



Current Ratings – Table 4J2A Mineral insulated cables bare and neither exposed to touch nor in contact with combustible materials (copper conductors and sheath)

Current – carrying capacity (amperes):

Ambient temperature: 30°C, Conductor operating temperature: 105°C

Notes:

1. For single core cables, the sheaths of the circuit are assumed to be connected together at both ends
2. No correction factor for grouping need to be applied
3. Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see regulation 512-02)

Conductor cross sectional area	Reference Method 1 (clipped direct)							
	2 single core cables or 1 two core cable, single phase a.c or d.c	2 single core cables in trefoil or 1 three core cable, three phase a.c	3 single core cables in flat formation three phase a.c	1 four core cable three cores loaded three phase a.c	1 four core cable, all cores loaded	1 seven core cable all cores loaded	1 twelve core cable all cores loaded	1 nineteen core cable, all cores loaded
1	2	3	4	5	6	7	8	9
(mm ²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
Light duty 500v	-	-	-	-	-	-	-	-
1	22	19	2	18.5	16.5	13	-	-
1.5	28	24	27	24	21	16.5	-	-
2.5	38	33	36	33	28	22	-	-
4	51	44	47	-	-	-	-	-
Heavy duty 750v	-	-	-	-	-	-	-	-
1	24	20	24	20	17.5	14	12	10.5
1.5	31	26	30	26	22	17.5	15.5	13
2.5	42	35	41	35	30	24	20	-
4	55	47	53	46	40	32	-	-
6	70	59	67	58	50	-	-	-
10	96	81	91	78	68	-	-	-
16	127	107	119	102	90	-	-	-
25	166	140	154	134	117	-	-	-
35	203	171	187	-	-	-	-	-
50	251	212	230	-	-	-	-	-
70	307	260	280	-	-	-	-	-
95	369	312	334	-	-	-	-	-
120	424	359	383	-	-	-	-	-
150	485	410	435	-	-	-	-	-
185	550	465	492	-	-	-	-	-
240	643	544	572	-	-	-	-	-



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Current – carrying capacity (amperes):

Ambient temperature: 30°C, Conductor operating temperature: 105°C

Conductor cross sectional area	Reference Method 12 and 13 (Free air)									
	2 single core cables or 1 two core cable, single phase a.c or d.c	3 single core cables in trefoil or 1 three core cable, three phase a.c	1 four core cable three cores loaded three phase a.c	1 four core cable, all cores loaded	1 seven core cable all cores loaded	1 twelve core cable all cores loaded	1 nineteen core cable, all cores loaded	3 single core cables three phase a.c		
	10	11	12	13	14	15	16	Vertical spaced	Horizontal spaced	Touching
1	10	11	12	13	14	15	16	17	18	19
(mm ²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
Light duty 500v	-	-	-	-	-	-	-	-	-	-
1	24	21	20	18	14	-	-	26	29	23
1.5	31	26	26	22	18	-	-	33	37	29
2.5	41	35	35	30	24	-	-	43	49	39
4	54	46	-	-	-	-	-	56	64	51
Heavy duty 750v	-	-	-	-	-	-	-	-	-	-
1	26	22	22	19	15	13	11	28	32	25
1.5	33	28	28	24	19	16.5	14	35	40	32
2.5	45	38	37	32	26	22	-	47	54	43
4	60	50	49	43	34	-	-	61	70	56
6	76	64	63	54	-	-	-	78	89	71
10	104	87	85	73	-	-	-	105	12	96
16	137	115	112	97	-	-	-	137	157	127
25	179	150	146	126	-	-	-	178	204	164
35	220	184	-	-	-	-	-	216	248	200
50	272	228	-	-	-	-	-	266	304	247
70	333	279	-	-	-	-	-	323	370	300
95	400	335	-	-	-	-	-	385	441	359
120	460	385	-	-	-	-	-	441	505	411
150	526	441	-	-	-	-	-	498	565	469
185	596	500	-	-	-	-	-	557	629	530
240	697	584	-	-	-	-	-	624	704	617



Current Ratings – Table 4J2B Mineral insulated cables bare and neither exposed to touch nor in contact with combustible materials (copper conductors and sheath)

Voltage drop (per ampere per metre) for single phase a.c or d.c

Sheath operating temperature: 105°C

Notes:

- * multiple single phase a.c or d.c circuits in multicore cable

Conductor cross sectional area 1	Two single-core cables, touching			One two-core or multicore* cable		
	2			3		
(mm ²)	(mV/A/m)			(mV/A/m)		
1	47			47		
1.5	31			31		
2.5	19			19		
4	12			12		
6	7.8			7.8		
10	4.7			4.7		
16	3.0			3.0		
	R	X	Z	R	X	Z
25	1.85	0.180	1.85	1.85	0.145	1.85
35	1.35	0.175	1.35	-	-	-
50	1.00	0.170	1.00	-	-	-
70	0.69	0.165	0.71	-	-	-
95	0.51	0.160	0.54	-	-	-
120	0.41	0.160	0.44	-	-	-
150	0.33	0.155	0.36	-	-	-
185	0.27	0.150	0.31	-	-	-
240	0.21	0.150	0.26	-	-	-

Voltage drop (per ampere per metre) for three phase operation

Sheath operating temperature: 105°C

Notes:

- * multiple single phase a.c or d.c circuits in multicore cable

Conductor cross sectional area 1	Three single core cables									One three core, four core of multicore * cables 5		
	Trefoil touching 2			Flat formation								
				Touching 3			Spaced 1 cable diameter apart 4					
(mm ²)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
1	40			40			40			40		
1.5	27			27			27			27		
2.5	16			16			16			16		
4	10			10			10			10		
6	6.8			6.8			6.8			6.8		
10	4.1			4.1			4.1			4.1		
16	2.6			2.6			2.6			2.6		
-	R	X	Z	R	X	Z	R	X	Z	R	X	Z
25	1.60	0.160	1.65	1.60	0.23	1.65	1.60	0.31	1.65	1.60	0.125	1.60
35	1.15	0.155	1.20	1.15	0.23	1.20	1.20	0.30	1.25	-	-	-
50	0.87	0.150	0.88	0.88	0.22	0.91	0.90	0.29	0.95	-	-	-
70	0.60	0.145	0.62	0.61	0.22	0.65	0.63	0.29	0.70	-	-	-
95	0.45	0.140	0.47	0.46	0.21	0.50	0.48	0.28	0.56	-	-	-
120	0.36	0.135	0.38	0.37	0.21	0.42	0.39	0.28	0.48	-	-	-
150	0.29	0.135	0.32	0.31	0.20	0.37	0.34	0.27	0.43	-	-	-
185	0.23	0.130	0.27	0.26	0.20	0.33	0.29	0.26	0.39	-	-	-
240	0.180	0.130	0.22	0.22	0.195	0.29	0.26	0.25	0.36	-	-	-