

FieldLink®

Industrial Ethernet Cat 5e



Design

Wire

Bare copper wire (22 AWG) ø 0.65 mm (0,026 in)
 Insulation of Polyethylene (PE) ø 1.5 mm (0,059 in)

Core:

Filler as central element
 1. layer: 4 wires
 Sequence of colors: WH-YE-BU-OG
 Plastic tape, overlapped
 Inner- Jacket: Thermoplastic copolymer (FRNC) ø 4.0 mm (0,157 in)
 Alulaminat foil overlapped, applied longitudinally
 Shield braiding of tinned copper wires 0.13 mm dia (36 AWG)
 Coverage about 85% ø 4.6 mm (0,181 in)

Jacket:

Thermoplastic copolymer (FRNC) GN
 Wall thickness about 0.95 mm ø (6.5 ±0.2) mm (0,256 ±0,008 in)

Printing: "sequential length in metres" LEONI L INDUSTRIAL ETHERNET STANDARD CABLE * PROFINET
 TYPE A ES CAT5 PLUS FRNC * 22AWG (SHIELDED) (UL) E119100 CMG 75 °C OR AWM 600V FT4 *
 "year/internal order number"

Electrical data at 20°C

Loop resistance	≤	124	Ohm/km
Resistance difference		5	%
Signal run time	≤	5.3	ns/m
Insulation resistance	≥	500	MOhm*km
Characteristic impedance		(100 ±15)	Ohm

1 – 100 MHz

Ground unbalance attenuation at 64 kHz	>	43	dB
Capacity unbalanced to ground at 1 MHz	≤	3300	pF/km
Return loss (dB) 1 ≤ f ≤ 10 MHz		20 + 5	log (f)
10 ≤ f ≤ 20 MHz		25	
20 ≤ f ≤ 100 MHz		25 - 7	log (f/20)
Surface transfer impedance 10 MHz	≤	10	mOhm/m
UL-Rating		600	V
Test voltage (wire/wire/screen rms 50Hz 1min)	=	2000	V

Near-end crosstalk attenuation

Frequency (MHz)	0.772	1	4	10	16	20	31.25	62.5	100
CAT 5E requirements (dB - 100m) ≥	67	65.3	56.3	50.3	47.3	45.8	42.9	38.4	35
typ. value (dB - 100m)	≥ 80	≥ 80	75	70	65	63	60	55	50

Far-end crosstalk attenuation

Frequency (MHz)	0.772	1	4	10	16	20	31.25	62.5	100
CAT 5E requirements (dB - 100m) ≥	66	63.8	51.7	43.8	39.7	37.7	33.9	27.8	23.8
typ. value (dB - 100m)	≥ 80	≥ 80	75	65	59	55	50	47	45

Attenuation

Frequency (MHz)	0.256	0.512	0.772	1	4	10	16	20	31.25	62.5	100
CAT 5E requirements (dB - 100m) ≤	1.1	1.5	1.8	2.0	4.1	6.5	8.2	9.3	11.7	17.0	22.0
typ. value (dB - 100m)	0.8	1.0	1.1	1.6	3.2	5.2	6.9	7.8	10.5	15	19.5

Mechanical and thermal characteristics

UL-File E119100 Vol.1 Sec.11 Page 1
 UL-Style 21279 (80°C/300V)

Other characteristics:

Permissible temperature range : -25 °C (-13 °F) up to 75 °C (167 °F)
 Min. bending radius allowed : repeated 10X ø, single 5X ø
 Weight about : 65 Kg/km (44 lb/1000ft)

Designation of order:

L45467-J16-B136
 212830
 2YH(ST)CH 2X2X0.64/1.5-100 BLW GN
 1000 m (3281 ft) on non-returnable reel