

## CONDUCTOR RESISTANCE

Conductor resistance for Class 1 solid conductor & Class 2 stranded conductor

NOMINAL CROSS SECTIONAL AREA	Minimum number of wires in the conductor	Maximum resistance of conductor at 20°C, (Class 1 & Class 2)	
		Plain wires	Metal-coated wires
mm <sup>2</sup>	(Class 2 conductor)	Ω/km	Ω/km
0.5	7	36.0	36.7
0.75	7	24.5	24.8
1.0	7	18.1	18.2
1.5	7	12.1	12.2
2.5	7	7.41	7.56
4	7	4.61	4.70
6	7	3.08	3.11
10	7	1.83	1.84
16	7	1.15	1.16
25	7	0.727	0.734
35	7	0.524	0.529
50	19	0.387	0.391
70	19	0.268	0.270
95	19	0.193	0.195
120	37	0.153	0.154
150	37	0.124	0.126
185	37	0.0991	0.100
240	37	0.0754	0.0762
300	61	0.0601	0.0607
400	61	0.0470	0.0475
500	61	0.0366	0.0369
630	91	0.0283	0.0286

The above table is based on BS EN 60228

### Conductor resistance for Class 5 & Class 6 flexible conductor

NOMINAL CROSS SECTIONAL AREA	Maximum diameter of wires in conductor		Maximum resistance of conductor at 20°C, (Class 5 & Class 6)	
	Class 5	Class 6	Plain wires	Metal-coated wires
mm <sup>2</sup>	mm	mm	Ω/km	Ω/km
0.5	0.21	0.16	39.0	40.1
0.75	0.21	0.16	26.0	26.7
1.0	0.21	0.16	19.5	20.0
1.25	0.21	-	15.6	16.1
1.5	0.26	0.16	13.3	13.7
2.5	0.26	0.16	7.98	8.21
4	0.31	0.16	4.95	5.09
6	0.31	0.21	3.30	3.39
10	0.41	0.21	1.91	1.95
16	0.41	0.21	1.21	1.24
25	0.41	0.21	0.780	0.795
35	0.41	0.21	0.554	0.565
50	0.41	0.31	0.386	0.393
70	0.51	0.31	0.272	0.277
95	0.51	0.31	0.206	0.210
120	0.51	0.31	0.161	0.164
150	0.51	0.31	0.129	0.132
185	0.51	0.41	0.106	0.108
240	0.51	0.41	0.0801	0.0817
300	0.51	0.41	0.0641	0.0654
400	0.51	-	0.0486	0.0495
500	0.61	-	0.0384	0.0391
630	0.61	-	0.0287	0.0292

The above table is based on BS EN 60228

### Conductor resistance for copper under BS 2004

SIZE,	Maximum resistance of conductor at 20°C,
No. / Inch	Ω/1,000yard
23/0.0076	25.08
40/0.0076	14.42
70/0.0076	8.242
110/0.0076	5.247
162/0.0076	3.561

The above table is based on BS 3360