

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



For more Information  
please call

1-800-Belden1



### General Description:

CAT6+ (600MHz), 4-Bonded-Pairs, U/UTP-Unshielded, Riser-CMR, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Polyolefin Insulation, Patented E-Spline, Ripcord, PVC Jacket

### Usage (Overall)

**Suitable Applications:** Premise Horizontal Cable, Gigabit Ethernet, POE, POE+, 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. (mm) |
|----------------|
| 6.731          |

**Outer Jacket Ripcord:** Yes

#### Overall Cable

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

**Overall Nominal Diameter:** 5.766 x 8.001 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)

**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:** 52.087 Kg/Km

**Max. Recommended Pulling Tension:** 200.169 N

**Min. Bend Radius/Minor Axis:** 12.700 mm

**Min. Bend/Installation:** 57.150 mm

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

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| NEC/(UL) Specification:               | CMR                                 |
| NEC Articles:                         | 800                                 |
| CEC/C(UL) Specification:              | CMR                                 |
| EU Directive 2011/65/EU (ROHS II):    | Yes                                 |
| 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            |

#### Applicable Patents:

|                  |
|------------------|
| Country          |
| www.belden.com/p |

#### 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 |

### Electrical Characteristics (Overall)

#### Nom. Mutual Capacitance:

|                    |
|--------------------|
| Capacitance (pF/m) |
| 50.8555            |

|   |    |
|---|----|
| 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:

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**DCR Unbalance @ 20°C (%)**

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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) |
|-------------|-----------------------------|----------------|------------------|---------------|-----------------|-------------|
| 1           | 1.900                       | 82.3           | 80.3             | 80.5          | 78.5            | 20.000      |
| 4           | 3.600                       | 73.3           | 71.3             | 69.7          | 67.7            | 23.000      |
| 8           | 5.100                       | 68.8           | 66.8             | 63.7          | 61.7            | 24.500      |
| 10          | 5.700                       | 67.3           | 65.3             | 61.6          | 59.6            | 25.000      |
| 16          | 7.200                       | 64.3           | 62.3             | 57.0          | 55.0            | 25.000      |
| 20          | 8.100                       | 62.8           | 60.8             | 54.7          | 52.7            | 25.000      |
| 25          | 9.100                       | 61.3           | 59.3             | 52.3          | 50.3            | 25.000      |
| 31.25       | 10.200                      | 59.9           | 57.9             | 49.7          | 47.7            | 25.000      |
| 62.5        | 14.700                      | 55.4           | 53.4             | 40.7          | 38.7            | 25.000      |
| 100         | 18.900                      | 52.3           | 50.3             | 33.4          | 31.4            | 25.000      |
| 155         | 23.900                      | 49.5           | 47.5             | 25.5          | 23.5            | 22.800      |
| 200         | 27.500                      | 47.8           | 45.8             | 20.3          | 18.3            | 21.700      |
| 250         | 31.200                      | 46.3           | 44.3             | 15.2          | 13.2            | 20.500      |
| 300         | 34.500                      | 43.1           | 43.1             | 8.6           | 8.6             | 20.200      |
| 350         | 37.700                      | 42.1           | 42.1             | 4.4           | 4.4             | 19.800      |
| 400         | 40.600                      | 41.3           | 41.3             | 0.7           | 0.7             | 19.500      |
| 450         | 43.500                      | 40.5           | 40.5             | 0             | 0               | 18.900      |
| 460         | 44.000                      | 40.4           | 40.4             | 0             | 0               | 18.800      |
| 500         | 46.200                      | 39.8           | 39.8             |               |                 | 18.400      |
| 550         | 48.800                      | 39.2           | 39.2             |               |                 | 18.000      |
| 600         | 51.400                      | 38.6           | 38.6             |               |                 | 17.600      |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ACRF (dB) | Min. PSACRF (dB) |
|-------------|------------------------------|------------------|----------------|------------------|
| 1           | 100 ± 12                     | 100 ± 15         | 74.8           | 72.8             |
| 4           | 100 ± 12                     | 100 ± 10.4       | 62.8           | 60.8             |
| 8           | 100 ± 12                     | 100 ± 8          | 56.7           | 54.7             |
| 10          | 100 ± 12                     | 100 ± 7.3        | 54.8           | 52.8             |
| 16          | 100 ± 12                     | 100 ± 5.7        | 50.7           | 48.7             |
| 20          | 100 ± 12                     | 100 ± 5          | 48.8           | 46.8             |
| 25          | 100 ± 15                     | 100 ± 5          | 46.8           | 44.8             |
| 31.25       | 100 ± 15                     | 100 ± 5          | 44.9           | 42.9             |
| 62.5        | 100 ± 15                     | 100 ± 5          | 38.9           | 36.9             |
| 100         | 100 ± 15                     | 100 ± 5          | 34.8           | 32.8             |
| 155         | 100 ± 15                     | 100 ± 5          | 31.0           | 29.0             |
| 200         | 100 ± 15                     | 100 ± 5          | 28.8           | 26.8             |
| 250         | 100 ± 20                     | 100 ± 5          | 26.8           | 24.8             |
| 300         | 100 ± 20                     | 100 ± 5          | 25.3           | 23.3             |
| 350         | 100 ± 22                     | 100 ± 5          | 23.9           | 21.9             |
| 400         | 100 ± 22                     | 100 ± 5          | 22.8           | 20.8             |
| 450         | 100 ± 22                     | 100 ± 5          | 21.7           | 19.7             |
| 460         | 100 ± 22                     | 100 ± 5          | 21.5           | 19.5             |
| 500         | 100 ± 22                     | 100 ± 5          | 20.8           | 18.8             |
| 550         | 100 ± 22                     | 100 ± 5          | 20.0           | 18.0             |
| 600         | 100 ± 22                     | 100 ± 5          | 19.2           | 17.2             |

### 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 |

## METRIC MEASUREMENT VERSION

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

|                |          |           |             |   |                            |
|----------------|----------|-----------|-------------|---|----------------------------|
| 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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