

Nexans



High Temperature

ELCUFLON[®]

General

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Explanation of type designation
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Type programme

Hook-up Wires

1. AWG Wires

- 1.1 ETFE-insulated, especially for Wire-Wrap
- 1.2 PEIC-insulated, zero halogen
- 1.3 PEEK-insulated, zero halogen
- 1.4 PTFE-insulated

Hook-up Strands

2.1 AWG Strands

- 2.1.1 ETFE-insulated, UL approved
- 2.1.2 PEIC-insulated, zero halogen
- 2.1.3 PEEK-insulated, zero halogen
- 2.1.4 PTFE-insulated

2.2 Metric Strands

FEP-insulated, reduced diameter

Control and Power Cables

- 3. FEP/PTFE control cables

Diesel Engine Cables for Ship

- 4.1 FEP-insulated, glass fibre braided, armoured (GSD)
- 4.2 FEP-insulated, inner jacket FEP, armoured, FEP-sheathed (EDE)
- 4.3 FEP-insulated, armoured, FEP-sheathed (DE)

High Tension Ignition Cables

- 5. FEP-insulated

Properties of ELCUFLON® Cables

ELCUFLON® is our registered trademark for high temperature cables with insulation based on Fluorocarbonpolymeres resp. in zero halogen version with Polyetheretherketone.

ETFE Ethylene-Tetrafluoroethylene copolymer
 FEP Perfluoroethylene-Propylene copolymer
 PEEK Polyetheretherketone
 PTFE Polytetrafluoroethylene
 PFA Perfluoroalkoxy-Tetrafluoroethylene copolymer
 PEIC Polyetherimid copolymer

ELCUFLON® cables offer an outstanding temperature resistance











ETFE	below -180°C up to +150°C
FEP	below -180°C up to +180°C/+200°C
PEEK	below -180°C up to +220°C
PTFE, PFA	below -180°C up to +260°C
PEIC	below -180°C up to +130°C

Additional outstanding properties of ELCUFLON® cables:

- Resistance against soldering temperature (no shrinking or melting)
- Exceptional flame resistance
- High insulation resistance
- Minimum dielectric loss
- High dielectric strength
- No water absorbtion
- Best chemical resistance
- Absolute weather resistance
- Excellent cut and abrasion resistance
- Space saving due to thin wall thickness
- High radiation resistance (PEEK)
- High tensile strength (PEEK)
- Zero halogen (PEEK/PEIC)

Upon request we manufacture special constructions in combination with other insulation materials, e.g. PE, TPU or PVC

Colour Code

				
0 orange	1 black	2 white	3 grey	4 red
				
5 blue	6 yellow	7 green	8 violet	9 brown

Additional colour distinction by spiralized colour stripes

Technical Data

Material Properties	Unit	ETFE (7Y)	PEIC	FEP (6Y)
max. continuous operating temperature	°C	+ 150	+ 130	+ 200
Cold resistance	below °C	- 180	- 60	- 180
Tensile strength	N/mm ²	30	20	10
Elongation at break	%	150	50	200
Volume resistivity	Ω x cm at + 20°C	10 ¹⁶	4,6 x 10 ¹⁶	2 x 10 ¹⁸
Dielectric constant ε _r (1 MHz)		2,6	2,9	2,1
Dissipation factor δ (1 MHz)		0,0008	0,0056*)	0,0002
Oxygene index	%	30	46	95
Irradiation resistance	Gy (rad)	10 ⁵ (10 ⁷)	10 ⁴ (10 ⁶)	10 ⁴ (10 ⁶)

*) measured at 100 kHz

Material Properties	Unit	PEEK	PTFE/PFA (5Y/14Y)
max. continuous operating temperature	°C	+ 220	+ 260
Cold resistance	below °C	- 180	- 180
Tensile strength	N/mm ²	70	20
Elongation at break	%	50	200
Volume resistivity	Ω x cm at + 20°C	10 ¹⁶	10 ¹⁸ /10 ¹⁶
Dielectric constant ε _r (1 MHz)		3,2	2,1
Dissipation factor δ (1 MHz)		0,003	0,0002
Oxygene index	%	35	95
Irradiation resistance	Gy (rad)	10 ⁷ (10 ⁹)	10 ³ (10 ⁵)

Example of type codes

No. of cores	A 1. Letter operating voltage	B 2. Letter Insulation	C 3./4. Letter Conductor surface	D 1. Group of figures AWG- dimens. of conductor	E 2. Group of figures No. of Strands and AWG	F 4./5. Letter Screen	G 5./6. Letter Sheath	Remarks
	M	E		24 - 1936				
	T	X	N	30 - 738				
	M			28 - 736				
	H			18 - 118				
	M	T	Z	30 - 130				Typ 2
2	T	X		26 - 734		S	Y	
4	T	X		20 - 1932		Z	E	
		C						

A 1. Letter – max. operating voltage

- .M 250 V (test voltage 1500 V)
- .T 600 V (test voltage 2000 V)
- .H 1000 V (test voltage 3000 V)

B 2. Letter – Insulation material

- .X PTFE extruded
- .E FEP extruded
- .T ETFE extruded
- .Pk PEEK extruded
- .C PEIC extruded

C 3./4. Letter – Conductor surface

- .N nickel plated (cont. operating temperature up to + 260°C)
- . omission silver plated (cont. operating temperature up to + 200°C)
- .Z tinned (cont. operating temperature up to + 180°C)
- .BC bare (cont. operating temperature up to + 180°C)

D 1. Group of figures

- . AWG dimension of conductor (in case of metric dimensions cross section)

E 2. Group of figures

- . In case of 3 figures the 1st one stands for the no. of single strands, the 2nd and 3rd figure stand for the AWG size of the single wire
- . In case of 4 figures the 1st and 2nd stand for the no. of single wires, the 3rd and 4th figure stand for the AWG size of the single wire
- . In case of metric dimensions the cross section is completed by the no. of single wires and their diameter

F 4./5. Letter – Screen

- (only application for control cables)
- .N copper nickel plated
- .S copper silver plated
- .Z copper tinned

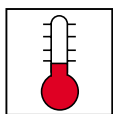
G 5./6. Letter – Sheath

- (only application for control cables)
- .TJ PTFE wrapped tape
- .E FEP extruded
- .Y PVC extruded

**Dimensions and Constructions
of solid and stranded Wires
according to AWG**

AWG Gauge	Solid wires		Stranded wires	
	Diameter mm	Cross section mm ²	Cross section mm ²	Construction
32	0,203	0,032	0,035	7 x 0,079
(31)	0,226	0,040		
30	0,254	0,051	0,055	7 x 0,102
(29)	0,287	0,065		
28	0,320	0,081	0,093	7 x 0,127
(27)	0,361	0,102	0,096	19 x 0,079
26	0,404	0,128	0,14	7 x 0,160
(25)	0,455	0,162	0,15	19 x 0,102
24	0,511	0,205	0,22	7 x 0,203
(23)	0,574	0,259	0,25	19 x 0,127
22	0,643	0,324	0,34	7 x 0,254
(21)	0,724	0,411	0,38	19 x 0,160
20	0,813	0,517	0,56	7 x 0,320
(19)	0,912	0,654	0,60	19 x 0,203
18	1,024	0,823	0,88	7 x 0,404
(17)	1,151	1,039	0,93	19 x 0,254
16	1,290	1,309	1,25	7 x 0,404
(15)	1,450	1,652		19 x 0,287
14	1,628	2,084	1,93	19 x 0,361
(13)	1,829	2,627	2,44	37 x 0,287
12	2,052	3,308	3,02	19 x 0,455
(11)	2,304	4,168	2,80	37 x 0,320
10	2,588	5,262	4,65	19 x 0,455
(9)	2,906	6,632		37 x 0,320

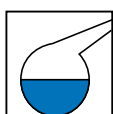
Pictographs



Operating temperature



Weather resistance



Chemical resistance



Halogen free



Fire retardant

Type Approval Certificates

UL-Style no. 1508, 1513,
1516, 1517, 1523, 1609,
1610 (+ 105 °C),
10126 (+ 150 °C/600 V)

Applications

Solid Hook-up Wires with
insulation for Wire-Wrap®
Solutions e.g. within control
panels, switch boards,
temperature sensors

250/600 V

**Max core temperature:
150 °C**

Design

1. Conductor

Solid copper conductor tinned,
alternatively silver plated or
bare copper

2. Insulation

ETFE extruded

Standards

DIN VDE 0881

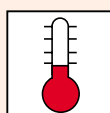
Type Colours

0 - 9 (Codes page 2)

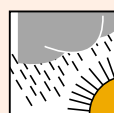


250 V operating voltage

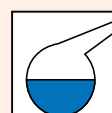
AWG-Gauge	Cross-section mm ²	Conductor diameter mm	Outer diameter		Reference to		Type Colours Code page 2
			min mm	max mm	DIN VDE	NEXANS	
30	0,05	0,25	0,49	0,61	7Y 0,25/0,55	MT ¹⁾ 30-130	0 - 9
30	0,05	0,25	0,49	0,61	7YV 0,25/0,55	MTZ ¹⁾ 30-130	0 - 9
28	0,08	0,32	0,56	0,68	7YV 0,32/0,6	MTZ ¹⁾ 28-128	0 - 9
26	0,13	0,40	0,64	0,76	7YV 0,40/0,7	MTZ ¹⁾ 26-126	0 - 9
24	0,20	0,51	0,74	0,86	7YV 0,50/0,8	MTZ ¹⁾ 24-124	0 - 9
22	0,32	0,64	0,87	0,99	7YV 0,63/0,95	MTZ ¹⁾ 22-122	0 - 9
20	0,52	0,81	1,04	1,17	7YV 0,80/1,1	MTZ ¹⁾ 20-120	2, 5, 7



-180°C / +150°C



good



yes

ETFE (7Y)

600 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor diameter mm	Outer diameter		Reference to		Type Colours Code page 2
			min mm	max mm	DIN VDE	NEXANS	
30	0,05	0,25	0,65	0,85	7YV 0,25/0,75	TTZ ¹⁾ 30-130	0 - 9 1, 5, 6
28	0,08	0,32	0,72	0,92	7YV 0,32/0,80	TTZ ¹⁾ 28-128	
26	0,13	0,40	0,80	1,00	7YV 0,40/0,90	TTZ ¹⁾ 26-126	
24	0,20	0,51	0,90	1,10	7YV 0,50/1,0	TTZ ¹⁾ 24-124	
22	0,32	0,64	1,03	1,23	7YV 0,63/1,2	TTZ ¹⁾ 22-122	
20	0,52	0,81	1,20	1,40	7YV 0,80/1,3	TTZ ¹⁾ 20-120	

- ¹⁾ We distinguish between type 1 and type 2
- for Wire Wrap-technique we recommend type 1, precut lengths of wires are employed
 - If self cutting and stripping tools i.e. CSW or KAA are employed only Type 2 is recommended.
- Type MT 30-130-05 is manufactured with limited outer diameter to fit with Wire Wrap tools

Min. order quantity for special colours and types = 12 km



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Applications

250/600 V

Stranded Hook-up Wires with halogenfree PEIC-Insulation for Wire-Wrap® Solutions e.g. used in sensitive electronic equipment and analytic equipment

**Max core temperature:
130 °C**

Design

1. Conductor

Solid copper conductor tinned, alternatively silver plated or bare copper

2. Insulation

PEIC extruded

Standards

according to DIN VDE 0881

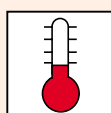


Type Colours

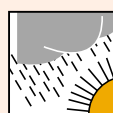
0 - 9 (Code page 2)

250 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to NEXANS	Type colours Code page 2
			min mm	max mm		
30	0,05	0,25	0,49	0,61	MC 30-130	0 - 9
30	0,05	0,25	0,49	0,61	MCZ 30-130	0 - 9
28	0,08	0,32	0,56	0,68	MCZ 28-128	0 - 9
26	0,13	0,40	0,64	0,76	MCZ 26-126	0 - 9
24	0,20	0,51	0,74	0,86	MCZ 24-124	0 - 9
22	0,32	0,64	0,87	0,99	MCZ 22-122	0 - 9
20	0,52	0,81	1,04	1,17	MCZ 20-120	2, 5, 7



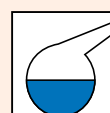
-180°C/+150°C



good



yes



yes

PEIC

600 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to NEXANS	Type colours Code page 2
			min mm	max mm		
30	0,05	0,25	0,65	0,85	TCZ 30-130	0 - 9 1, 5, 6
28	0,08	0,32	0,72	0,92	TCZ 28-128	
26	0,13	0,40	0,80	1,00	TCZ 26-126	
24	0,20	0,51	0,90	1,10	TCZ 24-124	
22	0,32	0,64	1,03	1,23	TCZ 22-122	
20	0,52	0,81	1,20	1,40	TCZ 20-120	

Min. order quantity for special types and colours = 12 km



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250 V

Applications

Zero halogen solid Hook-up wires with PEEK-Insulation also for Wire-Wrap® Solutions

**Max core temperature:
200 °C**

Design

1. Conductor

Depending on type
Solid copper conductor silver¹⁾
or nickel²⁾ plated

2. Insulation

PEEK (Polyetheretherketone)
extruded, zero halogene

Standards

Construction according to
DIN VDE 0881

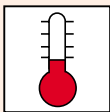
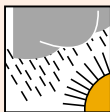

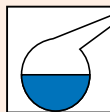


Type Colours

1, 4, 5, 7, 9 (Code page 2)

AWG-Gauge	Cross-section mm ²	Conductor diameter mm	Outer diameter		Reference to	Type colours Code page 2
			min mm	max mm		
30	0,05	0,25	0,49	0,59	MPk-30-130	1, 4, 5, 7, 9
28	0,08	0,32	0,56	0,66	MPk-28-128	
26	0,13	0,40	0,64	0,74	MPk-26-126	
24	0,20	0,51	0,74	0,84	MPk-24-124	
22	0,32	0,64	0,87	0,97	MPk-22-122	
20	0,52	0,81	1,04	1,15	MPk-20-120	

Min. order quantity for special types and colours = 12 km

			
-180°C/+200°C ¹⁾ -180°C/+220°C ²⁾	good	yes	yes



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Type Approval Certificates

UL-Style no. 1199
(+ 200 °C/600 V)

Applications

Solid Hook-up Wires with PTFE-Insulation used both in chemically and high temperature environments

250/600 V

**Max core temperature:
200 °C**

Design

1. Conductor

Solid copper conductor silver¹⁾ plated, alternatively nickel²⁾ plated

2. Insulation

PTFE extruded

Standards

DIN VDE 0881
MIL-W-16878E, IEC 673

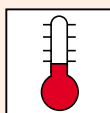
Type Colours

0 - 9 (Code page 2)
600 V: 2, 5 (Code page 2)

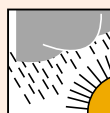


250 V operating voltage

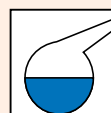
AWG-Gauge	Cross-section mm ²	Conductor diameter mm	Outer diameter		Reference to	
			min mm	max mm	DIN VDE	NEXANS
30	0,03	0,20	0,46	0,56	Li5Y -	MX 32-132
30*)	0,05	0,25	0,51	0,61	Li5Y 0,25/0,55	MX 30-130
28*)	0,08	0,32	0,58	0,68	Li5Y 0,32/0,6	MX 28-128
26*)	0,13	0,40	0,66	0,76	Li5Y 0,4/0,7	MX 26-126
24*)	0,20	0,51	0,74	0,86	Li5Y 0,5/0,8	MX 24-124
22	0,32	0,64	0,89	0,99	Li5Y 0,63/0,95	MX 22-122
20	0,52	0,81	1,07	1,17	Li5Y 0,8/1,1	MX 20-120



-180°C/+200°C¹⁾
-180°C/+260°C²⁾



good



yes

PTFE (5Y)

600 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor diameter mm	Outer diameter		Reference to	
			min mm	max mm	DIN VDE	NEXANS
32	0,03	0,20	0,64	0,81	Li5Y -	TX 32-132
30	0,05	0,25	0,66	0,85	Li5Y 0,25/0,75	TX 30-130
28	0,08	0,32	0,74	0,92	Li5Y 0,32/0,80	TX 28-128
26	0,13	0,40	0,81	1,00	Li5Y 0,4/0,9	TX 26-126
24	0,20	0,51	0,91	1,10	Li5Y 0,5/1,0	TX 24-124
22	0,32	0,64	1,04	1,23	Li5Y 0,63/1,2	TX 22-122
20	0,52	0,81	1,22	1,40	Li5Y 0,8/1,3	TX 20-120
18	0,82	1,02	1,42	1,60	Li5Y 1,0/1,5	TX 18-118
16	1,31	1,29	1,7	1,9	Li5Y 1,3/1,8	TX 16-116
14	2,08	1,63	2,03	2,23	Li5Y 1,6/2,1	TX 14-114
12	3,31	2,05	2,50	2,70	Li5Y 2,1/2,6	TX 12-112

¹⁾ also according to IEC 673

Min. order quantity for special colours and types AWG 12-18 = 3 km



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Type Approval Certificates

UL-Style no. 1508, 1513, 1516,
1517, 1523, 1609,
= AWG 32-20 as MTZ types
UL-Style no. 1610
= AWG 32-10 as TTZ types
(+ 150 °C)

Applications

Stranded Hook-up Wires with
ETFE-Insulation for medical,
electronic or automotive solutions

250/600 V

**Max core temperature:
150 °C**

Design

1. Conductor

Stranded copper conductor
finned, alternatively silver
plated or bare

2. Insulation

ETFE extruded

Standards

DIN VDE 0881

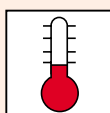


Type Colours

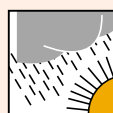
0 - 9 (Code page 2)

250 V operating voltage

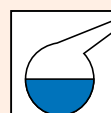
AWG-Gauge	Cross-section mm ²	Conductor diameter n x mm	Outer diameter		Reference to	
			min mm	max mm	DIN VDE	NEXANS
32	0,04	7 x 0,08	0,48	0,62	Li7YV 0,035/0,55	MTZ 32-740
30	0,06	7 x 0,10	0,54	0,68	Li7YV 0,055/0,60	MTZ 30-738
28	0,09	7 x 0,13	0,60	0,74	Li7YV 0,079/0,70	MTZ 28-736
26	0,15	19 x 0,10	0,76	0,83	Li7YV ¹⁾ 0,15(19)/0,8	MTZ ¹⁾ 26-1938
24	0,25	19 x 0,13	0,86	0,97	Li7YV ¹⁾ 0,22(19)/0,9	MTZ ¹⁾ 24-1936
22	0,38	19 x 0,16	1,04	1,12	Li7YV ¹⁾ 0,36(19)/1,1	MTZ ¹⁾ 22-1934
20	0,60	19 x 0,20	1,24	1,32	Li7YV ¹⁾ 0,59(19)/1,3	MTZ ¹⁾ 20-1932



-180°C / +150°C



good



yes

ETFE (7Y)

250 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor diameter n x mm	Outer diameter		Reference to	
			min mm	max mm	DIN VDE	NEXANS
18	0,93	19 x 0,25	1,50	1,60	Li7YV ¹⁾ 0,93(19)/1,55	MTZ ¹⁾ 18-1930
16	1,25	19 x 0,29	1,73	1,83	Li7YV ¹⁾ 1,3(19)/1,8	MTZ ¹⁾ 16-1929
14	1,93	19 x 0,36	2,11	2,21	Li7YV ¹⁾ 1,9(19)/2,15	MTZ ¹⁾ 14-1927

600 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor diameter n x mm	Outer diameter		Reference to	
			min mm	max mm	DIN VDE	NEXANS
32	0,04	7 x 0,08	0,66	0,86	Li7YV 0,035/0,75	TTZ 32-740
30	0,06	7 x 0,10	0,71	0,91	Li7YV 0,055/0,8	TTZ 30-738
28	0,09	7 x 0,13	0,79	0,99	Li7YV 0,079/0,9	TTZ 28-736
26	0,14	7 x 0,16	0,89	1,09	Li7YV 0,12/1,0	TTZ 26-734
26	0,15	19 x 0,10	0,89	1,09	Li7YV 0,12/1,0	TTZ 26-1938
24	0,25	19 x 0,13	1,02	1,22	Li7YV ²⁾ 0,22/1,1	TTZ ²⁾ 24-1936
22	0,38	19 x 0,16	1,17	1,37	Li7YV ²⁾ 0,34/1,3	TTZ ²⁾ 22-1934
20	0,60	19 x 0,20	1,37	1,58	Li7YV ²⁾ 0,56/1,5	TTZ ²⁾ 20-1932
18	0,93	19 x 0,25	1,65	1,88	Li7YV ²⁾ 0,93/1,8	TTZ ²⁾ 18-1930
16	1,25	19 x 0,29	1,85	2,10	Li7YV ²⁾ 1,3/2,0	TTZ ²⁾ 16-1929
14	1,93	19 x 0,36	2,24	2,45	Li7YV ²⁾ 1,9/2,3	TTZ ²⁾ 14-1927
14	2,44	37 x 0,29	2,24	2,45	Li7YV ²⁾ 1,9/2,3	TTZ ²⁾ 14-3729
12	3,02	19 x 0,45	2,72	2,95	Li7YV ²⁾ 3,2/2,8	TTZ ²⁾ 12-1925
10	4,65	37 x 0,40	3,23	3,47	-	TTZ ²⁾ 10-3726

¹⁾ also according to IEC 673

²⁾ Min. order quantity for special colours and types
 AWG 32-26 = 12 km; AWG 24-18 = 6 km; AWG 16-10 = 3 km



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Applications
Stranded Hook-up Wires with
PEIC-Insulation

250/600 V

**Max core temperature:
130 °C**

Design

1. Conductor

Stranded copper conductor
tinned, alternatively silver
plated

2. Insulation

PEIC extruded

Standards

according to DIN VDE 0881

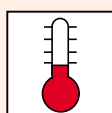


Type Colours

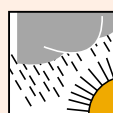
0 - 9 (Code page 2)

250 V operating voltage

AWG- Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to NEXANS	
			min mm	max mm		
32	0,04	7 x 0,08	0,48	0,62	MCZ	32-740
30	0,06	7 x 0,10	0,54	0,68	MCZ	30-738
28	0,09	7 x 0,13	0,60	0,74	MCZ	28-736
26	0,15	19 x 0,10	0,76	0,83	MCZ	26-1938
24	0,25	19 x 0,13	0,86	0,97	MCZ	24-1936
22	0,38	19 x 0,16	1,04	1,12	MCZ	22-1934
20	0,60	19 x 0,20	1,24	1,32	MCZ	20-1932



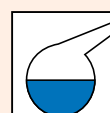
-180°C/+150°C



good



yes



yes

PEIC

250 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to NEXANS	
			min mm	max mm		
18	0,93	19 x 0,25	1,50	1,60	MCZ	18-1930
16	1,25	19 x 0,29	1,73	1,83	MCZ	16-1929
14	1,93	19 x 0,36	2,11	2,21	MCZ	14-1927

600 V operating voltage

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to NEXANS	
			min mm	max mm		
32	0,04	7 x 0,08	0,66	0,86	TCZ	32-740
30	0,06	7 x 0,10	0,71	0,91	TCZ	30-738
28	0,09	7 x 0,13	0,79	0,99	TCZ	28-736
26	0,14	7 x 0,16	0,89	1,09	TCZ	26-734
26	0,15	19 x 0,10	0,89	1,09	TCZ	26-1938
24	0,25	19 x 0,13	1,02	1,22	TCZ	24-1936
22	0,38	19 x 0,16	1,17	1,37	TCZ	22-1934
20	0,60	19 x 0,20	1,37	1,58	TCZ	20-1932
18	0,93	19 x 0,25	1,65	1,88	TCZ	18-1930
16	1,25	19 x 0,29	1,85	2,10	TCZ	16-1929
14	1,93	19 x 0,36	2,24	2,45	TCZ	14-1927
14	2,44	37 x 0,29	2,24	2,45	TCZ	14-3729
12	3,02	19 x 0,45	2,72	2,95	TCZ	12-1925
10	4,65	37 x 0,40	3,23	3,47	TCZ	10-3726

Min. order quantity for special types and colours AWG 32 - 20 = 3 km



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Type Approval Certificates

As an element of a cable according to VG 95218 T11

Applications

Zero halogen Hook-up strands
PEEK-Insulation
Space saving wiring due to extremely thin wall thickness of the insulation maintaining high mechanical and dielectric strength. The cables are flame retardant and zero halogen (FRNC).

250 V

**Max core temperature:
200 °C**

Design

1. Conductor

Depending on type
Stranded copper conductor
tinned¹⁾, silver²⁾ or nickel³⁾ plated

2. Insulation

PEEK (Polyetheretherketone)
extruded,

Standards

Construction according to
DIN VDE 0881

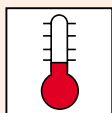
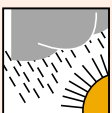

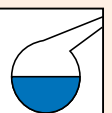


Type Colours

0, 1, 3, 4, 5, 6, 7, 8, 9
(Code page 2)

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference
			min mm	max mm	
30	0,06	7 x 0,10	0,56	0,66	MPk 30-738
28	0,09	7 x 0,13	0,64	0,74	MPk 28-736
26	0,14	7 x 0,16	0,74	0,83	MPk 26-734
24	0,25	19 x 0,13	0,86	0,97	MPk 24-1936
22	0,38	19 x 0,16	1,02	1,12	MPk 22-1934
20	0,60	19 x 0,20	1,22	1,32	MPk 20-1932

Min. order quantity for special types and colours = 6 km

				
-180°C/+150°C ¹⁾ -180°C/+200°C ²⁾ -180°C/+220°C ³⁾	good	yes	yes	yes



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PTFE (5Y)

Type Approval Certificates

UL-Style No. 1199
(600 V/200 °C)

Applications

Stranded Hook-up Wires with PTFE-Insulation e.g. for temperature-, oxygen sensors, ignition cables

250/600/1000 V

**Max core temperature:
200 °C/260 °C**

Design

1. Conductor

Stranded copper conductor silver¹⁾ plated, alternatively nickel²⁾ plated (only MIL)

2. Insulation

PTFE extruded

Standards

DIN VDE 0881,
MIL-W-16878, IEC 673

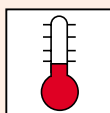


Type Colours

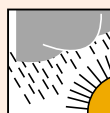
0 - 9 (Codes page 2)

250 V operating voltage, type ET according to MIL

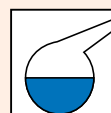
AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to		Type Colours
			min mm	max mm	DIN VDE	NEXANS	
32*)	0,04	7 x 0,08	0,51	0,61	Li5Y 0,035/0,55	MX 32-740	0 - 9
30*)	0,06	7 x 0,10	0,56	0,66	Li5Y 0,055/0,6	MX 30-738	
28*)	0,09	7 x 0,13	0,64	0,74	Li5Y 0,079/0,7	MX 28-736	
26*)	0,14	7 x 0,16	0,74	0,83	Li5Y 0,12/0,8	MX 26-734	2, 4, 5
26	0,15	19 x 0,10	0,74	0,83	Li5Y 0,12/0,8	MX 26-1938	
24*)	0,22	7 x 0,20	0,86	0,97	Li5Y 0,22/0,9	MX 24-732	1, 4, 5
24	0,25	19 x 0,13	0,86	0,97	Li5Y 0,22/0,9	MX 24-1936	



-180°C/+200°C¹⁾
-180°C/+260°C²⁾



good



yes

PTFE (5Y)

250 V operating voltage, type ET according to MIL

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to		Type Colours
			min mm	max mm	DIN VDE	NEXANS	
22*)	0,34	7 x 0,25	1,02	1,12	Li5Y 0,34/1,1	MX 22-730	2
22	0,38	19 x 0,16	1,02	1,12	Li5Y 0,34/1,1	MX 22-1934	
20*)	0,56	7 x 0,32	1,22	1,32	Li5Y 0,56/1,3	MX 20-728	
20	0,60	19 x 0,20	1,22	1,32	Li5Y 0,56/1,3	MX 20-1932	

600 V operating voltage, type E according to MIL

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to		Type Colours
			min mm	max mm	DIN VDE	NEXANS	
32*)	0,04	7 x 0,08	0,66	0,86	Li5Y 0,035/0,75	TX 32-740	4
30*)	0,06	7 x 0,10	0,71	0,91	Li5Y 0,055/0,8	TX 30-738	2
28*)	0,09	7 x 0,13	0,79	0,99	Li5Y 0,079/0,9	TX 28-736	
26*)	0,14	7 x 0,16	0,89	1,09	Li5Y 0,12/1,0	TX 26-734	0 - 9
26	0,15	19 x 0,10	0,89	1,09	Li5Y 0,12/1,0	TX 26-1936	1, 2, 4, 5
24*)	0,22	7 x 0,20	1,02	1,22	Li5Y 0,22/1,1	TX 24-732	0 - 9
24	0,25	19 x 0,13	1,02	1,22	Li5Y 0,22/1,1	TX 24-1936	0 - 9
22	0,34	7 x 0,25	1,17	1,37	Li5Y 0,34/1,3	TX 22-730	0 - 9
22	0,38	19 x 0,16	1,17	1,37	Li5Y 0,34/1,3	TX 22-1934	2, 4
20	0,56	7 x 0,32	1,37	1,58	Li5Y 0,56/1,5	TX 20-728	0 - 9
20	0,60	19 x 0,20	1,37	1,58	Li5Y 0,56/1,5	TX 20-1932	1-5
18	0,88	7 x 0,40	0,65	0,88	Li5Y -	TX 18-726	2
18	0,93	19 x 0,25	1,65	1,88	Li5Y 0,93/1,8	TX 18-1930	1, 2,
16	1,25	19 x 0,29	1,85	2,10	Li5Y 1,3/2,0	TX 16-1929	1, 2, 4, 5, 7
14	1,93	19 x 0,36	2,24	2,45	Li5Y 1,9/2,3	TX 14-1927	1, 2, 4
14	2,44	37 x 0,29	2,24	2,45	Li5Y 1,9/2,3	TX 14-3729	2
12	3,02	19 x 0,45	2,72	2,95	Li5Y 3,2/2,8	TX 12-1925	4
10	4,65	37 x 0,40	3,23	3,47	Li5Y -	TX 10-3726	

1000 V operating voltage, type EE according to MIL

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter		Reference to		Type Colours
			min mm	max mm	DIN VDE	NEXANS	
32	0,04	7 x 0,08	0,91	1,09	Li5Y -	HX 32-740	
30	0,06	7 x 0,10	0,97	1,17	Li5Y -	HX 30-738	
28	0,09	7 x 0,13	1,04	1,25	Li5Y -	HX 28-736	
26*)	0,14	7 x 0,16	1,14	1,35	Li5Y 0,12/1,3	HX 26-734	
26	0,15	19 x 0,10	1,14	1,35	Li5Y 0,12/1,3	HX 26-1938	
24*)	0,22	7 x 0,20	1,27	1,47	Li5Y 0,22/1,4	HX 24-732	
24	0,25	19 x 0,13	1,27	1,47	Li5Y 0,22/1,4	HX 24-1936	
22	0,34	7 x 0,25	1,42	1,63	Li5Y 0,34/1,6	HX 22-730	
22	0,38	19 x 0,16	1,42	1,63	Li5Y 0,34/1,6	HX 22-1934	
20	0,56	7 x 0,32	1,63	1,83	Li5Y 0,56/1,8	HX 20-728	
20	0,60	19 x 0,20	1,63	1,83	Li5Y 0,56/1,8	HX 20-1932	
18	0,93	19 x 0,25	1,88	2,13	Li5Y 0,93/2,1	HX 18-1930	1, 4
16	1,25	19 x 0,29	2,11	2,41	Li5Y 1,3/2,3	HX 16-1929	1, 4
14	1,93	19 x 0,36	2,49	2,80	Li5Y 1,9/2,6	HX 14-1927	
14	2,44	37 x 0,29	2,49	2,80	Li5Y 1,9/2,6	HX 14-3729	1
12	3,02	19 x 0,45	2,97	3,30	Li5Y 3,2/3,1	HX 12-1925	
10	4,65	37 x 0,40	3,48	3,82	Li5Y 4,6/3,6	HX 10-3726	

*) also according to IEC 673

Min. order quantity for special types or colours AWG 32 - 22 = 6 km; AWG 20 - 14 = 3 km; AWG 12 - 10 = 1 km



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Type Approval Certificates

VDE registered No. 529629142
for TE and TEBC
(0,50 - 10,0 mm²)

Applications

Hook-up Strands in Metric Cross-Sections to be used in appliances, lighting equipment, electronics

600 V

**Max core temperature:
200 °C**

Design

1. Conductor

Stranded copper conductor
silver plated¹⁾ TE
tinned²⁾ TEZ
bare²⁾ TEBC

2. Insulation

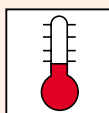
FEP extruded

Type Colours

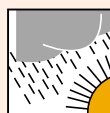
0 - 9 (Codes page 2)



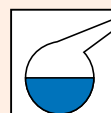
Cross section mm ²	Conductor construction n x mm	Wall thickness mm	Outer diameter mm	Reference
0,25	14 x 0,15	0,25	1,16	0,25 - 1415
0,50	16 x 0,20	0,30	1,55	0,50 - 1620
0,75	24 x 0,20	0,30	1,70	0,75 - 2420
1,0	32 x 0,20	0,30	1,90	1,00 - 3220
1,5	30 x 0,25	0,30	2,20	1,5 - 3025
2,5	50 x 0,25	0,30	2,70	2,5 - 5025
4,0	56 x 0,30	0,30	3,20	4,0 - 5630
6,0	84 x 0,30	0,30	4,30	6,0 - 8430



-180°C/+200°C¹⁾
-180°C/+180°C²⁾



good



yes

I FEP (6Y)

Cross section mm ²	Conductor construction n x mm	Wall thickness mm	Outer diameter mm	Reference
10,0	80 x 0,40	0,40	5,60	10 - 8040
16,0	126 x 0,40	0,40	6,80	16 - 12640
25,0	196 x 0,40	0,50	8,50	25 - 19640
35,0	276 x 0,40	0,50	9,50	35 - 27640
50,0	396 x 0,40	0,60	11,70	50 - 39640
70,0	360 x 0,50	0,60	13,70	70 - 36050
95,0	475 x 0,50	0,70	15,90	95 - 47550

Min. order quantity for special types or colours 0,25 - 1,5 mm² = 8 km; 2,5 - 6 mm² = 4 km; 10 - 95 mm² = 1 km



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FEP (6Y)/PTFE (5Y)

600 V

Applications

Control and Power Cables with FEP/PTFE-Insulation for universal use in harsh chemical and temperature environments

**Max core temperature:
200 °C**

Design

1. Conductor

Stranded copper conductor silver plated

2. Insulation

PTFE-(TX) or FEP-(TE) insulated

3. Screen

Braiding of silver plated (S) or nickel plated (N) copper wires

4. Sheath

FEP(E)

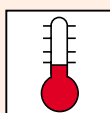
Standards

Single cores acc. to
DIN VDE 0881,
MIL-W-16878 E,
IEC 673 with PTFE-(TX) or
FEP-(TE) insulation

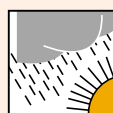


One core

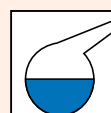
AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter mm	Reference
30	0,06	7 x 0,10	1,8	1 TX (alt. TE) 30-738 SE
28	0,09	7 x 0,13	1,9	1 TX (alt. TE) 28-736 SE
26	0,14	7 x 0,16	2,0	1 TX (alt. TE) 26-734 SE
24	0,24	19 x 0,13	2,1	1 TX (alt. TE) 24-1936 SE
22	0,38	19 x 0,16	2,3	1 TX (alt. TE) 22-1934 SE
20	0,62	19 x 0,20	2,5	1 TX (alt. TE) 20-1932 SE
18	0,96	19 x 0,26	2,9	1 TX (alt. TE) 18-1930 SE



-180°C / +200°C



good



yes

I FEP (6Y)/PTFE (5Y)

Two cores

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter mm	Reference
30	0,06	7 x 0,10	2,7	2 TX (alt. TE) 30- 738 SE
28	0,09	7 x 0,13	2,9	2 TX (alt. TE) 28- 736 SE
26	0,14	7 x 0,16	3,1	2 TX (alt. TE) 26- 734 SE
24	0,24	19 x 0,13	3,3	2 TX (alt. TE) 24-1936 SE
22	0,38	19 x 0,16	3,8	2 TX (alt. TE) 22-1934 SE
20	0,62	19 x 0,20	4,2	2 TX (alt. TE) 20-1932 SE
18	0,96	19 x 0,26	5,0	2 TX (alt. TE) 18-1930 SE

Three cores

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter mm	Reference
30	0,06	7 x 0,10	2,9	3 TX (alt. TE) 30- 738 SE
28	0,09	7 x 0,13	3,0	3 TX (alt. TE) 28- 736 SE
26	0,14	7 x 0,16	3,2	3 TX (alt. TE) 26- 734 SE
24	0,24	19 x 0,13	3,5	3 TX (alt. TE) 24-1936 SE
22	0,38	19 x 0,16	4,0	3 TX (alt. TE) 22-1934 SE
20	0,62	19 x 0,20	4,5	3 TX (alt. TE) 20-1932 SE
18	0,96	19 x 0,26	5,3	3 TX (alt. TE) 18-1930 SE

Four cores

AWG-Gauge	Cross-section mm ²	Conductor construction n x mm	Outer diameter mm	Reference
30	0,06	7 x 0,10	3,0	4 TX (alt. TE) 30- 738 SE
28	0,09	7 x 0,13	3,2	4 TX (alt. TE) 28- 736 SE
26	0,14	7 x 0,16	3,5	4 TX (alt. TE) 26- 734 SE
24	0,24	19 x 0,13	4,0	4 TX (alt. TE) 24-1936 SE
22	0,38	19 x 0,16	4,4	4 TX (alt. TE) 22-1934 SE
20	0,62	19 x 0,20	5,0	4 TX (alt. TE) 20-1932 SE
18	0,96	19 x 0,26	5,7	4 TX (alt. TE) 18-1930 SE



Type Approval Certificates

These Cables have been approved by the Germanischer Lloyd as wiring cables for signal and control equipment for Diesel engines and steam boilers on ships. EDE types can be installed as control cable for refrigerations plants.

Applications

Diesel and oil resistant cables with FEP-Insulation for harnesses of ship or stationary Diesel engines

250 V

**Max core temperature:
200 °C**

Design

1. Conductor

Stranded copper conductor silver¹⁾ plated (TE), tinned²⁾ (TEZ) or bare³⁾ (TEBC) class 5 acc. to DIN VDE 0295

2. Insulation

FEP extruded (also applicable to sheath) (E)

3. Core Arrangement

2 - 10 cores stranded, where necessary with filler, and glas-fibre tape (GS, type GSD)

4. Screen

Braiding of zinc plated steel wires (D), alternatively nickel plated copper wires (N)

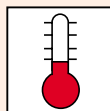
Type Colours

0 - 9 (Code page 2)

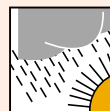


Type Series GSD

Cross-section mm ²	Conductor construction n x mm	Wall thickness of cores mm	Wall thickness		Outer diameter approx. mm	Reference TE TEZ TEBC
			Inside mm	Outside mm		
2 x 1,5	30 x 0,25	0,30	-	-	6,1	2 x 1,5-3025+GSD
3 x 1,5	30 x 0,25	0,30	-	-	6,5	3 x 1,5-3025+GSD
4 x 1,5	30 x 0,25	0,30	-	-	7,0	4 x 1,5-3025+GSD
5 x 1,5	30 x 0,25	0,30	-	-	7,6	5 x 1,5-3025+GSD
7 x 1,5	30 x 0,25	0,30	-	-	8,3	7 x 1,5-3025+GSD
8 x 1,5	30 x 0,25	0,30	-	-	9,0	8 x 1,5-3025+GSD
10 x 1,5*)	30 x 0,25	0,30	-	-	10,2	10 x 1,5-3025+GSD



-180°C/+200°C¹⁾
-180°C/+180°C²⁾



good



yes

I FEP (6Y)

Type Series EDE

Cross-section mm ²	Conductor construction n x mm	Wall thickness of cores mm	Wall thickness		Outer diameter approx. mm	Reference TE TEZ TEBC
			Inside mm	Outside mm		
2 x 1,5	30 x 0,25	0,30	0,45	0,45	7,3	2 x 1,5-3025+EDE
3 x 1,5	30 x 0,25	0,30	0,45	0,45	7,7	3 x 1,5-3025+EDE
4 x 1,5	30 x 0,25	0,30	0,45	0,45	8,2	4 x 1,5-3025+EDE
5 x 1,5	30 x 0,25	0,30	0,45	0,45	8,8	5 x 1,5-3025+EDE
7 x 1,5	30 x 0,25	0,30	0,45	0,45	9,5	7 x 1,5-3025+EDE
2 x 2,5	30 x 0,25	0,30	0,45	0,45	8,3	2 x 2,5-5025+EDE
3 x 2,5*)	30 x 0,25	0,30	0,45	0,45	8,7	3 x 2,5-5025+EDE
4 x 2,5	30 x 0,25	0,30	0,45	0,45	9,4	4 x 2,5-5025+EDE
5 x 2,5	30 x 0,25	0,30	0,45	0,45	10,2	5 x 2,5-5025+EDE
7 x 2,5	30 x 0,25	0,30	0,45	0,45	11,0	7 x 2,5-5025+EDE

Type Series DE

Cross-section mm ²	Conductor construction n x mm	Wall thickness of cores mm	Wall thickness		Outer diameter approx. mm	Reference TEBC
			Inside mm	Outside mm		
16	126 x 0,4	0,40	-	-	9,1	16,0-12640+DE

*) not approved



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FEP (6Y)

Applications

High Tension Ignition Cables with FEP-Insulation for automotive or electronic applications

1,3 bis 4,2 kV

**Max core temperature:
200 °C**

Design

1. Conductor

Solid or stranded copper conductor silver plated

2. Insulation

FEP extruded (E)

3. Screen

Braiding of silver plated copper wires (S)

4. Sheath

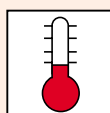
FEP extruded (E)

Special properties

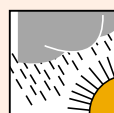
- small outer diameter
- high temperature resistance
- low capacity



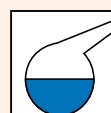
Conductor construction n x mm	Outer diameter mm	Medium immediatly break down voltage kV	Operating voltage at 50 Hz kV	Reference
1 x 0,32	0,92	18	1,3	HE 28- 128- 9,2
1 x 0,51	1,30	25	2,0	HE 24- 124- 13
1 x 0,81	2,9	20	4,2	HE 20- 120- 29
7 x 0,20	1,60	23	1,4	HE 24- 732- 16
7 x 0,20	2,10	20	1,4	HE 24- 732- 16S
7 x 0,40	3,10	60	3,0	HE 18- 726- 31



-180°C / +200°C



good



yes

FEP (6Y)

Conductor construction n x mm	Outer diameter mm	Medium immediatly break down voltage kV	Operating voltage at 50 Hz kV	Reference
19 x 0,25	3,80	68	2,5	HE 18- 1930- 38
19 x 0,25	5,30	65	2,5	HE 18- 1930- 38SE
19 x 0,29	3,50	53	2,2	HE 16- 1939- 35
19 x 0,36	3,90	46	2,0	HE 14- 1927- 39
37 x 0,40	6,80	68	3,0	HE 10- 3726- 68



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