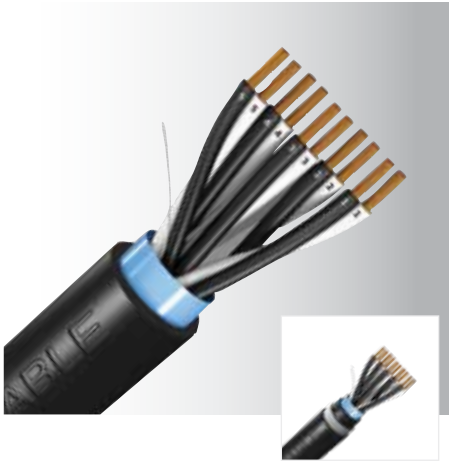


Flame Retardant Instrumentation Cables



tel (65) 6367 0107 fax (65) 6365 2963
www.keystone-cable.com

500V Collective Screen
XLEVA Insulated, OS, Unarmoured & Armoured, LSZH Sheathed Cable
CU/XLEVA/OS/LSZH or CU/XLEVA/OS/LSZH/SWA/LSZH
Model Code: VOL or VOLSL



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, 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

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

Conductor			Insulation Thickness (mm)	Unarmoured			Armoured		
Nominal Area (mm ²)	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	0.9	0.6	0.6		7.0	63		11.8	237
					10.2	104		15.0	354
					12.2	160		16.4	453
					14.0	208		18.5	553
					15.6	262		20.2	644
					17.5	315		23.0	886
					18.0	361		23.8	946
					20.4	460		26.8	1268
					22.8	565		29.5	1476
					25.4	680		32.0	1693
					29.2	961		36.5	2111
					34.5	1314		42.0	3018
					7.4	69		12.0	251
					13.2	223		18.0	555
					15.5	283		20.0	664
					20.5	491		26.2	1153
					23.0	641		29.5	1554
					33.2	1369		40.8	3011
0.75	1.11	0.6	0.6		7.4	71		12.0	260
					10.8	132		15.5	386
					12.5	203		17.5	534
					14.8	252		19.5	622
					16.8	312		22.5	870
					19.0	385		25.0	1024
					19.8	434		25.5	1098
					22.2	567		28.5	1479
					25.0	703		31.5	1722
					27.5	839		34.2	1982
					31.6	1192		38.5	2526
					37.5	1631		45.5	3549
					7.8	80		12.5	276
					13.8	261		18.8	622
					16.6	339		22.2	895
					22.2	610		28.0	1349
					24.8	796		31.5	1816
					36.0	1705		43.5	3533

Flame Retardant Instrumentation Cables



tel (65) 6367 0107 fax (65) 6365 2963
www.keystone-cable.com

500V Collective Screen
XLEVA Insulated, OS, Unarmoured & Armoured, LSZH Sheathed Cable
CU/XLEVA/OS/LSZH or CU/XLEVA/OS/LSZH/SWA/LSZH
Model Code: VOL or VOLSL

Conductor			Insulation Thickness (mm)	Unarmoured			Armoured		
Nominal Area (mm ²)	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	1.29	0.6	1P		7.8	82		12.5	278
			2P		11.5	135		16.2	420
			4P		13.2	233		18.0	579
			6P		16.0	297		21.5	828
			8P		18.0	370		23.5	956
			10P		20.5	458		26.2	1135
			12P		21.0	520		27.0	1228
			16P		23.6	679		30.0	1652
			20P		26.5	843		33.0	1925
			24P		29.5	1006		36.0	2215
			36P		34.2	1453		41.5	3179
			50P		40.5	1989		48.0	4043
			1T		8.2	93		13.0	296
			4T		14.6	304		19.8	586
			6T		17.8	402		23.2	987
			12T		23.8	733		29.5	1539
16T		26.6	959		33.2	2059			
36T		38.5	2067		46.2	4021			
1.5	1.59	0.6	1P		8.5	108		13.5	311
			2P		12.5	180		17.8	492
			4P		14.5	313		19.5	665
			6P		17.5	413		23.0	953
			8P		19.8	529		25.5	1151
			10P		22.6	659		29.0	1541
			12P		23.4	753		30.0	1669
			16P		26.2	981		32.8	1987
			20P		29.2	1209		36.0	2346
			24P		32.5	1442		40.0	3006
			36P		37.8	2087		45.5	3861
			50P		44.8	2880		54.0	5483
			1T		9.0	115		13.5	340
			4T		16.4	393		22.0	948
			6T		19.6	532		25.5	1181
			12T		26.4	982		33.0	2074
16T		29.5	1286		36.2	2489			
36T		43.0	2803		51.5	5456			
2.5	2.01	0.7	1P		10.0	144		14.5	390
			2P		14.5	231		19.5	600
			4P		17.2	409		23.0	993
			6P		20.5	554		26.5	1245
			8P		23.4	716		30.0	1519
			10P		27.0	906		34.0	2027
			12P		27.8	1043		35.0	2206
			16P		31.2	1361		38.4	2673
			20P		35.0	1681		43.0	3500
			24P		39.2	2025		47.4	4069
			36P		45.2	2939		55.0	5789
			50P		54.0	4054		63.5	7482
			1T		10.4	167		15.5	427
			4T		19.2	579		25.0	1242
			6T		23.2	782		30.0	1755
			12T		31.5	1488		38.5	2821
16T		35.2	1947		43.0	3768			
36T		51.5	4257		61.0	7529			

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 ²	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 ²	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 ²	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