

FLAMEBLOCKER NKOXSekw
FLAMEBLOCKER NKOXSekw EMC
Cu/XLPE/LSOH/CWB/LSOH 0.6/1 kV
Cu/XLPE/LSOH/CWB/LSOH EMC 0.6/1 kV

Correction factors for various ambient air temperatures

Maximum conductor temperature	90°C									
Ambient temperature °C	35	40	45	50	55	60	65	70	75	80
Correction factors	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Correction factors for cable grouping

Where more than six bunched cables on cable trays, in cable conduits, pipes or trunking are expected to operate simultaneously full rated capacity, a correction factor of 0.85 should be applied.

Short circuit ratings

Cross-section in mm²	Maximum short circuit current rating for 1 s, in kA	Maximum short circuit current rating for 3 s, in kA	Maximum short circuit current rating for 5 s, in kA
1	0.14	0.08	0.06
1.5	0.21	0.12	0.1
2.5	0.36	0.21	0.16
4	0.57	0.33	0.26
6	0.86	0.5	0.38
10	1.43	0.83	0.64
16	2.29	1.32	1.02
25	3.58	2.06	1.6
35	5.01	2.89	2.24
50	7.15	4.13	3.2
70	10.01	5.78	4.48
95	13.59	7.84	6.08
120	17.16	9.91	7.67
150	21.45	12.38	9.59
185	26.46	15.27	11.83
240	34.32	19.81	15.35
300	42.9	24.77	19.19

For 0.6/1 kV cable and maximum normal operating temperature +90°C, short circuit temperature up to 250°C.

FLAME-X 950

NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

IEC 60092-353

Halogen-free, fire resistant shipboard power cables
with cross-linked insulation and halogen-free sheath

CONSTRUCTION

Conductors:		Circular or circular compacted stranded bare or tinned copper class 2 (RM) acc. to IEC 60092-350 and IEC 60228
Insulation:		Special cross-linked compound S 95 acc. to IEC 60092-360
Inner covering:		Bedding tape or/and extruded layer special flame-retardant, halogen-free compound
Sheath:		Halogen-free thermoplastic compound type SHF 1 acc. to IEC 60092-360
Colour of sheath:		Orange, black or other agreed
Core identification:		
	Without green-yellow	**With green-yellow**
HD 308 S2:		
2-core:	Blue, brown	–
3-core:	Brown, black, grey	Green-yellow, blue, brown
4-core:	Blue, brown, black, grey	Green-yellow, brown, black, grey
5-core:	Blue, brown, black, grey, black	Green-yellow, blue, brown, black, grey
7 and more:	Numbered cores	Green-yellow, other cores numbered
	Other colors available on request	Other colors available on request

CHARACTERISTIC

Rated voltage $U_0/U/U_m$:	AC 0.6/1 (1.2) kV DC 0.9/1.5 kV
Test voltage:	3.5 kV
Maximum conductor operating temperature:	+95°C
Lowest ambient temperature for fixed installation:	-40°C

FLAME-X 950
NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

Lowest installation temperature:	-15°C	
Maximum short-circuit conductor temperature:	+350°C [1]	
Minimum bending radius for cable with overall diameter (D):	D < 25 mm	4D
	D > 25 mm	6D

[1] temperature applicable only to power cables and is not appropriate for tinned conductors

Fire performance

Fire resistant :	IEC 60331-21: for cable diameters ≤ 20 mm, IEC 60331-1: for cable diameters > 20 mm
Flame retardant:	IEC 60332-1-2 IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-1 IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

For fixed marine installations, where circuit integrity is required under fire conditions.

Approvals

DNV-GL, ABS, LR, PRS, BV, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Number and cross--sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
n × mm²	**mm**		**kg/km**	
1 × 1 RM	–	5.3	–	39

FLAME-X 950
NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
1 × 1.5 RM	–	5.6	–	46
1 × 2.5 RM	–	6	–	58
1 × 4 RM	–	6.5	–	76
1 × 6 RM	–	7.1	–	99
1 × 10 RM	–	8.2	–	147
1 × 16 RM	–	9.2	–	208
1 × 25 RM	–	11.1	–	316
1 × 35 RM	–	12.2	–	413
1 × 50 RM	–	14.1	–	555
1 × 70 RM	–	15.4	–	755
1 × 95 RM	–	18	–	1,034
1 × 120 RM	–	19.6	–	1,279
1 × 150 RM	–	21.6	–	1,564
1 × 185 RM	–	23.7	–	1,941
1 × 240 RM	–	26.8	–	2,507
1 × 300 RM	–	29.2	–	3,116
2 × 1 RM	9.5	10.3	128	92
2 × 1.5 RM	10.1	10.9	150	107
2 × 2.5 RM	11	11.8	187	134
2 × 4 RM	12.2	13	244	177
2 × 6 RM	13.3	14.1	308	225
2 × 10 RM	15.2	16	431	324
2 × 16 RM	18	18.2	636	460
2 × 25 RM	21.8	21.8	819	756
2 × 35 RM	24.1	24.1	1,056	986
2 × 50 RM	27.7	27.7	1,398	1,316
3 × 1 RM	10	10.8	144	114
3 × 1.5 RM	10.7	11.5	171	135
3 × 2.5 RM	11.8	12.6	222	178
3 × 4 RM	12.9	13.7	288	232
3 × 6 RM	14.1	14.9	370	300
3 × 10 RM	16.1	16.9	527	438
3 × 16 RM	19	19.2	783	631
3 × 25 RM	23.1	23.1	1,075	1,007

FLAME-X 950
NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
3 × 35 RM	25.6	25.6	1,401	1,326
3 × 50 RM	29.6	29.6	1,879	1,791
3 × 70 RM	32.9	32.7	2,553	2,436
3 × 95 RM	38.4	38.2	3,488	3,351
3 × 120 RM	41.6	41.4	4,264	4,114
3 × 150 RM	46.6	46	5,281	5,060
3 × 185 RM	51.1	50.5	6,519	6,276
3 × 240 RM	58	57.2	8,425	8,115
4 × 1 RM	10.9	11.7	169	138
4 × 1.5 RM	11.8	12.6	207	171
4 × 2.5 RM	12.8	13.6	264	219
4 × 4 RM	14.1	14.9	346	290
4 × 6 RM	15.6	16.4	456	386
4 × 10 RM	17.8	18.6	654	565
4 × 16 RM	21	21.2	974	818
4 × 25 RM	25.5	25.5	1,365	1,290
4 × 35 RM	28.3	28.3	1,787	1,703
4 × 50 RM	33	32.8	2,419	2,302
4 × 70 RM	36.4	36.2	3,279	3,149
4 × 95 RM	42.5	42.3	4,478	4,325
4 × 120 RM	46.5	45.9	5,547	5,326
4 × 150 RM	51.8	51.2	6,820	6,573
4 × 185 RM	57	56.2	8,463	8,159
4 × 240 RM	64.6	63.8	10,926	10,580
5 × 1 RM	12	12.8	206	174
5 × 1.5 RM	12.8	13.6	247	209
5 × 2.5 RM	14	14.8	318	271
5 × 4 RM	15.6	16.4	428	369
5 × 6 RM	17.3	18.1	564	491
5 × 10 RM	19.4	20.2	798	705
5 × 16 RM	23	23.2	1,191	1,026
5 × 25 RM	28.2	28.2	1,657	1,574
5 × 35 RM	31.2	31.2	2,172	2,079
5 × 50 RM	36.4	36.2	2,937	2,806

FLAME-X 950
NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
5 × 70 RM	40.4	40	4,008	3,844
6 × 1.5 RM	13.9	14.7	290	249
6 × 2.5 RM	15.4	16.2	382	331
7 × 1 RM	13	13.8	247	211
7 × 1.5 RM	13.9	14.7	299	257
7 × 2.5 RM	15.4	16.2	398	347
8 × 1.5 RM	14.9	15.7	338	294
9 × 1.5 RM	16	16.8	391	327
10 × 1 RM	16.5	17.3	355	297
10 × 1.5 RM	17.8	18.6	438	371
10 × 2.5 RM	19.6	20.4	573	490
12 × 1 RM	17	17.8	392	338
12 × 1.5 RM	18.4	19.2	486	424
12 × 2.5 RM	20.4	21.2	650	573
14 × 1.5 RM	19.3	20.1	543	479
16 × 1 RM	19	19.8	497	440
16 × 1.5 RM	20.5	21.3	618	553
16 × 2.5 RM	22.6	23.4	820	739
19 × 1 RM	20.2	21	566	507
19 × 1.5 RM	21.6	22.4	695	627
19 × 2.5 RM	24	24.8	939	856
20 × 1 RM	21.1	21.9	604	533
20 × 1.5 RM	22.9	23.7	754	671
20 × 2.5 RM	25.1	25.9	1,001	900
24 × 1 RM	23.6	24.4	717	637
24 × 1.5 RM	25.4	26.2	883	790
24 × 2.5 RM	28.1	28.9	1,191	1,077
27 × 1 RM	24.1	24.9	774	697
27 × 1.5 RM	26.1	26.9	968	880
27 × 2.5 RM	29	29.8	1,310	1,201
30 × 1 RM	25	25.8	838	760
30 × 1.5 RM	27	27.8	1,050	960
30 × 2.5 RM	30	30.8	1,425	1,315
37 × 1 RM	27.1	27.9	1,001	919

FLAME-X 950
NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

Number and cross--sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
37 × 1.5 RM	29.3	30.1	1,258	1,163
37 × 2.5 RM	32.7	33.3	1,730	1,595

Current ratings

Current ratings acc. to IEC 60092-352 based on ambient air temperature of 45°C

Nominal cross-sectional area	Insulation class temperature 90°C		
	1-core	2-cores	3-cores & 4-cores
mm²	**A**	**A**	**A**
1	18	15	13
1.5	23	20	16
2.5	40	26	21
4	51	34	28
6	52	44	36
10	72	61	50
16	96	82	67
25	127	108	89
35	157	133	110
50	196	167	137
70	242	206	169
95	293	249	205
120	339	288	237
150	389	331	272
185	444	377	311
240	522	444	365
300	601	511	421

Current ratings for more than 4-core cables:

FLAME-X 950
NKOGs 0.6/1 kV
Cu/SiR/LSOH 0.6/1 kV

Number of cores	Nominal cross-sectional area of conductor		
	1 mm²	**1.5 mm²**	**2.5 mm²**
	A	**A**	**A**
5	10.5	12	16
7	9	10	15
10	8	9	13
12	8	9	12
16	7	8	11
19	7	7	10
20	7	7	10
24	6	6.5	9.5
27	6	6.5	9
30	6	6	9
37	5	6	8

Correction factors for different ambient air temperatures

The ambient temperature of 45°C, on which the current ratings are based, is considered as a standard value for the ambient air temperature, generally applicable for any kind of ship and for navigation in any climate.

Correction factors for various ambient air temperatures

Maximum conductor temperature	90°C									
Ambient temperature °C	35	40	45	50	55	60	65	70	75	80
Correction factors	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Correction factors for cable grouping

Where more than six bunched cables on cable trays, in cable conduits, pipes or trunking are expected to operate simultaneously full rated capacity, a correction factor of 0.85 should be applied,

Short circuit ratings

Cross-section in mm²	Maximum short circuit current rating for 1 s, in kA	Maximum short circuit current rating for 3 s, in kA	Maximum short circuit current rating for 5 s, in kA
1	0.14	0.08	0.06
1.5	0.21	0.12	0.1
2.5	0.36	0.21	0.16
4	0.57	0.33	0.26
6	0.86	0.5	0.38
10	1.43	0.83	0.64
16	2.29	1.32	1.02
25	3.58	2.06	1.6
35	5.01	2.89	2.24
50	7.15	4.13	3.2
70	10.01	5.78	4.48
95	13.59	7.84	6.08
120	17.16	9.91	7.67
150	21.45	12.38	9.59
185	26.46	15.27	11.83
240	34.32	19.81	15.35
300	42.9	24.77	19.19

For 0.6/1 kV cable and maximum normal operating temperature +90°C. Short circuit temperature up to 250°C.

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV

Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

IEC 60092-353

Halogen-free, fire resistant shipboard power cables with cross-linked insulation, halogen-free sheath and screen ensuring full electromagnetic compatibility (EMC)

CONSTRUCTION

Conductors:		Circular or circular compacted stranded bare or tinned copper class 2 (RM) acc. to IEC 60092-350 and IEC 60228
Insulation:		Special cross-linked compound S 95 acc. to IEC 60092-360
Inner covering:		Bedding tape or/and extruded layer special flame-retardant, halogen-free compound
Screen:		NKOGsekw: copper wire braiding NKOGsekw EMC: copper/polyester tape (coverage 100%) & copper wire braid acc. to IEC 60092-350
Sheath:		Halogen-free thermoplastic compound type SHF 1 acc. to IEC 60092-360
Colour of sheath:		Orange, black or other agreed
Core identification:		
	Without green-yellow	**With green-yellow**
HD 308 S2:		
2-core:	Blue, brown	–
3-core:	Brown, black, grey	Green-yellow, blue, brown
4-core:	Blue, brown, black, grey	Green-yellow, brown, black, grey
5-core:	Blue, brown, black, grey, black	Green-yellow, blue, brown, black, grey
7 and more:	Numbered cores	Green-yellow, other cores numbered
	Other colors available on request	Other colors available on request

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

CHARACTERISTIC

Rated voltage $U_0/U/U_m$:	AC 0.6/1 (1.2) kV DC 0.9/1.5 kV
Test voltage:	3.5 kV
Maximum conductor operating temperature:	+95°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Maximum short-circuit conductor temperature:	+350°C [1)]
Minimum bending radius for:	NKOGsekw: 6 × D NKOGsekw EMC: 8 × D D – overall diameter of the cable

[1)] temperature applicable only to power cables and is not appropriate for tinned conductors

Fire performance

Fire resistant :	IEC 60331-21: for cable diameters ≤ 20 mm, IEC 60331-1: for cable diameters > 20 mm
Flame retardant:	IEC 60332-1-2 IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-1 IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

For fixed marine installations, where circuit integrity is required under fire conditions.
Available is also version with EMC (Electro Magnetic Compatibility) protection.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

Approvals

DNV-GL, ABS, LR, PRS, BV, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Number and cross-sectional area of conductor	Approximate overall diameter			Approximate net weight of cables			Maximum conductor resistance at temperature 20°C
	Extruded bedding	Tape bedding	EMC	Extruded bedding	Tape bedding	EMC	
n × mm²		**mm**			**kg/km**		**Ω/km**
1 × 1 RM	6.9	7.7	8.3	83	87	122	18.1
1 × 1.5 RM	7.2	8	8.6	91	100	131	12.1
1 × 2.5 RM	7.6	8.4	9	110	113	145	7.41
1 × 4 RM	8.1	8.9	9.7	128	137	177	4.61
1 × 6 RM	8.9	9.7	10.3	162	165	203	3.08
1 × 10 RM	9.8	10.6	11.2	215	217	259	1.83
1 × 16 RM	11.4	11.6	12.4	299	285	338	1.15
1 × 25 RM	13.3	13.5	14.1	431	406	466	0.727
1 × 35 RM	14.4	14.6	15.8	531	512	628	0.524
1 × 50 RM	16.7	16.9	17.5	751	716	794	0.387
1 × 70 RM	18.2	18.4	19	964	945	1,031	0.268
1 × 95 RM	20.8	21	21.6	1,274	1,248	1,349	0.193
1 × 120 RM	22.2	22.4	23	1,533	1,503	1,593	0.153
1 × 150 RM	24.4	24.6	25.2	1,857	1,802	1,932	0.124
1 × 185 RM	26.5	26.7	27.3	2,252	2,221	2,353	0.0991
1 × 240 RM	29.6	29.8	30.4	2,861	2,821	2,941	0.0754
1 × 300 RM	32	32.2	32.8	3,508	3,434	3,596	0.0601
2 × 1 RM	10.3	11.1	11.7	171	152	224	18.1
2 × 1.5 RM	10.9	11.7	12.5	197	167	255	12.1
2 × 2.5 RM	12	12.8	13.4	244	210	303	7.41
2 × 4 RM	13	13.8	14.4	305	256	357	4.61
2 × 6 RM	14.7	15.5	16.1	424	351	481	3.08
2 × 10 RM	16.4	17.2	18	536	463	629	1.83
2 × 16 RM	19.2	19.4	20	770	664	817	1.15
2 × 25 RM	23	23	24	993	952	1,086	0.727
2 × 35 RM	25.3	25.3	26.1	1,259	1,192	1,327	0.524

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross-sectional area of conductor	Approximate overall diameter			Approximate net weight of cables			Maximum conductor resistance at temperature 20°C
	Extruded bedding	Tape bedding	EMC	Extruded bedding	Tape bedding	EMC	
2 × 50 RM	29.1	29.1	29.9	1,642	1,564	1,721	0.387
3 × 1 RM	10.8	11.6	12.4	193	173	251	18.1
3 × 1.5 RM	11.7	12.5	13.1	231	212	289	12.1
3 × 2.5 RM	12.6	13.4	14	278	249	337	7.41
3 × 4 RM	14.3	15.1	15.7	407	358	463	4.61
3 × 6 RM	15.5	16.3	16.9	487	445	568	3.08
3 × 16 RM	20.4	20.6	21.2	930	852	981	1.15
3 × 25 RM	24.5	24.5	25.3	1,279	1,215	1,355	0.727
3 × 35 RM	27	27	27.8	1,616	1,573	1,719	0.524
3 × 50 RM	30.8	30.8	31.6	2,138	2,054	2,222	0.387
3 × 70 RM	34.3	33.9	35.3	2,854	2,727	2,964	0.268
3 × 95 RM	40	39.8	41.2	3,899	3,815	4,152	0.193
3 × 120 RM	43.4	43.2	44.4	4,746	4,650	4,938	0.153
3 × 150 RM	48.4	47.8	49.4	5,807	5,607	5,963	0.124
3 × 185 RM	52.9	52.3	53.9	7,081	6,876	7,265	0.0991
3 × 240 RM	59.8	59	61	9,058	8,795	9,296	0.0754
4 × 1 RM	11.9	12.7	13.3	229	214	288	18.1
4 × 1.5 RM	12.6	13.4	14	264	242	323	12.1
4 × 2.5 RM	13.6	14.4	15.6	328	299	441	7.41
4 × 4 RM	15.5	16.3	16.9	466	435	546	4.61
4 × 6 RM	17	17.8	18.4	595	533	661	3.08
4 × 10 RM	19	19.8	20.6	802	723	886	1.83
4 × 16 RM	22.2	22.4	23	1,130	1,045	1,186	1.15
4 × 25 RM	26.9	26.9	27.7	1,580	1,537	1,682	0.727
4 × 35 RM	29.7	29.7	30.5	2,031	1,980	2,112	0.524
4 × 70 RM	38.2	38	39.2	3,709	3,581	3,831	0.268
4 × 95 RM	44.3	44.1	45.3	4,961	4,861	5,156	0.193
4 × 120 RM	48.3	47.7	49.3	6,073	5,872	6,229	0.153
4 × 150 RM	53.6	53	54.6	7,391	7,182	7,576	0.124
4 × 185 RM	58.8	58	60	9,085	8,827	9,318	0.0991
4 × 240 RM	66.4	65.4	67.6	11,631	11,307	11,893	0.0754
5 × 1 RM	12.8	13.6	14.2	264	245	324	18.1
5 × 1.5 RM	13.6	14.4	15.6	313	288	425	12.1

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross-sectional area of conductor	Approximate overall diameter			Approximate net weight of cables			Maximum conductor resistance at temperature 20°C
	Extruded bedding	Tape bedding	EMC	Extruded bedding	Tape bedding	EMC	
5 × 2.5 RM	15.4	16.2	16.8	440	417	520	7.41
5 × 4 RM	17	17.8	18.4	568	515	634	4.61
5 × 6 RM	18.5	19.3	19.9	694	648	786	3.08
5 × 10 RM	20.8	21.6	22.2	954	892	1,056	1.83
5 × 16 RM	24.4	24.6	25.2	1,377	1,262	1,448	1.15
5 × 25 RM	29.6	29.6	30.4	1,907	1,855	1,988	0.727
5 × 35 RM	32.6	32.6	33.4	2,456	2,395	2,545	0.524
5 × 50 RM	38.2	37.6	39.2	3,388	3,152	3,510	0.387
5 × 70 RM	42	41.8	43.2	4,501	4,359	4,709	0.268
6 × 1.5 RM	15.3	16.1	16.7	412	394	492	12.1
6 × 2.5 RM	16.6	17.4	18.2	516	470	589	7.41
7 × 1 RM	14.4	15.2	15.8	370	338	426	18.1
7 × 1.5 RM	15.3	16.1	16.7	421	403	501	12.1
7 × 2.5 RM	16.6	17.4	18.2	531	485	605	7.41
8 × 1.5 RM	16.3	17.1	17.7	461	441	544	12.1
9 × 1.5 RM	17.4	18.2	18.8	531	492	619	12.1
10 × 1 RM	17.9	18.7	19.3	496	463	586	18.1
10 × 1.5 RM	19	19.8	20.6	589	529	674	12.1
10 × 2.5 RM	21	21.8	22.4	730	676	833	7.41
12 × 1 RM	18.4	19.2	19.8	533	504	625	18.1
12 × 1.5 RM	19.8	20.6	21.2	647	610	745	12.1
12 × 2.5 RM	21.6	22.4	23	819	769	904	7.41
14 × 1.5 RM	20.7	21.5	22.1	704	666	805	12.1
16 × 1 RM	20.4	21.2	21.8	659	626	759	18.1
16 × 1.5 RM	21.7	22.5	23.3	789	748	886	12.1
16 × 2.5 RM	24	24.8	25.4	1,019	956	1,124	7.41
19 × 1 RM	21.4	22.2	22.8	738	702	822	18.1
19 × 1.5 RM	23	23.8	24.4	876	833	987	12.1
19 × 2.5 RM	25.4	26.2	26.8	1,149	1,101	1,249	7.41
20 × 1 RM	22.5	23.3	23.9	784	739	893	18.1
20 × 1.5 RM	24.1	24.9	25.5	941	876	1,047	12.1
20 × 2.5 RM	26.5	27.3	27.9	1,208	1,146	1,343	7.41
24 × 1 RM	24.8	25.6	26.4	915	871	1,026	18.1

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

Number and cross-sectional area of conductor	Approximate overall diameter			Approximate net weight of cables			Maximum conductor resistance at temperature 20°C
	Extruded bedding	Tape bedding	EMC	Extruded bedding	Tape bedding	EMC	
24 × 1.5 RM	26.8	27.6	28.2	1,091	1,036	1,227	12.1
24 × 2.5 RM	29.5	30.3	30.9	1,426	1,353	1,574	7.41
27 × 1 RM	25.5	26.3	26.9	984	943	1,115	18.1
27 × 1.5 RM	27.3	28.1	28.7	1,194	1,113	1,303	12.1
27 × 2.5 RM	30.2	31	31.6	1,533	1,464	1,683	7.41
30 × 1 RM	26.4	27.2	27.8	1,048	1,006	1,183	18.1
30 × 1.5 RM	28.4	29.2	29.8	1,289	1,236	1,402	12.1
30 × 2.5 RM	31.4	32.2	32.8	1,692	1,593	1,817	7.41
37 × 1 RM	28.5	29.3	29.9	1,242	1,195	1,355	18.1

Current ratings

Current ratings acc. to IEC 60092-352 based on ambient air temperature of 45°C

Nominal cross-sectional area	Insulation class temperature 90°C		
	1-core	2-cores	3-cores & 4-cores
mm²	**A**	**A**	**A**
1	18	15	13
1.5	23	20	16
2.5	40	26	21
4	51	34	28
6	52	44	36
10	72	61	50
16	96	82	67
25	127	108	89
35	157	133	110
50	196	167	137
70	242	206	169
95	293	249	205
120	339	288	237
150	389	331	272

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

Nominal cross-sectional area	Insulation class temperature 90°C		
	1-core	2-cores	3-cores & 4-cores
185	444	377	311
240	522	444	365
300	601	511	421

Current ratings for more than 4-core cables:

Number of cores	Nominal cross-sectional area of conductor		
	1 mm²	**1.5 mm²**	**2.5 mm²**
	A	**A**	**A**
5	10.5	12	16
7	9	10	15
10	8	9	13
12	8	9	12
16	7	8	11
19	7	7	10
20	7	7	10
24	6	6.5	9.5
27	6	6.5	9
30	6	6	9
37	5	6	8

Correction factors for different ambient air temperatures

The ambient temperature of 45°C, on which the current ratings are based, is considered as a standard value for the ambient air temperature, generally applicable for any kind of ship and for navigation in any climate

FLAME-X 950 NKOGsekw 0.6/1 kV
FLAME-X 950 NKOGsekw EMC 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH 0.6/1 kV
Cu/SiR/LSOH/CWB/LSOH EMC 0.6/1 kV

Correction factors for various ambient air temperatures

Maximum conductor temperature	90°C									
Ambient temperature °C	35	40	45	50	55	60	65	70	75	80
Correction factors	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Correction factors for cable grouping

Where more than six bunched cables on cable trays, in cable conduits, pipes or trunking are expected to operate simultaneously full rated capacity, a correction factor of 0.85 should be applied.

Short circuit ratings

Cross-section in mm²	Maximum short circuit current rating for 1 s, in kA	Maximum short circuit current rating for 3 s, in kA	Maximum short circuit current rating for 5 s, in kA
1	0.14	0.08	0.06
1.5	0.21	0.12	0.1
2.5	0.36	0.21	0.16
4	0.57	0.33	0.26
6	0.86	0.5	0.38
10	1.43	0.83	0.64
16	2.29	1.32	1.02
25	3.58	2.06	1.6
35	5.01	2.89	2.24
50	7.15	4.13	3.2
70	10.01	5.78	4.48
95	13.59	7.84	6.08
120	17.16	9.91	7.67
150	21.45	12.38	9.59
185	26.46	15.27	11.83
240	34.32	19.81	15.35
300	42.9	24.77	19.19

For 0.6/1 kV cable and maximum normal operating temperature +90°C, short circuit temperature up to 250°C.

FLAMEBLOCKER NKOXSekw-VFD

1.8/3 kV HD
Cu/XLPE/LSOH/CWB/LSOH VFD 1.8/3 kV

IEC 60092-353

Halogen-free shipboard power cables with cross-linked polyethylene insulation, halogen-free sheath and screen suitable for variable frequency dives (VFD)

CONSTRUCTION

Conductors:	Circular stranded bare copper class 2 (RM) or class 5 (RF) acc. to IEC 60228
Insulation:	≤ 35 mm²: cross-linked polyethylene XLPE acc. to IEC 60092-360 > 35 mm²: cross-linked polyolefin compound HF 90 acc. to IEC 60092-360
Inner covering:	Bedding tape or/and extruded layer special flame-retardant, halogen-free compound
Screen:	Copper/polyester tape coverage 100%
Armour:	Tinned copper wire braid, coverage > 90% acc. to IEC 60092-350
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-360
Colour of sheath:	Black
Core identification:	**HD 308 S2**
1-core: 3-core: 3-core + 3 earth cores:	Black or green-yellow Black, brown, grey Black, brown, grey + 3 green-yellow
	Other colors available on request

CHARACTERISTIC

Rated voltage $U_0/U/U_m$:	AC 1.8/3 (3.6) kV
Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	8 × D D – overall diameter

FLAMEBLOCKER NKOXSekw-VFD
1.8/3 kV HD
Cu/XLPE/LSOH/CWB/LSOH VFD 1.8/3 kV

Fire performance

Flame retardant:	IEC 60332-1-2 IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

For fixed installations in ships. Special cable for variable frequency drives (VFD).

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
n x mm²	**mm**		**kg/km**	
1 × 25 RF	16.5	15.5	539	463
1 × 25 RM	16.3	15.3	531	475
1 × 35 RF	17.5	16.5	640	580
1 × 35 RM	17.4	16.4	655	594
1 × 50 RF	19.6	18.6	858	769
1 × 50 RM	19.1	18.1	827	760
1 × 70 RF	21.4	20.4	1,070	993
1 × 70 RM	20.4	19.4	1,058	986
1 × 95 RF	23.7	22.7	1,334	1,248
1 × 95 RM	22.6	21.6	1,363	1,262
1 × 120 RF	25	24	1,606	1,495
1 × 120 RM	24.2	23.2	1,624	1,536
1 × 150 RF	26.8	25.8	1,893	1,794
1 × 150 RM	25.6	24.6	1,920	1,807
3 × 25 RF	29.3	28.1	1,539	1,308
3 × 25 RM	29	27.8	1,570	1,343

FLAMEBLOCKER NKOXSekw-VFD
1.8/3 kV HD
Cu/XLPE/LSOH/CWB/LSOH VFD 1.8/3 kV

Number and cross-sectional area of conductor	Approximate overall diameter		Approximate net weight of cables	
	Extruded bedding	Tape bedding	Extruded bedding	Tape bedding
3 × 35 RF	31.7	30.5	1,925	1,630
3 × 35 RM	31.4	30.2	1,932	1,674
3 × 50 RF	36.4	34.6	2,656	2,247
3 × 50 RM	35.2	33.4	2,565	2,211
3 × 70 RF	40.9	39.3	3,510	3,073
3 × 70 RM	38.7	37.1	3,421	3,026
3 × 95 RF	45.6	44	4,406	3,871
3 × 95 RM	43.1	41.5	4,423	3,893
3 × 120 RF	48.7	46.5	5,340	4,630
3 × 120 RM	46.9	44.7	5,344	4,730
3 × 150 RF	52.9	50.9	6,417	5,626
3 × 150 RM	50.3	48.3	6,354	5,684
3 × 50 RF + 3 × 6 RF	38.1	36.3	2,771	2,400
3 × 50 RM + 3 × 6 RM	37.1	35.3	2,726	2,352
3 × 70 RF + 3 × 10 RF	42.7	41.1	3,757	3,277
3 × 70 RM + 3 × 10 RM	41.2	39.6	3,643	3,272
3 × 95 RF + 3 × 16 RF	47.7	46.1	4,767	4,195
3 × 95 RM + 3 × 16 RM	45.7	44.1	4,769	4,318
3 × 120 RF + 3 × 25 RF	52.2	50.2	5,843	5,259
3 × 120 RM + 3 × 25 RM	50.9	48.9	5,959	5,429
3 × 150 RF + 3 × 35 RF	56.7	54.7	7,126	6,450
3 × 150 RM + 3 × 35 RM	54.9	52.9	7,183	6,604

	Conductor class 2		Conductor class 5	
	Bare copper		Bare copper	
Cross-section of conductor	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
	R_{20}	R_{90}	R_{20}	R_{90}
mm²	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**
25	0.727	0.927	0.78	0.995
35	0.524	0.668	0.554	0.706
50	0.387	0.493	0.386	0.492
70	0.268	0.342	0.272	0.347

FLAMEBLOCKER NKOXSekw-VFD
1.8/3 kV HD
Cu/XLPE/LSOH/CWB/LSOH VFD 1.8/3 kV

	Conductor class 2		Conductor class 5	
	Bare copper		Bare copper	
Cross-section of conductor	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
	R_{20}	R_{90}	R_{20}	R_{90}
95	0.193	0.249	0.206	0.263
120	0.153	0.195	0.161	0.205
150	0.124	0.158	0.129	0.164

Current ratings

Current ratings acc. to IEC 60092-352 based on ambient air temperature of 45°C

Nominal cross-sectional area	Insulation class temperature 90°C
	3-cores & 4-cores
mm²	**A**
25	89
35	110
50	137
70	169
95	205
120	237
150	272

Correction factors for different ambient air temperatures

The ambient temperature of 45°C, on which the current ratings are based, is considered as a standard value for the ambient air temperature, generally applicable for any kind of ship and for navigation in any climate.

FLAMEBLOCKER NKOXSekw-VFD
1.8/3 kV HD
Cu/XLPE/LSOH/CWB/LSOH VFD 1.8/3 kV

Correction factors for various ambient air temperatures

Maximum conductor temperature	90°C									
Ambient temperature °C	35	40	45	50	55	60	65	70	75	80
Correction factors	1.10	1.05	1.00	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Correction factors for cable grouping

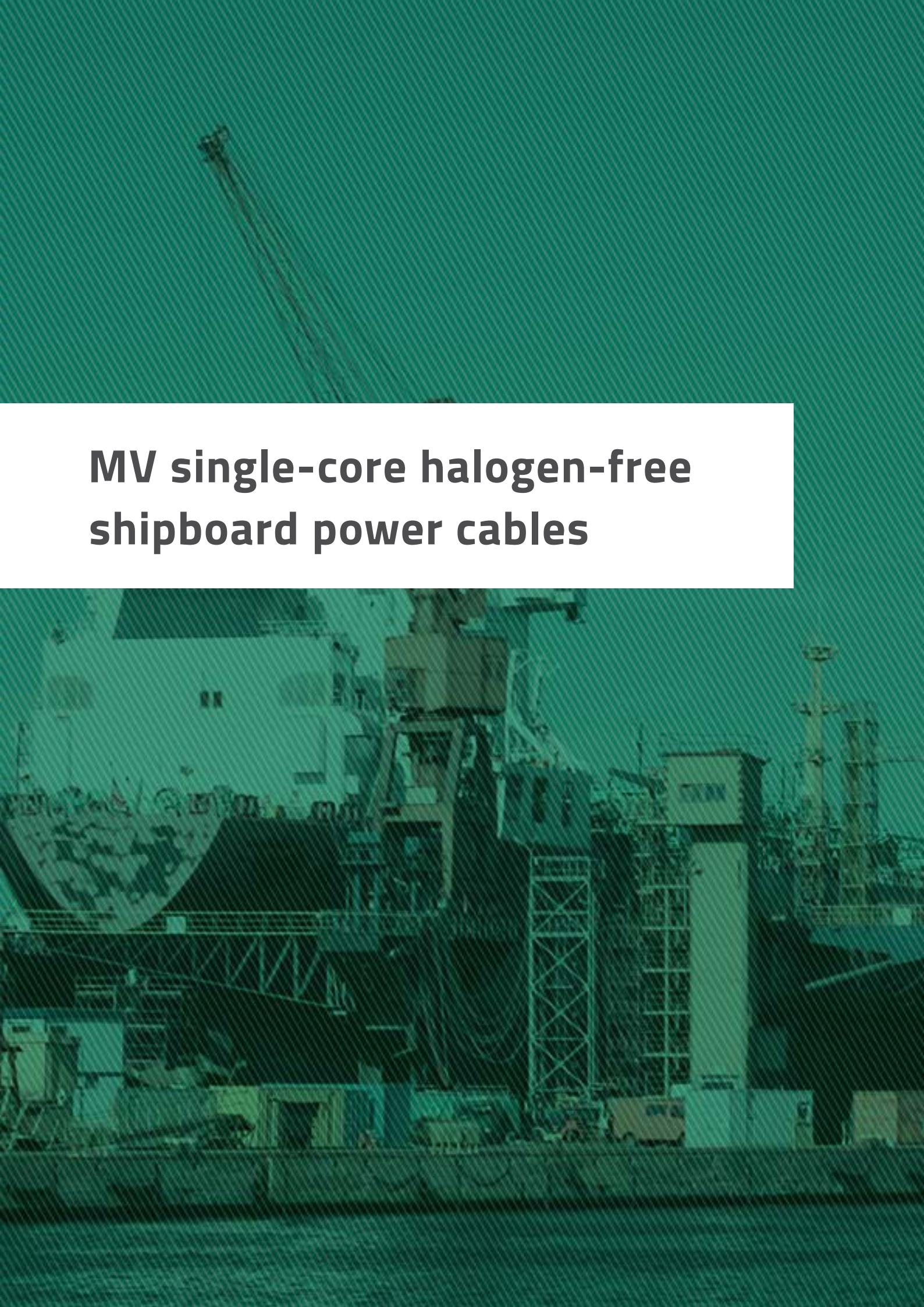
Where more than six bunched cables on cable trays, in cable conduits, pipes or trunking are expected to operate simultaneously full rated capacity, a correction factor of 0.85 should be applied.

Short circuit ratings

Cross-section in mm²	25	35	50	70	95	120	150
Maximum short circuit current rating for 1 s, in kA	3.58	5.01	7.15	10.01	13.59	17.16	21.45
Maximum short circuit current rating for 3 s, in kA	2.06	2.89	4.13	5.78	7.84	9.91	12.38
Maximum short circuit current rating for 5 s, in kA	1.6	2.24	3.2	4.48	6.08	7.67	9.59

For 1.8/3 kV cable and maximum normal operating temperature +90°C, short circuit temperature up to 250°C.

MV single-core halogen-free shipboard power cables



NHKOXSek

Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

IEC 60092-354

Single-core, halogen-free ship board power cable

CONSTRUCTION

Conductors:	Round, stranded and compacted bare copper class 2 acc. to IEC 60228
Insulation:	▪ Extruded semi-conductive conductor screen ▪ Insulation XLPE, dry cured ▪ Extruded semi-conductive insulation screen, fully bonded
Screen:	▪ Semi-conductive tape ▪ Metallic screen, double bare copper tape
Inner covering:	Halogen-free compound
Separator:	Separating tape – optional
Armour (overall screen):	Bare copper braid
Separator:	Separating tape – optional
Outer sheath:	Halogen-free compound type SHF 1
Colour of sheath:	Red

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum short-circuit conductor temperature:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	0°C
Minimum bending radius:	15 × D D – overall diameter of cable

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Used for fixed installations on board of ships laying in air, but not on open decks

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Description	Unit	Details				
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 35/16**	**1 × 50/16**	**1 × 70/16**	**1 × 95/16**	**1 × 120/16**
		Construction data				
Phase copper round conductor:						
▪ Nominal cross sectional area	mm²	35	50	70	95	120
▪ Number of wires	No.	7	19	19	19	36
▪ Diameter and tolerance	mm	6.96 $^{+0.15}$	8.15 $^{+0.2}$	9.6 $^{+0.2}$	11.5 $^{+0.2}$	12.8 $^{+0.3}$
Minimum thickness of semi-conductive XLPE on conductor	mm			0.30		
Insulation thickness:						
▪ Nominal	mm			3.4		
▪ Minimum at a point	mm			2.96		
Approximate diameter over insulation	mm	14.8	16.0	17.4	19.3	20.6
Minimum thickness of semi-conductive XLPE on insulation	mm			0.30		
Approximate thickness of semi--conductive tape	mm			0.4		
Metallic screen:						
▪ Nominal cross sectional area	mm²	16		16		
▪ Copper tapes, no. And dimensions	No. × mm × mm	2 × 30 × 0.30		2 × 40 × 0.20		

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Description	Unit	Details				
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 35/16**	**1 × 50/16**	**1 × 70/16**	**1 × 95/16**	**1 × 120/16**
Approximate thickness of inner covering	mm			1.0		
Nominal dia. of wires of bare copper braid	mm			0.3		
Number of wires in copper braid	No.	24 × 10	36 × 7	36 × 7	36 × 7	36 × 7
Outer sheath thickness						
▪ Nominal	mm	1.7	1.7	1.7	1.8	1.9
▪ Minimum at a point	mm	1.16	1.16	1.16	1.24	1.32
Approximate overall diameter of complete cable (D)	mm	25.0	26.2	27.2	29.1	30.6
Approximate weight of complete cable	kg/km	1,170	1,320	1,530	1,820	2,110
		Delivery data				
Length per drum ± 5%	m			1,000		
Diameter and max. width of wooden drum, type	m × m	1.60 × 1.06 16	1.60 × 1.06 16	1.60 × 1.06 16	1.60 × 1.06 16	1.80 × 1.07 18
Approximate weight of heaviest reel including cable	kg	1,400	1,550	1,760	2,050	2,340
		Mechanical data				
Recommended minimum bending radius for laying	m	0.38	0.39	0.41	0.44	0.46
Maximum permissible pulling force with a pulling eye on conductor	kN	1.75	2.50	3.50	4.75	6.00
		Electrical data				
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.524	0.387	0.268	0.193	0.153
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.668	0.496	0.345	0.249	0.198
		Short circuit currents				
Maximum permissible thermal short-circuit current for 1 sec.						
Phase conductor from 90°C to 250°C	kA	5.0	7.2	10.0	13.6	17.2
Metallic screen from 80°C to 180°C	kA	1.9	1.9	1.9	1.9	1.9
		Ampacity, in free air, ambient temperature 45°C, acc. to IEC 60092-352 Table A.4				

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Description	Unit	Details				
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 35/16**	**1 × 50/16**	**1 × 70/16**	**1 × 95/16**	**1 × 120/16**
Trefoil formation	A	147	180	233	285	333
Vertical Flat formation and spaced	A	175	214	277	338	395

Description	Unit	Details			
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 150/25**	**1 × 185/25**	**1 × 240/25**	**1 × 300/25**
		Construction data			
Phase copper round conductor:					
▪ Nominal cross sectional area	mm²	150	185	240	300
▪ Number of wires	No.	36	36	60	60
▪ Diameter and tolerance	mm	$14.25^{+0.30}$	$15.85^{+0.30}$	$18.5^{+0.3}$	$20.5^{+0.3}$
Minimum thickness of semi-conductive XLPE on conductor	mm	0.30			
Insulation thickness:					
▪ Nominal	mm	3.4			
▪ Minimum at a point	mm	2.96			
Approximate diameter over insulation	mm	22.1	23.7	26.3	28.3
Minimum thickness of semi-conductive XLPE on insulation	mm	0.30			
Approximate thickness of semi--conductive tape	mm	0.4			
Metallic screen:					
▪ Nominal cross sectional area	mm²	25			
▪ Copper tapes, No. and dimensions	No. × mm × mm	2 × 50 × 0.25			
Approximate thickness of inner covering	mm	1.0		1.2	
Nominal dia. of wires of bare copper braid	mm	0.3		0.4	
Number of wires in copper braid	No.	36 × 11	36 × 11	36 × 7	36 × 7
Outer sheath thickness					
▪ Nominal	mm	1.9	2.0	2.1	2.2
▪ Minimum at a point	mm	1.32	1.40	1.48	1.56
Approximate overall diameter of complete cable (D)	mm	32.3	34.5	37.7	39.9

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Description	Unit	Details			
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 150/25**	**1 × 185/25**	**1 × 240/25**	**1 × 300/25**
Approximate weight of complete cable	kg/km	2.,510	2,960	3,650	4,320
		Delivery data			
Length per drum ± 5%	m	1.80 × 1.07	2.00 × 1.09	2.00 × 1.09	2.20 × 1.49
Diameter and max. width of wooden drum, type	m × m	1.60 × 1.06 18	1.60 × 1.06 20	1.60 × 1.06 20	1.60 × 1.06 22A
Approximate weight of heaviest reel including cable	kg	2,820	3,400	4,060	5,000
		Mechanical data			
Recommended minimum bending radius for laying	m	0.48	0.52	0.57	0.60
Maximum permissible pulling force with a pulling eye on conductor	kN	7.50	9.25	12.0	15.0
		Electrical data			
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.124	0.0991	0.0754	0.0601
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.163	0.1310	0.1010	0.0830
		Short circuit currents			
Maximum permissible thermal short-circuit current for 1 sec.					
Phase conductor from 90°C to 250°C	kA	21.5	26.5	34.3	42.9
Metallic screen from 80°C to 180°C	kA	2.9	2.9	2.9	2.9
		Ampacity, in free air, ambient temperature 45°C, acc. to IEC 60092-352 Table A.4			
Trefoil formation	A	386	444	528	612
Vertical flat formation and spaced	A	458	526	626	725

NHKOXSek

Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

IEC 60092-354

Single-core, halogen-free ship board power cable

CONSTRUCTION

Conductors:	Round, stranded and compacted bare copper class 2 acc. to IEC 60228
Insulation:	▪ Extruded semi-conductive conductor screen ▪ Insulation XLPE, dry cured ▪ Extruded semi-conductive insulation screen, fully bonded
Screen:	▪ Semi-conductive tape ▪ Metallic screen, double bare copper tape
Inner covering:	Halogen-free compound
Separator:	Separating tape – optional
Armour (overall screen):	Bare copper braid
Separator:	Separating tape – optional
Outer sheath:	Halogen-free compound type SHF 1
Colour of sheath:	Red

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum short-circuit conductor temperature:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	0°C
Minimum bending radius:	15 × D; D – overall diameter of cable

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Used for fixed installations on board of ships laying in air, but not on open decks

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Description	Unit	Details				
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 35/16**	**1 × 50/16**	**1 × 70/16**	**1 × 95/16**	**1 × 120/16**
		Construction data				
Phase copper round conductor:						
▪ Nominal cross sectional area	mm²	35	50	70	95	120
▪ Number of wires	No.	7	19	19	19	36
▪ Diameter and tolerance	mm	$6.96^{+0.15}$	$8.15^{+0.2}$	$9.6^{+0.2}$	$11.5^{+0.2}$	$12.8^{+0.3}$
Minimum thickness of semi-conductive XLPE on conductor	mm	0.30				
Insulation thickness:						
▪ Nominal	mm	4.5				
▪ Minimum at a point	mm	3.95				
Approximate diameter over insulation	mm	17.0	18.2	19.6	21.5	22.8
Minimum thickness of semi-conductive XLPE on insulation	mm	0.30				
Approximate thickness of semi--conductive tape	mm	0.4				
Metallic screen:						
▪ Nominal cross sectional area	mm²	16				
▪ Copper tapes, No. and dimensions	No. × mm × mm	2 × 40 × 0.20				

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Description	Unit	Details				
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 35/16**	**1 × 50/16**	**1 × 70/16**	**1 × 95/16**	**1 × 120/16**
Approximate thickness of inner covering	mm			1.0		
Nominal dia. of wires of bare copper braid	mm			0.3		
Number of wires in copper braid	No.	36 × 7	36 × 7	36 × 7	36 × 8	36 × 8
Outer sheath thickness						
▪ Nominal	mm	1.7	1.8	1.8	1.9	2.0
▪ Minimum at a point	mm	1.16	1.24	1.24	1.32	1.40
Approximate overall diameter of complete cable (D)	mm	26.8	28.0	29.4	31.5	33.0
Approximate weight of complete cable	kg/km	1,240	1,390	1,640	1,960	2,240
	Delivery data					
Length per drum ± 5%	m			1,000		
Diameter and max. width of wooden drum, type	m × m	1.60 × 1.06 16	1.60 × 1.06 16	1.60 × 1.06 16	1.80 × 1.07 18	2.00 × 1.09 20
Approximate weight of heaviest reel including cable	kg	1,470	1,620	1,870	2,270	2,680
	Mechanical data					
Recommended minimum bending radius for laying	m	0.40	0.42	0.44	0.47	0.50
Maximum permissible pulling force with a pulling eye on conductor	kN	1.75	2.50	3.50	4.75	6.00
	Electrical data					
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.524	0.387	0.268	0.193	0.153
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.668	0.496	0.345	0.249	0.198
	Short circuit currents					
Maximum permissible thermal short-circuit current for 1 sec.						
Phase conductor from 90°C to 250°C	kA	5.0	7.2	10.0	13.6	17.2
Metallic screen from 80°C to 180°C	kA	1.9	1.9	1.9	1.9	1.9

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Description	Unit	Details				
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 35/16**	**1 × 50/16**	**1 × 70/16**	**1 × 95/16**	**1 × 120/16**
	Ampacity, in free air, ambient temperature 45°C, acc. to IEC 60092-352 Table A.4					
Trefoil formation	A	147	180	233	285	333
Vertical flat formation and spaced	A	175	214	277	338	395

Description	Unit	Details			
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 150/25**	**1 × 185/25**	**1 × 240/25**	**1 × 300/25**
	Construction data				
Phase copper round conductor:					
▪ Nominal cross sectional area	mm²	150	185	240	300
▪ Number of wires	No.	36	36	60	60
▪ Diameter and tolerance	mm	$14.25^{+0.30}$	$15.85^{+0.30}$	$18.5^{+0.3}$	$20.5^{+0.3}$
Minimum thickness of semi-conductive XLPE on conductor	mm	0.30			
Insulation thickness:					
▪ Nominal	mm	4.5			
▪ Minimum at a point	mm	3.95			
Approximate diameter over insulation	mm	24.3	25.9	28.5	30.5
Minimum thickness of semi-conductive XLPE on insulation	mm	0.30			
Approximate thickness of semi--conductive tape	mm	0.4			
Metallic screen:					
▪ Nominal cross sectional area	mm²	25			
▪ Copper tapes, No. and dimensions	No. × mm × mm	2 × 50 × 0.25			
Approximate thickness of inner covering	mm	1.2			
Nominal dia. of wires of bare copper braid	mm	0.3		0.4	
Number of wires in copper braid	No.	36 × 11	36 × 7	36 × 7	36 × 8
Outer sheath thickness					
▪ Nominal	mm	2.0	2.1	2.2	2.3
▪ Minimum at a point	mm	1.40	1.48	1.56	1.64
Approximate overall diameter of complete cable (D)	mm	35.1	37.3	40.1	42.3

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Description	Unit	Details			
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**1 × 150/25**	**1 × 185/25**	**1 × 240/25**	**1 × 300/25**
Approximate weight of complete cable	kg/km	2,690	3,200	3,820	4,510
		Delivery data			
Length per drum ± 5%	m	1,000			
Diameter and max. width of wooden drum, type	m × m	2.00 × 1.09 20	2.00 × 1.09 20A	2.20 × 1.49 22A	2.20 × 1.49 22A
Approximate weight of heaviest reel including cable	kg	3,260	3,610	4,500	5,190
		Mechanical data			
Recommended minimum bending radius for laying	m	0.53	0.56	0.60	0.63
Maximum permissible pulling force with a pulling eye on conductor	kN	7.50	9.25	12.0	15.0
		Electrical data			
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.124	0.0991	0.0754	0.0601
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.163	0.1310	0.1010	0.0830
		Short circuit currents			
Maximum permissible thermal short-circuit current for 1 sec.					
Phase conductor from 90°C to 250°C	kA	21.5	26.5	34.3	42.9
Metallic screen from 80°C to 180°C	kA	2.9	2.9	2.9	2.9
		Ampacity, in free air, ambient temperature 45°C, acc. to IEC 60092-352 Table A.4			
Trefoil formation	A	386	444	528	612
Vertical flat formation and spaced	A	458	526	626	725

MV three-core halogen-free shipboard power cables

NHKOXSek

Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

IEC 60092-354

Three-core, halogen-free shipboard power cable

CONSTRUCTION

Conductors:	Round, stranded and compacted bare copper class 2 acc. to IEC 60228
Insulation:	▪ Extruded semi-conductive conductor screen ▪ Insulation XLPE, dry cured ▪ Extruded semi-conductive insulation screen, fully bonded
Screen:	▪ Semi-conductive tape ▪ Metallic screen, double bare copper tapes over each core
Forming:	Assembly of cores with central filler
Inner covering:	Halogen-free compound
Separator:	Separating tape – optional
Armour (overall screen):	Bare copper braid
Separator:	Separating tape – optional
Outer sheath:	Halogen-free compound type SHF 1
Colour of sheath:	Red

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum short-circuit conductor temperature:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	0°C
Minimum bending radius:	15 × D; D – overall diameter of cable

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Used for fixed installations on board of ships laying in air, but not on open decks

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 35/16**	**3 × 50/16**	**3 × 70/16**
		Construction data		
Phase copper round conductor:				
▪ Nominal cross sectional area	mm²	35	50	70
▪ Number of wires	No.	7	19	19
▪ Diameter and tolerance	mm	6.96$^{+0.15}$	8.15$^{+0.2}$	9.6$^{+0.2}$
Minimum thickness of semi-conductive XLPE on conductor	mm	0.30		
Insulation thickness:				
▪ Nominal	mm	3.4		
▪ Minimum at a point	mm	2.96		
Approximate diameter over insulation	mm	14.8	16.0	17.4
Minimum thickness of semi-conductive XLPE on insulation	mm	0.30		
Approximate thickness of semi--conductive tape	mm	0.4		
Metallic screen:				
▪ Nominal cross sectional area	mm²	16		
▪ Copper tapes, No. and dimensions	No. × mm × mm	(3 × 2) × 30 × 0.10		

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 35/16**	**3 × 50/16**	**3 × 70/16**
Approximate diameter over stranded cores	mm	36.6	39.2	42.3
Approximate thickness of inner covering	mm		1.4	
Nominal dia. of wires of bare copper braid	mm		0.4	
Number of wires in copper braid	No.	36 × 8	36 × 9	36 × 9
Outer sheath thickness				
▪ Nominal	mm	2.5	2.6	2.7
▪ Minimum at a point	mm	1.80	1.88	1.96
Approximate overall diameter of complete cable (D)	mm	46.4	49.2	52.5
Approximate weight of complete cable	kg/km	3,430	4,000	4,840
		Delivery data		
Length per drum ± 5%	m		500	
Diameter and max. width of wooden drum, type	m × m	2.00 × 1.09 20	2.00 × 1.09 20A	2.00 × 1.09 20A
Approximate weight of heaviest reel including cable	kg	2,160	2,410	2,830
		Mechanical data		
Recommended minimum bending radius for laying	m	0.70	0.74	0.79
Maximum permissible pulling force with a pulling eye on conductor	kN	5.25	7.50	10.50
		Electrical data		
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.524	0.387	0.268
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.668	0.496	0.345
		Short circuit currents		
Maximum permissible thermal short-circuit current for 1 sec.				
Phase conductor from 90°C to 250°C	kA	5.0	7.2	10.0

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 35/16**	**3 × 50/16**	**3 × 70/16**
Metallic screen from 80°C to 180°C	kA	1.9	1.9	1.9
		Ampacity, acc. to IEC 60092-352 Table A.4		
In free air, ambient temperature 45°C	A	137	167	214

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 95/16**	**3 × 120/16**	**3 × 150/25**
		Construction data		
Phase copper round conductor:				
▪ Nominal cross sectional area	mm²	95	120	150
▪ Number of wires	No.	19	36	36
▪ Diameter and tolerance	mm	$11.5^{+0.2}$	$12.8^{+0.3}$	$14.25^{+0.30}$
Minimum thickness of semi-conductive XLPE on conductor	mm	0.30		
Insulation thickness:				
▪ Nominal	mm	3.4		
▪ Minimum at a point	mm	2.96		
Approximate diameter over insulation	mm	19.3	20.6	22.1
Minimum thickness of semi-conductive XLPE on insulation	mm	0.30		
Approximate thickness of semi--conductive tape	mm	0.4		
Metallic screen:				
▪ Nominal cross sectional area	mm²	16		25
▪ Copper tapes, No. and dimensions	No. × mm × mm	(3 × 2) × 30 × 0.10		(3 × 2) × 40 × 0.12
Approximate diameter over stranded cores	mm	46.4	49.2	52.5
Approximate thickness of inner covering	mm	1.6		
Nominal dia. of wires of bare copper braid	mm	0.4		
Number of wires in copper braid	No.	36 × 10	36 × 10	36 × 12
Outer sheath thickness				
▪ Nominal	mm	2.9	3.0	3.1
▪ Minimum at a point	mm	2.12	2.20	2.28

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
6/10 (12) kV

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 95/16**	**3 × 120/16**	**3 × 150/25**
Approximate overall diameter of complete cable (D)	mm	57.4	60.4	63.9
Approximate weight of complete cable	kg/km	6,030	7,000	8,160
		Delivery data		
Length per drum ± 5%	m		500	
Diameter and max. width of wooden drum, type	m × m	2.20 × 1.34 22	2.20 × 1.34 22	2.40 × 1.44 24
Approximate weight of heaviest reel including cable	kg	3,630	4,120	4,830
		Mechanical data		
Recommended minimum bending radius for laying	m	0.86	0.91	0.96
Maximum permissible pulling force with a pulling eye on conductor	kN	14.25	18.00	22.50
		Electrical data		
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.193	0.153	0.124
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.249	0.198	0.163
		Short circuit currents		
Maximum permissible thermal short-circuit current for 1 sec.				
Phase conductor from 90°C to 250°C	kA	13.6	17.2	21.5
Metallic screen from 80°C to 180°C	kA	1.9	1.9	1.9
		Ampacity, acc. to IEC 60092-352 Table A.4		
In free air, ambient temperature 45°C	A	259	301	347

NHKOXSek

Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

IEC 60092-354

Three-core, halogen-free shipboard power cable

CONSTRUCTION

Conductors:	Round, stranded and compacted bare copper class 2 acc. to IEC 60228
Insulation:	▪ Extruded semi-conductive conductor screen ▪ Insulation XLPE, dry cured ▪ Extruded semi-conductive insulation screen, fully bonded
Screen:	▪ Semi-conductive tape ▪ Metallic screen, double bare copper tapes over each core
Forming:	Assembly of cores with central filler
Inner covering:	Halogen-free compound
Separator:	Separating tape – optional
Armour (overall screen):	Bare copper braid
Separator:	Separating tape – optional
Outer sheath:	Halogen-free compound type SHF 1
Colour of sheath:	Red

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum short-circuit conductor temperature:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	0°C
Minimum bending radius:	15 × D; D – overall diameter of cable

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Used for fixed installations on board of ships laying in air, but not on open decks

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 35/16**	**3 × 50/16**	**3 × 70/16**
		Construction data		
Phase copper round conductor:				
▪ Nominal cross sectional area	mm²	35	50	70
▪ Number of wires	No.	7	19	19
▪ Diameter and tolerance	mm	6.96$^{+0.15}$	8.15$^{+0.2}$	9.6$^{+0.2}$
Minimum thickness of semi-conductive XLPE on conductor	mm		0.30	
Insulation thickness:				
▪ Nominal	mm		4.5	
▪ Minimum at a point	mm		3.95	
Approximate diameter over insulation	mm	17.0	18.2	19.6
Minimum thickness of semi-conductive XLPE on insulation	mm		0.30	
Approximate thickness of semi-conductive tape	mm		0.4	
Metallic screen:				
▪ Nominal cross sectional area	mm²		16	
▪ Copper tapes, No. and dimensions	No. × mm × mm		(3 × 2) × 30 × 0.10	

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 35/16**	**3 × 50/16**	**3 × 70/16**
Approximate diameter over stranded cores	mm	41.3	43.9	47.0
Approximate thickness of inner covering	mm	1.4		1.6
Nominal dia. of wires of bare copper braid	mm		0.4	
Number of wires in copper braid	No.	36 × 9	36 × 10	36 × 10
Outer sheath thickness				
▪ Nominal	mm	2.6	2.7	2.9
▪ Minimum at a point	mm	1.88	1.96	2.12
Approximate overall diameter of complete cable (D)	mm	51.4	54.1	58.0
Approximate weight of complete cable	kg/km	3,930	4,540	5,500
		Delivery data		
Length per drum ± 5%	m		500	
Diameter and max. width of wooden drum, type	m × m	2.00 × 1.09 20A	2.00 × 1.09 20A	2.20 × 1.34 22
Approximate weight of heaviest reel including cable	kg	2,370	2,680	3,370
		Mechanical data		
Recommended minimum bending radius for laying	m	0.77	0.81	0.87
Maximum permissible pulling force with a pulling eye on conductor	kN	5.25	7.50	10.50
		Electrical data		
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.524	0.387	0.268
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.668	0.496	0.345
		Short circuit currents		
Maximum permissible thermal short-circuit current for 1 sec.				
Phase conductor from 90°C to 250°C	kA	5.0	7.2	10.0

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 35/16**	**3 × 50/16**	**3 × 70/16**
Metallic screen from 80°C to 180°C	kA	1.9	1.9	1.9
		Ampacity, acc. to IEC60092-352 Table A.4		
In free air, ambient temperature 45°C	A	137	167	214

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 95/16**	**3 × 120/16**	**3 × 150/25**
		Construction data		
Phase copper round conductor				
▪ Nominal cross sectional area	mm²	95	120	150
▪ Number of wires	No.	19	36	36
▪ Diameter and tolerance	mm	$11.5^{+0.2}$	$12.8^{+0.3}$	$14.25^{+0.30}$
Minimum thickness of semi-conductive XLPE on conductor	mm	0.30		
Insulation thickness:				
▪ Nominal	mm		4.5	
▪ Minimum at a point	mm		3.95	
Approximate diameter over insulation	mm	21.5	22.8	24.3
Minimum thickness of semi-conductive XLPE on insulation	mm	0.30		
Approximate thickness of semi-conductive tape	mm	0.4		
Metallic screen:				
▪ Nominal cross sectional area	mm²	16		25
▪ Copper tapes, No. and dimensions	No. × mm × mm	(3×2) × 30 × 0.10		(3×2) × 50 × 0.10
Approximate diameter over stranded cores	mm	51.1	53.9	57.0
Approximate thickness of inner covering	mm		1.6	
Nominal dia. of wires of bare copper braid	mm		0.4	
Number of wires in copper braid	No.	36 × 11	36 × 12	36 × 12
Outer sheath thickness				
▪ Nominal	mm	3.1	3.2	3.3
▪ Minimum at a point	mm	2.28	2.36	2.44
Approximate overall diameter of complete cable (D)	mm	62.5	65.5	68.9
Approximate weight of complete cable	kg/km	6,700	7,670	8,830

NHKOXSek
Cu/XLPE/CTS/LSOH/CWB/LSOH
8.7/15 (17.5) kV

Description	Unit	Details		
Number and nominal cross-section of the conductors	**No. × mm²/mm²**	**3 × 95/16**	**3 × 120/16**	**3 × 150/25**
		Delivery data		
Length per drum ± 5%	m		500	
Diameter and max. width of wooden drum, type	m × m	2.20 × 1.34 22	2.40 × 1.44 24	2.40 × 1.44 24A
Approximate weight of reel including cable	kg	3,970	4,590	5,120
		Mechanical data		
Recommended minimum bending radius for laying	m	0.94	0.98	1.03
Maximum permissible pulling force with a pulling eye on conductor	kN	14.25	18.00	22.50
		Electrical data		
Maximum D.C. phase conductor resistance at 20°C	Ω/km	0.193	0.153	0.124
Maximum A.C. phase conductor resistance at 90°C	Ω/km	0.249	0.198	0.163
		Short circuit currents		
Maximum permissible thermal short-circuit current for 1 sec. Phase conductor from 90°C to 250°C	kA	13.6	17.2	21.5
Metallic screen from 80°C to 180°C	kA	1.9	1.9	2.9
		Ampacity, acc. to IEC 60092-352 Table A.4		
In free air, ambient temperature 45°C	A	259	301	347

Type MVEPRHXCuHX

Marine Cables 6/10 (12) kV

IEC 60092-350, IEC 60092-354

EPR Insulated, polyolefin jacketed, marine cable

CONSTRUCTION

Conductors	Annealed stranded bare copper Class 2 in accordance IEC 60228
Conductor shield	Semi-conductive tape layer between the conductor and insulation
Insulation	Ethylene-propylene rubber type E 90 to 3.22 UL 1309
Insulation shield	Semi-conductive layer + bare copper tape
Inner covering	Polyolefin
Armouring	Bare copper braid
Jacket:	Polyolefin thermosetting compound, halogen-free
Colour of jacket	Red

CHARACTERISTIC

Maximum conductor temperature:	90°C
Temperature range:	-15°C to +50°C

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1 IEC 60754-2

Applications

- For fixed installations on board of ships at all levels and open decks
- Cables are halogen-free, non corrosive and low toxic gases
- Other industrial applications

Type MVEPRHXCuHX
Marine Cables 6/10 (12) kV

Approvals

ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Size	Outer diameter			Approximate weight
mm²	**Minimum mm**	**Approx. mm**	**Maximum mm**	**kg/km**
3 × 25	42.00	45.50	46.50	3,263
3 × 35	44.50	47.90	49.50	3,744
3 × 50	47.00	51.00	51.50	4,377
3 × 70	50.50	54.10	56.00	5,262
3 × 95	54.50	59.10	60.00	6,511
3 × 120	58.50	62.40	64.50	7,529
3 × 150	61.50	66.20	67.50	8,717

Size	Stranding	Conductor diameter	Thickness of semi--con. tape +layer over conductor	Thickness of insulation	Thickness of semi-con + Cu over insulation	Diameter over ins. and screens	Thickness of inner covering	Thickness of screen Cu wires	Thickness of outer covering
mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**
3 × 25	7 × 2.13	6.10	0.2 + 0.7	3.4	0.8 + 0.127	16.70	1.4	0.4	2.4
3 × 35	7 × 2.55	7.15	0.2 + 0.7	3.4	0.8 + 0.127	17.70	1.4	0.4	2.5
3 × 50	19 × 1.84	8.25	0.2 + 0.7	3.4	0.8 + 0.127	19.00	1.4	0.4	2.6
3 × 70	19 × 2.17	9.8	0.2 + 0.7	3.4	0.8 + 0.127	20.40	1.4	0.4	2.7
3 × 95	19 × 2.55	11.75	0.2 + 0.7	3.4	0.8 + 0.127	22.30	1.6	0.4	2.9
3 × 120	19 × 2.96	13.15	0.2 + 0.7	3.4	0.8 + 0.127	23.70	1.6	0.4	3.1
3 × 150	37 × 2.25	14.80	0.2 + 0.7	3.4	0.8 + 0.127	25.40	1.6	0.4	3.2

* Single core constructions are available on request

Type MVEPRHXCuHX

Marine Cables 8.7/15 (17.5) kV

IEC 60092-350, IEC 60092-354

EPR Insulated, polyolefin jacketed, marine cable

CONSTRUCTION

Conductors	Annealed stranded bare copper Class 2 in accordance IEC 60228
Conductor shield	Semi-conductive tape layer between the conductor and insulation
Insulation	Ethylene-propylene rubber type E 90 to 3.22 UL 1309
Insulation shield	Semi-conductive layer + bare copper tape
Inner covering	Polyolefin
Armouring	Bare copper braid
Jacket:	Polyolefin thermosetting compound, halogen-free
Colour of jacket	Red

CHARACTERISTIC

Maximum conductor temperature:	90°C
Temperature range:	-15°C to +50°C

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1 IEC 60754-2

Applications

- For fixed installations on board of ships at all levels and open decks
- Cables are halogen-free, non corrosive and low toxic gases
- Other industrial applications

Type MVEPRHXCuHX
Marine Cables 8.7/15 (17.5) kV

Approvals

ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Size	Outer diameter			Approximate weight
mm²	**Minimum mm**	**Approx. mm**	**Maximum mm**	**kg/km**
3 × 25	47.5	49.1	52.0	3,905
3 × 35	49.5	50.3	54.5	4,438
3 × 50	52.0	52.8	57.0	5,108
3 × 70	56.0	56.2	61.5	6,175
3 × 95	59.5	63.8	65.5	7,325
3 × 120	63.5	67.3	69.5	8,505
3 × 150	66.5	71.1	73.5	9,744
3 × 185	69.5	74.4	78.0	11,150
3 × 240	79.0	83.5	87.5	13,936

Size	Stranding	Conductor diameter	Thickness of semi-con. tape +layer over conductor	Thickness of insulation	Thickness of semi-con + Cu over insulation	Diameter over ins. and screens	Thickness of inner covering	Thickness of screen Cu wires	Thickness of outer covering
mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**
3 × 25	7 × 2.13	6.10	0.2 + 0.7	4.5	0.8 + 0.127	40.60	1.4	0.4	2.6
3 × 35	7 × 2.55	7.15	0.2 + 0.7	4.5	0.8 + 0.127	42.90	1.4	0.4	2.7
3 × 50	19 × 1.84	8.25	0.2 + 0.7	4.5	0.8 + 0.127	45.70	1.6	0.4	2.8
3 × 70	19 × 2.17	9.8	0.2 + 0.7	4.5	0.8 + 0.127	50.20	1.6	0.4	3.0
3 × 95	19 × 2.55	11.75	0.2 + 0.7	4.5	0.8 + 0.127	52.80	1.6	0.4	3.1
3 × 120	19 × 2.96	13.15	0.2 + 0.7	4.5	0.8 + 0.127	55.90	1.6	0.4	3.3
3 × 150	37 × 2.25	14.80	0.2 + 0.7	4.5	0.8 + 0.127	59.40	1.6	0.4	3.4
3 × 185	37 × 2.55	16.30	0.2 + 0.7	4.5	0.8 + 0.127	62.00	1.8	0.4	3.5
3 × 240	61 × 2.25	18.50	0.2 + 0.7	4.5	0.8 + 0.127	70.40	1.8	0.4	3.8

* Single core constructions are available on request

Shipboard instrumentation, control and telecommunication cables

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

IEC 60092-376

Halogen-free, low smoke shipboard instrumentation, control and telecommunication cables with screen

CONSTRUCTION

Conductors	Circular stranded bare or tinned copper class 2 or class 5 acc. to IEC 60228	
Insulation	Cross-linked polyethylene XLPE 90°C acc. to IEC 60092-351	
Inner covering:	Tape or extruded inner bedding (optional)	
Armour (screen):	Bare copper wire braid with the metallic contact with a copper drain wire (optional)	
Colour code:	**Pair identification:**	Core a: blue (or black) Core b: white
	Triple identification:	Core a: blue (or black) Core b: white Core c: red with printed pair or triple number
	Core identification:	White with black printed numbers
	Other colors available on request	
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-359	
Colour of sheath:	Grey, black or blue	

CHARACTERISTIC

Inductance:	Max. 0.67 mH/km
Pair capacitance:	Max. 70 nF/km
Impedance at f=1MHz:	110±15 Ω
Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C

FLAMEBLOCKER NTKOXSekw
150/250 V (300 V)
Cu/XLPE/CWB/LSOH

Lowest installation temperature:	-15°C
Minimum bending radius:	6 × D D – overall diameter of the cable

Fire performance

Flame retardant:	IEC 60332-1-2; IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Cables designed for connections of all sorts of measuring and telecommunication equipment including emergency communications systems which proper functioning is necessary in order to ensure safety on ships.

Approvals

DNV-GL, LR, PRS, BV, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Multipair/Multitriple cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.5	7	0.4	0.1	0.20	1.0	6.4	7.0	7.8	73
2 × 2 × 0.5*	7	0.4	0.1	0.20	1.0	7.0	7.8	8.6	96

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

Multipair/Multitriple cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
3 × 2 × 0.5	7	0.4	0.1	0.20	1.1	9.0	10.0	11.0	135
4 × 2 × 0.5	7	0.4	0.1	0.20	1.1	9.6	10.8	11.5	152
7 × 2 × 0.5	7	0.4	0.1	0.20	1.2	11.0	12.7	13.5	220
10 × 2 × 0.5	7	0.4	0.1	0.30	1.3	14.5	16.3	17.5	338
12 × 2 × 0.5	7	0.4	0.1	0.30	1.3	15.0	16.7	18.0	367
14 × 2 × 0.5	7	0.4	0.1	0.30	1.3	15.5	17.5	18.5	415
19 × 2 × 0.5	7	0.4	0.1	0.30	1.4	17.5	19.4	20.5	501
24 × 2 × 0.5	7	0.4	0.1	0.30	1.5	20.0	22.6	24.0	633
37 × 2 × 0.5	7	0.4	0.1	0.30	1.6	23.0	25.7	27.0	862
1 × 3 × 0.5	7	0.4	0.1	0.20	1.0	6.6	7.3	8.0	81
3 × 3 × 0.5	7	0.4	0.1	0.20	1.1	9.8	10.9	12.0	165
7 × 3 × 0.5	7	0.4	0.1	0.20	1.2	12.5	14.0	15.0	281
12 × 3 × 0.5	7	0.4	0.1	0.30	1.4	16.5	18.7	20.0	483
1 × 2 × 0.75	7	0.5	0.1	0.20	1.0	7.2	7.8	8.8	90
2 × 2 × 0.75	7	0.5	0.1	0.20	1.0	8.0	8.7	9.8	120
3 × 2 × 0.75	7	0.5	0.1	0.20	1.1	10.5	11.4	13.0	167
4 × 2 × 0.75	7	0.5	0.1	0.20	1.2	11.5	12.5	14.0	206
5 × 2 × 0.75	7	0.5	0.1	0.20	1.2	12.5	13.5	15.0	231
6 × 2 × 0.75	7	0.5	0.1	0.20	1.2	13.5	14.6	16.5	266
7 × 2 × 0.75	7	0.5	0.1	0.20	1.2	13.5	14.6	16.5	283
10 × 2 × 0.75	7	0.5	0.1	0.30	1.4	17.5	19.0	21.0	444
12 × 2 × 0.75	7	0.5	0.1	0.30	1.4	18.0	19.6	21.5	504
14 × 2 × 0.75	7	0.5	0.1	0.30	1.4	19.0	20.5	22.5	548
19 × 2 × 0.75	7	0.5	0.1	0.30	1.5	21.0	22.8	25.0	687
20 × 2 × 0.75	7	0.5	0.1	0.30	1.6	22.5	24.2	26.5	726
24 × 2 × 0.75	7	0.5	0.1	0.30	1.7	25.0	26.8	29.5	861
37 × 2 × 0.75	7	0.5	0.1	0.30	1.8	28.5	30.6	33.5	1,180
1 × 3 × 0.75	7	0.5	0.1	0.20	1.0	7.6	8.1	9.2	101
3 × 3 × 0.75	7	0.5	0.1	0.20	1.2	11.5	12.7	14.0	216
7 × 3 × 0.75	7	0.5	0.1	0.30	1.3	15.5	16.8	18.5	413
12 × 3 × 0.75	7	0.5	0.1	0.30	1.5	20.5	22.0	24.5	644

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

Multipair/Multitriple cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
1 × 2 × 1	7	0.5	0.1	0.20	1.0	7.2	8.1	9.0	99
2 × 2 × 1*	7	0.5	0.1	0.20	1.1	8.4	9.3	10.5	139
3 × 2 × 1	7	0.5	0.1	0.20	1.1	10.5	12.0	13.0	194
4 × 2 × 1	7	0.5	0.1	0.20	1.2	11.5	13.2	14.5	234
7 × 2 × 1	7	0.5	0.1	0.30	1.3	14.5	16.1	17.5	381
10 × 2 × 1	7	0.5	0.1	0.30	1.4	18.0	20.2	220	526
12 × 2 × 1	7	0.5	0.1	0.30	1.4	18.5	20.8	22.5	579
14 × 2 × 1	7	0.5	0.1	0.30	1.5	19.5	22.0	23.5	645
19 × 2 × 1	7	0.5	0.1	0.30	1.6	21.5	24.5	26.0	813
24 × 2 × 1	7	0.5	0.1	0.30	1.7	25.5	28.6	30.5	1,033
37 × 2 × 1	7	0.5	0.1	0.30	1.8	29.0	32.7	34.5	1,425
1 × 3 × 1	7	0.5	0.1	0.20	1.0	7.6	8.5	9.4	114
3 × 3 × 1	7	0.5	0.1	0.20	1.2	12.0	13.4	14.5	247
7 × 3 × 1	7	0.5	0.1	0.30	1.3	16.0	17.8	19.5	495
12 × 3 × 1	7	0.5	0.1	0.30	1.5	20.5	23.4	25.0	770
1 × 2 × 1.5	7	0.6	0.1	0.20	1.0	8.2	9.1	10.0	121
2 × 2 × 1.5*	7	0.6	0.1	0.20	1.1	9.6	10.5	11.5	175
3 × 2 × 1.5	7	0.6	0.1	0.20	1.2	12.5	13.9	15.0	256
4 × 2 × 1.5	7	0.6	0.1	0.30	1.3	14.0	15.8	17.0	352
5 × 2 × 1.5	7	0.6	0.1	0.30	1.3	15.5	17.1	18.5	416
7 × 2 × 1.5	7	0.6	0.1	0.30	1.4	17.0	18.7	20.5	505
8 × 2 × 1.5	7	0.6	0.1	0.30	1.5	19.0	21.0	22.5	584
10 × 2 × 1.5	7	0.6	0.1	0.30	1.6	21.5	23.8	25.5	704
12 × 2 × 1.5	7	0.6	0.1	0.30	1.6	22.0	24.5	26.5	782
14 × 2 × 1.5	7	0.6	0.1	0.30	1.6	23.0	25.7	27.5	890
16 × 2 × 1.5	7	0.6	0.1	0.30	1.7	24.5	27.3	29.5	986
19 × 2 × 1.5	7	0.6	0.1	0.30	1.7	26.0	28.7	30.5	1,132
20 × 2 × 1.5	7	0.6	0.1	0.30	1.8	27.5	30.4	32.5	1,196
24 × 2 × 1.5	7	0.6	0.1	0.30	1.9	30.5	33.8	36.0	1,411
37 × 2 × 1.5	7	0.6	0.1	0.30	2.1	35.0	38.8	41.5	1,986
1 × 3 × 1.5	7	0.6	0.1	0.20	1.1	8.8	9.8	11.0	146

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

Multipair/Multitriple cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
2 × 3 × 1.5	7	0.6	0.1	0.20	1.2	13.0	14.5	16.0	279
3 × 3 × 1.5	7	0.6	0.1	0.30	1.3	14.5	16.0	17.5	372
4 × 3 × 1.5	7	0.6	0.1	0.30	1.3	15.5	17.4	19.0	453
7 × 3 × 1.5	7	0.6	0.1	0.30	1.5	19.0	21.0	22.5	672
8 × 3 × 1.5	7	0.6	0.1	0.30	1.5	21.0	23.4	25.0	763
12 × 3 × 1.5	7	0.6	0.1	0.30	1.7	25.0	27.6	29.5	1,060
16 × 3 × 1.5	7	0.6	0.1	0.30	1.8	27.5	30.7	33.0	1,342
1 × 4 × 2.5	7	0.6	0.1	0.20	1.1	10.5	11.6	13.0	227
2 × 2 × 2.5	7	0.6	0.1	0.20	1.2	13.0	14.6	16.0	265
1 × 2 × 2.5	7	0.6	0.1	0.20	1.1	9.2	10.2	11.5	158
4 × 2 × 2.5	7	0.6	0.1	0.30	1.3	16.0	17.5	19.0	462
6 × 2 × 2.5	7	0.6	0.1	0.30	1.5	19.0	21.0	23.0	631
10 × 2 × 2.5	7	0.6	0.1	0.30	1.6	24.0	26.6	28.5	951
12 × 2 × 2.5	7	0.6	0.1	0.30	1.7	25.0	27.7	30.0	1,081

* Cables 2 pairs are assembler as a quad

Multicore cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of inner bedding	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
2 × 0.75	7	0.5	0.1	0.20	1.0	7.2	7.8	8.8	90
3 × 0.75	7	0.5	0.1	0.20	1.0	7.5	8.1	9.2	101
4 × 0.75	7	0.5	0.1	0.20	1.0	8.0	8.7	9.8	119
5 × 0.75	7	0.5	0.1	0.20	1.1	8.8	9.5	11.0	136
7 × 0.75	7	0.5	0.1	0.20	1.1	9.4	10.2	11.5	164
10 × 0.75	7	0.5	0.1	0.20	1.2	11.5	12.6	14.0	225
12 × 0.75	7	0.5	0.1	0.20	1.2	12.0	12.9	14.5	246
14 × 0.75	7	0.5	0.1	0.20	1.2	12.5	13.5	15.0	268
16 × 0.75	7	0.5	0.1	0.20	1.2	13.0	14.1	15.5	299

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

Multicore cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of inner bedding	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
19 × 0.75	7	0.5	0.1	0.20	1.2	13.5	14.8	16.5	331
24 × 0.75	7	0.5	0.1	0.30	1.3	16.0	17.6	19.5	464
27 × 0.75	7	0.5	0.1	0.30	1.4	16.5	18.1	20.0	503
32 × 0.75	7	0.5	0.1	0.30	1.4	18.0	19.3	21.5	559
37 × 0.75	7	0.5	0.1	0.30	1.4	18.5	20.0	22.0	628

Multipair/Multitriple cables with extruded inner bedding IB

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of inner bedding	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.5	7	0.4	1.0	0.20	1.0	8.2	8.8	9.8	121
2 × 2 × 0.5*	7	0.4	1.0	0.20	1.1	9.2	9.7	11.0	144
3 × 2 × 0.5	7	0.4	1.0	0.20	1.1	11.0	11.7	13.0	188
4 × 2 × 0.5	7	0.4	1.0	0.20	1.2	11.5	12.7	14.0	223
7 × 2 × 0.5	7	0.4	1.0	0.20	1.2	13.0	14.4	16.0	291
10 × 2 × 0.5	7	0.4	1.0	0.30	1.4	16.5	18.2	19.5	444
12 × 2 × 0.5	7	0.4	1.0	0.30	1.4	17.0	18.7	20.0	477
14 × 2 × 0.5	7	0.4	1.0	0.30	1.4	17.5	19.4	21.0	513
19 × 2 × 0.5	7	0.4	1.0	0.30	1.5	19.5	21.4	23.0	626
24 × 2 × 0.5	7	0.4	1.0	0.30	1.6	22.5	24.5	26.0	756
37 × 2 × 0.5	7	0.4	1.0	0.30	1.7	25.0	27.7	29.5	982
1 × 3 × 0.5	7	0.4	1.0	0.20	1.1	8.6	9.2	10.5	133
3 × 3 × 0.5	7	0.4	1.0	0.20	1.2	12.0	12.9	14.0	235
7 × 3 × 0.5	7	0.4	1.0	0.30	1.3	15.0	16.4	18.0	403
12 × 3 × 0.5	7	0.4	1.0	0.30	1.4	18.5	20.5	22.0	592
1 × 2 × 0.75	7	0.5	1.0	0.20	1.1	9.4	9.7	11.0	144
2 × 2 × 0.75	7	0.5	1.0	0.20	1.1	10.0	10.7	12.0	175
3 × 2 × 0.75	7	0.5	1.0	0.20	1.2	12.5	13.3	15.0	239
4 × 2 × 0.75	7	0.5	1.0	0.20	1.2	13.5	14.3	16.0	276

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

Multipair/Multitriple cables with extruded inner bedding IB

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of inner bedding	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
5 × 2 × 0.75	7	0.5	1.0	0.23	1.3	15.0	15.9	18.0	365
7 × 2 × 0.75	7	0.5	1.0	0.30	1.3	16.0	17.0	19.0	413
10 × 2 × 0.75	7	0.5	1.0	0.30	1.5	19.5	21.0	23.5	570
12 × 2 × 0.75	7	0.5	1.0	0.30	1.5	20.0	21.6	24.0	617
14 × 2 × 0.75	7	0.5	1.0	0.30	1.5	21.0	22.5	25.0	685
19 × 2 × 0.75	7	0.5	1.0	0.30	1.6	23.0	24.8	27.5	844
20 × 2 × 0.75	7	0.5	1.0	0.30	1.6	24.5	26.0	28.5	875
24 × 2 × 0.75	7	0.5	1.0	0.30	1.7	27.0	28.6	31.5	1,025
37 × 2 × 0.75	7	0.5	1.0	0.30	1.9	30.5	32.6	36.0	1,350
1 × 3 × 0.75	7	0.5	1.0	0.20	1.1	9.6	10.1	11.5	160
3 × 3 × 0.75	7	0.5	1.0	0.30	1.3	14.0	15.1	17.0	346
7 × 3 × 0.75	7	0.5	1.0	0.30	1.4	17.5	18.8	21.0	524
12 × 3 × 0.75	7	0.5	1.0	0.30	1.6	22.5	23.9	26.5	785
1 × 2 × 1	7	0.5	1.0	0.20	1.1	9.4	10.1	11.5	162
2 × 2 × 1*	7	0.5	1.0	0.20	1.1	10.0	11.1	12.5	199
3 × 2 × 1	7	0.5	1.0	0.20	1.2	12.5	14.0	15.5	273
4 × 2 × 1	7	0.5	1.0	0.30	1.3	14.0	16.6	17.5	361
7 × 2 × 1	7	0.5	1.0	0.30	1.4	16.5	18.1	20.0	490
10 × 2 × 1	7	0.5	1.0	0.30	1.5	20.0	22.2	24.0	660
12 × 2 × 1	7	0.5	1.0	0.30	1.5	20.5	22.8	24.5	719
14 × 2 × 1	7	0.5	1.0	0.30	1.5	21.5	23.8	25.5	781
19 × 2 × 1	7	0.5	1.0	0.30	1.6	23.5	26.3	28.5	971
24 × 2 × 1	7	0.5	1.0	0.30	1.8	27.5	30.5	33.0	1,198
37 × 2 × 1	7	0.5	1.0	0.30	1.9	31.0	34.6	37.0	1,578
1 × 3 × 1	7	0.5	1.0	0.20	1.1	9.8	10.5	12.0	175
3 × 3 × 1	7	0.5	1.0	0.30	1.3	14.5	15.8	17.5	383
7 × 3 × 1	7	0.5	1.0	0.30	1.4	18.0	19.8	21.5	614
12 × 3 × 1	7	0.5	1.0	0.30	1.6	23.0	25.3	27.5	930
1 × 2 × 1.5	7	0.6	1.0	0.20	1.1	10.0	11.1	12.5	195
2 × 2 × 1.5*	7	0.6	1.0	0.20	1.2	11.5	12.5	14.0	253
3 × 2 × 1.5	7	0.6	1.0	0.30	1.3	15.0	16.3	18.0	384

FLAMEBLOCKER NTKOXSekw

150/250 V (300 V)

Cu/XLPE/CWB/LSOH

Multipair/Multitriple cables with extruded inner bedding IB

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of inner bedding	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
4 × 2 × 1.5	7	0.6	1.0	0.30	1.4	16.5	17.7	19.5	460
7 × 2 × 1.5	7	0.6	1.0	0.30	1.5	19.0	20.7	22.5	634
8 × 2 × 1.5	7	0.6	1.0	0.30	1.5	21.0	22.8	25.0	713
10 × 2 × 1.5	7	0.6	1.0	0.30	1.6	23.5	25.5	27.5	863
12 × 2 × 1.5	7	0.6	1.0	0.30	1.6	24.0	26.3	28.5	948
14 × 2 × 1.5	7	0.6	1.0	0.30	1.7	25.5	27.7	30.0	1,050
16 × 2 × 1.5	7	0.6	1.0	0.30	1.7	26.5	29.0	31.5	1,167
19 × 2 × 1.5	7	0.6	1.0	0.30	1.8	28.0	30.6	33.0	1,308
20 × 2 × 1.5	7	0.6	1.0	0.30	1.8	29.5	32.2	34.5	1,386
24 × 2 × 1.5	7	0.6	1.2	0.30	2.0	33.0	36.1	39.0	1,672
37 × 2 × 1.5	7	0.6	1.2	0.40	2.2	38.0	41.6	44.5	2,321
1 × 3 × 1.5	7	0.6	1.0	0.20	1.1	10.5	11.5	13.0	213
2 × 3 × 1.5	7	0.6	1.0	0.30	1.3	15.5	16.9	18.5	413
3 × 3 × 1.5	7	0.6	1.0	0.30	1.4	16.5	18.0	20.0	491
4 × 3 × 1.5	7	0.6	1.0	0.30	1.4	18.0	19.4	21.5	559
7 × 3 × 1.5	7	0.6	1.0	0.30	1.5	21.0	22.7	25.0	804
8 × 3 × 1.5	7	0.6	1.0	0.30	1.6	23.0	25.3	27.5	935
12 × 3 × 1.5	7	0.6	1.0	0.30	1.8	27.0	29.5	32.0	1,251
16 × 3 × 1.5	7	0.6	1.0	0.30	1.9	30.0	32.6	35.0	1,556
1 × 4 × 2.5	7	0.6	1.0	0.20	1.2	12.5	13.5	15.0	310
2 × 2 × 2.5	7	0.6	1.0	0.30	1.3	15.5	17.0	19.0	423

* Cables 2 pairs are assembled as a quad.

FLAMEBLOCKER NTKOXSekwf

150/250 V (300 V)
Cu/XLPE/CAM/LSOH

IEC 60092-376

Halogen-free, low smoke shipboard instrumentation, control and telecommunication cables, collectively screened

CONSTRUCTION

Conductors:	Circular stranded bare or tinned copper class 2 or 5 (for request) acc. to IEC 60228	
Insulation:	Cross-linked polyethylene XLPE 90°C acc. to IEC 60092-351	
Inner covering:	Tape	
Screen:	Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire	
Colour code:	**Pair identification:**	Core a: blue (or black) Core b: white with printed pair number
	Other colors available on request	
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-359	
Colour of sheath:	Grey, black, blue or white	

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D D – overall diameter of the cable

FLAMEBLOCKER NTKOXSekwf
150/250 V (300 V)
Cu/XLPE/LSOH

Fire performance

Flame retardant:	IEC 60332-1-2; IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Cables designed for connections of all sorts of measuring and telecommunication equipment including emergency communications systems which proper functioning is necessary in order to ensure safety on ships.

Approvals

DNV-GL

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Multipair cables class 2

Number and cross-sectional area of conductor	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Maximum conductor resistance at temperature 20°C	Net weight of cables
				Min.	Nom.	Max.		
n × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**
1 × 2 × 0.5	0.4	0.1	1.0	5.4	6.2	6.6	45	40.4
2 × 2 × 0.5*	0.4	0.1	1.0	6.0	7.0	7.4	63	40.4
4 × 2 × 0.5	0.4	0.1	1.1	8.6	10.0	10.5	110	40.4
7 × 2 × 0.5	0.4	0.1	1.1	10.0	11.7	12.5	159	40.4
10 × 2 × 0.5	0.4	0.1	1.2	13.0	14.8	15.5	224	40.4
12 × 2 × 0.5	0.4	0.1	1.2	13.5	15.3	16.0	253	40.4

FLAMEBLOCKER NTKOXSekwf

150/250 V (300 V)

Cu/XLPE/LSOH

Multipair cables class 2								
Number and cross-sectional area of conductor	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Maximum conductor resistance at temperature 20°C	Net weight of cables
				Min.	Nom.	Max.		
14 × 2 × 0.5	0.4	0.1	1.3	14.0	16.2	17.0	291	40.4
19 × 2 × 0.5	0.4	0.1	1.3	15.5	18.0	19.0	368	40.4
24 × 2 × 0.5	0.4	0.1	1.4	18.5	21.1	22.0	465	40.4
37 × 2 × 0.5	0.4	0.1	1.5	21.5	24.3	25.5	667	40.4
1 × 2 × 0.75	0.5	0.1	1.0	6.2	7.0	7.8	57	26.0
2 × 2 × 0.75*	0.5	0.1	1.0	7.0	7.9	8.8	82	26.0
3 × 2 × 0.75	0.5	0.1	1.1	9.6	10.6	11.5	120	26.0
4 × 2 × 0.75	0.5	0.1	1.1	10.5	11.5	12.5	145	26.0
7 × 2 × 0.75	0.5	0.1	1.2	12.5	13.8	15.0	221	26.0
8 × 2 × 0.75	0.5	0.1	1.3	14.0	15.6	17.0	259	26.0
10 × 2 × 0.75	0.5	0.1	1.3	16.0	17.6	19.5	311	26.0
12 × 2 × 0.75	0.5	0.1	1.3	16.5	18.2	20.0	353	26.0
14 × 2 × 0.75	0.5	0.1	1.4	17.5	19.3	21.0	407	26.0
19 × 2 × 0.75	0.5	0.1	1.5	19.5	21.6	23.5	528	26.0
20 × 2 × 0.75	0.5	0.1	1.5	21.0	22.8	25.0	557	26.0
24 × 2 × 0.75	0.5	0.1	1.6	23.0	25.4	27.5	665	26.0
37 × 2 × 0.75	0.5	0.1	1.7	26.5	29.2	32.0	957	26.0
1 × 2 × 1	0.5	0.1	1.0	6.4	7.4	8.0	67	19.2
2 × 2 × 1*	0.5	0.1	1.0	7.2	8.4	9.0	98	19.2
3 × 2 × 1	0.5	0.1	1.1	9.8	11.2	12.0	142	19.2
4 × 2 × 1	0.5	0.1	1.1	10.5	12.2	13.0	173	19.2
7 × 2 × 1	0.5	0.1	1.2	12.5	14.7	15.5	267	19.2
18 × 2 × 1	0.5	0.1	1.3	14.5	16.6	18.0	311	19.2
10 × 2 × 1	0.5	0.1	1.4	16.5	19.0	20.0	385	19.2
12 × 2 × 1	0.5	0.1	1.4	17.0	19.6	21.0	438	19.2
14 × 2 × 1	0.5	0.1	1.4	18.0	20.6	22.0	494	19.2
19 × 2 × 1	0.5	0.1	1.5	20.0	23.1	24.5	644	19.2
20 × 2 × 1	0.5	0.1	1.5	21.0	24.3	26.0	680	19.2
24 × 2 × 1	0.5	0.1	1.6	23.5	27.1	28.5	812	19.2
37 × 2 × 1	0.5	0.1	1.8	27.5	31.4	33.0	1,191	19.2
1 × 2 × 1.5	0.6	0.1	1.0	7.2	8.3	9.0	84	12.8

FLAMEBLOCKER NTKOXSekwf

150/250 V (300 V)

Cu/XLPE/LSOH

Multipair cables class 2

Number and cross-sectional area of conductor	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Maximum conductor resistance at temperature 20°C	Net weight of cables
				Min.	Nom.	Max.		
2 × 2 × 1.5*	0.6	0.1	1.1	8.6	9.7	10.5	133	12.8
3 × 2 × 1.5	0.6	0.1	1.2	11.5	13.2	14.0	194	12.8
4 × 2 × 1.5	0.6	0.1	1.2	12.5	14.4	15.5	238	12.8
7 × 2 × 1.5	0.6	0.1	1.3	15.0	17.3	18.5	373	12.8
8 × 2 × 1.5	0.6	0.1	1.4	17.5	19.6	21.0	433	12.8
10 × 2 × 1.5	0.6	0.1	1.5	20.0	22.4	24.0	536	12.8
12 × 2 × 1.5	0.6	0.1	1.5	20.5	23.1	24.5	614	12.8
14 × 2 × 1.5	0.6	0.1	1.6	21.5	24.5	26.0	707	12.8
16 × 2 × 1.5	0.6	0.1	1.6	23.0	25.9	27.5	791	12.8
19 × 2 × 1.5	0.6	0.1	1.7	24.5	27.5	29.0	924	12.8
20 × 2 × 1.5	0.6	0.1	1.7	26.0	29.0	31.0	974	12.8
24 × 2 × 1.5	0.6	0.1	1.8	29.0	32.4	34.5	1,163	12.8
37 × 2 × 1.5	0.6	0.1	2.0	33.5	37.5	39.5	1,711	12.8

* Cables 2 pairs are assembled as a quad.

FLAMEBLOCKER NTKOXSekf/ekw

150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

IEC 60092-376

Halogen-free low smoke shipboard instrumentation, control and telecommunication cables, individually and collectively screened

CONSTRUCTION

Conductors:	Circular stranded bare or tinned copper class 2 or class 5 acc. to IEC 60228	
Insulation:	Cross-linked polyethylene XLPE 90°C acc. to IEC 60092-351	
Individual screen:	Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire	
Inner covering:	Tape or extruded inner bedding (optional)	
Armour (screen):	Bare copper wire braid with the metallic contact with a tinned copper drain wire	
Colour code:	**Pair identification:**	Core a: blue (or black) Core b: white
	Triple identification:	Core a: blue (or black) Core b: white Core c: red with printed pair or triple number
	Core identification:	White with black printed numbers
	Other colors available on request	
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-359	
Colour of sheath:	Grey, black or blue	

CHARACTERISTIC

Inductance:	Max. 0.67 mH/km
Pair capacitance:	Max. 100 nF/km
Impedance at f=1MHz:	80±15 Ω

FLAMEBLOCKER NTKOXSekf/ekw
150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	6 × D D – overall diameter of the cable

Fire performance

Flame retardant:	IEC 60332-1-2; IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Cables designed for measuring and control circuits on ships. For fixed installation only.

Approvals

DNV-GL, ABS, LR, PRS, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

FLAMEBLOCKER NTKOXSekf/ekw
150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.5	7	0.5	0.1	0.20	1.00	6.4	7.4	7.8	79
2 × 2 × 0.5	7	0.5	0.1	0.20	1.10	9.0	10.8	11.0	135
3 × 2 × 0.5	7	0.5	0.1	0.20	1.20	9.6	11.6	11.5	167
4 × 2 × 0.5	7	0.5	0.1	0.20	1.10	10.0	12.3	12.5	193
5 × 2 × 0.5	7	0.5	0.1	0.20	1.10	11.0	13.3	13.5	217
7 × 2 × 0.5	7	0.5	0.1	0.20	1.20	12.0	14.6	14.5	275
10 × 2 × 0.5	7	0.5	0.1	0.30	1.30	15.5	18.8	18.5	424
12 × 2 × 0.5	7	0.5	0.1	0.30	1.30	16.0	19.4	19.0	482
14 × 2 × 0.5	7	0.5	0.1	0.30	1.40	17.0	20.5	20.0	535
16 × 2 × 0.5	7	0.5	0.1	0.30	1.40	17.5	21.5	21.0	580
17 × 2 × 0.5	7	0.5	0.1	0.30	1.40	18.5	22.6	22.0	623
19 × 2 × 0.5	7	0.5	0.1	0.30	1.40	18.5	22.6	22.0	660
24 × 2 × 0.5	7	0.5	0.1	0.30	1.50	21.5	26.4	25.5	818
37 × 2 × 0.5	7	0.5	0.1	0.30	1.70	24.5	30.4	29.0	1,141
1 × 3 × 0.5	7	0.5	0.1	0.20	1.00	6.6	7.7	8.0	93
2 × 3 × 0.5	7	0.5	0.1	0.20	1.10	9.8	11.8	12.0	159
3 × 3 × 0.5	7	0.5	0.1	0.20	1.20	10.5	12.6	12.5	201
4 × 3 × 0.5	7	0.5	0.1	0.20	1.20	11.0	13.7	13.5	240
5 × 3 × 0.5	7	0.5	0.1	0.20	1.20	12.0	14.8	14.5	273
7 × 3 × 0.5	7	0.5	0.1	0.20	1.20	13.0	16.1	16.0	338
10 × 3 × 0.5	7	0.5	0.1	0.30	1.40	17.0	21.0	20.5	531
12 × 3 × 0.5	7	0.5	0.1	0.30	1.40	17.5	21.6	21.0	586
14 × 3 × 0.5	7	0.5	0.1	0.30	1.40	18.5	22.7	22.0	661
16 × 3 × 0.5	7	0.5	0.1	0.30	1.50	19.5	24.0	23.5	732
17 × 3 × 0.5	7	0.5	0.1	0.30	1.50	20.5	25.3	24.5	793
19 × 3 × 0.5	7	0.5	0.1	0.30	1.50	20.5	25.3	24.5	843
24 × 3 × 0.5	7	0.5	0.1	0.30	1.60	24.0	29.6	28.5	1,041
37 × 3 × 0.5	7	0.5	0.1	0.30	1.80	27.5	34.0	32.5	1,461
1 × 2 × 0.75	7	0.6	0.1	0.20	1.00	7.2	8.2	8.8	97
2 × 2 × 0.75	7	0.6	0.1	0.20	1.10	10.5	12.2	13.0	172

FLAMEBLOCKER NTKOXSekf/ekw
150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with tape bedding									
Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
3 × 2 × 0.75	7	0.6	0.1	0.20	1.20	11.0	13.1	13.5	208
4 × 2 × 0.75	7	0.6	0.1	0.20	1.20	12.0	14.2	15.0	249
5 × 2 × 0.75	7	0.6	0.1	0.20	1.20	13.0	15.4	16.0	290
7 × 2 × 0.75	7	0.6	0.1	0.30	1.30	15.0	17.3	18.0	413
10 × 2 × 0.75	7	0.6	0.1	0.30	1.40	18.5	21.8	22.5	549
12 × 2 × 0.75	7	0.6	0.1	0.30	1.50	19.5	22.7	23.5	634
14 × 2 × 0.75	7	0.6	0.1	0.30	1.50	20.5	23.8	24.5	695
16 × 2 × 0.75	7	0.6	0.1	0.30	1.50	21.5	25.0	25.5	783
17 × 2 × 0.75	7	0.6	0.1	0.30	1.60	22.5	26.5	27.0	832
19 × 2 × 0.75	7	0.6	0.1	0.30	1.60	22.5	26.5	27.0	884
24 × 2 × 0.75	7	0.6	0.1	0.30	1.70	26.5	31.0	31.5	1,091
37 × 2 × 0.75	7	0.6	0.1	0.30	1.90	30.5	35.7	36.0	1,556
1 × 3 × 0.75	7	0.6	0.1	0.20	1.00	7.6	8.6	9.2	114
3 × 3 × 0.75	7	0.6	0.1	0.20	1.20	12.5	14.3	15.0	254
7 × 3 × 0.75	7	0.6	0.1	0.30	1.30	16.5	19.1	20.0	495
12 × 3 × 0.75	7	0.6	0.1	0.30	1.50	21.5	25.1	25.5	799
16 × 3 × 0.75	7	0.6	0.1	0.30	1.60	24.0	28.0	28.5	978
17 × 3 × 0.75	7	0.6	0.1	0.30	1.70	25.5	29.6	30.0	1,066
19 × 3 × 0.75	7	0.6	0.1	0.30	1.70	25.5	29.6	30.0	1,138
24 × 3 × 0.75	7	0.6	0.1	0.30	1.80	30.0	34.7	35.0	1,405
37 × 3 × 0.75	7	0.6	0.1	0.30	2.00	34.5	40.0	40.5	1,992
1 × 2 × 1	7	0.6	0.1	0.20	1.00	7.2	8.6	9.0	114
2 × 2 × 1	7	0.6	0.1	0.20	1.10	10.5	12.8	13.0	193
3 × 2 × 1	7	0.6	0.1	0.20	1.20	11.5	13.8	14.0	245
4 × 2 × 1	7	0.6	0.1	0.20	1.20	12.5	15.0	15.5	287
5 × 2 × 1	7	0.6	0.1	0.30	1.30	14.0	16.9	17.0	382
7 × 2 × 1	7	0.6	0.1	0.30	1.30	15.0	18.3	18.5	476
8 × 2 × 1	7	0.6	0.1	0.30	1.30	17.0	20.6	20.8	552
10 × 2 × 1	7	0.6	0.1	0.30	1.50	19.5	23.3	23.5	665
12 × 2 × 1	7	0.6	0.1	0.30	1.50	20.0	24.0	24.0	739
14 × 2 × 1	7	0.6	0.1	0.30	1.50	21.0	25.2	25.0	842

FLAMEBLOCKER NTKOXSekf/ekw
150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with tape bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
16 × 2 × 1	7	0.6	0.1	0.30	1.60	22.0	26.7	26.5	933
17 × 2 × 1	7	0.6	0.1	0.30	1.60	23.0	28.1	28.0	1,005
19 × 2 × 1	7	0.6	0.1	0.30	1.60	23.0	28.1	28.0	1,072
24 × 2 × 1	7	0.6	0.1	0.30	1.80	27.5	33.1	33.0	1,338
37 × 2 × 1	7	0.6	0.1	0.30	1.90	31.0	37.9	37.5	1,867
3 × 3 × 1.5	7	0.7	0.1	0.30	1.20	15.0	17.7	18.5	421
4 × 3 × 1.5	7	0.7	0.1	0.30	1.40	17.0	19.7	20.5	532
7 × 3 × 1.5	7	0.7	0.1	0.30	1.50	20.0	23.6	24.0	780

Multipair cables with extruded inner bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter	Net weight of cables
						Approximate	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.5	7	0.5	1.0	0.20	1.00	9.1	123
2 × 2 × 0.5	7	0.5	1.0	0.20	1.10	12.5	206
4 × 2 × 0.5	7	0.5	1.0	0.20	1.20	14.2	271
7 × 2 × 0.5	7	0.5	1.0	0.30	1.30	16.9	404
10 × 2 × 0.5	7	0.5	1.0	0.30	1.40	20.7	551
14 × 2 × 0.5	7	0.5	1.0	0.30	1.40	22.2	659
19 × 2 × 0.5	7	0.5	1.0	0.30	1.50	24.5	815
27 × 2 × 0.5	7	0.5	1.0	0.30	1.60	28.9	1,059
37 × 2 × 0.5	7	0.5	1.0	0.30	1.70	32.1	1,327
1 × 3 × 0.5	7	0.5	1.0	0.20	1.10	9.6	138
2 × 3 × 0.5	7	0.5	1.0	0.20	1.20	13.7	244
4 × 3 × 0.5	7	0.5	1.0	0.20	1.20	15.4	319
7 × 3 × 0.5	7	0.5	1.0	0.30	1.30	18.4	485
10 × 3 × 0.5	7	0.5	1.0	0.30	1.50	22.9	670
14 × 3 × 0.5	7	0.5	1.0	0.30	1.50	24.6	817
19 × 3 × 0.5	7	0.5	1.0	0.30	1.60	27.2	987

FLAMEBLOCKER NTKOXSekf/ekw

150/250 V (300 V)

Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with extruded inner bedding							
Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter Approximate	Net weight of cables
27 × 3 × 0.5	7	0.5	1.0	0.30	1.70	32.1	1,323
37 × 3 × 0.5	7	0.5	1.0	0.30	1.90	35.9	1,685
1 × 2 × 0.75	7	0.6	1.0	0.20	1.10	10.1	150
2 × 2 × 0.75	7	0.6	1.0	0.20	1.20	14.1	255
4 × 2 × 0.75	7	0.6	1.0	0.30	1.30	16.5	378
7 × 2 × 0.75	7	0.6	1.0	0.30	1.40	19.2	513
10 × 2 × 0.75	7	0.6	1.0	0.30	1.50	23.7	697
14 × 2 × 0.75	7	0.6	1.0	0.30	1.60	25.7	860
19 × 2 × 0.75	7	0.6	1.0	0.30	1.70	28.4	1,065
27 × 2 × 0.75	7	0.6	1.0	0.30	1.80	33.5	1,390
37 × 2 × 0.75	7	0.6	1.0	0.30	1.90	37.4	1,749
1 × 3 × 0.75	7	0.6	1.0	0.20	1.10	10.5	164
2 × 3 × 0.75	7	0.6	1.0	0.30	1.30	16.0	342
4 × 3 × 0.75	7	0.6	1.0	0.30	1.30	18.0	453
7 × 3 × 0.75	7	0.6	1.0	0.30	1.40	21.1	624
10 × 3 × 0.75	7	0.6	1.0	0.30	1.60	26.4	868
14 × 3 × 0.75	7	0.6	1.0	0.30	1.70	28.6	1,078
19 × 3 × 0.75	7	0.6	1.0	0.30	1.70	31.5	1,300
27 × 3 × 0.75	7	0.6	1.0	0.30	1.90	37.6	1,763
37 × 3 × 0.75	7	0.6	1.2	0.40	2.10	43.0	2,430
1 × 2 × 1	7	0.6	1.0	0.20	1.10	10.5	163
2 × 2 × 1	7	0.6	1.0	0.20	1.20	14.7	282
4 × 2 × 1	7	0.6	1.0	0.30	1.30	17.3	439
7 × 2 × 1	7	0.6	1.0	0.30	1.40	20.2	599
8 × 2 × 1	7	0.6	1.0	0.30	1.50	22.5	687
10 × 2 × 1	7	0.6	1.0	0.30	1.50	25.0	821
12 × 2 × 1	7	0.6	1.0	0.30	1.60	25.9	908
14 × 2 × 1	7	0.6	1.0	0.30	1.60	27.1	991
16 × 2 × 1	7	0.6	1.0	0.30	1.60	28.4	1,104
19 × 2 × 1	7	0.6	1.0	0.30	1.70	30.0	1,238
24 × 2 × 1	7	0.6	1.0	0.30	1.80	34.8	1,522
27 × 2 × 1	7	0.6	1.0	0.30	1.90	35.7	1,675

FLAMEBLOCKER NTKOXSekf/ekw
150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with extruded inner bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter Approximate	Net weight of cables
37 × 2 × 1	7	0.6	1.2	0.30	2.00	40.2	2,138
1 × 3 × 1	7	0.6	1.0	0.20	1.10	10.9	187
2 × 3 × 1	7	0.6	1.0	0.30	1.30	16.7	378
4 × 3 × 1	7	0.6	1.0	0.30	1.30	18.9	513
7 × 3 × 1	7	0.6	1.0	0.30	1.40	22.2	737
10 × 3 × 1	7	0.6	1.0	0.30	1.60	27.9	1,006
14 × 3 × 1	7	0.6	1.0	0.30	1.70	30.2	1,264
19 × 3 × 1	7	0.6	1.0	0.30	1.80	33.6	1,588
27 × 3 × 1	7	0.6	1.2	0.30	2.00	40.4	2,175
37 × 3 × 1	7	0.6	1.2	0.40	2.20	45.8	2,922
1 × 2 × 1.5	7	0.7	1.0	0.20	1.10	11.5	191
2 × 2 × 1.5	7	0.7	1.0	0.30	1.30	17.1	402
4 × 2 × 1.5	7	0.7	1.0	0.30	1.40	19.6	542
7 × 2 × 1.5	7	0.7	1.0	0.30	1.50	23.0	748
8 × 2 × 1.5	7	0.7	1.0	0.30	1.60	25.7	864
10 × 2 × 1.5	7	0.7	1.0	0.30	1.70	28.9	1,047
12 × 2 × 1.5	7	0.7	1.0	0.30	1.70	29.8	1,147
14 × 2 × 1.5	7	0.7	1.0	0.30	1.80	31.3	1,272
16 × 2 × 1.5	7	0.7	1.0	0.30	1.80	32.9	1,413
19 × 2 × 1.5	7	0.7	1.0	0.30	1.90	34.8	1,592
24 × 2 × 1.5	7	0.7	1.2	0.40	2.10	41.5	2,131
27 × 2 × 1.5	7	0.7	1.2	0.40	2.10	42.3	2,326
37 × 2 × 1.5	7	0.7	1.2	0.40	2.30	47.4	2,957
1 × 3 × 1.5	7	0.7	1.0	0.20	1.10	11.9	220
2 × 3 × 1.5	7	0.7	1.0	0.30	1.40	18.8	466
4 × 3 × 1.5	7	0.7	1.0	0.30	1.40	21.4	639
7 × 3 × 1.5	7	0.7	1.0	0.30	1.60	25.5	946
8 × 3 × 1.5	7	0.7	1.0	0.30	1.70	28.5	1,087
10 × 3 × 1.5	7	0.7	1.0	0.30	1.80	32.1	1,317
12 × 3 × 1.5	7	0.7	1.0	0.30	1.80	33.1	1,457
14 × 3 × 1.5	7	0.7	1.0	0.30	1.90	34.8	1,625
16 × 3 × 1.5	7	0.7	1.0	0.30	1.90	36.7	1,808

FLAMEBLOCKER NTKOXSekf/ekw
150/250 V (300 V)
Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with extruded inner bedding

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter Approximate	Net weight of cables
19 × 3 × 1.5	7	0.7	1.2	0.30	2.00	39.1	2,085
24 × 3 × 1.5	7	0.7	1.2	0.40	2.20	46.2	2,726
27 × 3 × 1.5	7	0.7	1.2	0.40	2.30	47.3	3,003
37 × 3 × 1.5	7	0.7	1.4	0.40	2.50	53.4	3,863

Multipair cables with extruded inner bedding

Number and cross-sectional area of conductor	Maximum diameter of wires in conductor cl. 5	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter Approximate	Net weight of cables
n × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.5	0.21	0.5	1.0	0.20	1.00	9.2	123
2 × 2 × 0.5	0.21	0.5	1.0	0.20	1.10	12.5	205
4 × 2 × 0.5	0.21	0.5	1.0	0.20	1.20	14.2	269
7 × 2 × 0.5	0.21	0.5	1.0	0.30	1.30	17.0	400
10 × 2 × 0.5	0.21	0.5	1.0	0.30	1.40	20.8	545
14 × 2 × 0.5	0.21	0.5	1.0	0.30	1.40	22.3	650
19 × 2 × 0.5	0.21	0.5	1.0	0.30	1.50	24.6	803
27 × 2 × 0.5	0.21	0.5	1.0	0.30	1.60	29.0	1,042
37 × 2 × 0.5	0.21	0.5	1.0	0.30	1.70	32.2	1,304
1 × 3 × 0.5	0.21	0.5	1.0	0.20	1.10	9.7	137
2 × 3 × 0.5	0.21	0.5	1.0	0.20	1.20	13.7	242
4 × 3 × 0.5	0.21	0.5	1.0	0.20	1.20	15.4	315
7 × 3 × 0.5	0.21	0.5	1.0	0.30	1.30	18.5	478
10 × 3 × 0.5	0.21	0.5	1.0	0.30	1.50	23.0	660
14 × 3 × 0.5	0.21	0.5	1.0	0.30	1.50	24.6	803
19 × 3 × 0.5	0.21	0.5	1.0	0.30	1.60	27.3	968
27 × 3 × 0.5	0.21	0.5	1.0	0.30	1.70	32.2	1,295
37 × 3 × 0.5	0.21	0.5	1.0	0.30	1.90	36.1	1,646
1 × 2 × 0.75	0.21	0.6	1.0	0.20	1.10	10.1	149
2 × 2 × 0.75	0.21	0.6	1.0	0.20	1.20	14.1	255
4 × 2 × 0.75	0.21	0.6	1.0	0.30	1.30	16.6	376

FLAMEBLOCKER NTKOXSekf/ekw

150/250 V (300 V)

Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with extruded inner bedding

Number and cross-sectional area of conductor	Maximum diameter of wires in conductor cl. 5	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter Approximate	Net weight of cables
7 × 2 × 0.75	0.21	0.6	1.0	0.30	1.40	19.3	508
10 × 2 × 0.75	0.21	0.6	1.0	0.30	1.50	23.8	690
14 × 2 × 0.75	0.21	0.6	1.0	0.30	1.60	25.7	851
19 × 2 × 0.75	0.21	0.6	1.0	0.30	1.70	28.5	1,052
27 × 2 × 0.75	0.21	0.6	1.0	0.30	1.80	33.6	1,371
37 × 2 × 0.75	0.21	0.6	1.0	0.30	1.90	37.5	1,723
1 × 3 × 0.75	0.21	0.6	1.0	0.20	1.10	10.5	163
2 × 3 × 0.75	0.21	0.6	1.0	0.30	1.30	15.9	339
4 × 3 × 0.75	0.21	0.6	1.0	0.30	1.30	18.0	448
7 × 3 × 0.75	0.21	0.6	1.0	0.30	1.40	21.0	614
10 × 3 × 0.75	0.21	0.6	1.0	0.30	1.60	26.3	854
14 × 3 × 0.75	0.21	0.6	1.0	0.30	1.70	28.5	1,059
19 × 3 × 0.75	0.21	0.6	1.0	0.30	1.70	31.4	1,274
27 × 3 × 0.75	0.21	0.6	1.0	0.30	1.90	37.5	1,726
37 × 3 × 0.75	0.21	0.6	1.2	0.40	2.10	42.9	2,380
1 × 2 × 1	0.21	0.6	1.0	0.20	1.10	10.3	160
2 × 2 × 1	0.21	0.6	1.0	0.20	1.20	14.4	274
4 × 2 × 1	0.21	0.6	1.0	0.30	1.30	17.0	409
7 × 2 × 1	0.21	0.6	1.0	0.30	1.40	19.8	580
8 × 2 × 1	0.21	0.6	1.0	0.30	1.50	22.0	647
10 × 2 × 1	0.21	0.6	1.0	0.30	1.50	24.4	793
12 × 2 × 1	0.21	0.6	1.0	0.30	1.60	25.3	876
14 × 2 × 1	0.21	0.6	1.0	0.30	1.60	26.5	954
16 × 2 × 1	0.21	0.6	1.0	0.30	1.60	27.7	1,036
19 × 2 × 1	0.21	0.6	1.0	0.30	1.70	29.3	1,190
24 × 2 × 1	0.21	0.6	1.0	0.30	1.80	34.0	1,461
27 × 2 × 1	0.21	0.6	1.0	0.30	1.90	34.8	1,581
37 × 2 × 1	0.21	0.6	1.2	0.30	2.00	39.2	2,040
1 × 3 × 1	0.21	0.6	1.0	0.20	1.10	10.7	176
2 × 3 × 1	0.21	0.6	1.0	0.30	1.30	16.3	364
4 × 3 × 1	0.21	0.6	1.0	0.30	1.30	18.4	490
7 × 3 × 1	0.21	0.6	1.0	0.30	1.40	21.6	684

FLAMEBLOCKER NTKOXSekf/ekw

150/250 V (300 V)

Cu/XLPE/IAM/CAM/CWB/LSOH

Multipair cables with extruded inner bedding							
Number and cross-sectional area of conductor	Maximum diameter of wires in conductor cl. 5	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Overall diameter Approximate	Net weight of cables
10 × 3 × 1	0.21	0.6	1.0	0.30	1.60	27.1	955
14 × 3 × 1	0.21	0.6	1.0	0.30	1.70	29.3	1,195
19 × 3 × 1	0.21	0.6	1.0	0.30	1.80	32.5	1,498
27 × 3 × 1	0.21	0.6	1.2	0.30	2.00	39.2	2,037
37 × 3 × 1	0.21	0.6	1.2	0.40	2.20	44.3	2,750
1 × 2 × 1.5	0.21	0.7	1.0	0.20	1.10	11.3	187
2 × 2 × 1.5	0.21	0.7	1.0	0.30	1.30	16.9	376
4 × 2 × 1.5	0.21	0.7	1.0	0.30	1.40	19.4	510
7 × 2 × 1.5	0.21	0.7	1.0	0.30	1.50	22.7	724
10 × 2 × 1.5	0.21	0.7	1.0	0.30	1.70	28.5	1,012
14 × 2 × 1.5	0.21	0.7	1.0	0.30	1.80	30.9	1,226
19 × 2 × 1.5	0.21	0.7	1.0	0.30	1.90	34.2	1,530
27 × 2 × 1.5	0.21	0.7	1.2	0.40	2.10	41.7	2,193
37 × 2 × 1.5	0.21	0.7	1.2	0.40	2.30	46.6	2,793
1 × 3 × 1.5	0.21	0.7	1.0	0.20	1.10	11.8	209
2 × 3 × 1.5	0.21	0.7	1.0	0.30	1.40	18.6	453
4 × 3 × 1.5	0.21	0.7	1.0	0.30	1.40	21.1	617
7 × 3 × 1.5	0.21	0.7	1.0	0.30	1.60	25.1	909
10 × 3 × 1.5	0.21	0.7	1.0	0.30	1.80	31.6	1,239
14 × 3 × 1.5	0.21	0.7	1.0	0.30	1.90	34.3	1,555
19 × 3 × 1.5	0.21	0.7	1.2	0.30	2.00	38.5	1,990
27 × 3 × 1.5	0.21	0.7	1.2	0.40	2.30	46.6	2,823
37 × 3 × 1.5	0.21	0.7	1.4	0.40	2.50	52.6	3,673

FLAMEBLOCKER NTKOXSekf/ekwf

150/250 V (300 V)
Cu/XLPE/IAM/CAM/LSOH

IEC 60092-376

Halogen-free low smoke shipboard instrumentation, control and telecommunication cables, individually and collectively screened

CONSTRUCTION

Conductors:	Circular stranded bare or tinned copper class 2 or 5 (for request) acc. to IEC 60228	
Insulation:	Cross-linked polyethylene XLPE 90°C acc. to IEC 60092-351	
Individually pair:	Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire	
Inner covering:	Tape	
Screen:	Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire	
Colour code:	**Pair identification:**	Core a: blue (or black) Core b: white with printed pair number
	Other colors available on request	
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-359	
Colour of sheath:	Grey, black, blue or white	

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D D – overall diameter of the cable

FLAMEBLOCKER NTKOXSekf/ekwf
150/250 V (300 V)
Cu/XLPE/IAM/CAM/LSOH

Fire performance

Flame retardant:	IEC 60332-1-2; IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Cables designed for measuring and control circuits on ships. For fixed installation only.

Approvals

DNV-GL

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Net weight of cables	Maximum conductor resistance at temperature 20°C
				Min.	Nom.	Max.		
n × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**
2 × 2 × 0.5	0.4	0.1	1.0	7.8	9.4	9.6	84	40.4
4 × 2 × 0.5	0.4	0.1	1.1	9.2	11.1	11.5	133	40.4
7 × 2 × 0.5	0.4	0.1	1.1	10.5	13.0	13.0	198	40.4
10 × 2 × 0.5	0.4	0.1	1.3	14.0	16.9	17.0	288	40.4
12 × 2 × 0.5	0.4	0.1	1.3	14.5	17.4	17.5	328	40.4
14 × 2 × 0.5	0.4	0.1	1.3	15.0	18.3	18.0	369	40.4
19 × 2 × 0.5	0.4	0.1	1.4	17.0	20.5	20.5	482	40.4
24 × 2 × 0.5	0.4	0.1	1.5	20.0	24.1	24.0	609	40.4
37 × 2 × 0.5	0.4	0.1	1.6	23.0	27.7	27.5	881	40.4
2 × 2 × 0.75	0.5	0.1	1.1	9.6	11.1	12.0	115	26.0

FLAMEBLOCKER NTKOXSekf/ekwf

150/250 V (300 V)

Cu/XLPE/IAM/CAM/LSOH

Number and cross-sectional area of conductor	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Net weight of cables	Maximum conductor resistance at temperature 20°C
				Min.	Nom.	Max.		
4 × 2 × 0.75	0.5	0.1	1.1	11.0	12.8	13.5	176	26.0
7 × 2 × 0.75	0.5	0.1	1.2	13.0	15.4	16.0	275	26.0
8 × 2 × 0.75	0.5	0.1	1.3	15.0	17.5	18.5	321	26.0
10 × 2 × 0.75	0.5	0.1	1.4	17.5	20.0	21.0	398	26.0
12 × 2 × 0.75	0.5	0.1	1.4	18.0	20.6	21.5	455	26.0
14 × 2 × 0.75	0.5	0.1	1.4	18.5	21.7	22.5	514	26.0
19 × 2 × 0.75	0.5	0.1	1.5	21.0	24.3	25.0	673	26.0
20 × 2 × 0.75	0.5	0.1	1.6	22.5	25.9	27.0	722	26.0
24 × 2 × 0.75	0.5	0.1	1.7	25.0	28.9	30.0	863	26.0
37 × 2 × 0.75	0.5	0.1	1.8	29.0	33.2	34.5	1,251	26.0
2 × 2 × 1	0.5	0.1	1.10	9.8	11.7	12.0	137	19.2
3 × 2 × 1	0.5	0.1	1.10	10.0	12.4	13.0	174	19.2
4 × 2 × 1	0.5	0.1	1.20	11.5	13.8	14.0	222	19.2
7 × 2 × 1	0.5	0.1	1.20	13.5	16.4	17.0	340	19.2
8 × 2 × 1	0.5	0.1	1.30	15.5	18.6	19.0	395	19.2
10 × 2 × 1	0.5	0.1	1.40	17.5	21.3	21.5	490	19.2
12 × 2 × 1	0.5	0.1	1.40	18.0	22.0	22.5	563	19.2
14 × 2 × 1	0.5	0.1	1.50	19.5	23.3	23.5	651	19.2
19 × 2 × 1	0.5	0.1	1.50	21.5	25.9	26.0	841	19.2
20 × 2 × 1	0.5	0.1	1.60	23.0	27.6	28.0	899	19.2
24 × 2 × 1	0.5	0.1	1.70	25.5	30.8	31.0	1,075	19.2
37 × 2 × 1	0.5	0.1	1.80	29.5	35.5	35.5	1,573	19.2
2 × 2 × 1.5	0.6	0.1	1.2	11.5	13.6	14.0	175	12.8
3 × 2 × 1.5	0.6	0.1	1.2	12.5	14.5	15.0	226	12.8
4 × 2 × 1.5	0.6	0.1	1.2	13.5	15.8	16.5	280	12.8
7 × 2 × 1.5	0.6	0.1	1.4	16.5	19.3	20.0	453	12.8
8 × 2 × 1.5	0.6	0.1	1.4	18.5	21.7	22.5	516	12.8
10 × 2 × 1.5	0.6	0.1	1.5	21.5	24.8	25.5	641	12.8
12 × 2 × 1.5	0.6	0.1	1.6	22.0	25.9	26.5	750	12.8
14 × 2 × 1.5	0.6	0.1	1.6	23.5	27.2	28.0	852	12.8
19 × 2 × 1.5	0.6	0.1	1.7	25.0	28.9	29.5	1,119	12.8
20 × 2 × 1.5	0.6	0.1	1.8	26.0	30.5	31.5	1,195	12.8
24 × 2 × 1.5	0.6	0.1	1.9	28.0	32.5	33.0	1,427	12.8
37 × 2 × 1.5	0.6	0.1	2.1	31.0	36.2	37.0	2,108	12.8

* Cables 2 pairs are assembled as a quad.

FLAME-X 950 NTKOGsekw

150/250 V (300 V)
Cu/SiR/CWB/LSOH

IEC 60092-376

Fire resistant, halogen-free, low smoke shipboard instrumentation, control and telecommunication cables

CONSTRUCTION

Conductors:	Circular stranded bare copper class 2 or class 5 acc. to IEC 60228	
Insulation:	Special cross-linked compound HF S95 acc. to IEC 60092-351	
Inner covering:	Tape	
Armour (screen):	Bare copper wire braiding with the metallic contact with a copper drain wire	
Colour code:	**Pair identification:**	Starting par: red, white Reference par: blue, white Uneven par: black, white Even par: yellow, white
	Other colors available on request	
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-359	
Colour of sheath:	Orange or grey	

CHARACTERISTIC

Inductance:	Max. 0.67 mH/km
Pair capacitance:	Max. 70 nF/km
Impedance at f=1MHz:	110±15 Ω
Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	6 × D D – overall diameter of the cable

FLAME-X 950 NTKOGsekw
150/250 V (300 V)
Cu/SiR/CWB/LSOH

Fire performance

Fire resistant:	IEC 60331-21: for cable diameters ≤ 20 mm
	IEC 60331-1: for cable diameters > 20 mm
Flame retardant:	IEC 60332-1-2; IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm $^{-1}$

Applications

Cables designed for connections of all sorts of measuring and telecommunication equipment including emergency communications systems which proper functioning is necessary in order to ensure safety on ships.

Approvals

DNV-GL, ABS, LR, PRS, BV, RINA

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Cable with tape bedding class 2

Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
n × mm^2	n	mm	mm	mm	mm	mm	mm	mm	kg/km
1 × 2 × 0.5	7	0.6	0.1	0.20	1.0	7.0	8.0	8.6	90
2 × 2 × 0.5*	7	0.6	0.1	0.20	1.0	8.0	9.0	9.6	119
3 × 2 × 0.5	7	0.6	0.1	0.20	1.1	10.0	11.7	12.5	167
4 × 2 × 0.5	7	0.6	0.1	0.20	1.2	11.0	12.9	13.5	205
7 × 2 × 0.5	7	0.6	0.1	0.20	1.2	13.0	15.1	15.5	288

FLAME-X 950 NTKOGsekw

150/250 V (300 V)

Cu/SiR/CWB/LSOH

Cable with tape bedding class 2									
Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
10 × 2 × 0.5	7	0.6	0.1	0.30	1.4	17.5	19.7	20.5	458
12 × 2 × 0.5	7	0.6	0.1	0.30	1.4	18.0	20.3	21.0	498
14 × 2 × 0.5	7	0.6	0.1	0.30	1.4	18.5	21.3	22.0	541
19 × 2 × 0.5	7	0.6	0.1	0.30	1.5	20.5	23.7	24.5	676
24 × 2 × 0.5	7	0.6	0.1	0.30	1.6	24.0	27.7	28.0	836
37 × 2 × 0.5	7	0.6	0.1	0.30	1.8	28.0	31.9	32.5	1,158
1 × 2 × 0.75	7	0.6	0.1	0.20	1.0	7.6	8.4	9.2	98
2 × 2 × 0.75*	7	0.6	0.1	0.20	1.1	8.6	9.6	10.5	138
3 × 2 × 0.75	7	0.6	0.1	0.20	1.2	11.0	12.6	13.5	201
4 × 2 × 0.75	7	0.6	0.1	0.20	1.2	12.0	13.7	15.0	239
7 × 2 × 0.75	7	0.6	0.1	0.20	1.3	15.0	16.7	18.0	377
10 × 2 × 0.75	7	0.6	0.1	0.20	1.4	19.0	21.0	22.5	520
12 × 2 × 0.75	7	0.6	0.1	0.30	1.5	19.5	21.9	23.5	582
14 × 2 × 0.75	7	0.6	0.1	0.30	1.5	20.5	22.9	24.5	654
19 × 2 × 0.75	7	0.6	0.1	0.30	1.6	23.0	25.5	27.0	828
20 × 2 × 0.75	7	0.6	0.1	0.30	1.6	24.0	26.8	28.5	863
24 × 2 × 0.75	7	0.6	0.1	0.30	1.7	26.5	29.8	31.5	1,019
37 × 2 × 0.75	7	0.6	0.1	0.30	1.9	31.0	34.3	36.0	1,417
1 × 2 × 0.75	7	0.6	0.1	0.20	1.0	7.6	8.4	9.2	98
2 × 2 × 0.75*	7	0.6	0.1	0.20	1.1	8.6	9.6	10.5	138
3 × 2 × 0.75	7	0.6	0.1	0.20	1.2	11.0	12.6	13.5	201
4 × 2 × 0.75	7	0.6	0.1	0.20	1.2	12.0	13.7	15.0	239
7 × 2 × 0.75	7	0.6	0.1	0.20	1.3	15.0	16.7	18.0	377
10 × 2 × 0.75	7	0.6	0.1	0.20	1.4	19.0	21.0	22.5	520
12 × 2 × 0.75	7	0.6	0.1	0.30	1.5	19.5	21.9	23.5	582
14 × 2 × 0.75	7	0.6	0.1	0.30	1.5	20.5	22.9	24.5	654
19 × 2 × 0.75	7	0.6	0.1	0.30	1.6	23.0	25.5	27.0	828
20 × 2 × 0.75	7	0.6	0.1	0.30	1.6	24.0	26.8	28.5	863
24 × 2 × 0.75	7	0.6	0.1	0.30	1.7	26.5	29.8	31.5	1,019
37 × 2 × 0.75	7	0.6	0.1	0.30	1.9	31.0	34.3	36.0	1,417
1 × 3 × 0.75	7	0.6	0.1	0.20	1.0	8.0	8.8	9.6	117
1 × 4 × 0.75	7	0.6	0.1	0.20	1.1	8.6	9.6	10.5	138

FLAME-X 950 NTKOGsekw

150/250 V (300 V)

Cu/SiR/CWB/LSOH

Cable with tape bedding class 2									
Number and cross-sectional area of conductor	Number of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
1 × 2 × 1	7	0.6	0.1	0.20	1.0	7.6	8.7	9.4	113
2 × 2 × 1*	7	0.6	0.1	0.20	1.1	8.8	10.1	11.0	159
3 × 2 × 1	7	0.6	0.1	0.20	1.2	11.5	13.3	14.0	224
4 × 2 × 1	7	0.6	0.1	0.20	1.2	12.5	14.4	15.5	268
7 × 2 × 1	7	0.6	0.1	0.30	1.3	15.0	17.6	18.5	442
10 × 2 × 1	7	0.6	0.1	0.30	1.5	19.5	22.4	23.5	616
12 × 2 × 1	7	0.6	0.1	0.30	1.5	20.0	23.1	24.0	680
14 × 2 × 1	7	0.6	0.1	0.30	1.5	21.0	24.2	25.0	747
19 × 2 × 1	7	0.6	0.1	0.30	1.6	23.5	27.0	28.0	951
20 × 2 × 1	7	0.6	0.1	0.30	1.7	24.5	28.6	29.5	1,032
24 × 2 × 1	7	0.6	0.1	0.30	1.8	27.5	31.7	33.0	1,190
37 × 2 × 1	7	0.6	0.1	0.3	1.9	31.5	36.3	37.5	1,679
1 × 3 × 1	7	0.6	0.1	0.20	1.0	8.0	9.2	9.8	129
1 × 4 × 1	7	0.6	0.1	0.20	1.1	8.8	10.1	11.0	159
1 × 2 × 1.5	7	0.7	0.1	0.20	1.1	8.8	9.9	11.0	141
2 × 2 × 1.5*	7	0.7	0.1	0.20	1.1	10.0	11.2	12.0	197
3 × 2 × 1.5	7	0.7	0.1	0.30	1.3	14.0	15.6	16.5	334
4 × 2 × 1.5	7	0.7	0.1	0.30	1.3	15.0	17.0	18.0	385
7 × 2 × 1.5	7	0.7	0.1	0.30	1.4	18.0	20.2	21.5	576
8 × 2 × 1.5	7	0.7	0.1	0.30	1.5	20.0	22.7	24.0	664
10 × 2 × 1.5	7	0.7	0.1	0.30	1.6	22.5	25.8	27.0	809
12 × 2 × 1.5	7	0.7	0.1	0.30	1.6	23.5	26.6	28.0	900
14 × 2 × 1.5	7	0.7	0.1	0.30	1.7	25.0	28.1	29.5	1,008
19 × 2 × 1.5	7	0.7	0.1	0.30	1.8	27.5	31.3	32.5	1,286
20 × 2 × 1.5	7	0.7	0.1	0.30	1.8	29.0	33.0	34.5	1,371
24 × 2 × 1.5	7	0.7	0.1	0.30	2.0	32.5	36.9	38.5	1,633
37 × 2 × 1.5	7	0.7	0.1	0.40	2.2	38.0	42.9	44.5	2,435
1 × 3 × 1.5	7	0.7	0.1	0.20	1.1	9.2	10.4	11.5	165
1 × 4 × 1.5	7	0.7	0.1	0.20	1.1	10.0	11.2	12.0	197
1 × 2 × 2.5	7	0.7	0.1	0.20	1.1	9.6	10.7	12.0	168
1 × 3 × 2.5	7	0.7	0.1	0.20	1.1	10.6	11.6	12.6	211

FLAME-X 950 NTKOGsekw

150/250 V (300 V)

Cu/SiR/CWB/LSOH

Cables with tape bedding class 5									
Number and cross-sectional area of conductor	Maximum diameter of wires in conductor cl. 5	Nominal thickness of insulation	Thickness of tape	Diameter of wires in braid	Nominal thickness of sheath	Overall diameter			Net weight of cables
						Min.	Nom.	Max.	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.75	0.21	0.6	0.1	0.2	1.0	7.6	8.4	9.2	98
2 × 2 × 0.75*	0.21	0.6	0.1	0.2	1.1	8.6	9.7	10.5	138
3 × 2 × 0.75	0.21	0.6	0.1	0.2	1.2	11.0	12.7	13.5	201
4 × 2 × 0.75	0.21	0.6	0.1	0.2	1.2	12.0	13.7	15.0	239
7 × 2 × 0.75	0.21	0.6	0.1	0.3	1.3	15.0	16.8	18.0	378
10 × 2 × 0.75	0.21	0.6	0.1	0.3	1.4	19.0	21.1	22.5	521
12 × 2 × 0.75	0.21	0.6	0.1	0.3	1.5	19.5	21.9	23.5	583
14 × 2 × 0.75	0.21	0.6	0.1	0.3	1.5	20.5	22.9	24.5	655
19 × 2 × 0.75	0.21	0.6	0.1	0.3	1.6	23.0	25.6	27.0	829
20 × 2 × 0.75	0.21	0.6	0.1	0.3	1.6	24.0	26.9	28.5	864
24 × 2 × 0.75	0.21	0.6	0.1	0.3	1.7	26.5	29.9	31.5	1,021
37 × 2 × 0.75	0.21	0.6	0.1	0.3	1.9	31.0	34.4	36.0	1,419

*Cables 2 pairs are assembled as a quad.

FLAME-X 950 NTKOGsekwf

150/250 V (300 V)
Cu/SiR/CAM/LSOH

IEC 60092-376

Fire resistant, halogen-free, low smoke shipboard instrumentation, control and telecommunication cables

CONSTRUCTION

Conductors:	Circular stranded bare copper class 2 acc. to IEC 60228	
Insulation:	Special cross-linked compound HF S95 acc. to IEC 60092-351	
Inner covering:	Tape	
Armour (screen):	Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire	
Colour code:	**Pair identification:**	Starting par: red, white Reference par: blue, white Uneven par: black, white Even par: yellow, white
	Other colors available on request	
Sheath:	Thermoplastic halogen-free polyolefin compound type SHF1 acc. to IEC 60092-359	
Colour of sheath:	Orange or red	

CHARACTERISTIC

Inductance:	Max. 0.67 mH/km
Pair capacitance:	Max. 70 nF/km
Impedance at f=1MHz:	110±15 Ω
Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	6 × D D – overall diameter of the cable

FLAME-X 950 NTKOGsekwf

150/250 V (300 V)
Cu/SiR/CAM/LSOH

Fire performance

Fire resistant:	IEC 60331-21
Flame retardant:	IEC 60332-1-2; IEC 60332-3-22 Category A
Smoke emission:	IEC 61034-2 min. 60%
Gases evolved during combustion:	IEC 60754-1: < 0.5% HCl and HBr IEC 60754-2: pH ≥ 4.3; conductivity ≤ 10 μSmm^{-1}

Applications

Cables designed for connections of all sorts of measuring and telecommunication equipment including emergency communications systems which proper functioning is necessary in order to ensure safety on ships.

Standard length cable packing:	500 or 1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Maximum diameter of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Net weight of cables
					Min.	Nom.	Max.	
n × mm²	**n**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.75	0.36	0.6	0.1	1.0	7.3	7.6	8.5	67
2 × 2 × 0.75*	0.36	0.6	0.1	1.0	8.3	8.6	9.5	99
4 × 2 × 0.75	0.36	0.6	0.1	1.1	12.0	12.7	13.5	176
7 × 2 × 0.75	0.36	0.6	0.1	1.2	14.5	15.3	16.6	272
8 × 2 × 0.75	0.36	0.6	0.1	1.3	16.5	17.3	18.7	317
10 × 2 × 0.75	0.36	0.6	0.1	1.4	19.0	19.8	21.3	394
12 × 2 × 0.75	0.36	0.6	0.1	1.4	19.5	20.4	21.9	448
14 × 2 × 0.75	0.36	0.6	0.1	1.4	20.5	21.4	23.0	505
19 × 2 × 0.75	0.36	0.6	0.1	1.5	23.0	24.0	25.7	660
20 × 2 × 0.75	0.36	0.6	0.1	1.6	24.5	25.6	27.4	707
24 × 2 × 0.75	0.36	0.6	0.1	1.7	27.5	28.5	30.4	845
37 × 2 × 0.75	0.36	0.6	0.1	1.8	31.5	32.8	34.9	1,220
1 × 2 × 1.5	0.52	0.7	0.1	1.0	8.6	8.9	9.8	96
2 × 2 × 1.5	0.52	0.7	0.1	1.1	10.0	10.5	11.5	155

FLAME-X 950 NTKOGsekwf

150/250 V (300 V)

Cu/SiR/CAM/LSOH

Number and cross-sectional area of conductor	Maximum diameter of wires in conductor cl. 2	Nominal thickness of insulation	Thickness of tape	Nominal thickness of sheath	Overall diameter			Net weight of cables
					Min.	Nom.	Max.	
4 × 2 × 1.5	0.52	0.7	0.1	1.2	15.0	15.6	16.9	280
7 × 2 × 1.5	0.52	0.7	0.1	1.4	18.4	19.0	20.5	450
8 × 2 × 1.5	0.52	0.7	0.1	1.4	20.5	21.3	22.7	515
10 × 2 × 1.5	0.52	0.7	0.1	1.5	23.5	24.3	26.0	640
12 × 2 × 1.5	0.52	0.7	0.1	1.6	24.5	25.4	27.2	745
14 × 2 × 1.5	0.52	0.7	0.1	1.6	25.5	26.7	28.5	850
19 × 2 × 1.5	0.52	0.7	0.1	1.7	29.0	29.9	31.9	1,105
20 × 2 × 1.5	0.52	0.7	0.1	1.8	30.5	31.8	33.9	1,182
24 × 2 × 1.5	0.52	0.7	0.1	1.9	34.0	35.5	37.8	1,410
37 × 2 × 1.5	0.52	0.7	0.1	2.1	39.5	41.1	43.7	2,078

* Cables 2 pairs are assembled as a quad.

Classification Bureau	Type cables
DNV-GL	FLAMEBLOCKER KONS
	FLAMEBLOCKER NKOXS
	FLAMEBLOCKER NKOXSekw FLAMEBLOCKER NKOXSekw EMC
	FLAME-X 950 NKOGs
	FLAME-X 950 NKOGsekw FLAME-X 950 NKOGsekw EMC
	FLAMEBLOCKER NTKOXSekw
	FLAMEBLOCKER NTKOXSekwf
	FLAMEBLOCKER NTKOXSekf/ekw
	FLAMEBLOCKER NTKOXSekf/ekwf
	FLAME-X 950 NTKOGsekw
ABS	FLAMEBLOCKER KONS
	FLAMEBLOCKER NKOXS
	FLAMEBLOCKER NKOXSekw FLAMEBLOCKER NKOXSekw EMC
	FLAME-X 950 NKOGs
	FLAME-X 950 NKOGsekw FLAME-X 950 NKOGsekw EMC
	Type MVEPRHXCuHX Marine Cables 6/10 (12) kV
	Type MVEPRHXCuHX Marine Cables 8.7/15 (17.5) kV
	FLAMEBLOCKER NTKOXSekf/ekw
	FLAME-X 950 NTKOGsekw
LR	FLAMEBLOCKER NKOXS
	FLAMEBLOCKER NKOXSekw FLAMEBLOCKER NKOXSekw EMC
	FLAME-X 950 NKOGs
	FLAME-X 950 NKOGsekw FLAME-X 950 NKOGsekw EMC
	FLAMEBLOCKER NTKOXSekw
	FLAMEBLOCKER NTKOXSekf/ekw
	FLAME-X 950 NTKOGsekw

Classification Bureau	Type cables
PRS	FLAMEBLOCKER NKOXS
	FLAMEBLOCKER NKOXSekw FLAMEBLOCKER NKOXSekw EMC
	FLAME-X 950 NKOGs
	FLAME-X 950 NKOGsekw FLAME-X 950 NKOGsekw EMC
	FLAMEBLOCKER NTKOXSekw
	FLAMEBLOCKER NTKOXSekf/ekw
	FLAME-X 950 NTKOGsekw
BV	FLAMEBLOCKER NKOXS
	FLAMEBLOCKER NKOXSekw FLAMEBLOCKER NKOXSekw EMC
	FLAME-X 950 NKOGs
	FLAME-X 950 NKOGsekw FLAME-X 950 NKOGsekw EMC
	FLAMEBLOCKER NTKOXSekw
	FLAME-X 950 NTKOGsekw
RINA	FLAMEBLOCKER NKOXS
	FLAMEBLOCKER NKOXSekw FLAMEBLOCKER NKOXSekw EMC
	FLAME-X 950 NKOGs
	FLAME-X 950 NKOGsekw FLAME-X 950 NKOGsekw EMC
	FLAMEBLOCKER NTKOXSekw
	FLAMEBLOCKER NTKOXSekf/ekw
	FLAME-X 950 NTKOGsekw

Oil&Gas / Offshore

Oil and Gas

Since late 1990s, TF Kable has been engaged in the production and delivery of cables for the oil and gas industry. Being one of the largest producers of this type of cables in Europe, we offer products that meet all requirements of the certification authorities, such as Lloyd Register, DNV and ABS. All cables are designed for operation in the harshest environmental conditions and are environmentally friendly, such as the new generation of lead-free cables.

They are designed for operation on ships and drilling platforms. They are characterised by excellent mechanical and chemical resistance required to work in harsh conditions.

JDR Product and Installation Service division provides 24/7 installation (testing and commissioning) and maintenance support through a global network of highly experienced and fully certified technicians. Our team of certified offshore technicians supports installation, hook-up and commissioning. The team is equipped for rapid mobilisation to anywhere in the world.

BS6883/BS7917 (UKOOA)

6571 Earth SW4 0.6/1 kV

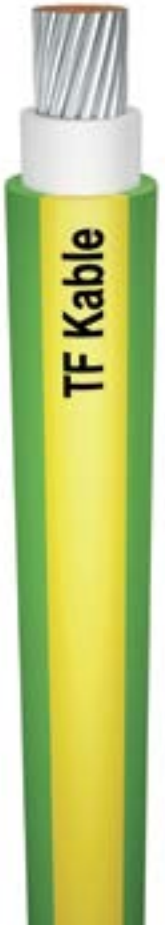
EPR/ZH

BS 6883

Halogen-free, flame retardant, offshore & shipboard earth cables with elastomeric insulation and sheath

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper class 2 acc. to BS EN 60228
Insulation	Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6
Colour of outer sheath	Green/yellow
Cable marking	ELECTRIC CABLE Type SW4 "number of cores" "x" "conductor size" "600/1,000 V" "TFK3" "BS6883" "UKOOA code" "IEC60332-3-22 cat. A" "year" "metre mark"



CHARACTERISTIC

Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Minimum bending radius:	**Overall diameter of cable (D)**	**Minimum bending radius**
	≤ 10 mm	3 D
	16-25 mm	4 D
	> 25 mm	6 D
	D – overall diameter of cable	

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables ≤ 0.5% HCl

6571 Earth SW4 0.6/1 kV
EPR/ZH
BS 6883

Applications

Unarmoured earth cable for fixed installations in all areas, including accommodation and open deck in ships and offshore units.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number and cross- sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of outersheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
n × mm²		**mm**	**mm**	**mm**	**kg/km**	
1 × 1	2	0.8	1.0	4.8	34	–
1 × 1.5	2	0.8	1.0	5.1	40	–
1 × 2.5	2	0.8	1.0	5.6	54	WE103
1 × 4	2	1.0	1.0	6.5	78	WE104
1 × 6	2	1.0	1.0	7.3	101	WE106
1 × 10	2	1.0	1.0	8.1	144	WE110
1 × 16	2	1.0	1.1	9.5	216	WE116
1 × 25	2	1.2	1.2	11.4	328	WE125
1 × 35	2	1.2	1.2	12.6	429	WE135
1 × 50	2	1.4	1.3	14.3	551	WE150
1 × 70	2	1.4	1.3	16.0	753	WE170
1 × 95	2	1.6	1.4	18.6	1,049	WE195
1 × 120	2	1.6	1.5	20.3	1,274	WE10A
1 × 150	2	1.8	1.6	22.5	1,568	WE10B
1 × 185	2	2.0	1.7	24.9	1,949	WE10C
1 × 240	2	2.2	1.8	28.0	2,530	WE10D
1 × 300	2	2.4	1.9	30.9	3,134	WE10E
1 × 400	2	2.6	2.0	34.6	4,258	WE10F
1 × 500	2	2.8	2.2	37.6	5,337	WE10G
1 × 630	2	2.8	2.3	42.9	6,533	WE10H

Please refer to technical section for additional information relating to these cables.

657(*) SW4 0.6/1 kV

EPR/ZH

BS 6883

Flame retardant, halogen-free, offshore & shipboard power, control & lighting cables with elastomeric insulation and sheath

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper	
	Class 5 acc. to BS EN 60228	Class 2 acc. to BS EN 60228
	[1] For sizes: 1.0 ÷ 1.5 mm²	[2] For sizes 2.5 mm² and above
Insulation	Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2	
Core identification [3]	All cores are white with black printed numbers	
Outer sheath	Heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6	
Colour of outer sheath	Black	
Cable marking	ELECTRIC CABLE Type SW4 "number of cores" "x" "conductor size" "600/1,000 V" "TFK3" "BS6883" "UKOOA code" "IEC60332-3-22 cat. A" "year" "metre mark"	

[1] Class 2 conductors for sizes below 2.5 mm² are available on request.

[2] Class 5 flexible conductors for sizes above 2.5 mm² are available on request.

[3] Coloured cores are available on request.

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Minimum bending radius:	**Overall diameter of cable (D)**	**Minimum bending radius**
	≤ 10 mm	3 D
	16-25 mm	4 D
	> 25 mm	6 D
	D – overall diameter of cable	

657(*) SW4 0.6/1 kV
EPR/ZH
BS 6883

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables ≤ 0.5% HCl
UV resistant:	UL 1581

Applications

Power, control or lighting cable for fixed installations in all areas and open deck in ships and offshore units.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
n × mm²		**mm**	**mm**	**mm**	**kg/km**	
1 × 1	5	0.8	1.0	4.8	34	WF101
1 × 1.5	5	0.8	1.0	5.1	40	WF102
1 × 2.5	2	0.8	1.0	5.6	54	WF103
1 × 4	2	1.0	1.0	6.7	78	WF104
1 × 6	2	1.0	1.0	7.3	101	WF106
1 × 6	5	1.0	1.0	7.1	96	–
1 × 10	2	1.0	1.0	8.2	144	WF110
1 × 16	2	1.0	1.1	9.5	216	WF116
1 × 25	2	1.2	1.2	11.5	328	WF125
1 × 35	2	1.2	1.2	12.6	429	WF135

657(*) SW4 0.6/1 kV
EPR/ZH
BS 6883

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
1 × 50	2	1.4	1.3	14.3	551	WF150
1 × 70	2	1.4	1.3	16.1	753	WF170
1 × 95	2	1.6	1.4	18.6	1,049	WF195
1 × 120	2	1.6	1.5	20.3	1,274	WF10A
1 × 150	2	1.8	1.6	22.5	1,568	WF10B
1 × 185	2	2.0	1.7	25.0	1,949	WF10C
1 × 240	2	2.2	1.8	28.0	2,530	WF10D
1 × 300	2	2.4	1.9	31.1	3,134	WF10E
1 × 400	2	2.6	2.0	34.6	4,258	WF10F
1 × 500	2	2.8	2.2	38.8	5,337	WF10G
1 × 630	2	2.8	2.2	42.9	6,533	WF10H
2 × 1	5	0.8	1.0	8.1	86	WF201
2 × 1.5	5	0.8	1.1	8.5	103	WF202
2 × 2.5	2	0.8	1.1	9.5	140	WF203
2 × 4	2	1.0	1.2	11.7	210	WF204
2 × 6	2	1.0	1.2	12.8	270	WF206
2 × 10	2	1.0	1.3	14.9	391	WF210
2 × 16	2	1.0	1.4	17.4	574	WF216
2 × 25	2	1.2	1.5	21.1	864	WF225
2 × 35	2	1.2	1.6	23.7	1,129	WF235
2 × 50	2	1.4	1.7	26.8	1,452	WF250
2 × 70	2	1.4	1.9	30.7	1,991	WF270
2 × 95	2	1.6	2.1	35.8	2,766	WF295
2 × 120	2	1.6	2.2	39.1	3,338	WF20A
2 × 150	2	1.8	2.3	43.1	4,097	WF20B
3 × 1	5	0.8	1.1	8.4	100	WF301
3 × 1.5	5	0.8	1.1	9.0	122	WF302
3 × 2.5	2	0.8	1.1	10.1	169	WF303
3 × 4	2	1.0	1.2	12.4	257	WF304
3 × 6	2	1.0	1.2	13.6	335	WF306
3 × 10	2	1.0	1.3	15.9	490	WF310
3 × 16	2	1.0	1.4	18.6	732	WF316
3 × 25	2	1.2	1.6	22.7	1,121	WF325
3 × 35	2	1.2	1.7	25.4	1,474	WF335

657(*) SW4 0.6/1 kV
EPR/ZH
BS 6883

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
3 × 50	2	1.4	1.8	28.9	1,893	WF350
3 × 70	2	1.4	2.0	33.0	2,611	WF370
3 × 95	2	1.6	2.2	38.5	3,638	WF395
3 × 120	2	1.6	2.3	41.8	4,400	WF30A
3 × 150	2	1.8	2.5	46.5	5,425	WF30B
3 × 185	2	2.0	2.7	51.9	6,754	WF30C
3 × 240	2	2.2	2.9	58.7	8,770	WF30D
4 × 1	5	0.8	1.1	9.1	122	WF401
4 × 1.5	5	0.8	1.1	9.8	149	WF402
4 × 2.5	2	0.8	1.1	11.0	210	WF403
4 × 4	2	1.0	1.2	13.6	321	WF404
4 × 6	2	1.0	1.3	15.2	428	WF406
4 × 10	2	1.0	1.4	17.6	627	WF410
4 × 16	2	1.0	1.5	20.6	940	WF416
4 × 25	2	1.2	1.7	25.3	1,442	WF425
4 × 35	2	1.2	1.8	28.2	1,899	WF435
4 × 50	2	1.4	1.9	32.1	2,439	WF450
4 × 70	2	1.4	2.1	36.7	3,370	WF470
4 × 95	2	1.6	2.3	42.8	4,700	WF495
4 × 120	2	1.6	2.5	46.7	5,710	WF40A
4 × 150	2	1.8	2.7	51.9	7,035	WF40B
5 × 1.5	5	0.8	1.1	10.7	180	–
5 × 2.5	2	0.8	1.2	12.2	260	–
5 × 4*	2	1	1.3	15.2	394	–
5 × 6*	2	1	1.4	16.9	463	–
5 × 10*	2	1	1.5	19.6	685	–
5 × 35*	2	1.2	1.9	31.3	2,114	–
5 × 50*	2	1.4	2	35.6	2,709	–
6 × 1.5*	2	0.8	1.2	12.0	226	–
6 × 1.5*	5	0.8	1.2	11.8	214	–
6 × 2.5*	2	0.8	1.2	13.3	305	–
7 × 1.5	5	0.8	1.2	12.8	252	WF702
7 × 2.5	2	0.8	1.2	14.4	359	WF703
9 × 1.5*	5	0.8	1.3	14.9	304	–

657(*) SW4 0.6/1 kV
EPR/ZH
BS 6883

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
10 × 1.5*	2	0.8	1.3	15.4	347	–
10 × 1.5*	5	0.8	1.3	15.1	326	–
12 × 1.5	5	0.8	1.3	15.6	370	WFA02
12 × 2.5	2	0.8	1.4	17.9	543	WFA03
19 × 1.5	5	0.8	1.4	19.4	570	WFB02
19 × 2.5	2	0.8	1.5	22.2	842	WFB03
27 × 1.5	5	0.8	1.6	22.4	766	WFC02
27 × 2.5*	5	0.8	1.7	25.5	1,082	–
37 × 1.5	5	0.8	1.7	26.2	1,107	WFD02

*Based on standard

Please refer to technical section for additional information relating to these cables.

658(*) SW4 0.6/1 kV

TCu/EPR/ZH/GSWB/ZH

BS 6883

Halogen-free, flame retardant, offshore & shipboard power, control & lighting cables with elastomeric insulation and sheath, with steel wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper	
	Class 5 acc. to BS EN 60228	Class 2 acc. to BS EN 60228
	[1] For sizes: 1.0 & 1.5 mm²	[2] For sizes 2.5 mm² and above
Insulation	Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2	
Core identification [3]	All cores are white with black printed numbers	
Inner sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6	
Armour/Mechanical screen [4]	Galvanized steel wire braid	
Separator	Separator, suitable tape between the braid and outer sheath	
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6	
Colour of outer sheath	Black	
Cable marking	ELECTRIC CABLE Type SW4 "number of cores" "x" "conductor size" "600/1,000 V" "TFK3" "BS6883" "UKOOA code" "IEC60332-3-22 cat. A" "year" "metre mark"	

[1] Class 2 conductors for sizes below 2.5 mm² are available on request.

[2] Class 5 flexible conductors for sizes above 2.5 mm² are available on request.

[3] Coloured cores are available on request.

[4] Tinned copper wire braid version is available on request.

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Minimum bending radius:	**Overall diameter of cable (D)**	**Minimum bending radius**
	< 25 mm	4 D
	> 25 mm	6 D
	D – overall diameter of cable	

658(*) SW4 0.6/1 kV
TCu/EPR/ZH/GSWB/ZH
BS 6883

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables ≤ 0.5% HCl
UV resistant:	UL 1581

Applications

Armoured power, control or lighting cable for fixed installations in all areas including accommodation and open deck in ships and offshore units where halogen-free cable protection is required.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
n × mm 2		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
*2 × 0.75	5	0.8	1	0.3	1.2	11.3	198	–
2 × 1	5	0.8	1	0.3	1.2	11.6	200	WB201
2 × 1.5	5	0.8	1.1	0.3	1.2	12.4	241	WB202
2 × 2.5	2	0.8	1.1	0.3	1.2	13.4	283	WB203
2 × 4	2	1	1.2	0.3	1.3	15.6	387	WB204
2 × 6	2	1	1.2	0.3	1.4	16.9	476	WB206
2 × 10	2	1	1.3	0.3	1.4	19.2	627	WB210
2 × 16	2	1	1.4	0.3	1.5	22	853	WB216

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Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
2 × 25	2	1.2	1.5	0.3	1.7	26.1	1,212	WB225
2 × 35	2	1.2	1.6	0.3	1.8	28.8	1,532	WB235
2 × 50	2	1.4	1.7	0.45	2	33	2,038	WB250
2 × 70	2	1.4	1.9	0.45	2.1	37.1	2,680	WB270
2 × 95	2	1.6	2.1	0.45	2.3	42.6	3,593	WB295
2 × 120	2	1.6	2.2	0.45	2.5	46.2	4,291	WB20A
2 × 150	2	1.8	2.3	0.45	2.6	50.5	5,120	WB20B
2 × 185	2	2	2.5	0.45	2.8	55.7	6,404	WB20C
2 × 240	2	2.2	2.8	0.45	3.1	62.8	8,210	WB20D
2 × 300	2	2.4	3	0.45	3.3	69.1	10,016	WB20E
*3 × 0.75	5	0.8	1.1	0.3	1.2	12.1	222	–
3 × 1	5	0.8	1.1	0.3	1.2	12.2	237	WB301
3 × 1.5	5	0.8	1.1	0.3	1.2	12.9	263	WB302
3 × 2.5	2	0.8	1.1	0.3	1.3	14.1	323	WB303
3 × 4	2	1	1.2	0.3	1.3	16.3	439	WB304
3 × 6	2	1	1.2	0.3	1.4	17.7	547	WB306
3 × 10	2	1	1.3	0.3	1.5	20.4	743	WB310
3 × 16	2	1	1.4	0.3	1.6	23.3	1,029	WB316
3 × 25	2	1.2	1.6	0.3	1.8	27.8	1,515	WB325
3 × 35	2	1.2	1.7	0.45	1.9	31.4	2,032	WB335
3 × 50	2	1.4	1.8	0.45	2	35	2,547	WB350
3 × 70	2	1.4	2	0.45	2.2	39.6	3,340	WB370
3 × 95	2	1.6	2.2	0.45	2.4	45.5	4,514	WB395
3 × 120	2	1.6	2.3	0.45	2.6	49.3	5,408	WB30A
3 × 150	2	1.8	2.5	0.45	2.8	54.3	6,587	WB30B
3 × 185	2	2	2.7	0.45	3	59.9	8,197	WB30C
3 × 240	2	2.2	2.9	0.45	3.2	67	10,475	WB30D
3 × 300	2	2.4	3.2	0.45	3.5	74.1	12,878	WB30E
4 × 1	5	0.8	1.1	0.3	1.2	12.9	262	WB401
4 × 1.5	5	0.8	1.1	0.3	1.3	13.9	301	WB402
4 × 2.5	2	0.8	1.1	0.3	1.3	15.1	384	WB403
4 × 4	2	1	1.2	0.3	1.4	17.7	532	WB404
4 × 6	2	1	1.3	0.3	1.5	19.4	673	WB406

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Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
4 × 10	2	1	1.4	0.3	1.6	22.3	917	WB410
4 × 16	2	1	1.5	0.3	1.7	25.6	1,287	WB416
4 × 25	2	1.2	1.7	0.45	1.9	31.3	1,999	WB425
4 × 35	2	1.2	1.8	0.45	2	34.2	2,525	WB435
4 × 50	2	1.4	1.9	0.45	2.2	38.7	3,159	WB450
4 × 70	2	1.4	2.1	0.45	2.4	43.7	4,226	WB470
4 × 95	2	1.6	2.3	0.45	2.6	50.2	5,718	WB495
4 × 120	2	1.6	2.5	0.45	2.8	54.6	6,876	WB40A
4 × 150	2	1.8	2.7	0.45	3	60.1	8,357	WB40B
4 × 185	2	2	2.9	0.45	3.2	66.3	10,406	WB40C
4 × 240	2	2.2	3.2	0.45	3.5	74.6	13,363	WB40D
4 × 300	2	2.4	3.5	0.45	3.8	82.4	16,433	WB40E
5 × 1.5	5	0.8	1.1	0.3	1.3	14.8	351	–
5 × 2.5	2	0.8	1.2	0.3	1.3	16.3	441	–
*5 × 4	2	1	1.4	0.3	1.5	19.7	652	–
*5 × 6	2	1	1.5	0.3	1.6	21.6	807	–
*5 × 10	2	1	1.5	0.3	1.7	24.3	1,090	–
*5 × 16	2	1	1.7	0.45	1.9	28.9	1,654	–
*5 × 25	2	1.2	1.8	0.45	2	34	2,374	–
*5 × 35	2	1.2	1.9	0.45	2.2	37.6	3,086	–
*5 × 50	2	1.4	2.1	0.45	2.4	42.6	3,857	–
*5 × 70	2	1.4	2.3	0.45	2.6	48.2	5,152	–
*6 × 1	2	0.8	1.2	0.3	1.3	15.1	342	–
*6 × 1.5	2	0.8	1.2	0.3	1.3	16.1	408	–
*6 × 4	2	1	1.4	0.3	1.5	21.2	724	–
*6 × 6	2	1	1.5	0.3	1.7	23.5	911	–
*7 × 1	5	0.8	1.2	0.3	1.3	15.8	367	–
7 × 1.5	5	0.8	1.2	0.3	1.3	16.8	452	WB702
7 × 2.5	2	0.8	1.2	0.3	1.4	18.6	577	WB703
*8 × 1.5	5	0.8	1.2	0.3	1.4	17.9	473	–
*10 × 4	2	1.0	1.4	0.3	1.6	26.2	1,067	–
12 × 1.5	5	0.8	1.3	0.3	1.5	20.1	621	WBA02
12 × 2.5	2	0.8	1.4	0.3	1.6	22.6	836	WBA03

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Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
**13G2.5	5	0.8	1.5	0.3	1.7	23.7	885	–
*14 × 2.5	2	0.8	1.5	0.3	1.7	23.8	944	–
**14G2.5	5	0.8	1.5	0.3	1.7	23.8	912	
19 × 1.5	5	0.8	1.4	0.3	1.6	24.1	888	WBB02
19 × 2.5	2	0.8	1.5	0.3	1.7	27.1	1,202	WBB03
19 × 4	2	1.0	1.6	0.3	1.8	32.8	1,740	–
*20 × 2.5	2	0.8	1.6	0.3	1.8	27.4	661	–
*20 × 2.5	5	0.8	1.6	0.3	1.8	27.3	650	–
*24 × 1.5	5	0.8	1.6	0.3	1.8	26.9	1,070	–
*24 × 2.5	2	0.8	1.6	0.3	1.8	29.8	1,462	–
27 × 1.5	5	0.8	1.6	0.3	1.8	27.5	1,162	WBC02
*27 × 2.5	2	0.8	1.7	0.45	1.9	31.4	1,714	WBC03
*30 × 2.5	2	0.8	1.7	0.45	1.9	32.4	1,803	–
37 × 1.5	5	0.8	1.7	0.45	1.9	32.1	1,608	WBD02
*37 × 2.5	2	0.8	1.8	0.45	2	36	2,240	–
*37 × 2.5	5	0.8	1.8	0.45	2	35.9	2,153	–
*47 × 1.5	2	0.8	1.8	0.45	2	35.5	2,060	–
*48 × 1.5	2	0.8	1.8	0.45	2	35.4	2,002	–
*48 × 2.5	2	0.8	1.9	0.45	2.1	39.3	2,688	–

*Based on standard

**Based on standard with green-yellow earth core

Continuous Current Ratings

In accordance with IEC 60092-352

Conductor size	Single core	2-core	3- or 4-core
mm²	**Amps**	**Amps**	**Amps**
1	18	15	13
1.5	23	20	16
2.5	30	26	21

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Conductor size	Single core	2-core	3- or 4-core
4	40	34	28
6	52	44	36
10	72	61	50
16	96	82	67
25	127	108	89
35	157	133	110
50	196	167	137
70	242	206	169
95	293	249	205
120	339	288	237
150	389	331	272
185	444	377	311
240	522	444	365
300	601	511	421

Maximum rated conductor temperature 90°C, ambient temperature 45°C

Correction factor for different ambient temperature										
Temperature of air [°C]	35	40	45	50	55	60	65	70	75	80
Correction factor	1.1	1.05	1	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Please refer to technical section for additional information relating to these cables.

658(*)(c) SW4 150/250 V

TCu/EPR/CAM/ZH/GSWB/ZH

BS 6883

Halogen-free, flame retardant, offshore & shipboard instrumentation cables, elastomer insulated and sheathed, collectively screened pairs, triples or quads with steel wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper class 5 [1] acc. to BS EN 60228
Insulation	Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Pairs identification*	Black and white with printed number of pairs in contrasting colour on the insulation
Triples identification*	Black, white and red with printed number of triples in contrasting colour on the insulation
Quad identification*	Black, white, red and blue with printed number of quad in a contrasting colour on the insulation
Separator	Polyester tape
Collective screen	Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire
Inner sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4, acc. to BS 7655-2.6
Separator	Polyester tape
Armour/mechanical screen	Galvanized steel wire braid [2]
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4, acc. to BS 7655-2.6
Colour of outer sheath	Grey (Non Intrinsically Safe) or blue (Intrinsically Safe) [3]
Cable marking	ELECTRIC CABLE Type SW4 “number of pairs or triples, quads” “x” “ conductor size” “(C)” “150/250 V” “TFK3” “BS6883” “UKOOA code” “IEC60332-3-22 cat. A” “year” “metre mark”

[1] Class 2 conductors are available on request

[2] Tinned copper wire braid version is available on request

[3] Black outer sheathing is available on request

*Alternative coloured cores are available on request

658(*)(c) SW4 150/250 V
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CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	8 × D; D – overall diameter of cable

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables ≤ 0.5% HCl

Applications

Armoured instrumentation cable for fixed installations in all areas including accommodation and on open deck in ships and offshore units where halogen-free cable protection is required.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 2 × 1.5*	2	0.8	1.2	0.3	1.4	13.2	245	–
1 × 4 × 2.5*	2	0.8	1.4	0.3	1.6	16.3	422	–

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Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
2 × 2 × 0.75*	5	0.8	1.2	0.3	1.4	13.3	340	–
2 × 2 × 1.0*	5	0.8	1.2	0.3	1.4	13.5	357	–
2 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	15.1	352	–
2 × 2 × 2.5*	2	0.8	1.4	0.3	1.6	16.6	404	–
2 × 2 × 2.5*	5	0.8	1.4	0.3	1.6	16.6	404	–
3 × 2 × 0.75	5	0.8	1.2	0.3	1.4	16.9	435	KJH00/KGH00
3 × 2 × 1.0	5	0.8	1.2	0.3	1.4	17.8	483	KJH01/KGH01
3 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	18.9	497	KJH02/KGH02
4 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	20.4	561	–
5 × 2 × 0.75*	5	0.8	1.4	0.3	1.5	19.8	563	–
5 × 2 × 1.0*	5	0.8	1.4	0.3	1.6	20.4	613	–
5 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	21.9	716	–
5 × 2 × 2.5*	2	0.8	1.5	0.3	1.7	24.6	846	–
6 × 2 × 1*	5	0.8	1.4	0.3	1.6	21.9	595	–
7 × 2 × 0.75	5	0.8	1.4	0.3	1.5	21.2	566	KJJ00/KGJ00
7 × 2 × 1.0	5	0.8	1.4	0.3	1.6	22.2	640	KJJ01/KGJ01
7 × 2 × 1.5*	5	0.8	1.6	0.3	1.8	23.8	761	KJJ02/KGJ02
8 × 2 × 1.5*	5	0.8	1.6	0.3	1.8	25.5	889	–
10 × 2 × 0.75*	5	0.8	1.6	0.3	1.7	25.5	922	–
10 × 2 × 1.0*	5	0.8	1.6	0.3	1.8	26.3	889	–
10 × 2 × 1.5*	5	0.8	1.6	0.3	1.8	28.2	1,184	–
12 × 2 × 0.75	5	0.8	1.6	0.3	1.7	27.0	1,087	KJK00/KGJ00
12 × 2 × 1.0	5	0.8	1.6	0.3	1.8	28.3	1,155	KJK01/KGJ01
12 × 2 × 1.5*	5	0.8	1.8	0.45	2.1	30.9	1,470	KJK02/KGJ02
16 × 2 × 1.5*	5	0.8	1.8	0.45	2.1	34.2	1,540	–
20 × 2 × 0.75	5	0.8	1.8	0.45	2.0	33.4	1,549	KJL00/KGL00
20 × 2 × 1.0	5	0.8	1.8	0.45	2.1	35.7	1,810	KJL01/KGL01
20 × 2 × 1.5*	5	0.8	2.0	0.45	2.2	37.6	2,061	KJL02/KGL02
20 × 2 × 1.5*	2	0.8	2.0	0.45	2.2	38.2	1,919	–
24 × 2 × 1.5*	5	0.8	2.0	0.45	2.2	40.3	2,102	–
27 × 2 × 0.75	5	0.8	1.9	0.45	2.2	37.7	1,724	–
27 × 2 × 1	5	0.8	2.0	0.45	2.2	39.9	1,993	–
27 × 2 × 1.5*	5	0.8	2.1	0.45	2.3	42.4	2,503	–
37 × 2 × 0.75	5	0.8	2.1	0.45	2.3	43.0	2,199	–
37 × 2 × 1	5	0.8	2.2	0.45	2.4	44.5	2,454	–

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Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
37 × 2 × 1.5*	5	0.8	2.3	0.45	2.5	48.6	3,191	–
n × 3 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
3 × 3 × 0.75	5	0.8	1.3	0.3	1.4	18.5	440	KJS00/KGS00
3 × 3 × 1.0	5	0.8	1.3	0.3	1.5	19.6	519	KJS01/KGS01
2 × 3 × 1.5	2	0.8	1.4	0.3	1.6	19.9	493	–
3 × 3 × 1.5*	5	0.8	1.4	0.3	1.6	20.3	560	–
4 × 3 × 1.5*	5	0.8	1.5	0.3	1.7	22.3	674	–
5 × 3 × 1*	2	0.8	1.5	0.3	1.7	22.5	700	–
7 × 3 × 0.75	5	0.8	1.4	0.3	1.6	24.2	745	KJT00/KGT00
7 × 3 × 1.0	5	0.8	1.5	0.3	1.7	25.7	871	KJT01/KGT01
7 × 3 × 1.5*	5	0.8	1.7	0.3	1.9	27.4	1,008	–
8 × 3 × 1.5*	5	0.8	1.7	0.45	2.0	29.8	1,229	–
12 × 3 × 0.75	5	0.8	1.7	0.45	1.9	30.4	1,381	KJU00/KGU00
12 × 3 × 1.0	5	0.8	1.7	0.45	2.0	32.2	1,591	KJU01/KGU01
12 × 3 × 1.5*	5	0.8	1.9	0.45	2.1	34.4	1,772	–
16 × 3 × 1.5*	5	0.8	2.0	0.45	2.2	38.5	2,044	–
n × 4 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
3 × 4 × 0.75*	5	0.8	1.4	0.3	1.5	20.6	531	–
3 × 4 × 1*	5	0.8	1.4	0.3	1.6	21.3	576	–
3 × 4 × 1.5*	5	0.8	1.6	0.3	1.7	23.4	702	–
7 × 4 × 0.75*	5	0.8	1.6	0.3	1.7	26.8	908	–
7 × 4 × 1*	5	0.8	1.6	0.45	1.8	28.2	1,223	–
7 × 4 × 1.5*	5	0.8	1.7	0.45	1.9	30.8	1,466	–

* Based on standard

Electrical parameters

Nominal cross-sectional area	Maximum conductor resistance at 20°C (Ω/km)	
	Class 5	**Class 2**
0.75 mm²	26.7	24.8
1.0 mm²	20.0	18.2
1.5 mm²	13.7	12.2

Please refer to technical section for additional information relating to these cables.

658(*)(I) SW4 150/250 V

TCu/EPR/IAM/ZH/GSWB/ZH

BS 6883

Halogen-free, flame retardant, offshore & shipboard instrumentation cables, elastomer insulated and sheathed, individually screened pairs, triples or quads with steel wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper class 5 [1] acc. to BS EN 60228
Insulation	Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Pairs identification *	Black and white with printed number of pairs in contrasting colour on the insulation
Triples identification *	Black, white and red with printed number of triples in contrasting colour on the insulation
Quads identification *	Black, white, red and blue with printed number of quads in contrasting colour on the insulation
Separator	Polyester tape
Individual screen	Aluminium/polyester tape with the metallic contact with tinned copper drain wire
Separator	Polyester tape
Inner sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4, acc. to BS 7655-2.6
Armour/mechanical screen	Galvanized steel wire braid [2]
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4, acc. to BS 7655-2.6
Colour of outer sheath	Grey (Non Intrinsically Safe) or blue (Intrinsically Safe) [3]
Cable marking	ELECTRIC CABLE Type SW4 “number of pairs or triples, quads” “x” “ conductor size” “(I)” “150/250 V” “TFK3” “BS6883” “UKOOA code” “IEC60332-3-22 cat. A” “year” “metre mark”

[1] Class 2 conductors are available on request

[2] Tinned copper wire braid version is available on request

[3] Black outer sheathing is available on request

* Alternative coloured cores are available on request

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CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	8 × D; D – overall diameter of cable

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables < 0.5% HCl

Applications

Armoured instrumentation cable for fixed installations in all areas including accommodation and on open deck in ships and offshore units where halogen-free cable protection is required.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

658(*)(I) SW4 150/250 V
TCu/EPR/IAM/ZH/GSWB/ZH
BS 6883

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 2 × 0.75	5	0.8	1	0.3	1.2	11.5	197	KKF00/KHF00
1 × 2 × 1.0	5	0.8	1	0.3	1.2	11.7	205	KKF01/KHF01
1 × 2 × 1.5*	5	0.8	1.2	0.3	1.4	13.1	252	KKF02/KHF02
1 × 2 × 1.5*	2	0.8	1.2	0.3	1.4	13.2	257	–
1 × 2 × 2.5*	2	0.8	1.3	0.3	1.4	14.3	301	KKF03/KHF03
2 × 2 × 0.75*	5	0.8	1.2	0.3	1.4	13.1	260	–
2 × 2 × 1.5*	5	0.8	1.3	0.3	1.5	14.5	344	–
3 × 2 × 0.75	5	0.8	1.2	0.3	1.4	17.1	398	KKH00/KHH00
3 × 2 × 1	5	0.8	1.3	0.3	1.4	17.8	447	KKH01/KHH01
3 × 2 × 1.5*	5	0.8	1.3	0.3	1.5	18.3	448	KKH02/KHH02
4 × 2 × 0.75	5	0.8	1.4	0.3	1.6	18.5	453	–
4 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	20.2	552	–
5 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	21.7	673	–
7 × 2 × 0.75	5	0.8	1.4	0.3	1.6	21.8	658	KKJ00/KHJ00
7 × 2 × 1.0	5	0.8	1.4	0.3	1.6	22.9	739	KKJ01/KHJ01
7 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	23.2	786	KKJ02/KHJ02
10 × 2 × 1.5*	5	0.8	1.7	0.45	1.9	29.1	1,248	–
10 × 2 × 2.5*	2	0.8	1.7	0.45	1.9	32.2	1,605	–
12 × 2 × 0.75	5	0.8	1.6	0.3	1.8	26.5	944	KKK00/KHK00
12 × 2 × 1.0	5	0.8	1.7	0.45	1.9	28.9	1,200	KKK01/KHK01
12 × 2 × 1.5*	5	0.8	1.7	0.45	1.9	30.2	1,341	KKK02/KHK02
12 × 2 × 2.5*	5	0.8	1.9	0.45	2.1	34.2	1,696	–
16 × 2 × 0.75*	5	0.8	1.9	0.45	2.1	31.1	1,325	–
20 × 2 × 0.75	5	0.8	1.9	0.45	2.1	33.6	1,558	KKL00/KHL00
20 × 2 × 1.0	5	0.8	1.9	0.45	2.2	35.4	1,760	KKL01/KHL01
20 × 2 × 1.5*	5	0.8	2.0	0.45	2.3	37.6	2,039	KKL02/KHL02
24 × 2 × 0.75	5	0.8	2.0	0.45	2.3	36.4	1,903	–
27 × 2 × 0.75	5	0.8	2.0	0.45	2.3	38.0	1,968	–
27 × 2 × 1	5	0.8	2.1	0.45	2.4	39.7	2,203	–
27 × 2 × 1.5*	5	0.8	2.2	0.45	2.5	42.8	2,558	–
37 × 2 × 0.75	5	0.8	2.2	0.45	2.5	43.4	2,550	–
37 × 2 × 1	5	0.8	2.3	0.45	2.6	45.9	2,916	–

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Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
37 × 2 × 1.5	5	0.8	2.4	0.45	2.7	49.0	3,267	–
n × 3 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 3 × 0.75	5	0.8	1	0.3	1.2	11.9	218	KKR00/KHR00
1 × 3 × 1.0	5	0.8	1.1	0.3	1.2	12.3	234	KKR01/KHR01
1 × 3 × 1.5*	5	0.8	1.2	0.3	1.4	13.5	285	KKR02/KHR02
1 × 3 × 1.5*	2	0.8	1.2	0.3	1.4	13.7	291	–
1 × 3 × 2.5*	2	0.8	1.4	0.3	1.5	15.2	362	KKR03/KHR03
2 × 3 × 0.75*	5	0.8	1.3	0.3	1.5	17.6	385	–
2 × 3 × 1.5*	2	0.8	1.4	0.3	1.6	19.7	496	–
3 × 3 × 0.75	5	0.8	1.3	0.3	1.5	18.9	456	KKS00/KHS00
3 × 3 × 1.0	5	0.8	1.3	0.3	1.5	19.7	492	KKS01/KHS01
3 × 3 × 1.5*	5	0.8	1.4	0.3	1.6	20.1	588	–
7 × 3 × 0.75	5	0.8	1.5	0.3	1.7	24.4	803	KKT00/KHT00
7 × 3 × 1.0	5	0.8	1.5	0.3	1.7	26	871	KKT01/KHT01
7 × 3 × 1.5*	5	0.8	1.7	0.45	2	28.1	1,220	–
12 × 3 × 0.75	5	0.8	1.7	0.45	2	30.5	1,339	KKU00/KHU00
12 × 3 × 1.0	5	0.8	1.8	0.45	2	31.4	1,468	KKU01/KHU01
12 × 3 × 1.5*	5	0.8	1.9	0.45	2.1	34.2	1,815	–
n × 4 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 4 × 0.75	5	0.8	1.1	0.3	1.2	12.8	237	–
1 × 4 × 1	5	0.8	1.1	0.3	1.2	13.2	257	–
1 × 4 × 1.5*	5	0.8	1.4	0.3	1.5	14.9	361	–
3 × 4 × 0.75	5	0.8	1.4	0.3	1.5	21.0	574	–
3 × 4 × 1	5	0.8	1.4	0.3	1.6	22.3	654	–
3 × 4 × 1.5*	5	0.8	1.6	0.3	1.7	23.2	719	–
7 × 4 × 0.75	5	0.8	1.6	0.3	1.7	27.2	1,011	–
7 × 4 × 1	5	0.8	1.6	0.45	1.8	29.7	1,275	–
7 × 4 × 1.5	5	0.8	1.7	0.45	1.9	30.6	1,414	–

* Based on standard

Please refer to technical section for additional information relating to these cables.

659(*) SW4 0.6/1 kV

TCu/EPR/ZH/TPBWB/ZH

BS 6883

Halogen-free, flame retardant, offshore & shipboard power cables with elastomeric insulation and sheath, with tinned phosphor bronze wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper class 2 acc. to BS EN 60228
Insulation	Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Core identification	Red or black
Inner sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6
Screen	Tinned phosphor bronze wire braid
Separator	Separator, suitable tape between the braid and outer sheath
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame--retardant elastomer compound type SW4 acc. to BS 7655-2.6
Colour of outer sheath	Black

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Minimum bending radius:	**Overall diameter of cable (D)**	**Minimum bending radius**
	< 25 mm	4 D
	> 25 mm	6 D
	D – overall diameter of cable	

659(*) SW4 0.6/1 kV
TCu/EPR/ZH/TPBWB/ZH
BS 6883

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables ≤ 0.5% HCl
UV resistant:	UL 1581

Applications

Armoured instrumentation cable for fixed installations in all areas including accommodation and on open deck in ships and offshore units where halogen-free cable protection is required.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Class of the conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of the cable
n × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 1	2	0.8	1	0.3	1.1	8.5	137
1 × 1.5	2	0.8	1	0.3	1.1	8.8	145
1 × 2.5	2	0.8	1	0.3	1.1	9.2	160
1 × 4	2	1	1	0.3	1.1	10.2	190
1 × 6	2	1	1	0.3	1.1	10.8	219
1 × 10	2	1	1	0.3	1.2	11.9	280
1 × 16	2	1	1.1	0.3	1.2	13.3	371
1 × 25	2	1.2	1.2	0.3	1.3	15.4	519
1 × 35	2	1.2	1.2	0.3	1.4	16.8	644
1 × 50	2	1.4	1.3	0.3	1.4	18.5	789
1 × 50*	5	1.4	1.3	0.3	1.4	18.7	798
1 × 70	2	1.4	1.3	0.3	1.5	20.4	1,029
1 × 95	2	1.6	1.4	0.3	1.6	23.2	1,372
1 × 120	2	1.6	1.5	0.3	1.7	25.1	1,635
1 × 150	2	1.8	1.6	0.3	1.8	27.4	1,975

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Number and cross-sectional area of conductor	Class of the conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of the cable
1 × 185	2	2	1.7	0.45	1.9	30.7	2,520
1 × 185*	5	2	1.7	0.45	1.9	31.3	2,438
1 × 240	2	2.2	1.8	0.45	2	34.1	3,184
1 × 300	2	2.4	1.9	0.45	2.1	37.2	3,877
1 × 400	2	2.6	2	0.45	2.3	41.1	4,814
1 × 500	2	2.8	2.2	0.45	2.5	45.7	6,042
1 × 630	2	2.8	2.3	0.45	2.6	50	7,609

*) Based on standard

Please refer to technical section for additional information relating to these cables.

TCu/MGT/EPR/IS/ZH/GSWB/ZH

150/250 V

BS 7917

Halogen-free, fire resistant, low smoke, instrumentation cables with elastomeric insulation and sheath, with steel wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper according to BS EN 60228 class 2 or class 5
Insulation	Mica glass tape Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Pairs identification	Black and white with printed number of pairs in contrasting colour on the insulation
Triples identification	Black, white and red with printed number of triples in contrasting colour on the insulation
Quads identification	Black, white, red and blue with printed number of quads in contrasting colour on the insulation
Screen	Individual screen Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire
Inner sheath	Halogen-free elastomer compound EPR type SB 1 acc. to BS 7917
Braid armour	Galvanized steel wire braid
Separator	Separator, suitable tape between the braid and outer sheath
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6
Colour of outer sheath	Grey or other colors can be provided
Cable marking e.g.	ELECTRIC CABLE “Type SW4 F1” “number of pairs or triples or quads” “x” “conductor size” “(I)” “150/250 V” “TFK3” “BS 7917” “UKOOA code” “IEC60331-21” “IEC60332-3-22 cat. A” “year” “metre mark”

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	6 D D – overall diameter of cable

TCu/MGT/EPR/IS/ZH/GSWB/ZH
150/250 V
BS 7917

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Fire resistant:	IEC 60331-21
Smoke emission:	BS EN 61034-2, IEC 61034-2
Gases evolved during combustion:	BS EN 50267-2-1, IEC 60754-1 type SW4 cables: ≤ 0.5% HCl

Applications

Elastomer insulated, fire resistant (limited circuit integrity) cables for fixed wiring in ships and on mobile and fixed offshore units.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 2 × 0.75	5	0.8	1	0.3	1.2	12.9	221	GPF00/GMF00
1 × 2 × 1.0	5	0.8	1	0.3	1.2	13.1	225	GPF01/GMF01
1 × 2 × 1.5*	5	0.8	1.2	0.3	1.4	14.6	279	GPF02/GMF02
1 × 2 × 1.5*	2	0.8	1.2	0.3	1.4	14.6	279	–
1 × 2 × 2.5*	2	0.8	1.3	0.3	1.4	15.7	332	GPF03/GMF03
2 × 2 × 0.75*	5	0.8	1.2	0.3	1.4	14.9	312	–
2 × 2 × 1.0*	5	0.8	1.2	0.3	1.4	15.1	324	–
2 × 2 × 1.5*	2	0.8	1.3	0.3	1.5	16.4	386	–
2 × 2 × 1.5*	5	0.8	1.3	0.3	1.5	16.3	404	–

TCu/MGT/EPR/IS/ZH/GSWB/ZH

150/250 V

BS 7917

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
3 × 2 × 0.75	5	0.8	1.2	0.3	1.4	19.1	433	GPH00/GMH00
3 × 2 × 1	5	0.8	1.3	0.3	1.4	19.6	453	GPH01/GMH01
3 × 2 × 1.5*	5	0.8	1.3	0.3	1.5	21	522	GPH02/GMH02
3 × 2 × 2.5*	5	0.8	1.4	0.3	1.5	23	692	GPH03/GMH03
7 × 2 × 0.75	5	0.8	1.4	0.3	1.6	24.9	740	GPJ00/GMJ00
7 × 2 × 1.0	5	0.8	1.4	0.3	1.6	25.3	759	GPJ01/GMJ01
7 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	26.9	866	GPJ02/GMJ02
12 × 2 × 0.75	5	0.8	1.6	0.3	1.8	31.3	1,129	GPK00/GMK00
12 × 2 × 1.0	5	0.8	1.7	0.45	1.9	32.9	1,296	GPK01/GMK01
12 × 2 × 1.5*	5	0.8	1.7	0.45	1.9	35	1,475	GPK02/GMK02
20 × 2 × 0.75	5	0.8	1.9	0.45	2.1	39.8	1,925	GPL00/GML00
20 × 2 × 1.0	5	0.8	1.9	0.45	2.2	40.8	2,070	GPL01/GML01
20 × 2 × 1.5*	5	0.8	2.0	0.45	2.3	43.9	2,444	GPL02/GML02
n × 3 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 3 × 0.75	5	0.8	1	0.3	1.2	13.4	248	GPR00/GMR00
1 × 3 × 1.0	5	0.8	1.1	0.3	1.2	13.8	266	GPR01/GMR01
1 × 3 × 1.5*	5	0.8	1.2	0.3	1.4	15.1	314	GPR02/GMR02
1 × 3 × 1.5*	2	0.8	1.2	0.3	1.4	15.2	318	–
1 × 3 × 2.5*	2	0.8	1.4	0.3	1.5	16.8	394	GPR03/GMR03
n × 4 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 4 × 0.75	5	0.8	1.1	0.3	1.2	14.5	291	GPX00/GMX00
1 × 4 × 1.0	5	0.8	1.1	0.3	1.2	14.8	307	GPX01/GMX01
1 × 4 × 1.5*	5	0.8	1.2	0.3	1.4	16.1	359	GPX02/GMX02
1 × 4 × 2.5*	2	0.8	1.4	0.3	1.5	17.9	471	GPX03/GMX03

* Based on standard

Without approvals

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	

TCu/MGT/EPR/IS/ZH/GSWB/ZH

150/250 V

BS 7917

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
2 × 2 × 2.5*	2	0.8	1.3	0.3	1.4	17.4	450	–
5 × 2 × 0.75*	2	0.8	1.4	0.3	1.6	23.3	641	–
5 × 2 × 1.5*	2	0.8	1.4	0.3	1.6	25.5	761	–
10 × 2 × 0.75*	2	0.8	1.6	0.3	1.8	30.2	1,054	–
24 × 2 × 1.5*	5	0.8	2.1	0.45	2.4	47.7	2,793	–
27 × 2 × 0.75	5	0.8	2.0	0.45	2.3	45.3	2,445	–
27 × 2 × 1	5	0.8	2.1	0.45	2.4	47.6	2,646	–
27 × 2 × 1.5*	5	0.8	2.2	0.45	2.5	50.1	3,120	–
n × 3 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
3 × 3 × 0.75	5	0.8	1.3	0.3	1.5	21.0	552	–
3 × 3 × 1	5	0.8	1.3	0.3	1.5	21.4	583	–
3 × 3 × 1.5*	5	0.8	1.5	0.3	1.7	23.5	688	–
7 × 3 × 0.75	5	0.8	1.5	0.3	1.7	28.3	1,007	–
7 × 3 × 1.0	5	0.8	1.5	0.3	1.7	28.9	1,073	GPT01/ GMT01
7 × 3 × 1.5*	5	0.8	1.7	0.3	2.0	31.7	1,282	–
12 × 3 × 0.75	5	0.8	1.7	0.45	2.0	36.1	1,672	–
12 × 3 × 1.0	5	0.8	1.8	0.45	2.0	37.0	1,801	GPU01/ GMU01
12 × 3 × 1.5*	5	0.8	1.9	0.45	2.1	39.8	2,083	–
n × 4 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
3 × 4 × 0.75	5	0.8	1.4	0.3	1.5	24.0	670	–
3 × 4 × 1	5	0.8	1.4	0.3	1.6	24.6	727	–
3 × 4 × 1.5*	5	0.8	1.6	0.3	1.7	26.7	854	–
7 × 4 × 0.75	5	0.8	1.6	0.3	1.7	31.6	1,229	–
7 × 4 × 1	5	0.8	1.6	0.45	1.8	33.0	1,450	–
7 × 4 × 1.5*	5	0.8	1.7	0.45	1.9	35.6	1,644	–

* Based on standard

TCu/MGT/EPR/CS/ZH/GSWB/ZH

150/250 V

BS 7917

Halogen-free, fire resistant, low smoke, instrumentation cables with elastomeric insulation and sheath, with steel wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper according to BS EN 60228 class 2 or class 5
Insulation	Mica glass tape Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Pairs identification	Black and white with printed number of pairs in contrasting color on the insulation
Screen	Collective screen Aluminium/polyester tape with the metallic side in contact with tinned copper drain wire
Inner sheath	Halogen-free elastomer compound EPR type SB 1 acc. to BS 7917
Braid armour	Galvanized steel wire braid
Separator	Separator, suitable tape between the braid and outer sheath
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6
Colour of outer sheath	Grey or blue or other colors can be provided.
Cable marking e.g.	ELECTRIC CABLE "Type SW4 F1" "number of pairs" "x" "conductor size" "(C)" "150/250 V" "TFK3" "BS 7917" "UKOOA code" "IEC60331–21" "IEC60332–3–22 cat. A" "year" "metre mark"

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	6 D D – overall diameter of cable

TCu/MGT/EPR/CS/ZH/GSWB/ZH
150/250 V
BS 7917

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Fire resistant:	IEC 60331-21
Smoke emission:	BS EN 61034-2, IEC 61034-2
Gases evolved during combustion:	BS EN 50267-2-1, IEC 60754-1, type SW4 cables: ≤ 0.5% HCl

Applications

Elastomer insulated, fire resistant (limited circuit integrity) cables for fixed wiring in ships and on mobile and fixed offshore units.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
7 × 2 × 1.5*	5	0.8	1.6	0.3	1.8	27.9	908	GNJ02/GLJ02
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
12 × 2 × 0.75	5	0.8	1.6	0.3	1.7	31.3	1,075	GNK00/GLK00
12 × 2 × 1.0	5	0.8	1.6	0.3	1.8	32.1	1,104	GNK01/GLK01
12 × 2 × 1.5*	5	0.8	1.8	0.45	2.1	35.8	1,496	GNK02/GLK02
20 × 2 × 0.75	2	0.8	1.8	0.45	2	39.6	1,665	GNL00/GLL00
20 × 2 × 1.0	5	0.8	1.8	0.45	2.1	40.6	1,792	GNL01/GLL01
20 × 2 × 1.5*	5	0.8	2	0.45	2.2	43.9	2,157	GNL02/GLL02
20 × 2 × 1.5*	2	0.8	2	0.45	2.2	44.6	2,274	–

TCu/MGT/EPR/IS/ZH/GSWB/ZH
150/250 V
BS 7917

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code (Grey/Blue)
2 × 2 × 0.75*	5	0.8	1.2	0.3	1.4	15.1	307	–
2 × 2 × 1.0*	5	0.8	1.2	0.3	1.4	15.7	334	–
2 × 2 × 1.0*	2	0.8	1.2	0.3	1.4	15.9	341	–
2 × 2 × 1.5*	5	0.8	1.2	0.3	1.4	16.0	358	–
2 × 2 × 1.5*	2	0.8	1.2	0.3	1.4	16.3	370	–
3 × 2 × 0.75	5	0.8	1.2	0.3	1.4	19.3	434	GNH00/GLH00
3 × 2 × 1.0	5	0.8	1.2	0.3	1.4	19.6	437	GNH01/GLH01
3 × 2 × 1.5*	5	0.8	1.4	0.3	1.6	21.5	533	GNH02/GLH02
3 × 2 × 2.5*	5	0.8	1.6	0.3	1.8	24.1	735	GNH03/GLH03
7 × 2 × 0.75	5	0.8	1.4	0.3	1.5	24.8	707	GNJ00/GLJ00
7 × 2 × 1.0	5	0.8	1.4	0.3	1.6	25.5	737	GNJ01/GLJ01
7 × 2 × 1.5*	5	0.8	1.6	0.3	1.8	27.9	908	GNJ02/GLJ02
n × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
12 × 2 × 0.75	5	0.8	1.6	0.3	1.7	31.3	1,075	GNK00/GLK00
12 × 2 × 1.0	5	0.8	1.6	0.3	1.8	32.1	1,104	GNK01/GLK01
12 × 2 × 1.5*	5	0.8	1.8	0.45	2.1	35.8	1,496	GNK02/GLK02
20 × 2 × 0.75	2	0.8	1.8	0.45	2	39.6	1,665	GNL00/GLL00
20 × 2 × 1.0	5	0.8	1.8	0.45	2.1	40.6	1,792	GNL01/GLL01
20 × 2 × 1.5*	5	0.8	2	0.45	2.2	43.9	2,157	GNL02/GLL02
20 × 2 × 1.5*	2	0.8	2	0.45	2.2	44.6	2,274	–

* Based on standard

Without approvals

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code
		mm	**mm**	**mm**	**mm**	**mm**	**kg/km**	
1 × 2 × 1.5*	2	0.8	1.2	0.3	1.4	14.8	282	–
2 × 2 × 2.5*	2	0.8	1.2	0.3	1.4	17.4	425	–
7 × 4 × 1.5*	5	0.8	1.7	0.45	1.9	35.7	1,601	–

TCu/MGT/EPR/IS/ZH/GSWB/ZH

150/250 V

BS 7917

Number of pairs and nominal area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables	UKOOA Code
5 × 2 × 0.75	2	0.8	1.4	0.3	1.5	23.1	598	–
5 × 2 × 1.0*	2	0.8	1.4	0.3	1.6	24.1	631	–
5 × 2 × 1.5*	2	0.8	1.4	0.3	1.6	25.6	731	–
5 ×2 × 2.5*	2	0.8	1.4	0.6	1.6	28.2	921	
10 × 2 × 0.75*	2	0.8	1.6	0.3	1.7	30.0	973	–
10 × 2 × 1.5*	2	0.8	1.6	0.3	1.8	33.4	1,204	–
10 × 2 × 2.5*	2	0.8	1.6	0.3	1.8	36.2	1,484	–
20 × 2 × 2.5*	2	0.8	1.8	0.45	2.1	47.8	2,725	
27 × 2 × 0.75	5	0.8	1.9	0.45	2.2	45.0	2,178	
27 × 2 × 1	5	0.8	2.0	0.45	2.2	46.2	2,363	
27 × 2 × 1.5*	5	0.8	2.1	0.45	2.3	49.7	2,802	
3 × 3 × 0.75	5	0.8	1.3	0.3	1.4	21.0	518	–
3 × 3 × 1	5	0.8	1.3	0.3	1.5	21.6	558	–
3 × 3 × 1.5*	5	0.8	1.4	0.3	1.6	23.3	655	–
7 × 3 × 0.75	5	0.8	1.4	0.3	1.6	28.1	911	–
7 × 3 × 1	5	0.8	1.5	0.3	1.7	29.1	1,002	–
7 × 3 × 1.5*	5	0.8	1.7	0.3	1.9	31.7	1,215	–
8 × 3 × 1.5*	2	0.8	1.8	0.45	2.1	35.2	1,540	–
12 × 3 × 0.75	5	0.8	1.7	0.45	1.9	36.0	1,525	–
12 × 3 × 1	5	0.8	1.7	0.45	2.0	36.9	1,654	–
12 × 3 × 1.5*	5	0.8	1.8	0.45	2.1	39.8	1,966	–
12 × 3 × 1.5*	2	0.8	1.8	0.45	2.1	40.2	2,022	–
3 × 4 × 0.75*	5	0.8	1.4	0.3	1.5	24.1	656	–
3 × 4 × 1*	5	0.8	1.4	0.3	1.6	24.8	703	–
3 × 4 × 1.5*	5	0.8	1.6	0.3	1.7	26.9	844	–
7 × 4 × 0.75*	5	0.8	1.6	0.3	1.7	31.8	1,143	–
7 × 4 × 1*	5	0.8	1.6	0.45	1.8	33.2	1,383	–
7 × 4 × 1.5*	5	0.8	1.7	0.45	1.9	35.7	1,601	–

* Based on standard

TCu/MGT/EPR/ZH/GSWB/ZH

0.6/1 kV SW4

BS 7917

Halogen-free, fire resistant, low smoke, low voltage cables with elastomeric insulation and sheath, with steel wire braid

CONSTRUCTION

Conductors	Tinned annealed circular stranded copper according to BS EN 60228 class 2 or class 5
Insulation	Mica glass tape Halogen-free elastomer compound EPR type GP4 acc. to BS 7655-1.2
Core identification	All cores are white with black printed numbers [1)]
Inner sheath	Halogen-free elastomer compound EPR type SB 1 acc. to BS 7917
Braid armour	Galvanized steel wire braid
Separator	Separator, suitable tape between the braid and outer sheath
Outer sheath	Halogen-free, heat-resistant, oil-resisting and flame-retardant elastomer compound type SW4 acc. to BS 7655-2.6
Colour of outer sheath	Black or other colors can be provided.
Cable marking e.g.	ELECTRIC CABLE TYPE SW4 F1 "number of core" "x" "conductor size" "600/1,000 V" "TFK3" "BS 7917" "UKOOA code" "IEC60331-21" "IEC60332–3–22 cat. A" "year" "metre mark"

[1)] Other colours available on request

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Minimum bending radius:	

Overall diameter of cable (D)	**Minimum bending radius**
< 25 mm	4 D
> 25 mm	6 D

D – overall diameter of cable

TCu/MGT/EPR/ZH/GSWB/ZH
0.6/1 kV SW4
BS 7917

Fire performance

Flame retardant:	IEC 60332-3-22 Category A
Fire resistant:	IEC 60331-21
Smoke emission:	BS EN 61034-2, IEC 61034-2
Corrosive gas emission:	BS EN 50267-2-1, IEC 60754-1: type SW4 cables ≤ 0.5% HCl

Applications

Elastomer insulated, fire resistant (limited circuit integrity) cables for fixed wiring in ships and on mobile and fixed offshore units.

Approvals

LR

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
n × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**	
2 × 1.5	5	0.8	1.1	0.3	1.2	14.4	312	YD202
2 × 2.5	2	0.8	1.1	0.3	1.2	15.3	350	YD203
2 × 4	2	1	1.2	0.3	1.3	17.5	464	YD204
2 × 6	2	1	1.2	0.3	1.4	18.9	542	YD206
2 × 10	2	1	1.3	0.3	1.4	20.9	696	YD210
2 × 16	2	1	1.4	0.3	1.5	23.7	947	YD216
2 × 25	2	1.2	1.5	0.3	1.7	27.8	1,330	YD225
2 × 35	2	1.2	1.6	0.3	1.8	30.5	1,639	YD235
2 × 50	2	1.4	1.7	0.45	2	34.7	2,163	YD250

TCu/MGT/EPR/ZH/GSWB/ZH

0.6/1 kV SW4

BS 7917

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
2 × 70	2	1.4	1.9	0.45	2.1	38.9	2,824	YD270
2 × 95	2	1.6	2.1	0.45	2.3	44.4	3,766	YD295
2 × 120	2	1.6	2.2	0.45	2.5	48	4,483	YD20A
3 × 1.5	5	0.8	1.1	0.3	1.2	14.2	319	YD302
3 × 2.5	2	0.8	1.1	0.3	1.3	15.6	378	YD303
3 × 4	2	1	1.2	0.3	1.3	17.7	502	YD304
3 × 6	2	1	1.2	0.3	1.4	19.1	596	YD306
3 × 10	2	1	1.3	0.3	1.5	21.5	803	YD310
3 × 16	2	1	1.4	0.3	1.6	24.4	1,102	YD316
3 × 25	2	1.2	1.6	0.3	1.8	29.7	1,611	YD325
3 × 35	2	1.2	1.7	0.45	1.9	33.2	2,138	YD335
3 × 50	2	1.4	1.8	0.45	2	37.1	2,669	YD350
3 × 70	2	1.4	2	0.45	2.2	41.5	3,529	YD370
3 × 95	2	1.6	2.2	0.45	2.4	47.3	4,730	YD395
3 × 120	2	1.6	2.3	0.45	2.6	51.1	5,642	YD30A
4 × 1.5	2	0.8	1.1	0.3	1.3	15.6	366	YD402
4 × 2.5	2	0.8	1.1	0.3	1.3	16.7	440	YD403
4 × 4	2	1	1.2	0.3	1.4	19.3	594	YD404
4 × 6	2	1	1.3	0.3	1.5	21	727	YD406
4 × 10	2	1	1.4	0.3	1.6	23.6	973	YD410
4 × 16	2	1	1.5	0.3	1.7	26.9	1,345	YD416
4 × 25	2	1.2	1.7	0.45	1.9	33.3	2,110	YD425
4 × 35	2	1.2	1.8	0.45	2	36.5	2,671	YD435
4 × 50	2	1.4	1.9	0.45	2.2	40.7	3,350	YD450
4 × 70	2	1.4	2.1	0.45	2.4	45.8	4,436	YD470
4 × 95	2	1.6	2.3	0.45	2.6	52.2	5,960	YD495
4 × 120	2	1.6	2.5	0.45	2.8	57.7	7,093	YD40A
5 × 1.5	5	0.8	1.1	0.3	1.3	17.5	464	–
5 × 2.5	2	0.8	1.2	0.3	1.3	18.7	566	–
5 × 4*	2	1	1.3	0.3	1.5	21.3	698	–
5 × 6*	2	1	1.3	0.3	1.5	23.1	851	–
5 × 25*	2	1.2	1.8	0.45	2.0	35.5	2,425	–
5 × 70*	2	1.4	2.2	0.45	2.6	49.9	5,276	–
5 × 95*	2	1.6	2.4	0.45	2.7	56.9	7,099	–

TCu/MGT/EPR/ZH/GSWB/ZH
0.6/1 kV SW4
BS 7917

Number and cross-sectional area of conductor	Class of conductor	Nominal thickness of insulation	Nominal thickness of inner sheath	Diameter of steel wires in braid	Nominal thickness of outer sheath	Approximate overall diameter of cable	Approximate net weight of cables SW4	UKOOA Code
7 × 1.5	5	0.8	1.2	0.3	1.3	18.8	580	YD702
7 × 2.5	2	0.8	1.2	0.3	1.4	20	708	YD703
8 × 1.5*	5	0.8	1.3	0.3	1.5	20.9	588	–
12 × 1.5	5	0.8	1.3	0.3	1.5	23.9	797	YDA02
12 × 2.5	2	0.8	1.4	0.3	1.6	26	986	YDA03
14 × 2.5*	2	0.8	1.5	0.3	1.7	27	1,090	–
16 × 2.5*	2	0.8	1.5	0.3	1.7	28.2	1,200	–
19 × 1.5	5	0.8	1.4	0.3	1.6	27.1	1,139	YDB02
19 × 2.5	2	0.8	1.5	0.3	1.7	29.1	1,435	YDB03
20 × 2.5*	2	0.8	1.6	0.45	1.8	31.9	1,548	–
24 × 1.5*	5	0.8	1.6	0.45	1.8	31.9	1,411	–
24 × 2.5*	2	0.8	1.6	0.45	1.8	34.9	1,814	–
27 × 1.5	5	0.8	1.6	0.3	1.8	31.9	1,461	YDC02
27 × 2.5*	2	0.8	1.6	0.45	1.8	35.5	1,983	YDC03
37 × 1.5	5	0.8	1.7	0.45	1.9	35.8	1,608	YDD02
37 × 2.5*	2	0.8	1.8	0.45	2.0	41.2	2,515	–

* Based on standard

Classification Bureau	Type cables
LR	657(*) SW4 0.6/1 kV EPR/ZH BS 6883
	658(*) SW4 0.6/1 kV TCu/EPR/ZH/GSWB/ZH BS 6883
	658(*)(c) SW4 150/250 V TCu/EPR/CAM/ZH/GSWB/ZH BS 6883
	658(*)(I) SW4 150/250 V TCu/EPR/IAM/ZH/GSWB/ZH BS 6883
	TCu/MGT/EPR/IS/ZH/GSWB/ZH 150/250 V BS 7917
	TCu/MGT/EPR/CS/ZH/GSWB/ZH 150/250 V BS 7917
	TCu/MGT/EPR/ZH/GSWB/ZH 0.6/1 kV SW4 BS 7917

NEK606

UX P15 TCu/EVA

0.6/1 kV

NEK TS 606 Code P15, IEC 60092-353-Design guidelines

Halogen-free, flame retardant.
Mud resistant, insulated conductor

CONSTRUCTION

	Code letter	
Conductor		Tinned annealed stranded circular copper conductor class 2 or class 5 wrapped PETP
Insulation	**U**	Halogen-free thermoset compound in accordance with type SHF2
Unsheathed	**X**	
Standard marking		TF KABLE 3 UX 1,000 V P15 (SIZE) IEC 60332-3-22
Color		Green/Yellow

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Oil resistance:	IEC 60092-360 SHF2. I RM 902 (100°C /24h)
Mud resistance:	NEK 606 (SHF MUD. SHF2)
Minimum bending radius: During installation Fixed installed	 8 D 6 D D – overall diameter of cable

Fire performance

Flame retardant:	IEC 60332-3-22 (Category A)
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

UX P15 TCu/EVA
0.6/1 kV

Applications

- Insulated conductor for earthing and bonding services
- Meets the MUD resistance requirement in NEK TS 606:2009
- Other industrial applications

Approvals

DNV-GL, ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Size	Insulation thickness	Approximate diameter over insulation	Approximate weight of cable
N × mm²	**mm**	**mm**	**kg/km**
1 × 6	1.0	5.2	81
1 × 10	1.0	6.5	121
1 × 16	1.0	7.1	182
1 × 25	1.2	9.0	282
1 × 35	1.2	10.2	371
1 × 50	1.4	11.7	521
1 × 70	1.4	13.4	731
1 × 95	1.6	15.8	972
1 × 120	1.6	17.3	1,221
1 × 150	1.8	19.2	1,521
1 × 185	2.0	21.4	1,893
1 × 240	2.2	24.4	2,455
1 × 300	2.4	27.2	3,093
1 × 630	2.8	38.6	6,351

RFOU P1/P8 & RFOU EMC

0.6/1 (1.2) kV
EPR/EPR/TCWB/EVA

NEK TS 606 Code P1/P8, IEC 60092-353-Design guidelines

Flame retardant halogen-free power cable. Mud resistant

CONSTRUCTION

	Code letter	
Conductor		Tinned annealed stranded circular copper conductor. IEC 60228 class 2 or class 5
Insulation	**R**	EP-rubber thermosetting compound. IEC 60092–360 (EPR)
Core identification		Accordance to HD308 S2
		Single core: Black 2-core: Blue, brown 3-core: Brown, black, grey or green/yellow, blue, brown 4-core: Blue, brown, black, grey or green/yellow, brown, black, grey 5-core: Blue, brown, black, grey, black or green/yellow, blue, brown, black, grey Multi-cores: White with black numbers
Lay up/Shielding		Cores laid up in concentric layers
Inner covering	**F**	Flame retardant and halogen-free thermosetting compound.
Armour/screen	**O**	Tinned annealed copper wire braid
For EMC cable		Cu/PET tape under the braid
Separator		Separator, suitable tape between the braid and outer sheath
Outer sheath	**U**	Flame retardant, halogen-free, heat-resistant, oil-resisting and mud-resistant thermosetting compound type SHF2 acc. to IEC 60092–360
Outer sheath colour		Black
Standard marking		TF KABLE 3 RFOU 0.6/1 KV P1/P8 (SIZE) IEC 60332-3-22

RFOU P1/P8 & RFOU EMC
0.6/1 (1.2) kV
EPR/EPR/TCWB/EVA

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Oil resistance:	IEC 60092-360 SHF2. I RM 902 (100°C/24 h)
Mud resistance:	NEK 606 (SHF MUD. SHF2)
Minimum bending radius for cable with overall diameter (D):	**Overall diameter of cable (D)** — **Minimum bending radius** D < 25 mm — 4 D D > 25 mm — 6 D D – overall diameter of cable

Fire performance

Flame retardant	IEC 60332-3-22 (Category A)
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

Applications

- Fixed installation for power control and lighting in both EX- and safe areas, general purposes
- For installation in areas exposed to MUD and drilling/cleaning fluids
- Meets the MUD resistance requirement in NEK TS 606:2009
- For fixed wiring installations on Oil and Gas Rigs, Shipboard and other marine applications requiring screened cable for EMC
- Other industrial applications.

RFOU P1/P8 & RFOU EMC

0.6/1 (1.2) kV

EPR/EPR/TCWB/EVA

Approvals

DNV-GL, ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer sheath	Approximate outer diameter	Approximate weight of cable
N × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 16/2.5*	1	1.1	0.2	1.2	12.8	328
1 × 25/4*	1.2	1.1	0.2	1.2	14.5	454
1 × 35/6*	1.2	1.1	0.3	1.3	16.3	610
1 × 50/6*	1.4	1.1	0.3	1.4	18	753
1 × 70/10*	1.4	1.1	0.3	1.4	19.7	1,010
1 × 95/10*	1.6	1.1	0.3	1.5	22.3	1,312
1 × 120/10*	1.6	1.2	0.3	1.6	24.1	1,562
1 × 150/10*	1.8	1.2	0.3	1.6	26.1	1,871
1 × 185/10*	2	1.2	0.3	1.7	28.7	2,286
1 × 240/16*	2.2	1.2	0.3	1.8	31.8	2,987
1 × 300/16*	2.4	1.2	0.3	1.9	34.7	3,544
2 × 1.5/4	1	1.1	0.2	1.2	12.7	263
2 × 2.5/4	1	1.1	0.2	1.2	13.6	299
2 × 4/6	1	1.1	0.3	1.3	15.5	420
2 × 6/6	1	1.1	0.3	1.3	16.6	485
2 × 10/10	1	1.1	0.3	1.4	18.6	613
2 × 16/16	1	1.1	0.4	1.5	21.5	881
2 × 25/16*	1.2	1.2	0.4	1.6	25.4	1,240
2 × 35/16	1.2	1.2	0.3	1.7	27.5	1,510
2 × 50/25	1.4	1.2	0.4	1.8	31.1	1,929
2 × 70/35	1.4	1.2	0.5	1.9	35.2	2,656
2 × 95/50	1.6	1.4	0.5	2.1	40.7	3,686
2 × 120/70	1.6	1.4	0.5	2.2	43.9	4,441
3 × 1.5/4	1	1.1	0.2	1.2	13.3	267
3G1.5	1	1.1	0.2	1.2	13.3	271

RFOU P1/P8 & RFOU EMC

0.6/1 (1.2) kV

EPR/EPR/TCWB/EVA

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer sheath	Approximate outer diameter	Approximate weight of cable
3 × 2.5/6	1	1.1	0.3	1.3	14.8	360
3G2.5	1	1.1	0.3	1.3	14.8	356
3 × 4/6	1	1.1	0.3	1.3	16.2	464
3G4	1	1.1	0.3	1.3	16.2	437
3 × 6/6	1	1.1	0.3	1.4	17.6	555
3G6	1	1.1	0.3	1.4	17.6	536
3 × 10/10	1	1.1	0.3	1.4	19.5	756
3G10	1	1.1	0.3	1.4	19.5	710
3 × 16/16	1	1.1	0.4	1.5	22.7	1,075
3G16	1	1.1	0.3	1.5	22.3	985
3 × 25/16	1.2	1.2	0.3	1.6	26.4	1,481
3 × 35/16*	1.2	1.2	0.3	1.7	29.1	1,847
3 × 50/25	1.4	1.2	0.4	1.9	33.1	2,428
3 × 70/35	1.4	1.4	0.5	2	37.9	3,300
3 × 95/50	1.6	1.4	0.5	2.2	43.4	4,524
3 × 120/70	1.6	1.4	0.5	2.3	46.8	5,584
3 × 240/120	2.2	1.6	0.4	3.1	63.9	10,461
4 × 1.5/4	1	1.1	0.3	1.3	14.8	342
4G1.5	1	1.1	0.3	1.3	14.8	352
4 × 2.5/6	1	1.1	0.3	1.3	15.9	411
4G2.5	1	1.1	0.3	1.3	15.9	411
4 × 4/6	1	1.1	0.3	1.4	17.6	632
4G4	1	1.1	0.3	1.4	17.6	518
4 × 6/6	1	1.1	0.3	1.4	18.9	1,217
4G6	1	1.1	0.3	1.4	18.9	632
4 × 10/10	1	1.1	0.3	1.5	21.3	2,254
4G10	1	1.1	0.3	1.5	21.3	859
4 × 16/16	1	1.2	0.4	1.6	24.9	3,966
4G16	1	1.2	0.4	1.6	24.5	1,217
4 × 25/16	1.2	1.2	0.3	1.7	29	6,463
4G25	1.2	1.2	0.3	1.7	29	1,764
4 × 35/16*	1.2	1.2	0.3	1.8	31.9	2,260
4G35	1.2	1.2	0.3	1.8	31.9	2,254
4 × 50/25	1.4	1.4	0.4	2	36.8	2,988
4G50	1.4	1.4	0.4	2	36.4	2,885

RFOU P1/P8 & RFOU EMC

0.6/1 (1.2) kV

EPR/EPR/TCWB/EVA

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer sheath	Approximate outer diameter	Approximate weight of cable
4 × 70/35	1.4	1.4	0.5	2.2	41.8	4,059
4G70	1.4	1.4	0.4	2.2	41.4	3,966
4 × 95/50	1.6	1.4	0.5	2.4	47.9	5,559
4G95	1.6	1.4	0.4	2.4	47.5	5,378
4 × 120/70	1.6	1.6	0.5	2.5	52	6876
4G120	1.6	1.6	0.4	2.5	51.6	6463
5 × 1.5/6	1	1.1	0.3	1.3	15.8	402
5G1.5	1	1.1	0.3	1.3	15.8	387
5 × 2.5/6	1	1.1	0.3	1.4	17.2	483
5G2.5	1	1.1	0.3	1.4	17.2	477
5 × 4/6	1	1.1	0.3	1.4	18.9	596
5G4	1	1.1	0.3	1.4	18.9	596
5G6	1	1.1	0.3	1.5	20.6	742
5G10	1	1.2	0.3	1.5	23.3	1,017
5 × 16/16	1	1.2	0.3	1.6	26.6	1,482
5G16	1	1.2	0.3	1.6	26.6	1,436
5G25	1.2	1.2	0.3	1.8	31.7	2,110
5G35	1.2	1.2	0.3	1.9	35	2,706
5G50	1.4	1.4	0.4	2.1	40.3	3,561
5 × 70/35	1.4	1.4	0.4	2.3	45.4	4,797
5G70	1.4	1.4	0.4	2.3	45.4	4,769
5G120	1.6	1.6	0.5	2.7	57.3	7,966
7 × 1.5/6	1	1.1	0.3	1.4	18	485
7 × 2.5/6	1	1.1	0.3	1.4	19.6	601
12 × 1.5/10	1	1.1	0.3	1.5	21.4	691
12 × 2.5/10	1	1.2	0.3	1.6	23.6	887
19 × 1.5/10	1	1.2	0.3	1.6	25.9	973
19 × 2.5/10	1	1.2	0.3	1.7	28.4	1,247
27 × 1.5/16	1	1.2	0.3	1.8	29.3	1,275
27 × 2.5/16	1	1.2	0.3	1.9	32.2	1,657
37 × 1.5/16	1	1.2	0.3	1.9	33.6	1,625
37 × 2.5/16	1	1.4	0.3	2	37.4	2,161

* Braid cannot be used as protective earth conductor.

RFOU P1/P8 & RFOU EMC

0.6/1 (1.2) kV

EPR/EPR/TCWB/EVA

Without approvals

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer sheath	Approximate outer diameter	Approximate weight of cable
N × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 10/2.5	1.0	1.1	0.2	1.2	11.7	254
3 × 35 RF/16	1.2	1.2	0.3	1.7	28.5	1,698
3G70	1.4	1.3	0.3	2.0	37	3,047
3 × 95 RF/50	1.6	1.4	0.5	2.2	44.5	4,347
3G120	1.6	1.3	0.4	2.3	46.4	5,050
3G150	1.8	1.5	0.4	2.5	51.3	6,301
3 × 150/70	1.8	1.5	0.5	2.5	51.7	6,560
3G185	2	1.5	0.4	2.7	56.5	7,581
3 × 185/95**	2	1.5	0.5	2.7	58.9	8,155
3G240	2.2	1.6	0.4	3.1	64.0	9,577
3G300	2.4	1.7	0.4	3.1	70.1	11,940
4G150	1.8	1.5	0.4	2.7	56.6	7,785
4G185	2	1.7	0.4	2.9	62.9	9,647
4G240	2.2	1.7	0.4	3.1	70.5	12,325
5 × 10/10	1	1.1	0.3	1.6	23.4	1,055
5G95	1.6	1.5	0.4	2.5	52.3	6,388
6G2.5	1	1.1	0.3	1.4	18.5	537
7G1.5	1	1.1	0.3	1.4	18.3	484
7G4	1	1.1	0.3	1.5	22.0	807
9G1.5	1	1.1	0.3	1.5	20.7	653
10G1.5	1	1.1	0.3	1.5	21	633
10 × 1.5/10	1	1.1	0.3	1.5	21	633
10 × 2.5/10	1	1.1	0.3	1.6	22.9	794
12G4	1	1.1	0.3	1.7	26.3	1,198
14G2.5	1	1.1	0.3	1.6	24.5	1,057
14G4	1	1.1	0.3	1.7	27.5	1,240
15 × 2.5/10	1	1.1	0.3	1.7	25.9	1,040
16G1.5	1	1.1	0.3	1.6	23.7	920
16 × 2.5/10	1	1.1	0.3	1.7	25.9	1,063
17G1.5	1	1.1	0.3	1.6	24.7	1,005
20G2.5	1	1.1	0.3	1.8	28.5	1,266

RFOU P1/P8 & RFOU EMC

0.6/1 (1.2) kV

EPR/EPR/TCWB/EVA

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer sheath	Approximate outer diameter	Approximate weight of cable
20G4	1	1.1	0.3	1.9	32.0	1,651
24G1.5	1	1.1	0.3	1.8	28.7	1,157
27G2.5	1	1.3	0.3	2	37.3	2,368
33G1.5	1	1.1	0.3	1.9	31.4	1,656
47G1.5	1	1.3	0.3	2.1	37.4	2,283
1 × 2.5	1	1.1	0.2	1.1	9.4	144
1 × 500	2.8	1.3	0.4	2.2	43.1	5,653

** Double braided

BFOU P5/P12 & BFOU EMC

EPR/EPR/TCWB/EVA

0.6/1 (1.2) kV

NEK TS 606 Code P5/P12, IEC 60092-353-Design guidelines

Fire resistant, flame retardant halogen-free power cable. Mud resistant

CONSTRUCTION

	Code letter	
Conductor		Tinned annealed stranded circular copper conductor, IEC 60228 class 2 or class 5
Insulation	**B**	Mica tape + EP-rubber thermosetting compound, IEC 60092-360 (EPR)
Core identification		Accordance to HD308 S2
		Single core: Black Two cores: Blue, brown Three cores: Brown, black, grey or green/yellow, blue, brown Four cores: Blue, brown, black, grey or green/yellow, brown, black, grey Five cores: Blue, brown, black, grey, black or green/yellow, blue, brown, black, grey Multi-cores: White with black numbers
Lay up/Shielding		Cores laid up in concentric layers
Inner covering	**F**	Flame retardant and halogen-free thermosetting compound
Armour/screen	**O**	PET tape & Tinned annealed copper wire braid
For EMC cable		Cu/PET tape under the braid
Separator		Separator, suitable tape between the braid and outer sheath
Outer sheath	**U**	Flame retardant, halogen-free, heat-resistant, oil-resisting and mud resistant thermosetting compound type SHF2 acc. to IEC 60092-360
Outer sheath colour		Black
Standard marking		TF KABLE 3 BFOU 0.6/1 KV P5/P12 (SIZE) IEC 60331-21 IEC 60332-3-22

BFOU P5/P12 & BFOU EMC

EPR/EPR/TCWB/EVA

0.6/1 (1.2) kV

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C	
Maximum conductor temperature during short circuit:	+250°C	
Lowest ambient temperature for fixed installation:	-40°C	
Lowest installation temperature:	-15°C	
Oil resistance:	IEC 60092-360 SHF2. I RM 902 (100°C /24 h)	
Mud resistance:	NEK 606 (SHF MUD. SHF2)	
Minimum bending radius :	**Overall diameter of cable (D)**	**Minimum bending radius**
	D < 25 mm	4 D
	D > 25 mm	6 D
	D – overall diameter of cable	

Fire performance

Flame retardant:	IEC 60332-3-22 (Category A)
Fire resistant:	IEC 60331
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

Applications

- Fixed installation for power control and lighting in both EX- and safe areas emergency and critical systems where requirement for fire resistant exists
- For installation in areas exposed to MUD and drilling/cleaning fluids
- Meets the MUD resistance requirement in NEK TS 606:2009
- For fixed wiring installations on Oil and Gas Rigs. Shipboard and other marine applications requiring screened cable for EMC
- Other industrial applications

BFOU P5/P12 & BFOU EMC

EPR/EPR/TCWB/EVA

0.6/1 (1.2) kV

Approvals

DNV-GL, ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing: 1,000 m on drums
Other forms of packing and delivery are available on request

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer covering	Approximate outer diameter	Approximate weight of cable
N × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 16/4*	1	1.1	0.2	1.2	13.4	362
1 × 25/6*	1.2	1.1	0.3	1.3	15.7	534
1 × 35/6*	1.2	1.1	0.3	1.3	16.9	654
1 × 50/10*	1.4	1.1	0.3	1.4	18.6	801
1 × 70/10*	1.4	1.1	0.3	1.4	20.3	1,010
1 × 95/10*	1.6	1.1	0.3	1.5	22.9	1,342
1 × 120/10*	1.6	1.2	0.3	1.6	24.8	1,600
1 × 150/10*	1.8	1.2	0.3	1.7	26.9	1,922
1 × 185/10*	2	1.2	0.3	1.7	29.1	2,323
1 × 240/16*	2.2	1.2	0.3	1.8	32.3	2,946
1 × 300/16*	2.4	1.2	0.3	1.9	35.3	3,586
2 × 1.5/4*	1	1.1	0.2	1.2	14.2	279
2 × 2.5/6*	1	1.1	0.3	1.3	15.6	364
2 × 4/6	1	1.1	0.3	1.3	16.7	429
2 × 6/6	1	1.1	0.3	1.4	18	512
2 × 10/10	1	1.1	0.3	1.4	19.8	650
2 × 16/16	1	1.1	0.4	1.5	22.8	926
2 × 25/16	1.2	1.2	0.4	1.6	26.7	1,296
2 × 35/16*	1.2	1.2	0.3	1.7	28.8	1,539
2 × 50/25	1.4	1.4	0.4	1.8	32.8	2,015
2 × 70/35	1.4	1.6	0.5	2	37.6	2,842
3G1.5	1	1.1	0.3	1.3	15.4	349
3 × 1.5/6	1	1.1	0.3	1.3	15.4	361
3G2.5	1	1.1	0.3	1.3	16.4	404

BFOU P5/P12 & BFOU EMC

EPR/EPR/TCWB/EVA

0.6/1 (1.2) kV

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer covering	Approximate outer diameter	Approximate weight of cable
3 × 2.5/6	1	1.1	0.3	1.3	16.4	409
3 × 4/6	1	1.1	0.3	1.3	17.5	484
3 × 6/6	1	1.1	0.3	1.4	18.9	585
3 × 10/10	1	1.1	0.3	1.5	21.1	768
3 × 16/16	1	1.1	0.4	1.5	24	1,096
3 × 25/16	1.2	1.2	0.3	1.7	28	1,497
3G35	1.2	1.2	0.3	1.8	30.6	1,898
3 × 35/16*	1.2	1.2	0.3	1.8	30.6	1,926
3 × 50/25	1.4	1.2	0.4	1.9	34.5	2,476
3 × 70/35	1.4	1.4	0.5	2	39.2	3,361
3 × 95/50	1.6	1.4	0.5	2.2	44.8	4,589
3 × 120/70	1.6	1.4	0.5	2.4	48.5	5,447
3 × 185/95	2	2	0.5	3	59.7	6,030
4 × 1.5/6	1	1.1	0.3	1.3	16.6	450
4G1.5	1	1.1	0.3	1.3	16.6	420
4 × 2.5/6	1	1.1	0.3	1.3	17.6	480
4G2.5	1	1.1	0.3	1.3	17.6	460
4 × 4/6	1	1.1	0.3	1.4	19.1	610
4G4	1	1.1	0.3	1.4	19.1	660
4 × 6/6	1	1.1	0.3	1.4	20.4	770
4G6	1	1.1	0.3	1.4	20.4	720
4 × 10/10	1	1.1	0.3	1.5	22.8	990
4G10	1	1.1	0.3	1.5	22.8	990
4 × 16/16	1	1.2	0.4	1.6	26.4	1,420
4G16	1	1.2	0.3	1.6	26	1,330
4 × 25/16	1.2	1.2	0.3	1.7	29	1,970
4G25	1.2	1.2	0.3	1.7	29	1,930
4 × 35/16*	1.2	1.2	0.3	1.9	33.5	2,490
4G35	1.2	1.2	0.3	1.9	33.5	2,470
4 × 50/25	1.4	1.4	0.4	2	38.5	3,380
4G50	1.4	1.4	0.3	2	38	3,290
4 × 70/35	1.4	1.4	0.4	2.2	43	4,610
4G70	1.4	1.4	0.4	2.2	43	4,520
4 × 95/50	1.6	1.6	0.5	2.4	49.8	6,150

BFOU P5/P12 & BFOU EMC

EPR/EPR/TCWB/EVA

0.6/1 (1.2) kV

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer covering	Approximate outer diameter	Approximate weight of cable
4G95	1.6	1.6	0.4	2.4	49.4	5,900
4 × 120/70	1.6	1.6	0.5	2.5	52.8	7,470
4G120	1.6	1.6	0.4	2.5	54	7,180
4G150	1.8	1.6	0.5	2.7	59	8,910
4G185	2	1.8	0.4	2.9	64.8	10,830
5G1.5	1	1.1	0.3	1.4	18	454
5 × 1.5/6	1	1.1	0.3	1.4	18	460
5G2.5	1	1.1	0.3	1.4	19.1	475
5 × 2.5/6	1	1.1	0.3	1.4	19.1	487
5G4	1	1.1	0.3	1.4	20.5	651
5G6	1	1.1	0.3	1.5	22.3	798
5G10	1	1.2	0.3	1.6	25.1	1,085
5G16	1	1.2	0.3	1.7	28.5	1,510
5G25	1.2	1.2	0.3	1.8	33.4	2,172
5G35	1.2	1.4	0.3	2	37.3	2,825
5G50	1.4	1.4	0.4	2.2	42.2	3,651
5G70	1.4	1.4	0.4	2.3	47.1	4,845
5G95	1.6	1.6	0.5	2.6	54	7,140
7 × 1.5/6	1	1.1	0.3	1.4	17	540
7 × 2.5/6	1	1.1	0.3	1.4	22	630
12 × 1.5/10	1	1.2	0.3	1.6	21.5	810
12 × 2.5/10	1	1.2	0.3	1.6	25.5	990
19 × 1.5/10	1	1.2	0.3	1.7	25	1,100
19 × 2.5/16	1	1.2	0.3	1.8	30	1,370
27 × 1.5/16	1	1.4	0.3	2	34.7	1,565
27 × 2.5/25	1	1.4	0.3	2	37.3	1,994
37 × 1.5/16	1	1.4	0.3	2	39.6	1,987
37 × 2.5/25	1	1.4	0.4	2.2	43.5	2,628

* Braid cannot be used as protective earth conductor

BFOU P5/P12 & BFOU EMC

EPR/EPR/TCWB/EVA

0.6/1 (1.2) kV

Without approvals

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer covering	Approximate outer diameter	Approximate weight of cable
N × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
2 × 240/120**	2.2	1.5	0.5	2.8	63.3	8,525
3G1	1	1.1	0.2	1.2	14.3	269
3G150	1.8	1.5	0.4	2.5	52.8	6,357
3 × 150/70	1.8	1.5	0.5	2.6	53.4	6,752
3G300	2.4	1.7	0.4	3.2	71.9	12,226
4G1	1	1.1	0.3	1.3	16.0	371
4 × 240/120**	2.2	1.7	0.5	3.2	74.9	13,816
4G300	2.4	1.7	0.4	3.4	79.5	15,482
5G150	1.8	1.7	0.4	2.9	64.9	9,776
7G1.5	1	1.1	0.3	1.5	20.9	585
9 × 1.5/10	1	1.1	0.3	1.5	23.5	700
10G1.5	1	1.1	0.3	1.6	24.1	764
20 × 2.5/16	1	1.2	0.3	1.8	32.5	1,492
24G2.5	1	1.3	0.3	2	36.4	1,792

** Double braided

RFOU (i) S1/S5 & RFOU (i) EMC

150/250 (300) V
EPR/EPR/TCWB/EVA

NEK TS 606 Code S1/S5, IEC 60092-376-Design guidelines

Flame retardant, halogen-free instrumentation cable.
Mud resistant

CONSTRUCTION

	Code letter	
Conductors		Tinned annealed circular stranded copper according to IEC 60228 class 2 or class 5
Insulation	**R**	EP rubber thermosetting compound, IEC 60092-360 (EPR)
Pair, Triple, Quad twisting		Color coded cores twisted together. Pairs/Triples are screened by copper backed polyester tape with tinned copper drain wire. Each pair/triple is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triples. Pairs/triples are identified by numbers printed directly on the insulated conductors
Lay up/Shielding		Individually shielded pairs/triples/quads are laid up in concentric layers and wrapped with polyester tape
Inner covering	**F**	Flame retardant and halogen-free thermosetting compound
Armour/screen	**O**	PET tape & Tinned annealed copper wire braid
For EMC cable		Cu/PET tape under the braid
Separator		Suitable tape between the braid and outer sheath
Outer sheath	**U**	Flame retardant, halogen-free and mud resistant thermosetting compound SHF2 (IEC 60092-360)
Colour of outer sheath*		Grey or blue
Standard marking		E.g. TF KABLE 3 RFOU (i) 250 V S1/S5 2 PAIR 0.75 mm² IEC 60332-3-22 IEC 60092-376

* Black outer sheathing is available on request

RFOU (i) S1/S5 & RFOU (i) EMC
150/250 (300) V
EPR/EPR/TCWB/EVA

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Oil resistance:	IEC 60092-360 SHF2, I RM 902 (100°C /24h)
Mud resistance:	NEK 606 (SHF MUD, SHF2)
Minimum bending radius:	6 D D – overall diameter of cable

Fire performance

Flame retardant	IEC 60332-3-22 (Category A)
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

Applications

- Fixed installation for instrumentation, communication, control and alarm system in both EX- and safe areas
- Meets the MUD resistance requirement in NEK TS 606
- For fixed wiring installations on Oil and Gas Rigs, Shipboard and other marine applications requiring screened cable for EMC
- Other industrial applications

Approvals

DNV-GL, ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

RFOU (i) S1/S5 & RFOU (i) EMC

150/250 (300) V

EPR/EPR/TCWB/EVA

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.75	2	0.6	1.1	0.2	1.1	10.3	148
2 × 2 × 0.75	2	0.6	1.1	0.2	1.2	14.4	248
4 × 2 × 0.75	2	0.6	1.1	0.3	1.3	15.6	355
8 × 2 × 0.75	2	0.6	1.1	0.3	1.5	19.2	554
12 × 2 × 0.75	2	0.6	1.4	0.3	1.6	22.9	775
16 × 2 × 0.75	2	0.6	1.9	0.3	1.7	26.5	1,024
19 × 2 × 0.75	2	0.6	1.9	0.3	1.7	28.1	1,153
24 × 2 × 0.75	2	0.6	2.1	0.3	1.9	31.3	1,421
1 × 3 × 0.75	2	0.6	1.1	0.2	1.1	10.6	162
2 × 3 × 0.75	2	0.6	1.1	0.3	1.3	15.2	308
4 × 3 × 0.75	2	0.6	1.1	0.3	1.4	17	429
8 × 3 × 0.75	2	0.6	1.1	0.3	1.6	21.7	698
12 × 3 × 0.75	2	0.6	1.4	0.3	1.7	25.5	972
16 × 3 × 0.75	2	0.6	2.1	0.3	1.8	29.8	1,310
19 × 3 × 0.75	2	0.6	2.1	0.3	1.8	31.7	1,482
24 × 3 × 0.75	2	0.6	2.5	0.4	2	36.1	1,859
1 × 2 × 1.5	2	0.7	1.1	0.2	1.1	11.6	187
2 × 2 × 1.5	2	0.7	1.1	0.3	1.3	17.6	384
4 × 2 × 1.5	2	0.7	1.1	0.3	1.4	20.0	546
8 × 2 × 1.5	2	0.7	1.1	0.3	1.7	23.1	809
12 × 2 × 1.5	2	0.7	1.4	0.3	1.8	27.8	1,156
16 × 2 × 1.5	2	0.7	1.9	0.3	1.9	32.1	1,524
19 × 2 × 1.5	2	0.7	1.9	0.3	1.9	34.2	1,732
24 × 2 × 1.5	2	0.7	2.3	0.4	2.2	39.1	2,287
1 × 3 × 1.5	2	0.7	1.1	0.2	1.1	12.2	216
2 × 3 × 1.5	2	0.7	1.1	0.3	1.4	18	428
4 × 3 × 1.5	2	0.7	1.1	0.3	1.5	20.2	622
8 × 3 × 1.5	2	0.7	1.1	0.3	1.8	26.3	1,047
12 × 3 × 1.5	2	0.7	1.4	0.3	1.9	31.1	1,488
16 × 3 × 1.5	2	0.7	2.3	0.4	2	37.1	2,030
24 × 3 × 1.5	2	0.7	2.5	0.4	2.3	44.1	2,983
1 × 2 × 2.5	2	0.7	1.1	0.2	1.1	12.4	222

RFOU (i) S1/S5 & RFOU (i) EMC

150/250 (300) V

EPR/EPR/TCWB/EVA

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
2 × 2 × 2.5	2	0.7	1.1	0.3	1.4	14.6	368
4 × 2 × 2.5	2	0.7	1.1	0.3	1.5	20.5	637

Without approvals

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
5 × 2 × 0.75	2	0.6	1.1	0.3	1.3	18.1	444
10 × 2 × 0.75	2	0.6	1.1	0.3	1.5	24.1	734
20 × 2 × 0.75	2	0.6	1.9	0.3	1.7	31.9	1,321
4 × 2 × 2.5	2	0.7	1.1	0.3	1.5	21.9	677
8 × 2 × 2.5	2	0.7	1.1	0.3	1.7	29.9	1,167
16 × 2 × 2.5	2	0.7	1.1	0.3	1.9	37.2	1,969
24 × 2 × 2.5	2	0.7	1.2	0.4	2.2	46.7	2,968
1 × 3 × 2.5	2	0.7	1	0.2	1.2	13.0	265
4 × 3 × 2.5	2	0.7	1.1	0.3	1.5	24.0	840
16 × 3 × 2.5	2	0.7	1.2	0.4	2.1	42.2	2,705
1 × 4 × 2.5	2	0.7	1	0.2	1.2	13.9	309
4 × 3 × 1	2	0.6	1	0.3	1.4	22.5	635

RFOU (c) S2/S6 & RFOU (c) EMC

150/250 (300) V
EPR/EPR/TCWB/EVA

NEK TS 606 Code S2/S6, IEC 60092-376-Design guidelines

Flame retardant halogen-free instrumentation cable. Mud resistant

CONSTRUCTION

	Code letter	
Conductors		Tinned annealed circular stranded copper according to IEC 60228 class 2 or class 5
Insulation	**R**	EP rubber thermosetting compound. IEC 60092-360 (EPR)
Pair, Triple, Quad twisting		Color coded cores twisted together and wrapped with polyester tape. Pairs/Triples are laid up collectively and screened by copper backed polyester tape with tinned copper drain wire. Pairs/triples are identified by numbers printed directly on the insulated conductors.
Inner covering	**F**	Flame retardant and halogen-free thermosetting compound
Armour/screen	**O**	PET tape & Tinned annealed copper wire braid
For EMC cable		Cu/PET tape under the braid
Separator		Suitable tape between the braid and outer sheath
Outer sheath	**U**	Flame retardant, halogen-free and mud resistant thermosetting compound SHF2 (IEC 60092-360)
Colour of outer sheath		Grey or blue
Standard marking		E.g. TF KABLE 3 RFOU (c) 250 V S2/S6 2 PAIR 0.75 mm^2 IEC 60332-3-22 IEC 60092-376

RFOU (c) S2/S6 & RFOU (c) EMC
150/250 (300) V
EPR/EPR/TCWB/EVA

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Oil resistance:	IEC 60092-360 SHF2, I RM 902 (100°C/24h)
Mud resistance:	NEK 606 (SHF MUD, SHF2)
Minimum bending radius:	6 D D – overall diameter of cable

Fire performance

Flame retardant	IEC 60332-3-22 (Category A)
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

Applications

- Fixed installation for instrumentation, communication, control and alarm system in both EX- and safe areas
- Meets the MUD resistance requirement in NEK TS 606
- For fixed wiring installations on Oil and Gas Rigs, Shipboard and other marine applications requiring screened cable for EMC
- Other industrial applications

Approvals

DNV-GL, ABS

Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

RFOU (c) S2/S6 & RFOU (c) EMC

150/250 (300) V

EPR/EPR/TCWB/EVA

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
2 × 2 × 0.75	2	0.6	1.1	0.2	1.2	11.4	187
4 × 2 × 0.75	2	0.6	1.1	0.3	1.3	15.9	337
8 × 2 × 0.75	2	0.6	1.1	0.3	1.5	21.7	496
12 × 2 × 0.75	2	0.6	1.4	0.3	1.5	24.4	685
16 × 2 × 0.75	2	0.6	1.9	0.3	1.6	26.5	899
19 × 2 × 0.75	2	0.6	1.9	0.3	1.7	28.3	1,017
24 × 2 × 0.75	2	0.6	2.1	0.3	1.8	31.3	1,231
2 × 3 × 0.75	2	0.6	1.1	0.3	1.3	15.4	306
4 × 3 × 0.75	2	0.6	1.1	0.3	1.3	17	403
8 × 3 × 0.75	2	0.6	1.1	0.3	1.6	21.8	639
12 × 3 × 0.75	2	0.6	1.4	0.3	1.6	25.5	879
16 × 3 × 0.75	2	0.6	2.1	0.3	1.7	29.9	1,183
24 × 3 × 0.75	2	0.6	2.5	0.4	2	36.3	1,680
2 × 2 × 1.5	2	0.7	1.1	0.3	1.3	13.6	288
4 × 2 × 1.5	2	0.7	1.1	0.3	1.4	18.8	475
8 × 2 × 1.5	2	0.7	1.1	0.3	1.6	23.3	740
10 × 2 × 1.5	2	0.7	1.2	0.3	1.7	26.4	900
12 × 2 × 1.5	2	0.7	1.4	0.3	1.7	27.9	1,031
16 × 2 × 1.5	2	0.7	1.9	0.3	1.8	32.2	1,353
19 × 2 × 1.5	2	0.7	1.9	0.3	1.9	34.4	1,543
24 × 2 × 1.5	2	0.7	2.3	0.3	2.1	39.1	1,932
2 × 3 × 1.5	2	0.7	1.1	0.3	1.4	18.2	420
4 × 3 × 1.5	2	0.7	1.1	0.3	1.4	20.3	585
8 × 3 × 1.5	2	0.7	1.1	0.3	1.7	26.5	975
12 × 3 × 1.5	2	0.7	1.4	0.3	1.8	31.1	1,357
16 × 3 × 1.5	2	0.7	2.1	0.4	1.9	36.7	1,810
24 × 3 × 1.5	2	0.7	2.5	0.4	2.2	44.1	2,593
2 × 2 × 2.5	2	0.7	1.1	0.3	1.4	14.8	358
4 × 2 × 2.5	2	0.7	1.1	0.3	1.4	20.6	594
8 × 2 × 2.5	2	0.7	2.1	0.3	1.8	28.1	1,110
12 × 2 × 2.5	2	0.7	2.1	0.3	1.8	32.4	1,460

RFOU (c) S2/S6 & RFOU (c) EMC
150/250 (300) V
EPR/EPR/TCWB/EVA

Without approvals

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
6 × 2 × 0.75	2	0.6	1.1	0.3	1.4	19.0	451
10 × 2 × 0.75	2	0.6	1.1	0.3	1.5	23.3	629
14 × 2 × 0.75	2	0.6	1.4	0.3	1.6	25.8	797
1 × 2 × 1	2	0.6	1.0	0.2	1.1	11.8	199
2 × 2 × 1	2	0.6	1.0	0.2	1.2	14.5	250
4 × 2 × 1	2	0.6	1.0	0.3	1.4	20.1	484
6 × 2 × 1	2	0.6	1.0	0.3	1.4	19.6	490
10 × 2 × 1	2	0.6	1.0	0.3	1.5	24.2	702
12 × 2 × 1	2	0.6	1.0	0.3	1.6	25.1	775
3 × 2 × 1.5	2	0.7	1.0	0.3	1.3	17.6	408
5 × 2 × 1.5	2	0.7	1.0	0.3	1.4	20.7	552
6 × 3 × 1.5	2	0.7	1.0	0.3	1.6	24.8	803
20 × 2 × 1.5	2	0.7	1.0	0.3	1.9	35.4	1,479
16 × 2 × 2.5	2	0.7	1.0	0.3	1.9	35.8	1,648
24 × 2 × 2.5	2	0.7	1.2	0.4	2.2	45.1	2,496
4 × 3 × 2.5	2	0.7	1.0	0.3	1.5	23.2	761
16 × 3 × 2.5	2	0.7	1.2	0.4	2.1	40.9	2,373

BFOU (i) S3/S7 & BFOU (i) EMC

150/250 (300) V
MGT/EPR/EPR/TCWB/EVA

NEK TS 606 Code S3/S7, IEC 60092-376-Design guidelines

Fire resistant, flame retardant halogen-free instrumentation cable.
Mud resistant

CONSTRUCTION

	Code letter	
Conductors		Tinned annealed circular stranded copper according to IEC 60228 class 2 or class 5
Insulation	**B**	Mica tape EP rubber thermosetting compound, IEC 60092-360 (EPR)
Pair, triple, quad twisting		Color coded cores twisted together. Pairs/Triples are screened by copper backed polyester tape with tinned copper drain wire. Each pair/triple is wrapped with polyester tape to prevent electrical contact with adjacent pairs/triples. Pairs/triples are identified by numbers printed directly on the insulated conductors.
Lay up/shielding		Individually shielded pairs/triples/quads are laid up in concentric layers and wrapped with polyester tape
Inner covering	**F**	Flame retardant and halogen-free thermosetting compound
Armour/screen	**O**	PET tape & Tinned annealed copper wire braid
For EMC cable		Cu/PET tape under the braid
Separator		Separator, suitable tape between the braid and outer sheath
Outer sheath	**U**	Flame retardant, halogen-free and mud resistant thermosetting compound SHF2 (IEC 60092-360)
Colour of outer sheath *		Grey or blue
Standard marking		E.g. TF KABLE 3 BFOU (c) 250 V S3/S7 2 PAIR 0.75 mm^2 IEC 60331-21 IEC 60332-3-22 IEC 60092-376

* Black outer sheathing is available on request

BFOU (i) S3/S7 & BFOU (i) EMC
150/250 (300) V
MGT/EPR/EPR/TCWB/EVA

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Maximum conductor temperature during short circuit:	+250°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-15°C
Oil resistance:	IEC 60092-360 SHF2. I RM 902 (100°C/24h)
Mud resistance:	NEK 606 (SHF MUD. SHF2)
Minimum bending radius:	6 D D – overall diameter of cable

Fire performance

Flame retardant:	IEC 60332-3-22 (Category A)
Fire resistant:	IEC 60331
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

Applications

- Fixed installation for instrumentation, communication, control and alarm system in both EX- and safe areas emergency and critical systems where requirements for fire resistance exists.
- Meets the MUD resistance requirement in NEK TS 606
- For fixed wiring installations on Oil and Gas Rigs, Shipboard and other marine applications requiring screened cable for EMC
- Other industrial applications

Approvals

DNV-GL, ABS
Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

BFOU (i) S3/S7 & BFOU (i) EMC

150/250 (300) V

MGT/EPR/EPR/TCWB/EVA

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 0.75	2	0.6	1.1	0.2	1.1	11.7	171
2 × 2 × 0.75	2	0.6	1.1	0.3	1.3	13.5	258
4 × 2 × 0.75	2	0.6	1.1	0.3	1.4	18.8	438
8 × 2 × 0.75	2	0.6	1.1	0.3	1.6	23.4	680
12 × 2 × 0.75	2	0.6	1.4	0.3	1.7	28	949
16 × 2 × 0.75	2	0.6	1.9	0.3	1.8	32.3	1,250
19 × 2 × 0.75	2	0.6	1.9	0.3	1.9	34.6	1,422
24 × 2 × 0.75	2	0.6	2.3	0.4	2.1	39.4	1,879
1 × 3 × 0.75	2	0.6	1.1	0.2	1.1	12.2	200
2 × 3 × 0.75	2	0.6	1.1	0.3	1.4	18.2	384
4 × 3 × 0.75	2	0.6	1.1	0.3	1.4	20.3	521
8 × 3 × 0.75	2	0.6	1.1	0.3	1.7	26.6	860
12 × 3 × 0.75	2	0.6	1.4	0.3	1.8	31.3	1,192
16 × 3 × 0.75	2	0.6	2.1	0.4	1.9	36.9	1,603
19 × 3 × 0.75	2	0.6	2.3	0.4	2	39.9	1,866
24 × 3 × 0.75	2	0.6	2.5	0.4	2.2	44.4	2,395
1 × 2 × 1.5	2	0.7	1.1	0.2	1.1	13	214
2 × 2 × 1.5	2	0.7	1.1	0.3	1.4	20.1	454
4 × 2 × 1.5	2	0.7	1.1	0.3	1.5	23.2	648
8 × 2 × 1.5	2	0.7	1.1	0.3	1.7	27.3	947
12 × 2 × 1.5	2	0.7	1.4	0.3	1.9	36.5	1,519
16 × 2 × 1.5	2	0.7	2.1	0.4	2	38.7	1,810
19 × 2 × 1.5	2	0.7	1.9	0.4	2	40.9	2,092
24 × 2 × 1.5	2	0.7	2.3	0.4	2.3	46.2	2,657
1 × 3 × 1.5	2	0.7	1.1	0.2	1.1	13.6	259
2 × 3 × 1.5	2	0.7	1.1	0.3	1.5	21	508
4 × 3 × 1.5	2	0.7	1.1	0.3	1.6	23.8	730
8 × 3 × 1.5	2	0.7	1.1	0.3	1.8	31.1	1,221
12 × 3 × 1.5	2	0.7	1.6	0.4	2	37.7	1,765

BFOU (i) S3/S7 & BFOU (i) EMC

150/250 (300) V

MGT/EPR/EPR/TCWB/EVA

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
16 × 3 × 1.5	2	0.7	2.3	0.4	2.2	43.9	2,481
24 × 3 × 1.5	2	0.7	2.7	0.4	2.5	52.8	3,527
1 × 2 × 2.5	2	0.7	1.1	0.2	1.2	14.1	258
2 × 2 × 2.5	2	0.7	1.1	0.3	1.5	16.5	423
4 × 2 × 2.5	2	0.7	1.1	0.3	1.6	23.7	733
8 × 2 × 2.5	2	0.7	1.1	0.3	1.8	29.8	1,200
16 × 2 × 2.5	2	0.7	2.3	0.4	2.2	42.9	2,466
8 × 3 × 2.5	2	0.7	1.3	0.3	2	34.7	1,621
16 × 3 × 2.5	2	0.7	2.6	0.4	2.2	48.4	3,224

Without approvals

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
1 × 2 × 1	2	0.6	1.0	0.2	1.1	11.9	187
5 × 2 × 1.5	2	0.7	1.1	0.3	1.5	25.1	754
6 × 2 × 1.5	2	0.7	1.1	0.3	1.6	27.4	870
10 × 2 × 1.5	2	0.7	1.1	0.3	1.8	34.6	1,299
1 × 2 × 2.5	2	0.7	1.1	0.2	1.1	13.1	222
5 × 2 × 2.5	2	0.7	1.1	0.3	1.6	27.4	953
12 × 2 × 2.5	2	0.7	1.1	0.3	1.9	39.1	1,838
20 × 2 × 2.5	2	0.7	1.2	0.4	2.2	49.1	2,855
1 × 3 × 2.5	2	0.7	1.1	0.2	1.2	14.8	312
2 × 3 × 2.5	2	0.7	1.1	0.3	1.5	23.9	653
4 × 3 × 2.5	2	0.7	1.1	0.3	1.6	27.7	985
12 × 3 × 2.5	2	0.7	1.3	0.4	2.1	44.6	2,532

BFOU (c) S4/S8 & BFOU (c) EMC

150/250 (300) V
MGT/EPR/EPR/TCWB/EVA

NEK TS 606 Code S4/S8, IEC 60092-376-Design guidelines

Fire resistant, flame retardant, halogen-free instrumentation cable.
Mud resistant

CONSTRUCTION

	Code letter	
Conductors		Tinned annealed circular stranded copper according to IEC 60228 class 2 or class 5
Insulation	**B**	Mica tape EP rubber thermosetting compound. IEC 60092-360 (EPR)
Pair, Triple, Quad twisting		Color coded cores twisted together and wrapped with polyester tape. Pairs/ Triples are laid up collectively and screened by copper backed polyester tape with tinned copper drain wire. Pairs/ triples are identified by numbers printed directly on the insulated conductors.
Inner covering	**F**	Flame retardant and halogen-free thermosetting compound
Armour/screen	**O**	PET tape & Tinned annealed copper wire braid
For EMC cable		Cu/PET tape under the braid
Separator		Separator, suitable tape between the braid and outer sheath
Outer sheath	**U**	Flame retardant, halogen-free and mud resistant thermosetting compound SHF2 (IEC 60092-360)
Colour of outer sheath		Grey or blue
Standard marking		E.g. TF KABLE 3 BFOU (c) 250 V S4/S8 2 PAIR 0.75 mm^2 IEC 60331-21 IEC 60332-3-22 IEC 60092-376

BFOU (c) S4/S8 & BFOU (c) EMC
150/250 (300) V
MGT/EPR/EPR/TCWB/EVA

CHARACTERISTIC

Maximum conductor operating temperature:	+90 °C
Maximum conductor temperature during short circuit:	+250 °C
Lowest ambient temperature for fixed installation:	-40 °C
Lowest installation temperature:	-15 °C
Oil resistance:	IEC 60092-360 SHF2. I RM 902 (100 °C/24 h)
Mud resistance:	NEK 606 (SHF MUD. SHF2)
Minimum bending radius:	6 D D – overall diameter of cable

Fire performance

Flame retardant:	IEC 60332-3-22 (Category A)
Fire resistant:	IEC 60331
Smoke emission:	IEC 61034-2
Corrosive gas emission:	IEC 60754-1

Applications

- Fixed installation for instrumentation, communication, control and alarm system in both EX- and safe areas emergency and critical systems where requirements for fire resistance exists.
- Meets the MUD resistance requirement in NEK TS 606
- For fixed wiring installations on Oil and Gas Rigs, Shipboard and other marine applications requiring screened cable for EMC
- Other industrial applications

Approvals

DNV-GL, ABS
Details related to particular Approvals are informative only. Please contact manufacturer to confirm whether the required cross-sections are covered by the Certificate.

BFOU (c) S4/S8 & BFOU (c) EMC

150/250 (300) V

MGT/EPR/EPR/TCWB/EVA

Standard length cable packing:	1,000 m on drums Other forms of packing and delivery are available on request

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
N × 2 × mm²		**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
2 × 2 × 0.75	2	0.6	1.1	0.3	1.3	13.7	258
4 × 2 × 0.75	2	0.6	1.1	0.3	1.4	19	416
8 × 2 × 0.75	2	0.6	1.1	0.3	1.5	23.4	612
12 × 2 × 0.75	2	0.6	1.4	0.3	1.6	28	842
16 × 2 × 0.75	2	0.6	1.9	0.3	1.7	32.3	1,104
19 × 2 × 0.75	2	0.6	1.9	0.3	1.8	34.6	1,247
24 × 2 × 0.75	2	0.6	2.3	0.4	2	39.4	1,561
2 × 3 × 0.75	2	0.6	1.1	0.3	1.3	18.2	372
4 × 3 × 0.75	2	0.6	1.1	0.3	1.4	20.5	497
8 × 3 × 0.75	2	0.6	1.1	0.3	1.6	22.7	703
12 × 3 × 0.75	2	0.6	1.4	0.3	1.8	31.5	1,091
16 × 3 × 0.75	2	0.6	2.1	0.4	1.9	37.1	1,463
24 × 3 × 0.75	2	0.6	2.5	0.4	2.1	44.4	2,157
2 × 2 × 1.5	2	0.7	1.1	0.3	1.4	19.7	435
4 × 2 × 1.5	2	0.7	1.1	0.3	1.4	21.8	551
8 × 2 × 1.5	2	0.7	1.1	0.3	1.7	27.5	868
12 × 2 × 1.5	2	0.7	1.4	0.3	1.8	32.9	1,207
16 × 2 × 1.5	2	0.7	1.9	0.4	1.9	38.4	1,580
24 × 2 × 1.5	2	0.7	2.3	0.4	2.3	46.4	2,379
2 × 3 × 1.5	2	0.7	1.1	0.3	1.4	21	492
4 × 3 × 1.5	2	0.7	1.1	0.3	1.5	24.9	742
8 × 3 × 1.5	2	0.7	1.1	0.3	1.8	34.4	1,139
12 × 3 × 1.5	2	0.7	1.4	0.4	1.9	39.6	1,578
16 × 3 × 1.5	2	0.7	2.3	0.4	2.1	44	2,274
24 × 3 × 1.5	2	0.7	2.7	0.4	2.4	52.8	3,210
2 × 2 × 2.5	2	0.7	1.1	0.3	1.4	16.6	402
4 × 2 × 2.5	2	0.7	1.1	0.3	1.5	23.7	683
8 × 2 × 2.5	2	0.7	1.1	0.3	1.8	30.1	1,103
16 × 2 × 2.5	2	0.7	2.3	0.4	2.1	42.9	2,228
4 × 3 × 2.5	2	0.7	1.1	0.3	1.6	26	929

BFOU (c) S4/S8 & BFOU (c) EMC

150/250 (300) V

MGT/EPR/EPR/TCWB/EVA

Size	Class of conductor	Insulation thickness	Thickness of inner sheath	Diameter of braid wire	Thickness of outer sheath	Approximate overall diameter	Approximate net weight of cable
8 × 3 × 2.5	2	0.7	1.1	0.3	1.9	34.4	1,472
16 × 3 × 2.5	2	0.7	2.6	0.4	2.3	48.9	3,023

Without approvals

Size	Insulation thickness	Thickness inner covering	Diameter of braid wire	Thickness outer covering	Approximate outer diameter	Approximate weight of cable
N × mm²	**mm**	**mm**	**mm**	**mm**	**mm**	**kg/km**
4 × 2 × 1	0.6	0.6	0.3	1.4	20.2	484
5 × 2 × 1	0.6	1.0	0.3	1.4	21.8	545
6 × 2 × 1	0.6	1.0	0.3	1.5	23.7	625
8 × 2 × 1	0.6	1.0	0.3	1.6	27.4	777
12 × 2 × 1	0.6	1.0	0.3	1.7	30.7	992
20 × 2 × 1	0.6	1.0	0.3	1.9	37.6	1,439
3 × 3 × 1	0.6	1.0	0.3	1.4	20.4	505
5 × 3 × 1	0.6	1.0	0.3	1.5	24.1	684
19 × 3 × 1	0.6	1.2	0.3	2.0	42.3	1,836
5 × 2 × 1.5	0.7	1.0	0.3	1.5	24.4	679
6 × 2 × 1.5	0.7	1.0	0.3	1.6	26.5	773
19 × 2 × 1.5	0.7	1.2	0.3	2.0	42.8	1,837
20 × 2 × 1.5	0.7	1.2	0.4	2.1	43.4	2,016
6 × 3 × 1.5	0.7	1.1	0.3	1.7	29.6	1,001
7 × 3 × 1.5	0.7	1.1	0.3	1.7	31.9	1,129

Classification Bureau	Type cables
DNV-GL	UX P15 TCu/EVA 0.6/1 kV
	RFOU P1/P8 & RFOU EMC 0.6/1 (1.2) kV EPR/EPR/TCWB/EVA
	BFOU P5/P12 & BFOU EMC EPR/EPR/TCWB/EVA 0.6/1 (1.2) kV
	RFOU (i) S1/S5 & RFOU (i) EMC 150/250 (300) V EPR/EPR/TCWB/EVA
	RFOU (c) S2/S6 & RFOU (c) EMC 150/250 (300) V EPR/EPR/TCWB/EVA
	BFOU (i) S3/S7 & BFOU (i) EMC 150/250 (300) V MGT/EPR/EPR/TCWB/EVA
	BFOU (c) S4/S8 & BFOU (c) EMC 150/250 (300) V MGT/EPR/EPR/TCWB/EVA
ABS	UX P15 TCu/EVA 0.6/1 kV
	RFOU P1/P8 & RFOU EMC 0.6/1 (1.2) kV EPR/EPR/TCWB/EVA
	BFOU P5/P12 & BFOU EMC EPR/EPR/TCWB/EVA 0.6/1 (1.2) kV
	RFOU (i) S1/S5 & RFOU (i) EMC 150/250 (300) V EPR/EPR/TCWB/EVA
	RFOU (c) S2/S6 & RFOU (c) EMC 150/250 (300) V EPR/EPR/TCWB/EVA
	BFOU (i) S3/S7 & BFOU (i) EMC 150/250 (300) V MGT/EPR/EPR/TCWB/EVA
	BFOU (c) S4/S8 & BFOU (c) EMC 150/250 (300) V MGT/EPR/EPR/TCWB/EVA

Technical section

To be read in conjunction
with the relevant cable datasheet

Installation recommendations

(in accordance with BS 6883:1999 appendix B)

Installation Temperature

Minimum recommended installation temperature for cables according to BS6883 is -15 °C

Minimum bending radius (MBR)

The cables specified in BS6883 should not be bent to an internal radius smaller than that given in the table A1 below. Wherever possible larger installation radii should be used.

Type of cable	Overall diameter	Minimum bending radius
Screened multi-pair, triple or quad	Any	8 D
Multi-core unarmoured (unbraided) 600/1000 V	≤10mm	3 D
	>10mm to ≤25mm	4 D
	>25mm	6 D
Multi-core armoured (braided) 600/1000 V	≤25mm	4 D
	>25mm	6 D

D – is the overall diameter of the cable

Current Ratings

(in accordance with IEC 60092-352 based on ambient air temperature of 45 °C)

Nominal cross-sectional area	Insulation class temperature 90 °C		
mm^2	Single core Ampere	2 core Ampere	3 & 4 core Ampere
1	18	15	13
1.5	23	20	16
2.5	30	26	21
4	40	34	28
6	52	44	36
10	72	61	50
16	96	82	67
25	127	108	89
35	157	133	110
50	196	167	137
70	242	206	169
95	293	249	205
120	339	288	237
150	389	331	272
185	444	377	311
240	522	444	365
300	601	511	421
400	719	611	503
500	827	703	579
630	955	812	669

Current ratings for 5 cores and over

Number of cores		Insulation class temperature 90 °C	
Nominal cross-sectional area	1 mm²	1.5 mm²	2.5 mm²
	Ampere	Ampere	Ampere
5	10.5	12	16
7	9	10	15
10	8	9	13
12	8	9	12
16	7	8	11
19	7	7	10
20	7	7	10
24	6	6.5	9.5
27	6	6.5	9
30	6	6	9
37	5	6	8

The ambient temperature of 45 °C, on which the above current ratings are based, is considered as a standard value for the ambient air temperature, generally applicable for any kind of ship or offshore platform in any climate.

Correction factors for different ambient air temperatures

Maximum conductor temperature	90 °C									
Ambient temperature, °C	35	40	45	50	55	60	65	70	75	80
Correction factor	1.10	1.05	1.0	0.94	0.88	0.82	0.74	0.67	0.58	0.47

Where more than six bunched cables on cable trays, in cable conduits. Pipes or trunking are expected to operate simultaneously full rated capacity, a correction factor of 0.85 should be applied.

Short circuit rating

Short circuit rating calculation based on formula:

$$Short\ circuit = 226x \frac{S}{\sqrt{t}} x \sqrt{ln \frac{234 + T_k}{234 + T_b}}$$

S = Cross-section of conductor, mm²
t = Duration of the short circuit, s

T_k = Maximum rated conductor temperature, short circuit, °C
T_b = Maximum rated conductor temperature, normal, °C

Size	Maximum short circuit current rating for 1 second	Maximum short circuit current rating for 3 seconds	Maximum short circuit current rating for 5 seconds
mm²	**kA**	**kA**	**kA**
1	0.14	0.08	0.06
1.5	0.21	0.12	0.10
2.5	0.35	0.21	0.16
4	0.57	0.33	0.26
6	0.85	0.50	0.38
10	1.43	0.82	0.64
16	2.29	1.32	1.02

Size	Maximum short circuit current rating for 1 second	Maximum short circuit current rating for 3 seconds	Maximum short circuit current rating for 5 seconds
25	3.57	2.06	1.60
35	5.01	2.89	2.20
50	7.15	4.13	3.20
70	10.0	5.78	4.48
95	13.6	7.85	6.08
120	17.1	9.91	7.68
150	21.4	12.3	9.60
185	26.4	15.3	11.8
240	34.3	19.8	15.3
300	42.9	24.8	19.2
400	56.0	–	–
500	70.0	–	–
630	88.2	–	–

Conductor resistance for Power cables

(in accordance with IEC60228)

Cross-section of conductor	Conductor class 2		Conductor class 5	
	Tinned copper		Tinned copper	
	Maximum resistance at 20°C	Maximum resistance at 90°C	Maximum resistance at 20°C	Maximum resistance at 90°C
mm²	**Ω/km**	**Ω/km**	**Ω/km**	**Ω/km**
1	18.2	23.2	20.0	25.5
1.5	12.2	15.6	13.7	17.5
2.5	7.56	9.64	8.21	10.47
4	4.7	5.99	5.09	6.49
6	3.11	3.97	3.39	4.32
10	1.84	2.35	1.95	2.49
16	1.16	1.48	1.24	1.58
25	0.734	0.936	0.795	1.014
35	0.529	0.675	0.565	0.720
50	0.391	0.499	0.393	0.501
70	0.27	0.344	0.277	0.353
95	0.195	0.249	0.210	0.268
120	0.154	0.196	0.164	0.209
150	0.126	0.161	0.132	0.168
185	0.1	0.128	0.108	0.138
240	0.0762	0.0972	0.0817	0.1042
300	0.607	0.0774	0.0654	0.0834

Conductor resistance for Instrumentation cables

(in accordance with IEC60228)

Cross-section of conductor	Conductor class 5	
	Tinned copper	
	Maximum resistance at 20°C	Maximum resistance at 90°C
mm²	**Ω/km**	**Ω/km**
0.75	26.7	34.18
1	20.0	25.60
1.5	13.7	17.54

UKOOA cable coding

1st Character

	Type	Voltage		Type	Voltage
F	Fire resistant, reduced halogen	150/250 V	M	Flame retardant, reduced halogen	3.8/6.6 KV
G	Fire resistant, low smoke & fume	150/250 V	N	Flame retardant, reduced halogen	1.9/3.3 KV
H	Flame retardant, reduced halogen	8.7/15 KV	P	Flame retardant, reduced halogen	6.35/11 KV
J	Flame retardant, reduced halogen	150/250 V	W	Flame retardant, low smoke & fume	600/1000 V
K	Flame retardant, low smoke & fume	150/250 V	X	Fire resistant, reduced halogen	600/1000 V
L	Flame retardant, reduced halogen	600/1000 V	Y	Fire resistant, low smoke & fume	600/1000 V

2nd Character

	Basic Construction	Sheath Colour	Armour	Screen
A	Flame retardant	Black (600/1000 V) , Red (HV)	Bronze braid (TPBWB)	–
B	Flame retardant	Black (600/1000 V) , Red (HV)	GSWB	–
C	Fire resistant	Black (600/1000 V)	Bronze braid (TPBWB)	–
D	Fire resistant	Black (600/1000 V)	GSWB	–
E	Flame retardant	Green/Yellow	None	–
F	Flame retardant	Black	None	–
G	Flame retardant	Light Blue	GSWB	Collective
H	Flame retardant	Light Blue	GSWB	Individual
J	Flame retardant	Grey	GSWB	Collective
K	Flame retardant	Grey	GSWB	Individual
L	Fire resistant	Light Blue	GSWB	Collective
M	Fire resistant	Light Blue	GSWB	Individual
N	Fire resistant	Grey	GSWB	Collective
P	Fire resistant	Grey	GSWB	Individual
Y	Flame retardant	Orange	GSWB	Co-axial

3rd Character

1	Single core	B	19 core	K	12 pair	T	7 triple
2	2 core	C	27 core	L	20 pair	U	12 triple
3	3 core	D	37 core	M	27 pair	X	1 quad
4	4 core	F	1 pair	N	37 pair	Y	3 quad
7	7 core	H	3 pair	R	1 triple	Z	7 quad
A	12 core	J	7 pair	S	3 triple		

4th & 5th Character

	Conductor Size	**Type of stranding**		**Conductor Size**	**Type of stranding**
00	0.75 mm^2	Flexible tinned copper (Class5)	70	70 mm^2	Tinned copper (Class2)
01	1.0 mm^2	Flexible tinned copper (Class5)	95	95 mm^2	Tinned copper (Class2)
02	1.5 mm^2	Flexible tinned copper (Class5)	0A	120 mm^2	Tinned copper (Class2)
03	2.5 mm^2	Tinned copper (Class2)	0B	150 mm^2	Tinned copper (Class2)
04	4 mm^2	Tinned copper (Class2)	0C	185 mm^2	Tinned copper (Class2)
06	6 mm^2	Tinned copper (Class2)	0D	240 mm^2	Tinned copper (Class2)
10	10 mm^2	Tinned copper (Class2)	0E	300 mm^2	Tinned copper (Class2)
16	16 mm^2	Tinned copper (Class2)	0F	400 mm^2	Tinned copper (Class2)
25	25 mm^2	Tinned copper (Class2)	0G	500 mm^2	Tinned copper (Class2)
35	35 mm^2	Tinned copper (Class2)	0H	630 mm^2	Tinned copper (Class2)
50	50 mm^2	Tinned copper (Class2)			

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