



Product: [7812E](#)

Cat 6 Cable, U/UTP, PVC, 4 Pair bonded, AWG 23, Indoor CPR Eca

Product Description

Cat. 6 (250MHz), 4-Pair, U/UTP Unshielded, Premise Horizontal Cable, 23 AWG solid bare copper conductors, Polyethylene insulation, PVC jacket

Technical Specifications

Product Overview

Suitable Applications:	Horizontal and building backbone cable; Support current and future Category 6 and 5e applications, such as: 1000Base - T (Gigabit Ethernet), 100 Base - T, 10 Base - T, FDDI, ATM
------------------------	---

Physical Characteristics (Overall)

Conductor

Element	AWG	Stranding	Material	No. of Pairs
Individual pair	23	Solid	BC - Bare Copper	4

Conductor Count:	8
Total Number of Pairs:	4

Insulation

Element	Type	Material	Nominal Diameter
Individual pair	Dielectric	Polyethylene	1.1 mm

Bonded-Pair:	Yes
--------------	-----

Color Chart

Number	Color
Pair 1	White/Blue & Blue
Pair 2	White/Green & Green
Pair 3	White/Orange & Orange
Pair 4	White/Brown & Brown

Outer Jacket Material

Material	Nominal Diameter	Diameter +/- Tolerance
PVC - Polyvinyl Chloride	6.1 mm	0.3 mm

Construction and Dimensions

Min Elongation at Breakof Conductors:	10 %
Min Elongation at Breakof Insulation:	100 %
Min Elongation at Breakof Jacket:	100 %
Min Tensile Strength of Jacket:	9 MPa

Electrical Characteristics

Conductor DCR

Max. Conductor DCR	Max DCR Unbalanced Between Pairs [%]	Max. DCR Unbalanced Within Pair [%]
95 Ohm/km	4 %	2 %

Capacitance

Max. Capacitance Unbalance	Max. Mutual Capacitance
----------------------------	-------------------------

1,600 pF/m	56 pF/m
------------	---------

Impedance

Nominal Characteristic Impedance
100 Ohm

Delay

Max. Delay Skew	Min. Velocity of Propagation
40 ns/100m	60 %

High Freq

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. PSNEXT [dB]	Min. ACR [dB]	Min. PSACR [dB]	Min. ACRF (ELFEXT) [dB]	Min. PSACRF (PSELFEXT) [dB]	Min. RL (Return Loss) [dB]	Min. TCL [dB]	Min. ELTCTL [dB]
1 MHz	2.1 dB/100m	75.3 dB	72.3 dB	73.2 dB	70.2 dB	70 dB	67 dB	20 dB	50 dB	35 dB
4 MHz	3.8 dB/100m	66.3 dB	63.3 dB	62.4 dB	59.4 dB	58 dB	55 dB	23 dB	44 dB	23 dB
10 MHz	6 dB/100m	60.3 dB	57.3 dB	54.3 dB	51.3 dB	50 dB	47 dB	25 dB	40 dB	15 dB
16 MHz	7.6 dB/100m	57.2 dB	54.2 dB	49.6 dB	46.6 dB	45.9 dB	42.9 dB	25 dB	38 dB	10.9 dB
20 MHz	8.5 dB/100m	55.8 dB	52.8 dB	47.3 dB	44.3 dB	44 dB	41 dB	25 dB	37 dB	9 dB
31.2 MHz	10.7 dB/100m	52.9 dB	49.9 dB	42.1 dB	39.1 dB	40.1 dB	37.1 dB	23.6 dB	35.1 dB	5.1 dB
62.5 MHz	15.5 dB/100m	48.4 dB	45.4 dB	32.9 dB	29.9 dB	34.1 dB	31.1 dB	21.5 dB	32 dB	
100 MHz	19.9 dB/100m	45.3 dB	42.3 dB	25.4 dB	22.4 dB	30 dB	27 dB	20.1 dB	30 dB	
155 MHz	25.3 dB/100m	42.4 dB	39.4 dB	17.1 dB	14.1 dB	26.2 dB	23.2 dB	18.8 dB	28.1 dB	
200 MHz	29.1 dB/100m	40.8 dB	37.8 dB	11.6 dB	8.6 dB	24 dB	21 dB	18 dB	27 dB	
250 MHz	33 dB/100m	39.3 dB	36.3 dB	6.3 dB	3.3 dB	22 dB	19 dB	17.3 dB	26 dB	

High Freq Table Note: Limits below 4 MHz are for information only. Reference standard: ISO/IEC 61156-5 ed. 2.0 (2009)

General Electrical Parameters Notes: Reference standard: ISO/IEC 61156 - 5 ed. 2.0 (2009)

Segregation class according EN50174-2: b

Current

Max. Recommended Current [A]
1.5 A

Voltage

Voltage Rating [V]
72 V

Temperature Range

Installation Temp Range:	0°C To +50°C
Operating Temp Range:	-30°C To +60°C

Mechanical Characteristics

Bulk Cable Weight:	41 kg/km
Max Recommended Pulling Tension:	80 N
Min Bend Radius During Installation:	52 mm
Min Bend Radius During Operation:	26 mm

Standards

ISO/IEC Compliance:	ISO/IEC 11801 Ed. 2.2:2002/A2:2010/C1:2011
CPR Euroclass:	Eca
CENELEC Compliance:	EN 50173-1 Ed. 3:2011
Data Category:	Category 6
ANSI Compliance:	ANSI/TIA 568.2-D (2018)
IEEE Specification:	PoE: IEEE 802.3bt Type 1, Type 2, Type 3, Type 4

Applicable Environmental and Other Programs

Environmental Space:	Indoor - Euroclass Eca
EU RoHS Compliance Date (yyyy-mm-dd):	2004-01-01

Flammability, LSOH, Toxicity Testing

ISO/IEC Flammability:	IEC 60332-1-2
Burning Load:	575 kJ/m

Part Number

Variants

Item #	Color	Length
7812E.011000	Blue	1,000 m
7812E.01500	Blue	500 m
7812E.01U305	Blue	305 m
7812E.001000	Gray	1,000 m
7812E.00500	Gray	500 m
7812E.00B100	Gray	100 m
7812E.00U305	Gray	305 m

Patent: <https://www.belden.com/resources/patents>

History

Update and Revision: Revision Number: 0.199 Revision Date: 01-31-2020

© 2020 Belden, Inc

All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described here in are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "ASIS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale.

Belden believes this product to be in compliance with all applicable environmental programs as listed in the data sheet. The information provided is correct to the best of Belden's knowledge, information and belief at the date of its publication. This information is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. The Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.