

## SPFB Speed Control System Cables

### Applications

The cables are used for the train speed control system (French system KVB). The cables are laid along railway lines and connect the speed sensors (located between the rails) to the encoder located inside the trackside equipment shelter.

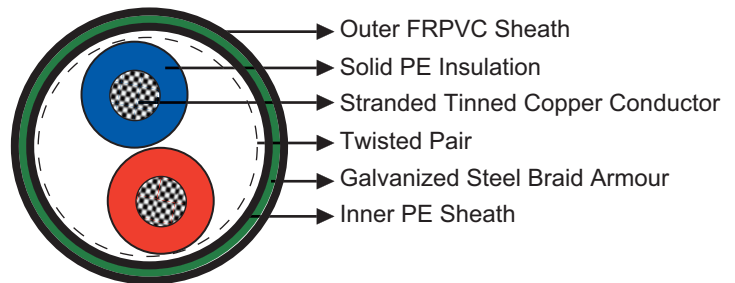


### Standards

- SNCF CT 446

### Construction

- Conductors: Class 2 stranded tinned copper.
- Insulation: Solid polyethylene.
- Cabling Element: Twisted pair.
- Inner Sheath: Low density polyethylene.
- Armour: Galvanized steel braid armour.
- Outer Sheath: Flame Retardant PVC.



### Electrical Characteristics at 20°C

Nominal Conductor Diameter	mm	0.8
Nominal Cross Section Area	mm <sup>2</sup>	0.5
Maximum Conductor Resistance (DC)	Ω/km	36
Characteristic Impedance @100KHz	Ω	120
Maximum Attenuation @50KHz	dB/km	5
Nominal Insulation Thickness	mm	0.55
Operating Voltage	V	500

### Mechanical and Thermal Properties

- Minimum Bending Radius: 8×OD (static); 16×OD (dynamic)
- Temperature Range: -30°C to +70°C (during operation); -20°C to +50°C (during installation)

### Dimensions and Weight

Cable Code	No. of cores & Nominal Conductor Cross Sectional Area No. x mm <sup>2</sup>	No. & Nominal Diameter of Strands No./mm	Nominal Sheath Thickness mm		Nominal Overall Diameter mm	Nominal Weight kg/km
			Inner	Outer		
RS/SPFB-2Y2Y(SWB)2Y-2C0.5S	2 x 0.5	7/0.32	1.0	1.5	9.1	97



Flexible



Ozone Resistant



Fuel Oil Resistant



Mineral Oil Resistant



Laid In Ducts/  
Channel



Flame Retardant  
NF C32-070-2.1(C2)  
IEC 60332-1/EN 50265-2-1



## EUROBALISE SIF

### Applications

The cables are used in Eurobalise (ERTMS) speed control circuits. The cables are laid in trays alongside railway lines and connect an "Eurobalise" located between the rails to the Eurocoder (LEU) located in a control centre.

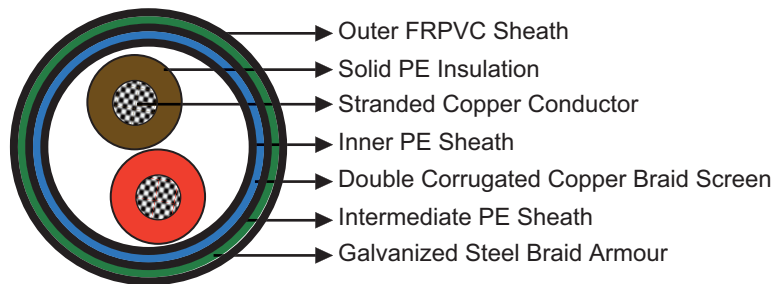


### Standards

- ALSTOM 5 326 203
- SNCF CT 446

### Construction

- Conductors: Class 2 stranded copper.
- Insulation: Solid polyethylene.
- Inner sheath: Low density polyethylene.
- Screen: Two corrugated copper braid shields.
- Intermediate Sheath: Low density polyethylene.
- Armour: Galvanized steel braid armour.
- Outer Sheath: Flame Retardant PVC.



### Electrical Characteristics at 20°C

Nominal Conductor Diameter	mm	1.04
Nominal Cross Section Area	mm <sup>2</sup>	0.85
Maximum Conductor Resistance (DC)	Ω/km	22
Nominal Characteristic Impedance @100 KHz-1MHz	Ω	95
Maximum Attenuation		
@560 kHz	dB/km	7.5
@1MHz	dB/km	10
Nominal Insulated Thickness	mm	0.63

### Mechanical and Thermal Properties

- Minimum Bending Radius: 8×OD (static); 16×OD (dynamic)
- Temperature Range: -30°C to +70°C (during operation); -20°C to +50°C (during installation)

### Dimensions and Weight

Cable Code	No. of cores & Nominal Conductor Cross Sectional Area No. × mm <sup>2</sup>	No. & Nominal Diameter of Strands No./mm	Nominal Sheath Thickness mm			Nominal Overall Diameter mm	Nominal Weight kg/km
			Inner	Inter.	Outer		
RS/SIF-2Y2YC2Y(SWB)Y-2C0.85S	2 x 0.85	7/0.386	1.0	0.8	1.6	15	301



Mineral Oil Resistant



Fuel Oil Resistant



Ozone Resistant



Rated voltage



Laid In Ducts/  
Channel



Flame Retardant  
NF C32-070-2.1(C2)  
IEC 60332-1/EN 50265-2-1

## EUROBALISE BGA

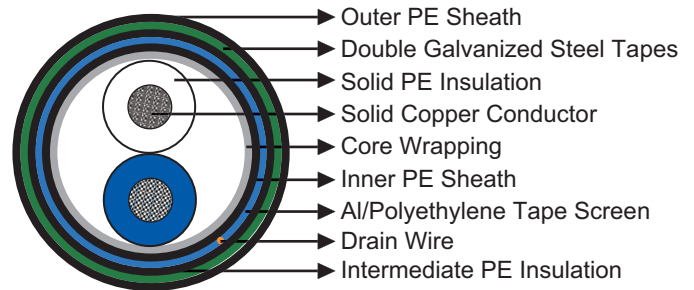
### Applications

The cables are used as balise cables for ERTMS (European Rail Traffic Management System) railway networks. The cables are armoured and can provide low reduction factor.



### Standards

- CEI 20-11
- CEI 20-14
- CEI 20-29
- CEI 20-34
- CEI 46-4
- CEI 103-10



### Construction

- Conductors: Solid annealed copper, 1.6 mm nominal diameter.
- Insulation: Solid polyethylene.
- Stranding: Conductors will be stranded with dielectric fillers in order to get a circular core shape.
- Core Wrapping: Plastic tape (s) with overlapping.
- Inner Sheath: Low density polyethylene.
- Screen: Aluminium/polyethylene tape longitudinally applied and overlapped.
- Drain Wire: Tinned copper drain wire
- Intermediate Sheath: Low density polyethylene.
- Armour: Two galvanized steel tapes.
- Outer Sheath: Low density polyethylene.

### Electrical Characteristics at 20°C

Nominal Conductor Diameter	mm	1.6
Maximum Conductor Resistance (DC)	Ω/km	21.5
Mutual Capacitance	nF/km	42.3+/-15%
Nominal Characteristic Impedance @8.9 KHz	Ω	130
Nominal Characteristic Impedance @560 KHz	Ω	110
Maximum Attenuation @560 KHz	dB/km	3.8
Insulation Resistance	MΩ.km	10000
Minimum Dielectric Strength core to screen (DC)	V	1000
Minimum Dielectric Strength core to core (DC)	V	3000
Reduction Factor @100V/km 50Hz		0.6



## ➤ Mechanical and Thermal Properties

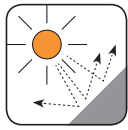
- Minimum Bending Radius: 8×OD (static); 16×OD (dynamic)
- Temperature Range: -30°C to +70°C (during operation); -20°C to +50°C (during installation)

## ➤ Dimensions and Weight

Cable Code	Number of Pairs	Nominal Sheath Thickness mm			Nominal Overall Diameter mm	Nominal Weight kg/km
		Inner	Inter.	Outer		
1.6mm Conductor, 3.4mm Insulated Wire						
RS/BGA-2Y2Y(L)2YB2Y-1P1.6	1	1.0	0.8	1.6	16	334



Anti Induction



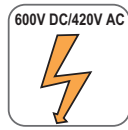
UV Resistant



Water Resistant



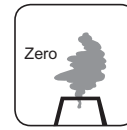
Mineral Oil Resistant



Rated Voltage



Laid In Ducts



Zero Halogen  
IEC 60754-1/NF C20-454  
EN 50267-2-1

