



## 1.8/3KV Single Core Standard Wall Traction Cables

### Applications

Single Core power and control cable designed for protected, fixed installation inside and outside railway vehicles for connecting fixed and moving parts in direct current and alternating voltage technology, especially converter technology



### Standard

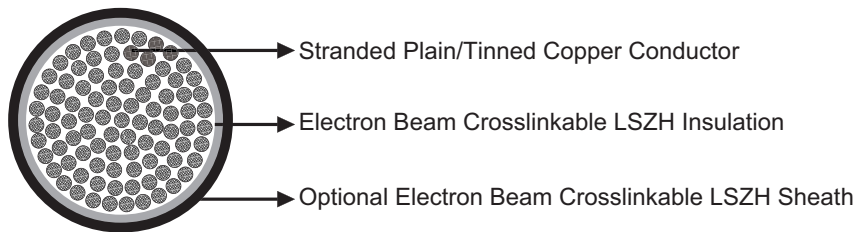
- BS 6853 -1a
- DIN 5510-1 1-4
- NFF 16-101 F0

### Construction

- Conductors: Circular Class 5 stranded plain or tinned copper to BS EN 60228: 2005 / BS 6360.

- Insulation: Electron beam crosslinkable standard wall LSZH compound.

- Outer Sheath (optional): Electron beam crosslinkable LSZH compound (for sheathed cables).



### Optional

- FRA-SW-3S-OS (Screened & Sheathed);
- FRA-SW-3SU-FR(Fire resistant & Unsheathed)

### Electrical Characteristics at 20°C

Nominal Conductor Cross Section	mm <sup>2</sup>	1.5	2.5	4.0	6.0	10	16	25	35	50
Maximum Conductor Resistance	Ω/km	13.7	8.21	5.09	3.39	1.95	1.24	0.795	0.565	0.393
Voltage Rating	KV	1.8/3								

Nominal Conductor Cross Section	mm <sup>2</sup>	70	95	120	150	185	240	300	400
Maximum Conductor Resistance	Ω/km	0.277	0.21	0.164	0.132	0.108	0.0817	0.0654	0.0495
Voltage Rating	KV	1.8/3							

### Mechanical and Thermal Properties

- Minimum Bending Radius: 3×OD (OD<12mm); 4×OD (OD>12mm)
- Temperature Range: -40°C to +120°C

➤ **Dimensions and Weight**

**FRA-SW-3SU (Unsheathed)**

Cable Code	No. of cores & Nominal Conductor Cross Sectional Area No. x mm <sup>2</sup>	Nominal Diameter of Strands No/mm	Nominal Insulation Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
FRA-SW-3SU-1G1.5	1x1.5	30/0.25	2.5	6.8	70
FRA-SW-3SU-1G2.5	1x2.5	50/0.25	2.5	7.2	90
FRA-SW-3SU-1G4	1x4.0	56/0.30	2.5	7.8	110
FRA-SW-3SU-1G6	1x6.0	84/0.30	2.5	8.3	130
FRA-SW-3SU-1G10	1x10.0	80/0.40	2.5	9.2	190
FRA-SW-3SU-1G16	1x16.0	126/0.40	2.5	10.3	250
FRA-SW-3SU-1G25	1x25.0	196/0.40	2.5	11.8	330
FRA-SW-3SU-1G35	1x35.0	276/0.40	2.5	13.1	430
FRA-SW-3SU-1G50	1x50.0	396/0.40	2.5	14.6	570
FRA-SW-3SU-1G70	1x70.0	360/0.50	2.7	16.4	760
FRA-SW-3SU-1G95	1x95.0	475/0.50	2.7	18.4	980
FRA-SW-3SU-1G120	1x120.0	608/0.50	2.7	20.1	1210
FRA-SW-3SU-1G150	1x150.0	756/0.50	2.7	21.7	1500
FRA-SW-3SU-1G185	1x185.0	925/0.50	2.7	23.5	1800
FRA-SW-3SU-1G240	1x240.0	1221/0.50	2.7	26.2	2360
FRA-SW-3SU-1G300	1x300.0	1525/0.50	2.7	28.6	2840
FRA-SW-3SU-1G400	1x400.0	2013/0.50	2.9	32.4	3800

**FRA-SW-3S (Sheathed)**

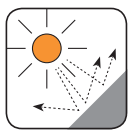
Cable Code	No. of cores & Nominal Conductor Cross Sectional Area No. x mm <sup>2</sup>	Nominal Diameter of Strands No/mm	Nominal Insulation Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
FRA-SW-3S-1G1.5	1x1.5	30/0.25	1.3	7.3	80
FRA-SW-3S-1G2.5	1x2.5	50/0.25	1.3	7.7	100
FRA-SW-3S-1G4	1x4.0	56/0.30	1.3	8.3	120
FRA-SW-3S-1G6	1x6.0	84/0.30	1.3	8.8	140
FRA-SW-3S-1G10	1x10.0	80/0.40	2.2	11.5	250
FRA-SW-3S-1G16	1x16.0	126/0.40	2.2	12.7	310
FRA-SW-3S-1G25	1x25.0	196/0.40	2.2	14.1	410
FRA-SW-3S-1G35	1x35.0	276/0.40	2.2	15.4	520
FRA-SW-3S-1G50	1x50.0	396/0.40	2.2	17.0	660
FRA-SW-3S-1G70	1x70.0	360/0.50	2.2	19.0	880
FRA-SW-3S-1G95	1x95.0	475/0.50	2.4	21.0	1130
FRA-SW-3S-1G120	1x120.0	608/0.50	2.4	22.9	1370
FRA-SW-3S-1G150	1x150.0	756/0.50	2.4	24.7	1690
FRA-SW-3S-1G185	1x185.0	925/0.50	2.4	26.1	2000
FRA-SW-3S-1G240	1x240.0	1221/0.50	2.4	29.3	2620
FRA-SW-3S-1G300	1x300.0	1525/0.50	2.4	31.9	3140
FRA-SW-3S-1G400	1x400.0	2013/0.50	2.6	35.5	4140



Impact Resistant



Highly Flexible



UV Resistant



Weather Resistant



Oil Resistant



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



Fire Retardant  
NF C32-070-2.2(C1)  
IEC 60332-3/EN50266



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



Low Smoke Emission  
IEC 61034/NFC20-902  
EN 50268/NF C32-073



Low Corrosivity  
EN 50267-2-2/NF C32-074  
IEC 60754-2/NF C20-453



Low Toxicity