

TKF Catalogue



Marine



www.tkf.eu

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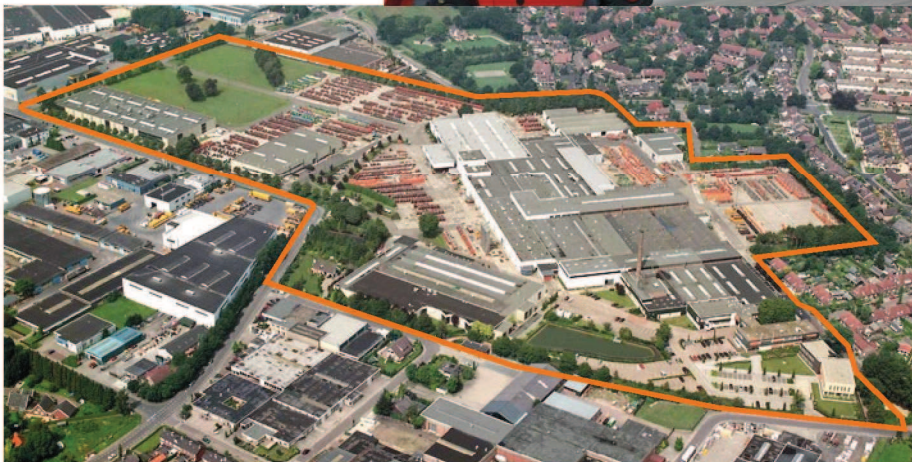
About TKF

Founded in 1930, TKF has developed from a local Dutch cable producer to a cable technology leader servicing customers all over the world. As a member of TKH Group NV, a Dutch-based international group of technology-powered companies, TKF has access to various international marketing, purchasing, sales and research groups with diverse specialisms.

TKF has dedicated itself to delivering innovative Telecom, Building and Industrial Solutions that match specific customer needs. A good strategy, looking at the long-term relationships between TKF and a growing number of companies. Professionals who value the continuous pursuit of a better understanding between suppliers, customers, contractors, installers and end-users.

TKF naturally takes its corporate social responsibility into account. Innovation, Growth and Responsibility are key factors for TKF.

Choose TKF - Choose quality!



Interested in more information about TKF and our wide range of products and services? Please visit our website www.tkf.nl for more information.

Symbols



Rodent protected

The cable is designed to give some protection against rodents.



Radial water blocking

The outer sheath of the cable is designed to prevent water entering into the cable. The cable is provided with a moisture barrier that prevents radial ingress of water.



Fire resistant

The cable has an improved operational reliability in fire situations.



Flame retardent

The outer sheath of the cable is made of a flame-retardent and self-extinguishing material.



Compact design

Smaller cable diameter due to the application of sector-shaped conductors.



Flexible cables

Cables with reduced bending stiffness.



Chemical resistance

Cables with improved resistance against aggressive chemicals.



Medium and High Voltage cables

Cables designed for the transportation of tensions of 6/10 kV up to 38/66 kV.



Data cables

Suitable for the transmission of optical or electric high frequency signal.



Copper telecommunication cables

Cables with symmetrically stranded elements for the transmission of telecommunication signals. Unshielded, shielded or multiple shielded.



Rodent resistant

The cable is rodent proof by means of a metal barrier.



Longitudinal water blocking

Due to the cable construction and the materials used, water inside the core cannot spread through the cable longitudinally.



Low smoke-halogen free

Reduced emissions of fume and toxic gas in case of fire.



Copper braid

Cables with (tinned) copper braid for improved shielding against electromagnetic influences and mechanical protection.



EMC/EMI

Excellent EMC/EMI properties.



Temperature range

Suitable for wide temperature range.



Marine and Offshore cables

Halogen free and flame retardant cables for application on board ships and offshore platforms.



Signal cables

Cables with numbered cores designed for the transport of signals between processes and control.



Engine cables

Three core cables for the electric supply of engines.



Instrumentation cables

Cables for instrumentation and control systems for various analogue and/or digital signal transmission.



Offshore cables

Halogen free and flame retardant cables for application on board offshore platforms.

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Marine Cables

High-end solutions for all marine cable applications

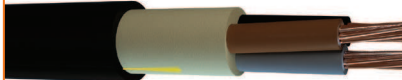
MarineLine

Unbraided, braided or screened power cables
YZp, YOZp, YZafp 0,6/1kV



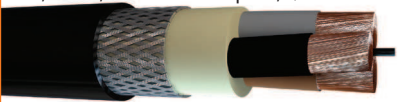
MarineLine+

Filled, unbraided or braided power cables
YZp, YOZp 0,6/1kV



MarineFlex

Flexible power cables unbraided or braided
YZp, YOZp, MultiFlex BOQp 0,6/3kV



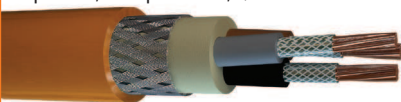
MarineLine (X)-FR

Fire Resistant power cables unbraided or braided
YZp (X)-FR, YOZp (X)-FR 0,6/1kV



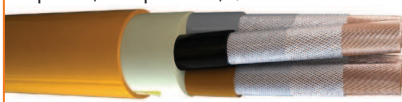
MarineLine+ X-FR

Fire Resistant power cables unbraided or braided
YZp X-FR, YOZp X-FR 0,6/1kV



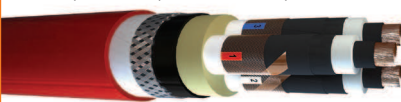
MarineFlex X-FR

Flexible Fire Resistant power cables unbraided or braided
YZp X-FR, YOZp X-FR 0,6/1kV



MarinePower(Flex) (Multiflex)

Flexible Medium Voltage cables for special applications
YOZmv, YZOZmv, YQOQmv 3,6/30kV



MarineCom

Braided or screened twisted pair communication cables
YOZc, YZafc, YOZ2c 250V



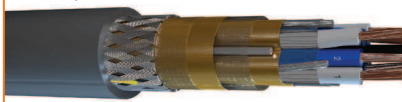
Marine2Com X-FR

Fire Resistant communication cables
YOZc, YOZ2c X-FR 250V



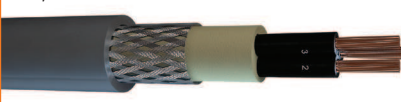
Marine2Com

Fire Resistant communication cables
YOZ2c, YZ2afc 250V



MarineSignal, MarineSignal+

Signaling cables
YZs, YOZs 250V



Fibre Optic

Multimode or Singlemode Fibre Optic cables, with or without copper braid
SM G.657A1, LSZH CWBKMaMb,e8lxfMamM 6il2i,e5/125 + 2 x 1,5 mm²



Marine

MarineLine YZp 0,6/1 kV



Lightweight, reduced diameter low voltage power cables for power and lighting applications in all ship areas. High abrasion resistant sheath and easily strippable with ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions. Different sheath colours available on request.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YZp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16560	2 x 1 mm ²	Round	56	30	7,4	30
15969	3 G 1,5 mm ²	Round	92	34	8,5	68
15970	4 G 1,5 mm ²	Round	114	37	9,3	90
15971	5 G 1,5 mm ²	Round	138	40	10,1	113
15972	7 G 1,5 mm ²	Round	180	45	11,2	158
16000	1 x 1,5 mm ²	Round	36	20	4,9	23
16001	2 x 1,5 mm ²	Round	68	32	7,9	45
16002	3 x 1,5 mm ²	Round	92	34	8,5	68
16003	4 x 1,5 mm ²	Round	114	37	9,3	90
16004	5 x 1,5 mm ²	Round	138	40	10,1	113
16005	6 x 1,5 mm ²	Round	169	45	11,2	135
16006	7 x 1,5 mm ²	Round	179	45	11,2	158
16007	8 x 1,5 mm ²	Round	222	52	13	180
16008	10 x 1,5 mm ²	Round	289	62	15,6	225



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16009	12 x 1,5 mm ²	Round	292	59	14,8	270
16010	16 x 1,5 mm ²	Round	385	68	16,9	360
16011	19 x 1,5 mm ²	Round	443	72	18,1	428
16012	24 x 1,5 mm ²	Round	574	81	20,2	540
15999	27 x 1,5 mm ²	Round	609	85	21,2	608
15973	3 G 2,5 mm ²	Round	125	38	9,5	113
15974	4 G 2,5 mm ²	Round	158	42	10,4	150
15975	5 G 2,5 mm ²	Round	197	46	11,5	188
15976	7 G 2,5 mm ²	Round	251	50	12,6	263
16013	1 x 2,5 mm ²	Round	47	21	5,3	38
16014	2 x 2,5 mm ²	Round	95	36	9	75
16015	3 x 2,5 mm ²	Round	125	38	9,5	113
16016	4 x 2,5 mm ²	Round	158	42	10,4	150
16017	5 x 2,5 mm ²	Round	197	46	11,5	188
16018	7 x 2,5 mm ²	Round	251	50	12,6	263
17752	1 G 4 mm ²	Round	64	24	5,9	60
15977	3 G 4 mm ²	Round	175	43	10,7	180
15978	4 G 4 mm ²	Round	229	48	11,9	240
16019	1 x 4 mm ²	Round	64	24	5,9	60
16020	2 x 4 mm ²	Round	130	40	10,1	120
16021	3 x 4 mm ²	Round	177	43	10,7	180
16022	4 x 4 mm ²	Round	227	48	11,9	240
16561	5 x 4 mm ²	Round	284	53	13,1	240
17753	1 G 6 mm ²	Round	86	26	6,4	90
15979	3 G 6 mm ²	Round	239	48	12,1	270
15980	4 G 6 mm ²	Round	307	53	13,2	360
15967	5 G 6 mm ²	Round	385	59	14,7	450
16023	1 x 6 mm ²	Round	84	26	6,4	90
16024	2 x 6 mm ²	Round	179	46	11,4	180
16025	3 x 6 mm ²	Round	239	48	12,1	270
16026	4 x 6 mm ²	Round	307	53	13,2	360
16563	5 x 6 mm ²	Round	385	59	14,7	450
17754	1 G 10 mm ²	Round	123	29	7,2	150
15981	3 G 10 mm ²	Round	375	55	13,8	450
15982	4 G 10 mm ²	Round	482	61	15,2	600
16027	1 x 10 mm ²	Round	127	29	7,2	150
16028	2 x 10 mm ²	Round	265	52	12,9	300
16029	3 x 10 mm ²	Round	363	55	13,8	450
16030	4 x 10 mm ²	Round	470	61	15,2	600
16564	5 x 10 mm ²	Round	607	68	17	750
16568	4 G 16 mm ²	Round	728	71	17,9	960
16031	1 x 16 mm ²	Round	186	33	8,2	240
16032	2 x 16 mm ²	Round	393	60	15,1	480
16033	3 x 16 mm ²	Round	553	64	16	720

Marine

MarineLine YZp 0,6/1 kV

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16034	4 x 16 mm ²	Round	728	71	17,8	960
15968	5 x 16 mm ²	Round	915	79	19,8	1200
16565	5 x 16 mm ²	Round	915	79	19,8	1200
16035	1 x 25 mm ²	Round	281	40	10,1	375
16036	2 x 25 mm ²	Round	591	75	18,7	750
16037	3 x 25 mm ²	Round	843	80	20	1125
16038	4 x 25 mm ²	Round	1116	89	22,3	1500
16039	1 x 35 mm ²	Round	378	47	11,8	525
16040	2 x 35 mm ²	Round	789	88	22,1	1050
16041	1 x 50 mm ²	Round	499	53	13,2	750
16042	1 x 70 mm ²	Round	718	62	15,4	1050
16043	1 x 95 mm ²	Round	955	70	17,5	1425
17755	1 G 120 mm ²	Round	1244	78	19,5	1800
16044	1 x 120 mm ²	Round	1222	78	19,5	1800
16045	1 x 150 mm ²	Round	1485	86	21,5	2250
16046	1 x 185 mm ²	Round	1893	96	24	2775
16047	1 x 240 mm ²	Round	2402	162	27	3600

Marine

MarineLine YOZp 0,6/1 kV



Armoured, lightweight, reduced diameter low voltage cables for power and lighting applications in all ship areas where extra mechanical and EMC protection is needed. The tinned copper braid is highly corrosion resistant which ensures a long cable lifetime. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YOZp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
15984	3 G 1,5 mm ²	Round	131	38	9,4	68
15985	4 G 1,5 mm ²	Round	158	41	10,6	90
15986	5 G 1,5 mm ²	Round	191	45	11,7	113
15995	7 G 1,5 mm ²	Round	232	49	12,2	158
16110	1 x 1,5 mm ²	Round	60	23	5,8	23
16111	2 x 1,5 mm ²	Round	110	36	9	45
16112	3 x 1,5 mm ²	Round	132	38	9,9	68
16113	4 x 1,5 mm ²	Round	156	41	10,2	90
16114	5 x 1,5 mm ²	Round	191	45	11,2	113
16115	6 x 1,5 mm ²	Round	221	48	12,1	135
16116	7 x 1,5 mm ²	Round	233	49	12,6	158
16117	8 x 1,5 mm ²	Round	313	56	13,9	180
16118	10 x 1,5 mm ²	Round	386	63	15,7	225
16119	12 x 1,5 mm ²	Round	400	64	16,1	270



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16120	16 x 1,5 mm ²	Round	505	73	18,2	360
16121	19 x 1,5 mm ²	Round	578	76	19	428
16430	20 x 1,5 mm ²	Round	605	80	20	450
16122	24 x 1,5 mm ²	Round	723	86	21,5	540
16159	27 x 1,5 mm ²	Round	772	91	22,7	608
16185	37 x 1,5 mm ²	Round	993	104	26,1	833
15987	3 G 2,5 mm ²	Round	171	42	10,4	113
15988	4 G 2,5 mm ²	Round	213	46	11,9	150
15989	5 G 2,5 mm ²	Round	250	50	12,4	188
16123	1 x 2,5 mm ²	Round	71	25	6,2	38
16124	2 x 2,5 mm ²	Round	136	40	9,9	75
16125	3 x 2,5 mm ²	Round	170	42	10,8	113
16126	4 x 2,5 mm ²	Round	188	46	11,4	150
16127	5 x 2,5 mm ²	Round	250	50	12,4	188
16128	7 x 2,5 mm ²	Round	309	56	14,2	263
16567	10 x 2,5 mm ²	Round	482	71	17,8	375
16429	19 x 2,5 mm ²	Round	809	87	21,7	713
15992	4 G 4 mm ²	Round	281	51	12,8	240
16129	1 x 4 mm ²	Round	92	27	6,8	60
16130	2 x 4 mm ²	Round	183	44	11,1	120
16131	3 x 4 mm ²	Round	231	47	11,7	180
16132	4 x 4 mm ²	Round	282	51	12,7	240
16480	5 G 6 mm ²	Round	499	64	16,1	450
16109	7 G 6 mm ²	Round	627	71	17,6	630
16133	1 x 6 mm ²	Round	115	29	7,3	90
16134	2 x 6 mm ²	Round	233	49	12,4	180
16135	3 x 6 mm ²	Round	294	52	12,9	270
16136	4 x 6 mm ²	Round	412	59	14,8	360
16566	5 x 6 mm ²	Round	493	64	16,1	450
16089	7 x 6 mm ²	Round	626	70	17,5	630
16534	3 G 10 mm ²	Round	420	60	15,2	450
15993	4 G 10 mm ²	Round	537	67	16,8	600
16108	5 G 10 mm ²	Round	731	67	18,3	600
16137	1 x 10 mm ²	Round	156	32	8,1	150
16138	2 x 10 mm ²	Round	358	57	14,4	300
16139	3 x 10 mm ²	Round	462	60	15,1	450
16140	4 x 10 mm ²	Round	586	67	16,7	600
16489	5 x 10 mm ²	Round	707	67	18,3	600
16535	3 G 16 mm ²	Round	667	70	17,6	720
15994	4 G 16 mm ²	Round	857	77	19,4	960
16141	1 x 16 mm ²	Round	229	37	9,3	240
16142	2 x 16 mm ²	Round	505	66	16,5	480
16143	3 x 16 mm ²	Round	670	70	17,5	720
16144	4 x 16 mm ²	Round	870	77	19,3	960

Marine

MarineLine YOZp 0,6/1 kV

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16145	1 x 25 mm ²	Round	336	45	11,2	375
16146	2 x 25 mm ²	Round	735	80	20,1	750
16147	3 x 25 mm ²	Round	994	85	21,9	1125
16148	4 x 25 mm ²	Round	1281	94	23,6	1500
16436	5 G 35 mm ²	Round	2123	121	30,2	2625
16158	1 x 35 mm ²	Round	468	53	13,2	525
16157	2 x 35 mm ²	Round	959	94	23,4	1050
16401	1 x 50 mm ²	Round	605	59	14,7	750
16402	1 x 70 mm ²	Round	830	66	16,6	1050
16403	1 x 95 mm ²	Round	1091	75	18,7	1425
16404	1 x 120 mm ²	Round	1350	82	20,5	1800
16405	1 x 150 mm ²	Round	1650	90	22,6	2250
17191	1 x 150 mm ²	Round	1664	90	22,6	2250
16406	1 x 185 mm ²	Round	2084	101	25,3	2775
16407	1 x 240 mm ²	Round	2615	112	27,9	3600
16433	1 x 300 mm ²	Round	3516	126	31,6	4500

Marine

MarineLine YZafp 0,6/1 kV



Alpet taped screen, lightweight, reduced diameter low voltage cables for power and lighting applications in all ship areas where EMC protection is needed. High abrasion resistant sheath and easily strippable with ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YZafp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	Alpet tape	
Drain wire	Yes	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16670	3 G 1,5 mm ²	Round	101	70	8,8	68
16671	4 G 1,5 mm ²	Round	122	76	9,5	90
16672	5 G 1,5 mm ²	Round	147	83	10,4	113
16676	7 G 1,5 mm ²	Round	189	92	11,5	158
16601	2 x 1,5 mm ²	Round	77	65	8,1	45
16602	3 x 1,5 mm ²	Round	101	70	8,8	68
16603	4 x 1,5 mm ²	Round	122	76	9,5	90
16604	5 x 1,5 mm ²	Round	147	82	10,3	113
16605	6 x 1,5 mm ²	Round	179	91	11,4	135
16606	7 x 1,5 mm ²	Round	190	91	11,4	158
16607	8 x 1,5 mm ²	Round	234	106	13,2	180
16609	10 x 1,5 mm ²	Round	300	126	15,8	225
16611	12 x 1,5 mm ²	Round	304	120	15	270
16615	16 x 1,5 mm ²	Round	398	136	17	360



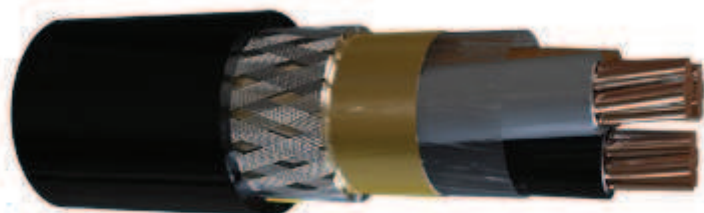
Marine

MarineLine YZafp 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16618	19 x 1,5 mm ²	Round	455	146	18,3	428
16623	24 x 1,5 mm ²	Round	597	163	20,4	540
16626	27 x 1,5 mm ²	Round	623	171	21,4	608
16627	30 x 1,5 mm ²	Round	683	180	22,5	675
16628	37 x 1,5 mm ²	Round	831	198	24,8	833
16673	3 G 2,5 mm ²	Round	135	78	9,7	113
16674	4 G 2,5 mm ²	Round	166	85	10,6	150
16675	5 G 2,5 mm ²	Round	209	94	11,8	188
16677	7 G 2,5 mm ²	Round	263	102	12,8	263
16631	2 x 2,5 mm ²	Round	106	74	9,2	75
16632	3 x 2,5 mm ²	Round	134	78	9,7	113
16633	4 x 2,5 mm ²	Round	167	85	10,6	150
16634	5 x 2,5 mm ²	Round	208	94	11,8	188
16635	6 x 2,5 mm ²	Round	247	103	12,9	225
16636	7 x 2,5 mm ²	Round	264	103	12,9	263
16637	8 x 2,5 mm ²	Round	329	115	14,4	300
16639	10 x 2,5 mm ²	Round	401	132	16,5	375
16641	12 x 2,5 mm ²	Round	436	138	17,2	450
16645	16 x 2,5 mm ²	Round	561	155	19,4	600
16648	19 x 2,5 mm ²	Round	657	169	21,1	713
16653	24 x 2,5 mm ²	Round	839	188	23,5	900
16656	27 x 2,5 mm ²	Round	904	198	24,7	1013
16657	30 x 2,5 mm ²	Round	1005	208	26	1125
16658	37 x 2,5 mm ²	Round	1212	228	28,5	1388

Marine

MarineLine YOZp EMC 0,6/1 kV



Low voltage marine power cables, with combined screen of copper-pet tape and tinned copper wire braid for optimal screening effectiveness in situations where Electro-Magnetic Interference needs to be limited to the minimum.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YOZp EMC 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	EMC-screen consists of copper/PETtape and (CU) braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16530	4 x 1,5 mm ²	Round	Black	161	41	10,2	90
16531	4 x 2,5 mm ²	Round	Black	219	46	11,4	150
16533	19 x 2,5 mm ²	Round	Black	819	90	22,4	713
16532	2 x 4 mm ²	Round	Black	189	45	11,2	120
17193	3 x 10 mm ²	Round	Black	467	61	15,2	450
17780	3 x 10 mm ²	Round	Black	468	61	15,2	450
17781	3 x 25 mm ²	Round	Black	1026	86	21,5	1125
17197	3 x 25 mm ²	Round	Black	1001	86	21,5	1125

Marine

MarineLine+ YZp 0,6/1 kV



Low voltage cables for power and lighting applications for fixed installation in all ship areas. The MarineLine+ cables have an extruded inner bedding and are suitable for heavy duty applications and grant optimal sealing in cable transits. High abrasion resistant sheath and easily strippable with ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine+ YZp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16420	3 G 1,5 mm ²	Round	125	36	9	68
16419	4 G 1,5 mm ²	Round	143	39	9,7	90
16418	5 G 1,5 mm ²	Round	177	43	10,7	113
16060	2 x 1,5 mm ²	Round	119	36	9	45
16061	3 x 1,5 mm ²	Round	125	36	9	68
16062	4 x 1,5 mm ²	Round	143	39	9,7	90
16063	5 x 1,5 mm ²	Round	178	43	10,7	113
16417	3 G 2,5 mm ²	Round	169	41	10,2	113
16416	4 G 2,5 mm ²	Round	203	45	11,2	150
16415	5 G 2,5 mm ²	Round	254	50	12,5	188
16064	2 x 2,5 mm ²	Round	138	38	9,4	75
16065	3 x 2,5 mm ²	Round	169	41	10,2	113
16066	4 x 2,5 mm ²	Round	203	45	11,2	150



Marine

MarineLine+ YZp 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16067	5 x 2,5 mm ²	Round	254	50	12,5	188
16084	3 G 4 mm ²	Round	246	47	11,8	180
16068	2 x 4 mm ²	Round	198	43	10,8	120
16069	3 x 4 mm ²	Round	246	47	11,8	180
16070	4 x 4 mm ²	Round	297	51	12,8	240
16085	3 G 6 mm ²	Round	317	51	12,8	270
16071	2 x 6 mm ²	Round	270	49	12,2	180
16072	3 x 6 mm ²	Round	317	51	12,8	270
16073	4 x 6 mm ²	Round	389	56	14	360
16083	4 G 10 mm ²	Round	592	64	16,1	600
16074	2 x 10 mm ²	Round	384	56	13,9	300
16075	3 x 10 mm ²	Round	477	59	14,8	450
16076	4 x 10 mm ²	Round	592	64	16,1	600
16086	5 G 16 mm ²	Round	1045	82	20,4	1200
16077	2 x 16 mm ²	Round	558	65	16,2	480
16078	3 x 16 mm ²	Round	688	68	17,1	720
16079	4 x 16 mm ²	Round	851	74	18,4	960
16087	3 G 25 mm ²	Round	1087	86	21,4	1125
16088	4 G 25 mm ²	Round	1349	95	23,7	1500
16080	2 x 25 mm ²	Round	870	80	20,1	750
16081	3 x 25 mm ²	Round	1066	84	21	1125
16082	4 x 25 mm ²	Round	1349	93	23,2	1500

Marine

MarineLine+ YOZp 0,6/1 kV



Armoured low voltage cables for power and lighting applications for fixed installation in all ship areas where extra mechanical and EMC protection is needed. The tinned copper braid is highly corrosion resistant and provides optimal screening. Suitable for heavy duty applications and grants optimal sealing in cable transits due to its extruded filler.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine+ YOZp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16414	3 G 1,5 mm ²	Round	217	46	11,9	68
16413	4 G 1,5 mm ²	Round	243	48	12,1	90
16412	5 G 1,5 mm ²	Round	276	52	12,9	113
16160	2 x 1,5 mm ²	Round	190	43	10,8	45
16161	3 x 1,5 mm ²	Round	215	46	11,4	68
16162	4 x 1,5 mm ²	Round	243	48	12,1	90
16163	5 x 1,5 mm ²	Round	306	52	13,8	113
16411	3 G 2,5 mm ²	Round	262	49	12,3	113
16410	4 G 2,5 mm ²	Round	339	56	13,9	150



Marine

MarineLine+ YOZp 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16409	5 G 2,5 mm ²	Round	392	60	14,9	188
16164	2 x 2,5 mm ²	Round	237	47	11,8	75
16165	3 x 2,5 mm ²	Round	263	49	12,4	113
16166	4 x 2,5 mm ²	Round	342	56	13,9	150
16167	5 x 2,5 mm ²	Round	440	60	14,9	188
16186	3 G 4 mm ²	Round	369	56	14,1	180
16446	5 G 4 mm ²	Round	517	66	16,6	300
16168	2 x 4 mm ²	Round	291	51	12,8	120
16169	3 x 4 mm ²	Round	372	56	14,1	180
16170	4 x 4 mm ²	Round	439	60	15,5	240
16187	3 G 6 mm ²	Round	469	62	15,4	270
16171	2 x 6 mm ²	Round	403	59	14,7	180
16172	3 x 6 mm ²	Round	467	62	15,4	270
16173	4 x 6 mm ²	Round	558	67	16,7	360
16428	3 G 10 mm ²	Round	641	69	17,2	450
16445	4 G 10 mm ²	Round	769	74	18,5	600
16174	2 x 10 mm ²	Round	524	65	16,2	300
16175	3 x 10 mm ²	Round	626	69	17,2	450
16176	4 x 10 mm ²	Round	766	74	18,9	600
16188	5 G 16 mm ²	Round	1295	93	23,2	1200
16177	2 x 16 mm ²	Round	734	74	18,4	480
16178	3 x 16 mm ²	Round	879	78	19,5	720
16179	4 x 16 mm ²	Round	1080	85	21,2	960
16431	3 G 25 mm ²	Round	1278	94	23,4	1125
16432	4 G 25 mm ²	Round	1603	103	25,8	1500
16435	5 G 25 mm ²	Round	1910	113	28,3	1875
16180	2 x 25 mm ²	Round	1052	88	22,1	750
16181	3 x 25 mm ²	Round	1268	93	23,3	1125
16182	4 x 25 mm ²	Round	1567	102	25,5	1500

Marine

MarineFlex YZp 0,6/1 kV



These extra flexible low voltage cables for fixed installation ensure easy installation, also in tight spaces and for bigger conductor sizes. The sheath material has excellent abrasion resistance properties and can be stripped easily with the ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions. Different sheath colours available on request.


Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YZp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16090	1 x 35 mm ²	Round	373	48	11,9	525
16091	2 x 35 mm ²	Round	1138	93	23,3	1050
16092	3 x 35 mm ²	Round	1473	103	25,8	1575
16438	4 x 35 mm ²	Round	1891	116	28,9	2100
16093	1 x 50 mm ²	Round	499	54	13,4	750
16094	3 x 50 mm ²	Round	1968	118	29,4	2250
16439	4 x 50 mm ²	Round	2542	132	33,1	3000
16095	1 x 70 mm ²	Round	684	62	15,6	1050
16096	3 x 70 mm ²	Round	2686	137	34,3	3150
16440	4 x 70 mm ²	Round	3447	152	37,9	4200
16097	1 x 95 mm ²	Round	910	70	17,4	1425
16098	3 x 95 mm ²	Round	3517	153	38,2	4275



Marine

MarineFlex YZp 0,6/1 kV



Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16441	4 x 95 mm ²	Round	4463	168	42,1	5700
16099	1 x 120 mm ²	Round	1151	78	19,4	1800
16100	3 x 120 mm ²	Round	4471	170	42,6	5400
16442	4 x 120 mm ²	Round	5715	170	42,6	5400
16101	1 x 150 mm ²	Round	1422	86	21,4	2250
16102	3 x 150 mm ²	Round	5541	190	47,4	6750
16103	1 x 185 mm ²	Round	1732	94	23,6	2775
16104	3 x 185 mm ²	Round	6650	208	52,1	8325
16105	1 x 240 mm ²	Round	2316	107	26,8	3600
16106	3 x 240 mm ²	Round	8875	236	59	10800
16107	1 x 300 mm ²	Round	2603	123	30,8	4500

Marine

MarineFlex YOZp 0,6/1 kV



TKF: Shipboard cable MarineFlex YOZp 0,6/1 kV. These armoured extra flexible low voltage cables for fixed installation ensure easy installation, also in tight spaces and for bigger conductor sizes. The tinned copper braid with a high coverage density is highly corrosion resistant and provides good EMC and mechanical protection. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YOZp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16483	3 x 16 mm ²	Round	952	86	21,6	720
16485	4 x 16 mm ²	Round	1159	94	23,6	960
16487	2 x 25 mm ²	Round	1155	97	24,2	750
16491	4 x 25 mm ²	Round	1703	112	28	1500
16523	4 G 35 mm ²	Round	2140	124	30,9	2100
16190	1 x 35 mm ²	Round	462	53	13,3	525
16456	2 x 35 mm ²	Round	1424	106	26,6	1050
16191	3 x 35 mm ²	Round	1730	113	28,2	1575
16192	4 x 35 mm ²	Round	2121	124	30,9	2100
17790	4 G 50 mm ²	Round	2789	139	34,7	3000
16473	5 G 50 mm ²	Round	3473	155	38,7	3750



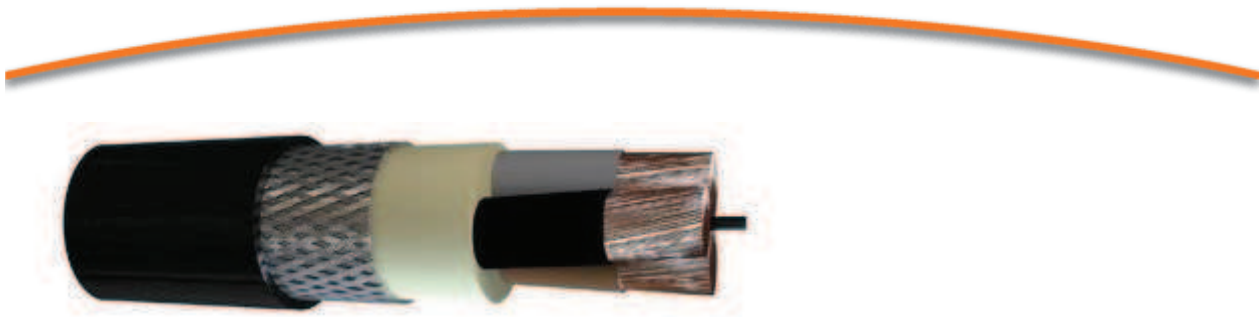
Marine

MarineFlex YOZp 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16193	1 x 50 mm ²	Round	611	60	15	750
16194	3 x 50 mm ²	Round	2255	127	31,7	2250
16195	4 x 50 mm ²	Round	2793	140	35	3000
16524	4 G 70 mm ²	Round	3950	162	40,4	4200
16474	5 G 70 mm ²	Round	4806	178	44,6	5250
16196	1 x 70 mm ²	Round	829	69	17,2	1050
16197	3 x 70 mm ²	Round	3094	146	36,5	3150
16198	4 x 70 mm ²	Round	3929	162	40,4	4200
16490	4 G 95 mm ²	Round	5008	181	45,2	5700
16475	5 G 95 mm ²	Round	6177	199	49,8	7125
16199	1 x 95 mm ²	Round	1047	75	18,8	1425
16200	3 x 95 mm ²	Round	4012	165	41,2	4275
16201	4 x 95 mm ²	Round	5010	181	45,2	5700
16476	4 G 120 mm ²	Round	6230	200	49,9	7200
16477	5 G 120 mm ²	Round	7722	220	55,1	9000
16202	1 x 120 mm ²	Round	1301	83	20,8	1800
16203	3 x 120 mm ²	Round	4956	181	45,3	5400
16443	4 x 120 mm ²	Round	6266	200	49,9	7200
17791	4 G 150 mm ²	Round	7640	220	55,1	9000
16204	1 x 150 mm ²	Round	1600	92	23	2250
16205	3 x 150 mm ²	Round	6068	200	50	6750
16478	4 G 185 mm ²	Round	9176	240	59,9	11100
16206	1 x 185 mm ²	Round	1923	101	25,2	2775
16207	3 x 185 mm ²	Round	7245	216	54	8325
16479	4 x 185 mm ²	Round	9182	240	59,9	11100
16208	1 x 240 mm ²	Round	2560	114	28,5	3600
16209	3 x 240 mm ²	Round	9546	247	61,7	10800
16455	1 x 300 mm ²	Round	2843	125	31,3	4500

Marine

MarineFlex YOZp 1,8/3 kV



Special Frequency Drive cables. These cables have increased isolation thickness to withstand voltage spikes that can occur in low-voltage frequency drives, and to withstand accelerated aging of the insulation material due to higher frequencies. The tinned copper wire braiding offers excellent EMI protection and mechanical protection. Special types available on request.


Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YOZp 1,8/3 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U ₀	1.8	kV
Nominal voltage U	3	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16507	1 x 35 mm ²	Round	534	63	15,7	525
16515	3 x 35 mm ²	Round	1992	128	32,1	1575
16508	1 x 50 mm ²	Round	675	69	17,2	750
16516	3 x 50 mm ²	Round	2216	147	36,7	2250
16509	1 x 70 mm ²	Round	882	75	18,8	1050
16517	3 x 70 mm ²	Round	3585	166	41,6	3150
16510	1 x 95 mm ²	Round	1099	83	20,8	1425
16518	3 x 95 mm ²	Round	4410	181	45,3	4275
16511	1 x 120 mm ²	Round	1358	90	22,6	1800
16519	3 x 120 mm ²	Round	5364	196	49,1	5400



Marine

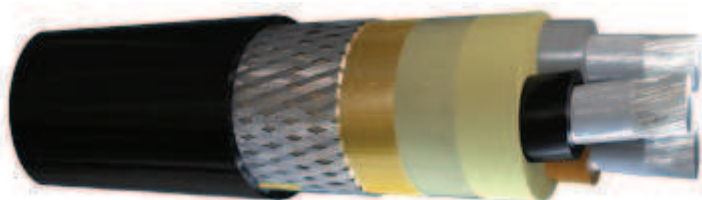
MarineFlex YOZp 1,8/3 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16512	1 x 150 mm ²	Round	1638	97	24,2	2250
16520	3 x 150 mm ²	Round	6397	211	52,7	6750
16513	1 x 185 mm ²	Round	1945	104	26	2775
16521	3 x 185 mm ²	Round	7492	224	56	8325
16514	1 x 240 mm ²	Round	2538	116	29	3600

Marine

MarineFlex YOZp EMC 0,6/1 kV



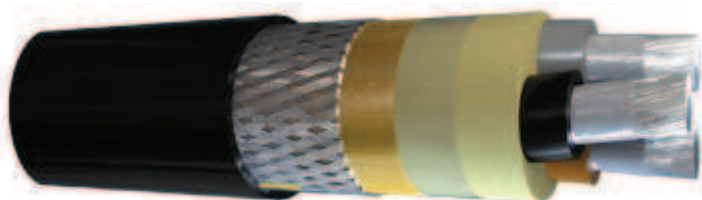
Extra EMC screened flexible low voltage marine power cables, with combined screen of copper-pet tape and tinned copper wire braid for optimal screening effectiveness in situations where Electro-Magnetic Interference needs to be limited to the minimum.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YOZp EMC 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Construction outer shield	EMC-screen consists of copper/PETtape and (CU) braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
17198	3 x 35 mm ²	Round	1748	113	28,3	1575
17217	4 x 35 mm ²	Round	2156	124	31	2100
17199	3 x 50 mm ²	Round	2294	127	31,8	2250
17218	1 x 95 mm ²	Round	1049	75	18,8	1425
17195	3 x 95 mm ²	Round	4049	165	41,3	4275
17214	4 x 95 mm ²	Round	5388	181	45,3	5700
17213	3 x 120 mm ²	Round	4985	182	45,4	5400
17216	3 x 150 mm ²	Round	6115	200	50,1	6750
17194	1 x 185 mm ²	Round	1947	101	25,3	2775

Marine

MarineFlex YOZp EMC 1,8/3 kV



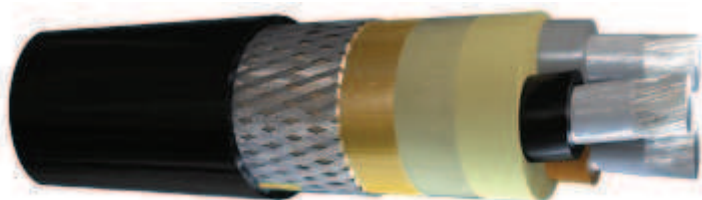
Extra EMC-screened VFD cables, with increased insulation thickness for handling spikes in frequency drives. With extra combined screen of tinned copper wire braid and copper-polyester tape for the best possible EMC screening.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YOZp EMC 1,8/3 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Construction outer shield	EMC-screen consists of copper/PETtape and (CU) braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U0	1.8	kV
Nominal voltage U	3	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
17782	3 x 35 mm ²	Round	2253	138	34,5	1575
17783	3 x 70 mm ²	Round	3581	165	41,3	3150
17784	3 x 95 mm ²	Round	4570	183	45,8	4275
55901	3 G 120 mm ²	Round	6806	226	56,5	10000
17785	3 x 120 mm ²	Round	5786	207	51,8	5400
55900	1 x 185 mm ²	Round	1982	104	26,1	2775

Marine

MarineMultiFlex BOQp 0,6/1 kV



Special flexible cables for when repeated bending is required and for operating in harsh environments, such as in retractable azipod drives, powering underwater dredger motors, and use in cable chains. Special construction and materials ensures a long lifetime in demanding conditions, and a special combined EMI screening for use in frequency drive applications.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineMultiFlex BOQp 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu, tinned	
Shape of conductor	Round	
Core insulation	Rubber (EPR)	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Construction outer shield	EMC-screen consists of copper/PETtape and (CU) braiding	
Material outer sheath	PUR (Polyurethane)	
Colour outer sheath	Black	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
17349	3 x 50 mm ²	Round	3326	258	43	2250
17351	3 x 95 mm ²	Round	5283	317	52,9	4275

Marine

MarineLine YZp FR 0,6/1 kV



Fire resistant low voltage power cables for power and lighting applications in all ship areas, with reduced diameter and weight. High abrasion resistant sheath and easily strippable with ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YZp FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26080	3 G 1,5 mm ²	Round	99	36	9	68
26081	4 G 1,5 mm ²	Round	122	39	9,8	90
26082	5 G 1,5 mm ²	Round	147	43	10,7	113
26001	2 x 1,5 mm ²	Round	77	34	8,5	45
26002	3 x 1,5 mm ²	Round	99	36	9	68
16351	3 x 1,5 mm ²	Round	99	36	8,9	68
26003	4 x 1,5 mm ²	Round	124	39	9,8	90
26004	5 x 1,5 mm ²	Round	147	43	10,7	113
26006	7 x 1,5 mm ²	Round	192	47	11,8	158
16354	7 x 1,5 mm ²	Round	191	47	11,8	158
26009	12 x 1,5 mm ²	Round	314	63	15,8	270
26011	19 x 1,5 mm ²	Round	483	78	19,4	428
26013	27 x 1,5 mm ²	Round	667	91	22,7	608



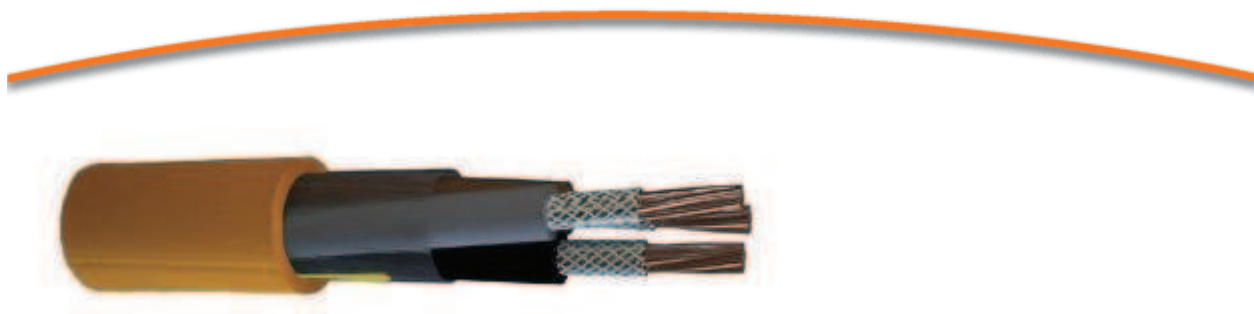
Marine

MarineLine YZp FR 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26084	3 G 2,5 mm ²	Round	133	41	10,3	113
26085	4 G 2,5 mm ²	Round	172	46	11,4	150
26086	5 G 2,5 mm ²	Round	212	50	12,5	188
26017	2 x 2,5 mm ²	Round	103	39	9,7	75
26018	3 x 2,5 mm ²	Round	136	41	10,3	113
26019	4 x 2,5 mm ²	Round	176	46	11,4	150
26020	5 x 2,5 mm ²	Round	211	50	12,5	188
26022	7 x 2,5 mm ²	Round	269	54	13,6	263
26024	2 x 4 mm ²	Round	137	42	10,5	120
26025	3 x 4 mm ²	Round	181	43	10,7	180
26026	4 x 4 mm ²	Round	237	48	11,9	240
26028	2 x 6 mm ²	Round	190	51	12,8	180
26029	3 x 6 mm ²	Round	258	54	13,6	270
26030	4 x 6 mm ²	Round	339	60	15,1	360
26032	2 x 10 mm ²	Round	287	56	13,9	300
26033	3 x 10 mm ²	Round	390	59	14,8	450
26034	4 x 10 mm ²	Round	510	65	16,2	600
26036	2 x 16 mm ²	Round	404	63	15,8	480
26037	3 x 16 mm ²	Round	575	68	17	720
26038	4 x 16 mm ²	Round	748	75	18,7	960
26041	3 x 25 mm ²	Round	907	84	21	1125
26042	4 x 25 mm ²	Round	1196	93	23,3	1500
26063	1 x 150 mm ²	Round	1534	86	21,5	2250

Marine

MarineLine YZp X-FR 0,6/1 kV



Fire resistant low voltage power cables according to the new demanding IEC -60331 1/2 specifications for power and lighting applications in all ship areas, with reduced diameter and weight. High abrasion resistant sheath and easily strippable with ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YZp X-FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLHFFR	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27080	3 G 1,5 mm ²	Round	130	42	10,5	68
27081	4 G 1,5 mm ²	Round	162	47	11,7	90
27082	5 G 1,5 mm ²	Round	200	51	12,8	113
27083	7 G 1,5 mm ²	Round	262	56	14,1	158
27000	1 x 1,5 mm ²	Round	48	23	5,8	23
27001	2 x 1,5 mm ²	Round	100	40	9,9	45
27002	3 x 1,5 mm ²	Round	130	42	10,5	68
27003	4 x 1,5 mm ²	Round	163	46	11,5	90
27004	5 x 1,5 mm ²	Round	202	51	12,8	113
27005	6 x 1,5 mm ²	Round	240	56	13,9	135
27006	7 x 1,5 mm ²	Round	255	56	13,9	158
27007	8 x 1,5 mm ²	Round	292	52	13	180
27008	10 x 1,5 mm ²	Round	375	63	15,7	225



Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27009	12 x 1,5 mm ²	Round	429	59	14,8	270
27010	16 x 1,5 mm ²	Round	565	68	16,9	360
27011	19 x 1,5 mm ²	Round	664	73	18,2	428
27012	24 x 1,5 mm ²	Round	847	103	25,8	540
27013	27 x 1,5 mm ²	Round	899	110	27,4	608
27014	30 x 1,5 mm ²	Round	988	113	28,3	675
27015	37 x 1,5 mm ²	Round	1205	125	31,2	833
27084	3 G 2,5 mm ²	Round	174	38	9,5	113
27085	4 G 2,5 mm ²	Round	219	51	12,8	150
27086	5 G 2,5 mm ²	Round	271	46	11,6	188
27087	7 G 2,5 mm ²	Round	339	61	15,3	263
27016	1 x 2,5 mm ²	Round	61	25	6,3	38
27017	2 x 2,5 mm ²	Round	125	44	10,9	75
27018	3 x 2,5 mm ²	Round	169	46	11,5	113
27019	4 x 2,5 mm ²	Round	216	51	12,8	150
27020	5 x 2,5 mm ²	Round	264	56	14,1	188
27021	6 x 2,5 mm ²	Round	312	61	15,3	225
27022	7 x 2,5 mm ²	Round	338	61	15,3	263
27088	3 G 4 mm ²	Round	229	51	12,8	180
27089	4 G 4 mm ²	Round	291	56	14	240
27023	1 x 4 mm ²	Round	81	27	6,8	60
27024	2 x 4 mm ²	Round	165	48	11,9	120
27025	3 x 4 mm ²	Round	228	51	12,8	180
27026	4 x 4 mm ²	Round	292	56	14	240
27090	3 G 6 mm ²	Round	298	57	14,2	270
27091	4 G 6 mm ²	Round	399	62	15,6	360
27027	1 x 6 mm ²	Round	104	30	7,4	90
27028	2 x 6 mm ²	Round	219	53	13,2	180
27029	3 x 6 mm ²	Round	298	56	14	270
27030	4 x 6 mm ²	Round	391	62	15,6	360
27092	3 G 10 mm ²	Round	433	63	15,8	450
27093	4 G 10 mm ²	Round	563	70	17,4	600
27031	1 x 10 mm ²	Round	148	32	8,1	150
27032	2 x 10 mm ²	Round	308	59	14,7	300
27033	3 x 10 mm ²	Round	433	63	15,8	450
27034	4 x 10 mm ²	Round	563	70	17,4	600
27094	3 G 16 mm ²	Round	631	74	18,4	720
27095	4 G 16 mm ²	Round	815	80	20,1	960
27035	1 x 16 mm ²	Round	214	38	9,4	240
27036	2 x 16 mm ²	Round	444	69	17,2	480
27037	3 x 16 mm ²	Round	632	74	18,4	720
27038	4 x 16 mm ²	Round	823	81	20,3	960
27039	1 x 25 mm ²	Round	323	45	11,2	375

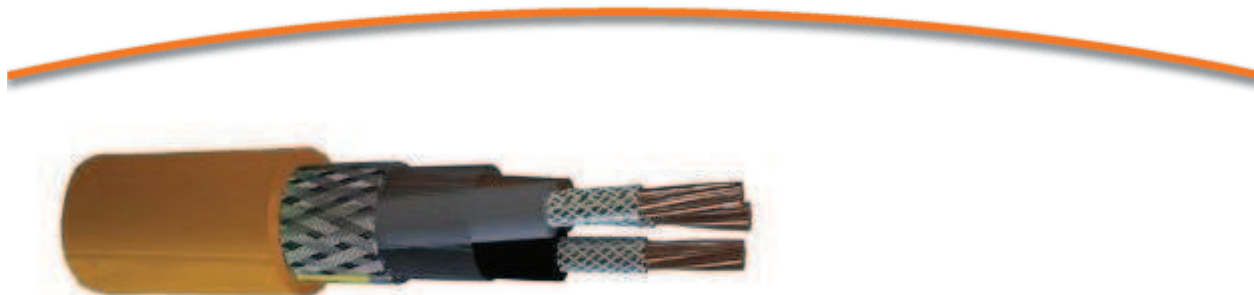
Marine

MarineLine YZp X-FR 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27040	2 x 25 mm ²	Round	678	84	20,9	750
27041	3 x 25 mm ²	Round	971	90	22,4	1125
27042	4 x 25 mm ²	Round	1281	100	24,9	1500
27043	1 x 35 mm ²	Round	446	49	12,3	525
27044	2 x 35 mm ²	Round	876	92	22,9	1050
27047	1 x 50 mm ²	Round	551	56	14,1	750
27048	2 x 50 mm ²	Round	1174	109	27,3	1500
27051	1 x 70 mm ²	Round	764	64	16	1050
27055	1 x 95 mm ²	Round	1031	73	18,3	1425
27059	1 x 120 mm ²	Round	1292	80	19,9	1800
27063	1 x 150 mm ²	Round	1566	88	22	2250
27067	1 x 185 mm ²	Round	1942	99	24,7	2775
27071	1 x 240 mm ²	Round	2500	109	27,3	3600
27075	1 x 300 mm ²	Round	3020	123	30,8	4500

Marine

MarineLine YOZp FR 0,6/1 kV



Fire resistant armoured, lightweight, reduced diameter low voltage cables for power and lighting applications in all ship areas where extra mechanical and EMC protection is needed. The sheath material has excellent abrasion resistance properties and can be stripped easily with the ripcord.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YOZp FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLPE	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26181	4 G 1,5 mm ²	Round	167	43	10,7	90
26182	5 G 1,5 mm ²	Round	205	47	11,8	113
26101	2 x 1,5 mm ²	Round	115	38	9,4	45
26102	3 x 1,5 mm ²	Round	140	40	9,9	68
26104	5 x 1,5 mm ²	Round	202	47	11,8	113
26105	6 x 1,5 mm ²	Round	237	51	12,7	135
26106	7 x 1,5 mm ²	Round	246	51	12,7	158
26109	12 x 1,5 mm ²	Round	433	68	17,1	270
16448	12 x 1,5 mm ²	Round	440	68	17,1	270
26111	19 x 1,5 mm ²	Round	633	83	20,7	428
26113	27 x 1,5 mm ²	Round	833	96	24	608
16451	27 x 1,5 mm ²	Round	833	96	23,9	608



Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26184	3 G 2,5 mm ²	Round	190	46	11,4	113
26185	4 G 2,5 mm ²	Round	224	49	12,3	150
26186	5 G 2,5 mm ²	Round	272	54	13,4	188
26143	5 G 2,5 mm ²	Round	271	54	13,4	188
26117	2 x 2,5 mm ²	Round	148	42	10,6	75
26118	3 x 2,5 mm ²	Round	186	46	11,4	113
26119	4 x 2,5 mm ²	Round	229	49	12,3	150
26120	5 x 2,5 mm ²	Round	272	54	13,4	188
26121	6 x 2,5 mm ²	Round	363	60	15,1	225
26122	7 x 2,5 mm ²	Round	381	60	15,1	263
26124	2 x 4 mm ²	Round	192	46	12,0	120
26125	3 x 4 mm ²	Round	265	49	12,2	180
26126	4 x 4 mm ²	Round	325	53	13,2	240
26128	2 x 6 mm ²	Round	245	56	13,9	180
26129	3 x 6 mm ²	Round	350	59	14,7	270
26130	4 x 6 mm ²	Round	444	66	16,6	360
26131	1 x 10 mm ²	Round	174	35	8,7	150
26132	2 x 10 mm ²	Round	380	61	15,2	300
26133	3 x 10 mm ²	Round	496	64	16,1	450
26134	4 x 10 mm ²	Round	629	71	17,7	600
26135	1 x 16 mm ²	Round	238	39	9,7	240
26136	2 x 16 mm ²	Round	527	69	17,3	480
26137	3 x 16 mm ²	Round	696	73	18,3	720
26138	4 x 16 mm ²	Round	903	81	20,2	960
26139	1 x 25 mm ²	Round	356	46	11,6	375
26140	2 x 25 mm ²	Round	778	84	21	750
26141	3 x 25 mm ²	Round	1069	90	22,5	1125
26142	4 x 25 mm ²	Round	1380	99	24,8	1500
26163	1 x 150 mm ²	Round	1677	92	23,1	2250

Marine

MarineLine YOZp X-FR 0,6/1 kV



Fire resistant according to new IEC 60331-1/2 (2009) specifications armoured, lightweight, reduced diameter low voltage cables for power and lighting applications in all ship areas where extra mechanical and EMC protection is needed. The sheath material has excellent abrasion resistance properties and can be stripped easily with the ripcord.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine YOZp X-FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLHFFR	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27180	3 G 1,5 mm ²	Round	177	46	11,4	68
27181	4 G 1,5 mm ²	Round	224	50	12,6	90
27182	5 G 1,5 mm ²	Round	261	55	13,7	113
27183	7 G 1,5 mm ²	Round	325	59	14,8	158
27100	1 x 1,5 mm ²	Round	76	27	6,7	23
27101	2 x 1,5 mm ²	Round	146	43	10,8	45
27102	3 x 1,5 mm ²	Round	178	46	11,4	68
27103	4 x 1,5 mm ²	Round	222	50	12,6	90
27104	5 x 1,5 mm ²	Round	261	55	13,7	113
27105	6 x 1,5 mm ²	Round	341	59	14,8	135
27106	7 x 1,5 mm ²	Round	354	59	14,8	158
27107	8 x 1,5 mm ²	Round	436	68	16,9	180



Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27108	10 x 1,5 mm ²	Round	505	78	19,4	225
27109	12 x 1,5 mm ²	Round	565	80	20	270
27110	16 x 1,5 mm ²	Round	730	90	22,6	360
27111	19 x 1,5 mm ²	Round	817	97	24,3	428
27112	24 x 1,5 mm ²	Round	1032	108	26,9	540
27113	27 x 1,5 mm ²	Round	1116	114	28,5	608
27114	30 x 1,5 mm ²	Round	1139	118	29,4	675
27115	37 x 1,5 mm ²	Round	1465	131	32,7	833
27184	3 G 2,5 mm ²	Round	227	50	12,6	113
27185	4 G 2,5 mm ²	Round	306	55	13,7	150
27186	5 G 2,5 mm ²	Round	366	60	15,8	188
27187	7 G 2,5 mm ²	Round	455	67	16,8	263
27116	1 x 2,5 mm ²	Round	92	29	7,2	38
27117	2 x 2,5 mm ²	Round	184	48	12	75
27118	3 x 2,5 mm ²	Round	228	50	12,6	113
27119	4 x 2,5 mm ²	Round	308	55	13,7	150
27120	5 x 2,5 mm ²	Round	365	60	15	188
17825	7 x 2,5 mm ²	Round	458	67	16,8	263
27196	19 x 2,5 mm ²	Round	1100	110	27,4	713
27398	21 x 2,5 mm ²	Round	1182	110	28,5	713
27188	3 G 4 mm ²	Round	319	55	13,7	180
27189	4 G 4 mm ²	Round	403	62	15,5	240
27123	1 x 4 mm ²	Round	112	31	7,7	60
27124	2 x 4 mm ²	Round	228	52	13	120
27125	3 x 4 mm ²	Round	318	55	13,7	180
27126	4 x 4 mm ²	Round	405	62	15,5	240
27190	3 G 6 mm ²	Round	410	62	15,5	270
27191	4 G 6 mm ²	Round	509	68	16,9	360
16457	5 G 6 mm ²	Round	617	75	18,7	450
27127	1 x 6 mm ²	Round	139	33	8,3	90
27128	2 x 6 mm ²	Round	315	56	14,1	180
27129	3 x 6 mm ²	Round	410	62	15,5	270
27130	4 x 6 mm ²	Round	504	68	16,9	360
27192	3 G 10 mm ²	Round	549	68	17,1	450
27193	4 G 10 mm ²	Round	690	76	18,9	600
16458	5 G 10 mm ²	Round	865	83	20,8	750
27131	1 x 10 mm ²	Round	190	37	9,2	150
27132	2 x 10 mm ²	Round	419	65	16,2	300
27133	3 x 10 mm ²	Round	546	68	17,1	450
27134	4 x 10 mm ²	Round	700	76	18,9	600
27194	3 G 16 mm ²	Round	766	79	19,7	720
27195	4 G 16 mm ²	Round	980	87	21,8	960
16459	5 G 16 mm ²	Round	1215	96	24,1	1200
27135	1 x 16 mm ²	Round	259	41	10,3	240

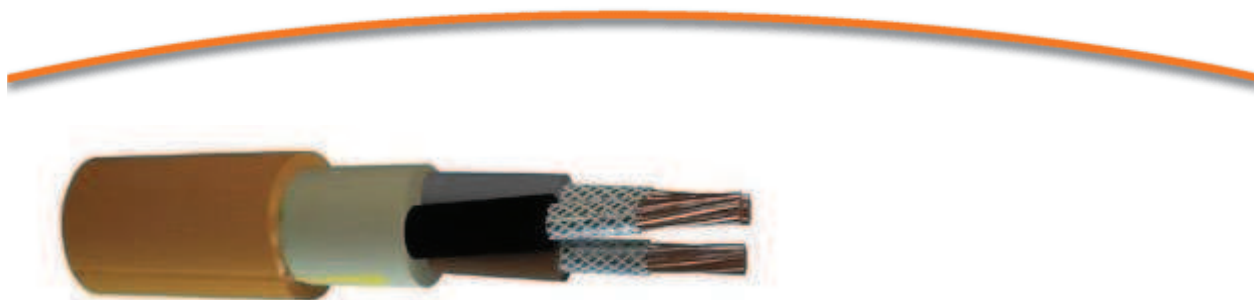
Marine

MarineLine YOZp X-FR 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27136	2 x 16 mm ²	Round	577	75	18,7	480
27137	3 x 16 mm ²	Round	766	79	19,7	720
27138	4 x 16 mm ²	Round	985	87	21,8	960
16460	4 G 25 mm ²	Round	1469	105	26,2	1500
16461	5 G 25 mm ²	Round	1829	117	29,2	1875
27139	1 x 25 mm ²	Round	381	49	12,3	375
27140	2 x 25 mm ²	Round	852	90	22,4	750
27141	3 x 25 mm ²	Round	1138	95	23,7	1125
27142	4 x 25 mm ²	Round	1471	105	26,2	1500
27143	1 x 35 mm ²	Round	483	53	13,3	525
27144	2 x 35 mm ²	Round	1062	98	24,4	1050
27147	1 x 50 mm ²	Round	657	63	15,7	750
27148	2 x 50 mm ²	Round	1380	115	28,8	1500
27151	1 x 70 mm ²	Round	830	70	17,4	1050
27155	1 x 95 mm ²	Round	1169	79	19,7	1425
27159	1 x 120 mm ²	Round	1454	86	21,5	1800
27163	1 x 150 mm ²	Round	1732	94	23,4	2250
27167	1 x 185 mm ²	Round	2127	104	26,1	2775
27171	1 x 240 mm ²	Round	2705	115	28,7	3600
27175	1 x 300 mm ²	Round	3267	130	32,4	4500

Marine

MarineLine+ YZp X-FR 0,6/1 kV



Fire Resistant according to new IEC 60331-1/2 (2009) specifications low voltage power cables for power and lighting applications in all ship areas, with extruded filler for heavy duty applications, giving the cable optimal roundness and making sealing in cable transits easier. High abrasion resistant sheath and easily strippable with the ripcord. Halogen-Free, low smoke, flame retardant and fire resistant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine+ YZp X-FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLHFFR	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27280	3 G 1,5 mm ²	Round	195	46	11,4	68
27281	4 G 1,5 mm ²	Round	225	50	12,4	90
27282	5 G 1,5 mm ²	Round	273	55	13,7	113
27200	2 x 1,5 mm ²	Round	169	43	10,8	45
27201	3 x 1,5 mm ²	Round	191	46	11,4	68
27203	5 x 1,5 mm ²	Round	273	55	13,7	113
27283	3 G 2,5 mm ²	Round	240	50	12,4	113
27284	4 G 2,5 mm ²	Round	290	55	13,7	150
27285	5 G 2,5 mm ²	Round	348	60	15	188
27204	2 x 2,5 mm ²	Round	211	47	11,8	75
27205	3 x 2,5 mm ²	Round	240	50	12,4	113
27206	4 x 2,5 mm ²	Round	290	55	13,7	150



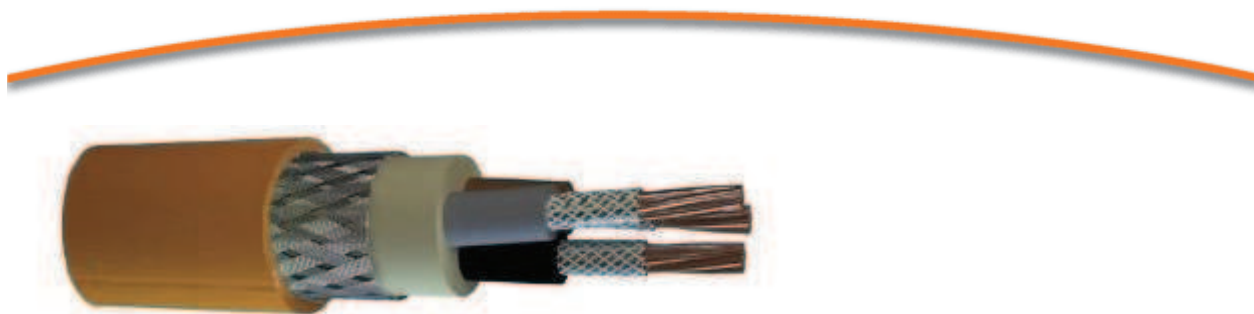
Marine

MarineLine+ YZp X-FR 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27207	5 x 2,5 mm ²	Round	348	60	15	188
27286	3 G 4 mm ²	Round	318	55	13,7	180
27287	4 G 4 mm ²	Round	382	60	14,9	240
27288	5 G 4 mm ²	Round	464	66	16,5	300
27208	2 x 4 mm ²	Round	272	52	13	120
27209	3 x 4 mm ²	Round	318	55	13,7	180
27210	4 x 4 mm ²	Round	382	60	14,9	240
27289	3 G 6 mm ²	Round	403	60	14,9	270
27290	4 G 6 mm ²	Round	500	66	16,5	360
27291	5 G 6 mm ²	Round	599	72	18,1	450
27211	2 x 6 mm ²	Round	340	56	14,1	180
27212	3 x 6 mm ²	Round	403	60	14,9	270
27213	4 x 6 mm ²	Round	501	66	16,5	360
27292	3 G 10 mm ²	Round	567	67	16,7	450
27293	4 G 10 mm ²	Round	709	74	18,5	600
27294	5 G 10 mm ²	Round	849	81	20,2	750
27295	3 G 16 mm ²	Round	812	77	19,3	720
27296	4 G 16 mm ²	Round	1011	85	21,2	960
27297	5 G 16 mm ²	Round	1240	94	23,5	1200
27217	2 x 16 mm ²	Round	656	72	18,1	480
27218	3 x 16 mm ²	Round	812	77	19,3	720
27219	4 x 16 mm ²	Round	1011	85	21,2	960
27220	2 x 25 mm ²	Round	990	88	22	750
27221	3 x 25 mm ²	Round	1223	93	23,3	1125
27222	4 x 25 mm ²	Round	1532	103	25,8	1500

Marine

MarineLine+ YOZp X-FR 0,6/1 kV



Tinned copper wire braided Fire Resistant according to new IEC 60331-1/2 (2009) specifications low voltage power cables for power and lighting applications in all ship areas, with extruded filler for heavy duty applications, giving the cable optimal roundness and making sealing in cable transits easier. High abrasion resistant sheath and easily strippable with the ripcord. Halogen-Free, low smoke, flame retardant and fire resistant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineLine+ YOZp X-FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLHFFR	
Conductor category	Class 2 = stranded	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27380	3 G 1,5 mm ²	Round	282	53	13,2	68
27381	4 G 1,5 mm ²	Round	334	58	14,4	90
27382	5 G 1,5 mm ²	Round	384	62	15,5	113
27300	2 x 1,5 mm ²	Round	254	50	12,6	45
27301	3 x 1,5 mm ²	Round	283	53	13,2	68
27302	4 x 1,5 mm ²	Round	361	58	14,4	90
27303	5 x 1,5 mm ²	Round	384	62	15,5	113
27383	3 G 2,5 mm ²	Round	375	58	14,4	113
27385	5 G 2,5 mm ²	Round	522	70	17,4	188
27304	2 x 2,5 mm ²	Round	341	55	13,8	75
27305	3 x 2,5 mm ²	Round	375	58	14,4	113



Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27306	4 x 2,5 mm ²	Round	434	62	15,5	150
27307	5 x 2,5 mm ²	Round	521	70	17,4	188
27386	3 G 4 mm ²	Round	429	62	15,5	180
27387	4 G 4 mm ²	Round	555	69	17,3	240
27388	5 G 4 mm ²	Round	642	75	18,7	300
27308	2 x 4 mm ²	Round	377	59	14,8	120
27309	3 x 4 mm ²	Round	429	62	15,5	180
27310	4 x 4 mm ²	Round	555	69	17,3	240
27389	3 G 6 mm ²	Round	576	69	17,3	270
27390	4 G 6 mm ²	Round	680	75	18,7	360
27391	5 G 6 mm ²	Round	809	82	20,5	450
27311	2 x 6 mm ²	Round	454	64	15,9	180
27312	3 x 6 mm ²	Round	566	69	17,3	270
27313	4 x 6 mm ²	Round	680	75	18,7	360
27392	3 G 10 mm ²	Round	756	76	19,1	450
27393	4 G 10 mm ²	Round	909	83	20,7	600
27394	5 G 10 mm ²	Round	1080	90	22,6	750
27314	2 x 10 mm ²	Round	636	72	18	300
27315	3 x 10 mm ²	Round	755	76	19,1	450
27316	4 x 10 mm ²	Round	909	83	20,7	600
27395	3 G 16 mm ²	Round	1016	86	21,5	720
27396	4 G 16 mm ²	Round	1249	94	23,6	960
27397	5 G 16 mm ²	Round	1501	104	25,9	1200
27317	2 x 16 mm ²	Round	864	82	20,5	480
27318	3 x 16 mm ²	Round	1016	86	21,5	720
27319	4 x 16 mm ²	Round	1249	94	23,6	960
27320	2 x 25 mm ²	Round	1231	97	24,2	750
27321	3 x 25 mm ²	Round	1485	103	25,7	1125
27322	4 x 25 mm ²	Round	1811	112	28	1500

Marine

MarineFlex YZp X-FR 0,6/1 kV



The only flexible Fire Resistant cables! The extra flexibility ensures easy installation, also in tight spaces such as emergency switchboards. The cables meet the heavy IEC 60331-2 fire resistancy test for bigger cable sizes. The sheath material has excellent abrasion resistance properties and can be stripped easily with the ripcord. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YZp X-FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLHFFR	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U0	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27230	1 x 35 mm ²	Round	411	52	12,9	525
27231	2 x 35 mm ²	Round	1260	100	25	1050
27232	3 x 35 mm ²	Round	1549	107	26,7	1575
27233	4 x 35 mm ²	Round	1970	119	29,7	2100
27234	1 x 50 mm ²	Round	542	57	14,3	750
27235	2 x 50 mm ²	Round	1637	113	28,2	1500
27236	3 x 50 mm ²	Round	2045	120	30	2250
27237	4 x 50 mm ²	Round	2600	133	33,3	3000
27238	1 x 70 mm ²	Round	745	66	16,4	1050
27240	3 x 70 mm ²	Round	2796	138	34,5	3150
27241	4 x 70 mm ²	Round	3561	153	38,3	4200



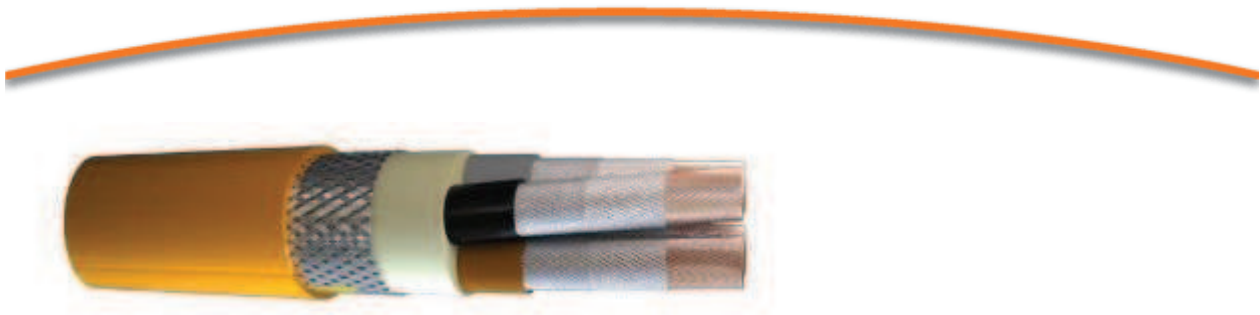
Marine

MarineFlex YZp X-FR 0,6/1 kV

Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27242	1 x 95 mm ²	Round	969	74	18,4	1425
27244	3 x 95 mm ²	Round	3592	154	38,5	4275
27245	4 x 95 mm ²	Round	4592	171	42,8	5700
27246	1 x 120 mm ²	Round	1220	85	21,2	1800
27248	3 x 120 mm ²	Round	4624	179	44,8	5400
27249	4 x 120 mm ²	Round	5906	200	49,9	7200
27250	1 x 150 mm ²	Round	1491	90	22,5	2250
27252	3 x 150 mm ²	Round	5544	189	47,3	6750
27253	4 x 150 mm ²	Round	7124	211	52,8	9000
27254	1 x 185 mm ²	Round	1802	98	24,4	2775
27256	3 x 185 mm ²	Round	6694	206	51,6	8325
27257	4 x 185 mm ²	Round	8597	230	57,5	11100
27258	1 x 240 mm ²	Round	2445	112	27,9	3600
27260	3 x 240 mm ²	Round	9049	236	59,1	10800
27262	1 x 300 mm ²	Round	3061	123	30,7	4500

Marine

MarineFlex YOZp X-FR 0,6/1 kV



The only flexible Fire Resistant cables! The extra flexibility ensures easy installation, also in tight spaces such as emergency switchboards. The cables meet the heavy IEC 60331-2 fire resistancy test for bigger cable sizes. The sheath material has excellent abrasion resistance properties and can be stripped easily with the ripcord. The tinned copper wire braid gives good EMI & mechanical protection. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Low voltage cables	
Series	Shipboard cable	
Type	MarineFlex YOZp X-FR 0,6/1 kV	
Standardization	IEC 60092-350/-351/-353	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	Mica + XLHFFR	
Conductor category	Class 5 = flexible	
Core identification	HD 308 S2	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Insulation integrity in accordance with IEC 60331	Yes	
Nominal voltage U ₀	0.6	kV
Nominal voltage U	1	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

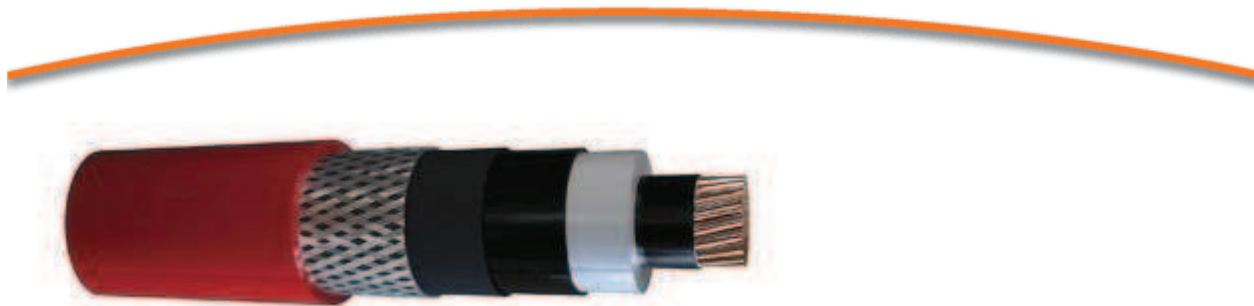
Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27330	1 x 35 mm ²	Round	476	56	13,9	525
27331	2 x 35 mm ²	Round	1577	114	28,4	1050
27332	3 x 35 mm ²	Round	1888	120	29,9	1575
16462	3 x 35 mm ²	Round	1983	124	31,1	1575
16463	4 x 35 mm ²	Round	2452	136	34,1	2100
27333	4 x 35 mm ²	Round	2346	132	32,9	2100
16464	5 x 35 mm ²	Round	3077	151	37,7	2625
16465	4 G 50 mm ²	Round	3208	153	38,3	3000
16466	5 G 50 mm ²	Round	3839	168	41,9	3750
27334	1 x 50 mm ²	Round	657	64	15,9	750
27335	2 x 50 mm ²	Round	1945	122	30,4	1500



Partnumber	Construction G=Y/G	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
27336	3 x 50 mm ²	Round	2516	136	34	2250
27337	4 x 50 mm ²	Round	2992	147	36,7	3000
27338	1 x 70 mm ²	Round	874	72	18	1050
27340	3 x 70 mm ²	Round	3385	155	38,7	3150
16467	4 x 70 mm ²	Round	4270	172	43,1	4200
27341	4 x 70 mm ²	Round	4232	171	42,7	4200
16468	5 x 70 mm ²	Round	5269	190	47,5	5250
27342	1 x 95 mm ²	Round	1107	79	19,8	1425
27344	3 x 95 mm ²	Round	4275	172	42,9	4275
16469	4 x 95 mm ²	Round	5340	189	47,2	5700
27345	4 x 95 mm ²	Round	5343	189	47,2	5700
16470	5 x 95 mm ²	Round	6687	211	52,7	7125
16444	5 x 95 mm ²	Round	6675	211	52,7	7125
27346	1 x 120 mm ²	Round	1398	91	22,8	1800
27348	3 x 120 mm ²	Round	5404	197	49,2	5400
16471	4 x 120 mm ²	Round	6746	216	54,1	7200
27349	4 x 120 mm ²	Round	6749	216	54,1	7200
27350	1 x 150 mm ²	Round	1671	96	24	2250
27352	3 x 150 mm ²	Round	6434	209	52,3	6750
27353	4 x 150 mm ²	Round	8010	228	57	9000
16472	4 x 150 mm ²	Round	8006	228	57	9000
27354	1 x 185 mm ²	Round	1981	103	25,8	2775
27356	3 x 185 mm ²	Round	7581	223	55,8	8325
27357	4 x 185 mm ²	Round	9568	247	61,7	11100
27358	1 x 240 mm ²	Round	2657	117	29,3	3600
27360	3 x 240 mm ²	Round	10049	253	63,3	10800
27362	1 x 300 mm ²	Round	2959	128	32,1	4500

Marine

MarinePower YOZmv 3,6/6 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YOZmv 3,6/6 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semiconductive XLPE, semiconductive tape and braiding	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	3.6	kV
Nominal voltage U	6	kV
Nominal voltage Umax	7.2	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33000	1 x 35 mm ²	Round	708	0,23	19,4	1750
33001	1 x 50 mm ²	Round	835	0,25	20,5	2500
33002	1 x 70 mm ²	Round	1051	0,27	22,3	3500
33003	1 x 95 mm ²	Round	1347	0,29	24	4750
33004	1 x 120 mm ²	Round	1664	0,31	25,8	6000
33005	1 x 150 mm ²	Round	1930	0,33	27,5	7500



Marine

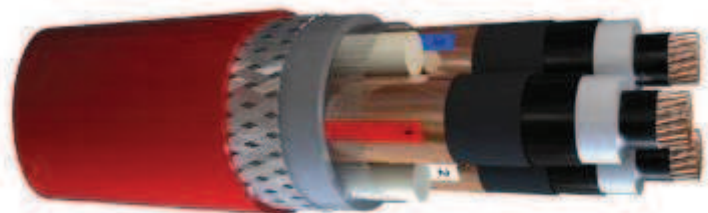
MarinePower YOZmv 3,6/6 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33006	1 x 185 mm ²	Round	2312	0,35	29,1	9250
33007	1 x 240 mm ²	Round	2934	0,39	32,1	12000

Marine

MarinePower YZOZmv 3,6/6 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YZOZmv 3,6/6 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semicon-XLPE, semicon-swellable tape and copper tape	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	3.6	kV
Nominal voltage U	6	kV
Nominal voltage Umax	7.2	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33008	3 x 35 mm ²	Round	2900	0,38	42,3	5250
33009	3 x 50 mm ²	Round	3357	0,4	44,9	7500
33010	3 x 70 mm ²	Round	4073	0,44	48,9	10500
33011	3 x 95 mm ²	Round	5462	0,48	52,9	14250



Marine

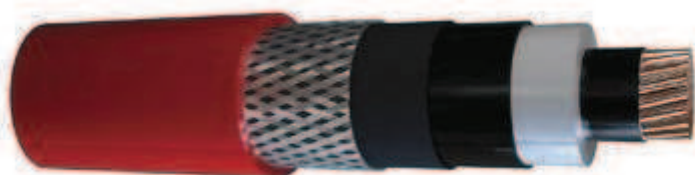
MarinePower YZOZmv 3,6/6 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33012	3 x 120 mm ²	Round	6314	0,51	56,8	18000
33013	3 x 150 mm ²	Round	7699	0,55	60,6	22500
33014	3 x 185 mm ²	Round	8635	0,58	64,4	27750

Marine

MarinePower YOZmv 6/10 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YOZmv 6/10 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semiconductive XLPE, semiconductive tape and braiding	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	6	kV
Nominal voltage U	10	kV
Nominal voltage Umax	12	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33100	1 x 35 mm ²	Round	744	0,25	21,2	1750
33101	1 x 50 mm ²	Round	890	0,27	22,5	2500
33102	1 x 70 mm ²	Round	1120	0,29	24,1	3500
33104	1 x 120 mm ²	Round	1709	0,33	27,8	6000
33105	1 x 150 mm ²	Round	1953	0,35	29,3	7500
33106	1 x 185 mm ²	Round	2359	0,37	31,1	9250



Marine

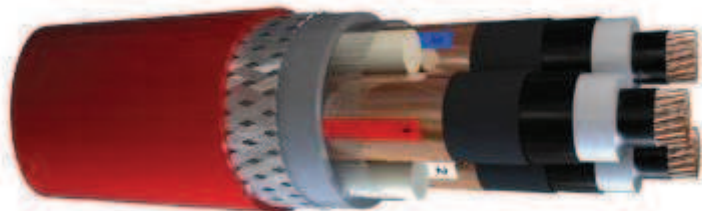
MarinePower YOZmv 6/10 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33114	1 x 300 mm ²	Round	3523	0,43	35,8	15000
33118	1 x 630 mm ²	Round	7348	0,57	47,8	31500

Marine

MarinePower YZOZmv 6/10 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YZOZmv 6/10 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semicon-XLPE, semicon-swellable tape and copper tape	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	6	kV
Nominal voltage U	10	kV
Nominal voltage Umax	12	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33117	3 x 25 mm ²	Round	2774	0,4	44,7	3750
33108	3 x 35 mm ²	Round	3207	0,42	46,7	5250
33109	3 x 50 mm ²	Round	3660	0,44	49,3	7500
33110	3 x 70 mm ²	Round	4721	0,48	53,1	10500



Marine

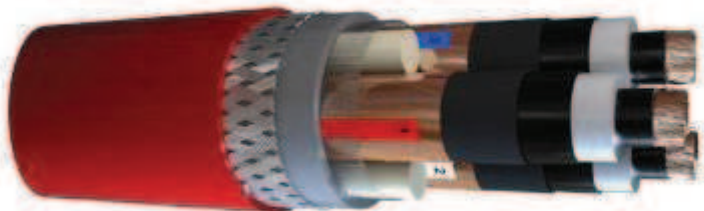
MarinePower YZOZmv 6/10 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33111	3 x 95 mm ²	Round	5679	0,52	57,6	14250
33112	3 x 120 mm ²	Round	6909	0,55	61,2	18000
33113	3 x 150 mm ²	Round	7773	0,59	65	22500

Marine

MarinePowerFlex YZOZmv 6/10 kV



The MarinePowerFlex cables have a Class-5 flexible conductor, increasing the cable flexibility and making installation easier in tight spaces.

The XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper wire braids grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.

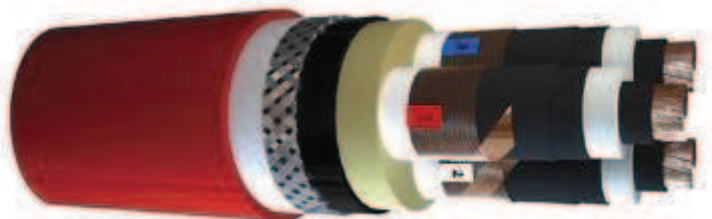
Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePowerFlex YZOZmv 6/10 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 5 = flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semicon-XLPE, semicon-swellable tape and copper tape	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	6	kV
Nominal voltage U	10	kV
Nominal voltage Umax	12	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33129	3 x 50 mm ²	Round	3840	0,48	53,1	7500
33131	3 x 95 mm ²	Round	5649	0,55	61,4	14250
33132	3 x 120 mm ²	Round	6748	0,59	65,2	18000



Marine

MarinePower MultiFlex YQOQmv 6/10 kV



The MarinePower Multiflex cables are designed for flexibility, and are used where continuous bending is required, e.g. on cable chains in dredgers or in retractable Azipod drives. The special sheathing material has very good resistance to chemicals and UV and is highly abrasion resistant. Completely halogen-free, flame-retardant and low-smoke in fire conditions.

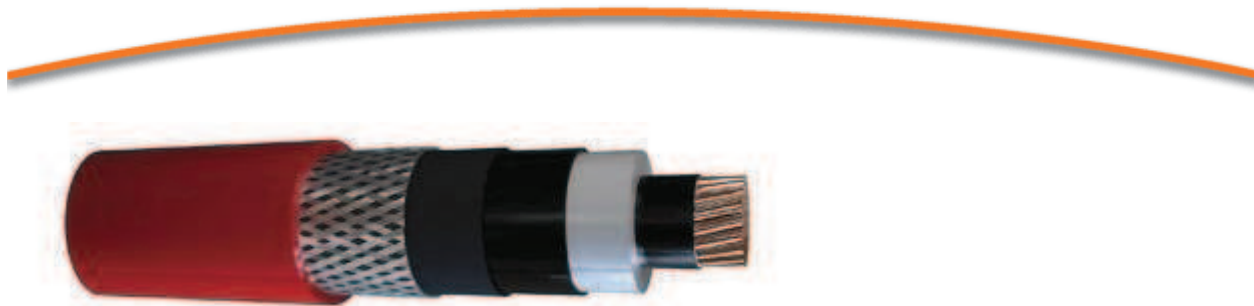
Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower MultiFlex YQOQmv 6/10 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 5-Plus = Extra Flexible	
Conductor shield	Semiconductive Compound with semiconductive tape	
Core insulation	XLPE	
Insulation shield	Semiconductive Compound with semiconductive tape	
Laminated sheath	Yes	
Core shield construction	Copper round wire + copper tape counter spiral	
Material inner sheath	PUR (Polyurethane)	
Earthscreens construction	Core screen and tinned copper braiding combination	
Material outer sheath	PUR (Polyurethane)	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U ₀	6	kV
Nominal voltage U	10	kV
Nominal voltage U _{max}	12	kV
Max. conductor temperature	90	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33189	3 x 50 mm ²	Round	5283	0,35	57,5	7500
33191	3 x 95 mm ²	Round	7303	0,39	65,4	14250
33192	3 x 95 mm ²	Round	7913	0,39	70,0	14250



Marine

MarinePower YOZmv 8,7/15 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YOZmv 8,7/15 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semiconductive XLPE, semiconductive tape and braiding	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	8.7	kV
Nominal voltage U	15	kV
Nominal voltage Umax	17.5	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33200	1 x 35 mm ²	Round	841	0,28	23,6	1750
33201	1 x 50 mm ²	Round	996	0,3	24,9	2500
33202	1 x 70 mm ²	Round	1228	0,32	26,5	3500
33203	1 x 95 mm ²	Round	1526	0,34	28,4	4750
33204	1 x 120 mm ²	Round	1822	0,36	30,2	6000
33205	1 x 150 mm ²	Round	2090	0,38	31,7	7500



Marine

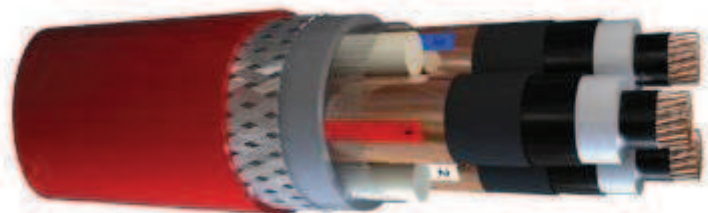
MarinePower YOZmv 8,7/15 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33206	1 x 185 mm ²	Round	2494	0,4	33,5	9250
33207	1 x 240 mm ²	Round	3211	0,44	36,5	12000

Marine

MarinePower YZOZmv 8,7/15 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YZOZmv 8,7/15 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semicon-XLPE, semicon-swellable tape and copper tape	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	8.7	kV
Nominal voltage U	15	kV
Nominal voltage Umax	17.5	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33208	3 x 35 mm ²	Round	3852	0,47	52,1	5250
33209	3 x 50 mm ²	Round	4378	0,49	54,8	7500
33210	3 x 70 mm ²	Round	5109	0,53	58,6	10500
33211	3 x 95 mm ²	Round	6382	0,57	62,9	14250



Marine

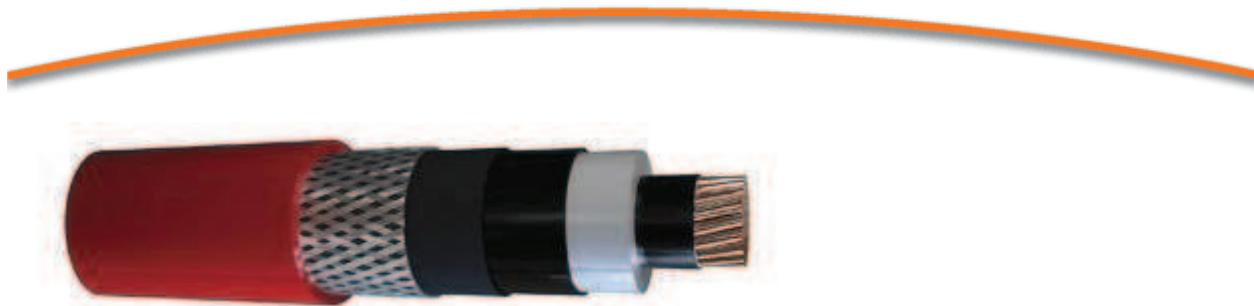
MarinePower YZOZmv 8,7/15 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33212	3 x 120 mm ²	Round	7450	0,6	66,7	18000
33213	3 x 150 mm ²	Round	8904	0,65	71,8	22500

Marine

MarinePower YOZmv 12/20 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YOZmv 12/20 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semiconductive XLPE, semiconductive tape and braiding	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	12	kV
Nominal voltage U	20	kV
Nominal voltage Umax	24	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33300	1 x 35 mm ²	Round	918	0,31	25,8	1750
33301	1 x 50 mm ²	Round	1059	0,32	26,9	2500
33302	1 x 70 mm ²	Round	1340	0,34	28,7	3500
33303	1 x 95 mm ²	Round	1668	0,37	30,6	4750
33304	1 x 120 mm ²	Round	1932	0,39	32,2	6000
33305	1 x 150 mm ²	Round	2214	0,41	33,9	7500



Marine

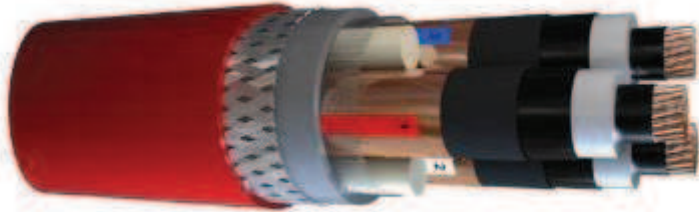
MarinePower YOZmv 12/20 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33306	1 x 185 mm ²	Round	2712	0,43	36,1	9250
33307	1 x 240 mm ²	Round	3357	0,46	38,7	12000

Marine

MarinePower YZOZmv 12/20 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YZOZmv 12/20 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semicon-XLPE, semicon-swellable tape and copper tape	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	12	kV
Nominal voltage U	20	kV
Nominal voltage Umax	24	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33308	3 x 35 mm ²	Round	4233	0,51	56,7	5250
33309	3 x 50 mm ²	Round	4741	0,54	59,5	7500
33310	3 x 70 mm ²	Round	5738	0,57	63,5	10500
33311	3 x 95 mm ²	Round	6804	0,61	67,6	14250



Marine

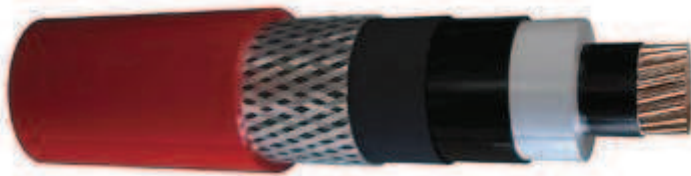
MarinePower YZOZmv 12/20 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33312	3 x 120 mm ²	Round	7897	0,64	71,2	18000

Marine

MarinePower YOZmv 18/30 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.


Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YOZmv 18/30 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semiconductive XLPE, semiconductive tape and braiding	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	18	kV
Nominal voltage U	30	kV
Nominal voltage Umax	36	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33400	1 x 35 mm ²	Round	1210	0,37	31,2	1750
33401	1 x 50 mm ²	Round	1366	0,39	32,3	2500
33402	1 x 70 mm ²	Round	1633	0,41	34,1	3500
33403	1 x 95 mm ²	Round	2065	0,44	36,4	4750
33404	1 x 120 mm ²	Round	2362	0,46	38,2	6000
33405	1 x 150 mm ²	Round	2652	0,48	39,7	7500



Marine

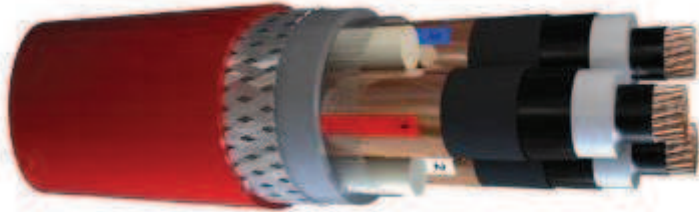
MarinePower YOZmv 18/30 kV



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33406	1 x 185 mm ²	Round	3077	0,5	41,5	9250
33407	1 x 240 mm ²	Round	3639	0,53	44,1	12000

Marine

MarinePower YZOZmv 18/30 kV



The MarinePower cables are designed for medium voltage energy transport for fixed installation in all ship areas. The special XLPE insulation has very good electrical properties and ensures a high lifetime and availability of the installation. The tinned copper braid grants excellent mechanical and EMC protection, and is compliant with the specifications of VFD manufacturers.

Characteristics	Properties	Unit
Product group	Medium-voltage ship-cable	
Series	Shipboard cable	
Type	MarinePower YZOZmv 18/30 kV	
Standardization	IEC 60092-354	
Conductor material	Cu	
Conductor category	Class 2 ss = stranded flexible	
Conductor shield	Semiconductive Compound	
Core insulation	XLPE	
Insulation shield	Semicon-XLPE, semicon-swellable tape and copper tape	
Armouring	Yes	
Earthscreens construction	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Red	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Low smoke	IEC 61034-2	
Nominal voltage U0	18	kV
Nominal voltage U	30	kV
Nominal voltage Umax	36	kV
Max. conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (m)	Outer diameter approx. (mm)	Tensile load (N)
33408	3 x 35 mm ²	Round	5565	0,62	69,1	5250
33409	3 x 50 mm ²	Round	6273	0,65	71,9	7500





Control, instrumentation, tele-and data communication cables.

The tinned copper braided screen reduces Electro Magnetic Interferences (EMI) and grants extra mechanical protection.

The XLPE isolation and variable twist lengths of the pairs provide perfect electrical properties and low capacitance for minimal signal loss.

The special ripcord provides easy stripping of the outer sheath.

Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	MarineCom YOZc 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Pair	
Conductor category	Class 2 = stranded	
Core insulation	XLPE	
Core identification	Numbers	
Construction outer shield	Tinned copper braiding	
Screen over stranding	Braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16900	1 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	62	41	6,8	15
16915	1 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	71	43	7,1	23
16901	1 x 4 x 0,5 mm ²	Class 2 = stranded	Grey	87	47	7,8	30
16902	2 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	105	58	10,0	30
16916	2 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	126	62	10,3	45
16903	4 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	147	67	11,1	60
16917	4 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	183	73	12,1	90
16904	6 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	205	78	13	90
16905	7 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	204	78	13	105
16918	7 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	275	89	14,9	158
16906	8 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	234	84	14	120
16907	10 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	309	94	15,7	150
16919	10 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	411	108	18	225
16908	12 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	356	100	16,6	180
16909	14 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	392	106	17,6	210



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16920	14 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	515	119	19,9	315
16910	19 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	492	121	20,1	285
16921	19 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	653	137	22,9	428
16911	24 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	606	136	22,7	360
16922	24 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	801	154	25,6	540
16912	27 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	652	143	23,8	405
16913	30 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	710	149	24,8	450
16914	37 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	829	163	27,2	555
16271	1 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	74	43	7,1	23
16272	1 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	85	45	7,5	34
16273	1 x 4 x 0,75 mm ²	Class 2 = stranded	Grey	97	48	8	45
16270	2 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	126	62	10,4	45
16923	2 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	156	67	11,1	68
16274	4 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	184	73	12,5	90
16924	4 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	229	77	12,9	135
16275	6 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	299	86	14,8	135
16276	7 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	299	86	14,8	158
16925	7 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	385	96	16	236
16288	8 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	327	91	15,2	180
16277	10 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	399	104	17,3	225
16926	10 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	531	117	19,5	338
16289	12 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	446	109	18,1	270
16278	14 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	512	116	20,2	315
16927	14 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	666	131	21,8	473
16279	19 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	647	135	22,5	428
16928	19 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	869	149	24,9	641
16285	20 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	678	92	23	450
16280	24 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	784	150	25	540
16929	24 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	1057	167	27,8	810
16283	27 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	879	157	26,2	608
16281	30 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	960	165	27,5	675
16282	37 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	1145	181	30,2	833
16930	1 x 2 x 1 mm ²	Class 2 = stranded	Grey	80	45	7,5	30
16945	1 x 3 x 1 mm ²	Class 2 = stranded	Grey	93	47	7,8	45
16931	1 x 4 x 1 mm ²	Class 2 = stranded	Grey	114	52	8,6	60
16932	2 x 2 x 1 mm ²	Class 2 = stranded	Grey	141	65	10,9	60
16946	2 x 3 x 1 mm ²	Class 2 = stranded	Grey	177	71	11,8	90
16933	4 x 2 x 1 mm ²	Class 2 = stranded	Grey	206	76	12,6	120
16947	4 x 3 x 1 mm ²	Class 2 = stranded	Grey	272	84	14	180
16934	6 x 2 x 1 mm ²	Class 2 = stranded	Grey	300	91	15,1	180
16935	7 x 2 x 1 mm ²	Class 2 = stranded	Grey	307	91	15,1	210
16948	7 x 3 x 1 mm ²	Class 2 = stranded	Grey	445	103	17,1	315
16936	8 x 2 x 1 mm ²	Class 2 = stranded	Grey	341	96	16	240
16937	10 x 2 x 1 mm ²	Class 2 = stranded	Grey	457	109	18,2	300
16949	10 x 3 x 1 mm ²	Class 2 = stranded	Grey	621	128	21,3	450
16938	12 x 2 x 1 mm ²	Class 2 = stranded	Grey	526	114	19	360
16939	14 x 2 x 1 mm ²	Class 2 = stranded	Grey	584	122	20,4	420

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16950	14 x 3 x 1 mm ²	Class 2 = stranded	Grey	797	141	23,5	630
16940	19 x 2 x 1 mm ²	Class 2 = stranded	Grey	754	142	23,7	570
16951	19 x 3 x 1 mm ²	Class 2 = stranded	Grey	1023	161	26,9	855
16941	24 x 2 x 1 mm ²	Class 2 = stranded	Grey	914	158	26,3	720
16952	24 x 3 x 1 mm ²	Class 2 = stranded	Grey	1262	179	29,8	1080
16942	27 x 2 x 1 mm ²	Class 2 = stranded	Grey	1008	166	27,6	810
16943	30 x 2 x 1 mm ²	Class 2 = stranded	Grey	1102	174	29	900
16944	37 x 2 x 1 mm ²	Class 2 = stranded	Grey	1304	190	31,7	1110
16301	1 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	100	51	8,5	45
16316	1 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	127	55	9,1	68
16302	1 x 4 x 1,5 mm ²	Class 2 = stranded	Grey	156	61	10,1	90
16303	2 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	186	77	12,8	90
16317	2 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	239	83	13,9	135
16304	4 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	314	89	14,9	180
16318	4 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	369	98	16,3	270
16305	6 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	458	107	18,3	270
16306	7 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	468	109	18,5	315
16319	7 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	628	123	20,5	473
16307	8 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	528	115	19,2	360
16308	10 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	625	124	21	450
16320	10 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	872	153	25,5	675
16309	12 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	720	139	23,2	540
16310	14 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	824	148	24,7	630
16321	14 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	1121	168	28	945
16311	19 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1090	171	28,5	855
16322	19 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	1459	193	32,1	1283
16312	24 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1300	190	31,6	1080
16323	24 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	1791	215	35,8	1620
16313	27 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1434	199	33,2	1215
16314	30 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1571	209	34,9	1350
16315	37 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1885	230	38,3	1665
16960	1 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	133	58	9,6	75
16975	1 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	165	61	10,1	113
16961	1 x 4 x 2,5 mm ²	Class 2 = stranded	Grey	210	68	11,3	150
16962	2 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	280	87	14,9	150
16976	2 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	315	94	15,6	225
16963	4 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	376	100	16,7	300
16977	4 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	550	111	18,5	450
16964	6 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	602	122	20,3	450
16965	7 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	631	122	20,3	525
16978	7 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	868	142	23,6	788
16966	8 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	718	133	22,2	600
16967	10 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	882	152	25,3	750
16979	10 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	1225	174	29	1125
16968	12 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1003	158	26,4	900
16969	14 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1138	169	28,1	1050
16980	14 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	1591	193	32,1	1575

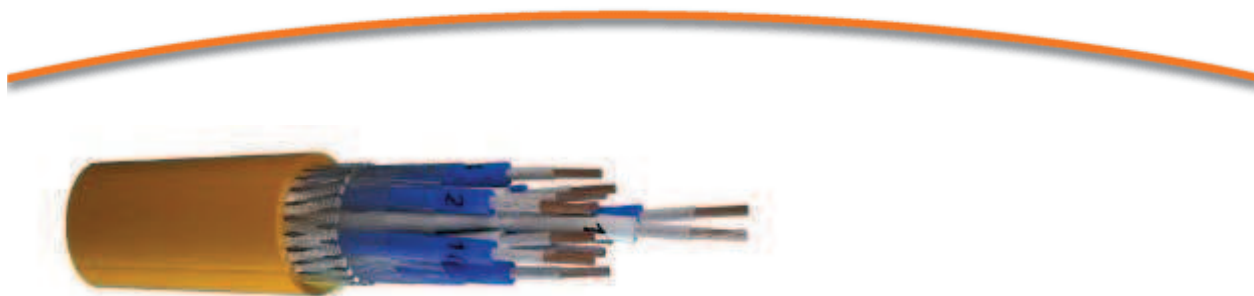
Marine

MarineCom YOZc 250 V



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16970	19 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1485	194	32,4	1425
16981	19 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	2083	221	36,8	2138
16971	24 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1840	217	36,2	1800
16982	24 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	2586	247	41,1	2700
16972	27 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2035	228	38	2025
16973	30 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2222	240	40	2250
16974	37 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2683	263	43,8	2775

MarineCom YOZc X-FR 250 V



Fire resistant according to new IEC 60331-1/2 (2009) specifications, control, instrumentation, tele-and data communication cables. The tinned copper braided screen reduces Electro Magnetic Interferences (EMI) and grants extra mechanical protection. The XLHFFR isolation and variable twist lengths of the pairs provide perfect electrical properties and low capacitance for minimal signal loss. The special ripcord provides easy stripping of the outer sheath.

Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	MarineCom YOZc X-FR 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Article dependant, see detail sheet	
Conductor category	Class 2 = stranded	
Core insulation	Mica + XLHFFR	
Core identification	Numbers	
Construction outer shield	Tinned copper braiding	
Screen over stranding	Braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Insulation integrity in accordance with IEC 60331	Yes	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26470	1 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	81	32	8,3	15
26485	1 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	93	33	8,2	23
26471	1 x 4 x 0,5 mm ²	Class 2 = stranded	Orange	119	37	9,3	30
26520	2 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	143	69	11,5	30
26486	2 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	176	75	12,5	45
26472	4 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	240	83	13,8	60
26487	4 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	302	91	15,2	90
26473	6 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	339	98	16,4	90
26474	7 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	339	98	16,4	105
26488	7 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	449	113	18,8	158
26475	8 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	382	106	17,6	120
26476	10 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	456	120	20	150
26489	10 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	613	137	22,8	225
26477	12 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	515	125	20,8	180
26478	14 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	576	134	22,3	210



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26490	14 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	778	152	25,3	315
26479	19 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	740	153	25,5	285
26491	19 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	986	173	28,8	428
26480	24 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	891	169	28,2	360
26492	24 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	1196	192	32	540
26481	27 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	965	178	29,6	405
26482	30 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	1070	187	31,2	450
26483	37 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	1268	205	34,2	555
26500	1 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	89	33	8,2	23
26515	1 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	103	33	8,2	34
26501	1 x 4 x 0,75 mm ²	Class 2 = stranded	Orange	137	38	9,5	45
26502	2 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	164	73	12,2	45
26516	2 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	203	81	13,1	68
26503	4 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	279	86	14,7	90
26517	4 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	349	96	16	135
26504	6 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	390	103	17,1	135
26505	7 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	404	103	17,9	158
26518	7 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	539	121	20,1	236
26506	8 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	445	109	18,9	180
26507	10 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	548	126	21	225
26519	10 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	729	145	24,2	338
26508	12 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	630	133	22,2	270
26509	14 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	616	142	23,6	315
26521	14 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	936	161	26,8	473
26510	19 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	887	161	27,3	428
26522	19 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	1228	185	30,8	641
26511	24 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1087	179	29,8	540
26523	24 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	1494	205	34,2	810
26512	27 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1214	189	31,5	608
26513	30 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1332	199	33,2	675
26514	37 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1574	217	36,2	833
26526	1 x 2 x 1 mm ²	Class 2 = stranded	Orange	106	36	8,9	30
26541	1 x 3 x 1 mm ²	Class 2 = stranded	Orange	124	37	9,3	45
26527	1 x 4 x 1 mm ²	Class 2 = stranded	Orange	152	41	10,2	60
26528	2 x 2 x 1 mm ²	Class 2 = stranded	Orange	184	80	13,0	60
26542	2 x 3 x 1 mm ²	Class 2 = stranded	Orange	268	88	14,6	90
26543	4 x 3 x 1 mm ²	Class 2 = stranded	Orange	406	103	17,2	180
26532	8 x 2 x 1 mm ²	Class 2 = stranded	Orange	516	120	20	240
26533	10 x 2 x 1 mm ²	Class 2 = stranded	Orange	637	136	22,7	300
26545	10 x 3 x 1 mm ²	Class 2 = stranded	Orange	852	156	26	450
26534	12 x 2 x 1 mm ²	Class 2 = stranded	Orange	711	142	23,7	360
26535	14 x 2 x 1 mm ²	Class 2 = stranded	Orange	802	151	25,2	420
26546	14 x 3 x 1 mm ²	Class 2 = stranded	Orange	1099	173	28,8	630
26536	19 x 2 x 1 mm ²	Class 2 = stranded	Orange	1036	175	29,1	570
26547	19 x 3 x 1 mm ²	Class 2 = stranded	Orange	1443	199	33,2	855
26537	24 x 2 x 1 mm ²	Class 2 = stranded	Orange	1259	193	32,2	720
26548	24 x 3 x 1 mm ²	Class 2 = stranded	Orange	1840	223	37,2	1080

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26538	27 x 2 x 1 mm ²	Class 2 = stranded	Orange	1398	205	34,1	810
26539	30 x 2 x 1 mm ²	Class 2 = stranded	Orange	1613	216	36	900
26540	37 x 2 x 1 mm ²	Class 2 = stranded	Orange	1917	238	39,6	1110
26550	1 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	126	39	9,7	45
26551	1 x 4 x 1,5 mm ²	Class 2 = stranded	Orange	192	45	11,3	90
26552	2 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	274	91	15,1	90
26566	2 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	337	98	16,3	135
26553	4 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	401	106	17,8	180
26567	4 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	531	118	19,6	270
26554	6 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	570	126	21	270
26525	7 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	600	126	21	315
26568	7 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	812	146	24,4	473
26555	8 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	677	135	22,5	360
26556	10 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	821	154	25,7	450
26569	10 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	1135	179	29,8	675
26557	12 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	922	161	26,8	540
26558	14 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1058	173	28,8	630
26570	14 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	1487	199	33,2	945
26559	19 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1354	197	32,9	855
26571	19 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	2027	232	38,6	1283
26560	24 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1769	297	37,1	1080
26572	24 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	2479	342	42,8	1620
26561	27 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1961	314	39,2	1215
26562	30 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	2142	328	41	1350
26563	37 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	2580	362	45,3	1665
26575	1 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	156	64	10,7	75
26590	1 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	202	69	11,5	113
26565	1 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	202	46	11,5	113
26576	1 x 4 x 2,5 mm ²	Class 2 = stranded	Orange	249	74	12,4	150
26577	2 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	344	101	16,9	150
26591	2 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	430	109	18,2	225
26592	4 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	688	130	21,7	450
26593	7 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	1112	165	27,5	788
26581	8 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	897	152	25,4	600
26582	10 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1091	174	29	750
26594	10 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	1535	201	33,5	1125
26583	12 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1267	183	30,5	900
26584	14 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1423	196	32,6	1050
26595	14 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	2095	226	37,6	1575
26585	19 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1957	227	37,9	1425
26596	19 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	2746	259	43,2	2138
26586	24 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	2415	338	42,2	1800
26597	24 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	3398	385	48,1	2700
26587	27 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	2685	357	44,6	2025
26588	30 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	2955	374	46,7	2250
26589	37 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	3587	414	51,7	2775

Marine

MarineCom YZafc 250 V



Special lightweight communication cables for use in yachts. When no mechanical protection is needed, but screening is necessary these cables offer a lightweight and small-diameter solution compared to braided cables. The Alu-pet tape in combination with the tinned copper drainwire offers good EMI protection.

Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	MarineCom YZafc 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Pair	
Conductor category	Class 2 = stranded	
Core insulation	XLPE	
Core identification	Numbers	
Screen over stranding	Alpet tape	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C


Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16690	1 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	44	49	6,1	15
16691	1 x 4 x 0,5 mm ²	Class 2 = stranded	Grey	64	57	7,1	30
16692	2 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	74	71	8,9	30
16693	4 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	105	82	10,2	60
16694	6 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	157	98	12,3	90
16695	7 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	158	98	12,3	105
16696	8 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	175	105	13,1	120
16697	10 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	216	120	15	150
16698	12 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	245	126	15,7	180
16699	14 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	283	135	16,9	210
16700	19 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	360	154	19,2	285
16701	24 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	445	171	21,4	360
16702	27 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	499	182	22,7	405
16703	30 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	544	190	23,7	450
16704	37 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	658	209	26,1	555
16708	1 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	51	51	6,4	23
16709	1 x 4 x 0,75 mm ²	Class 2 = stranded	Grey	74	58	7,3	45



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16710	2 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	92	77	9,6	45
16711	4 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	144	90	11,3	90
16712	6 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	211	107	13,4	135
16713	7 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	213	107	13,4	158
16714	8 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	238	116	14,5	180
16715	10 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	302	130	16,3	225
16716	12 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	346	139	17,4	270
16717	14 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	392	147	18,4	315
16718	19 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	514	169	21,1	428
16719	24 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	628	189	23,6	540
16722	27 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	684	200	25	608
16720	30 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	773	209	26,1	675
16721	37 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	935	230	28,8	833
16731	1 x 4 x 1 mm ²	Class 2 = stranded	Grey	89	63	7,9	60
16730	2 x 1 x 1 mm ²	Class 2 = stranded	Grey	57	54	6,8	30
16732	2 x 2 x 1 mm ²	Class 2 = stranded	Grey	102	82	10,2	60
16733	4 x 2 x 1 mm ²	Class 2 = stranded	Grey	161	95	11,9	120
16734	6 x 2 x 1 mm ²	Class 2 = stranded	Grey	236	114	14,2	180
16735	7 x 2 x 1 mm ²	Class 2 = stranded	Grey	243	114	14,2	210
16736	8 x 2 x 1 mm ²	Class 2 = stranded	Grey	278	122	15,3	240
16737	10 x 2 x 1 mm ²	Class 2 = stranded	Grey	344	140	17,5	300
16738	12 x 2 x 1 mm ²	Class 2 = stranded	Grey	395	146	18,3	360
16739	14 x 2 x 1 mm ²	Class 2 = stranded	Grey	449	156	19,5	420
16740	19 x 2 x 1 mm ²	Class 2 = stranded	Grey	591	179	22,4	570
16741	24 x 2 x 1 mm ²	Class 2 = stranded	Grey	745	202	25,2	720
16742	27 x 2 x 1 mm ²	Class 2 = stranded	Grey	823	212	26,5	810
16743	30 x 2 x 1 mm ²	Class 2 = stranded	Grey	901	222	27,7	900
16744	37 x 2 x 1 mm ²	Class 2 = stranded	Grey	1097	245	30,6	1110
16830	1 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	74	62	7,8	45
16831	1 x 4 x 1,5 mm ²	Class 2 = stranded	Grey	123	75	9,4	90
16832	2 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	141	97	12,1	90
16833	4 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	221	112	14	180
16834	6 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	337	136	17	270
16835	7 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	350	138	17,2	315
16836	8 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	397	146	18,3	360
16837	10 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	493	168	21	450
16838	12 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	568	175	21,9	540
16839	14 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	658	189	23,6	630
16840	19 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	872	218	27,2	855
16841	24 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1092	244	30,5	1080
16842	27 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1209	257	32,1	1215
16843	30 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1325	269	33,6	1350
16844	37 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1613	296	37	1665
16850	1 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	99	70	8,7	75
16851	1 x 4 x 2,5 mm ²	Class 2 = stranded	Grey	167	83	10,4	150
16852	2 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	188	109	13,6	150

Marine

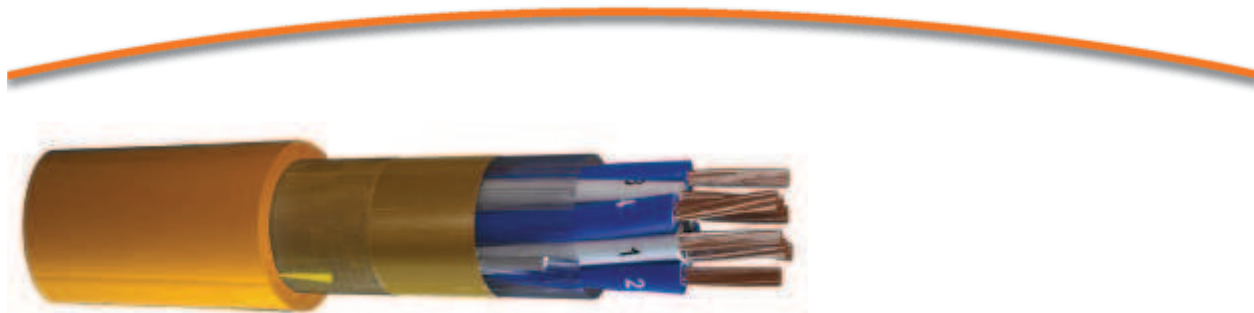
MarineCom YZafc 250 V



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16853	4 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	314	128	16	300
16854	6 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	482	155	19,4	450
16855	7 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	501	155	19,4	525
16856	8 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	573	167	20,9	600
16857	10 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	711	192	24	750
16858	12 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	836	202	25,3	900
16859	14 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	955	216	27	1050
16860	19 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1263	249	31,1	1425
16861	24 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1590	279	34,9	1800
16862	27 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1766	294	36,7	2025
16863	30 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1961	310	38,7	2250
16864	37 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2392	342	42,7	2775

Marine

MarineCom YZafc X-FR 250 V



Fire Resistant, lightweight screened marine instrumentation cables, for when weight reduction (e.g. fast superyachts) is critical.

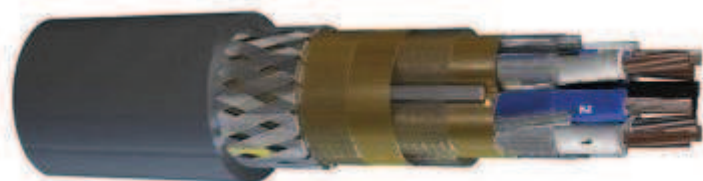
Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	MarineCom YZafc X-FR 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Pair	
Conductor category	Class 2 = stranded	
Core insulation	Mica + XLHFFR	
Core identification	Numbers	
Screen over stranding	Alpet tape	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Insulation integrity in accordance with IEC 60331	Yes	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26801	2 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	122	46	11,5	45
26803	4 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	187	54	13,4	90
26805	7 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	290	65	16,2	158
26807	10 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	410	80	19,9	225
26809	14 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	545	90	22,5	315
26810	19 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	715	103	25,8	428
26811	24 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	885	115	28,7	540



Marine

Marine2Com YOZ2c 250 V



The combination of the overall braid, individual and overall pair screening, and tinned copper drain wires of the Marine2Com cables grants optimal protection against electro Magnetic Interference (EMI). The XLPE isolation and variable twist lengths of the pairs provides perfect electrical properties and low capacitance for minimal signal loss.

Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	Marine2Com YOZ2c 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Pair	
Conductor category	Class 2 = stranded	
Core insulation	XLPE	
Core identification	Numbers	
Construction outer shield	Tinned copper braiding	
Screen over stranding element	Alpet tape	
Screen over stranding	Foil + braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
17223	2 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	134	82	10,3	30
17280	2 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	158	89	11,1	45
17224	4 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	189	95	11,9	60
17281	4 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	226	103	12,9	90
17225	6 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	273	114	14,2	90
17226	7 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	311	114	14,2	105
17282	7 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	343	127	15,9	158
17227	8 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	308	120	15	120
17228	10 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	413	140	17,5	150
17283	10 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	516	158	19,8	225
17229	12 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	464	146	18,2	180
17230	14 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	528	156	19,5	210
17284	14 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	646	174	21,7	315
17231	19 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	657	176	22	285
17285	19 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	833	198	24,7	428
17232	24 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	796	195	24,4	360



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
17286	24 x 3 x 0,5 mm ²	Class 2 = stranded	Grey	1010	219	27,4	540
17233	27 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	890	206	25,8	405
17234	30 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	958	215	26,9	450
17235	37 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	1144	236	29,5	555
16290	2 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	159	90	12,7	45
17290	2 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	185	95	11,9	68
16291	4 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	259	103	13,7	90
17291	4 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	284	112	14	135
16292	6 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	329	123	15,4	135
16293	7 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	369	123	15,4	158
17292	7 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	457	140	17,5	236
17237	8 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	411	130	16,3	180
16294	10 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	494	152	19	225
17293	10 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	635	170	21,3	338
17238	12 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	557	156	19,5	270
16295	14 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	636	170	21,3	315
17294	14 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	814	188	23,5	473
16296	19 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	808	194	24,2	428
17295	19 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	1041	214	26,8	641
16297	24 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	1003	215	26,9	540
17296	24 x 3 x 0,75 mm ²	Class 2 = stranded	Grey	1283	238	29,7	810
17239	27 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	1092	222	27,8	608
16298	30 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	1203	238	29,7	675
16299	37 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	1427	261	32,6	833
17243	2 x 2 x 1 mm ²	Class 2 = stranded	Grey	172	94	11,8	60
17300	2 x 3 x 1 mm ²	Class 2 = stranded	Grey	205	101	12,6	90
17244	4 x 2 x 1 mm ²	Class 2 = stranded	Grey	237	108	13,5	120
17301	4 x 3 x 1 mm ²	Class 2 = stranded	Grey	319	119	14,9	180
17245	6 x 2 x 1 mm ²	Class 2 = stranded	Grey	367	130	16,2	180
17246	7 x 2 x 1 mm ²	Class 2 = stranded	Grey	377	130	16,2	210
17242	7 x 3 x 1 mm ²	Class 2 = stranded	Grey	527	151	18,9	315
17247	8 x 2 x 1 mm ²	Class 2 = stranded	Grey	462	142	17,8	240
17248	10 x 2 x 1 mm ²	Class 2 = stranded	Grey	565	162	20,2	300
17303	10 x 3 x 1 mm ²	Class 2 = stranded	Grey	736	183	22,9	450
17249	12 x 2 x 1 mm ²	Class 2 = stranded	Grey	634	169	21,1	360
17250	14 x 2 x 1 mm ²	Class 2 = stranded	Grey	728	179	22,4	420
17304	14 x 3 x 1 mm ²	Class 2 = stranded	Grey	935	202	25,2	630
17251	19 x 2 x 1 mm ²	Class 2 = stranded	Grey	927	204	25,5	570
17305	19 x 3 x 1 mm ²	Class 2 = stranded	Grey	1210	230	28,7	855
17252	24 x 2 x 1 mm ²	Class 2 = stranded	Grey	1141	228	28,5	720
17256	24 x 3 x 1 mm ²	Class 2 = stranded	Grey	1480	257	32,1	1080
17253	27 x 2 x 1 mm ²	Class 2 = stranded	Grey	1259	239	29,9	810
17254	30 x 2 x 1 mm ²	Class 2 = stranded	Grey	1363	250	31,3	900
17255	37 x 2 x 1 mm ²	Class 2 = stranded	Grey	1635	275	34,4	1110
16333	2 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	257	111	14,3	90
17310	2 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	302	118	14,8	135

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16335	4 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	381	128	16	180
17311	4 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	472	144	18	270
16334	6 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	535	157	19,6	270
16336	7 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	560	158	19,8	315
17312	7 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	728	179	22,4	473
16337	8 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	615	168	21	360
16338	10 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	756	192	24	450
17317	10 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	998	218	27,3	675
16339	12 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	863	200	25	540
16340	14 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	975	214	26,8	630
17314	14 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	1291	242	30,2	945
16341	19 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1262	246	30,7	855
17315	19 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	1661	276	34,5	1283
16342	24 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1580	274	34,2	1080
17316	24 x 3 x 1,5 mm ²	Class 2 = stranded	Grey	2078	310	38,7	1620
16343	27 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1727	288	36	1215
16344	30 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1879	302	37,8	1350
16345	37 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	2367	336	42	1665
17263	2 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	291	125	15,6	150
17320	2 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	360	134	16,8	225
17276	4 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	492	149	18,6	300
17321	4 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	629	163	20,4	450
17265	6 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	714	178	22,3	450
17266	7 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	751	178	22,3	525
17322	7 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	987	203	25,4	788
17267	8 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	834	191	23,9	600
17268	10 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1032	218	27,2	750
17323	10 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	1363	248	31	1125
17269	12 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1184	230	28,7	900
17270	14 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1342	244	30,5	1050
17324	14 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	1786	275	34,4	1575
17271	19 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1729	279	34,9	1425
17325	19 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	2342	317	39,6	2138
17272	24 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2180	314	39,2	1800
17326	24 x 3 x 2,5 mm ²	Class 2 = stranded	Grey	2918	354	44,2	2700
17273	27 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2404	330	41,2	2025
17274	30 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2608	346	43,2	2250
17275	37 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	3187	381	47,6	2775

Marine

Marine2Com YZ2afc 250 V



Special lightweight individually pair screened communication cables for use in yachts. When no mechanical protection is needed, but screening is necessary these cables offer a lightweight and small-diameter alternative to heavy braided cables. Individual + overall pair screen of Alu-pet tape with drain-wires gives very good EMI protection.

Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	Marine2Com YZ2afc 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Pair	
Conductor category	Class 2 = stranded	
Core insulation	XLPE	
Core identification	Numbers	
Screen over stranding element	Alpet tape	
Screen over stranding	Alpet tape	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C


Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16750	2 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	91	76	9,5	30
16751	4 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	136	87	10,9	60
16752	6 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	205	106	13,2	90
16753	7 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	211	106	13,2	105
16754	8 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	242	114	14,2	120
16755	10 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	292	129	16,1	150
16756	12 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	343	136	17	180
16757	14 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	388	145	18,1	210
16758	19 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	510	166	20,8	285
16759	24 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	633	186	23,2	360
16760	27 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	699	195	24,4	405
16761	30 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	776	206	25,7	450
16762	37 x 2 x 0,5 mm ²	Class 2 = stranded	Grey	930	225	28,1	555
16770	2 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	107	82	10,3	45
16771	4 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	175	97	12,1	90
16772	6 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	262	117	14,6	135



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16773	7 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	268	117	14,6	158
16774	8 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	299	122	15,3	180
16775	10 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	370	142	17,8	225
16776	12 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	426	146	18,3	270
16777	14 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	497	161	20,1	315
16778	19 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	666	184	23	428
16779	24 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	809	206	25,7	540
16782	27 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	895	213	26,6	608
16780	30 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	988	228	28,5	675
16781	37 x 2 x 0,75 mm ²	Class 2 = stranded	Grey	1206	251	31,4	833
16790	2 x 2 x 1 mm ²	Class 2 = stranded	Grey	119	86	10,8	60
16791	4 x 2 x 1 mm ²	Class 2 = stranded	Grey	194	102	12,8	120
16792	6 x 2 x 1 mm ²	Class 2 = stranded	Grey	295	123	15,4	180
16793	7 x 2 x 1 mm ²	Class 2 = stranded	Grey	305	123	15,4	210
16794	8 x 2 x 1 mm ²	Class 2 = stranded	Grey	341	131	16,4	240
16795	10 x 2 x 1 mm ²	Class 2 = stranded	Grey	424	150	18,8	300
16796	12 x 2 x 1 mm ²	Class 2 = stranded	Grey	498	159	19,9	360
16797	14 x 2 x 1 mm ²	Class 2 = stranded	Grey	567	170	21,2	420
16798	19 x 2 x 1 mm ²	Class 2 = stranded	Grey	748	194	24,3	570
16799	24 x 2 x 1 mm ²	Class 2 = stranded	Grey	930	217	27,1	720
16800	27 x 2 x 1 mm ²	Class 2 = stranded	Grey	1044	230	28,7	810
16801	30 x 2 x 1 mm ²	Class 2 = stranded	Grey	1144	241	30,1	900
16802	37 x 2 x 1 mm ²	Class 2 = stranded	Grey	1394	266	33,2	1110
16810	2 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	161	103	12,9	90
16811	4 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	267	122	15,2	180
16812	6 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	404	147	18,4	270
16813	7 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	421	147	18,4	315
16814	8 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	478	158	19,8	360
16815	10 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	593	182	22,8	450
16816	12 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	685	190	23,8	540
16817	14 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	782	203	25,4	630
16818	19 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1048	236	29,5	855
16819	24 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1317	262	32,8	1080
16820	27 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1478	278	34,8	1215
16821	30 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1600	291	36,4	1350
16822	37 x 2 x 1,5 mm ²	Class 2 = stranded	Grey	1949	322	40,2	1665
16870	2 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	221	118	14,8	150
16871	4 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	361	138	17,2	300
16872	6 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	552	169	21,1	450
16873	7 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	591	169	21,1	525
16874	8 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	663	180	22,5	600
16875	10 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	836	208	26	750
16876	12 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	972	218	27,3	900
16877	14 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1126	234	29,3	1050
16878	19 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1490	270	33,7	1425
16879	24 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	1884	302	37,8	1800

Marine

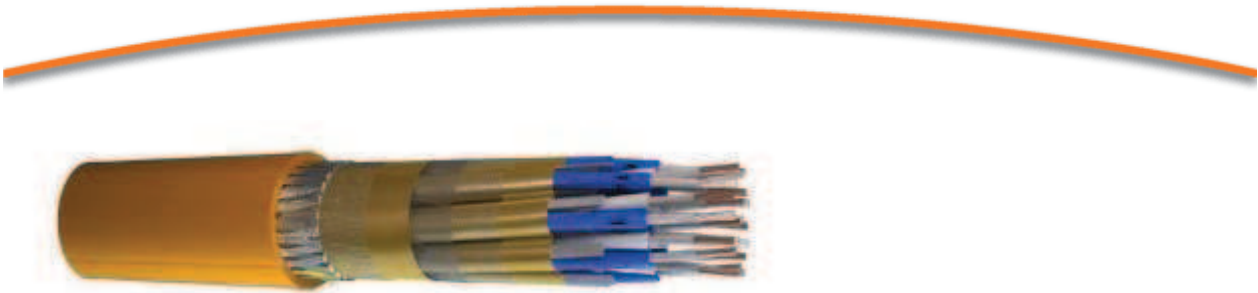
Marine2Com YZ2afc 250 V



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16880	27 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2092	318	39,8	2025
16881	30 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2306	336	42	2250
16882	37 x 2 x 2,5 mm ²	Class 2 = stranded	Grey	2811	370	46,3	2775

Marine

Marine2Com YOZ2c X-FR 250 V



Fire resistant according to new IEC 60331-1/2 (2009) specifications, control, instrumentation, tele-and data communication cables. The combination of the overall braid, individual and overall pair screening, and tinned copper drain wires of the Marine2Com cables grants optimal protection against electro Magnetic Interference (EMI). The XLHFFR isolation and variable twist lengths of the pairs provide perfect electrical properties and low capacitance for minimal signal loss. The special ripcord provides easy stripping of the outer sheath.

Characteristics	Properties	Unit
Product group	Communication cables	
Series	Shipboard cable	
Type	Marine2Com YOZ2c X-FR 250 V	
Standardization	IEC 60092-350/-351/-376	
Stranding element	Article dependant, see detail sheet	
Conductor category	Class 2 = stranded	
Core insulation	Mica + XLHFFR	
Core identification	Numbers	
Construction outer shield	Tinned copper braiding	
Screen over stranding element	Alpet tape	
Screen over stranding	Foil + braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Orange	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Insulation integrity in accordance with IEC 60331	Yes	
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26661	1 x 4 x 0,5 mm ²	Class 2 = stranded	Orange	119	74	9,3	30
26662	2 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	177	100	12,5	30
26681	2 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	243	110	13,7	45
26663	4 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	297	120	15	60
26682	4 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	357	130	16,2	90
26664	6 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	414	142	17,8	90
26665	7 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	421	142	17,8	105
26683	7 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	533	160	20	158
26666	8 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	465	151	18,9	120
26667	10 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	562	172	21,5	150
26684	10 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	715	195	24,4	225
26668	12 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	646	181	22,6	180
26669	14 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	713	192	24	210



Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26685	14 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	913	216	27	315
26670	19 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	918	219	27,4	285
26686	19 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	1180	246	30,8	428
26671	24 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	1124	245	30,6	360
26687	24 x 3 x 0,5 mm ²	Class 2 = stranded	Orange	1450	275	34,4	540
26672	27 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	1223	257	32,1	405
26673	30 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	1335	269	33,6	450
26674	37 x 2 x 0,5 mm ²	Class 2 = stranded	Orange	1675	298	37,3	555
26600	1 x 1 x 0,75 mm ²	Class 2 = stranded	Orange	98	66	8,2	11
26601	1 x 4 x 0,75 mm ²	Class 2 = stranded	Orange	137	76	9,5	45
26602	2 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	229	106	13,6	45
26691	2 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	272	117	14,6	68
26603	4 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	304	123	15,4	90
26692	4 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	413	138	17,3	135
26604	6 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	465	150	18,8	135
26605	7 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	426	150	18,8	158
26693	7 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	626	171	21,4	236
26606	8 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	544	161	20,1	180
26607	10 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	685	183	22,9	225
26694	10 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	858	208	26	338
26608	12 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	746	191	23,9	270
26609	14 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	876	206	25,7	315
26695	14 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	1088	229	28,6	473
26610	19 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1115	234	29,3	428
26696	19 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	1411	262	32,7	641
26611	24 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1359	260	32,5	540
26697	24 x 3 x 0,75 mm ²	Class 2 = stranded	Orange	1822	296	37	810
26612	27 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1500	274	34,3	608
26613	30 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1630	287	35,9	675
26614	37 x 2 x 0,75 mm ²	Class 2 = stranded	Orange	1972	317	39,6	833
26616	1 x 4 x 1 mm ²	Class 2 = stranded	Orange	152	82	10,2	60
26617	2 x 2 x 1 mm ²	Class 2 = stranded	Orange	253	115	14,4	60
26701	2 x 3 x 1 mm ²	Class 2 = stranded	Orange	307	124	15,5	90
26618	4 x 2 x 1 mm ²	Class 2 = stranded	Orange	371	134	16,7	120
26702	4 x 3 x 1 mm ²	Class 2 = stranded	Orange	464	147	18,4	180
26619	6 x 2 x 1 mm ²	Class 2 = stranded	Orange	529	160	20	180
26620	7 x 2 x 1 mm ²	Class 2 = stranded	Orange	540	160	20	210
26703	7 x 3 x 1 mm ²	Class 2 = stranded	Orange	710	182	22,8	315
26621	8 x 2 x 1 mm ²	Class 2 = stranded	Orange	613	172	21,5	240
26622	10 x 2 x 1 mm ²	Class 2 = stranded	Orange	741	195	24,4	300
26704	10 x 3 x 1 mm ²	Class 2 = stranded	Orange	975	222	27,8	450
26628	12 x 2 x 1 mm ²	Class 2 = stranded	Orange	855	206	25,7	360
26624	14 x 2 x 1 mm ²	Class 2 = stranded	Orange	967	219	27,4	420
26705	14 x 3 x 1 mm ²	Class 2 = stranded	Orange	1257	246	30,8	630
26625	19 x 2 x 1 mm ²	Class 2 = stranded	Orange	1236	250	31,3	570
26706	19 x 3 x 1 mm ²	Class 2 = stranded	Orange	1703	286	35,7	855
26626	24 x 2 x 1 mm ²	Class 2 = stranded	Orange	1521	280	35	720

Partnumber	Construction	Conductor category	Colour outer sheath	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
26707	24 x 3 x 1 mm ²	Class 2 = stranded	Orange	2101	318	39,8	1080
26627	27 x 2 x 1 mm ²	Class 2 = stranded	Orange	1760	298	37,2	810
26623	30 x 2 x 1 mm ²	Class 2 = stranded	Orange	1931	312	39	900
26629	37 x 2 x 1 mm ²	Class 2 = stranded	Orange	2309	343	42,9	1110
26631	1 x 4 x 1,5 mm ²	Class 2 = stranded	Orange	192	90	11,3	90
26632	2 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	314	130	16,2	90
26711	2 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	377	140	17,5	135
26633	4 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	470	151	18,9	180
26712	4 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	592	166	20,7	270
26634	6 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	662	181	22,6	270
26635	7 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	689	181	22,6	315
26713	7 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	905	206	25,8	473
26636	8 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	767	194	24,2	360
26637	10 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	957	222	27,8	450
26714	10 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	1261	254	31,7	675
26638	12 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1078	233	29,1	540
26639	14 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1234	250	31,2	630
26715	14 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	1636	281	35,1	945
26640	19 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	1674	289	36,1	855
26716	19 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	2228	325	40,6	1283
26641	24 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	2055	322	40,2	1080
26717	24 x 3 x 1,5 mm ²	Class 2 = stranded	Orange	2763	364	45,5	1620
26642	27 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	2257	338	42,3	1215
26643	30 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	2483	356	44,5	1350
26644	37 x 2 x 1,5 mm ²	Class 2 = stranded	Orange	3083	398	49,8	1665
26646	1 x 4 x 2,5 mm ²	Class 2 = stranded	Orange	249	99	12,4	150
26647	2 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	393	146	18,2	150
26721	2 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	478	155	19,4	225
26648	4 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	601	170	21,3	300
26722	4 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	775	186	23,3	450
26649	6 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	857	204	25,5	450
26650	7 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	923	204	25,5	525
26723	7 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	1107	234	29,2	788
26651	8 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1024	219	27,4	600
26652	10 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1261	252	31,5	750
26724	10 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	1770	290	36,3	1125
26653	12 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1443	263	32,9	900
26654	14 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	1727	286	35,7	1050
26725	14 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	2307	322	40,2	1575
26655	19 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	2234	326	40,8	1425
26726	19 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	3026	370	46,2	2138
26656	24 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	2769	366	45,7	1800
26727	24 x 3 x 2,5 mm ²	Class 2 = stranded	Orange	3768	414	51,7	2700
26657	27 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	3062	385	48,1	2025
26658	30 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	3384	405	50,6	2250
26659	37 x 2 x 2,5 mm ²	Class 2 = stranded	Orange	4067	445	55,6	2775

Marine

MarineSignal YZs 250 V



Cables designed for signal, control & alarm purposes, with reduced weight & diameter. The special ripcord provides easy stripping of the outer sheath. Halogen-free and low-smoke, flame-retardant in fire conditions.


Characteristics	Properties	Unit
Product group	Signal cables	
Series	Shipboard cable	
Type	MarineSignal YZs 250 V	
Standardization	IEC 60092-350/-351/-376	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	Numbers	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U	0.25	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16210	2 x 0,75 mm ²	Round	44	25	6,3	23
16211	3 x 0,75 mm ²	Round	54	26	6,6	34
16212	4 x 0,75 mm ²	Round	66	28	7,1	45
16213	5 x 0,75 mm ²	Round	79	31	7,7	56
16214	7 x 0,75 mm ²	Round	102	34	8,6	79
16215	12 x 0,75 mm ²	Round	160	45	11,2	135
16216	19 x 0,75 mm ²	Round	240	54	13,5	214
16217	27 x 0,75 mm ²	Round	331	63	15,8	304
16218	37 x 0,75 mm ²	Round	443	73	18,2	416
16220	2 x 1,0 mm ²	Round	49	27	6,7	30
16221	3 x 1,0 mm ²	Round	62	28	7	45
16222	4 x 1,0 mm ²	Round	76	31	7,7	60
16223	5 x 1,0 mm ²	Round	93	34	8,5	75
16224	7 x 1,0 mm ²	Round	120	37	9,2	105
16225	12 x 1,0 mm ²	Round	195	48	12,1	180
16226	19 x 1,0 mm ²	Round	293	59	14,8	285



Marine

MarineSignal YZs 250 V



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16227	27 x 1,0 mm ²	Round	403	69	17,3	405
16228	37 x 1,0 mm ²	Round	539	80	20	555

MarineSignal YOZs 250 V



Armoured cables for signal, control & alarm purposes with reduced weight & diameter. The tinned copper braid is highly corrosion resistant and provides optimal screening. The special ripcord provides easy stripping of the outer sheath. Halogen-free and low-smoke, flame-retardant in fire conditions.


Characteristics	Properties	Unit
Product group	Signal cables	
Series	Shipboard cable	
Type	MarineSignal YOZs 250 V	
Standardization	IEC 60092-350/-351/-376	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	Numbers	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U	0.25	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16241	2 x 0,75 mm ²	Round	74	29	7,2	23
16242	3 x 0,75 mm ²	Round	85	30	7,5	34
16243	4 x 0,75 mm ²	Round	103	32	8	45
16244	5 x 0,75 mm ²	Round	121	35	8,8	56
16245	7 x 0,75 mm ²	Round	141	38	9,5	79
16246	12 x 0,75 mm ²	Round	217	48	12,4	135
16247	19 x 0,75 mm ²	Round	352	59	14,8	214
16248	27 x 0,75 mm ²	Round	462	68	17,1	304
16249	37 x 0,75 mm ²	Round	599	78	19,5	416
16250	2 x 1,0 mm ²	Round	81	30	7,6	30
16251	3 x 1,0 mm ²	Round	99	32	7,9	45
16252	4 x 1,0 mm ²	Round	118	35	8,7	60
16253	5 x 1,0 mm ²	Round	135	38	9,4	75
16254	7 x 1,0 mm ²	Round	165	40	10,1	105
16255	12 x 1,0 mm ²	Round	254	52	13	180



Marine

MarineSignal YOZs 250 V



Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16256	19 x 1,0 mm ²	Round	494	64	15,9	285
16257	27 x 1,0 mm ²	Round	524	74	18,4	405
16258	37 x 1,0 mm ²	Round	701	84	21,1	555

Marine

MarineSignal+ YZs 250 V



Heavy duty cables for signal, control & alarm purposes. The special ripcord provides easy stripping of the outer sheath. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Signal cables	
Series	Shipboard cable	
Type	MarineSignal+ YZs 250 V	
Standardization	IEC 60092-350/-351/-376	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	Numbers	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U	0.25	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16231	2 x 0,75 mm ²	Round	63	27	6,7	23
16232	3 x 0,75 mm ²	Round	72	28	7	34
16233	4 x 0,75 mm ²	Round	84	30	7,5	45
16234	5 x 0,75 mm ²	Round	99	33	8,2	56
16235	2 x 1,0 mm ²	Round	77	29	7,3	30
16236	3 x 1,0 mm ²	Round	84	30	7,5	45
16237	4 x 1,0 mm ²	Round	99	33	8,2	60
16238	5 x 1,0 mm ²	Round	120	36	8,9	75



Marine

MarineSignal+ YOZs 250 V



Armoured heavy duty signal, control & alarm cables. The tinned copper braid is highly corrosion resistant and provides optimal screening. The special ripcord provides easy stripping of the outer sheath. Halogen-free and low-smoke, flame-retardant in fire conditions.

Characteristics	Properties	Unit
Product group	Signal cables	
Series	Shipboard cable	
Type	MarineSignal+ YOZs 250 V	
Standardization	IEC 60092-350/-351/-376	
Conductor material	Cu	
Shape of conductor	Round	
Core insulation	XLPE	
Conductor category	Class 2 = stranded	
Core identification	Numbers	
Construction outer shield	Tinned copper braiding	
Material outer sheath	Flame Retardant Halogen Free Polyolefin Compound	
Colour outer sheath	Grey	
Flame retardant	IEC 60332-1 / IEC 60332-3-22 Cat. A	
Halogen free	IEC 60754-1/2	
Nominal voltage U	0.25	kV
Maximum conductor temperature	90	°C
Operating temperature, flexible	-20 / 70	°C
Operating temperature, fixed	-40 / 70	°C

Partnumber	Construction	Shape of conductor	Net weight (kg/km)	Bending radius after installation (mm)	Outer diameter approx. (mm)	Tensile load (N)
16261	2 x 0,75 mm ²	Round	112	32	8	23
16262	3 x 0,75 mm ²	Round	122	34	8,5	34
16263	4 x 0,75 mm ²	Round	138	36	9,1	45
16264	5 x 0,75 mm ²	Round	158	39	9,7	56
16265	2 x 1,0 mm ²	Round	123	34	8,6	30
16266	3 x 1,0 mm ²	Round	133	36	9	45
16267	4 x 1,0 mm ²	Round	155	38	9,6	60
16268	5 x 1,0 mm ²	Round	176	41	10,2	75



Marine

Break-Out



Break-out Multimode Fibre Optic cable for use in ships. Halogen free, flame retardant. The cable consist of multiple simplex elements suitable for direct connector assembly. Available in single- and multi-mode fibre types. Special types available on request.

Characteristics	Properties	Unit
Product group	Fibre Optic cables	
Series	Fibre optic cable	Single mode
Type	Break-Out	
Standardization	IEC 60794-2-20	
Test procedures	IEC 60794-1-2	
Application	Inside	
Strain relief	Yes	
Optical Element	Article dependant, see detail sheet	
Fibre type	Single mode	
Optical fibre standard	ITU-T G.657.A1	
Strip method	1 Rip cord	
Material outer sheath	LSZH	
Colour outer sheath	Yellow	
Flame retardant	Acc. IEC 60332-1-2	
Halogen free	Acc. IEC 60754-1	
Halogen free (acc. EN 50267-2-2)	Yes	
Cable metal free	Yes	
Longitudinal water blocking	No	
Radial water blocking	No	
Installation temperature	-10 / 60	°C
Operation temperature range	-20 / 60	°C
Transportation and storage temperature	-30 / 60	°C
Attenuation @ 1310 nm	0.5	dB/km
Attenuation @ 1550 nm	0.5	dB/km

Partnumber	Construction	Bending radius during installation (mm)	Bending radius after installation (mm)	Net weight (kg/km)	Outer diameter approx. (mm)	Tensile load short term (Tm)
77064	4 x Single mode (4 x 1)	150	110	70	7,4	400
77068	4 x Single mode (4 x 1)	180	130	70	8,7	700
77069	8 x Single mode (8 x 1)	180	135	95	10,1	900
77065	8 x Single mode (8 x 1)	180	130	83	8,9	800
77066	12 x Single mode (12 x 1)	220	170	126	11	1000
77070	12 x Single mode (12 x 1)	250	190	174	13	1200
77071	24 x Single mode (24 x 1)	380	230	192	14,8	1800
77067	24 x Single mode (24 x 1)	250	190	133	12,4	1200
77072	48 x Single mode (48 x 1)	320	240	220	16	2000

Product information

Product Characteristics - Optical fibres

Fibre:			
	type of fibre	hydrogen passivated, dispersion unshifted, matched cladding bending loss insensitive singlemode fibre 9/125µm	
		Fully compatible with G.652.D fibre	
		Optical and geometrical properties exceed ITU-recommendations G.652.D and G.657.A1	
	standard	IEC-60793-2-50, B6-a1	
	standard	ITU-T G.657.A1	

Characteristics:	Properties	Unit
Mode field diameter; 1310nm	9.0 ± 0.3	µm
Mode field diameter; 1550nm	10.2 ± 0.4	µm
Core non-circularity	max 6	%
Core/Cladding concentricity error	max 0.4	µm
Cladding diameter	125.0 ± 0.5	µm
Cladding non-circularity	max 0.6	%
Coating diameter, uncoloured	242 ± 5	µm
Coating diameter, coloured	248 ± 6	µm
Coating/Cladding concentricity error	max 8	µm
Temperature sensitivity; -60°C to +85°C	max 0.05	dB/km
Bending sensitivity - 10 turns around Ø30mm - 1550nm	max 0.1	dB
Bending sensitivity - 10 turns around Ø30mm - 1625nm	max 0.3	dB
Bending sensitivity - 1 turn around Ø20mm - 1550nm	max 0.75	dB
Bending sensitivity - 1 turn around Ø20mm - 1625nm	max 1.5	dB
Proof test level	min 0.69	GPa
Fibre curl	min 4	m
Cable cut-off wavelength	max 1260	nm
Zero-dispersion wavelength	1300 - 1322	nm
Zero-dispersion slope	max 0.090	ps/nm ² .km
Chromatic dispersion; 1285nm - 1330 nm	max 3.2	ps/nm.km
Chromatic dispersion; 1550nm	max 17	ps/nm.km
Chromatic dispersion; 1625nm	max 21	ps/nm.km
Polarisation Mode Dispersion; maximum individual fibre	max 0.1	ps/√km
PMD _Q	max 0.08	ps/√km
Max attenuation at 1383nm (α ₁₃₈₃) [note a]	< max α ₁₃₁₀	
Effective Group Core Refractive Index; 1310 nm	1.4671	-
Effective Group Core Refractive Index; 1550 nm	1.4675	-
Effective Group Core Refractive Index; 1625 nm	1.4680	-

note a: after hydrogen ageing

Marine Cables

International standards and approvals

All marine cables are designed and produced according to international standards. TKF marine cables fully comply with the requirements specified in the IEC 60092 series of standards.



Marine & Offshore Green Passport

As one of the first cable manufacturers, TKF has registered with Det Norske Veritas (DNV) a declaration of conformity for a "Green Passport" for ships, in June 2009. A Green Passport is an inventory of materials present in a ship's structure, systems and equipment that may be hazardous to health and / or the environment. The Green Passport was adopted by the IMO by resolution A.962 Clean Design / Green Passport.

A Green Passport is granted to a ship when build. On completion of the ship, a class society such as DNV issues a certificate of compliance. This, together with the inventory of hazardous materials and declarations that the ship is free of certain materials, form the Green Passport. This passport accompanies the ship throughout its working life. The final ship owner delivers the Green Passport together with the vessel to the recycling yard, so that hazardous materials in the ship can be identified and disposed of in an environmentally clean and safe way.



Yard owners and sub-suppliers must ensure that certain materials are excluded for new-build ships. Also, they must declare all materials that have been included according to various categories required by IMO.

TKF marine cables are completely free of hazardous substances and may therefore be used in a ship with a Green Passport, and do not have to be listed on the inventory of hazardous materials.

SUPPLIERS DECLARATION OF CONFORMITY for Material Declaration Management
(Please refer to IMO MEPC 58/3 Guidelines dated 9. April 2009 Annex 2 Section 7 for details)

1) SDoC No: 1

2) Issuers name: TKF, BV Twentsche KabelFabriek

Issuers address: Spinnerstraat 15, Haaksbergen, The Netherlands

3) Object(s) of the declaration: 1) Shipboard power, signaling & communication cables

4) The object of declaration described above is in conformity with the requirement of the following documents:

5) Document No. Title
35439 International Convention for the safe and environmentally sound recycling of ships
1 Report of the correspondence group on ship recycling Guidelines (Part 1)
1 ISO 9001: 2000 ISO 14001:2004
1 RoHS Declaration of Compliance
1 REACH Declaration of Compliance

6) Additional information:

Signed for and on behalf of: TKF, BV Twentsche KabelFabriek

Haaksbergen 23-6-2009
(Place of issue) (Date of issue)

7) Hans De Boer, Head of Research & Development
(Name, function)

MATERIAL DECLARATION
Type 1: SELF DECLARATION

Date of declaration: 23-6-2009

IMO ID Number: DNV 401 assign a unique number to each IMO (MEPC/58/3)

Other information (e.g. shipbuilder, hull NO. 7 and Duplex):

Product already Type approved by DNV? Yes No

Product information: Product Name: Shipboard Cable Product Number: Product DNV Name: Shipboard Power, Signaling & Communication cables

The material information shows the amount of hazardous materials contained in: List

Table A	Material Name	Threshold level	Presently when	IF YES	IF YES
Material Name	Threshold level	Presently when	IF YES	IF YES	
Table A	Substances	Threshold level	Presently when	IF YES	IF YES
Table B	Substances	Threshold level	Presently when	IF YES	IF YES

The object of declaration described above is in conformity with the Guidelines for the development of Inventory of Hazardous Materials IMO MEPC 58/3 dated 9. April 2009.

Hans De Boer
(Date, Signature and Company Stamp)

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IMPORTANT NOTICE: Any significant change in material content may render this declaration invalid. Validity date relates to the DNV internet publication of declaration.

More forms can be downloaded from DNV's website: http://www.dnv.com/industry/marine/ship_recycling/green_passport/techinfo.html

DNV form made by DNV
Version 6.1, Date 26.05.2009

Technical Product information

Marine Cables

Materials

Insulation

Cable Type	Insulation Material
MarineLine, MarineFlex, Marinecom	Cross-Linked Polyethylene (XLPE) according to IEC 60092-351, type HF-XLPE
FR- types	Mica tape + Cross-Linked Polyethylene (XLPE) according to IEC 60092-351, type HF-XLPE
X-FR types	Mica tape + Cross Linked Flame Retardent Polyolefine according IEC 60092-351, type HF90

TKF uses high-quality insulation materials for all its marine cables, which allow a continuous conductor temperature of 90 °C and withstands a temporary overload temperature of 130 °C and a short-circuit temperature of 250 °C. The materials shows very low dielectric losses when used in power cables and excellent transmission properties for the instrumentation and communication cables. It also has extremely low moisture absorption, and a high resistance to most chemicals. The Fire-Resistant cables have conductors fully wrapped in mica-glass tape before being insulated.

Sheathing

Standard TKF marine cables have a SHF1 type, halogen-free, flame retardant, low-smoke sheath. This sheath has very good abrasion resistance, good mechanical properties, low moisture absorption and high resistance to most chemicals. The material meets the requirements as specified in IEC 6092-359 under type SHF-1 for mechanical properties, as well as the IEC 60811-2-1 for oil-resistance (ASTM oil 2, 4 hours, 70 °C) The selected sheath material makes TKF marine cables are very suitable for installation and usage in areas with low temperatures. If the cables are exposed to direct sunlight protective covering or black outer sheath is recommended On request special sheath materials can be applied (e.g. TPU or SHF2) for more extreme conditions.

Armouring and Screening

All TKF's braided cables (designated with the "O" in the type designation) have tinned-copper wire braiding with a coverage of at least 90%. The tinned wires give a high corrosion resistance of the braid and offer both mechanical and EMI protection. Screened cables ("af" type designation) offer only EMI protection with alu-

PET tapes in combination with a tinned copper drain wire.

International Standards

The Marine cables in this catalogue are designed and tested in accordance with the following standards, where applicable.

Standard	Description
IEC 60092-350	General construction and test methods of power, control and instrumentation cables for shipboard and offshore applications
IEC 60092-351	Insulating materials for shipboard offshore units, power, control, instrumentation, telecommunication and data cables
IEC 60092-352	Electrical installations in ships -Choice and installation of cables for low-voltage power systems
IEC 60092-353	Single and multicore non-radial field power cables with extruded solid insulation for rated voltages 1 kV and 3 kV
IEC 60092-354	Single- and three-core power cables with extruded solid insulation for rated voltages 6 kV (Um = 7.2 kV) up to 30 kV (Um = 36 kV)
IEC 60092-359	Sheathing materials for shipboard power and telecommunication cables
IEC 60092-376	Cables for control and instrumentation circuits 150/250 V (300 V)
IEC 60228	Conductors of insulated cables
IEC 60331-11	Tests for electric cables under fire conditions - circuit integrity - apparatus - fire alone at a flame temperature of at least 750 °C
IEC 60331-21	Tests for electric cables under fire conditions - circuit integrity - procedures and requirements - cables of rated voltage up to and including 0.6/1.0 kV
IEC 60331-1/2	Tests for electric cables under fire conditions – Test for method for fire with shock at temperature of at least 803° C for cables rated up to and including 0,6/1kV
IEC 60332-1	Tests on electric cables under fire conditions - part 1: test on a single vertical insulated wire or cable
IEC 60332-3-22 - A	Tests on electric cables under fire conditions - part 3-22: test for vertical flame spread of vertically mounted bunched wires or cables - category A
IEC 60754-1	Test on gases evolved during combustion of electric cables - determination of the amount of halogen acid gas
IEC 60811	Common test methods for insulating and sheathing materials of electric cables
IEC 61034 series	Measurement of smoke density of electric cables burning under defined conditions

Technical Product information

Marine Cables

Installation Instructions

Bending Radius

Bending Radii according to IEC 60092-352

Voltage Rating	Cable Construction	Outer Diameter	Bending Radius	Cable Types
Up to 1.8/ 3 kV	Unarmoured	<25 mm	R = 4 x D	YZp, YZs
	Unarmoured	>25 mm	R = 6 x D	YZp, YZs
	Armoured/Screened	any	R = 6 x D	YOZp, YOZs, YOZc
	Foil screened	any	R = 8 x D	YOZ2c, YZafp, YZafc
≥3.6/6 kV	Single Core	any	R = 12 x D	YOZmv
	Triple Core	any	R = 9 x D	YZOZmv

Pulling Force

The cable pulling tension during installation can be estimated by means of the following formula:

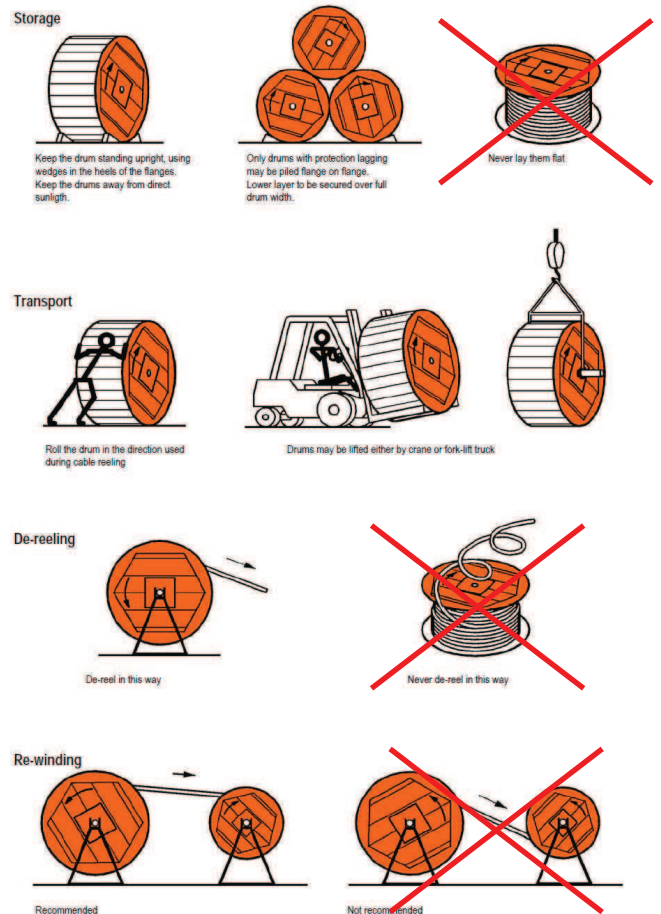
Max. Pulling Force (N) = 15 × total cross section

Pulling instructions

It is recommended to use a sleeve on the cable head when pulling cable into cable trays, to evenly distribute the pulling stress over the whole conductor area of the cable. When using lubricants to lower the friction in cable pulling a lubricant suitable for Halogen Free cable should be used. When installing cables in below zero temperatures, installing the cable is greatly eased when the cable has been stored in a location with a temperature of +15 degrees for at least 24 hours. When pulling cable in winter conditions and the reels have been stored outside, please check the reels for ice buildup and layers of cable frozen together, which could cause damage to the cable when unwinding the reels.

Installation temperature

Minimum recommended installation temperature for cables of rated voltage up to 20 kV, = -20°C



Current Rating for General Installations

The current ratings are applicable for d.c. and a.c. with a nominal frequency of 50 Hz or 60 Hz and an ambient air temperature of 45° C. For higher frequencies, the current rating shall be calculated with an appropriate method (e.g. IEC 60287). For other ambient air temperatures the correction factors have to be applied. These ratings are applicable, without correction factors, for cables bunched together on cable trays, in cable conduits, pipes or trunking, unless more than six cables operating simultaneously at their full rated capacity are laid close together without free air circulating around them. In this case a correction factor of 0.85 should be applied. The tables are for general reference purposes only, and do not describe all installation methods existing in practice. For more detailed information see IEC 60092-352(2005) Annex A & B. For specific situations not covered by these standards exact current calculations can be made by our engineering office.

Correction Factors for ambient air temperatures for maximum conductor temperature of 90° C

Air Temperature	35° C	40° C	45° C	50° C	55° C	60° C
Correction Factor	1.10	1.05	1.00	0.94	0.88	0.82

Air Temperature	65° C	70° C	75° C	80° C	85° C	90° C
Correction Factor	0.74	0.67	0.58	0.47	-	-

Current carrying capacities in continuous service at maximum rated conductor temperature of 90° C in A, at 45° C ambient air temperature, Based on IEC 60092-352 Annex A Table B-4

Cross Section(mm2)	Current Rating (A)					
	Number of cores loaded					
	1		2		3 & 4	
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	
	d.c.	a.c.	d.c.	a.c.	d.c.	a.c.
400	690	670	587	570	483	469
500	780	720	663	612	546	504
630	890	780	757	663	623	548

For cables with >4 conductors the current rating can be calculated with the following formula:

$$I = \frac{I_1}{\sqrt[3]{n}}$$

where I_1 = current rating for single core, n = number of cores

# of cores	Ampacity (A)		
	1,5mm2	2,5mm2	4mm2
5	13	23	30
6	13	22	28
7	12	21	27
8	12	20	26
10	11	19	24
12	10	17	22
16	9	16	20
19	9	15	19
24	8	14	18
27	8	13	17
30	7	13	16
34	7	12	16
37	7	12	15

Marine Cables

Short Circuit Current

The maximum permissible short circuit current for different cables is based on the formula

$$I_k = 146 \cdot \frac{S}{\sqrt{t}}$$

I_k = the maximum permissible short-circuit current in Ampere

S = the cross section area of the conductor in mm^2

t = the duration of the short-circuit in seconds

The formula is acceptable for an increase in temperature from 90°C at the start to 250°C at the end (according to IEC 60093-3). In the figure the permissible short-circuit current is given in kA as a function of time (from 0.1 to 5 seconds) and as a function of the cross sectional area of the conductor.

Max Short Circuit Current in kA	Duration Short Circuit	
	0,1 Second	1 second
1	0,461	0,146
1.5	0,692	0,219
2.5	1,154	0,365
4	1,846	0,584
6	2,77	0,876
10	4,616	1,46
16	7,387	2,336
25	11,542	3,65
35	16,159	5,11
50	23,084	7,3
70	32,318	10,22
95	43,86	13,87
120	55,403	17,52
150	69,253	21,9
185	85,413	27,01
240	110,806	35,04
300	138,507	43,8
400	184,677	58,4
500	230,846	73
630	290,866	91,98

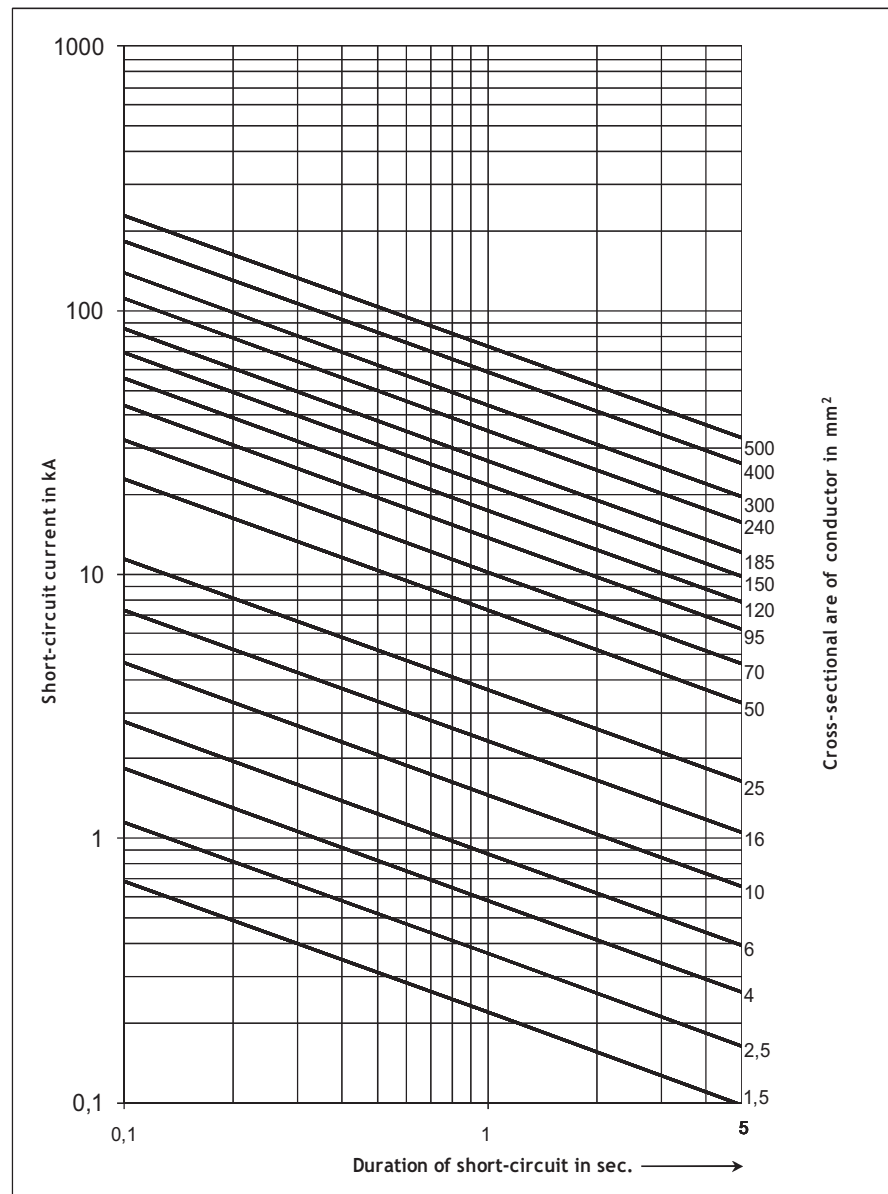
Reactance Calculations

The reactance of cables can be calculated with the following formula:

$$2 \cdot \pi \cdot f \cdot L$$

f = frequency in Hz

L = inductance in H



Technical Product information

Marine Cables

Sheath Colours & Core Identification

Overview types, standards, core identification and sheath colour

Application	Type	Standard	Core Identification	Sheath Colour
Low voltage	Marineline (+) Y(O)Z(af)p 0,6/1 kV	IEC 60092-350/-351/-353	HD308 S2-2001	black
	MarineFlex Y(O)Zp & YOQp 0,6/1 kV	IEC 60092-350/-351/-353	HD308 S2-2001	black
	MarineFlex YOZp 1,8/3 kV	IEC 60092-350/-351/-353	HD308 S2-2001	black
	Marineline (+) Y(O)Zp FR 0,6/1 kV	IEC 60331-11/21	HD308 S2-2001	orange
Medium voltage	MarinePower Y(O)Zmv 3,6-30 kV	IEC 60092-350/-351/-354	Coloured tape + numbers	red
	MarinePower Multiflex YQOQmv 6/10kV	IEC 60092-350/-351/-354	Coloured tape + numbers	red
Communication	Marine(2)Com Y(O)Z(af)(2)c 250V	IEC 60092-350/-351/-376	Blue/White cores + numbers	grey
	Marine(2)Com Y(O)Z(af)(2)c FR 250V	IEC 60331-11/21	Blue/White cores + numbers	orange
Signal	MarineSignal (+) Y(O)Zs 250V	IEC 60092-350/-351/-376	Black cores + numbers	grey

Different sheath colours on request



Core Identification




Low voltage power cables 0,6/1 kV -1,8/3kV - According to HD308 S2-2001

Cond .	Without Yellow/Green Conductor					With Yellow/Green Conductor (G)				
	N	L1/L2	L/L2	L3	L3	PE	N	L1/L2	L/L2	L3
1			Black							
2	Blue	Orange								
3		Orange	Black	Grey		Green/Yellow	Blue	Orange		
4	Blue	Orange	Black	Grey		Green/Yellow			Black	Grey
5	Blue	Orange	Black	Grey	Black	Green/Yellow	Blue	Orange		
>5			Nr.			Green/Yellow			Nr.	

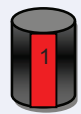
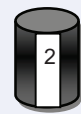
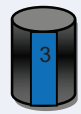
- Notes:
- 1) PE = protective conductor - beschermingsleiding - Schutzleiter - conducteur de protection
N = neutral conductor - nulleiding - Neutraleiter - conducteur neutre
L, L1, L2, L3 = phase conductors - faseleidingen - Phasenleiter - conducteurs de phase
 - 2) **Nr.** = black numbered - zwart genummerd - schwarz nummeriert - noir numéroté

Communication Cables 250 V


Pairs (n x 2 x y mm ²)	
	
1	2
3..etc	4..etc

Triples (n x 3 x y mm ²)		
		
1	2	3
4..etc	5..etc	6..etc

Medium Voltage cables 3,6-30kV

Triple Cores (YZOZmv, YQOQmv)		
		
Spiral wound red tape with number	Spiral wound white tape with number	Spiral wound blue tape with number

Signal Cables 250 V

Multicores

1
2..etc

More information

This catalogue also contains information about product families. Information at item level can be requested via our website and from our sales staff. This catalogue has been customised. Information about products that have not been included in this catalogue is available from our sales departments and can also be found on our website www.tkf.nl.



Please contact us for additional technical or commercial information. Contact information for our sales teams can be found on the next page and on our website.

Subject to changes

TKF reserves the right to make changes to its product specifications and its range of products without informing its clients of this in advance.

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Terms of delivery

Our general terms of delivery apply to all our deliveries including the products named in the catalogue. They are available via our website www.tkf.nl or from our sales departments.

Prices

Please contact our sales department for price information. The gross item prices of part of our portfolio have been included in our TPL price list. It can be downloaded via our website or requested from our sales staff.



Global customer service

Please consult the table below for the contact information for our sales teams. The latest information about our distributors worldwide is available from our sales staff and on our website (www.tkf.nl).

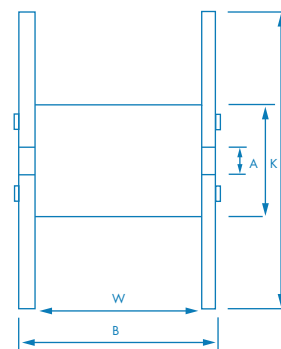
Broadband		
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Energy		
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Marine & Offshore		
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Installation		
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Industry		
Tel. +31 (0)53 573 23 90	Fax +31 (0)53 573 21 84	industry@tkf.nl
Infra		
Tel. +31(0)53 573 23 187	Fax +31 (0)53 573 21 84	infra@tkf.nl
General & Sales Support		
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Cable drum sizes and weights

A wide range of drums with various sizes and weights is used to store and transport our cables. The most common types of drum and their sizes and weights are shown in this table.

Flange diameter (F) mm	Core diameter (K) mm	Central hole diameter (A) mm	Largest width (B) mm	Winding width (W) mm	Empty weight kg	Volume m ³
*600	250	80	468	400	7,5	0,17
*800	400	100	480	400	14	0,31
800	500	100	500	485	43	0,31
*1000	500	100	605	485	28	0,31
1000	500	100	609	485	74	0,61
1200	600	100	724	600	108	1,04
1500	800	100	946	750	160	2,13
1600	800	100	1030	834	240	2,64
1800	900	100	1030	834	400	3,34
2100	900	100	1148	950	450	5,06
2250	1400	100	1122	830	600	5,68
2500	1450	100	1220	930	700	7,63
2500	1450	100	1458	1150	800	9,11
2650	1450	100	1488	1175	850	10,45
2800	1700	100	1520	1157	1050	11,92
3000	1600	100	1600	1235	1150	14,40

* Plastic drum



F = Diameter flange
K = Diameter core
A = Diameter axle-hole
B = Largest width
W = Winding width

Empty drum return

To get your empty drums in the Netherlands collected quickly, please send your request to our shipping department via the website (www.tkf.nl) or by e-mail to haspels@tkf.nl. If drums have to be collected outside the Netherlands, please contact our sales staff.





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