WTB (Wired Train Bus) Cables
FRL-WTB-02YCH-2G0.75/FRL-WTB-02YCH-1P0.75S/FRL-WTB-02YCH-2P0.75S

Application
The cables are designed for permanent installation inside of rolling stock to connect fixed parts. A typical application is a communication system in a locomotive. The system uses a wire backed bus system to the TCN standard for control and instrumentation and for diagnostics. This bus system consists of the rail bus WTB (Wired Train Bus) and the road bus MVB (Multifunction Vehicle Bus) which are connected via redundant gateways.

Construction
Conductors
Stranded tinned copper conductor according to IEC 60228 class 5
Insulation
Foam PE or foam skin PE
Core Wrapping
Plastic tape(s)
EMC Screen
Tinned copper braid
Outer Sheath
Cross-linked oil resistant LSZH compound

Electrical & Mechanical Properties
Nominal Voltage: 300 V
Max. Temperature: 90 °C
Min. Temperature: -40 °C
Bending Radius: 12 x Overall Diameter

Chemical & Environmental Properties
EN 60684-2: No fluorine
EN 50305; EN 60811-2-1: Resistance to mineral oil & fuel oil, acid & alkali
EN 50305: Resistance to ozone

Fire Performance for Rolling Stock Application
EN 50306-2: Hazard levels HL1, HL2/HL3, HL4
DIN 5510-2: Protection level 1/2/3/4
BS 6853: Interior use 1a, 1b, II; Exterior use 1a, 1b, II
NF F 16-101: F0
Fire Performance in General

- **Fire Performance in General**
- EN 50265-2-1; IEC 60332-1-2; NF C 32-070 2.1 (C2)
- Vertical flame propagation for a single insulated wire or cable
- EN 50266-2-4 + EN 50305; IEC 60332-3-24;
- Vertical flame spread of vertically mounted bunched wires or cables
- NF C 20-902; NF F 16 101; VDE 0472 Teil 816
- NF C 20-754-2; IEC 60754-2; NF C 32-074;
- Low Smoke Emission
- NF C 20-453; VDE 0472 Teil 813
- EN 50305; NF X 70-100; NF F 63 808; TM1-04; BS6853
- NF F 63 808; BS6853; NF F 16 101

### Databus Cables

<table>
<thead>
<tr>
<th>Nominal Cross-Sectional Area</th>
<th>Number &amp; Nominal Diameter of Strands</th>
<th>Nominal Sheath Thickness</th>
<th>Nominal Overall Diameter</th>
<th>Nominal Weight</th>
<th>Max. Conductor Resistance</th>
<th>Impedance</th>
<th>Max. Transfer Impedance</th>
<th>Max. Attenuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75 mm²</td>
<td>19/0.22</td>
<td>1.4</td>
<td>8.3</td>
<td>97</td>
<td>26.7</td>
<td>120 +/- 12</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FRL-WTB-02YCH-2G0.75S**

<table>
<thead>
<tr>
<th>Nominal Cross-Sectional Area</th>
<th>Number &amp; Nominal Diameter of Strands</th>
<th>Nominal Sheath Thickness</th>
<th>Nominal Overall Diameter</th>
<th>Nominal Weight</th>
<th>Max. Conductor Resistance</th>
<th>Impedance</th>
<th>Max. Transfer Impedance</th>
<th>Max. Attenuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75 mm²</td>
<td>19/0.22</td>
<td>1.4</td>
<td>9.0</td>
<td>110</td>
<td>26.7</td>
<td>120 +/- 12</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FRL-WTB-02YCH-2P0.75S**

<table>
<thead>
<tr>
<th>Nominal Cross-Sectional Area</th>
<th>Number &amp; Nominal Diameter of Strands</th>
<th>Nominal Sheath Thickness</th>
<th>Nominal Overall Diameter</th>
<th>Nominal Weight</th>
<th>Max. Conductor Resistance</th>
<th>Impedance</th>
<th>Max. Transfer Impedance</th>
<th>Max. Attenuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75 mm²</td>
<td>19/0.22</td>
<td>1.4</td>
<td>11.4</td>
<td>150</td>
<td>26.7</td>
<td>120 +/- 12</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>