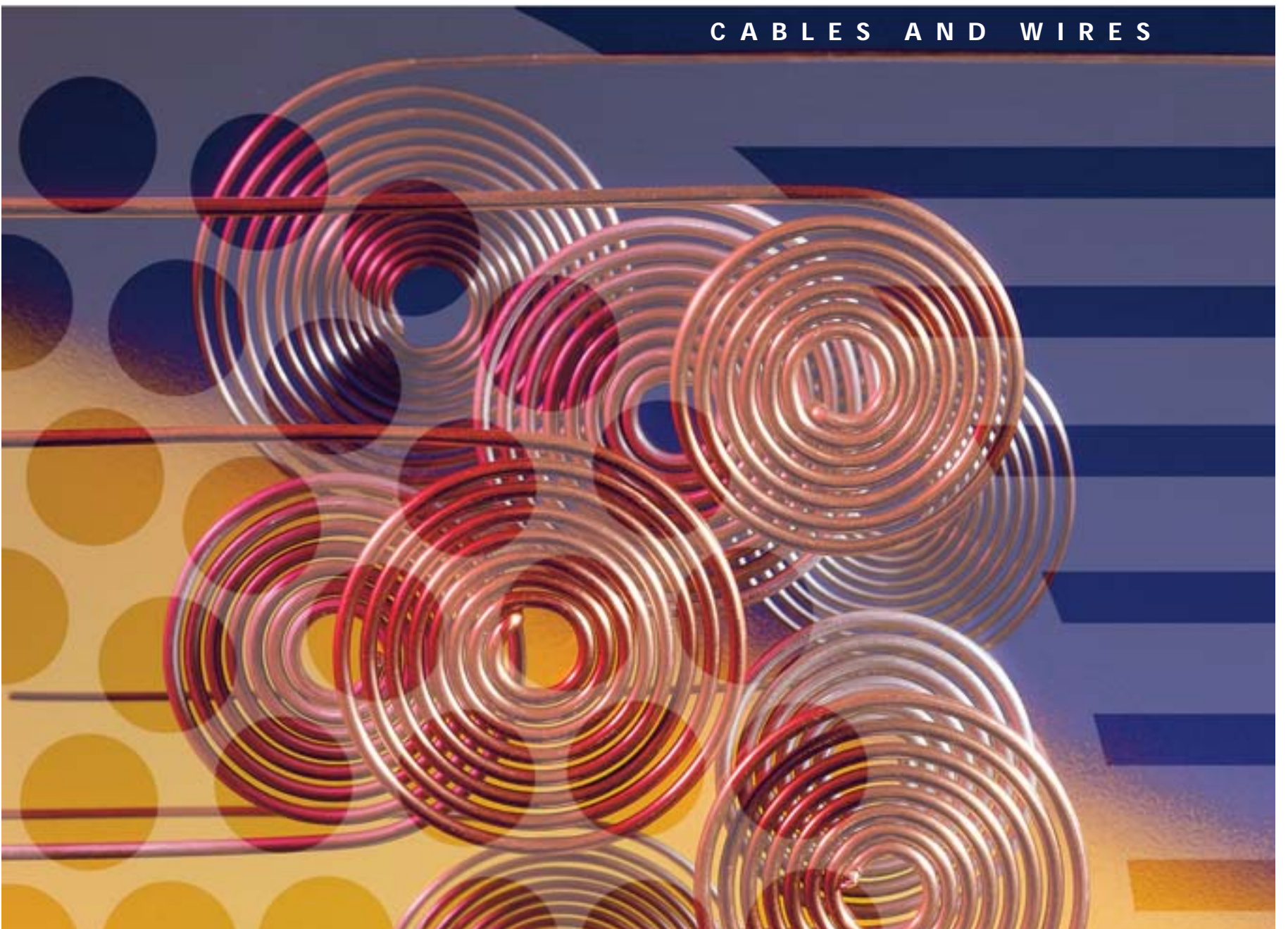


C A T A L O G U E

C A B L E S A N D W I R E S



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C O N T A C T

HEW-KABEL/CDT

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Sales Heating Cables

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Fax +49 (0) 2267/683-264

Development/Technique

Tel. +49 (0) 2267/683-276
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From A45 Hagen / Siegen

Follow the A45 to the "Meinerzhagen" exit and join the B54 towards Meinerzhagen, Lüdenscheid. In Kierspe turn left onto the B237 towards Remscheid, Wipperfürth. In Wipperfürth join the B506 towards Köln. After approx. 1,5 km travel through the "Tor 1" gate to find the HEW building on your right.

From A3 Frankfurt and Köln/Bonn Airport

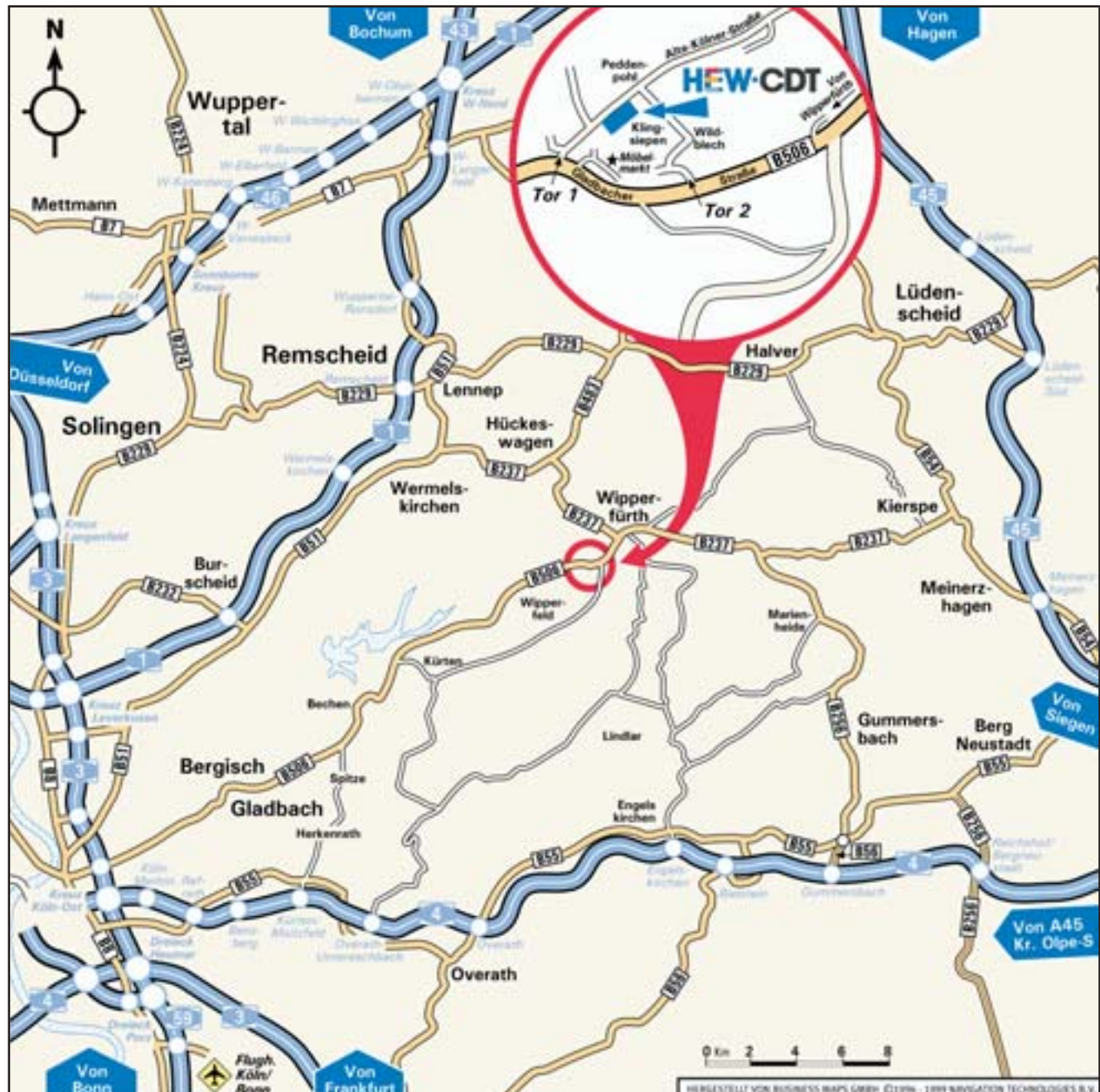
From the airport join the A59 towards Köln. At the "Dreieck Heumar" exit join the A3 towards Oberhausen. Follow the A3 to the "Kreuz Köln-Ost" exit and join the A4 towards Olpe. Leave at the "Kürten / Moitzfeld" exit and continue straight towards Herkenrath, Spitze onto the B506 towards Wipperfürth. Just before Wipperfürth turn left (before the furniture store) towards "Tor 1" (Gate 1).

From A3 Düsseldorf and Düsseldorf Airport

From the airport join the A44 and continue onto the A3 towards Köln. Follow the A3 to the "Leverkusener Kreuz" exit and join the A1 towards Dortmund. Leave the motorway at the "Remscheid" exit and follow as "From the A1 Dortmund".

From A1 Dortmund

Follow the A1 to "Remscheid" exit and join the B229 towards Lennep. In Lennep turn right onto the B51 towards Hückeswagen, Wipperfürth. In Wipperfürth turn right onto the B506 towards Köln. After approx 1,5 km travel through the "Tor 1" gate to find the HEW building on your right.



Company



History

HISTORY

HEW-KABEL/CDT

L o o k i n g f o r s o l u t i o n s ?
C h a l l e n g e u s !

HEW-KABEL/CDT has been established more than 35 years in the field of cable production. This experience is the basis for development and manufacturing of cable insulation and sheathing materials, which meet various requirements even under most extreme conditions.

Since August 1998 HEW-KABEL/CDT is a member of the American CDT-Group (Cable Design Technologies).

The CDT-Group consists of 23 cable manufacturers with 3000 employees and an annual turnover of 1 billion DM worldwide.

The synergy effects of this community is used by HEW-KABEL/CDT to extend today's market position and to be able to work even more efficiently.

So in future we can offer much more tailor made designs.

In addition to our proved product range we also supply cables to extended and new fields of application e.g. telecommunication and net managment.

HEW-KABEL/CDT is meeting the requirements of changing markets and offers complex solutions to customers. Innovative special cables are developed and produced to meet the demands of costumers worldwide.

Even in the field of harnessing the name HEW-KABEL/CDT represents quality and service.

380 employees, highly qualified by ongoing training based on the latest technology are working in research, development, production and sales.

Branches of CDT Group



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Barberton, OH 44203

VDE Prüf- und Zertifizierungsinstitut
VDE VERBAND DER ELEKTROTECHNIK
ELEKTROTECHNIK INFORMATIONSTECHNIK e.V.

CERTIFICATE

Registration Number: 6574 / QM / 04.1997 (AA)

This is to certify that the company

HEW-CDT
KABEL A SUBSIDIARY OF CABLE DESIGN TECHNOLOGIES

located at

**Gewerbegebiet Klingsiepen 12
51688 Wipperfurth**

has implemented and maintains a
Quality System for the following scope

**Manufacturing and Sales of Special Cables and Electric Conductors
as well as Cable Accessories**

This Q System complies with the requirements of

DIN EN ISO 9001:1994

This Certificate is valid until 15.04.2003

VDE Testing and Certification Institute
Certification



63069 Offenbach/Main, Merianstraße 28
Datum: 03.04.2000

The VDE Testing and Certification Institute is accredited by DAF Accreditation Bodies
according to DIN EN ISO 9001 and notified in the EC under ID. No. 0369.


DAF
TÜV-25-000/02-00



Fluoropolymers

Fluoropolymers are high-performance insulation and sheath materials which cover a very wide temperature range (-190°C up to +260°C). Other characteristics of these materials are an excellent resistance to chemicals and other aggressive media and remarkable electrical and mechanical properties. Mainly, HEW-KABEL/CDT processes the four following materials:

- PTFE:** Temperature range: -190°C up to +260°C
Best chemical resistance and very good electrical and mechanical properties are characteristic for this material. *HEW-KABEL/CDT processes PTFE in the form of wrapped tapes and extrusion.*
- PFA:** Temperature range: -190°C up to +260°C
Same material properties as PTFE. Applied by extrusion.
- FEP:** Temperature range: -100°C up to +205°C
Material properties comparable to PTFE except temperature range. Applied by extrusion.
- ETFE:** Temperature range: -100°C up to +150°C
Chemical and mechanical properties comparable to PTFE. Applied by extrusion

The above listed materials are distributed under the following trade names:

	PTFE (Polytetrafluorethylene)	FEP (Fluorethylenepropylene)	ETFE (Ethylene-Tetrafluorethylene)	PFA (Perfluoralkoxy)
Asahi Glass Fluoropolymers	Fluon®		Aflon® COP	Aflon® PFA
Daikin	POLYFLON™ TFE	NEOFLON™ FEP	NEOFLON™ ETFE	NEOFLON™ PFA
DuPont	TEFLON® PTFE	TEFLON® FEP	TEFZEL® ETFE	TEFLON® PFA
Dyneon	Dyneon™ PTFE	Dyneon™ FEP	Dyneon™ ETFE	Dyneon™ PFA

The publication of the product names occurs by courtesy of Asahi Glass Fluoropolymers, Daikin, DuPont and Dyneon.

Further information and technical data concerning fluoropolymers are to be found on the insert.

FLUOROPOLYMERS



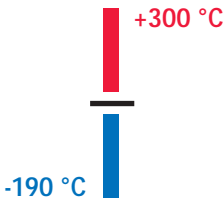
FLUOROPOLYMERS

Products

*Fluoropolymers
Cables*

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PTFE single core according to MIL-W-16878 (metric cross sections)

TE

Construction

Conductor: Cu sp, np, solid or stranded acc. to VDE 0295 or pure nickel
Insulation: PTFE 5Y to ASTM-D 4895
Colour: On request

Application

For internal wiring at low and high ambient temperatures and/or corrosive environments
200 °C with spc conductor
260 °C with npc conductor
260 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

Temperature range: - 190 °C up to + 260 °C, short-term +300 °C
Rated voltage: 250 V / 600 V / 1000 V
Test voltage: 2,5 kV / 3,4 kV / 5 kV
Min. bending radius: 5 x diameter

Notes

→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ PTFE cores are also available in different cross sections and various conductor materials
→ For PTFE cores with VDE-approval please refer to page 12 + 13 (VDE 0881) and page 14 + 15 (VDE ÜG)

cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			copper weight [kg/km]	weight approx. [kg/km]		
		250 V	600 V	1000 V		250 V	600 V	1000 V
0,051	1 x 0,254	----	0,66 - 0,86	0,91 - 1,12	0,49	1,0	1,4	2,3
0,080	1 x 0,32	0,56 - 0,68	0,72 - 0,92	0,99 - 1,19	0,77	1,4	2,0	2,9
0,126	1 x 0,40	0,64 - 0,76	0,80 - 1,00	1,07 - 1,27	1,2	1,8	2,7	3,5
0,197	1 x 0,50	0,74 - 0,86	0,90 - 1,10	1,17 - 1,37	1,9	2,7	3,7	4,6
0,32	1 x 0,64	0,88 - 1,00	1,04 - 1,24	1,30 - 1,50	3,2	4,0	4,8	6,0
0,5	1 x 0,80	1,04 - 1,16	1,20 - 1,40	1,47 - 1,68	4,8	6,1	7,0	8,4
0,5	7 x 0,30	1,15 - 1,27	1,31 - 1,51	1,63 - 1,83	4,8	6,4	7,4	8,6
0,5	15 x 0,203	1,16 - 1,28	1,32 - 1,52	1,63 - 1,83	4,8	6,3	7,6	8,8
0,75	1 x 0,98	----	1,38 - 1,58	1,65 - 1,91	7,2	----	9,3	11
0,75	19 x 0,228	----	1,49 - 1,69	1,85 - 2,05	7,2	----	11	12
0,75	22 x 0,203	----	1,50 - 1,70	1,85 - 2,05	7,2	----	10	12
1	1 x 1,13	----	1,53 - 1,73	1,85 - 2,05	9,6	----	13	14
1	29 x 0,203	----	1,68 - 1,88	2,05 - 2,25	9,6	----	13	15
1,5	1 x 1,38	----	1,88 - 2,08	2,08 - 2,28	14,4	----	18	19
1,5	27 x 0,254	----	2,04 - 2,24	2,30 - 2,50	14,4	----	18	20
2,5	1 x 1,78	----	2,28 - 2,48	2,58 - 2,78	24	----	29	31
2,5	45 x 0,254	----	2,45 - 2,65	2,85 - 3,05	24	----	30	32
4	50 x 0,30	----	2,95 - 3,15	3,50 - 3,70	38	----	45	48
6	75 x 0,30	----	3,65 - 3,85	4,15 - 4,45	58	----	66	69
10	80 x 0,404	----	5,50 - 5,70	5,80 - 6,10	96	----	116	120
16	126 x 0,404	----	6,60 - 6,80	6,80 - 7,10	154	----	176	181
25	196 x 0,404	----	8,30 - 8,60	8,60 - 8,90	240	----	272	286
35	276 x 0,404	----	9,50 - 9,90	9,90 - 10,30	336	----	375	398



Products

Fluoropolymers
Cables

+260 °C

-190 °C



TE
MIL-W-16878

PTFE single core according to MIL-W-16878

Construction

Conductor: Cu sp, np, stranded acc. to MIL- W-16878
Insulation: PTFE 5Y to ASTM-D 4895
Colour: On request

Application

For internal wiring at high ambient temperatures
200 °C with spc conductor
260 °C with npc conductor

Technical data

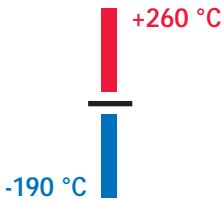
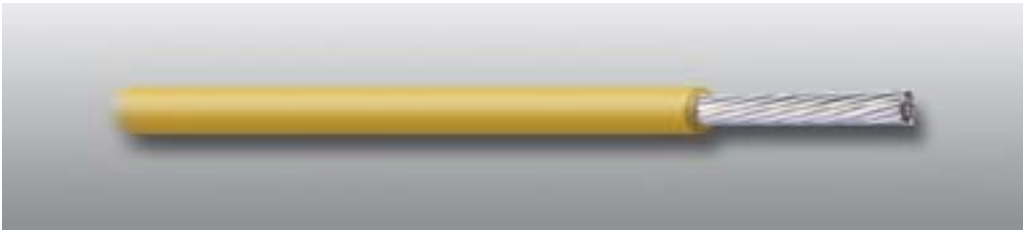
Temperature range: - 190 °C up to + 260 °C
Rated voltage: ET = 250 V / E = 600 V / EE = 1000 V
Test voltage: ET = 2,5 kV / E = 3,4 kV / EE = 5 kV
Min. bending radius: 5 x diameter

Notes

→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ PTFE cores are also available in different cross sections and various conductor materials.
→ For PTFE cores with VDE-approval please refer to page 12 + 13 (VDE 0881) and page 14 + 15 (VDE ÜG)

AWG	cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			conductor resistance at 20° C max. [Ohm/km]		weight approx. [kg/km]		
			ET	E	EE	s.p.	n.p.	ET	E	EE
32	0,034	7 x 0,079	0,508 - 0,610	0,660 - 0,864	0,914 - 1,117	567	607	0,8	1,4	2,2
30	0,057	7 x 0,102	0,559 - 0,660	0,711 - 0,914	0,965 - 1,168	330	363	1,0	1,8	2,6
28	0,089	7 x 0,127	0,635 - 0,737	0,787 - 0,991	1,041 - 1,245	209	223	1,5	2,0	2,8
26	0,141	7 x 0,160	0,737 - 0,838	0,889 - 1,092	1,143 - 1,346	133	141	2,1	2,7	3,9
26	0,155	19 x 0,102	0,737 - 0,838	0,889 - 1,092	1,143 - 1,346	126	138	2,3	2,9	4,2
24	0,227	7 x 0,203	0,864 - 0,965	1,016 - 1,219	1,270 - 1,473	82,7	86,9	3,0	3,8	5,1
24	0,241	19 x 0,127	0,864 - 0,965	1,016 - 1,219	1,270 - 1,473	79,7	84,9	3,2	4,0	5,3
22	0,355	7 x 0,254	1,016 - 1,118	1,168 - 1,372	1,422 - 1,626	52,1	54,4	4,5	5,4	6,6
22	0,382	19 x 0,160	1,016 - 1,118	1,168 - 1,372	1,422 - 1,626	49,5	52,5	4,8	5,7	7,0
20	0,563	7 x 0,320	1,219 - 1,321	1,372 - 1,575	1,626 - 1,829	32,8	34,1	6,7	7,7	9,1
20	0,616	19 x 0,203	1,219 - 1,321	1,372 - 1,575	1,626 - 1,829	30,1	32,0	7,1	8,2	9,7
18	0,897	7 x 0,404	-----	1,626 - 1,880	1,880 - 2,134	20,6	21,3	-----	12	13
18	0,963	19 x 0,254	-----	1,626 - 1,880	1,880 - 2,134	19,0	20,0	-----	12	14
16	1,229	19 x 0,287	-----	1,854 - 2,210	2,108 - 2,413	14,8	15,6	-----	16	17
14	1,941	19 x 0,361	-----	2,235 - 2,591	2,489 - 2,896	9,44	9,84	-----	23	25
12	3,085	19 x 0,455	-----	2,718 - 3,073	2,972 - 3,378	5,94	6,17	-----	35	37
10	4,743	37 x 0,404	-----	3,226 - 3,581	3,480 - 3,886	3,90	4,07	-----	51	55
8	8,604	133 x 0,287	-----	-----	5,055 - 5,563	2,16	2,28	-----	-----	103
6	13,613	133 x 0,361	-----	-----	6,426 - 6,934	1,37	1,43	-----	-----	159
4	21,153	133 x 0,450	-----	-----	8,865 - 9,373	0,865	0,902	-----	-----	277
2	33,696	665 x 0,254	-----	-----	10,033 - 10,541	0,557	0,580	-----	-----	403
1	41,398	817 x 0,254	-----	-----	12,065 - 12,573	0,455	0,472	-----	-----	498
0	52,951	1045 x 0,254	-----	-----	12,802 - 13,310	0,354	0,370	-----	-----	619
00	67,392	1330 x 0,254	-----	-----	14,046 - 14,656	0,278	0,291	-----	-----	735
0000	106,865	2109 x 0,254	-----	-----	17,856 - 18,466	0,177	0,183	-----	-----	1139





PTFE single core according to MIL-W-22759

TE
MIL-W-22759

Construction

Conductor: Cu sp, np acc. to MIL-W-22759
Insulation: PTFE 5Y to VDE 0207 part 6 + ASTM-D 4895
Colour: On request

Application

For internal wiring at high ambient temperatures

Technical data

Temperature range: Cu sp + 200 °C
Cu np + 260 °C
Rated voltage: 600 V / 1000 V
Test voltage: 3,4 kV / 5 kV
Min. bending radius: 5 x diameter

Notes

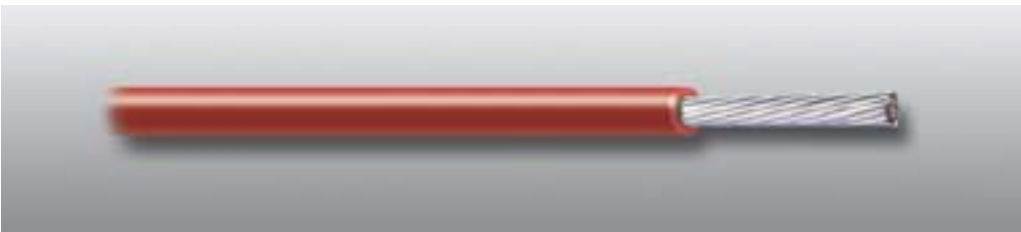
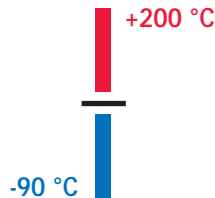
- PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
- PTFE cores with metric conductor constructions see page 9.
- PTFE cores with VDE-approval please refer to page 12+13 (VDE 0881) and page 14+15 (VDE ÜG)

AWG	cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)		conductor resistance at 20° C max. [Ohm/km]		weight approx. [kg/km]	
			600 V	1000 V	vs	vn	600 V	1000 V
28	0,089	7 x 0,127	0,787 - 0,889	1,041 - 1,143	209	223	2	2,9
26	0,155	19 x 0,102	0,914 - 1,016	1,168 - 1,270	126	138	3	4,1
24	0,241	19 x 0,127	1,041 - 1,143	1,295 - 1,397	79,7	84,9	4	5,3
22	0,382	19 x 0,160	1,194 - 1,295	1,473 - 1,575	49,5	52,5	5,9	7,1
20	0,616	19 x 0,203	1,422 - 1,524	1,676 - 1,778	30,1	32,0	8,1	9,4
18	0,963	19 x 0,254	1,676 - 1,778	1,930 - 2,032	19,0	20,0	12	14
16	1,229	19 x 0,287	1,854 - 1,956	2,108 - 2,210	14,8	15,6	16	17
14	1,941	19 x 0,361	2,235 - 2,337	2,464 - 2,616	9,44	9,84	24	26
12	3,085	19 x 0,455	2,743 - 2,896	2,946 - 3,150	5,94	6,17	36	39
10	4,743	37 x 0,404	3,429 - 3,632	3,480 - 3,683	3,90	4,07	53	56
8	8,604	133 x 0,287	5,029 - 5,232	5,131 - 5,385	2,16	2,28	95	99

Products

Fluoropolymers
Cables





TE
Li5Y VDE 0881

PTFE single core according to DIN VDE 0881, stranded

Construction

Conductor: Cu sp, stranded, to VDE 0881
Insulation: PTFE 5Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

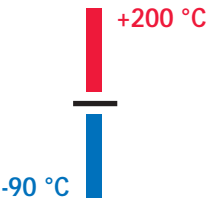
Temperature range: Fixed installation - 90 °C up to + 200 °C
Flexible installation - 55 °C up to + 200 °C
Rated voltage max: 375¹⁾ / 900²⁾ / 1500³⁾ V
(Peak voltage)
Test voltage max: 1500¹⁾ / 2500²⁾ / 3000³⁾ V
(r.m.s)
Insulation resistance: min. 1500 MΩ x km at 20 °C

Notes

→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominal cross section/ coreØ [mm²]/[mm]	minimum number of wires x diameter [mm]	strandØ max. [mm]	nominal insulation wall thickness (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		weight approx. [kg/km]
					min. [mm]	max. [mm]	1 core [Ω/km]	multicore [Ω/km]	
.../... = nominal conductor cross section in mm²/nominal core diameter in mm	x 0,035/0,55	7 x 0,08	0,27	0,15 ¹⁾ (0,12)	0,48	0,62	545	567	0,7
	x 0,055/0,6	7 x 0,10	0,33		0,54	0,68	349	363	1
	x 0,079/0,7	7 x 0,12	0,39		0,60	0,74	236	245	1,3
	x 0,12/0,8	7 x 0,15	0,48		0,69	0,83	151	157	1,8
	x 0,22/0,9	7 x 0,20	0,63		0,84	0,98	84,8	87,3	2,8
	x 0,34/1,1	7 x 0,25	0,78		0,99	1,13	54,3	55,9	4,1
	x 0,56/1,3	7 x 0,32	0,99		1,20	1,34	32,5	33,1	6,3
	x 0,035/0,75	7 x 0,08	0,27	0,25 ²⁾ (0,20)	0,64	0,87	545	567	1,2
	x 0,055/0,8	7 x 0,10	0,33		0,70	0,93	349	363	1,5
	x 0,079/0,9	7 x 0,12	0,39		0,76	0,99	236	245	1,8
	x 0,12/1,0	7 x 0,15	0,48		0,85	1,08	151	157	2,4
	x 0,22/1,1	7 x 0,20	0,63		1,00	1,23	84,8	87,3	3,5
	x 0,34/1,3	7 x 0,25	0,78		1,15	1,38	54,3	55,9	4,9
	x 0,56/1,5	7 x 0,32	0,99		1,36	1,59	32,5	33,1	7,3
	x 0,93/1,8	19 x 0,25	1,30		1,65	1,90	20,0	20,4	11
	x 1,3/2,0	19 x 0,29	1,50		1,85	2,10	14,9	15,2	15
	x 1,9/2,3	19 x 0,36	1,85		2,20	2,45	9,46	9,65	21
	x 3,2/2,8	19 x 0,46	2,35		2,70	2,95	5,79	5,91	34
	x 0,12/1,3	7 x 0,15	0,48	0,40 ³⁾ (0,30)	1,05	1,40	151	157	3,4
	x 0,22/1,4	7 x 0,20	0,63		1,20	1,55	84,8	87,3	4,6
	x 0,34/1,6	7 x 0,25	0,78		1,35	1,73	54,3	55,9	6,2
	x 0,56/1,8	7 x 0,32	0,99		1,56	1,94	32,5	33,1	8,9
	x 0,93/2,1	19 x 0,25	1,30		1,85	2,25	20,0	20,4	13
	x 1,3/2,3	19 x 0,29	1,50		2,05	2,45	14,9	15,2	17
	x 1,9/2,6	19 x 0,36	1,85		2,40	2,80	9,46	9,65	24
	x 3,2/3,1	19 x 0,46	2,35		2,90	3,30	5,79	5,91	37
	x 4,6/3,6	37 x 0,40	2,87		3,40	3,82	3,93	4,01	51
	x 8,8/5,2	133 x 0,29	4,50		4,95	5,45	2,12	2,16	93
	x 13,5/6,2	133 x 0,36	5,55	0,60 ³⁾ (0,45)	6,00	6,50	1,35	1,38	140





PTFE single core according to DIN VDE 0881, solid

TE
5Y VDE 0881

Construction

Conductor: Cu sp, solid, to VDE 0881
Insulation: PTFE 5Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

Temperature range: Fixed installation - 90 °C up to + 200 °C
Flexible installation - 55 °C up to + 200 °C
Rated voltage max: 375¹⁾ / 900²⁾ V
(Peak voltage)
Test voltage max: 1500¹⁾ / 2500²⁾
(r.m.s.)
Insulation resistance: min. 1500 MΩ × km at 20 °C

Notes

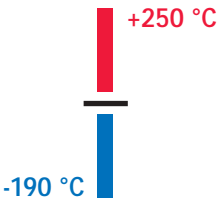
→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominalØ conductor/core [mm]	nominal wall thickness of insulation (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		weight approx. [kg/km]
			min. [mm]	max. [mm]	1 core [Ω/km]	multicore [Ω/km]	
.../... = nominal conductor diameter in mm/ nominal core diameter in mm	x 0,25/0,55	0,15 ¹⁾ (0,12)	0,49	0,61	369	384	0,9
	x 0,32/0,6		0,56	0,68	221	230	1,2
	x 0,4/0,7		0,64	0,76	141	146	1,7
	x 0,5/0,8		0,74	0,86	90,4	93,1	2,4
	x 0,63/0,95		0,87	0,99	57	58,7	3,6
	x 0,8/1,1		1,04	1,17	35,3	36,0	5,5
	x 0,25/0,75	0,25 ²⁾ (0,20)	0,65	0,85	369	384	1,3
	x 0,32/0,8		0,72	0,92	221	230	1,7
	x 0,4/0,9		0,80	1,00	141	146	2,2
	x 0,5/1,0		0,90	1,10	90,4	93,1	3
	x 0,63/1,2		1,03	1,23	57,0	58,7	4,3
	x 0,8/1,3		1,20	1,40	35,3	36,0	6,3
	x 1,0/1,5		1,40	1,60	22,6	23,1	9,1
	x 1,3/1,8		1,70	1,90	13,4	13,6	15
	x 1,6/2,1		2,00	2,23	8,83	9,01	21
	x 2,1/2,6		2,50	2,70	5,13	5,23	35

Products

Fluoropolymers
Cables





TE
VDE-Reg.-Nr. 6574 5411

PTFE single core with VDE-approval, stranded

Construction

Conductor: Cu bare, tp, sp, np, stranded to VDE 0295 class 5 or pure nickel
Insulation: PTFE 5Y to VDE 0207 part 6
Colour: On request
Identification: Printing of VDE registration number

Application

For wiring of electrical appliances and lighting up to a maximum operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
200 °C with spc conductor
250 °C with npc conductor
250 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

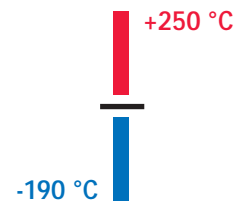
Temperature range: - 190 °C up to + 250 °C
Rated voltage Uo/U: 300 / 500 V
Test voltage: 3,4 kV
Min. bending radius: 5 x diameter

Notes

→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ PTFE cores with VDE-approval are also available with conductors to VDE 0295 class 2

cross section [mm²]	maximum Ø of single wires [mm]	max. coreØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,22 (AWG 24)	0,21	0,63	1,2	2,2	4,2
0,5	0,21	0,98	1,5	2,4	4,5
0,75	0,21	1,16	1,7	4,8	7,3
1	0,21	1,35	1,9	7,2	10
1,5	0,26	1,61	2,1	9,6	13
2,5	0,26	2,00	2,7	14,4	19





PTFE single core with VDE-approval, solid

TE
VDE-Reg.-Nr. 6574 5411

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp, sp, np
solid acc.. to VDE 0295 class 1
or pure nickel
Insulation: PTFE 5Y to VDE 0207 part 6
Colour: On request
Identification: Printing of VDE registration
number

Application

For wiring in electrical appliances and lighting up to a maximum operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
200 °C with spc conductor
250 °C with npc conductor
250 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

Temperature range: - 190 °C up to + 250 °C
Rated voltage Uo/U: 300 / 500 V
Test voltage: 3,4 kV
Min. bending radius: 10 x diameter

Notes

→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ PTFE cores with VDE ÜG and flexible conductors are to be found on page 14.

cross section [mm²]	conductorØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,22 (AWG 24)	0,51	1,1	2	3,8
0,5	0,80	1,4	4,8	6,8
0,75	0,98	1,6	7,2	9,5
1	1,13	1,7	9,6	12
1,5	1,38	2,0	14,4	17





TE

UL file no. E 69837 (M)

PTFE single core with UL approval

Construction

Conductor:

Insulation:

Colour:

Identification:

Conductor construction and material according to table below

PTFE acc. to UL standards 62 and 83

On request

Print or temperature marker (stripe)***

Application

For internal wiring of appliances according to corresponding style approvals

Technical data

Temperature range:

Rated voltage:

Test voltage:

Flame test:

- 190 °C up to max. + 250 °C

125 - 1000 V

Acc. to style approvals

FT1

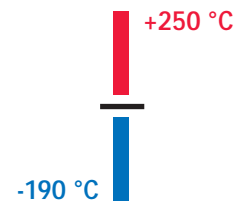
Notes

→ The itemized cables are also available

- with combined UL/CSA approvals
- screened, UL approved construction

→ UL/CSA approved cables with additional insulation materials refer to pages 143 onwards.

UL Style*	AWG*	average wall thickness [mm]	range*		conductor construction	
			temperature [°C]	voltage [Volt]	material	solid / stranded
1164	32 - 10	0,33	150	300*	spc, npc, pure nickel, NiCr-alloy	x x
1180	32 - 10	0,33	200	300*	spc, npc, pure nickel, NiCr-alloy	x x
1198	30 - 10	0,51	150	600*	spc, npc, pure nickel, NiCr-alloy	x x
	8 - 2	0,77	150	600*	spc, npc, pure nickel, NiCr-alloy	x x
	1 - 4/0	1,15	150	600*	spc, npc, pure nickel, NiCr-alloy	x x
1199	30 - 10	0,51	200	600*	spc, npc, pure nickel, NiCr-alloy	x x
	8 - 2	0,77	200	600*	spc, npc, pure nickel, NiCr-alloy	x x
	1 - 4/0	1,15	200	600*	spc, npc, pure nickel, NiCr-alloy	x x
1212	36 - 16	0,20	80	-----	spc, npc, pure nickel, Cw sp	x x
1213	32 - 20	0,20	105	-----	spc, npc, pure nickel, Cw sp	x x
1371	36 - 20	0,14	105	-----	bare copper, tpc, spc, npc, pure nickel	x x
	19 - 16	0,20	105	-----	bare copper, tpc, spc, npc, pure nickel	x x
	15 - 10	0,33	105	-----	bare copper, tpc, spc, npc, pure nickel	x x
	9 - 6	0,51	105	-----	bare copper, tpc, spc, npc, pure nickel	x x
1512	16 - 14	0,25	105	-----	spc, npc	x
1538	36 - 20	0,14	105	125*	tpc, spc, npc, pure nickel, Cw sp	x x
	19 - 15	0,2	105	125*	tpc, spc, npc, pure nickel, Cw sp	x x
	14 - 10	0,33	105	125*	tpc, spc, npc, pure nickel, Cw sp	x x
	9 - 6	0,51	105	125*	tpc, spc, npc, pure nickel, Cw sp	x x
1577	32 - 16	0,3	200	-----	tpc, spc, npc, pure nickel	x x
1584	30 - 10	0,56	200	1000	tpc, spc, npc, alloy sp	x x
1659**	26 - 10	0,51	250	600*	npc, pure nickel, Cw sp	x x
	8 - 2	0,77	250	600*	npc, pure nickel, Cw sp	x x
	1 - 4/0	1,15	250	600*	npc, pure nickel, Cw sp	x x



PTFE single core with UL approval

TE
UL file no. E 69837 (M)

Products

Fluoropolymers
Cables

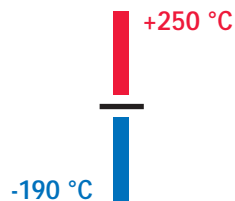
UL Style*	AWG*	average wall thickness [mm]	range*		conductor construction		
			temperature [°C]	voltage [Volt]	material	solid / stranded	
1716	40 - 20	0,14	150	150*	bare copper, spc, npc	x	x
	19 - 16	0,2	150	150*	bare copper, spc, npc	x	x
	15 - 10	0,33	150	150*	bare copper, spc, npc	x	x
	9 - 6	0,51	150	150*	bare copper, spc, npc	x	x
1723	32 - 16	0,28	200	tpc, spc, npc, pure nickel	x	x
1746	20 - 16	0,23	200	125	npc, spc, pure nickel, Cw sp	x	x
1815	32 - 10	0,33	250	300*	npc, pure nickel	x	x

* pay attention to UL-Style specifications.
** on request choice of teflon impregnated glass fibre braid

*** temperature identification stripe:
operating temperature [°C] colour of identification stripe
80 blue
105 yellow
150 orange
200 black
250 2 x black or printing max. 250 °C

If base colour is identical with temperature identification stripe a printing of °C is necessary.
If cross sections are < AWG 20 above mentioned identification is not necessary.





TE
CSA file no. LL 59063

PTFE single core with CSA approval

Construction

Conductor*: Cu sp, np, pure nickel, nickel alloy to CSA-C22.2 No.210.2-M90
Insulation: PTFE to CSA-C22.2 No.210.2-M90
Colour: On request (except transparent and clear)
Identification: Print (not necessary with conductor diameter < 1,3 mm)

Application

Internal wiring of appliances

Technical data

Temperature range: - 190 °C up to max. + 250 °C
Rated voltage: 150 - 1000 V
Test voltage: According to CSA standard
Flame test: FT1

Notes

→ The itemized cables are also available with combined UL/CSA approvals
→ UL/CSA approved cables with additional insulation materials refer to page 148 onwards.

AWG	average wall thickness [mm]	range	
		temperature [°C]	voltage [Volt]
28 - 16	0,25	150	150
28 - 16	0,25	200	150
28 - 16	0,25	250	150
28 - 16 14 - 10 8 - 2 1 - 4/0	0,25 0,33 0,76 1,15	200	300
28 - 16 14 - 10 8 - 2 1 - 4/0	0,33 0,51 0,76 1,15	200	600
28 - 16 14 - 10 8 - 2 1 - 4/0	0,51 0,76 1,15 1,52	200	1000
28 - 16 14 - 10 8 - 2 1 - 4/0	0,25 0,33 0,76 1,15	250	300
28 - 16 14 - 10 8 - 2 1 - 4/0	0,33 0,51 0,76 1,15	250	600
28 - 16 14 - 10 8 - 2 1 - 4/0	0,51 0,76 1,15 1,52	250	1000

conductor material

bare copper, single wire Ø < 0,38 mm
bare copper, single wire Ø ≥ 0,38 mm
tpc, single wire Ø < 0,38 mm
tpc, single wire Ø ≥ 0,38 mm
spc
npc
nickel alloy
cadmium-chrome-copper silver plated

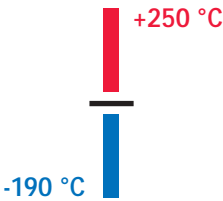
temperature limit [°C]

150
200
150
200
200
250
250
250

*temperature limits of conductor
(C 22.2 No. 210.2 - M 90 class I, group A/B)

*pay attention to CSA specification.





PTFE single core double insulated with VDE approval, stranded

TETE
VDE reg. no. 6574 6594

Construction

- Conductor: Cu bare, tp, sp, np, stranded acc to VDE 0295 class 5 or pure nickel
- Insulation: PTFE 5Y to VDE 0207 part 6
- Sheath: PTFE 5Y to VDE 0207 part 6
- Colour: On request
- Identification: Printing of VDE registration number

Technical data

- Temperature range: - 190 °C up to + 250 °C
- Rated voltage Uo/U: 300 / 300 V
- Test voltage: 3,4 kV
- Min. bending radius: 5 x diameter

Application

- For wiring in electrical appliances and lighting up to a maximum operating temperature of:
- 130 °C with bare copper conductor
- 180 °C with tpc conductor
- 200 °C with spc conductor
- 250 °C with npc conductor
- 250 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Notes

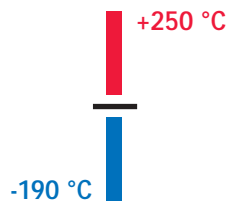
- PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
- PTFE cores with VDE ÜG are also available with conductors to VDE 0295 class 2

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	1,95	4,8	11
0,75	0,21	1,16	2,1	7,2	14
1	0,21	1,35	2,3	9,6	18

Products

Fluoropolymers
Cables





TETE
VDE-reg.-nr. 6574 6594

PTFE single core double insulated with VDE-approval, solid

Construction

- Conductor: Cu bare, tp, sp, np
solid acc. to VDE 0295 class 1
or pure nickel
- Insulation: PTFE 5Y to VDE 0207 part 6
- Sheath: PTFE 5Y to VDE 0207 part 6
- Colour: On request
- Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting up to a maximum operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
200 °C with spc conductor
250 °C with npc conductor
250 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

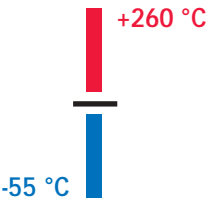
- Temperature range: - 190 °C up to + 250 °C
- Rated voltage Uo/U: 300 / 300 V
- Test voltage: 3,4 kV
- Min. bending radius: 10 x diameter

Note

→ PTFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties

cross section [mm²]	conductor Ø [mm]	o.d. [mm] ± 5 %	copper weightt [kg/km]	weight approx. [kg/km]
0,5	0,8	1,8	4,8	11
0,75	0,98	2,0	7,2	14
1	1,13	2,15	9,6	17





PTFE/glass fibre single core according to MIL-W-22759 class 1 and 2

TEGL
MIL-W-22759

Construction

- Conductor: Cu sp, stranded, for class 1
Cu np, stranded, for class 2
- Insulation: PTFE 5Y to ASTM-D 4895
- Colour: Transparent
- Braiding: PTFE impregnated glass fibre yarn
- Identification: Class 1 with blue identification tracer
Class 2 with orange identification tracer

Application

- For wiring at high ambient temperature and increased mechanical stress e.g.
- Lead wires for engine constructions
 - Traffic and automotive

Technical data

- Temperature range: Class 1 - 55 °C up to + 200 °C
Class 2 - 55 °C up to + 260 °C
- Rated voltage: 600 V
- Test voltage: 3,4 kV
- Min. bending radius: 5 x diameter

Note

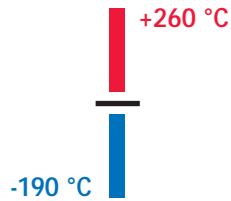
→ Standard MIL-W-22759 supersedes MIL-W-7139

AWG	cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)	weight approx. [kg/km]
22	0,382	19 x 0,160	2,032 - 2,235	9,4
20	0,616	19 x 0,203	2,286 - 2,489	13
18	0,963	19 x 0,254	2,540 - 2,794	17
16	1,229	19 x 0,287	2,921 - 3,175	20
14	1,941	19 x 0,361	3,378 - 3,632	27
12	2,976	37 x 0,320	3,861 - 4,115	49
10	4,743	37 x 0,404	4,420 - 4,775	65
8	8,605	133 x 0,287	6,121 - 6,477	116
6	13,613	133 x 0,361	7,188 - 7,696	159
4	21,625	133 x 0,455	8,636 - 9,398	248
2	33,696	665 x 0,254	10,287 - 11,049	380
1	41,398	817 x 0,254	11,557 - 12,319	464
0	52,951	1045 x 0,254	12,573 - 13,589	581
00	67,392	1330 x 0,254	14,097 - 15,113	763
000	84,367	1665 x 0,254	15,748 - 16,764	920
0000	106,865	2109 x 0,254	17,526 - 18,542	1145

Products

Fluoropolymers
Cables





TEYTE
VG 95218

PTFE/Kapton®/PTFE single core according to VG 95218 part 20 B

Construction

Conductor: Cu np, stranded
Insulation: PTFE 5Y to ASTM-D 4895
Wrapping: Kapton® foil
Sheath: PTFE 5Y to ASTM-D 4895
Sheath colour: White

Application

For wiring at high ambient temperatures and increased mechanical stress e.g.
- aerospace
- lead wires for engines and gear-boxes

Technical data

Temperature range: - 190 °C up to + 260 °C
Rated voltage: 600 V
Test voltage: 3,4 kV

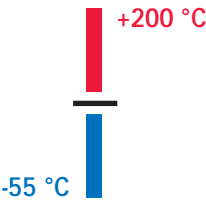
Note

→ The itemized cables are also available with reduced wall thickness, but without VG-approval.

part no.	nominal cross section [mm²]	number of single wires / legs (L)	maximum single wireØ [mm]	maximum conductor Ø [mm]	maximum conductor resistance at 20°C [Ohm/km]	o.d. [mm]		weight approx. [kg/km]
						minimum	maximum	
001	0,5	37	----	0,94	42,3	1,8	2,1	9,9
002	0,75			1,20	26,6	2,0	2,3	13
003	1			1,32	21,0	2,2	2,5	16
004	1,5			1,68	13,5	2,5	2,8	23
005	2,5			2,14	8,20	3,1	3,5	35
006	4	7 L	0,16	3,05	5,09	4,0	4,4	56
007	6		0,21	3,8	3,39	4,8	5,3	77
008	10	19 L		4,8	1,95	5,9	6,5	123
009	16			5,8	1,24	7,1	7,7	198
010	25	37 L		0,21	7,7	0,795	9,0	9,6
011	35		9		0,565	10,3	10,9	410
012	50		0,31		10,7	0,393	12,1	12,8
013	70			12,6	0,277	14,2	14,9	752
014	95			14,8	0,210	16,6	17,4	997
015	120			16,4	0,163	18,4	19,2	1212

Kapton® is a registered trademark of Du Pont.





Fluoropolymer insulated coaxial cables according to MIL-C-17

TECTE
MIL-C-17

Products

Fluoropolymers
Cables

Construction

Conductor: Cu sp or copperweld sp steel wire
Insulation: PTFE 5Y to VDE 0207 part 6
Screen: Cu sp braid
Sheath: PTFE, FEP or PTFE with impregna-
ted glass fibre braid

Application

For wiring at high ambient temperatures, increased mechanical stress
and limited space e.g.
- high frequency technology
- communication technology
- instrumentation engineering
- mechanical engineering

Technical data

Temperature range: - 55 °C up to + 200 °C
For additional technical data refer to table below.

Notes

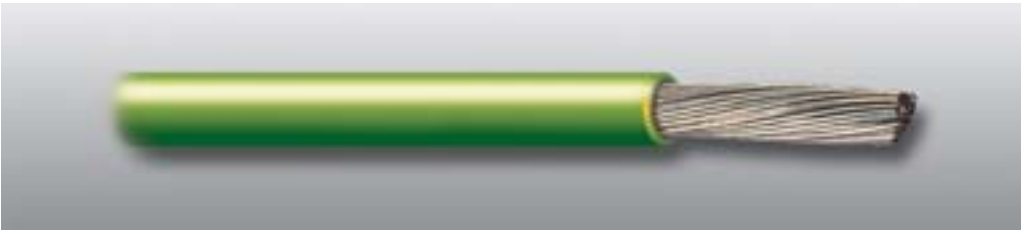
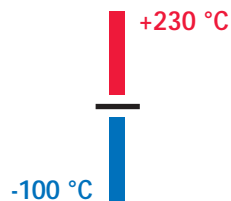
→ PTFE insulated coaxial cables offer exceptionally good chemical
resistance as well as excellent electrical and mechanical properties.
Additional characteristics are a wide temperature range and small
outer diameters
→ Upon request, the itemized coaxial cables are also available with UL
approval
→ Upon request, we also offer coaxial- and triaxial cables acc. to
customers specifications.

type	conductor construction [mm]	dielec- tric Ø [mm] min. max.	screen- ing	sheath			impe- dance [Ohm]	capa- cittance [pF/m] nom. *max.	max. attenu- ation at 400 MHz [dB/ 100 m]	opera- ting voltage: [kV]	corona voltage [kV]	weight approx. [kg/km]
				sheath material	minimum wall thick- ness [mm]	o.d. [mm] min. max.						
RG-140 /U	1 x 0,64 Cwsp	3,60 - 3,81	GC sp	TGL	-----	5,72 - 6,12	75 ± 3	63,0	26,2	1,7	2,3	70
RG-142 B/U	1 x 0,94 Cw sp	2,82 - 3,07	2xGC sp	FEP	0,381	4,82 - 5,08	50 ± 2	96,1	32,5	1,4	1,9	66
RG-165 /U	7 x 0,80 C sp	7,12 - 7,36	GC sp	TGL	-----	10,16 - 10,66	50 ± 2	96,1	15,0	3,7	5,0	198
RG-178 B/U	7 x 0,10 Cw sp	0,79 - 0,88	GCsp	FEP	-----	1,70 - 1,90	50 ± 2	*104,9	108,0	0,75	1,0	9
RG-179 B/U	7 x 0,10 Cw sp	1,53 - 1,67	GC sp	FEP	-----	2,41 - 2,66	75 ± 3	*75,0	68,8	0,9	1,2	16
RG-180 B/U	7 x 0,10 Cw sp	2,52 - 2,66	GCsp	FEP	-----	3,47 - 3,68	95 ± 5	*57,0	55,7	1,1	1,5	28
RG-187 A/U	7 x 0,10 Cw sp	1,53 - 1,67	GC sp	PTFE	-----	2,41 - 2,66	75 ± 3	*75,0	68,8	0,9	1,2	15
RG-188 A/U	7 x 0,17 Cw sp	1,45 - 1,60	GC sp	PTFE	-----	2,38 - 2,59	50 ± 2	*104,9	68,8	0,9	1,2	15
RG-195 A/U	7 x 0,10 Cw sp	2,52 - 2,66	GC sp	PTFE	-----	3,47 - 3,68	95 ± 3	*57,0	55,7	1,1	1,5	27
RG-196 A/U	7 x 0,10 Cw sp	0,79 - 0,88	GC sp	PTFE	-----	1,70 - 1,90	50 ± 2	*104,9	108,0	0,75	1,0	8,6
RG-225 /U	7 x 0,79 C sp	7,12 - 7,36	2xGC sp	TGL	-----	10,67 - 11,17	50 ± 2	*106,0	16,4	3,7	5,0	268
RG-302 /U	1 x 0,64 Cw sp	3,60 - 3,81	GC sp	FEP	-----	5,00 - 5,25	75 ± 2	*104,9	28,2	1,4	1,9	59
RG-303 /U	1 x 0,94 Cw sp	2,82 - 3,07	GC sp	FEP	-----	4,19 - 4,44	50 ± 2	*104,9	28,2	1,4	1,9	47
RG-304 /U	1 x 1,50 Cw sp	4,58 - 4,82	GCsp	FEP	0,381	6,90 - 7,31	50 ± 2	*104,9	20,9	2,2	3,0	128
RG-316 /U	7 x 0,17 Cw sp	1,45 - 1,60	GC sp	FEP	-----	2,38 - 2,59	50 ± 2	*104,9	68,8	0,9	1,2	16

C = copper
Cw= copperweld steel wire
sp = silver plated
G = braid

PTFE = polytetrafluorethylene
FEP = fluorethylene propylene
TGL = PTFE + glass fibre braid with silicone impregnation





TE FEP single core solid and stranded (metric cross sections)

Construction

Conductor: Cu bare, tp, sp, np, solid and stranded acc. to VDE 0295 or pure nickel
Insulation: FEP 6Y to ASTM-D 2116 + VDE 0207 part 6
Colour: On request

Application

- For wiring at low and high ambient temperatures and/or corrosive environments

Technical data

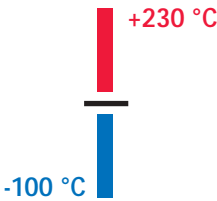
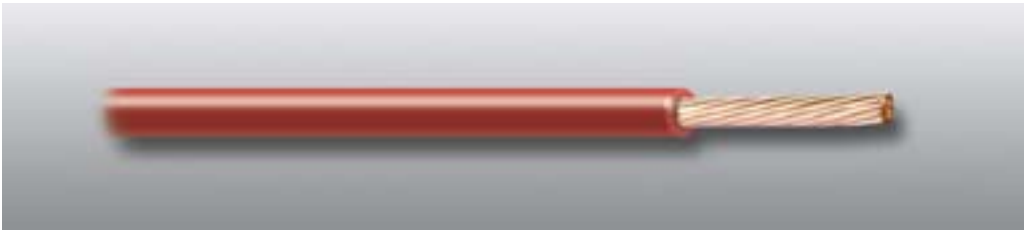
Temperature range: - 100 °C up to + 205 °C, short-term + 230 °C
Rated voltage U₀/U: 250 /600 V / 1000 V
Test voltage: 2,5 kV / 3,4 kV / 5 kV
Min. bending radius: 10 x diameter

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ FEP cores are also available in different cross sections and various conductor materials
→ For FEP cores with VDE-approval please refer to page 26+27 (VDE 0881) and page 28+29 (VDE ÜG)

cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			copper weight [kg/km]	weight approx. [kg/km]		
		250 V	600 V	1000 V		250 V	600 V	1000 V
0,051	1 x 0,254	----	0,66 - 0,86	0,91 - 1,12	0,49	1	1,4	2,3
0,080	1 x 0,32	0,56 - 0,68	0,72 - 0,92	0,99 - 1,19	0,77	1,4	2,0	2,9
0,126	1 x 0,40	0,64 - 0,76	0,80 - 1,00	1,07 - 1,27	1,2	1,8	2,7	3,5
0,197	1 x 0,50	0,74 - 0,86	0,90 - 1,10	1,17 - 1,37	1,9	2,7	3,7	4,6
0,32	1 x 0,64	0,88 - 1,00	1,04 - 1,24	1,30 - 1,50	3,2	4,0	4,8	6,0
0,5	1 x 0,80	1,04 - 1,16	1,20 - 1,40	1,47 - 1,68	4,8	6,1	7,0	8,4
0,5	7 x 0,30	1,15 - 1,27	1,31 - 1,51	1,57 - 1,77	4,8	6,4	7,4	8,6
0,5	15 x 0,203	1,16 - 1,28	1,32 - 1,52	1,58 - 1,78	4,8	6,3	7,6	8,8
0,75	1 x 0,98	----	1,38 - 1,58	1,65 - 1,91	7,2	----	9,3	11
0,75	19 x 0,228	----	1,49 - 1,69	1,95 - 2,05	7,2	----	11	12
0,75	22 x 0,203	----	1,50 - 1,70	1,76 - 1,96	7,2	----	10	12
1	1 x 1,13	----	1,53 - 1,73	1,79 - 1,99	9,6	----	13	14
1	29 x 0,203	----	1,68 - 1,88	1,94 - 2,14	9,6	----	13	15
1,5	1 x 1,38	----	1,88 - 2,08	2,08 - 2,28	14,4	----	18	19
1,5	27 x 0,254	----	2,04 - 2,24	2,30 - 2,50	14,4	----	18	20
2,5	1 x 1,78	----	2,28 - 2,48	2,58 - 2,78	24	----	29	31
2,5	45 x 0,254	----	2,45 - 2,65	2,85 - 3,05	24	----	30	32
4	50 x 0,30	----	2,95 - 3,15	3,35 - 3,55	38	----	45	48
6	75 x 0,30	----	3,65 - 3,85	4,15 - 4,45	58	----	66	69
10	80 x 0,404	----	5,50 - 5,80	5,80 - 6,10	96	----	116	120
16	126 x 0,404	----	6,60 - 6,80	7,00 - 7,30	154	----	176	181
25	196 x 0,404	----	8,30 - 8,60	8,60 - 8,90	240	----	272	286
35	276 x 0,404	----	9,50 - 9,90	9,90 - 10,30	336	----	375	398





FEP single core according to MIL-W-16878

TE
MIL-W-16878

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp, sp, np, stranded, acc. to MIL-W-16878
Insulation: FEP 6Y to ASTM-D 2116
Colour: On request

Application

- For wiring at high ambient temperatures

Technical data

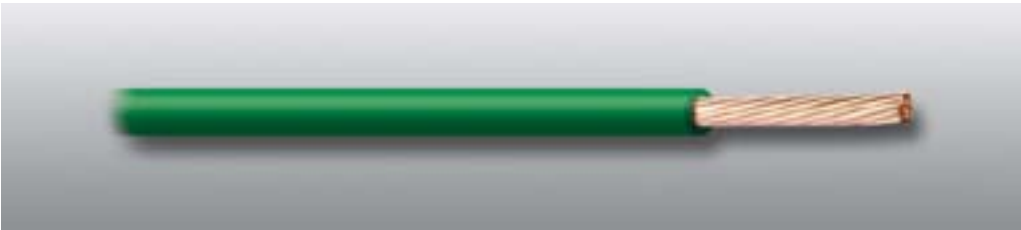
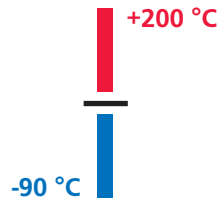
Temperature range: - 100 °C up to + 200 °C
short-term + 230 °C
tpc + 180 °C
Rated voltage: KT=250 V / K=600 V / KK=1000 V
Test voltage: KT=2,5 kV / K=3,4 kV / KK=5 kV
Min. bending radius: 5 x diameter

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ FEP cores with metric conductor constructions see page 24
→ FEP cores with VDE-approval please refer to page 26+27 (VDE 0881) and page 28+29 (VDE ÜG)

AWG	cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			conductor resistance at 20° C max. [Ohm/km]			weight approx. [kg/km]		
			KT	K	KK	tp	sp	np	KT	K	KK
32	0,034	7 x 0,079	0,508 - 0,610	0,660 - 0,864	0,889 - 1,092	620	567	607	0,8	1,4	2,2
30	0,057	7 x 0,102	0,559 - 0,660	0,711 - 0,914	0,965 - 1,168	374	330	363	1	1,8	2,6
28	0,089	7 x 0,127	0,635 - 0,737	0,787 - 0,991	1,041 - 1,245	225	209	223	1,5	2	2,8
26	0,141	7 x 0,160	0,737 - 0,838	0,889 - 1,092	1,143 - 1,346	142	133	141	2,1	2,7	3,9
26	0,155	19 x 0,102	0,737 - 0,838	0,889 - 1,092	1,143 - 1,346	135	126	138	2,3	2,9	4,2
24	0,227	7 x 0,203	0,864 - 0,965	1,016 - 1,219	1,270 - 1,473	88,6	82,7	86,9	3	3,8	5,1
24	0,241	19 x 0,127	0,864 - 0,965	1,016 - 1,219	1,270 - 1,473	85,9	79,7	84,9	3,2	4	5,3
22	0,355	7 x 0,254	1,016 - 1,118	1,168 - 1,372	1,422 - 1,626	56,1	52,1	54,4	4,5	5,4	6,6
22	0,382	19 x 0,160	1,016 - 1,118	1,168 - 1,372	1,422 - 1,626	53,1	49,5	52,5	4,8	5,7	7
20	0,563	7 x 0,320	1,219 - 1,321	1,372 - 1,575	1,626 - 1,829	35,1	32,8	34,1	6,7	7,7	9,1
20	0,616	19 x 0,203	1,219 - 1,321	1,372 - 1,575	1,626 - 1,829	32,4	30,1	32,0	7,1	8,2	9,7
18	0,897	7 x 0,404	-----	1,626 - 1,880	1,880 - 2,134	21,9	20,6	21,3	-----	12	13
18	0,963	19 x 0,254	-----	1,626 - 1,880	1,880 - 2,134	20,4	19,0	20,0	-----	12	14
16	1,229	19 x 0,287	-----	1,854 - 2,210	2,108 - 2,413	15,7	14,8	15,6	-----	16	17
14	1,941	19 x 0,361	-----	2,235 - 2,591	2,489 - 2,896	10,03	9,44	9,84	-----	23	25
12	3,085	19 x 0,455	-----	2,718 - 3,073	2,972 - 3,378	6,29	5,94	6,17	-----	35	37
10	4,743	37 x 0,404	-----	3,226 - 3,581	3,480 - 3,886	4,13	3,90	4,07	-----	51	55
8	8,604	133 x 0,287	-----	4,699 - 5,055	5,055 - 5,563	2,30	2,16	2,28	-----	92	103
6	13,613	133 x 0,361	-----	-----	7,264 - 7,645	1,45	1,37	1,43	-----	-----	159
4	21,153	133 x 0,450	-----	-----	8,865 - 9,373	0,918	0,865	0,902	-----	-----	277
2	33,696	665 x 0,254	-----	-----	10,033 - 10,541	0,600	0,557	0,580	-----	-----	403
1	41,398	817 x 0,254	-----	-----	12,065 - 12,573	0,488	0,455	0,472	-----	-----	498
0	52,951	1045 x 0,254	-----	-----	12,802 - 13,310	0,380	0,354	0,370	-----	-----	619
00	67,392	1330 x 0,254	-----	-----	14,046 - 14,656	0,298	0,278	0,291	-----	-----	735
000	106,865	2109 x 0,254	-----	-----	17,856 - 18,466	0,183	0,177	0,183	-----	-----	1139





TE
Li6Y VDE 0881

FEP single core according to DIN VDE 0881, stranded

Construction

Conductor: Cu sp, stranded, to VDE 0881
Insulation: FEP 6Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

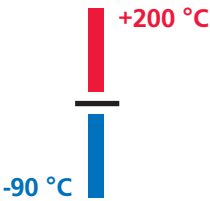
Temperature range: Fixed installation -90 °C up to + 180 °C, short-term + 200 °C
Flexible installation - 55 °C up to + 180 °C, short-term + 200 °C
Rated voltage max: 375¹⁾ / 900²⁾ / 1500³⁾ V
(Peak voltage)
Test voltage max: 1500¹⁾ / 2500²⁾ / 3000³⁾ V
(r.m.s.)
Insulation resistance: min. 500 MΩ x km at 20 °C

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominal cross section/ coreØ [mm²]/[mm]	minimum number of wires x diameter [mm]	strandØ max. [mm]	nominal insulation wall thickness (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		weight approx. [kg/km]
					min. [mm]	max. [mm]	1 core [Ω/km]	multi core [Ω/km]	
.../... = nominal conductor cross section in mm² / nominal core diameter in mm	x 0,035/0,55	7 x 0,08	0,27	0,15 ¹⁾ (0,12)	0,48	0,62	545	567	0,7
	x 0,055/0,6	7 x 0,10	0,33		0,54	0,68	349	363	1,0
	x 0,079/0,7	7 x 0,12	0,39		0,60	0,74	236	245	1,3
	x 0,12/0,8	7 x 0,15	0,48		0,69	0,83	151	157	1,8
	x 0,22/0,9	7 x 0,20	0,63		0,84	0,98	84,8	87,3	2,8
	x 0,34/1,1	7 x 0,25	0,78		0,99	1,13	54,3	55,9	4,1
	x 0,56/1,3	7 x 0,32	0,99		1,20	1,34	32,5	33,1	6,3
	x 0,035/0,75	7 x 0,08	0,27	0,25 ²⁾ (0,20)	0,64	0,87	545	567	1,2
	x 0,055/0,8	7 x 0,10	0,33		0,70	0,93	349	363	1,5
	x 0,079/0,9	7 x 0,12	0,39		0,76	0,99	236	245	1,8
	x 0,12/1,0	7 x 0,15	0,48		0,85	1,08	151	157	2,4
	x 0,22/1,1	7 x 0,20	0,63		1,00	1,23	84,8	87,3	3,5
	x 0,34/1,3	7 x 0,25	0,78		1,15	1,38	54,3	55,9	4,9
	x 0,56/1,5	7 x 0,32	0,99		1,36	1,59	32,5	33,1	7,3
	x 0,93/1,8	19 x 0,25	1,30		1,65	1,90	20,0	20,4	11
	x 1,3/2,0	19 x 0,29	1,50		1,85	2,10	14,9	15,2	15
	x 1,9/2,3	19 x 0,36	1,85		2,20	2,45	9,46	9,65	21
	x 3,2/2,8	19 x 0,46	2,35		2,70	2,95	5,79	5,91	34
	x 0,12/1,3	7 x 0,15	0,48	0,40 ³⁾ (0,30)	1,05	1,40	151	157	3,4
	x 0,22/1,4	7 x 0,20	0,63		1,20	1,55	84,8	87,3	4,6
	x 0,34/1,6	7 x 0,25	0,78		1,35	1,73	54,3	55,9	6,2
	x 0,56/1,8	7 x 0,32	0,99		1,56	1,94	32,5	33,1	8,9
	x 0,93/2,1	19 x 0,25	1,30		1,85	2,25	20,0	20,4	13
	x 1,3/2,3	19 x 0,29	1,50		2,05	2,45	14,9	15,2	17
	x 1,9/2,6	19 x 0,36	1,85		2,40	2,80	9,46	9,65	24
	x 3,2/3,1	19 x 0,46	2,35		2,90	3,30	5,79	5,91	37
	x 4,6/3,6	37 x 0,40	2,87		3,40	3,82	3,93	4,01	51
	x 8,8/5,2	133 x 0,29	4,50	0,60 ³⁾ (0,45)	4,95	5,45	2,12	2,16	93
	x 13,5/6,2	133 x 0,36	5,55		6,00	6,50	1,35	1,38	139





FEP single core to DIN VDE 0881, solid

TE
6Y VDE 0881

Products

Fluoropolymers
Cables

Construction

Conductor: Cu sp, solid to VDE 0881
Insulation: FEP 6Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

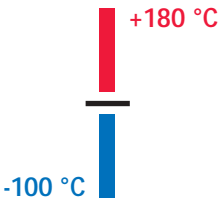
Temperature range: Fixed installation - 90 °C up to + 180 °C, short-term + 200 °C
Flexible installation - 55 °C up to + 180 °C, short-term + 200 °C
Rated voltage max: 375¹⁾ / 900²⁾ V
(Peak voltage)
Test voltage max: 1500¹⁾ / 2500²⁾ V
(r.m.s.)
Insulation resistance: min. 500 MΩ x km at 20 °C

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominalØ conductor/core [mm]	nominal wall thickness of insulation (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		weight approx. [kg/km]
			min. [mm]	max. [mm]	1 core [Ω/km]	multicore [Ω/km]	
.../... = nominal conductor diameter in mm / nominal core diameter in mm	x 0,25/0,55	0,15 ¹⁾ (0,12)	0,49	0,61	369	384	0,9
	x 0,32/0,6		0,56	0,68	221	230	1,2
	x 0,4/0,7		0,64	0,76	141	146	1,7
	x 0,5/0,8		0,74	0,86	90,4	93,1	2,4
	x 0,63/0,95		0,87	0,99	57	58,7	3,6
	x 0,8/1,1		1,04	1,17	35,3	36,0	5,5
	x 0,25/0,75	0,25 ²⁾ (0,20)	0,65	0,85	369	384	1,3
	x 0,32/0,8		0,72	0,92	221	230	1,7
	x 0,4/0,9		0,80	1,00	141	146	2,2
	x 0,5/1,0		0,90	1,10	90,4	93,1	3
	x 0,63/1,2		1,03	1,23	57,0	58,7	4,3
	x 0,8/1,3		1,20	1,40	35,3	36,0	6,3
	x 1,0/1,5		1,40	1,60	22,6	23,1	9,1
	x 1,3/1,8		1,70	1,90	13,4	13,6	15
	x 1,6/2,1		2,00	2,23	8,83	9,01	21
	x 2,1/2,6		2,50	2,70	5,13	5,23	35





TE
VDE reg. no. 6574 5519

FEP single core with VDE approval, stranded

Construction

Conductor: Cu bare, tp, sp, np, stranded, to VDE 0295 class 5 or pure nickel
Insulation: FEP 6Y to VDE 0207 part 6
Colour: On request
Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting up to a maximum operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
180 °C with spc conductor
180 °C with npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

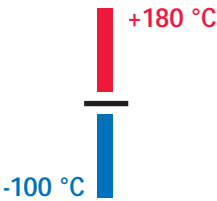
Temperature range: - 100 °C up to + 180 °C
Rated voltage U₀/U: 300 / 500 V
Test voltage: 3,4 kV
Min. bending radius: 5 x diameter

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ FEP cores with VDE-approval are also available with conductors to VDE 0295 class 2

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight [kg/km]
0,5	0,21	0,98	1,5	2,4	4,5
0,75	0,21	1,16	1,7	4,8	7,3
1	0,21	1,35	1,9	7,2	10
1,5	0,26	1,61	2,1	9,6	13
2,5	0,26	2,11	2,7	14,4	19





FEP single core with VDE-approval, solid

TE
VDE reg. no. 6574 5519

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp, sp, np, solid acc. to VDE 0295 class 1 or pure nickel
Insulation: FEP 6Y to VDE 0207 part 6
Colour: On request
Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting up to a maximum operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
180 °C with spc conductor
180 °C with npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

Temperature range: - 100 °C up to + 180 °C
Rated voltage U₀/U: 300 / 500 V
Test voltage: 3,4 kV
Min. bending radius: 10 x diameter

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ FEP cores with VDE ÜG and stranded conductors see page 28

cross section [mm ²]	conductorØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,80	1,4	4,8	6,8
0,75	0,98	1,6	7,2	9,5
1	1,13	1,65	9,6	12
1,5	1,38	2,0	14,4	17
2,5	1,78	2,5	24	28





TE

UL file no. E 69837 (M)

FEP single core with UL approval

Construction

Conductor:

Conductor construction and material
acc. to table below

Insulation:

FEP acc. to UL standards 62 and 83

Colour:

On request

Identification:

Print or temperature marker (stripe)***

Application

For internal wiring of appliances taking into consideration corresponding style approvals

Technical data

Temperature range:

- 100 °C up to max. + 200 °C

Rated voltage:

125 - 1000 V

Test voltage:

According to style approvals

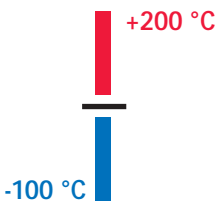
Flame test:

FT1

Notes

- The itemized cables are also available
- with combined UL/CSA approvals,
- screened, UL approved construction
- UL/CSA approved cables with additional insulation materials refer to page 143 onwards.

UL Style*	AWG*	average wall thickness (min. wall thickness) [mm]	range *		conductor construction	
			temperature [°C]	voltage [Volt]	material	solid / stranded
1226	32 - 20	0,2 (0,18)	80	----	spc, npc, pure nickel Cw sp	x x
	19 - 14	0,33 (0,30)	80	----	spc, npc, pure nickel Cw sp	x x
1227	32 - 20	0,2 (0,18)	105	----	bare copper, tpc, spc, npc, pure nickel	x x
	19 - 14	0,33 (0,3)	105	----	bare copper, tpc, spc, npc, pure nickel	x x
1330	30 - 10	0,51 (0,46)	200	600	bare copper, tpc, spc, npc, pure nickel	x x
	8 - 2	0,76 (0,69)	200	600	bare copper, tpc, spc, npc, pure nickel	x x
	1 - 4/0	1,15 (1,02)	200	600	bare copper, tpc, spc, npc, pure nickel	x x
1331	30 - 10	0,5 (0,46)	150	600	bare copper, tpc, spc, npc, pure nickel	x x
	8 - 2	0,76 (0,69)	150	600	bare copper, tpc, spc, npc, pure nickel	x x
	1 - 4/0	1,15 (1,02)	150	600	bare copper, tpc, spc, npc, pure nickel	x x
1332	30 - 10	0,33 (0,31)	200	300*	bare copper, tpc, spc, npc, pure nickel	x x
1333	30 - 10	0,33 (0,31)	150	300*	bare copper, tpc, spc, npc, pure nickel	x x
1371	32 - 20	0,14 (0,13)	105	600	bare copper, tpc, spc, npc, pure nickel	x x
	19 - 16	0,2 (0,18)	105	600	bare copper, tpc, spc, npc, pure nickel	x x
	15 - 10	0,33 (0,31)	105	600	bare copper, tpc, spc, npc, pure nickel	x x
	9 - 6	0,51 (0,46)	105	600	bare copper, tpc, spc, npc, pure nickel	x x
1538	36 - 20	0,14 (0,13)	105	125*	bare copper, tpc, spc, npc, pure nickel	x x
	19 - 16	0,2 (0,18)	105	125*	bare copper, tpc, spc, npc, pure nickel	x x
	15 - 10	0,33 (0,30)	105	125*	bare copper, tpc, spc, npc, pure nickel	x x
	9 - 6	0,51 (0,46)	105	125*	bare copper, tpc, spc, npc, pure nickel	x x
1577	32 - 16	0,31 (0,25)	200	----	tpc, spc, npc, pure nickel	x x
1591	32 - 16	0,41 (0,33)	150	300	tpc, spc, npc, pure nickel	x x
1592	32 - 16	0,41 (0,33)	200	300	npc, > 0,38 mm, pure nickel	x x
1716	40 - 20	0,14 (0,13)	150	150	bare copper, spc, npc	x x
	19 - 16	0,2 (0,18)	150	150	bare copper, spc, npc	x x
	15 - 10	0,33 (0,31)	150	150	bare copper, spc, npc	x x
	9 - 6	0,51 (0,46)	150	150	bare copper, spc, npc	x x



FEP single cores with UL approval

TE
UL file no. E 69837 (M)

Products

Fluoropolymers
Cables

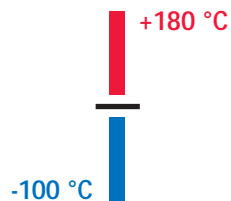
UL Style*	AWG*	average wall thickness (min. wall thickness) [mm]	range*		conductor construction	
			temperature [°C]	voltage [Volt]	material	solid / stranded
1723	32 - 16	0,25 (0,2)	200	-----	tpc, spc, npc, pure nickel	x x
1886	30 - 10	0,25 (0,23)	150	300	tpc, spc, npc, pure nickel	x x
1887	30 - 10	0,35 (0,33)	150	600	tpc, spc, npc, pure nickel	x x
	8 - 2	0,51 (0,46)	150	600	tpc, spc, npc, pure nickel	x x
	1 - 4/0	0,76 (0,69)	150	600	tpc, spc, npc, pure nickel	x x
10203	30 - 10	0,51 (0,46)	150	1000	bare copper, tpc, spc, npc, pure nickel	x x
	8 - 2	0,76 (0,69)	150	1000	bare copper, tpc, spc, npc, pure nickel	x x
	1 - 4/0	1,15 (1,02)	150	1000	bare copper, tpc, spc, npc, pure nickel	x x
10203	30 - 10	0,51 (0,46)	200	1000	bare copper, tpc, spc, npc, pure nickel	x x
	8 - 2	0,76 (0,69)	200	1000	bare copper, tpc, spc, npc, pure nickel	x x
	1 - 4/0	1,15 (1,02)	200	1000	bare copper, tpc, spc, npc, pure nickel	x x

* pay attention to UL-Style specifications.

*** temperature identification stripe:	
operating temperature [°C]	colour of identification stripe
80	blue
105	yellow
150	orange
200	black
250	2 x black or printing max. 250°C

If base colour is identical with temperature identification stripe a printing of °C is necessary.
If cross sections are < AWG 20 above mentioned identification is not necessary.





TE
CSA file no. LL 59063

FEP single core with CSA approval

Construction

Conductor*: Cu bare tp sp, np, pure nickel, nickel alloy to CSA-C22.2 No.210.2-M90
Insulation: FEP acc. to CSA-C22.2 No. 210.2-M90
Colour: On request (except transparent and clear)
Identification: Print (not necessary with conductor diameter < 1,3 mm)

Application

For internal wiring of appliances

Technical data

Temperature range: - 100 °C up to max. + 180 °C
Rated voltage: 150 - 1000 V
Test voltage: According to CSA standard
Flame test: FT1

Notes

→ The itemized cables are also available with combined UL/CSA approvals
→ UL/CSA approved cables with additional insulation materials refer to page 148 onwards.

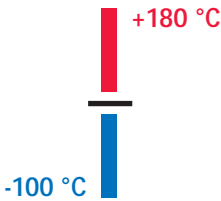
AWG	average wall thickness (min. wall thickness) [mm]	range	
		temperature [°C]	voltage [Volt]
32 - 16	0,25 (0,21)	150	150
32 - 10	0,38 (0,33)	180	300
32 - 10	0,76 (0,69)	180	600
8 - 2	1,15 (1,02)		
1 - 4/0	1,52 (1,37)		

* temperature limits of conductor
(C 22.2 No. 210.2 - M 90 class I, group A/B)

conductor material	temperature limit [°C]
bare copper, single wire Ø < 0,38 mm	150
bare copper, single wire Ø ≥ 0,38 mm	200
tpc, single wire Ø < 0,38 mm	150
tpc, single wire Ø ≥ 0,38 mm	200
spc	200
npc	250
npc 27 %	450
pure nickel	250 flexible application 450 fixed application
nickel alloy	250
cadmium-chrome-copper-silver plated	250

pay attention to CSA specification.





FEP single core double insulated with VDE-approval, stranded

TETE
VDE reg. no. 6574 9410

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp, sp, np, stranded, acc. to VDE 0295 class 5 or pure nickel
Insulation: FEP 6Y to VDE 0207 part 6
Sheath: FEP 6Y to VDE 0207 part 6
Colour: On request
Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting appropriate for protection class II up to an operating temperature of:
130 °C with bare copper conductor
180 °C with tpc, spc, npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

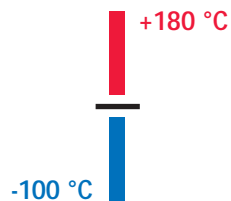
Temperature range: - 100 °C up to + 180 °C
Rated voltage U₀/U: 300 / 500 V
Test voltage: 3,4 kV
Min. bending radius: 5 x diameter

Notes

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ FEP cores with VDE ÜG are also available with conductors to VDE 0295 class 2

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	2,1	4,8	12
0,75	0,21	1,16	2,3	7,2	15
1	0,21	1,35	2,5	9,6	18
1,5	0,26	1,61	2,7	14,4	24
2,5	0,26	2,11	3,4	24	37





TETE

VDE reg. no. 6574 9410

FEP single core double insulated with VDE-approval, solid

Construction

Conductor: Cu bare, tp, sp, np, solid acc. to VDE 0295 class 1 or pure nickel
Insulation: FEP 6Y to VDE 0207 part 6
Jacket: FEP 6Y to VDE 0207 part 6
Colour: On request
Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting appropriate for protection class II up to an operating temperature of:
130 °C with bare copper conductor
180 °C with tpc, spc, npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

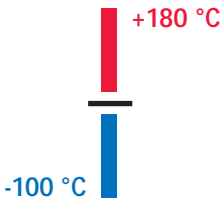
Temperature range: - 100 °C up to + 180 °C
Rated voltage U₀/U: 300 / 500 V
Test voltage: 3,4 kV
Min. bending radius: 10 x diameter

Note

→ FEP cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties

cross section [mm²]	conductor Ø [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,8	2	4,8	11
0,75	0,98	2,2	7,2	14
1	1,13	2,3	9,6	17
1,5	1,38	2,6	14,4	23
2,5	1,78	3,2	24	36





ETFE single core solid and stranded, (metric cross sections)

TE

Construction

Conductor: Cu bare, tp, sp, np, solid or stranded acc. to VDE 0295 or pure nickel
Insulation: ETFE 7Y to ASTM-D 3159 + VDE 0207 part 6
Colour: On request

Application

For wiring at low and high ambient temperatures and/or corrosive environments

Technical data

Temperature range: - 100 °C up to + 150 °C, short-term + 180 °C
Rated voltage Uo/U: 250 V / 600 V / 1000 V
Test voltage: 2,5 kV / 3,4 kV / 5 kV
Min. bending radius: 10 x diameter

Notes

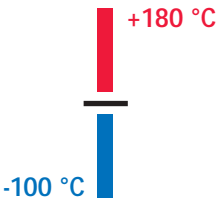
→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ ETFE cores are also available in different cross sections and various conductor materials
→ For ETFE cores with VDE-approval please refer to page 38-40 (VDE 0881) and page 41+43 (VDE ÜG)

cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			copper weight [kg/km]	weight approx. [kg/km]		
		250 V	600 V	1000 V		250 V	600 V	1000 V
0,051	1 x 0,254	----	0,66 - 0,86	0,91 - 1,12	0,49	0,8	1,2	2,0
0,080	1 x 0,32	0,56 - 0,68	0,72 - 0,92	0,99 - 1,19	0,77	1,1	1,6	2,7
0,126	1 x 0,40	0,64 - 0,76	0,80 - 1,00	1,07 - 1,27	1,2	1,6	2,1	2,9
0,197	1 x 0,50	0,74 - 0,86	0,90 - 1,10	1,17 - 1,37	1,9	2,4	3,0	3,9
0,32	1 x 0,64	0,88 - 1,00	1,04 - 1,24	1,30 - 1,50	3,2	3,6	4,2	5,3
0,5	1 x 0,80	1,04 - 1,16	1,20 - 1,40	1,47 - 1,68	4,8	5,5	6,4	7,3
0,5	7 x 0,30	1,15 - 1,27	1,31 - 1,51	1,57 - 1,77	4,8	5,8	6,8	7,7
0,5	15 x 0,203	1,16 - 1,28	1,32 - 1,52	1,58 - 1,78	4,8	6,0	6,9	7,7
0,75	1 x 0,98	----	1,38 - 1,58	1,65 - 1,91	7,2	----	9,0	10
0,75	19 x 0,228	----	1,49 - 1,69	1,75 - 1,95	7,2	----	10	11
0,75	22 x 0,203	----	1,50 - 1,70	1,76 - 1,96	7,2	----	9,4	10
1	1 x 1,13	----	1,53 - 1,73	1,79 - 1,99	9,6	----	12	13
1	29 x 0,203	----	1,68 - 1,88	1,94 - 2,14	9,6	----	12	13
1,5	1 x 1,38	----	1,88 - 2,08	2,08 - 2,28	14,4	----	17	18
1,5	27 x 0,254	----	2,04 - 2,24	2,30 - 2,50	14,4	----	17	19
2,5	1 x 1,78	----	2,28 - 2,48	2,58 - 2,78	24	----	27	29
2,5	45 x 0,254	----	2,45 - 2,65	2,85 - 3,05	24	----	28	30
4	50 x 0,30	----	2,95 - 3,15	3,50 - 3,70	38	----	43	46
6	75 x 0,30	----	3,65 - 3,85	4,15 - 4,45	58	----	63	66
10	80 x 0,404	----	5,50 - 5,70	5,80 - 6,10	96	----	110	114
16	126 x 0,404	----	6,60 - 6,80	7,00 - 7,30	154	----	168	177
25	196 x 0,404	----	8,30 - 8,60	8,60 - 8,90	240	----	256	267
35	276 x 0,404	----	9,50 - 9,90	9,90 - 10,30	336	----	359	370



Products

Fluoropolymers
Cables



TE

ETFE single core stranded, (AWG cross sections)

Construction

Conductor: Cu tp, sp, np acc. to MIL-W-16878
Insulation: ETFE 7Y to VDE 0207 part 6 + ASTM-D 3159
Colour: On request

Application

For wiring at high ambient temperatures

Technical data

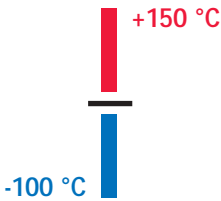
Temperature range: - 100 °C up to + 150 °C, short-term + 180 °C
Rated voltage: ZT=250 V / Z=600 V / ZZ=1000 V
Test voltage: ZT=2,5 kV / Z=3,4 kV / ZZ=5 kV
Min. bending radius: 5 x diameter

Notes

- ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
- ETFE cores with metric conductor constructions see page 35
- For ETFE cores with VDE-approval please refer to page 38-40 (VDE 0881) and page 41+43 (VDE 0250)

AWG	cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			conductor resistance at 20° C max. [Ω/km]			weight approx. [kg/km]		
			ZT	Z	ZZ	vz	vs	vn	ZT	Z	ZZ
32	0,034	7 x 0,079	0,508 - 0,610	0,660 - 0,864	0,914 - 1,117	620	567	607	0,8	1,1	1,8
30	0,057	7 x 0,102	0,559 - 0,660	0,711 - 0,914	0,965 - 1,168	374	330	363	0,9	1,6	2,1
28	0,089	7 x 0,127	0,635 - 0,737	0,787 - 0,991	1,041 - 1,245	225	209	223	1,3	1,8	2,4
26	0,141	7 x 0,160	0,737 - 0,838	0,889 - 1,092	1,143 - 1,346	142	133	141	1,9	2,4	3,4
26	0,155	19 x 0,102	0,737 - 0,838	0,889 - 1,092	1,143 - 1,346	135	126	138	2	2,5	3,5
24	0,227	7 x 0,203	0,864 - 0,965	1,016 - 1,219	1,270 - 1,473	88,6	82,7	86,9	2,8	3,4	4,4
24	0,241	19 x 0,127	0,864 - 0,965	1,016 - 1,219	1,270 - 1,473	85,9	79,7	84,9	3	3,6	4,6
22	0,355	7 x 0,254	1,016 - 1,118	1,168 - 1,372	1,422 - 1,626	56,1	52,1	54,4	4,3	4,9	6,2
22	0,382	19 x 0,160	1,016 - 1,118	1,168 - 1,372	1,422 - 1,626	53,1	49,5	52,5	4,5	5,2	6,4
20	0,563	7 x 0,320	1,219 - 1,321	1,372 - 1,575	1,626 - 1,829	35,1	32,8	34,1	6,4	7,2	8,2
20	0,616	19 x 0,203	1,219 - 1,321	1,372 - 1,575	1,626 - 1,829	32,4	30,1	32,0	7	7,8	8,8
18	0,897	7 x 0,404	-----	1,626 - 1,880	1,880 - 2,134	21,9	20,6	21,3	-----	11	12
18	0,963	19 x 0,254	-----	1,626 - 1,880	1,880 - 2,134	20,4	19,0	20,0	-----	12	13
16	1,229	19 x 0,287	-----	1,854 - 2,210	2,108 - 2,413	15,7	14,8	15,6	-----	14	15
14	1,941	19 x 0,361	-----	2,235 - 2,591	2,489 - 2,896	10,03	9,44	9,84	-----	22	24
12	3,085	19 x 0,455	-----	2,718 - 3,073	2,972 - 3,378	6,29	5,94	6,17	-----	34	35
10	4,743	37 x 0,404	-----	3,226 - 3,581	3,480 - 3,886	4,13	3,9	4,07	-----	50	52
8	8,604	133 x 0,287	-----	4,699 - 5,055	5,055 - 5,563	2,30	2,16	2,28	-----	91	98
6	13,613	133 x 0,361	-----	-----	6,426 - 6,934	1,45	1,37	1,43	-----	-----	152
4	21,153	133 x 0,450	-----	-----	8,865 - 9,373	0,918	0,865	0,902	-----	-----	260
2	33,696	665 x 0,254	-----	-----	10,033 - 10,541	0,600	0,557	0,580	-----	-----	356
1	41,398	817 x 0,254	-----	-----	12,065 - 12,573	0,488	0,455	0,472	-----	-----	465
0	52,951	1045 x 0,254	-----	-----	12,802 - 13,310	0,380	0,354	0,370	-----	-----	591
00	67,392	1330 x 0,254	-----	-----	14,046 - 14,656	0,298	0,278	0,291	-----	-----	762
000	106,865	2109 x 0,254	-----	-----	17,856 - 18,466	0,183	0,177	0,183	-----	-----	1215





ETFE single core according to MIL-W-22759, light weight + medium weight

TE
MIL-W-22759

Construction

Conductor: Cu tp acc. to MIL-W-22759
Insulation: ETFE 7Y to VDE 0207 part 6 + ASTM-D 3159
Colour: On request

Application

For wiring at high ambient temperatures and increased mechanical stress, e.g.
- lighting
- domestic appliances
- instrumentation engineering
- mechanical engineering
- chemical industry
- traffic and automotive

Technical data

Temperature range: - 100 °C up to + 150 °C
Rated voltage: 600 V
Test voltage: 3,4 kV
Min. bending radius: 5 x diameter

Notes

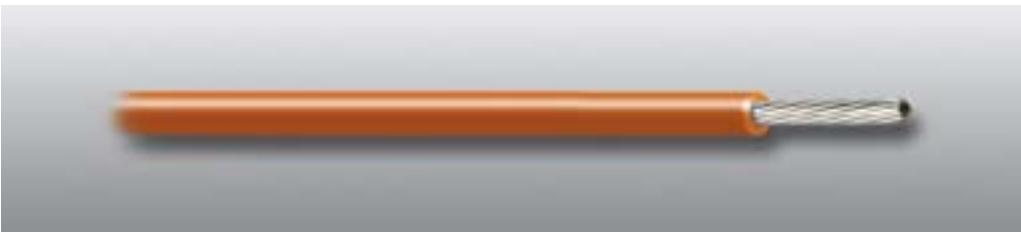
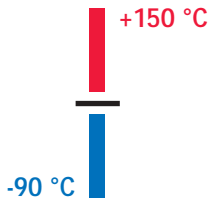
→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ ETFE cores with metric conductor constructions see page 35
→ For ETFE cores with VDE-approval please refer to page 38-40 (VDE 0881) and page 41+43 (VDE 0250)

AWG	cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)		conductor resistance at 20° C max. [Ohm/km]	weight approx. [kg/km]	
			light weight	medium weight		light weight	medium weight
26	0,155	19 x 0,102	0,762 - 0,864	-----	135,5	2	-----
24	0,241	19 x 0,127	0,864 - 0,965	1,092 - 1,194	85,9	3	3,6
22	0,382	19 x 0,160	1,041 - 1,143	1,270 - 1,372	53,1	4,6	5,2
20	0,616	19 x 0,203	1,245 - 1,346	1,473 - 1,575	32,4	7	7,8
18	0,963	19 x 0,254	1,499 - 1,600	1,753 - 1,854	20,4	10,3	12
16	1,229	19 x 0,287	1,727 - 1,829	1,956 - 2,057	15,7	13,1	14
14	1,941	19 x 0,361	2,108 - 2,210	2,311 - 2,413	10,03	20,2	22
12	3,085	37 x 0,32	2,642 - 2,794	2,819 - 2,972	6,63	31,8	34
10	4,743	37 x 0,404	3,327 - 3,480	3,454 - 3,607	4,13	50,1	51
8	8,604	133 x 0,287	-----	4,978 - 5,131	2,30	-----	91
6	13,613	133 x 0,361	-----	6,274 - 6,426	1,45	-----	144
4	21,153	133 x 0,450	-----	7,823 - 8,026	0,918	-----	226
2	33,696	665 x 0,254	-----	9,754 - 9,957	0,600	-----	345
1	41,398	817 x 0,254	-----	10,820 - 11,074	0,488	-----	425
0	52,951	1045 x 0,254	-----	12,014 - 12,319	0,380	-----	559
00	67,392	1330 x 0,254	-----	13,691 - 14,046	0,298	-----	747

Products

Fluoropolymers
Cables





TE
Li7Y VDE 0881

ETFE single core to DIN VDE 0881, stranded

Construction

Conductor: Cu bare, tp, sp to VDE 0881
Insulation: ETFE 7Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

Temperature range: Fixed installation - 90 °C up to + 135 °C
Flexible installation - 55 °C up to + 135 °C

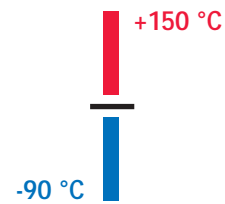
Rated voltage max: 375¹⁾ / 900²⁾ / 1500³⁾ V
(Peak voltage)
Test voltage max: 1500¹⁾ / 2500²⁾ / 3000³⁾ V
(r.m.s.)
Insulation resistance: min. 1500 MΩ x km at 20 °C

Notes

→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominal cross section/ coreØ [mm²]/[mm]	minimum number of wires x diameter [mm]	strandØ max. [mm]	nominal insulation wall thickness (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		weight approx. [kg/km]
					min. [mm]	max. [mm]	1 core [Ω/km]	multicore [Ω/km]	
.../... = nominal conductor cross section in mm²/nominal core diameter in mm	x 0,035/0,55	7 x 0,08	0,27	0,15 ¹⁾ (0,12)	0,48	0,62	545	567	0,6
	x 0,055/0,6	7 x 0,10	0,33		0,54	0,68	349	363	0,9
	x 0,079/0,7	7 x 0,12	0,39		0,60	0,74	236	245	1,1
	x 0,12/0,8	7 x 0,15	0,48		0,69	0,83	151	157	1,6
	x 0,22/0,9	7 x 0,20	0,63		0,84	0,98	84,8	87,3	2,6
	x 0,34/1,1	7 x 0,25	0,78		0,99	1,13	54,3	55,9	3,9
	x 0,56/1,3	7 x 0,32	0,99		1,20	1,34	32,5	33,1	5,9
	x 0,035/0,75	7 x 0,08	0,27	0,25 ²⁾ (0,20)	0,64	0,87	545	567	1,0
	x 0,055/0,8	7 x 0,10	0,33		0,70	0,93	349	363	1,3
	x 0,079/0,9	7 x 0,12	0,39		0,76	0,99	236	245	1,6
	x 0,12/1,0	7 x 0,15	0,48		0,85	1,08	151	157	2,1
	x 0,22/1,1	7 x 0,20	0,63		1,00	1,23	84,8	87,3	3,2
	x 0,34/1,3	7 x 0,25	0,78		1,15	1,38	54,3	55,9	4,5
	x 0,56/1,5	7 x 0,32	0,99		1,36	1,59	32,5	33,1	6,8
	x 0,93/1,8	19 x 0,25	1,30		1,65	1,90	20,0	20,4	11
	x 1,3/2,0	19 x 0,29	1,50		1,85	2,10	14,9	15,2	14
	x 1,9/2,3	19 x 0,36	1,85		2,20	2,45	9,46	9,65	20
	x 3,2/2,8	19 x 0,46	2,35		2,70	2,95	5,79	5,91	33
	x 0,12/1,3	7 x 0,15	0,48	0,40 ³⁾ (0,30)	1,05	1,40	151	157	2,9
	x 0,22/1,4	7 x 0,20	0,63		1,20	1,55	84,8	87,3	4,0
	x 0,34/1,6	7 x 0,25	0,78		1,35	1,73	54,3	55,9	5,5
	x 0,56/1,8	7 x 0,32	0,99		1,56	1,94	32,5	33,1	8,0
	x 0,93/2,1	19 x 0,25	1,30		1,85	2,25	20,0	20,4	12
	x 1,3/2,3	19 x 0,29	1,50		2,05	2,45	14,9	15,2	16
	x 1,9/2,6	19 x 0,36	1,85		2,40	2,80	9,46	9,65	22
	x 3,2/3,1	19 x 0,46	2,35		2,90	3,30	5,79	5,91	35
	x 4,6/3,6	37 x 0,40	2,87		3,40	3,82	3,93	4,01	49
	x 8,8/5,2	133 x 0,29	4,50	0,60 ³⁾ (0,45)	4,95	5,45	2,12	2,16	90
	x 13,5/6,2	133 x 0,36	5,55		6,00	6,50	1,35	1,38	135





ETFE single core to DIN VDE 0881, stranded, light weight

TE
Li7Y VDE 0881

Products

Fluoropolymers
Cables

Construction

Conductor: Cu tp to VDE 0881
Insulation: ETFE 7Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

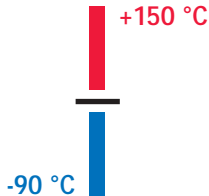
Temperature range: Fixed installation - 90 °C up to + 135 °C, short-term + 150 °C
Flexible installation - 55 °C up to + 135 °C, short-term + 150 °C
Rated voltage max: 900 V
(Peak voltage)
Test voltage max: 2500 V
(r.m.s.)
Insulation resistance: see table below

Notes

→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominal cross section/ coreØ [mm²]/[mm]	minimum number of wires x diameter [mm]	strandØ max. [mm]	nominal insulation wall thickness (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		insulation resistance at 20° C min. [MΩ · Km]	weight approx. [kg/km]
					min. [mm]	max. [mm]	1 core [Ω/km]	multicore [Ω/km]		
.../...= nominal conductor cross section in mm²/nominal core diameter in mm	x 0,15/0,8	19 x 0,10	0,51	0,16 (0,13)	0,76	0,86	135	139	1500	1,9
	x 0,22/0,9	19 x 0,12	0,61		0,86	0,97	86,0	88,5		2,6
	x 0,36/1,1	19 x 0,15	0,79		1,04	1,14	53,2	54,7		3,8
	x 0,59/1,3	19 x 0,20	0,99	0,17 (0,13)	1,24	1,35	32,4	33,1	900	6,3
	x 0,93/1,55	19 x 0,25	1,25		1,50	1,60	20,4	20,8		9,5
	x 1,3/1,8	19 x 0,29	1,40	0,21 (0,17)	1,73	1,83	15,8	16,1		13
	x 1,9/2,15	19 x 0,36	1,75	0,23 (0,18)	2,11	2,21	10,0	10,2	600	19
	x 2,8/2,7	37 x 0,31	2,26	0,26 (0,19)	2,64	2,79	6,63	6,76		29
	x 4,6/3,4	37 x 0,40	2,84	0,32 (0,25)	3,33	3,48	4,13	4,22		47





TE
7Y VDE 0881

ETFE single core to DIN VDE 0881, solid

Construction

Conductor: Cu bare, tp, sp, solid to VDE 0881
Insulation: ETFE 7Y to VDE 0207 part 6
Colour: On request

Application

For internal wiring of telecommunication devices, electronic modules in appliances and for wiring of telecommunication and data processing systems.

Technical data

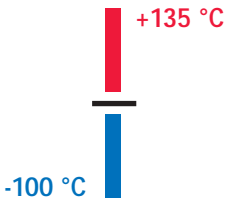
Temperature range: Fixed installation - 90 °C up to + 135 °C, short-term + 150 °C
Flexible installation - 55 °C up to + 135 °C, short-term + 150 °C
Rated voltage max: 375¹⁾ / 900²⁾ V
(Peak voltage)
Test voltage max: 1500¹⁾ / 2500²⁾ V
(r.m.s.)
Insulation resistance: min. 1500 MΩ x km at 20 °C

Notes

→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ Hook-up wires and strands according to this standard must not be used for high voltage installations

	nominal diameter conductor/core [mm]	nominal insulation wall thickness (minimum value) [mm]	coreØ		conductor resistance at 20° C max.		weight approx. [kg/km]
			min. [mm]	max. [mm]	1 core [Ω/km]	multicore [Ω/km]	
.../... = nominal conductor diameter in mm/ nominal core diameter in mm	x 0,25/0,55	0,15 ¹⁾ (0,12)	0,49	0,61	369	384	0,8
	x 0,32/0,6		0,56	0,68	221	230	1,1
	x 0,4/0,7		0,64	0,76	141	146	1,5
	x 0,5/0,8		0,74	0,86	90,4	93,1	2,3
	x 0,63/0,95		0,87	0,99	57,0	58,7	3,4
	x 0,8/1,1		1,04	1,17	35,3	36,0	5,2
	x 0,25/0,75	0,25 ²⁾ (0,20)	0,65	0,85	369	384	1,1
	x 0,32/0,8		0,72	0,92	221	230	1,5
	x 0,4/0,9		0,80	1,00	141	146	2,0
	x 0,5/1,0		0,90	1,10	90,4	93,1	2,7
	x 0,63/1,2		1,03	1,23	57,0	58,7	3,9
	x 0,8/1,3		1,20	1,40	35,3	36,0	5,8
	x 1,0/1,5		1,40	1,60	22,6	23,1	8,6
	x 1,3/1,8		1,70	1,90	13,4	13,6	14
	x 1,6/2,1		2,00	2,23	8,83	9,01	20
	x 2,1/2,6		2,50	2,70	5,13	5,23	34





ETFE single core to VDE 0250 part 106, stranded

TE
N7YAF

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp sp, np, stranded, acc, to VDE 0295 class 5
Insulation: ETFE 7Y to VDE 0207 part 6
Colour: On request
Identification: Print on insulation

Application

For internal wiring of power electronics, heating appliances and lighting at an ambient temperature exceeding 55°C.

Technical data

Temperature range: - 100 °C up to + 135 °C
Rated voltage Uo/U: 450 V / 750 V
Test voltage: 2,5 kV

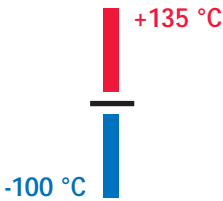
Note

→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties

VDE-type	cross section [mm²]	maximum Ø of single wire [mm]	nominal insulation wall thickness nominal value [mm]	o.d. min. - max. [mm]	insulation resistance at 20° C minimum value [MΩ x km]	copper weight [kg/km]	weight approx. [kg/km]
N7YAF	0,25	0,21	0,4	1,3 - 1,55	1,0	2,4	4,5
	0,5	0,21	0,4	1,6 - 1,85	1,0	4,8	7,3
	0,75	0,21	0,4	1,75 - 2,0	1,0	7,2	10
	1	0,21	0,4	1,95 - 2,2	1,0	9,6	13
	1,5	0,26	0,5	2,4 - 2,65	1,0	14,4	19
	2,5	0,26	0,6	3,1 - 3,35	1,0	24	31
	4	0,31	0,6	3,55 - 3,8	1,0	38	46
	6	0,31	0,6	4,1 - 4,4	1,0	58	64



Lined area for notes with horizontal blue lines and decorative gray shapes.



ETFE single core to VDE 0250 part 106, solid

TE
N7YA

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp, sp, np, solid, acc. to VDE 0295 class 1
Insulation: ETFE 7Y to VDE 0207 part 6
Colour: On request
Identification: Print on insulation

Application

For internal wiring of power electronics, heating appliances and lighting at an ambient temperature exceeding 55°C.

Technical data

Temperature range: - 100 °C up to + 135 °C
Rated voltage Uo/U: 450 V / 750 V
Test voltage: 2,5 kV

Note

→ ETFE cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties

VDE-type	cross section [mm²]	conductorØ [mm]	nominal insulation wall thickness [mm]	o.d. min. - max. [mm]	insulation resistance at 20° C minimum value [MΩ x km]	copper weight [kg/km]	weight approx. [kg/km]
N7YA	0,25	1 x 0,56	0,4	1,25 - 1,45	1,0	2,4	4,4
	0,5	1 x 0,80	0,4	1,45 - 1,7	1,0	4,8	7,2
	0,75	1 x 0,98	0,4	1,65 - 1,9	1,0	7,2	9,8
	1	1 x 1,13	0,4	1,8 - 2,05	1,0	9,6	12
	1,5	1 x 1,38	0,5	2,25 - 2,5	1,0	14,4	18
	2,5	1 x 1,78	0,6	2,8 - 3,1	1,0	24	30
	4	1 x 2,26	0,6	3,3 - 3,6	1,0	38	44
	6	1 x 2,76	0,6	3,8 - 4,1	1,0	58	64





TE

UL file no. E 69837 (M)

ETFE single core with UL approval

Construction

Conductor: Conductor construction and material according to table below
Insulation: ETFE to UL standards 62 and 83
Colour: On request
Identification: Print or temperature marker (stripe)**

Application

For internal wiring of appliances taking into consideration corresponding style approvals

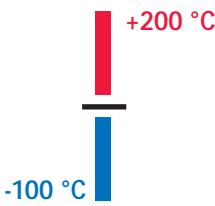
Technical data

Temperature range: - 100 °C up to max. + 200 °C
Rated voltage: 30 - 600 V
Test voltage: According to style approvals
Flame test: FT1

Notes

→ Upon request also available in screened UL-approved construction
→ UL/CSA approved cables with additional insulation materials refer to page 143 onwards.

UL Style*	AWG*	average wall thickness [mm]	range*		conductor construction	
			temperature [°C]	voltage [Volt]	material	solid / stranded
1508	32 - 20	0,13	105	30	tpc, spc, npc, alloy sp	x x
1513	36 - 20	0,13	105	-----	tpc, spc, npc, alloy sp	x x
1516	36 - 20	0,1	105	-----	tpc, spc, npc, alloy sp	x x
1517	32 - 20	0,15	105	-----	tpc, spc, npc, alloy sp	x x
1523	32 - 20	0,13	105	-----	tpc, spc, npc, alloy sp	x x
1558	34 - 16	0,1	125	-----	tpc, spc, npc, alloy sp	x x
1586	36 - 20	0,14	105	-----	tpc, spc, npc, alloy sp	x x
	19 - 16	0,2	105	-----	tpc, spc, npc, alloy sp	x x
	15 - 10	0,33	105	-----	tpc, spc, npc, alloy sp	x x
	9 - 6	0,51	105	-----	tpc, spc, npc, alloy sp	x x
1609	36 - 20	0,14	105	125	bare copper, tpc, spc, npc, pure Ni, alloy sp	x x
	19 - 16	0,2	105	125	bare copper, tpc, spc, npc, pure Ni, alloy sp	x x
	15 - 10	0,33	105	125	bare copper, tpc, spc, npc, pure Ni, alloy sp	x x
	9 - 6	0,51	105	125	bare copper, tpc, spc, npc, pure Ni, alloy sp	x x
1610	32 - 10	0,25	105	-----	tpc, spc, npc, alloy sp	x x
1643	32 - 10	0,33	150	300*	tpc, spc, npc, alloy sp	x x
	9 - 2	0,51	150	300*	tpc, spc, npc, alloy sp	x x
	1 - 4/0	0,76	150	300*	tpc, spc, npc, alloy sp	x x
1644	30 - 10	0,51 (0,40)	150	600*	tpc, spc, npc, alloy sp	x x
	9 - 2	0,76 (0,69)	150	600*	tpc, spc, npc, alloy sp	x x
	1 - 4/0	0,15 (1,02)	150	600*	tpc, spc, npc, alloy sp	x x
1671	32 - 10	0,25	150	300	bare copper, tpc, spc, npc, alloy sp	x x
1814	36 - 20	0,15	150	150	bare copper, tpc, spc, npc, pure nickel	x x
1828	32 - 10	0,33	150	300	bare copper, tpc	x x



ETFE single core with UL approval

TE
UL file no. E 69837 (M)

Products

Fluoropolymers
Cables

UL Style*	AWG*	average wall thickness [mm]	range*		conductor construction		
			temperature [°C]	voltage [Volt]	material	solid / stranded	
1829	32 - 10	0,51	150	600	bare copper, tpc	x	x
10086	36 - 14	0,25	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	12 - 10	0,38	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	8 - 2	0,64	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	1 - 4/0	1,15	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
10086	36 - 14	0,25	200	600	bare copper, tpc, spc, npc, pure nickel	x	x
	12 - 10	0,38	200	600	bare copper, tpc, spc, npc, pure nickel	x	x
	8 - 2	0,64	200	600	bare copper, tpc, spc, npc, pure nickel	x	x
	1 - 4/0	1,15	200	600	bare copper, tpc, spc, npc, pure nickel	x	x
10109	36 - 18	0,15	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	16 - 14	0,2	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	12 - 10	0,25	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	8 - 2	0,76	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	1 - 4/0	1,15	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
10109	36 - 18	0,15	200	300	bare copper, tpc, spc, npc, pure nickel	x	x
	16 - 14	0,2	200	300	bare copper, tpc, spc, npc, pure nickel	x	x
	12 - 10	0,25	200	300	bare copper, tpc, spc, npc, pure nickel	x	x
	8 - 2	0,76	200	300	bare copper, tpc, spc, npc, pure nickel	x	x
	1 - 4/0	1,15	200	300	bare copper, tpc, spc, npc, pure nickel	x	x
10125	36 - 18	0,15	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	16 - 14	0,2	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	12 - 10	0,25	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	8 - 2	0,76	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
	1 - 4/0	1,15	150	300	bare copper, tpc, spc, npc, pure nickel	x	x
10126	36 - 18	0,15	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	16 - 14	0,2	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	12 - 10	0,25	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	8 - 2	0,76	150	600	bare copper, tpc, spc, npc, pure nickel	x	x
	1-4/0	1,15	150	600	bare copper, tpc, spc, npc, pure nickel	x	x

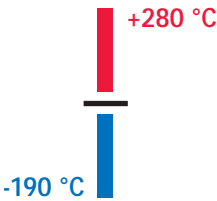
* pay attention to UL-Style specifications.

*** temperature identification stripe:	
operating temperature [°C]	colour of identification stripe
80	blue
105	yellow
150	orange
200	black

If base colour is identical with temperature identification stripe a printing of °C is necessary.

If cross sections are < AWG 20 above mentioned identification is not necessary.





TE PFA single core solid and stranded, (metric cross sections)

Construction

Conductor: Cu bare, tp, sp, np, solid or stranded acc. to VDE 0295 or pure nickel
Insulation: PFA 51Y to ASTM-D 3307
Colour: On request

Application

For internal wiring at low and high ambient temperatures and/or corrosive environments

Technical data

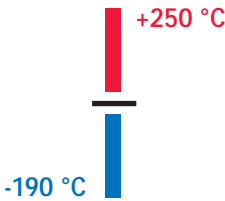
Temperature range: - 190 °C up to + 260 °C, short-term + 280 °C
Rated voltage Uo/U: 250 V / 600 V / 1000 V
Test voltage: 2,5 kV / 3,4 kV / 5 kV
Min. bending radius: 10 x diameter

Notes

→ PFA cores offer exceptionally good chemical resistance as well as excellent electrical and mechanical properties
→ PFA cores are also available in different cross sections and various conductor materials

cross section [mm²]	conductor construction [mm]	o.d. [mm] (min.-max.)			copper weight [kg/km]	weight approx. [kg/km]		
		250 V	600 V	1000 V		250 V	600 V	1000 V
0,051	1 x 0,254	----	0,66 - 0,86	0,91 - 1,12	0,49	1	1,4	2,3
0,080	1 x 0,32	0,56 - 0,68	0,72 - 0,92	0,99 - 1,19	0,77	1,4	2	2,9
0,126	1 x 0,40	0,64 - 0,76	0,80 - 1,10	1,07 - 1,27	1,2	1,8	2,7	3,5
0,197	1 x 0,50	0,74 - 0,86	0,90 - 1,10	1,17 - 1,37	1,9	2,7	3,7	4,6
0,32	1 x 0,64	0,88 - 1,00	1,04 - 1,24	1,30 - 1,50	3,2	4	4,8	6
0,5	1 x 0,80	1,04 - 1,16	1,20 - 1,40	1,47 - 1,68	4,8	6,1	7	8,4
0,5	7 x 0,30	1,15 - 1,27	1,31 - 1,51	1,57 - 1,77	4,8	6,4	7,4	8,6
0,5	15 x 0,20	1,16 - 1,28	1,32 - 1,52	1,58 - 1,78	4,8	6,3	7,6	8,8
0,75	1 x 0,98	----	1,38 - 1,58	1,65 - 1,91	7,2	----	9,3	11
0,75	19 x 0,228	----	1,49 - 1,69	1,75 - 1,95	7,2	----	11	12
0,75	22 x 0,20	----	1,50 - 1,70	1,76 - 1,96	7,2	----	10	12
1	1 x 1,13	----	1,53 - 1,73	1,79 - 1,99	9,6	----	13	14
1	29 x 0,20	----	1,68 - 1,88	1,94 - 2,14	9,6	----	13	15
1,5	1 x 1,38	----	1,88 - 2,08	2,08 - 2,28	14	----	18	19
1,5	27 x 0,25	----	2,04 - 2,24	2,30 - 2,50	14	----	18	20
2,5	1 x 1,78	----	2,28 - 2,48	2,58 - 2,78	24	----	29	31
2,5	45 x 0,25	----	2,45 - 2,65	2,85 - 3,05	24	----	30	32
4	50 x 0,30	----	2,95 - 3,15	3,35 - 3,55	38	----	45	48
6	75 x 0,30	----	3,65 - 3,85	4,15 - 4,45	58	----	66	69
10	80 x 0,404	----	5,50 - 5,70	5,80 - 6,10	96	----	116	120
16	126 x 0,404	----	6,60 - 6,80	7,00 - 7,30	154	----	176	181
25	196 x 0,404	----	8,30 - 8,60	8,60 - 8,90	240	----	272	286
35	276 x 0,404	----	9,50 - 9,90	9,90 - 10,30	336	----	375	398





PFA single core with UL approval

TE
UL file no. E 69837 (M)

Products

Fluoropolymers
Cables

Construction

Conductor: Conductor construction and material according to table below
Insulation: PFA to UL standards 62 and 83
Colour: On request
Identification: Print or temperature marker (stripe)**

Application

For internal wiring of appliances taking into consideration corresponding style approvals

Technical data

Temperature range: - 190 °C up to max. + 250 °C
Rated voltage: 30 - 600 V
Test voltage: According to style approvals
Flame test: FT1

Notes

→ The itemized cables are also available in screened, UL approved constructions
→ UL/CSA approved cables with additional insulation materials refer to page 143 onwards.

UL Style*	AWG*	average wall thickness (min. wall thickness) [mm]	range *		conductor construction	
			temperature [°C]	voltage [Volt]	material	solid / stranded
1538	36 - 20	0,14 (0,13)	105	125	tpc, spc, npc, pure nickel, Cw sp	x x
	19 - 15	0,2 (0,18)	105	125	tpc, spc, npc, pure nickel, Cw sp	x x
	14 - 10	0,33 (0,3)	105	125	tpc, spc, npc, pure nickel, Cw sp	x x
	9 - 6	0,51 (0,46)	105	125	tpc, spc, npc, pure nickel, Cw sp	x x
1707	32 - 20	0,13 (0,1)	200	30	tpc, spc, npc, pure nickel	x x
1708	32 - 20	0,13 (0,1)	200	-----	tpc, spc, npc, pure nickel	x x
1709	32 - 10	0,33 (0,28)	200	300	bare copper, tpc, spc, npc, pure nickel	x x
1710	32 - 10	0,55 (0,51)	200	600	tpc, spc, npc, pure nickel	x x
1716	8 - 2	0,76 (0,7)	200	600	tpc, spc, npc, pure nickel	x x
	1 - 4/0	0,15 (1,1)	200	600	tpc, spc, npc, pure nickel	x x
	40 - 20	0,14 (0,13)	150	150	bare copper, spc, npc	x x
	19 - 16	0,2 (0,18)	150	150	bare copper, spc, npc	x x
1726	15 - 10	0,33 (0,3)	150	150	bare copper, spc, npc	x x
	9 - 6	0,51 (0,45)	150	150	bare copper, spc, npc	x x
	32 - 4/0	0,33 (0,3)	250	300	npc, pure nickel	x x
	32 - 10	0,51 (0,46)	250	600	npc, pure nickel	x x
1857	8 - 2	0,76 (0,69)	250	600	npc, pure nickel	x x
	1 - 4/0	1,14 (1)	250	600	npc, pure nickel	x x
	32 - 16	0,25 (0,23)	150	150	tpc, spc, npc	x x
	32 - 10	0,33 (0,28)	150	300	tpc, spc, npc	x x
1860	32 - 10	0,51 (0,46)	150	600	tpc, spc, npc	x x
	8 - 2	0,76 (0,69)	150	600	tpc, spc, npc	x x
	0 - 00	1,14 (1,02)	150	600	tpc, spc, npc	x x
	32 - 16	0,25 (0,23)	200	150	tpc, spc, npc	x x
1882	36 - 16	0,25 (0,23)	250	150	npc, pure nickel	x x

* pay attention to UL-Style specifications.

*** temperature identification stripe:

operating temperature [°C]

80

105

150

200

250

colour of identification stripe

blue

yellow

orange

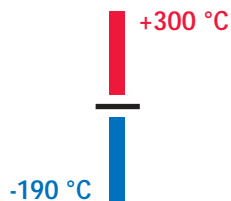
black

2 x black or printing max. 250 °C



If base colour is identical with temperature identification stripe a printing of °C is necessary.

If cross sections are < AWG 20 above mentioned identification is not necessary.



TEHTE

Fluoropolymer insulated multicore cable

Construction

Conductor: Cu bare, tp, sp, np, acc. to VDE 0295 or pure nickel
Core insulation: PTFE, FEP, ETFE to VDE 0207 part 6
Colour: On request
Twisting: In layers
Sheath: PTFE, FEP, ETFE to VDE 0207 part 6
Colour: On request

Application

Industrial areas with high temperature and increased mechanical stress, e.g.
- instrumentation engineering
- mechanical engineering
- chemical industry
- traffic- and automotive
- lighting industry

Technical data

Temperature range: (When using corresponding conductor materials)*
PTFE - 190 °C up to + 260 °C, short-term + 300 °C
FEP - 100 °C up to + 205 °C, short-term + 230 °C
ETFE - 100 °C up to + 150 °C, short-term + 180 °C
Rated voltage: 600 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter

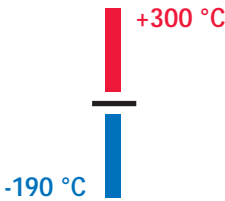
Notes

→ Fluoropolymer insulated multicore cables are also available in different metric and AWG cross sections as well as with various conductor materials
→ On request the itemized cables are also available with UL-approvals

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	coreØ [mm] ± 5 %	o.d. [mm] ± 5 %	weight approx. [kg/km]
2 x 0,75	0,21	1,16	1,7	4,5	31
3 x 0,75	0,21	1,16	1,7	4,8	42
4 x 0,75	0,21	1,16	1,7	5,1	58
5 x 0,75	0,21	1,16	1,7	5,8	75
7 x 0,75	0,21	1,16	1,7	6,1	92
2 x 1	0,21	1,35	1,9	4,9	38
3 x 1	0,21	1,35	1,9	5,2	54
4 x 1	0,21	1,35	1,9	5,7	70
5 x 1	0,21	1,35	1,9	6,1	88
7 x 1	0,21	1,35	1,9	6,9	119
2 x 1,5	0,26	1,61	2,1	5,4	53
3 x 1,5	0,26	1,61	2,1	5,8	72
4 x 1,5	0,26	1,61	2,1	6,3	91
5 x 1,5	0,26	1,61	2,1	7,1	117
7 x 1,5	0,26	1,61	2,1	7,8	154
2 x 2,5	0,26	2,11	2,7	6,5	88
3 x 2,5	0,26	2,11	2,7	7,2	114
4 x 2,5	0,26	2,11	2,7	7,8	147
5 x 2,5	0,26	2,11	2,7	8,6	180
7 x 2,5	0,26	2,11	2,7	9,7	243

* temperature range for conductor materials:
- bare copper + 130 °C
- tpc + 180 °C
- spc + 200 °C
- npc + 300 °C
- pure nickel + 600 °C





Fluoropolymer insulated cable with copper screen

TEHCTE

Products

Fluoropolymers
Cables

Construction

Conductor: Cu bare, tp, sp, np, pure nickel, stranded, 7 or 19 wires
Core insulation: PTFE, FEP, ETFE to VDE 0207 part 6
Colour: On request
Twisting: In layers
Wrapping: 1 layer separator foil
Screen: Braid, cu bare, tp, sp, np, approx. 85% coverage
Sheath: PTFE, FEP, ETFE to VDE 0207 part 6
Colour: On request

Application

In industrial areas with high temperature and increased mechanical stress, e.g.
- instrumentation engineering
- mechanical engineering
- chemical industry
- traffic and automotive
- lighting industry

Technical data

Temperature range: (When using corresponding conductor and screen materials)*
PTFE - 190 °C up to + 260 °C, short-term + 300 °C
FEP - 100 °C up to + 205 °C, short-term + 230 °C
ETFE - 100 °C up to + 150 °C, short-term + 180 °C
Voltage rating: 600 V
Test voltage: Core/core 2000 V, Core/screen 1500 V
Min. bending radius: 15 x diameter

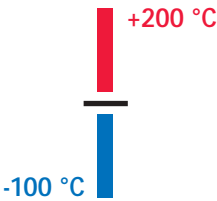
Notes

→ Due to the copper screen electromagnetic interference is greatly reduced.
→ Fluoropolymer insulated cables with copper screen are also available in different metric and AWG cross sections as well as with various conductor materials
→ On request the itemized cables are also available with UL-approvals

number of cores x cross section [mm²]	maximum strandØ [mm]	coreØ [mm] ± 5 %	o.d. [mm] ± 5 %	weight approx. [kg/km]
2 x AWG 26	0,54	1,06	3,6	25
3 x AWG 26	0,54	1,06	3,8	30
4 x AWG 26	0,54	1,06	3,9	35
5 x AWG 26	0,54	1,06	4,4	44
6 x AWG 26	0,54	1,06	4,9	51
7 x AWG 26	0,54	1,06	4,9	54
2 x AWG 24	0,64	1,12	3,8	30
3 x AWG 24	0,64	1,12	4,0	35
4 x AWG 24	0,64	1,12	4,2	39
5 x AWG 24	0,64	1,12	4,8	51
6 x AWG 24	0,64	1,12	5,0	55
7 x AWG 24	0,64	1,12	5,0	63
2 x AWG 22	0,79	1,27	4,1	36
3 x AWG 22	0,79	1,27	4,3	44
4 x AWG 22	0,79	1,27	4,9	54
5 x AWG 22	0,79	1,27	5,3	64
6 x AWG 22	0,79	1,27	5,7	72
7 x AWG 22	0,79	1,27	5,7	78
2 x AWG 20	1,02	1,47	4,5	44
3 x AWG 20	1,02	1,47	4,9	56
4 x AWG 20	1,02	1,47	5,4	74
5 x AWG 20	1,02	1,47	5,8	84
6 x AWG 20	1,02	1,47	6,3	98
7 x AWG 20	1,02	1,47	6,3	107



* temperature range for conductor and screen materials
- bare copper + 130° C
- tpc + 180 °C
- spc + 200 °C
- npc + 300 °C
- pure nickel + 600 °C



TEHGLP/TEHGLC

Fluoropolymer insulated cable
to Germanischer Lloyd 63713-73 HH

Construction

Conductor: Cu bare, tp, sp, np, acc. to VDE 0295 class 5
Core insulation: PTFE or FEP to VDE 0207 part 6
Colour: On request
Twisting: In layers with glass fibre filler(s)
Braiding: Impregnated glass fibre yarn
Braiding: Choice of galvanized steel wire, tpc , npc, stainless steel (V4A)

Application

In industrial areas with high temperature and increased mechanical stress, e.g.

- shipbuilding industry
- motor- and turbine engineering
- mechanical engineering

Technical data

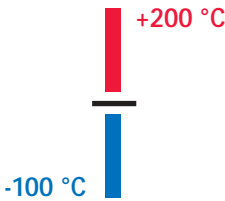
Temperature range: - 100 °C up to + 130 °C, conductor material copper bare
- 100 °C up to + 180 °C, conductor material tpc
- 100 °C up to + 200 °C, conductor material spc and npc
Rated voltage: 300/500 V
Test voltage: Core/core 2000 V, Core/braid 1500 V
Min. bending radius: 15 x diameter

Note

→ On request, we also deliver GL-cables with different cross sections.

number of cores x cross section [mm²]	maximum single wireØ [mm]	maximum strandØ [mm]	coreØ [mm] ± 5 %	o.d. [mm] ± 5 %	weight approx. [kg/km]
2 x 0,75	0,21	1,16	1,7	4,9	49
3 x 0,75	0,21	1,16	1,7	5,1	69
5 x 0,75	0,21	1,16	1,7	6,1	94
2 x 1	0,21	1,35	1,9	5,2	61
3 x 1	0,21	1,35	1,9	5,5	82
4 x 1	0,21	1,35	1,9	6	94
2 x 1,5	0,26	1,61	2,1	5,7	84
3 x 1,5	0,26	1,61	2,1	6,1	100
4 x 1,5	0,26	1,61	2,1	6,6	118
5 x 1,5	0,26	1,61	2,1	7,3	142
7 x 1,5	0,26	1,61	2,1	8	172
12 x 1,5	0,26	1,61	2,1	10,5	278
2 x 2,5	0,26	2,11	2,7	6,8	105
3 x 2,5	0,26	2,11	2,7	7,2	140
4 x 2,5	0,26	2,11	2,7	8	174
5 x 2,5	0,26	2,11	2,7	8,7	214
7 x 2,5	0,26	2,11	2,7	9,5	261
2 x 4	0,31	2,58	3,4	8,3	158
3 x 4	0,31	2,58	3,4	9	206
4 x 4	0,31	2,58	3,4	9,9	255
5 x 4	0,31	2,58	3,4	10,8	331
2 x 6	0,31	3,22	4,1	9,7	198
3 x 6	0,31	3,22	4,1	10,4	272
4 x 6	0,31	3,22	4,1	11,7	336
2 x 10	0,41	4,78	5,7	13,2	287
3 x 10	0,41	4,78	5,7	14,1	394
4 x 10	0,41	4,78	5,7	15,6	502





Fluoropolymer insulated cable
to Germanischer Lloyd 73 340-77 HH

TEHTEPTE/TEHTECTE

Products

Fluoropolymers
Cables

Construction

- Conductor: Cu bare, tp, sp, np, acc. to VDE 0295 class 5
Core insulation: PTFE or FEP to VDE 0207 part 6
Colour: On request
Twisting: In layers
Inner sheath: FEP to VDE 0207 part 6
Braiding: Choice of galvanized steel wire, tpc, npc, stainless steel (V4A)
Sheath: FEP to VDE 0207 part 6
Sheath colour: On request

Application

- In industrial areas with high temperature and increased mechanical stress, e.g.
- shipbuilding industry
- motor- and turbine engineering
- mechanical engineering

Technical data

- Temperature range: - 100 °C up to + 130 °C, conductor material copper bare
- 100 °C up to + 180 °C, conductor material tpc
- 100 °C up to + 200 °C, conductor material spc and npc
Voltage rating: 300/500 V
Test voltage: Core/core 2000 V, Core/braid 1500 V
Min. bending radius: 15 x diameter

Note

→ On request, we also deliver GL-cables with different cross sections

number of cores x cross section [mm²]	maximum single wireØ [mm]	maximum strandØ [mm]	coreØ [mm] ± 5 %	o.d. [mm] ± 5 %	weight approx. [kg/km]
2 x 0,75	0,21	1,16	1,7	6,3	71
3 x 0,75	0,21	1,16	1,7	6,6	88
5 x 0,75	0,21	1,16	1,7	7,3	132
2 x 1	0,21	1,35	1,9	6,5	87
3 x 1	0,21	1,35	1,9	6,8	119
4 x 1	0,21	1,35	1,9	7,3	130
2 x 1,5	0,26	1,61	2,1	7,1	99
3 x 1,5	0,26	1,61	2,1	7,4	122
4 x 1,5	0,26	1,61	2,1	8,0	141
5 x 1,5	0,26	1,61	2,1	8,6	172
7 x 1,5	0,26	1,61	2,1	9,3	215
12 x 1,5	0,26	1,61	2,1	11,8	394
2 x 2,5	0,26	2,11	2,7	8,3	149
3 x 2,5	0,26	2,11	2,7	8,7	196
4 x 2,5	0,26	2,11	2,7	9,4	245
5 x 2,5	0,26	2,11	2,7	10,3	302
7 x 2,5	0,26	2,11	2,7	11,1	366
2 x 4	0,31	2,58	3,4	10,0	221
3 x 4	0,31	2,58	3,4	10,5	288
4 x 4	0,31	2,58	3,4	11,4	357
5 x 4	0,31	2,58	3,4	12,4	462
2 x 6	0,31	3,22	4,1	12,5	276
3 x 6	0,31	3,22	4,1	13,2	381
4 x 6	0,31	3,22	4,1	14,3	470
2 x 10	0,41	4,78	5,7	15,3	398
3 x 10	0,41	4,78	5,7	16,2	550
4 x 10	0,41	4,78	5,7	17,7	698



Silicone insulated cables and wires

Silicone Rubber (SiR) has developed into a multi-purpose material which appears quite often in daily life.

The basic material for SiR is ordinary sand from which pure silicium is extracted. The silicon rubber is then produced after a long and complex manufacturing process.

Due to our own silicone compounding, HEW-KABEL/CDT is able to offer a wide range of silicone compounds which meet our customers specific requirements, e.g. resistance to high temperatures, notches, tearing, flame, high voltage and hot steam sterilization.

Silicone rubber cables made by HEW-KABEL/CDT are extremely resistant to heat and cold while keeping their physical properties constant.

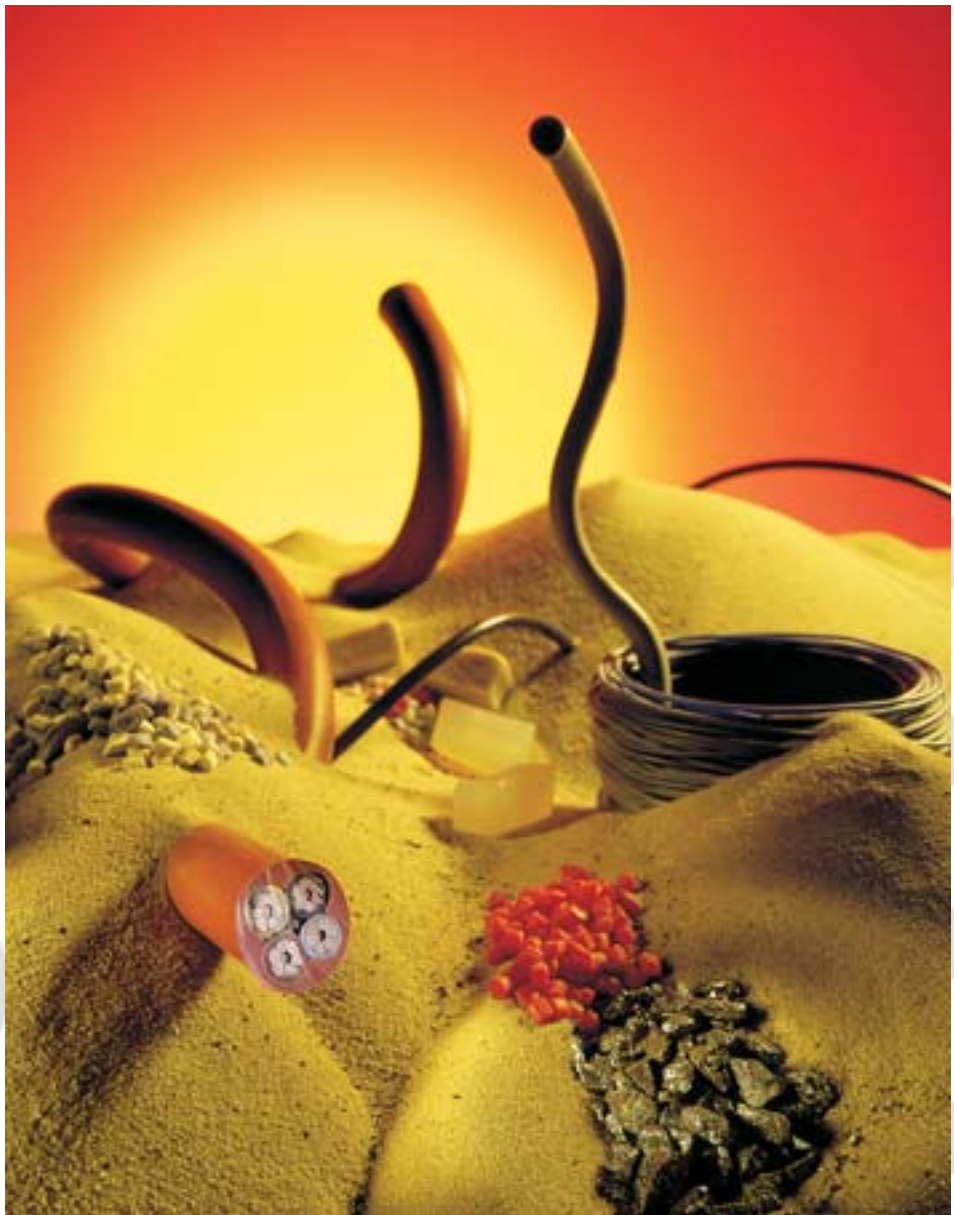
Further special features of our SiR insulated cables are their resistance to weather, ozone, and aging as well as UV-radiation and radioactive rays.

Among others applications for SiR insulated cables are:

Domestic appliances, lighting, automotive industry, mechanical engineering, medical equipment, heating cables, high voltage cables, fire security cables, nuclear power plants, shipbuilding etc.

For further information and technical data concerning silicone rubber please refer to the insert.

SILICONE INSULATED CABLES AND WIRES



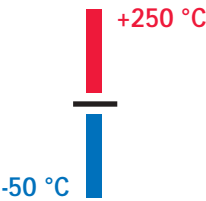
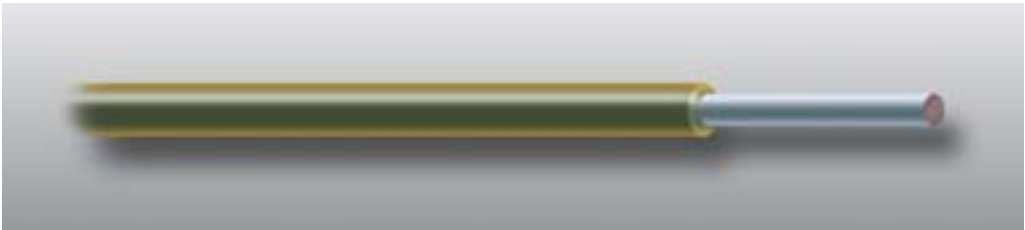
SILICONE INSULATED CABLES AND WIRES

Products

*Silicone Rubber
Cables*

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Silicone rubber single core, solid

SID

Products

Construction

Conductor: Cu bare, tp, solid, acc. to VDE 0295 class 1
Insulation: SiR E12 to VDE 0282 part 1
Colour: On request

Application

For wiring at high ambient temperatures, e.g.
- Lighting
- Domestic appliances
- Instrumentation engineering
- Mechanical engineering

Technical data

Temperature range: - 50 °C up to +180 °C, Cu bare + 130 °C short-term + 250 °C
Rated voltage U0/U: 300/500 Volt
Test voltage: 2000 Volt
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

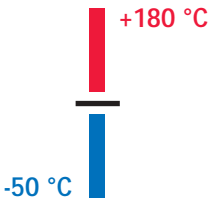
Notes

→ On request the itemized SiR cores are also available in various conductor materials
→ SiR cores with solid conductor and VDE approvals see page 56.
→ Stranded SiR cores please refer to page 59.

Silicone Rubber
Cables

cross section [mm²]	conductorØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,80	2,0	4,8	8
0,75	0,98	2,1	7,2	11
1	1,13	2,3	9,6	13
1,5	1,38	2,5	14,4	18
2,5	1,78	3,1	24	29
4	2,26	3,8	38	45





SID

*N2GFA resp. (N)2GFA

Silicone rubber single core, solid, with VDE-approval

Construction

Conductor: Cu bare, tp, np, solid acc. to VDE 0295 class 1 or pure nickel
Pure nickel, solid
*N2GFA tpc only

Insulation: SiR E12 to VDE 0282 part 1

Colour: On request

Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting up to an operating temperature of:

130 °C with bare conductor

180 °C with tp conductor

180 °C with np conductor

180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

Temperature range: - 50 °C up to +180 °C

Rated voltage U0/U: 300/300 V

Test voltage: 2000 V

Min. bending radius: 10 x diameter

Insulation resistance: Min. 20 MΩ x km at 20 °C

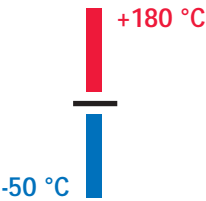
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

- SiR cores with stranded conductor and VDE approval see page 60.
- SiR cores of industrial standard quality (without VDE approval) please refer to page 55.
- Manufacturing according to DIN 0250 part 1 and part 502

cross section [mm²]	conductorØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight ca. [kg/km]
0,5	0,80	2,0	4,8	8
*0,75	0,98	2,1	7,2	11
1	1,13	2,3	9,6	13
1,5	1,38	2,7	14,4	18
2,5	1,78	3,3	24	29





Silicone rubber single core, solid, to VDE 0282 part 3

SID
H05S-U

Products

Silicone Rubber
Cables

Construction

Conductor: Cu bare, tp sp, np, solid, acc. to VDE 0295 class 1 and HD 383 class 1 resp.
Insulation: SiR E12 to VDE 0282 part 1
Colour: On request
Identification: Print on insulation

Application

For wiring in electrical appliances and lighting up to an operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
180 °C with npc conductor
180 °C with spc conductor

Technical data

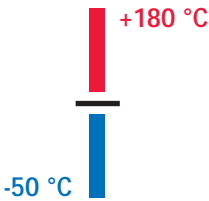
Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ SiR cores with stranded conductors and VDE approval please refer to page 60 (N2GFAF and VDE ÜG) and page 61 (H05S-K)
→ SiR cores of industrial standard quality (without VDE approval) see page 55 (solid) and page 59 (stranded).

cross section [mm²]	conductorØ [mm]	o.d. [mm] + 5 % - 3 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,80	2,4	4,8	11
0,75	0,98	2,5	7,2	14
1	1,13	2,7	9,6	17
1,5	1,38	3,1	14,4	24
2,5	1,78	3,7	24	36





SIDGL
A05SJ-U

Silicone rubber/glass fibre single core, solid, to VDE 0282 part 3

Construction

Conductor: Cu bare, tp sp, np, solid, acc. to VDE 0295 class 1 and HD 383 class 1 resp.
Insulation: SiR E12 to VDE 0282 part 1
Colour: White
Braid: Silicone impregnated glass-fibre acc. to HD 22.1
Identification: Identification tracer

Application

For internal wiring at high ambient temperatures, e.g.

- Lighting
- Domestic appliances
- Mechanical engineering

Technical data

Temperature range: - 50 °C up to +180 °C
Cu bare + 130 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

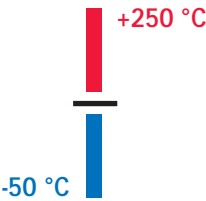
Notes

→ The cross sections (0,5 and 0,75 mm2) itemized in the table below are not included in VDE 0282 T3
→ SiR/glass-fibre cores with stranded copper conductors please refer to page 66 (0,5 - 16 mm2) and page 67 (25 - 185 mm2).

cross section [mm²]	conductorØ [mm]	o.d. [mm] + 5 % - 3 %	copper weight [kg/km]	weight approx. [kg/km]
0,5*	0,8	2,6	4,8	11
0,75*	0,98	2,7	7,2	14
1	1,13	2,9	9,6	18
1,5	1,38	3,8	14,4	24
2,5	1,78	3,9	24	35
4	2,26	4,4	38	52
6	2,78	4,9	59	74
10	3,6	6,3	96	121

* according to VDE 0282 part 3





Silicone rubber single core, stranded

SIF

Products

Silicone Rubber
Cables

Construction

Conductor: Cu bare, tp, sp, np, stranded,
acc. to VDE 0295 class 5 or pure nickel
Insulation: SiR E12 to VDE 0282 part 1
Colour: On request

Application

For wiring at high ambient temperatures, e.g.
- Lighting
- Domestic appliances
- Instrumentation engineering
- Mechanical engineering

Technical data

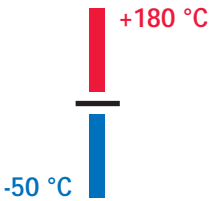
Temperature range: - 50 °C up to +180 °C
Cu bare + 130 °C
short-term + 250 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ VDE-approved SiR cores see page 60 (N2GFAF and VDE ÜG) and
page 61 (H05S-K)
→ For increased mechanical stress we offer SiR cores with glass fibre
braid (page 66+67).

cross section [mm²]	maximumØ of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,25	0,17	0,77	1,8	2,4	6
0,5	0,21	0,98	2,1	4,8	9
0,75	0,21	1,16	2,3	7,2	11
1	0,21	1,35	2,4	9,6	14
1,5	0,26	1,61	2,7	14,4	19
2,5	0,26	2,11	3,2	24	29
4	0,31	2,58	4,0	38	44
6	0,31	3,22	4,6	58	62
10	0,41	4,78	6,5	96	124
16	0,41	6,0	7,7	154	185
25	0,41	7,46	9,5	240	281
35	0,41	8,93	10,9	336	381
50	0,41	10,4	12,7	480	536
70	0,51	12,44	14,6	672	744
95	0,51	14,91	17,4	912	989
120	0,51	16,53	18,9	1152	1221
150	0,51	17,96	20,7	1440	1521
185	0,51	20,48	23,5	1776	1899
240	0,51	23,31	26,6	2304	2600





SIF

*N2GFAF resp. (N)2GFAF

Silicone rubber single core, stranded, with VDE-approval

Construction

Conductor: Cu bare, tp, np, stranded, acc. to VDE 0295 class 5 or pure nickel
Insulation: SiR E12 to VDE 0282 part 1
Colour: On request
Identification: Print on insulation

Application

For wiring in electrical appliances and lighting up to an operating temperature of:
130 °C with bare conductor
180 °C with tp conductor
180 °C with np conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

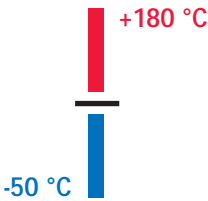
Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/300 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ VDE-approved SiR cores are also available with conductors to VDE 0295 class 2
→ SiR cores with solid conductor and VDE approval see page 56.
→ SiR cores of industrial standard quality (without VDE approval) please refer to page 59.

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	2,1	4,8	9
*0,75	0,21	1,16	2,3	7,2	11
1	0,21	1,35	2,4	9,6	14
1,5	0,26	1,61	2,9	14,4	20
2,5	0,26	2,11	3,5	24	32





Silicone rubber single core, stranded, to VDE 0282 part 3

SIF
H05S-K

Products

Silicone Rubber
Cables

Construction

Conductor: Cu bare, tp,sp, np, stranded, acc. toVDE 0295 class 5 and HD 383 class 5 resp.
Insulation: SiR E12 to VDE 0282 part 1
Colour: On request
Identification: Print on insulation

Application

For wiring in electrical appliances and lighting up to an operating temperature of:
130 °C with bare conductor
180 °C with tpc conductor
180 °C with npc conductor
180 °C with spc conductor

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ SiR cores with solid conductor and VDE-approval please refer to page 56 (N2GFA and VDE ÜG) and page 57 (H05S-U)
→ SiR cores of industrial standard quality (without VDE-approval) see page 55 (solid) and page 59 (stranded).

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] - 4 % + 6 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	2,5	4,8	12
0,75	0,21	1,16	2,7	7,2	15
1	0,21	1,35	2,8	9,6	17
1,5	0,26	1,61	3,3	14,4	25
2,5	0,26	2,11	3,9	24	37





SIF

UL file no. E 69837 (M)

Silicone single core with UL approval

Construction

Conductor:

Conductor construction and material according to table below

Insulation:

Silicone to UL 1581, subject 758, class 22

Colour:

On request

Application

For internal wiring of appliances taking into consideration corresponding style specifications

Technical data

Temperature range:

- 50 °C up to max. + 250 °C

Rated voltage U0/U:

300/600/1000 V

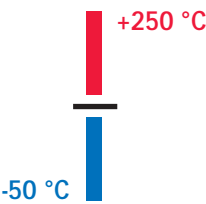
Test voltage:

According to style specifications

Notes

- The itemized cables are also available with combined UL/CSA approval
- Silicone cores with UL approval and glass fibre braid refer to pages 68-69.
- UL/CSA approved cables with additional insulation materials see page 148.

UL Style***	AWG	average wall thickness [mm]	range		conductor construction	
			temperature [°C]	voltage [Volt]	material	solid / stranded
3066	28 - 20	0,8	200	600	WM-NrCrFe	x
3077	≥ 28	0,8	150	300	WM-Alloy	x x
3078	≥ 28	1,6	150	300	WM-Alloy	x x
3099*	20 - 16	0,8	150	300	tpc, spc, npc	x
3122	26 - 16	0,5	200	300	tpc**, spc, npc, pure nickel	x x
3123	30 - 16	0,8	150	600	tpc, spc, npc	x
3132	30 - 16	0,5	150	300	tpc, spc, npc, pure nickel	x x
3133	30 - 16	0,8	150	600	tpc, spc, npc, pure nickel	x x
3134	18 - 12	0,8	150	600	tpc, spc, npc, pure nickel	x x
3135	26 - 12	0,8	200	600	tpc**, spc, npc, pure nickel	x x
3136	26 - 20	1,2	150	300	tpc, spc, npc, pure nickel	x x
3137	26 - 20	1,2	150	600	tpc, spc, npc, pure nickel	x x
3138	18 - 9	1,2	150	600	tpc, spc, npc, pure nickel	x x
3139	26 - 12	1,2	200	600	tpc**, spc, npc, pure nickel	x x
3140	26 - 20	1,6	150	300	tpc, spc, npc, pure nickel	x x
3141	26 - 20	1,6	150	600	tpc, spc, npc, pure nickel	x x
3142	18 - 12	1,6	150	600	tpc, spc, npc, pure nickel	x x
3143	18 - 12	1,6	200	600	tpc**, spc, npc, pure nickel	x x
3147	≥ 28	1,2	150	300	WM-Alloy	x x
3171	22 - 12	0,8	105	600	bare copper, Ø 0,0508 mm	x



Silicone single core with UL approval

SIF
UL file no. E 69837 (M)

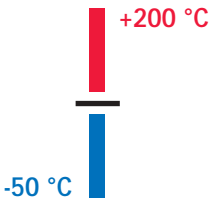
Products

Silicone Rubber
Cables

UL Style***	AWG	average wall thickness [mm]	range		conductor construction		
			temperature [°C]	voltage [Volt]	material	solid / stranded	
3211	26 - 14	0,8	150	300	tpc, spc, npc, pure nickel	x	x
3212	26 - 10	1,2	150	600	tpc, spc, npc, pure nickel	x	x
3213	8 - 2	1,6	150	600	tpc, spc, npc, pure nickel		x
3214	1 - 4/0	2,1	150	600	tpc, spc, npc, pure nickel		x
3215	18 - 16	1,6	150	600	tpc, spc, npc, pure nickel		x
3216	14 - 10	2,1	150	600	tpc, spc, npc, pure nickel		x
3232*	26 - 16	0,5	105	300	tpc, spc, npc		x
3240	26 - 10	1,2	200	600	tpc** , spc, npc, pure nickel	bunched conductor	
3241	26 - 14	0,8	200	300	tpc** , spc, npc, pure nickel	bunched conductor	
3251	30 - 10	1,2	250	600	spc, npc, Fe np	solid	stranded
3253	30 - 12	0,8	250	300	spc, npc, Fe np	x	x
3268	18 - 12	0,8	200	600	Fe np, V2A, V4A	x	x
3512	0,5 - 4 mm²	0,8	200	600	tpc, spc, npc	x	x
	4,1 - 9 mm²	1,2	200	600	tpc, spc, npc	x	x
	9,1 - 35 mm²	1,6	200	600	tpc, spc, npc	x	x
	35,1 - 100 mm²	2,1	200	600	tpc, spc, npc	x	x
	100,1 - 250 mm²	2,4	200	600	tpc, spc, npc	x	x
3513	0,5 - 4 mm²	0,8	200	600	tpc, spc, npc	x	x
	4,1 - 9 mm²	1,2	200	600	tpc, spc, npc	x	x
	9,1 - 35 mm²	1,6	200	600	tpc, spc, npc	x	x
	35,1 - 100 mm²	2,1	200	600	tpc, spc, npc	x	x
	100,1 - 250 mm²	2,4	200	600	tpc, spc, npc	x	x
3580	26 - 9	1,2	150	1000	tpc, spc, npc, pure nickel	x	x
	8 - 2	1,6	150	1000	tpc, spc, npc, pure nickel	x	x
	1 - 4/0	2,1	150	1000	tpc, spc, npc, pure nickel	x	x
	250 - 500 kcmil	2,4	150	1000	tpc, spc, npc, pure nickel	x	x

single wire diameter:
* ≥ 0,0787 mm
** tpc ≥ 0,386 mm
*** pay attention to UL-Style specifications.





SIF
CSA file no. LL 59063

Silicone single core with CSA approval

Construction

Conductor: Cu bare, tp, sp, np to CSA-C22.2 No. 210.2-M90
Insulation: Silicone to CSA-C22.2-M90
Colour: On request (except transparent and clear)

Application

Internal wiring of appliances

Technical data

Temperature range: - 50 °C up to max. + 200 °C
Rated voltage U0/U: 300 / 600 /1000 V
Test voltage: According to CSA standard
Flame test: FT1

Notes

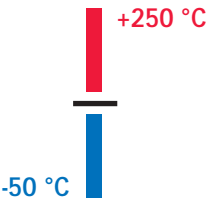
- The itemized cables are also available with combined UL/CSA approval
- Silicone cores with CSA approval and glass fibre braid refer to page 70.
- UL/CSA approved cables with additional insulation materials refer to page 148 onwards.

AWG	conductor material*	average wall thickness (minimum wall thickness) [mm]	range	
			temperature [°C]	voltage [Volt]
32 - 16	bare copper tpc spc npc	0,8 (0,76)	150	300
14 - 12		0,8 (0,76)	150	300
10		1,2 (1,14)	150	300
8 - 2		1,6 (1,52)	150	300
1 - 4/0		2,1 (2,03)	150	300
32 - 16		0,8 (0,76)	150	600
14 - 12		0,8 (0,76)	150	600
10		0,8 (0,76)	150	600
8 - 2		1,6 (1,52)	150	600
1 - 4/0		2,1 (2,03)	150	600
32 - 12		0,8 (0,76)	150	1000
10		1,2 (1,14)	150	1000
8 - 2		1,6 (1,52)	150	1000
1 - 4/0		2,1 (2,03)	150	1000
32 - 16		0,8 (0,76)	200	300
14 - 12		0,8 (0,76)	200	300
10		1,2 (1,14)	200	300
8 - 2		1,6 (1,52)	200	300
1 - 4/0		2,1 (2,03)	200	300
32 - 24		0,8 (0,76)	200	600
22 - 12		0,8 (0,76)	200	600
10		1,2 (1,14)	200	600
8 - 2		1,6 (1,52)	200	600
1 - 4/0		2,1 (2,03)	200	600
32 - 12		0,8 (0,76)	200	1000
10		1,2 (1,14)	200	1000
8 - 2		1,6 (1,52)	200	1000
1 - 4/0		2,1 (2,03)	200	1000

* temperature limits of conductor
(C 22.2 no. 210.2 - M 90)

conductor material	temperature limit [°C]	conductor material	temperature limit [°C]
bare copper, single wire Ø < 0,38 mm	150	spc	200
bare copper, single wire Ø ≥ 0,38 mm	200	npc	250
tpc, single wire Ø < 0,38 mm	150	npc 27 %	450
tpc, single wire Ø ≥ 0,38 mm	200		





Silicone rubber single core, highly flexible

SIFF

Products

Silicone Rubber
Cables

Construction

Conductor: Cu bare, tp, highly flexible
Insulation: SiR E12 to VDE 0282 part 1
Colour: On request

Application

For internal wiring at high ambient temperatures, e.g.

- Lighting
- Domestic appliances
- Instrumentation engineering
- Mechanical engineering

Technical data

Temperature range: - 50 °C up to +180 °C,
Cu bare + 130 °C
short-term + 250 °C

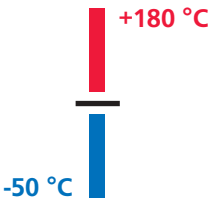
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Note

→ For increased mechanical stress we offer highly flexible SiR cores with notch resistant insulation and/or increased wall thickness.

cross section [mm²]	single wireØ [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,25	0,05	0,74	1,8	2,5	6
0,5	0,05	1,05	2,2	5	10
0,75	0,05	1,31	2,4	7,5	12
1	0,05	1,58	2,7	10	16
1,5	0,07	2,0	3,1	15	22
2,5	0,07	2,52	3,8	25	35
4	0,07	3,26	4,7	40	53
6	0,07	3,89	5,2	60	76
10	0,07	5,57	7	100	123
16	0,07	6,83	8,5	160	189
25	0,10	8,82	10,2	255	291
35	0,10	9,66	11,8	360	404





SIFGL
H05SJ-K

Silicone rubber/glass-fibre single core, stranded, to VDE 0282 part 3

Construction

Conductor: Cu bare, tp, sp, np, stranded, acc. to VDE 0295 class 5 and HD 383 class 5 resp.
Insulation: SiR E12 to VDE 0282 part 1
Colour: White
Braid: Silicone impregnated glass-fibre acc. to HD 22.1
Identification: Identification tracer

Application

For internal wiring at high ambient temperatures, e.g.
- Lighting
- Domestic appliances
- Mechanical engineering

Technical data

Temperature range: - 50 °C up to +180 °C
Cu bare + 130 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

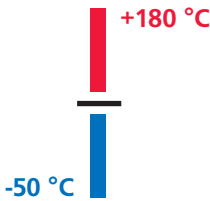
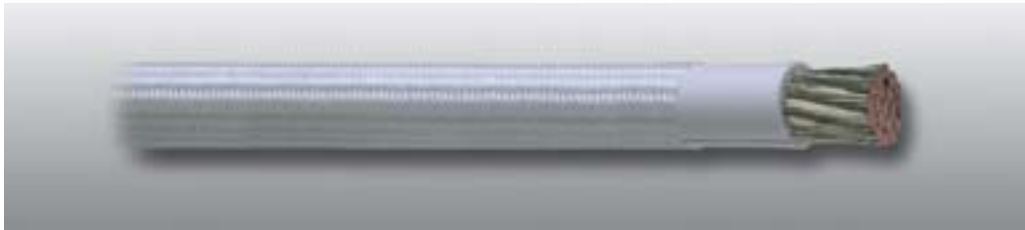
Notes

→ Cross sections >16 mm² see page 67 (A05SJ-K)
→ SiR/glass-fibre cores are also available with different cross sections and various conductor materials, but without VDE-approval.

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] + 5 % - 2 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	2,7	4,8	12
0,75	0,21	1,16	2,9	7,2	15
1	0,21	1,35	3,0	9,6	18
1,5	0,26	1,61	3,5	14,4	22
2,5	0,26	2,11	4,1	24	35
4	0,31	2,58	4,6	38	49
6	0,31	3,22	5,2	58	68
10	0,41	4,78	7,2	96	131
16	0,41	6,0	8,4	154	197

cross sections > 16 mm² see next page - A05SJ-K





Silicone rubber/glass-fibre single core, stranded, to VDE 0282 part 3

SIFGL
A05SJ-K

Products

Construction

Conductor: Cu bare, tp, sp, np, stranded, acc. to VDE 0295 class 5 and HD 383 class 5 resp.
Insulation: SiR E12 to VDE 0282 part 1
Colour: White
Braid: Silicone impregnated glass-fibre acc. to HD 22.1
Identification: Identification tracer

Application

For internal wiring at high ambient temperatures, e.g.
- Lighting
- Domestic appliances
- Mechanical engineering

Technical data

Temperature range: - 50 °C up to +180 °C
Cu bare + 130 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ The itemized cross sections (120 mm² - 185 mm²) mentioned in the table below are not included in VDE 0282 T3
→ Cross sections < 25 mm² see page 66 (H05SJ-K)
→ SiR/glass-fibre cores are also available with different cross sections and various conductor materials but without VDE-approval.

Silicone Rubber
Cables

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
25	0,41	7,46	10,2	240	295
35	0,41	8,93	11,6	336	394
50	0,41	10,4	13,4	480	550
70	0,51	12,44	15,3	672	761
95	0,51	14,91	18,1	912	1003
120*	0,51	16,53	19,6	1152	1239
150*	0,51	17,96	21,4	1140	1536
185*	0,51	20,48	24,2	1776	1924

* according to VDE 0282 part 3





SIFGL

UL file no. E 69837 (M)

Silicone/glass fibre single core with UL approval

Construction

Conductor:

Conductor construction and material according to table below

Insulation:

Silicone to UL 1581, subject 758, class 22

Colour:

White or on request

Braid:

Silicone impregnated glass fibre

Application

For internal wiring of appliances taking into consideration corresponding style specifications

Technical data

Temperature range:

- 50 °C up to max. + 250 °C

Rated voltage U0/U:

300 and 600 V resp.

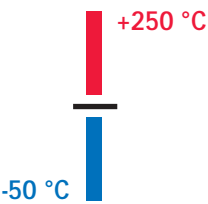
Test voltage:

Acc. to style specifications

Notes

- The itemized cables are also available with combined UL/CSA approval
- Silicone cores with UL approval without glass fibre braid refer to pages 62-63.
- UL/CSA approved cables with additional insulation materials see page 148.

UL Style***	AWG	average wall thickness [mm]	range		conductor construction		
			temperature [°C]	voltage [Volt]	material	solid / stranded	
3067	28 - 20	0,8	200	600	Specific resistance material-NrCrFe	x	
3068	30 - 16	0,5	150	300	tpc, spc, npc, pure nickel	x	x
3069	26 - 20	0,8	150	600	tpc, spc, npc, pure nickel	x	x
3070	18 - 12	0,8	150	600	tpc, spc, npc, pure nickel	x	x
3071	18 - 13	0,8	200	600	tpc**, spc, npc, pure nickel	x	x
3074	12	0,8	200	600	tpc**, spc, npc, pure nickel	x	x
3075	10	1,2	200	600	tpc**, spc, npc, pure nickel	x	x
3076	≥ 28	0,8	150	300	Specific resistance material-Alloy	x	x
3100	12	0,8	150	600	tpc*, spc, npc	x	x
3101	10	1,2	150	600	tpc, spc, npc, pure nickel	x	x
3113	18	1,6	150	600	tpc, Ø ≥ 0,254 mm		x
3115	20	0,8	150	300	bare coper, 7x15x0,08 mmØ		x
3125	8 - 2	1,6	200	600	tpc**, spc, npc		x
3126	1 - 4/0	2,1	200	600	tpc**, spc, npc		x
3127	8 - 2	1,6	150	600	tpc**, spc, npc		x
3128	1 - 4/0	2,1	150	600	tpc**, spc, npc		x
3132	30 - 16	0,5	150	300	tpc, spc, npc, pure nickel	x	x



Silicone/glass fibre single core with UL approval

SIFGL
UL file no. E 69837 (M)

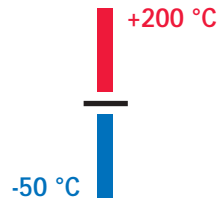
Products

Silicone Rubber
Cables

UL Style***	AWG	average wall thickness [mm]	range		conductor construction		
			temperature [°C]	voltage [Volt]	material	solid / stranded	
3144	26 - 12	1,2	200	600	tpc**, spc, npc, pure nickel	x	x
3145	12	1,6	200	600	tpc**, spc, npc, pure nickel	x	x
3146	≥ 28	1,2	150	300	specific resistance material-Alloy	x	x
3172	26 - 18	0,8	200	600	tpc**, spc, npc	x	x
3207	18	1,6	150	600	tpc, Ø ≥ 0,254 mm		x
3208	18 - 12	1,6	150	600	tpc, spc, npc, pure nickel	x	x
3209	18 - 12	1,6	200	600	tpc**, spc, npc, pure nickel	x	x
3210	18 - 12	1,6	150	600	tpc, spc, npc, pure nickel	x	x
3252	30 - 10	0,8	250	600	spc, npc, Fe np	x	x
3254	30 - 12	0,8	250	300	spc, npc, Fe np	x	x
3278	8 - 2	1,6	150	600	tpc, spc, npc, pure nickel	x	x
	1 - 4/0	2,1	150	600	tpc, spc, npc, pure nickel	x	x

single wire diameter:
* tpc ≥ 0,254 mm
** tpc ≥ 0,386 mm
*** pay attention to UL-Style specifications.





SIFGL
CSA file no. LL 59063

Silicone/glass fibre single core with CSA approval

Construction

Conductor: Cu bare, tp, sp, np to CSA-C22.2 No. 210.2-M90
Insulation: Silicone to CSA-C22.2 No. 210.2-M90
Colour: On request (except transparent and clear)
Braid: Silicone impregnated glass fibre

Application

Internal wiring of appliances

Technical data

Temperature range: - 50 °C up to max. + 200 °C
Rated voltage U0/U: 300 / 600 /1000 V
Test voltage: According to CSA standard
Flame test: FT1

Notes

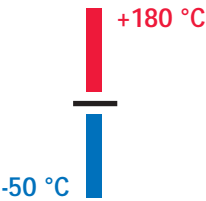
- The itemized cables are also available with combined UL/CSA approval
- Silicone cores with CSA approval without glass fibre braid see page 64.
- UL/CSA approved cables with additional insulation materials refer to page 148.

AWG	conductor material*	average wall thickness (minimum wall thickness) [mm]	range	
			temperature [°C]	voltage [Volt]
32 - 16	bare copper tpc spc npc	0,8 (0,76)	150	300
14 - 12		0,8 (0,76)	150	300
10		1,2 (1,14)	150	300
8 - 2		1,6 (1,52)	150	300
1 - 4/0		2,1 (2,03)	150	300
32 - 16		0,8 (0,76)	150	600
14 - 12		0,8 (0,76)	150	600
10		0,8 (0,76)	150	600
8 - 2		1,6 (1,52)	150	600
1 - 4/0		2,1 (2,03)	150	600
32 - 12		0,8 (0,76)	150	1000
10		1,2 (1,14)	150	1000
8 - 2		1,6 (1,52)	150	1000
1 - 4/0		2,1 (2,03)	150	1000
32 - 16		0,8 (0,76)	200	300
14 - 12		0,8 (0,76)	200	300
10		1,2 (1,14)	200	300
8 - 2		1,6 (1,52)	200	300
1 - 4/0		2,1 (2,03)	200	300
32 - 24		0,8 (0,76)	200	600
22 - 12		0,8 (0,76)	200	600
10		1,2 (1,14)	200	600
8 - 2		1,6 (1,52)	200	600
1 - 4/0		2,1 (2,03)	200	600
32 - 12		0,8 (0,76)	200	1000
10		1,2 (1,14)	200	1000
8 - 2		1,6 (1,52)	200	1000
1 - 4/0		2,1 (2,03)	200	1000

* temperature limits of conductor
(C 22.2 No. 210.2 - M 90)

conductor material	temperature limit [°C]	conductor material	temperature limit [°C]
bare copper, single wire Ø < 0,38 mm	150	spc	200
bare copper, single wire Ø ≥ 0,38 mm	200	npc	250
tpc, single wire Ø < 0,38 mm	150	npc 27 %	450
tpc, single wire Ø ≥ 0,38 mm	200		





Silicone single core double insulated, solid, with VDE-approval **SISID**
VDE-reg. no. 6574 9049

Construction

Conductor: Cu bare, tp, np, solid, acc. to VDE 0295 class 1
Pure nickel, solid
1st insulation: SIR E12 to VDE 0282 part 1
2nd insulation: SIR E12 to VDE 0282 part 1
Colour: Black or on request
Identification: Printing of VDE registration number on 2nd insulation

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/300 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Application

For wiring in electrical appliances and lighting up to an operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
180 °C with npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Note

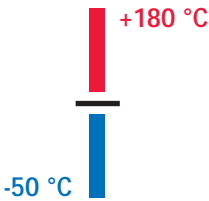
→ Double insulated silicone cores with stranded conductors see page 72.

cross section [mm²]	conductor Ø [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,8	3,1	4,8	14
0,75	0,98	3,3	7,2	17
1	1,13	3,5	9,6	20
1,5	1,38	4,1	14,4	28
2,5	1,78	4,9	24	43

Products

Silicone Rubber
Cables





SISIF

VDE-reg. no. 6574 9049

Silicone single core double insulated, stranded, with VDE-approval

Construction

Conductor: Cu bare, tp, np, stranded, acc. to VDE 0295 class 5 or pure nickel
1st insulation: SiR E12 to VDE 0282 part 1
2nd insulation: SiR E12 to VDE 0282 part 1
Colour: Black or on request
Identification: Printing of VDE registration number on 2nd insulation

Application

For wiring in electrical appliances and lighting up to an operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
180 °C with npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

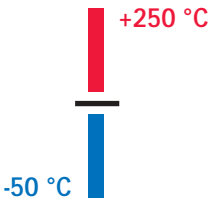
Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/300 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

- On request the itemized cables are also available with rated voltage 300/500 V (ÜG 9869) for use in ignition devices with ignition voltages r.m.s. up to 5kV.
- Double insulated silicone cores with VDE-ÜG are also available with conductors to VDE 0295 class 2.
- Double insulated silicone cores with solid conductor see page 71.

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	3,3	4,8	15
0,75	0,21	1,16	3,4	7,2	18
1	0,21	1,35	3,6	9,6	20
1,5	0,26	1,61	4,3	14,4	29
2,5	0,26	2,11	5,1	24	46





Silicone ignition cable

SIFZÜ

Products

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 2 and class 5
Insulation: SIR E12 to VDE 0282 part 1
Colour: Black or on request

Application

For wiring at high ambient temperatures, e.g.
- Lighting
- Heating installations
- Mechanical engineering
- Traffic and automotive

Technical data

Temperature range: - 50 °C up to +180 °C, short-term + 250 °C
Rated voltage U0/U: 20 kV
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

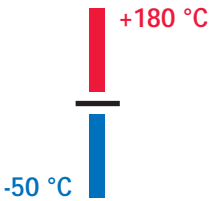
Note

→ For higher ignition voltages we can offer special high voltage silicone cables according to your requirements

Silicone Rubber
Cables

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	ignition voltage [kV]	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,32	0,96	5	6	4,8	29,2
1	0,26	1,35	7	8	9,6	54,9
1,5	0,26	1,61	8	10	14,4	70,9





SIF

VDE-reg. no. 6574 9835

Silicone single core 0,6/1 kV with VDE-approval

Construction

Conductor:

Cu tp, stranded, acc. to VDE 0295 class 5

Insulation:

SIR E12 to VDE 0282 part 1

Colour:

On request

Identification:

Printing of VDE registration number

Application

For wiring in ignition devices and lighting up to an operating temperature of 180°C. This cable can be used in ignition devices with an ignition voltage of up to 5 kV.

Technical data

Temperature range:

- 50 °C up to +180 °C

Rated voltage U0/U:

0,6/1 kV

Test voltage:

5 kV

Min. bending radius:

7,5 x diameter

Insulation resistance:

Min. 20 MΩ x km at 20 °C

Halogenfree:

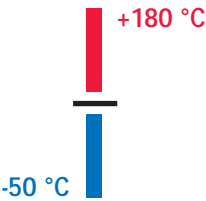
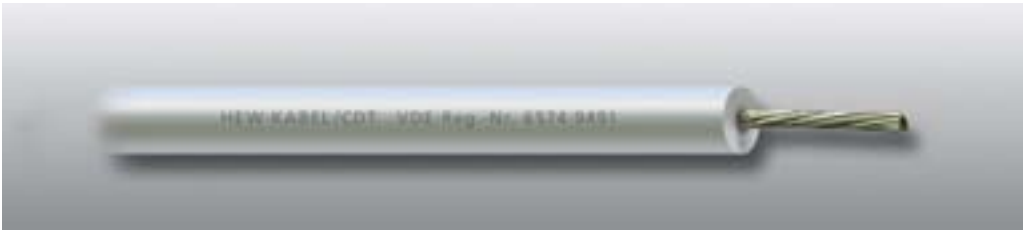
To VDE 0472 part 813 and IEC 754-1

Note

→ For higher ignition voltages we can offer special high voltage silicone cables according to your requirements.

cross section [mm²]	maximum Ø of single wires [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	3,0	4,8	12
0,75	0,21	1,16	3,2	7,2	15
1	0,21	1,35	3,4	9,6	18
1,5	0,26	1,61	3,6	14,4	23
2,5	0,26	2,11	4,5	24	38





Silicone single core 1,8/3 kV with VDE -approval

SIF
VDE-reg. no. 6574 9491

Products

Construction

Conductor: Cu bare, tp, np, stranded, acc. to VDE 0295 class 5 or pure nickel
Insulation: SIR E12 to VDE 0282 part 1
Colour: White or on request
Identification: Printing of VDE registration number

Application

For wiring in electrical appliances and lighting up to an operating temperature of:
130 °C with bare copper conductor
180 °C with tpc conductor
180 °C with npc conductor
180 °C with pure nickel conductor taking into consideration reduced conductor conductivity
This cable can be used for ignition devices with an ignition voltage of up to 10 kV.

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 1,8/3 kV
Test voltage: 10 kV
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

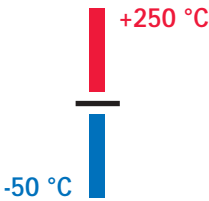
Notes

→ On request the itemized cables are also available with conductors to VDE 0295 class 1 and 2
→ For higher ignition voltages we can offer special high voltage silicone cables according to your requirements.

Silicone Rubber
Cables

cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	0,21	0,98	3,6	4,8	16
0,75	0,21	1,16	3,8	7,2	19
1	0,21	1,35	4,0	9,6	23
1,5	0,26	1,61	4,2	14,4	28
2,5	0,26	2,11	4,7	24	40





SIGLSI

Silicone/glass fibre ignition cable

Construction

Conductor: Cu tp
Insulation: High voltage resistant silicone compound
Braiding: Glass fibre yarn
Sheath: SiR E12 to VDE 0282 part 1
Colour: Black or on request

Application

For wiring of ignition systems at high ambient temperatures, e.g.
- Traffic and automotive
- Mechanical engineering

Technical data

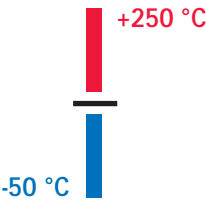
Temperature range: - 50 °C up to +180 °C, short-term + 250 °C
Ignition voltage: 20 kV
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Note

→ On request the itemized ignition cables are also available in different cross sections and various conductor materials.

cross section [mm²]	maximum Ø of single wires [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
1	0,26	1,31	7,0	9,6	54
1,5	0,26	1,61	7,4	14,4	72





Silicone twin flat cable

SIFZW

Construction

Conductor: Cu bare, tp, sp, np, stranded, acc. to VDE 0295 class 5 or pure nickel
Insulation: SIR E12 to VDE 0282 part 1
Colour: On request, also available with coloured stripe on one core

Application

For internal wiring of lighting and appliances at high ambient temperatures

Technical data

Temperature range: - 50 °C up to +180 °C
Cu bare + 130 °C
short-term + 250 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Note

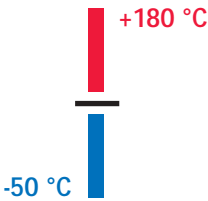
→ VDE-approved silicone twin flat cables see page 79.

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,5	0,21	0,98	2,1 x 4,5	9,6	16
2 x 0,75	0,21	1,16	2,3 x 4,8	14,4	21
2 x 1	0,21	1,35	2,4 x 5,2	19	25
2 x 1,5	0,26	1,61	2,9 x 6,1	29	37

Products

Silicone Rubber
Cables





Silicone twin flat cable, stranded, with VDE-approval

SIFZW
VDE reg. no. 6574 9246

Products

Construction

Conductor: Cu bare, tp, np, stranded, acc. to VDE 0295 class 5 or 6 or pure nickel
Insulation: SIR E12 to VDE 0282 part 1
Colour: Red-brown or on request
Identification: Printing of VDE registration number

Application

For internal wiring of lighting or protected installations at ambient temperatures exceeding 55°C
max. 130 °C with bare copper conductor
max. 180 °C with tpc conductor
max. 180 °C with npc conductor
max. 180 °C with pure nickel conductor taking into consideration reduced conductor conductivity

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 230/400 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Note

→ Silicone twin flat cables without VDE-approval see page 77.

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,5	0,21	0,98	2,1 x 4,5	9,6	16
2 x 0,75	0,21	1,16	2,3 x 4,8	14,4	21
2 x 1	0,21	1,35	2,4 x 5,2	19	25
2 x 1,5	0,26	1,61	2,9 x 6,1	29	37





SIHSI

Silicone multicore cable

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201),
> 6 cores: black with printed numbers (also applicable to cables without earth)
Twisting: In layers
Sheath: SiR 2GM1 to VDE 0207 part 21
Colour: Red-brown or on request

Technical data

Temperature range: - 50 °C up to +180 °C, short-term + 250 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

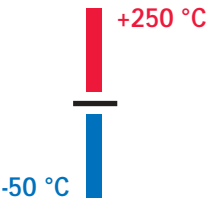
Application

Industrial areas with increased temperature requirements, e.g.
- Mechanical engineering
- Traffic technology
- Lighting industry
- Sauna and solarium
- Glass and ceramic fabrication
- Steel and iron fabrication

Notes

→ Silicone multicore cables are also available with different cross sections and various conductor materials.
→ We recommend our armoured silicone multicore cables (page 88-89) or our glass fibre braided multicore cables (on request only) for increased mechanical stress
→ VDE-approved silicone multicore cables see page 83.

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,75	0,21	1,16	2,26	6,1	14,4	56
3 x 0,75	0,21	1,16	2,26	6,4	21,6	66
4 x 0,75	0,21	1,16	2,26	7,0	29	80
5 x 0,75	0,21	1,16	2,26	8,1	36	109
6 x 0,75	0,21	1,16	2,26	8,7	43	127
7 x 0,75	0,21	1,16	2,26	8,7	50	132
2 x 1	0,21	1,35	2,44	6,4	19	62
3 x 1	0,21	1,35	2,44	6,8	29	81
4 x 1	0,21	1,35	2,44	7,6	38	97
5 x 1	0,21	1,35	2,44	8,5	48	124
6 x 1	0,21	1,35	2,44	9,3	58	144
7 x 1	0,21	1,35	2,44	9,3	67	151
2 x 1,5	0,26	1,61	2,70	7,2	29	87
3 x 1,5	0,26	1,61	2,70	7,6	43	102
4 x 1,5	0,26	1,61	2,70	8,5	58	126
5 x 1,5	0,26	1,61	2,70	9,3	72	159
6 x 1,5	0,26	1,61	2,70	10,1	86	176
7 x 1,5	0,26	1,61	2,70	10,1	101	186
8 x 1,5	0,26	1,61	2,70	11,3	116	235
10 x 1,5	0,26	1,61	2,70	12,6	144	280
12 x 1,5	0,26	1,61	2,70	13,2	173	320
14 x 1,5	0,26	1,61	2,70	14,3	202	370
16 x 1,5	0,26	1,61	2,70	15,7	231	433
18 x 1,5	0,26	1,61	2,70	16,5	260	464
20 x 1,5	0,26	1,61	2,70	16,9	288	507
24 x 1,5	0,26	1,61	2,70	19,0	346	625



Silicone multicore cable

SIHSI

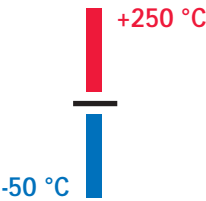
Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 2,5	0,26	2,05	3,31	8,6	48	131
3 x 2,5	0,26	2,05	3,31	9,1	72	163
4 x 2,5	0,26	2,05	3,31	10,1	96	197
5 x 2,5	0,26	2,05	3,31	11,3	120	242
6 x 2,5	0,26	2,05	3,31	12,3	144	297
7 x 2,5	0,26	2,05	3,31	12,3	168	311
12 x 2,5	0,26	2,05	3,31	16,2	288	492
2 x 4	0,31	2,58	4,01	10,2	77	177
3 x 4	0,31	2,58	4,01	10,8	115	217
4 x 4	0,31	2,58	4,01	12	154	281
5 x 4	0,31	2,58	4,01	13,8	192	373
6 x 4	0,31	2,58	4,01	15	230	428
7 x 4	0,31	2,58	4,01	15	269	443
2 x 6	0,31	3,2	4,61	11,6	115	231
3 x 6	0,31	3,2	4,61	12,3	173	296
4 x 6	0,31	3,2	4,61	13,5	230	369
5 x 6	0,31	3,2	4,61	15,4	288	462
6 x 6	0,31	3,2	4,61	16,8	346	569
7 x 6	0,31	3,2	4,61	16,8	403	605
2 x 10	0,41	4,78	6,51	16	192	422
3 x 10	0,41	4,78	6,51	17	288	540
4 x 10	0,41	4,78	6,51	19,2	384	644
5 x 10	0,41	4,78	6,51	21,1	480	834
2 x 16	0,41	6,0	7,66	18,9	308	604
3 x 16	0,41	6,0	7,66	20,1	462	762
4 x 16	0,41	6,0	7,66	22	616	976
5 x 16	0,41	6,0	7,66	24,8	770	1218
2 x 25	0,41	7,45	9,46	22,5	480	895
3 x 25	0,41	7,45	9,46	24,6	720	1172
4 x 25	0,41	7,45	9,46	27	960	1477
2 x 35	0,41	8,9	10,86	25,9	672	1181
3 x 35	0,41	8,9	10,86	27,6	1008	1616
4 x 35	0,41	8,9	10,86	30,9	1344	2006
2 x 50	0,41	10,4	12,66	30,1	960	1639
3 x 50	0,41	10,4	12,66	32,1	1440	2256
4 x 50	0,41	10,4	12,66	35,9	1920	2715
2 x 70	0,51	12,4	14,61	34,0	1344	2235
3 x 70	0,51	12,4	14,61	36,9	2016	3037
4 x 70	0,51	12,4	14,61	41,2	2688	3778
2 x 95	0,51	14,9	17,36	40,1	1824	3080
3 x 95	0,51	14,9	17,36	43,5	2736	3988
4 x 95	0,51	14,9	17,36	48,4	3648	5007
3 x 120	0,51	16,5	18,91	47,4	3465	4945
4 x 120	0,51	16,5	18,91	52,7	4620	6216



Lined area for notes with horizontal blue lines and decorative gray shapes.



Silicone multicore cable to VDE 0250 part 816

SIHSI
N2GMH2G

Products

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201)
Twisting: In layers
Sheath: SiR 2GM1 to VDE 0207 part 2 1
Colour: Red-brown or on request

Application

Industrial areas with increased temperature requirements and VDE-approval, e.g.

- Mechanical engineering
- Traffic technology
- Lighting industry
- Sauna and solarium
- Glass and ceramic fabrication
- Steel and iron fabrication

Technical data

Temperature range: - 50 °C up to +180 °C, short-term + 250 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ VDE-approved silicone multicore cables are also available with bare copper, npc and spc conductors
→ We recommend our armoured silicone multicore cables (page 88-89) or our glass fibre braided multicore cables (on request only) for increased mechanical stress

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] min - max	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,75	0,21	1,16	2,26	6,0 - 7,2	14,4	50
3 x 0,75	0,21	1,16	2,26	6,6 - 7,8	21,6	62
4 x 0,75	0,21	1,16	2,26	7,2 - 8,4	29	72
5 x 0,75	0,21	1,16	2,26	8,0 - 9,4	36	98
2 x 1	0,21	1,35	2,44	6,4 - 7,8	19	64
3 x 1	0,21	1,35	2,44	6,8 - 8,2	29	73
4 x 1	0,21	1,35	2,44	7,6 - 8,8	38	88
5 x 1	0,21	1,35	2,44	8,4 - 9,8	48	105
2 x 1,5	0,26	1,61	2,90	7,6 - 9,0	29	84
3 x 1,5	0,26	1,61	2,90	8,0 - 9,6	43	101
4 x 1,5	0,26	1,61	2,90	9,0 - 10,5	58	126
5 x 1,5	0,26	1,61	2,90	9,8 - 11,5	72	157
2 x 2,5	0,26	2,05	3,51	9,0 - 10,5	48	124
3 x 2,5	0,26	2,05	3,51	9,6 - 11,5	72	157
4 x 2,5	0,26	2,05	3,51	10,5 - 12,5	96	196
5 x 2,5	0,26	2,05	3,51	12,0 - 14,0	120	238





SIHSI
(N)2GMH2G

Silicone multicore cable with VDE-approval, registration no. 6574 9059

Construction

Conductor:
Insulation:
Colour:

Cu tp, stranded, acc. to VDE 0295 class 5
SiR E12 to VDE 0282 part 1
To VDE 0293 (page 201)
> 6 cores: black with printed numbers
(also applicable to cables without earth)

Twisting:
Sheath:
Colour:
Identification:

In layers
SiR 2GM1 to VDE 0207 part 21
Red-brown or on request
Printing of VDE registration number

Application

Industrial areas with increased temperature requirements and
VDE-approval, e.g.

- Mechanical engineering

- Traffic technology

- Lighting industry

- Sauna and solarium

- Glass and ceramic fabrication

- Steel and iron fabrication

Technical data

Temperature range:

- 50 °C up to +180 °C,
short-term + 250 °C

Rated voltage U0/U:

300/500 V

Test voltage:

2000 V

Min. bending radius:

7,5 x diameter

Insulation resistance:

Min. 20 MΩ x km at 20 °C

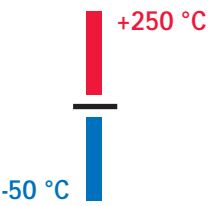
Halogenfree:

To VDE 0472 part 813 and IEC 754-1

Note

→ We recommend our armoured silicone multicore cables (page 88-89)
or our glass fibre braided multicore cables (on request only) for
increased mechanical stress

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
6 x 0,75	0,21	1,16	2,26	8,7	43	111
7 x 0,75	0,21	1,16	2,26	8,7	50	113
8 x 0,75	0,21	1,16	2,26	9,6	58	132
10 x 0,75	0,21	1,16	2,26	10,9	74	162
12 x 0,75	0,21	1,16	2,26	11,4	91	185
14 x 0,75	0,26	1,16	2,26	12,5	103	217
16 x 0,75	0,26	1,16	2,26	13,2	116	248
18 x 0,75	0,26	1,16	2,26	14,1	132	281
20 x 0,75	0,26	1,16	2,26	14,5	147	295
24 x 0,75	0,26	1,16	2,26	16,1	177	354
25 x 0,75	0,26	1,16	2,26	17,1	183	386
6 x 1	0,21	1,35	2,44	9,5	58	130
7 x 1	0,21	1,35	2,44	9,5	67	143
8 x 1	0,21	1,35	2,44	10,2	78	160
10 x 1	0,21	1,35	2,44	11,6	98	196
12 x 1	0,21	1,35	2,44	12,3	122	224
14 x 1	0,21	1,35	2,44	13,5	136	262
16 x 1	0,21	1,35	2,44	14,2	145	299
18 x 1	0,21	1,35	2,44	15,2	174	340
20 x 1	0,21	1,35	2,44	15,6	195	360
24 x 1	0,21	1,35	2,44	17,3	230	429
25 x 1	0,21	1,35	2,44	18,4	240	457
6 x 1,5	0,26	1,61	2,90	11,1	86	183
7 x 1,5	0,26	1,61	2,90	11,1	101	192
8 x 1,5	0,26	1,61	2,90	12,2	116	228
10 x 1,5	0,26	1,61	2,90	13,8	144	279



Silicone multicore cable with VDE-approval, registration no. 6574 9059

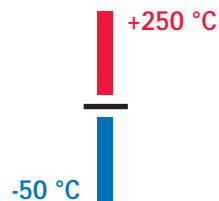
SIHSI
(N)2GMH2G

Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copperweight [kg/km]	weight approx. [kg/km]
12 x 1,5	0,26	1,61	2,90	14,4	173	322
14 x 1,5	0,26	1,61	2,90	15,7	202	370
16 x 1,5	0,26	1,61	2,90	16,8	231	423
18 x 1,5	0,26	1,61	2,90	17,7	260	464
20 x 1,5	0,26	1,61	2,90	18,4	288	513
24 x 1,5	0,26	1,61	2,90	20,4	346	615
25 x 1,5	0,26	1,61	2,90	21,6	362	654
6 x 2,5	0,26	2,05	3,51	13,1	144	279
7 x 2,5	0,26	2,05	3,51	13,1	168	290
8 x 2,5	0,26	2,05	3,51	14,4	192	341
10 x 2,5	0,26	2,05	3,51	16,3	242	416
12 x 2,5	0,26	2,05	3,51	17,2	288	494
14 x 2,5	0,26	2,05	3,51	18,8	336	564
16 x 2,5	0,26	2,05	3,51	20,1	384	638
18 x 2,5	0,26	2,05	3,51	21,1	432	668
20 x 2,5	0,26	2,05	3,51	21,9	484	787
24 x 2,5	0,26	2,05	3,51	24,3	578	936
25 x 2,5	0,26	2,05	3,51	25,8	604	970





SIHSI
H05SS-F

Silicone multicore cable to VDE 0282 part 15

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5 and HD 383 class 5 resp.
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201)
Twisting: In layers
Sheath: SiR EM9 to VDE 0282 part 1 and HD 22.1 S3 resp.
Colour: Red-brown or on request
Identification: Printing

Application

Industrial areas with increased temperature requirements and VDE-approval, e.g.
- Mechanical engineering
- Traffic technology
- Lighting industry
- Sauna and solarium
- Glass and ceramic fabrication
- Steel and iron fabrication

Technical data

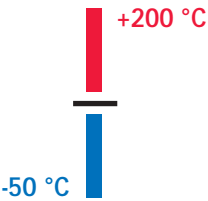
Temperature range: - 50 °C up to +180 °C, short-term + 250 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1
Flame resistance: Acc. to VDE 0472 part 814 test B

Notes

→ VDE-approved silicone multicore cables are also available with bare copper, npc and spc conductors
→ On request the following variations of our silicone multicore cables are available:
- H05SST-F (with braid)
- H05SSD3-K (with strain relief)
- H05SSD3T-K (with strain relief and braid)

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] min - max	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,75	0,21	1,16	2,26	5,7 - 7,4	14,4	50
3 x 0,75	0,21	1,16	2,26	6,2 - 8,1	21,6	62
4 x 0,75	0,21	1,16	2,26	6,8 - 8,8	29	72
5 x 0,75	0,21	1,16	2,26	7,6 - 9,9	36	98
2 x 1	0,21	1,35	2,44	6,1 - 8,0	19	64
3 x 1	0,21	1,35	2,44	6,5 - 8,5	29	73
4 x 1	0,21	1,35	2,44	7,1 - 9,3	38	88
5 x 1	0,21	1,35	2,44	8,0 - 10,3	48	105
2 x 1,5	0,26	1,61	3,10	7,6 - 9,8	29	84
3 x 1,5	0,26	1,61	3,10	8,0 - 10,4	43	101
4 x 1,5	0,26	1,61	3,10	9,0 - 11,6	58	126
5 x 1,5	0,26	1,61	3,10	9,8 - 12,7	72	157
2 x 2,5	0,26	2,05	3,71	9,0 - 11,6	48	124
3 x 2,5	0,26	2,05	3,71	9,6 - 12,4	72	157
4 x 2,5	0,26	2,05	3,71	10,7 - 13,8	96	196
5 x 2,5	0,26	2,05	3,71	11,9 - 15,3	120	238
3 x 4	0,31	2,58	4,41	11,3 - 14,5	115	225
4 x 4	0,31	2,58	4,41	12,7 - 16,2	154	290
3 x 6	0,31	3,22	5,01	12,8 - 16,3	173	305
4 x 6	0,31	3,22	5,01	14,2 - 18,1	230	380





Silicone multicore cable with UL approval

SIHSI
UL style no. 4476

Construction

- Conductor: Cu bare, tp, sp, np, pure nickel to UL 1581
- Core insulation: Silicone to UL 1581, subject 758, class 22, page 89
- Colour: According to UL 1581
- Twisting: In layers
- Sheath: Silicone to UL 1581, subject 758, class 22, page 89
- Colour: Red-brown or on request
- Identification: UL printing on sheath

Technical data

- Temperature range: - 50 °C up to +150/200 °C
- Rated voltage U0/U: 150 V, 300 V, 600 V, 1000 V
- Test voltage: Core/core 2 kV

Application

For internal wiring of appliances. The cables are not suitable for high mechanical stress requirements.
External interconnection of appliances and electronic equipment

Notes

- The itemized cables are also available according to UL 4476 without sheath
- Screened silicone multicore cables with UL approval see page 91.

number of cores	cross sections
2 or more	AWG 28 - AWG 4/0

→ Due to the vast variety of combinations please contact our sales office
pay attention to UL-Style specification.

Products

Silicone Rubber
Cables





Silicone multicore cable with steel wire armouring

SIHSIGLP

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201),
> 6 cores: black with printed numbers
Twisting: In layers
Sheath: SiR 2GM1 to VDE 0207 part 21
Wrapping: 1 layer of glass fibre tape
Armouring: Galvanized steel wire braid

Application

Industrial areas with increased temperature and mechanical requirements, e.g.
- Mechanical engineering
- Glass and ceramic fabrication
- Steel and iron fabrication

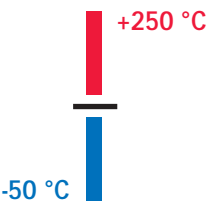
Technical data

Temperature range: - 50 °C up to +180 °C,
short-term + 250 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ Silicone multicore cables with steel wire armouring are also available with different cross sections and various conductor materials.
→ We recommend our silicone multicore cables (page 80-81) or our glass fibre braided multicore cables (on request only) for reduced mechanical stress

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,75	0,21	1,16	2,26	7,2	14,4	88
3 x 0,75	0,21	1,16	2,26	7,6	21,6	99
4 x 0,75	0,21	1,16	2,26	8,1	29	121
5 x 0,75	0,21	1,16	2,26	9,2	36	147
6 x 0,75	0,21	1,16	2,26	9,9	43	169
7 x 0,75	0,21	1,16	2,26	9,9	50	178
2 x 1	0,21	1,35	2,44	7,6	19	98
3 x 1	0,21	1,35	2,44	8,0	29	119
4 x 1	0,21	1,35	2,44	8,8	38	139
5 x 1	0,21	1,35	2,44	9,7	48	167
6 x 1	0,21	1,35	2,44	10,4	58	185
7 x 1	0,21	1,35	2,44	10,4	67	194
2 x 1,5	0,26	1,61	2,70	8,3	29	126
3 x 1,5	0,26	1,61	2,70	8,7	43	143
4 x 1,5	0,26	1,61	2,70	9,6	58	170
5 x 1,5	0,26	1,61	2,70	10,4	72	198
6 x 1,5	0,26	1,61	2,70	11,4	86	245
7 x 1,5	0,26	1,61	2,70	11,4	101	256
8 x 1,5	0,26	1,61	2,70	12,7	116	315
10 x 1,5	0,26	1,61	2,70	14,0	144	370
12 x 1,5	0,26	1,61	2,70	14,5	173	408
14 x 1,5	0,26	1,61	2,70	15,6	202	471
16 x 1,5	0,26	1,61	2,70	17,0	231	541
18 x 1,5	0,26	1,61	2,70	17,8	260	599
20 x 1,5	0,26	1,61	2,70	18,3	288	630
24 x 1,5	0,26	1,61	2,70	20,4	346	760



Silicone multicore cable with steel wire armouring

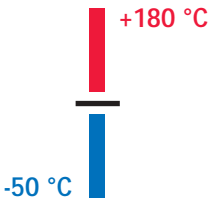
SIHSIGLP

Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 2,5	0,26	2,05	3,31	9,7	48	165
3 x 2,5	0,26	2,05	3,31	10,2	72	238
4 x 2,5	0,26	2,05	3,31	11,5	96	268
5 x 2,5	0,26	2,05	3,31	12,7	120	315
6 x 2,5	0,26	2,05	3,31	13,7	144	370
7 x 2,5	0,26	2,05	3,31	13,7	168	385
12 x 2,5	0,26	2,05	3,31	17,6	288	608
2 x 4	0,31	2,58	4,01	11,5	77	255
3 x 4	0,31	2,58	4,01	12,2	115	299
4 x 4	0,31	2,58	4,01	13,4	154	365
5 x 4	0,31	2,58	4,01	15,1	192	455
6 x 4	0,31	2,58	4,01	16,4	230	525
7 x 4	0,31	2,58	4,01	16,4	269	556
2 x 6	0,31	3,22	4,61	12,9	115	326
3 x 6	0,31	3,22	4,61	13,7	173	401
4 x 6	0,31	3,22	4,61	14,8	230	485
5 x 6	0,31	3,22	4,61	16,8	288	602
6 x 6	0,31	3,22	4,61	18,2	346	701
7 x 6	0,31	3,22	4,61	18,2	403	736
2 x 10	0,41	4,78	6,51	17,3	192	543
3 x 10	0,41	4,78	6,51	18,4	288	652
4 x 10	0,41	4,78	6,51	20,6	384	825
5 x 10	0,41	4,78	6,51	22,5	480	987
2 x 16	0,41	6,0	7,66	20,2	308	748
3 x 16	0,41	6,0	7,66	21,5	462	909
4 x 16	0,41	6,0	7,66	23,4	616	1183
5 x 16	0,41	6,0	7,66	26,2	770	1393
2 x 25	0,41	7,45	9,46	23,8	480	1046
3 x 25	0,41	7,45	9,46	26	720	1347
4 x 25	0,41	7,45	9,46	28,3	960	1678
2 x 35	0,41	8,93	10,86	27,2	672	1378
3 x 35	0,41	8,93	10,86	29	1008	1846
4 x 35	0,41	8,93	10,86	32,3	1344	2240
2 x 50	0,41	10,4	12,66	31,4	960	1869
3 x 50	0,41	10,4	12,66	33,5	1440	2384
4 x 50	0,41	10,4	12,66	37,2	1920	2702
2 x 70	0,51	12,44	14,61	35,3	1344	2482
3 x 70	0,51	12,44	14,61	38,3	2016	3314
4 x 70	0,51	12,44	14,61	42,5	2688	4074
2 x 95	0,51	14,9	17,36	41,4	1824	3380
3 x 95	0,51	14,9	17,36	44,8	2736	4299
4 x 95	0,51	14,9	17,36	49,8	3648	5339
3 x 120	0,51	16,53	18,91	48,8	3465	5277
4 x 120	0,51	16,53	18,91	54,1	4620	6571





SIHCSI

Silicone cable with copper screen

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201)
> 6 cores: black with printed numbers
Twisting: In layers
Wrapping: 1 layer separator foil
Screen: Braid; tpc, approx. 85% coverage
Sheath: SiR 2GM1 to VDE 0207 part 21
Colour: Red-brown or on request

Application

Industrial areas with increased temperature requirements, e.g.
- Mechanical engineering
- Traffic technology
- Lighting industry
- Glass and ceramic fabrication
- Steel and iron fabrication

Technical data

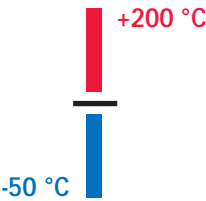
Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: Core/core 2000 V
Core/screen 1500 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

Notes

→ Due to the copper screen electromagnetic interference is greatly reduced
→ Silicone insulated cables with copper screen are also available in different metric and AWG cross sections as well as with various conductor materials
→ For increased mechanical stress we offer these cables with notch resistant sheath.

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,75	0,21	1,16	2,26	7,3	14,4	91
3 x 0,75	0,21	1,16	2,26	7,6	21,6	109
4 x 0,75	0,21	1,16	2,26	8,2	29	128
5 x 0,75	0,21	1,16	2,26	8,9	36	155
7 x 0,75	0,21	1,16	2,26	9,8	50	190
2 x 1	0,21	1,35	2,44	8,0	19	104
3 x 1	0,21	1,35	2,44	8,4	29	124
4 x 1	0,21	1,35	2,44	9,0	38	143
5 x 1	0,21	1,35	2,44	9,7	48	183
7 x 1	0,21	1,35	2,44	10,7	67	240
2 x 1,5	0,26	1,61	2,70	8,6	29	120
3 x 1,5	0,26	1,61	2,70	9,0	43	145
4 x 1,5	0,26	1,61	2,70	9,9	58	191
5 x 1,5	0,26	1,61	2,70	10,7	72	224
7 x 1,5	0,26	1,61	2,70	11,5	101	270
2 x 2,5	0,26	2,05	3,31	10,0	48	175
3 x 2,5	0,26	2,05	3,31	10,5	72	212
4 x 2,5	0,26	2,05	3,31	11,3	96	262
5 x 2,5	0,26	2,05	3,31	12,3	120	306
7 x 2,5	0,26	2,05	3,31	13,9	168	410
2 x 4	0,31	2,58	4,01	11,4	77	228
3 x 4	0,31	2,58	4,01	12,0	115	289
4 x 4	0,31	2,58	4,01	13,6	154	376
5 x 4	0,31	2,58	4,01	14,8	192	438
7 x 4	0,31	2,58	4,01	16,0	269	556





Silicone cables with copper shield and UL approval

SIHCSI
UL style no. 4476

Products

Silicone Rubber
Cables

Construction

- Conductor: Cu bare, tp, sp, np, pure nickel to UL 1581
- Core insulation: Silicone to UL 1581, subject 758, class 22, page 89
- Colour: According to UL 1581
- Twisting: In layers
- Wrapping: 1 layer separator foil
- Screen: Braid, tpc, spc, npc to UL 1581
- Sheath: Silicone to UL 1581, subject 758, class 22, page 89
- Colour: Red-brown or on request
- Identification: UL printing on sheath

Application

For internal wiring of appliances. The cables are not suitable for high mechanical stress applications.

External interconnection of appliances and electronic equipment.

Technical data

- Temperature range: - 50 °C up to +150/200 °C
- Rated voltage U0/U: 300 V, 600 V, 1000 V
- Test voltage: Core/core 2 kV
Core/screen 1,5 kV

Notes

- The itemized cables are also available according to UL 4476 without sheath
- Unscreened silicone multicore cables with UL approval refer to page 87.

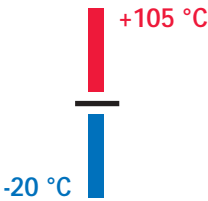
number of cores	cross sections
2 or more	AWG 28 - AWG 4/0

→ Due to the vast variety of combinations please contact our sales office

pay attention to UL-Style specification.



Lined area for notes with horizontal blue lines and decorative gray shapes.



Silicone/PVC multicore cable with VDE-approval, flat and circular

SIHY
VDE reg. no. 6574 9310

Products

Construction

- Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
- Insulation: SIR E12 to VDE 0282 part 1
- Colour: Acc. to VDE 0293 (page 201)
- Twisting: Choice of - 2 and 3 cores twisted or - 2 cores flat
- Sheath: Heat resistant PVC, type YM4
- Colour: On request
- Identification: Printing of VDE registration number on one core or sheath

Application

Lighting industry with increased temperature stress at conductor (180 °C) and VDE-approval.

Technical data

- Temperature range: - 20 °C up to +90 °C, short-term + 105 °C
Maximum permissible temperature at conductor + 180 °C
- Rated voltage U0/U: 300/500 V
- Test voltage: 2000 V
- Min. bending radius: 7,5 x diameter
- Insulation resistance: Min. 20 MΩ x km at 20 °C

Note

→ Silicone/PVC multicore cables are also available with bare copper conductor (no VDE-approval)

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strand diameter [mm]	core diameter [mm] ± 5 %	o.d. [mm] ± 5 %		copper weight [kg/km]	weight approx. [kg/km]
				flat	circular		
2 x 0,75	0,21	1,16	2,26	3,8 x 6,1	6,1	14,4	56
2 x 1	0,21	1,35	2,44	4,0 x 6,4	6,4	19	67
2 x 1,5	0,26	1,61	2,90	4,5 x 7,4	7,4	29	93
3 x 0,75	0,21	1,16	2,26	-----	6,4	21,6	65
3 x 1	0,21	1,35	2,44	-----	6,8	29	78
3 x 1,5	0,26	1,61	2,90	-----	7,8	43	112





SIHSI

FRNC* L

Silicone FRNC* multicore cable

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201),
> 6 cores: black with printed numbers
Twisting: In layers
Sheath: FRNC-SiR (page 103)
Colour: Black or on request
Identification: Printing HEW-KABEL/CDT FRNC - X

Application

Industrial areas with increased temperature requirements, e.g.
- Railway engineering
- Traffic technology
- Power plant technology
- Mechanical engineering
- Steel and iron fabrication

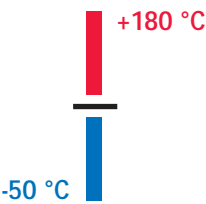
Notes

→The itemized FRNC-cables meet the following requirements acc. to the standards listed on page 103:
- Flame retardance
- Low smoke emission
- Insulation integrity
- Halogenfree
- Low fuel value level
- Cables for power plants
→ We recommend our FRNC-silicone multicore cables - heavy duty (increased thickness of sheath) - for increased mechanical stress. See page 96 - 97.

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 0,75	0,21	1,16	0,6	0,8	6,1	14,4	51	630
3 x 0,75	0,21	1,16	0,6	0,9	6,6	21,6	64	735
4 x 0,75	0,21	1,16	0,6	0,9	7,2	29	77	840
5 x 0,75	0,21	1,16	0,6	1	8,1	36	95	1015
6 x 0,75	0,21	1,16	0,6	1	8,7	43	110	1154
7 x 0,75	0,21	1,16	0,6	1	8,7	50	121	1225
2 x 1	0,21	1,35	0,6	0,9	6,6	19	62	737
3 x 1	0,21	1,35	0,6	0,9	7,0	29	76	805
4 x 1	0,21	1,35	0,6	0,9	7,6	38	91	915
5 x 1	0,21	1,35	0,6	1	8,5	48	112	1115
6 x 1	0,21	1,35	0,6	1,1	9,5	58	135	1320
7 x 1	0,21	1,35	0,6	1,1	9,5	67	147	1400
2 x 1,5	0,26	1,61	0,7	1	7,8	29	86	990
3 x 1,5	0,26	1,61	0,7	1	8,2	43	106	1085
4 x 1,5	0,26	1,61	0,7	1,1	9,1	58	133	1300
5 x 1,5	0,26	1,61	0,7	1,1	10,0	72	159	1400
6 x 1,5	0,26	1,61	0,7	1,2	11,1	86	188	1680
7 x 1,5	0,26	1,61	0,7	1,2	11,1	101	208	1870
8 x 1,5	0,26	1,61	0,7	1,3	12,2	116	254	2410
10 x 1,5	0,26	1,61	0,7	1,4	13,8	144	299	2720
12 x 1,5	0,26	1,61	0,7	1,4	14,4	173	347	3060
14 x 1,5	0,26	1,61	0,7	1,5	15,7	202	400	3485
16 x 1,5	0,26	1,61	0,7	1,6	16,8	231	455	3800
18 x 1,5	0,26	1,61	0,7	1,6	17,7	260	502	4200
20 x 1,5	0,26	1,61	0,7	1,7	18,4	288	554	4700
24 x 1,5	0,26	1,61	0,7	2	20,8	346	680	5900
30 x 1,5	0,26	1,61	0,7	2	22,5	429	815	6840



Silicone FRNC* multicore cable

SIHSI
FRNC* L

Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 2,5	0,26	2,05	0,8	1,1	9,2	48	128	1375
3 x 2,5	0,26	2,05	0,8	1,1	9,7	72	158	1495
4 x 2,5	0,26	2,05	0,8	1,2	10,8	96	198	1795
5 x 2,5	0,26	2,05	0,8	1,3	12,0	120	243	2250
6 x 2,5	0,26	2,05	0,8	1,3	13,1	144	285	2450
7 x 2,5	0,26	2,05	0,8	1,3	13,1	168	313	2565
12 x 2,5	0,26	2,05	0,8	1,6	17,2	288	530	4290
24 x 2,5	0,26	2,05	0,8	2	24,3	572	1010	7784
30 x 2,5	0,26	2,05	0,8	2,3	27,1	715	1254	9600
2 x 4	0,31	2,58	0,8	1,2	10,4	77	177	1740
3 x 4	0,31	2,58	0,8	1,2	11,0	115	222	1885
4 x 4	0,31	2,58	0,8	1,2	12,0	154	275	2145
5 x 4	0,31	2,58	0,8	1,4	13,6	192	350	2700
6 x 4	0,31	2,58	0,8	1,5	15,0	230	422	3200
7 x 4	0,31	2,58	0,8	1,5	15,0	269	453	3285
2 x 6	0,31	3,22	0,8	1,2	11,6	115	234	2080
3 x 6	0,31	3,22	0,8	1,3	12,5	173	304	2320
4 x 6	0,31	3,22	0,8	1,4	13,9	230	383	2720
5 x 6	0,31	3,22	0,8	1,5	15,4	288	479	3150
6 x 6	0,31	3,22	0,8	1,6	17,0	346	578	3860
7 x 6	0,31	3,22	0,8	1,6	17,0	403	623	3960
2 x 10	0,41	4,78	1	1,5	16,0	192	413	3850
3 x 10	0,41	4,78	1	1,6	17,2	288	530	4260
4 x 10	0,41	4,78	1	1,7	19,0	384	665	4985
5 x 10	0,41	4,78	1	1,8	21,1	480	830	5900
2 x 16	0,41	6,0	1	1,7	18,7	308	592	5248
3 x 16	0,41	6,0	1	1,8	20,1	462	768	5435
4 x 16	0,41	6,0	1	1,8	22	616	960	6180
5 x 16	0,41	6,0	1	2,1	24,8	770	1220	7800
2 x 25	0,41	7,45	1,2	2	22,9	480	914	7595
3 x 25	0,41	7,45	1,2	2	24,4	720	1172	8045
4 x 25	0,41	7,45	1,2	2,1	27,0	960	1475	9260
2 x 35	0,41	8,93	1,2	2,1	25,9	672	1190	9110
3 x 35	0,41	8,93	1,2	2,1	27,6	1008	1540	9545
4 x 35	0,41	8,93	1,2	2,4	30,9	1344	1975	11420
2 x 50	0,41	10,4	1,4	2,4	30,1	960	1648	12140
3 x 50	0,41	10,4	1,4	2,4	32,1	1440	2147	12750

* FRNC = Flame Retardant Non Corrosive





SIHSI
FRNC* S

Silicone FRNC* multicore cable, heavy duty

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201),
> 6 cores: black with printed numbers
Twisting: In layers
Sheath: FRNC-SiR (page 103)
Colour: Black or on request
Identification: Printing HEW-KABEL/CDT FRNC - X

Application

Industrial areas with increased temperature requirements, e.g.
- Traffic technology
- Power plant technology
- Mechanical engineering
- Steel and iron fabrication

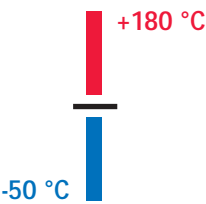
Note

→ The itemized FRNC-cables meet the following requirements acc. to the standards listed on page 103:
- Flame retardance
- Low smoke emission
- Insulation integrity
- Halogenfree
- Low fuel value level
- Cables for power plants
→ We recommend our standard FRNC-silicone multicore cables (page 94 - 95) where mechanical requirements are less demanding.

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 7,5 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

number of cores x cross section [mm²]	maximum Ø of single wires [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	weight approx. [kg/km]	copper aweight [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 0,75	0,21	1,16	0,6	2,5	9,5	105	14,4	1512
3 x 0,75	0,21	1,16	0,6	2,5	9,8	118	21,6	1613
4 x 0,75	0,21	1,16	0,6	2,5	10,4	135	29	1784
5 x 0,75	0,21	1,16	0,6	2,5	11,1	157	36	1867
6 x 0,75	0,21	1,16	0,6	2,5	11,7	180	43	2058
7 x 0,75	0,21	1,16	0,6	2,5	11,7	184	50	2131
2 x 1	0,21	1,35	0,6	2,5	9,8	116	19	1619
3 x 1	0,21	1,35	0,6	2,5	10,2	132	29	1732
4 x 1	0,21	1,35	0,6	2,5	10,8	152	38	1907
5 x 1	0,21	1,35	0,6	2,5	11,5	179	48	2003
6 x 1	0,21	1,35	0,6	2,5	12,3	204	58	2205
7 x 1	0,21	1,35	0,6	2,5	12,3	211	67	2287
2 x 1,5	0,26	1,61	0,7	2,5	10,8	143	29	1942
3 x 1,5	0,26	1,61	0,7	2,5	11,2	165	43	2074
4 x 1,5	0,26	1,61	0,7	2,5	11,9	192	58	2305
5 x 1,5	0,26	1,61	0,7	2,5	12,8	229	72	2569
6 x 1,5	0,26	1,61	0,7	2,5	13,7	251	86	2847
7 x 1,5	0,26	1,61	0,7	2,5	13,7	272	101	2964
8 x 1,5	0,26	1,61	0,7	2,5	14,6	309	116	3259
10 x 1,5	0,26	1,61	0,7	2,5	16,0	366	144	3848
12 x 1,5	0,26	1,61	0,7	2,5	16,6	411	173	4148
14 x 1,5	0,26	1,61	0,7	2,5	17,7	466	202	4624
16 x 1,5	0,26	1,61	0,7	2,5	18,6	520	231	4994
18 x 1,5	0,26	1,61	0,7	2,5	19,5	577	260	5395
20 x 1,5	0,26	1,61	0,7	2,5	20,0	616	288	5763
24 x 1,5	0,26	1,61	0,7	2,5	21,8	721	346	6628
30 x 1,5	0,26	1,61	0,7	2,5	23,5	863	429	7634



Silicone FRNC*multicore cable, heavy duty

SIHSI
FRNC* S

Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wires [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	weight approx. [kg/km]	copper weight [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 2,5	0,26	2,05	0,8	2,5	12,0	187	48	2378
3 x 2,5	0,26	2,05	0,8	2,5	12,5	221	72	2557
4 x 2,5	0,26	2,05	0,8	2,5	13,4	261	96	2850
5 x 2,5	0,26	2,05	0,8	2,5	14,4	312	120	3212
6 x 2,5	0,26	2,05	0,8	2,5	15,5	364	144	3570
7 x 2,5	0,26	2,05	0,8	2,5	15,5	382	168	3733
12 x 2,5	0,26	2,05	0,8	2,5	19,0	597	288	5454
24 x 2,5	0,26	2,05	0,8	2,5	25,3	1061	572	8645
30 x 2,5	0,26	2,05	0,8	2,5	27,5	1227	715	9988
2 x 4	0,31	2,58	0,8	2,5	13,0	239	77	2790
3 x 4	0,31	2,58	0,8	2,5	13,6	288	115	2979
4 x 4	0,31	2,58	0,8	2,5	14,6	346	154	3330
5 x 4	0,31	2,58	0,8	2,5	15,8	422	192	3754
6 x 4	0,31	2,58	0,8	2,5	17,0	489	230	4191
7 x 4	0,31	2,58	0,8	2,5	17,0	518	269	4381
2 x 6	0,31	3,22	0,8	2,5	14,2	303	115	3238
3 x 6	0,31	3,22	0,8	2,5	14,9	371	173	3443
4 x 6	0,31	3,22	0,8	2,5	16,1	449	230	3837
5 x 6	0,31	3,22	0,8	2,5	17,4	554	288	4339
6 x 6	0,31	3,22	0,8	2,5	18,8	647	346	4837
7 x 6	0,31	3,22	0,8	2,5	18,8	682	403	5060
2 x 10	0,41	4,78	1	2,5	18,0	486	192	5053
3 x 10	0,41	4,78	1	2,5	19,0	603	288	5399
4 x 10	0,41	4,78	1	2,5	20,6	738	384	6096
5 x 10	0,41	4,78	1	2,5	22,5	910	480	6913
2 x 16	0,41	6,0	1	2,5	20,3	655	308	6092
3 x 16	0,41	6,0	1	2,5	21,5	828	462	6481
4 x 16	0,41	6,0	1	2,5	23,4	1025	616	7290
5 x 16	0,41	6,0	1	2,5	25,6	1266	770	8290
2 x 25	0,41	7,45	1,2	2,5	23,9	963	480	8540
3 x 25	0,41	7,45	1,2	2,5	25,4	1224	720	9029
4 x 25	0,41	7,45	1,2	2,5	27,8	1522	960	10127
2 x 35	0,41	8,93	1,2	2,5	26,7	1236	672	9800
3 x 35	0,41	8,93	1,2	2,5	28,4	1594	1008	10484
4 x 35	0,41	8,93	1,2	2,5	31,1	1996	1344	11777
2 x 50	0,41	10,4	1,4	2,5	30,3	1663	960	12653
3 x 50	0,41	10,4	1,4	2,5	32,3	2163	1440	13208

*FRNC = Flame Retardant Non Corrosive





SIHGLCSI
FRNC* L

Silicone FRNC* cable screened

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201),
> 6 cores: black with printed numbers
Twisting: In layers
1 layer of glass fibre tape
1 layer of mica tape
Screen: Braid, tpc
Sheath: FRNC-SiR (page 103)
Colour: Black or on request
Identification: Printing HEW-KABEL/CDT FRNC - X

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

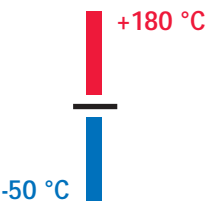
Application

Industrial areas with increased temperature requirements, e.g.
- Railway engineering
- Traffic technology
- Power plant technology
- Mechanical engineering
- Steel and iron fabrication

Notes

→ The itemized FRNC-cables meet the following requirements acc. to the standards listed on page 103:
- Flame retardance
- Low smoke emission
- Insulation integrity
- Halogenfree
- Low fuel value level
- Cables for power plants
→ We recommend our screened FRNC-silicone multicore cables - heavy duty (increased thickness of sheath) - for increased mechanical stress. See page 100 - 101.

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 0,75	0,21	1,16	0,6	1	7,9	43	89	685
3 x 0,75	0,21	1,16	0,6	1	8,3	53	106	795
4 x 0,75	0,21	1,16	0,6	1	8,8	72	134	940
5 x 0,75	0,21	1,16	0,6	1,2	9,9	83	163	1220
6 x 0,75	0,21	1,16	0,6	1,2	10,8	97	187	1370
7 x 0,75	0,21	1,16	0,6	1,2	10,8	104	196	1440
2 x 1	0,21	1,35	0,6	1	8,3	48	99	752
3 x 1	0,21	1,35	0,6	1	8,7	70	128	870
4 x 1	0,21	1,35	0,6	1	9,3	85	151	1010
5 x 1	0,21	1,35	0,6	1,2	10,6	98	184	1310
6 x 1	0,21	1,35	0,6	1,2	11,3	113	210	1500
7 x 1	0,21	1,35	0,6	1,2	11,3	122	221	1560
2 x 1,5	0,26	1,61	0,7	1,2	9,6	59	127	1025
3 x 1,5	0,26	1,61	0,7	1,2	10,3	89	166	1195
4 x 1,5	0,26	1,61	0,7	1,2	11,0	109	198	1385
5 x 1,5	0,26	1,61	0,7	1,2	11,8	128	230	1550
6 x 1,5	0,26	1,61	0,7	1,4	13,1	144	270	1900
7 x 1,5	0,26	1,61	0,7	1,4	13,1	161	293	2110
8 x 1,5	0,26	1,61	0,7	1,5	14,4	183	320	2185
10 x 1,5	0,26	1,61	0,7	1,5	15,8	220	400	2905
12 x 1,5	0,26	1,61	0,7	1,5	16,4	253	457	3295
14 x 1,5	0,26	1,61	0,7	1,7	18,0	309	546	3875
16 x 1,5	0,26	1,61	0,7	1,7	18,8	341	600	4280
18 x 1,5	0,26	1,61	0,7	1,7	19,7	375	657	4670
20 x 1,5	0,26	1,61	0,7	1,8	20,4	416	725	5115
24 x 1,5	0,26	1,61	0,7	2,2	23,0	482	874	6510
30 x 1,5	0,26	1,61	0,7	2,2	24,8	579	1033	7600



Silicone FRNC* cable screened

SIHGLCSI
FRNC* L

Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 2,5	0,26	2,05	0,8	1,2	11,0	101	183	1250
3 x 2,5	0,26	2,05	0,8	1,2	11,6	127	222	1485
4 x 2,5	0,26	2,05	0,8	1,4	12,9	156	277	1920
5 x 2,5	0,26	2,05	0,8	1,5	14,3	186	335	2400
6 x 2,5	0,26	2,05	0,8	1,5	15,3	218	385	2700
7 x 2,5	0,26	2,05	0,8	1,5	15,3	242	416	2820
12 x 2,5	0,26	2,05	0,8	1,8	19,5	410	693	4665
24 x 2,5	0,26	2,05	0,8	2,2	26,6	750	1251	8440
30 x 2,5	0,26	2,05	0,8	2,5	29,3	905	1525	10510
2 x 4	0,31	2,58	0,8	1,4	12,4	134	238	1620
3 x 4	0,31	2,58	0,8	1,4	13,1	177	297	1900
4 x 4	0,31	2,58	0,8	1,4	14,3	222	361	2235
5 x 4	0,31	2,58	0,8	1,6	15,8	287	471	2900
6 x 4	0,31	2,58	0,8	1,6	17,0	336	552	3300
7 x 4	0,31	2,58	0,8	1,6	17,0	374	582	3430
2 x 6	0,31	3,22	0,8	1,4	13,8	181	298	1840
3 x 6	0,31	3,22	0,8	1,5	14,8	258	400	2295
4 x 6	0,31	3,22	0,8	1,6	16,1	324	496	2805
5 x 6	0,31	3,22	0,8	1,6	17,5	395	605	3360
6 x 6	0,31	3,22	0,8	1,8	19,2	460	725	4150
7 x 6	0,31	3,22	0,8	1,8	19,2	517	770	4220
2 x 10	0,41	4,78	1	1,6	18,0	301	492	3070
3 x 10	0,41	4,78	1	1,8	19,5	402	643	3960
4 x 10	0,41	4,78	1	1,8	21,1	515	800	4735
5 x 10	0,41	4,78	1	2	23,4	622	994	5900
2 x 16	0,41	6,0	1	1,8	20,7	435	671	3865
3 x 16	0,41	6,0	1	2	22,4	596	892	4950
4 x 16	0,41	6,0	1	2	24,3	760	1109	5885
5 x 16	0,41	6,0	1	2,2	26,9	930	1386	7500
2 x 25	0,41	7,45	1,2	2,2	25,1	630	980	5795
3 x 25	0,41	7,45	1,2	2,2	26,6	881	1293	6950
4 x 25	0,41	7,45	1,2	2,2	29,0	1150	1636	8315
2 x 35	0,41	8,93	1,2	2,2	27,9	837	1229	6560
3 x 35	0,41	8,93	1,2	2,2	29,7	1200	1661	7900
4 x 35	0,41	8,93	1,2	2,5	33,0	1548	2146	10345
2 x 50	0,41	10,4	1,4	2,5	32,1	1163	1684	8825
3 x 50	0,41	10,4	1,4	2,5	34,2	1648	2261	10630

* FRNC = Flame Retardant Non Corrosive





SIHGLCSI
FRNC* S

Silicone FRNC* cable screened, heavy duty

Construction

Conductor: Cu tp, stranded, acc. to VDE 0295 class 5
Insulation: SiR E12 to VDE 0282 part 1
Colour: To VDE 0293 (page 201),
> 6 cores: black with printed numbers
Twisting: In layers
1 layer of glass fibre tape
1 layer of mica tape
Screen: Braid, tpc
Sheath: FRNC-SiR (page 103)
Colour: Black or on request
Identification: Printing HEW-KABEL/CDT FRNC - X

Application

Industrial areas with increased temperature requirements, e.g.
- Traffic technology
- Power plant technology
- Mechanical engineering
- Steel and iron fabrication

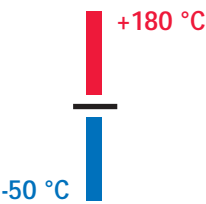
Notes

→ The itemized FRNC-cables meet the following requirements acc. to the standards listed on page 103:
- Flame retardance
- Low smoke emission
- Insulation integrity
- Halogenfree
- Low fuel value level
- Cables for power plants
→ We recommend our standard screened FRNC-silicone multicore cables for reduced mechanical stress. See page 98 - 99.

Technical data

Temperature range: - 50 °C up to +180 °C
Rated voltage U0/U: 300/500 V
Test voltage: 2000 V
Min. bending radius: 10 x diameter
Insulation resistance: Min. 20 MΩ x km at 20 °C
Halogenfree: To VDE 0472 part 813 and IEC 754-1

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 0,75	0,21	1,16	0,6	2,5	10,9	43	135	1532
3 x 0,75	0,21	1,16	0,6	2,5	11,3	53	151	1677
4 x 0,75	0,21	1,16	0,6	2,5	11,8	72	170	1861
5 x 0,75	0,21	1,16	0,6	2,5	12,5	83	193	2069
6 x 0,75	0,21	1,16	0,6	2,5	13,4	97	237	2290
7 x 0,75	0,21	1,16	0,6	2,5	13,4	104	242	2363
2 x 1	0,21	1,35	0,6	2,5	11,3	48	146	1618
3 x 1	0,21	1,35	0,6	2,5	11,7	70	164	1775
4 x 1	0,21	1,35	0,6	2,5	12,3	85	187	1964
5 x 1	0,21	1,35	0,6	2,5	13,2	98	219	2216
6 x 1	0,21	1,35	0,6	2,5	13,9	113	262	2444
7 x 1	0,21	1,35	0,6	2,5	13,9	122	269	2526
2 x 1,5	0,26	1,61	0,7	2,5	12,2	59	185	1975
3 x 1,5	0,26	1,61	0,7	2,5	12,9	89	226	2221
4 x 1,5	0,26	1,61	0,7	2,5	13,6	109	262	2468
5 x 1,5	0,26	1,61	0,7	2,5	14,4	128	303	2764
6 x 1,5	0,26	1,61	0,7	2,5	15,3	144	345	3059
7 x 1,5	0,26	1,61	0,7	2,5	15,3	161	356	3176
8 x 1,5	0,26	1,61	0,7	2,5	16,4	183	426	3520
10 x 1,5	0,26	1,61	0,7	2,5	17,8	220	484	4044
12 x 1,5	0,26	1,61	0,7	2,5	18,4	253	551	4506
14 x 1,5	0,26	1,61	0,7	2,5	19,6	309	606	4901
16 x 1,5	0,26	1,61	0,7	2,5	20,4	341	669	5336
18 x 1,5	0,26	1,61	0,7	2,5	21,3	375	742	5769
20 x 1,5	0,26	1,61	0,7	2,5	21,8	416	784	6121
24 x 1,5	0,26	1,61	0,7	2,5	23,6	482	934	7003
30 x 1,5	0,26	1,61	0,7	2,5	25,4	579	1097	8171



Silicone FRNC* cable screened, heavy duty

SIHGLCSI
FRNC* S

Products

Silicone Rubber
Cables

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	wall thickness [mm]		o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]	fuel value level approx. [kJ/m]
			core	sheath				
2 x 2,5	0,26	2,05	0,8	2,5	13,6	101	246	2345
3 x 2,5	0,26	2,05	0,8	2,5	14,2	127	287	2622
4 x 2,5	0,26	2,05	0,8	2,5	15,1	156	338	2964
5 x 2,5	0,26	2,05	0,8	2,5	16,3	186	423	3391
6 x 2,5	0,26	2,05	0,8	2,5	17,3	218	480	3766
7 x 2,5	0,26	2,05	0,8	2,5	17,3	242	498	3929
12 x 2,5	0,26	2,05	0,8	2,5	20,9	410	754	5666
24 x 2,5	0,26	2,05	0,8	2,5	27,2	750	1301	9036
30 x 2,5	0,26	2,05	0,8	2,5	29,3	905	1573	10688
2 x 4	0,31	2,58	0,8	2,5	14,6	134	278	2493
3 x 4	0,31	2,58	0,8	2,5	15,3	177	338	2796
4 x 4	0,31	2,58	0,8	2,5	16,5	222	428	3236
5 x 4	0,31	2,58	0,8	2,5	17,6	287	510	3675
6 x 4	0,31	2,58	0,8	2,5	18,8	336	581	3994
7 x 4	0,31	2,58	0,8	2,5	18,8	374	618	4316
2 x 6	0,31	3,22	0,8	2,5	16,0	181	365	2823
3 x 6	0,31	3,22	0,8	2,5	16,8	258	444	3180
4 x 6	0,31	3,22	0,8	2,5	17,9	324	531	3650
5 x 6	0,31	3,22	0,8	2,5	19,3	395	648	4156
6 x 6	0,31	3,22	0,8	2,5	20,6	460	751	4699
7 x 6	0,31	3,22	0,8	2,5	20,6	517	791	4922
2 x 10	0,41	4,78	1	2,5	19,8	301	532	3995
3 x 10	0,41	4,78	1	2,5	20,9	402	672	4681
4 x 10	0,41	4,78	1	2,5	22,5	515	832	5492
5 x 10	0,41	4,78	1	2,5	24,4	622	1020	6354
2 x 16	0,41	6,0	1	2,5	22,1	435	695	4622
3 x 16	0,41	6,0	1	2,5	23,4	596	900	5451
4 x 16	0,41	6,0	1	2,5	25,3	760	1117	6418
5 x 16	0,41	6,0	1	2,5	27,5	930	1424	7503
2 x 25	0,41	7,45	1,2	2,5	25,7	630	967	6022
3 x 25	0,41	7,45	1,2	2,5	27,2	881	1326	7219
4 x 25	0,41	7,45	1,2	2,5	29,6	1150	1650	8576
2 x 35	0,41	8,93	1,2	2,5	28,5	837	1263	6841
3 x 35	0,41	8,93	1,2	2,5	30,3	1200	1681	8191
4 x 35	0,41	8,93	1,2	2,5	33,0	1548	2118	9744
2 x 50	0,41	10,4	1,4	2,5	32,1	1163	1644	8276
3 x 50	0,41	10,4	1,4	2,5	34,2	1648	2224	10003

* FRNC = Flame Retardant Non Corrosive



Lined area for notes with horizontal blue lines and decorative gray shapes.

SILICONE-FRNC*-CABLES

Halogenfree and Flame retardant

For operation temperatures between - 50 °C up to + 180°C

HEW-KABEL/CDT Silicone-FRNC*-cables offer the benefits of higher tear strength and an improved flame retardant protective sheath.

These cables meet the following requirements:

1. **VDE-stipulations for halogenfree and flame retardant cables**
According to VDE 0207 part 23 and part 24, VDE 0266 / 2.85
Additionally for extended temperature range from - 50 °C up to + 180 °C
Short circuit resistance of SiR 350°C (VDE 0298, part 3)
2. **Flame retardance:**
VDE 0472 part 804 testing method C
Combustion chamber test
FMPPA-Bauwesen-Stuttgart (test report K 735 19 a and b, dated 12/18/79)
IEEE Std. 383 - 1974 AB. 2.5... 2.5.4.4.4. (test report)
3. **Low smoke emission:**
FMPPA-Bauwesen-Stuttgart (test report K 735 19 a and b, dated 12/18/79)
4. **Insulation integrity**
IEC 331, VDE 0472 part 814 (test report)
5. **Halogenfree**
VDE 0472 part 813
FMPPA-Bauwesen-Stuttgart (test report K 735 19 a and b, dated 12/18/79)
6. **Limited fuel value level of insulation and sheath materials**
approx. 16,5 MJ/kg
7. **Approved security cables for power plants**
KMV-incidence resistant cables e.g.:
 1. TÜV Bayern: Test certificate Nr. KSY 50/318/83
 2. TÜV Hannover: Test certificate Nr. KTSK - 501/84
Nr. KTSK - 502/84
Nr. KTSK - 506/84
Nr. KTSK - 507/84
 3. TÜV Baden: Test certificate Nr. 116 - 584 - ELA - 84 -3

* FRNC = Flame Retardant Non Corrosive

Products

*Silicone Rubber
Cables*

TPE-insulated cables

Thermoplastic elastomers combine both the special qualities of elastomers and the processing possibilities of thermoplastics, i.e. the materials behave like elastomers during application and are easily processable on conventional extruders like thermoplastics.

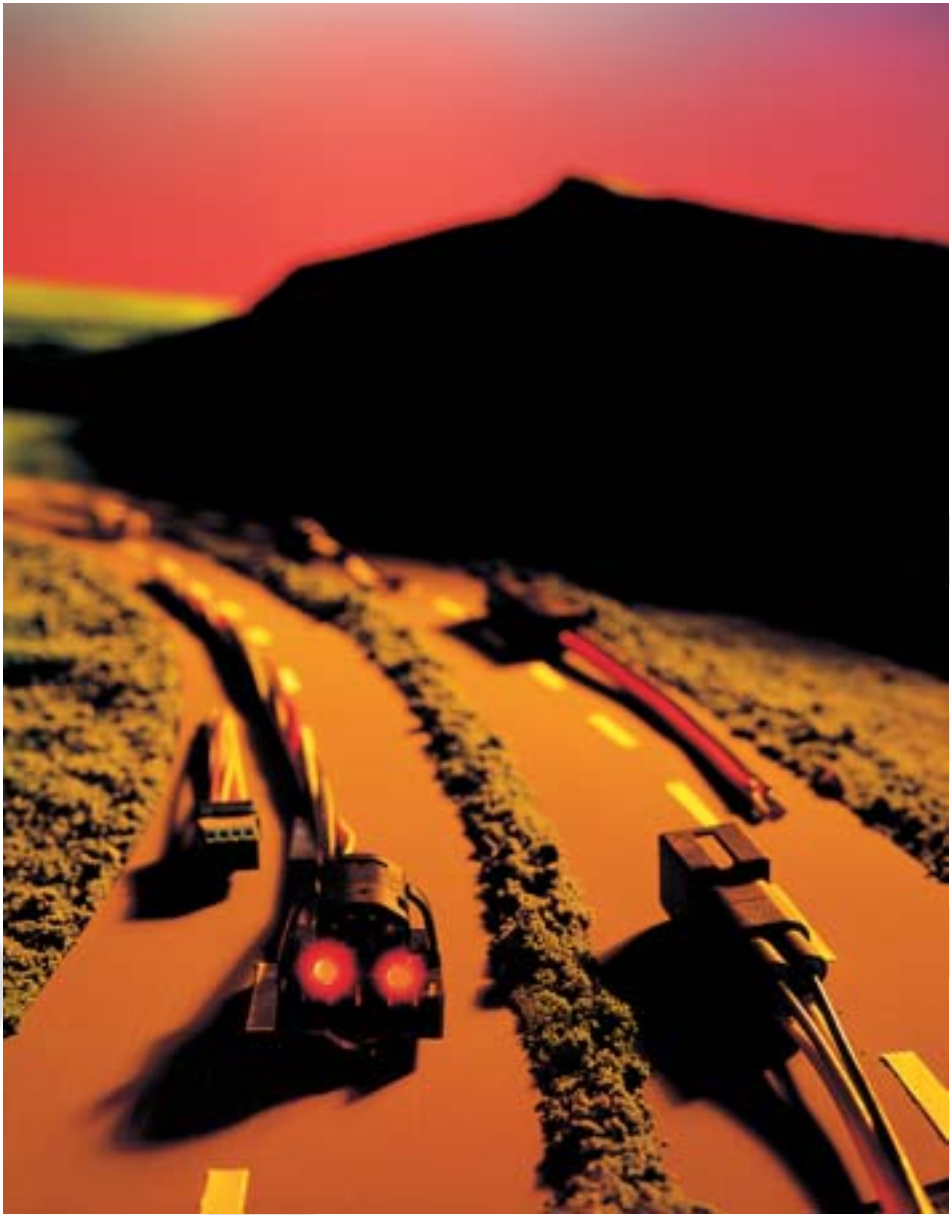
Further characteristics of this material group are:

- wide temperature application range between -60°C up to +150°C
- good mechanical and electrical properties
- good resistance against fuel, oil and detergents
- high flexibility even at low temperatures
- good adhesion to other materials (e.g. moulded connectors)
- further applications by using additives (flame resistant, halogen free)
- due to thin insulation and sheath wall thicknesses as well as low density of materials, lower weight and reduced space demand is possible

In the range of thermoplastic elastomers, HEW-KABEL/CDT distinguishes between different materials. The following table shows the typical properties of these materials and their field of application.

Material	Temperature range	Resistance against		Fields of application
		Oil / Solvents	Acids / Bases	
TPE-E	-40 bis +150 °C	good	good	Automotive and traffic technologies, electrical industry
TPE-S	-40 bis +140 °C	sufficient	good	Automotive and electrical industry
TPE-O	-50 bis +115 °C	sufficient	excellent	Medical equipment, electrical industry, high and low voltage cables, installations in buildings
TPE-U	-60 bis +110 °C	good	good	Automotive and traffic technologies, tool and mechanical engineering, robotics, spiralized cables
TPE-V	-50 bis +115 °C	good	excellent	Automotive and electrical industry

TPE-INSULATED CABLES



TPE-INSULATED CABLES

Products

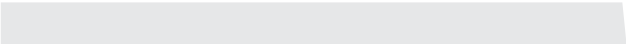
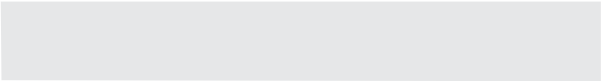
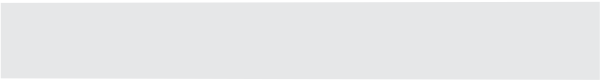
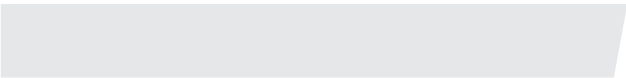
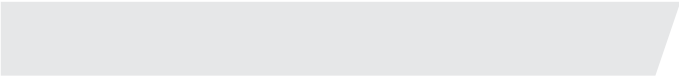
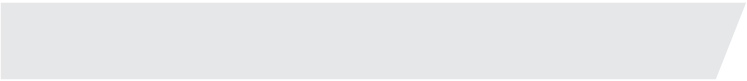
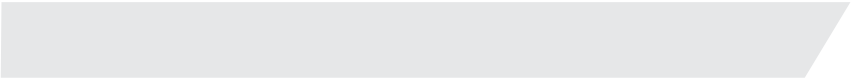
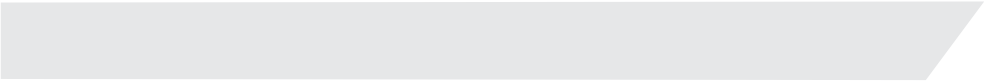
*TPE -
Cables*

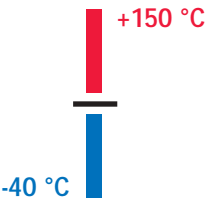


C O N T E N T S

C O N T E N T S

	Page
TPE single cores according to DIN 72551, type A	107
TPE single cores according to DIN 72551, type B	108
TPE single cores stranded	109
TPE insulated multicore cables	110
TPE insulated cables with copper screen	111





TPE-single core, stranded, according to DIN 72551 Type A

Y

Construction

Conductor: Cu bare, tp, stranded, acc. to DIN 72551 part 6, type A
Insulation: Thermoplastic elastomer
Colour: On request
Identification: ≥ 0,5 mm² printing HEW-KABEL/CDT

Application

For wiring in vehicles, e.g. wiring in engine compartments.

Technical data

Temperature range: - 40 °C to + 150 °C / 3000 h
Rated voltage : 48 Volt
Test voltage: 2000 Volt
Min. bending radius: 5 x diameter
Insulation resistance: >10¹⁰ Ohm x cm at 20 °C

Note

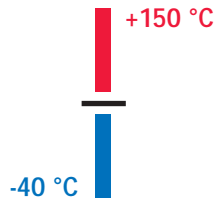
→ TPE cables with asymmetric conductor constructions (type B) see page 108.

cross section [mm²]	number of single wires	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm]	copper weight [kg/km]	weight approx. [kg/km]
0,35	7	0,26	0,80	1,25 ± 0,05	3,4	4,5
0,5	19	0,19	1,00	1,5 ± 0,1	4,8	6,6
0,75		0,23	1,20	1,8 ± 0,1	5,9	9
1		0,26	1,35	2,0 ± 0,1	9,2	11
1,5		0,32	1,70	2,3 ± 0,1	13,8	16
2,5		0,41	2,20	2,85 ± 0,15	23,4	26

Products

TPE -
Cables





Y

TPE-single core, stranded, according to DIN 72551 Type B

Construction

Conductor: Cu bare, tp, stranded, acc. to DIN 72551 part 6, type B
Insulation: Thermoplastic elastomer
Core colours: On request
Identification: ≥ 0,5 mm² printing HEW-KABEL/CDT

Application

For wiring in vehicles, e.g. wiring in engine compartments

Technical data

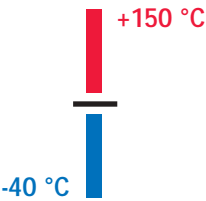
Temperature rage: - 40 °C up to + 150 °C / 3000 h
Rated voltage : 48 Volt
Test voltage: 2000 Volt
Min. bending radius: 5 x diameter
Insulation resistance: >10¹⁰ Ohm x cm at 20 °C

Note

→ TPE cables with symmetric conductor constructions (type A) see page 107.

cross section [mm²]	number of single wires	maximum Ø of single wire [mm]	maximum strand diameter [mm]	o.d. [mm]	copper weight [kg/km]	weight approx. [kg/km]
0,35	12	0,21	0,90	1,3 ± 0,1	3,7	4,5
0,5	16		1,00	1,5 ± 0,1	4,8	6,6
0,75	24		1,20	1,8 ± 0,1	7,2	9
1	32		1,35	2,0 ± 0,1	9,6	11
1,5	30	0,26	1,70	2,3 ± 0,1	14,4	16
2,5	50		2,20	2,85 ± 0,15	24	26
4	56	0,31	2,75	3,55 ± 0,15	38	42
6	84		3,30	4,15 ± 0,15	58	61





TPE-single core, stranded

Y

Products

Construction

Conductor: Cu bare, tp, stranded, acc. to VDE 0295
Insulation: Thermoplastic elastomer
Colour: On request

Application

- Traffic and automotive
- Installations in buildings
- Medical equipment
- Robotics
- Tool and mechanical engineering

Technical data

Temperature range: - 40 °C up to + 150 °C
Rated voltage : 300 Volt
Test voltage: 2000 Volt
Min. bending radius: 5 x diameter
Insulation resistance: >10¹⁰ Ohm x cm at 20 °C

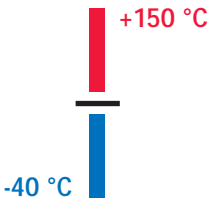
Note

→ TPE cables are also available in different metric and AWG cross sections, conductor materials and various insulation materials (TPE-E, -S, -O, -U, -V).

TPE -
Cables

cross section [mm²]	maximum Ø of single core [mm]	maximum strandØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,25	0,17	0,77	1,2	2,4	3,6
0,5	0,21	0,98	1,5	4,8	6,3
0,75	0,21	1,16	1,7	7,2	9
1	0,21	1,35	1,9	9,6	11,4
1,5	0,26	1,61	2,1	14,4	16,3
2,5	0,26	2,11	2,8	24	27,5
4	0,31	2,58	3,4	38	42
6	0,31	3,22	4,0	58	61,5
10	0,41	4,78	5,7	96	106
16	0,41	6,0	6,8	154	163
25	0,41	7,46	8,3	240	250
35	0,41	8,93	9,7	336	357
50	0,41	10,4	11,3	480	506
70	0,51	12,44	13,3	672	712
95	0,51	14,91	16,0	912	946
120	0,51	16,53	17,8	1152	1187





YHY

TPE-insulated multicore cable

Construction

Conductor: Cu bare, tp, stranded, acc. to VDE 0295
Insulation: Thermoplastic elastomer
Colour: On request
Twisting: In layers
Sheath: Thermoplastic elastomer
Colour: On request

Application

- Traffic and automotive
- Installations in buildings
- Instrumentation engineering
- Robotics
- Tool and mechanical engineering

Technical data

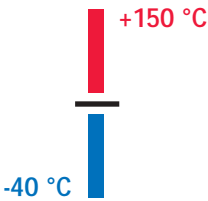
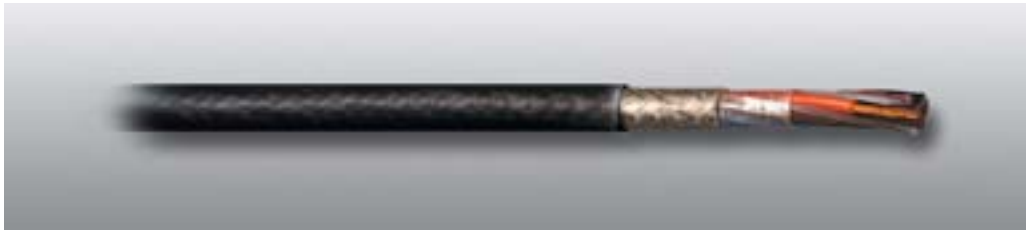
Temperature rage: - 40 °C up to + 150 °C
(depending on insulation and sheath material)
Rated voltage: 300 Volt
Test voltage: 2000 Volt
Min. bending radius: 10 x diameter

Note

→ TPE insulated multicore cables are also available in different metric and AWG cross sections as well as with various conductor materials

number of cores x cross section [mm²]	maximum Ø of single wire [mm]	maximum strandØ [mm]	coreØ [mm] ± 5 %	o.d. [mm] ± 5 %	weight approx. [kg/km]
2 x 0,5	0,21	0,98	1,54	3,9	23
3 x 0,5	0,21	0,98	1,54	4,1	28
4 x 0,5	0,21	0,98	1,54	4,7	36
5 x 0,5	0,21	0,98	1,54	5,2	45
7 x 0,5	0,21	0,98	1,54	5,6	57
2 x 0,75	0,21	1,16	1,7	4,2	29
3 x 0,75	0,21	1,16	1,7	4,5	36
4 x 0,75	0,21	1,16	1,7	5,1	47
5 x 0,75	0,21	1,16	1,7	5,6	59
7 x 0,75	0,21	1,16	1,7	6,1	75
2 x 1	0,21	1,35	1,9	4,8	37
3 x 1	0,21	1,35	1,9	5,1	47
4 x 1	0,21	1,35	1,9	5,5	58
5 x 1	0,21	1,35	1,9	6,1	70
7 x 1	0,21	1,35	1,9	6,8	96
2 x 1,5	0,26	1,61	2,14	5,3	48
3 x 1,5	0,26	1,61	2,14	5,6	62
4 x 1,5	0,26	1,61	2,14	6,2	78
5 x 1,5	0,26	1,61	2,14	7,0	100
7 x 1,5	0,26	1,61	2,14	7,6	129





TPE insulated cable with copper screen

YHCY

Products

Construction

Conductor: Cu bare, tp, stranded, 7 or 19 wires
Insulation: Thermoplastic elastomer
Colour: On request
Twisting: In layers
Wrapping: 1 layer separator foil
Screen: Braid, cu bare, tp, approx. 85% coverage
Sheath: Thermoplastic elastomer
Colour: On request

Application

- Traffic and automotive
- Installations in buildings
- Instrumentation engineering
- Robotics
- Tool and mechanical engineering

Notes

- Due to the copper screen electromagnetic interference is greatly reduced
- TPE insulated cables with copper screen are also available in different metric and AWG cross sections as well as with various conductor and sheath materials.

Technical data

Temperature range: - 40 °C up to + 150 °C
(depending on insulation and sheath material)
Rated voltage: 300 Volt
Test voltage: Core/core 2000 Volt
Core/screen 1500 Volt
Min. bending radius: 10 x diameter

TPE -
Cables

number of cores x cross section [mm²]	maximum strandØ [mm]	coreØ [mm] ± 5 %	o.d. [mm] ± 5 %	weight approx. [kg/km]
2 x AWG 26	0,54	1,07	3,5	17,5
3 x AWG 26	0,54	1,07	3,7	21,3
4 x AWG 26	0,54	1,07	4,0	24,5
5 x AWG 26	0,54	1,07	4,3	33,2
6 x AWG 26	0,54	1,07	4,8	37
7 x AWG 26	0,54	1,07	4,8	46
2 x AWG 24	0,64	1,2	3,8	21
3 x AWG 24	0,64	1,2	4,0	25
4 x AWG 24	0,64	1,2	4,3	30
5 x AWG 24	0,64	1,2	4,9	41
6 x AWG 24	0,64	1,2	5,2	44
7 x AWG 24	0,64	1,2	5,2	47
2 x AWG 22	0,79	1,34	4,1	26
3 x AWG 22	0,79	1,34	4,3	31
4 x AWG 22	0,79	1,34	4,8	38
5 x AWG 22	0,79	1,34	5,3	51
6 x AWG 22	0,79	1,34	5,6	58
7 x AWG 22	0,79	1,34	5,6	60
2 x AWG 20	1,02	1,52	4,5	34
3 x AWG 20	1,02	1,52	4,9	44
4 x AWG 20	1,02	1,52	5,3	54
5 x AWG 20	1,02	1,52	5,8	67
6 x AWG 20	1,02	1,52	6,3	80
7 x AWG 20	1,02	1,52	6,3	85



High temperature cables

In addition to their resistance to high temperatures special properties of this product type are good mechanical strength and high aging stability if applied in dry environments.

We divide high temperature cables into two categories :

1. Standard glass fibre cables

Application temperature range: -50°C up to +350°C.

By using special high temperature resistant glass fibre and corresponding conductor materials the maximum temperature reaches up to +550°C.

2. Ceramic material insulated cables

HEW-KABEL/CDT offers special insulation and sheath materials based on ceramic and mica.

These materials allow service at a constant ambient temperature of + 800 °C and peak temperatures up to +1550°C even under extreme conditions, e.g. application in glass-, iron- and steel fabrication.

In order to extend the fields of application, glass fibre materials can be combined with other high performance materials e.g. PTFE, FEP, Kapton®, Silicone or Mica. These combinations ensure application in humid areas at an excellent dielectric strength.

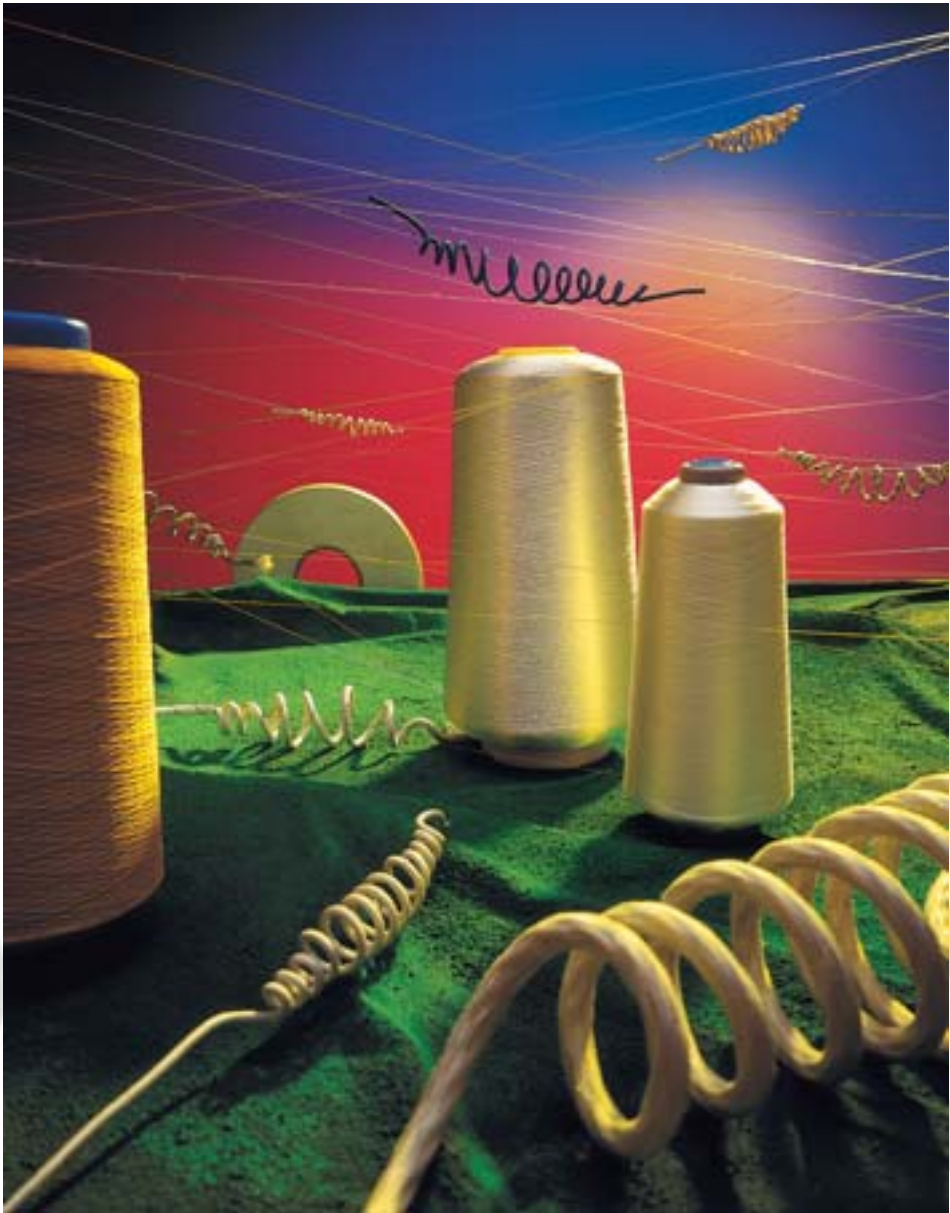
Typical applications for high temperature cables are e.g.:

Electric heating systems, domestic appliances (stoves, ovens, heating plates), extrusion- and drying installation, industrial furnaces, steel-,iron-,glass- and ceramic fabrication etc.

For further information and technical data concerning insulation and sheath materials please refer to insert.

Kapton® is a registered trademark of DuPont.

HIGH TEMPERATURE CABLES



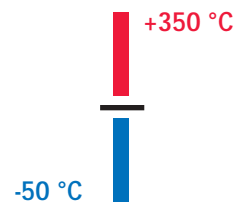
HIGH TEMPERATURE CABLES

Products

*High temperature
Cables*

C O N T E N T S

	Page
Glass fibre cables (temperature range up to + 500 °C)	
Glass fibre single cores	Type GL 115
Kapton®/glass fibre single cores	Type YGL 116
Mica/glass fibre single cores	Type GLIGL 117
PTFE/glass fibre single cores	Type TEGL 119
Multicore glass fibre cables	Type GLHGL 120
Multicore glass fibre cables with steel wire armouring	Type GLHGLP 121
Ceramic fibre cables (temperature range up to + 1250 °C)	
Mica/ceramic fibre single cores	Type GLIGA 122
Multicore Mica/ceramic fibre cables	Type GLIGAHGLIGA 123
Micaflame® cables (short-term + 1550 °C)	125
Kapton® is a registered trademark of Du Pont	
Micaflame® is a registered trademark of HEW-KABEL/CDT	



Glass fibre single core

GL

Products

Construction

- Conductor: Cu np or pure nickel
Insulation: - 1 separator foil
- Glass fibre serving
- Counterwound glass fibre serving
- Glass fibre braid with impregnation
Identification: Optional coloured identification tracers

Application

- For wiring at high ambient temperatures and increased mechanical stress e.g.
- domestic appliances (stoves, heating plates, ovens)
 - extrusion- and drying installations
 - electric heating systems
 - steel and iron fabrication
 - glass and ceramic fabrication

Technical data

- Temperature range: - 50 °C up to + 350 °C
Rated voltage: 300 / 300 Volt
Test voltage: 1,5 kV

Notes

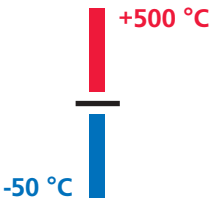
- Glass fibre cores are also available in different cross sections, conductor materials and/or higher nominal voltages.
→ The itemized cores are also available with high temperature resistant glass fibre for applications up to + 550 °C.

High temperature
Cables

cross section [mm²]	strand construction	maximum strandØ [mm]	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
0,22	7 x 0,20	0,66	1,1	2,2	3,5
0,25	14 x 0,15	0,67	1,9	2,4	5,6
0,34	7 x 0,254	0,82	1,9	3,4	11
0,5	16 x 0,203	0,98	2,1	4,8	13
0,75	24 x 0,203	1,16	2,3	7,5	17
1	32 x 0,203	1,35	2,5	9,8	22
1,5	30 x 0,254	1,61	2,8	14,4	27
2,5**	50 x 0,254	2,11	4,3	24,4	50
4**	56 x 0,3	2,58	5	38	66
6**	84 x 0,3	3,22	5,7	58	81

* On request diameter tolerance according to intended purpose
** 380 Volt construction





YGL Kapton®/glass fibre single core

Construction

Conductor: Cu np or pure nickel
Insulation: - 1 layer Kapton®-foil
- Glass fibre braid with impregnation
Identification: Optional coloured identification tracers

Application

For wiring at high ambient temperatures and increased mechanical stress, e.g.
- domestic appliances (stoves, heating plates, ovens)
- extrusion- and drying installations
- traffic technology

Technical Data

Temperature range: - 50 °C to + 350 °C, short-term + 500 °C
Rated voltage: 300 / 300 Volt
Test voltage: 2 kV

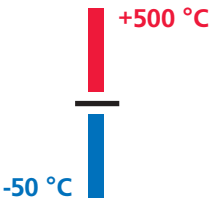
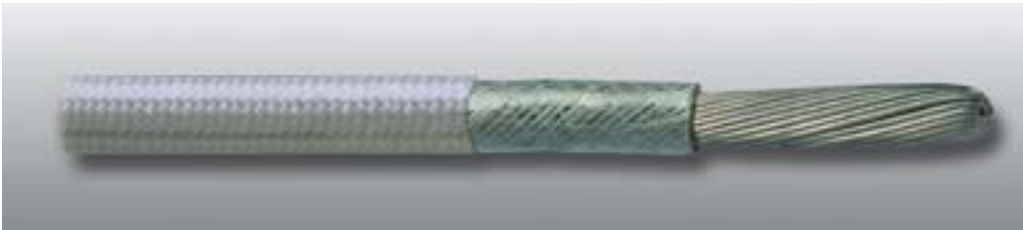
Notes

→ Kapton®/glass fibre cores are also available in different cross sections, conductor materials and/or higher nominal voltages.
→ Kapton®/glass fibre cores offer a very good dielectric strength in humid areas.

cross section [mm²]	strand construction	maximum strandØ [mm]	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
0,22	7 x 0,20	0,66	1,2	2,2	7
0,25	14 x 0,15	0,67	1,3	2,3	4,5
0,34	7 x 0,254	0,82	1,4	3,4	7,5
0,5	16 x 0,203	0,98	1,7	4,8	8
0,75	24 x 0,203	1,16	1,9	7,5	11
1	32 x 0,203	1,35	2	9,8	13
1,5	30 x 0,254	1,61	2,5	14,4	18
2,5	50 x 0,254	2,11	2,8	24,4	30
4	56 x 0,3	2,58	3,5	38	50
6	84 x 0,3	3,22	4,1	58	65

* On request diameter tolerance according to intended purpose.
Kapton® is a registered trademark of Du Pont





Mica/glass fibre single core

GLIGL

Products

Construction

- Conductor: Cu np or pure nickel
Insulation: - Mica wrapping
- Glass fibre braid with impregnation
Identification: Optional coloured identification tracers

Application

- For wiring at high ambient temperatures and increased operating voltage, e.g.
- industrial furnaces
 - extrusion- and drying installations
 - electric heating systems

Technical Data

- Temperature range: - 50 °C to + 350 °C,
short-term + 500 °C
Rated voltage: 300 / 500 Volt
Test voltage: 2 kV

Note

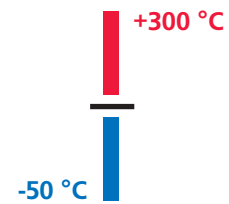
→ Mica/glass fibre cores are also available in different cross sections, conductor materials and/or higher nominal voltages.

High temperature
Cables

cross section [mm²]	strand construction	maximum strandØ [mm]	o.d. [mm] *	copper weight [kg/km]	weight ca. [kg/km]
0,5	16 x 0,203	0,98	2,4	4,8	13
0,75	24 x 0,203	1,16	2,6	7,5	18
1	32 x 0,203	1,35	3,1	9,8	22
1,5	30 x 0,254	1,61	3,4	14,4	30
2,5	50 x 0,254	2,11	3,9	24,4	39
4	56 x 0,3	2,58	4,7	38	59
6	84 x 0,3	3,22	5,4	58	81

*On request diameter tolerance according to intended purpose





PTFE/glass fibre single core

TEGL

Products

Construction

Conductor: Cu np or pure nickel
Insulation: - PTFE 5Y to VDE 0207 part 6
- glass fibre braid with impregnation
Identification: Optional coloured identification tracers

Application

For wiring at high ambient temperatures and increased mechanical stress, e.g.
- domestic appliances (stoves, heating plates, ovens)
- extrusion and drying installations
- electric heating systems
- aerospace
- traffic technology

Technical Data

Temperature range: - 50 °C to + 260 °C,
short-term + 300 °C
Rated voltage: 600 Volt
Test voltage: 3,4 kV

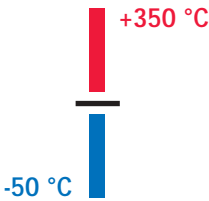
Notes

→ PTFE/glass fibre cores are also available in different cross sections, conductor materials and/or higher nominal voltages.
→ PTFE/glass fibre cores offer a very good dielectric strength in humid areas.
→ PTFE/glass fibre cores acc. to MIL-W-22759 see page 21.

High temperature
Cables

cross section [mm²]	strand construction	maximum strandØ [mm]	o.d. [mm] ± 5 %	copper weight [kg/km]	weight approx. [kg/km]
0,5	16 x 0,203	0,98	2	4,8	10
0,75	24 x 0,203	1,16	2,2	7,5	14
1	32 x 0,203	1,35	2,4	9,8	16
1,5	30 x 0,254	1,61	2,7	14,4	22
2,5	50 x 0,254	2,11	3,3	24,4	36
4	56 x 0,3	2,58	3,8	38	52
6	84 x 0,3	3,22	4,5	58	71





GLHGL Glass fibre cable

Construction

Conductor: Cu np or pure nickel
Insulation: - 1 separator foil
- glass fibre serving
- glass fibre braid with impregnation
Identification: Coloured identification tracers
Twisting: In layers with glass fibre filler
Sheath: Glass fibre braid with impregnation

Application

For wiring at high ambient temperatures and increased mechanical stress, e.g.
- extrusion and drying installations
- electric heatings
- steel and iron fabrication
- glass- and ceramic fabrication

Technical Data

Temperature range: - 50 °C to + 350 °C
Rated voltage: 300 / 300 Volt
Test voltage: Core/core 1,5 kV

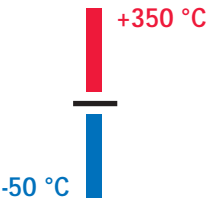
Notes

→ Glass fibre cables are also available in different cross sections, conductor materials and/or higher nominal voltages.
→ On request, we also deliver 2-core constructions as flat cables.
→ The itemized cables are also available with high temperature resistant glass fibre for applications up to + 530 °C.

cross section [mm²]	strand construction	maximum strandØ [mm]	coreØ [mm] *	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,22	7 x 0,20	0,66	1,1	2,5	4,4	13
3 x 0,22	7 x 0,20	0,66	1,1	2,7	6,6	15
4 x 0,22	7 x 0,20	0,66	1,1	2,9	8,8	17
2 x 0,34	7 x 0,254	0,82	1,2	3	6,9	19
3 x 0,34	7 x 0,254	0,82	1,2	3,3	11	15
4 x 0,34	7 x 0,254	0,82	1,2	3,5	13,8	33
2 x 0,5	16 x 0,203	0,98	1,5	3,5	9,7	26
3 x 0,5	16 x 0,203	0,98	1,5	3,7	15	36
4 x 0,5	16 x 0,203	0,98	1,5	4	20	45
2 x 0,75	24 x 0,203	1,16	2,3	5,1	15	44
3 x 0,75	24 x 0,203	1,16	2,3	5,6	23	56
4 x 0,75	24 x 0,203	1,16	2,3	6,1	30	83
2 x 1	32 x 0,203	1,35	2,5	5,6	20	63
3 x 1	32 x 0,203	1,35	2,5	6	30	88
4 x 1	32 x 0,203	1,35	2,5	6,5	40	113
2 x 1,5	30 x 0,254	1,61	2,8	6,4	30	74
3 x 1,5	30 x 0,254	1,61	2,8	6,8	45	103
4 x 1,5	30 x 0,254	1,61	2,8	7,4	60	133
2 x 2,5**	50 x 0,254	2,11	4,3	8,3	48	142
3 x 2,5**	50 x 0,254	2,11	4,3	10,2	74	172
4 x 2,5**	50 x 0,254	2,11	4,3	11,3	99	225
2 x 4**	56 x 0,3	2,58	5	11,1	77	184
3 x 4**	56 x 0,3	2,58	5	11,9	115	225
4 x 4**	56 x 0,3	2,58	5	13,2	154	310

* On request diameter tolerance according to intended purpose.
** 300 / 500 Volt construction





Glass fibre cable with steel wire armouring

GLHGLP

Products

Construction

- Conductor: Cu np or pure nickel
Insulation: - 1 separator foil
- Glass fibre serving
- Glass fibre braid with impregnation
Identification: Coloured identification tracers
Twisting: In layers with glass fibre filler
Sheath: Glass fibre braid with impregnation
Armouring: Galvanized steel wire or stainless steel braid

Application

- For wiring at high ambient temperatures and increased mechanical stress, e.g.
- extrusion and drying installations
 - electric heating systems
 - steel and iron fabrication
 - glass- and ceramic fabrication

Technical Data

- Temperature range: - 50 °C to + 350 °C
Rated voltage: 300 / 300 Volt
Test voltage: Core / core 1,5 kV

Notes

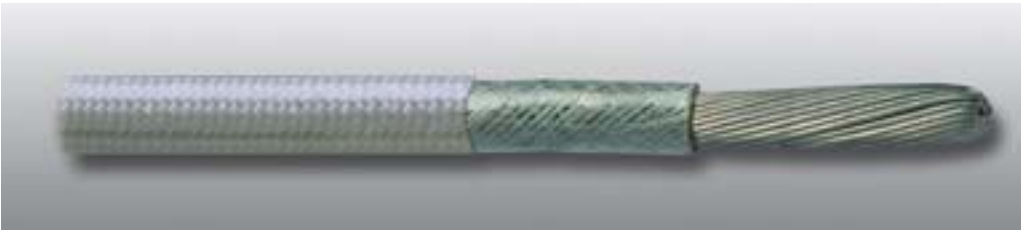
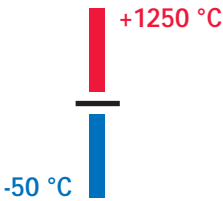
- Glass fibre cables are also available in different cross sections, conductor materials and/or higher nominal voltages.
- The itemized cables are also available with high temperature resistant glass fibre for applications up to + 530 °C.

High temperature
Cables

cross section [mm²]	strand construction	maximum strandØ [mm]	coreØ [mm] *	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
2 x 0,22	7 x 0,20	0,66	1,1	3,3	4,4	25
3 x 0,22	7 x 0,20	0,66	1,1	3,5	6,4	30
4 x 0,22	7 x 0,20	0,66	1,1	3,8	8,8	33
2 x 0,34	7 x 0,254	0,82	1,2	3,7	7	32
3 x 0,34	7 x 0,254	0,82	1,2	3,9	10,4	38
4 x 0,34	7 x 0,254	0,82	1,2	4,2	13,8	49
2 x 0,5	16 x 0,203	0,98	1,5	4,2	10	42
3 x 0,5	16 x 0,203	0,98	1,5	4,4	15	52
4 x 0,5	16 x 0,203	0,98	1,5	4,8	20	62
2 x 0,75	24 x 0,203	1,16	2,3	5,8	15	68
3 x 0,75	24 x 0,203	1,16	2,3	6,3	23	88
4 x 0,75	24 x 0,203	1,16	2,3	6,8	30	106
2 x 1	32 x 0,203	1,35	2,5	6,3	20	86
3 x 1	32 x 0,203	1,35	2,5	6,7	30	111
4 x 1	32 x 0,203	1,35	2,5	7,2	40,5	142
2 x 1,5	30 x 0,254	1,61	2,8	7,1	30	97
3 x 1,5	30 x 0,254	1,61	2,8	7,5	44,5	133
4 x 1,5	30 x 0,254	1,61	2,8	8,1	59	163
2 x 2,5**	50 x 0,254	2,11	4,3	8,8	48	175
3 x 2,5**	50 x 0,254	2,11	4,3	10,9	74	213
4 x 2,5**	50 x 0,254	2,11	4,3	12,3	98	297
2 x 4**	56 x 0,3	2,58	5	12,1	77	253
3 x 4**	56 x 0,3	2,58	5	12,9	115	295
4 x 4**	56 x 0,3	2,58	5	14,2	154	394

* On request diameter tolerance according to intended purpose
** 300 / 500 Volt construction





GLIGA Mica/Ceramic fibre single core

Construction

Conductor: Cu np, pure nickel or special alloys
Insulation: - Mica wrapping
 - braid of impregnated ceramic fibre
Identification: Optional coloured identification tracers

Application

For wiring at high ambient temperatures and increased mechanical stress, e.g.
- glass-, steel and iron fabrication
- industrial furnaces
- electric heating systems

Technical Data

Temperature range: - 50 °C to + 1250 °C
Rated voltage: 300/500 Volt
Test voltage: 2 kV

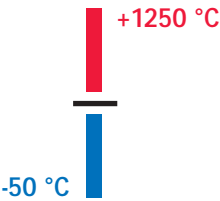
Note

→ Mica/ceramic fibre cores are also available in different cross sections and/or higher nominal voltages.

cross section [mm²]	strand construction	maximum strandØ [mm]	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
0,5	16 x 0,203	0,98	2,4	4,8	11
0,75	24 x 0,203	1,16	2,5	7,5	18
1	32 x 0,203	1,35	3,2	9,8	23
1,5	30 x 0,254	1,61	3,6	14,4	28
2,5	50 x 0,254	2,11	3,9	24,4	46
4	56 x 0,30	2,58	5,2	38	70
6	84 x 0,30	3,22	6,0	58	104
10	80 x 0,4	4,78	7,4	100	147

* On request diameter tolerance according to intended purpose.





Multicore mica/Ceramic fibre cable

GLIGAHGLIGA(P)

Products

Construction

- Conductor: Cu np, pure nickel or special alloys
- Insulation: - Mica wrapping
- Braid of impregnated ceramic fibre
- Identification: Coloured identification tracers
- Twisting: In layers with filler
- Wrapping: Mica tape
- Sheath: Braid of impregnated ceramic fibre
- Armouring: Galvanized steel wire or stainless steel braid (optional)

Application

- For wiring at high ambient temperatures and increased mechanical stress, e.g.
- glass- and ceramic fabrication
 - industrial furnaces
 - electric heating systems

Technical Data

- Temperature range: - 50 °C to + 1250 °C
- Rated voltage: 380 Volt
- Test voltage: Core/core 2 kV

Notes

- Mica/ceramic fibre cables are also available in different cross sections, conductor materials and/or higher nominal voltages.
- The cables are also available with armourings.
- For increased operation security in case of fire use our Micaflame®-cables (page 125).

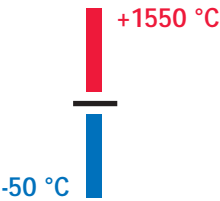
High temperature
Cables

cross section [mm²]	strand construction	maximum strandØ [mm]	CoreØ [mm] *	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
2 x 1	32 x 0,203	1,35	3,4	8,2	20	77
3 x 1	32 x 0,203	1,35	3,4	8,7	30	100
4 x 1	32 x 0,203	1,35	3,4	9,7	40	125
5 x 1	32 x 0,203	1,35	3,4	10,6	50	157
2 x 1,5	30 x 0,254	1,61	3,7	8,8	29	92
3 x 1,5	30 x 0,254	1,61	3,7	9,4	44	120
4 x 1,5	30 x 0,254	1,61	3,7	10,4	58	151
5 x 1,5	30 x 0,254	1,61	3,7	11,3	73	190
2 x 2,5	50 x 0,254	2,11	4,0	9,5	49	124
3 x 2,5	50 x 0,254	2,11	4,0	10,1	74	158
4 x 2,5	50 x 0,254	2,11	4,0	11,1	99	200
5 x 2,5	50 x 0,254	2,11	4,0	12,3	124	245
2 x 4	56 x 0,3	2,58	4,8	11,1	77	172
3 x 4	56 x 0,3	2,58	4,8	11,9	116	238
4 x 4	56 x 0,3	2,58	4,8	13,1	154	306
5 x 4	56 x 0,3	2,58	4,8	14,5	193	404
2 x 6	84 x 0,3	3,22	5,4	12,3	118	234
3 x 6	84 x 0,3	3,22	5,4	13,2	176	324
4 x 6	84 x 0,3	3,22	5,4	14,5	235	417
5 x 6	84 x 0,3	3,22	5,4	16,1	295	529

* On request diameter tolerance according to intended purpose.



Lined area for notes with horizontal blue lines and decorative gray shapes.



Micaflame®-cable

Micaflame

Products

Construction

- Conductor:
- Cu np
- Insulation:
- Mica wrapping

- Glass fibre braid with impregnation
- Identification:
- Coloured identification tracers
- Twisting:
- In layers with filler
- Sheath:
- Glass fibre braid with impregnation
- Sheath:
- High temperature resistant silicone (optional)

Application

- For wiring at high ambient temperatures and increased mechanical stress.
These cables are fire resistant and offer at least 15 minutes insulation integrity in liquid steel or aluminium.
- Glass- and ceramic fabrications
 - Industrial furnaces
 - Electric heating systems

Technical Data

- Temperature range:
- 50 °C - + 1550 °C short term

- 50 °C - + 400 °C temperature
- Rated voltage:
- 300/500 Volt
- Test voltage:
- Core/core 2 kV

Notes

- Micaflame®-cables are also available in different cross sections, conductor materials and/or higher nominal voltages.
→ To guarantee a good dielectric strength in humid or wet areas, the cables are also available with a special high temperature resistant silicone sheath.

High temperature
Cables

cross section [mm²]	strand construction	maximum strandØ [mm]	CoreØ [mm] *	o.d. [mm] *	copper weight [kg/km]	weight approx. [kg/km]
2 x 1	32 x 0,203	1,35	4,4	10,2	20	106
3 x 1	32 x 0,203	1,35	4,4	11,0	30	143
4 x 1	32 x 0,203	1,35	4,4	12,1	40	181
5 x 1	32 x 0,203	1,35	4,4	13,3	50	230
2 x 1,5	30 x 0,254	1,61	4,7	10,7	29	121
3 x 1,5	30 x 0,254	1,61	4,7	11,5	44	164
4 x 1,5	30 x 0,254	1,61	4,7	12,6	58	208
5 x 1,5	30 x 0,254	1,61	4,7	14,0	73	266
2 x 2,5	50 x 0,254	2,11	5,2	11,8	49	150
3 x 2,5	50 x 0,254	2,11	5,2	12,5	74	206
4 x 2,5	50 x 0,254	2,11	5,2	13,8	99	265
5 x 2,5	50 x 0,254	2,11	5,2	15,4	124	332
2 x 4	56 x 0,3	2,58	5,6	12,7	77	188
3 x 4	56 x 0,3	2,58	5,6	13,6	116	262
4 x 4	56 x 0,3	2,58	5,6	15,0	154	337
5 x 4	56 x 0,3	2,58	5,6	16,6	193	415
2 x 6	84 x 0,3	3,22	6,3	14,1	118	238
3 x 6	84 x 0,3	3,22	6,3	15,1	176	336
4 x 6	84 x 0,3	3,22	6,3	16,5	235	448
5 x 6	84 x 0,3	3,22	6,3	18,5	295	565

*On request diameter tolerance according to intended purpose .



Special Cables

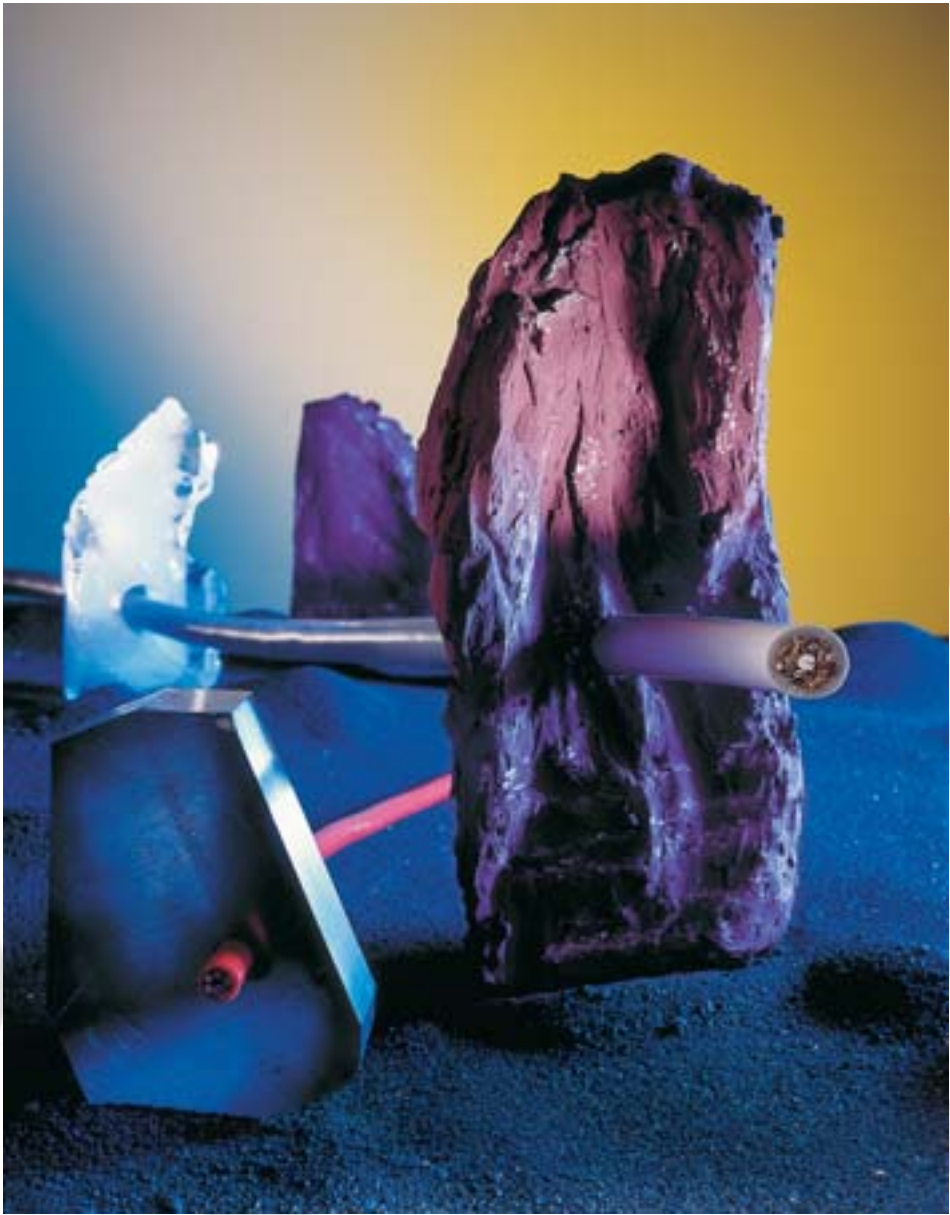
Temperature range -190°C up to + 1550°C

- Applications
- Traffic technologies
- Lighting
- Data transmission
- Control engineering
- Medical equipment
- Chemical industry

Apart from production of cables according to national and international standards we have an excellent experience in developing and manufacturing products to our customers' specifications.

In-house wire drawing, galvanizing, stranding, SiR-compounding as well as patented production procedures (PTFE-taping, Micaflame®-technology, HEW-Therm® heating cable technology) enables us not only to answer your questions but also to solve your technical problems.

SPECIAL CABLES



SPECIAL CABLES

Products

*Special
Cables*

Special Cables



Wrappings:

- Foils: PTFE, polyester, aluminium, laminated aluminium, copper and Kapton®
- Tapes: glass fibre, mica, fleece

Screening materials:

- Cu bare, tp, sp, np, braids and servings
- Wrappings with various foil materials



Specifications:

VDE, UL, CSA, combined VDE-, UL- and CSA-approvals, MIL-W-16878, MIL-W-22759, Germanischer Lloyd, DEMKO, FIMKO, NEMKO, SEMKO, PTB, ZEG, ISSEP, KEMA, glg, SEV, FTZÜ, BWB

Applications:

Automotive, lighting, chemical industry, EMC optimized data transfer, energy transfer, domestic appliances, highest and lowest temperatures, high frequency technology, refrigeration technology, leakage monitoring, aerospace, medical equipment, petro chemistry, robotics, sensory analysis, temperature measuring technology, traffic technology, shipbuilding industry etc.

Kevlar® and Kapton® are registered trademarks of Du Pont.



Conductor materials :

Cu bare, tp, sp, np, pure nickel, thermo-couple and compensating materials as well as special alloys

Conductor cross sections:

0,08 up to 500 mm² resp. AWG 32 to AWG 0000

Twisting:

2 to 120 cores in layers resp. pair twisting

Insulation materials:

- Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE
- Silicone rubber: standard compounds as well as compounds acc. to customers requirements
- Elastomers: EPDM, EVM
- Thermoplastic elastomers: TPE-E, -S, -V
- Special thermoplastics: PEI, PEEK, PEI/SIR
- Thermoplastics: LDPE, HDPE, PP, PA
- Inorganic materials: glass fibre, mica, ceramic fibre
- Organic materials: Kevlar®

Inner sheath materials:

- Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE, Teflon®, Tefzel®
- Silicone rubber: standard compounds as well as compounds acc. to customers requirements
- Elastomers: EPDM, EVM
- Thermoplastic elastomers: TPE-E, -S, -V
- Special thermoplastics: PEI, PEEK, PEI/SIR
- Thermoplastics: LDPE, HDPE, PP, PA
- Inorganic materials: glass fibre, mica, ceramic fibre,
- Organic materials: Kevlar®

Sheath materials:

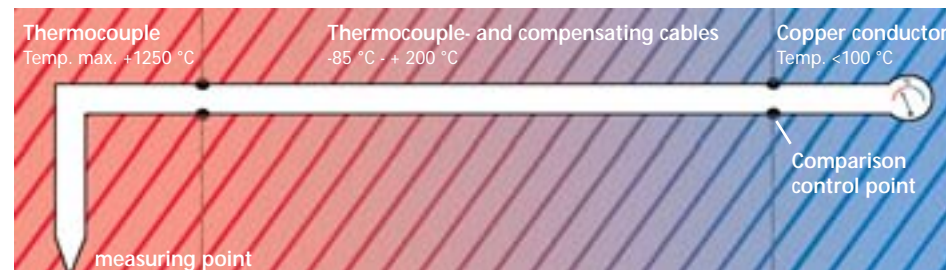
- Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE
- Silicone rubber: standard compounds as well as compounds for customer specific applications
- Elastomers: EPDM, EVM, ACM, HNBR, CSM, FPM, CR, CM, XVH
- Thermoplastic elastomers: TPE-E, -O, -S, -U, -V
- Thermoplastics: PVC, LDPE, HDPE, PP, PA
- Inorganic materials: glass fibre, mica, ceramic fibre
- Organic materials: Kevlar®

Armourings:

Galvanized steel wire or stainless steel wire braids

Thermo- and Compensating cables

Thermocouple- and compensating cables function as a link between the open ends of a thermocouple and the comparison control point in a temperature measuring facility. In the following illustration the position of the particular element is shown. In order to gain exact measuring values thermocouples are used in high temperature areas. The chemical composition of these alloys guarantees the maximum possible accuracy.



Thermocouple- or compensating cables are used whenever there is a great distance between the measuring point and the comparison control point.

Criteria for selecting specific thermocouple- or compensating cables are:

- a) technical requirements e.g. temperature- and corrosion resistance
- b) economical aspects

At low temperatures cables with copper conductors can be used as links between the measuring instrument and the comparison control point.

But in most cases thermocouple- or compensating cables are installed to cover the whole distance.

Materials:

Thermocouples:

Serve as measurement transducers in a temperature measuring facility. High performance materials are applied (depending on standard and/or type) up to +1250°C. Normally solid conductors are used.

Thermocables (original materials):

Form the electric connection between thermocouple and comparison control point.

These materials have the same chemical structure as the corresponding thermocouple, but are only suitable for a temperature range -25°C and +200°C.

Compensating cables (alternative materials):

As thermocables above

These materials have a different chemical structure as the corresponding thermocouple, thus they are only suitable for a temperature range 0°C up to +100/200°C.

THERMO-AND COMPENSATING CABLES



THERMO-AND COMPENSATING CABLES

Products

*Thermo + Comp.
Cables*

C O N T E N T S

Page

Conductor materials:

Thermocouples, extension and compensating materials according to national and international standards e.g. DIN IEC 584, DIN 43710/13/14, ANSI, NFC, BS, GOST, JIS, alloys according to customers' specifications

Conductor cross sections:

0,14 up to 2,5 mm², solid or stranded

Insulation- and sheath materials:

- Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE
- SiR: standard compounds and compounds according to customers' requirements
- Elastomers: EPDM, EVM, ACM, HNBR, CSM, FPM, CR, CM, XVH
- Thermoplastic elastomers (TPE - E, -O, -U, -V)
- Special thermoplastics: PEI, PEEK, PEI/SIR
- Thermoplastics: PVC, LDPE, HDPE, PP, PA
- Inorganic materials: glass fibre, mica, ceramic fibre
- Organic Materials: Kevlar®

Twisting:

2 to 120 cores in layers as well as pair twisting

Screen materials:

- Cu bare, tp, sp, np, braids and servings
- wrappings with different foil materials with drain wires (longitudinal or wound)

Foil wrappings:

PTFE, polyester-, aluminium-, copper clad aluminium-, copper- and Kapton®-foils

Armourings:

Braids of galvanized steel wire or stainless steel wire

Specifications:

DIN IEC 584, DIN 43710/13/14, ANSI MC 96.1-1982, NFC 42-324, BS 4937, GOST, JIS, 1610 etc.

Applications:

Chemical industry, sensors, temperature measuring technology etc.

Kevlar® and Kapton® are registered trademarks of Du Pont

Products

*Thermo + Comp.
Cables*



Thermocouples according to DIN, ANSI, NFC

(DIN) IEC 584

type	class 1		class 2		class 3	
	temperature range	tolerance	temperatur range	tolerance	temperature range	tolerance
T	- 40 up to + 350 °C	± 0,5 °C or 0,4 %	- 40 up to + 350 °C	± 1,0 °C or 0,75 %	- 200 up tos + 40 °C	± 1,0 °C or 1,5 %
J	- 40 up to + 750 °C	± 1,5 °C or 0,4 %	- 40 up to + 750 °C	± 2,5 °C or 0,75 %	—	—
K	- 40 up to + 1000 °C	± 1,5 °C or 0,4 %	- 40 up to + 1200 °C	± 2,5 °C or 0,75 %	- 200 up to + 40 °C	± 2,5 °C or 1,5 %
E	- 40 up to + 800 °C	± 1,5 °C or 0,4 %	- 40 up to + 900 °C	± 2,5 °C or 0,75 %	- 200 up to + 40 °C	± 2,5 °C or 1,5 %
N	- 40 up to + 1000 °C	± 1,5 °C or 0,4 %	- 40 up to + 1200 °C	± 2,5 °C or 0,75 %	- 200 up to + 40 °C	± 2,5 °C or 1,5 %

Thermocouples according to DIN, ANSI, NFC

ANSI MC 96.1-1982

type	temperature range	standard	special
T	0 up to 350 °C	± 1,0 °C or 0,75 %	0,5 °C or 0,4 %
J	0 up to 750 °C	± 2,2 °C or 0,75 %	1,1 °C or 0,4 %
K	0 up to 1250 °C	± 2,2 °C or 0,75 %	1,1 °C or 0,4 %
E	0 up to 900 °C	± 1,7 °C or 0,50 %	1,0 °C or 0,4 %

Thermocouples according to DIN, ANSI, NFC

NFC 42-324

type	class 1		class 2		class 3	
	temperature range	tolerance	temperature range	tolerance	temperature range	tolerance
T	- 40 up to 350°C	± 0,5 °C or 0,4 %	- 40 up to + 350 °C	± 1,0 °C or 0,75 %	- 200 up to + 40 °C	± 1,0 °C or 2 %
J	- 40 up to 750°C	± 1,5 °C or 0,4 %	- 40 up to + 750 °C	± 2,5 °C or 0,75 %	—	± 2,5 °C or 2 %
K	- 40 up to + 1000 °C	± 1,5 °C or 0,4 %	- 40 up to + 1000 °C	± 2,5 °C or 0,75 %	- 200 up to + 40 °C	± 2,5 °C or 2 %
E	- 40 up to + 800 °C	± 1,5 °C or 0,4 %	- 40 up to + 900 °C	± 2,5 °C or 0,75 %	- 200 up to + 40 °C	± 2,5 °C or 2 %

Thermocouples according to DIN, ANSI, NFC

DIN 43710/1985

type	temperature range	
U	0 up to + 400 °C ± 3 °C	+ 400 up to + 600 °C ± 0,75 %
L	0 up to + 700 °C ± 3 °C	+ 700 up to + 900 °C ± 0,75 %



Products

Thermocouple cables according to DIN, ANSI, NFC (DIN) IEC 584

type	temperature range	tolerance class	
		1	2
TX	- 25 up to + 100 °C	± 30 µV (± 0,5 °C)	± 60 µV (± 1,0 °C)
JX	- 25 up to + 200 °C	± 85 µV (± 1,5 °C)	± 140 µV (± 2,5 °C)
KX	- 25 up to + 200 °C	± 60 µV (± 1,5 °C)	± 100 µV (± 2,5 °C)
EX	- 25 up to + 200 °C	± 120 µV (± 1,5 °C)	± 200 µV (± 2,5 °C)
NX	- 25 up to + 200 °C	± 60 µV (± 1,5 °C)	± 100 µV (± 2,5 °C)

Thermocouple cables according to DIN, ANSI, NFC ANSI MC 96.1 - 1982

type	temperature range	standard	special
TX	0 up to + 100 °C	± 1,0 °C	± 0,5 °C
JX	0 up to + 200 °C	± 2,2 °C	± 1,1 °C
KX	0 up to + 200 °C	± 2,2 °C	—
EX	0 up to + 200 °C	± 1,7 °C	—

Thermo + Comp.
Cables

Thermocouple cables according to DIN, ANSI, NFC NFC 42-324

type	temperature range	tolerance
TX	- 25 up to + 250 °C	± 0,5 °C
JX	- 25 up to + 250 °C	± 1,5 °C
KX	- 25 up to + 250 °C	± 1,5 °C
EX	- 25 up to + 250 °C	± 1,5 °C



Compensating cables according to DIN and NFC

(DIN) IEC 584

type	temperature range	tolerance (class B)
KCB	0 up to + 100 °C	± 100 µV (± 2,5 °C)
KCA	0 up to + 150 °C	± 100 µV (± 2,5 °C)
NC	0 up to + 150 °C	± 100 µV (± 2,5 °C)
RCA/SCA	0 up to + 100 °C	± 30 µV (± 2,5 °C)
RCB/SCB	0 up to + 200 °C	± 60 µV (± 5,0 °C)

Compensating cables according to DIN and NFC

















NFC 42-324

type	temperature range	tolerance
TC	- 25 up to + 100 °C	± 1 °C
JC	- 25 up to + 250 °C	± 3 °C
EC	- 25 up to + 250 °C	± 3 °C
KC	- 25 up to + 200 °C	± 3 °C
VC	- 25 up to + 100 °C	± 3 °C
WC	- 25 up to + 200 °C	± 3 °C
SC	- 25 up to + 200 °C	± 7 °C
BC	- 25 up to + 200 °C	± 4 °C

Products
























Thermo + Comp.
Cables

Colour code of Thermocouple Exten

Symbol of couple	Material combinations		 DIN IEC 584 ¹⁾ DIN 43722 DIN EN 60584 DIN 43714 draft 7/90	 DIN 43710 ⁴⁾ / 43713 ⁴⁾ / 43714 ⁴⁾
			Colour code Ext. Comp.	Colour code Ext. Comp.
T	Cu	Cu Ni	TX -25°C to +100°C 	
U	Cu	Cu Ni		UX ²⁾ 0°C to +200°C 
J	Fe	Cu Ni	JX -25°C to +200°C 	
L	Fe	Cu Ni		LX 0°C to +200°C 
E	NiCr	Cu Ni	EX -25°C to +200°C 	
K	NiCr	Ni	KX -25°C to +200°C 	KX -25°C to +200°C 
	Fe	Cu Ni	 KCA 0°C to +150°C	3)  SoNiCr-SoNi 0° to +200°C
	Cu	Cu Ni	 KCB 0°C to +100°C	
N	NiCrSi	Ni Si	NX -25°C to +200°C 	NC 0°C to +150°C
R S	Pt 13Rh Pt 10Rh	Pt Pt	A 0°C to +100°C B 0°C to +200°C 	SCA/RCA SCB/RCB 3)  ⁴⁾ DIN IEC (SoPtRh- SoPt0°C to +200°C)
B	Pt 30Rh	Pt 6Rh	2) 	BC 0°C to +100°C

1)DIN IEC 584-Issue 92
2)To DIN 43710/85
3)Sequences SoNiCr ao will be replaced according to
DIN 43713 draft 8/91 ⁴⁾ DIN IEC 584

4)Standard was cancelled
Cables for intrinsically safe circuits can
wear blue sheats in accordance with
thermocouple stripes

 <p>ANSI MC 96.1</p>	 <p>BS 4937</p>	 <p>NF C 42-324</p>
<p>Colour code</p> <p>Ext. Comp.</p>	<p>Colour code</p> <p>Ext. Comp.</p>	<p>Colour code</p> <p>Ext. Comp.</p>
<p>TX 0°C to +100°C</p> 	<p>TX 0°C to +100°C</p> 	<p>TX -25°C to +250°C</p>  <p>TC -25°C to +100°C</p>
<p>JX 0°C to +200°C</p> 	<p>JX 0°C to +200°C</p> 	<p>JX -25°C to +250°C</p>  <p>JC -25°C to +250°C</p>
<p>EX 0°C to +200°C</p> 	<p>EX 0°C to +200°C</p> 	<p>EX -25°C to +250°C</p>  <p>EC -25°C to +250°C</p>
<p>KX 0°C to +200°C</p> 	<p>KX 0°C to +200°C</p> 	<p>KX -25°C to +250°C</p>  <p>KC -25°C to +200°C</p>
		<p>WC -25°C to +200°C</p> 
	<p>VX 0°C to +100°C</p> 	<p>VC -25°C to +100°C</p> 
<p>SX 0°C to +200°C</p> 	<p>SX 0°C to +200°C</p> 	<p>SC -25°C to +200°C</p> 
<p>BX 0°C to +100°C</p> 		<p>BC -25°C to +200°C</p> 
<p>KX Thermocouple Extension KPX^Δ positive conductor for THL KX KNX^Δ negative conductor for THL KX</p> <p>KCA Compensating cables KPCA^Δ positive conductor for AGL KC KPCA^Δ negative conductor for AGL KC (A^Δ 0/+100°C)</p>		

UL- and CSA-approved cables

With increasing globalization the combination of national and international approvals becomes more and more important. In order to distribute products worldwide it is imperative to employ an international standard, not only in the field of domestic appliances.

In our particular case it is not sufficient to offer cables and wires with only one national approval (e.g. VDE). Each cable should meet the requirements of several national and international standards. (e.g. combination of UL-, CSA-, and VDE-approvals).

HEW-KABEL/CDT offers a wide range of products approved by the following bodies:



It is not possible to list all combinations in this catalogue. Therefore please send us your detailed inquiries.

On the following pages we provide an overview of the currently available UL- and CSA-approvals. Those are continuously updated and extended.

For further information about approved cables please refer to the corresponding product group.

UL- AND CSA-APPROVED CABLES



UL- AND CSA-APPROVED CABLES

Products

*UL & CSA
Cables*

C O N T E N T S

	Page
UL-approved cables	143-147
CSA-approved cables	148-149



UL approvals

Products

Style-No.	Insulation material	Temperature [°C]	Voltage [Volt]	Detailed information are available...
1164	PTFE	150	300	on page 16
1180	PTFE	200	300	on page 16
1198	PTFE	150	600	on page 16
1199	PTFE	200	600	on page 16
1212	PTFE	80	----	on page 16
1213	PTFE	105	----	on page 16
1226	FEP	80	----	on page 30
1227	FEP	105	----	on page 30
1330	FEP	200	600	on page 30
1331	FEP	150	600	on page 30
1332	FEP	200	300	on page 30
1333	FEP	150	300	on page 30
1354	Multi/Coax	60/80	30	on request
1371	PTFE	105	----	on page 16
1371	FEP	105	----	on page 30
1375	Multi/Coax	60/80	30	on request
1394	PTFE/PA	200	----	on request
1419	PTFE/PTFE	105	----	on request
1419	FEP/FEP	105	----	on request
1458	PTFE/PVC	105	300	on request
1458	FEP/PVC	105	300	on request
1508	ETFE	105	30	on page 44
1512	PTFE	105	----	on page 16
1513	ETFE	105	----	on page 44
1516	ETFE	105	----	on page 44
1517	ETFE	105	----	on page 44
1523	ETFE	105	----	on page 44
1524	PTFE/PTFE	105	30	on request
1524	FEP/FEP	105	30	on request
1538	PTFE	105	125	on page 16
1538	FEP	105	125	on page 30
1538	PFA	105	125	on page 47
1558	ETFE	125	----	on page 44
1559	PTFE/PTFE	105	30	on request
1559	FEP/FEP	105	30	on request
1577	PTFE	200	----	on page 16
1577	FEP	200	----	on page 30
1584	PTFE	200	1000	on page 16
1586	ETFE	105	----	on page 44
1591	FEP	150	300	on page 30
1592	FEP	200	300	on page 30
1595	Kynar	125	----	on request
1609	ETFE	105	125	on page 44
1610	ETFE	105	----	on page 44

UL & CSA
Cables



UL approvals

Style-No.	Insulation material	Temperature [°C]	Voltage [Volt]	Detailed information are available...
1643	ETFE	150	300	on page 44
1644	ETFE	150	600	on page 44
1659	PTFE	250	600	on page 16
1666	FEP/FEP	150	300	on request
1667	FEP/FEP	150	600	on request
1668	FEP/FEP	200	300	on request
1669	FEP/FEP	200	600	on request
1671	ETFE	150	300	on page 44
1694	PTFE/PTFE	80	----	on request
1694	FEP/FEP	80	----	on request
1707	PFA	200	30	on page 47
1708	PFA	200	----	on page 47
1709	PFA	200	300	on page 47
1710	PFA	200	600	on page 47
1716	PTFE/PTFE	150	150	on request
1716	FEP/FEP	150	150	on request
1716	PFA/PFA	150	150	on request
1723	PTFE	200	----	on page 17
1723	FEP	200	----	on page 31
1726	PFA	250	300	on page 47
1727	PFA	250	600	on page 47
1736	FEP/FEP	150	300	on request
1737	FEP/FEP	150	600	on request
1738	FEP/FEP	200	300	on request
1739	FEP/FEP	200	600	on request
1745	Multi/Coax	90	30	on request
1746	PTFE	200	125	on page 17
1814	ETFE	150	150	on page 44
1815	PTFE	250	300	on page 17
1828	ETFE	150	300	on page 44
1829	ETFE	150	600	on page 45
1835	PTFE/PTFE	150	600	on request
1835	FEP/FEP	150	600	on request
1847	FEP	105	30	on request
1848	FEP/heating cable	150	300	on request
1848	FEP/heating cable	200	300	on request
1849	FEP/heating cable	150	600	on request
1849	FEP/heating cable	200	600	on request
1857	PFA	150	150	on page 47
1858	PFA	150	300	on page 47
1859	PFA	150	600	on page 47
1860	PFA	200	150	on page 47



UL approvals

Products

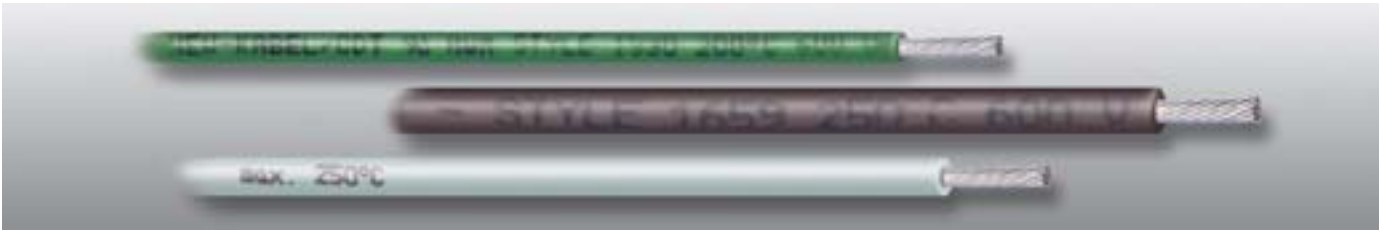
Style-No.	Insulation material	Temperature [°C]	Voltage [Volt]	Detailed information are available...
1882	PFA	250	150	on page 47
1883	PFA/PFA	200	150	on request
1883	PFA/PFA	250	150	on request
1884	PFA/PFA	200	300	on request
1884	PFA/PFA	250	300	on request
1885	PFA/PFA	200	600	on request
1885	PFA/PFA	250	600	on request
1886	PFA/PFA	150	300	on request
1887	FEP	150	600	on page 31
2688	PI	105	300	on request
2747	FEP/Multi	150	300	on request
2748	FEP/Multi	150	600	on request
2749	FEP/Multi	200	300	on request
2750	FEP/Multi	200	600	on request
2796	PTFE/PTFE	80	-----	on request
2796	FEP/FEP	80	-----	on request
2825	FEP/Twin	105	30	on request
2894	FEP/Multi	150	300	on request
2895	FEP/Multi	200	300	on request
2990	PTFE/PVC	80	30	on request
2990	FEP/PVC	80	30	on request
2990	PFA/PVC	80	30	on request
2990	PVC/PVC	80	30	on request
3066	Silicone	200	600	on page 62
3067	Silicone/glass fibre	200	600	on page 68
3068	Silicone/glass fibre	150	300	on page 68
3069	Silicone/glass fibre	150	600	on page 68
3070	Silicone/glass fibre	150	600	on page 68
3071	Silicone/glass fibre	200	600	on page 68
3074	Silicone/glass fibre	200	600	on page 68
3075	Silicone/glass fibre	200	600	on page 68
3076	Silicone/glass fibre	150	300	on page 68
3077	Silicone	150	300	on page 62
3078	Silicone	150	300	on page 62
3099	Silicone	150	300	on page 62
3100	Silicone/glass fibre	150	600	on page 68
3101	Silicone/glass fibre	150	600	on page 68
3113	Silicone/glass fibre	150	600	on page 68
3115	Silicone/glass fibre	150	300	on page 68
3122	Silicone	200	300	on page 62
3123	Silicone	150	600	on page 62
3125	Silicone/glass fibre	200	600	on page 68

UL & CSA
Cables



UL approvals

Style-No.	Insulation material	Temperature [°C]	Voltage [Volt]	Detailed information are available...
3126	Silicone/glass fibre	200	600	on page 68
3127	Silicone/glass fibre	150	600	on page 68
3128	Silicone/glass fibre	150	600	on page 68
3132	Silicone	150	300	on page 62
3133	Silicone	150	600	on page 62
3134	Silicone	150	600	on page 62
3135	Silicone	200	600	on page 62
3136	Silicone	150	300	on page 62
3137	Silicone	150	600	on page 62
3138	Silicone	150	600	on page 62
3139	Silicone	200	600	on page 62
3140	Silicone	150	300	on page 62
3141	Silicone	150	600	on page 62
3142	Silicone	150	600	on page 62
3143	Silicone	200	600	on page 62
3144	Silicone/glass fibre	200	600	on page 69
3145	Silicone/glass fibre	200	600	on page 69
3146	Silicone/glass fibre	150	300	on page 69
3147	Silicone	150	300	on page 62
3171	Silicone	105	600	on page 62
3172	Silicone/glass fibre	200	600	on page 69
3207	Silicone/glass fibre	150	600	on page 69
3208	Silicone/glass fibre	150	600	on page 69
3209	Silicone/glass fibre	200	600	on page 69
3210	Silicone/glass fibre	150	600	on page 69
3211	Silicone	150	300	on page 63
3212	Silicone	150	600	on page 63
3213	Silicone	150	600	on page 63
3214	Silicone	150	600	on page 63
3215	Silicone	150	600	on page 63
3216	Silicone	150	600	on page 63
3232	Silicone	105	300	on page 63
3240	Silicone	200	600	on page 63
3241	Silicone	200	300	on page 63
3251	Silicone	250	600	on page 63
3252	Silicone/glass fibre	250	600	on page 69
3253	Silicone	250	300	on page 63
3254	Silicone/glass fibre	250	300	on page 69
3268	Silicone	200	600	on page 63
3278	Silicone/glass fibre	150	600	on page 69
3512	Silicone	200	600	on page 63
3513	Silicone	200	600	on page 63



UL approvals

Style-No.	Insulation material	Temperature [°C]	Voltage [Volt]	Detailed information are available...
3580	Silicone	150	1000	on page 63
4476	Silicone-cable with copper screen	150	600	on page 87
4476	Silicone-cable with copper screen	200	600	on page 87
5107	Mica/TGL	200	600	on request
5107	Mica/TGL	450	600	on request
5108	Mica/TGL	250	600	on request
5127	PTFE/glass fibre	250	600	on request
5128	Mica/TGL	450	300	on request
5134	Mica/TGL	250	300	on request
5180	PTFE/glass fibre	250	300	on request
5181	PTFE/glass fibre	250	600	on request
5259	PTFE/glass fibre	250	600	on request
5259	Mica/TGL	250	600	on request
10086	ETFE	150	600	on page 45
10086	ETFE	200	600	on page 45
10109	ETFE	150	300	on page 45
10109	ETFE	200	300	on page 45
10125	ETFE	150	300	on page 45
10126	ETFE	150	600	on page 45
10203	FEP	150	1000	on page 31
10203	FEP	200	1000	on page 31
20121	PFA/Multi	80	30	on request
20223	PFA/Multi	200	150	on request
20223	PFA/Multi	250	150	on request
20224	PFA/Multi	200	300	on request
20224	PFA/Multi	250	300	on request
20225	PFA/Multi	200	600	on request
20225	PFA/Multi	250	600	on request
20229	FEP/Multi	150	300	on request
20230	FEP/Multi	150	600	on request
20231	FEP/Multi	150	-----	on request
20469	FEP/PVC	80	30	on request

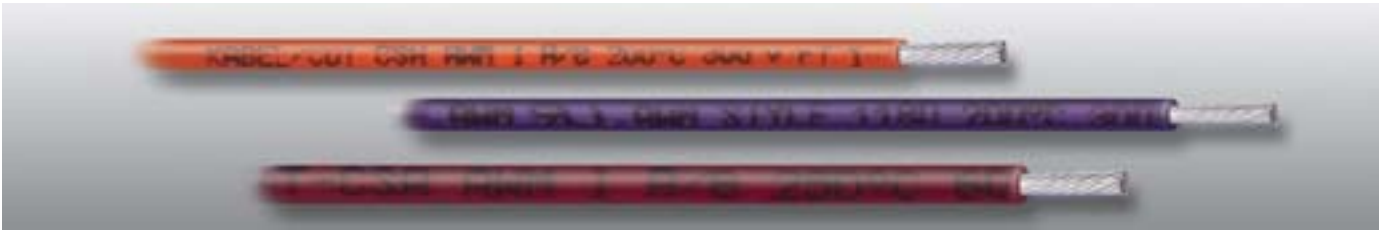
Products

UL & CSA
Cables



CSA approvals

Insulation materials	AWG	Temperature [°C]	Voltage [Volt]	Detailed information are available on...
PTFE	28 - 16	150	150	page 18
	28 - 16	200	150	
	28 - 16	250	150	
	28 - 16 14 - 10 8 - 2 1 - 4/0	200	300	
	28 - 16 14 - 10 8 - 2 1 - 4/0	200	600	
	28 - 16 14 - 10 8 - 2 1 - 4/0	200	1000	
	28 - 16 14 - 10 8 - 2 1 - 4/0	250	300	
	28 - 16 14 - 10 8 - 2 1 - 4/0	250	600	
	28 - 16 14 - 10 8 - 2 1 - 4/0	250	1000	
	32 - 16	150	150	
	32 - 10	180	300	
	32 - 10 8 - 2 1 - 4/0	180	600	
FEP	32 - 16 14 - 12 10 8 - 2 1 - 4/0	150	300	page 32
	32 - 16 14 - 12 10 8 - 2 1 - 4/0	150	600	
	32 - 12 10 8 - 2	150	1000	



CSA approvals

Products

Insulation materials	AWG	Temperature [°C]	Voltage [Volt]	Detailed information are available on...
Silicone	1 - 4/0	200	300	page 64
	32 - 16			
	14 - 12			
	10			
	8 - 2			
	1 - 4/0	200	600	
	32 - 24			
	22 - 12			
	10			
	8 - 2			
	1 - 4/0	200	1000	
	32 - 12			
	10			
	8 - 2			
	1 - 4/0			
Silicone/glass fibre	32 - 16	150	300	page 70
	14 - 12			
	10			
	8 - 2			
	1 - 4/0			
	32 - 16	150	600	
	14 - 12			
	10			
	8 - 2			
	1 - 4/0			
	32 - 12	150	1000	
	10			
	8 - 2			
	1 - 4/0			
	32 - 16	200	300	
	14 - 12			
	10			
	8 - 2			
	1 - 4/0			
	32 - 24	200	600	
	22 - 12			
	10			
	8 - 2			
	1 - 4/0			
	32 - 12	200	1000	
	10			
	8 - 2			
	1 - 4/0			

UL & CSA
Cables

pay attention to CSA specifications.

HEW-THERM® Heating cables and tapes:

Years ago, the only way of heating products in pipes or containers was through warm water or steam. Nowadays, this function is provided by electric heating systems.

The advantages of electric heating systems, e.g. the exact adjustable heat output, the economic use of electric energy as well as no need of maintenance even after a long period of using an electric operated heating system, lead to predatory competition between "steam" and "electric energy".

The classic purposes of heating cables are frost protection, temperature extension and temperature maintenance. Modern connection systems simplify the application of electric heating systems on pipes and containers even within hazardous areas.

The continuous development of new conductor and insulation materials enables an exact adaptation to temperature and corrosion resistance. Fluoropolymer materials such as PTFE, PFA and FEP combine both properties in an almost classical way by a temperature range up to 300°C and an excellent chemical resistance. By the use of Silicone Rubber up to an operation temperature of 180°C high flexibility is ensured.

In addition to all heating cables HEW-KABEL/CDT offers the matching accessories for the manufacturing of prefabricated heating systems.

According to the latest national and international standards, this conception allows an installation in hazardous areas. In combination with tools from HEW-Therm® program, maximum operation safety is ensured.

HEATING CABLES



HEATING CABLES

Products

*Heating
Cables*

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HEW-THERM® 260 EYCEX 5203 ATEX

Products

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength >> 120 N according to VDE 0253/12.87, part 5.1.1.)
Insulation:	Sandwich construction made of PTFE and high temperature tape (polyimide), PTFE wall thickness min. 0,7 mm
Braid:	Cu np, wire Ø 0,16 mm (0,20 mm) (specific resistance << 18,2 Ω/km acc. to VDE 0253/12.87, part 5.4.3.)
Sheath:	PTFE, wall thickness 0,6 mm (up to 1,0 mm)

Application

- Heating cable preferred for industrial applications that requires extreme mechanical strength (impact and crush test according to EN 50019 parts 6.8.4. and 6.8.5. passed).
- Temperature maintenance of media temperatures in pipes and containers up to 150 °C. Steam cleaning pressure up to 18 bar.

Technical data

Operating temperature:	max. + 260 °C, short-term + 300 °C (1.000 hours cumulative)
Rated voltage U ₀ /U:	450/750 Volt
Insulation test voltage:	3 kV AC / 1 minute
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	0,8 - 8.000 Ω/km (lower/higher values on request; see table page 182)

Notes

- Heating cable according to latest technology with ATEX certificate for installation within hazardous areas (ATEX 100/118a) and based on the standard for construction and testing of heating cables (EN 50019 and IEC 62028).
- PTFE insulation and PTFE sheath ensure interference and maintenance free operation even under extreme conditions like direct contact with lyes, acids or salts due to extremely high resistance quality.
- Installation such as frost protection or temperature maintenance/ increase inside or outside hazardous areas (international/national certificates for applicable components in HEW-THERM® product range).
- Termination systems (connection elements, cold leads, lead in pressure entry glands with alternatively PG- or M-thread) for use at high temperatures available.
- National approvals
 - VDE (identification no. 52169, construction code NH5YYQU5Y-220)
- International approvals
 - KEMA 02 ATEX 2014 X (system)
 - KEMA 02 ATEX 2013 U (heating cable)
 - KEMA 02 ATEX 1345 U (joint)

Heating Cables



HEW-THERM® 260 ECEX 5307

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength >> 120 N according to VDE 0253/12.87, part 5.1.1.)
Insulation:	PTFE, wall thickness 0,6 mm (up to 1,1 mm)
Braid:	Cu np, wire, Ø 0,16 mm (0,20 mm) (specific resistance << 18,2 Ω/km acc. to VDE 0253/12.87, part 5.4.3.)
Sheath:	PTFE, wall thickness 0,6 mm (up to 1,0 mm)

Application

- High power heating cable for industrial applications following with it´s constructions the extreme requirements concerning corrosion resistance and thermal stress.
- Temperature maintenance of media in pipes and containers up to 150 °C. Steam cleaning pressure up to 18 bar.
- Installations such as frost protection or temperature increase outside hazardous areas (international/national certificates for applicable components in HEW-THERM® product range)

Technical data

Operating temperature:	max. + 260 °C short-term + 300 °C (1.000 hours cumulative)
Rated voltage Uo/U:	300/500 Volt
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.87, part 6.3.1.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	0,8 Ω/km - 8.000 Ω/km (lower/higher values on request; see table page 183)

Notes

- PTFE characterizes itself by its extreme chemical resistance against chemicals even in case of direct contact with a variety of lyes, acids and salts.
- Termination systems (connection elements, cold leads, lead in pressure entry glands with alternatively PG- or M-thread) for use at high temperatures available.
- National approvals
 - VDE (identification no. 52169, construction code NH5YQU5Y-220)
- International approvals
 - ISSEP (heating cables: ISSEP 93/050, joint: ISSEP 93C. 108.015 U, pressure entry gland: ISSEP 93C. 102.956)
 - SEMKO (S 9030104)
 - FIMKO (FI 164515)



HEW-THERM® 200/230 PARA ATEX

Products

Construction

Conductor:	Parallel busbars (power supply), nickel platet copper, conductor cross section 1,5 mm²
Insulation:	PTFE, wall thickness 0.5 mm
Stranding:	2 cores with filler
Heating conductor:	Nickelchromium heating wire; contact spots between heating wire and parallel busbars marked with equispaced printings
Inner sheath:	Fluoropolymer, wall thickness 0.4
Braid:	Cu tp wire, Ø 0,16 mm
Wrapping:	white tape carrying identification print
Outer sheath:	FEP violet, wall thickness 0.4 mm (with HEW-THERM® 200 PARA) PFA red, wall thickness 0,4 mm (with HEW-THERM® 230 PARA) both covering transparent

Application

→ Short pipes, small surfaces or objects whose final lengths or dimensions are not certain when starting projects, can be heated with the parallel heating tape by individual tailoring on side at installation location. Due to the tape construction with its heating zones, cutting of the last contact point between heating wire and busbat (indicated by print) creates a jointless cold lead - in cable for use as power supply.

Technical data

Operating temperature:	- 40 °C up to + 200 °C (PARA 200) - 40 °C up to + 230 °C (PARA 230)
Rated voltage Uo/U:	300/300 Volt (230V operating voltage)
Specific heating power:	10,20 and 30 W/m heating cable
Maximum circuit length (single energizing):	10 W/m - 200 m 20 W/m - 150 m 30 W/m - 120 m
Min. bending radius:	20 mm

Notes

- The application of fluoroplastics in all insulation layers performs in addition to the mechanical strength as an excellent combination against acids, lyes and salts as often occuring in industrial plants.
- Maintenance of media temperatures in pipes or containers up to 110 °C. Steam cleaning inside pipes up to 12 bar. Installations such as frost protection or increase inside or outside within or beyond hazardous areas (international/national certificates for applicable compontents in HEW-THERM® product range)
 - Termination systems available with different constructions (Ex/Ex-area)
 - International approvals
 - AEX
 - KEMA 97 ATEX 1991 U (heating tape)
 - KEMA 97 ATEX 1995 X (heating system)
 - SEMKO
 - S 9412162 (HEW-THERM® 200 PARA)
 - S 9226055 (HEW-THERM® 230 PARA)

Heating
Cables



HEW-THERM® 260 ECEX 5354

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength >> 120 N according to VDE 0253/12.87, part 5.1.1.)
Insulation:	PTFE, wall thickness 0,7 mm (up to 1,2 mm)
Braid:	Cu np wire, Ø 0,16 mm (0,20 mm) (specific resistance << 18,2 Ω/km according to VDE 0253/12.87, part 5.4.3.)
Sheath:	PTFE, wall thickness 0,6 mm (up to 1,0 mm)

Technical data

Operating temperature:	max + 260 °C short-term + 300 °C (1.000 hours cumulative)
Rated voltage U ₀ /U:	450/750 Volt
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.87 part 6.3.1.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	0,8 Ω/km - 8000 Ω/km (on request lower/higher values, see table page 183)

Application

- Industrial heating cable with extreme corrosion resistance and thermal power rating at increased operating voltage, e.g. in supply networks with 450/750 V operating voltage.
- Used for application such as frost protection or temperature maintenance/increase inside or outside of hazardous areas. Steam cleaning inside pipes up to 18 bar.
- Maintenance of media temperatures in pipes or containers up to 150 °C.

Notes

- PTFE performs with an excellent resistance against a vast variety of lyes, acids and salts even at direct contact.
- Termination systems (connection elements, direct lines, pressure entry glands with alternatively PG- or M-thread) for use in high temperature available.
- National approvals
 - VDE (ÜG no 9521, construction code NH5YQU5Y-220)



HEW-THERM® 230 SPEZIAL 5852

Products

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength $\gg 120$ N acc. to VDE 0253/12.87, part 5.1.1.)
Insulation:	PTFE, wall thickness 0.5 mm
Braid:	Cu np wire, \varnothing 0.127 - 0.20 mm (specific resistance $\ll 18,2 \Omega/\text{km}$ acc. to VDE 0253/12.87, part 5.4.3. and VDE 0254/04.98 part 5.5.1.)
Sheath:	PTFE, wall thickness 0,4 mm

Application

- Heating cable for frost protection on pipes and containers with a specific maximum load of 20 W/m.
- Moderate mechanical strength, high chemical resistance to many acids and lyes as well as salts.
- Max. operating temperature up to 230 °C.
- Steam cleaning inside pipes up to 18 bar.

Technical data

Operating temperature:	max. + 230 °C short-term + 300 °C (1.000 hours cumulative)
Rated voltage U_0/U :	300/500 Volt
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.87 part 6.3.1.2.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	10 Ω/km - 8.000 Ω/km

Notes

- PTFE performs with an excellent resistance against a vast variety of lyes, aids and salts even at direct contact
- Termination systems (connection elements, direct lines, pressure entry glands with alternatively PG- or M-thread) for use in high temperature available.
- National approvals
 - VDE (ÜG no 125126)

Heating Cables



HEW-THERM® 260 TE-WM

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength $>> 120$ N acc. to VDE 0253/12.87, part 5.1.1.)
Sheath:	PTFE, wall thickness 0.4, 0.5, 0.6 mm (0.6 mm = VDE 0253/12.87)

Application

→ Examples for application:
Car seat heating, heating of surfaces in processing machines, e.g. moulding of synthetic materials, heating of flexible, liquid or gas leading pipes.

Technical data

Operating temperature:	max. + 260 °C short-term + 300 °C (1.000 hours cumulative)
Rated voltage U_0/U :	300/300 Volt or 300/500 Volt
Insulation test voltage:	3 kV (wall thickness 0.6 mm) (acc. to VDE 0253/12.87 part 6.3.1.)

Notes

→ These heating cables are variations of previously constructed PTFE-insulated heating cables. In course of the years they have become standardized products for several applications. This is an example for an HEW-KABEL/CDT development according to customers requirement.
→ Load depending of operation an type of installation between 15 W/m - 25 W/m
→ Extremely small bending radius depending on small cable diameters
→ High flexibility, mechanical strength and extremely high corrosion resistance



Selflimiting heating tape HEW-THERM® 90 SBL-CT ATEX

Products

Construction

Conductor:	Parallel busbars (power supply), cross-section: 1.5 mm ²
Heating element:	Semi-conductive heater matrix
Insulation:	Polyolefine, wall thickness 0.8 mm
Braid:	Cu tp wire Ø 0,16 mm (specific resistance << 18,2 Ω/km acc. to VDE 0254, part 5.5.1.)
Sheath:	Type SBL-CR polyolefine, wall thickness 0.8 mm Type SBL-CT FEP, wall thickness 0.45 mm

Technical data

Operating temperature:	- 20 °C up to 85 °C (switched off) - 20 °C up to + 65 °C (permanent operation)
Rated voltage U ₀ /U:	300/300 Volt
Operating voltage:	230 Volt, 50-60 Hz
Insulation test voltage:	2 kV AC / 1 minute
Min. bending radius:	20 mm (over flat side of tape)
Specific load:	10 W/m - reference SBL-CT 10 16 W/m - reference SBL-CT 16 26 W/m - reference SBL-CT 26 33 W/m - reference SBL-CT 33
Max. circuit length:	10 W/m - 201 m 16 W/m - 145 m 26 W/m - 90 m 33 W/m - 75 m

Application

- Characteristic for the special construction of the heating tape is the variable heating output depending on the heating tape temperature.
- Range of application: Frost protection and temperature maintenance of products up to 40 °C.
- Good mechanical strength extreme chemical resistance.

Notes

- Load is limited by itself due the material of the heater matrix between the parallel busbars. This requires basicly no limiting device when tape is used in hazardous areas.
- Can be cut to length at site, therefore only requested heating power on pipes or containers has to be calculated.
- Heating tapes may cross or overlap. Due to selflimiting performance no danger of overheating and cable damage.
- Termination sets for use inside hazardous areas are installed without open fire or hot air.
- Instead of FEP sheath, ETFE can be offered upon request.
- National approvals:
 - SEMKO: S9226054
- International approvals:
 - PTB:
 - PTB 97 ATEX 1015 U (heating tape)
 - PTB 97 ATEX 1069 X (heating system)

Heating
Cables



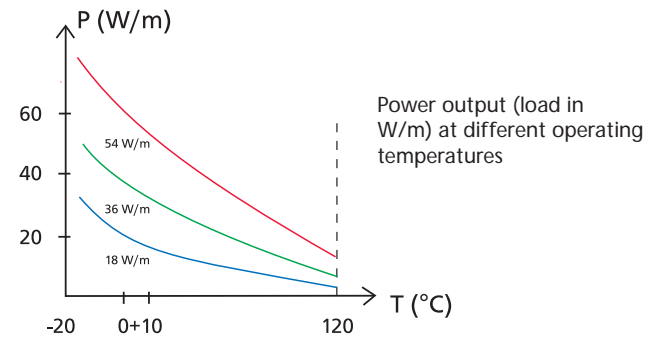
Selflimiting heating tape HEW-THERM® 180 SBH-CT ATEX

Construction

Conductor:	Parallel busbars (power supply), cross-section: 1.5 mm ²
Heating element:	Semi-conductive heater matrix
Insulation:	FEP, wall thickness 0.6 mm
Braid:	Cu tp wire Ø 0,16 mm (specific resistance << 18,2 Ω/km acc. to VDE 0254, part 5.5.1.)
Sheath:	FEP, wall thickness 0.45 mm

Application

→ HEW-THERM®180 SBH-CT heating tapes show selflimiting properties, similar to heating tape HEW-THERM®90 SBL-CR/CT. Due to the application of FEP on all components, this construction permits the usage the installation at higher operating temperatures. Product temperature can be maintained up to 60 °C. FEP gives the heating tape an extreme resistance against chemicals and performs mechanically excellent within its operating temperature range.



Technical data

Operating temperature:	max. + 180 °C (switched off) max. + 120 °C (permanent operation)
Rated voltage U ₀ /U:	300/300 Volt
Operating voltage:	230 Volt, 50-60 Hz
Insulation test voltage:	2 kV AC / 1 minute
Min. bending radius:	20 mm (over flat side of tape)
Heating output:	18 W/m - reference SBH-CT 18 36 W/m - reference SBH-CT 36 54 W/m - reference SBH-CT 54
Biggest heating circuit lengths allowed:	18 W/m - 100 m 36 W/m - 53 m 54 W/m - 32 m

Notes

- Load is limited by itself due the material of the heater matrix between the parallel busbars. This requires basically no limiting device when tape is used in hazardous areas.
- Can be cut to length at site, therefore only requested heating power on pipes or containers has to be calculated.
- Heating tapes may cross or overlap. Due to the selflimiting performance there is no danger of overheating and cable damage. Termination sets for use inside hazardous areas are installed without open fire or hot air.
- National approvals:
 - SEMKO: S9226054
- International approvals:
 - PTB:
 - PTB 97 ATEX 1016 U (heating tape)
 - PTB 99 ATEX 1001 X (heating system)
- Steam cleaning inside pipes up to 10 bar (180°C).

Products

Heating
Cables



HEW-THERM® 90 ECY 5311

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength >> 120 N acc. to VDE 0253/12.87, part 5.1.1.)
Insulation:	PTFE, wall thickness 0,6 mm
Braid:	Cu np wire, Ø 0,16 mm (specific resistance << 18,2 Ω/km acc. to VDE 0253, part 5.4.3.)
Sheath:	HDPE, wall thickness 1.2 mm (UV stabilized)

Technical data

Operating temperature:	- 20 °C up to + 80 °C (105 °C)
Rated voltage Uo/U:	300/500 Volt (ECY 5311) 450/750 Volt (ECY 5311-II)
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.78 part 6.3.1.2.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	0,7 Ω/km - 100.000 Ω/km (on request lower/higher values, see table page 183)

Application

- Special cable construction for installation in outdoor surfaces.
- Due to the polyethylene reinforced sheath the cable provides an extremely high mechanical strength.
- Parking areas, ramps, soccerfields, bridges and subway stairs are examples for the possible use as well as frost protection of pipelines, vessels and tanks or containers.
- An UV-stabilizing additive in the outer sheath allows an endurand exposure of the cable to daylight on roofs, in gutters and down-pipes.

Notes

- Heating cable is applicable:
ECY 5311 - voltage rating (Uo/U) 300/500 V
ECY 5311-II- voltage rating (Uo/U) 450/750 V
- VDE approvals
5311 : ÜG 9875
5311-II : ÜG 9877



HEW-THERM® 90 KY 5333

Products

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength $\gg 120$ N acc. to VDE 0253/12.87, part 5.1.1.)
Insulation:	FEP, wall thickness 0,45 mm
Sheath:	PVC, heat stabilized up to 105 °C, wall thickness 1.2 mm

Application

→ The heating cable is designed for installation in floors. These indoor underfloor heating systems can either be direct or accumulating. With regard to their function they can be installed as full-time, seasonal or comfort heating, e.g. in bathrooms and kitchens. An economical electric heating can be realized in combination with a room thermostat.

Technical data

Operating temperature:	- 20 °C up to + 80 °C (105 °C)
Rated voltage U_0/U :	300/500 Volt (ECY 5311)
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.87, part 6.3.1.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	10 Ω /km - 8,000 Ω /km

Notes

- Low investments for the electrical heating system and low operation costs in conjunction with an advanced temperature control.
- Fast and easy installation. Individual adjustment of heating to any room shape.
- Load on heating cable up to 25 W/m
- Use of fluoropolymere (FEP) for conductor insulation ensures long and servicefree lifetime.
- Approval for indoor underfloor heating by VDE-ID: 52169/VDE 0253/12.87, construction code NH6YMY 90

Heating Cables



HEW-THERM® 90 DUO-MIX 5398

Construction

Conductor:	Stranded conductor or spiralized heating element on glassfibre core (tensile strength $>> 120$ N acc. to VDE 0253/12.87, part 5.1.1.)
Insulation:	FEP, wall thickness 0.25 mm HDPE, wall thickness 0.6 mm
1 st serving:	Cu tp conductor, total cross section ≥ 1 mm ² ; function: return lead
Intermediate insulation:	HDPE, wall thickness 0.7 mm
2 nd serving:	Cu tp conductor, function: earth lead, resistance $<< 18.2$ Ω /km acc. to VDE 0253/12.87, part 5.4.3.
Sheath:	PVC, wall thickness 0.6 mm

Technical data

Operating temperature:	- 20 °C up to + 80 °C (105 °C)
Rated voltage U ₀ /U:	300/500 Volt
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.87 part 6.3.1.2.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	25 - 140,000 Ω /km

Application

- Due to its typical construction, HEW-THERM®90 DUO-MIX 5398 offers besides the usual installation on pipes or containers, the opportunity to heat inaccessible pipes. This can be realized by installing heating cable inside the pipeline or tank. The advantage of having an in-built back lead requires the installation of only one cable run instead of two with conventional heater types.
- Frost protection or temperature maintenance up to 40 °C is possible. The outer PVC-jacket, UV. stabilized and temperature resistant up to 105 °C, offers an excellent cable performance under worse coditions.

Notes

- Maximum load on heating cable: 25 W/m.
- Easy installation as only one cable is needed. The normally necessary installation of a separat return circuit can be omitted.
- Approvals:
SEMKO S9532165 (expected spring 2002)
- Suitable for inside-pipe-heating together with associated accessories. For this purpose special accessories are available (see Accessories and Associated Products for HEW-THERM® heating cables and heating tapes)
- Meets the requirements for increased mechanical strength acc. to EN 50019 (impact test with 7 Joule, crush test 1500 N)
- Standard termination sets for connection to power supply. (see data sheet)



HEW-THERM® 260 EGLVA 5320

Construction

Conductor:	Stranded conductor (tensile strength >> 120 N acc.g to VDE0253/12.87, part 5.1.1.)
Insulation:	PTFE, wall thickness 0.6 mm + glassfiber braid
Braid:	Stainless steel single wires (specific resistance > 18,2 Ω /km, therefore restriction of maximum heating circuit length)

Application

- The combination of PTFE and glassfiber together with a stainless steel braid obtains an excellent mechanical and chemical performance even under worst conditions. The stainless steel braid protects the heating conductor against animal attacks when cable exposed to the ambient.
- UV-stabilized by material choice.

Technical data

Operating temperature:	max. + 260 °C short-term + 300 °C (1.000 hours cumulative)
Rated voltage U ₀ /U:	300/500 Volt
Insulation test voltage:	3 kV AC (acc. to VDE 0253/12.87 part 6.3.1.2.)
Min. bending radius:	2,5 x diameter at o.d. ≤ 6 mm 5 x diameter at o.d. > 6 mm
Conductor resistance:	10 Ω /km - 8,000 Ω /km available cold leads: 1,5 mm ² (11,7 Ω /km) 2,5 mm ² (7 Ω /km)

Notes

- Maximum load in gutters, on roofs and in down-pipes: 25 W/m.
- Termination systems especially designed for use in water and in UV-radiation.
- Up to a certain length, the heating cable can be installed without any supporting element construction in down pipes.
- Economical and reliable heating system for domestic applications.



Selflimiting heating tape HEW-THERM® 90 SBL-CR ATEX

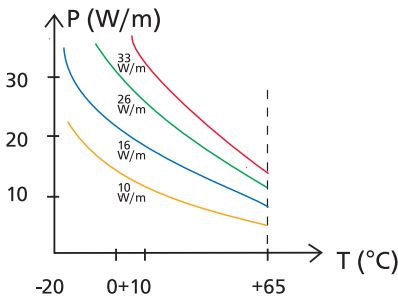
Products

Construction

Conductor:	Parallel busbars (power supply), cross section 1,5 mm²
Heating element:	Semi conductive heater matrix
Insulation:	polyolefine, wall thickness 0,8 mm
Braid:	Cu tp wire Ø 0,16 mm (specific resistance << 18,2 Ω/km acc. to VDE 0254, part 5.5.1.)
Sheath:	Polyolefine, wall thickness 0,8 mm

Application

- Characteristic for the special construction of the heating tape is the variable heating output depending on the heating tape temperature.
- Range of application: Frost protection and temperature maintenance of products up to 40°C for domestic applications
- Range of applications: gutters, down-pipes, roofs



Technical data

Operating temperature:	- 20 °C up to + 85 °C (switched off) - 20 °C up to + 65 °C (permanent operation)
Rated voltage U ₀ /U:	300/300 Volt
Operating voltage:	230 Volt, 50-60 Hz
Insulations test voltage:	2 kV AC / 1 minute
Min. bending radius:	20 mm (over flat side of tape)
Specific load:	10 W/m - reference SBL-CR 10 16 W/m - reference SBL-CR 16 26 W/m - reference SBL-CR 26 33 W/m - reference SBL-CR 33
Max. circuit length:	10 W/m - 201 m 16 W/m - 145 m 26 W/m - 90 m 33 W/m - 75 m

Notes

- Can be cut to length at site, therefore only requested heating power on pipes in roofs and gutters or containers has to be determined.
- Heating tapes may cross or overlap! Due to self limiting properties no danger of overheating!
- Termination systems are installed without open fire or hot air.
- Optional to polyolefine sheath: polyurethane and PVDF available on request.
- National approvals:
 - SEMKO: S9226054
- International approvals:
 - PTB:
 - PTB 97 ATEX 1015 U (heating tape)
 - PTB 97 ATEX 1069 X (heating system)

Heating
Cables

Accessories and associated Products for HEW-THERM® heating cables and heating tapes:

Additional equipment is needed in order to connect heating cables and heating tapes on pipes, vessels, in in-or outdoor-surfaces or on roof and in gutters to the power supply.

A series-resistive heating cable, e.g. HEW-THERM® 260 EYCEX 5203 is joined to a cold lead-in cable by installing a special joint. This cold lead-in cable has got a considerably higher conductor cross section and consequently does not produce any sensible heat.

Due to a temperature drop between heating cable and connection, the maximum limited temperature around the terminal block and inside a control unit, thermostat or connection box is kept. The use of a termination box in combination with the pressure entry gland, ensures a maximum of safety for the heating unit in regard of ingress of moisture or dust.

The program of accessories provides elements for each individual type and construction of cable or tape. This is shown on the following pages.

Most parts are certified by certified bodies for the installation in hazardous areas. Each product is declared with its specific type of protection.

Certified bodies:

- KEMA - KEMA REGISTERED QUALITY B.V.
Arnhem, Netherlands
Dutch approval authority for ex-components
- ISSEP - Institut Scientifique de Service Public
Pâturages, Belgium
Belgium approval authority for ex-components
- PTB - Physikalisch Technische Bundesanstalt
Braunschweig, Germany
German approval authority for ex-components

Accessories

HEW-THERM®
heating cables and heating tapes
Selection table

	Applicable in hazardous areas	HEW-THERM® 260 EYCEX 5203	HEW-THERM® 260 ECEX 5307	HEW-THERM® 260 ECE 5342	HEW-THERM® 230 Spz. 5852	HEW-THERM® 260 ECEX 5354	HEW-THERM® 230/200 PARA	HEW-THERM® 200 KCK 5344	HEW-THERM® 260 EGLVA 5320	HEW-THERM® 180 SBH-CT	HEW-THERM® 90 SBH-CR/CT	HEW-THERM® 90 ECY 5311	HEW-THERM® 90 KY 5333
Joint (PTFE), with filling order references: 60205; 60215; 60225	•	⊕	⊕	⊕	⊕ ¹⁾	⊕		⊕ ¹⁾				⊕ ¹⁾	
Joint (PTFE), without filling order reference: 30298	•	⊕	⊕ ¹⁾	⊕ ¹⁾	⊕ ¹⁾	⊕ ¹⁾		⊕ ¹⁾				⊕ ¹⁾	
Pressure entry glaad (cold lead) Material: nickel-plated brass PG 60105, 60115, 60125 ISO 67245, 67255, 67265	•	⊕	⊕	⊕	⊕ ¹⁾	⊕		⊕ ¹⁾				⊕ ¹⁾	
Metal joint for EGLVA 5320 order reference: 60505									⊕				
Termination set selflimiting tape (85 °C)* order reference: 14169 (PTFE/SIR) SBL-CR 14170 (PTFE/SIR) SBL-CT	•										⊕		
Termination set selflimiting tape (180 °C)* order reference: 14171 (PTFE/SIR) SBH-CT	•									⊕			
Termination set selflimiting tape (85 °C) order reference: 14114 (shrink tube+metal gland); 14111 (shrink tube+plastic gland)											⊕		
Termination set selflimiting tape (180 °C) order reference: 14160 (shrink tube+metal gland); 14161 (shrink tube+plastic gland)										⊕			
Termination set PARA heating tape order reference: 17674 (PTFE/SIR)	•						⊕						
Termination set PARA heating tape order reference: 12560 (shrink tube)	•						⊕						
Repair joint for selflimiting heating tape (PTFE/SIR) SBL-CR/CT order ref. 14166/14167; SBH-CT order ref. 14168	•									⊕	⊕		
Repair joint for heating tape PARA order reference: 66180 (PTFE/SIR)	•						⊕						

⊕ to be combined
¹⁾ not applicable within hazardous areas
* including 2 meters of flexible cold lead-in cable

Products

Heating
Cables

HEW-THERM® Termination sets and components:

Note:

The following product descriptions are created to support your choice of heating cables or heating tapes together with appropriate accessories.

Our team members will gladly assist you to put the individual components together to an operational heating system.



1.)

Heating cable/cold lead-in joint of PTFE with silicone sealing.

Maximum permissible operating temperature:
200 °C (260°C)

Rated voltage: 300/500 V resp. 450/750 V

Three construction sizes:

References: 60205 for connection cables up to
7 Ω /km (2,5 mm²)
60215 for connection cables
4,4 - 2,9 Ω /km (4 - 6 mm²)
60225 for connection cables
1,8 - 0,8 Ω /km (10 - 25 mm²)

Maximum permissible power load:

References: 60205 up to 32 A
60215 up to 54 A
60225 up to 129 A

Approvals: KEMA 02 ATEX 1345 U
II 2G EEx em II



2.)

Heating cable/cold lead-in joint of PTFE without sealing.

Maximum permissible operating temperature:
200 °C (260 °C)

Rated voltage: 300/500 V resp. 450/750 V

Construction sizes:

Reference: 30298 for connection cables up to 7 Ω /km
(2,5 mm²)

Maximum permissible power load:

Reference: 30298 up to 32A

HEW-THERM® Termination sets and components:



3.)

Pressure entry gland for fitting of cold lead into a termination box or thermostat housing.

Material: nickel plated brass

Fitting thread: PG16 or M20/M25 (isometric)

Rated voltage: 450/750 V

Maximum permissible operating temperature:
70 °C/85 °C

Construction sizes:

References:

60105 (PG 16) for connection cables 24,8 - 11,7 Ω/km

60115 (PG 16) for connection cables 10 - 4,4 Ω/km

60125 (PG 16) for connection cables 2,9 - 1,8 Ω/km

67245 (M 20) for connection cables 24,8 - 11,7 Ω/km

67255 (M 20) for connection cables 10 - 4,4 Ω/km

67265 (M 20) for connection cables 2,9 - 1,8 Ω/km

67275 (M 25) for connection cables 24,8 - 11,7 Ω/km

67285 (M 25) for connection cables 10 - 4,4 Ω/km

67295 (M 25) for connection cables 2,9 - 1,8 Ω/km

Approvals:

KEMA 02 ATEX 2014 X

II 2G EEx em II T3



4.)

Special termination for the connection of HEW-THERM® 260 EGLVA 5320 to power supply cable. Gas-, moisture- and watertight construction for the exposure to ordinary ambient conditions roof surfaces, in gutters and down-pipes

Maximum permissible operating temperature:
85 °C

Rated voltage: 300/500 V

Maximum permissible power load: 32 A

Reference: 60505

Products

*Heating
Cables*

HEW-THERM® Termination sets and components:



5.)

Termination set for selflimiting heating tapes
HEW-THERM® 90 SBL-CR/CT.

Heating tape is lead via joint onto a flexible cold lead
for power supply.

Length of cold lead: 2 meters (joint and end seal made
of PTFE)

Rated voltage: 300/300 V (working voltage 230 V)

Maximum operating temperature: 85 °C

Maximum power load: 16 A

Note:

In case of order please specify type of heating tape.

References:

14169 for HEW-THERM® 90 SBL-CR

14170 for HEW-THERM® 90 SBL-CT

Approval:

PTB 97 ATEX 1069 X II 2G EEx e II T4/T5



6.)

Termination set for selflimiting heating tape
HEW-THERM® 180 SBH-CT.

Heating tape is lead via joint onto a flexible cold lead
for power supply.

Length of cold lead: 2 meters (joint and end seal made
of PTFE)

Rated voltage: 300/300 V (working voltage 230 V)

Maximum operating temperature: 180 °C

Maximum power load: 16 A

Note:

In case of order please specify type of heating tape.

Reference:

14171 for HEW-THERM® 180 SBL-CT

Approval:

PTB 99 ATEX 1001 X II 2G EEx e II T3

HEW-THERM® Termination sets and components:



7.)
Termination set for selflimiting heating tapes
HEW-THERM® 90 SBL-CR/CT.
End seal made of shrinkable tube, direct transfer of heating tape by a special fitting into a termination box or thermostat housing.
Entry glands are available made of plastic or nickel-plated brass and in PG16- or M20 thread.
Rated voltage: 450/750 V
Maximum operating temperature: 85 °C (260 °C)
Maximum power load: 16 A
References:
Termination sets:
SBL-CR metal 14114
 plastic 14159
SBL-CT metal 14158
 plastic 14111



8.)
Termination set for selflimiting heating tapes
HEW-THERM® 180 SBH-CT.
End seal made of shrinkable tube, direct transfer of heating tape by a special fitting into a termination box or thermostat housing.
Entry glands are available made of plastic or nickel-plated brass and in PG16- or M20 thread.
Rated voltage: 450/750 V
Maximum operating temperature: 180 °C (260 °C)
Maximum power load: 16 A
References:
Termination sets:
PG16 thread, metal 14160
PG16 thread, plastic 14161
M20 thread, metal on request
M20 thread, plastic on request



9.)
Termination set for parallel heating tape
HEW-THERM® 230/200 PARA, consisting of end seal and accessories for connection to power supply.
Silicone filled end seal.
Fitting threads PG 16 or M 20.
Materials: End seal made of PTFE, entry gland made of nickel plated brass.
Rated voltage: 300/300V (max. working voltage 253V)
Maximum operating temperature: 200/230 °C
Approval: KEMA 97 ATEX 1995 X II G2 EEx em II T3
References:
Termination sets:
PG16 thread 17674
M20 thread on request

Products

Heating
Cables

HEW-THERM® Termination set and components:



10.)
Termination set for parallel heating tape
HEW-THERM® 230/200 PARA,
Content: End seal made of fluoroplastic-shrink tube;
pressure entry gland of nickel-plated brass for connec-
tion to power supply into a termination box or ther-
mostat housing. Gland with PG or M 20 thread.
Rated voltage: 300/300V (max. working voltage 253V)
Maximum operating temperature: 200/230 °C
Approval: KEMA 97 ATEX 1995 X II 2G EEx e II T3
References:
PG16 thread 17869
M20 thread on request



11.)
Joint for extension or repair of two equal heating tapes
HEW-THERM® 90 SBL-CR/CT or
HEW-THERM® 180 SBH-CT.
Material: PTFE.
Rated voltage: 300/500 V
Maximum operating temperature: 200/260 °C
References:
HEW-THERM® 90 SBL-CR 14166
HEW-THERM® 90 SBL-CT 14167
HEW-THERM® 180 SBL-CT 14168

12.)
Joint for extension or repair of two parallel-resistive hea-
ting tapes type HEW-THERM® 200/230 PARA.
Material: PTFE.
Rated voltage: 300/500 V
Maximum operating temperature: 230/260 °C
Approval: applied

Products

Heating
Cables

Installation of HEW-THERM® heating cables and heating tapes

HEW-KABEL/CDT provides components and tools for an easy and safe installation of HEW-THERM® heating cables and tapes on pipes, containers, for indoor and outdoor heating systems.



For installation on pipes

- Mounting tape made of stainless steel:
Equipped with clips for carriage of round-shaped heating cables, s.a. HEW-THERM® 260 ECEX 5307.
For installation on surface of pipes no tools are required!
According to various cable diameters, two sizes available:
60008-heating cable up to \varnothing 5 mm,
tape width: 10 mm
60018-heating cable more than \varnothing 5 mm,
tape width: 13 mm
Not suitable for fixing of flat heating tapes!

- Glassfibre mounting tape with adhesive backside (acid-free).
Tape width: 12 mm, length 16 m (=1 reel)
Temperature resistance up to + 300 °C
Suitable for fixing of all heating cable or tape constructions.
Reference: 16488

- Aluminium foil with backside coating:
For full coverage and fixing of heating cables and tapes on pipes. Supports heat propagation on heated surfaces.
Tape width: 50 mm, length: 100 m,
Temperature resistance up to 300 °C
Reference: 15700



For installation on surfaces

- Mounting tape made of stainless steel:
Mounting tape can be welded to surfaces.
According to various cable diameters, two sizes available:
60008-heating cable up to \varnothing 5 mm,
tape width: 10 mm
60018-heating cable more than \varnothing 5 mm,
tape width: 13 mm
Not suitable for fixing of flat heating tapes!

Installation of HEW-THERM® heating cables and heating tapes

For connections between heating cables and tapes

- Special tools for pressing crimp connectors within the following termination systems:

Heating cable joints (series-resistive):

60205, 60215, 60225 (PTFE heating cables)

Termination systems:

14169, 14170, 14171 (selflimiting heating tape)

Repair and extension joints:

14166, 14167, 14168 (selflimiting heating tape)
27907 (parallel heating tape PARA)

Special tools order reference: 12548 (small) or 12552 (big) can be supplied with different pressing dies to ensure an adaptation to each crimp connector.

To guarantee secure and maintenance-free operation of a heating system comprising HEW-THERM® heating cables or tapes, especially within hazardous areas, the exclusive use of special tools, the matching pressing dies and crimp connectors is absolutely imperative.



order reference: 12548



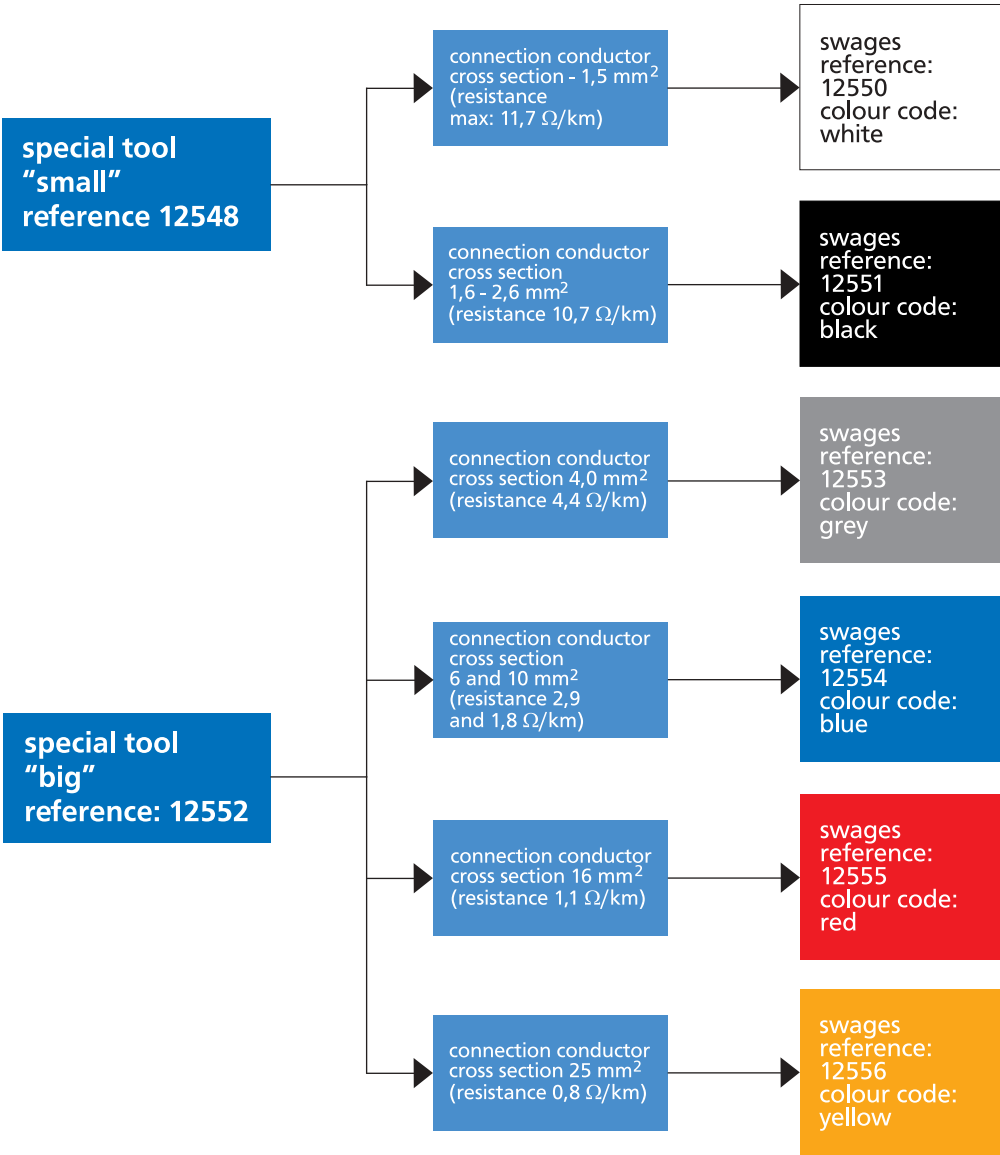
order reference: 12552

Products

Heating
Cables

Installation of HEW-THERM® heating cables and heating tapes

Choice of tools
The chart below supports the choice of connector, die and tool. Special crimp connectors connect heating cables and tapes to appropriate cold leads or, in case of extension or repair, to again heating cables or tapes. Further the special tools for heating cables of following references can be chosen:
HEW-THERM® 260, HEW-THERM® 230 ECE 5342/SPEZIAL 5852, HEW-THERM® 200 KCK 5344, HEW-THERM® 180 und HEW-THERM® 90.



Important note: Every termination set contains only the connecting sleeve which serves to establish the protective braid connection.
The connection between heating and cold lead has to be chosen individually.
Assistance to be offered by the installation instructions or our technical advisors.

Installation of HEW-THERM® heating cables and heating tapes

The crimp tools of order reference 62005 are recommended to manufacture the connection of conductors for the following products:
Parallel-resistive heating tapes HEW-THERM® 230/200 PARA
Selflimiting heating tape HEW-THERM® 180 SBH-CT
Selflimiting heating tape HEW-THERM® 90 SBL-CR/CT
The termination sets include all required crimp connectors.

Joints of reference 60505 for heating cables HEW-THERM® 260 EGLVA 5320 are made with pressing pliers 62045.

As a basic equipment with tools and connectors, the accessory program of HEW-KABEL/CDT offers complete sets consisting of small metal baggage, tools and connectors according to joint sizes.

Products

Complete set "tool kit small" 14185
(for joints with cold leads up to 2,5 mm²)



Complete set "tool kit large" 14186
(for joints with cold leads within 4..25 mm²)



Heating
Cables

HEW-THERM® 260 PTFE-heating cable EYCEX 5203

The table below shows the resistance values, temperature coefficients and dimensions of the HEW-THERM® delivery program. All series - resistive heating cables can be equipped with conductors.

Order reference	Resistance [Ω/km]	Resistance material	Conductor construction number of wires x diameter	o.d. [mm]	Temperature coefficient at 20 °C (α-value) x 10 ⁻³
10	10	npc	7 x 0,57	5,35	+ 3,90
11,7	11,7	npc	7 x 0,52	5,20	+ 3,90
15	15	npc	7 x 0,47	5,05	+ 3,90
17,8	17,8	npc	7 x 0,43	4,95	+ 3,90
25	25	A-copper	7 x 0,45	5,00	+ 1,90
31,5	31,5	Alloy 30	7 x 0,54	5,25	+ 1,30
50	50	Alloy 30	7 x 0,43	4,95	+ 1,30
65	65	Alloy 30	7 x 0,37	4,75	+ 1,30
80	80	Alloy 60	7 x 0,47	5,05	+ 0,70
100	100	Alloy 90	7 x 0,52	5,20	+ 0,40
150	150	Alloy 90	7 x 0,43	4,95	+ 0,40
200	200	Alloy 90	7 x 0,37	4,75	+ 0,40
320	320	ISAZIN	7 x 0,41	4,85	+ 0,25
380	380	ISAZIN	7 x 0,38	4,80	+ 0,25
480	480	ISAZIN	7 x 0,34	4,65	+ 0,25
600	600	ISAZIN	7 x 0,3	4,55	+ 0,25
700	700	ISAZIN	7 x 0,28	4,50	+ 0,25
810	810	ISOTAN	7 x 0,335	4,65	+ 0,04
1000	1000	ISOTAN	7 x 0,3	4,55	+ 0,04
1440	1440	ISOTAN	7 x 0,25	4,40	+ 0,04
1750	1750	ISOTAN	7 x 0,228	4,30	+ 0,04
2000	2000	NiCr 3020	7 x 0,315	4,60	± 0,00 ¹
3000	3000	NiCr 3020	7 x 0,25	4,40	± 0,00 ¹
4000	4000	CrNi 2520	7 x 0,2	4,25	± 0,00 ²
4400	4400	NiCr 8020	7 x 0,22	4,30	± 0,00 ³
5600	5600	NiCr 8020	7 x 0,192	4,35	± 0,00 ³
7000	7000	NiCr 8020	7 x 0,17	4,25	± 0,00 ³
8000	8000	NiCr 8020	7 x 0,16	4,15	± 0,00 ³

¹ = > 200 °C + 0,37
² = > 200 °C + 0,47
³ = > 200 °C + 0,05

HEW-THERM® 260 PTFE-heating cable ECEX 5307

Products

Order reference	Resistance [Ω/km]	Resistance material	Conductor construction number of wires x diameter	o.d. [mm]	Temperature coefficient at 20 °C (α-value) x 10 ⁻³
0,8	0,8	npc	175 x 0,4	11,90	+ 3,90
1,1	1,1	npc	126 x 0,4	10,10	+ 3,90
1,8	1,8	npc	80 x 0,4	8,55	+ 3,90
2,9	2,9	npc	84 x 0,3	7,10	+ 3,90
4,4	4,4	npc	56 x 0,3	6,10	+ 3,90
7	7	npc	50 x 0,25	5,30	+ 3,90
10	10	npc	7 x 0,57	4,75	+ 3,90
11,7	11,7	npc	7 x 0,52	4,60	+ 3,90
15	15	npc	7 x 0,47	4,45	+ 3,90
17,8	17,8	npc	7 x 0,43	4,35	+ 3,90
25	25	A-copper	7 x 0,45	4,40	+ 1,90
31,5	31,5	Alloy 30	7 x 0,54	4,70	+ 1,30
50	50	Alloy 30	7 x 0,43	4,35	+ 1,30
65	65	Alloy 30	7 x 0,37	4,15	+ 1,30
80	80	Alloy 60	7 x 0,47	4,45	+ 0,70
100	100	Alloy 90	7 x 0,52	4,65	+ 0,40
150	150	Alloy 90	7 x 0,43	4,30	+ 0,40
200	200	Alloy 90	7 x 0,37	4,15	+ 0,40
320	320	ISAZIN	7 x 0,41	4,30	+ 0,25
380	380	ISAZIN	7 x 0,38	4,20	+ 0,25
480	480	ISAZIN	7 x 0,34	4,10	+ 0,25
600	600	ISAZIN	7 x 0,3	3,90	+ 0,25
700	700	ISAZIN	7 x 0,28	3,90	+ 0,25
810	810	ISOTAN	7 x 0,335	4,00	+ 0,04
1000	1000	ISOTAN	7 x 0,3	3,95	+ 0,04
1440	1440	ISOTAN	7 x 0,25	3,80	+ 0,04
1750	1750	ISOTAN	7 x 0,228	3,70	+ 0,04
2000	2000	NiCr 3020	7 x 0,315	4,00	± 0,00 ¹
3000	3000	NiCr 3020	7 x 0,25	3,80	± 0,00 ¹
4000	4000	CrNi 2520	7 x 0,2	3,65	± 0,00 ²
4400	4400	NiCr 8020	7 x 0,22	3,70	± 0,00 ³
5600	5600	NiCr 8020	7 x 0,192	3,65	± 0,00 ³
7000	7000	NiCr 8020	7 x 0,17	3,60	± 0,00 ³
8000	8000	NiCr 8020	7 x 0,16	3,55	± 0,00 ³

¹ = > 200 °C + 0,37

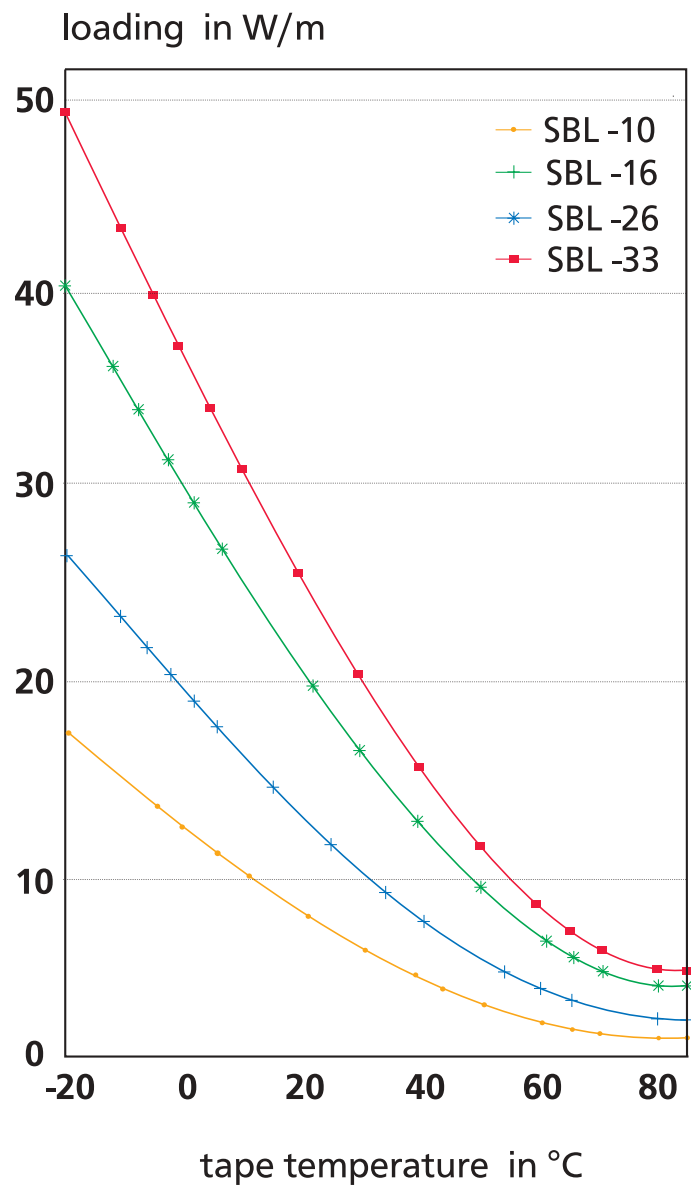
² = > 200 °C + 0,47

³ = > 200 °C + 0,05

Heating
Cables

HEW-THERM® 90 SBL-CR/CT

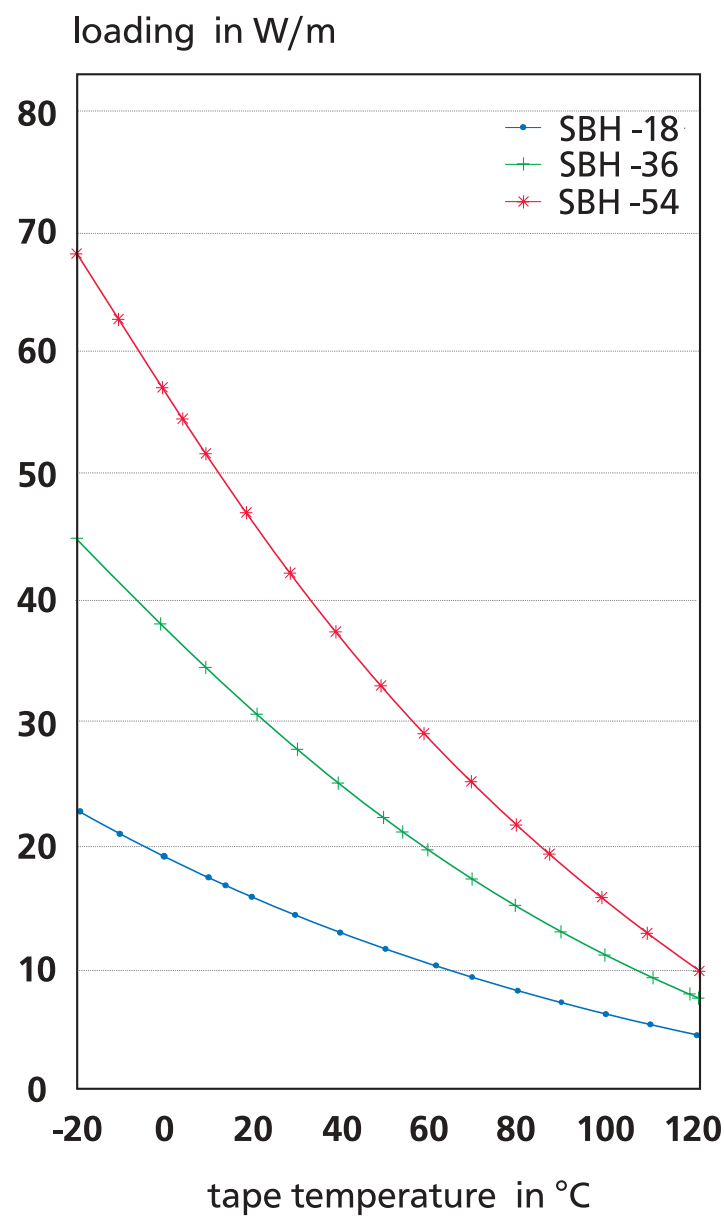
Power output of selflimiting heating tape



Depending on ambient or tape temperature selflimiting heating tapes emit the load to the heated medium.
The graph shows the performance of HEW-THERM® 90 SBL-CR/CT.
The load response is based on the test procedure shown in VDE standard 0254.

HEW-THERM® 180 SBH-CT

Power output of selflimiting heating tape

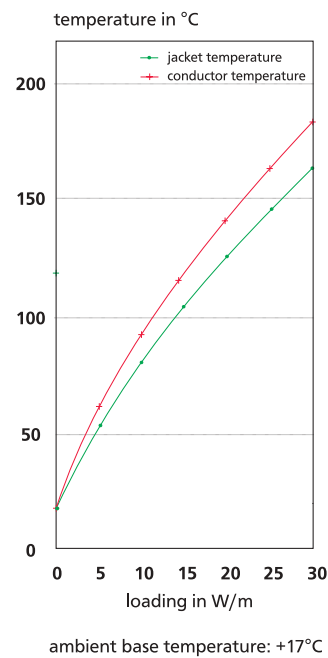


Depending on ambient or tape temperature selflimiting heating tapes emit the load to the heated medium.
The graph shows the performance of HEW-THERM® 180 SBH-CT.
The load response is based on the test procedure shown in VDE standard 0254.

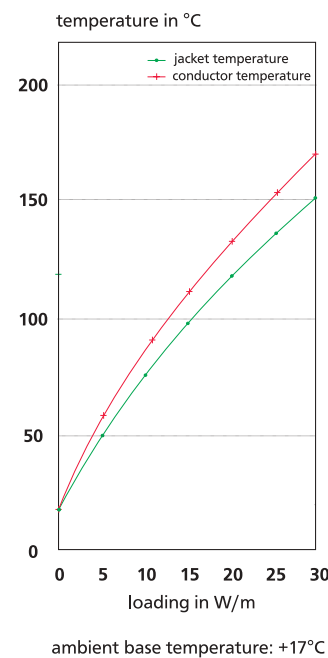
Products

Heating
Cables

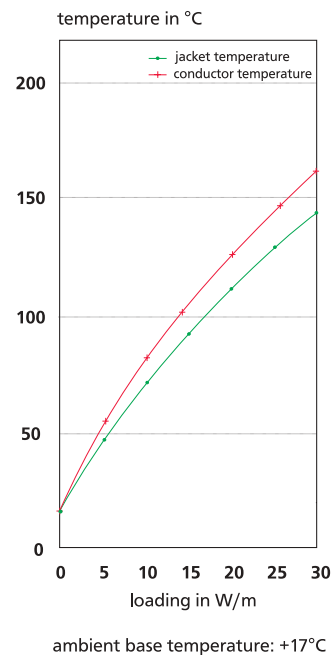
HEW-THERM® 260 ECEX
(diameter: 3,6-4,0 mm)



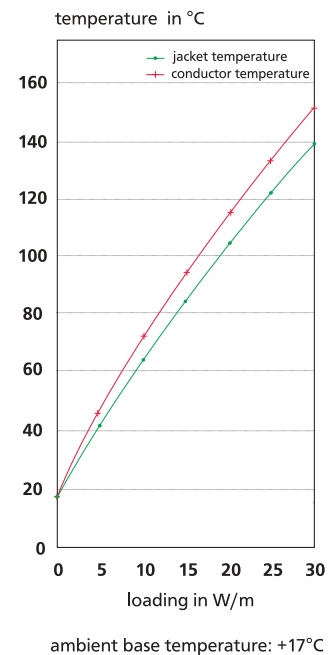
HEW-THERM® 260 ECEX
(diameter: 4,0-4,3 mm)



HEW-THERM® 260 ECEX
(diameter: 4,3-4,6 mm)



HEW-THERM® 260 ECEX
(diameter: 4,6-4,9 mm)



The knowledge of the sheath temperature of heating cables is necessary to determine the limiter temperature within hazardous areas to avoid any ignition. Diagrams above show temperatures of the conductor surface and heating cable sheath at an ambient temperature of + 17 °C.

For deviating product or pipe temperatures the temperature difference has to be added to the determined value of the graph.

Example:

Product temperature: 80 °C
Reference temperature of values in diagram: 17 °C
 $\Delta T = 63 \text{ K}$

(This value has to be added to the temperature value of the diagram at defined load to determine conductor or cable sheath temperature.)

Loads for heating cables HEW-THERM® 260 ECEX 5307

Application temperature in °C	Specific load in W/m at complete/partial contact between heating cable and heated surface
... up to + 10	30/25
+ 11 up to + 30	25/20
+ 31 up to + 50	21/18
+ 51 up to + 75	18/15
+ 76 up to + 100	15/12
+ 101 up to + 125	12/10
+ 126 up to + 150	10/ 8
+ 151 up to + 200	8/ 5

The specific load or power output is subject to variation depending on the temperature of the surface to be heated. This variation has to be taken into consideration when using series - resistive heating cables, e.g. HEW-THERM® 260 EYCEX 5203 or ECEX 5307. In these values, aspects like heating conductor extension and material movements in insulations and sheats etc. are taken into consideration.

The power load of connection cables is determined by the material properties as well as the instructions of VDE standard 0100/part 523. These values also typify the use of joints.

Products

Heating
Cables

Temperature differences between heating conductor surface and surface of sheath

HEW-THERM® 260 EYCEX 5203 and HEW-THERM® 260 ECEX 5307

Resistance [Ω/km]		Load per meter cable [W]				
		5	10	15	20	25
		Temperature difference [K]				
0,7	I.	8	14	20	24	29
	II.	21	32	44	53	63
1,1	I.	10	19	27	32	37
	II.	24	38	52	62	70
1,8	I.	12	21	29	36	41
	II.	25	41	54	65	73
2,9	I.	12	21	29	34	40
	II.	26	39	51	60	70
4,4	I.	16	25	34	42	49
	II.	32	51	64	77	87
7	I.	17	27	37	45	52
	II.	32	51	65	78	88
10	I.	19	32	43	51	58
	II.	36	58	73	86	98
11,7	I.	18	30	40	49	56
	II.	35	53	69	82	95
15	I.	19	33	44	53	61
	II.	36	59	75	89	102
25	I.	22	36	48	59	70
	II.	42	64	84	100	115
50	I.	19	32	44	54	63
	II.	38	57	75	89	103
65	I.	21	34	47	57	68
	II.	41	61	80	95	110
80	I.	22	37	51	62	73
	II.	44	66	87	104	119
100	I.	18	30	41	50	59
	II.	36	54	70	84	96
150	I.	20	32	44	54	65
	II.	38	58	76	91	105
200	I.	21	35	48	58	69
	II.	41	63	82	98	112
320	I.	20	34	46	56	67
	II.	40	61	79	94	109
380	I.	21	29	47	57	68
	II.	41	61	80	95	110
480	I.	22	37	51	62	73
	II.	44	66	87	104	119
600	I.	25	41	56	68	81
	II.	49	73	96	114	132
700	I.	21	29	47	57	68
	II.	41	61	80	95	110
810	I.	22	38	51	68	73
	II.	44	66	87	104	119

Temperature differences between heating conductor surface and surface of sheath

HEW-THERM® 260 EYCEX 5203 and HEW-THERM® 260 ECEX 5307

Resistance [Ω/km]		Load per meter cable [W]				
		5	10	15	20	25
		Temperature difference [K]				
1000	I.	23	38	53	64	77
	II.	46	69	91	108	124
1440	I.	26	43	58	71	84
	II.	51	76	100	119	137
1750	I.	27	45	62	75	89
	II.	54	81	106	126	145
2000	I.	23	38	52	63	75
	II.	45	68	89	106	122
3000	I.	29	47	64	78	93
	II.	56	84	110	131	151
4000	I.	30	50	69	83	99
	II.	59	90	118	140	161
4400	I.	29	48	66	79	95
	II.	57	86	112	134	154
5600	I.	30	51	70	84	100
	II.	59	90	117	140	162
7000	I.	32	52	72	87	104
	II.	62	94	123	146	169
8000	I.	28	48	67	83	98
	II.	57	86	109	133	152

Temperature differences at:
I. Full surface contact between heating cable and surface to be heated
II. Partial heat transfer between heating cable and surface to be heated

The temperature of the heating conductor can be important when choosing insulation material, especially when installing HEW-THERM® heating cables within hazardous areas. The ΔT-values shown in the tables for HEW-THERM® 260 EYCEX 5203 ECEX 5703 can also be used for the design with heating cables HEW-THERM® 260 ECEX 5344, HEW-THERM® 230 KCY 5344 and HEW-THERM® 230 SPEZIAL 5852.

Example: Calculation of conductor surface temperature:

Product temperature: 80 °C, specific heating power: 10 W/m

Chosen cable:
HEW-THERM® 260 ECEX 5307/100 (100 Ω/km)
ΔT = 54 K

Conductor surface temperature: 80 + 54 = 134 °C

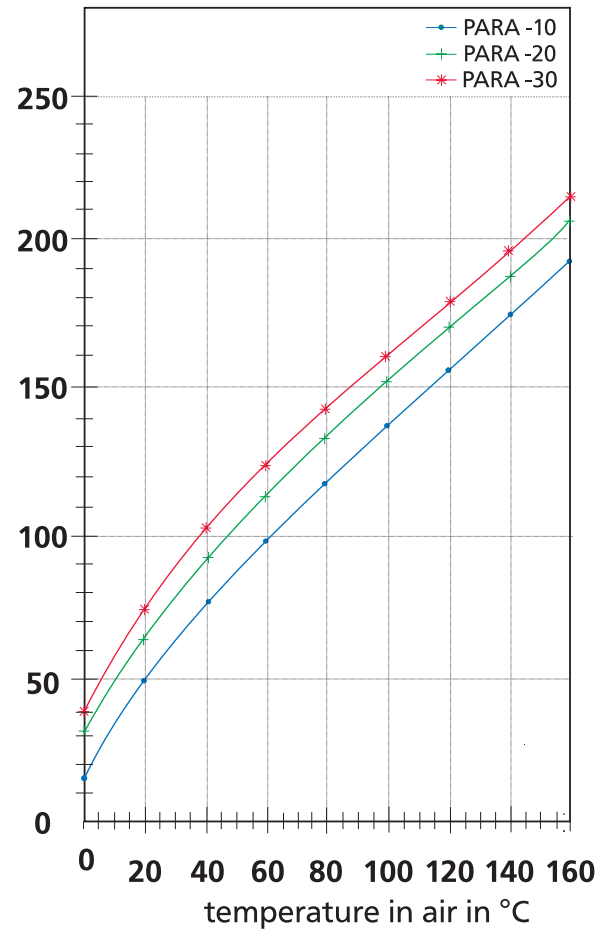
Products

Heating
Cables

HEW-THERM® 230/200 PARA

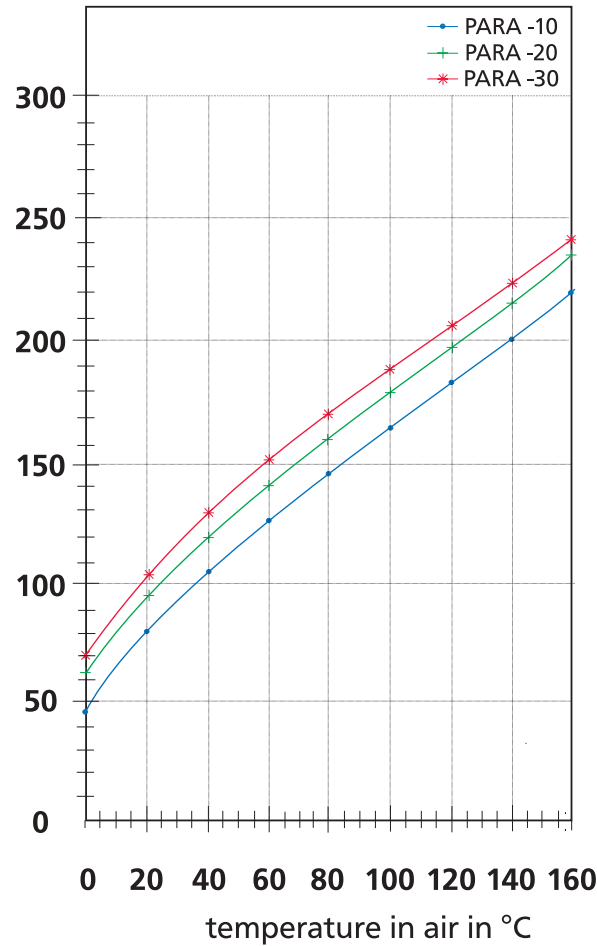
Sheath temperatures (heating tape temperatures) of heating tape HEW-THERM® 230 PARA and 200 PARA.

HEW-THERM® 200 PARA
Heating tape temperature in °C



Measurement in air

HEW-THERM® 230 PARA
Heating tape temperature in °C



Measurement in air

Public testing authorities HEW-THERM® heating cables

Products

HEW-KABEL/CDT products are regularly tested by certified test institutes. These certified bodies test the construction of heating cables and heating tapes as well as accessories for use inside or outside of hazardous areas.

These are in particular:

PTB ¹⁾	Physikalisch-Technische Bundesanstalt, Braunschweig/D
VDE	VDE-Prüfstelle, Offenbach/D
KEMA ¹⁾	Dutch test institute, Arnheim/NL
ISSEP ¹⁾	Belgium test institute, Pâturages/B
SEMKO	Swedish test institute, Kista/S
FIMKO	Finnish test institute, Helsinki/Fin
SEV	Swiss test institute, Zürich/CH
NEMKO	Norwegian test institute, Oslo/N
GOST ¹⁾	Russian test institute (GUS), Moscow/RUS

¹⁾ Approvals for products applied in hazardous areas (tests according to EN 50019 and ATEX 110/118a resp.)

Heating
Cables

Resistance of insulation and sheath materials

Only an optimized adjustment of the heating cable to environmental influences ensures a long-term and troublefree operation of the heating system.
Especially the sheath of the heating cable is continuously exposed to more or less aggressive components.
According to this demand the product program of HEW-THERM®-heating cables offers the possibility to choose between several insulation and sheath materials. The table below shows the performance of each material.

	Temperatur °C	Sulphuric acid	Nitric acid	Formic acid	Acetic acid	Hydrochloric acid 20%	Ammonia	Natron hydroxide/potash lye	Sodium chloride	Sodium carbonate	Benzole/ethanol	Toluol/benzine	Tetrachloromethane	Fluorine/chlorine/ozone	Bromine	Hydraulic oil (Skydrol)	Mineral oil	Sodium salt	Potassium salt	UV-rays
PTFE	20																			
	60																			
	100																			
	150																			
PFA	20																			
	60																			
	100																			
	150																			
FEP	20																			
	60																			
	100																			
	150																			
HDPE	20																			
	60																			
	90																			
PVDF	20																			
	60																			
	100																			
	150																			
PVC	20																			
	60																			
	90																			
V4A + Glass fibre	20																			
	60																			
	100																			
	150																			
Glass fibre	20																			
	60																			
	100																			
	150																			

- applicable
- limited applicable
- material not applicable in this temperature range
- not applicable

Products

Heating
Cables

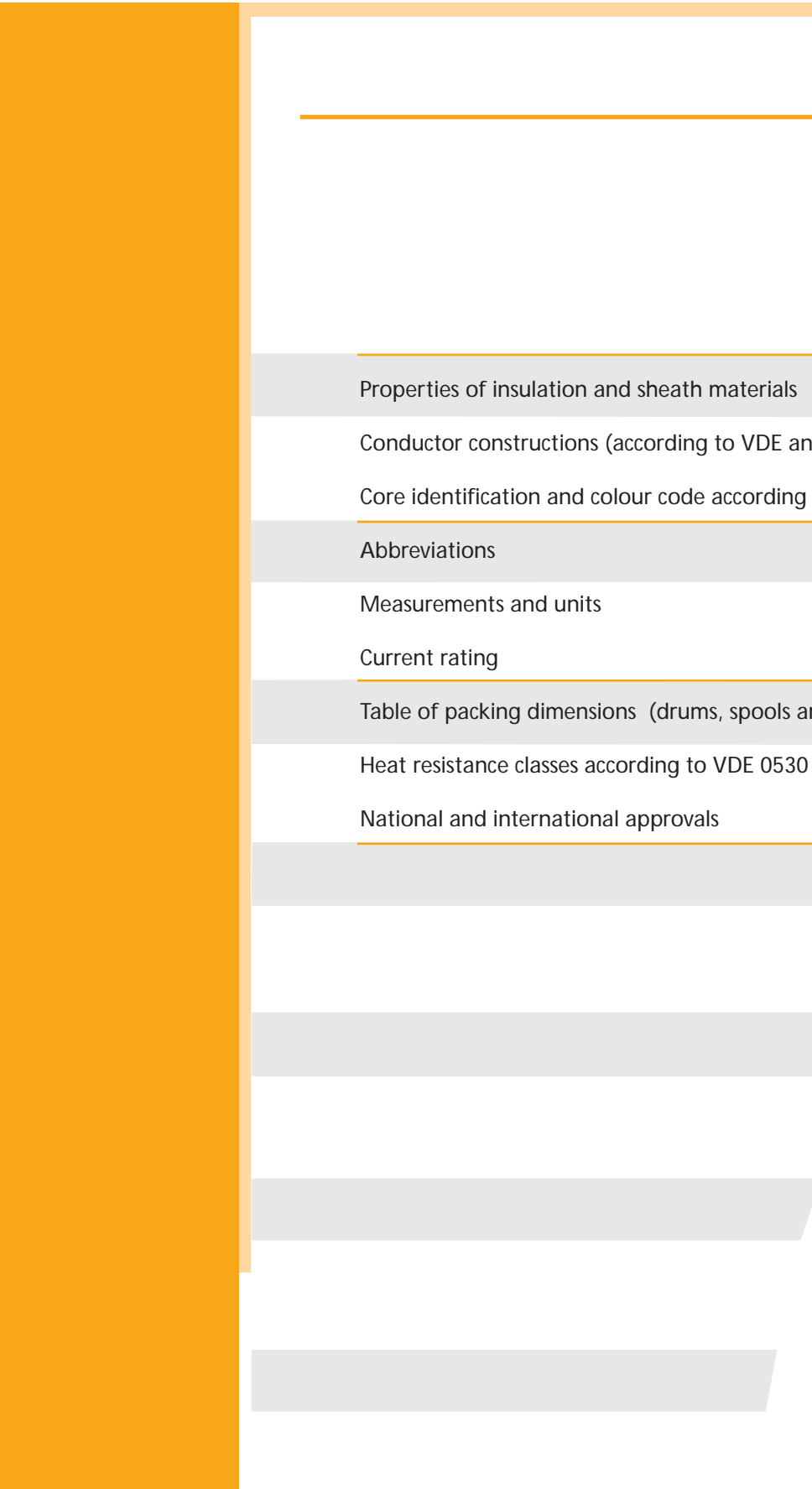
Lined area for notes, featuring horizontal blue lines and a decorative pattern of gray circles in the bottom right corner.

TECHNIQUE

HEW-KABEL/CDT

L o o k i n g f o r s o l u t i o n s ?
C h a l l e n g e u s !

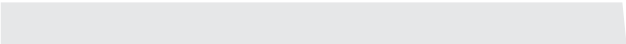
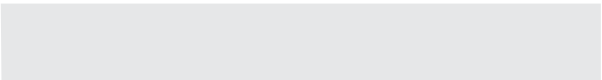
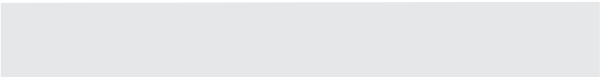
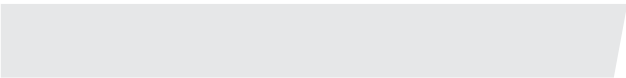
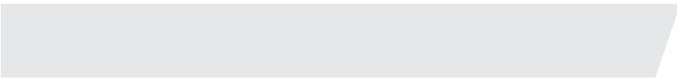
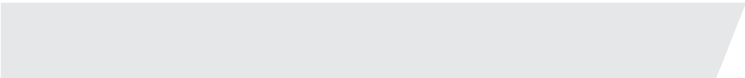
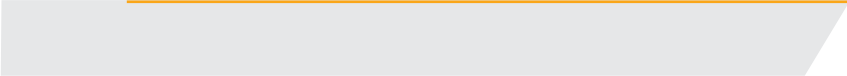
Technique



C O N T E N T S

C O N T E N T S

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Conductor constructions

according to DIN VDE 0295 class 1

Class 1:
Solid conductors for
single and multicore cables

Nominal cross section mm²	Conductor resistance at 20 °C maximum value	
	Circular copper conductor	
	bare Ohm/km	metal plated Ohm/km
0,5	36,0	36,7
0,75	24,5	24,8
1	18,1	18,2
1,5	12,1	12,2
2,5	7,41	7,56
4	4,61	4,70
6	3,08	3,11
10	1,83	1,84
16	1,15	1,16
25	0,727 ¹⁾	
35	0,524 ¹⁾	
50	0,387 ¹⁾	
70	0,268 ¹⁾	
95	0,193 ¹⁾	
120	0,153 ¹⁾	
150	0,124 ¹⁾	
185		
240		
300		

¹⁾ For mineral-insulated cables

Conductor constructions

according to DIN VDE 0295 class 2

Class 2:
Stranded conductors for
single and multicore cables

Nominal cross section mm²	Minimum number of single wires in conductor		Conductor resistance at 20 °C maximum value	
	Circular copper con- ductor	Compacted circular copper conductor	Copper conductor	
			bare Ohm/km	metal plated Ohm/km
0,5	7	-----	36,0	36,7
0,75	7	-----	24,5	24,8
1	7	-----	18,1	18,2
1,5	7	6	12,1	12,2
2,5	7	6	7,41	7,56
4	7	6	4,61	4,70
6	7	6	3,08	3,11
10	7	6	1,83	1,84
16	7	6	1,15	1,16
25	7	6	0,727	0,734
35	7	6	0,524	0,529
50	19	6	0,387	0,391
70	19	12	0,268	0,270
95	19	15	0,193	0,195
120	37	18	0,153	0,154
150	37	18	0,124	0,126
185	37	30	0,0991	0,100
240	61	34	0,0754	0,0762
300	61	34	0,0601	0,0607
400	61	53	0,0470	0,0475

Conductor constructions

according to DIN VDE 0295 class 5 and 6

Class 5+6:
Fine wire copper conductors for single and multicore cables

Nominal cross section mm²	Maximum diameter of single wire mm (Class 5)	Maximum diameter of single wire mm (Class 6)	Conductor resistance at 20 °C maximum value	
			bare single wires Ohm/km	metal plated single wires Ohm/km
0,5	0,21	0,16	39,0	40,1
0,75	0,21	0,16	26,0	26,7
1	0,21	0,16	19,5	20,0
1,5	0,26	0,16	13,3	13,7
2,5	0,26	0,16	7,98	8,21
4	0,31	0,16	4,95	5,09
6	0,31	0,21	3,30	3,39
10	0,41	0,21	1,91	1,95
16	0,41	0,21	1,21	1,24
25	0,41	0,21	0,780	0,795
35	0,41	0,21	0,554	0,565
50	0,41	0,31	0,386	0,393
70	0,51	0,31	0,272	0,277
95	0,51	0,31	0,206	0,210
120	0,51	0,31	0,161	0,164
150	0,51	0,31	0,129	0,132
185	0,51	0,41	0,106	0,108
240	0,51	0,41	0,0801	0,0817
300	0,51	0,41	0,0641	0,0654

Conductor constructions

according to US-standards

AWG	Cross section	Conductor construction	Conductor resistance at 20 °C max. Ohm/km		
			tp	sp	np
32	0,034	7 x 0,079	620	567	607
30	0,057	7 x 0,102	374	330	363
28	0,089	7 x 0,127	225	209	223
26	0,141	7 x 0,160	142	133	141
26	0,155	19 x 0,102	135	126	138
24	0,227	7 x 0,203	88,6	82,7	86,9
24	0,241	19 x 0,127	85,9	79,7	84,9
22	0,355	7 x 0,254	56,1	52,1	54,4
22	0,382	19 x 0,160	53,1	49,5	52,5
20	0,563	7 x 0,320	35,1	32,8	34,1
20	0,616	19 x 0,203	32,4	30,1	32,0
18	0,897	7 x 0,404	21,9	20,6	21,3
18	0,963	19 x 0,254	20,4	19,0	20,0
16	1,229	19 x 0,287	15,7	14,8	15,6
14	1,941	19 x 0,361	10,03	9,44	9,84
12	3,085	19 x 0,455	6,29	5,94	6,17
10	4,743	37 x 0,404	4,13	3,90	4,07
8	8,604	133 x 0,287	2,30	2,16	2,28
6	13,613	133 x 0,361	1,45	1,37	1,43
4	21,153	133 x 0,450	0,918	0,865	0,902
2	33,696	665 x 0,254	0,600	0,557	0,580
1	41,398	817 x 0,254	0,488	0,455	0,472
0	52,951	1045 x 0,254	0,380	0,354	0,370
00	67,392	1330 x 0,254	0,298	0,278	0,291
0000	106,865	2109 x 0,254	0,183	0,177	0,183

HEW-colour code for measuring cable

according to DIN VDE 47100

Core No.	Colour of core	Core No.	Colour of core	Core No.	Colour of core
1	white	22	brown-blue	43	blue-black
2	brown	23	white-red	44	red-black
3	green	24	brown-red	45	white-brown-black
4	yellow	25	white-black	46	yellow-green-black
5	grey	26	brown-black	47	grey-pink-black
6	pink	27	grey-green	48	red-blue-black
7	blue	28	yellow-green	49	white-green-black
8	red	29	pink-green	50	brown-green-black
9	black	30	yellow-pink	51	white-yellow-black
10	violet	31	green-blue	52	yellow-brown-black
11	grey-pink	32	yellow-blue	53	white-grey-black
12	red-blue	33	green-red	54	grey-brown-black
13	white-grey	34	yellow-red	55	white-pink-black
14	brown-green	35	green-black	56	pink-brown-black
15	white-yellow	36	yellow-black	57	white-blue-black
16	yellow-brown	37	grey-blue	58	brown-blue-black
17	white-grey	38	pink-blue	59	white-red-black
18	grey-brown	39	grey-red	60	brown-red-black
19	white-pink	40	pink-red	61	black-white
20	pink-brown	41	grey-black		
21	white-blue	42	pink-black		

HEW-Colour code for connection cables

Number of cores	Colour code
2	red x white
3	red x red x white
4	red x red x white x white

Colour abbreviations

according to DIN, IEC* and CENELEC HD 757

Colour	German abbreviations according to DIN 47002	Abbreviations to DIN IEC 757
black	SW	BK
brown	BR	BN
red	RT	RD
orange	OR	OG
yellow	GE	YE
green	GN	GN
blue	BL	BU
violet	VI	VT
grey	GR	GY
white	WS	WH
pink	RS	PK
turquoise	TK	TQ

* IEC = International Electrotechnical Commission

Core identification according to DIN VDE 0293
Multicore flexible cables

Number of cores	Cables with earth (-J)	Cables without earth (-O)
2	-----	brown x blue
3	green-yellow x brown x blue	black x blue x brown
4	green-yellow x black x blue x brown	black x blue x brown x black
5	green-yellow x black x blue x brown x black	black x blue x brown x black x black
6 and more	green-yellow, additional cores with printed numbers	Cores with printed numbers according to part 5

Multicore cables for fixed installation

Number of cores	Cables with earth (-J)	Cables without earth (-O)
2	green-yellow x black*	black x blue
3	green-yellow x black x blue	black x blue x brown
4	green-yellow x black x blue x brown	black x blue x brown x black
5	green-yellow x black x blue x brown x black	black x blue x brown x black x black
6 and more	green-yellow, additional cores with printed numbers	black with printed numbers

* Acc. to VDE 0100 part 540, table 2 this construction is permissible for conductor cross sections starting from 10 mm² Cu or 16 mm² Al only.

Abbreviations for materials and symbols for constructions

TE	- Fluoropolymers
Y	- Thermoplastics
GL	- Glass fibre
GLI	- Mica
C	- Copper screen
(St)	- Static screen
P	- Stainless or galvanized steel wire braid
GA	- Yarn
SI	- Silicone rubber
R	- Elastomers
	- EPDM
	- EVM
	- ACM
	- HNBR
	- CSM
	- FPM
	- CR
	- CM
	- XVH
	- ZYRAD
TPE	- Thermoplastic elastomers
	- TPE-E
	- TPE-O
	- TPE-S
	- TPE-U
	- TPE-V
STP	- Special thermoplastics
	- PPO
	- PEI
	- PEEK
	- PEI/SIR
	- PPS
Cu	- bare
	- tp, tin plated
	- np, nickel plated
	- sp, silver plated
RNi	- Pure nickel
WM	- Resistance material

Other conductor materials on request

H - Symbol for twisting (2 or more cores, flat or twisted without sheath, additional sheath optional (sheathing materials on request)).

D	- Solid conductor
F	- Stranded conductor, fine wires
FF	- Stranded conductor, extra fine wires
ZW	- Twin flat flexible cord
ZÜ	- Ignition cable
AWG	- (A)merican (W)ire (G)auge
SiBd	- Simatic®-colour coding, couple or star quad twisting

Abbreviations for materials and symbols for constructions

Excerpt: DIN/VDE

J	- Installation cable (solid conductor)
JE	- like J- for electric engineering
Li	- Stranded conductor
C	- Screen: copper braid
Q	- Screen: galvanized steel wire
(St)	- Static screen
Bd	- Bunch twisting
Lg	- Layer twisting

HEW-KABEL/CDT identification tracer:

Blue/orange/red – three threads twisted

Example for HEW-type designation:

TEHCTEPY- Cu sp 5xAWG 12/19/EE

TE	= Fluoropolymer insulation
H	= Twisting
C	= Copper screen
TE	= Fluoropolymer inner sheath
P	= Steel wire braid
Y	= Thermoplastic sheath
Cu sp	= Conductor material
5 x	= Number of cores
AWG 12	= (A)merican (W)ire (G)auge
19	= Number of single wires
EE	= Operating voltage

Technique

according to VDE 0281/VDE 0282

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HEW-KABEL/CDT

Abbreviations for insulation and sheath materials

according to VDE 0207 or DIN 76722

VDE-abbreviations	Material	HEW-abbreviations
Y	PVC = polyvinylchloride	Y
X	PVC = polyvinylchloride (vulcanized)	Y
2Y	LDPE = high pressure-polyethylene	Y
2X	LDPE = high pressure-polyethylene (vulcanized)	Y
2Y	HDPE = low pressure-polyethylene	Y
4Y	PA = polyamide	Y
5Y	PTFE = polytetrafluorethylene	TE.../E
6Y	FEP = perfluorethylenpropylene-copolymer	TE.../K
7Y	ETFE = ethylene-tetrafluorethylene-copolymer	TE.../Z
8Y	PI/F = polyimide foil	Y
9Y	PP = polypropylene	Y
10Y	PVDF = polyvinylidenfluoride	Y
10X	PVDF = polyvinylidenfluoride (vulcanized)	Y
11Y	TPE-U = PUR polyurethane	Y
12Y	TPE-EE = (thermoplastic elastomer based on polyester-ester)	Y
12X	TPE-EE = (thermoplastic elastomer based on polyester-ester) vulcanized	Y
13 Y	TPE-E = (thermoplastic elastomer based on polyester-ester)	Y
13X	TPE-E = (thermoplastic elastomer based on polyester-ester) vulcanized	Y
31Y	TPE-S = (thermoplastic elastomer based on polystyrole)	Y
31X	TPE-S = (thermoplastic elastomer based on polystyrole) vulcanized	Y
41Y	TPE-A = (thermoplastic elastomer based on polyamide)	Y
51Y	PFA = perfluoralkoxy-tetrafluorethylene-copolymer	TE.../P
71Y	ECTFE = monochlortrifluorethylene	TE
91Y	TPE-O = (thermoplastic elastomer based on polyolefine)	Y
91 X	TPE-O = (thermoplastic elastomer based on polyolefine) vulcanized	Y
2G	SIR = silicone rubber	SI
2G	SIR/FRNC = silicone rubber flame retardant non corrosive	SI
3G	EPR = ethylene-propylene-rubber	R
4G	EVA = ethylene-vinylacetate	R
5G	CR = chloroprene	R
6G	CSM = Hypalon®	R
53G	CM = chlorized polyethylene	R

Conversion of British and American measures and units

Length

1 inch	= 25,4 mm
1 foot	= 0,3048 m
1 yard	= 0,9144 m
1 statute mile	= 1609,341 m
1 nautical mile	= 1853,181 m
1 cm	= 0,3937 inches
1 m	= 39,37 inches

Area

1 square inch	= 6,4516 cm ²
1 square foot	= 0,0929 m ²
1 square yard	= 0,8361 m ²
1 acre	= 4047 m ²
1 square mile	= 2,5899 km ²
1 cm ²	= 0,155 sq. in.
1 m ²	= 10,764 sq. ft.

Volume

1 cu. inch	= 16,387 cm ³
1 cu. foot	= 28,3167 dm ³
1 cu. yard	= 0,764551 m ³
1 gallon (US)	= 3,78540
1 gallon (Brit.)	= 4,546 l
1 quart (US)	= 0,946 l
1 barrel (US)	= 158,8 l
1 m ³	= 35,3148 cu. ft.
1 dm ³	= 61,0239 cu. in.

Weight

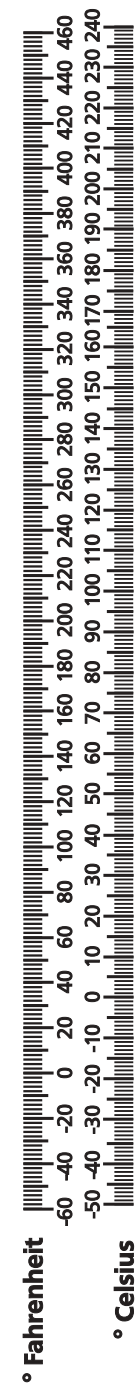
1 ounce (oz)	= 28,35 p
1 pound (lb)	= 0,4536 kp
1 quarter	= 12,7 kp
1 hundredweight	
(centweight; cwt)	= 50,802 kp
1 kp	= 2,2046 lbs.
	= 35,274 oz.

Temperature

°C (Celsius)	= 0,5556 * (F-32)
°F (Fahrenheit)	= 1,8 * C + 32

Power

1 PS	= 0,736 kW
1 hp	= 1,014 PS
	= 0,7453 kW
1 kW	= 1,36 PS
	= 1,31 hp



Current rating

according to VDE 0100 part 523

Apart from the ambient temperature several other important factors have to be taken into consideration when calculating load currents.

Special attention has to be paid to the method of installation, the environmental conditions, fuse protection (overvoltage protection) and the corresponding choice of insulation and sheath materials.

Table 1 shows an excerpt from VDE 0100 part 523 concerning current ratings of cables at an ambient temperature of 30 °C.

Table 2 shows the percentage of current rating at ambient temperatures up to 175 °C.

Conductors of insulated cables may be operated continuously as listed below.

Group 1: One or more single cores installed in pipes

Group 2: Multicore cables

Group 3: Solid, open air installed cables - installation distance between each cable min. 1 x o.d.

Current rating /Z of insulated cables and
cables not installed in ground
ambient temperature 30 °C

Current rating /Z of cables with increased
heat resistance
ambient temperature > 55 °C

Table 1

Nominal cross section [mm²]	Group 1 Cu cond. [A]	Group 2 Cu cond. [A]	Group 3 Cu cond. [A]
0,75	-----	12	15
1	11	15	19
1,5	15	18	24
2,5	20	26	32
4	25	34	42
6	33	44	54
10	45	61	73
16	61	82	98
25	83	108	129
35	103	135	158
50	132	168	198
70	165	207	245
95	197	250	292
120	235	292	344
150	-----	335	391
185	-----	382	448
240	-----	453	528
300	-----	504	608
400	-----	-----	726
500	-----	-----	830

Table 2

Ambient temperature °C		Current rating I _z in % of values of table 1
permissible conductor temperature 100 °C	permissible conductor temperature 180 °C	
from 55 up to 65	from 55 up to 145	
from 65 up to 70	from 145 up to 150	92
from 70 up to 75	from 150 up to 155	85
from 75 up to 80	from 155 up to 160	75
from 80 up to 85	from 160 up to 165	65
from 85 up to 90	from 165 up to 170	53
from 90 up to 95	from 170 up to 175	38

Technique

Making up in barrels of silicone single cores

Cross section stranded	o.d. approx. mm	Capacity [metres] depending on barrel size		
		400	560	800
0,25 mm²	1,9	7500	10000	12500
0,5 mm²	2,1	6000	9000	12500
0,75 mm²	2,4	5000	7000	10000
1 mm²	2,5	4000	6000	9000
1,5 mm²	2,8	3000	5000	7500
2,5 mm²	3,4	2000	3000	5000
4 mm²	4,2	1500	2500	3500
6 mm²	4,9	-----	2000	2500
Cross section solid	o.d. approx. mm	Capacity [metres] depending on barrel size		
		400	560	800
0,5 mm²	2,0	5000	8000	10000
0,75 mm²	2,2	3500	5500	9500
1 mm²	2,3	3000	5500	8000
1,5 mm²	2,6	3000	5000	7000
2,5 mm²	3,2	-----	-----	-----
4 mm²	3,9	-----	-----	-----

Capacity of HEW-KABEL/CDT wooden drums

o.d. approx (mm)	Capacity [metres] depending on drum size							
	500	620	700	800	1000	1250	1400	1600
4	2400	3400	6200	7500				
4,5	1800	2600	4800	5800				
5	1500	2200	4000	4800				
5,5	1200	1800	3200	3800				
6	1000	1500	2600	3300	7400			
6,5	930	1300	2200	2800	6200			
7	780	1100	1900	2400	5400			
7,5	680	980	1700	2000	4700	8900		
8	590	850	1500	1800	4100	7800		
8,5	520	760	1300	1600	3600	6900	9100	
9	460	670	1100	1400	3300	6100	8000	
9,5	410	580	1000	1200	2900	5500	7200	
10	390	560	1000	1200	2700	5100	6600	10000
11	290	430	790	960	2200	4100	5400	8700
12	240	350	670	820	1800	3400	4600	7400
13	220	320	560	690	1500	3000	3900	6100
14		280	480	600	1300	2500	3200	5500
15		220	400	510	1100	2200	2900	4700
16		210	390	440	990	1900	2400	4000
17			320	410	860	1700	2100	3600
18			270	350	810	1500	1900	3200
19			260	300	690	1300	1700	2900
20			250	280	670	1200	1600	2600
21			200	270	580	1100	1400	2300
22				220	560	980	1300	2100
23				210	460	920	1200	2000
24				200	440	810	1000	1700
25					390	780	1000	1700
26					380	750	930	1500
27					360	650	890	1300
28					300	620	780	1300
29					280	530	750	1200
30					280	510	720	1100
31					260	490	620	1000
32					230	490	620	930
33					210	410	590	930
34					210	390	500	900
35					200	390	500	860
36					200	370	470	740
37						370	470	740
38						300	390	710
39						300	390	630
40						280	370	600
41						280	370	570
42						260	350	570
43						260	300	570
44						220	300	480
45						210	280	480
46						210	280	450
47						210	280	450
48							260	430
49							260	430
50							260	430

Technique

Capacity of HEW-KABEL/CDT plastic reels

o.d. approx (mm)	Capacity [metres] depending on reel size						
	125	160	200	250	355	500	800
0,8	800	1900	3200	5200			
0,9	640	1500	2500	4100			
1,0	520	1200	2000	3400			
1,1	410	1000	1700	2700			
1,2	350	830	1300	2300	5300		
1,3	300	730	1200	1900	4500		
1,4	260	600	1000	1700	3800		
1,5	220	530	910	1400	3400		
1,6	190	470	800	1200	2900		
1,7	170	410	710	1100	2600		
1,8	150	360	630	1000	2300		
1,9	140	340	560	920	2100		
2,0	120	300	490	830	1800		
2,1	110	250	470	740	1700	13000	
2,2		250	410	660	1500	11000	
2,3		210	360	630	1400	10000	
2,4		200	340	560	1300	10000	
2,5		200	330	540	1200	9300	
2,6			290	480	1100	8400	
2,7			280	430	1000	7900	
2,8			240	410	950	7300	18000
2,9			230	400	910	6700	16000
3,0			220	350	830	6400	15000
3,2				300	740	5500	13000
3,4				280	660	5000	12000
3,6				240	570	4400	11000
3,8				230	510	3900	9700
4,0					450	3600	8900
4,2					430	3200	8000
4,4					370	2900	7300
4,6					350	2600	6500
4,8					310	2500	6000
5,0					300	2300	5700
5,2					260	2000	5200
5,4					250	1900	4800
5,6					220	1700	4500
5,8					210	1600	4100
6,0					200	1600	3800





Heat resistance classes

according to VDE 0530










Class	Insulation material	Varnish	Maximum operating temperature	HEW insulation- + sheath materials
Y	Cotton, artificial and natural silk, polyamide-fibre, paper, polyvinyl-chloride (PVC), polyethy-lene (PE), vulc. natural rubber	-----	90 °C	PVC, PE, CSM, HDPE, LDPE, PA
A	Cotton, artificial and natural silk, polyamide, paper, varnished textiles, polyester resins	Asphalt varnish, synthetic resin varnish, insulation oil and synthetic dielectric liquids	105 °C	TPE
E	Special wire varnishes, special plastic foils, moulding compound with cellulose, paper and cotton laminates	synthetic resin varnishes, polyester resins, each with maximum operation temperature ≥ 120 °C	120 °C	EVM, PP
B	Glass fibre, mica products, special plastic foils, moulding parts with mineral filler	like „E“, but ≥ 130 °C epoxy resin	130 °C	PETP, STP
F	Glass fibre, mica products, aromatic polyamide, varnished glass-fibre textiles, varnished asbestos	resins with maximum operation temperature ≥ 155 °C	155 °C	ETFE
H	Glass fibre, mica products aromatic polyamide silicone rubber polyimide foil, PTFE	silicone resins with maximum operation temperature ≥ 180 °C	180 °C	Silicone, PTFE, FEP
C	Mica, porcelain, glass, quartz and similar fire resistant materials	like „H“, but ≥ 225 °C	more than 180 °C	PTFE, PFA, FEP, PI/F, glass fibre, mica, FPM, ceramics

Technique

National and international approvals

Country	Approvals	Testing place/testing authority
Denmark		Demko
Germany		VDE-Prüfstelle (Verband Deutscher Elektrotechniker e.V. = Association of German Electro technicians)
Germany		VDE-Prüfstelle (Verband Deutscher Elektrotechniker e.V. = Association of German Electro technicians)
Germany		Germanischer Lloyd Hamburg
Germany		Physikalisch Technische Bundesanstalt
Europe		Communauté Européenne
Europe		DIN GOST TÜV Berlin-Brandenburg
Finnland		Fimko Ltd. Finland
France		Institut scientifique de Service public

National and international approvals

Country	Approvals	Testing place/testing authority
Canada		Canadian Standards Association
Netherlands		Naamloze Vennootschap tot Keuring van Electro-technischen Materialen
Poland		Główny Instytut Górnictwa
Sweden		Svenska Elektriska Materielkontrollanstalten
Switzerland		Schweizerischer Elektrotechnischer Verein (SEV) = Swiss Electrotechnical association
Switzerland		Schweizerischer Elektrotechnischer Verein (SEV) = Swiss Electrotechnical association
Czech Republic		Fyzikálne technický Zkusební ústav, Ostrava Radvanice
USA		Underwriters Laboratories (UL)
Norway		Nemko

Technique

Lined area for notes, featuring horizontal orange lines and a decorative pattern of gray circles at the bottom.

A P P L I C A T I O N

HEW-KABEL/CDT

L o o k i n g f o r s o l u t i o n s ?
C h a l l e n g e u s !

Application

Application areas



1. Traffic

Automotive

Connection and control cables for

- Engines
- Gear boxes
- Chassis
- Ignition
- Fuel injection
- Lighting

Railway engineering

- UIC-connection cables for internal and external wiring of vehicles
- WTB- and MVB-databus cables
- Connection cables for traction motors

Shipbuilding

- Teflon®-insulated cables, screened, unscreened and armoured with Germanischer Lloyd approval

Aerospace:

- Cables with high performance insulation and sheath materials for wiring of communication systems, power modules, fuel systems



2. Instrumentation- and Control Engineering

Measuring-, connection- and data cables as well as thermo- and compensating cables for:

- High frequency technology
- Medical equipment
- Robotics
- Sensors



3. Communication- and Information Technology

Coaxial- and triaxial cables, EMC-optimized data cables, measuring- and control cables for:

- Data transmission technology
- Industrial communication
- Industrial illuminations
- Aerospace communication systems



4. Heating cables

Heating cables, -tapes and -mats as well as accessories for:

- **Industrial appliances:**
 - Pipe and container heating
 - Heating of exhaust air filters
 - Heating systems for traffic technology
 - Heating components for mechanical engineering
- **Domestic appliances:**
 - Floor heating
 - Gutter, downpipe and roof heating

Teflon® is a registered trademark of Du Pont

Application

Lined area for notes, featuring horizontal orange lines and a decorative pattern of gray circles at the bottom.

ORDER FORMS

HEW-KABEL/CDT

Looking for solutions?
Challenge us!

Order
forms

GENERAL TERMS OF DELIVERY AND PAYMENT of HEW-KABEL/CDT GmbH & Co. KG

1. General

The following terms are constituent of all contracts made. Differing terms will be opposed.

2. Conclusion of a contract

Offers made by HEW-KABEL/CDT are not binding. The binding contract begins either with the written confirmation of an order or with the actual delivery of ordered goods by HEW-KABEL/CDT

3. Withdrawal from contract

If the purchaser withdraws from the contract without justification or if (s)he refuses to meet the requirements of the contract, (s)he is obligated to take delivery of and pay for the production costs of the primary and partial products. HEW-KABEL/CDT reserves the right for a possible higher compensation for damage.

4. Prices

The prices quoted on the delivery date are prevalent. The prices include a copper basis for € 150,-/100 kg as well as a silver basis for € 100,-/1 kg silver. The noting of NE metal-workers (DEL notice) plus supply costs, at the moment 1 %, shall prevail when determining metal value. The minimum amount ordered should be 250,00 Euro. HEW-KABEL/CDT does not generally pay for delivery of goods.

5. Bearing of the risk during transport

The purchaser bears the risk as soon as the object to be delivered has left the factory or the storehouse is ready for delivery or collection, or if delivery of the object has been entrusted to the forwarding agent or to the common carrier. This remains the case, independent of any other agreements made, be they collection from the company, carriage paid delivery, regardless of whether the means of conveyance belongs to oneself or others, or any other agreements.

6. Amount of delivery

An amount 15% above or below the ordered amount is admissible. The object of contract is the actually delivered amount. Complete accordance with the exact object previously supplied can only be guaranteed with recurring orders if this was explicitly agreed upon. HEW-KABEL/CDT is not obligated to announce changes that it judges to be made for the better. If goods are made according to a customer's assignment, liability is ruled out for injury of a third person or of a customer or for nonobservance of instructions.

7. Packaging

HEW-KABEL/CDT uses its own drums and packaging. These are charged separately and are also object of contract, unless otherwise stipulated. Prices established at the time of delivery by HEW-KABEL/CDT are valid. If the purchaser returns the drum within six months and it is in perfect reusable condition, (s)he will receive 2/3 of the paid price back from HEW-KABEL/CDT.

8. Terms of payment

Invoices should be paid within 30 days of date of invoice. If a contractual payment period is exceeded on a tracking business, we are entitled to add maturity interests of 8% over the current base of interest rates without any proof of loss. Differing terms of payment shall be opposed.

9. Reservation of title

a) HEW-KABEL/CDT reserves the title of the supplied goods until payment of the purchase price has been completed. HEW-KABEL/CDT reserves the title of goods, that the purchaser obtains within the framework of his or her commercial activity until various outstanding debts, including those from simultaneous or later concluded contracts have been settled. This is also valid if individual or various other claims of HEW-KABEL/CDT have been included in an open account and the account has been settled and accepted. If the form of payment of purchase price includes a bill of exchange, then the reservation of title prevails until the exchange has occurred with the purchaser as the drawee.

b) If the reserved goods are combined with other goods by the purchaser, then HEW-KABEL/CDT has the right to joint ownership of the new object in the proportion of the calculated value of the reserved goods to the calculated value of the other goods and of the processing. If the property of HEW-KABEL/CDT expires through combination, mixing or processing, then the purchaser transfers the right of ownership of the new object according to the calculated value of the reserved goods to HEW-KABEL/CDT at the moment of the conclusion of treaty. The purchaser keeps the title of joint ownership safe free of charge. The thus ensuing right to joint-ownership prevails as reserved goods.

c) The purchaser may dispose of the reserved goods in his or her usual business transactions at his/her usual terms and conditions of trade as long as (s)he is not in delay with payment. This disposal includes installation of the goods in a building, an aircraft or a ship.

d) The purchaser's claims concerning the resale of the reserved goods are immediately assigned to HEW-KABEL/CDT. They serve as much of a form of security as the reserved goods. If the purchaser disposes of the reserved goods together with other goods that were not supplied by HEW-KABEL/CDT then the outstanding debt from the resale is assigned by the proportion of the amount to be paid to the value of the other sold goods. When goods that are co-jointly owned are sold, HEW-KABEL/CDT is assigned a part of the claim that is equivalent to part of joint ownership.

e) The purchaser is obligated to inform HEW-KABEL/CDT immediately about a third party's eventual access to the reserved goods and to the assigned outstanding debts. The purchaser is only permitted to dispose of the reserved goods or assigned outstanding debts under the conditions listed in c).

f) The purchaser is authorized to collect outstanding debts from resale. If the purchaser is in default of payment or if (s)he does not fulfill his or her bill of exchange, then HEW-KABEL/CDT is authorized to revoke this.

g) If the purchaser is in default of payment and thus terminates the contract, then HEW-KABEL/CDT is irrevocably authorized to enter the purchaser's company and take the goods.

h) HEW-KABEL/CDT obligates itself to release the security they are entitled to release when the nominal value exceeds these outstanding debts by more than 10%.

10) Term of delivery

Dates in the confirmation of an order are not seen as dating as determined by law which is valid at the moment. If HEW-KABEL/CDT is in default of delivery, then indemnification is limited to 1% for each week of delay and 10% in toto of the entire sum of the order. If the purchaser, after a default in delivery of longer than a month, determines a suitable extension of time for their threat of refusal, (s)he is authorized to withdraw from the contract once the determined period of time has expired. Indemnification for damage caused by non-performance is limited to 10% of the entire sum of the order.

If the default in delay is caused by a sub-supplier and the purchaser was informed in advance of the delegated function, then HEW-KABEL/CDT is not liable. Instead, HEW-KABEL/CDT assigns the purchaser's damage claims to the sub-supplier.

11) Guarantee

a) Even if samples had been sent at an earlier date, delivered goods should be immediately inspected on arrival for any form of damage. The delivery is seen as approved if no written form of complaint for damages is sent within the preclusive period of ten days.

b) If the quality of a cable is cause for written complaint, it requires that the specialists from HEW-KABEL/CDT first inspect the cable. The costs for the inspection have the flat rate of 50,00 Euro per hour. If the cable is faulty, HEW-KABEL/CDT will cover the cost for the inspection. If the cable is in perfect condition, the purchaser covers the cost for the inspection.

c) If there are defects, HEW-KABEL/CDT is authorized to choose the form of reparation, be it repair of the faulty object or compensation delivery. If two attempts to repair the defect have proven unsuccessful, the purchaser is entitled to choose a change in the contract of purchase or to choose a reduction in price.

d) Attributes are only seen as guaranteed if they are explicitly written in the confirmation of the order.

e) If the goods are processed by the purchaser, then HEW-KABEL/CDT is not liable for anything other than for intent and gross negligence from the beginning of processing onwards.

f) The time limitation for various guarantee claims, even for consequential harm caused by a defect meets the regulations of law.

12) Set-off prohibition

There shall be no set-off of any counterclaims with purchase price claims of HEW-KABEL/CDT.

13) Copyright

HEW-KABEL/CDT has copyright for various rough estimates of cost, drawings, and other documents and data. The statutory copyright laws are prevalent.

14) Place of court

Various contracts concluded with HEW-KABEL/CDT are subject to German law. Wipperfurth, Germany is place of performance and jurisdiction. CISG (United Nations Convention on Contracts for the International Sale of Goods) is not applicable.

HEW-KABEL/CDT
GmbH & Co. KG
Gewerbegebiet Klingsiepen 12
D-51688 Wipperfürth
P.O. Box 1226
D-51676 Wipperfürth

Tel. +49 (0) 2267/683-0
Fax +49 (0) 2267/2203
E-mail: mail@hew-kabel-cdt.com
www.hew-kabel-cdt.com



Enquiry- / order form STANDARD CABLES

Address:

Company: Name:
Department: Tel. / Fax:
E-mail:
Enquiry / order #:

Quantity	Product description / Cross section	Colour	Packaging	Price	Delivery time

Date and signature:

HEW-KABEL/CDT
GmbH & Co. KG
Gewerbegebiet Klingsiepen 12
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www.hew-kabel-cdt.com



Enquiry / order form SPECIAL CABLES

Address:

Company: Name:
Department: Tel. / Fax:
E-mail:
Enquiry / order #:

Construction:

Conductor construction: Solid, stranded, highly flexible
Others:

Conductor material: Cu bare, tin plated, silver plated, nickel plated, pure nickel
Others:

Cross section:

Insulation materials: - Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE
- Silicone rubber (SiR)
- Elastomers: EPDM, EVM
- Thermoplastic elastomers: TPE-E, -S, -V
- Special thermoplastics: PEI, PEEK, PEI/SIR
- Thermoplastics: LDPE, HDPE, PP, PA
- Inorganic materials: Glass fibre, mica, ceramic fibre
- Organic materials: Kevlar®
- Others:

Core colours:

Number of cores:

Core twisting: Layers / pairs / flat
Others:

Wrappings: - Foil: PTFE, polyester, aluminium, laminated aluminium, copper, polyimide (Kapton®)
- Tape: Glass fibre, mica, fleece
- Others:.....

Inner sheath: - Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE
- Silicone rubber (SiR)
- Elastomers: EPDM, EVM, ACM, HNBR, CSM, FPM, CR, CM, XVH
- Thermoplastic elastomers: TPE-E, -O, -S, -U, -V
- Special thermoplastics: PEI, PEEK, PEI/SIR
- Thermoplastics: PVC, LDPE, HDPE, PP, PA
- Inorganic materials: Glass fibre, mica, ceramic fibre
- Organic materials: Kevlar®
- Others:

Order
forms

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P.O. Box 1226
D-51676 Wipperfürth

Tel. +49 (0) 2267/683-0
Fax +49 (0) 2267/2203
E-mail: mail@hew-kabel-cdt.com
www.hew-kabel-cdt.com



Screen:	<ul style="list-style-type: none">- Braid: Cu bare, tin plated, silver plated, nickel plated- Serving: Cu bare, tin plated, silver plated, nickel plated- Static screen- Others:
Sheath:	<ul style="list-style-type: none">- Fluoropolymers: PTFE, FEP, ETFE, PFA, MFA, PVDF, ECTFE- Silicone rubber (SiR)- Elastomers: EPDM, EVM, ACM, HNBR, CSM, FPM, CR, CM, XVH- Thermoplastic elastomers: TPE-E, -O, -S, -U, -V- Special thermoplastics: PEI, PEEK, PEI/SIR- Thermoplastics: PVC, LDPE, HDPE, PP, PA- Inorganic materials: Glass fibre, mica, ceramic fibre- Organic materials: Kevlar®- Others:
Armouring:	Braid: Galvanized steel, stainless steel
Outer diameter:
Electrical properties:	<ul style="list-style-type: none">- Nominal voltage:- Conductor resistance:- Capacity:- Others:
Mechanical properties:	<ul style="list-style-type: none">- Media resistance: acids, chemicals, oils, fuels- Others:- Temperature range: -.....°C up to +.....°C- Application:- Other remarks:
Other properties:
Enquiry- / order quantity:

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Handwriting practice area with horizontal lines and decorative circles.

Order
forms

Lined area for notes, featuring horizontal blue lines and a decorative pattern of gray circles in the lower right corner.

Lined area for notes with horizontal blue lines and decorative gray shapes (circles and trapezoids) on the left side.

Order
forms

Lined area for notes, featuring horizontal blue lines and a decorative pattern of gray circles in the bottom right corner.



CATALOGUE



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