Integrated 9/11/18/20 Cores 0.75mm² UIC Databus Cables

**Applications**

The cables are used as connecting cables to transmit digital signals inside railway rolling stocks.

**Standards**

- DIN 5510-1

**Construction**

**For 9 cores UIC databus cables:**

- 4 cores: 10 mm² stranded tinned copper conductor with LSZH insulation.
- Combined Element: 3 cores (with Cu-strand 2×6mm², 1×2.5mm²) are twisted with a filling element to a combined element. Wrapping: Overlapped plastic-foil(s). Elements sheaths: TPE.
  - UIC Data Bus 0.75mm²: Two foam skin insulated tinned copper stranded conductors are twisted together with two filling elements to a pair.
    - Wrapping: Overlapped plastic-foil(s).
    - Screen: Tinned copper wire braid screen
    - Elements sheaths: TPE.
    - Wrapping: Overlapped plastic-foil(s).
  - Stranding: 4 strands are twisted to a core together with 3 cored element, the UIC data bus and two fillers
  - Core Wrapping: Overlapped plastic-foil(s).
  - Outer Sheath: Cross-linked oil resistant LSZH compound.

**For 11 cores UIC databus cables:**

- 4 cores: 10 mm² stranded tinned copper conductor with LSZH insulation.
- Combined Element: 5 cores (with Cu-strand 2×6mm², 1×2.5mm² and 2×1.0 mm²) are twisted with a filling element to form a combined element.
  - Wrapping: Overlapped plastic-foil(s).
  - Elements sheaths: TPE.
  - UIC Data Bus 0.75mm²: Two foam skin insulated tinned copper stranded conductors are twisted together with two filling elements to a pair.
    - Wrapping: Overlapped plastic-foil(s).
    - Screen: Tinned copper wire braid screen
    - Elements sheaths: TPE.
    - Wrapping: Overlapped plastic-foil(s).
  - Stranding: 4 strands are twisted to a core together with 5 cored element, the UIC data bus and two fillers.
  - Core Wrapping: Overlapped plastic-foil(s).
  - Outer Sheath: Cross-linked oil resistant LSZH compound.
For 18/20 cores UIC databus cables:

- Star Quad: Four LSZH insulated 1mm² stranded tinned copper conductors are twisted to form a star quad.
- UIC Data Bus 0.75mm²: Two foam skin insulated tinned copper stranded conductors are twisted together with two filling elements to form a pair.

Wrapping: Overlapped plastic-foil(s)
Screen: Tinned copper wire braid screen
Element sheaths: TPE.
Wrapping: Overlapped plastic-foil(s)
- Stranding: 4 star quads are stranded together with 2 or 4 UIC data bus cable and several fillers.
- Core Wrapping: Overlapped plastic-foil(s).
- Screen: Tinned copper-wire braid screen.
- Outer Sheath: Cross-linked oil resistant LSZH compound.

Electrical Characteristics at 20°C

<table>
<thead>
<tr>
<th>Nominal Cross Section</th>
<th>0.75</th>
<th>1</th>
<th>2.5</th>
<th>6</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of Strand/Strand Diameter</td>
<td>19/0.22</td>
<td>19/0.25</td>
<td>37/0.29</td>
<td>84/0.3</td>
<td>80/0.4</td>
</tr>
<tr>
<td>Maximum Conductor Resistant</td>
<td>Ω/km</td>
<td>26.7</td>
<td>20</td>
<td>8.21</td>
<td>3.39</td>
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<tr>
<td><a href="mailto:Impedance@1.0-10MHz">Impedance@1.0-10MHz</a></td>
<td>Ω</td>
<td>120+/-12</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum Attenuation @1MHz</td>
<td>dB/km</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum Attenuation @1.5MHz</td>
<td>dB/km</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum Attenuation @2MHz</td>
<td>dB/km</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum Attenuation @3MHz</td>
<td>dB/km</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum Transfer Impedance</td>
<td>mΩ/m</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nominal Voltage Rating</td>
<td>V</td>
<td>300</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Mechanical and Thermal Properties

- Minimum Bending Radius: 6×OD (single); 12×OD (multiple)
- Temperature Range: -40°C to +90°C (during operation); -20°C +50°C (during installation)

Dimensions and Weight

<table>
<thead>
<tr>
<th>Cable Code</th>
<th>No. of cores&amp; Nominal Conductor Cross Sectional Area No.x:mm²</th>
<th>Nominal Sheath Thickness mm</th>
<th>Nominal Overall Diameter mm</th>
<th>Nominal Weight kg/km</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD-UIC-4C10S+2C6S+1C2.5S+2C0.75S</td>
<td>4×10+2×6+1×2.5+2×0.75</td>
<td>1.8</td>
<td>25</td>
<td>917</td>
</tr>
<tr>
<td>RD-UIC-4C10S+2C6S+1C2.5S+2C1S+2C0.75S</td>
<td>4×10+2×6+1×2.5+2×1.0+2×0.75</td>
<td>1.8</td>
<td>25</td>
<td>969</td>
</tr>
<tr>
<td>RD-UIC-4Q1S+2C0.75S</td>
<td>4×4×1.0+2×0.75</td>
<td>1.8</td>
<td>18.5</td>
<td>498</td>
</tr>
<tr>
<td>RD-UIC-4Q1S+2P0.75S</td>
<td>4×4×1.0+2×2×0.75</td>
<td>1.8</td>
<td>23</td>
<td>530</td>
</tr>
</tbody>
</table>

- Impact Resistant
- Highly Flexible
- UV Resistant
- Weather Resistant
- Oil Resistant
- Flame Retardant
  NF C32-070-2.1(C2)
  IEC 60332-1-EN 50265-2-1
- Fire Retardant
  NF C32-070-2.2(C1)
  IEC 60332-3-EN50266
- Zero Halogen
  IEC 60754-1/EN C20-454
  IEC 60754-2/EN C20-453
- Low Smoke Emission
  EN 50267-2-2/EN C32-074
- Low Corrosivity
  EN 50267-2-2/EN C20-453
- Low Toxicity