

# 6491X Cable

## Application

For use in conduit and fixed, protected installation in switchgear, lighting and appliances.



## Standards

BS6004

## Conductor

H07V-R: Class 2 stranded plain copper conductors to BS EN 60228:2005 (previously BS6360)

H07V-U: Class 1 solid plain copper conductor to BS EN 60228:2005 (previously BS6360)

## Insulation

PVC (Polyvinyl Chloride)  
Type TI1 to BS7655

## Insulation Colour

Red, Black, Blue, Yellow, Brown, White, Green/Yellow, Grey

## Voltage Rating

450/750V

## Temperature Rating

0°C to +70°C

## Minimum Bending Radius

Up to 10mm<sup>2</sup>:  
3 x overall diameter

10mm<sup>2</sup> to 25mm<sup>2</sup>:  
4 x overall diameter

Above 25mm<sup>2</sup>:  
5 x overall diameter

## Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm <sup>2</sup>	Nominal Thickness of Insulation mm	Maximum Overall Diameter mm	Nominal Weight kg/Km
1 x 1.5	0.7	3.3	22
1 x 2.5	0.8	3.9	32
1 x 4.0	0.8	4.6	50
1 x 6.0	0.8	5.2	71
1 x 10.0	1.0	6.7	120
1 x 16.0	1.0	7.8	180
1 x 25.0	1.2	9.7	280
1 x 35.0	1.2	10.9	380
1 x 50.0	1.4	12.8	510
1 x 70.0	1.4	14.6	710
1 x 95.0	1.6	17.1	970
1 x 120.0	1.6	18.8	1200
1 x 150.0	1.8	20.9	1480
1 x 185.0	2.0	23.3	1900
1 x 240.0	2.2	26.6	2480
1 x 300.0	2.4	29.6	3100

## Conductors

### Class 2 stranded conductors for single core and multi-core cables

Nominal Cross Sectional Area mm <sup>2</sup>	Minimum Number of Wires in the Conductor							Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor	
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km	
1.00	7	-	-	-	-	-	18.1000	
1.50	7	-	6	-	-	-	12.1000	
2.50	7	-	6	-	-	-	7.4100	
4.00	7	-	6	-	-	-	4.6100	
6.00	7	-	6	-	-	-	3.0800	
10.00	7	7	6	6	-	-	1.8300	
16.00	7	7	6	6	-	-	1.1500	
25.00	7	7	6	6	6	6	0.7270	
35.00	7	7	6	6	6	6	0.5240	

Table in accordance with BS EN 60228:2005 (previously BS6360).

[Datasheet continues»](#)

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## Conductors

Class 2 stranded conductors for Single Core and Multi-Core cables

1	2	3	4	5	6	7	9
Nominal Cross Sectional Area mm <sup>2</sup>	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
50.00	19	19	6	6	6	6	0.3870
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
630.00	91	91	53	53	53	53	0.0283

Table in accordance with BS EN 60228:2005 (previously BS6360)

## Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm <sup>2</sup>	Reference Method A (enclosed in conduit in thermally insulating wall etc.) Amps		Reference Method B (enclosed in conduit on a wall or in a trunking etc) Amps		Reference Method C (clipped direct) Amps		Reference Method F (in free air or on a perforated cable tray etc horizontal or vertical) Amps				
	2 Cables Single Phase AC or DC	3 or 4 Cables Three Phase AC	2 Cables Single Phase AC or DC	3 or 4 Cables Three Phase AC	2 Cables Single Phase AC or DC flat or touching	3 or 4 Cables Three Phase AC flat and touching or trefoil	Touching			Spaced by one diameter	
							2 Cables Single Phase AC or DC flat	3 Cables Three Phase AC flat	3 Cables Three Phase AC trefoil	2 Cables Single Phase AC or DC	3 Cables Three Phase AC flat
1	2	3	4	5	6	7	8	9	10	11	12
1.0	11.0	10.5	13.5	12.0	15.5	14.0	-	-	-	-	-
1.5	14.5	13.5	17.5	15.5	20.0	18.0	-	-	-	-	-
2.5	20.0	18.0	24.0	21.0	27.0	25.0	-	-	-	-	-
4.0	26.0	24.0	32.0	28.0	37.0	33.0	-	-	-	-	-
6.0	34.0	31.0	41.0	36.0	47.0	43.0	-	-	-	-	-
10.0	46.0	42.0	57.0	50.0	65.0	59.0	-	-	-	-	-
16.0	61.0	56.0	76.0	68.0	87.0	79.0	-	-	-	-	-
25.0	80.0	73.0	101.0	89.0	114.0	104.0	131	114	110	146	130
35.0	99.0	89.0	125.0	110.0	141.0	129.0	162	143	137	181	162
50.0	119.0	108.0	151.0	134.0	182.0	167.0	196	174	167	219	197
70.0	151.0	136.0	192.0	171.0	234.0	214.0	251	225	216	281	254
95.0	182.0	164.0	232.0	207.0	284.0	261.0	304	275	264	341	311
120.0	210.0	188.0	269.0	239.0	330.0	303.0	352	321	308	396	362
150.0	240.0	216.0	300.0	262.0	381.0	349.0	406	372	356	456	419
185.0	273.0	245.0	341.0	296.0	436.0	400.0	463	427	409	521	480
240.0	321.0	286.0	400.0	346.0	515.0	472.0	546	507	485	615	569
300.0	367.0	328.0	458.0	394.0	594.0	545.0	629	587	561	709	659
400.0	-	-	546.0	467.0	694.0	634.0	754	589	656	852	795
500.0	-	-	626.0	533.0	792.0	723.0	868	789	749	982	920
630.0	-	-	720.0	611.0	904.0	826.0	1005	905	855	1138	1070

Ambient temperature: 30°C

Conductor operating temperature: 70°C

The above table is in accordance with Table 4D1A of the 17th Edition of IEE Wiring Regulations.

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Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm <sup>2</sup>	2 Cables DC mV/A/m	2 Cables Single Phase AC mV/A/m									3 or 4 Cables Three Phase AC mV/A/m											
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C, F & G (clipped direct, on tray or in free air)						Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C, F & G (clipped direct, on tray or in free air)								
					Cable Touching			Cable Spaced*						Cable Touching Trefoil		Cable Touching Flat		Cable Spaced* Flat				
1	2	3			4			5			6			7			8			9		
1.0	44.000	44.0			44.0			44.0			38.0			38.0			38.0			38.0		
1.5	29.000	29.0			29.0			29.0			25.0			25.0			25.0			25.0		
2.5	18.000	18.0			18.0			18.0			15.0			15.0			15.0			15.0		
4.0	11.000	11.0			11.0			11.0			9.5			9.5			9.5			9.5		
6.0	7.300	7.3			7.3			7.3			6.4			6.4			6.4			6.4		
10.0	4.400	4.4			4.4			4.4			3.8			3.8			3.8			3.8		
16.0	2.800	2.8			2.8			2.8			2.4			2.4			2.4			2.4		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25.0	1.750	1.800	0.33	1.80	1.750	0.200	1.750	1.750	0.29	1.80	1.500	0.29	1.55	1.500	0.175	1.500	0.150	0.25	1.55	1.500	0.32	1.55
35.0	1.250	1.300	0.31	1.30	1.250	0.195	1.250	1.250	0.28	1.30	1.100	0.27	1.10	1.100	0.170	1.100	0.100	0.24	1.10	1.100	0.32	1.15
50.0	0.930	0.950	0.30	1.00	0.930	0.190	0.950	0.930	0.28	0.97	0.810	0.26	0.85	0.800	0.165	0.820	0.800	0.24	0.84	0.800	0.32	0.86
70.0	0.630	0.650	0.29	0.72	0.630	0.185	0.660	0.630	0.27	0.69	0.560	0.25	0.61	0.550	0.160	0.570	0.550	0.24	0.60	0.550	0.31	0.63
95.0	0.460	0.490	0.28	0.56	0.470	0.180	0.500	0.470	0.27	0.54	0.420	0.24	0.48	0.410	0.155	0.430	0.410	0.23	0.47	0.400	0.31	0.51
120.0	0.360	0.390	0.27	0.47	0.370	0.175	0.410	0.370	0.26	0.45	0.330	0.23	0.41	0.320	0.150	0.360	0.320	0.23	0.40	0.320	0.30	0.44
150.0	0.290	0.310	0.27	0.41	0.300	0.175	0.340	0.290	0.26	0.39	0.270	0.23	0.36	0.260	0.150	0.300	0.260	0.23	0.34	0.260	0.30	0.40
185.0	0.230	0.250	0.27	0.37	0.240	0.170	0.290	0.240	0.26	0.35	0.220	0.23	0.32	0.210	0.145	0.260	0.210	0.22	0.31	0.210	0.30	0.36
240.0	0.180	0.195	0.26	0.33	0.185	0.165	0.250	0.185	0.25	0.31	0.170	0.23	0.29	0.160	0.145	0.220	0.160	0.22	0.27	0.160	0.29	0.34
300.0	0.145	0.160	0.26	0.31	0.150	0.165	0.220	0.150	0.25	0.29	0.140	0.23	0.27	0.130	0.140	0.190	0.130	0.22	0.25	0.130	0.29	0.32
400.0	0.105	0.130	0.26	0.29	0.120	0.160	0.200	0.115	0.25	0.27	0.120	0.22	0.25	0.105	0.140	0.175	0.105	0.21	0.24	0.100	0.29	0.31
500.0	0.086	0.110	0.26	0.28	0.098	0.155	0.185	0.093	0.24	0.26	0.100	0.22	0.25	0.086	0.135	0.160	0.086	0.21	0.23	0.081	0.29	0.30
630.0	0.068	0.094	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25	0.080	0.22	0.24	0.072	0.135	0.150	0.072	0.21	0.22	0.066	0.28	0.29

Conductor operating temperature: 70°C

\*Spacings larger than one cable diameter will result in a larger voltage drop.

The above table is in accordance with Table 4D1B of the 17th Edition of IEE Wiring Regulations.

r = Resistive Component  
 x = Reactive Component  
 z = Impedance Value

For cables having conductors of 16mm<sup>2</sup> or less cross-sectional area their inductances can be ignored and (mV/A/m)<sub>r</sub> values only are tabulated. For cables having conductors greater than 16mm<sup>2</sup> cross-sectional area the impedance values are given as (mV/A/m)<sub>z</sub>, together with the resistive component (mV/A/m)<sub>r</sub> and the reactive component (mV/A/m)<sub>x</sub>.

The above paragraph is extracted from Appendix 4 of the 16th Edition of IEE Wiring Regulations.