

BS6491 B / H07Z-R / BS EN 50525-3-41

A low smoke zero halogen and flame retardant cable for power and auxiliary control



Application

The BS6491 B cable is a single core stranded copper conductor cable for fixed wiring purposes. Used in conduits, trunking and other fixed protected installations, or may be surface mounted when used for earthing. It is recommended for use in dry environments, for applications such as wiring lighting fixtures and appliances, distributor boards and switchboards. Especially for use in areas where fire would create dense smoke and toxic fumes causing a major threat to life and equipment.

Construction

Conductor	: Class 2 stranded copper conductors to BS EN 60228
Insulation	: Low smoke zero halogen thermosetting insulation Type EI.5 to BS EN 50363-5 Flame retardant to BS EN 60332-2-2 (up to and incl. 1.0mm ²) and BS EN 60332-1-2 (above 1.0mm ²)
Voltage rating	: 300/500V, Up to and including 1.0mm ² 450/750V, 1.5mm ² and above
Temperature rating	: 0 °C – 90 °C

Outer Sheath Colours

Available colours : Black, Blue, Brown, Grey, Green/Yellow

Installation recommendations

Min. Bending Radius < 10mm²	: 4xD
Min. Bending Radius 10mm² - 25mm²	: 5xD
Min. Bending Radius > 25mm²	: 6xD

Standards applied

BS EN 50525-3-41
Cenelec harmonised codes
BASEC approved

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Range and Dimensions

Article Code	Nominal cross sectional area mm ²	Nominal thickness of insulation mm	Nominal overall diameter mm	Nominal weight kg/km
P02L01C1.5BAK**3	1.5	0.7	3.4	22
P02L01C2.5BAK**3	2.5	0.8	4.1	33
P02L01C004BAK**3	4	0.8	4.7	49
P02L01C006BAK**3	6	0.8	5.4	69
P02L01C010BAK**3	10	1.0	7.0	116
P02L01C016BAK**3	16	1.0	8.0	175
P02L01C025BAK**3	25	1.2	10.1	273
P02L01C035BAK**3	35	1.2	11.3	367
P02L01C050BAK**3	50	1.4	13.2	495
P02L01C070BAK**3	70	1.4	15.1	699
P02L01C095BAK**3	95	1.6	17.6	968
P02L01C120BAK**3	120	1.6	19.4	1164
P02L01C150BAK**3	150	1.8	21.6	1413
P02L01C185BAK**3	185	2.0	24.1	1828
P02L01C240BAK**3	240	2.2	27.5	2320
P02L01C300BAK**3	300	2.4	30.6	2988
P02L01C400BAK**3	400	2.6	34.3	3800
P02L01C500BAK**3	500	2.8	38.2	4750
P02L01C630BAK**3	630	2.8	42.5	6050

** Incore Cables No. shown above designate the sheath colour (*). For each colour substitute * for a colour code as listed below. e.g. P02L01C1.5BAKBR3 = 4mm² Brown

Colour codes

Colour	Black	Blue	Grey	Green / Yellow	Brown
Code	BK	BL	GR	GY	BR

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Electrical characteristics

Current – Carrying capacity

Nominal cross sectional area mm ²	Reference method A (enclosed in conduit in thermally insulating wall etc)		Reference method B (enclosed in conduit on a wall or in trunking etc)		Reference method C (Clipped direct)		Reference method F (on a perforated cable tray horizontal or vertical)		Reference method G (in free air)		
	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	3 or 4 Cables three-phase AC	2 Cables single-phase AC or DC	3 Cables Flat	Horizontal Flat Spaced	Vertical Flat Spaced	Trefoil
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	2 Cables single-phase AC or DC or 3 Cables three-phase AC		3 Cables trefoil three phase AC
1.5	19	17	23	20	25	23	-	-	-	-	-
2.5	26	23	31	28	34	31	-	-	-	-	-
4	35	31	42	37	46	41	-	-	-	-	-
6	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	161	141	182	161	135
35	131	117	164	144	176	161	200	176	226	201	169
50	158	141	198	175	228	209	242	216	275	246	207
70	200	179	253	222	293	268	310	279	353	308	268
95	241	216	306	269	355	326	377	342	430	389	328
120	278	249	354	312	413	379	437	400	500	454	383
150	318	285	393	342	476	436	504	464	577	527	444
185	362	324	449	384	545	500	575	533	661	605	510
240	424	380	528	450	644	590	679	634	781	719	607
300	486	435	603	514	743	681	783	736	902	833	703
400	-	-	683	584	868	793	940	868	1085	1008	823
500	-	-	783	666	990	904	1083	998	1253	1169	946
630	-	-	900	764	1130	1033	1254	1151	1454	1362	1088

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Voltage drop

Nominal cross sectional area	2 Cables DC	2 Cables single-phase AC mV/A/m						3 or 4 Cables three-phase AC mV/A/m																	
		Reference Methods A & B (enclosed in conduit etc in or on a wall)			Reference Methods C, F & G (clipped direct or on trays, touching)			Reference Method C, F & G (spaced*)			Reference Methods A & B (enclosed in conduit etc in or on wall)			Reference Methods C, F & G (in trefoil)			Reference Methods C, F & G (flat touching)			Reference Methods C, F & G (flat spaced*)					
mm ²	mV	mV			mV			mV			mV			mV			mV			mV					
1.5	31	31			31			31			27			27			27			27					
2.5	19	19			19			19			16			16			16			16					
4	12	12			12			12			10			10			10			10					
6	7.9	7.9			7.9			7.9			6.8			6.8			6.8			6.8					
10	4.7	4.7			4.7			4.7			4			4			4			4					
16	2.9	2.9			2.9			2.9			2.5			2.5			2.5			2.5					
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	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	1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.19	1.60	1.60	0.27	1.65	1.60	0.27	1.65
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.35	0.27	1.35	1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.18	1.15	1.15	0.26	1.20	1.15	0.26	1.20
50	0.99	1.00	0.29	1.05	0.99	0.18	1.00	0.99	0.27	1.00	0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.18	0.87	0.86	0.26	0.89	0.86	0.26	0.89
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	0.60	0.24	0.65	0.59	0.15	0.61	0.59	0.175	0.62	0.59	0.25	0.65	0.59	0.25	0.65
95	0.49	0.51	0.27	0.58	0.49	0.17	0.52	0.49	0.26	0.56	0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.17	0.46	0.43	0.25	0.49	0.43	0.25	0.49
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	0.35	0.23	0.42	0.34	0.14	0.37	0.34	0.165	0.38	0.34	0.24	0.42	0.34	0.24	0.42
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	0.29	0.23	0.37	0.28	0.14	0.31	0.28	0.165	0.32	0.28	0.24	0.37	0.28	0.24	0.37
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	0.23	0.23	0.32	0.22	0.14	0.26	0.22	0.165	0.28	0.22	0.24	0.33	0.22	0.24	0.33
240	0.19	0.21	0.26	0.33	0.20	0.16	0.25	0.195	0.25	0.31	0.185	0.22	0.29	0.17	0.14	0.22	0.17	0.165	0.24	0.17	0.24	0.29	0.17	0.24	0.29
300	0.155	0.175	0.25	0.31	0.16	0.16	0.22	0.155	0.25	0.29	0.15	0.22	0.27	0.14	0.14	0.195	0.135	0.16	0.21	0.135	0.24	0.27	0.135	0.24	0.27
400	0.120	0.14	0.25	0.29	0.13	0.155	0.20	0.125	0.24	0.27	0.125	0.22	0.25	0.11	0.135	0.175	0.11	0.16	0.195	0.11	0.24	0.26	0.11	0.24	0.26
500	0.093	0.12	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	0.10	0.22	0.24	0.09	0.135	0.16	0.068	0.16	0.18	0.085	0.24	0.25	0.085	0.24	0.25
630	0.072	0.10	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	0.088	0.21	0.23	0.074	0.135	0.15	0.071	0.16	0.17	0.068	0.23	0.24	0.068	0.23	0.24

Conductor operating temperature: 90°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

* Spaced by one cable diameter

De-rating factors

For ambient air temperatures other than 30°C

Ambient temperature	20°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
De-rating factor	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41	0.29

NOTICE

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