



Product: [BA43103](#)

RailTuff™ RS485 CANBUS Railway TCN Cable with X-LSZH Material

Product Description

2CX0.5 mm2 + 1CX0.5mm2 Stranded Tinned Copper Conductors, Foam Polyolefin and Polyolefin insulation, Shield and XL-LSZH Sheath

Technical Specifications

Product Overview

Suitable Applications:	RS485 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.
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Construction Details

Conductor

Size	Material	No. of Elements	Notes
0.5 mm²	TC - Tinned Copper	3	Nom. Conductor Stranding:19/0.18 mm

Insulation

Material	Nom. Insulation Diameter	Color Code	Notes
PO - Polyolefin (Foam)	2.4 mm (0.094 in)	Blue and Red	Signal Core
PO - Polyolefin	1.45 mm (0.0571 in)	Black	Power
PO - Polyolefin	1.45 mm (0.0571 in)	Natural	Filler

Outer Shield

Shield Type	Material	Coverage
Tape	Bi-Laminate (Alum+Poly)	100%
Braid	Tinned Copper (TC)	75%

Outer Jacket

Material	
LSZH - Low Smoke Zero Halogen (Flame Retardant, Thermoset)	
Overall Cable Diameter (Nominal):	7.14 mm (0.281 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	3

Voltage

UL Voltage Rating
300 V

Mechanical Characteristics

Temperature

Operating
-40°C to +85°C

Bend Radius

Installation Min.
5×D

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.)
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History

Update and Revision:	Revision Number: 0.21 Revision Date: 05-29-2025
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Part Numbers

Variants

Item #	Color	Length
BA43103 010305M	Black	305 m

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