



Data cables – UTP category 5e (5+)

Standard: ZN-MADEX-04

Cables meet requirements of category 5e according to ISO/IEC 11801; EN 50173; IEC 61156-5; EN 50288-3-1 and ANSI/TIA/EIA 568-B.2.

Resistance for flame propagation according to IEC 60332-1 (EN 60332-1).

Types of cables

- **Powernet 4 x 2 x 24AWG**
- **Ultralink 4 x 2 x 0,5**
- **Internet 2 x 2 x 0,5**

Application

Cables are intended for use in SCS as horizontal or backbone cable within networks, which are not exposed to electromagnetic interference. Suitable for digital signals transmission, ranging from Token Ring, Ethernet, ISDN, TPDDI, Fast-Ethernet 100Base-TX to ATM and Gigabit-Ethernet 1000Base-T. Signal frequency spectrum up to 125MHz.

Cables are not intended for direct connection to mains electricity supply.

Construction

- conductor: solid copper wires with diameter 0,511mm (24AWG) or 0,5mm
- insulation: solid PE
- cable core: 4 or 2 pairs stranded together
- jacket : - flame retardant PVC with oxygen index > 31 (FR-PVC)
- low smoke zero halogen flame retardant material (LSOH)

jacket colour: standard grey 7035 (other colours - red, blue, yellow, green, white - available upon request)

Characteristic

Electrical parameters at temperature 20°C	Unit	Value
DC Loop Resistance – maximal value	Ω/km	190
Resistance unbalance - maximal value	%	2
Insulation resistance - minimal value	MΩ x km	5000
Capacitance unbalance pair to ground - maximal value	pF/km	1600
Dielectric strength conductor/conductor	V	700 a.c . 1000 d.c.
Input impedance at frequency range 1 ÷ 100 MHz	Ω	100 ± 15
Mean characteristic impedance at frequency 100MHz	Ω	100 ± 5
Velocity of propagation - minimal value		at frequency 1 MHz 0,60c at frequency 10 MHz 0,65c at frequency 100 MHz 0,65c
Return Loss (RL) - minimal value	dB	at frequency range (f) 1 ÷ 10MHz 20 + 5 log(f) at frequency range (f) 10 ÷ 20MHz 25 at frequency range (f) 20 ÷ 125MHz 25-7log (f/20)

Other transmission parameters at temperature 20°C

Frequency [MHz]	Attenuation Max. [dB/100m]	NEXT Min. [dB/100m]	PS NEXT Min. [dB/100m]	ELFEXT Min. [dB/100m]	PS ELFEXT Min. [dB/100m]	ACR Min. [dB/100m]
1	2,0	65,3	62,3	63,8	60,8	63,3
4	4,0	56,3	53,3	51,7	48,7	52,3
10	6,3	50,3	47,3	43,8	40,8	44,0
16	8,0	47,2	44,2	39,7	36,7	39,2
20	9,0	45,8	42,8	37,7	34,7	36,8
31,25	11,4	42,9	39,9	33,9	30,9	31,5
62,50	16,5	38,4	35,4	27,8	24,8	21,9
100	21,3	35,3	33,3	23,8	20,8	14,0
125	24,2	33,8	30,8	21,8	18,8	9,6

Working conditions

Temperature range during installation: cables with PVC jacket cables with LSOH jacket	0°C ÷ +50°C -10°C ÷ +50°C
Temperature range during working	-20°C ÷ +70°C
Min. bending ratio during installation	8 x outer diameter of the cable
Min. bending ratio after installation	4 x outer diameter of the cable
Maximal pulling force	20N per pair

Weight and dimensions data of 1 km cable

Type of cable	Maximum overall cable diameter	Standard weight
	[mm]	[kg/km]
Powernet 4 x 2 x 24AWG	5,5	33
Ultralink 4 x 2 x 0,5	5,0	30
Internet 2 x 2 x 0,5	4,5	21

Standard package

Standard length - 305 m (1000 foot) coiled and packed in box, cable 2 x 2 x 0,5 – box 500m.
Other lengths - according to Client's specification.

Additional data

Conductor identification colours

Number of pair	Colour
1	white/blue – blue
2	white/orange – orange
3	white/green – green
4	white/brown – brown

Cable marking

According to Client's specification. Length marking in the distance of 1 meter made on each cable factory length.