

LSGS-10-LN0015-02

for

**4 PAIR UTP CABLES
(ENHANCED CATEGORY 5)**

(Ref.: UL 444, ANSI/TIA/EIA-568B.2 & ISO/IEC 11801, IEC 61156-5)

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1. SCOPE

This specification is based on the specifications of UL 444, ANSI/TIA/EIA-568-B.2 and ISO/IEC 11801 and covers the requirements for unshielded twisted pair (UTP) cables of 100 Ω , enhanced category 5 (Cat.5e).

where there any conflict between the requirements of reference standards and this specification, the final decision shall be follow this specification.

- Applicable cable size & type ; 4 pairs,
PVC sheath (CMX,CM,CMR) or LSZH sheath (CMX)

2. CABLE CONSTRUCTION

2.1 CONDUCTOR

The conductors shall be solid, annealed and bare copper with a diameter of 25AWG and adequate to meet electrical performances indicated in clause 3.

2.2 INSULATION

Each conductor shall be insulated with solid high density polyethylene.

The insulation shall be uniform and shall not have any defects.

The diameter over the insulation shall be maximum 1.22mm.

2.3 COLOR CODE

The color code of insulation shall be shown as Table 1.

Table 1. Color code of insulation

Pair No.	a-wire		b-wire	
	Base	Stripe	Base	Stripe
1	White	Blue	Blue	-
2	White	Orange	Orange	-
3	White	Green	Green	-
4	White	Brown	Brown	-

* The stripe marking shall be applied on the white color.

2.4 CORE ASSEMBLY

Two insulated conductors shall be twisted into a pair.

Four twisted pairs shall be assembled into a cable core.

2.5 SHEATH

The flame retardant PVC or LSZH (Low Smoke Zero Halogen) compound colored grey or other colors shall be applied over the cable core.

The sheath shall be uniform and shall not have any defects.

The thickness of sheath and cable diameter shall be shown as Table 2.

Table 2. Thickness of sheath and cable diameter

Sheath thickness (Nominal, mm)	Cable diameter (Nominal, mm)
0.4	4.5

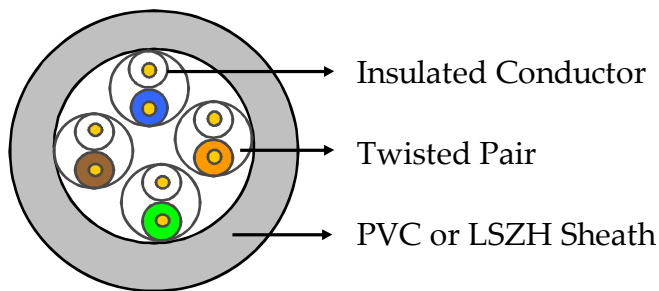


Fig. 1. Cross-sectional Diagram of cable

The drawing appearing on this page may be subject to change or modification without any prior notice.

3. ELECTRICAL CHARACTERISTICS

3.1 ELECTRICAL CHARACTERISTICS

Characteristics		Unit	Cat.5E			
Impedance - Zo	1 ~100MHz	Ω	100 ± 15			
Return Loss (RL)		dB/100m	RL/SRL (Min.)	Att. (Max.)	NEXT/PSNEXT (Min.)	
Attenuation (Att.)	1MHz		N/A	N/A	62.3	
	4MHz		23.0	4.3	53.3	
Pair-to-Pair	8MHz		23.0	6.1	48.8	
Near End	10MHz		23.0	6.8	47.3	
Cross Talk (NEXT)	16MHz		23.0	8.6	44.2	
	20MHz		23.0	9.8	42.8	
Power Sum	25MHz		22.0	10.9	41.3	
Near End	31.25MHz		21.1	12.3	39.9	
Cross Talk	62.5MHz		18.1	17.9	35.4	
(PSNEXT)	100MHz		16.0	23.1	32.3	
Pair-to-Pair Equal Level Far End Cross Talk (ELFEXT)	1MHz		dB/100m	ELFEXT/PSELFEXT (Min.)		
	4MHz			60.8		
	8MHz			48.8		
Power Sum	10MHz	42.7				
Equal Level Far End	16MHz	40.8				
Cross Talk	20MHz	36.7				
(PSELFEXT)	25MHz	34.8				
	31.25MHz	32.8				
	62.5MHz	30.9				
	100MHz	24.9				
		20.8				
Propagation Delay	1MHz	ns/100m	Max. 570			
	10MHz		Max. 545			
	100MHz		Max. 538			
Propagation Delay Skew	1MHz	ns/100m	Max. 45			
	10MHz		Max. 45			
	100MHz		Max. 45			

3.2 MEASUREMENTS PRECAUTION

All electrical characteristics specified in clause 3.1 shall be tested on one sample length of 100 meter or greater removed from the package.

4. PHYSICAL PROPERTIES

4.1 INSULATION

The unaged tensile strength and elongation shall be minimum 16.5MPa and 300%, respectively.

The insulation shrinkage shall not exceed 9.5mm and insulation cold bend shall show no visible cracks.

4.2 SHEATH (PVC)

The unaged tensile strength and elongation shall be minimum 13.8MPa and 100%, respectively.

4.3 SHEATH (LSZH)

The LSZH compound shall comply with IEC 60754-2 and IEC 61034.

The unaged tensile strength and elongation shall be minimum 9MPa and 100%, respectively.

5. MARKING OF CABLES

The cable shall be marked on the sheath to designate the transmission performance and/or others (If ordered by purchaser).

The marking shall be repeated through the outer sheath clearly.

6. PACKING

Each length of completed cable shall be wound on box.

The standard delivery length is 305m.

7. MARKING ON TAG OR BOX

The following details shall be marked on a tag affixed to each shipping length of cable in a box, or directly printed on the outer surface of the box.

- 1) Conductor size and number of pairs
- 2) Flame test classification
- 3) Manufacturer name and Logo
- 4) Length
- 5) Others

- End of Specification -