

HELKAMA

THE PERFECT CONNECTION

H-FLEX CABLES



04/2023

HELKAMA \ MARINE

We are flexible.

And so are our cables.



Helkama specializes in the development and production of marine and telecom cables with experience in this field going back over fifty years. The name Helkama stands for quality, flexibility and outstanding personal service.

And flexibility is what this catalogue, and Helkama, is all about. H-Flex cables are made with polyurethane compound sheath to withstand abrasion and the strain of movable applications, so they are suitable for flexible, portable and movable installation. Our H-flex cables have excellent winding and unwinding strength and they are well suited for reeling and festoons, ship-to-shore and drag chain use. The cables are perfect for use even in fish farming conditions, because they can be submersed into water and they are resistant to UV, chemicals and other fluids.

Utilizing the latest technology, we are focusing on reducing cable weight and size as well as increasing cable flexibility. Using XLPE insulation reduces the cable diameter, making it possible to fit more cables and equipment in the installation space. The smaller size combined with high flexibility, smaller bending radius and slippery sheathing materials enables easier pulling and faster installation.

In addition to standard H-flex cables, our customers can choose a completely customized H-flex cable to suit their needs. We can produce cables with hybrid properties, or for applications demanding extra strength and durability reinforce the cable to withstand immense tensile loads by using aramid fibers. This allows applications without an extra hoisting cable.

Our high technical quality has been achieved by not only continuous development work, but by working closely together with our clients. And our focus is seriously on service. Or rather, we are serious when it comes to service. Our sales team is there to help with Your project from the design phase all the way to the cables arriving on time for the assembly crew on-site.

We ship yearly to over 60 countries, to more than 1000 active customers. Our short delivery times backed up by extensive stocks enable us to deliver punctually, giving our clients better project schedule control.

We are flexible, and it's not just a slogan made up by a clever marketing team. It is who we truly are, what we do and what we are the best in the field at!



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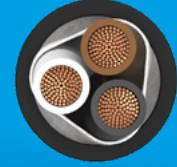
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H-FLEX PWR PUR

0.6/1 kV

Unscreened power and control cable



• Flame-retardant • Oil & chemical resistant • Halogen-free • Mud resistant

CONDUCTOR	Stranded copper conductor 1.0-300 mm ² IEC 60228 class5
INSULATION	XLPE plastic
BEDDING	Non-woven separator tape
SHEATH	Polyurethane compound Standard colour black, other colours on request



APPLICATION

Intended for flexible, portable and movable applications such as ship-to-shore cable, outdoor cranes and various industrial applications. Suitable for flexible applications in machineries, machine tools, robot technics, and can be submersed into water. Good mechanical characteristics, high tensile strength, resistant to UV, abrasion, chemicals, oil and other fluids. Good winding and unwinding strength. Suitable for drag chain use. Mud resistant according to NEK606.

PHYSICAL PROPERTIES:

MIN. BENDING RADIUS	Fixed: $4 \times \varnothing < 25 \text{ mm} < 6 \times \varnothing$ Mobile: $6 \times \varnothing < 25 \text{ mm} < 8 \times \varnothing$ S-shape deflection: $15 \times \varnothing < 25 \text{ mm} < 20 \times \varnothing$
MAX. TENSILE LOAD WITHOUT STRENGTH MEMBERS	15 N/mm ² of phases copper cross section
CORE IDENTIFICATION	Colour code for 1...4 (5 if PE conductor) core cable, number code for 5...37 core cable
MARINE TYPE APPROVALS	ABS, BV and DNV

MAIN CHARACTERISTICS:

RATED VOLTAGE	AC 0.6/1 kV (1.2 kV) DC 0.9/1.5 kV (if voltage to earth does not exceed 0.9 kV)
MAXIMUM CONDUCTOR TEMPERATURE	90 °C
FLAME-RETARDANT	IEC 60332-1-2 - test for single cable
HALOGEN-FREE	IEC 60754 series
MECHANICAL FLEX TEST	EN 50396 - conditions according to EN 50525
OIL RESISTANCE	EN 60811-404 - conditions according to EN 50363-10-2
OPERATING TEMPERATURE	-60 - 80 °C fixed use -35 - 80 °C flexible use

H-FLEX PWR PUR 0.6/1 kV

Part number	G-type	No. of conductors x Conductor area (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5300105010	5300105011	1 x 1.0	5.5	30	17
5300107010	5300107011	1 x 1.5	6.0	35	22
5300108010	5300108011	1 x 2.5	6.5	50	30
5300109010	5300109011	1 x 4	7.0	60	39
5300110010	5300110011	1 x 6	7.5	80	50
5300111010	5300111011	1 x 10	8.5	125	71
5300112010	5300112011	1 x 16	9.5	180	94
5300113010	5300113011	1 x 25	12.0	280	123
5300114010	5300114011	1 x 35	13.0	375	153
5300115010	5300115011	1 x 50	14.5	515	196
5300116010	5300116011	1 x 70	17.0	720	240
5300117010	5300117011	1 x 95	18.5	930	284
5300118010	5300118011	1 x 120	20.5	1170	331
5300119010	5300119011	1 x 150	23.5	1480	381
5300120010	5300120011	1 x 185	26.0	1805	429
5300121010	5300121011	1 x 240	29.0	2395	507
5300122010	5300122011	1 x 300	32.0	2960	582
5300105020	---	2 x 1.0	8.0	60	14
5300107020	---	2 x 1.5	8.5	65	19
5300108020	---	2 x 2.5	10.0	100	26
5300109020	---	2 x 4	11.0	130	33
5300110020	---	2 x 6	12.5	200	43
5300111020	---	2 x 10	15.0	310	60
5300112020	---	2 x 16	17.0	445	80
5300113020	---	2 x 25	21.0	690	105
5300114020	---	2 x 35	23.0	930	130
5300115020	---	2 x 50	27.0	1290	167
5300116020	---	2 x 70	31.0	1795	204
5300117020	---	2 x 95	35.0	2340	241
5300105030	5300105031	3 x 1.0	8.5	70	12
5300107030	5300107031	3 x 1.5	9.5	90	15
5300108030	5300108031	3 x 2.5	10.5	130	21
5300109030	5300109031	3 x 4	12.0	170	27
5300110030	5300110031	3 x 6	13.5	260	35
5300111030	5300111031	3 x 10	15.5	400	50
5300112030	5300112031	3 x 16	18.0	585	66
5300113030	5300113031	3 x 25	23.0	925	86
5300114030	5300114031	3 x 35	24.5	1225	107
5300115030	5300115031	3 x 50	29.0	1725	137
5300116030	5300116031	3 x 70	33.5	2420	168
5300117030	5300117031	3 x 95	37.5	3150	199
5300118030	5300118031	3 x 120	42.0	3980	232
5300119030	5300119031	3 x 150	48.0	5020	267
5300120030	5300120031	3 x 185	53.0	6155	300
5300121030	5300121031	3 x 240	60.0	8210	355
5300105040	5300105041	4 x 1.0	9.5	95	12
5300107040	5300107041	4 x 1.5	10.5	110	15
5300108040	5300108041	4 x 2.5	11.5	160	21
5300109040	5300109041	4 x 4	13.0	220	27
5300110040	5300110041	4 x 6	14.5	320	35
5300111040	5300111041	4 x 10	17.5	510	50
5300112040	5300112041	4 x 16	20.0	750	66
5300113040	5300113041	4 x 25	25.5	1170	86
5300114040	5300114041	4 x 35	27.5	1570	107

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H-FLEX PWR PUR 0.6/1 kV

Part number	G-type	No. of conductors x Conductor area (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5300115040	5300115041	4 x 50	32.5	2220	137
5300116040	5300116041	4 x 70	37.5	3110	168
5300117040	5300117041	4 x 95	42.0	4065	199
5300118040	5300118041	4 x 120	46.5	5120	232
5300119040	5300119041	4 x 150	53.5	6490	267
5300120040	5300120041	4 x 185	59.0	7955	300
5300105050	5300105051	5 x 1.0	10.5	110	10
5300107050	5300107051	5 x 1.5	11.0	130	13
5300108050	5300108051	5 x 2.5	12.5	195	17
5300109050	5300109051	5 x 4	14.0	265	23
5300110050	5300110051	5 x 6	16.0	390	29
5300111050	5300111051	5 x 10	19.0	620	41
5300112050	5300112051	5 x 16	22.0	905	55
5300113050	5300113051	5 x 25	28.0	1435	71
5300114050	5300114051	5 x 35	30.5	1935	89
5300115050	5300115051	5 x 50	35.5	2760	114
5300116050	5300116051	5 x 70	41.5	3935	139
5300117050	5300117051	5 x 95	46.0	5160	165
5300118050	5300118051	5 x 120	52.0	6630	192
5300119050	5300119051	5 x 150	59.5	8550	221
5300105060	5300105061	6 x 1.0	11.0	145	9
5300107060	5300107061	6 x 1.5	12.0	150	11
5300108060	5300108061	6 x 2.5	14.0	230	15
5300105070	5300105071	7 x 1.0	11.0	140	9
5300107070	5300107071	7 x 1.5	12.0	165	11
5300108070	5300108071	7 x 2.5	13.5	255	15
5300109070	5300109071	7 x 4	15.0	355	20
5300110070	5300110071	7 x 6	17.0	515	26
5300111070	5300111071	7 x 10	20.5	835	37
5300112070	5300112071	7 x 16	24.0	1255	49
5300113070	5300113071	7 x 25	30.5	2000	64
5300105100	5300105101	10 x 1.0	14.5	205	8
5300107100	5300107101	10 x 1.5	15.5	245	10
5300108100	5300108101	10 x 2.5	17.5	365	14
5300105120	5300105121	12 x 1.0	15.0	235	7
5300107120	5300107121	12 x 1.5	16.0	280	10
5300108120	5300108121	12 x 2.5	18.5	430	13
5300105140	5300105141	14 x 1.0	15.5	270	7
5300107140	5300107141	14 x 1.5	17.0	320	9
5300108140	5300108141	14 x 2.5	19.5	490	12
5300105160	5300105161	16 x 1.0	16.5	300	7
5300107160	5300107161	16 x 1.5	18.0	365	9
5300108160	5300108161	16 x 2.5	20.5	550	12
5300105190	5300105191	19 x 1.0	17.0	340	6
5300107190	5300107191	19 x 1.5	18.5	415	8
5300108190	5300108191	19 x 2.5	21.5	645	11

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H-FLEX PWR PUR 0.6/1 kV

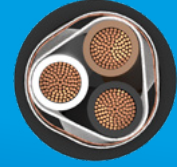
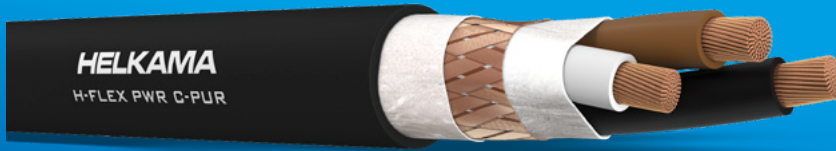
Part number	G-type	No. of conductors x Conductor area (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5300105240	5300105241	24 x 1.0	20.5	435	6
5300107240	5300107241	24 x 1.5	22.5	540	8
5300108240	5300108241	24 x 2.5	26.0	825	10
5300105270	5300105271	27 x 1.0	21.0	495	5
5300107270	5300107271	27 x 1.5	23.0	590	7
5300108270	5300108271	27 x 2.5	26.5	910	10
5300105300	5300105301	30 x 1.0	22.0	540	5
5300107300	5300107301	30 x 1.5	24.0	655	7
5300108300	5300108301	30 x 2.5	27.5	1010	9
5300105370	5300105371	37 x 1.0	23.0	640	5
5300107370	5300107371	37 x 1.5	25.5	780	7
5300108370	5300108371	37 x 2.5	29.0	1205	9
---	5330113031	3 x 25 + 3 x 6	23.0	1060	86
---	5330114031	3 x 35 + 3 x 6	25.0	1355	107
---	5330115031	3 x 50 + 3 x 10	29.0	1940	137
---	5330116031	3 x 70 + 3 x 16	33.5	2765	168
---	5330117031	3 x 95 + 3 x 16	37.5	3475	199
---	5330118031	3 x 120 + 3 x 25	42.0	4530	232
---	5330119031	3 x 150 + 3 x 25	48.5	5560	267
---	5330120031	3 x 185 + 3 x 35	53.0	6880	300
---	5330121031	3 x 240 + 3 x 50	60.0	9190	355



H-FLEX PWR C-PUR

0.6/1 kV

Screened power and control cable



• Flame-retardant • Oil & chemical resistant • Halogen-free • Mud resistant

CONDUCTOR	Stranded copper conductor 1.0-300 mm ² IEC 60228 class5
INSULATION	XLPE plastic
BEDDING	Non-woven separator tape
SCREEN	Copper wire braid, coverage > 94%
SHEATH	Polyurethane compound Standard colour black, other colours on request



APPLICATION

Intended for flexible, portable and movable applications such as ship-to-shore cable, outdoor cranes and various industrial applications. Suitable for flexible applications in machineries, machine tools, robot technics, and can be submersed into water. Good mechanical characteristics, high tensile strength, resistant to UV, abrasion, chemicals, oil and other fluids. Good winding and unwinding strength. Suitable for drag chain use. Mud resistant according to NEK606.

PHYSICAL PROPERTIES:

MIN. BENDING RADIUS	Fixed: 4 x Ø < 25 mm < 6 x Ø Mobile: 8 x Ø < 25 mm < 10 x Ø S-shape deflection: 15 x Ø < 25 mm < 20 x Ø
MAX. TENSILE LOAD WITHOUT STRENGTH MEMBERS	15 N/mm ² of phases copper cross section
CORE IDENTIFICATION	Colour code for 1...4 (5 if PE conductor) core cable, number code for 5...37 core cable
MARINE TYPE APPROVALS	ABS, BV and DNV

MAIN CHARACTERISTICS:

RATED VOLTAGE	AC 0.6/1 kV (1.2 kV) DC 0.9/1.5 kV (if voltage to earth does not exceed 0.9 kV)
MAXIMUM CONDUCTOR TEMPERATURE	90 °C
FLAME-RETARDANT	IEC 60332-1-2 - test for single cable
HALOGEN-FREE	IEC 60754 series
MECHANICAL FLEX TEST	EN 50396 - conditions according to EN 50525
OIL RESISTANCE	EN 60811-404 - conditions according to EN 50363-10-2
OPERATING TEMPERATURE	-60 - 80 °C fixed use -35 - 80 °C flexible use

H-FLEX PWR C-PUR 0.6/1 kV

Part number	G-type	No. of conductors x Conductor area (mm ²)	Screen Cross-section (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5400105010	5400105011	1 x 1.0	1.9	6.0	50	17
5400107010	5400107011	1 x 1.5	1.9	6.5	55	22
5400108010	5400108011	1 x 2.5	1.9	7.0	70	30
5400109010	5400109011	1 x 4	2.6	7.5	90	39
5400110010	5400110011	1 x 6	2.6	8.0	110	50
5400111010	5400111011	1 x 10	3.3	9.0	155	71
5400112010	5400112011	1 x 16	3.3	10.5	220	94
5400113010	5400113011	1 x 25	3.9	12.5	320	123
5400114010	5400114011	1 x 35	4.6	13.5	420	153
5400115010	5400115011	1 x 50	5.9	15.5	570	196
5400116010	5400116011	1 x 70	6.0	17.5	780	240
5400117010	5400117011	1 x 95	7.0	19.5	1005	284
5400118010	5400118011	1 x 120	7.3	21.0	1245	331
5400119010	5400119011	1 x 150	8.2	24.0	1560	381
5400120010	5400120011	1 x 185	9.1	26.5	1895	429
5400121010	5400121011	1 x 240	10.2	29.5	2505	507
5400122010	5400122011	1 x 300	11.2	33.0	3095	582
5400105020	---	2 x 1.0	3.3	9.0	90	14
5400107020	---	2 x 1.5	3.3	10.0	105	19
5400108020	---	2 x 2.5	3.3	11.0	130	26
5400109020	---	2 x 4	3.9	12.0	165	33
5400110020	---	2 x 6	4.6	13.0	260	43
5400111020	---	2 x 10	5.9	15.5	380	60
5400112020	---	2 x 16	7.0	17.5	530	80
5400113020	---	2 x 25	7.3	22.0	780	105
5400114020	---	2 x 35	8.4	24.0	1015	130
5400115020	---	2 x 50	9.8	27.5	1390	167
5400116020	---	2 x 70	11.3	32.0	1930	204
5400117020	---	2 x 95	12.8	35.5	2460	241
5400105030	5400105031	3 x 1.0	3.3	9.5	110	12
5400107030	5400107031	3 x 1.5	3.3	10.0	125	15
5400108030	5400108031	3 x 2.5	3.9	11.5	165	21
5400109030	5400109031	3 x 4	4.1	12.5	215	27
5400110030	5400110031	3 x 6	4.6	14.0	305	35
5400111030	5400111031	3 x 10	6.0	16.5	470	50
5400112030	5400112031	3 x 16	7.0	19.0	660	66
5400113030	5400113031	3 x 25	7.9	23.5	1000	86
5400114030	5400114031	3 x 35	9.0	25.5	1310	107
5400115030	5400115031	3 x 50	10.6	29.5	1805	137
5400116030	5400116031	3 x 70	12.1	34.5	2505	168
5400117030	5400117031	3 x 95	13.9	38.0	3240	199
5400118030	5400118031	3 x 120	15.4	42.5	4075	232
5400119030	5400119031	3 x 150	17.2	49.0	5145	267
5400120030	5400120031	3 x 185	19.2	53.5	6245	300
5400121030	5400121031	3 x 240	21.7	60.5	8290	355
5400105040	5400105041	4 x 1.0	3.3	10.5	130	12
5400107040	5400107041	4 x 1.5	3.9	11.0	150	15
5400108040	5400108041	4 x 2.5	4.0	12.5	200	21
5400109040	5400109041	4 x 4	4.6	13.5	265	27
5400110040	5400110041	4 x 6	5.9	15.5	380	35
5400111040	5400111041	4 x 10	7.0	18.0	575	50
5400112040	5400112041	4 x 16	7.1	21.0	830	66
5400113040	5400113041	4 x 25	8.8	26.0	1280	86
5400114040	5400114041	4 x 35	10.0	28.0	1685	107
5400115040	5400115041	4 x 50	11.7	33.0	2340	137

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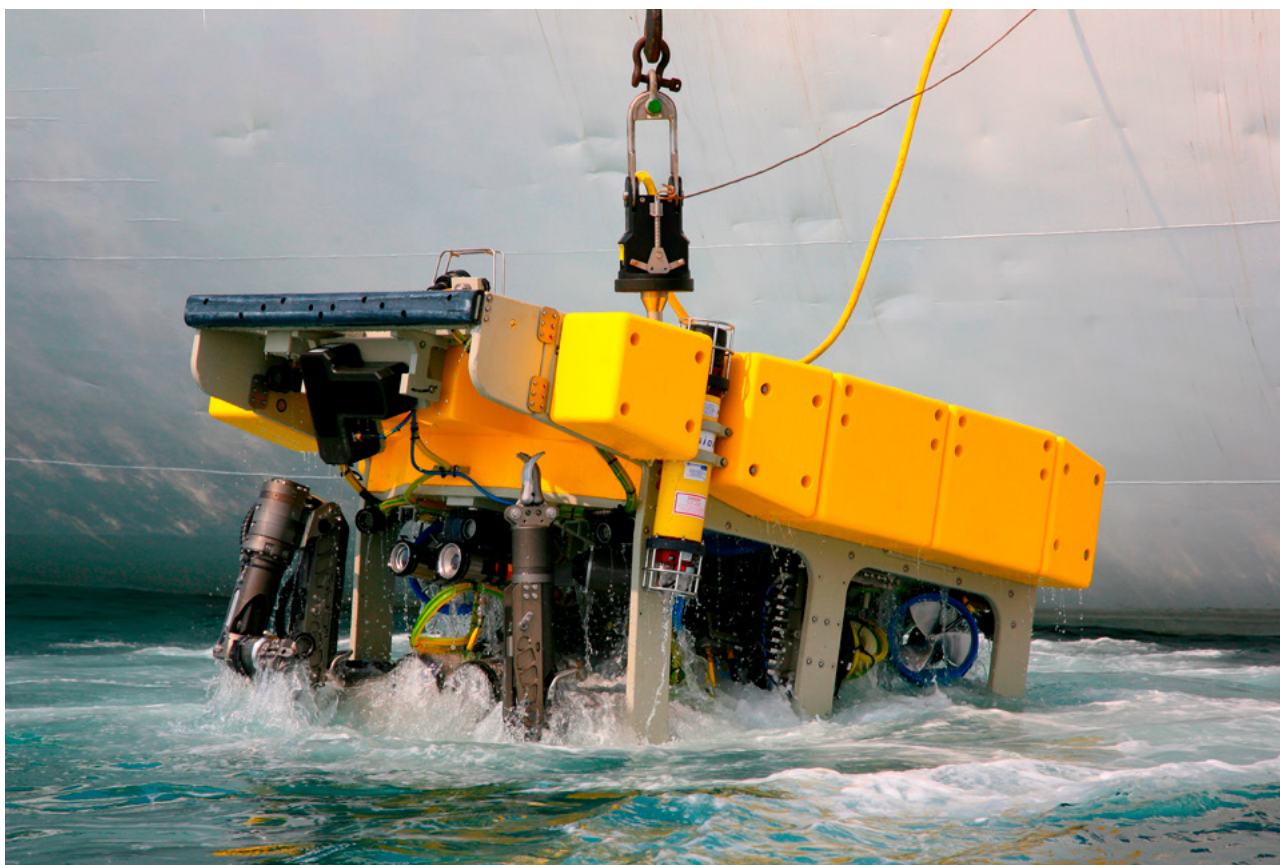
H-FLEX PWR C-PUR 0.6/1 kV

Part number	G-type	No. of conductors x Conductor area (mm ²)	Screen Cross-section (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5400116040	5400116041	4 x 70	13.5	38.0	3260	168
5400117040	5400117041	4 x 95	15.4	42.5	4220	199
5400118040	5400118041	4 x 120	17.2	47.5	5325	232
5400119040	5400119041	4 x 150	19.3	54.5	6725	267
5400120040	5400120041	4 x 185	21.6	60.0	8170	300
5400105050	5400105051	5 x 1.0	3.9	11.0	155	10
5400107050	5400107051	5 x 1.5	3.9	12.0	175	13
5400108050	5400108051	5 x 2.5	4.6	13.5	245	17
5400109050	5400109051	5 x 4	5.9	14.5	330	23
5400110050	5400110051	5 x 6	6.0	16.5	450	29
5400111050	5400111051	5 x 10	7.0	20.0	695	41
5400112050	5400112051	5 x 16	7.8	23.0	970	55
5400113050	5400113051	5 x 25	9.8	28.5	1480	71
5400114050	5400114051	5 x 35	11.2	31.5	2065	89
5400115050	5400115051	5 x 50	13.1	36.5	2885	114
5400116050	5400116051	5 x 70	15.1	42.5	4075	139
5400117050	5400117051	5 x 95	17.1	47.5	5350	165
5400118050	5400118051	5 x 120	19.2	52.5	6805	192
5400119050	5400119051	5 x 150	21.6	60.0	8745	221
5400105060	5400105061	6 x 1.0	3.9	12.0	190	9
5400107060	5400107061	6 x 1.5	4.3	13.0	205	11
5400108060	5400108061	6 x 2.5	4.8	14.5	285	15
5400105070	5400105071	7 x 1.0	3.9	12.0	180	9
5400107070	5400107071	7 x 1.5	4.3	13.0	215	11
5400108070	5400108071	7 x 2.5	4.8	14.5	300	15
5400109070	5400109071	7 x 4	6.0	16.0	415	20
5400110070	5400110071	7 x 6	7.0	18.0	560	26
5400111070	5400111071	7 x 10	7.4	21.5	870	37
5400112070	5400112071	7 x 16	8.7	25.5	1300	49
5400113070	5400113071	7 x 25	10.9	31.5	2020	64
5400105100	5400105101	10 x 1.0	5.9	15.0	270	8
5400107100	5400107101	10 x 1.5	6.0	16.5	310	10
5400108100	5400108101	10 x 2.5	7.0	18.5	445	14
5400105120	5400105121	12 x 1.0	6.0	15.5	295	7
5400107120	5400107121	12 x 1.5	6.0	17.0	340	10
5400108120	5400108121	12 x 2.5	7.0	19.0	495	13
5400105140	5400105141	14 x 1.0	6.0	16.5	325	7
5400107140	5400107141	14 x 1.5	6.3	18.0	385	9
5400108140	5400108141	14 x 2.5	7.1	20.0	555	12
5400105160	5400105161	16 x 1.0	6.0	17.0	360	7
5400107160	5400107161	16 x 1.5	7.0	18.5	435	9
5400108160	5400108161	16 x 2.5	7.6	21.5	640	12
5400105190	5400105191	19 x 1.0	7.0	18.0	415	6
5400107190	5400107191	19 x 1.5	7.1	19.5	485	8
5400108190	5400108191	19 x 2.5	8.0	22.5	725	11
5400105240	5400105241	24 x 1.0	7.7	21.5	525	6

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H-FLEX PWR C-PUR 0.6/1 kV

Part number	G-type	No. of conductors x Conductor area (mm ²)	Screen Cross-section (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5400107240	5400107241	24 x 1.5	8.5	23.0	620	8
5400108240	5400108241	24 x 2.5	9.6	26.5	915	10
5400105270	5400105271	27 x 1.0	7.9	22.0	570	5
5400107270	5400107271	27 x 1.5	8.7	24.0	680	7
5400108270	5400108271	27 x 2.5	9.9	27.0	1010	10
5400105300	5400105301	30 x 1.0	8.2	22.5	620	5
5400107300	5400107301	30 x 1.5	9.1	24.5	740	7
5400108300	5400108301	30 x 2.5	10.3	28.0	1105	9
5400105370	5400105371	37 x 1.0	8.9	24.5	735	5
5400107370	5400107371	37 x 1.5	9.9	26.5	885	7
5400108370	5400108371	37 x 2.5	11.2	30.5	1335	9
---	5430113031	3 x 25 + 3 x 6	8.0	24.0	1150	86
---	5430114031	3 x 35 + 3 x 6	9.1	26.0	1455	107
---	5430115031	3 x 50 + 3 x 10	10.7	30.0	2055	137
---	5430116031	3 x 70 + 3 x 16	12.3	35.0	2910	168
---	5430117031	3 x 95 + 3 x 16	14.0	38.5	3630	199
---	5430118031	3 x 120 + 3 x 25	15.5	43.0	4700	232
---	5430119031	3 x 150 + 3 x 25	17.3	49.5	5745	267
---	5430120031	3 x 185 + 3 x 35	19.3	54.5	7125	300
---	5430121031	3 x 240 + 3 x 50	21.9	61.5	9470	355



H-FLEX CTL PUR

250 V

Unscreened control cable



• Flame-retardant • Oil & chemical resistant • Halogen-free • Mud resistant

CONDUCTOR	Stranded copper conductor IEC 60228 class5
INSULATION	XLPE plastic
BEDDING	Separator tape
SHEATH	Polyurethane compound Standard colour black, other colours on request



APPLICATION

Intended for flexible, portable and movable applications such as ship-to-shore cable, outdoor cranes and various industrial applications. Suitable for flexible applications in machineries, machine tools, robot technics, and can be submersed into water. Good mechanical characteristics, high tensile strength, resistant to UV, abrasion, chemicals, oil and other fluids. Good winding and unwinding strength. Suitable for drag chain use. Mud resistant according to NEK606.

PHYSICAL PROPERTIES:

MIN. BENDING RADIUS	Fixed: $4 \times \varnothing < 25 \text{ mm} < 6 \times \varnothing$ Mobile: $6 \times \varnothing < 25 \text{ mm} < 8 \times \varnothing$ S-shape deflection: $15 \times \varnothing < 25 \text{ mm} < 20 \times \varnothing$
MAX. TENSILE LOAD WITHOUT STRENGTH MEMBERS	15 N/mm ² of phases copper cross section
CORE IDENTIFICATION	White insulation with black numbers
MARINE TYPE APPROVALS	ABS, BV, and DNV

MAIN CHARACTERISTICS:

RATED VOLTAGE	150/250 V (300 V)
MAXIMUM CONDUCTOR TEMPERATURE	90 °C
FLAME-RETARDANT	IEC 60332-1-2 - test for single cable
HALOGEN-FREE	IEC 60754 series
MECHANICAL FLEX TEST	EN 50396 - conditions according to EN 50525
OIL RESISTANCE	EN 60811-404 - conditions according to EN 50363-10-2
OPERATING TEMPERATURE	-60 - 80 °C fixed use -35 - 80 °C flexible use

H-FLEX CTL PUR 250 V

Part number	G-type	No. of conductors x Conductor area (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5300103020	---	2 x 0.5	6.0	35.0	8.7
5300103030	5300103031	3 x 0.5	6.5	40.0	7.6
5300103040	5300103041	4 x 0.5	7.0	50.0	6.9
5300103050	5300103051	5 x 0.5	8.0	60.0	6.4
5300103070	5300103071	7 x 0.5	8.0	70.0	5.8
5300103100	5300103101	10 x 0.5	10.5	105.0	5.1
5300103120	5300103121	12 x 0.5	11.0	120.0	4.8
5300103140	5300103141	14 x 0.5	11.5	135.0	4.6
5300103160	5300103161	16 x 0.5	12.5	155.0	4.4
5300103190	5300103191	19 x 0.5	12.5	170.0	4.1
5300103200	5300103201	20 x 0.5	12.5	180.0	4.1
5300103240	5300103241	24 x 0.5	14.5	220.0	3.8
5300103270	5300103271	27 x 0.5	15.0	235.0	3.7
5300103320	5300103321	32 x 0.5	15.5	270.0	3.5
5300103370	5300103371	37 x 0.5	17.0	310.0	3.3
5300104020	---	2 x 0.75	7.0	40.0	11.3
5300104030	5300104031	3 x 0.75	7.0	50.0	9.8
5300104040	5300104041	4 x 0.75	7.5	65.0	8.9
5300104050	5300104051	5 x 0.75	9.0	80.0	8.3
5300104070	5300104071	7 x 0.75	9.0	95.0	7.4
5300104100	5300104101	10 x 0.75	12.0	145.0	6.6
5300104120	5300104121	12 x 0.75	12.0	165.0	6.2
5300104140	5300104141	14 x 0.75	13.0	190.0	5.9
5300104160	5300104161	16 x 0.75	14.0	215.0	5.6
5300104190	5300104191	19 x 0.75	14.0	240.0	5.3
5300104200	5300104201	20 x 0.75	14.0	255.0	5.2
5300104240	5300104241	24 x 0.75	16.5	305.0	4.9
5300104270	5300104271	27 x 0.75	17.0	335.0	4.7
5300104320	5300104321	32 x 0.75	17.5	385.0	4.5
5300104370	5300104371	37 x 0.75	19.0	440.0	4.3



H-FLEX CTL C-PUR

250 V

Screened control cable



• Flame-retardant • Oil & chemical resistant • Halogen-free • Mud resistant

CONDUCTOR	Stranded copper conductor IEC 60228 class5
INSULATION	XLPE plastic
BEDDING	Separator tape
SCREEN	Copper wire braid, coverage > 94%
SHEATH	Polyurethane compound Standard colour black, other colours on request



APPLICATION

Intended for flexible, portable and movable applications such as ship-to-shore cable, outdoor cranes and various industrial applications. Suitable for flexible applications in machineries, machine tools, robot technics, and can be submersed into water. Good mechanical characteristics, high tensile strength, resistant to UV, abrasion, chemicals, oil and other fluids. Good winding and unwinding strength. Suitable for drag chain use. Mud resistant according to NEK606.

PHYSICAL PROPERTIES:

MIN. BENDING RADIUS	Fixed: $4 \times \varnothing < 25 \text{ mm} < 6 \times \varnothing$ Mobile: $8 \times \varnothing < 25 \text{ mm} < 10 \times \varnothing$ S-shape deflection: $15 \times \varnothing < 25 \text{ mm} < 20 \times \varnothing$
MAX. TENSILE LOAD WITHOUT STRENGTH MEMBERS	15 N/mm ² of phases copper cross section
CORE IDENTIFICATION	White insulation with black numbers
MARINE TYPE APPROVALS	ABS, BV and DNV

MAIN CHARACTERISTICS:

RATED VOLTAGE	150/250 V (300 V)
MAXIMUM CONDUCTOR TEMPERATURE	90 °C
FLAME-RETARDANT	IEC 60332-1-2 - test for single cable
HALOGEN-FREE	IEC 60754 series
MECHANICAL FLEX TEST	EN 50396 - conditions according to EN 50525
OIL RESISTANCE	EN 60811-404 - conditions according to EN 50363-10-2
OPERATING TEMPERATURE	-60 - 80 °C fixed use -35 - 80 °C flexible use

H-FLEX CTL C-PUR 250 V

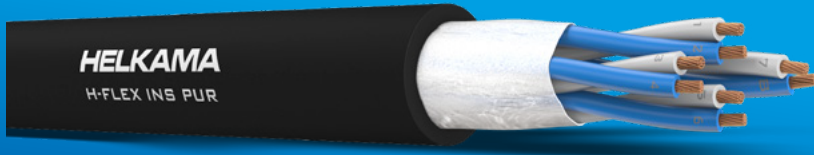
Part number	G-type	No. of conductors x Conductor area (mm ²)	Screen Cross-section (mm ²)	Nominal outer Ø (mm)	Weight kg/km	Current rating A
5400103020	---	2 x 0.5	2.6	7.0	60	8.7
5400103030	5400103031	3 x 0.5	2.6	7.5	70	7.6
5400103040	5400103041	4 x 0.5	2.6	8.0	75	6.9
5400103050	5400103051	5 x 0.5	3.2	9.0	95	6.4
5400103070	5400103071	7 x 0.5	3.2	9.0	105	5.8
5400103100	5400103101	10 x 0.5	3.9	11.5	150	5.1
5400103120	5400103121	12 x 0.5	3.9	12.0	160	4.8
5400103140	5400103141	14 x 0.5	3.9	12.5	175	4.6
5400103160	5400103161	16 x 0.5	4.6	13.5	205	4.4
5400103190	5400103191	19 x 0.5	4.6	13.5	220	4.1
5400103200	5400103201	20 x 0.5	4.7	13.5	235	4.1
5400103240	5400103241	24 x 0.5	5.9	16.0	285	3.8
5400103270	5400103271	27 x 0.5	5.9	16.0	305	3.7
5400103320	5400103321	32 x 0.5	6.0	16.5	335	3.5
5400103370	5400103371	37 x 0.5	7.0	17.5	380	3.3
5400104020	---	2 x 0.75	2.6	7.5	70	11.3
5400104030	5400104031	3 x 0.75	2.6	8.0	80	9.8
5400104040	5400104041	4 x 0.75	2.6	8.5	90	8.9
5400104050	5400104051	5 x 0.75	3.3	10.5	120	8.3
5400104070	5400104071	7 x 0.75	3.3	10.5	135	7.4
5400104100	5400104101	10 x 0.75	4.1	13.0	190	6.6
5400104120	5400104121	12 x 0.75	4.6	13.0	215	6.2
5400104140	5400104141	14 x 0.75	4.6	14.0	235	5.9
5400104160	5400104161	16 x 0.75	4.9	15.0	265	5.6
5400104190	5400104191	19 x 0.75	5.9	15.0	300	5.3
5400104200	5400104201	20 x 0.75	6.0	15.0	320	5.2
5400104240	5400104241	24 x 0.75	7.0	17.5	375	4.9
5400104270	5400104271	27 x 0.75	7.0	18.0	405	4.7
5400104320	5400104321	32 x 0.75	7.0	19.0	460	4.5
5400104370	5400104371	37 x 0.75	7.1	20.0	515	4.3



H-FLEX INS PUR

250 V

Unscreened instrumentation and control cable



• Flame-retardant • Oil & chemical resistant • Halogen-free • Mud resistant

CONDUCTOR	Stranded copper conductor IEC 60228 class5
INSULATION	XLPE plastic
TWISTED PAIR	Two insulated cores twisted together to form a pair See next page for Quad
SHEATH	Polyurethane compound Standard colour black, other colours on request



APPLICATION

Intended for flexible, portable and movable applications such as ship-to-shore cable, outdoor cranes and various industrial applications. Suitable for flexible applications in machineries, machine tools, robot technics, and can be submersed into water. Good mechanical characteristics, high tensile strength, resistant to UV, abrasion, chemicals, oil and other fluids. Good winding and unwinding strength. Suitable for drag chain use. Mud resistant according to NEK606.

PHYSICAL PROPERTIES:

MIN. BENDING RADIUS	Fixed: $4 \times \emptyset < 25 \text{ mm} < 6 \times \emptyset$ Mobile: $6 \times \emptyset < 25 \text{ mm} < 8 \times \emptyset$ S-shape deflection: $15 \times \emptyset < 25 \text{ mm} < 20 \times \emptyset$
MAX. TENSILE LOAD WITHOUT STRENGTH MEMBERS	15 N/mm ² of phases copper cross section
CORE IDENTIFICATION	White and blue insulation with black numbers
MARINE TYPE APPROVALS	ABS, BV and DNV

MAIN CHARACTERISTICS:

RATED VOLTAGE	150/250 V (300 V)
MAXIMUM CONDUCTOR TEMPERATURE	90 °C
FLAME-RETARDANT	IEC 60332-1-2 - test for single cable
HALOGEN-FREE	IEC 60754 series
MECHANICAL FLEX TEST	EN 50396 - conditions according to EN 50525
OIL RESISTANCE	EN 60811-404 - conditions according to EN 50363-10-2
OPERATING TEMPERATURE	-60 - 80 °C fixed use -35 - 80 °C flexible use

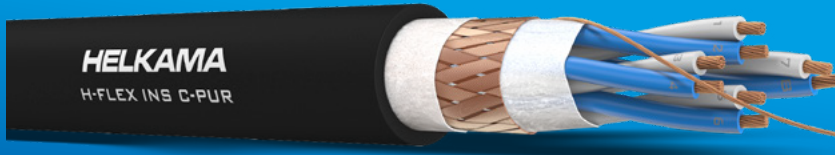
H-FLEX INS PUR 250 V

Part number	No. of conductors x Conductor area (mm ²)	Nominal outer Ø (mm)	Weight kg/km
5900103012	1 x 2 x 0.5	6.0	35
5900103013	1 x 3 x 0.5	6.5	40
5900103014	1 x 4 x 0.5	7.0	50
5900103022	2 x 2 x 0.5	9.0	55
5900103032	3 x 2 x 0.5	9.0	70
5900103042	4 x 2 x 0.5	10.5	95
5900103072	7 x 2 x 0.5	12.5	140
5900103082	8 x 2 x 0.5	13.0	160
5900103102	10 x 2 x 0.5	15.0	195
5900103122	12 x 2 x 0.5	15.5	230
5900103142	14 x 2 x 0.5	16.5	260
5900103162	16 x 2 x 0.5	17.5	290
5900103192	19 x 2 x 0.5	19.0	335
5900103242	24 x 2 x 0.5	21.5	430
5900103272	27 x 2 x 0.5	22.5	475
5900103302	30 x 2 x 0.5	23.5	520
5900103322	32 x 2 x 0.5	24.0	550
5900103372	37 x 2 x 0.5	26.0	630
5900104012	1 x 2 x 0.75	7.0	40
5900104013	1 x 3 x 0.75	7.0	50
5900104014	1 x 4 x 0.75	7.5	65
5900104022	2 x 2 x 0.75	10.0	80
5900104032	3 x 2 x 0.75	10.5	100
5900104042	4 x 2 x 0.75	11.5	125
5900104072	7 x 2 x 0.75	14.0	195
5900104082	8 x 2 x 0.75	15.0	225
5900104102	10 x 2 x 0.75	17.0	275
5900104122	12 x 2 x 0.75	18.0	320
5900104142	14 x 2 x 0.75	19.0	365
5900104162	16 x 2 x 0.75	20.0	410
5900104192	19 x 2 x 0.75	22.0	490
5900104242	24 x 2 x 0.75	24.5	610
5900104272	27 x 2 x 0.75	26.0	675
5900104302	30 x 2 x 0.75	27.0	750
5900104322	32 x 2 x 0.75	28.0	790
5900104372	37 x 2 x 0.75	29.5	895
5900107012	1 x 2 x 1.5	8.5	65
5900107013	1 x 3 x 1.5	9.0	85
5900107014	1 x 4 x 1.5	10.0	110
5900107022	2 x 2 x 1.5	13.0	135
5900107032	3 x 2 x 1.5	14.0	175
5900107042	4 x 2 x 1.5	15.0	215
5900107072	7 x 2 x 1.5	18.5	345
5900107082	8 x 2 x 1.5	20.0	395
5900107102	10 x 2 x 1.5	23.0	500
5900107122	12 x 2 x 1.5	24.0	580
5900107142	14 x 2 x 1.5	25.5	675
5900107162	16 x 2 x 1.5	27.0	755
5900107192	19 x 2 x 1.5	29.5	890
5900107242	24 x 2 x 1.5	33.0	1130
5900107272	27 x 2 x 1.5	35.0	1255
5900107302	30 x 2 x 1.5	36.5	1375
5900107322	32 x 2 x 1.5	38.0	1470
5900108012	1 x 2 x 2.5	10.0	100
5900108013	1 x 3 x 2.5	10.5	125
5900108014	1 x 4 x 2.5	11.5	155
5900108022	2 x 2 x 2.5	15.0	185
5900108032	3 x 2 x 2.5	15.5	245
5900108042	4 x 2 x 2.5	17.5	320
5900108072	7 x 2 x 2.5	21.0	520
5900108082	8 x 2 x 2.5	23.0	600
5900108102	10 x 2 x 2.5	26.0	750
5900108122	12 x 2 x 2.5	27.5	875
5900108142	14 x 2 x 2.5	29.5	1010
5900108162	16 x 2 x 2.5	31.5	1140
5900108192	19 x 2 x 2.5	34.0	1355
5900108242	24 x 2 x 2.5	38.0	1705

H-FLEX INS C-PUR

250 V

Screened instrumentation and control cable



• Flame-retardant • Oil & chemical resistant • Halogen-free • Mud resistant

CONDUCTOR	Stranded copper conductor IEC 60228 class5
INSULATION	XLPE plastic
TWISTED PAIR	Two insulated cores twisted together to form a pair See next page for Quad
SCREEN	Copper wire braid, coverage > 94%
SHEATH	Polyurethane compound Standard colour black, other colours on request



APPLICATION

Intended for flexible, portable and movable applications such as ship-to-shore cable, outdoor cranes and various industrial applications. Suitable for flexible applications in machineries, machine tools, robot technics, and can be submersed into water. Good mechanical characteristics, high tensile strength, resistant to UV, abrasion, chemicals, oil and other fluids. Good winding and unwinding strength. Suitable for drag chain use. Mud resistant according to NEK606.

PHYSICAL PROPERTIES:

MIN. BENDING RADIUS	Fixed: $4 \times \varnothing < 25 \text{ mm} < 6 \times \varnothing$ Mobile: $8 \times \varnothing < 25 \text{ mm} < 10 \times \varnothing$ S-shape deflection: $15 \times \varnothing < 25 \text{ mm} < 20 \times \varnothing$
MAX. TENSILE LOAD WITHOUT STRENGTH MEMBERS	15 N/mm ² of phases copper cross section
CORE IDENTIFICATION	White and blue insulation with black numbers
MARINE TYPE APPROVALS	ABS, BV and DNV

MAIN CHARACTERISTICS:

RATED VOLTAGE	150/250 V (300 V)
MAXIMUM CONDUCTOR TEMPERATURE	90 °C
FLAME-RETARDANT	IEC 60332-1-2 - test for single cable
HALOGEN-FREE	IEC 60754 series
MECHANICAL FLEX TEST	EN 50396 - conditions according to EN 50525
OIL RESISTANCE	EN 60811-404 - conditions according to EN 50363-10-2
OPERATING TEMPERATURE	-60 - 80 °C fixed use -35 - 80 °C flexible use

H-FLEX INS C-PUR 250 V

Part number	Number of conductors & cross-section n x mm ²	Screen Cross-section (mm ²)	Nominal outer Ø (mm)	Weight kg/km
5700103012	1 x 2 x 0.5	2.6	7.0	60
5700103013	1 x 3 x 0.5	2.6	7.5	70
5700103014	1 x 4 x 0.5	2.6	8.0	75
5700103022	2 x 2 x 0.5	3.3	10.0	100
5700103032	3 x 2 x 0.5	3.5	10.5	115
5700103042	4 x 2 x 0.5	3.9	11.5	135
5700103072	7 x 2 x 0.5	4.7	13.5	195
5700103082	8 x 2 x 0.5	5.1	14.0	210
5700103102	10 x 2 x 0.5	6.0	16.0	260
5700103122	12 x 2 x 0.5	6.2	16.5	290
5700103142	14 x 2 x 0.5	7.0	17.5	330
5700103162	16 x 2 x 0.5	7.1	19.0	365
5700103192	19 x 2 x 0.5	7.7	20.0	415
5700103242	24 x 2 x 0.5	8.6	22.5	515
5700103272	27 x 2 x 0.5	9.1	23.5	565
5700103302	30 x 2 x 0.5	9.6	24.5	625
5700103322	32 x 2 x 0.5	9.9	25.5	655
5700103372	37 x 2 x 0.5	10.6	27.0	735
5700104012	1 x 2 x 0.75	2.6	7.5	70
5700104013	1 x 3 x 0.75	2.6	8.0	80
5700104014	1 x 4 x 0.75	2.7	9.0	100
5700104022	2 x 2 x 0.75	3.9	11.0	120
5700104032	3 x 2 x 0.75	4.0	11.5	145
5700104042	4 x 2 x 0.75	4.5	13.0	175
5700104072	7 x 2 x 0.75	5.5	15.0	250
5700104082	8 x 2 x 0.75	6.0	16.0	285
5700104102	10 x 2 x 0.75	7.1	18.0	350
5700104122	12 x 2 x 0.75	7.1	19.0	395
5700104142	14 x 2 x 0.75	7.7	20.0	440
5700104162	16 x 2 x 0.75	8.2	21.5	505
5700104192	19 x 2 x 0.75	8.9	23.0	580
5700104242	24 x 2 x 0.75	10.0	25.5	715
5700104272	27 x 2 x 0.75	10.6	27.0	785
5700104302	30 x 2 x 0.75	11.2	28.0	855
5700104322	32 x 2 x 0.75	11.5	29.0	905
5700104372	37 x 2 x 0.75	12.2	31.0	1040
5700107012	1 x 2 x 1.5	3.3	10.0	105
5700107013	1 x 3 x 1.5	3.3	10.0	140
5700107014	1 x 4 x 1.5	3.9	11.0	150
5700107022	2 x 2 x 1.5	5.1	14.0	185
5700107032	3 x 2 x 1.5	5.4	15.0	230
5700107042	4 x 2 x 1.5	6.0	16.5	285
5700107072	7 x 2 x 1.5	7.4	19.5	425
5700107082	8 x 2 x 1.5	8.0	21.0	490
5700107102	10 x 2 x 1.5	9.3	24.0	600
5700107122	12 x 2 x 1.5	9.8	25.0	685
5700107142	14 x 2 x 1.5	10.6	26.5	780
5700107162	16 x 2 x 1.5	11.2	28.5	875
5700107192	19 x 2 x 1.5	12.2	30.5	1010
5700107242	24 x 2 x 1.5	13.6	34.0	1265
5700107272	27 x 2 x 1.5	14.4	36.0	1395
5700107302	30 x 2 x 1.5	15.3	37.5	1540
5700107322	32 x 2 x 1.5	15.7	38.5	1625
5700108012	1 x 2 x 2.5	3.6	11.0	135
5700108013	1 x 3 x 2.5	3.9	11.5	165
5700108014	1 x 4 x 2.5	4.3	12.5	205
5700108022	2 x 2 x 2.5	6.0	16.0	250
5700108032	3 x 2 x 2.5	6.3	17.0	315
5700108042	4 x 2 x 2.5	7.1	18.5	390
5700108072	7 x 2 x 2.5	8.6	22.5	620
5700108082	8 x 2 x 2.5	9.3	24.0	695
5700108102	10 x 2 x 2.5	10.8	27.5	865
5700108122	12 x 2 x 2.5	11.3	28.5	995
5700108142	14 x 2 x 2.5	12.2	30.5	1130
5700108162	16 x 2 x 2.5	13.1	32.5	1290
5700108192	19 x 2 x 2.5	14.2	35.0	1505
5700108242	24 x 2 x 2.5	16.1	39.5	1890

TECHNICAL INFORMATION

ELECTRICAL DATA

H-FLEX PWR PUR AND H-FLEX PWR C-PUR

Size	Conductor resistance, max./20 °C ohm/km	Insulation resistance max./20 °C Mohm/km
1.0 mm ²	19.5	1300
1.5 mm ²	13.3	1100
2.5 mm ²	7.98	900
4 mm ²	4.95	700
6 mm ²	3.30	600
10 mm ²	1.91	500
16 mm ²	1.21	400
25 mm ²	0.78	500
35 mm ²	0.554	400
50 mm ²	0.386	400
70 mm ²	0.272	400
95 mm ²	0.206	300
120 mm ²	0.161	300
150 mm ²	0.129	300
185 mm ²	0.106	400
240 mm ²	0.0801	300
300 mm ²	0.0641	300

H-FLEX CTL PUR AND H-FLEX CTL C-PUR

Size	Loop resistance, max./20 °C ohm/km	Loop inductance, nom. mH/km	Insulation resistance max./20 °C Mohm/km
0.5 mm ²	82.8	0.6	1000
0.75 mm ²	55.2	0.6	1100

H-FLEX INS PUR AND H-FLEX INS C-PUR

Size	Loop resistance of pair, max./20 °C ohm/km	Pair capacitance, nom. nF/km	Loop inductance, nom. mH/km	Insulation resistance max./20 °C Mohm/km
0.5 mm ²	82.8	55	0.6	1000
0.75 mm ²	55.2	55	0.6	1100
1.5 mm ²	28.2	60	0.7	1100
2.5 mm ²	16.94	60	0.7	900

OIL RESISTANCE

Sheathing material is oil resistant according to method EN 60811-404 and requirements from EN 50363-10-2. Oil resistance demonstrated by immersion in mineral oil IRM902 for one week in 100 °C.

MUD RESISTANCE

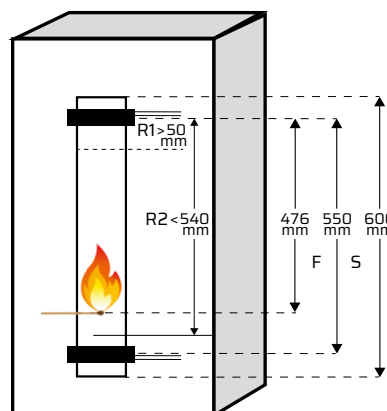
Sheathing material is mud resistant according to NEK 606 requirements. Mud resistance demonstrated by immersion in different types of drilling fluids for 56 days in 70 °C.

WATER PERFORMANCE

Water resistance: AD8 Submersion in salt and fresh water down to 500 m depth.

IEC 60332-1 TEST

IEC 60332-1 test for single cable. Test procedure and requirements according to picture below.



Min. 50 mm of the cable, measured from the upper support, must remain unburned after the specified time.

ADDITIONAL TESTS

IEC 60754-1

Acid gas emission test
Halogen content of material < 5 mg/g

IEC 60754-2

pH and conductivity test
Acidity of combustion gases pH > 4.3
Conductivity of combustion gases < 10 µS/mm

IEC 60684-2

Fluorine content test

EN 50396 PART 6.2

Mechanical flexing test
Mechanical bending test ongoing, 2.5 million bends

DIAMETER TOLERANCE

Nominal outer	Tolerance	Nominal outer	Tolerance
1 - 10	±0.5 mm	30.1 - 40	±2.0 mm
10.1 - 20	±1.0 mm	40.1 - 50	±2.5 mm
20.1 - 30	±1.5 mm	50.1 - 60	±3.0 mm

CORE IDENTIFICATION

H-FLEX PWR PUR / H-FLEX PWR C-PUR (according to HD 308 S2)

0.6/1 kV	Normal type	G-type (with earth conductor)
1-core		
2-cores		
3-cores		
3-cores + 3-ground cores		
4-cores		
5-cores		
7-cores and above		

Black numbers on white base

Black numbers on white base
Last core yellow/green.

BU = Blue, **BN** = Brown, **BK** = Black, **GY** = Grey, **Y/G** = Yellow/Green

250 V pair cables	250 V triad cables	250 V quad cables	250 V multicore cables
Pairs numbered Pair 1 1 1 Pair 2 2 2 Pair 3 3 3 etc. Each pair white - blue. Pairs numbered 1, 2, 3, 4, 5....	Built up as triple with the following identification Triple white-blue-red	(Quad)cable is built up as a star quad with the following identification 1 core white 2 core blue 3 core white 4 core blue 	2-cores Black numbers on white base 3-cores Black numbers on white base 4-cores to 37-cores Black numbers on white base

MARKING ON THE SHEATH

Lot number, Cable type, Cable size (number of cores x size of conductors mm²), Voltage, Temperature, Standards, Manufacturer's name, Production month and year, Meter marking.





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THE PERFECT CONNECTION

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