



Product: [7938A](#)

DataTuff® 5e, 4 Bonded-Pr #24 Str Alloy, PO Ins, OS+TC Brd, TPE Jkt, TPE Jkt, High Flex AWM 20606

[Request Sample](#)

Product Description

Industrial Ethernet Cat 5e, 4 Bonded-Pair, 24AWG (Stranded) Alloy, PO Insulation, Overall Beldfoil®+Tinned Copper Braid(85%) Shield, TPE Inner Jacket, TPE Outer Jacket, High Flex AWM 20606

Technical Specifications

Product Overview

| | |
|------------------------|---|
| Suitable Applications: | robotic, harsh environment, IIoT, factory or process automation, IP cameras and devices, data communication, etc. |
|------------------------|---|

Physical Characteristics (Overall)

Conductor

| AWG | Stranding | Material | No. of Pairs |
|-----|-----------|-------------------------|--------------|
| 24 | 7x32 | BCA - Bare Copper Alloy | 4 |

| | |
|------------------------|---|
| Conductor Count: | 8 |
| Total Number of Pairs: | 4 |

Insulation

| Material | |
|--------------|-----|
| Polyolefin | |
| Bonded-Pair: | Yes |

Color Chart

| Number | Color |
|--------|--------------------------------|
| 1 | White/Blue Stripe and Blue |
| 2 | White/Orange Stripe and Orange |
| 3 | White/Green Stripe and Green |
| 4 | White/Brown Stripe and Brown |

Inner Jacket Material

| Material | Nominal Diameter | Nominal Wall Thickness |
|-------------------------------|------------------|------------------------|
| TPE - Thermoplastic Elastomer | 0.254 in | 0.02 in |

Outer Shield Material

| Type | Material | Material Trade Name | Coverage [%] | Nominal Diameter |
|-------|--------------------|---------------------|--------------|------------------|
| Tape | Alum / Poly | Beldfoil® | 100% | |
| Braid | Tinned Copper (TC) | | 85% | 0.282 in |

Outer Jacket Material

| Material | Nominal Diameter | Nominal Wall Thickness | Ripcord | Separator Material |
|-------------------------------|------------------|------------------------|---------|--------------------|
| TPE - Thermoplastic Elastomer | 0.342 in | 0.03 in | No | Polyester |

Electrical Characteristics

Conductor DCR

| Max. Conductor DCR | Max. DCR Unbalance |
|--------------------|--------------------|
| 11 Ohm/1000ft | 3 % |

Capacitance

| Max. Capacitance Unbalance | Nom. Mutual Capacitance |
|----------------------------|-------------------------|
| 330 pF/ft | 15 pF/ft |

Delay

| Max. Delay | Max. Delay Skew | Nominal Velocity of Propagation (VP) [%] | Typical Delay Skew |
|-------------|-----------------|--|--------------------|
| 510 ns/100m | 45 ns/100m | 69% | 12 ns/ft |

High Freq

| Frequency [MHz] | Max. Insertion Loss (Attenuation) | Min. NEXT [dB] | Min. PSNEXT [dB] | Min. ACR [dB] | Min. PSACR [dB] | Min. ACRF (ELFEXT) [dB] | Min. PSACRF (PSELFEXT) [dB] | Min. RL (Return Loss) [dB] | Min. SRL (Structural Return Loss) | Max./Min. Input Impedance (unFitted) | Max./Min. Fitted Impedance |
|-----------------|-----------------------------------|----------------|------------------|---------------|-----------------|-------------------------|-----------------------------|----------------------------|-----------------------------------|--------------------------------------|----------------------------|
| 1 MHz | 2.5 dB/100m | 65.3 dB | 62.3 dB | 62.8 dB | 59.8 dB | 63.8 dB | 60.8 dB | 20 dB | 23 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 4 MHz | 4.9 dB/100m | 56.3 dB | 53.3 dB | 51.4 dB | 48.4 dB | 51.7 dB | 48.7 dB | 23 dB | 23 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 8 MHz | 6.9 dB/100m | 51.8 dB | 48.8 dB | 44.9 dB | 41.9 dB | 45.7 dB | 42.7 dB | 24.5 dB | 24.5 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 10 MHz | 7.8 dB/100m | 50.3 dB | 47.3 dB | 42.5 dB | 39.5 dB | 43.8 dB | 40.8 dB | 25 dB | 25 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 16 MHz | 9.9 dB/100m | 47.3 dB | 44.3 dB | 37.4 dB | 34.4 dB | 39.7 dB | 36.7 dB | 25 dB | 25 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 20 MHz | 11.1 dB/100m | 45.8 dB | 42.8 dB | 34.7 dB | 31.7 dB | 37.7 dB | 34.7 dB | 25 dB | 25 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 25 MHz | 12.5 dB/100m | 44.3 dB | 41.3 dB | 21.8 dB | 28.8 dB | 35.8 dB | 32.8 dB | 24.3 dB | 24.3 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 31.25 MHz | 14.1 dB/100m | 42.9 dB | 39.9 dB | 28.8 dB | 25.8 dB | 33.9 dB | 30.9 dB | 23.6 dB | 23.6 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 62.5 MHz | 20.4 dB/100m | 38.4 dB | 35.4 dB | 18 dB | 15 dB | 27.8 dB | 24.8 dB | 21.5 dB | 21.5 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |
| 100 MHz | 26.4 dB/100m | 35.3 dB | 32.3 dB | 8.9 dB | 5.9 dB | 23.8 dB | 20.8 dB | 20.1 dB | 20.1 dB | 100 ± 15 Ohm | 100 ± 15 Ohm |

Voltage

| UL Voltage Rating |
|-------------------|
| 300 V RMS |

Temperature Range

| | |
|--------------------------|----------------|
| Installation Temp Range: | -25°C To +75°C |
| UL Temp Rating: | 60°C |
| Storage Temp Range: | -40°C To +80°C |
| Operating Temp Range: | -40°C To +80°C |

Mechanical Characteristics

| | |
|-----------------------------|---------------|
| Bulk Cable Weight: | 60 lbs/1000ft |
| Max. Pull Tension: | 40 lbs |
| Min Bend Radius/Minor Axis: | 3.5 in |

Standards

| | |
|-----------------|-----------------|
| IEC Compliance: | Other Standards |
| CPR Euroclass: | Eca |
| Data Category: | Category 5e |

Applicable Environmental and Other Programs

| | |
|-----------------------------|-------------------------------|
| EU Directive Compliance: | EU Directive 2003/11/EC (BFR) |
| MII Order #39 (China RoHS): | Yes |

Suitability

| | |
|------------------------------------|-----|
| Suitability - Indoor: | Yes |
| Suitability - Oil Resistance: | Yes |
| Suitability - Outdoor: | Yes |
| Suitability - Sunlight Resistance: | Yes |

Flammability, LSOH, Toxicity Testing

| | |
|---------------------|-----------------------------|
| C(UL) Flammability: | FT1 |
| UL Flammability: | UL1581 Vertical Tray (VW-1) |
| IEC Flammability: | IEC 60332-1-2 |
| UL voltage rating: | 300 V RMS |

Plenum/Non-Plenum

Plenum (Y/N): No

Part Number

Variants

| Item # | Color | Putup Type | Length | UPC |
|---------------|--------------|------------|--------|--------------|
| 7938A B59500 | Black, Matte | Reel | 500 ft | 612825191735 |
| 7938A B591000 | Matte Black | | | 612825406204 |

Footnote: C - CRATE REEL PUT-UP.

Patent: <https://www.belden.com/resources/patents>

Product Notes

Notes: Operating temperatures are subject to length de-rating. Cable passes -40C Cold Bend per UL 1581. AWM 20626 80C 300V. *Special RJ45 plugs required. See WWW.BELDEN.COM - Tools - Connector Cross Reference.

History

Update and Revision: Revision Number: 0.315 Revision Date: 04-28-2020

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