

FieldLink®

Industrial Ethernet Cat 5e



Design

Wire:

Stranded tinned wire 7 X 0.25 (AWG 22)
Insulation of Polypropylene (PP)

ø 0.75 mm (0.030 in dia)
ø 1.5 mm (0.059 in dia)

Core:

Filler as central element
1.layer: 4 wires twisted
Sequence of colors: WH-YE-BU-OG
Plastic tape, overlapped
Inner jacket: Thermoplastic copolymer (FRNC)
Alulaminat foil overlapped
Shield braiding of tinned copper wires 0.13 mm dia
Coverage about 85%

ø 3.9 mm (0.154 in dia)

Jacket:

Thermoplastic copolymer (FRNC) GN
Wall thickness about 0.9 mm

ø (6.5 ±0.2) mm (0.256 ±0.008 in dia)

Printing: "sequential length in metres" LEONI L INDUSTRIAL ETHERNET FLEXIBLE CABLE * PROFINET Type B
ES CAT5 PLUS FRNC * 22AWG (SHIELDED) (UL) E119100 CM 75°C Verified (UL) CAT 5E Patch
Cable or PLTC Sun Res * "year/internal order number"

Electrical data at 20°C

Loop resistance	≤	120	Ohm/km
Resistance difference		5	%
Signal run time		5.55	ns/m
Insulation resistance	≥	500	MOhm*km
Characteristic impedance		(100 ±15)	Ohm
			1 – 100 MHz

LEONI Special Cables GmbH

Technisches Datenblatt – Technical Data Sheet – Technisches Datenblatt – Technical Data Sheet – Technisches Datenblatt – Technical Data Sheet

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 - 8.6	log (f/20)
Surface transfer impedance of screen 10 MHz	≤	10	mOhm/m
Capacitance 1 kHz	≈	53	nF/km
Inductance 0,06 MHz	≈	670	μH/km
1 MHz	≈	520	μH/km
≥ 10 MHz	≈	500	μH/km
UL-Rating		300	V
Test voltage (wire/wire/screen rms 50Hz 1 min)		700	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	76	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) ≤	1.3	1.8	2.2	2.4	4.9	7.8	9.8	11.1	14	20.4	26.4
typ. value (dB – 100m)	0.9	1.1	1.4	1.8	3.6	6.0	7.6	8.7	11.2	17	22

Mechanical and thermal characteristics

Flame test acc. to IEC 60332-3-22 category A/F

UL-File E119100 Vol.1 Sec.11 Page 1
UL-File E352715 Vol.1 Sec. 1 Page 1 Verified CAT 5E
UL-File E116441 Vol.1 Sec. 6 Page 4

Other characteristics:

Electrical requirements acc. to . prEN 50288 (Juni 1999) Category 5
Sunlight resistant acc. to UL 1581 Sec.1200
Acc. DIN EN 45545-2 R15/HL2

RoHS compliant (Directive 2011/65/EU & 2015/863/EU RoHS 3)
Halogen free
Limited oil resistance
Tensile loading: ≤ 150 N

Permissible temperature range
Transport, installation and operating: -40 °C (-40 °F) up to 75 °C (167 °F)
Fixed installation : -40 °C (-40 °F) up to 85 °C (185 °F)

Min. bending radius allowed: repeated $8X \varnothing$, single $4X \varnothing$
Weight about : 65 Kg/km (44 lb/1000ft)

Designation of order:

L45467-J16-B146
212831
L-9YH(ST)CH 2X2X0.34/1.5-100 VZN GN
1000 m (3281 ft) on non-returnable reel