

EA491K0-Ed1

SHIELDED PAIR RAILWAY SIGNALING CABLES, ARMoured PE SHEATH WITH A Rf OF 0,1. ADIF SPECIFICATION



Signaling cable



Impact Resistant



UV Resistant



Rodent resistant



EMI protected



ROHS Compliant

STANDARDS

Construction. ADIF ET-03.365.051.6

DESCRIPTION AND APPLICATION

Cables of 1 to 20 pairs individually shielded with an aluminium/polyester laminate. Conductors of 0.9 and 1.4 mm nominal diameter, PE insulation. Pairs are stranded in layers to form the core that is protected with a polyethylene anti-inductive sheath with a reduction factor of 0.1. They are used as signalling cables in railways infrastructures where protection against power lines induction is required. For installation in ducts or directly buried. Protected against rodents.

CONSTRUCTION

- **Conductors:** Annealed copper, 0.9 and 1.4 mm of nominal diameter.
- **Insulation:** Solid polyethylene.
- **Cabling elements:** Shielded pairs with an aluminium/polyester tape. Continuity tinned wire under the tape.
- **Core formation.** Stranded in layers. Colour code as per ADIF ET-03.365.051.6.
- **Core wrapping:** Dielectric tape longitudinally applied with overlap.
- **Cable screen.** Bare copper conductors helically applied.
- **Inner sheath:** Polyethylene.
- **Armour:** Two 0.8 mm thick steel tapes helically applied.
- **Outer 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 customer



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

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ELECTRICAL CHARACTERISTICS (20°C)	0,9 mm	1,4 mm
Conductor resistance (Ω/km)	Average: 27,5±1 / Maximum: 29	Average: 11,2±0,5 / Maximum: 11,9
Loop Resistance unbalance (%) $100 \times (R_{max} - R_{min}) / (R_{max} + R_{min})$	Average: 1 % / Maximum 2 %	
Minimum insulation resistance ($M\Omega \times \text{km}$, 20°C, 500 V)	35000	
Mutual capacitance (nF/km , 1000 Hz)	Average: 59±3 / Maximum 65	
Note :Average limit apply only to cables from 7 pairs		
Dielectric strength (Vdc, 3 s)		
conductor – conductor		4500
conductor – individual shield		1500
Between individual shields		300
Inductance (mH/Km, 20°C, 1000Hz)	-	0,72

TRANSMISSION CHARACTERISTICS (20°C)	0,9	1,4
Far-end crosstalk (ELFEXT, dB/km)		
1 kHz		80
3 kHz		80
5kHz		75
10kHz		65
Near- end crosstalk (NEXT)		
1 kHz		80
3 kHz		80
5kHz		80
10kHz		75

REDUCTION FACTOR, R_k (50 Hz)	0,90	1,4
Induced Voltage (V/km)		
200	0.1	0.1
500	0.1	0.1

MECHANICAL CHARACTERISTICS

Temperature range: from -25° C to +75° C

Bending radius: 15 x R_{cable}

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DIMENSIONS AND WEIGHTS

Diameter : 0.90 mm					
Code	No. quad.	Cable Diam. (mm)	Aprox weight. (kg/km)	Length (m)	Drum type

EA491K090000102N	1	20.8	964	1000	A4
EA491K090000302N	3	24.9	1207	1000	A4
EA491K090000502N	5	26.7	1334	1000	A4
EA491K090000602N	6	27.3	1404	1000	A6
EA491K090001002N	10	32.2	1743	1000	A6
EA491K090001402N	14	35.7	2035	1000	A8

Diameter : 1.40 mm					
Code	No. quad.	Cable Diam. (mm)	Aprox weight. (kg/km)	Length (m)	Drum type

EA491K0A4000102N	1	21.2	1017	1000	A4
EA491K0A4000202N	2	26.4	1300	1000	A4
EA491K0A4000402N	4	30	1596	1000	A6
EA491K0A4000602N	6	32.6	1835	1000	A6
EA491K090000802N	8	35.7	2091	1000	A8
EA491K0A4001002N	10	38.5	2342	1000	B0
EA491K0A4001202N	12	41	2571	1000	B0
EA491K0A4001402N	14	43.8	2831	1000	B0
EA491K0A4001602N	16	45.8	3039	1000	BB
EA491K0A4001802N	18	48.4	3275	1000	BB
EA491K0A4002002N	20	50.4	3495	1000	BB

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