

2413 Multi-Conductor - Enhanced Category 6 Nonbonded-Pair Cables



For more Information
please call

1-800-Belden1



General Description:

CAT6+ (350 MHz), 4-Pair, U/UTP-Unshielded, Plenum-CMP, Premise Horizontal Cable, 23 AWG Solid Bare Copper Conductors, Dual FRPO/FEP Insulation, Tape Separator, Ripcord, Flamarrest® Jacket

Usage (Overall)

Suitable Applications: Premise Horizontal Cable, Gigabit Ethernet, POE, POE+, 100BaseTX, 100BaseVG ANYLAN, 155 ATM, 622 ATM, 250MHz Category 6

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 |
|--|
| FRPO/FEP - Flame Retardant Polyolefin/Fluorinated Ethylene Propylene |

Outer Shield

Outer Shield Material:

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

Outer Jacket

Outer Jacket Material:

| Outer Jacket Trade Name | Outer Jacket Material |
|-------------------------|---------------------------------------|
| Flamarrest® | LS PVC - Low Smoke Polyvinyl Chloride |

Outer Jacket Diameter:

| Nom. Dia. (in.) |
|-----------------|
| 0.224 |

Outer Jacket Ripcord: Yes

Overall Cable

Overall Cabling Separator Material: Patented Dielectric Tape

Overall Nominal Diameter: 0.224 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)

Storage Temperature Range: -20°C To +75°C

Installation Temperature Range: +5°C To +50°C

Operating Temperature Range: -20°C To +75°C

Bulk Cable Weight: 27 lbs/1000 ft.

Max. Recommended Pulling Tension: 40 lbs.

Min. Bend Radius/Minor Axis: 0.750 in.

Min. Bend/Installation: 2.250 in.

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Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

| | |
|---------------------------------------|--|
| NEC/(UL) Specification: | CMP |
| NEC Articles: | NFPA 70 Article 800 |
| CEC/C(UL) Specification: | CMP |
| EU Directive 2011/65/EU (ROHS II): | Yes |
| 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): | 10/13/2005 |
| 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: | Category 6 - TIA 568.C.2 |
| ANSI Specification: | ANSI/NEMA WC-66, ANSI/ICEA S-90-661, ANSI/UL 444 |

Applicable Patents:

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

Flame Test

| | |
|-------------------|---|
| UL Flame Test: | NFPA 262 Plenum Flame Test (UL910)(FT6) |
| C(UL) Flame Test: | FT6 |
| CSA Flame Test: | FT6 |

Suitability

| | |
|------------------------|-----|
| Suitability - Indoor: | Yes |
| Suitability - Outdoor: | No |

Plenum/Non-Plenum

| | |
|--------------------|------|
| Plenum (Y/N): | Yes |
| Non-Plenum Number: | 2412 |

Electrical Characteristics (Overall)

Nom. Mutual Capacitance:

| |
|----------------------------|
| Capacitance (pF/ft) |
| 15 |

Maximum Capacitance Unbalance:

| |
|----------------------------|
| Capacitance (pF/ft) |
| 330.000 |

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) |
| 35.000 |

Maximum Conductor DC Resistance:

| |
|-------------------------------|
| DCR @ 20°C (Ohm/100 m) |
| 7.800 |

Max. Operating Voltage - UL:

| |
|----------------|
| Voltage |
| 300 V RMS |

Maximum DCR Unbalanced:

| |
|---------------------------------|
| DCR Unbalance @ 20°C (%) |
|---------------------------------|

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3.000

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 | 2.000 | 75.3 | 75.3 | 73.3 | 73.3 | 20.000 |
| 4 | 3.700 | 66.3 | 66.3 | 62.6 | 62.6 | 23.000 |
| 8 | 5.200 | 61.8 | 61.8 | 56.6 | 56.6 | 24.500 |
| 10 | 5.800 | 60.3 | 60.3 | 54.5 | 54.5 | 25.000 |
| 16 | 7.400 | 57.2 | 57.2 | 49.9 | 49.9 | 25.000 |
| 20 | 8.300 | 55.8 | 55.8 | 47.5 | 47.5 | 25.000 |
| 25 | 9.300 | 54.3 | 54.3 | 45.1 | 45.1 | 24.300 |
| 31.25 | 10.400 | 52.9 | 52.9 | 42.5 | 42.5 | 23.600 |
| 62.5 | 15.000 | 48.4 | 48.4 | 33.4 | 33.4 | 21.500 |
| 100 | 19.300 | 45.3 | 45.3 | 26.0 | 26.0 | 20.800 |
| 155 | 24.600 | 42.4 | 42.4 | 17.9 | 17.9 | 19.500 |
| 200 | 28.300 | 40.8 | 40.8 | 12.5 | 12.5 | 18.700 |
| 250 | 32.100 | 39.3 | 39.3 | 7.2 | 7.2 | 18.000 |
| 300 | 35.600 | 38.1 | 36.1 | 2.5 | .5 | 17.500 |
| 350 | 38.900 | 37.1 | 35.1 | -1.8 | -3.8 | 17.000 |
| 400 | 42.000 | 36.3 | 34.3 | -5.7 | -7.7 | 16.600 |
| 450 | 45.000 | 35.5 | 33.5 | -9.5 | -11.5 | 16.200 |
| 500 | 47.900 | 34.8 | 32.8 | -13.1 | -15.1 | 15.900 |
| 550 | 50.600 | 34.2 | 32.2 | -16.4 | -18.4 | 15.600 |

Premise Cable Electrical Table 2:

| Freq. (MHz) | Input (Unfitted) Imp. (Ohms) | Fitted Impedance | Min. ACRF (dB) | Min. PSACRF (dB) |
|-------------|------------------------------|------------------|----------------|------------------|
| 1 | 100 ± 15 | 100 ± 15 | 70.8 | 67.8 |
| 4 | 100 ± 15 | 100 ± 15 | 58.8 | 55.8 |
| 8 | 100 ± 15 | 100 ± 15 | 52.7 | 49.7 |
| 10 | 100 ± 15 | 100 ± 15 | 50.8 | 47.8 |
| 16 | 100 ± 15 | 100 ± 15 | 46.7 | 43.7 |
| 20 | 100 ± 15 | 100 ± 15 | 44.8 | 41.8 |
| 25 | 100 ± 15 | 100 ± 15 | 42.8 | 39.8 |
| 31.25 | 100 ± 15 | 100 ± 15 | 40.9 | 37.9 |
| 62.5 | 100 ± 15 | 100 ± 15 | 34.9 | 31.9 |
| 100 | 100 ± 15 | 100 ± 15 | 30.8 | 27.8 |
| 155 | 100 ± 22 | 100 ± 15 | 27.0 | 24.0 |
| 200 | 100 ± 22 | 100 ± 15 | 24.8 | 21.8 |
| 250 | 100 ± 32 | 100 ± 15 | 22.8 | 19.8 |
| 300 | 100 ± 32 | 100 ± 15 | 21.3 | 18.3 |
| 350 | 100 ± 32 | 100 ± 15 | 19.9 | 16.9 |
| 400 | 100 ± 32 | 100 ± 15 | 18.8 | 15.8 |
| 450 | 100 ± 32 | 100 ± 15 | 17.7 | 14.7 |
| 500 | 100 ± 32 | 100 ± 15 | 16.8 | 13.8 |
| 550 | 100 ± 32 | 100 ± 15 | 16.0 | 13.0 |

Notes (Overall)

Notes: Third party verified to ANSI/TIA-568-C.2, Category 6. Values above 350 MHz are for Engineering Information Only. "BELDEN DATATWIST(R) 2413 -- IBDN CABLE -- 4PR/23 E108998 (-PLANT IDENTIFIER) C(UL)US CMP VERIFIED (UL) CAT 6 --US PAT. BELDEN.COM/P" Jacket sequentially marked at 2 ft./1m intervals.

Reference (Overall)

Previous Part Number:

24567415, 24567715, 24567736T, 24567615T, 25067545, 25067545T, 25067515T, 24567745T, 24567715T, 25067845, 25067845T, 25067836, 25067836T, 24567815, 24567815T, 2456705T, 24567145, 24567145T, 24567115, 24567115T, 24567345, 24567345T, 24567336, 24567336T, 24567315, 24567315T, 24567445T, 24567436, 24567436T, 24567415T, 24567A15T, 24567945, 24567945T, 24567936T, 24567915, 24567915T

Put Ups and Colors:

| Item # | Putup | Ship Weight | Color | Notes | Item Desc |
|---------------|----------|-------------|--------|-------|--------------------------|
| 2413 D15A1000 | 1,000 FT | 30.000 LB | BLUE | | CAT6+ 4PR U/UTP CMP RIB |
| 2413 D15U1000 | 1,000 FT | 28.000 LB | BLUE | | CAT6+ 4PR U/UTP CMP BOX |
| 2413 D151000 | 1,000 FT | 28.000 LB | BLUE | | CAT6+ 4PR U/UTP CMP REEL |
| 2413 D152500 | 2,500 FT | 65.000 LB | BLUE | | CAT6+ 4PR U/UTP CMP REEL |
| 2413 002A1000 | 1,000 FT | 30.000 LB | RED | | CAT6+ 4PR U/UTP CMP RIB |
| 2413 003A1000 | 1,000 FT | 30.000 LB | ORANGE | | CAT6+ 4PR U/UTP CMP RIB |
| 2413 003U1000 | 1,000 FT | 28.000 LB | ORANGE | | CAT6+ 4PR U/UTP CMP BOX |
| 2413 0031000 | 1,000 FT | 28.000 LB | ORANGE | | CAT6+ 4PR U/UTP CMP REEL |

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| | | | | |
|---------------|----------|------------|-------------|--------------------------|
| 2413 0035000 | 5,000 FT | 140.000 LB | ORANGE | CAT6+ 4PR U/UTP CMP REEL |
| 2413 004A1000 | 1,000 FT | 30.000 LB | YELLOW | CAT6+ 4PR U/UTP CMP RIB |
| 2413 004A500 | 500 FT | 16.500 LB | YELLOW | CAT6+ 4PR U/UTP CMP RIB |
| 2413 004U1000 | 1,000 FT | 28.000 LB | YELLOW | CAT6+ 4PR U/UTP CMP BOX |
| 2413 0041000 | 1,000 FT | 28.000 LB | YELLOW | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0042500 | 2,500 FT | 65.000 LB | YELLOW | CAT6+ 4PR U/UTP CMP REEL |
| 2413 005A1000 | 1,000 FT | 30.000 LB | GREEN, DARK | CAT6+ 4PR U/UTP CMP RIB |
| 2413 005U1000 | 1,000 FT | 28.000 LB | GREEN, DARK | CAT6+ 4PR U/UTP CMP BOX |
| 2413 0051000 | 1,000 FT | 28.000 LB | GREEN, DARK | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0052500 | 2,500 FT | 65.000 LB | GREEN, DARK | CAT6+ 4PR U/UTP CMP REEL |
| 2413 007A1000 | 1,000 FT | 30.000 LB | VIOLET | CAT6+ 4PR U/UTP CMP RIB |
| 2413 008A1000 | 1,000 FT | 30.000 LB | GRAY | CAT6+ 4PR U/UTP CMP RIB |
| 2413 008U1000 | 1,000 FT | 28.000 LB | GRAY | CAT6+ 4PR U/UTP CMP BOX |
| 2413 0081000 | 1,000 FT | 28.000 LB | GRAY | CAT6+ 4PR U/UTP CMP REEL |
| 2413 009A1000 | 1,000 FT | 30.000 LB | WHITE | CAT6+ 4PR U/UTP CMP RIB |
| 2413 009U1000 | 1,000 FT | 28.000 LB | WHITE | CAT6+ 4PR U/UTP CMP BOX |
| 2413 0091000 | 1,000 FT | 28.000 LB | WHITE | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0092500 | 2,500 FT | 65.000 LB | WHITE | CAT6+ 4PR U/UTP CMP REEL |
| 2413 010A1000 | 1,000 FT | 30.000 LB | BLACK | CAT6+ 4PR U/UTP CMP RIB |
| 2413 010U1000 | 1,000 FT | 28.000 LB | BLACK | CAT6+ 4PR U/UTP CMP BOX |
| 2413 0101000 | 1,000 FT | 28.000 LB | BLACK | CAT6+ 4PR U/UTP CMP REEL |
| 2413 0102500 | 2,500 FT | 65.000 LB | BLACK | CAT6+ 4PR U/UTP CMP REEL |
| 2413 012A1000 | 1,000 FT | 30.000 LB | PINK | CAT6+ 4PR U/UTP CMP RIB |

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