

## 7851A Multi-Conductor - Enhanced Category 6 Bonded-Pair Cable



For more Information  
please call

1-800-Belden1



### Description:

23 AWG Bonded-Pairs, Solid Bare Copper Conductors, Non-Plenum, Polyolefin Insulation, Patented e-Spline Center Member, Rip Cord, PVC Jacket

### Usage (Overall)

**Suitable Applications:** Premise Horizontal Cable, Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU Digital Audio, AES51, RS-422, Noisy Environments

### Physical Characteristics (Overall)

#### Conductor

##### AWG:

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

**Total Number of Conductors:** 8

#### Insulation

##### Insulation Material:

| Insulation Material |
|---------------------|
| PO - Polyolefin     |

#### Outer Shield

##### Outer Shield Material:

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

#### Outer Jacket

##### Outer Jacket Material:

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

##### Outer Jacket Diameter:

| Nom. Dia. (in.) |
|-----------------|
| 0.227           |
| 0.315           |

**Outer Jacket Ripcord:** Yes

#### Overall Cable

**Overall Cabling Separator Material:** Patented E-Spline Center Member

**Overall Nominal Diameter:** 0.227 x 0.315 in.

#### 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)

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|                                   |                 |
|-----------------------------------|-----------------|
| Storage Temperature Range:        | -20°C To +75°C  |
| Installation Temperature Range:   | -20°C To +75°C  |
| Operating Temperature Range:      | 0°C To +75°C    |
| Bulk Cable Weight:                | 35 lbs/1000 ft. |
| Max. Recommended Pulling Tension: | 45 lbs.         |
| Min. Bend Radius/Minor Axis:      | 2 in.           |
| Min. Bend/Installation:           | 2.300 in.       |

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| NEC/(UL) Specification:               | CMR                                 |
| NEC Articles:                         | 800                                 |
| CEC/C(UL) Specification:              | CMR                                 |
| Other Standards:                      | ISO/IEC 11801 ed 2.1 (2008) Class E |
| 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                                 |
| Telecommunications Standards:         | Category 6 - TIA 568.C.2            |
| Other Specification:                  | UL Verified to Category 6           |

#### Applicable Patents:

| Country | Patent  |
|---------|---------|
| US      | 5606151 |
| US      | 5734126 |
| US      | 6074503 |
| US      | 6855889 |
| US      | 7663061 |
| US      | 7838773 |
| US      | 7977575 |

#### Flame Test

|                   |                       |
|-------------------|-----------------------|
| UL Flame Test:    | UL1666 Vertical Riser |
| C(UL) Flame Test: | FT4                   |
| CSA Flame Test:   | FT4                   |
| IEEE Flame Test:  | 1202                  |

#### Suitability

|                        |     |
|------------------------|-----|
| Suitability - Indoor:  | Yes |
| Suitability - Outdoor: | No  |
| Suitability - Burial:  | No  |
| Sunlight Resistance:   | No  |

#### Plenum/Non-Plenum

|                |       |
|----------------|-------|
| Plenum (Y/N):  | No    |
| Plenum Number: | 7852A |

## 7851A Multi-Conductor - Enhanced Category 6 Bonded-Pair Cable

### Electrical Characteristics (Overall)

**Nom. Mutual Capacitance:**

Capacitance (pF/ft)  
15.5

Maximum Capacitance Unbalance (pF/100 m): 90

**Nominal Velocity of Propagation:**

VP (%)  
67

**Maximum Delay:**

Delay (ns/100 m)  
538 @ 100MHz

**Max. Delay Skew:**

Delay Skew (ns/100 m)  
38

**Maximum Conductor DC Resistance:**

DCR @ 20°C (Ohm/100 m)  
8.2

**Max. Operating Voltage - UL:**

Voltage  
300 V RMS

**Maximum DCR Unbalanced:**

DCR Unbalance @ 20°C (%)  
3

### 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           | 1.9                         | 82.3           | 80.3             | 80.5          | 78.5            | 20.0        | 27.0          |
| 4           | 3.6                         | 73.3           | 71.3             | 69.7          | 67.7            | 23.0        | 27.0          |
| 8           | 5.1                         | 68.8           | 66.8             | 63.7          | 61.7            | 24.5        | 27.0          |
| 10          | 5.7                         | 67.3           | 65.3             | 61.6          | 59.6            | 25.0        | 27.0          |
| 16          | 7.2                         | 64.3           | 62.3             | 57.0          | 55.0            | 25.0        | 27.0          |
| 20          | 8.1                         | 62.8           | 60.8             | 54.7          | 52.7            | 25.0        | 27.0          |
| 25          | 9.1                         | 61.3           | 59.3             | 52.3          | 50.3            | 25.0        | 27.0          |
| 31.25       | 10.2                        | 59.9           | 57.9             | 49.7          | 47.7            | 25.0        | 27.0          |
| 62.5        | 14.7                        | 55.4           | 53.4             | 40.7          | 38.7            | 25.0        | 27.0          |
| 100         | 18.9                        | 52.3           | 50.3             | 33.4          | 31.4            | 25.0        | 27.0          |
| 155         | 23.9                        | 49.5           | 47.5             | 25.5          | 23.5            | 22.8        | 24.7          |
| 200         | 27.5                        | 47.8           | 45.8             | 20.3          | 18.3            | 21.7        | 23.4          |
| 250         | 31.2                        | 46.3           | 44.3             | 15.2          | 13.2            | 20.5        | 22.2          |
| 300         | 34.5                        | 43.2           | 41.2             | 10.6          | 8.6             | 20.2        | 21.2          |
| 310         | 35.2                        | 42.9           | 40.9             | 9.8           | 7.8             | 20.1        | 21.1          |
| 350         | 37.7                        | 42.2           | 40.2             | 6.5           | 4.5             | 19.8        | 20.4          |
| 400         | 40.6                        | 41.3           | 39.3             | 2.6           | 0.6             | 19.5        | 19.7          |
| 450         | 43.5                        | 40.5           | 38.5             | 2.1           | 0.10            | 18.9        | 19.1          |
| 460         | 44.0                        | 40.4           | 38.4             | 0             | 0               | 18.8        | 19.0          |
| 500         | 46.2                        | 39.8           | 37.8             |               |                 | 18.4        | 18.5          |
| 550         | 48.8                        | 39.2           | 37.2             |               |                 | 18.0        | 18.0          |
| 600         | 51.4                        | 38.6           | 36.6             |               |                 | 17.6        | 17.6          |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ELFEXT (dB) | Min. PSELFEXT (dB) |
|-------------|------------------------------|------------------|------------------|--------------------|
| 1           | 100 ± 12                     | 100 ± 15         | 73.8             | 70.8               |
| 4           | 100 ± 12                     | 100 ± 10.4       | 61.8             | 58.8               |
| 8           | 100 ± 12                     | 100 ± 8          | 55.7             | 52.7               |
| 10          | 100 ± 12                     | 100 ± 7.3        | 53.8             | 50.8               |

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|       |          |           |      |      |
|-------|----------|-----------|------|------|
| 16    | 100 ± 12 | 100 ± 5.7 | 49.7 | 46.7 |
| 20    | 100 ± 12 | 100 ± 5   | 47.8 | 44.8 |
| 25    | 100 ± 15 | 100 ± 5   | 45.8 | 42.8 |
| 31.25 | 100 ± 15 | 100 ± 5   | 43.9 | 40.9 |
| 62.5  | 100 ± 15 | 100 ± 5   | 37.9 | 34.9 |
| 100   | 100 ± 15 | 100 ± 5   | 33.8 | 30.8 |
| 155   | 100 ± 15 | 100 ± 5   | 30.0 | 27.0 |
| 200   | 100 ± 15 | 100 ± 5   | 27.8 | 24.8 |
| 250   | 100 ± 20 | 100 ± 5   | 25.8 | 22.8 |
| 300   | 100 ± 20 | 100 ± 5   | 24.3 | 21.3 |
| 310   | 100 ± 20 | 100 ± 5   | 24.0 | 21.0 |
| 350   | 100 ± 22 | 100 ± 5   | 22.9 | 19.9 |
| 400   | 100 ± 22 | 100 ± 5   | 21.8 | 18.8 |
| 450   | 100 ± 22 | 100 ± 5   | 20.7 | 17.7 |
| 460   | 100 ± 22 | 100 ± 5   | 20.5 | 17.5 |
| 500   | 100 ± 22 | 100 ± 5   | 19.8 | 16.8 |
| 550   | 100 ± 22 | 100 ± 5   | 19.0 | 16.0 |
| 600   | 100 ± 22 | 100 ± 5   | 18.2 | 15.2 |

### Notes (Overall)

**Notes:** Belden IBDN. Jacket sequentially marked at 2 ft/1m intervals. Third party verified to ANSI/TIA-568-C.2, Category 6.

### Put Ups and Colors:

| Item #         | Putup    | Ship Weight | Color            | Notes | Item Desc                  |
|----------------|----------|-------------|------------------|-------|----------------------------|
| 7851A F6HA1000 | 1,000 FT | 39.000 LB   | GRAY, DARK PEARL |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A F6H1000  | 1,000 FT | 36.000 LB   | GRAY, DARK PEARL | C     | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 002A1000 | 1,000 FT | 39.000 LB   | RED              |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0021000  | 1,000 FT | 36.000 LB   | RED              |       | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 003A1000 | 1,000 FT | 39.000 LB   | ORANGE           |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0031000  | 1,000 FT | 36.000 LB   | ORANGE           | C     | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 004A1000 | 1,000 FT | 39.000 LB   | YELLOW           |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0041000  | 1,000 FT | 36.000 LB   | YELLOW           | C     | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 005A1000 | 1,000 FT | 39.000 LB   | GREEN, DARK      |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0051000  | 1,000 FT | 36.000 LB   | GREEN, DARK      | C     | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 006A1000 | 1,000 FT | 39.000 LB   | BLUE, LIGHT      |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0061000  | 1,000 FT | 36.000 LB   | BLUE, LIGHT      | C     | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 009A1000 | 1,000 FT | 39.000 LB   | WHITE            |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0091000  | 1,000 FT | 36.000 LB   | WHITE            | C     | CAT6E+ 4PRB U/UTP CMR REEL |
| 7851A 010A1000 | 1,000 FT | 39.000 LB   | BLACK            |       | CAT6E+ 4PRB U/UTP CMR RIB  |
| 7851A 0101000  | 1,000 FT | 36.000 LB   | BLACK            |       | CAT6E+ 4PRB U/UTP CMR REEL |

**Notes:**

C = CRATE REEL PUT-UP.

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Belden declares this product to be in compliance with EU LVD (Low Voltage Directive 73/23/EEC), as amended by directive 93/68/EEC.



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- Техническая поддержка проекта;
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