



Product: [3109ELZ](#)

Life Cycle Status: Capability

RS-485, 4 Pr #22 Str TC, FoamPE ins, F/B, LSZH Jkt, Eca



Product Description

RS-485, 4 Pair, 22 AWG stranded (7x32) Tinned Copper conductors, Foamed Polyethylene insulation, twisted pairs, overall Beldfoil® (100% coverage) + Tinned Copper braid shield (65% coverage), 22 AWG stranded Tinned Copper drain wire, LSZH jacket, CPR Eca

Technical Specifications

Product Overview

|                        |   |
|------------------------|---|
| Suitable Applications: | RS-485, POS; Computer communications; Low Voltage Analog Signals (4-20ma, 0-10v, ...); Low Voltage Digital Control (24v, ...); Line Level Audio; Panel Wiring; serial communication (RS-485 standard) comprising of PLCs, VFDs, HMIs, motors, RTU, SCADA, etc. within noisy environments over long distance, etc. |
|------------------------|---|

Construction Details

Conductor

| Element | No. of Elements | Size   | Stranding | Material           |
|---------|-----------------|--------|-----------|--------------------|
| Pair(s) | 4               | 22 AWG | 7x30      | TC - Tinned Copper |

Insulation

| Element | Material                 | Nom. Thickness     | Nom. Insulation Diameter | Color Code   |
|---------|--------------------------|--------------------|--------------------------|--|
| Pair(s) | PE - Polyethylene (Foam) | 0.73 mm (0.029 in) | 2.20 mm (0.0866 in)      | White/Blue Stripe & Blue/White, White/Orange Stripe & Orange/White, White/Green & Green/White, White/Brown & Brown/White |

Outer Shield

| Shield Type | Material                | Coverage | Drainwire Type   |
|-------------|-------------------------|----------|------------------|
| Tape        | Bi-Laminate (Alum+Poly) | 100%     | 22 AWG (7x30) TC |
| Braid       | Tinned Copper (TC)      | 65%      |                  |

Outer Jacket

| Material  | Nom. Thickness    | Nom. Diameter      |
|---|-------------------|--------------------|
| LSZH - Low Smoke Zero Halogen (Flame Retardant) | 0.8 mm (0.031 in) | 10.6 mm (0.417 in) |

|                                   |                      |
|-----------------------------------|----------------------|
| Overall Cable Diameter (Nominal): | 10.60 mm (0.4173 in) |
|-----------------------------------|----------------------|

Electrical Characteristics

Electricals

| Element                | Nom. Conductor DCR            | Nom. Capacitance Cond-to-Cond | Nom. Capacitance Cond-to-Other (Conds + Shield) | Nom. Characteristic Impedence | Nom. Velocity of Prop. | Max. Current           |
|------------------------|-------------------------------|-------------------------------|---|-------------------------------|------------------------|------------------------|
| Pair(s)                | 48.2 Ohm/km (14.7 Ohm/1000ft) | 36.1 pF/m (11.0 pF/ft)        | 68.6 pF/m                                       | 120 Ohm                       | 78%                    | 2.7 Amps per Conductor |
| Nom. Outer Shield DCR: | 5.9 Ohm/km (1.8 Ohm/1000ft)   |                               |   |                               |                        |                        |

High Frequency (Nominal/Typical)

| Element | Frequency [MHz] | Nom. Insertion Loss (Attenuation) |
|---------|-----------------|-----------------------------------|
| Pair(s) | 1               | 1.64 dB/100m (0.500 dB/100ft)     |

Voltage

| Voltage Rating |
|----------------|
| 300 V          |

Mechanical Characteristics

Temperature

| Operating      | Installation   | Storage        |
|----------------|----------------|----------------|
| -20°C To +70°C | -10°C To +70°C | -20°C To +70°C |

Bend Radius

| Stationary Min. | Installation Min. |
|-----------------|-------------------|
| 53 mm (2.1 in)  | 106 mm (4.17 in)  |

|                    |                           |
|--------------------|---------------------------|
| Max. Pull Tension: | 450 N (100 lbf)           |
| Bulk Cable Weight: | 130 kg/km (87 lbs/1000ft) |

Standards and Compliance

|                                  |  |
|----------------------------------|--|
| Environmental Suitability:       | Indoor - Euroclass Eca, Indoor, Non-Halogenated  |
| Flammability / Reaction to Fire: | IEC 60332-1-2  |
| CPR Compliance:                  | CPR Euroclass: Eca   |
| ISO/IEC Compliance:              | IEC 61034-2 - Smoke Density Min Transmittance = 60%  |
| CENELEC Compliance:              | EN 50290-2-20  |
| European Halogen Free Standards: | IEC 62821-1 Halogen Free Compliance = Yes, IEC 60754-1 - Halogen Amount = Zero, IEC 60754-2 - Halogen Acid Gas Amount - Max. Conductivity = 2.5 µS/mm, IEC 60754-2 - Halogen Acid Gas Amount - Min. pH = 4.3 |
| European Directive Compliance:   | EU CE Mark, EU Directive 2015/863/EU (RoHS 2 amendment), EU Directive 2011/65/EU (RoHS 2)  |
| UK Regulation Compliance:        | UKCA Mark  |
| Other Standard Compliance(s):    | DMX-512  |

Product Notes

|        |  |
|--------|--|
| Notes: | This is a preliminary Technical Design Specification (TDS). The minimum business quantity to offer is 6km for the first order. This product will have Gray as standard color and 305mt as standard put-ups. Additional options for colors and put-ups are available on special request. The estimated production lead time for the first order will be similar to the production lead time of 3107ENH. Please liaise with your Belden representative for confirmation. |
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History

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| Update and Revision: | Revision Number: 0.8 Revision Date: 07-24-2025 |
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