Flat Cables
Ribbon Cables
Flat Cables
Ribbon Cables

Flat cables in PVC and neoprene design are used as trailing cables for cranes, open field conveyors and shelve service devices.

Flat cables offer the following advantages:

- Extremely small bending radius
- High flexibility
- Minimum waste of space
- Packeting possibility

An expert and proper installation is important to ensure a perfect functioning. Please follow the corresponding fitting instructions.

Flat cables according to UL-standard are available on request.

Ribbon cables are ideal for use because of the excellent flexibility as connecting cable in electronics and in control engineering.
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<td>TUBEFLEX-(St)-CY</td>
<td>J 7</td>
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</tbody>
</table>
HELUKABEL® PVC-Flat

300/500 V and 450/750 V

Technical data

- Special PVC-flat cable, adapted to DIN VDE 0283 part 2 and 0281 part 404, IEC 60227-6
- Temperature range
  - flexible
  - ±5 °C to ±70 °C fixed installation
  - −40 °C to +80 °C
- Nominal voltage
  - up to 1 mm² U0/U 300/500 V
  - ≥ 1.5 mm² U0/U 450/750 V
- Test voltage
  - 5000 V
- Minimum bending radius
  - approx. 10x cable Ø
- Radiation resistance
  - up to 80 x 1.06 cJ/kg (up to 80 Mrad)

- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Cable structure

- Bare copper, stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5 and IEC 60228 cl. 5
- Special PVC core insulation
- Cores laying parallel
- Core identification up to 5 cores to colour code DIN VDE 0293
- 7 cores and above with number printing
- Green-yellow earth core
- Special PVC outer jacket
- Colour black (RAL 9005)
- Extensively oil resistant
- Chemical Resistance – see table Technical Informations
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Advantages of flat cables

- Extremely small bending radius
- High flexibility
- Minimum waste of space
- Packeting possibility

Application

PVC type of flat cables are used mainly as trailing cable for crane installations, floor conveyer systems and shelf control units.

Installation notes

Cables reels with flat cables must be transported in standing position on the flange. A bending flexibility can be achieved on a plane surface. For this purpose, the corresponding fitting instructions should be followed.

- Put the cable trolley on the guiding rail or upon carrier beam and push them together at the starting point. The distance between the bedding surface of two cable trolleys must be wider than the double thickness of a cable-packet. During the packeting performance, it must be started with the smaller cross-section which lays on the bedding surface and will be builded successively so that the biggest cross-section is laying on the top.
- Further, be careful of a symmetrical load distribution.
- In case of multicore flat cables with small cross-section, smaller than 2.5 mm², is very critical due to its low tensile stress. In such case, you should add 10% reserve wire for calculation.

Part No. | No. cores x cross-section mm² | Outer Ø ca. mm | Cop. weight kg/km | Weight ca. kg/km | AWG-no.*
--- | --- | --- | --- | --- | ---
26980 | 4G,75 | 4,3 x 12,6 | 28,8 | 90 | 18
26981 | 5G,75 | 4,3 x 16,1 | 36,0 | 115 | 18
26982 | 6G,75 | 4,3 x 19,4 | 43,2 | 141 | 18
26983 | 9G,75 | 4,3 x 26,4 | 64,8 | 198 | 18
26984 | 10G,75 | 4,3 x 30,1 | 72,0 | 224 | 18
26985 | 12G,75 | 4,5 x 33,8 | 84,4 | 258 | 18
26986 | 16G,75 | 4,5 x 44,4 | 115,2 | 340 | 18
26987 | 18G,75 | 4,5 x 49,2 | 129,6 | 380 | 18
26988 | 20G,75 | 4,5 x 55,0 | 144,0 | 424 | 18
26989 | 24G,75 | 4,5 x 65,6 | 172,8 | 509 | 18
26990 | 3G,75 | 4,5 x 10,8 | 28,8 | 80 | 17
26991 | 4G,75 | 4,5 x 13,4 | 38,4 | 104 | 17
26992 | 5G,75 | 4,5 x 16,0 | 48,0 | 134 | 17
26993 | 6G,75 | 4,5 x 20,6 | 57,6 | 161 | 17
26994 | 9G,75 | 4,5 x 28,4 | 86,4 | 230 | 17
26995 | 10G,75 | 4,5 x 30,0 | 96,0 | 256 | 17
26996 | 12G,75 | 4,5 x 36,2 | 115,2 | 298 | 17
26997 | 16G,75 | 4,5 x 47,6 | 153,6 | 595 | 17
26998 | 18G,75 | 4,5 x 52,8 | 172,8 | 441 | 17
26999 | 20G,75 | 4,5 x 59,0 | 192,0 | 495 | 17
27000 | 24G,75 | 4,5 x 70,4 | 230,4 | 590 | 17
27001 | 4G,15 | 4,5 x 15,7 | 58,0 | 133 | 16
27002 | 5G,15 | 4,5 x 17,9 | 72,0 | 169 | 16
27003 | 7G,15 | 4,5 x 25,5 | 101,0 | 235 | 16
27004 | 8G,15 | 4,5 x 26,8 | 115,0 | 265 | 16
27005 | 10G,15 | 4,5 x 33,5 | 144,0 | 332 | 16
27006 | 12G,15 | 4,5 x 38,9 | 173,0 | 421 | 16
27007 | 16G,15 | 4,5 x 51,5 | 230,4 | 555 | 16

Part No. | No. cores x cross-section mm² | Outer Ø ca. mm | Cop. weight kg/km | Weight ca. kg/km | AWG-no.*
--- | --- | --- | --- | --- | ---
27007 | 4G,2,5 | 5,5 x 17,0 | 96,0 | 205 | 14
27008 | 5G,2,5 | 5,5 x 21,5 | 192,0 | 424 | 14
27009 | 7G,2,5 | 5,5 x 25,0 | 168,0 | 344 | 14
27010 | 8G,2,5 | 5,5 x 29,9 | 192,0 | 389 | 14
27011 | 12G,2,5 | 5,8 x 41,7 | 288,0 | 590 | 14
27012 | 16G,2,5 | 5,8 x 51,1 | 284,0 | 674 | 14
27013 | 4G,4 | 7,0 x 27,4 | 154,0 | 348 | 12
27014 | 5G,4 | 7,0 x 27,4 | 192,0 | 428 | 12
27015 | 7G,4 | 7,9 x 35,6 | 269,0 | 609 | 12
27016 | 4G,6 | 8,2 x 24,8 | 230,0 | 424 | 10
27017 | 5G,6 | 8,2 x 21,8 | 288,0 | 530 | 10
27018 | 7G,6 | 8,2 x 42,6 | 403,0 | 760 | 10
27019 | 4G,10 | 10,0 x 30,0 | 584,0 | 1176 | 8
27020 | 4G,16 | 11,2 x 44,4 | 614,0 | 1014 | 6
27021 | 4G,25 | 13,7 x 46,6 | 960,0 | 1365 | 4
27022 | 4G,35 | 15,4 x 54,6 | 1344,0 | 2102 | 2
27023 | 5G,50 | 18,2 x 57,0 | 1920,0 | 2940 | 1
27024 | 4G,70 | 20,0 x 64,2 | 2688,0 | 4090 | 2/0
27025 | 5G,16 | 13,0 x 46,6 | 768,0 | 1370 | 6
27026 | 5G,25 | 15,5 x 55,5 | 1200,0 | 2000 | 4

G = with green-yellow earth core
Further dimensions on request.
PVC cables will be changed to lead free PVC successively.

* Note
AWG-sized are approximate equivalent values.
The actual cross-section is in mm² – see page T 15.

C = The product is conformed with the EC Low-Voltage Directive 73/23/EEC and 93/68/EEC.
Technical data
- Special Neoprene-flat cable to DIN VDE 0250 part 809
- Temperature range
  - Flexing: -25°C to +60°C
  - Fixed installation: -40°C to +80°C
- Nominal voltage: U0/U 300/500 V
- Test voltage: 3000 V
- Minimum bending radius: approx. 10 x cable
- Radiation resistance: up to 50 x 10^6 cJ/kg (up to 50 Mrad)
- Test according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Cable structure
- Bare copper, stranded to DIN VDE 0295, BS 6360 cl. 5 and IEC 60228, fine or extra fine wire stranded according to different cross-sections
  - 1 to 25 mm²: class 6, col. 4
  - 35 to 95 mm²: class 5
- Special rubber core insulation GI1, to DIN VDE 0207 part 20
- Core identification: up to 5 cores, colour code to DIN VDE 0293
- 7 cores and above with number printing
- Cores laying parallel
- Green-yellow earth core
- Special rubber outer sheath 5GM2, to DIN VDE 0207 part 21
- Cold-resistant
- Extensively oil resistant

Chemical Resistance – see table Technical Informations

Advantages of flat cables
- Extremely small bending radius
- High flexibility
- Minimum waste of space
- Packeting possibility

Application
Neoprene type of flat cables are used mainly as trailing cable for crane installations, floor conveyor systems and shelf control units. These cables are also available for export with UL-approval.

Installation notes
Cables reels with flat cables must be transported in standing position on the flange. A bending flexibility can be achieved on a plane surface. For this purpose, the corresponding fitting instructions should be followed.
- Put the cable trolly on the guiding rail or upon carrier beam and push them together at the starting point. The distance between the bedding surface of two cable trollys must be wider than the double thickness of a cable-packet.
- During the packeting performance, it must be started with the smaller cross-section which lays on the bedding surface and will be builded successively so that the biggest cross-section is laying on the top.
- Further, be careful of a symmetrical load distribution.
- In case of multicore flat cables with small cross-section, smaller than 2.5 mm², is very critical due to its low tensile stress. In such case, you should add 10% reserve wire for calculation.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>No. cores x cross-sec. mm²</th>
<th>Outer ø ca. mm</th>
<th>Cop. weight ca. kg/km</th>
<th>Weight ca. kg/km</th>
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<th>Weight ca. kg/km</th>
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</table>

*) Note
AWG sizes are approximate equivalent values.
The actual cross-section is in mm² – see page T 15.

Further dimensions on request.
Technical data
- Special PVC-flat cable, screened, adapted to DIN VDE 0283 part 2
- Temperature range
  - flexing: -5°C to +70°C
  - fixed installation: -40°C to +80°C
- Nominal voltage $U_{0}/U$: 300/500 V
- Test voltage: 3000 V
- Breakdown voltage: min. 6000 V
- Minimum bending radius: approx. 15 × cable
- Radiation resistance: up to 80 × 10^6 cJ/kg (up to 80 Mrad)
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Cable structure
- Bare copper, fine wire conductors according to DIN VDE 0295 and IEC 60228 cl. 5, BS 6360 cl. 5
- Special PVC insulation
- Core identification see below
- Cores screened individually or in bunches
- Cores laying parallel
- Copper screened braiding, approx. 85% coverage
- Special PVC outer jacket black (RAL 9005)
- Extensively oil resistant

Application
PVC screened flat cables are used mainly as trailing cable for crane installations, floor conveyer systems and shelf control units.

Advantages of flat cables
- Extremely small bending radius
- High flexibility
- Minimum waste of space
- Packeting possibility

The high degree of screening density assures disturbance-free transmission of all signal and impulses.

* EMV = Electromagnetic compatibility

Note
To optimise the EMC features we recommend a large contact of the copper braiding on both sides.

Installation notes
Cables reels with flat cables must be transported in standing position on the flange. A bending flexibility can be achieved on a plane surface. For this purpose, the corresponding fitting instructions should be followed.
- Put the cable trolley on the guiding rail or upon carrier beam and push them together at the starting point. The distance between the bedding surface of two cable trolleys must be wider than the double thickness of a cable-packet.
  - During the packeting performance, it must be started with the smaller cross-section which lays on the bedding surface and will be builted successively so that the biggest cross-section is laying on the top. Further, be careful of a symmetrical load distribution.
  - In case of multicore flat cables with small cross-section, smaller than 2,5 mm², is very critical due to its low tensile stress. In such case, you should add 10% reserve wire for calculation.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>No. cores x cross-section mm²</th>
<th>Color code according</th>
<th>Outer dia ca. mm</th>
<th>Cop. weight kg/km</th>
<th>Weight ca. kg/km</th>
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<td>35,8 x 10,5</td>
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<td>27113</td>
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<td>colour coded according DIN VDE 0293, green-yellow earth core</td>
<td>41,5 x 12,6</td>
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<td>27114</td>
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<td>colour coded according DIN VDE 0293, green-yellow earth core</td>
<td>48,4 x 14,4</td>
<td>1170</td>
<td>1780</td>
<td>4</td>
</tr>
</tbody>
</table>

* Note
AWG sizes are approximate equivalent values.
The actual cross-section is in mm² – see page T 15.

Further dimensions on request.

G = with green-yellow earth core
X = without green-yellow earth core (OZ)
HELUKABEL® NEO-Flat-CY (MCHÖU) screened, EMV*-preferred type

**Technical data**
- Special-Neoprene-flat cable, screened, adapted to DIN VDE 0250 part 809
- **Temperature range**
  - **flexing** 5°C to +70°C
  - **fixed installation** -35°C to +80°C
- **Nominal voltage** U0/U 300/500 V
- **Test voltage** 3000 V
- **Minimum bending radius** approx. 15 x cable
- **Radiation resistance**
  - Test according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

**Cable structure**
- Bare copper, extra fine wire conductors according to DIN VDE 0295 Kl. 6 and IEC 60228 cl. 6, BS 6360 cl. 6
- Special rubber core insulation
- Core identification up to 5 cores to colour code DIN VDE 0293, 7 cores and above with number printing
- Cores screened individually or in bunches
- Cores laying parallel
- Copper screened braiding, approx. 85% coverage
- Special Neoprene outer jacket black (RAL 9005)
- Outer jacket cold resistant
- Extensively oil resistant

**Application**
Neoprene screened flat cables are used mainly as trailing cable for crane installations, floor conveyer systems and shelf control units. These cables are also available for export with UL-approval.

**Advantages of flat cables**
- Extremely small bending radius
- High flexibility
- Minimum waste of space
- Packeting possibility

The high degree of screening density assures disturbance-free transmission of all signal and impulses.

*EMV* = Electromagnetic compatibility

**Note**
To optimise the EMC features we recommend a large contact of the copper braiding on both sides.

---

### Installation notes
Cables reels with flat cables must be transported in standing position on the flange. A bending flexibility can be achieved on a plane surface. For this purpose, the corresponding fitting instructions should be followed.

- Put the cable trolley on the guiding rail or upon carrier beam and push them together at the starting point. The distance between the bedding surface of two cable trollys must be wider than the double thickness of a cable-packet.
- During the packeting process, it must be started with the smaller cross-section which lays on the bedding surface and will be builded successively so that the biggest cross-section is laying on the top. Further, be careful of a symmetrical load distribution.
- In case of multicore flat cables with small cross-section, smaller than 2.5 mm², is very critical due to its low tensile stress. In such case, you should add 10% reserve wire for calculation.

---

### Part No.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>No. cores x cross-sec. mm²</th>
<th>Outer ø ca. mm</th>
<th>Cop. weight kg/km</th>
<th>Weight ca. kg/km</th>
<th>AWG-no.*</th>
<th>G</th>
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<tbody>
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<td>8G1.5</td>
<td>7.9 x 42.0</td>
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<td>8.9 x 68.0</td>
<td>494.0</td>
<td>620</td>
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</table>

* Note
AWG sizes are approximate equivalent values. The actual cross-section is in mm² – see page T 15.

Further dimensions on request.
Ribbon cables type L, type L AWG 28 and type D

**Technical data/design**

**Type L (stranded wire)**
- Special PVC-Ribbon cable
- Tinned copper, fine wire stranded to DIN VDE 0295 cl. 5, BS 6360 cl. 5
- PVC core insulation, flame retardant
- Pitch 2.54 mm
- Increased heat-resistance
- Cores colour coded

**Nominal voltage**
- 0.14 mm² = 350 V
- 0.25 to 0.75 mm² = 600 V
- Test voltage
  - 0.14 mm² = 1200 V
  - 0.25 to 0.75 mm² = 2000 V

**Technical data/design**

**Type L AWG 28 (stranded wire)**
- Special PVC-Ribbon cable
- Tinned copper 7 x 0.127
- PVC core insulation, flame retardant
- Pitch 1.27 mm
- Increased heat-resistance up to 105°C
- Cores single coloured, edge marking on one side

**Technical data/design**

**Type D (solid)**
- Special PVC-Ribbon cable
- Cu-solid, tinned 0.5 mm²
- PVC core insulation
- Cores moulded, can be separated easily
- Pitch 2.5 mm
- Cores colour coded

**Nominal voltage** 500 V
- Test voltage 1500 V

**Application**

Ribbon cables are used as connecting and control cables wherever there is a need to install quickly and with a minimum waste of space. These cables offer an excellent degree of flexibility.

<table>
<thead>
<tr>
<th>Technical data/design</th>
<th>Type L AWG 28 single coloured, edge marking on one side</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part No.</strong></td>
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<td>44043</td>
<td>16 x 0.08</td>
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<tr>
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<td>44045</td>
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<td>40 x 0.08</td>
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<td>44048</td>
<td>48 x 0.08</td>
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</table>

<table>
<thead>
<tr>
<th>Technical data/design</th>
<th>Type D (colour coded)</th>
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</thead>
<tbody>
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</tr>
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<td>44049</td>
<td>2 x 0.5/1.1</td>
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<tr>
<td>44050</td>
<td>3 x 0.5/1.1</td>
</tr>
<tr>
<td>44051</td>
<td>4 x 0.5/1.1</td>
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<tr>
<td>44052</td>
<td>5 x 0.5/1.1</td>
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<td>44053</td>
<td>6 x 0.5/1.1</td>
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<td>10 x 0.5/1.1</td>
</tr>
<tr>
<td>44058</td>
<td>11 x 0.5/1.1</td>
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</tbody>
</table>

**Standard colour-code** (not to DIN 47100)

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

The first colour is the basic colour, the second colour in form of ring.
TUBEFLEX-Y roundshaped Flat Ribbon Cable
for IDC-technique, Pitch 1,27 mm

Technical data
- Roundshaped special Flat Ribbon Cable
- Conductor resistance at 20°C
  \( \text{max. } 230 \text{ Ohm/km} \)
- Temperature range
  \(-20^\circ\text{C up to } +80^\circ\text{C}\)
- Voltage rating
  \( \text{max. } 300 \text{ V} \)
- Test voltage
  \( \text{core/core } 2000 \text{ V} \)
- Dielectric strength, Spark-test
  \( 3000 \text{ V} \)
- Insulation resistance
  \( \text{min. } 20 \text{ M\Omega/m/km} \)
- Capacitance (side cores)
  \( \text{ca. } 75 \text{ pF/m} \)
- Impedance
  \( 115 \text{ Ohm} \)
- Minimum bending radius
  \( 15 \times \text{cable} \)
- Radiation resistance
  \( \text{up to } 80 \times 10^6 \text{ cJ/kg (up to } 80 \text{ Mrad)} \)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers.

Cable structure
- Stranded tinned copper conductor,
  size AWG 28
  \( 7 \times (0.127 \text{ mm}) = 0.09 \text{ mm}^2 \)
- Special PVC core insulation,
  adapted to DIN VDE 0207 part 4
- Cores colour grey, edge marking on one side
- Cores laying parallel and adjacent, alternately spliced or separated and periodically slotted
- Roundshaped flat ribbon cable, folded
- Taping
- Special PVC outer sheath, adapted to DIN VDE 0207 part 5
- Colour grey
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Application
TUBEFLEX-Y Flat ribbon cable, due to its roundshape offers considerable advantages compared with other flat ribbon cables during the installation and assembly. This roundshaped cable bids enormous profits by using the quick and economical possibilities under continuance with the efficient connection in IDC-technique. All conductors can be contacted at one working procedure without stripping the insulation. The accurate to size pitch-image of the ribbon cable is obtained due to an adapted backshaping before the plug installation.

Very interesting for cable pre-assemblers!

---

<table>
<thead>
<tr>
<th>Part No.</th>
<th>No. of cores x cross-section AWG 28 = 0.09 mm²</th>
<th>Flat ribbon dimension width mm</th>
<th>Outer jacket nominal wall-thickness mm</th>
<th>Outer ø mm</th>
<th>Copper weight kg/km</th>
<th>Cable weight ca. kg/km</th>
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</thead>
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<td>45130</td>
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<td>6.1</td>
<td>8.7</td>
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<td>45131</td>
<td>10 x AWG 28</td>
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<tr>
<td>45132</td>
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<td>7.2</td>
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</tr>
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<td>23.2</td>
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<td>91</td>
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<td>11.6</td>
<td>62.0</td>
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</tr>
</tbody>
</table>

**Note**
AWG equivalent values – see page T 15.

PVC cables will be changed to lead free PVC successively.
TUBEFLEX-(St)-CY Roundshaped Flat Ribbon Cable, screened for IDC-technique, Pitch 1.27 mm EMC*-preferred type

Technical data
- Roundshaped special Flat Ribbon Cable, screened
- Conductor resistance at 20 °C max. 230 Ohm/km
- Temperature range -20 °C up to +80 °C
- Voltage rating max. 300 V
- Test voltage core/core 2000 V
- Dielectric strength, Spark-test 5000 V
- Insulation resistance min. 20 MΩxkm
- Capacitance (side cores) ca. 75 pF/m
- Impedance 11 5 Ohm
- Minimum bending radius 1.5 x cable
- Radiation resistance up to 80 x 10⁶ cJ/kg (up to 80 Mrad)
- The materials used in manufacture are cadmium-free and contain no silicone and free from substances harmful to the wetting properties of lacquers

Cable structure
- Stranded tinned copper conductor, size AWG 28
  7x0.127 mm = 0.09 mm²
- Special PVC core insulation, adapted to DIN VDE 0207 part 4
- Cores colour grey, edge marking on one side
- Cores laying parallel and adjacent, alternately spliced or separated and periodically slotted
- Roundshaped flat ribbon cable, folded
- Dual shielding:
  (S) – plastic coated Alu-foil and
  (C) – tinned copper wire braiding with optimal surface coverage
- Special PVC outer sheath, adapted to DIN VDE 0207 part 5
- Colour grey
- PVC self-extinguishing and flame retardant according to DIN VDE 0482 part 265-2-1/EN 50265-2-1/IEC 60332-1 (equivalent DIN VDE 0472 part 804 test method B)

Application
TUBEFLEX-(St)-CY Flat ribbon cable, due to its roundshape offers considerable advantages compared with other flat ribbon cables during the installation and assembly. This roundshaped cable bids enormous profits by using the quick and economical possibilities under continuance with the efficient connection in IDC-technique. All conductors can be contacted at one working procedure without stripping the insulation. The accurate to size pitch-image of the ribbon cable is obtained due to an adapted backshaping before the plug installation.

Very interesting for cable pre-assemblers!
The dual shielding with plastic coated aluminium foil (St) and the additional tinned copper wire braiding (C) protects against high frequency interference and ensures disturbance-free signal and impulse transfer.

* EMC = Electromagnetic compatibility

Note To optimise the EMC features we recommend a large round contact of the copper braiding on both ends.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>No. of cores x cross-section</th>
<th>Flat ribbon dimension width mm</th>
<th>Outer jacket nominal wall-thickness mm</th>
<th>Outer Ø ca.mm</th>
<th>Copper-weight kg/km</th>
<th>Cable weight ca.kg/km</th>
</tr>
</thead>
<tbody>
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<td>192</td>
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</tbody>
</table>

** AWG equivalent values – see page T 15.

PVC cables will be changed to lead free PVC successively.