

WTB (Wired Train Bus) / MVB (Multifunction Vehicle Bus) Cables FRL-WTB/MVB-02Y(ST+C)H-1P20A



A. Conductor B. Insulation C. EMC Screen 1 & 2 D. Sheath

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

Foam PE or foam skin PE

Cable Element

Twisted pair

Core Wrapping

Plastic tape(s)

EMC Screen 1

Aluminium clad polyester foil

EMC Screen 2

Tinned copper braid

Core Wrapping

Plastic tape(s)

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	12 × 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

Fire Performance in General

EN 50265-2-1; IEC 60332-1-2; NF C 32-070 2.1 (C2)
 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
 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

Vertical flame propagation for a single insulated wire or cable
 Vertical flame spread of vertically mounted bunched wires or cables

Low Smoke Emission

Halogen Free

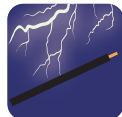

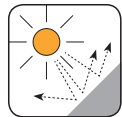
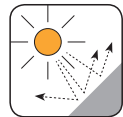
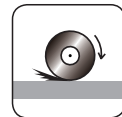
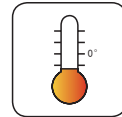









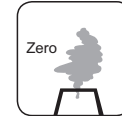
Low Corrosivity (Acidity & Conductivity)

Low Toxicity
 Smoke Index

FRL-WTB/MVB-02Y(ST+C)H-1P20A

Nominal Cross-Sectional Area		Number & Nominal Diameter of Strands	Nominal Sheath Thickness	Nominal Overall Diameter	Nominal Weight	Max. Conductor Resistance	Impedance	Max. Attenuation	
mm ²	AWG					20 °C		@0.75-3MHz	@1MHz
0.62	20	19/0.2	1.2	8.3	80	Ω/km	Ω	dB/km	dB/km
						33.1	120+/-12	10	15



 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 C32-070-2.2(C1) IEC60332-3-24/EN50266-2-4	 Flame Retardant NF C32-070-2.1(C2) IEC60332-1-2/EN50265-2-1	 Low Toxicity EN 50305; NF X70-100/NF F63 808/TM1-04/BS 6853	 Low Corrosivity IEC60754-2/EN50267-2-2/3 NF C32-074/NF C20-453	 Low Smoke Emission IEC 61034-2 / EN 50268-2 NF C32-073/NF C 20-902	 Zero Halogen IEC 60754-1/EN 50267-2-1 NF C20-454