

PE Insulated Air Core/Jelly Filled Paired Railway Signalling Cables (RF 0.3)

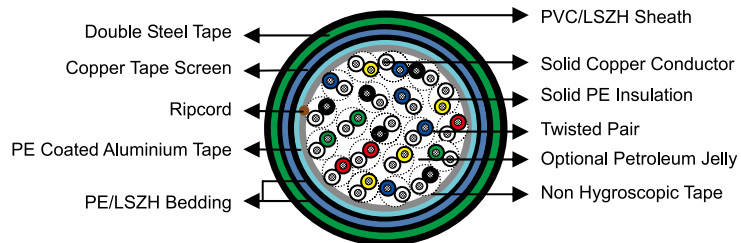
APPLICATION

The cables are designed to give good protection to the cable cores against inductive interference (RF=0.3). The cables are used for outdoor signalling equipment.



STANDARDS

- RENFE E.T. 03.365.051.6



CONSTRUCTION

- **Conductors:** Solid annealed bare copper 0.9/1.4mm as per ASTM B-3/class 1 of IEC 60228.
- **Insulation:** Solid polyethylene as per ASTM D 1248/IEC 60708.
- **Twisted Pairs:** Two insulated conductors are twisted into pairs with varying lays to minimize crosstalk.
- **Cable Core Assembly:** The cores are cabled together in concentric layers to form the cable core. Units are identified by colour coded binders.
- **Core Filling (optional):** The cable core interstices can be filled with petroleum jelly to avoid longitudinal water penetration inside the cable.
- **Core Wrapping:** One or more non-hygroscopic polyester tapes are helically or longitudinally laid with an overlap.
- **Moisture Barrier (optional):** An optional copolymer coated aluminium tape of 0.2mm is applied longitudinally with an overlap.
- **Bedding:** PE or LSZH.
- **Electrostatic Screen:** Corrugated copper tape of 0.12mm is applied longitudinally with overlap.
- **Bedding:** PE or LSZH.
- **Electrostatic Armour:** Two high permeability steel tapes of 0.5mm are helically applied with gap. The outer tape will cover the gap left by the inner one.
- **Sheath:** PVC or LSZH.
- **Ripcord:** Nylon ripcord may be placed parallel to the cores to facilitate sheath removal.

ELECTRICAL PROPERTIES

Nominal Conductor Diameter	mm	0.9	1.4
Conductor Size	mm ²	0.636	1.539
Maximum Conductor Resistance @20°C	Ω/km	28	12.1



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Minimum Insulation Resistance @500V DC	MΩ.km	35000	5000
Reduction Factor Rk (50Hz) Induced Voltage Em 100V/Km		0.3	0.3
Induced Voltage Em 500V/Km		0.5	0.5
Maximum Resistance Unbalance	%	2.5	2.5
Maximum Mutual Capacitance @0.8KHz	nF/km	59	64
Maximum Capacitance Unbalance @1KHz pair-to-pair	pF/500m	275	275
Maximum Capacitance Unbalance @1KHz pair-to-ground	pF/500m	1200	1200
Maximum Average Attenuation @1KHz	dB/km	0.7	0.46
Maximum Average Attenuation @10KHz	dB/km	1.6	0.85
Maximum Average Attenuation @20KHz	dB/km	2.1	1.3
Dielectric Strength Conductor to Conductor 1 min	V DC	1500	1500
Conductor to Screen 1min	V DC	2000	2000
Dielectric Strength Conductor to Conductor 3secs	V DC	3000	3000
Conductor to Screen 3secs	V DC	4500	4500
Nominal Insulation Thickness	mm	0.45	0.65
Nominal Insulated Conductor Diameter	mm	1.8	2.7

MECHANICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C– +70°C

Temperature range during installation (mobile state): -20°C – +50°C

Minimum bending radius: 15 x Overall Diameter

COLOUR CODE

Position	Number of pairs									
	1(Pilot)		2(Direct)		3		4		5	
Centre	BLACK	NATURAL	BLUE	NATURAL	YELLOW	NATURAL	RED	NATURAL		
Layers	BLACK	NATURAL	BLUE	NATURAL	YELLOW	NATURAL	RED	NATURAL	GREEN	NATURAL

DIMENSIONS AND WEIGHT

Cable Code	Number of Pairs	Nominal Bedding/ Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.9mm Conductor, 1.8mm Insulated Wire				
TP365-2Y2Y(CTS)2Y(DSTA)Y2P09-RF03	2	1.5/1.6	18.3	1300
TP365-2Y2Y(CTS)2Y(DSTA)Y6P09-RF03	6	1.5/1.6	21.7	1425
TP365-2Y2Y(CTS)2Y(DSTA)Y10P09-RF03	10	1.5/1.6	25.2	1650
TP365-2Y2Y(CTS)2Y(DSTA)Y14P09-RF03	14	1.5/1.6	26.7	1800
TP365-2Y2Y(CTS)2Y(DSTA)Y20P09-RF03	20	1.5/1.6	29.2	2275
TP365-2Y2Y(CTS)2Y(DSTA)Y28P09-RF03	28	1.6/1.8	32.3	2450
TP365-2Y2Y(CTS)2Y(DSTA)Y38P09-RF03	38	1.7/1.8	36.0	2895
TP365-2Y2Y(CTS)2Y(DSTA)Y54P09-RF03	54	1.7/1.8	40.5	3275
TP365-2Y2Y(CTS)2Y(DSTA)Y74P09-RF03	74	1.8/2.0	45.6	3775
TP365-2Y2Y(CTS)2Y(DSTA)Y96P09-RF03	96	1.9/2.0	49.8	4275
1.4mm Conductor, 2.7mm Insulated Wire				
TP365-2Y2Y(CTS)2Y(DSTA)Y2P14-RF03	2	1.5/1.6	20.2	1615
TP365-2Y2Y(CTS)2Y(DSTA)Y6P14-RF03	6	1.5/1.6	25.7	1775
TP365-2Y2Y(CTS)2Y(DSTA)Y10P14-RF03	10	1.6/1.8	30.8	2200
TP365-2Y2Y(CTS)2Y(DSTA)Y14P14-RF03	14	1.6/1.8	32.8	2525
TP365-2Y2Y(CTS)2Y(DSTA)Y20P14-RF03	20	1.7/1.8	36.5	2975
TP365-2Y2Y(CTS)2Y(DSTA)Y28P14-RF03	28	1.7/1.8	40.5	3150
TP365-2Y2Y(CTS)2Y(DSTA)Y38P14-RF03	38	1.8/2.0	45.6	3695
TP365-2Y2Y(CTS)2Y(DSTA)Y54P14-RF03	54	2.0/2.2	52.3	3975
TP365-2Y2Y(CTS)2Y(DSTA)Y74P14-RF03	74	2.1/2.2	59.1	4475
TP365-2Y2Y(CTS)2Y(DSTA)Y96P14-RF03	96	2.2/2.3	66.0	4975