

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Coil Lead

90°C/180°C



Application

Coil leads are designed for direct and permanent connection to coil winding of motors and other electrical apparatus. When used in coil lead applications, cable may also be required to withstand high temperatures or immersion in varnish or compound. May also be used for other applications such as flexible power leads.

Specifications

- In accordance with BS6195
- **Conductors:** Flexible Class 5 tinned copper conductors to BS EN 60228
- **Insulation:**
 - Type 3 – Rubber insulation Type OR1 to BS7655 (HOFR Type)
 - Type 4 – Composite insulation Type FR1 (Voltage Categories A & C) or Type FR2 (Voltage Categories D, E & F) to BS7655. Inner Layer EPR or Butyl, Outer Layer HOFR)
 - Type 5 – Silicone rubber insulation Type EI.2 to BS7655
- **Temperature Rating:** 90°C maximum conductor operating temperature (Types 3 & 4). 180°C maximum conductor operating temperature (Type 5)
- **Voltage Rating:** Voltage ratings for coil leads are divided into categories and define the maximum voltage between conductor and earth, to which the cable is liable to be subjected during a 1 minute test of the equipment to which it is connected

The nominal voltage rating denotes the continuous operating voltage that the cable may be used at during service.

Voltage Category	Maximum Equipment Test Voltage (a.c. rms)	Nominal Voltage Ratings of Cable U ₀ /U
A	2.5	300/500 V
C	4.0	600/1000 V
D	9.5	1900/3300 V
E	17	3800/6600 V
F	27	6350/11000 V

Coil Lead

90°C/180°C

Anixter Number*	Nominal Conductor Area mm ²	Nominal Conductor Stranding #/mm	Insulation Thickness (mm)	Maximum O/D (mm)	Approximate Cable Weight kg/km
Type 4, Category C					
COIL-4C-0005	0.5	16/0.2	1.4	4.5	21
COIL-4C-0007	0.75	24/0.2	1.4	4.7	25
COIL-4C-0010	1.0	32/0.2	1.4	4.9	29
COIL-4C-0015	1.5	30/0.25	1.4	5.2	36
COIL-4C-0025	2.5	50/0.25	1.4	5.6	47
COIL-4C-0040	4.0	56/0.3	1.4	6.3	65
COIL-4C-0060	6.0	84/0.3	1.5	7.5	93
COIL-4C-0100	10	80/0.4	1.5	8.5	136
COIL-4C-0160	16	126/0.4	1.5	9.6	206
COIL-4C-0250	25	196/0.4	1.6	11.4	300
COIL-4C-0350	35	276/0.4	1.6	12.8	406
COIL-4C-0500	50	396/0.4	1.7	14.8	573
COIL-4C-0700	70	360/0.5	1.8	17.2	793
COIL-4C-0950	95	475/0.5	2.0	19.7	1028
COIL-4C-1200	120	608/0.5	2.2	21.9	1285
COIL-4C-1500	150	756/0.5	2.3	24.1	1562
COIL-4C-1850	185	925/0.5	2.4	26.3	1914
COIL-4C-2400	240	1221/0.5	2.4	28.3	2431
COIL-4C-3000	300	1525/0.5	2.6	33.0	3024
COIL-4C-4000	400	2013/0.5	2.8	37.4	4780

For further technical information see page 2:66.

Technical Specifications for Coil Leads

For ambient air temperatures other than 40/100°C, the following factors should be applied.

Types 3 and 4:

Ambient temp °C	25	30	35	40	45	50	55	60	65	70	75	80
Rating factor	1.14	1.10	1.05	1.0	0.945	0.89	0.835	0.775	0.705	0.603	0.545	0.445

Type 5:

Ambient temp °C	80	85	90	95	100	105	110	115	120	125	130	135
Rating factor	1.18	1.14	1.10	1.05	1.0	0.945	0.89	0.835	0.775	0.705	0.63	0.545

Where cables are to be grouped in free air, the following factors should be applied:

Number of cables in group	2	3	4	5	6	7	8
Rating factor	0.8	0.7	0.65	0.6	0.56	0.53	0.5

Ambient air temperature 40°C, Conductor operating temperature 90°C.

Nominal Conductor Area	Nominal Conductor Stranding	Maximum d.c. Resistance at 20°C	Maximum Continuous Current Ratings (BSG195) Types
mm ²	#/mm	ohm/km	amp
0.5	16/0.20	38.2	13
0.75	24/0.20	25.4	17
1.0	32/0.20	19.1	20
1.5	30/0.25	13.0	26
2.5	50/0.25	7.82	36
4	56/0.30	4.85	49
6	84/0.30	3.23	64
10	80/0.40	1.85	90
16	126/0.40	1.18	120
25	196/0.40	0.757	163
35	276/0.40	0.538	203
50	396/0.40	0.375	267
70	360/0.50	0.264	324
95	475/0.50	0.200	391
120	608/0.50	0.156	455
150	756/0.50	0.126	525
185	925/0.50	0.103	600
240	1121/0.50	0.0778	725
300	1525/0.50	0.0623	840
400	2013/0.50	0.0472	1010

GUIDE TO MINIMUM BENDING RADII ON FLEXIBLE CORDS AND CABLES

Cable Type	Cable Diameter (mm)			
	$\leq 8 \leq$	$> 8 \leq 12$	$> 12 \leq 20$	> 20
	M.B.R. (Minimum Bending Radius)			
Flexible Cable Thermoplastic (e.g. PVC)				
Fixed installation	3D	3D	4D	4D
Free movement*	5D	5D	6D	6D
Flexible Cable Elastomeric (e.g. rubber)				
Fixed installation	3D	3D	4D	4D
Free movement*	4D	4D	5D	6D

Where D = cable diameter.

The above values are based on recommendations given in BS7540 "Use of cables with a rated voltage not exceeding 450/750 V".

*These values do not apply to cables used on festoon, reeling drum, cranes, robotics, etc., where repetitive flexing and/or twisting is anticipated.

For further details refer to BS7540.