

8166 Multi-Conductor - Low Capacitance Computer Cable for EIA RS-232/422 & Digital



Description:

24 AWG stranded (7x32) TC conductors, Datalene® insulation, twisted pairs individually Beldfoil® shielded + overall 100% Beldfoil + TC braid shield (65% coverage), drain wire, PVC jacket.

Physical Characteristics (Overall)

Conductor

AWG:

| # Pairs | AWG | Stranding | Conductor Material |
|---------|-----|-----------|--------------------|
| 6 | 24 | 7x32 | TC - Tinned Copper |

Insulation

Insulation Material:

| Insulation Trade Name | Insulation Material |
|-----------------------|-------------------------|
| Datalene® | FPE - Foam Polyethylene |

Inner Shield

Inner Shield Material:

| Inner Shield Trade Name | Type | Inner Shield Material | Coverage (%) |
|-------------------------|------|------------------------------|--------------|
| Beldfoil® (Z-Fold®) | Tape | Aluminum Foil-Polyester Tape | 100 |

Inner Shield Drain Wire AWG:

| AWG |
|-----|
| 24 |

Inner Shield Drain Wire Stranding: 7x32

Inner Shield Drain Wire Conductor Material: TC - Tinned Copper

Outer Shield

Outer Shield Material:

| Layer # | Outer Shield Trade Name | Type | Outer Shield Material | Coverage (%) |
|---------|-------------------------|-------|------------------------------|--------------|
| 1 | Beldfoil® | Tape | Aluminum Foil-Polyester Tape | 100 |
| 2 | | Braid | TC - Tinned Copper | 65 |

Outer Jacket

Outer Jacket Material:

| Outer Jacket Material |
|--------------------------|
| PVC - Polyvinyl Chloride |

Overall Cabling

Overall Nominal Diameter: 0.446 in.

Pair

Pair Color Code Chart:

| Number | Color |
|--------|----------------|
| 1 | Black & Red |
| 2 | Black & White |
| 3 | Black & Green |
| 4 | Black & Blue |
| 5 | Black & Yellow |
| 6 | Black & Brown |

Pair Lay Length & Direction:

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| Lay Length (in.) | Twists/ft. (twist/ft) |
|------------------|-----------------------|
| 1.500 | 8.000 |

Mechanical Characteristics (Overall)

| | |
|----------------------------------------|--------------------------|
| Operating Temperature Range: | -40°C To +60°C |
| Non-UL Temperature Rating: | 60°C (UL AWM Style 2493) |
| Bulk Cable Weight: | 110 lbs/1000 ft. |
| Max. Recommended Pulling Tension: | 151 lbs. |
| Min. Bend Radius (Install)/Minor Axis: | 4.500 in. |

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

| | |
|---------------------------------------|----------------------------|
| NEC/(UL) Specification: | CM |
| CEC/C(UL) Specification: | CM |
| AWM Specification: | UL Style 2493 (300 V 60°C) |
| EU CE Mark: | Yes |
| EU Directive 2000/53/EC (ELV): | Yes |
| EU Directive 2002/95/EC (RoHS): | Yes |
| EU RoHS Compliance Date (mm/dd/yyyy): | 01/01/2004 |
| EU Directive 2002/96/EC (WEEE): | Yes |
| EU Directive 2003/11/EC (BFR): | Yes |
| CA Prop 65 (CJ for Wire & Cable): | Yes |
| MII Order #39 (China RoHS): | Yes |

Plenum/Non-Plenum

| | |
|---------------|----|
| Plenum (Y/N): | No |
|---------------|----|

Electrical Characteristics (Overall)

Nom. Characteristic Impedance:

| Impedance (Ohm) |
|-----------------|
| 100 |

Nom. Capacitance Conductor to Conductor:

| Capacitance (pF/ft) |
|---------------------|
| 12.5 |

Nom. Capacitance Cond. to Other Conductor & Shield:

| Capacitance (pF/ft) |
|---------------------|
| 22 |

Nominal Velocity of Propagation:

| VP (%) |
|--------|
| 78 |

Nom. Conductor DC Resistance:

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 24.0 |

Nominal Outer Shield DC Resistance:

| DCR @ 20°C (Ohm/1000 ft) |
|--------------------------|
| 2.8 |

| | |
|-----------------------------------------------------|----------------|
| Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: | 18 Ohm/1000 ft |
|-----------------------------------------------------|----------------|

Max. Operating Voltage - UL:

| Voltage |
|---------|
| |

8166 Multi-Conductor - Low Capacitance Computer Cable for EIA RS-232/422 & Digital

300 V RMS

Max. Recommended Current:

Current

1.6 Amps per conductor @ 25°C

Notes (Overall)

Notes: Datalene® insulation features include low dielectric constant and a dissipation factor for high-speed, low-distortion data handling. Physical properties include good crush resistance and light weight.

Put Ups and Colors:

| Item # | Putup | Ship Weight | Color | Notes | Item Desc |
|--------------|----------|-------------|--------|-------|--------------------------|
| 8166 060100 | 100 FT | 9.000 LB | CHROME | C | 6 FS PR #24 FHDPE SH PVC |
| 8166 0601000 | 1,000 FT | 99.000 LB | CHROME | C | 6 FS PR #24 FHDPE SH PVC |
| 8166 060500 | 500 FT | 50.000 LB | CHROME | C | 6 FS PR #24 FHDPE SH PVC |

Notes:

C = CRATE REEL PUT-UP.

Introduction

Belden® paired cable products are manufactured in a variety of gage sizes, dimensions, insulation materials, shielding configurations, and jacketing materials including Plenum and High-Temperature versions to meet the technical requirements of many different types of systems.

Paired cables allow balanced signal transmission, which results in lower crosstalk through common mode rejection. Due to the improved noise immunity of twisted pairs, they generally permit higher data speeds than multi-conductor cables.

As an aid to proper cable selection, both the suggested working voltages and the maximum temperature ratings are indicated for each applicable paired cable selection.

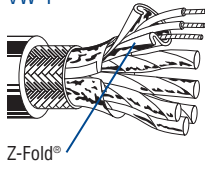
Most of our paired cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a paired cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

Paired Cables Packaging

Belden's unique UnReel® cable dispenser is available for many of the paired cable products listed in this section. The letter "U" before the specified put-up length denotes UnReel packaging.

Individually Shielded Pairs with Overall Foil/Braid Shield

Low-Capacitance Computer Cables for EIA RS-232, EIA RS-422, and Digital Audio Applications

| Description | Part No. | UL NEC/ C(UL) CEC Type | No. of Pairs | Color Code | Standard Lengths | | Standard Unit Weight | | Nom. DCR | | Nominal OD | | Nom. Imp. (Ω) | Nom. Vel. of Prop. | Nom. Capacitance | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------|-----------------|------------------------------------------|---------------------|------------------------|-------------------------|---------------------|----------------------|------------------------------------------------------------------------|---------------|-----|---------------------|-----------------------------|------------------|---------------|------------------|----------------|
| | | | | | Ft. | m | Lbs. | kg | Cond. | Shield | Inch | mm | | | * pF/ Ft. | * pF/ m | ** pF/ Ft. | ** pF/ m |
| 24 AWG Stranded (7x32) TC Conductors • Twisted Pairs Individually Beldfoil® Shielded + Overall Beldfoil (100% Coverage) + TC Braid Shield (65%) • Drain Wire[▲] | | | | | | | | | | | | | | | | | | |
| Datalene® Insulation • Chrome PVC Jacket | | | | | | | | | | | | | | | | | | |
| UL AWM Style 2493 (60°C) VW-1  Z-Fold® | 8162 | NEC: CM CEC: CM | 2 | See Chart 3 (Tech Info Section) | 100 500 1000 | 30.5 152.4 304.8 | 6.2 30.0 57.0 | 2.8 13.6 25.9 | 24.0Ω/M' 78.7Ω/km | Individual: 18.0Ω/M' 59.1Ω/km Overall: 4.3Ω/M' 14.1Ω/km | .343 8.71 | 100 | 78% | 12.5 | 41 | 22 | 72.2 | |
| | 8163 | NEC: CM CEC: CM | 3 | See Chart 3 (Tech Info Section) | 100 500 1000 | 30.5 152.4 304.8 | 7.0 34.0 66.0 | 3.2 15.5 30.0 | 24.0Ω/M' 78.7Ω/km | Individual: 18.0Ω/M' 59.1Ω/km Overall: 4.4Ω/M' 14.4Ω/km | .359 9.12 | 100 | 78% | 12.5 | 41 | 22 | 72.2 | |
| | 8164 | NEC: CM CEC: CM | 4 | See Chart 3 (Tech Info Section) | 100 500 1000 | 30.5 152.4 304.8 | 8.2 39.5 79.0 | 3.7 18.0 35.9 | 24.0Ω/M' 78.7Ω/km | Individual: 18.0Ω/M' 59.1Ω/km Overall: 3.2Ω/M' 10.5Ω/km | .388 9.86 | 100 | 78% | 12.5 | 41 | 22 | 72.2 | |
| | 8165 | NEC: CM CEC: CM | 5 | See Chart 3 (Tech Info Section) | 100 500 1000 | 30.5 152.4 304.8 | 9.0 45.0 89.0 | 4.1 20.5 40.5 | 24.0Ω/M' 78.7Ω/km | Individual: 18.0Ω/M' 59.1Ω/km Overall: 3.4Ω/M' 11.2Ω/km | .413 10.49 | 100 | 78% | 12.5 | 41 | 22 | 72.2 | |
| | 8166 | NEC: CM CEC: CM | 6 | See Chart 3 (Tech Info Section) | 100 500 1000 | 30.5 152.4 304.8 | 9.0 50.0 99.0 | 4.1 22.7 45.0 | 24.0Ω/M' 78.7Ω/km | Individual: 18.0Ω/M' 59.1Ω/km Overall: 2.8Ω/M' 9.2Ω/km | .446 11.33 | 100 | 78% | 12.5 | 41 | 22 | 72.2 | |
| | 8167 | NEC: CM CEC: CM | 7 | See Chart 3 (Tech Info Section) | 500 1000 | 152.4 304.8 | 52.5 103.0 | 23.9 46.7 | 24.0Ω/M' 78.7Ω/km | Individual: 18.0Ω/M' 59.1Ω/km Overall: 2.8Ω/M' 9.2Ω/km | .446 11.33 | 100 | 78% | 12.5 | 41 | 22 | 72.2 | |

[▲]24 AWG stranded TC drain wire

DCR = DC Resistance • TC = Tinned Copper

*Capacitance between conductors.

**Capacitance between one conductor and other conductors connected to shield.

Datalene insulation features include low dielectric constant and a dissipation factor for high-speed, low-distortion data handling. Physical properties include good crush resistance and light weight.