MVB (Multifunction Vehicle Bus) Cables (Redundant Version)
FRL-MVB-02YCH-1Q0.5S+4G0.25

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
Conductor
Stranded tinned copper conductor according to IEC 60228 class 5
Insulation
0.6mm foam PE/foam skin PE (for 0.5mmsq conductor), 0.2mm PE (for 0.25mmsq conductor)
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 10 × 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
EN45545-2  R15 Interior/ R16 Exterior HL1, HL2, HL3

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; NF C 32-070 2.2 (C1); VDE 0472 Teil 804
EN 50268-2; IEC 61034-2; NF C 32-073 ; NF C 20-902; NF F 16 101; VDE 0472 Teil 816  Low Smoke Emission
EN 50267-2-1; IEC 60754-1; NF C 32-074; NF C 20-454; VDE 0472 Teil 815
EN 50267-2-2/3; IEC 60754-2; NF C 32-074; 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
EN45545-2

Halogen Free
Low Corrosivity (Acidity & Conductivity)
Low Toxicity
Smoke Index
Requirement for fire behavior of materials & components
R15/R16

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<table>
<thead>
<tr>
<th>Nominal Cross-Sectional Area</th>
<th>Number &amp; Nominal Diameter of Strands</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>mm²</td>
<td>No/mm</td>
<td>mm</td>
<td>kg/km</td>
<td>@0.75-3MHz</td>
<td>f&lt;=20MHz</td>
<td>@1.5MHz</td>
<td>@3MHz</td>
</tr>
<tr>
<td>0.5 / 0.25</td>
<td>19/0.18(0.5) / 7/0.2(0.25)</td>
<td>7.9</td>
<td>95</td>
<td>41</td>
<td>120 +/- 12</td>
<td>20</td>
<td>17</td>
</tr>
</tbody>
</table>

- Corona Resistant
- Highly Flexible
- UV Resistant
- Ozone Resistant
- Abrasion Retardant
- Cold Resistant
- Resistance To Soldering Heat
- Acid & Alkaline Resistant
- IRM 903 Fuel Oil Resistant
- IRM 902 Mineral Oil Resistant
- Fire Retardant NF C32-070-2.3(C1)
- Flame Retardant NF C32-070-2.2(C1)
- Low Toxicity NF C32-070-2.1(C1)
- Low Corrosivity NF C32-074-1NF C30-453
- Low Smoke Emission IEC 61034-2 / EN 50268-2
- Zero Halogen IEC 60754-1 / EN 3837-2.1