



Product: [BA43104](#)

RailTuff™ MVB Type Railway CAN BUS Cable with X-LSZH Material

Product Description

4C (QUAD), 0.5mm2 stranded tinned copper conductors, XL-Foam PE insulation, shielded, XL-LSZH outer jacket

Technical Specifications

Product Overview

| | |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable Applications: | MVB (multi functional vehicle bus) data cable for fixed and protected installations inside and outside of rail vehicles. This cable is applied for digital signal transmission with good transmission rate at the high frequencies. It is suitable for wiring of the components in the train communication network (TCN) inside the car and coach. This cable meets the requirements of the relevant parts of international railway standards like DIN 5510-2, EN 50153, EN 50155, EN 50305, EN 45545-2, and T/J/CL-313. |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Construction Details

| Conductor | | | | |
|-----------|-----------|--------------------|--------------|-----------------|
| Size | Stranding | Material | No. of Pairs | No. of Elements |
| 0.5 mm² | Stranded | TC - Tinned Copper | 2 | 4 |

| Insulation | | |
|--------------------------|--------------------------|---------------------------------|
| Material | Nom. Insulation Diameter | Color Code |
| PE - Polyethylene (Foam) | 2.2 mm (0.087 in) | 1.Red 2.Yellow 3.Black 4. White |

| Outer Shield | | |
|--------------|-------------------------|----------|
| Shield Type | Material | Coverage |
| Tape | Bi-Laminate (Alum+Poly) | 100% |
| Braid | Tinned Copper (TC) | 85% |

| Outer Jacket | |
|------------------------------------------------------------|------------------|
| Material | |
| LSZH - Low Smoke Zero Halogen (Flame Retardant, Thermoset) | |
| Overall Cable Diameter (Nominal): | 7.9 mm (0.31 in) |

Electrical Characteristics

| Electricals | |
|--------------------|-------------------------------|
| Max. Conductor DCR | Nom. Characteristic Impedance |
| Max. 40.1 Ohm/km | 120 Ohm |

| High Frequency | |
|-----------------|---------------------------------------------|
| Frequency [MHz] | Max. Insertion Loss (Attenuation) [dB/100m] |
| 1.5 | 1.5 |
| 3 | 2 |

| Voltage | |
|-------------------|--|
| UL Voltage Rating | |
| 300 V | |

Mechanical Characteristics

Temperature

| Operating | Installation |
|----------------|----------------|
| -40°C to +85°C | -20°C to +50°C |

Bend Radius

| Installation Min. |
|-------------------|
| 5×D |

| | |
|--------------------|--------------------------|
| Bulk Cable Weight: | 80 kg/km (54 lbs/1000ft) |
|--------------------|--------------------------|

Standards and Compliance

| | |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Suitability: | Indoor, Oil Resistance |
| Flammability / Reaction to Fire: | IEC 60332-1-2, IEC 60332-3-25 |
| ISO/IEC Compliance: | IEC 61034-2 - Smoke Density Min Transmittance = 70% |
| CENELEC Compliance: | EN 45545-2 |
| European Halogen Free Standards: | IEC 62821-1 Halogen Free Compliance = Yes, IEC 60754-1 - Halogen Amount = Zero, IEC 60754-2 - Halogen Acid Gas Amount - Max. Conductivity = 10 µS/mm, IEC 60754-2 - Halogen Acid Gas Amount - Min. pH = 4.3 |
| European Directive Compliance: | EU CE Mark |

Product Notes

| | |
|--------|------------------------------------------------------------------------------------------------------|
| Notes: | Capacitance Core to Core: 46 nF/km (Max.) Core to Shield: 80 nF/km (Max.), NEXT: 45dB @ 0.75-3.0 MHz |
|--------|------------------------------------------------------------------------------------------------------|

History

| | |
|----------------------|-------------------------------------------------|
| Update and Revision: | Revision Number: 0.17 Revision Date: 05-26-2025 |
|----------------------|-------------------------------------------------|

Part Numbers

Variants

| Item # | Color | Length |
|-----------------|-------|--------|
| BA43104 010305M | Black | 305 m |

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