

Integrated 9/11/18/20 Cores 0.75mmsq UIC Databus Cables

FRL-UIC-4G10+2G6+1G2.5+2G0.75

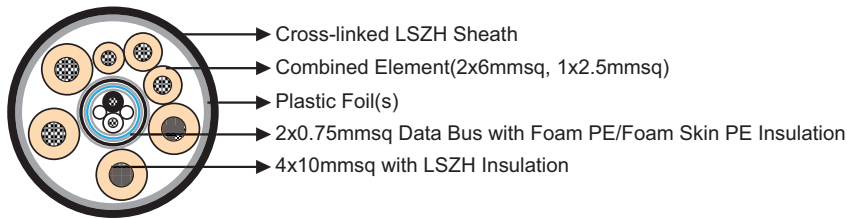
FRL-UIC-4G10+2G6+1G2.5+2G1+2G0.75

FRL-UIC-4Q1S+2G0.75/FRL-UIC-4Q1S+2P0.75S

Application

The cables are used as connecting cables to transmit digital signals inside railway rolling stocks.

Construction



For 9 cores UIC databus cables

4 cores: 10 mm² stranded tinned copper conductor with LSZH insulation

Combined Element: 3 cores (with Cu-strand 2 x 6mm², 1 x 2.5mm²) are twisted with a filling element to form a combined element

Core Wrapping: Overlapped plastic-foil(s)

Elements Sheaths: TPE

UIC Data Bus 0.75mm²: Two foam PE or foam skin PE insulated tinned copper stranded conductors are twisted together with two filling elements to form a pair

Core Wrapping: Overlapped plastic-foil(s)

Screen: Tin plated copper braid

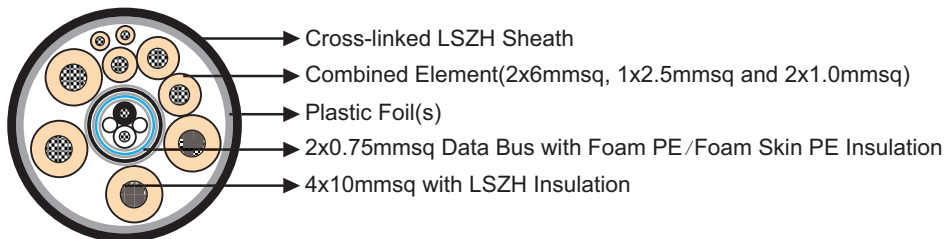
Elements Sheaths: TPE

Core Wrapping: Overlapped plastic-foil(s)

Stranding: 4 strands are twisted to a core together with 3 cored element, the UIC data bus and two fillers

Core Wrapping: Overlapped plastic-foil(s)

Outer Sheath: Cross-linked oil resistant LSZH compound



For 11 cores UIC databus cables

4 cores: 10 mm² stranded tinned copper conductor with LSZH insulation

Combined Element: 5 cores (with Cu-strand 2 x 6mm², 1 x 2.5mm² and 2 x 1.0 mm²) are twisted with a filling element to form a combined element

Core Wrapping: Overlapped plastic-foil(s)

Element sheaths: TPE

UIC Data Bus 0.75mm²: Two foam PE or foam skin PE insulated tinned copper stranded conductors are twisted together with two filling elements to form a pair

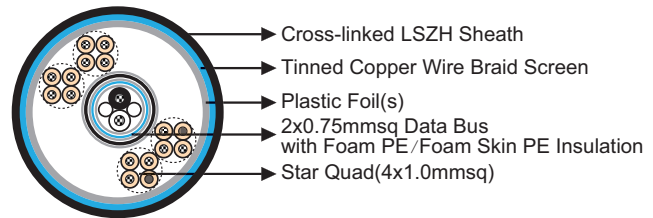
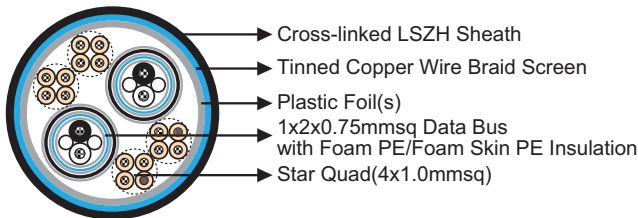
Core Wrapping: Overlapped plastic-foil(s)

Screen: Tin plated copper braid

Element Sheaths: TPE

Core Wrapping: Overlapped plastic-foil(s)

Stranding: 4 strands are twisted to a core together with 5 cored element, the UIC data bus and two fillers
 Core Wrapping: Overlapped plastic-foil(s)
 Outer Sheath: Cross-linked oil resistant LSZH compound



For 18/20 cores UIC databus cables

Star Quad: Four LSZH insulated 1mm² stranded tinned copper conductors are twisted to form a star quad.
 UIC Data Bus 0.75mm²: Two foam PE or foam skin PE insulated tinned copper stranded conductors are twisted together with two filling elements to form a pair
 Core Wrapping: Overlapped plastic-foil(s)
 Screen: Tin plated copper braid
 Element Sheaths: TPE
 Core Wrapping: Overlapped plastic-foil(s)
 Stranding: 4 star quads are stranded together with 2 or 4 UIC data bus cable and several fillers
 Core Wrapping: Overlapped plastic-foil(s)
 Screen: Tin plated copper braid.
 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)	Vertical flame propagation for a single insulated wire or cable
EN 50266-2-4 + EN 50305; IEC 60332-3-24;	Vertical flame spread of vertically mounted bunched wires or cables
NF C 32-070 2.2 (C1); VDE 0472 Teil 804	
EN 50268-2; IEC 61034-2; NF C 32-073 ;	Low Smoke Emission
NF C 20-902; NF F 16 101; VDE 0472 Teil 816	
EN 50267-2-1; IEC 60754-1; NF C 32-074;	Halogen Free
NF C 20-454; VDE 0472 Teil 815	
EN 50267-2-2/3; IEC 60754-2; NF C 32-074;	Low Corrosivity (Acidity & Conductivity)
NF C 20-453; VDE 0472 Teil 813	
EN 50305; NF X 70-100; NF F 63 808; TM1-04; BS6853	Low Toxicity
NF F 63 808; BS6853; NF F 16 101	Smoke Index

FRL-UIC-4G10+2G6+1G2.5+2G0.75

Nominal Cross-Sectional Area	Number & Nominal Diameter of Strands	Nominal Sheath Thickness	Nominal Overall Diameter	Nominal Weight	Max. Conductor Resistance	Impedance	Max. Attenuation					
					20 °C		@0.75-3MHz	@1MHz	@1.5MHz	@2MHz	@3MHz	
mm ²	No/mm	mm	mm	kg/km	Ω/km	Ω	dB/km	dB/km	dB/km	dB/km	dB/km	
0.75	19/0.22	1.8	25	917	26.7	120+/-12	10	13	14	18		
10	80/0.4				1.95	-	-	-	-	-	-	-
6	84/0.3				3.39	-	-	-	-	-	-	-
2.5	37/0.29				8.21	-	-	-	-	-	-	-

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mm ²	No/mm	mm	mm	kg/km	Ω/km	Ω	dB/km	dB/km	dB/km	dB/km	dB/km	
0.75	19/0.22	1.8	25	969	26.7	120+/-12	10	13	14	18		
10	80/0.4				1.95	-	-	-	-	-	-	-
6	84/0.3				3.39	-	-	-	-	-	-	-
2.5	37/0.29				8.21	-	-	-	-	-	-	-

FRL-UIC-4Q1S+2G0.75

Nominal Cross-Sectional Area	Number & Nominal Diameter of Strands	Nominal Sheath Thickness	Nominal Overall Diameter	Nominal Weight	Max. Conductor Resistance	Impedance	Max. Attenuation				
					20 °C		@0.75-3MHz	@1MHz	@1.5MHz	@2MHz	@3MHz
mm ²	No/mm	mm	mm	kg/km	Ω/km	Ω	dB/km	dB/km	dB/km	dB/km	dB/km
0.75	19/0.22	1.8	18.5	498	26.7	120+/-12	10	13	14	18	
1	19/0.25				20	-	-	-	-	-	-

FRL-UIC-4Q1S+2P0.75S

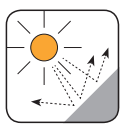
Nominal Cross-Sectional Area	Number & Nominal Diameter of Strands	Nominal Sheath Thickness	Nominal Overall Diameter	Nominal Weight	Max. Conductor Resistance	Impedance	Max. Attenuation				
					20 °C		@0.75-3MHz	@1MHz	@1.5MHz	@2MHz	@3MHz
mm ²	No/mm	mm	mm	kg/km	Ω/km	Ω	dB/km	dB/km	dB/km	dB/km	dB/km
0.75	19/0.22	1.5	23	530	26.7	120+/-12	10	13	14	18	
1	19/0.25				20	-	-	-	-	-	-



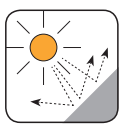
Corona Resistant



Highly Flexible



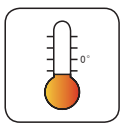
UV Resistant



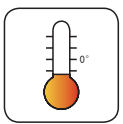
Ozone Resistant



Abrasion Retardant



Cold Resistant



Resistance To Soldering Heat



Acid & Alkaline Resistant


 IRM 903
Fuel Oil Resistant

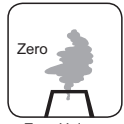
 IRM 902
Mineral Oil Resistant

 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/EN50266-2-1

 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