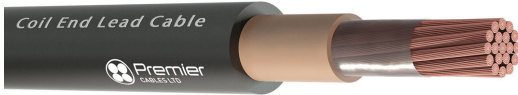


Coil End Lead Type 4 BS 6195 Cable



Application

Coil end leads are used mainly as a flexible connection to coil windings of motors, generators, transformers, circuit breakers and actuators.

Also suitable in certain applications instead of tri-rated and bi-rated cables.

Standards

BS 6195, EN 60228

Flame Retardant according to IEC/EN 60332-1-2

Characteristics

Voltage Rating U_o/U

Type 4A: 300/500V

Type 4C: 0.6/1kV

Type 4D: 1.9/3.3kV

Type 4E: 3.8/6.6kV

Type 4F: 6.35/11kV

Temperature Rating

Fixed: -40°C to +90°C

Flexed: -30°C to +90°C

Minimum Bending Radius

Fixed: 4 x overall diameter

Flexed: 6 x overall diameter



Construction

Conductor

Class 5 flexible tinned copper conductor

Separator

PET (Polyester Tape)

Insulation

4A, 4C: EPR-HOFR (Ethylene Propylene Rubber - Heat and Oil Resistant and Flame Retardant)

4D, 4E, 4F: EPR-HOFR (Ethylene Propylene Rubber - Heat and Oil Resistant and Flame Retardant)

Outer Sheath

CPE (Chlorinated Polyethylene) rubber compound

Sheath Colour

Black



Dimensions

CABLE TYPE	NO. OF CORES	VOLTAGE RATING KV	NOMINAL CROSS SECTIONAL AREA mm ²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
4A	1	0.3/0.5	1.5	0.8	4	29
4A	1	0.3/0.5	2.5	0.9	4.6	42
4A	1	0.3/0.5	4	1	5.4	61
4A	1	0.3/0.5	6	1	6.5	88
4A	1	0.3/0.5	10	1.2	7.9	141
4C	1	0.6/1	1.5	1.4	4.3	34
4C	1	0.6/1	2.5	1.4	4.8	45
4C	1	0.6/1	4	1.4	5.4	70
4C	1	0.6/1	6	1.5	6.2	97
4C	1	0.6/1	10	1.5	8.5	130
4C	1	0.6/1	16	1.5	9.6	190
4C	1	0.6/1	25	1.6	11.4	290
4C	1	0.6/1	35	1.6	12.8	380
4C	1	0.6/1	50	1.7	14.8	510
4C	1	0.6/1	70	1.8	17.2	750
4C	1	0.6/1	95	2	19.7	935
4C	1	0.6/1	120	2.2	21.9	1160
4C	1	0.6/1	150	2.3	24.1	1450
4C	1	0.6/1	185	2.4	26.3	1770
4C	1	0.6/1	240	2.4	28.3	2260
4C	1	0.6/1	300	2.6	33	2760
4C	1	0.6/1	400	2.8	37.4	3880
4C	1	0.6/1	500	3.2	38	4650
4C	1	0.6/1	630	3.3	43	6220
4D	1	1.9/3.3	2.5	2.8	8.5	100
4D	1	1.9/3.3	4	2.8	9.1	115
4D	1	1.9/3.3	6	2.8	10.3	141
4D	1	1.9/3.3	10	2.8	11.3	216
4D	1	1.9/3.3	16	2.8	12.4	288
4D	1	1.9/3.3	25	2.8	13.8	392
4D	1	1.9/3.3	35	2.8	15.2	509
4D	1	1.9/3.3	50	2.8	17.1	682
4D	1	1.9/3.3	70	2.8	19.2	894
4D	1	1.9/3.3	95	3	22	1168
4D	1	1.9/3.3	120	3	23.5	1433
4D	1	1.9/3.3	150	3	25.5	1734
4D	1	1.9/3.3	185	3	27.5	2073
4D	1	1.9/3.3	240	3	30.6	2657
4D	1	1.9/3.3	300	3	33.8	3279
4D	1	1.9/3.3	400	3	37.8	4229
4E	1	3.8/6.6	16	5	17.2	408
4E	1	3.8/6.6	25	5	18.6	527
4E	1	3.8/6.6	35	5	20	656
4E	1	3.8/6.6	50	5	22.1	832

CABLE TYPE	NO. OF CORES	VOLTAGE RATING KV	NOMINAL CROSS SECTIONAL AREA mm ²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
4E	1	3.8/6.6	70	5	24.2	1053
4E	1	3.8/6.6	95	5	26.3	1304
4E	1	3.8/6.6	120	5	27.8	1634
4E	1	3.8/6.6	150	5	29.8	1894
4E	1	3.8/6.6	185	5	32.1	2242
4E	1	3.8/6.6	240	5	35.1	2842
4F	1	6.35/11	25	7.6	24.1	764
4F	1	6.35/11	35	7.6	25.5	911
4F	1	6.35/11	50	7.6	27.3	1114
4F	1	6.35/11	70	7.6	29.4	1344
4F	1	6.35/11	95	7.6	31.5	1610
4F	1	6.35/11	120	7.6	33.3	1919
4F	1	6.35/11	150	7.6	35.3	2248
4F	1	6.35/11	185	7.6	37.3	2616
4F	1	6.35/11	240	7.6	40.3	3252

Electrical Characteristics

Class 5 Flexible Copper Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm ²	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km	
		Plain Wires	
1.5	0.26	13.3	
2.5	0.26	7.98	
4	0.31	4.95	
6	0.31	3.3	
10	0.41	1.91	
16	0.41	1.21	
25	0.41	0.78	
35	0.41	0.554	
50	0.41	0.386	
70	0.51	0.272	
95	0.51	0.206	
120	0.51	0.161	
150	0.51	0.129	
185	0.51	0.106	
240	0.51	0.0801	
300	0.51	0.0641	
400	0.51	0.0486	
500	0.61	0.0384	
630	0.61	0.0287	

The above table is in accordance with EN 60228

Electrical Characteristics

NOMINAL CROSS SECTIONAL AREA mm ²	REFERENCE METHOD C (clipped direct) A		REFERENCE METHOD F (in free air or on a perforated cable tray etc horizontal or vertical etc) Touching A			REFERENCE METHOD G (in free air) Spaced by one cable diameter A	
	2 cables, single-phase AC or DC flat and touching	3 or 4 cables, three-phase AC flat and touching or trefoil	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 or 3 cables three-phase AC flat	
						Horizontal	Vertical
1	19	17.5	-	-	-	-	-
1.5	25	23	-	-	-	-	-
2.5	34	31	-	-	-	-	-
4	46	41	-	-	-	-	-
6	59	54	-	-	-	-	-
10	81	74	-	-	-	-	-
16	109	99	-	-	-	-	-
25	143	130	161	141	135	182	161
35	176	161	200	176	169	226	201
50	228	209	242	216	207	275	246
70	293	268	310	279	268	353	318
95	355	326	377	342	328	430	389
120	413	379	437	400	383	500	454
150	476	436	504	464	444	577	527
185	545	500	575	533	510	661	605
240	644	590	679	634	607	781	719
300	743	681	783	736	703	902	833
400	868	793	940	868	823	1085	1008
500	990	904	1083	998	946	1253	1169
630	1130	1033	1254	1151	1088	1454	1362
800	1288	1179	1358	1275	1214	1581	1485
1000	1443	1323	1520	1436	1349	1775	1671

Reference table : 4E1A 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52

Ambient temperature: 30°C

Conductor operating temperature: 90°C

NOTES:

1. There it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory (see Regulation 512.1.5).
2. There it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group (see Regulation 512.1.5).
3. For cables having flexible conductors see section 2.4 of appendix for adjustment factors for current-carrying capacity and voltage drop.

De-Rating Factors

AMBIENT TEMP	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C	90°C	95°C
DE-RATING FACTOR	1.02	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41	-	-	-

Reference table : 4B1 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52

The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.