



**Product:** [11700A](#)

DataTuff® 5e, 4 Bonded-Pr #24 Sol BC, PO Ins, PVC Jkt, PVC Jkt, MSHA CMR

[Request Sample](#)

## Product Description

Industrial Ethernet Cat 5e, 4 Bonded-Pair 24AWG (Solid) Bare Copper, PO Insulation, PVC Inner Jacket, PVC Outer Jacket, MSHA CMR

## Technical Specifications

### Product Overview

|                        |   |
|------------------------|---|
| Suitable Applications: | outdoor, mining, exposure to abrasion, harsh environment, IIoT, factory or process automation, IP cameras and devices, data communication, etc. |
|------------------------|---|

### Physical Characteristics (Overall)

#### Conductor

| AWG | Stranding | Material         | Nominal Diameter | No. of Pairs |
|-----|-----------|------------------|------------------|--------------|
| 24  | Solid     | BC - Bare Copper | 0.02 in          | 4            |

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

#### Insulation

| Material   | Nominal Diameter | Nominal Wall Thickness |
|------------|------------------|------------------------|
| Polyolefin | 0.035 in         | 0.009 in               |

|              |     |
|--------------|-----|
| Bonded-Pair: | Yes |
|--------------|-----|

#### Color Chart

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

#### Inner Jacket Material

| Material                 | Nominal Diameter | Ripcord |
|--------------------------|------------------|---------|
| PVC - Polyvinyl Chloride | 0.2 in           | Yes     |

#### Outer Shield Material

| Material  |
|-----------|
| No Shield |

#### Outer Jacket Material

| Material                 | Nominal Diameter | Nominal Wall Thickness | Ripcord |
|--------------------------|------------------|------------------------|---------|
| PVC - Polyvinyl Chloride | 0.285 in         | 0.035 in               | Yes     |

### Electrical Characteristics

#### Conductor DCR

| Max. Conductor DCR | Max. DCR Unbalance |
|--------------------|--------------------|
| 9 Ohm/1000ft       | 3 %                |

#### Capacitance

| Max. Capacitance Unbalance | Nom. Mutual Capacitance |
|----------------------------|-------------------------|
| 66 pF/ft                   | 15 pF/ft                |

#### Delay

| Max. Delay  | Max. Delay Skew | Nominal Velocity of Propagation (VP) [%] |
|-------------|-----------------|--|
| 510 ns/100m | 25 ns/100m      | 70 %                                     |

#### 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] | Max./Min. Input Impedance (unFitted) | Max./Min. Fitted Impedance |
|-----------------|-----------------------------------|----------------|------------------|---------------|-----------------|-------------------------|-----------------------------|----------------------------|--------------------------------------|----------------------------|
| 1 MHz           | 2 dB/100m                         | 65.3 dB        | 65.3 dB          | 63.3 dB       | 63.3 dB         | 63.8 dB                 | 60.8 dB                     | 20 dB                      | 100 ± 12 Ohm                         | 105 ± 10 Ohm               |
| 4 MHz           | 4 dB/100m                         | 56.3 dB        | 56.3 dB          | 52.3 dB       | 52.3 dB         | 51.7 dB                 | 48.7 dB                     | 23 dB                      | 100 ± 12 Ohm                         | 100 ± 10                   |
| 8 MHz           | 5.7 dB/100m                       | 51.8 dB        | 51.8 dB          | 46.1 dB       | 46.1 dB         | 45.7 dB                 | 42.7 dB                     | 24.5 dB                    | 100 ± 12 Ohm                         | 100 ± 10                   |
| 10 MHz          | 6.4 dB/100m                       | 50.3 dB        | 50.3 dB          | 43.9 dB       | 43.9 dB         | 43.8 dB                 | 40.8 dB                     | 25 dB                      | 100 ± 12 Ohm                         | 100 ± 10                   |
| 16 MHz          | 8.1 dB/100m                       | 47.3 dB        | 47.3 dB          | 39.1 dB       | 39.1 dB         | 39.7 dB                 | 36.7 dB                     | 25 dB                      | 100 ± 12 Ohm                         | 100 ± 10                   |
| 20 MHz          | 9.2 dB/100m                       | 45.8 dB        | 45.8 dB          | 35.2 dB       | 35.2 dB         | 37.7 dB                 | 34.7 dB                     | 25 dB                      | 100 ± 12 Ohm                         | 100 ± 10                   |
| 25 MHz          | 10.3 dB/100m                      | 44.3 dB        | 44.3 dB          | 34.1 dB       | 34.1 dB         | 35.8 dB                 | 32.8 dB                     | 24.3 dB                    | 100 ± 15 Ohm                         | 100 ± 10                   |
| 31.25 MHz       | 11.6 dB/100m                      | 42.9 dB        | 42.9 dB          | 31.3 dB       | 31.3 dB         | 33.9 dB                 | 30.9 dB                     | 23.6 dB                    | 100 ± 15 Ohm                         | 100 ± 10                   |
| 62.5 MHz        | 16.8 dB/100m                      | 38.4 dB        | 38.4 dB          | 21.6 dB       | 21.6 dB         | 27.8 dB                 | 24.8 dB                     | 21.5 dB                    | 100 ± 15 Ohm                         | 100 ± 10                   |
| 100 MHz         | 21.7 dB/100m                      | 35.3 dB        | 35.3 dB          | 17.1 dB       | 17.1 dB         | 23.8 dB                 | 20.8 dB                     | 20.1 dB                    | 100 ± 15 Ohm                         |                            |
| 155 MHz         | 27.7 dB/100m                      | 32.5 dB        | 32.5 dB          | 4.7 dB        | 4.7 dB          | 19.9 dB                 | 16.9 dB                     | 19 dB                      | 100 ± 18 Ohm                         |                            |
| 200 MHz         | 32 dB/100m                        | 30.8 dB        | 30.8 dB          | 3 dB          | 3 dB            | 17.7 dB                 | 14.7 dB                     | 19 dB                      | 100 ± 20 Ohm                         |                            |
| 250 MHz         | 36.4 dB/100m                      | 29.3 dB        | 29.3 dB          | 0 dB          | 0 dB            | 15.8 dB                 | 12.8 dB                     | 18 dB                      | 100 ± 20 Ohm                         |                            |
| 300 MHz         | 40.5 dB/100m                      | 28.2 dB        | 28.2 dB          | 0 dB          | 0 dB            | 14.2 dB                 | 11.2 dB                     | 18 dB                      | 100 ± 20 Ohm                         |                            |
| 310 MHz         | 41.3 dB/100m                      | 27.9 dB        | 27.9 dB          |               |                 | 13.9 dB                 | 10.9 dB                     | 18 dB                      | 100 ± 20 Ohm                         |                            |
| 350 MHz         | 44.3 dB/100m                      | 27.2 dB        | 27.2 dB          |               |                 | 12.9 dB                 | 9.9 dB                      | 17 dB                      | 100 ± 22 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 +85°C |
| Operating Temp Range:    | -40°C To +75°C |

#### Mechanical Characteristics

|                                  |               |
|----------------------------------|---------------|
| Bulk Cable Weight:               | 35 lbs/1000ft |
| Max Recommended Pulling Tension: | 40 lbs        |
| Min Bend Radius/Minor Axis:      | 0.29 in       |

#### Standards

|                               |  |
|-------------------------------|--|
| NEC/(UL) Specification:       | CMR, CMX-Outdoor   |
| CEC/C(UL) Specification:      | CMR  |
| ISO/IEC Compliance:           | Other Standards  |
| CPR Euroclass:                | Eca  |
| Data Category:                | Category 5e  |
| Telecommunications Standards: | Category 5e - TIA 568C.2   |
| Other Specification:          | NEMA WC-63.1 Category 5e, Ethernet/IP™ compliant, UL verified to Category 5e |

#### Applicable Environmental and Other Programs

|                                    |                               |
|------------------------------------|-------------------------------|
| EU Directive 2000/53/EC (ELV):     | Yes                           |
| EU Directive 2003/11/EC (BFR):     | Yes                           |
| EU Directive 2011/65/EU (ROHS II): | Yes                           |
| EU Directive 2012/19/EU (WEEE):    | Yes                           |
| EU Directive 2015/863/EU:          | Yes                           |
| EU Directive Compliance:           | EU Directive 2003/11/EC (BFR) |

|                                       |            |
|---------------------------------------|------------|
| EU RoHS Compliance Date (yyyy-mm-dd): | 2004-01-04 |
| MII Order #39 (China RoHS):           | Yes        |

## Suitability

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

## Flammability, LS0H, Toxicity Testing

|                       |                       |
|-----------------------|-----------------------|
| UL Flammability:      | UL1666 Vertical Riser |
| CSA Flammability:     | FT4                   |
| ISO/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          |
|----------------|-------|------------|----------|--------------|
| 11700A 0101000 | Black | Reel       | 1,000 ft | 612825107705 |
| 11700A 0103000 | Black | Reel       | 3,000 ft | 612825107712 |
| 11700A 0061000 | Blue  | Reel       | 1,000 ft | 612825107682 |
| 11700A 0081000 | Gray  | Reel       | 1,000 ft | 612825107699 |
| 11700A 0021000 | Red   | Reel       | 1,000 ft | 612825107675 |
| 11700A 1NH1000 | Teal  | Reel       | 1,000 ft | 612825107729 |

|           |   |
|-----------|---|
| Footnote: | C - CRATE REEL PUT-UP.  |
| Patent:   | <a href="https://www.belden.com/resources/patents">https://www.belden.com/resources/patents</a> |

## Product Notes

|        |  |
|--------|--|
| Notes: | US Patent #'s 5, 606, 151; 5, 734, 126. EtherNet/IP is a trademark of ControlNet International, Ltd. under license by Open DeviceNet Vendor Association, Inc. Operating temperatures are subject to length de-rating. Cable passes -40C Cold Bend per UL 1581. Outer Shield Separator Material: Polyester. |
|--------|--|

## History

|                      |  |
|----------------------|--|
| Update and Revision: | Revision Number: 0.292 Revision Date: 04-28-2020 |
|----------------------|--|

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