

RAILWAY BALISE CABLES (ERTMS) FOR EXTERNAL INSTALLATIONS WITH FR.0,3.



Signaling cable



Impact resistant



UV Resistant



Rodent resistant



EMI protected



ROHS
Compliant

DESCRIPTION AND APPLICATION

Armored cables from 1 to 4 pairs for connexion of the balise signaling systems. Foam skin insulation, stranded in pairs with copper corrugated screen and steel armour, protected with a black PE sheath. This cable is protected against external inductions of the catenary with a reduction factor of 0,3. This cable is rodent resistant too. For installation in ducts or directly buried.

CONSTRUCTION

- **Conductors:** Annealed copper, 1.05, 1.4 o 1.6 mm nominal diameter.
- **Insulation:** Foam-skin polyethylene.
- **Cabling Element:** Pairs according to:
 - White-Blue
 - White-Orange
 - White-Green
 - White-Brown
- **Core wrapping:** Dielectric tape longitudinally applied with overlap.
- **Inner Sheath:** Natural low density polyethylene. Only for 1 pair cable.
- **Cable Screen:** Corrugated copper tape longitudinally applied with overlap.
- **Intermediate Sheath:** Low density black polyethylene.
- **Armour:** Two 0,5mm thick steel tapes helically applied. The external tape covers the internal tape gap.
- **Outer Sheath:** UV resistant black polyethylene.
- **Sheath Marking:** The outer sheath shall be marked with white ink at regular intervals, with the following information:
 - *Name of Manufacturer/Year/Length marks.*
 - *Other type of marks according with the costumer.*



Todos los dibujos, diseños, especificaciones y detalles sobre pesos, dimensiones, etc. contenidos en esta documentación son puramente indicativos y no pueden ser considerados contractuales.

Transport – Balise cables.

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ELECTRICAL CHARACTERISTICS(20°C)	1,05mm	1,4mm	1,6mm
<i>Conductor Resistance (Ω/km)</i>	44,0	24,0	18,0
<i>Loop resistance unbalance</i>		2 %	
<i>Minimum insulation resistance ($M\Omega \times km$, 20°C, 500 V)</i>		10000	
<i>Mutual Capacitance. Nominal (nF/km, 800-1000 Hz)</i>		40	
<i>Mutual Capacitance. Maximum (nF/km, 800-1000 Hz)</i>		45	
<i>Maximum capacitance unbalance pair-pair (only 2 pairs cable) (pF/km,800 Hz)</i>		150	
<i>Capacitance pair-earth</i>			
-Average (only 2 pair cable) (pF/km,800 Hz)		600	
-Maximum (pF/km,800 Hz)		1200	
<i>Dielectric Strength (Vdc, 3 s)</i>			
conductor – conductor		3000	
conductor – shield		5000	

TRANSMISSION CHARACTERISTICS (20°C)	1,05mm	1,4mm	1,6mm
<i>Nominal Attenuation (dB/km)</i>			
8,8 KHz	1.5	0.85	0.7
560 KHz	6.5	4.5	3.5
<i>Characteristic Impedance Z_0 (Ω)</i>			
8,8 KHz	140±14	140±14	150±22,5
560 KHz	125±12	120±12	130±19,5
1 MHz	125±12	120±12	130±19,5
<i>NEXT – (only 2 pair cable) (dB @1km)</i>	Min/Typ	Min/Typ	Min/Typ
8,8 KHz	66/105	66/105	66/105
560 KHz	55/75	55/75	55/75
<i>Propagation speed (km/s)</i>			
8,8 KHz	160000	177000	182000
560 KHz	190000	198000	210000

REDUCTION FACTOR R_k (50 Hz)	
<i>Induced Voltage (V/km)</i>	110-320
R_k maximum	0,3

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MECHANICAL CHARACTERISTICS

Temperature range: -25° C to +75° C

Bending radius: $10 \times \Phi_{\text{cable}}$

DIMENSIONS AND WEIGHTS

Diameter : 1,05 mm					
Code	# Pairs	Aprox. Φ (mm)	Aprox weight (kg/km)	Length (m)	Drum
EA2Y0M5A1000100N	1	19.0	580	2000	A4
EA2Y0HAA1000200N	2	19.5	620	2000	A4
EA2Y0HAA1000400N	4	20.5	680	2000	A6

Diameter: 1,6 mm					
Code	# Pairs	Aprox. Φ (mm)	Aprox weight (kg/km)	Length (m)	Drum
EA2Y05MA6000100N	1	20.4	680	1000	A4
EA2Y0HAA6000200N	2	23.8	835	1000	A4

Diameter: 1,4 mm					
Code	# Pairs	Aprox. Φ (mm)	Aprox weight (kg/km)	Length (m)	Drum
EA2Y05MA4000100N	1	20.5	680	2000	A6
EA2Y0HAA4000200N	2	24.0	820	2000	A6
EA2Y0HAA4000400N	4	25.5	910	2000	A8

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