

## 7931A Multi-Conductor - Category 6 DataTwist® Twisted Pair Cable



For more Information  
please call

1-800-Belden1



### Description:

23 AWG Bonded-Pairs solid bare copper conductors, FEP insulation, sunlight- oil- and gas-resistant FEP jacket. Sequential marking at two foot intervals.

### Usage (Overall)

**Suitable Applications:**

Industrial Ethernet Cable, Harsh Environments, 350MHz Enhanced Category 6, Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU Digital Audio, AES51, RS-422, RJ-45 Compatible, High and Low Temperature, Oil and Gasoline Exposure, Limited Combustible FHC 25/50

### Physical Characteristics (Overall)

#### Conductor

**AWG:**

| # Pairs | AWG | Stranding | Conductor Material |
|---------|-----|-----------|--------------------|
| 4       | 23  | Solid     | BC - Bare Copper   |

#### Insulation

**Insulation Material:**

| Insulation Material                  |
|--------------------------------------|
| FEP - Fluorinated Ethylene Propylene |

#### Outer Shield

**Outer Shield Material:**

| Outer Shield Material |
|-----------------------|
| Unshielded            |

#### Outer Jacket

**Outer Jacket Material:**

| Outer Jacket Material                |
|--------------------------------------|
| FEP - Fluorinated Ethylene Propylene |

#### Overall Cabling

**Overall Cabling Fillers:** Rod Center Member

**Overall Nominal Diameter:** 5.436 mm

#### Pair

**Pair Color Code Chart:**

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

### Mechanical Characteristics (Overall)

**Installation Temperature Range:** -55°C To +150°C

**Operating Temperature Range:** -70°C To +150°C

**Bulk Cable Weight:** 41.670 Kg/Km

**Max. Recommended Pulling Tension:** 177.928 N

## 7931A Multi-Conductor - Category 6 DataTwist® Twisted Pair Cable

Min. Bend Radius (Install)/Minor Axis: 12.700 mm

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

NEC/(UL) Specification: FHC 25/50, CMP, UL444

NEC Articles: NFPA 259

CEC/C(UL) Specification: CMP

EU Directive 2000/53/EC (ELV): Yes

EU Directive 2002/95/EC (RoHS): Yes

EU RoHS Compliance Date (mm/dd/yyyy): 04/01/2005

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

Telecommunications Standards: 568-B.2-1 Category 6

Other Specification: UL verified to Category 6

#### Flame Test

UL Flame Test: UL723 (NFPA 255), NFPA 262

CSA Flame Test: FT6

#### Suitability

Oil Resistance: Yes

#### Plenum/Non-Plenum

Plenum (Y/N): Yes

### Electrical Characteristics (Overall)

#### Nom. Mutual Capacitance:

Capacitance (pF/m)

49.215

Maximum Capacitance Unbalance (pF/100 m): 330

#### Nominal Velocity of Propagation:

VP (%)

72

#### Maximum Delay:

Delay (ns/100 m)

537 @ 100MHz

#### Max. Delay Skew:

Delay Skew (ns/100 m)

45

#### Maximum Conductor DC Resistance:

DCR @ 20°C (Ohm/100 m)

9.38

#### Max. Operating Voltage - UL:

Voltage

300 V RMS

#### Maximum DCR Unbalanced:

DCR Unbalance @ 20°C (%)

5

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### Electrical Characteristics-Premise (Overall)

Premise Cable Electrical Table 1:

| Freq. (MHz) | Max. Attenuation (dB/100 m) | Min. NEXT (dB) | Min. PSNEXT (dB) | Min. ACR (dB) | Min. PSACR (dB) | Min RL (dB) | Min. SRL (dB) |
|-------------|-----------------------------|----------------|------------------|---------------|-----------------|-------------|---------------|
| 1           | 2.0                         | 74.3           | 72.3             | 72.3          | 70.3            | 20.0        | na            |
| 4           | 3.8                         | 65.3           | 63.3             | 61.5          | 59.5            | 23.0        | na            |
| 8           | 5.3                         | 60.8           | 58.8             | 55.4          | 53.4            | 24.5        | na            |
| 10          | 6.0                         | 59.3           | 57.3             | 53.3          | 51.3            | 25.0        | na            |
| 16          | 7.6                         | 56.2           | 54.3             | 48.7          | 46.7            | 25.0        | na            |
| 20          | 8.5                         | 54.8           | 52.8             | 46.3          | 44.3            | 25.0        | na            |
| 25          | 9.5                         | 53.3           | 51.3             | 43.8          | 41.8            | 24.3        | na            |
| 31.25       | 10.7                        | 51.9           | 49.9             | 41.2          | 39.2            | 23.6        | na            |
| 62.5        | 15.4                        | 47.4           | 45.4             | 32.0          | 30.0            | 21.5        | na            |
| 100         | 19.8                        | 44.3           | 42.3             | 24.5          | 22.5            | 20.1        | na            |
| 155         | 25.2                        | 41.5           | 39.5             | 16.3          | 14.3            | 18.8        | na            |
| 200         | 29.0                        | 39.8           | 37.8             | 10.8          | 8.8             | 18.0        | na            |
| 250         | 32.8                        | 38.3           | 36.3             | 5.5           | 3.5             | 17.3        | na            |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ELFEXT (dB) | Min. PSELFEXT (dB) |
|-------------|------------------------------|------------------|------------------|--------------------|
| 1           | 100 ± 15                     | 100 ± 15         | 67.8             | 64.8               |
| 4           | 100 ± 15                     | 100 ± 15         | 55.8             | 52.7               |
| 8           | 100 ± 15                     | 100 ± 15         | 49.7             | 46.7               |
| 10          | 100 ± 15                     | 100 ± 15         | 47.8             | 44.8               |
| 16          | 100 ± 15                     | 100 ± 15         | 43.7             | 40.7               |
| 20          | 100 ± 15                     | 100 ± 15         | 41.8             | 38.7               |
| 25          | 100 ± 15                     | 100 ± 15         | 39.8             | 36.8               |
| 31.25       | 100 ± 15                     | 100 ± 15         | 37.9             | 34.9               |
| 62.5        | 100 ± 15                     | 100 ± 15         | 31.9             | 28.8               |
| 100         | 100 ± 15                     | 100 ± 15         | 27.8             | 24.8               |
| 155         | 100 ± 22                     | 100 ± 15         | 23.9             | 20.9               |
| 200         | 100 ± 22                     | 100 ± 15         | 21.8             | 18.7               |
| 250         | 100 ± 32                     | 100 ± 15         | 19.8             | 16.8               |

### Notes (Overall)

**Notes:** US Patents 5, 606, 151& 5, 573, 126. Operating temperatures subject to length de-rating.

**Notes (Cont'd.):** Cable passes -70C Cold Bend per UL 1581.

### Put Ups and Colors:

| Item #        | Putup  | Ship Weight | Color | Notes | Item Desc        |
|---------------|--------|-------------|-------|-------|------------------|
| 7931A 0101000 | 305 MT | 16.783 KG   | BLACK |       | 4 PR #23 FEP FEP |

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