

RAILWAY BALISE CABLES (ERTMS) FOR EXTERNAL INSTALLATIONS.

Signaling
CableImpact
ResistantUV
ResistantRodent
ResistantResistant to EM
InterferencesROHS
compliant

SPECIFICATIONS

Construction: own design for ERTMS balises

DESCRIPTION AND APPLICATION

Armoured cables with 1 & 2 pairs for ERTMS balise signalling connection systems. Insulated with coloured solid polyethylene. Internal protection with an EAP sheath and armoured with two galvanized steel tapes placed helically with 0.3 mm of thickness. External sheath of black polyethylene. This cable is protected against external inductions of the catenary with a reduction factor of 0.7 and is rodent resistant. Cable destined to ERTMS balise signalling connection systems. For installation in ducts, directly buried or stapled to the rail.

CONSTRUCTION

- **Conductors:** Annealed cooper wire, 1.4 mm in diameter.
- **Insulation:** High density solid polyethylene.
- **Formation:** Pairs.
- **Core wrapping:** Dielectric tape longitudinally applied with overlap.
- **Protection sheath:** Polyethylene (1 pair cable only).
- **Screen:** Aluminium copolymer tape, longitudinal applied with overlap and bonded to the polyethylene internal sheath.
- **Inner sheath:** Polyethylene.
- **Armour.** Two galvanized steel tapes of 0,3 mm thickness, helically applied.
- **Outer sheath:** UV resistant black polyethylene.
- **Sheath marking :** The sheath shall be marked, at a regular intervals, with the following information
 - Name of manufacturer/ Year/ Length marks
 - Other type of marks according to the costumer



ELECTRICAL CHARACTERISTICS (20°C)	1,4
Maximum resistance of conductor (Ω/km)	11.9
Maximum unbalance resistance	2.5 %
Minimum insulation resistance ($M\Omega \times \text{km}$, 20°C, 500 V)	10000
Mutual capacitance. Nominal (nF/km, 1000 Hz)	45
Pair to earth capacitance unbalance (pF/km, 1000 Hz). Maximum	2625
Dielectric strength (Vdc, 3 s)	
conductor – conductor	1000
conductor - shield	3000

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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TRANSMISSION CHARACTERISTICS (20°C)		1,4
<i>Nominal attenuation (dB/km)</i>		
8,8 KHz		0.85
560 KHz		4.5
<i>Characteristic impedance Z_0 (Ω)</i>		
8,8 KHz		140 \pm 10%
560 KHz		120 \pm 10%
<i>Far End crosstalk - 2 pairs cable (dB/km)</i>		Minimum Typical
8,8 KHz		66 105
560 KHz		45 75

REDUCTION FACTOR, R_k (50 Hz)		1,4									
<i>Induced Voltage (V/km)</i>		100	200	300	400	500	600	700	800	900	1000
R_k		0.63	0.68	0.76	0.82	0.86	0.88	0.92	0.93	0.94	0.95

MECHANICAL CHARACTERISTICS

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

Minimum radius of curvature: 15 x R_{cable}

DIMENSIONS AND WEIGHTS

Diameter : 1,4 mm						
Code	no. pairs	Cable Diam. (mm)	Aprox. weight. (kg/km)	Length (m)	Drum type	
EA2Y0P0A4000102N	1	16.0	320	3000	A6	
EA2Y0H0A4000202N	2	18.0	470	3000	A6	

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