EA2M0MS-Ed1

# ZPFU. ARMOURED PAIR CABLES FOR RAILWAY SIGNALLING


Signaling cable


Flame retardant


UV resistant


Rodents resistant


Chemicals resistant

ROHS compliant

## STANDARDS

Construction: SNCF CT-445
Complementary: EN 50266-2-1

## DESCRIPTION AND APPLICATION

Railway signalling cables from 1 to 28 pairs. Copper conductor of 1 $mm^2$, insulated with solid coloured polyethylene. Stranded into pairs. Armoured with two steel tapes applied helically. PVC unleaded outer sheath. This cable is flame retardant and resistant to mineral oils. This cable is used to connect the control centre to the centres of satellite equipment. Installed in conduit or buried along electrified or non-electrified routes to 1500 volts dc. It can also be installed in short lengths along routes electrified at 25 kV ac.

## CONSTRUCTION

- ***Conductors***: Annealed copper, section: 1 $mm^2$.
- ***Insulation***: Solid HDPE.
- ***Cabling Elements***: Pairs.
- ***Lay-up***. In layers. Colour code in accordance with SNCF CT-445.
- ***Core wrapping***. Overlapping longitudinal dielectric tape.
- ***Waterproof inner sheath***: PE.
- ***Armour***. Two steel tapes applied helically.
- ***Sheath***: Black unleaded and UV resistant PVC.
- ***Sheath marking*** : The outer sheath shall be marked at regular intervals with the following information:
  - *Name of Manufacturer / year / Length markings*
  - *Other type of markings is also possible according to the customer*

| **ELECTRICAL CHARACTERISTICS (20ºC)** | 1 $mm^2$ |
|---|---|
| *Maximum loop Resistance (Ω/km)* | 18,1 |
| *Resistance unbalance (%) 100x($R_{max}$-$R_{min}$)/($R_{min}$+$R_{max}$)* | < 2.5 % |
| *Minimum insulation resistance (MΩxkm, 20ºC, 500 V)* | 5000 |
| *Maximum mutual capacitance (nF/km, 1000 Hz)* | 55 |
| *Capacitance unbalance (pF/500m, 1000 Hz)* | |
| 2 pair cable | 300 |
| Cable > 2 pairs | 200 |
| *Dielectric strength (Vdc, 3 min)* | |
| conductor – conductor | 4500 |
| conductor – screen | 4500 |





**Cables de Comunicaciones Zaragoza, SL.**
Polígono de Malpica, calle D, nº 83. 50016 Zaragoza - España
+34 976 729 900 | +34 976 729 974
www.cablescom.com | comercial@cablescom.com
Certified Company **ISO 9001** - **ISO 14001**

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| TRANSMISSION CHARACTERISTICS (20ºC) | 1 $mm^2$ |
|---|---|
| *Maximum attenuation (dB/km)* | |
| 25-45 KHz | 2.5 |
| 45-80 KHz | 3.0 |
| *Characteristic impedance (Ω)* | |
| 2 pairs cables | |
| 25-45 KHz | 140±10 |
| 45-80 KHz | 130±10 |
| Cables > 2 pairs | |
| 25-45 KHz | 120±10 |
| 45-80 KHz | 115±10 |

## MECHANICAL CHARACTERISTICS

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

Minimum bending radius: 15 x $R_{cable}$

## SIZE, DIMENSIONS AND WEIGHTS

| Section : 1 $mm^2$ | | | | | |
|---|---|---|---|---|---|
| Code | # Pairs | Diam. cable (mm) | Weight approx. (kg/km) | Length (m) | Drum |
| EA2M0MSA1000102N | 1 | 14.4 | 232 | 2000 | A2 |
| EA2M0MSA1000302N | 3 | 16.5 | 310 | 2000 | A4 |
| EA2M0MSA1000402N | 4 | 18.5 | 400 | 2000 | A6 |
| EA2M0MSA1000702N | 7 | 22.5 | 720 | 2000 | A8 |
| EA2M0MSA1001402N | 14 | 26.0 | 1040 | 2000 | B0 |
| EA2M0MSA1002102N | 21 | 31.0 | 1350 | 1500 | B0 |
| EA2M0MSA1002802N | 28 | 35.2 | 1610 | 1000 | B0 |





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