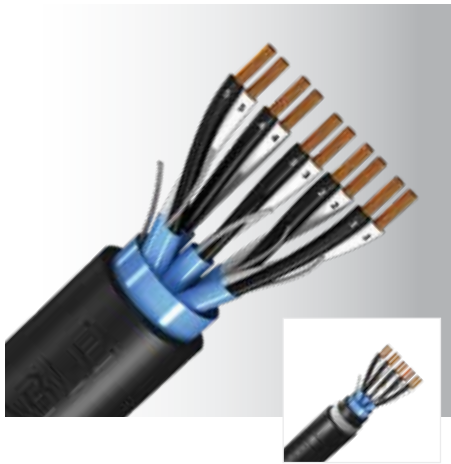


# Flame Retardant Instrumentation Cables

500V Individual & Collective Screen  
XLEVA Insulated, IS OS, Unarmoured & Armoured, LSZH Sheathed Cable  
CU/XLEVA/IS OS/LSZH or CU/XLEVA/IS OS/LSZH/SWA/LSZH  
Model Code: VIOL or VIOLSL



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, XLEVA 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 :	110°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	123		16.2	400
	4P				13.0	210		18.0	536
	6P				15.5	260		21.0	771
	8P				17.0	332		23.0	899
	10P				19.5	400		26.0	1049
	12P				20.0	461		27.5	1136
	16P				22.2	599		29.0	1540
	20P				25.0	743		32.0	1805
	24P				28.0	855		35.0	2088
	36P				32.5	1251		40.5	2920
	50P				38.5	1710		47.0	3690
	2T				12.2	158		17.5	471
	4T				14.2	268		19.2	626
	6T				16.8	327		22.5	882
	12T				22.6	601		29.5	1548
	16T				25.2	784		32.0	1850
	36T				36.6	1649		45.0	3544
	0.75			2P	1.11	0.6		12.0	140
4P			13.5	240				18.5	591
6P			16.2	304				22.0	848
8P			18.5	390				24.5	1001
10P			21.0	482				27.6	1354
12P			21.5	546				28.5	1454
16P			24.0	711				31.0	1724
20P			27.0	884				35.0	2022
24P			30.2	1053				37.4	2355
36P			34.8	1516				43.2	4679
50P			41.5	2073				51.0	5215
2T			13.2	183				18.2	517
4T			15.5	319				21.4	833
6T			18.2	400				24.5	1022
12T			24.2	729				31.0	1740
16T			27.2	952				34.5	2102
36T			39.0	2037				48.5	4121

# Flame Retardant Instrumentation Cables



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www.keystone-cable.com

500V Individual & Collective Screen  
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CU/XLEVA/IS OS/LSZH or CU/XLEVA/IS OS/LSZH/SWA/LSZH  
Model Code: VIOL or VIOLSL

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)
1.0	2P 4P 6P 8P 10P 12P 16P 20P 24P 36P 50P 2T 4T 6T 12T 16T 36T	1.29	0.6		12.5	256		17.8	484
					14.5	269		19.5	635
					17.2	347		23.0	927
					19.5	448		25.5	1107
					22.5	549		29.2	1476
					23.0	637		30.0	1605
					25.5	830		32.5	1919
					28.8	1023		36.6	2272
					32.5	1220		40.5	2914
					37.5	1763		46.0	3715
					44.5	2414		54.5	5215
					14.0	206		19.0	556
					16.2	362		22.2	903
					19.2	463		25.2	1125
					26.0	864		33.0	1956
					29.0	1128		36.5	2381
	42.2	2398		52.0	5068				
1.5	2P 4P 6P 8P 10P 12P 16P 20P 24P 36P 50P 2T 4T 6T 12T 16T 36T	1.59	0.6		14.0	203		19.5	657
					16.0	355		23.0	920
					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
					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 2T 4T 6T 12T 16T 36T	2.01	0.7		16.0	267		22.2	806
					18.8	470		25.0	1102
					22.5	625		29.5	1572
					25.5	821		32.5	1910
					29.2	1014		36.5	2270
					30.5	1163		38.5	2728
					34.0	1534		42.0	3310
					38.5	1891		47.0	3889
					42.8	2275		52.4	4999
					49.8	3289		60.0	6476
					59.2	4555		70.0	8382
					18.0	354		24.0	945
					21.2	628		27.5	1336
					25.5	856		32.5	1921
					34.2	1626		42.5	3397
					38.5	2122		47.5	4112
	56.5	4602		67.0	8215				

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