EA5K2LT-Ed1

QUADED RAILWAY SIGNALING CABLES, ARMOURED PE SHEATH - FR 0,1. TCDD SPECIFICATION


Telecommunication cable


Impact Resistant


UV Resistant


Rodent Resistant


Resistant to EM interferences

ROHS compliant

SPECIFICATIONS

TCDD

DESCRIPTION AND APPLICATION

Cables from 1 to 27 quads "star", conductors of 0.9 mm with polyethylene insulation. Quads are stranded into layers to form the core which is protected by an anti inductive sheath with reduction factor of less than 0.1.

They are used as telecommunication cables or in rail circuits, especially in rail infrastructures, when protection is required against the induction of high voltage lines. For installation in ducts or directly buried. The cable is rodent resistant.

CONSTRUCTION

- ***Conductors***: Grade A. Plain Annealed solid copper wire, nominal diameter 0.9 mm (0.63 mm^2).
- ***Insulation***: HDPE, acc to EN 50290-2-23.
- ***Cabling element***: Star quads coloured acc. to Table 1.
- ***Core formation***. Stranded in layers. Acc. To Table 2.
- ***Core wrapping***. One or more Polyester tapes.
- ***Bedding***: Polyethylene, acc. to EN 50290-2-24.
- ***Cable screen***. Two helically applied copper tapes with a thickness of 0,4 - 0,6mm. each.
- ***Intermediate sheath***: Polyethylene acc to EN 50290-2-24.
- ***Armour***: Two helically applied steel tapes with a thickness of 0.8 – 1.0 mm each.
- ***Outer sheath***: UV resistant black polyethylene acc to EN 50290-2-24.
- ***Sheath marks*** : The sheath shall be marked, at a regular intervals, with the following information
    - *Cable type (example: 3x4x0.9mm)/Manufacturer (CABLESCOM)/TCDD/Manufacturing lot/Length markings in meters (tolerance ± 1%).*
    - *Other marks available upon customer request*

Cables de Comunicaciones Zaragoza, SL.
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Certified Company **ISO 9001** - **ISO 14001**

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TABLE 1: CONDUCTOR COLOUR CODING

Layer	Quad	Conductor			
		1	2	3	4
Centre and even layers	First	Orange	Green	Red	White
	Even	Yellow	Green	Blue	White
	Odd	Yellow	Green	Red	White
	Last	Orange	Green	Blue	White
Odd layers	First	Orange	Green	Red	Black
	Even	Yellow	Green	Blue	Black
	Odd	Yellow	Green	Red	Black
	Last	Orange	Green	Blue	Black

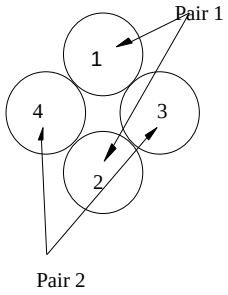

TABLE 2: CABLE MAKE-UP FOR QUADS

Number of quads in the cable	Cable make-up		
	center	1st layer	2nd layer
1	1		
3	3		
5	R*	5	
7	1	6	
10	2	8	
14	4	10	
19	1	6	12
25	3	8	14
27	3	9	15

R: filler

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ELECTRICAL CHARACTERISTICS (20ºC)	0,9 mm
Conductor resistance (Ω/km)	
Maximum	29,0
Average	27,5 ± 1
Resistance unbalance (%) 100x(R_{max}-R_{min})/(R_{max}+R_{min})	Average: <1 % / Maximum: <2 %
Minimum insulation resistance (MΩxkm, 20ºC, 500 V)	35.000
Mutual capacitance (nF/km, 1000 Hz)	Average: 38±4 / Maximum 45
Capacitance unbalance (pF/500m, 1000 Hz)	
K1-K9	Average < 35 / Maximum < 250
E1-E9	Average < 320 / Maximum < 1200
***Note**: average values are applied on cables of at least 7 quads.*	
Dielectric Strength (Vdc, 1 min)	
conductor – conductor	1.000
conductor - screen	4.000

TRANSMISION CHARACTERISTICS (20ºC)	0,90 mm.
Nominal attenuation (dB/km)	
1 KHz	0.62
10 KHz	1.50
30 KHz	2.00

REDUCTION FACTOR, R_k (50 Hz)	0,9 mm.
Induced Voltage (V/km)	
11	0.19
20	0.16
50	0.11
110	0.08
200	0.05
300	0.05
500	0.07

MECHANICAL CHARACTERISTICS

Operating temperature range : from -25º C to +75º C

Minimum radius of curvature: 15 x R_{cable}

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DIMENSIONS AND WEIGHT

Diameter : 0.90 mm

Code	No. quads	Cable Diam. (mm)	Approx. weight (kg/km)	Delivery length (m)	Drum type
EA5K2LT90000100N	1	22,60	1.338,14	920	BA3W000
EA5K2LT90000300N	3	26,30	1.687,12	920	BA4W000
EA5K2LT90000500N	5	29,00	1.992,49	920	BA6W000
EA5K2LT90000700N	7	29,40	2.094,99	920	BA6W000
EA5K2LT90001000N	10	32,30	2.451,18	920	BA6W000

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