

# FieldLink®

Industrial Ethernet Cat 5e



## Design

### Wire

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

∅ 0.75 mm (0.030 in dia)  
∅ 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%

∅ 3.9 mm (0.154 in dia)

### Jacket

Thermoplastic copolymer (FRNC) GN  
Wall thickness about 0.9 mm

∅ (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

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

Test requirement acc. to DIN EN 45545-2 table 5 R15/HL2

RoHS compliant (Directive 2011/65/EU & 2015/863/EU RoHS 3)

Halogen free

Limited oil resistance

Tensile loading:  $\leq 150$  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

Product has not been tested and classified according to the CPR (EU/305/2011).

The product shall not be permanently installed in buildings in the EU.