



**Product:** [BA43104](#)

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

## Product Description

4C (QUAD), 0.5mm<sup>2</sup> 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 mm <sup>2</sup>	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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