



SPECIFICATION CONTROL DRAWING

TECC0019C7-XL

Issue 4
14-Apr-21
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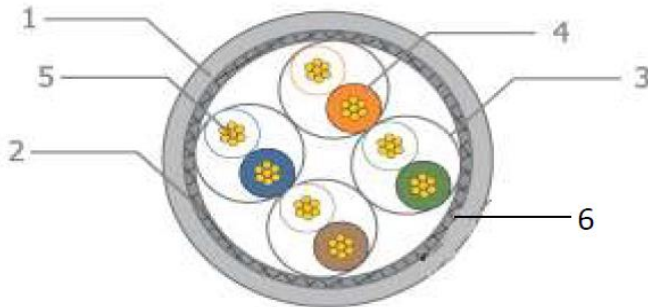
COMMUNICATION CABLE - FOUR PAIR 22AWG S/FTP CAT7 LSZH - EM104 RADIATION CROSS-LINKED

The complete requirements for procuring the wire described herein shall consist of this document and the issue in effect of the referenced specifications. This document takes precedence over documents referenced herein.

PRODUCT DETAILS

DESCRIPTION	PHYSICAL CHARACTERISTICS	
Application: 100BASE-T4, 100BASE-TX, 100VG-AnyLAN, 1000Base-T (1 Gb Ethernet), 1000Base-TX 155Mbps ATM, 622Mbps ATM, 10Gb Ethernet	Structure	Construction Number of Pairs
Rated temperature: 80°C	Conductor	AWG Conductor material Conductor dimension(mm)
Reference Standard: 61156-6, ISO/IEC 11801	Insulation	Insulation material Insulation dimension(mm) Number Colour (Stripe)
Flammability Rating: IEC 60332-3-25 & IEC 60332-1-2 EN 45545-2, EN 50264		Stranded Tinned Cooper (7/0.245) ± 0.02mm Foam PE 1.65 ± 0.05 mm 1. White/Blue & Blue 2. White/Orange & Orange 3. White/Green & Green 2. White/Brown & Brown
Stranded Tinned Copper Conductor Colour-coded PE Insulation XL-LSZH Jacket Packaging: Per customer request	Cabling	Twisting lay length Cabling lay length
	Filler	Material
	Binder	Material
	Shield	Individual shield & material Primary overall shield & material Shield nom. Coverage Drainwire
		AL-Foil Stranded Tinned Copper 35% Min. N/A
	Outer Jacket	Outer Jacket material Outer Jacket Thickness (mm) Overall Nom Dimension (mm) Outer Jacket Rip cord Outer Jacket Colour
		≤ 30 mm ≤ 200 mm N/A N/A Per Customer Request

CROSS SECTION



1	Jacket
2	Braid
3	AL-Foil
4	Insulation
5	Conductor
6	Tape

MECHANICAL CHARACTERISTICS

Outer Jacket	Operating Temp Range	-40°C to +80°C
	Bulk Cable weight	94 kg/km
	Max. recommended pulling tension	80 N
	Min. bend radius (Install)	8 x O.D.
	Tensile Strength	≥ 10 Mpa
	Elongation	≥ 125%
	Ageing Condition	120°C x 240hrs
	After Ageing Tensile Strength	± 30% of Unaging
After Ageing Elongation	± 30% of Unaging	
Cold Bend	No cracks -40°C/4hrs	

ELECTRICAL CHARACTERISTICS

Finished Cable	Nom. Mutual Capacitance	≤ 5.6 nF/100m (@1kHz)
	Pair-Ground Unbalance	≤ 160 pF/100m
	Nom. Velocity of Propagation	65%
	Max. Delay Skew	25 ns/100m
	Max Conductor DC Resistance	145 Ω/km (@ 20°C)
	Resistance Unbalance	2%
	Min. Insulation Resistance	5000 MΩ·km
	Max. Operating Voltage - UL	300 V

JACKET MARK

"TE CONNECTIVITY - TECC0019C7-XL - 4PR 22AWG STRANDED CAT 7 CABLE EM104 - YEAR OF MANUFACTURE - BATCH NUMBER - METRE MARK"

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TE Connectivity is a trading name of Tyco Electronics UK Ltd, Which is registered in England and Wales, number 550926. Registered office: Faraday Road, Dorcan, Swindon, SN3 5HH Website: www.te.com

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ELECTRICAL CHARACTERISTICS CONTINUED

Frequency	Impedance Upper Limit	Impedance Lower Limit	ATT	RL	NEXT	PS NEXT	FEXT	PD
(MHz)	Zu (Ω)	Zl (Ω)	(Db/100m)	(dB Min)	(dB Min)	(dB Min)	(dB Min)	(ns/100m Max)
1	-	-	3.0	20.0	78.0	75.0	70.0	570.0
4	115.2	86.8	5.6	23.0	78.0	75.0	70.0	552.0
8	112.6	88.8	7.9	24.5	78.0	75.0	70.0	546.7
10	111.9	89.4	8.8	25.0	78.0	75.0	70.0	545.4
16	111.9	89.4	11.1	25.0	78.0	75.0	70.0	543.0
20	111.9	89.4	12.4	25.0	78.0	75.0	70.0	542.0
25	113.2	88.3	13.9	24.2	78.0	75.0	70.0	541.2
31.25	114.6	87.2	15.6	23.3	78.0	75.0	70.0	540.4
62.5	120.2	83.2	22.3	20.7	75.5	72.5	70.0	538.6
100	125.3	79.8	28.5	19.0	72.4	69.4	70.0	537.6
200	135.7	73.7	41.2	16.4	67.9	64.9	70.0	536.5
250	140.0	71.4	46.5	15.6	66.4	63.4	70.0	536.3
300	139.8	71.5	51.3	15.6	65.2	62.2	70.0	536.1
600	139.8	71.5	75.1	15.6	60.7	57.7	70.0	535.5

Remark : Cable that meet the requirements of the template are not required to be measured for return loss; alternately cables that meet the return loss requirements are not required to be measured for characteristic impedance.

Mechanical performance Requirements for the tests for outer jacket.

Test	Type of compound		test method	
Hot set test	(200±3) °C/15Min/20N/cm ²	elongation under load ≤100%	EN 60811-2-1 9	
		elongation after unloading ≤25%		
Ozone resistance				
Method A	(0.025-0.03%)(25±2) °C/24h	No Crack	EN50305 7.4.2	
Method B	(0.00015-0.00025%)(40±2) °C	No Crack		
Mineral oil resistance	IRM902/(100±2) °C/72h	Tensile strength Variation ≤±30%.	EN 60811-2-1 10	
		Elongation at break Variation ≤±40%.		
Fuel resistance	IRM903/(70±2) °C/168h	Tensile strength Variation ≤±30%.		
		Elongation at break Variation ≤±40%.		
Acid resistance	N oxalic acid solution/(23±2) °C /168h	Tensile strength Variation ≤±30%.		
		Elongation at break Variation ≥100%.		
alkaline resistance	N-sodium-hydroxide solution/(23±2) °C/168h	Tensile strength Variation ≤±30%.		
		Elongation at break Variation ≥100%.		
Hot pressure	(125 ± 2) °C/4h,	tear strength ≤50%	EN 60811--1-3 9.2	
Cold bend	- (40 ± 2) °C, 8D	No Crack	EN 60811-1-4 8.1	
Impact test	- (25±2) °C	No Crack	EN 50305 5.1	
Assessment of halogens	HCl and HBr	≤0.5%	EN50267-2-1	
		HF	≤0.1%	EN 60684-2
		pH	≥4.3	EN50267-2-2
		Conductivity	≤10µS/mm	
Reaction to fire	Single vertical flame	IEC 60332-1-2	IEC 60332-1-2	
	Bunched cable flame	IEC 60332-3-25	IEC 60332-3-25	
	Smoke emission	>=70%	EN 61034-2	
	Toxicity index	ITC <=3	EN 50305 9.2	
Water absorpti	70±2 °C x 168hrs	Weight increase <=15mg/cm ²	EN 60811-1-3	

Approval Electronic sign off - no signatures will appear.

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