



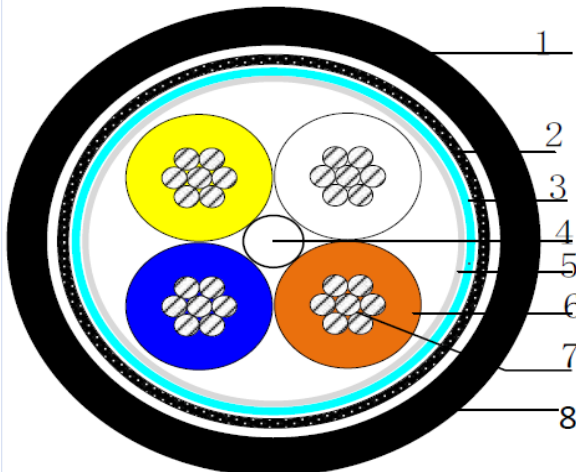
SPECIFICATION CONTROL DRAWING

TECC0029C5-XL

Issue 4
30-Sep-21
Page 1 of 2COMMUNICATION CABLE - 4 x 0.5mm² S/FTQ QUAD CABLE 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: Profinet IEEE 802.3bt Types 1 & 2 Rated temperature: 80°C Reference Standard: 61156-6, ISO/IEC 11801 Flammability Rating: IEC 60332-3-25 & IEC 60332-1-2 EN 45545-2, EN 50264 Stranded Tinned Copper Conductor Colour-coded PE Insulation XL-LSZH Jacket Packaging: Per customer request	CROSS SECTION 	Structure	Construction	SF/UTP
			Number of Conductors	4
		Conductor	AWG / mm²	AWG20 / 0.50 mm²
			Conductor material	Stranded Tinned Copper
			Conductor dimension(mm)	(19/0.185) ± 0.02 mm
	Insulation	Insulation material	PE	
		Insulation dimension (mm)	2.00 ± 0.08 mm	
		Insulation Colour (Pure Colour)	1.White 2.Yellow 3.Blue 4.Orange	
	Cabling	Cabling Lay Length	≤ 100mm	
	Filler	Filler	Optional	
	Tapes	Inner Tape	Separating Tape	
	Overall Shield	Primary Shield Material	AL/Polyester	
		Secondary Shield & Material	Tinned Copper Wire	
		Shield Coverage	≥ 80%	
	Outer Tape	Outer Tape	Fire-Retardant Tape	
	Outer Jacket	Outer Jacket material	XL-LSZH	
		Overall Nom Dimension (mm)	8.50 ± 0.50	
		Outer Jacket Rip cord	N/A	
		Outer Jacket Colour	Blue	
	Physical Characteristics	Operating Temp Range	-40°C to +80°C	
		Bulk Cable weight	95 kg/km	
		Max. Pulling Tension	80N	
		Min. Bend Radius (Install)	70mm	
		Outer Jacket Tensile Strength	≥ 10 MPa	
		Outer Jacket Elongation	≥ 125%	
		Outer Jacket Ageing	240h @ 120°C	
		Tensile Strength Variation	± 30% of Unaging	
		Elongation Variation	± 30% of Unaging	
	Electrical Characteristics	Nom. mutual capacitance	≤ 5.6 nF/100m (@ 1kHz)	
		Pair to ground capacitance unbalance	≤ 160 pF/100m	
		Nominal velocity of propagation	70%	
		Max. delay skew	45 ns/100m	
		Max. conductor DC resistance	40.1 Ω/km (@ 20 °C)	
		Max. Conductor resistance unbalance	2%	
		Min. insulation resistance	150 MΩ·km	
		Max. operating voltage - UL	300 V	
		JACKET MARK		
		"TE CONNECTIVITY - TECC0029C5-XL - 4 X 0.5mm² S/FTQ CAT 5E CABLE EM104 - YEAR OF MANUFACTURE - BATCH NUMBER - METRE MARK"		

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TE Connectivity is a trading name of Tyco Electronics UK Ltd.
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ELECTRICAL CHARACTERISTICS CONTINUED

Frequency	Input Impedance	ATT	RL	NEXT	ELFEXT	DELAY
(MHz)	(Ω)	(Db/100m)	(dB Min)	(dB Min)	(dB Min)	(Db/100m Max)
1	100 ± 15	2.1	-	59.0	58.0	570.0
4	100 ± 15	4.3	23.0	50.0	46.0	552.0
10	100 ± 15	6.6	25.0	44.0	38.0	545.4
16	100 ± 15	8.2	25.0	41.0	34.0	543.0
20	100 ± 15	9.2	25.0	39.0	32.0	542.0
31.25	100 ± 15	11.8	23.6	37.0	28.0	540.4
62.5	100 ± 15	17.1	21.5	32.0	22.0	538.6
100	100 ± 15	22.0	20.1	29.0	18.0	537.6

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% elongation after unloading ≤25%	EN 60811-2-1 9
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%. Elongation at break Variation ≤±40%.	EN 60811-2-1 10
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 ≤6	EN 45545-2
	Toxicity index	ITC ≤3	EN 50264-1 EM 104
Water absorption	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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