Photo: HELUKABEL®

Heat-resistant Cables

HELUKABEL Products are available from MARYLAND METRICS P.O. Box 261 Owings Mills, MD 21117 USA web: http://mdmetric.com
ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

Heat-resistant Cables

High or low temperatures and permanent temperature changes demand cable types with special core and sheath insulation depending on the different applications.

HELUKABEL® supply these indispensable special cables which are used in power stations, iron works, steelworks and rolling mill, in foundries, cement, glass and ceramic factories. They are also used in aircraft construction and shipbuilding, in brickworks, kitchen appliances, measuring and heat appliances as well as in many other areas.

Depending on their individual temperature limits these cables are splitted in different resistant classes which cover temperature ranges from –190°C to +1200°C.

The different insulant classes into which these cables are splitted, is effected as per VDE 0530 part 1 in the classes Y, A, E, B, F, H, C.

For detailed information please see technical information.

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

HELUTHERM® 120 flexible, heat-resistant (+105°C), meter marking

Technical data

- Special PVC cable with increased heat-resistance
  adapted to DIN VDE 0281 part 12
  0,5-0,75 mm² according IEC 60227/56
  1,0-2,5 mm² according IEC 60227/57
- **Temperature range**
  flexing -5 °C to 105 °C
  fixed installation -30 °C to +105 °C
  (up to +120 °C for short time)
- **Nominal voltage**
  0,5-1 mm²: U_0/U 300/500 V
  1,5 mm² and above: U_0/U 450/750 V
- **Spark-test** 6000 V
- **Test voltage** 2000 V
- **Breakdown voltage** min. 4000 V
- **Insulation resistance**
  min. 20 MOhm x km
- **Minimum bending radius**
  flexing 7,5x cable ø
  fixed installation 4x cable ø
- **Radiation resistance**
  up to 80x10⁶ cJ/kg (up to 80 Mrad)

Cable structure

- Bare copper conductors to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation, TI3 to DIN VDE 0281 part 1
- Core identification to DIN VDE 0293-308
- Core colours:
  up to 5 cores one-coloured
  6 and more cores, black with numbering
- 3 and above, with green-yellow earth core
- 2 cores without green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Special PVC outer jacket, heat-resistant TM3 to DIN VDE 0281 part 1
- Outer jacket black (RAL 9005), other colours on request
- with meter marking, change-over in 2011

Properties

- PVC self-extinguishing and flame retardant according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core;
  x = without green-yellow earth core.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- On request
  HELUTHERM® 120 H03V2V2-F
  HELUTHERM® 120 H05V2V2-F
  HELUTHERM® 120 (H)05V2V2-F

Application

Therm cables are ideal for use in machines, appliances or motors which are subject to direct contact with high temperatures (e.g. varnishing machines and drying towers etc.).
CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
24002	2 x 0,5	5,0	9,6	40,0	20
24003	3 G 0,5	5,3	14,4	50,0	20
24004	4 G 0,5	5,8	19,2	60,0	20
24005	5 G 0,5	6,7	24,0	70,0	20
24006	7 G 0,5	8,8	33,6	90,0	20
24007	12 G 0,5	11,1	58,0	140,0	20
24008	18 G 0,5	12,9	86,0	170,0	20
24009	25 G 0,5	15,8	101,0	250,0	20
24011	2 x 0,75	6,2	14,4	52,0	18
24012	3 G 0,75	6,6	21,6	61,0	18
24013	4 G 0,75	7,1	29,0	75,0	18
24014	5 G 0,75	8,0	36,0	94,0	18
24015	7 G 0,75	9,5	50,0	112,0	18
24016	12 G 0,75	11,6	86,0	180,0	18
24017	18 G 0,75	13,9	130,0	270,0	18
24018	25 G 0,75	16,9	180,0	380,0	18
24019	1 x 1	6,0	9,6	50,0	17
24020	2 x 1	6,5	19,2	60,0	17
24021	3 G 1	6,9	29,0	73,0	17
24022	4 G 1	7,7	38,0	88,0	17
24023	5 G 1	8,4	48,0	110,0	17
24024	6 G 1	9,3	58,0	121,0	17
24025	7 G 1	10,0	67,0	130,0	17
24026	12 G 1	12,5	115,0	223,0	17
24027	18 G 1	14,7	173,0	350,0	17
24028	25 G 1	17,8	240,0	485,0	17

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
24030	2 x 1,5	7,4	29,0	77,0	16
24031	3 G 1,5	8,1	43,0	97,0	16
24032	4 G 1,5	9,0	58,0	122,0	16
24033	5 G 1,5	10,0	72,0	143,0	16
24034	7 G 1,5	11,9	101,0	179,0	16
24035	12 G 1,5	14,5	173,0	310,0	16
24036	18 G 1,5	17,4	259,0	460,0	16
24037	25 G 1,5	21,3	360,0	650,0	16
24039	2 x 2,5	9,3	48,0	120,0	14
24046	3 G 2,5	10,1	72,0	150,0	14
24040	4 G 2,5	11,0	96,0	200,0	14
24041	5 G 2,5	12,3	120,0	250,0	14
24042	7 G 2,5	14,6	168,0	310,0	14
24044	2 x 4	10,6	77,0	180,0	12
24291	3 G 4	11,5	115,0	220,0	12
24045	4 G 4	12,5	154,0	300,0	12
24292	5 G 4	15,1	192,0	360,0	12

Dimensions and specifications may be changed without prior notice. (RE01)

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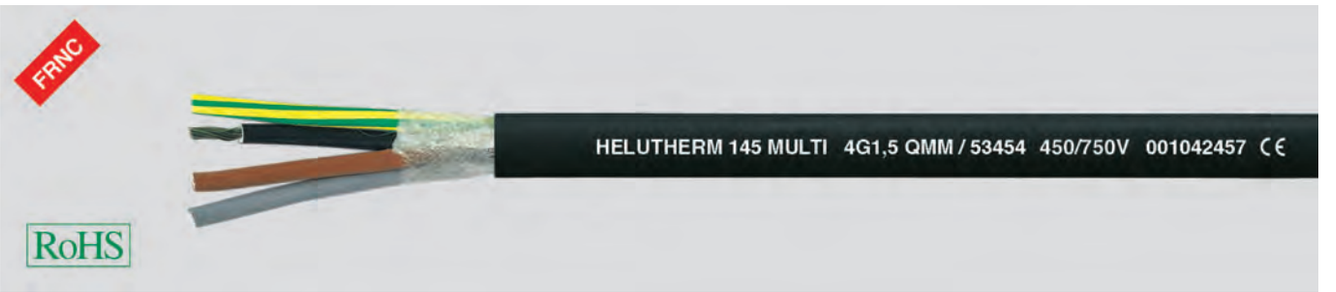
HELUTHERM® 145 MULTI flexible, cross-linked, halogen-free, meter marking



Technical data

- Halogen-free control and connecting cable with increased heat resistance
- **Temperature range**
  flexing -35 °C to +120 °C
  fixed installation -55 °C to +145 °C
  in short-circuit +250 °C
- **Nominal voltage**
  U_0/U 300/500 V up to 1,0 mm²
  U_0/U 450/750 V at 1,5 mm²
  with protected fixed installation
  U_0/U 600/1000 V at 1,5 mm²
- **Test voltage** 3500 V
- **Minimum bending radius**
  for fixed installation 4x cable ø
  in operation to -30 °C 12x cable ø
  in operation to +60 °C 8x cable ø
- **Caloric load values**
  see Technical Informations
- **Power ratings table**
  see Technical Informations
- **Approval**
  Germanischer Lloyd

Cable structure

- Tinned Cu wires, according to DIN VDE 0295 class 5, BS 6360 cl. 5 and IEC 60228 class 5
- Core insulation of polyolefin-copolymer, cross-linked and halogen-free
- Colour coded to DIN VDE 0293-308 and as of 6 cores number coded
- For two cores: brown, blue
- Green-yellow earth core as of 3 cores
- Cores stranded in layers with optimal lay-length
- Taping/Mica-Tape
- Polyolefin-Copolymer, cross-linked and halogen-free outer sheath
- Colour black
- with meter marking, change-over in 2011
- Different insulation- and outer sheath in other colours available on request.

Properties

- Reduced flame propagation
- Good abrasion and notch resistance
- Good resistance to oils and weathering
- Resistant to UV radiation and ozone
- Resistant to soldering temperatures
- Thermal class B
- Are resistant to melting, even when in contact with a temperatures of between 300 °C and 380 °C, because of the cross-linking for the insulation material
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- Flame test (unit flame test) to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3-22, IEC 60332-3-22 (equivalent DIN VDE 0472 part 804 test method C)
- Flame test (cable) to VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2 (equivalent DIN VDE 0472 part 804 test method B)
- Corrosiveness of combustion gases according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- Halogen-free according to DIN VDE 0482 part 267/ EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- Smoke density to VDE 0482 part 268-1 and 2, test method C, IEC 61034-1/61034-2, HD 606 and BS 7622 part 1 and 2 (DIN VDE 0472 part 816)

Note

- G = with green-yellow earth core
  x = without green-yellow earth core
- screened analogue type:
  HELUTHERM® 145 MULTI-C
  see page E 14

Application

These halogen-free, cross-linked and temperature resistant wiring and control cables with enhanced fire-behaviour properties are used for wiring up the lighting fixtures, heaters, electric machines (temperature class B), switching systems and distribution switchboards. A very long service life is also given on account of their excellent high-temperature stability.
These cables exhibit good resistance to weathering as well as being very stable to temperature, moisture, ozone and UV radiation. These cables are therefore mainly used for traffic control systems and diverse outdoor applications. The development of smoke is low and no corrosive gases are liberated during combustion of these halogen-free cables in case of fire. The risk of toxic fumes is considerably less in the event of fire because the coloric load values is lower. Precious time can thus be won for a disciplined evacuation, and unnecessary loss of life can be prevented. The extent of the damage to costly control and monitoring systems and the concrete and steel structures of buildings and plant due to fire is reduced by this. Injuries to persons and damage to materials can be prevented. A lower conductor cross-section is possible in certain circumstances because of the high thermal load and thus savings in the space and weight required can be made. These wiring and control cables provide a significant contribution in safety engineering and environmental protection.
CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53376	1 x 0,25	2,9	2,4	11,4	24
53377	2 x 0,25	4,6	4,8	28,7	24
53378	3 G 0,25	4,9	7,2	33,7	24
53379	4 G 0,25	5,5	9,6	41,8	24
53380	5 G 0,25	5,8	12,0	47,0	24
53381	6 G 0,25	6,5	14,4	58,0	24

Continuation ▸

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HELUTHERM® 145 MULTI flexible, cross-linked, halogen-free, meter marking

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53382	7 G 0,25	6,9	16,8	64,0	24
53383	8 G 0,25	7,3	19,2	71,0	24
53384	10 G 0,25	8,1	24,0	84,0	24
53385	12 G 0,25	8,1	28,8	90,0	24
53386	14 G 0,25	8,6	33,6	102,0	24
53387	16 G 0,25	8,9	38,4	114,0	24
53388	19 G 0,25	10,1	45,6	132,0	24
53389	21 G 0,25	10,5	50,4	145,0	24
53391	1 x 0,5	3,2	4,8	15,7	20
53392	2 x 0,5	5,1	9,6	39,6	20
53393	3 G 0,5	5,5	14,4	48,1	20
53394	4 G 0,5	5,9	19,2	51,0	20
53395	5 G 0,5	6,7	24,0	64,0	20
53396	6 G 0,5	7,1	28,8	74,0	20
53397	7 G 0,5	7,8	33,6	88,0	20
53398	8 G 0,5	8,6	38,4	102,0	20
53399	10 G 0,5	9,4	48,0	123,0	20
53400	12 G 0,5	9,4	57,6	135,0	20
53401	14 G 0,5	10,0	67,2	153,0	20
53402	16 G 0,5	10,7	76,8	176,0	20
53403	19 G 0,5	12,4	91,2	213,0	20
53404	21 G 0,5	13,0	100,8	234,0	20
53405	24 G 0,5	14,0	115,2	263,0	20
53406	25 G 0,5	14,0	120,0	269,0	20
53407	27 G 0,5	14,0	129,6	280,0	20
53408	30 G 0,5	15,0	144,0	311,0	20
53409	33 G 0,5	15,0	158,4	343,0	20
53410	37 G 0,5	17,0	177,6	392,0	20
53411	1 x 0,75	3,5	7,2	19,8	18
53412	2 x 0,75	5,9	14,4	40,0	18
53413	3 G 0,75	6,2	21,6	53,0	18
53414	4 G 0,75	6,9	28,8	69,0	18
53415	5 G 0,75	7,7	36,0	86,0	18
53416	6 G 0,75	8,3	43,2	101,0	18
53417	7 G 0,75	9,1	50,4	117,0	18
53418	8 G 0,75	10,2	57,6	140,0	18
53419	10 G 0,75	11,1	72,0	167,0	18
53420	12 G 0,75	11,1	86,4	183,0	18
53421	14 G 0,75	11,7	100,8	212,0	18
53422	16 G 0,75	12,5	115,2	239,0	18
53423	19 G 0,75	14,0	136,8	290,0	18
53424	21 G 0,75	15,0	151,2	323,0	18
53425	24 G 0,75	16,0	172,8	364,0	18
53426	25 G 0,75	16,0	180,0	371,0	18
53427	27 G 0,75	16,0	194,4	387,0	18
53428	30 G 0,75	17,0	216,0	429,0	18
53429	33 G 0,75	18,0	237,6	468,0	18
53430	37 G 0,75	19,0	266,4	550,0	18
53431	1 x 1	3,9	9,6	25,2	17
53432	2 x 1	6,3	19,2	50,0	17
53433	3 G 1	6,8	28,8	66,0	17
53434	4 G 1	7,4	38,4	86,0	17
53435	5 G 1	8,3	48,0	106,0	17
53436	6 G 1	8,9	57,6	127,0	17
53437	7 G 1	9,9	67,2	155,0	17
53438	8 G 1	11,0	76,8	187,0	17
53439	10 G 1	12,1	96,0	214,0	17
53440	12 G 1	12,1	115,2	230,0	17
53441	14 G 1	12,7	134,4	266,0	17
53442	16 G 1	13,6	153,6	301,0	17
53443	19 G 1	15,1	182,4	377,0	17
53444	21 G 1	16,0	201,6	419,0	17
53445	24 G 1	17,1	230,4	464,0	17
53446	25 G 1	17,1	240,0	472,0	17
53447	27 G 1	17,1	259,2	488,0	17
53448	30 G 1	17,7	288,0	536,0	17
53449	33 G 1	18,9	316,8	605,0	17
53450	37 G 1	20,3	355,2	690,0	17
53451	1 x 1,5	4,3	14,4	32,3	16
53452	2 x 1,5	7,6	28,8	69,0	16
53453	3 G 1,5	8,1	43,2	93,0	16
53454	4 G 1,5	8,8	57,6	120,0	16
53455	5 G 1,5	9,8	72,0	152,0	16
53456	6 G 1,5	10,9	86,4	187,0	16
53457	7 G 1,5	12,0	100,8	222,0	16
53458	8 G 1,5	14,0	115,2	263,0	16
53459	10 G 1,5	14,6	144,0	308,0	16
53460	12 G 1,5	14,6	172,8	330,0	16
53461	14 G 1,5	15,4	201,6	383,0	16
53462	16 G 1,5	16,2	230,4	438,0	16
53463	19 G 1,5	18,3	273,6	554,0	16
53464	21 G 1,5	19,7	302,4	614,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
53465	24 G 1,5	21,1	345,6	791,0	16
53466	25 G 1,5	21,1	360,0	701,0	16
53467	27 G 1,5	21,1	388,8	723,0	16
53468	30 G 1,5	21,8	432,0	796,0	16
53469	33 G 1,5	22,6	475,2	880,0	16
53470	37 G 1,5	24,8	532,8	1026,0	16
53471	1 x 2,5	5,0	24,0	46,9	14
53472	2 x 2,5	9,0	48,0	99,0	14
53473	3 G 2,5	9,8	72,0	140,0	14
53474	4 G 2,5	10,8	96,0	183,0	14
53475	5 G 2,5	12,0	120,0	231,0	14
53476	6 G 2,5	13,2	144,0	280,0	14
53477	7 G 2,5	14,6	168,0	336,0	14
53478	8 G 2,5	15,7	192,0	397,0	14
53479	10 G 2,5	17,7	240,0	460,0	14
53480	12 G 2,5	18,7	288,0	500,0	14
53481	14 G 2,5	19,0	336,0	593,0	14
53482	16 G 2,5	20,1	384,0	675,0	14
53483	19 G 2,5	20,7	456,0	835,0	14
53484	21 G 2,5	23,7	504,0	939,0	14
53485	24 G 2,5	25,8	576,0	1047,0	14
53486	25 G 2,5	25,8	600,0	1067,0	14
53487	27 G 2,5	25,8	648,0	1107,0	14
53488	30 G 2,5	26,7	720,0	1219,0	14
53489	33 G 2,5	28,0	792,0	1349,0	14
53490	37 G 2,5	30,6	888,0	1565,0	14
53491	1 x 4	5,6	38,4	96,0	12
53492	2 x 4	10,2	76,8	159,0	12
53493	3 G 4	10,9	115,2	197,0	12
53494	4 G 4	12,2	153,6	260,0	12
53495	5 G 4	13,5	192,0	329,0	12
53496	6 G 4	14,9	230,4	398,0	12
53497	7 G 4	16,4	268,8	478,0	12
53498	8 G 4	17,6	307,2	553,0	12
53499	10 G 4	20,1	384,0	663,0	12
53500	12 G 4	20,1	460,8	725,0	12
53501	14 G 4	21,5	537,6	797,0	12
53502	1 x 6	6,1	57,6	88,0	10
53503	2 x 6	11,6	115,2	216,0	10
53504	3 G 6	12,4	172,8	285,0	10
53505	4 G 6	13,8	230,4	375,0	10
53506	5 G 6	15,4	288,0	465,0	10
53507	6 G 6	16,7	345,6	544,0	10
53508	7 G 6	18,3	403,2	664,0	10
53509	1 x 10	7,7	96,0	144,0	8
53510	2 x 10	14,7	192,0	351,0	8
53511	3 G 10	15,7	288,0	475,0	8
53512	4 G 10	17,5	384,0	630,0	8
53513	5 G 10	19,6	480,0	782,0	8
53514	6 G 10	21,7	576,0	914,0	8
53515	7 G 10	23,7	672,0	1092,0	8
53516	1 x 16	9,1	153,6	205,0	6
53517	2 x 16	17,7	307,2	495,0	6
53518	3 G 16	19,3	460,8	691,0	6
53519	4 G 16	21,5	614,4	905,0	6
53520	5 G 16	23,9	768,0	1129,0	6
53521	6 G 16	26,2	921,6	1327,0	6
53522	7 G 16	28,9	1075,2	1590,0	6
53523	1 x 25	10,9	240,0	336,0	4
53524	2 x 25	21,3	480,0	833,0	4
53525	3 G 25	22,7	720,0	1139,0	4
53526	4 G 25	25,4	960,0	1489,0	4
53527	5 G 25	28,1	1200,0	1863,0	4
53528	6 G 25	31,1	1440,0	2275,0	4
53529	7 G 25	34,5	1680,0	2633,0	4
53530	1 x 35	12,1	336,0	454,0	2
53531	2 x 35	23,7	672,0	1104,0	2
53532	3 G 35	25,5	1008,0	1513,0	2
53533	4 G 35	28,4	1344,0	1992,0	2
53534	5 G 35	31,3	1680,0	2488,0	2
53535	1 x 50	14,9	480,0	638,0	1
53536	2 x 50	29,3	960,0	1573,0	1
53537	3 G 50	31,5	1440,0	2154,0	1
53538	4 G 50	35,3	1920,0	2819,0	1
53539	5 G 50	39,1	2400,0	3505,0	1
53540	1 x 70	17,1	672,0	875,0	2/0
53541	2 x 70	33,7	1344,0	2157,0	2/0
53542	3 G 70	36,4	2016,0	2946,0	2/0
53543	4 G 70	40,3	2688,0	3888,0	2/0
53544	5 G 70	44,5	3360,0	4864,0	2/0
53545	1 x 95	19,2	912,0	1149,0	3/0
53546	2 x 95	37,5	1824,0	2763,0	3/0
53547	3 G 95	40,0	2736,0	3835,0	3/0
53548	4 G 95	45,3	3648,0	5052,0	3/0
53549	5 G 95	50,7	4560,0	6307,0	3/0

Dimensions and specifications may be changed without prior notice. (RE01)

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ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

SiHF silicon mulitcore cable, flexible, halogen-free, meter marking

Technical data

- Special silicone multicore cable with higher heat-resistance range adapted to DIN VDE 0250 part 1 and part 816
- **Temperature range**
  -60 °C to +180 °C
  (up to +220 °C for short time)
- **Temperature limit at the conductor** in operation +180 °C
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Breakdown voltage** min. 5000 V
- **Insulation resistance**
  min. 200 MOhm x km
- **Power rating**
  at ambient temperature up to +145 °C to DIN VDE 0100 for higher temperatures valid:
  150 °C - load value 100%
  155 °C - load value 91%
  160 °C - load value 82%
  165 °C - load value 71%
  170 °C - load value 58%
  175 °C - load value 41%
- **Minimum bending radius**
  flexing 7,5x cable ø
  fixed installation 4x cable ø
- **Radiation resistance**
  up to 20x10^6 cJ/kg (up to 20 Mrad)

Cable structure

- Tinned fine wire copper conductors to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Silicone core insulation
- Core colours according DIN VDE 0293-308
- Core colour
  - up to 5 cores one-coloured
  - up 6 and more cores, black with white numbering
  - 3 and above, with green-yellow earth core
  - 2 cores without green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Outer jacket of silicone
- Jacket colour preferably redbrown
- with meter marking, change-over in 2011

Properties

- **Advantages**
  Hardly changes of dielectric strength and the insulation resistance also at high temperatures, high ignition or flash point, in case of fire, forms an insulating layer of SiO_2
- **Resistant to**
  High molecular oils, fats from vegetables and animals, alcohols, plasticizers and clophenes, diluted acids, lyes and salt dissolution, oxidation substances, tropical influences and weather, lake water, oxygen and UV
- **Halogen-free**
  according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Behaviour in fire**
  no flame propagation
  test according to DIN VDE 0482 part 265-2-1/ EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- For laying as a fixed installation only in open or ventilated pipe systems as well as in ducts. Otherwise the mechanical properties of the silicon are reduced by the enclosed air at temperatures exceeding 90 °C.

Note

- G = with green-yellow earth core;
  x = without green-yellow earth core (OB).
- screened analogue type:
  SIHF-C-SI see page E 17

Application

Silicone cables were evolved for use wherever insulation is subjected to extreme temperature changes. They are heat-resistant for permanent temperature up to +180 °C, for short time operation up to +220 °C. The good performance of the environmental resistant properties means that silicone cables can be used at temperatures down to -60 °C. Silicone cables are halogen-free cables and are especially suited for installation in power stations. They have also found their uses in the steel producing industries, aviation industry, ship building as well as in ceramic, glass and cement factories.
Due to elastical characteristic of core insulations, these are used as flexible connection cable.
CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
22989	2 x 0,5	5,6	9,6	42,0	20
22990	3 G 0,5	5,9	14,5	44,0	20
22940	3 x 0,5	5,9	14,5	44,0	20
22991	4 G 0,5	6,4	19,3	58,0	20
22941	4 x 0,5	6,4	19,3	58,0	20
22992	5 G 0,5	7,3	24,0	62,0	20
22942	5 x 0,5	7,3	24,0	62,0	20
22993	6 G 0,5	8,3	28,9	79,0	20
22994	7 G 0,5	8,1	33,7	85,0	20
22995	8 G 0,5	8,9	38,4	99,0	20
22996	10 G 0,5	10,0	48,1	124,0	20
22997	12 G 0,5	10,6	57,6	141,0	20
22998	16 G 0,5	12,1	76,7	186,0	20
22999	18 G 0,5	12,7	86,5	211,0	20
23000	25 G 0,5	15,2	120,0	271,0	20
23001	2 x 0,75	6,4	14,4	53,0	18

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23002	3 G 0,75	6,8	21,6	63,0	18
23104	3 x 0,75	6,8	21,6	63,0	18
23003	4 G 0,75	7,6	29,0	83,0	18
23105	4 x 0,75	7,6	29,0	83,0	18
23004	5 G 0,75	8,5	36,0	101,0	18
22943	5 x 0,75	8,5	36,0	101,0	18
23005	6 G 0,75	9,2	43,0	115,0	18
23006	7 G 0,75	9,2	50,0	124,0	18
23127	8 G 0,75	9,9	57,7	138,0	18
23128	10 G 0,75	11,1	72,1	156,0	18
23129	12 G 0,75	12,2	86,5	185,0	18
23130	16 G 0,75	13,7	115,2	218,0	18
23131	18 G 0,75	14,6	129,7	260,0	18
23132	25 G 0,75	17,2	180,0	370,0	18
23007	2 x 1	6,6	19,0	59,0	17
23008	3 G 1	7,0	29,0	77,0	17

Continuation ▸

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

SiHF silicon mulitcore cable, flexible, halogen-free, meter marking

ME01

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
22944	3 x 1	7,0	29,0	77,0	17
23009	4 G 1	7,8	38,0	94,0	17
22945	4 x 1	7,8	38,0	94,0	17
23010	5 G 1	8,8	48,0	115,0	17
22946	5 x 1	8,8	48,0	115,0	17
23011	6 G 1	9,5	58,0	134,0	17
23012	7 G 1	9,5	67,0	144,0	17
23133	8 G 1	10,3	76,7	175,0	17
23134	10 G 1	11,5	96,1	216,0	17
23135	12 G 1	12,5	115,2	231,0	17
23136	16 G 1	14,2	153,5	302,0	17
23137	18 G 1	15,1	172,9	340,0	17
23138	25 G 1	18,0	240,0	431,0	17
23013	2 x 1,5	7,6	29,0	81,0	16
23014	3 G 1,5	8,0	43,0	98,0	16
22947	3 x 1,5	8,0	43,0	98,0	16
23015	4 G 1,5	8,7	58,0	122,0	16
22948	4 x 1,5	8,7	58,0	122,0	16
23016	5 G 1,5	9,6	72,0	147,0	16
22949	5 x 1,5	9,6	72,0	147,0	16
23017	6 G 1,5	10,4	86,0	173,0	16
23018	7 G 1,5	10,4	101,0	187,0	16
23019	8 G 1,5	11,2	114,0	213,0	16
23020	10 G 1,5	13,0	116,0	263,0	16
23021	12 G 1,5	13,9	173,0	314,0	16
23022	14 G 1,5	14,7	202,0	379,0	16
23023	16 G 1,5	16,2	231,0	445,0	16
23024	18 G 1,5	17,0	260,0	506,0	16
23025	20 G 1,5	17,5	288,0	566,0	16
23026	24 G 1,5	20,4	346,0	722,0	16
23027	2 x 2,5	8,8	48,0	134,0	14
23028	3 G 2,5	9,7	72,0	152,0	14
23029	4 G 2,5	10,6	96,0	188,0	14
23030	5 G 2,5	11,6	120,0	228,0	14
23139	6 G 2,5	12,6	144,0	304,0	14
23032	7 G 2,5	12,6	168,0	320,0	14
23140	8 G 2,5	13,6	192,2	373,0	14
23141	10 G 2,5	15,5	240,1	450,0	14

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23033	12 G 2,5	17,1	288,0	502,0	14
23142	16 G 2,5	19,6	384,0	659,0	14
23143	18 G 2,5	20,6	432,2	761,0	14
23144	25 G 2,5	24,4	600,0	1007,0	14
23034	2 x 4	10,8	77,0	180,0	12
23035	3 G 4	11,4	115,0	224,0	12
23036	4 G 4	12,5	154,0	295,0	12
23037	5 G 4	13,9	192,0	359,0	12
23039	7 G 4	15,6	269,0	479,0	12
23040	2 x 6	12,4	115,0	210,0	10
23041	3 G 6	13,2	173,0	270,0	10
23042	4 G 6	14,8	230,0	341,0	10
23043	5 G 6	16,5	288,0	432,0	10
23045	7 G 6	18,0	403,0	552,0	10
23046	2 x 10	16,2	192,0	400,0	8
23047	3 G 10	17,2	288,0	507,0	8
23048	4 G 10	19,4	384,0	644,0	8
23049	5 G 10	21,4	480,0	788,0	8
23145	7 G 10	23,4	672,2	1151,0	8
23050	2 x 16	18,0	308,0	591,0	6
23051	3 G 16	19,3	462,0	749,0	6
23052	4 G 16	21,4	616,0	950,0	6
23053	5 G 16	24,0	770,0	1204,0	6
23146	7 G 16	26,4	1075,3	1682,0	6
23054	2 x 25	22,0	480,0	700,0	4
23055	3 G 25	23,4	720,0	1100,0	4
23056	4 G 25	26,3	960,0	1500,0	4
23057	2 x 35	24,6	672,0	1100,0	2
23058	3 G 35	26,3	1008,0	1500,0	2
23059	4 G 35	29,1	1344,0	2100,0	2

Dimensions and specifications may be changed without prior notice. (RE01)

E

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

THERMFLEX 180 EWKF (H05SS-F) halogen-free, silicone multicore cable, meter marking

Technical data

- Heat-resistant silicone-insulated flexible cable in adapted to DIN VDE 0250 part 816
- **Temperature range**
  flexing -25 °C to +180 °C
  fixed installation -60 °C to +180 °C
  (short time operation +220 °C)
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Insulation resistance**
  min. 200 MOhm x km
- **Minimum bending radius**
  flexing 7,5x cable ø
  fixed installation 4x cable ø
- **Radiation resistance**
  up to 20x10^6 cJ/kg (up to 20 Mrad)
- **Insulation integrity** continuance of insulation effects under fire condition according to IEC 60331 and DIN VDE 0472 part 814
- **Freedom from halogen** (corrosiveness of combustion gases) according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Behaviour in fire** no flame propagation, test according to DIN VDE 0482 part 265-2-1/ EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Cable structure

- Tinned copper conductor, stranded to DIN VDE 0295, cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special silicone core insulation, EI2 to DIN VDE 0207 part 20
- Core identification to DIN VDE 0293-308 up to 5 cores one-coloured, 6 and more cores black with white numbering
- Green-yellow earth core (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Silicone outer jacket, 2GM1 to DIN VDE 0207 part 21
- Jacket colour black (RAL 9005)
- with meter marking, change-over in 2011
- Different dimensions also approved by Germanischer Lloyd on request.

Properties

- **Smoke density** - low
- Due to the special abrasive and notch resistance outer jacket, these cables are suitable for heavy loading of mechanical stresses than the usual standard silicone cables
- Hardly changes of dielectric strength and the insulation resistance also at high temperatures
- High ignition or flash point
- In case of fire, forms an insulating layer of
- **Resistant to**
  High molecular oils, fats from vegetables and animals, alcohols, plasticizers and clophenes, diluted acids, lyes and salt dissolution, oxidation substances, tropical influences and weather, lake water, oxygen, ozone

Note

- G = with green-yellow earth core;
  x = without green-yellow earth core.
- **EWKF** = Improved values to **E**=tearing resistance, **W**=breaking strength propagation, **K**=notch strength, **F**=flexibility
- screened analogue type:
  THERMFLEX 180 EWKF-C
  see page E 19

Application

These cables are ideal for use everywhere, where increased mechanical stresses for the installation and operation are required. Silicone-rubber-insulated cables are used for all applications where the cable insulation is subjected to high temperature fluctuations. Suitable for installation at high temperature influence in dry, damp and in the open air. As flexible connecting cable for low mechanical stress i.e. sauna, solar installations, foundries and steel plants. This cable can be used for fixed installation only in open and ventilated cable tubes and cable ducts.

FRNC = **F**lame **R**etardant **N**on **C**orrosive

All silicon cables are available also in FRNC versions. The jacket designed with special-compound conform flame test method C to DIN VDE 0472 part 804 and IEC 60332-3 as well as HD 405.3. This special compound is self-extinguishing. Because of that these cables can be installed as security cable with functionality as for example in communal buildings, power stations, hotels, airports etc.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
74992	2 x 0,75	6,4	15,0	53,0	18
74993	3 G 0,75	7,0	22,0	64,0	18
74994	4 G 0,75	7,6	29,0	84,0	18
74995	5 G 0,75	8,5	36,0	101,0	18
74996	2 x 1	6,8	20,0	60,0	17
74997	3 G 1	7,2	29,0	78,0	17
74998	4 G 1	7,8	39,0	95,0	17
74999	5 G 1	8,8	48,0	116,0	17
75000	2 x 1,5	8,8	29,0	82,0	16
75001	3 G 1,5	8,9	43,0	98,0	16
75002	4 G 1,5	9,9	58,0	122,0	16
75003	5 G 1,5	10,8	72,0	148,0	16
75004	7 G 1,5	12,0	101,0	187,0	16
75005	12 G 1,5	16,1	173,0	315,0	16
75006	16 G 1,5	18,2	231,0	446,0	16
75007	20 G 1,5	19,4	288,0	566,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
75008	2 G 2,5	9,8	48,0	135,0	14
75009	3 G 2,5	10,4	72,0	152,0	14
75010	4 G 2,5	11,5	96,0	189,0	14
75011	5 G 2,5	12,9	120,0	229,0	14
75012	2 x 4	11,6	77,0	180,0	12
75013	3 G 4	12,3	115,0	230,0	12
75014	4 G 4	13,6	154,0	300,0	12
75015	5 G 4	15,2	192,0	380,0	12
75016	2 x 6	13,2	115,0	321,0	10
75017	3 G 6	14,0	173,0	330,0	10
75018	4 G 6	15,5	230,0	430,0	10
75019	5 G 6	17,2	288,0	550,0	10

Dimensions and specifications may be changed without prior notice. (RE01)

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

H05SS-F / H05SST-F heat-resistant multicore cable

Technical data

- Heat-resistant multicore cable to DIN VDE 0282 part 15, HD 22.15 S1
- **Temperature range** fixed installation -60 °C to +180 °C (250 °C for short time)
- **Temperature limit** at conductor in operation +180 °C
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Specific volume resistivity** min. 200 MOhm x km
- **Minimum bending radius** flexing 7,5x cable ø fixed installation 4x cable ø
- **Radiation resistance** up to 20x10⁶ cJ/kg (up to 20 Mrad)

Cable structure

- Tinned or bare1) copper conductor, stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5, HD 383 cl. 5 and IEC 60228
- SiR core insulation, crosslinked (rubber compound) E I2 to DIN VDE 0207 part 20
- Core identification to DIN VDE 0293-308
- Green-yellow earth core, 3 cores and above Cores stranded in layers with optimal lay-length
- Outer jacket of crosslinked EM9 (rubber compound) to HD 22.3 S3 : 1994 / A1 : 1999
- Jacket colour black (RAL 9005)
- Also available in other sheath colours

Cable structure H05SST-F

- As per H05SS-F
- Polyester braiding

Properties

- **Behavior in fire:** Test of vertical flame-propagation to DIN VDE 0482 part 265-2-1 and DIN EN 50265-2-1, not valid for the cables with polyesterbraiding (Type H05SST-F)
- Advantages Hardly changes of dielectric strength and the insulation resistance also at high temperatures
- For laying as a fixed installation only in open or ventilated pipe systems as well as in ducts. Otherwise the mechanical properties of the silicon are reduced by the enclosed air at temperatures exceeding 90 °C. These cables may be damaged by pulling over sharp-edges or by abrasion during the installation and application. To avoid this, it should be treated with great care during the installation and application of the cable.

Note

- G = with green-yellow earth core; x = without green-yellow earth core.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

Multicore cables insulated and sheathed with heat resistant silicone rubber without strain relieving elements are used in high temperatures or with contact to hot-surfaces. These cables are installed for fixed installation, mechanical protected, for internal wiring of lighting fixtures in industrial application. It is recommended for the application of the apparatus which are moving during the operation with less mechanical stress.

CE = The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

H05SS-F

Part no.	No.cores x cross-sec. mm²	Outer Ø min. - max. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
22290	2 x 0,75	5,7 - 7,4	14,4	59,0	18
22291	3 G 0,75	6,2 - 8,1	21,6	71,0	18
22292	4 G 0,75	6,8 - 8,8	28,8	93,0	18
22293	5 G 0,75	7,6 - 9,9	36,0	113,0	18
22294	2 x 1	6,1 - 8,0	19,2	67,0	17
22295	3 G 1	6,5 - 8,5	29,0	86,0	17
22296	4 G 1	7,1 - 9,3	38,4	105,0	17
22297	5 G 1	8,0 - 10,3	48,0	129,0	17
22298	2 x 1,5	7,6 - 9,8	29,0	91,0	16
22299	3 G 1,5	8,0 - 10,4	43,0	110,0	16
22300	4 G 1,5	9,0 - 11,6	58,0	137,0	16
22301	5 G 1,5	9,8 - 12,7	72,0	165,0	16
22302	2 x 2,5	9,0 - 11,6	48,0	150,0	14
22303	3 G 2,5	9,6 - 12,4	72,0	170,0	14
22304	4 G 2,5	10,7 - 13,8	96,0	211,0	14
22305	5 G 2,5	11,9 - 15,3	120,0	255,0	14
22306	3 G 4	11,3 - 14,5	115,0	251,0	12
22307	4 G 4	12,7 - 16,2	154,0	330,0	12
22308	3 G 6	12,8 - 16,3	173,0	379,0	10
22309	4 G 6	14,2 - 18,1	230,0	494,0	10

H05SS-F

Part no.	No.cores x cross-sec. mm²	Outer Ø min. - max. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
22343	2 x 0,75	6,7 - 8,4	14,4	63,0	18
22344	3 G 0,75	7,2 - 9,1	21,6	75,0	18
22345	4 G 0,75	7,8 - 9,8	28,8	99,0	18
22346	5 G 0,75	8,6 - 10,9	36,0	120,0	18
22347	2 x 1	7,1 - 9,0	19,2	71,0	17
22348	3 G 1	7,5 - 9,5	29,0	91,0	17
22349	4 G 1	8,1 - 10,3	38,4	111,0	17
22350	5 G 1	9,0 - 11,3	48,0	137,0	17
22351	2 x 1,5	8,6 - 10,8	29,0	97,0	16
22352	3 G 1,5	9,0 - 11,4	43,0	117,0	16
22353	4 G 1,5	10,0 - 12,6	58,0	145,0	16
22354	5 G 1,5	10,8 - 13,7	72,0	175,0	16
22355	2 x 2,5	10,0 - 12,6	48,0	159,0	14
22356	3 G 2,5	10,6 - 13,4	72,0	180,0	14
22357	4 G 2,5	11,7 - 14,8	96,0	224,0	14
22358	5 G 2,5	12,9 - 16,3	120,0	270,0	14
22359	3 G 4	12,3 - 15,5	115,0	266,0	12
22360	4 G 4	13,7 - 17,2	154,0	350,0	12
22361	3 G 6	13,8 - 17,3	173,0	402,0	10
22362	4 G 6	15,2 - 19,1	230,0	524,0	10

Dimensions and specifications may be changed without prior notice. (RE01)

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

HELUFLON®-FEP-6Y multi core, fluorinated polymeric materials, -100°C up to +205°

Technical data

- Fluorinated polymeric insulation FEP (Fluorethylenepropylene)
- **Temperature range** -100 °C to +205 °C (up to +230 °C for short time)
- **Nominal voltage** 600 V
- **Test voltage** 2500 V
- **Insulation resistance** min. 2 GOhm x km
- **Minimum bending radius** flexing 15x cable ø fixed installation 4x cable ø
- **Radiation resistance** up to 1x10⁶ cJ/kg (up to 1 Mrad)
- **Conductor temperature range** plain copper +130 °C tinned copper +180 °C silver pl. copper +200 °C

Cable structure

- Stranded copper wire, bare, tinned, silver
- Make-up fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation FEP-HELUFLON®
- Green-yellow earth core 0,25 mm² colour code to DIN VDE 0293-308 0,5 mm² and above black cores with white imprints
- Outer jacket FEP-HELUFLON®
- Colour black (RAL 9005)

Properties

- Higher insulation resistance
- Low dielectric loss
- Not flammable
- Resistant to micro-cultures
- Do not permit any fungus-formation
- Absolute ozone resistant
- Absolute weather resistant
- Water absorption <0,01%
- Minimal water vapour permeability (approx. 0,18 mgr/cm² in 24 hours)
- Self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/ EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Note

- G = with green-yellow earth core; x = without green-yellow earth core (OZ).
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².

Application

This cables are predominantly used for installing in control cabinets subjected to high thermal effects as well as in brickworks, heaters, kitchen fitments and measuring appliances as well as in the chemical industry. These cables are non-flammable and resistant to acids, alkalis, solvents, oil and petrol.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

copper wire, tinned

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
24547	2 x 0,25	2,7	5,0	17,0	24
24548	3 G 0,25	2,9	7,5	22,0	24
24549	4 G 0,25	3,2	10,0	27,0	24
24550	5 G 0,25	3,5	12,5	34,0	24
24551	7 G 0,25	3,9	17,5	46,0	24
24552	2 x 0,5	3,3	9,8	21,0	20
24553	3 G 0,5	3,5	14,7	32,0	20
24554	4 G 0,5	3,9	19,6	44,0	20
24555	5 G 0,5	4,3	24,5	55,0	20
24556	7 G 0,5	4,8	34,3	70,0	20
24557	2 x 0,75	3,6	14,4	31,0	18
24558	3 G 0,75	3,9	21,6	46,0	18
24559	4 G 0,75	4,3	29,0	58,0	18
24560	5 G 0,75	4,7	36,0	69,0	18
24561	7 G 0,75	4,8	50,0	92,0	18
24562	2 x 1	4,1	19,0	41,0	17
24563	3 G 1	4,4	29,0	55,0	17
24564	4 G 1	4,9	38,0	71,0	17
24565	5 G 1	5,5	48,0	88,0	17

copper wire, tinned

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
24566	7 G 1	6,0	67,0	113,0	17
24273	12 G 1	8,0	115,2	220,0	17
24274	18 G 1	9,5	173,0	321,0	17
24275	25 G 1	11,2	240,0	458,0	17
24501	2 x 1,5	4,9	29,0	45,0	16
24502	3 G 1,5	5,3	43,0	70,0	16
24503	4 G 1,5	5,8	58,0	98,0	16
24504	5 G 1,5	6,5	72,0	117,0	16
24505	7 G 1,5	7,2	101,0	184,0	16
24276	12 G 1,5	10,2	173,0	326,0	16
24277	18 G 1,5	12,3	260,0	504,0	16
24278	25 G 1,5	14,0	360,0	682,0	16
24279	3 G 2,5	6,4	72,0	121,0	14
24280	4 G 2,5	7,0	96,0	182,0	14
24281	5 G 2,5	7,9	120,0	240,0	14
24282	7 G 2,5	8,7	168,0	316,0	14
24283	3 G 4	7,5	115,0	212,0	12
24284	4 G 4	8,3	154,0	304,0	12
24285	5 G 4	9,2	192,0	386,0	12

Continuation ▸

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ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

HELUFLON®-FEP-6Y multi core, fluorinated polymeric materials,

-100°C up to +205°

copper wire, bare

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
25914	2 x 0,25	2,7	5,0	17,0	24
25915	3 G 0,25	2,9	7,5	22,0	24
25916	4 G 0,25	3,2	10,0	27,0	24
25917	5 G 0,25	3,5	12,5	34,0	24
25918	7 G 0,25	3,9	17,5	46,0	24
25919	2 x 0,5	3,3	9,8	21,0	20
25920	3 G 0,5	3,5	14,7	32,0	20
25921	4 G 0,5	3,9	19,6	44,0	20
25922	5 G 0,5	4,3	24,5	55,0	20
25923	7 G 0,5	4,8	34,3	70,0	20
25924	2 x 0,75	3,6	14,4	31,0	18
25925	3 G 0,75	3,9	21,6	46,0	18
25926	4 G 0,75	4,3	29,0	58,0	18
25927	5 G 0,75	4,7	36,0	69,0	18
25928	7 G 0,75	5,4	50,0	92,0	18
25929	2 x 1	4,1	19,0	41,0	17
25930	3 G 1	4,4	29,0	55,0	17
25931	4 G 1	4,9	38,0	71,0	17
25932	5 G 1	5,5	48,0	88,0	17
25933	7 G 1	6,0	67,0	113,0	17
25934	12 G 1	8,0	115,2	220,0	17
25935	18 G 1	9,5	173,0	321,0	17
25936	25 G 1	11,2	240,0	458,0	17
25937	2 x 1,5	4,9	29,0	45,0	16
25938	3 G 1,5	5,3	43,0	70,0	16
25939	4 G 1,5	5,8	58,0	98,0	16
25940	5 G 1,5	6,5	72,0	117,0	16
25941	7 G 1,5	7,2	101,0	184,0	16
25942	12 G 1,5	10,2	173,0	326,0	16
25943	18 G 1,5	12,3	260,0	504,0	16
25944	25 G 1,5	14,0	360,0	682,0	16
25945	3 G 2,5	6,4	72,0	121,0	14
25946	4 G 2,5	7,0	96,0	182,0	14
25947	5 G 2,5	7,9	120,0	240,0	14
25948	7 G 2,5	8,7	168,0	316,0	14
25949	3 G 4	7,5	115,0	212,0	12
25950	4 G 4	8,3	154,0	304,0	12
25951	5 G 4	9,2	192,0	386,0	12

copper wire, silvered

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
25952	2 x 0,25	2,7	5,0	17,0	24
25953	3 G 0,25	2,9	7,5	22,0	24
25954	4 G 0,25	3,2	10,0	27,0	24
25955	5 G 0,25	3,5	12,5	34,0	24
25956	7 G 0,25	3,9	17,5	46,0	24
25957	2 x 0,5	3,3	9,8	21,0	20
25958	3 G 0,5	3,5	14,7	32,0	20
25959	4 G 0,5	3,9	19,6	44,0	20
25960	5 G 0,5	4,3	24,5	55,0	20
25961	7 G 0,5	4,8	34,3	70,0	20
25962	2 x 0,75	3,6	14,4	31,0	18
25963	3 G 0,75	3,9	21,6	46,0	18
25964	4 G 0,75	4,3	29,0	58,0	18
25965	5 G 0,75	4,7	36,0	69,0	18
25966	7 G 0,75	5,4	50,0	92,0	18
25967	2 x 1	4,1	19,0	41,0	17
25968	3 G 1	4,4	29,0	55,0	17
25969	4 G 1	4,9	38,0	71,0	17
25970	5 G 1	5,5	48,0	88,0	17
25971	7 G 1	6,0	67,0	113,0	17
25972	12 G 1	8,0	115,2	220,0	17
25973	18 G 1	9,5	173,0	321,0	17
25974	25 G 1	11,2	240,0	458,0	17
25975	2 x 1,5	4,9	29,0	45,0	16
25976	3 G 1,5	5,3	43,0	70,0	16
25977	4 G 1,5	5,8	58,0	98,0	16
25978	5 G 1,5	6,5	72,0	117,0	16
25979	7 G 1,5	7,2	101,0	184,0	16
25980	12 G 1,5	10,2	173,0	326,0	16
25981	18 G 1,5	12,3	260,0	504,0	16
25982	25 G 1,5	14,0	360,0	682,0	16
25983	3 G 2,5	6,4	72,0	121,0	14
25984	4 G 2,5	7,0	96,0	182,0	14
25985	5 G 2,5	7,9	120,0	240,0	14
25986	7 G 2,5	8,7	168,0	316,0	14
25987	3 G 4	7,5	115,0	212,0	12
25989	4 G 4	8,3	154,0	304,0	12
25990	5 G 4	9,2	192,0	386,0	12

Dimensions and specifications may be changed without prior notice. (RE01)

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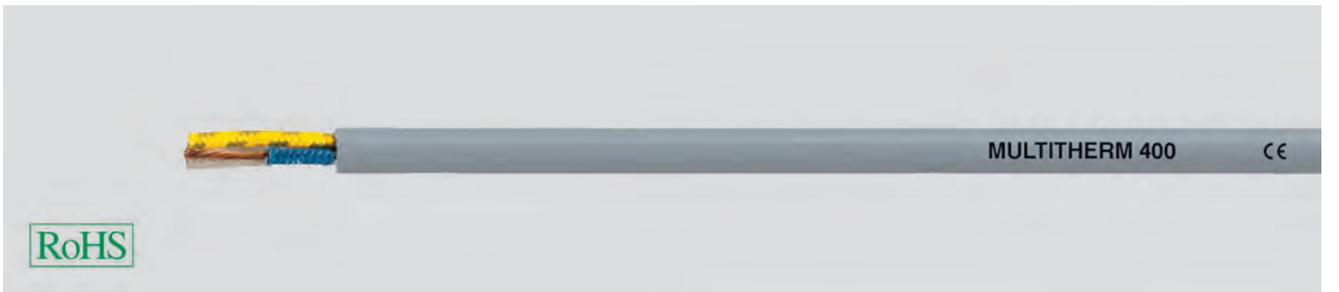
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

MULTITHERM® 400 halogen-free



Technical data

- Special Cu-nickel silicone-insulated cable with enhanced heat resistance
- **Temperature range**
  -60 °C to +400 °C
  (up to +500 °C for short time)
- **Nominal voltage** 500 V
- **Test voltage** 2500 V
- **Minimum bending radius**
  approx. 5x cable ø

Cable structure

- Cu wires, finely stranded, nickel plated (ASTM B 355)
- Core insulation of braided glass-fibre impregnated with silicone
- Second core insulation of glass-fibre braiding impregnated with silicone
- Overall lay up of cores
- Core identification according to colour coding listed below
- Common outer sheath of glass-fibre braiding impregnated with silicone
- Sheath colour grey

Properties

- **Asbestos** and **cadmium-free**

Colour code

- No. of cores **with** protective earth conductor
  3 = gn-ye/bl/bn
  4 = gn-ye/bk/bl/bn
  5 = gn-ye/bk/bl/bn/wh
  6 = gn-ye/bk/bl/bn/wh/rd
  7 = gn-ye/bk/bl/bn/wh/rd/gy
- No. of cores **without** protective earth conductor
  2 = bl/bn
  3 = bk/bl/bn
  4 = bk/bl/bn/wh
  5 = bk/bl/bn/wh/rd
  6 = bk/bl/bn/wh/rd/gy
  7 = bk/bl/bn/wh/rd/gy/gn

Note

- Enquire for further configurations and core cross sections for your requirements.
- We supply customised cables for temperature ranges up to approx. 1600 °C. Please enquire for minimum ordering quantities and delivery times.
- screened analogue type:
  MULTITHERM® 400 -ES
  see page E 20

Application

MULTITHERM 400 cables are used for applications where extremely high connecting and ambient temperatures can arise, e.g. in iron and steel works, rolling mills, foundries, glass and ceramic factories, in furnace and power plant construction, during thermoplastic moulding processes etc. The special construction of the cable is designed for a recommended maximum temperature in damp environments of 220 °C and for dry environments above this temperature.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
51741	2 x 0,5	6,2	10,0	47,0	20
51742	3 x 0,5	6,4	15,0	50,0	20
51743	4 x 0,5	7,5	19,0	70,0	20
51744	5 x 0,5	8,0	25,0	81,0	20
51745	6 x 0,5	8,6	30,0	97,0	20
51746	7 x 0,5	8,7	34,0	105,0	20
51747	2 x 0,75	6,7	14,4	55,0	18
51748	3 x 0,75	7,0	21,6	66,0	18
51749	4 x 0,75	8,0	29,0	86,0	18
51750	5 x 0,75	8,8	36,0	103,0	18
51751	6 x 0,75	9,5	43,0	119,0	18
51752	7 x 0,75	9,7	50,0	130,0	18
51753	2 x 1	6,9	19,0	63,0	17
51754	3 x 1	7,8	29,0	82,0	17
51755	4 x 1	8,3	38,0	98,0	17
51756	5 x 1	9,1	48,0	119,0	17
51757	6 x 1	9,8	58,0	138,0	17
51758	7 x 1	10,0	67,0	150,0	17
51759	2 x 1,5	8,0	29,0	87,0	16
51760	3 x 1,5	8,3	43,0	103,0	16
51761	4 x 1,5	9,1	58,0	128,0	16
51762	5 x 1,5	10,0	72,0	150,0	16
51763	6 x 1,5	10,7	88,0	175,0	16
51764	7 x 1,5	11,0	101,0	190,0	16
51765	2 x 2,5	9,2	48,0	135,0	14
51766	3 x 2,5	9,7	72,0	153,0	14
51767	4 x 2,5	10,6	96,0	190,0	14
50060	5 x 2,5	11,8	120,0	230,0	14

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
50061	6 x 2,5	12,8	144,0	270,0	14
50062	7 x 2,5	13,0	168,0	295,0	14
50063	2 x 4	11,0	77,0	191,0	12
50064	3 x 4	11,4	115,0	224,0	12
50065	4 x 4	13,0	154,0	285,0	12
50066	5 x 4	14,5	192,0	360,0	12
50067	7 x 4	16,5	270,0	485,0	12
50068	3 x 6	14,2	173,0	340,0	10
50069	4 x 6	16,2	230,0	442,0	10
50070	5 x 6	17,7	288,0	535,0	10
50071	4 x 10	20,0	384,0	710,0	8
50072	4 x 16	24,5	615,0	990,0	6

Dimensions and specifications may be changed without prior notice. (RE01)

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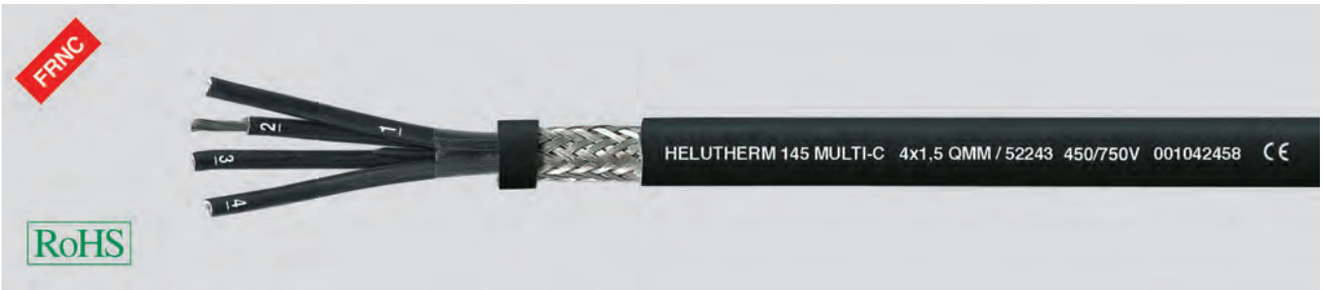
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

HELUTHERM® 145 MULTI-C flexible, cross-linked, halogen-free,

Cu-screened, EMC-preferred type, meter marking



Technical data

- Halogen-free control and connecting cable with increased heat resistance
- **Temperature range**
  flexing -35 °C to +120 °C
  fixed installation -55 °C to +145 °C
  in short-circuit +250 °C
- **Nominal voltage**
  U_0/U 300/500 V up to 1,0 mm²
  U_0/U 450/750 V at 1,5 mm²
  with protected fixed installation
  U_0/U 600/1000 V at 1,5 mm²
- **Test voltage** 3500 V
- **Minimum bending radius**
  for fixed installation 4x cable ø
  in operation to -30 °C 12x cable ø
  in operation to +60 °C 8x cable ø
- **Coupling resistance**
  max. 250 Ohm/km
- **Caloric load values**
  see Technical Informations
- **Power ratings table**
  see Technical Informations
- **Approval**
  Germanischer Lloyd

Cable structure

- Tinned copper conductor, fine wire stranded according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of polyolefin-copolymer, cross-linked and halogen-free
- Black cores with continuous white numbering
- Cores stranded in layers with optimal lay-lenght
- Braided screen of tinned Cu wires, coverage approx. 85%
- Polyolefin-Copolymer, cross-linked and halogen-free outer sheath
- Colour black
- with meter marking, change-over in 2011
- Different insulation- and outer sheath in other colours available on request

Note

- unscreened analogue type:
  HELUTHERM® 145 MULTI see page E 5

Properties

- Lower propagation of fire
- Low development of smoke and fumes
- Good abrasion and notch resistance
- Good resistance to oils and weathering
- Resistant to UV radiation and ozone
- Resistant to soldering temperatures
- Thermal class B
- These control cables are resistant to melting, even when in contact with a soldering iron at temperatures of between 300 °C and 380 °C, because of the cross-linking for the insulation material
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Tests

- **Flame test** (unit flame test) to VDE 0482-332-3, BS 4066 part 3/ DIN EN 60332-3-22, IEC 60332-3-22 (equivalent DIN VDE 0472 part 804 test method C)
- **Flame test** (cable) to VDE 0482-332-1-2, DIN EN 60332-1-2, IEC 60332-1-2 (equivalent DIN VDE 0472 part 804 test method B)
- **Corrosiveness of combustion gases** according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Halogen-free** according to VDE 0482 part 267/ DIN EN 50267-2-1/ IEC 60754-1 (equivalent DIN VDE 0472 part 815)
- **Smoke density** to VDE 0482 part 268-1 and 2, test method C, IEC 61034-1/61034-2, HD 606 and BS 7622 part 1 and 2 (DIN VDE 0472 part 816)

Application

These halogen-free, cross-linked and temperature resistant wiring and control cables with enhanced fire-behaviour properties are used for wiring up the lighting fixtures, heaters, electric machines (temperature class B), switching systems and distribution switchboards. A very long service life is also given on account of their excellent high-temperature stability.
These cables exhibit good resistance to weathering as well as being very stable to temperature, moisture, ozone and UV radiation. These cables are therfore mainly used for traffic control systems and diverse outdoor applications. The development of smoke is low and no corrosive gases are liberated during combustion of these halogen-free cables in case of fire. The risk of toxic fumes is considerably less in the event of fire because the coloric load values is lower. Precious time can thus be won for a disciplined evacuation, and unnecessary loss of life can be prevented. The extent of the damage to costly control and monitoring systems and the concrete and steel structures of buildings and plant due to fire is reduced by this. Injuries to persons and damage to materials can be prevented. A lower conductor cross-section is possible in certain circumstances because of the high thermal load and thus savings in the space and weight required can be made. These wiring and control cables provide a significant contribution in safety engineering and environmental protection.
EMC = Electromagnetic compatibillity
CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52194	2 x 0,25	5,0	16,0	36,0	24

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52195	3 x 0,25	5,5	21,0	44,0	24

Continuation ▸

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

HELUTHERM® 145 MULTI-C flexible, cross-linked, halogen-free,

Cu-screened, EMC-preferred type, meter marking

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
52196	5 x 0,25	6,4	29,0	68,0	24
52197	7 x 0,25	7,5	37,0	95,0	24
52198	1 x 0,5	3,7	15,0	24,0	20
52199	2 x 0,5	5,6	29,0	55,0	20
52200	3 x 0,5	6,1	38,0	64,0	20
52201	4 x 0,5	6,7	45,0	78,0	20
52202	5 x 0,5	7,3	51,0	95,0	20
52203	6 x 0,5	7,9	66,0	106,0	20
52204	7 x 0,5	8,4	68,0	122,0	20
52205	8 x 0,5	9,0	80,0	138,0	20
52206	10 x 0,5	10,0	93,0	161,0	20
52207	12 x 0,5	10,0	107,0	170,0	20
52208	14 x 0,5	11,0	122,0	193,0	20
52209	16 x 0,5	11,7	129,0	216,0	20
52210	19 x 0,5	12,8	158,0	253,0	20
52211	21 x 0,5	13,5	167,0	281,0	20
52212	1 x 0,75	4,0	18,0	29,0	18
52213	2 x 0,75	6,6	38,0	71,0	18
52214	3 x 0,75	6,9	50,0	82,0	18
52215	4 x 0,75	7,6	58,0	100,0	18
52216	5 x 0,75	8,3	70,0	117,0	18
52217	6 x 0,75	8,9	85,0	135,0	18
52218	7 x 0,75	9,9	90,0	158,0	18
52219	8 x 0,75	10,6	110,0	178,0	18
52220	10 x 0,75	11,5	140,0	207,0	18
52221	12 x 0,75	11,5	148,0	220,0	18
52222	14 x 0,75	12,2	167,0	250,0	18
52223	16 x 0,75	12,9	183,0	282,0	18
52224	19 x 0,75	14,5	212,0	335,0	18
52225	21 x 0,75	15,3	230,0	370,0	18
52226	1 x 1	4,2	20,0	33,0	17
52227	2 x 1	7,0	31,0	78,0	17
52228	3 x 1	7,4	56,0	92,0	17
52229	4 x 1	8,1	66,0	112,0	17
52230	5 x 1	8,9	95,0	134,0	17
52231	6 x 1	9,5	105,0	164,0	17
52232	7 x 1	10,5	109,0	192,0	17
52233	8 x 1	11,4	130,0	219,0	17
52234	10 x 1	12,5	138,0	254,0	17
52235	12 x 1	12,5	164,0	270,0	17
52236	14 x 1	13,5	198,0	308,0	17
52237	16 x 1	14,3	203,0	350,0	17
52238	19 x 1	16,2	235,0	447,0	17
52239	21 x 1	17,0	257,0	492,0	17
52240	1 x 1,5	4,8	22,0	42,0	16
52241	2 x 1,5	8,2	58,0	105,0	16
52242	3 x 1,5	8,7	71,0	121,0	16
52243	4 x 1,5	9,4	86,0	156,0	16
52244	5 x 1,5	10,5	104,0	188,0	16
52245	6 x 1,5	11,5	118,0	225,0	16
52246	7 x 1,5	12,6	136,0	264,0	16
52247	8 x 1,5	13,7	172,0	308,0	16
52248	10 x 1,5	15,0	193,0	361,0	16
52249	12 x 1,5	15,0	222,0	383,0	16
52250	14 x 1,5	16,0	272,0	458,0	16
52251	16 x 1,5	17,0	285,0	515,0	16
52252	19 x 1,5	19,3	331,0	639,0	16
52253	21 x 1,5	20,3	367,0	705,0	16
52254	1 x 2,5	5,6	28,0	59,0	14
52255	2 x 2,5	9,8	96,0	148,0	14
52256	3 x 2,5	10,4	146,0	183,0	14
52257	4 x 2,5	11,5	150,0	221,0	14
52258	5 x 2,5	12,6	200,0	273,0	14
52259	6 x 2,5	13,8	227,0	326,0	14
52260	7 x 2,5	15,3	235,0	397,0	14
52261	8 x 2,5	16,5	265,0	475,0	14
52262	10 x 2,5	18,3	326,0	542,0	14
52263	12 x 2,5	18,3	376,0	582,0	14
52264	14 x 2,5	19,6	428,0	681,0	14
52265	16 x 2,5	20,7	480,0	778,0	14
52266	19 x 2,5	23,5	557,0	948,0	14
52267	21 x 2,5	24,4	606,0	1042,0	14
52268	1 x 4	6,3	56,0	86,0	12
52269	2 x 4	10,9	135,0	196,0	12
52270	3 x 4	11,5	178,0	248,0	12
52271	4 x 4	12,8	220,0	316,0	12
52272	5 x 4	14,3	259,0	376,0	12
52273	6 x 4	15,6	302,0	452,0	12
52274	7 x 4	17,0	355,0	555,0	12
52275	8 x 4	18,3	392,0	655,0	12
52276	10 x 4	20,7	480,0	767,0	12
52277	12 x 4	20,7	557,0	829,0	12
52278	14 x 4	22,1	636,0	948,0	12
52279	1 x 6	6,9	81,0	108,0	10
52280	2 x 6	12,1	175,0	255,0	10
52281	3 x 6	12,8	240,0	330,0	10
52282	4 x 6	14,3	305,0	429,0	10
52283	5 x 6	16,0	441,0	536,0	10
52284	6 x 6	17,4	473,0	624,0	10
52285	7 x 6	19,3	505,0	751,0	10
52286	1 x 10	8,4	124,0	170,0	8
52287	2 x 10	15,1	265,0	409,0	8
52288	3 x 10	16,4	370,0	550,0	8
52289	4 x 10	18,1	485,0	715,0	8
52290	5 x 10	20,2	610,0	882,0	8
52291	6 x 10	22,3	715,0	1026,0	8
52292	7 x 10	24,3	820,0	1195,0	8

Dimensions and specifications may be changed without prior notice. (RE01)

HELUKABEL Products are available from MARYLAND METRICS P.O. Box 261 Owings Mills, MD 21117 USA web: http://mdmetric.com
ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

SiHF/GL-P silicon mulitcore cable, steel braiding, halogen-free

ME01

Technical data

- Special silicone multicore cable with higher heat-resistance range adapted to DIN VDE 0250 part 1 and part 816
- **Temperature range**
  -60 °C to +180 °C
  (up to +220 °C for short time)
- **Temperature limit at the conductor**
  in operation +180 °C
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Breakdown voltage** min. 5000 V
- **Insulation resistance**
  min. 200 MOhm x km
- **Power rating**
  at ambient temperature up to +145 °C to DIN VDE 0100 for higher temperatures valid:
  150 °C - load value 100%
  155 °C - load value 91%
  160 °C - load value 82%
  165 °C - load value 71%
  170 °C - load value 58%
  175 °C - load value 41%
- **Minimum bending radius**
  flexing 10x cable ø
  fixed installation 5x cable ø
- **Radiation resistance**
  up to 20x10^6 cJ/kg (up to 20 Mrad)

Cable structure

- Tinned copper conductors fine wire to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Silicone core insulation
- Core colours according DIN VDE 0293-308
- Core colour
  - up to 5 cores one-coloured
  - up 6 and more cores, black with white numbering
  - 3 and above, with green-yellow earth core
  - 2 cores without green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Outer jacket of silicone
- Jacket colour preferably redbrown
- Glass fibre tape over the jacket
- Galvanized steel wire outer braiding

Properties

- **Advantages**
  Hardly changes of dielectric strength and the insulation resistance also at high temperatures, high ignition or flash point, in case of fire, forms an insulating layer of SiO_2
- **Resistant to**
  High molecular oils, fats from vegetables and animals, alcohols, plasticizers and clophenes, diluted acids, lyes and salt dissolution, oxidation substances, tropical influences and weather, lake water, oxygen
- **Corrosivity of combustion gases (Halogen-free)**
  according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Behaviour in fire**
  no flame propagation
  test according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- For laying as a fixed installation only in open or ventilated pipe systems as well as in ducts. Otherwise the mechanical properties of the silicon are reduced by the enclosed air at temperatures exceeding 90 °C

Note

- G = with green-yellow earth core;
  x = without green-yellow earth core.

Application

Silicone cables screened with steel braiding were evolved for use wherever insulation is subjected to extreme temperature changes. They are heat-resistant for permanent temperature up to +180 °C, for short time operation up to +220 °C. The good performance of the environmental resistant properties means that silicone cables can be used at temperatures down to -60 °C. Silicone cables are halogen-free cables and are especially suited for installation in power stations. They have also found their uses in the steel producing industries, aviation industry, ship building as well as in ceramic, glass and cement factories.
The screened steel braiding ensures a disturbance-free transmission of signals and impulses.
CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23062	2 x 0,75	7,9	14,4	90,0	18
23063	3 G 0,75	8,3	21,6	101,0	18
23064	4 G 0,75	9,3	29,0	129,0	18
23065	5 G 0,75	10,0	36,0	157,0	18
23067	7 G 0,75	10,7	50,0	177,0	18
23068	2 x 1	8,0	19,0	97,0	17
23069	3 G 1	8,9	29,0	122,0	17
23070	4 G 1	9,4	38,0	141,0	17
23071	5 G 1	10,4	48,0	166,0	17
23073	7 G 1	11,1	67,0	197,0	17
23074	2 x 1,5	9,0	29,0	127,0	16
23075	3 G 1,5	9,5	43,0	145,0	16
23076	4 G 1,5	10,3	58,0	173,0	16
23077	5 G 1,5	11,0	72,0	202,0	16
23078	6 G 1,5	12,0	86,0	240,0	16
23079	7 G 1,5	12,0	101,0	244,0	16
23080	8 G 1,5	13,0	115,0	261,0	16
23081	12 G 1,5	15,5	173,0	327,0	16
23082	14 G 1,5	16,2	202,0	382,0	16
23083	18 G 1,5	18,7	259,0	440,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23084	24 G 1,5	21,5	346,0	600,0	16
23085	2 x 2,5	10,7	48,0	187,0	14
23086	3 G 2,5	11,2	72,0	205,0	14
23087	4 G 2,5	12,1	96,0	278,0	14
23088	5 G 2,5	13,3	120,0	322,0	14
23089	6 G 2,5	14,3	144,0	351,0	14
23090	7 G 2,5	14,4	168,0	380,0	14
23091	2 x 4	12,5	77,0	240,0	12
23092	3 G 4	13,0	115,0	311,0	12
23093	4 G 4	15,0	154,0	384,0	12
23094	5 G 4	16,0	192,0	454,0	12
23095	7 G 4	17,5	269,0	633,0	12
23096	2 x 6	15,1	115,0	321,0	10
23097	3 G 6	15,9	173,0	432,0	10
23098	4 G 6	18,0	230,0	544,0	10
23099	5 G 6	19,4	288,0	656,0	10
23100	7 G 6	20,7	403,0	768,0	10
23101	4 G 10	22,1	384,0	925,0	8
23102	4 G 16	26,1	614,0	1235,0	6
23103	4 G 25	30,4	960,0	1700,0	4

Dimensions and specifications may be changed without prior notice. (RE01)

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ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

SiHF-C-Si silicon multicore cable, halogen-free, Cu-screened, EMC-preferred type, meter marking

Technical data

- Special silicone-insulated cable with higher heat-resistance adapted to DIN VDE 0250 part 1 and part 816
- **Temperature range**
  -60 °C to +180 °C
  (+220 °C for short time)
- **Temperature limit at the conductor**
  in operation +180 °C
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Breakdown voltage** min. 5000 V
- **Insulation resistance**
  min. 200 MOhm x km
- **Power rating**
  at ambient temperatures up to +145 °C according to DIN VDE 0100
  150 °C - load value 100%
  155 °C - load value 91%
  160 °C - load value 82%
  165 °C - load value 71%
  170 °C - load value 58%
  175 °C - load value 41%
- **Minimum bending radius**
  flexing 10x cable ø
  fixed installation 5x cable ø
- **Coupling resistance**
  max. 250 Ohm/km
- **Radiation resistance**
  up to $20x10^6$ cJ/kg (up to 20 Mrad)

Cable structure

- Tinned copper conductor fine wire according to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Core insulation of silicone
- Core colours according DIN VDE 0293-308
  Core colour
  - up to 5 cores one-coloured
  - up 6 and more cores, black with white numbering
  - 3 and above, with green-yellow earth core
  - 2 cores without green-yellow earth core
- Cores stranded in layers with optimal lay-length
- Inner sheath of silicone
- Braid of tinned Cu wires, coverage approx. 85%
- Silicone-rubber-insulated common outer jacket
- Jacket preferentially redbrown colour
- with meter marking, change-over in 2011

Properties

- **Resistant to**
  High molecular oils, fats from vegetables and animals, alcohols, plasticizers and clophenes, diluted acids, lyes and salt dissolution, oxidation substances, tropical influences and weather, lake water, oxygen and UV
- **Halogen-free**
  according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Burning behaviour**
  no propagation of fire
  testing according to VDE 0482-332-1-2, DIN EN 60332-1-2/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)
- For laying as a fixed installation only in open or ventilated pipe systems as well as in ducts. Otherwise the mechanical properties of the silicon are reduced by the enclosed air at temperatures exceeding 90 °C.

Note

- G = with green-yellow earth core;
  x = without green-yellow earth core.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm².
- unscreened analoguetype:
  SiHF see page E 7

Application

Silicone-rubber-insulated cables are used for all applications where the cable insulation is subjected to high temperature fluctuations. These cables are heat-resistant for continuous use at temperatures up to +180 °C, as well as for short periods of time at +220 °C.
Silicone-rubber-insulated cables can also be used at low temperatures down to -60 °C because of the excellent weathering resistance of the material. These cables are halogen-free and hence are particularly suitable for applications in iron and steel works, rolling mills, foundries, in aircraft construction and ship building, as well as in cement, glass and ceramic plants. Silicone-rubber-insulated cables have demonstrated proven applications in projector and high-power lighting fixtures as well as all types of heating equipment.
An interference-free transmission of signals and pulse is assured by the high screening density. The ideal interference-protected silicone multicore flexible cable for such applications as given above.
EMC = Electromagnetic compatibillity
To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.
CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23151	2 x 0,5	8,0	55,5	101,0	20
23152	3 G 0,5	8,3	60,8	118,0	20
23153	4 G 0,5	9,1	66,5	131,0	20
23154	5 G 0,5	9,9	81,6	153,0	20
23155	7 G 0,5	10,9	92,2	173,0	20
23156	10 G 0,5	12,8	124,0	242,0	20
23157	12 G 0,5	13,5	134,4	263,0	20
23158	16 G 0,5	15,1	170,2	326,0	20
23159	18 G 0,5	15,9	181,0	351,0	20
23291	25 G 0,5	18,5	230,1	348,0	20

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23160	2 x 0,75	9,0	61,4	124,0	18
23161	3 G 0,75	9,4	69,1	136,0	18
23162	4 G 0,75	10,4	86,7	159,0	18
23163	5 G 0,75	11,3	95,2	180,0	18
23164	7 G 0,75	12,0	113,3	212,0	18
23165	10 G 0,75	13,9	165,2	306,0	18
23166	12 G 0,75	15,2	180,3	333,0	18
23167	16 G 0,75	16,9	212,2	418,0	18
23168	18 G 0,75	18,0	282,1	453,0	18
23292	25 G 0,75	20,8	297,4	468,0	18

Continuation ▸

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How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

SiHF-C-Si silicon multicore cable, halogen-free, Cu-screened, EMC-preferred type, meter marking

ME01

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23169	2 x 1	9,4	66,7	132,0	17
23170	3 G 1	9,8	86,2	153,0	17
23171	4 G 1	11,1	96,8	173,0	17
23172	5 G 1	12,0	108,3	202,0	17
23173	7 G 1	12,7	141,2	243,0	17
23174	10 G 1	14,7	190,0	238,0	17
23175	12 G 1	15,8	209,8	371,0	17
23176	16 G 1	17,4	251,8	468,0	17
23177	18 G 1	18,5	297,4	526,0	17
23293	25 G 1	21,8	329,0	559,0	17
23178	2 x 1,5	10,8	87,7	172,0	16
23179	3 G 1,5	11,2	103,5	198,0	16
23180	4 G 1,5	12,0	131,7	235,0	16
23181	5 G 1,5	12,8	148,5	281,0	16
23182	7 G 1,5	13,6	193,4	345,0	16
23183	10 G 1,5	14,7	268,5	482,0	16
23184	12 G 1,5	15,8	298,4	531,0	16
23185	16 G 1,5	17,4	362,3	662,0	16
23186	18 G 1,5	20,6	394,0	720,0	16
23294	25 G 1,5	24,2	488,2	791,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
23187	2 x 2,5	12,0	122,3	230,0	14
23188	3 G 2,5	12,9	147,7	275,0	14
23189	4 G 2,5	13,8	188,6	340,0	14
23190	5 G 2,5	14,8	214,9	394,0	14
23191	7 G 2,5	15,8	265,7	488,0	14
23192	4 G 4	16,0	294,0	520,0	12
23193	5 G 4	17,4	374,0	653,0	12
23150	2 x 6	15,8	171,0	350,0	20
23194	4 G 6	18,1	449,0	781,0	10
23195	5 G 6	20,0	563,0	982,0	10
23196	4 G 10	23,2	759,0	1294,0	8
23197	4 G 16	25,2	1180,0	1988,0	6
23198	4 G 25	31,0	1810,0	2995,0	4

Dimensions and specifications may be changed without prior notice. (RE01)

E

Conduits

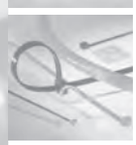
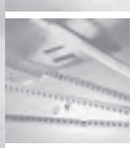
Corrugated tubes
- for standard applications
- for lager sizes
- scissile corrugated tubes
- conduit glands

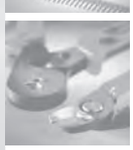
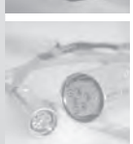
High flexible conduits
- plastic conduits with spiral spring
- metal conduits
- conduits glands

Conduit for heavy mechanical duty
- metal conduits with plastic sheat
- plastic conduits
- conduits glands for metal conduits





You can find conduits in our catalogue Cable Accessories.

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ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

THERMFLEX 180 EWKF-C silicone multicore cable, Cu-screened,

halogen-free, +180°C, EMC-preferred type, meter marking

Technical data

- in adapted to DIN VDE 0250 part 816
- **Temperature range**
  flexing -25 °C to +180 °C
  fixed installation -60 °C to +180 °C
  (short time operation +220 °C)
- **Nominal voltage** U_0/U 300/500 V
- **Test voltage** 2000 V
- **Insulation resistance**
  min. 200 MOhm x km
- **Minimum bending radius**
  flexing 10x cable ø
  fixed installation 5x cable ø
- **Coupling resistance**
  max. 250 Ohm/km
- **Radiation resistance**
  up to 20x10^6 cJ/kg (up to 20 Mrad)
- **Insulation integrity** continuance of insulation effects under fire condition according to IEC 60331 and DIN VDE 0472 part 814
- **Halogen-free**
  according to VDE 0482 part 267/ DIN EN 50267-2-2/ IEC 60754-2 (equivalent DIN VDE 0472 part 813)
- **Behaviour in fire** no flame propagation, test according to DIN VDE 0482 part 265-2-1/ EN 50265-2-1/ IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Cable structure

- Tinned copper conductor, stranded to DIN VDE 0295, cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Silicone core insulation, EI2 to DIN VDE 0207 part 20
- Core identification to DIN VDE 0293-308 up to 5 cores one-coloured, 6 and more cores black with white numbering
- Green-yellow earth core (3 cores and above)
- Cores stranded in layers with optimal lay-length
- Special silicone inner sheath
- Tinned copper braided screaning, covering approx. 85%
- Silicone outer jacket, 2GM1 to DIN VDE 0207 part 21
- Jacket colour black (RAL 9005)
- with meter marking, change-over in 2011

Properties

- **Smoke density** - low
- Due to the special abrasive and notch resistance outer jacket, these cables are suitable for heavy loading of mechanical stresses than the usual standard silicone cables
- Hardly changes of dielectric strength and the insulation resistance also at high temperatures
- High ignition or flash point
- In case of fire, forms an insulating layer of SiO_2
- **Resistant to**
  High molecular oils, fats from vegetables and animals, alcohols, plasticizers and clophenes, diluted acids, lyes and salt dissolution, oxidation substances, tropical influences and weather, lake water, oxygen, ozone

Note

- G = with green-yellow earth core;
  x = without green-yellow earth core.
- **EWKF** = Improved values to **E**=tearing resistance, **W**=breaking strength propagation, **K**=notch strength, **F**=flexibility
- unscreened analogue type:
  THERMFLEX 180 EWKF
  see page E 9

Application

These cables are ideal for use everywhere, where increased mechanical stresses for the installation and operation are required. Silicone-rubber-insulated cables are used for all applications where the cable insulation is subjected to high temperature fluctuations. Suitable for installation at high temperature influence in dry, damp and in the open air. As flexible connecting cable for low mechanical stress i.e. sauna, solar installations, foundries and steel plants. This cable can be used for fixed installation only in open and ventilated cable tubes and cable ducts. An interference-free transmission of signals and pulse is assured by the high screening density. The ideal interference-protected silicone multicore flexible cable for such applications as given above.

EMC = Electromagnetic compatibillity

FRNC = **F**lame **R**etardant **N**on **C**orrosive

All silicon cables are available also in FRNC versions. The jacket designed with special-compound conform flame test method C to DIN VDE 0472 part 804 and IEC 60332-3 as well as HD 405.3. This special compound is self-extinguishing. Because of that these cables can be installed as security cable with functionality as for example in communal buildings, power stations, hotels, airports etc.

CE= The product is conformed with the EC Low-Voltage Directive 2006/95/EG.

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
79804	2 x 0,75	9,0	61,4	124,0	18
79805	3 G 0,75	9,4	69,1	136,0	18
79806	4 G 0,75	10,4	86,7	160,0	18
79807	5 G 0,75	11,2	95,2	180,0	18
79808	2 x 1	9,4	66,7	132,0	17
79809	3 G 1	9,8	86,2	154,0	17
79810	4 G 1	10,7	96,8	176,0	17
79811	5 G 1	11,6	108,3	207,0	17
79812	2 x 1,5	10,8	87,7	170,0	16
79813	3 G 1,5	11,2	103,5	190,0	16
79814	4 G 1,5	12,0	131,7	231,0	16
79815	5 G 1,5	12,8	148,5	282,0	16
79816	7 G 1,5	13,6	193,4	342,0	16
701219	12 G 1,5	17,2	298,4	531,0	16

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Weight approx. kg / km	AWG-No.
79817	16 G 1,5	20,0	362,3	660,0	16
79818	20 G 1,5	21,3	405,1	766,0	16
79819	2 x 2,5	12,0	122,3	230,0	14
79820	3 G 2,5	12,9	147,7	275,0	14
79821	4 G 2,5	13,9	188,6	340,0	14
79822	5 G 2,5	14,8	214,9	395,0	14
79823	2 x 4	14,2	137,0	308,0	12
79824	3 G 4	14,9	178,1	364,0	12
79825	4 G 4	16,0	294,0	511,0	12
79826	5 G 4	17,4	374,0	630,0	12
79827	2 x 6	15,8	185,0	418,0	10
79828	3 G 6	16,6	241,1	612,0	10
79829	4 G 6	18,1	449,0	781,0	10
79830	5 G 6	20,0	563,0	980,0	10

Dimensions and specifications may be changed without prior notice. (RE01)

HELUKABEL Products are available from MARYLAND METRICS P.O. Box 261 Owings Mills, MD 21117 USA web: http://mdmetric.com
ph: (410)358-3130 (800)638-1830 fx: (410)358-3142 (800)872-9329 email: sales@mdmetric.com RFQ form: http://mdmetric.com/rfq.htm
How to order: Please preface each HELUKABEL part number with 'R955K-' Example (using the part number): R955K-14078

MULTITHERM® 400 -ES halogen-free, high-grade steel braiding

Technical data

- Special core insulation for high temperatures
- **Temperature range** -60 °C to +400 °C
- **Permissible temperature** +200 °C to +400 °C (up to +500 °C for short time)
- **Nominal voltage** 500 V
- **Test voltage** 2500 V
- **Minimum bending radius** approx. 5x cable ø

Cable structure

- Cu wires, finely stranded, nickel plated (ASTM B 355)
- Core insulation of braided glass-fibre impregnated with silicone
- Second core insulation of glass-fibre braiding impregnated with silicone
- Overall lay up of cores
- Core identification according to colour coding listed below
- Common outer sheath of glass-fibre braiding impregnated with silicone
- Sheath colour grey
- Overall screen of braided high-grade steel, coverage approx. 80%

Properties

- **Asbestos** and **cadmium-free**

Colour code

- No. of cores **with** protective earth conductor
  3 = gn-ye/bl/bn
  4 = gn-ye/bk/bl/bn
  5 = gn-ye/bk/bl/bn/wh
  6 = gn-ye/bk/bl/bn/wh/rd
  7 = gn-ye/bk/bl/bn/wh/rd/gy
- No. of cores **without** protective earth conductor
  2 = bk/bn
  3 = bk/bl/bn
  4 = bk/bl/bn/wh
  5 = bk/bl/bn/wh/rd
  6 = bk/bl/bn/wh/rd/gy
  7 = bk/bl/bn/wh/rd/gy/gn

Note

- Please enquire for further configurations and core cross sections for your requirements.
- unscreened analogue type: **MULTITHERM® 400** see page E 13

Application

Where extremely high connecting and ambient temperatures occur, e.g. in iron and steel works, rolling mills, foundries, glass and ceramic plants, in power plant construction, in the chemical industry, nuclear technology, crude oil engineering, in technical applications in medicine, as well as for wiring resistances in electrical heating equipment, furnaces and machinery in thermoplastic forming. Due to the special construction of the cable, a maximum temperature of approx. 220 °C is recommended for use in damp environments. Applications at temperatures above this should be used in dry environments only. The robust braiding of high-grade steel protects the cable from aggressive atmospheres and mechanical stresses. The braided screen can also be used for earthing purposes.

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Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Max. permiss. current carrying capacity at +340°C (A)	Weight approx. kg / km	AWG-No.
52018	2 x 0,5	7,1	10,0	3,3	84,0	20
52019	3 x 0,5	7,3	15,0	3,1	89,0	20
52020	4 x 0,5	8,4	19,0	3	111,0	20
52021	5 x 0,5	8,9	25,0	2,9	126,0	20
52022	6 x 0,5	9,5	30,0	2,8	146,0	20
52023	7 x 0,5	9,6	34,0	2,7	158,0	20
52024	2 x 0,75	7,6	14,4	5,1	95,0	18
52025	3 x 0,75	7,9	21,6	5,1	109,0	18
52026	4 x 0,75	8,9	29,0	4,9	131,0	18
52027	5 x 0,75	9,7	36,0	4,7	157,0	18
52028	6 x 0,75	10,4	43,0	4,5	177,0	18
52029	7 x 0,75	10,6	50,0	4,4	190,0	18
52030	2 x 1	7,8	19,0	7	105,0	17
52031	3 x 1	8,7	29,0	6,7	126,0	17
52032	4 x 1	9,2	38,0	6,4	148,0	17
52033	5 x 1	10,0	48,0	6,2	174,0	17
52034	6 x 1	10,7	58,0	6	198,0	17
52035	7 x 1	10,9	67,0	5,8	212,0	17
52036	2 x 1,5	8,9	29,0	9,4	132,0	16
52037	3 x 1,5	9,2	43,0	9	153,0	16
52038	4 x 1,5	10,0	58,0	8,6	183,0	16
52039	5 x 1,5	10,9	72,0	8,3	212,0	16
52040	6 x 1,5	11,6	88,0	8	241,0	16
52041	7 x 1,5	11,9	101,0	7,8	259,0	16
52042	2 x 2,5	10,1	48,0	12,2	191,0	14
52043	3 x 2,5	10,6	72,0	11,6	213,0	14
52044	4 x 2,5	11,5	96,0	11,2	256,0	14
52045	5 x 2,5	12,7	120,0	10,8	307,0	14

Part no.	No.cores x cross-sec. mm²	Outer Ø approx. mm	Cop. weight kg / km	Max. permiss. current carrying capacity at +340°C (A)	Weight approx. kg / km	AWG-No.
52046	6 x 2,5	14,9	144,0	10,4	359,0	14
52047	7 x 2,5	15,1	168,0	10,1	388,0	14
52048	2 x 4	11,9	77,0	16	260,0	12
52049	3 x 4	12,3	115,0	15,3	303,0	12
52050	4 x 4	15,1	154,0	14,6	378,0	12
52051	5 x 4	15,6	192,0	14,1	458,0	12
52052	7 x 4	16,6	270,0	13,3	593,0	12
52053	3 x 6	16,3	173,0	20	442,0	10
52054	4 x 6	18,3	230,0	19	567,0	10
52055	5 x 6	19,8	288,0	18	671,0	10
52056	4 x 10	22,1	384,0	26	866,0	8
52057	4 x 16	26,6	615,0	34	1203,0	6

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