BELDEN

Product: NH50116UFR ⧉

DataTuff™ Industrial Ethernet CAT6 4x2x23AWG/1 U/FTP Fire Resistant Anti-Rodent and Water- block

Product Description

23 AWG solid bare copper conductors, Polyethylene insulation, Mica Glass Tape Fire Protection, Individual Shielded Pair (U/FTP), Central Drain Wire, Mica Glass Tape and Water Blocking tape, LSZH Jacket, Anti-Rodent and Water-block

Technical Specifications

Product Overview

Suitable Applications:	Industrial Ethernet Cat 6 connection with Fire Resistant capability

Construction Details

Conductor

Element	Size	Stranding	Material	No. of Pairs	No. of Elements
Conductor(s)	23 AWG	Solid	BC - Bare Copper	4	8

Insulation

Material	Nom. Insulation Diameter	Color Code	Notes
PE - Polyethylene	1.58 mm (0.0622 in)	Blue & White with Blue Strip, Orange & White with Orange Strip, Green & White with Green Strip, Brown & White with Brown Strip	Fire Protection Barrier: Mica glass Tape(MGT)

Inner Shield

Element	Shield Type	Material	Drainwire Type	Notes
Individual Shielded Pair	Tape	Bi-Laminate (Alum+Poly)	26 AWG (Solid) TC	Fire Protection Barrier: Mica Glass Tape(MGT), Water blocking structure: Water block tape

Outer Jacket

Material	Nom. Diameter
LSZH - Low Smoke Zero Halogen (Flame Retardant)	11.40 mm (0.4488 in)

Electrical Characteristics

Electricals

Max. Conductor DCR	Nom. Characteristic Impedance
73.2 Ohm/km @ 20 Deg. C	100 Ohm

Delay

Max. Delay Skew
45 ns/70m

High Frequency

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. PSNEXT [dB]	Min. ACRF (ELFEXT) [dB]	Min. PSACRF (PSELFEXT) [dB]	Min. RL (Return Loss) [dB]
4	3.8 dB/70m	66.3	63.3	56.0	53.0	23.0
10	6.0 dB/70m	60.3	57.3	48.0	45.0	25.0
20	8.5 dB/70m	55.8	52.8	42.0	39.0	25.0
25	9.6 dB/70m	54.3	51.3	40.0	37.0	24.3
31.25	10.7 dB/70m	52.9	49.9	38.1	35.1	23.6
62.5	15.5 dB/70m	48.4	45.4	32.1	29.1	21.5
100	19.9 dB/70m	45.3	42.3	28.0	25.0	20.1

| 200 | 29.1 dB/70m | 40.8 | 37.8 | 22.0 | 19.0 | 18.0 |
| 250 | 33.0 dB/70m | 39.3 | 36.3 | 20.0 | 17.0 | 17.3 |

Voltage

UL Voltage Rating
60 V

Mechanical Characteristics

Table Notes:	Temperature range : -40°C To +80°C

Standards and Compliance

Environmental Suitability:	UV Resistance, Oil Resistance
Flammability / Reaction to Fire:	IEC 60332-1-2, IEC 60332-3-22, IEC 60331-23
Data Category:	Category 6
TIA/EIA Compliance:	ANSI/TIA 568.2-D
ISO/IEC Compliance:	IEC 61156-5, IEC 61034-2 - Smoke Density Min Transmittance = 60%
European Halogen Free Standards:	IEC 60754-1 - Halogen Amount = 0.50%, IEC 60754-2 - Halogen Acid Gas Amount - Max. Conductivity = 10 µS/mm, IEC 60754-2 - Halogen Acid Gas Amount - Min. pH = 4.3

History

Update and Revision:	Revision Number: 0.2 Revision Date: 09-03-2025