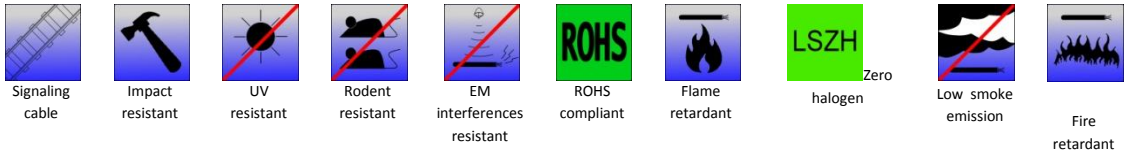
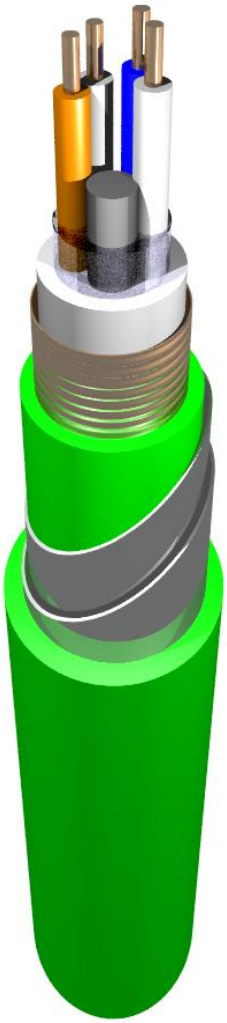
RAILWAY BALISE CABLES (ERTMS) FOR TUNNEL INSTALLATIONS WITH FR.0,3.



Signaling cable | Impact resistant | UV resistant | Rodent resistant | EM interferences resistant | ROHS compliant | Flame retardant | Zero halogen | Low smoke emission | Fire retardant

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 LSZH 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 tunnel.



CONSTRUCCION

- ***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***: LSZH material.
- ***Armour***: Two 0,5mm thick steel tapes helically applied. The external tape covers the internal tape gap.
- ***Outer Sheath***: UV resistant LSZH material coloured green RAL 6018.
- ***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.

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Empresa certificada **ISO 9001** - **ISO 14001**

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

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

TRANSMISION CHARACTERISTICS (20ºC)	1,05mm	1,4mm	1,6mm
Nominal Attenuation (dB/km)			
8,8 KHz	1.5	0.85	0.7
560 KHz	6.5	4.5	3.5
Caracteristic Impedance Zo (Ω)			
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
NEXT – (only 2 pair cable) (dB @1km)	Min/Typ	Min/Typ	Min/Typ
8,8 KHz	66/105	66/105	66/105
560 KHz	55/75	55/75	55/75
Propagation speed (km/s)			
8,8 KHz	160000	177000	182000
560 KHz	190000	198000	210000

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

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CABLESCOM ZARAGOZA

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

MECHANICAL CARACTERISTICS

Temperature range: -25º C to +75º C

Bending radius: 10 x Φ_{cable}

FIRE REACTION

Flame Propagation	EN 50265-1 & 2-1
Fire Propagation Cat C	EN 50266-2-4
Halogen free	EN 50267-2-2
Smoke density	EN 50268-1 & 2

DIMENSIONS AND WEIGTHS

Diameter : **1,05 mm**					
Code	# Pairs	Aprox. Ø (mm)	Aprox weigth (kg/km)	Length (m)	Code
EA2Y0xxA1000100N	**1**	**19.0**	**690**	**2000**	**A4**
EA2Y0xxA1000200N	2	19.5	715	2000	A4
EA2Y0xxA1000400N	4	20.5	775	2000	A6

Diameter: **1,6 mm**					
Code	# Pairs	Aprox. Ø (mm)	Aprox weigth (kg/km)	Length (m)	Drum
EA2Y0xxA6000100N	1	20.4	680	1000	A4
EA2Y0xxA6000200N	2	23.8	835	1000	A4

Diameter: 1,4 mm					
Aprox. Ø (mm)	Aprox weigth (kg/km)	Length (m)	Code	# Pairs	Aprox. Ø (mm)
EA2Y0xxA4000100N	1	20.5	700	2000	A6
EA2Y0xxA4000200N	2	24.0	940	2000	A6
EA2Y0xxA4000400N	4	25.5	1040	2000	A8

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