

EA610LR-Ed1

QUADED PETROLEUM FILLED RAILWAY SIGNALING CABLES, ARMoured PE SHEATH WITH A Rf OF 0,1. ADIF SPECIFICATION



Telecommunication Cable



Waterproof



Impact resistant



Rodent resistant



UV resistant



EMI resistant



ROHS compliant

STANDARDS

Construction: ADIF ET-03.365.051.6

DESCRIPTION AND APPLICATION

Cables of 3 to 25 star quads, conductors of 0.9, 1.3 and 1.4 mm nominal diameter, PE insulation. The quads are cabled in layers to form the core that is filled with petroleum filling compound. The core protection will be a PE sheath, bare copper wires, a PE sheath, two steel tapes helically applied and an external sheath of PE. They are used as signalling and control cables, especially in railways infrastructures where protection against power lines induction is required. For installation in ducts or directly buried. Protected against rodents and waterproof.

CONSTRUCTION

- **Conductors:** Annealed copper, 0.9, 1.3 and 1.4 mm nominal diameter.
- **Insulation:** High density solid polyethylene.
- **Cabling elements:** Star quads.
- **Lay-up.** Stranded in layers. Colour code as per ADIF ET-03.365.051.6
- **Filling compound.** Petroleum jelly.
- **Core wrapping:** Dielectric tape longitudinally applied with overlap.
- **Inner sheath:** Polyethylene.
- **Cable screen:** Bare copper wires helically applied to comply with the specified Fr.
- **Intermediate sheath:** Polyethylene.
- **Armour:** Two steel tapes helically applied with a gap less than 50% of the tape width. The external tape will cover the gap of the inner tape.
- **Sheath:** UV resistant black polyethylene.
- **Sheath marking:** The outer sheath shall be marked in white ink, at regular intervals, with the following information:
 - Name of manufacturer/ Year/ Length marks
 - Other type of marks according to the costumer



All drawings, designs, specifications and particulars of weights, dimensions, etc. in this documentation are only indicative and must not be considered contractual.

Page 1/3

EA610LR-Ed1

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ELECTRICAL CHARACTERISTICS (20°C)	0,9 mm	1,3 mm	1,4 mm
Conductor resistance (Ω/km)	29,0	13,9	11,90
Loop Resistance unbalance (%) $100 \times (R_{max} - R_{min}) / (R_{max} + R_{min})$	Average: 1 % / Maximum 2 %		
Minimum insulation resistance ($M\Omega \times km$, 20°C, 500 V)	35000		
Mutual capacitance (nF/km, 1000 Hz)	Average: 38±3 / Maximum 45	Average: 41±4 / Maximum 48	Average: 41±4 / Maximum 48
Capacitance unbalance (pF/460m, 1000 Hz)	Average < 35 / Maximum < 250		
Pair-pair	Average < 320 / Maximum < 1200		
Pair-earth			
*Note: Average limit apply only to cables from 7 quads			
Dielectric strength (Vcc, 3 s)			
conductor – conductor	3000		
conductor - shield	5000		
Nominal attenuation (dB/km)			
1 KHz	0.70	0.50	0.46
10 KHz	1.60	0.90	0.85
30 KHz	2.10	1.40	1.30

REDUCTION FACTOR, R_k (50 Hz)

Induced voltage (V/km)	
200	0.1
500	0.1

MECHANICAL CHARACTERISTICS

Temperature range: from -25° C to +60° C

Bending radius: 15 x R_{cable}

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Page 2/3

EA610LR-Ed1

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DIMENSIONS AND WEIGHTS

Diameter : 0.9 mm					
Code	no. quad.	Cable Diam. (mm)	Aprox weight. (kg/km)	Length (m)	Drum type
EA610LR90000102N	1	22.8	984	920	A0
EA610LR90000302N	3	26.2	1299	920	A2
EA610LR90000502N	5	29.2	1637	460	A2
EA610LR90000702N	7	31.6	1919	460	A2
EA610LR90001202N	12	35.4	2338	460	A4
EA610LR90001402N	14	38.1	2647	460	A4
EA610LR90001902N	19	43.2	3064	460	A6
EA610LR90002502N	25	47.2	3717	460	A6
EA610LR90002802N	28	48.5	3844	460	A6

Diameter : 1.30 mm					
Code	no. quad.	Cable Diam. (mm)	Aprox weight. (kg/km)	Length (m)	Drum type
EA610LRA3000102N	1	20.6	993	920	A3
EA610LRA3000302N	3	25	1325	920	A4
EA610LRA3000502N	5	28.6	1627	920	A4
EA610LRA3000702N	7	29.2	1775	920	A6
EA610LRA3001002N	10	32.6	2158	920	A6
EA610LRA3001902N	19	40.2	3121	920	B0
EA610LRA3002502N	25	44.7	3729	920	B0

Diameter : 1.40 mm					
Code	no. quad.	Cable Diam. (mm)	Aprox weight. (kg/km)	Length (m)	Drum type
EA610LRA4000102N	1	21.0	1021	300	A0
EA610LRA4000302N	3	26	1400	920	A4
EA610LRA4000402N	4	28	1579	300	A2
EA610LRA4000502N	5	29.8	1752	920	A6
EA610LRA4000702N	7	30.7	1940	920	A6
EA610LRA4001002N	10	34.2	2333	920	A6
EA610LRA4001402N	14	38.3	2852	920	A8
EA610LRA4001902N	19	43	3459	920	B0
EA610LRA4002502N	25	47.7	4153	800	B0
EA610LRA4002702N	27	49.2	4397	700	B0
EA610LRA4002802N	28	50	4515	700	B0

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Page 3/3