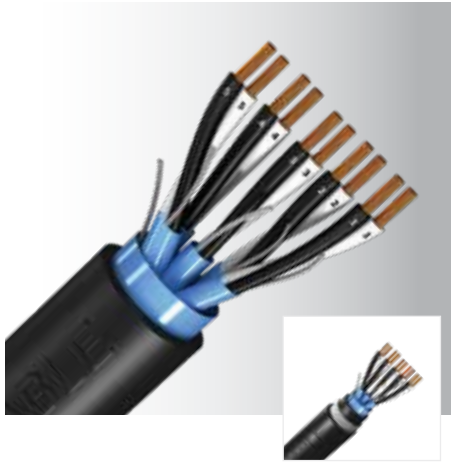


# Flame Retardant Instrumentation Cables

500V Individual & Collective Screen  
XLPE Insulated, IS OS, Unarmoured & Armoured, LSZH Sheathed Cable  
CU/XLPE/IS OS/LSZH or CU/XLPE/IS OS/LSZH/SWA/LSZH  
Model Code: XIOL or XIOLSL



Standard Reference	BS EN 50290, BS EN 50288-1 BS EN 50288-7
Flame Retardant Ref.	IEC 60332-3, IEC 60754 IEC 61034

Application :	This cable is intended for use in machineries, especially suitable for areas where fire would create dense smoke and toxic fumes, imposing major threat to lives and equipment
Construction :	Plain annealed copper wire, XLPE insulated, twisted pair or triad, individual and overall aluminium/polyester tape with tinned copper drain wire screened, unarmoured or galvanized steel wire armoured, LSZH bedding & sheathed cable
Insulation Colour :	Pair: Black, White with numbering Triple: Red, Black, White with numbering
Sheath Colour :	Black (Other colour upon request)
Operating Temperature :	90°C

Conductor			Insulation Thickness (mm)	Unarmoured			Armoured		
Nominal Area (mm <sup>2</sup> )	No. of Pair/Triple (no.)	Stranded Dia. (mm)		Part No.	Approx. Overall Dia. (mm)	Approx. Weight (kg/km)	Part No.	Approx. Overall Dia. (mm)	Approx. Weight (kg/km)
0.5	2P	0.9	0.6		11.0	118		16.2	393
	4P				13.0	181		18.0	524
	6P				15.5	239		21.0	754
	8P				17.0	305		23.0	875
	10P				19.5	366		26.0	1020
	12P				20.0	420		27.5	1101
	16P				22.2	545		29.0	1493
	20P				25.0	676		32.0	1746
	24P				28.0	804		35.0	2017
	36P				32.5	1133		40.5	2813
	50P				38.5	1545		47.0	3542
	2T				12.2	149		17.5	462
	4T				14.2	249		19.2	609
	6T				16.8	298		22.5	867
	12T				22.6	545		29.5	1495
	16T				25.2	709		32.0	1780
	36T				36.6	1481		45.0	3384
0.75	2P	1.11	0.6		12.0	133		17.0	444
	4P				13.5	225		18.5	577
	6P				16.2	312		22.0	826
	8P				18.5	362		24.5	984
	10P				21.0	446		27.6	1332
	12P				21.5	504		28.5	1412
	16P				24.0	654		31.0	1668
	20P				27.0	813		35.0	1952
	24P				30.2	968		37.4	2272
	36P				34.8	1388		43.2	3225
	50P				41.5	1895		51.0	4550
	2T				13.2	174		18.2	507
	4T				15.5	300		21.4	811
	6T				18.2	371		24.5	1003
	12T				24.2	670		31.0	1676
	16T				27.2	873		34.5	2017
	36T				39.0	1858		48.5	3929

# Flame Retardant Instrumentation Cables



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www.keystone-cable.com

500V Individual & Collective Screen  
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CU/XLPE/IS OS/LSZH or CU/XLPE/IS OS/LSZH/SWA/LSZH  
Model Code: XIOL or XIOLSL

Conductor			Insulation Thickness	Unarmoured			Armoured						
Nominal Area (mm <sup>2</sup> )	No. of Pair/ Triple	Stranded Dia. (mm)		Part No.	Approx. Overall Dia. (mm)	Approx. Weight (kg/km)	Part No.	Approx. Overall Dia. (mm)	Approx. Weight (kg/km)				
1.0	2P 4P 6P 8P 10P 12P 16P 20P 24P 36P 50P	1.29	0.6		12.5	148		17.8	477				
					14.5	253		19.5	621				
					17.2	324		23.0	905				
					19.5	415		25.5	1078				
					22.5	510		29.2	1439				
					23.0	590		30.0	1560				
					25.5	767		32.5	1860				
					28.8	944		36.6	2198				
					32.5	1126		40.5	2824				
					37.5	1622		46.0	3581				
					44.5	2217		54.5	5028				
				2T 4T 6T 12T 16T 36T					14.0	196		19.0	544
									16.2	341		22.2	879
									19.2	431		25.2	1089
									26.0	799		33.0	1885
									29.0	1039		36.5	2287
	42.2	2196						52.0	4856				
1.5	2P 4P 6P 8P 10P 12P 16P 20P 24P 36P 50P	1.59	0.6						14.0	203		19.5	657
									16.0	355		23.0	882
					19.2	452		25.4	1094				
					21.5	583		28.0	1306				
					24.5	727		31.5	1755				
					25.5	829		32.5	1895				
					28.5	1083		36.0	2275				
					32.0	1336		42.2	3020				
					36.0	1611		44.2	3468				
					41.5	2327		51.2	4917				
					49.5	3185		59.5	6335				
				2T 4T 6T 12T 16T 36T					15.2	256		21.5	769
									18.0	452		24.0	1045
									21.5	593		27.5	1312
									29.0	1114		36.5	2330
									32.5	1455		40.5	3131
	47.2	3131						57.0	6130				
2.5	2P 4P 6P 8P 10P 12P 16P 20P 24P 36P 50P	2.01	0.7						16.0	254		22.2	793
									18.8	443		25.0	1076
					22.5	586		29.5	1533				
					25.5	768		32.5	1857				
					29.2	948		36.5	2204				
					30.5	1085		38.5	2649				
					34.0	1429		42.0	3205				
					38.5	1760		47.0	3758				
					42.8	2117		52.4	4841				
					49.8	3052		60.0	6239				
					59.2	4226		70.0	8053				
				2T 4T 6T 12T 16T 36T					18.0	332		24.0	926
									21.2	585		27.5	1296
									25.5	793		32.5	1862
									34.2	1500		42.5	3278
									38.5	1955		47.5	3955
	56.5	4230						67.0	7860				

Note : For technical specification, please refer to Table 9 to 13 (Page 69)

**Table 9 : Electrical Characteristics for Instrumentation Cables**

Material	PVC	PE	XLPE	XLEVA	V-90
Max. Conductor Operating Temperature (°C)	70	70	90	105	90
Min. Ambient Temperature (°C)	-15	-15	-15	-15	-15
Max. Working Voltage (r.m.s)	300/500V	300/500V	300/500V	300/500V	300/500V
Test Voltage (1 minute)	2000 V R.M.S between conductors and screen/armour				
Min. Insulation Resistance (mΩ/km)	10	1000	1000	10	10

**Table 10 : Conductor Resistance @ 20 °C**

Conductor			Plain		Tinned	
Size mm <sup>2</sup>	Class	Stranding no./mm	Single/Multi-Core	Multi-Pair/Triple	Single/Multi-Core	Multi-Pair/Triple
0.5	1	1/0.80	36.0	36.7	36.7	37.1
	2	7/0.30	36.0	36.7	36.7	37.1
	5	16/0.20	39.0	39.7	40.1	40.9
0.75	1	1/0.97	24.5	25.0	24.8	25.3
	2	7/0.37	24.5	25.0	24.8	25.3
	5	24/0.20	26.0	26.5	26.7	27.2
1.0	1	1/1.13	18.1	18.4	18.2	18.6
	2	7/0.43	18.1	18.4	18.2	18.6
	5	32/0.20	19.5	19.9	20.0	20.4
1.5	1	1/1.38	12.1	12.3	12.2	12.4
	2	7/0.53	12.1	12.3	12.2	12.4
	5	30/0.25	13.3	13.6	13.7	14.0
2.5	1	1/1.78	7.41	7.6	7.56	7.71
	2	7/0.67	7.41	7.6	7.56	7.71
	5	50/0.25	8.0	8.1	8.212	8.37

**Table 11 : Maximum Inductance to Resistance Ratio (L/R)**

Conductor	
Size mm <sup>2</sup>	L/R Ratio (for adjacent cores) μH/Ω
0.50	25
0.75	25
1.0	25
1.5	40
2.5	60

**Table 12 : Maximum Mutual Capacitance Values**

Conductor Size mm <sup>2</sup>	Type of Material	Requirement nF/km
0.5	PE XLPE XLEVA	150
0.75		
1.0		
1.5		
2.5	PVC	250

**Table 13 : Minimum Bending Radius**

Cable Type	Unarmoured	Armoured
Collective Screen (OS)	8D	10D
Individual and Overall Screen (ISOS)	8D	10D