



**TABLE 4J1A- Single-core 90 °C thermosetting insulated cables, non-armoured, with or without sheath (ALUMINIUM CONDUCTORS)**

Ambient temperature: 30 °C

Conductor operating temperature: 90 °C

CURRENT-CARRYING CAPACITY (amperes):

Conductor cross-sectional area	Reference Method A (enclosed in conduit in thermally insulating wall etc.)		Reference Method 8 (enclosed in conduit on a wall or in trunking etc.)		Reference Method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray horizontal or vertical etc.) Touching			Reference Method G (in free air) Spaced by one cable diameter	
	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 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	
1	2	3	4	5	6	7	8	9	10	11	12
(mm)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	125	113	157	140	154	136	184	165	159	210	188
70	158	142	200	179	198	174	237	215	206	271	244
95	191	171	242	217	241	211	289	264	253	332	300
120	220	197	281	251	280	245	337	308	296	387	351
150	253	226	307	267	324	283	389	358	343	448	408
185	288	256	351	300	371	323	447	413	395	515	470
240	338	300	412	351	439	382	530	492	471	611	561
300	387	344	471	402	508	440	613	571	544	708	652
380					658	594	679	628	638	798	742
480					765	692	786	728	743	927	865
600					871	791	903	836	849	1058	990
740					1001	911	1025	951	979	1218	1143
960					1176	1072	1191	1108	1151	1440	1355
1200					1333	1217	1341	1249	1307	1643	1550

NOTES:

- Where 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).
- Where 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).

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**TABLE 4J1B**

Conductor operating temperature: 90 °C

VOLTAGE DROP (per ampere per metre):

Con- ductor cross- sec- tional area	2 cables, DC	2 cables, single-phase AC									3 or 4 cables, three-phase AC											
		Reference Methods A&B (enclosed in conduit or trunking)			References 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)								
					Cables touching			Cables spaced*						Cables touching, Trefoil			Cables Touching, Flat			Cables spaced* Flat		
		1	2	3			4			5			6			7			8			9
(mm)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		R	X	Z	R	X	Z	R	X	Z	R	X	Z	R	X	Z	R	X	Z	R	X	Z
50	1.65	1.70	0.30	1.72	1.65	0.190	1.66	1.65	0.28	1.68	1.44	0.26	1.46	1.44	0.165	1.45	1.44	0.24	1.46	1.44	0.32	1.48
70	1.13	1.17	0.30	1.21	1.12	0.185	1.14	1.12	0.27	1.15	1.00	0.26	1.04	0.97	0.160	0.98	0.97	0.24	1.00	0.97	0.31	1.02
95	0.82	0.86	0.29	0.91	0.82	0.185	0.84	0.82	0.27	0.94	0.75	0.25	0.79	0.71	0.160	0.73	0.71	0.23	0.75	0.71	0.31	0.78
120	0.65	0.68	0.29	0.74	0.65	0.180	0.67	0.65	0.27	0.70	0.59	0.25	0.64	0.57	0.155	0.59	0.57	0.23	0.61	0.57	0.31	0.64
150	0.53	0.54	0.28	0.61	0.52	0.175	0.55	0.52	0.26	0.58	0.48	0.24	0.54	0.45	0.155	0.47	0.45	0.23	0.50	0.45	0.30	0.54
185	0.42	0.45	0.28	0.53	0.43	0.175	0.46	0.42	0.26	0.49	0.38	0.24	0.45	0.36	0.150	0.39	0.36	0.23	0.43	0.36	0.30	0.47
240	0.32	0.34	0.27	0.43	0.32	0.170	0.36	0.32	0.26	0.41	0.30	0.24	0.38	0.28	0.150	0.32	0.28	0.22	0.35	0.28	0.30	0.41
300	0.26	0.28	0.27	0.38	0.26	0.170	0.31	0.26	0.26	0.36	0.25	0.23	0.34	0.22	0.145	0.27	0.22	0.22	0.31	0.22	0.30	0.37
380	0.20				0.21	0.165	0.27	0.21	0.25	0.33	0.20	0.23	0.31	0.180	0.145	0.23	0.180	0.22	0.28	0.180	0.29	0.34
480	0.160				0.170	0.165	0.23	0.165	0.25	0.30	0.165	0.23	0.28	0.150	0.140	0.20	0.150	0.22	0.27	0.145	0.29	0.32
600	0.130				0.140	0.160	0.21	0.135	0.25	0.28	0.135	0.22	0.26	0.120	0.140	0.185	0.120	0.22	0.25	0.120	0.29	0.31
740	0.105				0.115	0.160	0.19	0.110	0.25	0.27				0.100	0.135	0.170	0.100	0.21	0.23	0.095	0.29	0.30
960	0.080				0.092	0.155	0.18	0.087	0.24	0.26				0.082	0.135	0.160	0.082	0.21	0.23	0.076	0.29	0.30
1200	0.064				0.019	0.155	0.11	0.013	0.24	0.25	-	-	-	0.010	0.135	0.150	0.010	0.21	0.22	0.063	0.28	0.29

NOTE: \* Spacing's larger than one cable diameter will result in a larger voltage drop.

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