

The **BIG** names in Cable  
for the **BIG** jobs in Cable



# Treoflex Cables



Treotham Automation now offers it's own range of Treoflex cables.

These cables are manufactured to highest International, Australian and New Zealand standards

Our range of Treoflex cables includes :

- Treoflex JZ control cables
- Treoflex PUR polyurethane control cables
- Treoflex EMC-UV emc/vsc cables
- Treoflex CY-JB emc/vsd cables
- Treoflex SDI-VSD single core emc/vsd cables
- Treoflex V90HT flexible building wire
- Treoflex Flexible earth
- Treoflex Twin figure 8
- Treoflex Instrumentation cables

Our Hamilton branch keeps large stocks and these items are usually available for immediate dispatch.

Control

Power

Crane

Single Core

High Temp

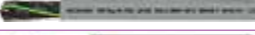

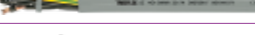

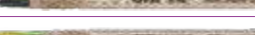




Instrumentation

EMC/VSD



Spiral Cables

Stage Lighting

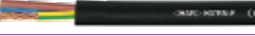








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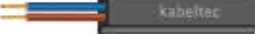



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# Treoflex JZ

Flexible control cable, number coded



### Technical Data

**Conductor Material**

Copper, Bare

**Conductor Class**

Class 5 according to DIN VDE 0295, resp. IEC 60228

**Core insulation**

PVC

**Core identification**

According DIN VDE 0293 black cores with white numerals

**Stranding**

Cores twisted in layers

**Outer sheath**

PVC

**Sheath colour**

Grey, RAL 7001

**Rated voltage [V]**

300/500

**Testing Voltage**

4000

**Conductor Resistance**

DIN VDE 0295, resp. IEC 60228

**Insulation resistance**

> 20 MΩ x km

**Current carrying capacity**

DIN VDE (see technical data)

**min. bending radius fixed [xd]**

4 x d

**min. bending radius moved [xd]**

15 x d

**working temp fixed min/max [C]**

-40°C up to +80°C

**working temp moved min/max [C]**

-15°C up to +70°C

**temp at conductor max.**

+70°C in operation, + 150°C in case of short

**Burning behaviour**

IEC 60332-1: flame-retardant and self-extinguishing

**Design:**

- fine strands of bare copper conductor
- PVC core insulation black with continuous white figure imprint
- stranding acc. to VDE 0295 class 5
- earth conductor green/yellow in other layer
- PVC outer sheath grey, RAL 7001

**Note**

G = with green-yellow earth core;  
X = without green-yellow earth core (OZ).

**Application:**

These cables are used for flexible use for medium mechanical stresses with free movement without tensile stress or forced movements in dry, moist and wet rooms but not suitable for open air, as measuring and control cables in tool machines, conveyor belts, production lines in machinery production, in air-conditioning and in steel production. The earth core is laid in the outer layer. Selected PVC-compounds guarantee a good flexibility as well as an economic and fast installation.



Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA20.0005.02.OZ	2 x 0.5	4.8	9.6	40
TA20.0005.03	3 G 0.5	5.1	14.4	46
TA20.0005.03.OZ	3 x 0.5	5.1	14.4	46
TA20.0005.04	4 G 0.5	5.7	19	56
TA20.0005.04.OZ	4 x 0.5	5.7	19	56
TA20.0005.05	5 G 0.5	6.2	24	65
TA20.0005.07	7 G 0.5	7.4	33.6	80
TA20.0005.12	12 G 0.5	9.1	58	135
TA20.0005.18	18 G 0.5	10.7	86	196
TA20.0005.25	25 G 0.5	13	120	270
TA20.0005.34	34 G 0.5	14.5	163	362
TA20.0005.40	40 G 0.5	15.8	192	434
TA20.0005.50	50 G 0.5	17.3	240	513
TA20.0005.65	65 G 0.5	20.2	312	682
TA20.0007.02.OZ	2 x 0.75	5.3	14.4	46.0
TA20.0007.03	3 G 0.75	5.6	21.6	54.0
TA20.0007.03.OZ	3 x 0.75	5.6	21.6	54.0
TA20.0007.04	4 G 0.75	6.3	28.8	66.0
TA20.0007.04.OZ	4 x 0.75	6.3	29.0	66.0
TA20.0007.05	5 G 0.75	6.9	36.0	80.0
TA20.0007.07	7 G 0.75	7.7	50.0	110.0
TA20.0007.12	12 G 0.75	10.0	86.0	179.0
TA20.0007.18	18 G 0.75	12.2	130	257
TA20.0007.25	25 G 0.75	14.5	180	365
TA20.0007.34	34 G 0.75	16.7	245	510
TA20.0007.41	41 G 0.75	18	296	607
TA20.0007.50	50 G 0.75	19.8	360	735
TA20.0010.02.OZ	2 x 1	5.6	19.2	60
TA20.0010.03	3 G 1	6.1	29	72
TA20.0010.03.OZ	3 x 1	6.1	29	72
TA20.0010.04	4 G 1	6.6	38.4	86
TA20.0010.04.OZ	4 x 1	6.6	38.4	86
TA20.0010.05	5 G 1	7.5	48	104
TA20.0010.07	7 G 1	8.1	67	141
TA20.0010.12	12 G 1	10.8	115	230
TA20.0010.18	18 G 1	12.9	173	343
TA20.0010.25	25 G 1	15.6	240	485
TA20.0010.34	34 G 1	17.9	326	650
TA20.0010.41	41 G 1	19.4	394	770
TA20.0010.50	50 G 1	21.2	480	936
TA20.0015.02.OZ	2 x 1.5	6.4	29	70
TA20.0015.03	3 G 1.5	6.8	43	90
TA20.0015.03.OZ	3 x 1.5	6.8	43	90
TA20.0015.04	4 G 1.5	7.6	58	109
TA20.0015.05	5 G 1.5	8.3	72	131
TA20.0015.07	7 G 1.5	9.2	101	184
TA20.0015.12	12 G 1.5	12.2	173	309
TA20.0015.18	18 G 1.5	14.8	259	440
TA20.0015.25	25 G 1.5	17.8	360	620
TA20.0015.34	34 G 1.5	20.2	490	830
TA20.0015.42	42 G 1.5	22	605	1007
TA20.0015.50	50 G 1.5	24.2	720	1250
TA20.0025.02.OZ	2 x 2.5	7.8	48	112
TA20.0025.03	3 G 2.5	8.3	72	148
TA20.0025.04	4 G 2.5	9.2	96	178
TA20.0025.05	5 G 2.5	10.1	120	221
TA20.0025.07	7 G 2.5	11.2	168	306
TA20.0025.12	12 G 2.5	15.1	288	498
TA20.0025.18	18 G 2.5	18.2	432	764
TA20.0025.25	25 G 2.5	22.1	600	1044
TA20.0040.04	4 G 4	10.8	154	295
TA20.0040.05	5 G 4	12.1	192	361
TA20.0040.07	7 G 4	13.4	269	458
TA20.0040.12	12 G 4	18.3	461	790
TA20.0060.04	4 G 6	13	230	424
TA20.0060.05	5 G 6	14.7	288	525
TA20.0060.07	7 G 6	16.2	403	625
TA20.0100.07	7 G 10	20.7	672	1106

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA20.0010.02.OZ	2 x 1	5.6	19.2	60
TA20.0010.03	3 G 1	6.1	29	72
TA20.0010.03.OZ	3 x 1	6.1	29	72
TA20.0010.04	4 G 1	6.6	38.4	86
TA20.0010.04.OZ	4 x 1	6.6	38.4	86
TA20.0010.05	5 G 1	7.5	48	104
TA20.0010.07	7 G 1	8.1	67	141
TA20.0010.12	12 G 1	10.8	115	230
TA20.0010.18	18 G 1	12.9	173	343
TA20.0010.25	25 G 1	15.6	240	485
TA20.0010.34	34 G 1	17.9	326	650
TA20.0010.41	41 G 1	19.4	394	770
TA20.0010.50	50 G 1	21.2	480	936
TA20.0015.02.OZ	2 x 1.5	6.4	29	70
TA20.0015.03	3 G 1.5	6.8	43	90
TA20.0015.03.OZ	3 x 1.5	6.8	43	90
TA20.0015.04	4 G 1.5	7.6	58	109
TA20.0015.05	5 G 1.5	8.3	72	131
TA20.0015.07	7 G 1.5	9.2	101	184
TA20.0015.12	12 G 1.5	12.2	173	309
TA20.0015.18	18 G 1.5	14.8	259	440
TA20.0015.25	25 G 1.5	17.8	360	620
TA20.0015.34	34 G 1.5	20.2	490	830
TA20.0015.42	42 G 1.5	22	605	1007
TA20.0015.50	50 G 1.5	24.2	720	1250
TA20.0025.02.OZ	2 x 2.5	7.8	48	112
TA20.0025.03	3 G 2.5	8.3	72	148
TA20.0025.04	4 G 2.5	9.2	96	178
TA20.0025.05	5 G 2.5	10.1	120	221
TA20.0025.07	7 G 2.5	11.2	168	306
TA20.0025.12	12 G 2.5	15.1	288	498
TA20.0025.18	18 G 2.5	18.2	432	764
TA20.0025.25	25 G 2.5	22.1	600	1044
TA20.0040.04	4 G 4	10.8	154	295
TA20.0040.05	5 G 4	12.1	192	361
TA20.0040.07	7 G 4	13.4	269	458
TA20.0040.12	12 G 4	18.3	461	790
TA20.0060.04	4 G 6	13	230	424
TA20.0060.05	5 G 6	14.7	288	525
TA20.0060.07	7 G 6	16.2	403	625
TA20.0100.07	7 G 10	20.7	672	1106

Treotham has a full range of cable glands and accessories



# 1 FLEX-JZ POWER

Flexible control Cables 0.6/1KV



### Technical Data:

- **Conductor material** Copper bare
- **Conductor Class** Class 5
- **Core Insulation** Special PVC
- **Core identification** DIN VDE 0293: black cores, white numerals
- **Stranding** Cores twisted in layers
- **Outer sheath** Special PVC
- **Sheath colour** Black RAL 9005
- **Rated voltage [V]** 600/1000
- **Testing voltage [V]** 4000
- **Conductor resistance** <13.7 MΩ x km
- **Insulation resistance** >20MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidelines)

- **Min. bending radius fixed [xd]** 4xd
- **Min. bending radius moved [xd]** 15xd
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -15°C up to +70°C
- **Temp at conductor max.** +70°C in operation, +160°C in case of short-circuit
- **Burning behaviour** VDE 0482-332-1-2/ IEC 60332-1: flame-retardant and self extinguishing

**Approvals** Oil resistant: EN 60811-2-1

### Construction:

- fine strands of bare copper conductor
- stranding acc. to VDE 0295, class 5
- black cores with white numbers
- JZ = earth conductor green/yellow in outer layer
- OZ= without earth conductor
- outer sheath of special PVC, fire and oil resistant, resistant of UV - radiation
- sheath colour: black RAL 9005

### Application:

Flex-JZ POWER can be installed in all electrical systems in dry and damp interiors, especially in industrial environments, and can also be used outside; underwater installation is not permitted. Not suitable for constant moving. It is suitable as measuring, monitoring and control cable in the machine tool and plant engineering, in heat and air conditioning systems and refrigeration plants, etc.

### Special features:

Flex-JZ POWER black is to a large extent resistant against oil and chemicals, rough but extremely flexible. All cables with three cores or more are included the green/yellow conductor arranged in the outer layer. Numbering distance approx. 20 - 50 mm. To avoid mistakes all numbers have a basic line.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
101020050	2 x 0.50	6.30	0.90	5.50
101030050	3 G 0.50	6.70	1.50	7.60
101040050	4 G 0.50	7.30	1.90	10.00
101050050	5 G 0.50	8.00	2.50	11.60
101070050	7 G 0.50	9.00	3.40	13.60
101120050	12 G 0.50	11.60	5.90	20.00
101180050	18 G 0.50	14.00	8.90	28.30
101250050	25 G 0.50	16.60	12.00	38.90
101020075	2 x 0.75 OZ	6.80	1.40	6.30
101030075	3 G 0.75	7.50	2.20	9.10
101040075	4 G 0.75	7.90	2.90	12.00
101050075	5 G 0.75	8.70	3.60	13.40
101070075	7 G 0.75	9.80	5.10	17.70
101120075	12 G 0.75	12.70	8.70	24.80
101180075	18 G 0.75	14.90	13.20	35.00
101250075	25 G 0.75	17.70	18.00	47.70
101340075	34 G 0.75	21.50	24.50	62.60
101410075	41 G 0.75	23.10	29.60	73.30
101500075	50 G 0.75	25.30	36.00	87.10
101020100	2 x 1 OZ	7.40	1.90	7.30
101030100	3 G 1	7.60	2.90	9.80
101040100	4 G 1	8.20	3.90	11.00
101050100	5 G 1	9.60	4.80	13.80
101070100	7 G 1	10.60	6.70	17.90
101120100	12 G 1	13.70	11.50	28.10
101180100	18 G 1	16.00	17.40	40.80
101250100	25 G 1	19.40	24.10	56.70
101340100	34 G 1	23.50	32.60	76.40
101410100	41 G 1	25.60	39.40	89.10
101500100	50 G 1	26.80	48.00	107.60
101020150	2 x 1.50 OZ	8.50	2.90	9.90
101030150	3 G 1.50	9.20	4.30	12.20
101040150	4 G 1.50	9.90	5.80	15.00
101050150	5 G 1.50	11.10	7.20	17.60
101070150	7 G 1.50	12.00	10.30	22.00
101120150	12 G 1.50	15.80	17.50	41.10
101180150	18 G 1.50	19.00	25.80	54.70

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
101250150	25 G 1.50	22.80	36.30	77.10
101340150	34 G 1.50	26.60	49.00	99.60
101500150	50 G 1.50	30.40	72.00	142.70
101020250	2 x 2.50 OZ	9.80	4.80	14.20
101030250	3 G 2.50	10.40	7.20	17.60
101040250	4 G 2.50	11.50	9.60	22.40
101050250	5 G 2.50	12.80	12.00	25.30
101070250	7 G 2.50	15.20	16.90	33.70
101120250	12 G 2.50	18.20	28.90	55.10
101180250	18 G 2.50	21.70	43.50	79.00
101250250	25 G 2.50	26.00	60.00	110.10
101030400	3 G 4	12.6	11.52	22.50
101040400	4 G 4	14.00	15.40	31.40
101050400	5 G 4	15.30	19.10	40.30
101070400	7 G 4	16.70	27.00	52.40
101030600	3 G 6	14.20	17.30	36.50
101040600	4 G 6	15.70	23.30	42.80
101050600	5 G 6	17.90	28.90	60.20
101070600	7 G 6	19.70	40.40	80.20
101041000	4 G 10	18.50	38.20	75.90
101051000	5 G 10	20.50	48.50	92.70
101071000	7 G 10	23.00	67.50	129.30
101041600	4 G 16	21.90	61.40	110.10
101051600	5 G 16	25.60	77.80	161.70
101071600	7 G 16	27.10	107.90	187.30
101042500	4 G 25	27.20	96.80	162.40
101052500	5 G 25	29.50	120.30	207.40
101072500	7 G 25	33.00	168.00	294.60
101043500	4 G 35	29.80	134.10	240.30
101053500	5 G 35	33.50	168.20	289.70
101045000	4 G 50	37.10	193.10	340.20
101047000	4 G 70	41.90	270.30	435.40
101049500	4 G 95	48.40	364.10	601.20
1010412000	4 G 120	53.80	460.40	750.30



# 1 Treoflex PUR-JZ

Polyurethane control cable, oil resistant

### Technical Data

- **Conductor Material** Copper, Bare
- **Conductor Class** Class 5 acc. to VDE 0295 or IEC 60228
- **Core insulation** PVC
- **Core identification** Cores consecutive numbered (VDE 0293-1)
- **Stranding** Cores twisted in layers
- **Outer sheath** Polyurethane
- **Sheath colour** Grey, RAL 7001
- **Rated voltage [V]** 300/500

- **Testing Voltage** 4000
- **Insulation resistance** > 20 MΩ x km
- **min. bending radius fixed [xd]** 4 x d
- **min. bending radius moved [xd]** 15 x d
- **working temp fixed min/max [C]** -40°C up to +80°C
- **working temp moved min/max [C]** -15°C up to +70°C
- **burning behaviour** IEC 60332-1: flame-retardant and self-extinguishing

### Design:

bare copper stranded conductor stranding acc. to VDE 0295 class 5 PVC insulated cores cores consecutive numbered protective conductor: green/yellow cores twisted in layers PUR outer sheath colour of sheath grey, RAL 7001

### Note

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

### Application:

Control cable with high abrasion and tear resistant properties. Also resistant to mineral oils, especially to coolant emulsions and UV-radiation. Suitable for use in the machine, plant and tool making industry. For installation in moist and wet rooms and outdoors.

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA60.0005.02	2 x 0.5	4.8	9.6	45.0
TA60.0005.03	3 G 0.5	5.1	14.4	55.0
TA60.0005.04	4 G 0.5	5.7	19.0	65.0
TA60.0005.05	5 G 0.5	6.2	24.0	75.0
TA60.0005.07	7 G 0.5	7.2	33.6	90.0
TA60.0005.12	12 G 0.5	9.1	58.0	135.0
TA60.0005.18	18 G 0.5	10.7	86.0	205.0
TA60.0005.25	25 G 0.5	13.2	120.0	270.0
TA60.0005.34	34 G 0.5	14.7	163.0	380.0
TA60.0005.42	42 G 0.5	15.8	202.0	415.0
TA60.0005.50	50 G 0.5	17.5	240.0	550.0
TA60.0007.02	2 x 0.75	5.4	14.4	44.0
TA60.0007.03	3 G 0.75	5.7	21.6	53.0
TA60.0007.04	4 G 0.75	6.2	29.0	64.0
TA60.0007.05	5 G 0.75	6.8	36.0	76.0
TA60.0007.07	7 G 0.75	8.1	50.0	96.0
TA60.0007.12	12 G 0.75	9.9	86.0	170.0
TA60.0007.18	18 G 0.75	11.9	130.0	260.0
TA60.0007.25	25 G 0.75	14.5	180.0	282.0
TA60.0007.34	34 G 0.75	16.3	245.0	475.0
TA60.0007.42	42 G 0.75	17.7	302.0	600.0
TA60.0007.50	50 G 0.75	19.4	360.0	720.0
TA60.0010.02	2 x 1	5.7	19.0	53.0
TA60.0010.03	3 G 1	6.0	29.0	63.0
TA60.0010.04	4 G 1	6.6	38.0	75.0
TA60.0010.05	5 G 1	7.1	48.0	89.0
TA60.0010.07	7 G 1	8.6	67.0	115.0
TA60.0010.12	12 G 1	10.7	115.0	201.0
TA60.0010.18	18 G 1	12.9	173.0	289.0
TA60.0010.25	25 G 1	14.9	240.0	380.0
TA60.0010.34	34 G 1	17.4	326.0	645.0
TA60.0010.42	42 G 1	18.8	403.0	730.0
TA60.0010.50	50 G 1	20.9	480.0	890.0

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA60.0015.02	2 x 1.5	6.2	29.0	68.0
TA60.0015.03	3 G 1.5	6.6	43.0	87.0
TA60.0015.04	4 G 1.5	7.2	58.0	106.0
TA60.0015.05	5 G 1.5	8.0	72.0	131.0
TA60.0015.07	7 G 1.5	9.6	101.0	173.0
TA60.0015.12	12 G 1.5	12.0	173.0	293.0
TA60.0015.18	18 G 1.5	14.1	259.0	454.0
TA60.0015.25	25 G 1.5	16.8	360.0	641.0
TA60.0015.34	34 G 1.5	19.5	490.0	945.0
TA60.0015.42	42 G 1.5	21.1	605.0	1100.0
TA60.0015.50	50 G 1.5	25.4	720.0	1250.0
TA60.0025.02	2 x 2.5	7.8	48.0	110.0
TA60.0025.03	3 G 2.5	8.3	72.0	146.0
TA60.0025.04	4 G 2.5	9.2	96.0	183.0
TA60.0025.05	5 G 2.5	10.1	120.0	222.0
TA60.0025.07	7 G 2.5	12.3	168.0	293.0
TA60.0025.12	12 G 2.5	15.3	288.0	512.0
TA60.0025.18	18 G 2.5	18.2	432.0	740.0
TA60.0025.25	25 G 2.5	22.3	600.0	940.0
TA60.0040.03	3 G 4	10.4	115.0	228.0
TA60.0040.04	4 G 4	11.4	154.0	291.0
TA60.0040.05	5 G 4	12.7	192.0	355.0
TA60.0040.07	7 G 4	14.0	269.0	503.0
TA60.0060.03	3 G 6	12.1	173.0	362.0
TA60.0060.04	4 G 6	13.4	230.0	468.0
TA60.0060.05	5 G 6	14.9	288.0	570.0
TA60.0060.07	7 G 6	16.5	403.0	808.0
TA60.0100.04	4 G 10	16.9	384.0	720.0
TA60.0100.05	5 G 10	18.7	480.0	894.0
TA60.0100.07	7 G 10	20.9	672.0	1295.0
TA60.0160.04	4 G 16	19.8	614.0	1063.0
TA60.0160.05	5 G 16	22.2	768.0	1400.0
TA60.0250.04	4 G 25	29.4	960.0	1590.0
TA60.0350.04	4 G 35	32.8	1344.0	2200.0
TA60.0500.04	4 G 50	38.9	1920.0	2400.0
TA60.0700.04	4 G 70	44.7	2688.0	4400.0
TA60.0950.04	4 G 95	50.0	3648.0	6000.0

# 1 Treoflex Soft Flex

Stage Event Cable Black



### Technical Data

- Specially modified PVC
- **Temperature range**  
-30C to +70C
- **Nominal voltage**  
450/750V
- **Bending radius**  
5 x cable diameter

### Cable Structure

- Bare copper conductors
- Class 5, according to PN-EN 60228
- Insulation of specially modified PVC
- Black cores with white numbers
- Outer sheath special PVC ensuring excellent flexibility
- Outer sheath colour black

### Properties

Excellent toughness and flexibility  
Good abrasion resistance

### Resistant to:

UV and ozone  
Alcohol  
Animal and vegetable oils

### Application

Soft-Flex cable is designed for mobile power supply to stage devices. The outer sheath is made of specially modified PVC compound and guarantees excellent flexibility and resistance to Ultra Violet rays.

Part Number	No. Cores x cross-sec mm²	Outer Diameter in mm	Coper weight Kg/Km	Cable Weight Kg/Km
TA21.0015.07	7 G 1.5	10.2	101	184
TA21.0015.12	12 G 1.5	11.8	173	309
TA21.0015.18	18 G 1.5	15.3	259	440
TA21.0015.12.6E	12 x 1.5 + 6 G 1.5	15.3	259	440
TA21.0025.12	12 G 2.5	16.05	288	520
TA21.0025.18	18 G 2.5	19.3	432	764
TA21.0025.12.6E	12 x 2.5 + 6 G 2.5	19.3	432	764

# 1 Treoflex CY-JZ

Screened control cable



### Technical Data

- **Conductor Material**  
Copper, Bare
- **Conductor Class**  
Class 5 acc. to DIN VDE 0295, or IEC 60228
- **Core insulation**  
PVC
- **Core identification**  
DIN VDE 0293: black cores, white numbers
- **Stranding**  
Cores twisted in layers
- **Outer sheath**  
PVC
- **Sheath colour**  
Transparent
- **Rated voltage [V]**  
300/500

- **Testing Voltage**  
4000
- **Insulation resistance**  
> 20 MΩ x km
- **Current carrying capacity**  
DIN VDE (see technical data)
- **min. bending radius fixed [xd]**  
6 x d
- **min. bending radius moved [xd]**  
15 x d
- **Working temp fixed min/max [C]**  
-40°C up to +80°C
- **Working temp moved min/max [C]**  
-15°C up to +70°C
- **Temp at conductor max.**  
+70°C in operation, + 150°C in case of short circuit

**Burning behaviour**  
IEC 60332-1: flame-retardant and self-extinguishing

### Design:

- fine strands of bare copper conductor
- stranding acc. to VDE 0295, class 5
- PVC core insulation black with continuous white figure imprint
- earth conductor green/yellow
- PVC inner sheath grey
- overall screen made of tinned copper wire braid coverage approx. 85%
- PVC outer sheath transparent

### Note

- G = with green-yellow earth core;
- X = without green-yellow earth core

### Application:

Used as connecting cable, as measuring, power and control cable in machine tool manufacturing, plant engineering and on assembly lines and production lines to meet stringent safety requirements. Suitable for fixed installation or flexible applications with unrestricted mobility without forced movement control and without exposure to tensile load. Installation in dry and moist rooms; outdoor installation not permitted. These cables with copper screening are ideally suitable for interference-free data and signal transmission in measuring and control technology. Good chemical resistance, largely oil resistant.

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA30.0005.02	2 x 0.5	6.9	41.0	67.0
TA30.0005.03	3 G 0.5	7.2	45.0	83.0
TA30.0005.04	4 G 0.5	7.8	54.0	94.0
TA30.0005.05	5 G 0.5	8.3	66.0	108.0
TA30.0005.07	7 G 0.5	9.5	79.0	136.0
TA30.0005.12	12 G 0.5	11.3	137.0	195.0
TA30.0005.18	18 G 0.5	13.1	156.0	277.0
TA30.0005.25	25 G 0.5	15.7	250.0	407.0
TA30.0005.40	40 G 0.5	18.9	345.0	654.0
TA30.0005.50	50 G 0.5	20.9	407.0	740.0
TA30.0007.02	2 x 0.75	7.6	46.0	87.0
TA30.0007.03	3 G 0.75	7.8	57.0	98.0
TA30.0007.04	4 G 0.75	8.3	63.0	113.0
TA30.0007.05	5 G 0.75	9.1	76.0	130.0
TA30.0007.07	7 G 0.75	10.4	100.0	184.0
TA30.0007.12	12 G 0.75	12.5	175.0	292.0
TA30.0007.18	18 G 0.75	14.3	240.0	358.0
TA30.0007.25	25 G 0.75	17.4	306.0	508.0
TA30.0007.41	41 G 0.75	21.2	403.0	971.0
TA30.0007.50	50 G 0.75	23.2	470.0	1100.0
TA30.0010.02	2 x 1	7.9	54.0	97.0
TA30.0010.03	3 G 1	8.2	64.0	103.0
TA30.0010.04	4 G 1	8.9	76.0	146.0
TA30.0010.05	5 G 1	9.5	89.0	169.0
TA30.0010.07	7 G 1	11.0	114.0	219.0
TA30.0010.12	12 G 1	13.1	186.0	350.0
TA30.0010.18	18 G 1	15.4	284.0	514.0
TA30.0010.25	25 G 1	18.3	387.0	689.0
TA30.0010.34	34 G 1	20.3	500.0	910.0
TA30.0010.50	50 G 1	24.0	681.0	1315.0

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA30.0015.02	2 x 1.5	8.4	64.0	130.0
TA30.0015.03	3 G 1.5	9.0	82.0	152.0
TA30.0015.04	4 G 1.5	9.6	99.0	168.0
TA30.0015.05	5 G 1.5	10.5	123.0	202.0
TA30.0015.07	7 G 1.5	12.1	148.0	304.0
TA30.0015.12	12 G 1.5	14.9	274.0	434.0
TA30.0015.18	18 G 1.5	17.1	386.0	640.0
TA30.0015.25	25 G 1.5	20.7	531.0	805.0
TA30.0015.40	40 G 1.5	24.4	759.0	1350.0
TA30.0015.50	50 G 1.5	26.8	997.0	1675.0
TA30.0025.02	2 x 2.5	10.0	110.0	180.0
TA30.0025.03	3 G 2.5	10.7	148.0	216.0
TA30.0025.04	4 G 2.5	11.4	169.0	267.0
TA30.0025.05	5 G 2.5	12.5	220.0	347.0
TA30.0025.07	7 G 2.5	15.0	284.0	407.0
TA30.0025.12	12 G 2.5	18.0	470.0	722.0
TA30.0040.03	3 G 4	12.3	178.0	340.0
TA30.0040.04	4 G 4	13.4	234.0	410.0
TA30.0040.05	5 G 4	14.8	284.0	502.0
TA30.0040.07	7 G 4	16.2	321.0	638.0
TA30.0060.03	3 G 6	14.2	245.0	450.0
TA30.0060.04	4 G 6	15.6	316.0	559.0
TA30.0060.05	5 G 6	17.0	442.0	702.0
TA30.0060.07	7 G 6	18.7	530.0	907.0
TA30.0100.03	3 G 10	17.8	367.0	750.0
TA30.0100.04	4 G 10	19.7	549.0	1020.0
TA30.0100.05	5 G 10	21.6	604.0	1115.0
TA30.0100.07	7 G 10	24.0	820.0	1500.0
TA30.0160.04	4 G 16	22.6	807.0	1380.0
TA30.0250.04	4 G 25	28.9	1169.0	1890.0
TA30.0350.04	4 G 35	32.2	1680.0	2390.0

## The most flexible cable on the market for Entertainment & Stage Lighting

- **UV Stabilized**
- **Available in 18 core with 6 earth conductors**
- **Special Super Flexible Construction**

# 1 Treoflex CY-JB

VSD Cable Colour Coded



### Technical Data

- **Conductor Material** Copper, Bare
- **Conductor Class** Class 5 acc. to DIN VDE 0295, or IEC 60228
- **Core insulation** PVC
- **Core identification** 3 core: Blue, Brown, Green/Yellow  
4 core: Brown, Black, Grey, Green/Yellow  
5 core: Brown, Black, Grey, Blue, Green/Yellow
- **Stranding** Cores twisted in layers
- **Outer sheath** PVC
- **Sheath colour** Transparent
- **Rated voltage [V]** 450/750 V
- **Testing Voltage** 4000
- **Conductor resistance** DIN VDE 0295 class 5, resp. IEC 60228 cl. 5
- **Insulation resistance** > 20 MΩ x km
- **Current carrying capacity** DIN VDE (see technical data)
- **min. bending radius fixed [xd]** 6 x d
- **min. bending radius moved [xd]** 15 x d
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -15°C up to +70°C
- **Temp at conductor max.** +70°C in operation, + 150°C in case of short circuit

### Application:

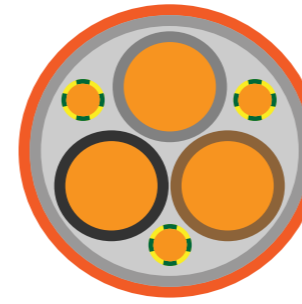
Used as connecting cable, as measuring, power and control cable in machine tool manufacturing, plant engineering and on assembly lines and production lines to meet stringent safety requirements and for lossless data transmission. Suitable for fixed installation or flexible applications with unrestricted mobility without forced movement control and without exposure to tensile load. Installation in dry and moist rooms; outdoor installation not permitted. These cables with copper screening are ideally suitable for interference-free data and signal transmission in measuring and control technology. Good chemical resistance, largely oil resistant.

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA25.0015.03	3 G 1.5	10.3	82.0	152.0
TA25.0015.04	4 G 1.5	11.3	99.0	168.0
TA25.0015.05	5 G 1.5	12.6	123.0	202.0
TA25.0025.03	3 G 2.5	11.8	148.0	216.0
TA25.0025.04	4 G 2.5	13.5	169.0	267.0
TA25.0025.05	5 G 2.5	14.6	220.0	347.0
TA25.0040.03	3 G 4	12.2	178.0	340.0
TA25.0040.04	4 G 4	15.1	234.0	410.0
TA25.0040.05	5 G 4	16.5	284.0	502.0
TA25.0060.03	3 G 6	13.8	245.0	450.0
TA25.0060.04	4 G 6	16.6	316.0	559.0
TA25.0060.05	5 G 6	18.2	442.0	702.0
TA25.0100.03	3 G 10	18.9	367.0	750.0
TA25.0100.04	4 G 10	21.1	549.0	1020.0
TA25.0100.05	5 G 10	23.1	604.0	1115.0

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA25.0160.04	4 G 16	23.9	807.0	1380.0
TA25.0160.05	5 G 16	26.8	940.0	1553.0
TA25.0250.04	4 G 25	29.4	1169.0	1890.0
TA25.0250.05	5 G 25	32.6	1420.0	2270.0
TA25.0035.04	4 G 35	32.4	1680.0	2390.0
TA25.0350.05	5 G 35	36	2020.0	2885.0
TA25.0500.04	4 G 50	38.8	2370.0	3315.0
TA25.0700.04	4 G 70	43.7	3257.0	4600.0
TA25.0950.04	4 G 95	50.4	4060.0	6060.0
TA25.1200.04	4 G 120	58.6	5231.0	7315.0
TA25.1500.04	4 G 150	62.2	7760.0	9340.0
TA25.1850.04	4 G 185	67.8	7760.0	11120.0

# 1 Treoflex-UV

UV stabilised VSD Cable 0.6/1kV



### Technical Data

- Flexible cable with multi-stranded conductors, with a cross-linked XLPE polyethylene insulation, double stranding element screen, with UV resistant outer sheath made of a special type of PVC. Symmetric conductor construction (3+3PE), conductors arranged symmetrically every 120°)
- **Operating temperature:** -40°C to 90°C
  - **Operating voltage:** U/U = 0.6/1 kV
  - **Test voltage:** 2500V
  - **Insulation resistance:** > 200 MΩm x km
  - **Capacitance:** conductor/conductor = 70 to 250 nF/km  
conductor/screen = 110 to 410 nF/km
  - **Max. operating conductor temp:** 90°C
  - **Min. bending radius:** Ø < 12 mm - 5 x Ø  
Ø = 12+20 mm - 7,5 x Ø  
Ø > 20 mm - 10 x Ø

### Application

Cables with a special construction, used to supply power to motors from frequency converters while maintaining full electromagnetic compatibility (EMC). The cross-linked XLPE polyethylene insulation improves current-carrying capacity, while at the same time maintaining low cable capacitance in comparison with cables with a PVC insulation. The cables are suitable for both fixed installation and movable connections in industrial equipment, process lines, and machines operating in dry and damp rooms. The symmetric construction of the cable (3+3PE) ensures the symmetry of supply voltages on the motor terminals.

Part Number	No of cores x cross section mm <sup>2</sup>	Outer Ø c.a mm	Current capacity amps un-enclosed touching	Cop weight kg/km	Weight ca. Kg	Gland part no.
TA6.0015.04	4G1.5	10.6	19	86	140	159.2012.20
TA6.0025.04	4G2.5	12.3	26	143	219	159.2012.20
TA6.0040.04	4G4	14.6	34	224	323	159.2516.20
TA6.0060.03.3E	3x6 + 3G1	16.1	43	298	429	159.2516.20
TA6.0100.03.3E	3x10 + 3G1.5	18.8	61	491	615	159.3221.20
TA6.0160.03.3E	3x16 + 3G 2.5	20.5	81	723	819	159.3221.20
TA6.0250.03.3E	3x25 + 3G4	24.8	108	1137	1324	159.4028.20
TA6.0350.03.3E	3x35 + 3G6	27.3	135	1535	1718	159.4028.20
TA6.0500.03.3E	3x50 + 3G10	31.3	170	2207	2398	108.503230
TA6.0700.03.3E	3x70 + 3G10	36.0	214	2871	3055	108.503630
TA6.0950.03.3E	3x95 + 3G16	40.2	256	3953	4161	108.634438
TA6.1200.03.3E	3x120 + 3G16	43.3	303	4836	5073	108.635142
TA6.1500.03.3E	3x150 + 3G25	49.8	348	5411	6127	108.635148
TA6.1850.03.3E	3x185 + 3G35	55.0	396	6968	7189	108.635654
TA6.2400.03.3E	3x240 + 3G50	61.0	472	8540	9540.0	108.806454

### Cable Structure

- **Conductors:** flexible copper wire, class 5 as per PN-EN 60228 or PN-HD 383 S2
- **Conductor insulation:** XLPE cross-linked polyethylene
- **Conductor marking:** black, brown, grey, yellow-green (3 + 3PE). Cores twisted together without fillers
- **Screens:** an electrostatic screen in the form of polyester tape covered with a layer of aluminium, and a second screen in the form of a tinned copper wire braid
- **Sheath:** special PVC, self-extinguishing and flame retardant (as per PN-N60332-1), UV resistant
- **Sheath colour:** transparent/orange

### Properties

- Low capacitance
- Self-extinguishing sheath
- UV resistant
- Fulfilment of electromagnetic compatibility (EMC) requirements\* \*Note: in order to ensure optimal screen earthing and the fulfilment of electromagnetic compatibility (EMC) requirements by the connection, we recommend using Treotham metal EMC glands

For suitable EMC glands, please refer to Cable Accessories section pages 357-359

# 1 FLEX-CY-JZ POWER

Screened Control 0.6/1 KV Black



## Technical Data:

- Conductor material** Copper bare
  - Conductor Class** Class 5 acc. to DIN VDE 0295 resp. IEC 60228
  - Core Insulation** Special PVC
  - Core identification** DIN VDE 0293: black cores, white numbers
  - Stranding** Cores twisted in Layers
  - Outer sheath** Special PVC
  - Sheath colour** Black RAL 9005
  - Rated voltage [V]** 600/1000
  - Testing voltage [V]** 4000
- Conductor resistance**
  - Insulation resistance** >20MΩ x km
  - Current carrying capacity** DIN VDE (s. technical guidance)
  - Min. bending radius fixed [xd]** 5xd
  - Min. bending radius moved [xd]** 15xd
  - Working temp fixed min/max [C]** -40°C up to +80°C
  - Temp at conductor max.** +70°C in operation, +160° (in case of short-circuit)
  - Burning behaviour** IEC 60332-1: flame-retardant and self-extinguishing
  - Approvals** Oil resistant: EN 60811-2-1

## Construction:

- fine strands of bare copper conductor
- stranding acc. to VDE0295, class 5
- cores of special PVC
- black cores with white numbers
- JZ = earth conductor green/yellow in outer layer
- OZ = without earth conductor
- inner sheath of special PVC, black
- copper screen of tinned copper wire braid
- outer sheath of special PVC, fire- and oil resistant, resistant of UV - radiation
- sheath colour: black RAL 9005

## Application:

Flex-CY-JZ POWER can be installed in all electrical systems in dry and damp interiors, especially in industrial environments and can also be used outside; underwater installation is not permitted. Flex-CY-JZ POWER is suitable as measuring, monitoring and control cable in the machine tool and plant engineering, assembly lines and production lines. These cables with copper screening are ideally suitable for interference-free data and signal transmission in measuring and control technology. Good chemical resistance, largely oil resistant.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
102020050	2 x 0.50 OZ	8.1	3.8	12
102030050	3 G 0.50	8.4	4.5	16.6
102040050	4 G 0.50	9.4	5.4	19
102050050	5 G 0.50	10	6.2	21.9
102070050	7 G 0.50	12.3	7.7	25.5
102120050	12 G 0.50	14.9	13	35.9
102180050	18 G 0.50	17	17.3	47.5
102250050	25 G 0.50	19.9	22.3	63.8
102020075	2 x 0.75 OZ	9	4.6	14.2
102030075	3 G 0.75	9.2	5.6	15.5
102040075	4 G 0.75	10.2	6.7	21.4
102050075	5 G 0.75	11.4	7.8	25
102070075	7 G 0.75	12.9	9.7	31.5
102120075	12 G 0.75	15.8	16.8	42.4
102180075	18 G 0.75	18	22.9	57.4
102250075	25 G 0.75	21.4	29.6	76.2
102020100	2 x 1 OZ	9.4	5.2	15.7
102030100	3 G 1	10	6.6	19.6
102040100	4 G 1	10.8	7.9	23.1
102050100	5 G 1	12.6	9.3	27
102070100	7 G 1	13.6	11.7	33.5
102120100	12 G 1	16.4	20.4	52.2
102180100	18 G 1	19.2	28	63.5
102250100	25 G 1	22.4	36.9	86.7
102020150	2 x 1.50 OZ	10.1	6.9	19.2
102030150	3 G 1.50	11.3	8.7	21.8
102040150	4 G 1.50	13	10.2	26.5
102050150	5 G 1.50	13.9	12.5	30
102070150	7 G 1.50	15	18	39.7

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
102120150	12 G 1.50	18.9	28.1	69
102180150	18 G 1.50	22.1	39.1	87.2
102250150	25 G 1.50	25.1	51.8	118
102020250	2 x 2.50	11.3	11.3	19.2
102030250	3 G 2.50	12.7	12.3	31.2
102040250	4 G 2.50	14.3	16.8	36.2
102050250	5 G 2.50	15.3	20.4	46.9
102070250	7 G 2.50	17.2	26.5	58
102120250	12 G 2.50	21.7	42.1	86.3
102180250	18 G 2.50	25.5	59.4	135.5
102250250	25 G 2.50	29.3	85.1	199.5
102040400	4 G 4	16.2	23.8	54
102050400	5 G 4	17.5	30.2	67.3
102070400	7 G 4	19	39.6	87.4
102040600	4 G 6	17.7	31.8	71.5
102050600	5 G 6	19.2	41.9	98.4
102070600	7 G 6	21.7	55.9	128.5
102041000	4 G 10	21.7	57.4	126.7
102051000	5 G 10	23.5	70.6	163.5
102041600	4 G 16	24.9	80.9	176.3
102051600	5 G 16	27.4	104.7	272
102042500	4 G 25	29.8	116.5	275
102052500	5 G 25	32.6	144.6	349
102043500	4 G 35	32.7	168.8	349.7
102045000	4 G 50	39.6	236.8	493.7
102047000	4 G 70	44.2	326.1	748
102049500	4 G 95	51	405.5	1022
1020412000	4 G 120	58.1	522.5	1375

# Treoflex SDI - VSD

Single Core VSD Cable



## Technical Data

### Special screened single core for EMC applications

- Temperature range**  
Flexing -30°C to + 90°C  
fixed installation -40°C to + 100°C
- Nominal Voltage**  
U°/U 600/1000 V
- Test voltage** 3000 V  
Insulation resistance min 200 MOhm x km
- Minimum bending radius**  
fixed installation 5x cores Ø

### Cable Structure

Tinned copper, fine wire conductors bunch stranded to DIN VDE 0295 class 5  
Inner insulation of special thermoplastic polymer, natural coloured  
Screen of tinned cu-braid, coverage approx 85%  
Outer insulation of special polyolefine black (RAL 9005)

### Properties

Very good oil resistance  
Halogen free  
Abrasion resistant  
Resistant to  
Hydrofluoric acid  
Hydrochloric acid  
Diluted sulfuric acid  
Coolants  
Microbes  
UV-Radiation  
**Weather**  
The materials used in manufacture are cadmium-free and contain no silicone and are free from substances harmful to the wetting properties of lacquers

## Application

The special single cores are used for permanent flexible applications in machines, machine tools, composting appliances and sewerage-treatment plants, animal stalls and greenhouses. They are used for permanent flexible application for movable automated machinery parts and multi-shift operation, as well as in open air. These cables are installed for flexible use with free movements without tensile stress or forced movements and are suitable for application in drag chains. The selected tinned copper wire conductor and tinned copper wire braid permit the installation in aggressive environments as well as hydrogen sulfide, ammonia and sulfur dioxide.

## TREOFLEX - VSD

These screened cables are particularly suitable for the interference-free transmission instrumentation and control engineering applications (electromagnetic compatibility).

### EMC = Electromagnetic compatibility.

For application as a protective core, the ends are to be identified with green-yellow shrink-on tubes.

For applications which go beyond standard solutions (for example for composting appliances or high shelf conveyors with extremely high processing speeds etc). We recommend for our specially developed enquiry sheet for energy guiding systems.

Before installation in cable trays please read the instructions. For further technical details see selection table for drag chain cables, see lead text.

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

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA1.1200.01	1 x 120	23.8	1260.0	1400.0
TA1.1500.01	1 x 150	26.0	1570.0	1710.0
TA1.1850.01	1 x 185	28.8	1911.0	2021.0
TA1.2400.01	1 x 240	32.0	2475.0	2750.0
TA1.3000.01	1 x 300	36.5	3050.0	3450.0

# ES-BL-OZ/JZ

Cables for intrinsically safe electric circuits



### Technical Data:

- **Conductor material** Copper bare
- **Conductor Class** Class 5 acc. to DIN VDE 0295 or IEC 60228
- **Core Insulation** PVC
- **Core identification** DIN VDE 0293: Black cores with consecutive white numerals
- **Stranding** Cores twisted in layers
- **Outer sheath** PVC
- **Sheath colour** Blue (RAL 5015)
- **Rated voltage [V]** 300 / 500
- **Testing voltage [V]** 3000
- **Insulation resistance** ≥ 20 MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidance)
- **Min. bending radius fixed [xd]** up to 12mm Ø: 5 x d <br /> > 12mm Ø: 7.5
- **Min. bending radius moved [xd]** up to 12mm Ø: 10 x d up to 20mm Ø: 15 x d 20mm Ø: 20
- **Working temp fixed min/max [C]** -30° c up to +80° c
- **Working temp moved min/mac [C]** -5°C up to +70°C
- **Burning behaviour** EC 60332-1-2: flame-retardant and self-extinguishing
- **Approvals** EN 50525-2-51. DIN EN 60079-14

- Construction:**
- fine strands of plain copper conductor
  - stranding as perVDE 0295. class 5
  - cores consecutive numbered
  - cores twisted in layers
  - colour of sheath blue. RAL 5015

### Application:

For application in intrinsically safe appendix as control. connecting and data transmission cable in measurement and control technology. Suitable for use in dry and moist rooms. no laying underground. For fixed laying and flexible applications with undefined cable routing and without tensile stress. Largely oil and fuel resistant. Also available without green/yellow protective conductor.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
31030075	3 G 0.75	5.80	2.20	5.40
31040075	4 G 0.75	6.60	2.90	6.60
31050075	5 G 0.75	7.50	3.60	8.00
31070075	7 G 0.75	8.10	5.00	11.00
31120075	12 G 0.75	11.20	8.60	17.60
31180075	18 G 0.75	12.00	13.00	26.00
31250075	25 G 0.75	16.70	18.00	37.00
31020075	2 x 0.75 OZ	5.50	1.47	5.00
310030075	3 x 0.75 OZ	5.70	2.20	6.00
310040075	4 x 0.75 OZ	6.30	2.90	8.10
310050075	5 x 0.75 OZ	6.70	3.68	8.80
31070075 OZ	7 x 0.75 OZ	7.50	5.20	11.50
310120075	12 x 0.75 OZ	9.90	8.82	18.50
310180075	18 x 0.75 OZ	11.70	13.23	28.20
310250075	25 x 0.75 OZ	14.30	18.00	39.30
31030100	3 G 1	6.30	3.00	6.70
31040100	4 G 1	7.00	3.90	8.30
31050100	5 G 1	7.80	4.80	10.50
31070100	7 G 1	8.70	6.70	19.00
31120100	12 G 1	11.70	11.50	22.50
31180100	18 G 1	14.30	17.30	35.00
31250100	25 G 1	17.50	24.00	50.00
31002010 OZ	2 x 1 OZ	5.80	2.00	5.70
31030100 OZ	3 x 1 OZ	6.00	2.90	7.30
31040100 OZ	4 x 1 OZ	6.60	3.80	8.60
310050100	5 x 1 OZ	7.1	4.94	10.50
31070100 OZ	7 x 1 OZ	8.10	6.70	14.10
310120100	12 x 1 OZ	10.5	11.84	23.10
31018010 OZ	18 x 1 OZ	12.7	17.77	33.10

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
31030150	3 G 1.50	7.00	4.30	8.60
31040150	4 G 1.50	8.00	5.80	11.00
31050150	5 G 1.50	8.80	7.20	14.00
31070150	7 G 1.50	9.90	10.10	18.00
31120150	12 G 1.50	13.60	17.30	33.90
31180150	18 G 1.50	16.40	25.90	51.30
31250150	25 G 1.50	19.40	36.00	69.80
310020150	2 x 1.50 OZ	6.60	2.90	8.00
310030150	3 x 1.50 OZ	6.80	4.30	10.50
31040150 OZ	4 x 1.50 OZ	7.40	5.80	12.50
310050150	5 x 1.50 OZ	8.10	7.20	13.90
31070150 OZ	7 x 1.50 OZ	9.20	10.10	18.40



# ES-BL-CY-OZ

Screened Cables for intrinsically safe circuits

### Technical Data:

- **Conductor material** Copper bare
- **Conductor Class** Class 5
- **Core Insulation** PVC
- **Core identification** DIN VDE 0293: Black cores numbered
- **Stranding** Cores twisted in layers
- **Outer sheath** PVC
- **Sheath colour** Blue (RAL 5015)
- **Rated voltage [V]** 300/500
- **Testing voltage [V]** 3000
- **Conductor resistance** DIN VDE 0295 Cl.5 Insulation resistance 20 MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidelines)
- **Min. bending radius fixed [xd]** up to 12mm Ø: 5 x d >12mm Ø: 7.5 > 20mm Ø: 20 x d
- **Min. bending radius moved [xd]** up to 12mm Ø: 10 x d up to 20mm Ø: 15 x d >20mm Ø: 20 x d
- **Working temp fixed min/max [C]** -30°C up to +80°C
- **Working temp moved min/mac [C]** -5°C up to +70°C
- **Burning behaviour** IEC 60332-1: flame-retardant and self-extinguishing
- **Approvals** DIN VDE 0245 and 0250 EC 60079-14 / EN 6D079-14 / VDE 0165-1
- **Construction:**
  - fine strands of plain copper conductor
  - cores consecutive numbered without green/yellow protective conductor
  - stranding as perVDE 0295. class 5
  - screen of tinned copper wire
  - cores twisted in layers
  - colour of sheath blue. RAL 5015

### Application:

For application in intrinsically safe appendix as control. connecting and data transmission cable in measurement and control technology for lossless data and signal transmission. Suitable for use in dry and moist rooms. no laying underground. For fixed laying and flexible applications with undefined cable routing and without tensile stress. Largely oil and fuel resistant.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
32020050	2 x 0.50	5.80	2.30	3.60
32030050	3 x 0.50	6.50	3.50	4.70
32040050	4 x 0.50	7.10	4.50	6.30
32050050	5 x 0.50	7.70	5.70	6.70
32070050	7 x 0.50	8.30	8.00	8.40
32120050	12 x 0.50	10.80	11.20	15.60
32020075	2 x 0.75	6.20	4.30	5.60
32030075	3 x 0.75	6.50	5.20	7.00
32040075	4 x 0.75	7.00	6.10	9.50
32050075	5 x 0.75	7.70	7.20	13.00
32070075	7 x 0.75	8.40	9.00	17.00
32120075	12 x 0.75	11.00	14.00	23.40
32180075	18 x 0.75	12.70	21.10	31.50
32250075	25 x 0.75	14.80	28.00	43.50
32020100	2 x 1	6.50	5.20	8.40
32030100	3 x 1	6.90	6.30	11.00
32040100	4 x 1	7.30	7.50	13.00
32050100	5 x 1	8.10	9.00	15.60
32070100	7 x 1	9.00	11.20	19.20
32120100	12 x 1	11.50	18.50	28.50
32180100	18 x 1	13.90	26.80	39.50
32250100	25 x 1	15.90	35.40	65.60

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
32180150	18 x 1.5	15.60	37.30	55.30
32250150	25 x 1.5	17.90	53.00	73.40
32020150	2 x 1.50	7.10	6.50	9.70
32030150	3 x 1.50	7.50	8.20	12.50
32040150	4 x 1.50	8.20	10.00	16.50
32050150	5 x 1.50	9.00	12.00	19.30
32070150	7 x 1.50	10.00	15.90	24.50
32120150	12 x 1.50	13.00	27.00	36.50



# 1 Treoflex H07 RN-F

Heavy duty rubber-sheathed cable, submersible



### Technical Data

- Conductor Material**  
Bare copper
- Conductor Class**  
Class 5
- Core insulation**  
EPR insulation
- Core identification**  
2 core: Blue, Brown  
3 core: Blue, Brown, Green/Yellow  
4 core: Brown, Black, Grey, Green/Yellow  
5 core: Blue, Brown, Black, Grey, Green/Yellow  
6 and more Black numbered Green/Yellow
- Stranding**  
Cores stranded in layers
- Outer sheath**  
Rubber compound
- Sheath colour**  
Black
- Rated Voltage**  
(V) U<sub>o</sub>/U 0.6/1kV  
This cable is designated 450/750V suitable for 0.6/1kV in fixed installations
- Testing Voltage**  
2500 V
- Insulation resistance**  
≥ 1 MΩ x km
- min. bending radius fixed [xd]**  
3 x d (≤ 12mm)  
4 x d (≥ 12mm)
- min. bending radius moved [xd]**  
5 x d (≤ 20mm)  
6 x d (≥ 20mm)
- Working temp fixed min/max [C]**  
-25°C up to +90°C
- Working temp moved min/max [C]**  
-25°C up to +90°C
- Temp at conductor max.**  
+90°C
- Flame retardant**  
Acc. to IEC 60332-1
- Resistant to**
  - UV Stabilised
  - Ozone
  - Weather
  - Oil
  - Abrasion
  - Submersible to 500 metres
- Design:**
  - stranding of fine bare copper wires
  - EPR insulation
  - conductor specification acc. to VDE 0293 up to 5 cores coloured, more than 5 cores number coded
- Note**
  - G = with green-yellow earth core;
  - X = without green-yellow earth core

### Application:

For connection of machines and hand tools for medium to high mechanical stress. Suitable in dry and moist rooms, outdoors and on buildings lot as well as in explosive areas.

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0015.01	1 x 1.5	6.7	14.4	58
TA35.0025.01	1 x 2.5	7.3	24	71
TA35.0040.01	1 x 4	8.2	38	100
TA35.0060.01	1 x 6	8.9	58	130
TA35.0100.01	1 x 10	10.5	96	230
TA35.0160.01	1 x 16	11.3	154	290
TA35.0250.01	1 x 25	13.4	240	420
TA35.0350.01	1 x 35	15.0	336	530
TA35.0500.01	1 x 50	17.4	480	750
TA35.0700.01	1 x 70	19.2	672	960
TA35.0950.01	1 x 95	21.6	912	1250
TA35.1200.01	1 x 120	23.6	1152	1560
TA35.1500.01	1 x 150	26.3	1440	1900
TA35.1850.01	1 x 185	28.6	1776	2300
TA35.2400.01	1 x 240	31.9	2304	2950
TA35.3000.01	1 x 300	34.6	2880	3600
TA35.4000.01	1 x 400	38.4	3840	4600
TA35.5000.01	1 x 500	42.3	4800	6000

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0010.02	2 x 1	8.3	19	98
TA35.0015.02	2 x 1.5	8.8	29	135
TA35.0250.02	2 x 2.5	10.4	48	193
TA35.0040.02	2 x 4	11.9	77	280
TA35.0060.02	2 x 6	13.8	115	330
TA35.0100.02	2 x 10	18.7	192	586
TA35.0160.02	2 x 16	21.5	307	810
TA35.0250.02	2 x 25	26.3	480	1160
TA35.0010.03	3 G 1	8.9	29	130
TA35.0015.03	3 G 1.5	9.5	43	165
TA35.0025.03	3 G 2.5	11.4	72	235
TA35.0040.03	3 G 4	13.3	115	320
TA35.0060.03	3 G 6	14.8	173	420
TA35.0100.03	3 G 10	20.6	288	810
TA35.0160.03	3 G 16	23.4	461	1050
TA35.0250.03	3 G 25	27.2	720	1250
TA35.0350.03	3 G 35	32.0	1008	1900
TA35.0500.03	3 G 50	36.5	1440	2600
TA35.0700.03	3 G 70	41.0	2016	3400
TA35.0950.03	3 G 95	51	2736	4450

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0010.04	4 G 1	9.7	38	150
TA35.0015.04	4 G 1.5	10.4	58	200
TA35.0025.04	4 G 2.5	12.5	96	290
TA35.0040.04	4 G 4	14.6	154	395
TA35.0060.04	4 G 6	16.4	230	540
TA35.0100.04	4 G 10	22.5	384	950
TA35.0160.04	4 G 16	25.5	614	1260
TA35.0250.04	4 G 25	30.9	960	1860
TA35.0350.04	4 G 35	34.6	1344	2380
TA35.0500.04	4 G 50	39.7	1920	3190
TA35.0700.04	4 G 70	44.4	2688	4260
TA35.0950.04	4 G 95	50.6	3648	5600
TA35.1200.04	4 G 120	57	4608	6830
TA35.1500.04	4 G 150	62	5760	8320
TA35.1850.04	4 G 185	67	7104	9800
TA35.2400.04	4 G 240	76	9216	12100
TA35.0015.05	5 G 1.5	11.5	72	240
TA35.0025.05	5 G 2.5	13.8	120	345
TA35.0040.05	5 G 4	16.3	192	485
TA35.0060.05	5 G 6	18.3	288	650

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0100.05	5 G 10	24.8	480	1200
TA35.0160.05	5 G 16	28.4	768	1550
TA35.0250.05	5 G 25	34.3	1200	2250
TA35.0350.05	5 G 35	38.2	1680	2750
TA35.0500.05	5 G 50	44.3	2400	3950
TA35.0700.05	5 G 70	49.6	3360	4740
TA35.0950.05	5 G 95	50	4560	6780
TA35.0015.07	7 G 1.5	15.0	101	375
TA35.0025.07	7 G 2.5	17.8	168	520
TA35.0015.12	12 G 1.5	17.9	175	460
TA35.0025.12	12 G 2.5	21.2	288	760
TA35.0015.18*	18 G 2.5	27.9	432	850
TA35.0015.19*	19 G 1.5	23.3	274	810
TA35.0025.19*	19 G 2.5	28.7	456	1075
TA35.0015.24*	24 G 1.5	23.9	346	1015
TA35.0025.24*	24 G 2.5	29.8	576	1390
TA35.0015.27*	27 G 1.5	27.3	385	1100
TA35.0025.27*	27 G 2.5	32.2	640	1521

\* These cables are only 80°C rated as per VDE 0298-4 table 11, current ratings in the below table is not valid. Please contact your local Treotham office for correct current rating.

### Current ratings for HO7 RN for current supply in industrial application Operating temperature at conductor 90°C Ambient temperature 40°C (Air)

Number of cores	1-core		2-cores		3-cores		4-cores	
	Number of loaded	2-cores loaded	3 cores loaded	2-cores loaded	3 cores loaded	3 cores loaded	3 cores loaded	
<b>Cross section mm<sup>2</sup></b>	<b>Current ratings in Ampere (A)</b>							
1	20	19	18	16	16			
1.5	26	25	24	20	20			
2.5	36	35	34	28	28			
4	48	46	45	38	38			
6	61	59	57	48	48			
10	84	81	78	66	66			
16	110	110	105	88	88			
25	150	145	140	120	120			
35	185	180	175	145	145			
50	230	220	210	180	180			
70	290	280	—	230	230			
95	360	350	—	285	285			
120	420	410	—	330	330			
150	485	470	—	375	375			
185	570	550	—	435	435			
240	680	660	—	520	520			
300	790	770	—	590	590			
400	920	900	—	—	—			
500	1080	1050	—	—	—			
630	1260	1230	—	—	—			

Note: For the method of installation: AS/NZS 3008.1.1:1998 - Refer to tables 4, 7, 10, 13 of AS/NZS 30081.1

Conversion factors for deviating ambient temperature				
Ambient temperature at °C	30	40	45	55
	1.10	1.00	0.94	0.88

# 1 Treoflex H05RN-F/H05RR-F

500 V Rubber Sheathed Cable



### Technical Data

- Conductor Material**  
Copper, bare or tinned
- Conductor Class**  
Class 5
- Core insulation**  
Rubber insulation
- Core identification**  
Colored acc. VDE 0293, more than 2 cores with green/yellow earth conductor
- Stranding**  
Cores twisted in Layers
- Outer sheath**  
H05RR-F: Synthetic rubber  
H05RN-F: polychloroprene (neoprene)
- Sheath colour**  
Black
- Rated voltage [V]**  
300/500
- Testing Voltage**  
2000
- min. bending radius fixed [xd]**  
4 x d
- min. bending radius moved [xd]**  
5 x d
- Working temp fixed min/max [C]**  
-40°C up to +90°C
- Working temp moved min/max [C]**  
-40°C up to +90°C
- Temp at conductor max.**  
+ 90°C
- Burning behaviour**  
VDE 0482-332-1-2/IEC 60332-1

### Design:

- stranding of fine copper wires blank or tinned
- rubber insulation
- coloured cores acc. to VDE 0293
- more than 2 cores with one green/yellow earth conductor
- outer sheath of H05RR-F of synthetic rubber, black, flame retardant
- outer sheath of H05RN-F of polychloroprene (Neoprene), black, flame retardant

### Note

- G = with green-yellow earth core;
- X = without green-yellow earth core

### Application: - H05RR-F:

For connection of electrical appliances when exposed to low mechanical strain in household, offices and for light utilities.

### Application of H05RN-F:

For connection of electrical appliances when exposed to low mechanical strain in dry and moist rooms as well as feed cable in outdoor for garden tools such as a lawn-mower etc.

H05 RR-F				
Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA36.0007.02	2 x 0.75	5.7 - 7.4	14.4	60
TA36.0007.03	3 G 0.75	6.2 - 8.1	21.6	74
TA36.0007.04	4 G 0.75	6.8 - 8.8	29	78
TA36.0007.05	5 G 0.75	7.6 - 9.9	36	99
TA36.0010.02	2 x 1	6.1 - 8.0	19	72
TA36.0010.03	3 G 1	6.5 - 8.5	29	85
TA36.0010.04	4 G 1	7.1 - 9.3	38	98
TA36.0010.05	5 G 1	8.0 - 10.3	48	134
TA36.0015.02	2 x 1.5	7.6 - 9.8	29	98
TA36.0015.03	3 G 1.5	8.0 - 10.4	43	120
TA36.0015.04	4 G 1.5	9.0 - 11.6	58	150
TA36.0015.05	5 G 1.5	9.8 - 12.7	72	180
TA36.0025.02	2 x 2.5	9.0 - 11.6	48	145
TA36.0025.03	3 G 2.5	9.6 - 12.4	72	170
TA36.0025.04	4 G 2.5	10.7 - 13.8	96	220
TA36.0025.05	5 G 2.5	11.9 - 15.3	120	270
TA36.0040.03	3 G 4	11.3 - 14.5	115	260
TA36.0040.04	4 G 4	12.7 - 16.2	154	340
TA36.0060.03	3 G 6	12.8 - 16.3	173	361
TA36.0060.04	4 G 6	14.2 - 18.1	230	462

H05 RN-F				
Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA35.0007.002	2 x 0.75	5.7 - 7.4	14.4	78
TA35.0007.003	3 G 0.75	6.2 - 8.1	21.6	94
TA35.0007.004	4 G 0.75	6.8 - 8.8	29	90
TA35.0010.002	2 x 1	6.1 - 8.0	19	94
TA35.0010.003	3 G 1	6.5 - 8.5	29	114

# 1 Treoflex RV-K

XLPE/PVC Sheathed Cable 0.6/1kV



### Technical Data

Special PVC outer sheath  
Type DMV 18 according to HD 603

- Temperature range**  
-40°C to + 90°C
- Nominal voltage**  
0.6/1kV
- Minimum bending radius**  
5 x cable diameter

### Cable Structure

- Flexible electrolytic annealed copper conductor class 5 according to IEC60228
- Core insulation XLPE. type DIX3 according to HD603
- Colour coded conductors
- Special PVC outer sheath

### Properties

- Extensively oil resistant
- No flame propagation
- Resistant to**
  - Ozone
  - Chemicals
  - Oil
  - Submersible to 200m

### Application

Heavy duty special PVC sheath flexible cable suitable for use in dry, damp, wet areas as well as open air and submersible. The cross linked polyethylene insulation ( XLPE ) allows greater power transmission as well as a higher resistance to overloads. Its flexibility makes the installation process substantially easier and as a result is particularly suitable for use in difficult layouts. It can be buried or installed in conduits as well as used outdoor without requiring additional protection. The RV-K can withstand total water immersion.

Part No.	No. of Cores x cross-sec	Outer Diameter	Weight kg/ km	Current Rating
TA55.0015.01	1 x 1.5	5.7	41	21
TA55.0025.01	1 x 2.5	6.2	53	29
TA55.0040.01	1 x 4	6.7	69	40
TA55.0060.01	1 x 6	7.2	89	53
TA55.0100.01	1 x 10	8.2	134	74
TA55.0160.01	1 x 16	9.3	193	101
TA55.0250.01	1 x 25	10.9	284	135
TA55.0350.01	1 x 35	12.1	377	169
TA55.0500.01	1 x 50	13.8	522	207
TA55.0700.01	1 x 70	15.9	721	268
TA55.0950.01	1 x 95	17.6	913	328
TA55.1200.01	1 x 120	19.5	1.156	383
TA55.1500.01	1 x 150	21.7	1.450	444
TA55.1850.01	1 x 185	23.9	1.745	510
TA55.2400.01	1 x 240	26.9	2.285	607
TA55.3000.01	1 x 300	29.6	2.844	703
TA55.4000.01	1 x 400	33.8	3.726	823
TA55.5000.01	1 x 500	37.4	4.728	946
TA55.6300.01	1 x 630	42.7	6.088	1088
TA55.0015.02	2 x 1.5	8.4	91	26
TA55.0025.02	2 x 2.5	9.5	121	36
TA55.0040.02	2 x 4	10.6	162	49
TA55.0060.02	2 x 6	11.4	208	63
TA55.0100.02	2 x 10	14.4	346	86
TA55.0160.02	2 x 16	16.6	512	115
TA55.0015.03	3 x 1.5	9	108	26
TA55.0025.03	3 x 2.5	10	145	36
TA55.0040.03	3 x 4	11.1	196	49
TA55.0060.03	3 x 6	12.3	262	63
TA55.0100.03	3 x 10	15.2	434	86

Part No.	No. of Cores x cross-sec	Outer Diameter	Weight kg/ km	Current Rating
TA55.0160.03	3 x 16	17.6	645	100
TA55.0250.03	3 x 25	21.1	972	127
TA55.0350.03	3 x 35	24.1	1.306	158
TA55.0500.03	3 x 50	27.8	1.822	192
TA55.0700.03	3 x 70	30.8	2.464	246
TA55.0015.04	4 x 1.5	9.6	128	23
TA55.0025.04	4 x 2.5	10.8	174	32
TA55.0040.04	4 x 4	12.1	241	42
TA55.0600.04	4 x 6	13.3	322	54
TA55.0100.04	4 x 10	16.5	537	75
TA55.0160.04	4 x 16	19.6	817	100
TA55.0250.04	4 x 25	23.1	1.201	127
TA55.0350.04	4 x 35	26.1	1.642	158
TA55.0500.04	4 x 50	31.3	2.327	192
TA55.0700.04	4 x 70	36.1	3.206	246
TA55.0950.04	4 x 95	40.4	4.092	298
TA55.1200.04	4 x 120	45.4	5.227	346
TA55.1500.04	4 x 150	50.4	6.600	399
TA55.1850.04	4 x 185	56.1	8.026	456
TA55.2400.04	4 x 240	63.1	10.491	538
TA55.0015.05	5 x 1.5	10.7	153	23
TA55.0025.05	5 x 2.5	11.9	210	32
TA55.0040.05	5 x 4	13.3	291	42
TA55.0060.05	5 x 6	14.7	393	54
TA55.0100.05	5 x 10	18.0	654	75
TA55.0160.05	5 x 16	21.6	1.013	100
TA55.0250.05	5 x 25	25.6	1.506	127
TA55.0350.05	5 x 35	29.1	2.040	158
TA55.0500.05	5 x 50	34.5	2.895	192

# 1 Treoflex H05BQ-F/H07BQ-F

PUR sheathed cable



### Technical Data

- Conductor Material**  
Copper, bare or tinned
- Conductor Class**  
Class 5
- Core insulation**  
Rubber insulation
- Core identification**  
Colored acc. VDE 0293, more than 2 cores with green/yellow earth conductor
- Stranding**  
Cores twisted in Layers
- Outer sheath**  
Polyurethane
- Sheath colour**  
Black
- Rated voltage [V]**  
H05BQ-F: 300/500  
H07BQ-F: 450/750

- Testing Voltage**  
2000
- min. bending radius fixed [xd]**  
5 x d
- min. bending radius moved [xd]**  
12.5 x d
- Working temp fixed min/max [C]**  
-40°C up to +90°
- Working temp moved min/max [C]**  
-40°C up to +90°
- Temp at conductor max.**  
+ 90°C
- Burning behaviour**  
VDE 0482-332-1-2/IEC 60332-1

### Design:

- fine strands of bare or tinned copper conductors
- PUR outer sheath, flame-retardant, orange with printing
- earth conductor green/yellow
- rubber insulated cores according to VDE 0207 part 20
- Core marking: up to 5 cores colour coded according to VDE 0293; 7 and up, cores and over black with printed consecutive number coding
- cores twisted in layers
- stranding acc. to VDE 0295 class 5
- H05BQ-F till 1mm<sup>2</sup>, 1,5mm<sup>2</sup> and higher H07BQ-F

### Note

- G = with green-yellow earth core;
- X = without green-yellow earth core

### Application

Suitable for installation in dry, moist and wet rooms as well as for outdoor installation if exposed to harsh mechanical strain. Used where a high chemical and abrasion resistance, impact strength and resistance to oil is required for example industrial plant. Used as feed cable for hand-held electrical equipment with hot parts or heat radiation, such as soldering and heating apparatus drills etc.

Special characteristics of this cable are;

- oil resistance
- weathering resistance
- hydrolysis resistance
- microbes resistance
- halogen free

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA50.0007.02	2 x 0.75	5.7 - 7.4	14.4	52
TA50.0007.03	3 G 0.75	6.2 - 8.1	21.6	63
TA50.0007.04	4 G 0.75	6.8 - 8.8	29	80
TA50.0007.05	5 G 0.75	7.6 - 9.9	36	96
TA50.0010.02	2 x 1	6.1 - 8.0	19.2	59
TA50.0010.03	3 G 1	6.5 - 8.5	29	71
TA50.0010.04	4 G 1	7.1 - 9.3	38.4	89
TA50.0010.05	5 G 1	8.0 - 10.3	48	112
TA50.0015.02	2 x 1.5	7.6 - 9.8	29	92
TA50.0015.03	3 G 1.5	8.0 - 10.4	43	109
TA50.0015.04	4 G 1.5	9.0 - 11.6	58	145
TA50.0015.05	5 G 1.5	9.8 - 12.7	72	169
TA50.0015.07	7 G 1.5	13.0 - 15.0	101	230
TA50.0015.12	12 G 1.5	17.0 - 20.0	173	398
TA50.0025.02	2 x 2.5	9.0 - 11.6	48	121
TA50.0025.03	3 G 2.5	9.6 - 12.4	72	164
TA50.0025.04	4 G 2.5	10.7 - 13.8	96	207
TA50.0025.05	5 G 2.5	11.9 - 15.3	120	262

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA50.0040.02	2 x 4	10.6 - 13.7	77	194
TA50.0040.03	3 G 4	11.3 - 14.5	115	224
TA50.0040.04	4 G 4	12.7 - 16.2	154	327
TA50.0040.05	5 G 4	14.1 - 17.9	192	415
TA50.0040.02	2 x 6	11.8 - 15.1	115	311
TA50.0060.03	3 G 6	12.8 - 16.3	173	310
TA50.0060.04	4 G 6	14.2 - 18.1	230	496
TA50.0060.05	5 G 6	15.7 - 20.0	288	586
TA50.0100.02	2 x 10	15.6 - 19.9	192	428
TA50.0100.03	3 G 10	16.8 - 21.4	288	640
TA50.0100.04	4 G 10	18.6 - 23.6	384	738
TA50.0100.05	5 G 10	20.4 - 25.9	480	968
TA50.0160.02	2 x 16	17.9 - 22.8	307	600
TA50.0160.03	3 G 16	19.5 - 24.7	461	758
TA50.0160.04	4 G 16	21.3 - 27.0	614	1187
TA50.0160.05	5 G 16	23.7 - 30.0	768	1475



# 1 Treoflex – SDI Flexible

Single Double Insulated 110 degree 0.6/1KV LSZH



### Technical Data

Extra flexible special LSHF R-E-110

- **Temperature range**  
-40°C to + 110°C
- **Nominal voltage**  
0.6/1kV
- **Bending radius**  
6 x cable diameter

### Cable Structure

- Annealed bare copper conductors
- Class 6 fine stranding
- Insulation of special R-E-110 low smoke halogen free 110°C, colour white
- Outer sheath of special R-HF-110 thermoset compound LSHF 110°C, colour orange.

### Properties

- Low Smoke Halogen Free (LSHF, LSOH, LSZH)
- UV Stabilised
- Flame Retardant
- Resistant to: oils, petrol, acids, sea water
- Submersible to 200 metres
- Relevant Standards  
AS/NZS1125, AS/NZS3808, IEC60332-1, AS/NZS5000.1

### Application

Flexible single core double insulated for use in switchboards, busbars, transformers, welding leads, battery charges.

Part Number	Size mm <sup>2</sup>	Nominal Stranding	Cable Diameter mm	Cable Weight KG/KM	Conductor Resistance @200 Ω/KM	Voltage Drop@50Hz MV/A	Current Rating Spaced Amps*	Current Rating Touching Amps*
TA7.0060.01 ..	6	172/0.20	8.5	118	3.3	6.81	70	48
TA7.0100.01 ..	10	320/0.2	8.7	128	1.91	4.3	99	80
TA7.0160.01 ..	16	512/0.2	10.6	189	1.21	2.71	130	105
TA7.0250.01 ..	25	800/0.2	11.9	276	0.78	1.72	173	139
TA7.0350.01 ..	35	1120/0.2	13.4	375	0.554	1.25	214	172
TA7.0500.01 ..	50	705/0.3	15.7	526	0.386	0.929	270	217
TA7.0700.01 ..	70	990/0.3	17.7	738	0.272	0.657	340	273
TA7.0950.01 ..	95	1340/0.3	19.3	922	0.206	0.491	410	329
TA7.1200.01 ..	120	1690/0.3	21.2	1164	0.161	0.403	487	390
TA7.1500.01 ..	150	2123/0.3	25.1	1470	0.129	0.344	562	450
TA7.1850.01 ..	185	1470/0.4	27.2	1746	0.106	0.296	644	516
TA7.2400.01 ..	240	1905/0.4	30.6	2364	0.080	0.252	775	620
TA7.3000.01 ..	300	2385/0.4	33.2	2938	0.064	0.227	895	714
TA7.4000.01 ..	400	3184/0.4	37	3859	0.049	0.208	1079	855
TA7.5000.01 ..	500	3980/0.4	41	4814	0.038	0.195	1260	990
TA7.6300.01 ..	630	5015/0.4	46	6040	0.029	0.184	1493	1154

\* 1.1:2009 Table 9 Columns 3 and 7.

**Note:** Please complete the part number for these cables by adding the below suffix for the colour required as per the list:

**OE = Orange**, following colours are available on request; **RD = Red**, **BE = Blue**, **BK = Black**, **WE = White**.

### Motor current table, Amperes

Power kW	hp	Single Phase 240V	Three Phase 415V	Power kW	hp	Single Phase 240V	Three Phase 415V
0.37	0.5	2.2	0.7	5.5	7.5	32.4	10.8
0.55	0.75	3.2	1.1	7.5	10		14.4
0.75	1	4.3	1.4	9.3	12.5		18
1.1	1.5	6.5	2.2	11	15		21.6
1.5	2	8.6	2.9	15	20		28.8
1.8	2.5	10.8	3.6	18.5	25		36
2.2	3	13	4.3	22	30		43.2
4	5	21.6	7.2	30	40		58

# 1 Treoflex – Flexible Earth

Single Double Insulated 110 degree 0.6/1KV LSZH



### Technical Data

- Special soft cross linked X-HF-110
- Temperature range**  
-40°C to + 110°C
- Nominal voltage**  
0.6/1kV
- Bending radius**  
6 x cable diameter

### Cable Structure

- Tinned copper conductors for sizes 0.75mm<sup>2</sup> to 6mm<sup>2</sup>
- Annealed bare copper conductors for size 10mm<sup>2</sup> and over
- Class 6 fine stranding
- Insulation of special Soft X-HF-110

### Properties

- Low Smoke Halogen Free (LSHF, LSOH, LSZH)
- UV Stabilised
- Flame Retardant

### Relevant Standards

AS/NZS1125, AS/NZS3808, IEC60332-1, IEC60332-3(A), IEC 61034, AS/NZS5000.1

### Application

Flexible single core earth cable for use in switchboards, mains and sub-mains, transformers and generators.

Part Number	Size mm <sup>2</sup>	Nominal Stranding	Thickness of Insulation mm	Cable Diameter mm	Approx Weight Kg/Km	Conductor Resistance @ 20° Ω/Km	Voltage Drop @50Hz MV/A
TA4.0100.01	10	320/0.20	0.7	5.7	115	1.91	4.3
TA4.0160.01	16	512/0.20	0.7	6.9	172	1.21	2.71
TA4.0250.01	25	800/0.20	0.9	8.7	269	0.78	1.72
TA4.0350.01	35	1120/0.20	0.9	9.9	363	0.554	1.25
TA4.0500.01	50	705/0.30	1.0	11.9	513	0.386	0.929
TA4.0700.01	70	990/0.30	1.1	12.1	700	0.272	0.657
TA4.0950.01	95	1340/0.30	1.1	14.3	949	0.206	0.491
TA4.1200.01	120	1690/0.30	1.2	15.9	1182	0.161	0.403
TA4.1500.01	150	2123/0.30	1.4	17.9	1477	0.129	0.344
TA4.1850.01	185	1470/0.30	1.6	19.9	1826	0.106	0.296
TA4.2400.01	240	1905/0.30	1.7	21.9	2362	0.080	0.252
TA4.3000.01	300	2385/0.30	1.8	25.6	2927	0.064	0.227

### Minimum size of copper earthing conductor

Nominal area active mm <sup>2</sup>	Cu Earth mm <sup>2</sup>	Nominal area active mm <sup>2</sup>	Cu Earth mm <sup>2</sup>
2.5	2.5	95	25
4	2.5	120	35
6	2.5	150	50
10	4	185	70
16	6	240	95
25	6	300	120
35	10	400	120
50	16	500	120
70	25	630	120

### A.W.G conversion to mm<sup>2</sup>

A.W.G	Dia mm	mm <sup>2</sup>	A.W.G	Dia mm	mm <sup>2</sup>
0000 (4/0)	11.68	107.3	10	2.59	5.3
000 (3/0)	10.4	85	12	2.05	3.3
00 (2/0)	9.27	67.4	14	1.63	2.1
0	8.25	53.5	16	1.29	1.3
2	6.54	33.6	18	1.02	0.8
4	5.19	21.2	20	0.81	0.5
6	4.12	13.3	22	0.64	0.3
8	3.25	8.4	24	0.51	0.2



# 1 Treoflex Welding Flex

90°C 0.6/1KV



### Technical Data

- Extra fine wire to ensure maximum flexibility
- Temperature range**  
-30°C to 90°C static  
-20°C to 90°C flexing
- Nominal voltage**  
0.6/1kV
- Bending radius**  
5 x cable diameter

### Cable Structure

- Annealed bare copper conductors
- Class 6 fine stranding
- Insulation of very flexible NBR 90°C, colour white
- Outer sheath of special NBR
- Available colours:**  
Orange, Red, Blue, Black, White

### Properties

- UV Stabilised
- Flame Retardant
- Resistant to: oils, acids, sea water

### Relevant Standards

AS/NZS1125, IEC60332-1, AS/NZS5000.1

### Application

Flexible single core double insulated for use in switchboards, busbars, transformers, welding leads and battery charges.

Part Number	Size mm <sup>2</sup>	Nominal Stranding	Cable Diameter mm	Cable Weight KG/KM	Conductor Resistance @20° Ω/KM	Three-Phase Voltage Drop @50Hz MV/A	Current Rating Spaced Amps*	Current Rating Touching Amps*
TA2.0100.01 ..	10	320/0.2	9.4	170	1.98	4.05	80	64
TA2.0160.01 ..	16	512/0.2	10.9	229	1.21	2.55	106	85
TA2.0250.01 ..	25	800/0.2	12.6	348	0.731	1.62	142	114
TA2.0350.01 ..	35	1120/0.2	13.5	450	536	1.17	177	141
TA2.0500.01 ..	50	705/0.3	15.6	600	0.402	0.872	223	178
TA2.0700.01 ..	70	990/0.3	17.7	805	0.266	0.615	283	225
TA2.0950.01 ..	95	1340/0.3	20	1070	0.208	0.457	341	271
TA2.1200.01 ..	120	1961/0.3	22	1330	0.161	0.373	406	322
TA2.1500.01 ..	150	1187/0.3	25	1650	0.126	0.316	570	373
TA2.1850.01 ..	185	2331/0.3	27	2055	0.104	0.269	540	428
TA2.2400.01 ..	240	3172/0.3	30	2570	0.080	0.227	651	515
TA2.3000.01 ..	300	3965/0.3	34	3210	0.632	0.203	752	594
TA2.4000.01 ..	400	5246/0.3	39	4190	0.465	0.183	909	715

\* Current ratings based on AS/NZS3008.1.1:2009 Table 8 Columns 3 and 9.

**Note:** Please complete the part number for these cables by adding the below suffix for the colour required as per the list:

**OE = Orange, RD = Red, BE = Blue**

following colours are available on request; **BK = Black, WE = White.**

120	Welding Current Rating (Amps) Maximum Duty Cycle percent to AS/NZS 1995			
Nominal Area mm <sup>2</sup>	100	60	30	25
16	125	160	225	245
25	165	210	300	330
35	205	265	375	410
50	260	335	475	520
70	325	415	590	645
95	390	505	715	780
120	455	585	830	910

\* Current ratings based on a conductor temperature of 90°C and in ambient air temperature of 40°C

# Treoflex

Figure 8 Twin 0.6/1kV



### Technical Data

Extra fine wire to ensure maximum flexibility

• **Temperature range**

- 30°C to + 75°C static
- 20°C to + 75°C flexing

• **Nominal voltage**

0.6/1kV

• **Bending radius**

5 x cable diameter

### Cable Structure

- Annealed bare copper conductors
- Class 6 fine stranding
- Insulation of very flexible NBR 90°C
- Outer sheath of special PVC

### Colour :

- Red and Blue (red and black on request)

### Properties

- UV Stabilised
- Flame Retardant

### Relevant Standards

AS/NZS1125,  
IEC60332-1,  
AS/NZS5000.1

### Application

For use as a battery/jumper cable or battery powered equipment like forklifts and also for Telecom companies for phone equipment.

Part Number	Size mm <sup>2</sup>	Conductor Structure No. / Wire mm	Thickness of Insulation mm	Thickness of Sheath mm	Overall Diameter mm	Conductor Resistance @20° Ω/Km	Approx Weight Kg/Km	Current Rating Amps
TA3.0015.02	2 x 1.5	48/0.2	0.8	0.9	5.0 x 10.2	13.3	76	19
TA3.0025.02	2 x 2.5	80/0.2	0.8	1.0	5.6 x 11.4	7.98	101	25
TA3.0040.02	2 x 4	127/0.2	0.8	1.0	6.5 x 13.2	4.95	153	42
TA3.0060.02	2x 6	190/0.2	0.8	1.1	7.3 x 14.8	3.3	219	62
TA3.0100.02	2 x 10	318/0.2	1.0	1.2	9.0 x 18.2	1.91	325	105
TA3.0160.02	2 x 16	504/0.2	1.0	1.2	10.0 x 20.2	1.21	444	135
TA3.0250.02	2 x 25	770/0.2	1.2	1.2	11.9 x 24.0	0.78	675	180
TA3.0350.02	2 x 35	714/0.25	1.2	1.2	13.7 x 27.6	0.554	913	225
TA3.0500.02	2 x 50	1042/0.25	1.4	1.4	15.6 x 31.4	0.384	1298	285
TA3.0700.02	2 x 70	1474/0.25	1.4	1.4	17.5 x 35.2	0.272	1738	355

### Duty Cycle Current Rating (A)

Size	100%	85%	60%	30%	20%	10%
2 x 4	42	46	54	77	94	188
2 x 6	62	67	80	113	138	196
2 x 10	105	115	135	190	235	332
2 x 16	135	145	175	245	302	426
2 x 25	180	195	230	330	402	569
2 x 35	225	245	290	410	503	711
2 x 50	285	310	370	520	637	901
2 x 70	355	385	460	650	794	1122



# Treoflex – V90HT 0.6/1kV

Single Core Flexible 0.6/1kV



### Technical Data

PVC single core to V90HT

• **Temperature range**

- 20°C to + 90°C

• **Nominal voltage**

0.6/1kV

• **Bending radius**

3 x cable diameter

### Cable Structure

- Annealed tinned copper conductors to AS1125
- Class 5 and 6 fine stranding
- Insulation of special soft V90HT PVC

### Properties

- Flame Retardant
- RoHS

### Relevant Standards

AS/NZS1125,  
AS/NZS3808,  
IEC60332-1,  
AS/NZS5000.1

### Application

Flexible single core cable for use in switchboards, transformers and other equipment requiring fixed and flexible single cores.

Part Number	Size	Nominal Stranding	Thickness of Insulation mm	Approx Diameter mm	Cable Weight KG/KM	Conductor Resistance @20° Ω/KM	Current Rating amps	Voltage Drop@50Hz MV/A
TA8.0005.01 ..	0.5	16/0.20	0.8	2.5	10.8	39	3	---
TA8.0007.01 ..	0.75	24/0.20	0.8	2.5	14.4	26	7.5	---
TA8.0010.01 ..	1	32/0.20	0.8	2.7	17.5	19.5	16	49.7
TA8.0015.01 ..	1.5	30/0.25	0.8	2.9	23	13.3	20	31.9
TA8.0025.01 ..	2.5	50/0.25	0.8	3.6	33.1	7.98	29	17.4
TA8.0040.01 ..	4	56/0.30	1.0	4.1	52.2	4.95	38	10.8
TA8.0060.01 ..	6	84/0.30	1.0	4.8	72.8	3.3	49	7.23
TA8.0100.01 ..	10	80/0.40	1.0	5.7	115	1.91	67	4.3
TA8.0160.01 ..	16	128/0.40	1.0	6.9	172	1.21	89	2.71
TA8.0250.01 ..	25	200/0.40	1.2	8.7	269	0.78	120	1.72
TA8.0350.01 ..	35	280/0.40	1.2	9.9	363	0.554	150	1.25
TA8.0500.01 ..	50	400/0.40	1.4	11.9	513	0.386	180	0.929
TA8.0700.01 ..	70	356/0.50	1.4	14.1	700	0.272	230	0.657
TA8.0950.01 ..	95	485/0.50	1.6	15.6	949	0.206	285	0.491
TA8.1200.01 ..	120	614/0.50	1.6	17.3	1182	0.161	335	0.403
TA8.1500.01 ..	150	765/0.50	1.8	19.4	1477	0.129	385	0.344
TA8.1850.01 ..	185	944/0.50	2.0	21.8	1826	0.106	445	0.296
TA8.2400.01 ..	240	1225/0.50	2.0	25.5	2362	0.080	540	0.252

**Note:** Please complete the part number for these cables by adding the below suffix for the colour required as per the list:

**BK** = Black, **RD** = Red, **WE** = White, **BE** = Blue, **BN** = Brown, **GY** = Grey, **VT** = Violet, **OE** = Orange, **PK** = Pink, **GW** = Green/Yellow.

### Current Ratings:

Table 6 Column 1 AS/NZS 3008.1.1: 1998

# FLEX-H

Halogen free control cable



### Technical Data:

- **Conductor material** Bare copper
- **Conductor Class** Class 5 according VDE 0295 resp IEC 60228 resp. IEC 60228
- **Core Insulation** Halogen-free compound
- **Core identification** Acc. to DIN VDE 0293: Black cores with consecutive white numerals
- **Stranding** Cores twisted in layers
- **Outer sheath** Halogen-free compound
- **Sheath colour** Grey (RAL 7001)
- **Rated voltage [V]** 300/500
- **Testing voltage [V]** 3000
- **Conductor resistance**
- **Insulation resistance** >20MΩ x km
- **Current carrying capacity** DIN VDE (s. technical guidance)
- **Min. bending radius fixed [xd]** 5xd
- **Min. bending radius moved [xd]** 10xd

- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/mac [C]** -15°C up to +70°C
- **Burning behaviour** VDE 0482-332-1-1: halogen-free and highly flame-retardant; IEC 60332-1-3
- **Approvals** Halogen-free acc. to IEC 60754-1
- Corrosivity acc. to IEC 60754-2
- EN 60754-2
- EN 60332-1-2
- EN 61034-2

### Construction:

- cores black with continuous white figure imprint
- core insulation: halogen-free compound
- stranding acc. to VDE 0295 class 5
- fine strands of bare copper conductor
- earth conductor green/yellow
- cores twisted in layers

- outer sheath halogen-free compound grey. RAL 7001. largely UV resistant

### Tests:

- halogen-free according to DIN VDE 0472 part 815
- behaviour in fire no flame propagation. test method to DIN VDE 0472 part 804 test method C. IEC 332-3 and HD 405.3 and as well as flame retardant and self extinguishing to IEC 332-1 and DIN VDE 0472 part 804 test method B
- corrosiveness of combustion gases (freedom from Halogen) test method to VDE 0472 part 813. IEC 754-2. HD 602 and 606
- burning behaviour according to VDE 0472 part 816 test method C. IEC 1034-1/1034-2. HD 606 and BS 7622 part 1 and 2

### Application:

Halogen-free, flame-retardant power control cable with improved properties in case of fire. Suitable for fixed or flexible applications. Suitable for use as energy, power, control or connecting cable to meet stringent safety requirements. Installation in dry and moist room, also suitable for limited external application. Pronounced advantages in comparance to a PVC control cable (e.g. Flex-JZ): - low fire load, - low smoke emission - reduced fire propagation

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
100020050	2 x 0.50 OZ	5.30	0.96	3.80
100030050	3 G 0.50	5.60	1.44	4.70
100040050	4 G 0.50	6.00	1.92	5.70
100050050	5 G 0.50	6.60	2.40	6.60
100070050	7 G 0.50	7.20	3.40	8.50
100120050	12 G 0.50	9.60	5.80	13.50
100180050	18 G 0.50	11.50	8.64	21.00
100250050	25 G 0.50	13.40	12.20	28.70
100020075	2 x 0.75 OZ	5.40	1.44	4.35
100030075	3 G 0.75	5.90	2.16	5.50
100040075	4 G 0.75	6.40	2.90	6.70
100050075	5 G 0.75	7.10	3.60	8.30
100070075	7 G 0.75	7.70	5.04	10.02
100120075	12 G 0.75	10.30	8.60	17.60
100180075	18 G 0.75	12.30	13.00	25.40
100250075	25 G 0.75	14.60	18.00	35.50
100020100	2 x 1 OZ	5.70	1.92	5.04
100030100	3 G 1	6.20	2.90	6.30
100040100	4 G 1	6.90	3.80	8.00
100050100	5 G 1	7.60	4.80	9.90
100070100	7 G 1	8.50	6.72	12.70
100120100	12 G 1	11.30	11.60	21.50
100180100	18 G 1	13.20	17.40	31.00
100250100	25 G 1	15.40	24.10	42.70
100410100	41 G 1	20.20	40.32	70.80
100020150	2 x 1.50 OZ	6.50	2.90	6.70
100030150	3 G 1.50	6.80	4.30	8.20
100040150	4 G 1.50	7.60	5.80	10.80
100050150	5 G 1.50	8.40	7.20	12.60
100070150	7 G 1.50	9.20	10.20	16.20
100120150	12 G 1.50	12.40	17.40	28.00
100180150	18 G 1.50	14.70	25.90	40.20
100250150	25 G 1.50	17.30	36.10	58.90
100020250	2 x 2.50 OZ	8.10	4.80	10.60
100030250	3 G 2.50	8.50	7.30	13.20
100040250	4 G 2.50	9.40	9.60	17.00

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
100050250	5 G 2.50	10.40	12.10	20.50
100070250	7 G 2.50	11.60	16.80	26.60
100120250	12 G 2.50	15.60	28.80	46.40
100160250	16 G 2.50	17.60	38.40	57.90
100180250	18 G 2.50	18.40	43.20	67.60
100020400	2 x 4 OZ	9.90	7.68	18.50
100030400	3 G 4	10.20	11.60	20.20
100040400	4 G 4	11.20	15.40	25.80
100050400	5 G 4	12.50	19.20	32.30
100020600	2 x 6	10.80	11.52	23.40
100040600	4 G 6	13.10	23.10	37.50
100050600	5 G 6	14.50	28.80	46.80
100021000	2 x 10	12.80	19.20	35.30
100041000	4 G 10	16.60	38.40	59.80
100051000	5 G 10	18.90	0.00	47.60
100041600	4 G 16	20.90	61.60	93.00
100051600	5 G 16	22.60	76.00	111.80
100052500	5 G 25	26.40	120.00	206.00
100033500	3 G 35	26.80	100.80	147.30
100043500	4 G 35	28.40	132.10	204.20
100053500	5 G 35	32.10	168.00	256.00
100035000	3 G 50	30.00	144.00	265.00
100045000	4 G 50	34.20	193.20	278.40
100055000	5 G 50	37.60	241.30	385.20
100037000	3 G 70	33.70	201.60	328.00
100047000	4 G 70	40.60	268.40	412.30
100057000	5 G 70	45.40	337.20	496.30
100039500	3 G 95	40.50	273.60	480.00
100049500	4 G 95	45.50	364.00	546.60
100059500	5 G 95	51.00	454.20	668.10
1000312000	3 G 120	44.00	345.60	540.00
1000412000	4 G 120	49.90	459.40	705.30



# FLEX-CH

Halogen-free control cable copper screened

### Technical Data:

- **Conductor material** copper, bare
- **Conductor Class** Class 5 according VDE 0295 resp IEC 60228
- **Core Insulation** Halogen-free compound
- **Core identification** Acc. to DIN VDE 0293: Black cores with consecutive white numerals
- **Stranding** Cores twisted in layers
- **Outer sheath** Halogen-free compound
- **Sheath colour** Grey (RAL 7001)
- **Rated voltage [V]** 300/500
- **Testing voltage [V]** 3000
- **Insulation resistance** min 20MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidelines)
- **Min. bending radius fixed [xd]** 6xd
- **Min. bending radius moved [xd]** 12xd

- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -15°C up to +70°C
- **Burning behaviour** VDE 0482-332-1-1: halogen-free und highly flameretardant; IEC-60332-3

### Construction:

- fine strands of bare copper conductor
- cores black with continuous white figure imprint
- core insulation: halogen-free compound
- stranding acc. to VDE 0295 class 5 - earth conductor green/yellow
- cores twisted in layers
- copper screen braiding of tinned copper wires
- outer sheath: halogen-free compound grey. RAL 7001

### Tests:

- halogen-free according to DIN VDE 0472 part 815
- behaviour in fire no flame propagation. test method to DIN VDE 0472 part 804 test method C. IEC 332-3 and HD 405.3 and as well as flame retardant and self-extinguishing to IEC 332-1 and DIN VDE 0472 part 804 test method B
- corrosiveness of combustion gases (freedom from Halogen) test method to VDE 0472 part 813. IEC 754-2. HD 602 and 606
- burning behaviour according to VDE 0472 part 816 test method C. IEC 1034-1/1034-2. HD 606 and BS 7622 part 1 and 2

### Application:

Halogen-free, flame retardant power control cable with improved properties in case of fire. Suitable for fixed or flexible applications. Suitable for use as energy, power, control or connecting cable to meet stringent safety requirements. Installation in dry and moist rooms. Pronounced advantages in comparance to a PVC control cable (e.g. Flex-JZ): - low fire load - low smoke emission - reduced fire propagation.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
214020050	2 x 0.50	5.80	3.60	4.50
214030050	3 G 0.50	6.20	4.20	5.30
214040050	4 G 0.50	6.80	4.80	6.60
214050050	5 G 0.50	7.20	5.60	8.30
214070050	7 G 0.50	7.80	7.10	10.60
214120050	12 G 0.50	10.10	10.70	16.10
214180250	18 G 0.50	11.80	14.40	22.80
214250050	25 G 0.50	13.80	20.80	29.90
214020075	2 x 0.75	6.20	3.90	5.80
214030075	3 G 0.75	6.60	5.10	7.30
214040075	4 G 0.75	7.20	6.10	8.00
214050075	5 G 0.75	7.80	7.40	10.20
214070075	7 G 0.75	8.70	9.10	13.20
214120075	12 G 0.75	11.00	14.20	20.50
214180075	18 G 0.75	13.00	20.50	29.70
214250075	25 G 0.75	15.20	28.50	41.60
214020100	2 x 1	6.50	4.90	6.70
214030100	3 G 1	7.00	6.00	8.00
214040100	4 G 1	7.50	7.60	10.70
214050100	5 G 1	8.30	8.60	12.60
214070100	7 G 1	9.00	10.90	15.20
214120100	12 G 1	11.80	18.20	24.60
214180100	18 G 1	14.00	26.10	35.60
214250100	25 G 1	16.30	34.90	48.70
214020150	2 x 1.50	7.20	6.30	7.00
214030150	3 G 1.50	7.80	8.10	10.40
214040150	4 G 1.50	8.40	9.70	12.70
214050150	5 G 1.50	9.00	11.60	15.50
214070150	7 G 1.50	10.00	15.20	20.40
214120150	12 G 1.50	13.20	26.10	31.90
214180150	18 G 1.50	15.80	36.90	47.20
214250150	25 G 1.50	18.00	51.70	64.90
214020250	2 x 2.50	8.60	9.30	11.80
214030250	3 G 2.50	9.20	11.30	15.00
214040250	4 G 2.50	10.10	14.62	18.80

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
214050250	5 G 2.50	11.00	17.50	22.90
214070250	7 G 2.50	12.20	24.60	30.10
214120250	12 G 2.50	16.40	39.20	49.00
214180250	18 G 2.50	19.70	56.41	69.10
214250250	25 G 2.50	24.20	77.00	96.30
214040400	4 G 4	12.00	23.70	28.30
214050400	5 G 4	13.20	26.20	34.80
214020600	2 x 6	11.90	20.00	28.50
214030600	3 G 6	12.50	25.30	32.90
214040600	4 G 6	14.10	35.80	42.40
214050600	5 G 6	15.70	44.18	48.90
214021600	2 x 10	14.70	32.80	44.80
214031600	3 G 10	15.70	38.50	50.60
214041600	4 G 10	17.20	53.40	66.80
214051600	5 G 10	19.50	64.00	81.00
214071600	7 G 10	21.20	85.00	120.00
214021600	2 x 16	17.00	42.00	57.00
214031600	3 G 16	18.40	75.00	89.00
214041600	4 G 16	20.20	91.00	103.00
214051600	5 G 16	22.80	105.00	126.20
214071600	7 G 16	24.80	147.00	170.00
214032500	3 G 25	22.30	90.00	99.60
214033500	3 G 35	25.80	113.00	132.90
214035000	3 G 50	30.50	176.60	308.00
214042500	4 G 25	26.10	128.90	152.00
214052500	5 G 25	28.40	148.60	192.30
214043500	4 G 35	29.20	169.30	234.20
214053500	5 G 35	33.20	201.50	291.20
214045000	4 G 50	35.50	228.80	325.00
214055000	5 G 50	39.20	278.10	416.20
214047000	4 G 70	40.50	308.90	430.70
214049500	4 G 95	48.30	406.00	635.70
2140412000	4 G 120	53.70	511.60	806.10

# 1 FLEX-H POWER

0.6/1kV black



### Technical Data:

- **Conductor material** Copper
- **Conductor Class** Class 5
- **Core Insulation** Special halogen free compound
- **Core identification** DIN VDE 0293: Black cores with white numerals
- **Stranding** Cores twisted in layers
- **Outer sheath** Special halogen free compound, self-extinguishing, flame retardant
- **Sheath colour** Black RAL 9005
- **Rated voltage [V]** 600/1000
- **Testing voltage [V]** 4000
- **Conductor resistance** <13.7 MΩ x km
- **Insulation resistance** >20MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidelines)
- **Min. bending radius fixed [xd]** 8xd
- **Min. bending radius moved [xd]** 12xd
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -15°C up to +70°C
- **Temp at conductor max.** +70°C in operation, +160°C in case of short-circuit
- **Burning behaviour** EN 60332-1, IEC 60332-3, EN 60332-3
- **Approvals** Oil resistant: EN 60811-2-1

### Construction:

- fine strands of bare copper conductor
- stranding acc. to EN 60228, class 5
- black cores with white numbers
- outer sheath of special halogen free compound, fire and oil resistant, resistant of UV - radiation
- sheath colour: black RAL 9005

### Application:

Flex-H POWER can be installed in all electrical systems in dry and damp interiors, especially in industrial environments, and can also be used outside; underwater installation is not permitted. Not suitable for constant moving. Flex-H POWER is suitable as measuring, monitoring and control cable in the machine tool and plant engineering, in heat and air conditioning systems and refrigeration plants, etc.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
1002020050	2 x 0.5	7.8	0.96	8.5
100203000	3 G 0.5	8.2	1.44	9.5
1002040050	4 G 0.5	8.9	1.92	11.1
1002050050	5 G 0.5	9.5	2.4	12.8
1002070050	7 G 0.5	10.2	3.36	15.2
1002120050	12 G 0.5	12.8	5.76	22.8
1002180050	18 G 0.5	14.8	8.64	30.8
1002020075	2 x 0.75	8.3	1.44	9.5
1002030075	3 G 0.75	8.7	2.16	11
1002040075	4 G 0.75		2.88	12.9
1002050075	5 G 0.75	10.1	3.6	14.8
1002070075	7 G 0.75	10.9	5.04	17.6
1002120075	12 G 0.75	13.9	8.64	26.9
1002180075	18 G 0.75	16	12.96	36.7
10020100	2 x 1	8.6	1.92	10.4
1002030100	3 G 1	9.1	2.88	12.2
1002040100	4 G 1	9.9	3.84	14.3
1002050100	5 G 1	10.5	4.8	16.6
1002070100	7 G 1	11.4	6.72	19.8
1002120100	12 G 1	14.5	11.52	30.5
1002180100	18 G 1	16.8	17.28	42.2
1002020150	2 x 1.5		2.88	12.9
1002030150	3 G 1.5	9.9	4.32	15
1002040150	4 G 1.5	10.8	5.76	17.8
1002050150	5 G 1.5	11.6	7.2	20.9
1002070150	7 G 1.5	12.6	10.08	25.2
1002120150	12 G 1.5	16.1	17.28	39.3
1002180150	18 G 1.5	18.8	25.92	55

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
1002030250	3 G 2.5	11.1	7.2	19.5
1002040250	4 G 2.5	12.2	9.6	23.7
1002050250	5 G 2.5	13.1	12	28.1
1002070250	7 G 2.5	14.2	16.8	34.3
1002120250	12 G 2.5	18.4	28.8	54.2
1002180250	18 G 2.5	21.6	43.2	76.7
1002020250	2 x 2.5	10.6	4.8	16.4
1002020400	2 x 4	12.5	7.68	25.3
1002030400	3 G 4	13.2	11.52	30
1002040400	4 G 4	14.5	15.36	36.4
1002050400	5 G 4	15.6	19.2	43.2
1002070400	7 G 4	17	26.88	53.3
1002180400	18 G 4	26.3	69.12	129.5
1002030600	3 G 6	14.6	17.28	38.9
1002040600	4 G 6	16.1	23.04	47.5
1002050600	5 G 6	17.5	28.8	57.4
1002070600	7 G 6	18.9	40.32	70.9



# 1 LIHH

Halogen free unscreened data cable

### Technical Data:

- **Conductor material** Copper bare
- **Conductor class** Class 5 acc. to DIN VDE 0295 or IEC 60228
- **Core insulation** Halogen-free polyethylene
- **Core identification** DIN 47100
- **Stranding** Cores twisted in layers
- **Outer sheath** Halogen-free polymer
- **Sheath colour** Grey (RAL 7032)
- **Rated voltage [V]** 350
- **Testing voltage [V]** 0.14 mm²: 1200 V, >0.14 mm²: 1500

### Conductor resistance \*

- **Insulation resistance** min. 20 MΩ x km
- **Current carrying capacity** DIN VDE (s. technical guidelines)
- **Min. bending radius fixed [xd]** 6 x d
- **Min. bending radius moved [xd]** 10 x d
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -15°C up to +80°C
- **Temp at conductor max.**
- **Burning behaviour** VDE 0482-332-2-1 (IEC 60332-1-2)
- **Approvals** DIN VDE 0295 VDE 0472, Teil804

### Construction:

- bare copper wires
- core insulation: halogen-free polyethylene
- core identification acc. to DIN 47100
- outer sheath: halogen-free polymer, grey (RAL 7032)
- cores twisted in layers
- flame-retardant

### Application:

Flexible halogen-free data transmission, control and interconnecting cable for measuring, control and regulation technology, intercom systems, machine, tool and equipment manufacturing and electronics, especially where small dimensions are required. Suitable for use in buildings where the release of halogens in the event of fire must be avoided in dry and damp rooms, or concealed, but not outdoors or in the ground.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
220020014	2 x 0.14	3.40	0.27	1.20
220030014	3 x 0.14	3.60	0.40	1.50
220040014	4 x 0.14	3.80	0.54	1.70
220050014	5 x 0.14	4.10	0.67	2.20
220060014	6 x 0.14	4.40	0.81	2.50
220070014	7 x 0.14	4.40	0.94	2.60
220080014	8 x 0.14	5.10	1.08	2.90
220100014	10 x 0.14	5.40	1.34	3.50
220120014	12 x 0.14	5.80	1.61	4.30
220150014	15 x 0.14	6.10	2.02	5.60
220180014	18 x 0.14	6.60	2.42	7.00
220200014	20 x 0.14	7.20	2.68	7.30
220210014	21 x 0.14	7.40	2.90	7.60
220250014	25 x 0.14	8.00	3.46	9.10
220300014	30 x 0.14	8.80	4.04	9.80
220340014	34 x 0.14	9.20	4.60	11.10
220400014	40 x 0.14	10.40	5.40	13.90
220500014	50 x 0.14	12.50	6.72	76.40
220020025	2 x 0.25	4.00	0.48	2.20
220030025	3 x 0.25	4.20	0.72	2.50
220040025	4 x 0.25	4.50	0.96	2.80
220050025	5 x 0.25	4.90	1.20	3.40
220060025	6 x 0.25	5.30	1.44	3.90
220070025	7 x 0.25	5.30	1.68	4.20
220080025	8 x 0.25	6.40	1.92	5.00
220100025	10 x 0.25	7.00	2.40	6.00
220120025	12 x 0.25	7.20	2.88	6.70
220150025	15 x 0.25	7.60	3.60	8.00
220160025	16 x 0.25	7.90	3.84	8.50
220180025	18 x 0.25	8.20	4.32	9.30
220210025	21 x 0.25	9.10	5.04	10.50
220250025	25 x 0.25	9.70	6.00	12.70
220340025	34 x 0.25	10.80	8.20	16.80
220400025	40 x 0.25	11.40	9.60	19.60

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
220020034	2 x 0.34	4.40	0.65	2.80
220030034	3 x 0.34	4.60	0.98	3.00
220040034	4 x 0.34	5.00	1.31	4.00
220050034	5 x 0.34	5.70	1.63	4.40
220070034	7 x 0.34	6.10	2.28	6.00
220080034	8 x 0.34	7.20	2.62	7.3
220100034	10 x 0.34	7.80	3.26	8.00
220120034	12 x 0.34	8.00	3.92	9.70
220150034	15 x 0.34	8.50	4.91	11.50
220180034	18 x 0.34	9.20	5.91	14.20
220210034	21 x 0.34	10.40	6.90	16.60
220250034	25 x 0.34	11.40	8.20	19.20
220340034	34 x 0.34	12.80	11.11	24.00
220400034	40 x 0.34	13.70	13.10	28.56
220020050	2 x 0.50	4.90	0.96	3.10
220030050	3 x 0.50	5.20	1.44	3.70
220040050	4 x 0.50	5.80	1.92	4.50
220050050	5 x 0.50	6.30	2.40	5.80
220070050	7 x 0.50	7.00	3.36	7.20
220100050	10 x 0.50	8.70	4.80	11.50
220120050	12 x 0.50	9.10	5.76	11.70
220150050	15 x 0.50	10.10	7.20	16.30
220210050	21 x 0.50	11.70	10.10	21.90
220250050	25 x 0.50	12.60	12.00	27.00
220020075	2 x 0.75	5.30	1.44	4.10
220030075	3 x 0.75	5.70	2.20	5.60
220040075	4 x 0.75	6.30	2.88	6.00
220050075	5 x 0.75	7.10	3.60	7.00
220070075	7 x 0.75	7.70	5.04	8.50
220100075	10 x 0.75	9.50	7.20	14.90
220120075	12 x 0.75	10.40	8.64	16.50
220020100	2 x 1.00	5.70	1.92	5.50
220030100	3 x 1.00	6.10	2.88	5.70
220040100	4 x 1.00	6.60	3.84	6.70
220020150	2 x 1.50	6.90	2.90	7.40
220030150	3 x 1.50	7.40	4.32	7.20
220040150	4 x 1.50	8.00	5.76	8.70

# LIHCH

Screened and Halogen-free data cable



### Technical Data:

- **Conductor material** Copper bare
- **Conductor class** Class 5 according VDE 0295 resp IEC 60228
- **Core insulation** H|1
- **Core identification** DIN 47100: Different colours
- **Stranding**
- **Outer sheath** Special halogen-free compound
- **Sheath colour** Grey
- **Rated voltage [V]** 250
- **Testing voltage [V]** 1200
- **Insulation resistance** 20 MOhm x km

### Min. bending radius

Occasional flexing: 10 x outer diameter  
Fixed installation: 6 x outer diameter

- **Working temp fixed min/max [C]** -40°C up to +70°C
- **Working temp moved min/max [C]** -15°C up to +70°C
- **Temp at conductor max.**
- **Burning behaviour** Flame-retardant: IEC 60332-1
- **Approvals** Halogen-free: IEC 60754-1 and IEC 60754-2

### Construction:

- fine stranded bare copper conductor
- core insulation made of halogen-free special compound (H|1)
- tinned copper screening
- outer sheath: halogen-free special compound.

### Application:

Halogen-free data transmission, connecting and control cable for safety-related facilities, in measurement and control technology for lossless transmission of signals.

Use in computer systems, office technology and scales - everywhere, where screened, halogen-free conductors with little cross sections are needed. Convenient for areas with high concentrations of people, e.g. public buildings or means of transportation as well as high material assets which have to be protected in case of fire.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
2140020014	2 x 0.14	4.10	1.30	2.20
2140030014	3 x 0.14	4.30	1.40	2.80
2140040014	4 x 0.14	4.40	1.50	3.20
2140050014	5 x 0.14	4.80	1.80	3.80
2140060014	6 x 0.14	5.00	1.80	4.30
2140070014	7 x 0.14	5.00	2.00	4.90
2140080014	8 x 0.14	6.00	2.20	5.50
2140100014	10 x 0.14	6.20	2.90	6.60
2140120014	12 x 0.14	6.50	3.20	7.80
2140140014	14 x 0.14	7.20	3.70	6.10
2140160014	16 x 0.14	7.10	4.30	9.00
2140180014	18 x 0.14	8.00	5.20	8.40
2140210014	21 x 0.14	8.30	6.20	9.40
2140250014	25 x 0.14	8.50	6.50	15.00
2140300014	30 x 0.14	10.00	9.30	12.50
2140340014	34 x 0.14	10.50	12.10	15.00
2140400014	40 x 0.14	11.00	12.60	15.50
2140020025	2 x 0.25	4.70	1.60	3.20
2140030025	3 x 0.25	4.90	2.10	3.60
2140040025	4 x 0.25	5.10	2.40	4.10
2140050025	5 x 0.25	5.80	2.90	5.10
2140060025	6 x 0.25	6.10	3.00	5.80
2140070025	7 x 0.25	6.20	3.60	6.50
2140080025	8 x 0.25	7.30	4.20	7.30
2140100025	10 x 0.25	7.70	4.60	8.10
2140120025	12 x 0.25	7.80	5.90	10.00
2140140025	14 x 0.25	7.90	5.80	10.00
2140160025	16 x 0.25	8.60	6.40	12.40
2140210025	21 x 0.25	9.50	9.50	13.50
2140250025	25 x 0.25	10.90	11.80	17.00
2140300025	30 x 0.25	11.00	13.00	16.80
2140020034	2 x 0.34	5.10	2.10	3.70
2140030034	3 x 0.34	5.30	2.70	4.90
2140040034	4 x 0.34	5.90	2.80	5.90
2140050034	5 x 0.34	6.40	3.00	6.60
2140060034	6 x 0.34	6.90	4.40	7.90
2140070034	7 x 0.34	7.00	4.80	8.30
2140080034	8 x 0.34	8.00	5.20	9.40
2140100034	10 x 0.34	8.50	7.40	12.90
2140120034	12 x 0.34	8.60	8.00	14.00
2140160034	16 x 0.34	9.50	9.40	16.00
2140250034	25 x 0.34	12.00	13.60	26.00
2140020050	2 x 0.50	5.80	2.90	5.40

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
2140030050	3 x 0.50	6.10	3.80	6.70
2140040050	4 x 0.50	6.50	4.50	7.70
2140050050	5 x 0.50	7.10	5.40	9.00
2140060050	6 x 0.50	7.80	5.90	10.50
2140070050	7 x 0.50	7.90	6.80	11.00
2140080050	8 x 0.50	8.90	7.30	13.50
2140100050	10 x 0.50	9.50	9.00	16.00
2140120050	12 x 0.50	9.80	10.10	18.00
2140180050	18 x 0.50	11.90	13.50	24.00
2140250050	25 x 0.50	13.90	21.10	35.20
2140020075	2 x 0.75	6.20	3.80	6.40
2140030075	3 x 0.75	6.50	4.80	7.60
2140040075	4 x 0.75	7.10	5.80	9.20
2140050075	5 x 0.75	7.70	7.00	11.00
2140070075	7 x 0.75	8.30	9.80	15.60
2140100075	10 x 0.75	10.70	13.10	18.50
2140120075	12 x 0.75	11.00	15.40	22.00
2140180075	18 x 0.75	13.10	19.50	32.70
2140250075	25 x 0.75	15.50	28.00	45.40
2140020100	2 x 1	6.40	4.30	7.20
2140030100	3 x 1	7.00	5.60	9.00
2140040100	4 x 1	7.40	6.80	10.90
2140050100	5 x 1	8.10	7.90	12.60
2140070100	7 x 1	8.80	11.80	17.10
2140100100	10 x 1	11.20	14.00	22.80
2140120100	12 x 1	11.60	17.00	26.00
2140180100	18 x 1	13.50	25.20	38.90
2140250100	25 x 1	16.50	34.00	52.20
2140020150	2 x 1.50	7.60	5.80	9.00
2140030150	3 x 1.50	8.00	7.40	11.50
2140040150	4 x 1.50	8.70	10.80	15.30
2140050150	5 x 1.50	9.40	12.90	17.60
2140070150	7 x 1.50	10.60	16.40	22.00
2140120150	12 x 1.50	13.80	25.40	37.60
2140180150	18 x 1.50	16.50	35.00	52.00
2140250150	25 x 1.50	20.00	55.00	90.50



# LIHCH (TP)

Screened pair and halogen free data cable

### Technical Data:

- **Conductor material** Copper bare
- **Conductor class** Class 5 or IEC 60228 cl. 5
- **Core insulation** Halogen-free polymer compound
- **Core identification** DIN 47100: Different colours
- **Stranding** Cores twisted in pairs, pairs twisted in layers
- **Outer sheath** Polymer compound
- **Sheath colour** Grey (RAL 7032)
- **Rated voltage [V]** 300
- **Testing voltage [V]** Core/screen 2000 V. Core/core: on 0.14mm' 1200 V and >0.14mm' 1500

- **Insulation resistance** 20 MΩ x km
- **Current carrying capacity** DIN VDE (s. technical guidelines)
- **Min. bending radius fixed [xd]** up to 12mm Ø: 5 x d. up to 20mm Ø: 7.5 x d. > 20mm Ø: 10
- **Min. bending radius moved [xd]** up to 12mm Ø: 10 x d. up to 20mm Ø: 15 x d. > 20mm Ø: 20
- **Working temp fixed min/max [C]** -40°C up to +70°C
- **Working temp moved min/max [C]** -15°C up to +70°C
- **Temp at conductor max.** +70 ° C
- **Burning behaviour** VDE 0482-332-2-1 (IEC 60332-1-2)

- **Approvals** DIN VDE 0812, 0814 and DIN 47414

### Construction:

- fine stranded bare copper conductors
- acc. to DIN VDE 0295, class 5 or IEC 60228 cl. 5
- Exception: 0.34 mm<sup>2</sup> mult-wired (7 x 0.25 mm)
- core colours acc. to DIN 47100
- cores twisted in pairs
- pairs twisted in layers
- screening made of tinned copper wires
- outer sheath: polymer compound, halogen-free, flame-retardant

### Application:

Halogen-free and environmentally data transmission cable, control and connecting cable predominantly for transmission of an a log and digital signals in process controlled facilities in measurement and control technology for lossless transmission of datas and signals.

For fixed laying and flexible applications with undefined cable routing and without tensile stress. Suitable for use in dry and humid rooms. Outdoor use only with UVprotection, no laying underground.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
2144020014	2 x 2 x 0.14	5.80	1.90	3.90
2144030014	3 x 2 x 0.14	6.00	2.30	4.80
2144040014	4 x 2 x 0.14	6.30	2.70	5.40
2144050014	5 x 2 x 0.14	8.00	4.53	7.60
2144060014	6 x 2 x 0.14	7.20	4.90	8.70
2144070014	7 x 2 x 0.14	8.70	6.50	9.40
2144080014	8 x 2 x 0.14	8.30	5.40	11.00
2144100014	10 x 2 x 0.14	8.90	6.00	11.00
2144120014	12 x 2 x 0.14	9.00	6.60	14.20
2144150014	15 x 2 x 0.14	11.40	9.24	15.70
2144160014	16 x 2 x 0.14	10.30	7.90	15.40
2144180014	18 x 2 x 0.14	12.60	11.00	19.00
2144200014	20 x 2 x 0.14	11.40	10.00	18.40
2144250014	25 x 2 x 0.14	12.60	11.30	24.00
2144020025	2 x 2 x 0.25	7.10	3.00	5.40
2144030025	3 x 2 x 0.25	7.30	4.00	6.60
2144040025	4 x 2 x 0.25	7.70	4.50	8.10
2144050025	5 x 2 x 0.25	8.60	5.98	9.80
2144060025	6 x 2 x 0.25	8.60	7.00	11.60
2144070025	7 x 2 x 0.25	9.50	7.13	12.00
2144080025	8 x 2 x 0.25	10.40	7.70	13.00
2144100025	10 x 2 x 0.25	10.70	11.00	15.30
2144120025	12 x 2 x 0.25	11.40	12.00	19.00
2144150025	15 x 2 x 0.25	12.90	13.60	21.30
2144160025	16 x 2 x 0.25	12.70	14.70	23.80
2144180025	18 x 2 x 0.25	13.60	15.50	24.80
2144240025	24 x 2 x 0.25	16.20	22.60	30.00
2144020034	2 x 2 x 0.34	7.20	4.33	6.80
2144030034	3 x 2 x 0.34	8.50	5.50	9.20
2144040034	4 x 2 x 0.34	9.50	6.40	11.00
2144050034	5 x 2 x 0.34	10.00	7.45	12.80
2144060034	6 x 2 x 0.34	10.60	8.50	14.70
2144070034	7 x 2 x 0.34	11.10	9.10	15.40
2144100034	10 x 2 x 0.34	13.20	12.58	20.90
2144120034	12 x 2 x 0.34	14.30	13.94	24.50
2144150034	15 x 2 x 0.34	15.10	17.20	27.90
2144180034	18 x 2 x 0.34	16.80	20.70	36.30

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
2144020050	2 x 2 x 0.5	8.70	4.80	9.30
2144030050	3 x 2 x 0.5	8.90	7.40	13.00
2144040050	4 x 2 x 0.5	9.50	8.20	14.60
2144050050	5 x 2 x 0.50	10.70	9.80	15.00
2144060050	6 x 2 x 0.5	11.20	11.00	20.00
2144070050	7 x 2 x 0.50	11.90	12.10	18.50
2144080050	8 x 2 x 0.5	13.30	14.00	26.00
2144100050	10 x 2 x 0.50	14.30	16.00	27.50
2144120050	12 x 2 x 0.5	15.00	20.00	35.40
2144150050	15 x 2 x 0.50	16.90	23.80	38.00
2144160050	16 x 2 x 0.5	16.60	24.00	46.00
2144180050	18 x 2 x 0.50	18.20	26.60	45.00
2144240050	24 x 2 x 0.5	21.40	39.40	57.00
2144020075	2 x 2 x 0.75	9.40	5.80	10.60
2144030075	3 x 2 x 0.75	9.60	8.40	14.00
2144040075	4 x 2 x 0.75	10.80	11.00	18.00
2144050075	5 x 2 x 0.75	11.20	12.60	20.00
2144060075	6 x 2 x 0.75	12.20	14.60	24.60
2144070075	7 x 2 x 0.75	13.70	17.00	25.50
2144080075	8 x 2 x 0.75	14.90	18.00	30.50
2144100075	10 x 2 x 0.75	15.70	22.20	36.30
2144120075	12 x 2 x 0.75	16.30	26.30	45.60
2144150075	15 x 2 x 0.75	19.20	33.00	50.00
2144160075	16 x 2 x 0.75	0.75	33.60	50.00
2144180075	18 x 2 x 0.75	20.70	39.00	58.00
2144020100	2 x 2 x 1	10.40	8.40	14.20
2144030100	3 x 2 x 1	10.60	9.60	17.30
2144040100	4 x 2 x 1	11.50	12.10	21.20
2144050100	5 x 2 x 1	11.90	16.10	26.60
2144080100	8 x 2 x 1	16.60	24.00	40.00
2144100100	10 x 2 x 1	17.10	28.20	51.00
2144120100	12 x 2x 1	19.60	32.40	59.00
2144020150	2 x 2 x 1.5	11.10	11.20	16.50
2144030150	3 x 2 x 1.5	12.20	14.00	22.00
2144040150	4 x 2 x 1.5	13.40	17.60	26.50
2144050150	5 x 2 x			



# Treoflex SiHF

Silicone multicore cable, flexible, halogen-free



### Technical Data

- Conductor Material**  
Copper tinned
- Conductor Class**  
Class 5 acc. to DIN VDE 0295 or IEC 60228
- Core insulation**  
Silicone rubber
- Core identification**  
Up to 5 cores colour coded in accordance to VDE 0293, 6 cores and more black with printed consecutive number coding
- Stranding**  
Cores twisted in layers
- Outer sheath**  
Silicone
- Sheath colour**  
Red-brown
- Rated voltage [V]**  
300/500
- Testing Voltage**  
2000
- Insulation resistance**  
> 2 GΩ x km
- Current carrying capacity**  
DIN VDE (s. technical guidelines)
- min. bending radius fixed [xd]**  
5 x d
- min. bending radius moved [xd]**  
10 x d
- Working temp fixed min/max [C]**  
-60°C up to +180°C
- Working temp moved min/max [C]**  
-60°C up to +180°C
- Temp at conductor max.**  
+ 180°C
- Burning behaviour**  
VDE 0482-332-2-1 (IEC 60332-1): flame-retardant
- Design:**
  - stranded conductor of tinned copper wire
  - core insulation made of silicone rubber
  - stranding acc. to VDE 0295 class 5
  - up to 5 cores: colour coded according to VDE 0293
  - 6 cores and more: black cores with printed consecutive number coding
  - earth conductor green/yellow
  - silicone outer sheath, red brown
- Note**
  - G = with green-yellow earth core;
  - X = without green-yellow earth core

### Application:

Suitable where PVC-insulated cables become brittle due to high temperature variations. Silicone-insulated single cores are preferably used in the metallurgical industry, steel works, hot-rolling mills, coking plants, foundries etc. The insulation consists of silicone rubber. It is resistant to vegetable and animal fat, many types of oil and diluted acids. No decomposition occurs when exposed to alcohol, alkaline dilutions etc. The insulation is resistant to oxygen and ozone. Should the cable burn, an insulation silicone dioxide layer will remain on the conductor to render it short circuit proof.

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA40.0005.02	2 x 0.5	5.4	9.6	42
TA40.0005.03	3 G 0.5	5.9	14.5	44
TA40.0005.04	4 G 0.5	6.6	19.3	58
TA40.0005.05	5 G 0.5	7.3	24	62
TA40.0005.07	7 G 0.5	8.1	33.7	85
TA40.0005.12	12 G 0.5	10.8	57.6	141
TA40.0005.18	18 G 0.5	12.9	86.5	211
TA40.0005.25	25 G 0.5	15.4	120	271
TA40.0007.02	2 x 0.75	6.4	14.4	53
TA40.0007.03	3 G 0.75	6.7	21.6	63
TA40.0007.04	4 G 0.75	7.5	29	83
TA40.0007.05	5 G 0.75	8.4	36	101
TA40.0007.07	7 G 0.75	9.5	50	124
TA40.0007.12	12 G 0.75	12.2	86.5	185
TA40.0007.18	18 G 0.75	14.5	129.7	260
TA40.0007.25	25 G 0.75	17.6	180	370
TA40.0010.02	2 x 1	6.7	19	59
TA40.0010.03	3 G 1	7.5	29	77
TA40.0010.04	4 G 1	8.1	38	94
TA40.0010.05	5 G 1	8.8	48	115
TA40.0010.07	7 G 1	9.6	67	144
TA40.0010.12	12 G 1	12.6	115.2	231
TA40.0010.18	18 G 1	15.1	172.9	340
TA40.0010.25	25 G 1	18.3	240	431
TA40.0015.02	2 x 1.5	7.8	29	81
TA40.0015.03	3 G 1.5	8.2	43	98
TA40.0015.04	4 G 1.5	8.9	58	122
TA40.0015.05	5 G 1.5	9.8	72	147
TA40.0015.07	7 G 1.5	10.8	101	187

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA40.0015.12	12 G 1.5	14.7	173	314
TA40.0015.18	18 G 1.5	17.4	260	506
TA40.0015.25	24 G 1.5	20.7	346	722
TA40.0025.02	2 x 2.5	9.2	48	134
TA40.0025.03	3 G 2.5	9.7	72	152
TA40.0025.04	4 G 2.5	10.6	96	188
TA40.0025.05	5 G 2.5	11.6	120	228
TA40.0025.07	7 G 2.5	12.6	168	320
TA40.0025.12	12 G 2.5	17.1	288	502
TA40.0025.18	18 G 2.5	20.8	432.2	761
TA40.0025.25	25 G 2.5	24.7	600	1007
TA40.0040.02	2 x 4	10.6	77	180
TA40.0040.03	3 G 4	11.4	115	224
TA40.0040.04	4 G 4	13	154	295
TA40.0040.05	5 G 4	14.3	192	359
TA40.0040.07	7 G 4	15.5	269	479
TA40.0060.02	2 x 6	12.6	115	210
TA40.0060.03	3 G 6	13.3	173	270
TA40.0060.04	4 G 6	14.7	230	341
TA40.0060.05	5 G 6	16.4	288	432
TA40.0060.07	7 G 6	18	403	552
TA40.0100.04	4 G 10	18.5	384	644
TA40.0100.05	5 G 10	20.5	480	788
TA40.0160.04	4 G 16	22.2	616	950
TA40.0160.05	5 G 16	24.7	770	1204
TA40.0250.04	4 G 25	27.4	960	1500
TA40.0350.04	4 G 35	29.2	1344	2100

# Treoflex SiHF-C-Si

Silicone multicore cable, halogen-free, screened EMC



### Technical Data

- Conductor Material**  
Copper tinned
- Conductor Class**  
Class 5 acc. to DIN VDE 0295 or IEC 60228
- Core insulation**  
Silicone rubber
- Core identification**  
Up to 5 cores colour coded in accordance to VDE 0293, 6 cores and more black with printed consecutive number coding
- Stranding**  
Cores twisted in layers
- Screening**  
Braid of tinned Cu wires, coverage approx 85%
- Outer sheath**  
Silicone
- Sheath colour**  
Red-brown
- Rated voltage [V]**  
300/500
- Testing Voltage**  
2000
- Insulation resistance**  
> 2 GΩ x km
- Current carrying capacity**  
DIN VDE (s. technical guidelines)
- min. bending radius fixed [xd]**  
5 x d
- min. bending radius moved [xd]**  
10 x d
- Working temp fixed min/max [C]**  
-60°C up to +180°C
- Working temp moved min/max [C]**  
-60°C up to +180°C
- Temp at conductor max.**  
+ 180°C
- Burning behaviour**  
VDE 0482-332-2-1 (IEC 60332-1): flame-retardant
- Design:**
  - stranded conductor of tinned copper wire
  - core insulation made of silicone rubber
  - stranding acc. to VDE 0295 class 5
  - up to 5 cores: colour coded according to VDE 0293
  - 6 cores and more: black cores with printed consecutive number coding
  - earth conductor green/yellow
  - braid of tinned copper wires
  - silicone outer sheath, red brown
- Note**
  - G = with green-yellow earth core;
  - X = without green-yellow earth core

### Application

Silicone-rubber-insulated cables are used for all applications where the cable insulation is subjected to high temperature fluctuations. These cables are heat-resistant for continuous use at temperatures up to +180°C as well as for short periods of time at +220°C. Silicone-rubber-insulated cables can also be used at low temperatures down to -60°C because of the excellent weathering resistance of the material. These cables are halogen-free. Silicone-rubber-insulated cables have demonstrated proven applications in projector and high-power lighting fixtures as well as all types of heating equipment. EMC = Electromagnetic compatibility

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA41.0005.02	2 x 0.5	8.7	55.5	101
TA41.0005.03	3 G 0.5	8.9	60.8	118
TA41.0005.04	4 G 0.5	9.4	66.5	131
TA41.0005.05	5 G 0.5	10	81.6	153
TA41.0005.07	7 G 0.5	10.5	92.2	173
TA41.0005.10	10 G 0.5	13.1	124	242
TA41.0005.12	12 G 0.5	13.4	134.4	263
TA41.0005.16	16 G 0.5	14.6	170.2	326
TA41.0005.18	18 G 0.5	15.1	181	351
TA41.0005.25	25 G 0.5	19.4	230.1	348
TA41.0007.02	2 x 0.75	9.2	61.4	124
TA41.0007.03	3 G 0.75	9.5	69.1	136
TA41.0007.04	4 G 0.75	10.1	86.7	159
TA41.0007.05	5 G 0.75	10.8	95.2	180
TA41.0007.07	7 G 0.75	11.6	113.3	212
TA41.0007.10	10 G 0.75	14.4	165.2	306
TA41.0007.12	12 G 0.75	14.7	180.3	333
TA41.0007.16	16 G 0.75	16.5	212.2	418
TA41.0007.18	18 G 0.75	17.3	282.1	453
TA41.0007.25	25 G 0.75	22.1	297.4	468
TA41.0010.02	2 x 1	9.5	66.7	132
TA41.0010.03	3 G 1	9.7	86.2	153
TA41.0010.04	4 G 1	10.4	96.8	173
TA41.0010.05	5 G 1	11.3	108.3	202
TA41.0010.07	7 G 1	12	141.2	243
TA41.0010.10	10 G 1	14.9	190	238
TA41.0010.12	12 G 1	15.2	209.8	371
TA41.0010.16	16 G 1	17	251.8	468
TA41.0010.18	18 G 1	17.8	297.4	526
TA41.0010.25	25 G 1	23	329	559

Part Number	No. of cores x cross-sec. mm²	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA41.0015.02	2 x 1.5	10.7	87.7	172
TA41.0015.03	3 G 1.5	11.2	103.5	198
TA41.0015.04	4 G 1.5	11.8	131.7	235
TA41.0015.05	5 G 1.5	13.3	148.5	281
TA41.0015.07	7 G 1.5	14.3	193.4	345
TA41.0015.10	10 G 1.5	17.7	268.5	482
TA41.0015.12	12 G 1.5	18	298.4	531
TA41.0015.16	16 G 1.5	20.1	362.3	662
TA41.0015.18	18 G 1.5	20.9	394	720
TA41.0025.25	25 G 1.5	24.1	488.2	791
TA41.0025.02	2 x 2.5	12.1	122.3	230
TA41.0025.03	3 G 2.5	12.9	147.7	275
TA41.0025.04	4 G 2.5	14.2	188.6	340
TA41.0025.05	5 G 2.5	15.3	214.9	394
TA41.0025.07	7 G 2.5	16.9	265.7	488
TA41.0040.04	4 G 4	17.1	294	520
TA41.0040.05	5 G 4	19.4	374	653
TA41.0060.04	4 G 6	18.8	449	781
TA41.0060.05	5 G 6	21.2	563	982
TA41.0100.04	4 G 10	25.7	759	1294
TA41.0160.04	4 G 16	28.4	1180	1988
TA41.0250.04	4 G 25	35	1810	2995

# 1 Treoflex SiF / SiFF / SiF/GL

Silicone single cores, halogen-free



### Technical data

- Special-silicone single core with higher heat-resistance range adapted to DIN VDE 0250 Teil 1 and part 502 Temperature range -60°C to +180°C (up to +220°C for short time)
- Temperature limit at the conductor in operation +180°C
- Nominal voltage U0/U 300/500 V Test voltage 2000 V
- Breakdown voltage min. 5000 V
- Minimum bending radius 15x cable Ø

### Cable structure

#### Type SiF

- Tinned copper conductors stranding according to VDE 0295 class 5
- Silicone core insulation

#### Type SiFF

- as SiFF but with super fine strands of tinned copper wire
- Strand make-up 0,25 to 1,0 mm<sup>2</sup> - class 6 col. 7 (single wire Ø 0,05 mm)
- 1,5 to 10 mm<sup>2</sup> - class 6 col. 6 (single wire Ø 0,07 mm)

#### Type SiF/GL

- as SiF but with glass fibre braiding
- fine strands of tinned copper wire
- glass fibre braiding

### Properties

#### Resistant to

High molecular oils, fats from vegetables and animals, alcohols, plasticisers and clophenes, diluted acids, lyes and salt dissolution, oxidation substances

- Halogen-free
- Oxygen & ozone

### Application

Special cables for use in high and low temperature areas. They are used mainly in the steel producing industries, hot rolling mills, cooking plants, foundries, cement, glass and ceramic factories. As these cables are halogen-free, they are especially suited for use in power stations. Suitable where PVC insulated cables become brittle due to high temperatures.

SiF Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA42.0002.01.xx	0.25	1.9	2.4	5.5
TA42.0005.01.xx	0.5	2.1	4.8	8.6
TA42.0007.01.xx	0.75	2.4	7.2	11.8
TA42.0010.01.xx	1	2.5	9.6	13.5
TA42.0015.01.xx	1.5	2.8	14.4	18.5
TA42.0025.01.xx	2.5	3.4	24	30
TA42.0040.01.xx	4	4.2	38	47.3
TA42.0060.01.xx	6	5.2	58	71.1
TA42.0100.01.xx	10	7	96	119.4
TA42.0160.01.xx	16	8.4	154	187.7
TA42.0250.01.xx	25	10.3	240	289.6

SiF/GL Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA44.0005.01	0.5	2.6	4.8	13
TA44.0007.01	0.75	2.9	7.2	16
TA44.0010.01	1	3	9.6	18
TA44.0015.01	1.5	3.3	14.4	24
TA44.0025.01	2.5	3.9	24	37
TA44.0040.01	4	4.7	38.4	53
TA44.0060.01	6	5.4	58	77.4
TA44.0100.01	10	7.6	96	129
TA44.0160.01	16	8.9	154	199
TA44.0250.01	25	10.9	240	303

SiFF Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km
TA43.0005.01.xx	0.5	2.1	4.8	10
TA43.0007.01.xx	0.75	2.5	7.2	13
TA43.0010.01.xx	1	2.7	9.6	15
TA43.0015.01.xx	1.5	3	14.4	19
TA43.0025.01.xx	2.5	3.8	24	32
TA43.0040.01.xx	4	4.6	38	50
TA43.0060.01.xx	6	5.7	58	73
TA43.0100.01.xx	10	7.6	96	125

**Note:** Please complete the part number for these cables by adding the below suffix for the colour required as per the list:

- BK** = Black
- BE** = Blue
- BN** = Brown
- GW** = Green/Yellow.
- GY** = Grey
- OE** = Orange
- PK** = Pink
- RD** = Red
- VT** = Violet
- WE** = White

# 1 Treoflex PVC-flat

PVC Flat Cable



### Technical Data

#### Conductor Material

Copper, bare

#### Conductor Class

Class 5

#### Core insulation

PVC

#### Core identification

acc. to VDE 0293-308 up to 5 wires coloured, from 6 wires black with white numerals resp. white with black numerals, with or without GNYE

#### Stranding

Cores side by side

#### Outer sheath

PVC

#### Sheath colour

Black

#### Rated voltage [V]

300/500 V up to 1mm<sup>2</sup>  
450/750 V from 1.5mm<sup>2</sup>

#### Testing Voltage

2000

#### Insulation resistance

> 2 GΩ x km

#### min. bending radius moved [xd]

10 x d

#### Working temp fixed min/max [C]

-40°C up to +70°C

#### Working temp moved min/max [C]

-20°C up to +70°C

#### Temp at conductor max.

+ 70°C

#### Burning behaviour

EC 60332-1: flame-retardant and self-extinguishing

### Design:

- bare copper conductor
- stranding acc. to VDE 0295, class 5
- Core marking: acc. to VDE 0293-308 up to 5 wires coloured, from 6 wires black with white numerals resp. white with black numerals, with or without GNYE
- PVC insulation
- earth conductor green/yellow
- PVC outer sheath, black
- flame-retardant

### Note

- G = with green-yellow earth core;
- X = without green-yellow earth core

### Application:

Suitable in dry, wet and moist rooms as control and power cable. Use in conveyor and hoisting equipment etc. and as feed cable for mobile machine components with permanent moving operation.

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer dimension	Cop.weight kg/km	Weight kg/km
TA45.0007.04	4 G 0.75	4.3 x 12.6	28.8	90
TA45.0007.05	5 G 0.75	4.3 x 16.1	36	115
TA45.0007.06	6 G 0.75	4.3 x 19.4	43.2	141
TA45.0007.09	9 G 0.75	4.3 x 26.4	64.8	198
TA45.0007.10	10 G 0.75	4.3 x 30.1	72	224
TA45.0007.12	12 G 0.75	4.3 x 33.8	84.4	258
TA45.0007.16	16 G 0.75	4.3 x 44.4	115.2	340
TA45.0007.18	18 G 0.75	4.3 x 49.2	129.6	380
TA45.0007.20	20 G 0.75	4.3 x 55.0	144	424
TA45.0007.24	24 G 0.75	4.3 x 65.6	172.8	509
TA45.0010.03	3 G 1	4.5 x 10.8	28.8	80
TA45.0010.04	4 G 1	4.5 x 13.4	38.4	104
TA45.0010.05	5 G 1	4.5 x 16.0	48	134
TA45.0010.06	6 G 1	4.5 x 20.6	57.6	161
TA45.0010.09	9 G 1	4.5 x 28.4	86.4	230
TA45.0010.10	10 G 1	4.5 x 30.0	96	256
TA45.0010.12	12 G 1	4.5 x 36.2	115.2	298
TA45.0010.16	16 G 1	4.5 x 47.6	153.6	395
TA45.0010.18	18 G 1	4.5 x 52.8	172.8	441
TA45.0010.20	20 G 1	4.5 x 59.0	192	495
TA45.0010.24	24 G 1	4.5 x 70.4	230.4	590
TA45.0015.04	4 G 1.5	4.5 x 13.7	58	133
TA45.0015.05	5 G 1.5	4.5 x 17.9	72	169
TA45.0015.07	7 G 1.5	4.5 x 23.5	101	235
TA45.0015.08	8 G 1.5	4.5 x 26.8	115	265
TA45.0015.10	10 G 1.5	4.5 x 33.5	144	332
TA45.0015.12	12 G 1.5	4.5 x 38.9	173	421
TA45.0015.16	16 G 1.5	4.5 x 51.5	230.4	555
TA45.0015.24	24 G 1.5	4.5 x 83.0	346	820

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer dimension	Cop.weight kg/km	Weight kg/km
TA45.0025.04	4 G 2.5	5.5 x 17.0	96	205
TA45.0025.05	5 G 2.5	5.5 x 21.5	120	256
TA45.0025.07	7 G 2.5	5.5 x 30.3	168	344
TA45.0025.08	8 G 2.5	5.5 x 31.9	192	389
TA45.0025.12	12 G 2.5	5.8 x 47.1	288	580
TA45.0025.16	16 G 2.5	5.8 x 55.1	384	674
TA45.0025.24	24 G 2.5	5.8 x 120.0	604	950
TA45.0040.04	4 G 4	7.0 x 21.8	154	344
TA45.0040.05	5 G 4	7.0 x 27.4	192	428
TA45.0040.07	7 G 4	7.9 x 36.6	269	590
TA45.0060.04	4 G 6	8.2 x 24.8	230	424
TA45.0060.05	5 G 6	8.2 x 31.8	288	530
TA45.0060.07	7 G 6	8.2 x 42.6	403	760
TA45.0100.04	4 G 10	10.0 x 29.6	384	710
TA45.0160.04	4 G 16	11.2 x 34.4	614	1014
TA45.0160.05	5 G 16	13.0 x 46.6	768	1370
TA45.0250.04	4 G 25	13.7 x 42.6	960	1365
TA45.0250.05	5 G 25	15.5 x 55.5	1200	2000
TA45.0350.04	4 G 35	15.4 x 47.6	1344	2100
TA45.0500.04	4 G 50	18.2 x 57.0	1920	2940
TA45.0700.04	4 G 70	20.0 x 64.2	2688	4090

# 1 Treoflex NEO-flat

Rubber Sheathed Flat cable



### Technical Data

**Conductor Material**

Copper, bare

**Conductor Class**

Class 5 or 6

**Core insulation**

Rubber compound

**Core identification**

Up to 5 cores colour coded in accordance to VDE 0293, 6 cores and more black with printed consecutive number coding

**Stranding**

Cores side by side

**Outer sheath**

Neoprene

**Sheath colour**

Black

**Rated voltage [V]**

300 / 500 V

**Testing Voltage**

2000

**Insulation resistance**

10 MΩ x km

**min. bending radius moved [xd]**

10 x d

**Working temp fixed min/max [C]**

-40°C up to +85°C

**Working temp moved min/max [C]**

-35°C up to +85°C

**Temp at conductor max.**

+ 90°C

**Burning behaviour**

IEC 60332-1: self-extinguishing and flame-retardant

**Design:**

- bare copper conductor
- earth conductor green/yellow
- structure according to VDE 0295, class 5 or 6
- rubber-insulated cores
- Core marking: up to 5 cores colour coded according to VDE 0293
- 7 cores and more black with printed consecutive number coding
- Neoprene outer sheath, black
- flame-retardant

**Note**

- G = with green-yellow earth core;
- X = without green-yellow earth core

**Application:**

Neoprene-sheathed flat cables are weatherproof and thus suitable for use under adverse ambient conditions, e.g. for outdoor installation in shipyards, on cranes and on hoisting gear and conveyor systems, for example. Used up to mean mechanical strain and severe bending load along a single level during operation. Suitable in dry and moist rooms and for outdoor use.

Part Number	No. of cores x cross-sec. mm²	Outer dimension	Cop.weight kg/km	Weight kg/km
TA46.0015.04	4 G 1.5	5.9 x 16.2	58	234
TA46.0015.05	5 G 1.5	5.9 x 23.7	72	304
TA46.0015.07	7 G 1.5	5.9 x 30.5	101	391
TA46.0015.08	8 G 1.5	5.9 x 34.0	115	441
TA46.0015.10	10 G 1.5	5.9 x 43.5	144	460
TA46.0015.12	12 G 1.5	6.5 x 50.4	173	646
TA46.0015.24	24 G 1.5	13.0 x 56.0	346	1290
TA46.0025.04	4 G 2.5	7.2 x 19.6	96	316
TA46.0025.05	5 G 2.5	7.2 x 27.8	120	391
TA46.0025.07	7 G 2.5	7.2 x 36.1	168	533
TA46.0025.08	8 G 2.5	7.2 x 40.2	192	602
TA46.0025.12	12 G 2.5	7.8 x 59.4	288	890
TA46.0025.24	24 G 2.5	15.5 x 66.8	576	1480
TA46.0040.04	4 G 4	8.8 x 24.2	154	506
TA46.0040.05	5 G 4	8.8 x 33.4	192	621
TA46.0040.07	7 G 4	8.8 x 42.5	269	851
TA46.0060.04	4 G 6	9.6 x 27.4	230	661
TA46.0060.05	5 G 6	9.6 x 37.4	288	740
TA46.0060.07	7 G 6	9.6 x 47.2	403	1004

Part Number	No. of cores x cross-sec. mm²	Outer dimension	Cop.weight kg/km	Weight kg/km
TA46.0100.04	4 G 10	10.4 x 30.8	384	1027
TA46.0100.05	5 G 10	10.4 x 41.6	480	1171
TA46.0160.04	4 G 16	11.6 x 35.6	614	1430
TA46.0160.05	5 G 16	12.2 x 48.2	768	1590
TA46.0250.04	4 G 25	14.1 x 45.8	960	1890
TA46.0250.05	5 G 25	14.7 x 58.3	1200	2215
TA46.0250.07	7 G 25	15.3 x 78.7	1680	3000
TA46.0350.04	4 G 35	15.8 x 50.8	1344	2460
TA46.0350.05	5 G 35	16.4 x 64.4	1680	2880
TA46.0350.07	7 G 35	16.4 x 86.4	2352	4100
TA46.0500.04	4 G 50	18.6 x 60.2	1920	3385
TA46.0700.04	4 G 70	21.0 x 68.0	2688	4480
TA46.0950.04	4 G 95	24.1 x 78.6	3648	5990
TA46.1200.04	4 G 120	25.5 x 84.2	4608	7240

# 1 PVC FLAT-CY

Flat cable of PVC, screened



### Technical Data:

**Conductor material** Copper bare

**Conductor class** Class 5

**Core insulation** PVC

**Core identification** Up to 5 cores colour coded in accordance to VDE 0293. 6 cores and more black with printed consecutive number coding

**Stranding** Cores side by side

**Outer sheath** PVC

**Sheath colour** Black

**Rated voltage [V]** 300 / 500

**Testing voltage [V]** 1200

**Current carrying capacity** DIN VDE (s. technical guidelines)

**Min. bending radius fixed [xd]**

10xd

**Min. bending radius moved [xd]**

10xd

**Working temp fixed min/max [C]**

-40°C up to +70°C

**Working temp moved min/max [C]**

-5°C up to +70°C

**Temp at conductor max.** +70 ° C

**Burning behaviour** EC 60332-1: flame- retardant and self- extinguishing

**Construction:**

- fine bare copper conductors
- strand structure according to VDE 0295. class 5
- PVC insulation
- Core marking: up to 5 cores colour coded in accordance to VDE 0293
- 7 cores and over black with printed consecutive number coding
- earth conductor green/yellow
- copper wire braid
- PVC outer sheath. black
- suitable in low temperatures

**Application:**

Can be used in dry, damp and wet rooms. Due to the screening of single cores of bundles this cable is suitable for EMC-critical use.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
673040150	4 G 1.50	6.5 x 19.6	11.30	21.00
673040250	4 G 2.50	7.4 x 22.0	16.80	27.00
673040400	4 G 4	9.4 x 28.1	22.00	40.00
673040600	4 G 6	9.8 x 31.2	32.50	52.00
673041000	4 G 10	11.8 x 37.5	52.10	84.00
673041600	4 G 16	14.0 x 46.0	78.40	128.00
673042500	4 G 25	15.0 x 51.0	116.30	180.00

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
673043500	4 G 35	16.5 x 59.0	177.60	247.80
672050050	5 G 0.50	5.0 x 22.0	6.00	13.00
67307010 0B	7 x 3 G 1	10.4 x 54.3	27.50	75.50
67307005 0B	7 x 4x0.5	10.3 x 50.0	22.20	74.50
673080150	8 G 1.50	6.5 x 37.0	21.70	40.00
673080150	8 G 1.50	6.5 x 37.0	21.70	40.00
673120150	12 G 1.50	6.5 x 52.7	33.50	61.00

# NEO FLAT-CY

Flat cable of neoprene, screened



### Technical Data:

- **Conductor material** Copper bare
- **Conductor class** Class 5
- **Core insulation** Rubber insulated
- **Core identification** Up to 5 cores colour coded in accordance to VDE 0293. 6 cores and more black with printed consecutive number coding
- **Stranding** Cores side by side
- **Outer sheath** Neoprene, special rubber-compund
- **Sheath colour** Black (RAL 9005)
- **Rated voltage [V]** 0.6/1kV
- **Testing voltage [V]** 3500
- **Conductor resistance \***
- **Insulation resistance \***
- **Current carrying capacity** DIN VDE (s. technical guidelines)
- **Min. bending radius fixed [xd]** DIN VDE 0298 part 3
- **Min. bending radius moved [xd]** DIN VDE 0298 part 3
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -30°C up to +80°C
- **Temp at conductor max.** +90 ° C
- **Burning behaviour** EC 60332-1: flame- retardant and self- extinguishing

### Construction:

- super fine bare copper conductor
- structure according to VDE 0295, class 5 or 6
- Core marking: up to 5 cores colour coded according to VDE 0293 7 cores and over black with printed consecutive number coding
- rubber-insulated cores
- earth conductor green/yellow
- copper wire braid around each core
- Neoprene outer sheath, black
- suitable in low temperatures
- EMC

### Application:

Neoprene-sheathed flat cables are weatherproof. This cable can be used in dry, damp, wet rooms or outdoors. Used up to harsh mechanical strain and banding load along a single level during operation. Due to the individual core screening there is an additional stability, which causes a free-interference transmission of data and signals (EMC). Suitable for use in dry and moist rooms as well as outdoor.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
681040100	4 x 2 x 1	11.8 x 33.5	27.30	59.00
681040150	4 G 1.50	8.0 x 21.5	11.50	35.00
681040250	4 G 2.50	8.7 x 24.1	16.40	41.70
681040400	4 G 4	9.5 x 27.6	24.10	56.20
681040600	4 G 6	10.5 x 30.1	35.30	60.30
681041000	4 G 10	12.1 x 36.7	49.70	93.40
681041600	4 G 16	13.7 x 41.5	80.50	129.30
681042500	4 G 25	15.5 x 47.0	120.00	164.70
681043500	4 G 35	17.1 x 53.2	165.70	232.50

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
681045000	4 G 50	19.7 x 61.6	226.10	316.90
681047000	4 G 70	24.0 x 77.0	325.90	474.20
681049500	4 G 95	25.3 x 81.9	431.10	566.40
681060250	6 G 2.50	8.7 x 33.5	24.60	57.40
681080150	8 G 1.50	8.0 x 38.6	22.80	54.20
681120150	12 G 1.50	8.0 x 57.1	34.20	89.60
681120250	12 G 2.50	8.7 x 64.0	49.30	114.00

# NSHTOU-J

Drum reeling cable



### Technical Data:

- **Conductor material** Copper, tinned
- **Conductor class** Class 5
- **Core insulation** Rubber compound
- **Core identification** Up to 5 cores colour coded in accordance to VDE 0293, 7 cores and more black with printed consecutive number coding
- **Stranding** Cores twisted in layers
- **Outer sheath** Neoprene
- **Sheath colour** Black
- **Rated voltage [V]** 600/1000
- **Testing voltage [V]** 2500
- **Insulation resistance** 10 MΩ/km
- **Min. bending radius fixed [xd]** 6 x d
- **Min. bending radius moved [xd]** 10 x d
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/mac [C]** -20°C up to +70°C
- **Burning behaviour** VDE 0482-332-1-2/IEC 60332-1
- **Approvals** VDE 0250 T. 602

### Construction:

- tinned copper conductor
- Core marking: up to 5 cores colour coded according to VDE 0293, 7 cores and more black with printed consecutive number coding

- core insulation made of rubber
- strand structure according to VDE 0295, class 5
- earth conductor green/yellow
- cores twisted in layers
- fabric lapping
- black outer sheath made of neoprene with incorporated vulcanised fabric braiding
- Bending radius: drum 12,5xØ / reversing rolls: 15xØ
- UV and Oil resistant

### Application:

Suitable for use as trailing cable in hoists, transporting machines, and conveyors. Suitable in dry, moist and wet rooms and for outdoor installation.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
63035000/25	3 x 50 +3G25/3	37	168	251.6
63037000/35	3 x 70 +3G35/3	41.8	235.2	349.4
63039500/50	3 x 95 +3G50/3	47.6	321.6	446.6
630312000/70	3 x 120 +3G70/3	50.8	412.8	564
63031500/70	3 x 150 +3G70/3	55.5	499.2	671.3
630318500/95	3 x 185 +3G95/3	61.9	624	786.5
630324000	3 x 240.00	71.8	691.2	1389
63032400/120	3 x 240 +3G120/3	70.8	806.4	1080
63040150	4 x 1.50	14.6	6.2	29.5
63050150	5 x 1.50	15.6	8.1	34
63070150	7 x 1.50	17.6	11.5	42
63120150	12 x 1.50	21.3	19.6	63
63180150	18 x 1.50	24.8	30.3	89.5
63240150	24 x 1.50	28	39.2	110
63300150	30 x 1.50	30.3	45	134.5
63420150	42 x 1.50	35.2	64.6	177.3
63040250	4 x 2.50	16.2	9.9	41.5
63050250	5 x 2.50	18.6	12.4	49
63070250	7 x 2.50	20.8	18	61.5
63120250	12 x 2.50	24.9	30.8	89.5
63180250	18 x 2.50	28.2	45.1	119.5
63240250	24 x 2.50	33	61.6	156.5

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
63300250	30 x 2.50	34.6	77.1	183
63450250	45 x 2.50	43.8	112.8	286.3
63500250	50 x 2.50	43.9 - 49	134	320
63080250	8 x 2.5	23.5	18	70
63040400	4 x 4	19.3	16	53
63050400	5 x 4	20.5	22	64
63040600	4 x 6	21.7	24.1	69
63041000	4 x 10	25.9	40.4	102.5
63041600	4 x 16	29.1	64.5	137
63042500	4 x 25	34.4	100.5	207
63043500	4 x 35	38.6	141.7	274
63045000	4 x 50	45	202.4	379
63047000	4 x 70	51	283.3	535.6
63049500	4 x 95	60.6	384.5	701.8
630412000	4 x 120	63.5	485.7	860
630415000	4 x 150	66.5	576	909
63050600	5 x 6	23.2	31.7	85.5
63051000	5 x 10	27.8	52.8	120
63051600	5 x 16	31.7	84.4	174.5
63052500	5 x 25	36.5	126	213
63053500	5 x 35	55.7	240	435

# 1 TROMMELFLEX PUR

Trailing and control cable, halogen-free



### Technical Data

- Special PUR insulation and jacket
- Adapted to DIN VDE 0250
- Strain bearing support strand
- **Temperature range** -40°C to +90°C
- **Nominal Voltage** 0.6/1 kV
- **Test Voltage** 2.5 kV
- **Minimum bending radius** 6 x cable Ø

### Cable Structure

- Bare copper, fine wire conductors, bunch stranded to DIN VDE 0295 class 5
- Core insulation based on polyester
- Support core
- Core coding to DIN VDE 0293 up to 5 cores from 6 cores numbered
- Cores stranded in layers
- Core wrapping with fleece
- Halogen-free outer jacket PUR

### Properties

- High flexibility at low temperatures
- Abrasion and tear resistant
- Loadable under torsional stress
- for travelling speed up to 180 m/min

### Resistant to

- Oils and fats
- Non-alcoholic fuels and kerosene
- Atmospheric influences
- UV-radiation
- Oxygen and ozone

### Note

- G = with green-yellow earth core.
- AWG sizes are approximate equivalent values. The actual cross-section is in mm<sup>2</sup>.

### Application

TROMMELFLEX-PUR-HF halogen-free reeling cable for heavy duty devices such as cable reels (also vertical operation), hoisting devices, conveyor facilities, mobile motors, rail motors and agricultural devices. For exceptional mechanical stress in dry, humid and wet rooms and for outdoor use. The polyurethane material has reduced outer diameters and reduced weights.

Part Number	No. of cores x cross-sec. mm <sup>2</sup>	Outer Ø ca. mm	Cop.weight kg/km	Weight kg/km	Breaking Strain ca. kp
TA70.0015.04	4 X 1,5	10,0 - 11,2	61,0	150,0	1.340
TA70.0015.05	5 X 1,5	10,6 - 11,7	81,0	170,0	1.690
TA70.0015.07	7 X 1,5	12,0 - 13,2	115,0	220,0	2.150
TA70.0015.12	12 X 1,5	15,5 - 16,7	196,0	360,0	2.600
TA70.0015.18	18 X 1,5	16,9 - 18,1	271,0	470,0	2.600
TA70.0015.24	24 X 1,5	19,0 - 20,2	392,0	600,0	2.800
TA70.0015.30	30 X 1,5	21,1 - 22,5	450,0	740,0	2.900
TA70.0015.42	42 X 1,5	25,0 - 28,0	633,0	920,0	2.900
TA70.0025.04	4 X 2,5	11,1 - 12,2	99,0	200,0	1.345
TA70.0025.05	5 X 2,5	11,8 - 13,0	125,0	220,0	2.100
TA70.0025.07	7 X 2,5	13,5 - 14,7	180,0	310,0	2.550
TA70.0025.12	12 X 2,5	18,9 - 20,1	308,0	550,0	2.900
TA70.0025.18	18 X 2,5	19,2 - 20,4	451,0	670,0	3.450
TA70.0025.24	24 X 2,5	21,5 - 22,9	616,0	870,0	3.200
TA70.0025.30	30 X 2,5	24,4 - 26,0	771,0	1.090,0	4.200
TA70.0025.36	36 X 2,5	27,4 - 29,0	930,0	1.400,0	4.500
TA70.0040.04	4 X 4	12,3 - 13,5	160,0	280,0	1.690
TA70.0040.14	14 X 4	22,7 - 25,3	616,0	919,0	6.000
TA70.0060.04	4 X 6	14,1 - 15,2	241,0	370,0	1.860
TA70.0100.04	4 X 10	17,4 - 18,6	404,0	600,0	2.300
TA70.0160.04	4 X 16	20,0 - 21,4	645,0	850,0	2.800
TA70.0250.04	4 X 25	23,5 - 24,9	1.005,0	1.230,0	3.300
TA70.0350.04	4 X 35	28,5 - 30,2	1.417,0	1.760,0	3.300
TA70.0040.05	5 X 4	13,3 - 14,5	200,0	330,0	2.500
TA70.0060.05	5 X 6	16,4 - 17,6	317,0	480,0	3.000
TA70.0100.05	5 X 10	18,7 - 19,9	528,0	720,0	3.000
TA70.0160.05	5 X 16	21,7 - 23,0	816,0	1.030,0	3.000



# 1 LIFT 2S

Elevator steel wire cable with two external institutions

### Technical Data:

- **Conductor material** Copper, bare
- **Conductor class** Class 5
- **Core insulation** PVC or thermoplastic material
- **Core identification** Core colours black with white figure imprint, available with and without earth conductor
- **Stranding** Cores twisted
- **Outer sheath** Special weather resistant, cold-flexible PVC compound
- **Sheath colour** Black (RAL 9005)
- **Rated voltage [V]** 300/500
- **Testing voltage [V]** 2000
- **Min. bending radius fixed [xd]** 10 x d

- **Min. bending radius moved [xd]** 12 x d
- **Working temp fixed min/max [C]** -25°C up to +70°C
- **Working temp moved min/mac [C]** -40°C up to +70°C
- **Temp at conductor max.** +90°C in operation +250°C in case of short-circuit
- **Burning behaviour** DIN VDE 0482 and IEC 60332-1: flame-retardant and self-extinguishing
- **Approvals** DIN VDE 0250

### Construction:

- super fine stranding of bare copperwires, class 5
- outer sheath of special weather-resistant, cold-flexible PVC compound black
- fabric lapping
- cores twisted hemp wire
- flame-retardant
- Carriers integrated in the outer sheath with a breaking strength of 2100 N

### Application:

Suitable as control cable in lifts and hoists as control panels, converters, as self-supporting shaft cable, in high shelving racks, cable lines, etc.

Also as measuring and control cable in dry and moist rooms, and outdoor use up to -25 °C.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
621120100	12 x 1	21-25x12.5-14.5	11.52	40.80
621180100	18 x 1	22.3-26.3x15-17	17.28	59.00
621250100	25 x 1	25.8-29.8x17.7-19.7	24.00	75.10
621300100	30 x 1	28.6-32.6x18.4-22.4	28.80	89.00
621060150	6 x 1.50	20.1-24.1x11-13	8.64	35.00
621080150	8 x 1.50	20.1-24.1x11-13	11.50	41.90
62110150	10 x 1.50	20.6-24.6x13-15	14.40	47.00

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
621120150	12 x 1.50	20.6-24.6x13-15	17.28	51.50
621140150	14 x 1.50	21-25x14.3-16.3	20.16	55.00
621160150	16 x 1.50	22-26x15-17	23.04	59.40
621180150	18 x 1.50	25-29x17.3-19.3	25.90	65.50
621200150	20 x 1.50	24.4-28.4x16.8-18.8	28.80	79.80
621240150	24 x 1.50	26.5-30.5x18-20	34.60	82.50

# 1 Semoflex® Drum 0.6/1KV

Reeling cable for applications as control cable for spring and motor reels VDE / UL / CSA approved

## Semoflex®

Drum is ideally suited for use in dry and damp areas, explosive environments and for various heavy duty outdoor applications such as hoisting gears, transportation systems, motorised cable reels, rail traction motors and even agricultural machinery where high mechanical stresses are involved.



**Conductor:** plain copper, finest stranded according to VDE 0295 class 6 from 50 mm<sup>2</sup> fine stranded according to VDE 0295 class 5

**Insulation:** Semocore on polyester base

**Core colour:** up to 5 cores according to VDE 0293, from 7 cores white with black numbers + earth conductor Core arrangement: central textile filler, cores twisted around in short lengths of lay

**Inner sheath:** special polyurethane, yellow support braid consisting of textile threads

**Outer sheath:** special polyurethane, flame resistant, halogen free

**Outer sheath colour:** yellow, black would be available on customer's request

**Imprint:** VDE-Reg.-Nr.6510 E 195107

Style 10264/21897 80 °C 1000 V LL 46997 CSA AWM II A/B 600 V, 90 °C FT1 Semoflex® Drum 0.6/1 kV core x cross-section \*CE\* FHF . FK

**Maximum temperature for flexible installation:**

- 40 °C up to + 80 °C

**for fixed operation:** - 50 °C up to + 80 °C

**Nominal voltage:** 0.6/1 KV

**Test voltage:** core/core 4.000 V

**Conductor resistance:** accordance with VDE 0295 class 5 or 6

**Insulation resistance:** 20 MOhm x km

**Bending radius:** flexible application: in accordance with VDE 0298 part 3

**Minimum tensile strength:** 25 N per mm<sup>2</sup> cross-section, Type Drum 35 N per mm<sup>2</sup> cross-section, Type Drum Bd Oil resistance: according to DIN VDE 0472 part 803, test type B

**Characteristic of combustion:** flame resistant according to VDE 0482 part 332-1-2 resp. IEC 60332-1-2 Registration: VDE Reg. No.: 6510 / UL / CSA Style 10264/21897

**Speed:** up to 200 m/min. Please ask us if higher speeds will be required.

**Special core insulation according to patent no.:** EP 0 809 258 (which does not stick to the copper wires) Reduction of the outer diameter and weight up to 40 %. Extreme increase of service life in comparison with former reeling cables. Halogen free and flame resistant. UV resistant as far as possible.

## Semoflex® Drum 0.6 / 1 KV halogen free, resistant to coldness

Reeling cable for applications as control cable for spring and motor reels VDE / UL / CSA approved

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N	Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
4 G 1.5	59.0	10.2	156	150	4 G 2.5	99.0	11.7	214	250
5 G 1.5	74.0	10.8	178	190	5 G 2.5	124.0	12.7	270	315
7 G 1.5	104.0	12.9	251	265	7 G 2.5	173.0	14.8	353	440
12 G 1.5	178.0	18.4	462	450	12 G 2.5	297.0	20.4	640	750
18 G 1.5	259.2	18.6	543	675	18 G 2.5	446.0	21.1	792	1.13
24 G 1.5	356.0	21.3	715	900	24 G 2.5	594.0	24.8	1.08	1.5
30 G 1.5*	446.0	24.6	935	1.13	30 G 2.5*	743.0	27.6	1.30	1.88
36 G 1.5*	535.0	25.4	992	1.35	36 G 2.5*	864.0	28.2	1.41	2.25
42 G 1.5*	624.0	26.5	1.18	1.58	42 G 2.5*	1.040.0	31.4	1.51	2.63
					50 G 2.5*	1.238.0	34.9	2.13	-

# 1 Semoflex® Drum 0.6/1KV

Reeling cable for applications as control cable for spring and motor reels VDE / UL / CSA approved

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
4 G 4	158.0	12.5	282	400
5 G 4	198.0	14.3	364	500
4 G 6	238.0	16.9	485	600
5 G 6	297.0	17.8	509	750
7 G 6	416.0	20.9	759	1.05
4 G 10	396.0	19.6	625	1.00
5 G 10	495.0	20.9	784	1.25
7 G 10	693.0	25.8	1.14	1.75
4 G 16	634.0	23.8	972	1.60
5 G 16	792.0	25.3	1.19	2.00
4 G 25	990.0	27.7	1.47	2.50
5 G 25	1.250.0	30.8	1.75	3.10
4 G 35	1.386.0	30.1	2.11	3.50
4 G 50	1.980.0	35.2	2.91	5.00
4 G 70	2.772.0	40.3	3.72	7.00
4 G 95	3.762.0	47.5	5.122	7.000

## Semoflex® Drum 0.6 / 1 KV

halogen free, resistant to coldness

Reeling cable for applications as control cable with increased tensile loads VDE / UL / CSA approved

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
24 G 1.5 Bd*	356.0	23.2	722	1.26
30 G 1.5 Bd	446.0	27.4	1.05	-
36 G 1.5 Bd	535.0	29.0	1.20	1.89
42 G 1.5 Bd	624.0	29.5	1.29	2.20
49 G 1.5 Bd*	728.0	32.6	1.51	2.58
24 G 2.5 Bd	594.0	26.4	1.10	2.10
30 G 2.5 Bd	743.0	28.8	1.38	2.63
36 G 2.5 Bd	864.0	32.4	1.74	3.15
42 G 2.5 Bd	1.040.0	33.5	1.85	3.68
49 G 2.5 Bd	1.213.0	38.0	2.27	4.28

## Semoflex® Drum 0.6 / 1 KV halogen free, resistant to coldness

Reeling cable for applications with unscreened elements VDE / UL / CSA approved

Cross-section mm <sup>2</sup>	CU number Outer mm	Ø approx Weight	Tensile strength approx. kg/km	kg/km N
3 x 50 + 3 G 25/3	1.733.0	32.5	2.35	4.50
4 G 16 + 4 x 2.5	733.0	24.3	1.13	2.05

## Semoflex® Drum Special Combination cables screened

Reeling cable for applications with screened elements VDE/UL/CSA approved

Cross-section mm <sup>2</sup>	CU number Outer mm	Ø approx Weight	Tensile strength approx. kg/km	kg/km N
<b>Combination cables unscreened</b>				
<b>Single core screen</b>				
4 G (1.5)ec*	94.0	14.0	256	150
5 G (1.5)ec*	118.0	-	195	190
<b>Total screen</b>				
(24 G 1.5C)*	430.0	22.0	788	900
<b>Combination cables with single screen</b>				
19 G 2.5 + 5 x (1.5)ec	590.0	25.2	1.08	1.38
25 G 2.5 + 5 x (1.5)ec	672.0	27.7	1.36	1.75
<b>Combination cables pair or unit-stranded</b>				
3 x (2x1C)*	84.0	13.6	234	150
4 x (2x1C)*	110.9	14.9	306	200
6 x (2x1C)*	166.0	18.0	406	300
10 x (2x1C)*	330.0	31.1	1.19	500
4 G 16 + 2 x (4x1.5C)	925.0	29.3	1.45	1.60
4 G 35 + 2 x (4x1.5C)*	1.502.0	33.6	2.42	3.70
4 G 50 + 2 x (4x1.5C)*	2.078.0	37.5	3.00	5.20
13 G 4 + 2 x (2x1C)*	575.0	23.8	1.01	1400
17 G 4 + 2 x (2x1C)*	701.0	26.2	1.24	1500
3 x 2 x 2.5 + 2 x (2x1.5C)*	283.0	22.1	661	525

G = with green-yellow earth conductor

\* = a production is possible from 300 meters



**Technical Data:**

- **Conductor material** Copper bare
- **Conductor Class** Class 5 acc. to DIN VDE 0295 or IEC 60228
- **Core Insulation** PVC
- **Core identification** DIN 47100
- **Stranding** Cores twisted in layers
- **Outer sheath** PVC
- **Sheath colour** Grey (RAL 7001)
- **Rated voltage [V]** 300/500
- **Testing voltage [V]** 0.14 mm<sup>2</sup>= 1200 V > 0.14 mm<sup>2</sup>= 1500
- **Conductor resistance** DIN VDE 0295 Cl.5
- **Insulation resistance** 20 MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidelines)
- **Min. bending radius**  
Occasional flexing: 10 x outer diameter  
Fixed installation: 4 x outer diameter
- **Working temp fixed min/max [C]** -30°C up to +80°C
- **Working temp moved min/mac [C]** -15°C up to +70°C
- **Burning behaviour** IEC 60332-1: flame-retardant and self-extinguishing
- **Approvals** VDE 0812. 0814 and DIN 47414

**Construction:**

- fine strands of bare copper wire
- PVC core insulation marked as per DIN 47100
- cores twisted into layers
- available with or without foil
- PVC outer sheath grey. RAL 7001
- stranding acc. to VDE 0295 class 5 (exception 0.34mm<sup>2</sup> multi-wire)

**Application:**

This cable will be used as signal, connecting and control cable, predominantly for transmission of data in measurement and control technology. Suitable for use in dry and humid rooms. For fixed laying and flexible applications with undefined cable routing and without tensile stress.

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
22020014	2 x 0.14	3.20	0.27	1.20
22030014	3 x 0.14	3.50	0.40	1.70
22040014	4 x 0.14	3.60	0.54	1.90
22050014	5 x 0.14	3.90	0.67	2.20
22060014	6 x 0.14	4.20	0.81	2.50
22070014	7 x 0.14	4.20	1.00	2.70
22080014	8 x 0.14	4.70	1.10	3.00
22090014	9 x 0.14	5.20	1.20	3.30
22100014	10 x 0.14	5.30	1.34	4.10
22120014	12 x 0.14	5.60	1.60	4.80
22140014	14 x 0.14	5.80	1.90	5.40
22160014	16 x 0.14	6.10	2.15	6.00
22180014	18 x 0.14	7.00	2.42	7.20
22200014	20 x 0.14	6.90	2.70	7.30
22210014	21 x 0.14	7.20	2.80	7.70
22240014	24 x 0.14	7.50	3.23	9.40
22270014	27 x 0.14	7.80	3.60	8.50
22300014	30 x 0.14	8.20	4.10	9.60
22320014	32 x 0.14	8.40	4.30	10.50
22360014	36 x 0.14	8.80	4.90	11.40
22400014	40 x 0.14	9.40	5.40	12.70
22440014	44 x 0.14	9.80	5.90	14.53
22500014	50 x 0.14	10.50	6.80	15.40
22520014	52 x 0.14	10.70	7.00	16.34
22610014	61 x 0.14	11.50	8.20	19.05
22800014	80 x 0.14	16.10	10.80	23.50
221000014	100 x 0.14	19.00	13.50	25.00

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
22020025	2 x 0.25	3.70	0.50	1.70
22030025	3 x 0.25	4.00	0.72	2.10
22040025	4 x 0.25	4.40	0.96	2.70
22050025	5 x 0.25	4.80	1.20	3.20
22060025	6 x 0.25	5.10	1.44	4.00
22070025	7 x 0.25	5.30	1.70	4.20
22080025	8 x 0.25	5.80	1.90	5.10
22090025	9 x 0.25	6.20	2.16	5.30
22100025	10 x 0.25	6.40	2.40	6.10
22120025	12 x 0.25	6.80	2.90	7.10
22140025	14 x 0.25	7.40	3.40	7.50
22160025	16 x 0.25	7.60	3.84	8.10
22180025	18 x 0.25	8.60	4.30	10.40
22200025	20 x 0.25	8.50	4.80	10.50
22210025	21 x 0.25	9.10	5.30	12.00
22240025	24 x 0.25	9.70	5.90	12.50
22270025	27 x 0.25	10.20	6.48	15.30
22300025	30 x 0.25	10.50	7.20	16.80
22320025	32 x 0.25	10.70	7.70	18.20
22360025	36 x 0.25	11.20	8.70	20.00
22400025	40 x 0.25	12.00	9.60	21.00
22440025	44 x 0.25	13.40	10.56	24.90
22500025	50 x 0.25	13.40	12.20	27.80
22520025	52 x 0.25	13.90	12.48	28.70
22610025	61 x 0.25	14.50	14.70	33.80
22800025	80 x 0.25	19.60	19.20	53.40
221000025	100 x 0.25	23.10	24.00	66.70

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
22020034	2 x 0.34	4.40	0.70	2.40
22030034	3 x 0.34	4.50	1.00	2.80
22040034	4 x 0.34	5.00	1.30	3.90
22050034	5 x 0.34	5.80	1.60	4.40
22060034	6 x 0.34	6.00	2.00	5.50
22070034	7 x 0.34	6.30	2.28	6.00
22080034	8 x 0.34	6.70	2.61	6.30
22090034	9 x 0.34	7.60	2.94	7.64
22100034	10 x 0.34	7.50	3.30	7.65
22120034	12 x 0.34	7.80	8.80	8.50
22140034	14 x 0.34	8.20	4.60	10.00
22160034	16 x 0.34	8.70	5.20	11.70
22180034	18 x 0.34	9.80	5.90	13.52
22200034	20 x 0.34	10.00	6.50	14.60
22210034	21 x 0.34	10.10	6.90	16.10
22240034	24 x 0.34	11.20	7.90	17.10
22270034	27 x 0.34	11.60	8.80	18.82
22300034	30 x 0.34	11.80	9.80	20.62
22320034	32 x 0.34	12.20	10.60	22.30
22360034	36 x 0.34	12.60	11.80	24.42
22400034	40 x 0.34	13.30	13.00	29.90
22440034	44 x 0.34	14.40	14.40	29.20
22500034	50 x 0.34	15.00	16.32	33.70
22520034	52 x 0.34	15.10	17.00	33.80
22610034	61 x 0.34	16.00	19.90	39.00
22800034	80 x 0.34	22.00	26.40	51.10
221000034	100 x 0.34	25.40	32.70	63.90
22020050	2 x 0.50	4.80	0.96	2.60
22030050	3 x 0.50	5.10	1.44	3.10
22040050	4 x 0.50	5.40	1.90	4.20
22050050	5 x 0.50	6.10	2.40	4.70
22060050	6 x 0.50	6.60	2.90	6.20
22070050	7 x 0.50	6.80	3.40	6.50
22080050	8 x 0.50	7.50	3.90	7.80
22100050	10 x 0.50	8.20	4.80	9.20
22120050	12 x 0.50	8.70	5.80	12.10
22140050	14 x 0.50	10.80	6.72	13.00
22160050	16 x 0.50	10.20	7.70	14.60
22180050	18 x 0.50	12.00	8.64	16.60
22200050	20 x 0.50	11.70	9.70	17.60
22210050	21 x 0.50	13.00	10.08	18.40
22240050	24 x 0.50	12.70	11.60	22.10
22270050	27 x 0.50	14.70	12.96	24.40
22300050	30 x 0.50	13.80	14.40	27.20
22320050	32 x 0.50	14.00	15.36	29.10
22360050	36 x 0.50	14.80	17.28	31.40
22400050	40 x 0.50	15.60	19.20	34.50
22440050	44 x 0.50	17.50	21.12	39.20
22500050	50 x 0.50	19.40	24.00	44.00
22520050	52 x 0.50	19.80	24.96	45.40

Cross-section mm <sup>2</sup>	CU number kg/km	Outer Ø approx. mm	Weight approx. kg/km	Tensile strength N
22610050	61 x 0.50	20.80	29.28	53.60
22800050	80 x 0.50	24.30	38.40	70.40
221000050	100 x 0.50	29.60	48.00	88.00
22020075	2 x 0.75	5.20	1.44	4.80
22030075	3 x 0.75	5.50	2.20	5.70
22040075	4 x 0.75	6.10	2.90	6.90
22050075	5 x 0.75	7.00	3.60	7.70
22060075	6 x 0.75	7.30	4.32	10.30
22070075	7 x 0.75	7.50	5.00	12.50
22080075	8 x 0.75	8.30	5.90	12.30
22120075	12 x 0.75	10.10	8.70	17.90
22160075	16 x 0.75	11.40	11.60	23.00
22200075	20 x 0.75	12.60	14.40	27.40
22240075	24 x 0.75	14.30	17.60	29.70
22300075	30 x 0.75	15.30	21.70	39.40
22020100	2 x 1.00	5.60	1.90	6.10
22040100	4 x 1.00	6.50	3.84	8.50
22020150	2 x 1.50	6.80	2.90	6.00



# LIYCY

Flexible screened colour coded data cable



### Technical Data:

- Conductor material** Copper bare
- Conductor Class** Class 5 acc. to DIN VDE 0295 or IEC 60228
- Core Insulation** PVC
- Core identification** Cross sections from 0.14 to 0.75 mm<sup>2</sup> coloured cores acc. to DIN 47100  
1.0 to 10 mm<sup>2</sup> : black cores with continuous figure imprint in white
- Stranding** Cores twisted in layers
- Outer sheath** PVC
- Sheath colour** Grey (RAL 7001 or RAL 7032)
- Rated voltage [V]** 300/500
- Testing voltage [V]** 1200 / 1500
- Conductor resistance** Nach DIN VDE 0295. bzw. IEC 60228
- Insulation resistance** 20 MΩ x km
- Current carrying capacity** DIN VDE (see technical guidelines)
- Min. bending radius fixed [xd]** bis 12mm: 5 x d  
bis 20mm: 7.5 x d  
>20mm: 10
- Min. bending radius moved [xd]** bis 12mm: 5 x d  
bis 20mm: 7.5 x d Working temp fixed >20mm: 10
- Working temp fixed min/max [C]** -30°C up to +80°C
- Working temp moved min/max [C]** -15°C up to +70°C
- Burning behaviour** EC 60332-1: self-extinguishing and flame-retardant
- Approvals** VDE 0812

### Construction:

- fine strands of bare copper conductor
- stranding acc. to VDE 0295 class 5
- PVC core insulation
- colored cores acc. to DIN 47100 for cross sections from 0.14 to 0.75 mm<sup>2</sup>
- black cores with continuous figure imprint in white from cross sections 1.0 to 10.0 mm<sup>2</sup>
- overall screen of tinned copper wires
- cores twisted into layers
- foil wrapping
- PVC outer sheath grey. RAL 7001 or RAL 7032

### Application:

Used as junction or connecting cables in control, measuring and signalling technology as well as in data processing and office technology for lossless transmission of data and signals. The tight copper screening provides optimum protection against external electrical interference. Suitable for use in dry and humid rooms. For fixed laying and flexible applications with undefined cable routing and without tensile stress.

Good chemical resistance. largely oil resistant.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
20020014	2 x 0.14	3.9	1.1	2.1
20030014	3 x 0.14	4	1.2	4
20040014	4 x 0.14	4.3	1.4	4.3
20050014	5 x 0.14	4.7	1.6	4.7
20060014	6 x 0.14	5	1.9	5.2
20070014	7 x 0.14	5.1	2	5.4
20080014	8 x 0.14	5.4	2.3	5.8
20100014	10 x 0.14	6	2.8	5.2
20120014	12 x 0.14	6.2	3	8.1
20140014	14 x 0.14	6.5	3.3	6.5
20150014	15 x 0.14	6.9	3.9	7
20160014	16 x 0.14	7	4.3	9.7
20180014	18 x 0.14	7.3	5	7.9
20200014	20 x 0.14	7.8	5.7	11.6
20210014	21 x 0.14	7.8	5.9	9.6
20240014	24 x 0.14	8.5	7	10.6
20270014	27 x 0.14	9.10	8.40	12.20
20300014	30 x 0.14	9.30	9.00	12.90
20320014	32 x 0.14	9.60	9.60	13.80
20360014	36 x 0.14	9.60	11.40	14.80
20400014	40 x 0.14	10.30	12.30	16.50
20480014	48 x 0.14	10.60	13.00	18.30
20500014	50 x 0.14	11.30	14.90	19.60
20520014	52 x 0.14	12.10	15.00	20.00
20560014	56 x 0.14	12.40	15.30	21.20
20610014	61 x 0.14	12.50	15.70	24.30
20800014	80 x 0.14	16.40	19.50	48.60
201000014	100 x 0.14	17.90	25.10	57.80
20020025	2 x 0.25	4.5	1.5	2.8
20030025	3 x 0.25	4.7	2	3.4
20040025	4 x 0.25	5	2.2	4
20050025	5 x 0.25	5.5	2.7	4.7
20060025	6 x 0.25	6	3	5.9
20070025	7 x 0.25	6	3.5	6.1
20080025	8 x 0.25	6.5	4	6.6

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
20100025	10 x 0.25	7.4	4.2	8
20120025	12 x 0.25	7.6	5.6	9.1
20140025	14 x 0.25	8	5.9	12
20160025	16 x 0.25	8.5	6.7	13.5
20150025	15 x 0.25	8.2	6.1	12.7
20180025	18 x 0.25	8.8	8	15
20200025	20 x 0.25	9.6	10	15.7
20210025	21 x 0.25	9.4	10.4	16.3
20240025	24 x 0.25	10.4	11.5	16.1
20270025	27 x 0.25	11.00	12.30	17.20
20300025	30 x 0.25	11.20	13.00	18.70
20320025	32 x 0.25	11.40	13.50	20.10
20360025	36 x 0.25	11.70	14.50	21.70
20440025	44 x 0.25	14.30	16.50	24.90
20480025	48 x 0.25	14.50	17.40	27.40
20500025	50 x 0.25	14.00	18.00	29.90
20520025	52 x 0.25	14.80	18.60	31.00
20560025	56 x 0.25	15.20	20.10	34.80
20610025	61 x 0.25	15.20	22.00	39.30
20800025	80 x 0.25	20.00	29.20	55.80
201000025	100 x 0.25	22.80	37.10	71.00
20020034	2 x 0.34	5	2	3.1
20030034	3 x 0.34	5.1	2.4	3.8
20040034	4 x 0.34	5.6	2.5	4.6
20050034	5 x 0.34	6	3	5.4
20060034	6 x 0.34	6.6	4.3	6.7
20070034	7 x 0.34	6.6	4.6	7
20080034	8 x 0.34	7	5	7.6
20100034	10 x 0.34	8.1	7.3	10.4
20120034	12 x 0.34	8.4	7.6	12.8
20140034	14 x 0.34	8.8	8.6	14.1
20150034	15 x 0.34	9	8.8	15.2
20160034	16 x 0.34	9.2	9.2	15.5
20180034	18 x 0.34	10.1	9.9	16.6
20200034	20 x 0.34	10.5	12.4	19.5

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
20210034	21 x 0.34	10.8	13	20.2
20240034	24 x 0.34	12	14	23.4
20270034	27 x 0.34	12.20	15.00	24.60
20300034	30 x 0.34	12.80	15.60	28.20
20320034	32 x 0.34	13.30	16.50	29.80
20360034	36 x 0.34	13.80	18.30	32.20
20400034	40 x 0.34	14.20	19.80	35.20
20420034	42 x 0.34	15.10	20.50	37.10
20480034	48 x 0.34	15.50	22.80	43.00
20500034	50 x 0.34	15.90	23.60	43.90
20610034	61 x 0.34	16.90	29.90	51.00
20800034	80 x 0.34	21.20	37.00	66.90
201000034	100 x 0.34	26.50	41.50	83.60
19020050	2 x 0.50	5.4	2.6	3.6
19030050	3 x 0.50	5.8	3.5	4.5
19040050	4 x 0.50	6.2	4.5	5.4
19050050	5 x 0.50	6.7	5.3	6.7
19060050	6 x 0.50	7.3	6.8	8.1
19070050	7 x 0.50	7.4	7	8.40
19080050	8 x 0.50	8	8.5	11.1
19100050	10 x 0.50	9.2	10	13.4
19120050	12 x 0.50	9.5	11	15.6
19140050	14 x 0.50	11.7	12.5	16.9
19150050	15 x 0.50	12	13	18
19160050	16 x 0.50	12.3	14	19.5
19180050	18 x 0.50	11.5	14.2	21.5
19200050	20 x 0.50	12.2	16.5	23.4
19210050	21 x 0.50	12.8	17.1	25.1
19240050	24 x 0.50	13.1	23.6	28.8
20250050	25 x 0.50	13.4	25	31.3
19270050	27 x 0.50	14.20	20.60	32.10
19300050	30 x 0.50	14.70	22.50	34.80
19320050	32 x 0.50	15.20	23.60	37.30
19360050	36 x 0.50	15.70	26.00	40.50
19400050	40 x 0.50	16.30	29.00	44.00
19420050	42 x 0.50	17.10	29.80	48.70
19440050	44 x 0.50	17.60	31.10	50.50
19480050	48 x 0.50	18.00	33.00	53.20
19500050	50 x 0.50	18.40	34.00	55.20
19520050	52 x 0.50	18.40	35.50	56.60
19560050	56 x 0.50	19.40	37.70	61.80
19610050	61 x 0.50	19.80	41.50	65.90
19800050	80 x 0.50	23.00	51.50	86.40
191000050	100 x 0.50	25.90	63.00	105.00
19020075	2 x 0.75	5.6	3.5	6.2
19030075	3 x 0.75	6.3	4.8	7.3
19040075	4 x 0.75	7	5.6	9.5
19050075	5 x 0.75	7.4	7	12
19060075	6 x 0.75	8	8.5	14.5
19070075	7 x 0.75	8.3	9.8	15.8
19080075	8 x 0.75	8.6	11.6	16.3
19100075	10 x 0.75	11	13.1	19.5
19120075	12 x 0.75	11.2	14.8	23.2
19140075	14 x 0.75	12	16.7	26
19160075	16 x 0.75	12.5	18.3	29.6
19180075	18 x 0.75	12.9	20.5	31.5
19200075	20 x 0.75	14.9	22	36.4
19240075	24 x 0.75	15.2	26.6	39.8
20250075	25 x 0.75	16.6	28.08	40.4
19300075	30 x 0.75	16.40	31.50	49.00
19320075	32 x 0.75	16.70	33.00	52.00
19360075	36 x 0.75	17.20	37.00	60.60
19400075	40 x 0.75	17.90	39.50	67.20
19420075	42 x 0.75	18.20	44.00	69.30
19500075	50 x 0.75	19.50	48.00	80.70
19610075	61 x 0.75	21.50	55.50	94.20
19800075	80 x 0.75	27.40	71.50	119.00
191000075	100 x 0.75	31.20	91.00	146.30
19020100	2 x 1	6.4	5.5	8.4
19030100	3 G 1	6.7	6.6	10

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
19040100	4 x 1	7.2	8	12
19050100	5 x 1	7.8	9	13.6
19070100	7 x 1	8.5	12	16.2
19080100	8 x 1	10.5	13	20.3
19100100	10 x 1	11.1	15.5	23.1
19120100	12 x 1	11.6	18.2	26.5
19140100	14 x 1	12.4	20.5	29.2
19160100	16 x 1	13.1	22	33.1
19180100	18 x 1	13.6	24.5	36
19200100	20 x 1	15.9	27	38.8
19240100	24 x 1	17.5	32	45.1
19250100	25 x 1	17.5	33	47.5
19300100	30 x 1	20.60	39.50	55.40
19340100	34 x 1	21.50	44.00	62.90
19400100	40 x 1	22.90	51.00	70.90
19420100	42 x 1	23.20	53.30	76.90
19500100	50 x 1	25.70	62.50	99.50
19610100	61 x 1	27.30	71.00	110.00
19800100	80 x 1	32.70	94.00	148.50
191000100	100 x 1	37.10	118.00	183.00
19020150	2 x 1.50	7.2	6.5	9.7
19030150	3 x 1.50	7.7	9	12.5
19040150	4 x 1.50	8.2	11	14.5
19050150	5 x 1.50	9	12.7	17.3
19070150	7 x 1.50	10	16.2	22.5
19080150	8 x 1.50	11.5	17.5	27
19120150	12 x 1.50	13.2	25.1	36.5
19140150	14 x 1.50	14.1	28	41
19100150	10 x 1.50	12.9	21	33.8
19160150	16 x 1.50	15	31.5	46.5
19180150	18 x 1.50	16	34.5	51.3
19200150	20 x 1.50	17	37.5	63.5
19240150	24 x 1.50	19.7	44.5	70.5
19250150	25 x 1.50	20.1	46.5	72
19300150	30 x 1.50	20.70	55.50	77.60
19340150	34 x 1.50	21.50	61.20	89.60
19360150	36 x 1.50	23.30	63.00	98.50
19420150	42 x 1.50	25.50	78.20	114.00
19500150	50 x 1.50	27.40	88.50	133.00
19610150	61 x 1.50	29.10	112.00	165.00
19800150	80 x 1.50	34.80	136.00	208.50
191000150	100 x 1.50	39.60	169.00	257.00
19020250	2 x 2.50	10.1	9.8	14.8
19030250	3 x 2.50	10.6	12.4	18.8
19040250	4 x 2.50	11.6	15	23.6
19050250	5 x 2.50			



1

**LIYCY-CY paired**

Flexible data cable. screened pairs and overall screen

**Technical Data:**

- **Conductor material** Copper bare
- **Conductor Class** Class 5
- **Core Insulation** PVC
- **Core identification** DIN VDE 471000
- **Stranding** 2 cores twisted into pairs; Pairs stranded in layers
- **Outer sheath** PVC
- **Sheath colour** Grey (RAL 7032)
- **Rated voltage [V]** 350/500
- **Testing voltage [V]** Core/screen 2000 V
- **Core/core:** on 0.14 mm<sup>2</sup> 1200 V and 0.14mm<sup>2</sup> 1500
- **Conductor resistance** Acc. to DIN VDE 0295 or IEC 60228
- **Insulation resistance** ≥ 20 MΩ x km
- **Current carrying capacity** DIN VDE (see technical guidance)
- **Min. bending radius fixed [xd]** up to 12mm Ø: 5 x d up to 20mm Ø: 7.5 x d > 20mm Ø: 10
- **Min. bending radius moved [xd]** up to 12mm Ø: 10 x d up to 20mm Ø: 15 x d 20mm Ø: 20
- **Working temp fixed min/max [C]** -30°C up to +80°C
- **Working temp moved min/mac [C]** -5°C up to +70°C
- **Burning behaviour** IEC 60332-1: flame-retardant and self-extinguishing
- **Approvals** VDE 0812. 0814 und DIN 47414

**Construction:**

- fine strands of bare copper conductor
- stranding acc. to VDE0295. class 5
- cores of special PVC
- black cores with white numbers
- JZ = earth conductor green/yellow in outer layer
- OZ = without earth conductor
- inner sheath of special PVC. black
- copper screen of tinned copper wire braid
- outer sheath of special PVC. fire- and oil resistant. resistant of UV - radiation
- sheath colour: black RAL 9005

**Application:**

Used as junction or connecting cables in control, measuring and signalling technology as well as in data processing and office technology for lossless transmission of data and signals.

The twisted pairs are provided with a tinned overall copper screening to avoid external interference or mutual interference between various line circuits. Suitable for use in dry and humid rooms. For fixed laying and flexible applications with undefined cable routing and without tensile stress.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
25020014	2 x 2 x 0.14	7.70	4.60	10.00
25030014	3 x 2 x 0.14	8.00	6.50	11.50
25040014	4 x 2 x 0.14	8.50	8.40	15.00
25050014	5 x 2 x 0.14	10.70	9.20	18.00
25060014	6 x 2 x 0.14	11.00	10.10	20.80
25070014	7 x 2 x 0.14	12.00	11.20	23.00
25080014	8 x 2 x 0.14	13.00	12.70	24.70
25090014	9 x 2 x 0.14	14.00	14.00	28.00
25100014	10 x 2 x 0.14	14.30	15.00	32.00
25120014	12 x 2 x 0.14	15.10	17.00	38.20
25160014	16 x 2 x 0.14	17.20	21.40	44.00
25200014	20 x 2 x 0.14	18.00	26.00	52.00
25020025	2 x 2 x 0.25	9.50	6.30	12.50
25030025	3 x 2 x 0.25	10.00	8.00	15.00
25040025	4 x 2 x 0.25	11.40	9.50	18.00
25050025	5 x 2 x 0.25	12.10	10.60	21.50
25060025	6 x 2 x 0.25	13.50	13.50	26.00
25070025	7 x 2 x 0.25	14.70	14.70	30.00
25080025	8 x 2 x 0.25	15.50	16.60	32.50
25100025	10 x 2 x 0.25	17.00	20.70	39.50
25120025	12 x 2 x 0.25	18.70	24.70	44.00
25160025	16 x 2 x 0.25	22.20	32.30	61.00
25200025	20 x 2 x 0.25	23.60	39.00	70.80
25240025	24 x 2 x 0.25	26.00	44.00	81.20
25320025	32 x 2 x 0.25	29.50	58.60	90.00

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
25020034	2 x 2 x 0.34	12.70	6.70	13.50
25030034	3 x 2 x 0.34	13.80	9.00	16.80
25040034	4 x 2 x 0.34	15.50	11.10	22.60
25060034	6 x 2 x 0.34	18.60	15.60	31.00
25080034	8 x 2 x 0.34	20.80	18.80	36.00
25020050	2 x 2 x 0.5	13.00	9.10	19.30
25030050	3 x 2 x 0.5	13.40	11.00	21.00
25040050	4 x 2 x 0.5	14.60	15.70	27.20
25060050	6 x 2 x 0.5	18.00	19.10	39.60
25080050	8 x 2 x 0.5	19.60	22.50	42.00
25020075	2 x 2 x 0.75	12.2	9.50	20.50
25030075	3 x 2 x 0.75	13.5	12.37	26.50
25040075	4 x 2 x 0.75	15.0	16.20	32.50
25080075	8 x 2 x 0.75	22.0	24.50	63.40

**INSTRUMENTATION CABLE**

1

**Applications**

The instrumentation cables described in this catalogue are manufactured strictly based on the requirement of EN50288 as well as relevant Australian Standards. Instrumentation cables are mainly used in data processing and process control i.e. electrical measuring device to instrument panel. Instrument to instrument connection, and electrical sensing device to control cabinets. It can be used also for general transmission of electrical signals in any systems of remote control, indication, telemetering, monitoring and analysis which it needs to be protected from interference to the transmission signal by other electrical circuits.

Instrumentation cable with the identification colour blue is specified for intrinsically safe circuits use.

**Cable configuration**

<b>Conductor</b>	Plain annealed copper (class 2 strands) of the type specified in AS/NZS 1125.
<b>Insulation</b>	V90 PVC complying to AS/NZS3808
<b>Laying-up core</b>	Twisted to pair or triple with optimum pitch to minimise the cross talk.
<b>Core identification</b>	Pair element: Black, White, and all cores numbered Triple element: Black, White, Red, and all cores numbered
<b>Overall screened</b>	A stranded tinned annealed copper drain wire (7/0.2mm) is helically applied between the lapping polyester tape and the aluminium foil (100% coverage) for extra protection against external noise and interference (i.e. electrostatic from external high voltages and electromagnetic from external high currents)
<b>Outer sheath</b>	V90 PVC complying to AS/NZS3808
<b>Sheath identification</b>	Black sheath (Ultraviolet - UV stabilised) Blue sheath - instrumentation cable for intrinsically safe circuits
<b>Operating temperature</b>	Minimum conductor continuous operating temperature: -20°C Maximum conductor operating temperature: 90°C

**Electrical Properties**

**Rated Voltage:** Max. 110/150V

**Inductance**  
0.5SQMM: 1.1mH/km @1KHz  
1.5SQMM: 0.95mH/km @1KHz

**Capacitance**  
0.5SQMM: 0.145uF/km @1KHz  
1.5SQMM: 0.20uF/km @1KHz

**L/R ratio**  
0.5SQMM: 0.0157mH/Ω  
1.5SQMM: 0.0365mH/Ω

**Insulation Resistance** 140MΩ.km @ 20°C

**Conductor Resistance**  
0.5SQMM 38.4Ω/km @ 20°C  
1.5SQMM 13.6Ω/km @ 20°C

Flame retardant PVC is tested to standard IEC 60332-1

**Mechanical Properties**

The recommended bending radius is as follows:

Unarmoured Cable: 12 x Cable Outer Diameter (during installation)  
6 x Cable Outer Diameter (after installation)

Armoured Cable: 18 x Cable Outer Diameter (during installation)  
12 x Cable Outer Diameter (after installation)

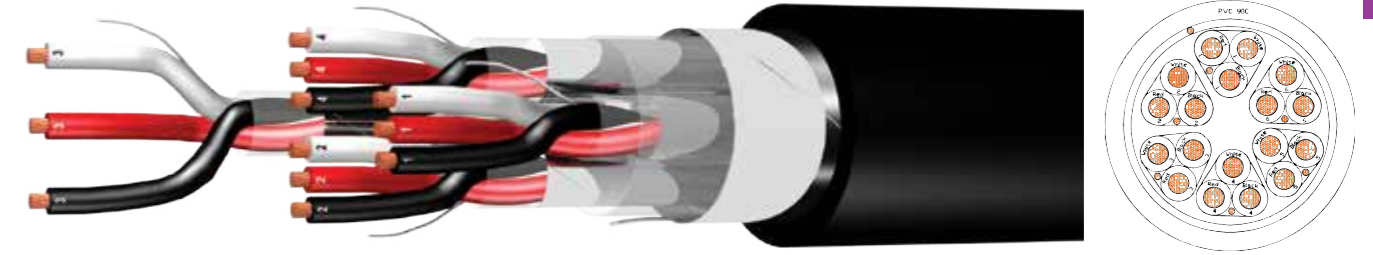
# 1 Individual & Overall Screened, Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA12.05.02.02	2	8.3	79
(7/0.30mm)	TA12.05.03.02	3	8.8	98
	TA12.05.04.02	4	9.5	119
	TA12.05.06.02	6	11.2	161
	TA12.05.08.02	8	12.5	200
	TA12.05.10.02	10	14.5	255
	TA12.05.12.02	12	15.3	304
	TA12.05.16.02	16	17.1	381
	TA12.05.18.02	18	17.9	428
	TA12.05.20.02	20	18.9	468
	TA12.05.24.02	24	21.2	567
	TA12.05.36.02	36	24.4	809
	TA12.05.50.02	50	27.7	1068

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA12.15.02.02	2	10.2	127
(7/0.50mm)	TA12.15.03.02	3	10.9	165
	TA12.15.04.02	4	12.1	211
	TA12.15.06.02	6	14.3	294
	TA12.15.08.02	8	16.2	382
	TA12.15.10.02	10	18.7	482
	TA12.15.12.02	12	19.3	556
	TA12.15.16.02	16	21.6	719
	TA12.15.18.02	18	22.7	798
	TA12.15.20.02	20	24.4	899
	TA12.15.24.02	24	26.9	1060
	TA12.15.36.02	36	31.2	1537
	TA12.15.50.02	50	36	2096

# Individual & Overall Screened, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA16.05.02.03	2	10	117
(7/0.30mm)	TA16.05.04.03	4	11.4	177
	TA16.05.06.03	6	13.5	243
	TA16.05.08.03	8	15	306
	TA16.05.10.03	10	16.9	372
	TA16.05.12.03	12	17.5	425
	TA16.05.16.03	16	19.4	539
	TA16.05.18.03	18	20.4	598
	TA16.05.20.03	20	21.6	658
	TA16.05.24.03	24	23.9	781
	TA16.05.36.03	36	27.4	1106

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA16.15.02.03	2	12.2	193
(7/0.50mm)	TA16.15.04.03	4	14.1	314
	TA16.15.06.03	6	16.8	444
	TA16.15.08.03	8	18.8	569
	TA16.15.10.03	10	21.4	701
	TA16.15.12.03	12	22.1	812
	TA16.15.16.03	16	24.6	1048
	TA16.15.18.03	18	25.9	1168
	TA16.15.20.03	20	27.5	1291
	TA16.15.24.03	24	30.5	1539
	TA16.15.36.03	36	35.1	2222

# Individual & Overall Screened, Armoured Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA13.05.02.02	2	13.49	277
(7/0.30mm)	TA13.05.04.02	4	14.72	334
	TA13.05.06.02	6	17.33	481
	TA13.05.08.02	8	18.66	555
	TA13.05.10.02	10	20.28	630
	TA13.05.12.02	12	21.55	691
	TA13.05.16.02	16	23.84	885
	TA13.05.20.02	20	25.89	1026
	TA13.05.24.02	24	28.66	1297
	TA13.05.36.02	36	31.61	1619
	TA13.05.50.02	50	35.19	2021

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA13.15.02.02	2	16.51	435
(7/0.50mm)	TA13.15.04.02	4	18.75	548
	TA13.15.06.02	6	21.01	682
	TA13.15.08.02	8	23.47	887
	TA13.15.10.02	10	25.62	1039
	TA13.15.12.02	12	26.64	1125
	TA13.15.16.02	16	29.15	1395
	TA13.15.20.02	20	32.21	1647
	TA13.15.24.02	24	35.22	1971
	TA13.15.36.02	36	39.13	2540
	TA13.15.50.02	50	44.02	3319
	TA12.05.36.02	36	24.4	809
	TA12.05.50.02	50	27.7	1068

# Individual & Overall Screened, Armoured, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA17.05.02.03	2	14.3	117
(7/0.30mm)	TA17.05.03.03	3	15.02	177
	TA17.05.04.03	4	16.46	177
	TA17.05.06.03	6	18.95	243
	TA17.05.08.03	8	21.21	306
	TA17.05.10.03	10	23.4	372
	TA17.05.12.03	12	25.12	425
	TA17.05.16.03	16	26.87	539
	TA17.05.20.03	20	28.92	658
	TA17.05.24.03	24	32.5	781
	TA17.05.36.03	36	36.15	1106

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA17.15.02.03	2	16.7	415
(7/0.50mm)	TA17.15.03.03	3	18.55	567
	TA17.15.04.03	4	19.67	561
	TA17.15.06.03	6	23.65	933
	TA17.15.08.03	8	25.18	1044
	TA17.15.10.03	10	27.53	1216
	TA17.15.12.03	12	29.42	1447
	TA17.15.16.03	16	32.33	1725
	TA17.15.20.03	20	35.03	2020
	TA17.15.24.03	24	39.1	2615
	TA17.15.36.03	36	43.78	3861

# 1 Overall Screened, Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA10.05.01.02	1	5.71	41
(7/0.30mm)	TA10.05.02.02	2	7.25	60
	TA10.05.03.02	3	7.67	75
	TA10.05.04.02	4	8.35	91
	TA10.05.06.02	6	10.07	128
	TA10.05.08.02	8	11.45	165
	TA10.05.10.02	10	13.30	211
	TA10.05.12.02	12	13.72	239
	TA10.05.16.02	16	15.93	329
	TA10.05.18.02	18	16.72	361
	TA10.05.20.02	20	17.99	410
	TA10.05.24.02	24	19.74	478
	TA10.05.36.02	36	22.77	677
	TA10.05.50.02	50	25.79	887
1.00 (18)	TA10.10.01.02	1	5.5	42
(7/0.40mm)	TA10.10.02.02	2	8.2	79
	TA10.10.03.02	3	8.7	104

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA10.15.01.02	1	7.33	70
(7/0.50mm)	TA10.15.02.02	2	9.57	113
	TA10.15.03.02	3	10.14	149
	TA10.15.04.02	4	11.27	190
	TA10.15.06.02	6	13.55	271
	TA10.15.08.02	8	15.36	351
	TA10.15.10.02	10	17.34	427
	TA10.15.12.02	12	17.91	493
	TA10.15.16.02	16	20.04	641
	TA10.15.18.02	18	21.12	711
	TA10.15.20.02	20	22.70	803
	TA10.15.24.02	24	25.10	947
	TA10.15.36.02	36	29.09	1378
	TA10.15.50.02	50	33.21	1852

# Overall Screened, Armoured Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA11.05.01.02	1	10.98	198
(7/0.30mm)	TA11.05.02.02	2	12.85	246
	TA11.05.04.02	4	14.15	304
	TA11.05.06.02	6	15.67	360
	TA11.05.08.02	8	17.05	430
	TA11.05.10.02	10	18.9	534
	TA11.05.12.02	12	19.92	570
	TA11.05.16.02	16	22.33	760
	TA11.05.20.02	20	23.99	899
	TA11.05.24.02	24	25.74	1010
	TA11.05.36.02	36	29.57	1365
	TA11.05.50.02	50	32.59	1658

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA11.15.01.02	1	12.08	238
(7/0.50mm)	TA11.15.02.02	2	14.97	330
	TA11.15.04.02	4	16.87	455
	TA11.15.06.02	6	19.45	623
	TA11.15.08.02	8	21.06	730
	TA11.15.10.02	10	24.34	940
	TA11.15.12.02	12	25.31	1075
	TA11.15.16.02	16	27.64	1282
	TA11.15.20.02	20	29.9	1491
	TA11.15.24.02	24	32.3	1702
	TA11.15.36.02	36	36.29	2497
	TA11.15.50.02	50	40.41	3124

# Overall Screened, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA14.05.01.03	1	5.3	43
(7/0.30mm)	TA14.05.02.03	2	7.9	78
	TA14.05.03.03	3	8.3	100
	TA14.05.04.03	4	9.3	128
	TA14.05.06.03	6	11	176
	TA14.05.08.03	8	12.9	240
	TA14.05.10.03	10	14.5	291
	TA14.05.12.03	12	15	334
	TA14.05.16.03	16	16.6	424
	TA14.05.18.03	18	18.2	502
	TA14.05.20.03	20	19.2	550
	TA14.05.24.03	24	22	686
	TA14.05.36.03	36	24.9	955

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA14.15.01.03	1	7	82
(7/0.50mm)	TA14.15.02.03	2	10.3	152
	TA14.15.03.03	3	11	203
	TA14.15.04.03	4	12.2	262
	TA14.15.06.03	6	14.7	378
	TA14.15.08.03	8	16.5	485
	TA14.15.10.03	10	19.5	630
	TA14.15.12.03	12	20.1	730
	TA14.15.16.03	16	23	980
	TA14.15.18.03	18	24.2	1088
	TA14.15.20.03	20	25.5	1196
	TA14.15.24.03	24	28.2	1414
	TA14.15.36.03	36	32.1	2027

# Overall Screened, Armoured, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA15.05.01.03	1	9.63	173
(7/0.30mm)	TA15.05.02.03	2	12.65	242
	TA15.05.03.03	3	13.9	277
	TA15.05.04.03	4	15.04	347
	TA15.05.06.03	6	17.58	449
	TA15.05.08.03	8	18.85	530
	TA15.05.10.03	10	20.2	599
	TA15.05.12.03	12	22.16	756
	TA15.05.16.03	16	23.68	887
	TA15.05.20.03	20	26.26	1083
	TA15.05.24.03	24	28.16	1234
	TA15.05.36.03	36	32.18	1767

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA15.15.01.03	1	10.82	224
(7/0.50mm)	TA15.15.02.03	2	14.72	341
	TA15.15.03.03	3	16.34	416
	TA15.15.04.03	4	18.64	559
	TA15.15.06.03	6	21.68	743
	TA15.15.08.03	8	23.42	886
	TA15.15.10.03	10	26.64	1152
	TA15.15.12.03	12	27.26	1266
	TA15.15.16.03	16	29.34	1529
	TA15.15.20.03	20	32.17	2168
	TA15.15.24.03	24	35.96	2604
	TA15.15.36.03	36	40.62	3600

# 1 Shielded Multi-Conductor FT-4

Stranded Tinned Copper Conductors



Part Number	Conductor			Drain AWG Size	Wall Thickness		Outer Diameter	Total Weight	Colour Code
	No	AWG Size	Stranding		Insulation	Jacket			
5032402TFT4	2	24	7 x 32	24	.015	.020	.150	46	ECI Chart 1
5032202TFT4	2	22	7 x 30	24	.015	.020	.162	57	1
5032203TFT4	3	22	7 x 30	24	.015	.023	.184	73	1
5032204TFT4	4	22	7 x 30	24	.015	.023	.200	93	1
5032205TFT4	5	22	7 x 30	24	.015	.023	.202	99	1
5032002TFT4	2	20	7 x 28	22	.015	.023	.187	73	1
5032003TFT4	3	20	7 x 28	22	.015	.023	.197	93	1
5032004TFT4	4	20	7 x 28	22	.015	.023	.216	133	1
5031802TFT4	2	18	16 x 30	20	.015	.023	.210	100	1
5031803TFT4	3	18	16 x 30	20	.015	.023	.222	127	1
5031804TFT4	4	18	16 x 30	20	.015	.023	.242	153	1
5031602TFT4	2	16	26 x 30	18	.015	.023	.236	133	1
5031603TFT4	3	16	26 x 30	18	.015	.023	.242	168	1
5031604TFT4	4	16	26 x 30	18	.015	.023	.265	207	1
5031402TFT4	2	14	41 x 30	16	.030	.030	.338	233	1
5031403TFT4	3	14	41 x 30	16	.030	.030	.359	300	1
5031404TFT4	4	14	41 x 30	16	.030	.030	.394	373	1
5031202TFT4	2	12	65 x 30	14	.030	.030	.376	312	1
5031203TFT4	3	12	65 x 30	14	.030	.030	.400	412	1
5031204TFT4	4	12	65 x 30	14	.030	.030	.440	520	1

All measurements in imperial i.e inches, lbs.

# Individually Foil Shielded Multi-Pair FT-4

Stranded Tinned Copper Conductors



Part Number	Pair			Wall Thickness		Outer Diameter	Nom. Cap.		Total Weight
	No	AWG Size	Stranding	Insulation	Jacket		pF/ft A**	pF/ft B***	
5822252TFT4	2	22	7 x 30	.010	.018	.165	35	62	65

All measurements in imperial i.e inches, lbs.

# 1 Multi-Pair Foil Shielded FT-4

Stranded Tinned Copper Conductors



Part Number	Pair			Drain AWG Size	Wall Thickness		Outer Diameter	Total Weight	Colour Code
	No	AWG Size	Stranding		Insulation	Jacket			
5152451TFT4	1	24	7 x 32	24	.010	.020	.130	40	ECI Chart 3
5152452TFT4	2	24	7 x 32	24	.010	.023	.197	73	3
5152453TFT4	3	24	7 x 32	24	.010	.023	.210	101	3
5152454TFT4	4	24	7 x 32	24	.010	.023	.230	112	3
5152455TFT4	5	24	7 x 32	24	.010	.023	.254	133	3
5152456TFT4	6	24	7 x 32	24	.010	.023	.265	140	3
5152457TFT4	7	24	7 x 32	24	.010	.023	.280	153	3
5152458TFT4	8	24	7 x 32	24	.010	.023	.294	170	3
5152459TFT4	9	24	7 x 32	24	.010	.030	.319	220	3
5152460TFT4	10	24	7 x 32	24	.010	.030	.332	232	3
5152461TFT4	11	24	7 x 32	24	.010	.030	.342	240	3
5152462TFT4	12	24	7 x 32	24	.010	.030	.350	273	3
5152465TFT4	15	24	7 x 32	24	.010	.030	.379	320	3
5152469TFT4	19	24	7 x 32	24	.010	.030	.420	393	3
5152475TFT4	25	24	7 x 32	24	.010	.035	.483	486	3
5152252TFT4	2	22	7 x 30	24	.010	.023	.218	93	3
5152253TFT4	3	22	7 x 30	24	.010	.023	.231	120	3
5152254TFT4	4	22	7 x 30	24	.010	.023	.254	147	3
5152256TFT4	6	22	7 x 30	24	.010	.023	.283	200	3
5152257TFT4	7	22	7 x 30	24	.010	.023	.313	221	3
5152258TFT4	8	22	7 x 30	24	.010	.030	.342	242	3
5152259TFT4	9	22	7 x 30	24	.010	.030	.353	287	3

# Multi-Pair Foil & Braid Shield FT-4

Stranded Tinned Copper Conductors



Part Number	Conductor			Drain AWG Size	Wall Thickness		Outer Diameter	Total Weight	Colour Code
	No	AWG Size	Stranding		Insulation	Jacket			
538245285TFT4	2	24	7 x 32	24	.010	.023	.218	113	ECI Chart 3
538245385TFT4	3	24	7 x 32	24	.010	.023	.230	127	3
538245485TFT4	4	24	7 x 32	24	.010	.023	.250	160	3
538245585TFT4	5	24	7 x 32	24	.010	.023	.274	175	3
538245685TFT4	6	24	7 x 32	24	.010	.023	.281	213	3
538245785TFT4	7	24	7 x 32	24	.010	.023	.281	213	3
538245885TFT4	8	24	7 x 32	24	.010	.030	.334	251	3
538245985TFT4	9	24	7 x 32	24	.010	.030	.339	280	3
538246085TFT4	10	24	7 x 32	24	.010	.030	.352	294	3
538246285TFT4	12	24	7 x 32	24	.010	.030	.364	326	3
538246385TFT4	12.5	24	7 x 32	24	.010	.030	.370	347	3
538246585TFT4	15	24	7 x 32	24	.010	.030	.393	378	3
538246885TFT4	18	24	7 x 32	24	.010	.030	.432	441	3
538247085TFT4	20	24	7 x 32	24	.010	.030	.443	471	3
538247585TFT4	25	24	7 x 32	24	.010	.035	.503	584	3
538225285TFT4	2	22	7 x 30	24	.010	.023	.238	140	3
538225385TFT4	3	22	7 x 30	24	.010	.023	.251	173	3
538225485TFT4	4	22	7 x 30	24	.010	.023	.274	193	3
538225585TFT4	5	22	7 x 30	24	.010	.023	.295	220	3
538225685TFT4	6	22	7 x 30	24	.010	.030	.317	267	3
538225785TFT4	7	22	7 x 30	24	.010	.030	.323	278	3
538225885TFT4	8	22	7 x 30	24	.010	.030	.367	319	3

# 1 Multi-Pair Foil & Braid Shield FT-4

Stranded Tinned Copper Conductors



Part Number	Pair			Wall Thickness		Outer Diameter	Total Weight	Colour Code
	No	AWG Size	Stranding	Insulation	Jacket			
5302452TFT4	2	24	7 x 32	.030	.226	82	13.7	ECI Chart 5
5302453TFT4	3	24	7 x 32	.030	.239	99	13.7	5
5302454TFT4	4	24	7 x 32	.030	.262	118	13.7	5
5302455TFT4	5	24	7 x 32	.030	.289	137	13.7	5
5302456TFT4	6	24	7 x 32	.030	.297	153	13.7	5
5302457STFT4	7.5	24	7 x 32	.030	.303	175	13.7	5
5302458TFT4	8	24	7 x 32	.030	.342	192	13.7	5
5302459TFT4	9	24	7 x 32	.030	.347	202	13.7	5
5302460TFT4	10	24	7 x 32	.030	.369	230	13.7	5
5302461TFT4	11	24	7 x 32	.030	.375	238	13.7	5
5302462TFT4	12	24	7 x 32	.030	.382	258	13.7	5
5302463STFT4	13.7	24	7 x 32	.030	.382	263	13.7	5
5302469TFT4	19	24	7 x 32	.030	.460	367	13.7	5
5302475TFT4	25	24	7 x 32	.045	.530	524	13.7	5

All measurements in imperial i.e inches, lbs.

# 1 Individually Foil Shielded Multi-Pair FT-4

Low Capacitance



Part Number	Pair			Wall Thickness		Outer Diameter	Total Weight	Colour Code
	No	AWG Size	Stranding	Insulation	Jacket			
5862452TFT4	2	24	7 x 32	.030	.228	89	18.5	ECI Chart 3
5862453TFT4	3	24	7 x 32	.030	.243	112	18.5	3
5862454TFT4	4	24	7 x 32	.030	.268	139	18.5	3
5862456TFT4	6	24	7 x 32	.030	.307	188	18.5	3
5862459TFT4	9	24	7 x 32	.030	.363	263	18.5	3
5862462TFT4	12	24	7 x 32	.030	.404	336	18.5	3
5862465TFT4	15	24	7 x 32	.030	.443	406	18.5	3
5862477TFT4	27	24	7 x 32	.049	.652	765	18.5	3

All measurements in imperial i.e inches, lbs.



# BUS-PB Profibus

## Technical Data:

- **Conductor material** Copper bare
- **Stranding** Two cores twisted in pairs
- **Outer sheath** PVC for indoor installation. PE for outdoor installation PU for use in drag chains halogen free compound
- **Sheath colour** Indoor installation: Violet
- **Rated voltage [V]** Max.100
- **Testing voltage [V]** 3600 V/3 sec
- **Insulation resistance**  $\geq 16000$  MO/km
- **Working temp fixed min/max [C]** -30°C up to +70°C
- **Working temp moved min/max [C]** -5°C up to +50°C
- **Burning behaviour** EC 60332-1-2: flame-retardant and self-extinguishing

## Construction:

- twisted. Screen of plastic-laminated metal foil
- 2 cores twisted in pairs
- Single plain copper conductor for fixed installation or fine wired for use in drag chain
- CU-screen
- outer sheath PVC for indoor installation
- outer sheath PE for outdoor installation
- outer sheath PU for use in drag chains
- or halogen free outer sheath
- outer sheath colour violet
- also UL-approved available

## Application:

For fix installation in dry rooms and for installation at outdoor and in earth for industrial communication of buses e.g. Sinec L2-DP and F.I.P. (Factory Instrumentation Protocol) as well as for high flexible use in drag chains.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
207010024 UL/PUR	1 x 2 x 0.64	7.20	3.70	7.20
207010064	1 x 2 x 0.64	7.20	3.70	7.20
207010064 FC	1 x 2 x 0.64	7.20	3.70	7.20
207010064 FC/UL	1 x 2 x 0.64	7.20	3.70	7.20
207010064/A	1 x 2 x 0.64	7.20	3.70	7.20
207010064/H	1 x 2 x 0.64	7.20	3.70	7.20



# BUS-LD Bus Cable

## Technical Data:

- **Conductor material** Copper bare
- **Core identification** Colour code according to DIN 47100
- **Stranding** 2 cores twisted into pairs and pairs into layers
- **Outer sheath** PVC
- **Sheath colour** Violet (RAL 4001)
- **Rated voltage [V]** 250/500
- **Testing voltage [V]** core/core 1500
- **Conductor resistance** (Loop):max. 186 Ω/km
- **Min. bending radius fixed [xd]** 8 x d
- **Working temp fixed min/max [C]** -40°C up to +80°C
- **Working temp moved min/max [C]** -5°C up to +70°C
- **Burning behaviour** EIC 60332-1-2 flame-retardant and self-extinguishing
- **Approvals** UL/CSA Typ CMX (UL 444). CSA C22.2 No. 214-02

## Construction:

- plain copper conductors
- 2 cores twisted into pairs and pairs into layers
- colour code according to DIN 47100
- wrapping of plastic film
- screen of copper
- outer sheath PVC-based compound. violet (RAL 4001)
- UL-approved available
- Characteristics impedance: 100-120 Ohm

## Application:

Industrial communication for flexible installation for field bus systems. Dry and humid rooms.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
207010022	1 x 2 x 0.22	5.70	1.92	3.70
207020022	2 x 2 x 0.22	7.20	2.15	4.50
207030022	3 x 2 x 0.22	7.20	3.70	7.20

# BUS CAN

CAN Bus-System-Cable for fix installation - UL/SCA certified



### Technical Data:

- **Conductor material** copper, bare
- **Core Insulation** Foam Skin
- **Core identification** Colour code according to DIN 47100
- **Outer sheath** PVC
- **Sheath colour** Violet (RAL 4001)
- **Rated voltage [V]** 250
- **Testing voltage [V]** core/core 1500
- **Conductor resistance** (Loop): max 186 MΩ x km
- **Min. bending radius fixed [xd]** 8xd
- **Working temp fixed min/max [C]** -30°C up to +80°C
- **Working temp moved min/max [C]** -5°C up to +70°C
- **Burning behaviour** IEC 60332-1-2: flame-retardant and self-extinguishing

### Approvals

UL/CSA Typ CMX (UL 444)

### Construction:

- plain copper conductors
- colour code according to DIN 47100
- copper shielding braid
- outer sheath PVC-based compound, violet (RAL 4001)
- UL-approved available
- Characteristics impedance: 120 Ohm

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
207010022	1 x 2 x 0.22	5.70	1.92	3.70
207020022	2 x 2 x 0.22	7.20	2.15	4.50
2170263 CAN	1 x 2 x 0.34	6.80	2.50	5.50
2170264 CAN	2 x 2 x 0.34	8.50	4.64	8.80
2170266 CAN	1 x 2 x 0.50	7.50	4.16	9.00
2170267 CAN	2 x 2 x 0.50	9.60	5.94	10.60
2170270 CAN	2 x 2 x 0.75	11.50	8.06	14.20



# DEVICE NET THICK THIN

DeviceNet Thick & Thin

### Technical Data:

- **Conductor material** copper, bare
- **Outer sheath** PUR
- **Sheath colour** Violet (RAL 4001)
- **Rated voltage [V]** 300
- **Testing voltage [V]** 1500
- **Conductor resistance** Thin (Schleife) 45 Ω / km Thick (Schleife) 180 Ω / k
- **Min. bending radius fixed [xd]** 8xd
- **Min. bending radius moved [xd]** 15 x d
- **Insulation resistance** 120 Ohm
- **Working temp fixed min/max [C]** -30°C up to +80/ -40 up to +80
- **Working temp moved min/max [C]** -30°C up to +70/ -5 up to +70
- **Burning behaviour** IEC 60332-1-2: flame-retardant

### Approvals

ISO 1189 8, UL /CSA Typ CMX (UL 44)

### Construction:

- Outer sheath: polyurethane (PUR)
- Mantel: polyvinylchloride (PVC)
- Sunlight resistance

### Application:

Device Net, a bus system developed by Allen Bradley (Rockwell Automation) connects industrial devices (e.g. limit switches, variable frequency drives, motor starters, valve islands, PLCs). The Device Net communication link is based on proven CAN technology.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
202170025 P	1 x 2 x AWG24 + 1x 2 x AWG 22 THIN	6.90	3.34	6.77
202170341 UL	1 x 2 x AWG24 + 1x 2 x AWG 22 THIN	6.90	3.34	6.77
202170252 P#UL	1 x 2 x AWG18 + 1x 2 x AWG 15 THICK	12.20	9.40	18.40
202170362	1 x 2 x AWG18 + 1x 2 x AWG 15 THICK	12.20	9.40	19.50

# DEVICE NET THICK THIN FRNC

Fixed Installation

### Technical Data:

- **Conductor material** Copper, tinned
- **Outer sheath** FRNC
- **Sheath colour** Violet (RAL 4001)
- **Rated voltage [V]** 300
- **Conductor resistance** Thin (Schleife) 45 Ω / km Thick (Schleife) 180 Ω / k
- **Min. bending radius fixed [xd]** 15 x d
- **Insulation resistance** 120 Ohm
- **Working temp fixed min/max [C]** -25°C bis +80°C
- **Burning behaviour** IEC 60332-1-2: flame-retardant

### Approvals

CMG UL/CSA-certification 75°C oder PLTC, Sun Res

### Construction:

- Outer sheath: FRNC
- Core Insulation: Foam Skin
- Tinned copper braid with drain wire
- UV-resistant

### Application:

Device Net, a bus system developed by Allen Bradley (Rockwell Automation) connects industrial devices (e.g. limit switches, variable frequency drives, motor starters, valve islands, PLCs). The Device Net communication link is based on proven CAN technology.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
202170341	1 x 2 x AWG 24 + 1 x 2 x AWG 22	6.90	3.34	6.95
202170340	1 x 2 x AWG 18 + 1 x 2 x AWG 15	12.20	8.28	19.50

# 1 ASI-BUS PUR / TPE /EPDM



### Technical Data:

- Conductor material** Copper, tinned
- Conductor class** Class 5
- Core insulation** PVC
- Core identification** Colours : brown . blue (VDE 0293)
- Stranding\***
- Outer sheath** PUR, TPE or EPDM
- Sheath colour** Yellow (RAL 1023) or black (RAL 9005) Black
- Rated voltage [V]** 300
- Testing voltage [V]** 2000
- Conductor resistance** max. 13.7 Ω x km
- Insulation resistance** ≥ 1 MΩx km
- Current carrying capacity**
- Min. bending radius fixed [xd]** 3 x d
- Min. bending radius moved [xd]** 6 x d
- Working temp fixed min/max [C]** -40°C up to +100°C
- Working temp moved min/max [C]** -30°C up to +80°C
- Temp at conductor max.** +85°C
- Burning behaviour** EIC 60332-1-2 flame-retardant and self-extinguishing

### Construction:

- tinned copper conductor, fine wire
- core colours: brown, blue
- parallel cores
- profiled outer sheath: PUR/TPE or EPDM, oil-resistant
- sheath colour: yellow, RAL 1023 or black, RAL 9005
- available in UL/CSA approval
- bending radius: fixed 12 mm | moved 24 mm

### Application:

AS-Interface bus cables connect simple binary actuators and sensors such as proximity switches, valves or signal lamps with the central control system.

The yellow cable is used for data transmission and auxiliary energy supply (48 VDC) for the AS-Interface slaves.

The black cable exclusively supplies auxiliary energy to the AS-Interface slaves (24 VDC).

Also available as UL- and CSA-type!

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100	Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
2070020150	2 x 1.50 black	0.00	2.90	6.00	2077020150P	2 x 1.50 PUR GE	0.00	2.00	5.70
2077020150	2 x 1.50 yellow	0.00	2.90	6.00	2070020150P	2 x 1.50 PUR SW	0.00	2.00	5.70
2077020150GU	2 x 1.50 GE	0.00	2.90	5.70	2077020150UL	2 x 1.50 UL GE	0.00	2.90	5.70
2070020150GU	2 x 1.50 SW	0.00	2.90	5.70	2070020150UL	2 x 1.50 UL SW	0.00	2.90	5.70
2077020150	2 x 1.50 TPE GE	0.00	2.90	5.70	2077020150H	2 x 1.50 LSZH GE	0.00	2.90	5.70
2070020150	2 x 1.50 TPE SW	0.00	2.90	5.70	2070020150H	2 x 1.50 LSZH SW	0.00	2.90	5.70



# 1 BUS-EIB-H/KNX

European installation BUS, halogen free

### Technical Data:

- Conductor material** Copper bare
- Conductor class** Class 1
- Core insulation** Halogen free compound
- Core identification** colours: black, yellow, white, red (VDE 0815)
- Stranding** Cores twisted in star quads
- Outer sheath** PVC
- Sheath colour** Green
- Rated voltage [V]** 300
- Testing voltage [V]** 4000
- Insulation resistance** ≥ 100 MΩ x km
- Min. bending radius** 10 xd
- Min. bending radius moved [xd]** 15 x d
- Working temp fixed min/max [C]** -30°C up to +70°C
- Working temp moved min/max [C]** -5°C up to +50°C
- Burning behaviour** VDE 0482-332-1-2/IEC 60332-1: flame-retardant and self-extinguishing

### Construction:

- outer sheath of PVC
- core isolation of PVC
- blank copper conductor, single-wired
- cores: red, black, white, yellow
- foil screen
- wrapping of plastic film with drain wire
- UL-approved available

### Application:

For serial data transmission in the decentralized control system of buildings e.g. heating, ventilation, lighting, air-conditioning and closing systems. Here sensor signals or actor signals (e.g. the on off from light or motors) are transmitted.

This Bus-cable is suitable for installation in and under plaster and in suitable conduits

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
207020080	2 x 2 x 0.80	6.80	2.50	6.40
207040080	4 x 2 x 0.80	8.80	4.10	9.20

# BUS-EIB/KNX

European installation BUS



### Technical Data:

- Conductor material** Copper bare
- Conductor class** Class 1
- Core insulation** Halogen free compound
- Core identification** colours: red, black, white, yellow
- Stranding** Cores twisted in star quads
- Outer sheath** halogen free polymer-
- Sheath colour** Green
- Rated voltage [V]** 350
- Testing voltage [V]** 4000
- Insulation resistance** ≥ 100 MΩ x km
- Min. bending radius** 10 xd
- Working temp fixed min/max [C]** -30°C up to +70°C
- Working temp moved min/max [C]** -5°C up to +50°C
- Burning behaviour** IEC 60332-1: flame-retardant and self-extinguishing

### Construction:

- bare CU wire, 0.8 mm
- core insulation: halogen-free compound
- core colours: red, black, white, yellow
- cores twisted in star quads lapped with foil

### Special advantages over PVC-sheathed installation cables

- screened with plastics laminated aluminium foil tracer wire
- outer sheath: halogen-free, flame-retardant
- sheath colour: green
- reduced fire propagation
- reduced smoke emission
- reduced fire load
- no corrosive gas

### Application:

For serial data transmission in the decentralized control system of buildings e.g. heating, ventilation, lighting, air-conditioning and closing systems. Here sensor signals or actor signals (e.g. the on / off from light or motors) are transmitted.

Also as measuring and control cable for the transmission of measuring values in mains power equipment or processing data systems.

This Bus-cable is suitable for installation in and under plaster and in suitable conduits.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
207010080HF	1 x 2 x 0.80	5.00	1.30	3.10
207020080HF	2 x 2 x 0.80	6.80	2.50	6.40

# 1 LAN-Cable Cat 7

Cat 7 Cable

### Technical Data:

- **Conductor material** CU, bare
- **Core insulation** Cellular polyethylene
- **Core identification** DIN 47100: Different colours
- **Stranding** 4 pairs
- **Outer sheath** halogenfree Polymer HM2
- **Sheath colour** Orange RAL 2004
- **Insulation resistance** 20 MOhm x km
- **Conductor resistance**  $\leq 120 \Omega / km$
- **Working temp fixed min/max [C]** -30°C up to +80°C

### Construction:

- Copper conductor, bare
- Screen over stranding element: foil
- Shield over stranding: copper braid, tinned
- Outer sheath: halogenfree Polymer HM2

### Application:

- **Installation cables for use in structured building cabling according to ISO/IEC 11801 and EN 50173-2. Best suited for all applications from classes D to F multimedia (Video, Data, Language) >10 GbE according to IEEE 802.3, VoIP, PoE.**

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
CAT7 DUP	2 x (4 x 2 x AWG 23/1)		6.40	10.40
CAT7 SIM	4 x 2 x AWG 23/1	7.50	3.20	5.20

## RS485

Installation cables for use in structured building cabling

### Technical Data:

- **Conductor material** stranded tinned annealed copper
- **Core insulation** Polyethylen (PE)
- **Outer sheath** PVC
- **Sheath colour** Grey
- **Conductor resistance**  $\leq 120 \Omega / km$
- **Working temp fixed min/max [C]** -30°C up to +80°C
- **Construction:**
  - Conductor: 24AWG (7/32) stranded tinned annealed copper
  - Insulation: Polyethylene (PE)
  - Screen: overall aluminium mylar tape (100% coverage)
  - Braid: tinned copper wire braid (90% coverage)
- drain wire: 24AWG stranded tinned copper
- Inner and outer sheath: PVC

### Application:

Installation cables for use in structured building cabling according to ISO/IEC 11801 and EN 50173-2. Best suited for all applications from classes D to F multimedia (Video, Data, Language) >10 GbE according to IEEE 802.3, VoIP, PoE.

Part Number	No of cores x Cross section	Outer Ø ca. mm	Copper weight kg /100	Weight 100 kg/100
308010024	1 x 2 x AWG 24 LSZH grau	5.89	0.00	0.00
3080120024	1 x 2 x AWG 24 (7/32 tc) grau	5.89	0.00	0.00

# 1 Spiral cables

Treotham can customise spiral cables to suit your requirements. In-house manufacturing allows for short lead times.

## PVC spiral cables



### Technical Data

- **Temperature range** -5°C to +70°C
- **Nominal voltage** H03VV-F 300/300V (up to 1mm<sup>2</sup>)  
H05VV-F 300/500V (up to 1.5mm<sup>2</sup>)
- **Test Voltage** 2000 V
- **Expansion Ratio** 1:3

Also available in Black or Grey

## PUR spiral cables



### Technical Data

- **Temperature range** -25°C to +70°C
- **Nominal voltage** H05BQ-F 300/500V (up to 1mm<sup>2</sup>)  
H07BQ-F 450/750V (up to 1.5mm<sup>2</sup>)
- **Test Voltage** 2000/2500 V
- **Expansion Ratio** 1:4

Also available in Black

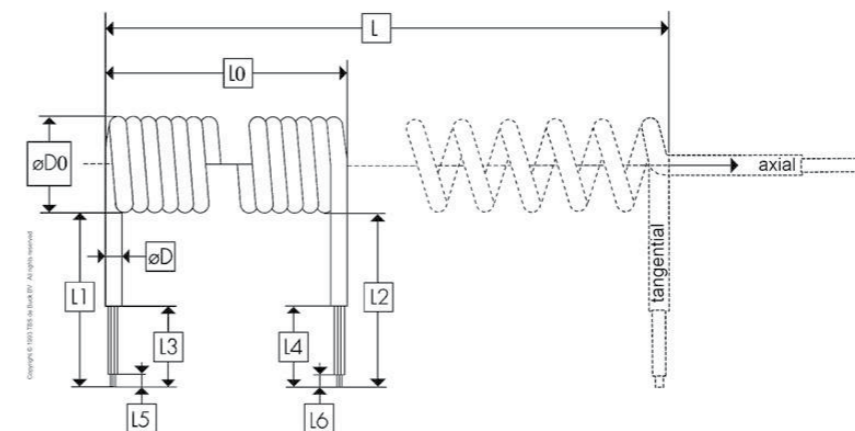
## PUR spiral cables for data



### Technical Data

- **Temperature range** -25°C to +80°C
- **Nominal voltage** 0.14mm<sup>2</sup> 100 V  
0.25mm<sup>2</sup> - 0.5mm<sup>2</sup> 300 V
- **Test Voltage** 1 kV
- **Expansion Ratio** 1:4

Available in both unscreened and screened versions



Specifications spiral cables		
L0	Retracted length**	: mm
L	Extended length**	: mm
D	Diameter of cable	: mm
D0	Diameter of extended cable	: mm
	Direction of the ends	: axial/tangential
L1	Length of end 1*	: mm
L2	Length of end 2*	: mm
L3	Dissmantling end 1	: mm
L4	Dissmantling end 2	: mm
L5	Finishing end 1	: mm
L6	Finishing end 2	: mm



# 1 Nominal voltage and Operating voltage

## Nominal voltage

Voltage of cables and wires, by which the construction and the tests in respect of electrical characteristics are to be referred.

According to DIN VDE 0298 and IEC 183 the cables are specified  $U_0/U$ , where:

$U_0$  = cable nominal voltage between the conductor and the metal covering or earth and

$U$  = cable nominal voltage between the phase conductors, for 3-phase  $U = \sqrt{3} U_0$ .

According to IEC regulations, the maximum permissible voltage  $U_m$  is given in brackets. The identification is:  $U_0/U (U_m)$ .

As the insulation of plastic insulated cables are measured with a nominal voltage  $U_0/U = 0,6/1$  kV and all radial field cables for the voltage  $U_0$ , these cables are suitable for installation:

- in single phase systems, in which the both phase conductors are insulated, with nominal voltage  $U_N = 2 U_0$
- in single phase systems, in which one phase conductor is earthed, with the nominal voltage  $U_N = U_0$

## Operating voltage

Voltage between conductors of a power system or between a conductor and earth under specified condition in a given time during an undisturbed operation.

### Coordination of cable-Nominal voltages

Nominal-voltages $U_0/U$ kV	for 3-phase system kV	for 1-phase alternating current	
		both phase conductors insulated kV	one phase conductor earthed kV
0,6/1	1	1,2	0,6
3,6/6	6	7,2	3,6
6/10	10	12	6
12/20	20	24	12
18/30	30	36	18

### Coordination of maximum permissible Operating voltages

Nominal voltages $U_0/U$ kV	maximum voltage for 3-phase system kV	maximum voltage for 1-phase alternating current	
		both phase conductors insulated kV	one phase conductor earthed kV
0,6/1	1,2	1,4	0,7
3,6/6	7,2	8,3	4,1
6/10	12	14	7
12/20	24	28	14
18/30	36	42	21

### Note:

Cable with  $U_0/U$  0,6/1 kV is allowed for **Direct Current Systems**, of those the maximum operating voltage conductor/conductor 1,8 kV or conductor/earth 1,8 kV not to be exceeded.

# 1 Strand make-up according to DIN VDE 0295, IEC 60228 and HD 383

cross section mm <sup>2</sup>	stranded wires		multistranded wires		fine wires		extra-fine wires					
	class 2 DIN VDE 0295		class 5 DIN VDE 0295		class 5 DIN VDE 0295		class 6 DIN VDE 0295					
	column 1	column 2	column 3	column 4	column 5	column 6	column 7	column 8	column 9	column 10	column 11	
	Number <sup>3)</sup> of wires	single wire $\varnothing$ mm	Number of wires	single wire $\varnothing$ mm	Number <sup>1)</sup> of wires	single <sup>2)</sup> wire $\varnothing$ mm	Number <sup>1)</sup> of wires	single <sup>2)</sup> wire $\varnothing$ mm	Number <sup>1)</sup> of wires	single wire $\varnothing$ mm	Number <sup>1)</sup> of wires	single wire $\varnothing$ mm
0,05										~14 x 0,07		~26 x 0,05
0,08												~40 x 0,05
0,09												~24 x 0,07*
0,14					~18 x 0,1		~18 x 0,1		~18 x 0,1		~36 x 0,07	~72 x 0,05
0,25					~14 x 0,15		~32 x 0,1		~32 x 0,1		~65 x 0,07	~128 x 0,05
0,34			7 x 0,25		~19 x 0,15		~42 x 0,1		~42 x 0,1		~88 x 0,07	~174 x 0,05
0,38			7 x 0,27		~12 x 0,2		~21 x 0,15		~48 x 0,1		~100 x 0,07	~194 x 0,05
0,5	7 x 0,30		7 x 0,30		~16 x 0,2		~28 x 0,15		~64 x 0,1		~131 x 0,07	~256 x 0,05
0,75	7 x 0,37		7 x 0,37		~24 x 0,2		~42 x 0,15		~96 x 0,1		~195 x 0,07	~384 x 0,05
1,0	7 x 0,43		7 x 0,43		~32 x 0,2		~56 x 0,15		~128 x 0,1		~260 x 0,07	~512 x 0,05
1,5	7 x 0,52		7 x 0,52		~30 x 0,25		~84 x 0,15		~192 x 0,1		~392 x 0,07	~768 x 0,05
2,5	7 x 0,67		19 x 0,41		~50 x 0,25		~140 x 0,15		~320 x 0,1		~651 x 0,07	~1280 x 0,05
4	7 x 0,85		19 x 0,52		~56 x 0,3		~224 x 0,15		~512 x 0,1		~1040 x 0,07	
6	7 x 1,05		19 x 0,64		~84 x 0,3		~192 x 0,2		~768 x 0,1		~1560 x 0,07	
10	7 x 1,35		49 x 0,51		~80 x 0,4		~320 x 0,2		~1280 x 0,1		~2600 x 0,07	
16	7 x 1,70		49 x 0,65		~128 x 0,4		~512 x 0,2		~2048 x 0,1			
25	7 x 2,13		84 x 0,62		~200 x 0,4		~800 x 0,2		~3200 x 0,1			
35	7 x 2,52		133 x 0,58		~280 x 0,4		~1120 x 0,2					
50	19 x 1,83		133 x 0,69		~400 x 0,4		~705 x 0,3					
70	19 x 2,17		189 x 0,69		~356 x 0,5		~990 x 0,3					
95	19 x 2,52		259 x 0,69		~485 x 0,5		~1340 x 0,3					
120	37 x 2,03		336 x 0,67		~614 x 0,5		~1690 x 0,3					
150	37 x 2,27		392 x 0,69		~765 x 0,5		~2123 x 0,3					
185	37 x 2,52		494 x 0,69		~944 x 0,5		~1470 x 0,4					
240	37 x 2,87		627 x 0,70		~1225 x 0,5		~1905 x 0,4					
300	61 x 2,50		790 x 0,70		~1530 x 0,5		~2385 x 0,4					
400	61 x 2,89				~2035 x 0,5							
500	61 x 3,23				~1768 x 0,6							
630	91 x 2,97				~2228 x 0,6							

<sup>1)</sup> The number of individual wires are without obligation.

<sup>2)</sup> The diameters of the single wires for each conductor are not allowed to exceed the values stated to DIN VDE 0295. The single wires of a stranded conductor must have all the same nominal diameters.

<sup>3)</sup> Minimum-number of single wires of stranded conductor. The single wires of a stranded conductor must have all the same nominal diameters.

<sup>2)</sup> Note: permissible maximal diameter of single wires:

nominal value mm	maximal value mm
0,2	0,21
0,25	0,26
0,3	0,31
0,4	0,41
0,5	0,51
0,6	0,61

## Conversion AWG to (mm<sup>2</sup>)

AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	kcmil	mm <sup>2</sup>
30	0,05	18	0,75	6	16	300 kcmil	150
28	0,08	17	1,00	4	25	350 kcmil	185
26	0,14	16	1,50	2	35	500 kcmil	240
24	0,25	14	2,50	1	50	600 kcmil	300
22	0,34	12	4	2/0	70	750 kcmil	400
21	0,38	10	6	3/0	95	1000 kcmil	500
20	0,50	8	10	4/0	120		

This cross reference list shows equivalent nominal values. Actual cross sections may vary. The AWG values are approximate, if the cables are made to European Standards (mm<sup>2</sup>) and vice versa. In critical applications, where the current reaches upper limits. The deviating operation conditions for installation and laying according to standards are to be taken into consideration.

# 1 Current ratings (general) for flexible cables, for non-existing cable types in the previous tables

The indicated values stated in the following table are considered as guiding values in an abbreviate form, extracted from DIN VDE 0298 part 4 and DIN VDE 0100 part 430. In a critical situation the DIN VDE recommendations should be considered.  
For industrial machines the DIN VDE 0113, part 1 (EN 60204 part 1/IEC 204-1) is valid; for telephone and information systems DIN VDE 0891 part 1; for telephone aerial cables DIN VDE 0891 part 8 and for flat cables DIN VDE 0891 part 10. General terms and recommended values are contained in DIN VDE 0298 part 2 and part 4.

Power rating values for 1,5–120 mm<sup>2</sup> (group 3 up to 35 mm<sup>2</sup>) according to DIN VDE 0100 part 430 at an:

## Ambient temperature up to 30°C

Nominal cross-section mm <sup>2</sup>	Group 1		Group 2		Group 3	
	power rating	protective fuse	power rating	protective fuse	power rating	protective fuse
	A	A	A	A	A	A
0,05	1	–	1	–	2	–
0,14	2	–	2	–	3,5	–
0,25	4	–	4,5	–	6	–
0,34	6	–	6	–	9	–
0,5	9	–	9	–	12	–
0,75	12	–	12	10	15	10
1	15	10	15	10	19	16
1,5	18	16	18	16	24	20
2,5	26	25	26	25	32	25
4	34	25	34	25	42	35
6	44	35	44	35	54	50
10	61	50	61	50	73	63
16	82	80	82	63	98	80
25	108	100	108	80	129	100
35	135	125	135	100	158	125
50	168	160	168	125	198	160
70	207	200	207	160	245	200
95	250	250	250	200	292	250
120	292	250	292	250	344	315
150	335	315	335	315	391	355
185	382	355	382	355	448	400
240	–	–	453	425	528	500
300	–	–	523	500	608	600
400	–	–	–	–	726	630

group 1 One or more single core cables and insulated wires laid in duct i. e. PVC-sheathed single cores H 03V. /H 05V. /H 07V. according to VDE 0281.

group 2 Multi core cables, i. e. light PVC-sheathed cables, flexible cables, metal-clad wiring cables in open or ventilated conduits.

group 3 Single core cables, laid open in air with a spacing at least equal to cable diameter, such as single core wirings for switch- and distribution cabinets and rail line distributors.

**Conversion factors** for deviating ambient temperatures:

### Ambient temperature over 30°C

Ambient temperature °C	Conversion factors, applied to the above current ratings table	
	Rubber insulation Permissible operating temp. at conductor Conversion factors up to 60°C	PVC insulation Permissible operating temp. at conductor Conversion factors up to 70°C
over 30 bis 35	0,91	0,94
over 35 bis 40	0,82	0,87
over 40 bis 45	0,71	0,79
over 45 bis 50	0,58	0,71
over 50 bis 55	0,41	0,61
over 55 bis 60	–	0,50
over 60 bis 65	–	0,35

### Ambient temperature over 50°C (heat-resistant)

Permissible operating temperature at conductor	Conversion factors, applied to the above current ratings table		
	Permissible operating temperature at conductor Conversion factors up to 90°C	Permissible operating temperature at conductor Conversion factors up to 110°C	
over 50 bis 55	0,94	1,00	
over 55 bis 60	0,87	1,00	
over 60 bis 65	0,79	1,00	
over 65 bis 70	0,71	1,00	
over 70 bis 75	0,61	1,00	
over 75 bis 80	0,50	1,00	
over 80 bis 85	0,35	0,91	
over 85 bis 90	–	0,82	
		over 90 bis 95	0,71
		over 95 bis 100	0,58
		over 100 bis 105	0,41
		over 105 bis 110	–

# 1 Colour code-JB

Colour coded Control Cables **JB** and **SY-JB** with green-yellow protective conductor

The combination of colour identification up to 102 cores consists of 11 basic colours. For core-no. 12 and more, one or two additional colour rings or longitudinal stripes are printed on the basic colour. The ring width is approximately 2 mm.

## 3- to 5-core cables

Colour identification according to VDE 0293 for flexible cables

- 3 cores = green-yellow/brown/blue
- 4 cores = green-yellow/brown/black/grey
- 5 cores = green-yellow/blue/brown/black/grey

## 6- and more core cables

Colour identification as per following table.

The insulation of the conductor gives the first basic colour. The second and the third colour is printed on the basic colour as a form of ring or longitudinal stripe. The cores are to be counted continuously through all layers in the same direction, beginning with inner layer towards outside.

### No. Basic-Ring-Colour

- 0 green-yellow
- 1 white
- 2 black
- 3 blue
- 4 brown
- 5 grey
- 6 red
- 7 violet
- 8 pink
- 9 orange
- 10 transparent
- 11 beige
- 12 black-white
- 13 blue-white
- 14 brown-white
- 15 grey-white
- 16 red-white
- 17 violet-white
- 18 pink-white
- 19 orange-white
- 20 transparent-white
- 21 beige-white
- 22 blue-black
- 23 brown-black
- 24 grey-black
- 25 red-black
- 26 violet-black
- 27 pink-black
- 28 orange-black
- 29 transparent-black
- 30 beige-schwarz
- 31 brown-blue
- 32 grey-blue
- 33 red-blue
- 34 pink-blue
- 35 orange-blue

### No. Basic-Ring-Colour

- 36 transparent-blue
- 37 beige-blue
- 38 grey-brown
- 39 red-brown
- 40 violet-brown
- 41 pink-brown
- 42 orange-brown
- 43 transparent-brown
- 44 beige-brown
- 45 red-grey
- 46 violet-grey
- 47 pink-grey
- 48 orange-grey
- 49 transparent-grey
- 50 beige-grey
- 51 orange-red
- 52 transparent-red
- 53 beige-red
- 54 pink-violet
- 55 orange-violet
- 56 transparent-violet
- 57 beige-violet
- 58 transparent-pink
- 59 beige-pink
- 60 transparent-orange
- 61 beige-orange
- 62 blue-white-black
- 63 brown-white-black
- 64 grey-white-black
- 65 red-white-black
- 66 violet-white-black
- 67 pink-white-black
- 68 orange-white-black

### No. Basic-Ring-Colour

- 69 transparent-white-black
- 70 beige-white-black
- 71 brown-white-blue
- 72 grey-white-blue
- 73 red-white-blue
- 74 violet-white-blue
- 75 pink-white-blue
- 76 orange-white-blue
- 77 transparent-white-blue
- 78 beige-white-blue
- 79 grey-white-brown
- 80 red-white-brown
- 81 violet-white-brown
- 82 pink-white-brown
- 83 orange-white-brown
- 84 transparent-white-brown
- 85 beige-white-brown
- 86 red-white-grey
- 87 violet-white-grey
- 88 pink-white-grey
- 89 orange-white-grey
- 90 transparent-white-grey
- 91 beige-white-grey
- 92 blue-white-red
- 93 brown-white-red
- 94 violet-white-red
- 95 pink-white-red
- 96 orange-white-red
- 97 brown-white-violet
- 98 orange-white-violet
- 99 brown-black-blue
- 100 grey-black-blue
- 101 red-black-blue

# 1 Colour code according to DIN 47100 with colour repetition from core no. 45 and above

Electronic control and computer cable: **single cores** stranding

The insulation of the conductor gives the first basic colour. The codes of the multi-coloured identification are combined with a basic colour and colour rings. The second and third colour is printed on the basic colour as a form of ring. The ring width is 2–3 mm.

The cores are to be counted continuously through all layers in the same direction, beginning with the outer layer towards inside.

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

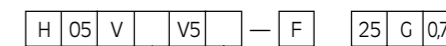
# Colour code adapted\* to DIN 47100 without colour repetition

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

# Designation code for harmonized cables

according to DIN VDE 0281/DIN VDE 0282/DIN VDE 0292

Construction reference



## Identifications of designation

- A** authorised national standards
- H** harmonized standards

## Nominal voltage U

- 01** 100 V
- 03** 300/300 V
- 05** 300/500 V
- 07** 450/750 V

## Insulation material

- B** (EPR) Ethylene-propylene-rubber
- G** (EVA) Ethylene-Vinylacetat-Copolymer
- N2** (CR) Chloroprene rubber for welding cables
- R** (NR a./o. SR) Natural a./o. synthetic rubber
- S** (SiR) Silicone rubber
- V** (PVC) Polyvinyl chloride
- V2** (PVC) Polyvinyl chloride heat-resistant
- V3** (PVC) Polyvinyl chloride low-temperature
- V4** (PVC) Polyvinyl chloride cross-linked
- Z** (PE) Polyethylene cross-linked

## Structural elements

- C** Screen
- Q4** (PA) Additional polyimide core jacket
- T** Additional textile braiding over laid-up cores
- T6** Additional textile braiding over individual cores

## Sheath/jacket material

- B** (EPR) Ethylene-propylene rubber
- J** Glass fibre braid
- N** (CR) Chloroprene rubber
- N2** (CR) Chloroprene rubber for welding cables
- N4** (CR) Chloroprene rubber heat-resistant
- O** (PUR) Polyurethane
- R** (NR a./o. SR) Natural- a./o. synthetic rubber
- T** Textile braid
- T2** Textile braid with flame retardant compound
- V** (PVC) Polyvinyl chloride
- V2** (PVC) Polyvinyl chloride heat-resistant
- V3** (PVC) Polyvinyl chloride low-temperature
- V4** (PVC) Polyvinyl chloride cross-linked
- V5** (PVC) Polyvinyl chloride oil resistant

## Special structural features

- D3** Stress-relieving elements (support wire)
- D5** Centre core (no supporting element)
- FM** Telecommunications cores integrated in power cables
- H** Flat, separable cable (twin cable)
- H2** Flat, non-separable cable (two-core sheathed cable)
- H6** Flat, non-separable cable (multi- and multiple sheathed cable)
- H7** Two-layer insulating jacket
- H8** Spiral cables

## Conductor type

- D** Finely stranded, for welding cables
- E** (Very) finely stranded, for welding cables
- F** Finely stranded, for cables for fixed installation
- H** (Very) finely stranded, for flexible cables
- K** Finely stranded, for cables for fixed installation
- R** Multiple-wire, round, class 2
- U** Single-wire, round, class 1
- Y** Tinsel wire, DIN 47104

## Number of cores

## Earth core

- G** With earth core
- X** Without earth core

## Conductor nominal cross section in mm<sup>2</sup>

**Examples:**  
**H07V-U 2,5 black** (according to DIN VDE 0281)  
 Harmonized PVC-insulated single-core sheathed cable, 2,5 mm<sup>2</sup> single-core, nominal voltage 750 V

**H07RN-F 3G 1,5** (according to DIN VDE 0282)  
 Harmonized rubber-sheathed-cable for medium tensile loads, three-core 1,5 mm<sup>2</sup>, finely stranded, green-yellow earth core, nominal voltage 750 V

# 1 US-American and British units

## Conversion of usual measuring units

### Units for cables and wires

In the US the measurements are mainly used in AWG-numbers (AWG = American Wire Gauge). The AWG-numbers conform the british B&S-numbers (B&S = Brown & Sharp)

AWG No.	Cross-section mm <sup>2</sup>	Dia-meter mm	Conductor resistance Ohm/km	AWG No.	Cross-section mm <sup>2</sup>	Dia-meter mm	Conductor resistance Ohm/km
1000 MCM*	507	25,4	0,035	14	2,08	1,63	8,79
750	380	22,0	0,047	15	1,65	1,45	11,20
600	304	19,7	0,059	16	1,31	1,29	14,70
500	254	20,7	0,07	17	1,04	1,15	17,80
400	203	18,9	0,09	18	0,8230	1,0240	23,0
350	178	17,3	0,10	19	0,6530	0,9120	28,3
300	152	16,0	0,12	20	0,5190	0,8120	34,5
250	127	14,6	0,14	21	0,4120	0,7230	44,0
4/0	107,20	11,68	0,18	22	0,3250	0,6440	54,8
3/0	85,00	10,40	0,23	23	0,2590	0,5730	70,1
2/0	67,50	9,27	0,29	24	0,2050	0,5110	89,2
0	53,40	8,25	0,37	25	0,1630	0,4550	111,0
1	42,40	7,35	0,47	26	0,1280	0,4050	146,0
2	33,60	6,54	0,57	27	0,1020	0,3610	176,0
3	26,70	5,83	0,71	28	0,0804	0,3210	232,0
4	21,20	5,19	0,91	29	0,0646	0,2860	282,0
5	16,80	4,62	1,12	30	0,0503	0,2550	350,0
6	13,30	4,11	1,44	31	0,0400	0,2270	446,0
7	10,60	3,67	1,78	32	0,0320	0,2020	578,0
8	8,366	3,26	2,36	33	0,0252	0,1800	710,0
9	6,63	2,91	2,77	34	0,0200	0,1600	899,0
10	5,26	2,59	3,64	35	0,0161	0,1430	1125,0
11	4,15	2,30	4,44	36	0,0123	0,1270	1426,0
12	3,30	2,05	5,41	37	0,0100	0,1130	1800,0
13	2,62	1,83	7,02	38	0,00795	0,1010	2255,0
				39	0,00632	0,0897	2860,0

4/0 is also stated: 0000; 1 mil = 0,001 inch = 0,0254 mm  
\* for bigger cross-section the sizes in MCM (circular mils)

1 CM = 1 Circ. mil. = 0,0005067 mm<sup>2</sup>  
1 MCM = 1000 Circ. mils = 0,5067 mm<sup>2</sup>

### General measuring units

#### Length

1 mil	= 0,0254 mm
1 in (inch)	= 25,4 mm
1 ft (foot)	= 0,3048 m
1 yd (yard)	= 0,9144 m
1 ch (chain)	= 20,1 m
1 mile (land mile)	= 1,609 km
	= 1760 yards
1 mile (nautic mile)	= 1,852 km
1 mm	= 0,039370 inches
1 m	= 39,370079 inches

#### Area

1 CM (circ. mil)	= 0,507 · 10 <sup>-3</sup> mm <sup>2</sup>
1 MCM	= 0,5067 mm <sup>2</sup>
1 sq. inch (sq. inch)	= 645,16 mm <sup>2</sup>
1 sq. ft. (sq. foot)	= 0,0929 m <sup>2</sup>
1 square yard	= 0,836 m <sup>2</sup>
1 acre	= 4047 m <sup>2</sup>
1 square mile	= 2,59 km <sup>2</sup>

#### Density

1 cu. in. (cubic inch)	= 16,39 cm <sup>3</sup>
1 cu. ft. (cubic foot)	= 0,0283 m <sup>3</sup>
1 cu. yd. (cubic yard)	= 0,7646 m <sup>3</sup>
1 gal. (US gallon)	= 3,785 l
1 gal. (brit. gallon)	= 4,546 l
1 US pint	= 0,473 l
1 US quart	= 0,946 l
1 US barrel	= 158,8 l

#### Temperature

F (Fahrenheit)	= (1,8 · C) + 3°
C (Celsius)	= 0,5556 · (F-32°)

#### Weight

1 grain	= 64,8 mg
1 dram	= 1,77 g

1 oz (ounce)	= 28,35 g
1 lb (pound)	= 0,4536 Kp
1 stone	= 6,35 Kp
1 qu (quarter)	= 12,7 Kp
1 US-cwt (hundred-weight)	= 45,36 Kp
1 US ton (short ton)	= 0,907 t
1 brit. ton (long ton)	= 1,016 t

#### Force

1 lb	= 4,448 N
1 brit. ton	= 9954 N
1 pdl (Poundal)	= 0,1383 N
1 kp	= 9,81 N
1 N	= 0,102 kp

#### Velocity

1 mile/h	= 1,609 km/h
1 Knoten	= 1,852 km/h
1 ft/s	= 0,305 m/s
1 ft/min	= 5,08 · 10 <sup>-3</sup> m/s

#### Energy

1 lb/mile	= 0,282 kg/m
1 lb/yd	= 0,496 kg/m
1 lb/foot	= 1,488 kg/m
<b>Radiation absorbed dose</b>	
1 Gray	= 1 J/kg
1 rad	= 10 <sup>-2</sup> J/kg = 1 Centi Gy
	= 0,01 Gy
	= 100 Joule
	= cJ/kg = 0,01Gy
1 Centi	= 1 · 10 <sup>6</sup> cJ/kg

#### Pressure

1 psi (lb/sq.)	= 68,95 mbar
	= 6,895 · 10 <sup>-3</sup> Nmm <sup>2</sup>

1 lb/sq. ft.	= 0,478 mbar
1 pdl/sq. ft.	= 1,489 N/m <sup>2</sup>
1 in Hg	= 33,86 mbar
1 ft H <sub>2</sub> O	= 29,89 mbar
1 in H <sub>2</sub> O	= 2,491 mbar
1 N/mm <sup>2</sup>	= 145 psi
	= 10 bar
	= 1422 psi
	= 736 Torr
	= 1 kp/cm <sup>2</sup>
	= 1 mm Hg
	= 0,1 H Pa
	= 1 N/m <sup>2</sup>

#### Density

1 lb/cu. ft.	= 16,02 kg/m <sup>3</sup>
1 lb/cu. in.	= 27,68 t/m <sup>3</sup>

#### Horse power

1 hp · h	= 1,0139 PS · h
	= 2,684 · 10 <sup>6</sup> Joule
	= 746 W · h
1 BTU (brit. therm. unit)	= 1055 Joule

#### Electrical units

1 ohm/1000 yd	= 1,0936 Ω/km
1 ohm/1000 ft	= 3,28 Ω/km
1 μF/mile	= 0,62 μF/km
1 megohm/mile	= 1,61 MΩ/km
1 μuf/foot	= 3,28 pF/m
1 decibel/mile	= 71,5 mN/m

#### Power rate

1 PS	= 0,736 kW
1 kW	= 1,36 PS
1 hp	= 0,7457 kW
1 kW	= 1,31 hp

# 1 Current ratings for silicone cables and wires

The indicated values stated in the following table are considered as guiding values. These are to be selected for each individual application.

Heat-resistance at an ambient **temperature up to 150°C**

Nominal-cross-section	Group 1		Group 2		Group 3	
	current-carrying capacity A	protective fuse A	current-carrying capacity A	protective fuse A	current-carrying capacity A	protective fuse A
0,25	2,8	-	-	-	5	-
0,5	6	-	7	-	10	-
0,75	9	6	12	6	15	10
1,0	12	10	15	10	19	20
1,5	16	16	18	16	24	25
2,5	21	20	26	25	32	35
4	28	25	34	35	42	50
6	36	35	44	50	54	63
10	49	50	61	63	73	80
16	65	63	82	80	98	100
25	85	83	108	100	129	125
35	105	100	135	-	158	160
50	140	125	168	-	198	200
70	175	160	207	-	245	250
95	210	200	250	-	292	300
120	250	250	292	-	344	335
150	-	-	335	-	391	-
185	-	-	382	-	448	-
240	-	-	453	-	528	-
300	-	-	523	-	608	-

**Group 1:** One or more single core cables laid in duct.

**Group 2:** Multicore cables, flexible cables laid in open or ventilated conduits.

**Group 3:** Single core cables laid in open air with a spacing at least equal to cable diameter.

Power ratings for ambient temperature over 150°C

The following conversion factors are valid:

Temperature °C	current-carrying capacity values in %
up to 150	100
over 150 to 155	91
over 155 to 160	82
over 160 to 165	71
over 165 to 170	58
over 170 to 175	41