

6701B/2491B (H07Z-K/H05Z-K) single core cables

These charts relate to single core cables with 90°C thermosetting insulation (non-armoured, with or without sheath). The figures shown are to be considered as guiding values only.

Current Carrying Capacity in Ampere (Amps)						
Based on an ambient temperature of 30°C and a conductor operating temperature of 90°C						
Conductor Area (mm ²)	A) In conduit in thermally insulating walls etc.		B) In conduit on a wall or inside a trunking etc.		C) Clipped direct, laid flat and touching or trefoil.	
	2 cables, single-phase AC or DC	3 or 4 cables, 3-phase AC	2 cables, single-phase AC or DC	3 or 4 cables, 3-phase AC	2 cables, single-phase AC or DC	3 or 4 cables, 3-phase AC
1.0	14	13	17	15	19	17.5
1.5	19	17	23	20	25	23
2.5	26	23	31	28	34	31
4.0	35	31	42	37	46	41
6.0	45	40	54	48	59	54
10	61	54	75	66	81	74
16	81	73	100	88	109	99
25	106	95	133	117	143	130
35	131	117	164	144	176	161
50	158	141	198	175	228	209
70	200	179	253	222	293	268
95	241	216	306	269	355	326
120	278	249	354	312	413	379
150	318	285	393	342	476	436
185	362	324	449	384	545	500
240	424	380	528	450	644	590

Conductor Area (mm ²)	F) In free air or on a perforated cable tray, horizontal or vertical and touching.			G) In free air, spacing at least equal to one cable diameter	
	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
25	161	141	135	182	161
35	200	176	169	226	201
50	242	216	207	275	246
70	310	279	268	353	318
95	377	342	328	430	389
120	437	400	383	500	454

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Current Carrying Capacity in Ampere (Amps)					
Based on an ambient temperature of 30°C and a conductor operating temperature of 90°C					
Conductor Area (mm ²)	F) In free air or on a perforated cable tray, horizontal or vertical and touching.			G) In free air, spacing at least equal to one cable diameter	
	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
150	504	464	444	577	527
185	575	533	510	661	605
240	679	634	607	781	719

Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see also Regulation 512.1.2). If cables are connected to equipment or accessories designed to operate at maximum 70°C see the equivalent table for 70°C thermoplastic insulated cables (Table 4D1A) must be used (see Regulation 523.1).

Voltage Drop (mV, per ampere, per metre), conductor operating temperature: 90°C										
Conductor Area (mm ²)	Two cables D.C.	Two cables, single phase A.C.								
		Methods A & B (in conduit or trunking)			Methods C, F & G (clipped direct, on tray or in free air)					
					cable touching			cable spaced*		
1.0	46	46			46			46		
1.5	31	31			31			31		
2.5	19	19			19			19		
4.0	12	12			12			12		
6.0	7.9	7.9			7.9			7.9		
10	4.7	4.7			4.7			4.7		
16	2.9	2.9			2.9			2.9		
		r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.19	1.85	1.85	0.28	1.85
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.35	0.27	1.35
50	0.99	1.00	0.29	1.05	0.99	0.18	1.00	0.99	0.27	1.00
70	0.68	0.70	0.28	0.75	0.68	0.17	0.71	0.68	0.26	0.73
95	0.49	0.51	0.27	0.58	0.49	0.17	0.52	0.49	0.26	0.56
120	0.39	0.41	0.26	0.48	0.39	0.16	0.48	0.39	0.25	0.47

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Voltage Drop (mV, per ampere, per metre), conductor operating temperature: 90°C												
Conductor Area (mm ²)	Three or four cables, three phase A.C.											
	Methods A & B (in conduit or trunking)			Methods C,F & G (clipped direct, on tray or in free air)								
				cable touching, trefoil			cable touching, flat			cable flat & spaced*		
1.0	40			40			40			40		
1.5	27			27			27			27		
2.5	16			16			16			16		
4.0	10			10			10			10		
6.0	6.8			6.8			6.8			6.8		
10	4			4			4			4		
16	2.5			2.5			2.5			2.5		
	r	x	z	r	x	z	r	x	z	r	x	z
25	1.60	0.27	1.65	1.60	0.16	1.60	1.60	0.19	1.60	1.60	0.27	1.65
35	1.15	0.25	1.15	1.15	0.16	1.15	1.15	0.18	1.15	1.15	0.26	1.20
50	0.87	0.26	0.90	0.86	0.16	0.87	0.85	0.18	0.87	0.86	0.26	0.89
70	0.60	0.24	0.65	0.59	0.15	0.61	0.59	0.18	0.62	0.59	0.25	0.65
95	0.44	0.23	0.50	0.43	0.15	0.45	0.43	0.17	0.46	0.43	0.25	0.49
120	0.35	0.23	0.42	0.34	0.14	0.37	0.34	0.17	0.88	0.34	0.24	0.42

* Spacing's larger than one cable diameter will result in a larger voltage drop.
r = Resistive Component, x = Reactive Component, z = Impedance Value
For cables with a conductor area of 16mm² or less their inductances can be ignored and (mV/A/m)r values only are tabulated. For cables having conductors greater than 16mm² area the impedance values are given as (mV/A/m)z, together with the resistive component (mV/A/m)r and the reactive component (mV/A/m)x

Conversion factors for deviating ambient air temperature

Temperature:	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C
Factor:	1.02	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58

The above information is generally in accordance with table 4E1A & 4E1B of the 17th Edition of the IEE Wiring Regulations.

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