Belden

Product: BA43103FR

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

Product Description

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

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 and capable to continue transmitting data even when being directly attacked by fire.. 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 EN 50305, EN 50267, EN 45545-2, IEC 60331-23, EN 50200, IEC 60332-3-25 Category D and TJ/CL-313.

Construction Details

Conductor

Size	Material	Notes
0.5 mm²	TC - Tinned Copper	Nom. Conductor Stranding:19/0.18 mm

Insulation

Material	Nom. Insulation Diameter	Color Code	Notes
PO - Polyolefin (Foam)	2.18 mm (0.0858 in)	Red	Signal Core
PO - Polyolefin	2.18 mm (0.0858 in)	Blue	Single Core
PO - Polyolefin	0.95 mm (0.037 in)	Black	Power

Outer Shield

Shield Type	Material	Coverage
Tape	Bi-Laminate (Alum+Poly)	100%
Braid	Tinned Copper (TC)	80%

Outer Jacket

Material
LSZH - Low Smoke Zero Halogen (Flame Retardant)

Overall Cable Diameter (Nominal):	8.6 mm (0.34 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 +80°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, IEC 60331-23
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

History

Update and Revision:	Revision Number: 0.12 Revision Date: 02-26-2026