

6491B / H07Z-R / EN 50525-3-41 Cable



Application

Suitable for use in conduit and for fixed, protected installation. For installations where fire, smoke emission and toxic fume create a potential risk to life and equipment.

Standards

EN 50525-3-41, EN 60228

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

Halogen Free according to IEC/EN 61034-1/2, IEC/EN 60754-1/2

Characteristics

Voltage Rating U₀/U
450/750V

Temperature Rating
Fixed: 0°C to +90°C

Minimum Bending Radius
6 x overall diameter



Construction

Conductor

Class 2 stranded copper conductor)

Insulation

LSZH (Low Smoke Zero Halogen)



Dimensions

NOMINAL CROSS SECTIONAL AREA mm ²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
1.5	0.7	3.4	22
2.5	0.8	4.1	35
4	0.8	4.7	50
6	0.8	5.4	72
10	1	6.8	121
16	1	8	182
25	1.2	9.8	285
35	1.2	11	390
50	1.4	13.2	510
70	1.4	15.1	710
95	1.6	17	980
120	1.6	19	1220
150	1.8	21	1500
185	2	23.5	1910
240	2.2	26.5	2490
300	2.4	29.5	3100
400	2.6	33.5	3950
500	2.8	37	5000
630	2.8	41	6350

Conductors

NOMINAL CROSS SECTIONAL AREA mm ²	MINIMUM NO. OF WIRES IN CONDUCTOR mm						MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires
1.5	7	-	6	-	-	-	12.1
2.5	7	-	6	-	-	-	7.41
4	7	-	6	-	-	-	4.61
6	7	-	6	-	-	-	3.08
10	7	7	6	6	-	-	1.83
16	7	7	6	6	-	-	1.15
25	7	7	6	6	6	6	0.727
35	7	7	6	6	6	6	0.524
50	19	19	6	6	6	6	0.387
70	19	19	12	12	12	12	0.268
95	19	19	15	15	15	15	0.193
120	37	37	18	15	18	15	0.153
150	37	37	18	15	18	15	0.124
185	37	37	30	30	30	30	0.0991
240	37	37	34	30	34	30	0.0754
300	61	61	34	30	34	30	0.0601
400	61	61	53	53	53	53	0.047
500	61	61	53	53	53	53	0.0366
600	91	91	53	53	53	53	0.0283

The above table is in accordance with EN 60228

Electrical Characteristics

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm ²	REFERENCE METHOD A (ENCLOSED IN CONDUIT IN THERMALLY INSULATING WALL ETC) Amps		REFERENCE METHOD B (ENCLOSED IN CONDUIT IN WALL OR IN TRUNKING ETC) Amps		REFERENCE METHOD C (CLIPPED DIRECT) Amps		REFERENCE METHOD F IN FREE AIR OR ON A PERFORATED CABLE TRAY ETC HORIZONTAL OR VERTICAL ETC TOUCHING Amps			REFERENCE METHOD G IN FREE AIR) SPACED 1 x OD Amps	
	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 Three-Phase AC		Horizontal	Vertical
								Flat	Trefoil		
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	135	182	161
35	131	117	164	144	176	161	200	176	169	226	201
50	158	141	198	175	228	209	242	216	207	275	246
70	200	179	253	222	293	268	310	279	268	353	318
95	241	216	306	269	355	326	377	342	328	430	389
120	278	249	354	312	413	379	437	400	383	500	454
150	318	285	393	342	476	436	504	464	444	577	527
185	362	324	449	384	545	500	575	533	510	661	605
240	424	380	528	450	644	590	679	634	607	781	719
300	486	435	603	514	743	681	783	736	703	902	833
400	-	-	683	584	868	793	940	868	823	1085	1008
500	-	-	783	666	990	904	1083	998	946	1253	1169
630	-	-	900	764	1130	1033	1254	1151	1088	1454	1362

Ambient temperature: 30°C Conductor
operating temperature: 90°C

Notes: -

- 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 Regulations 512.1.2 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52).
- Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D1A) MUST BE USED (See Regulation 523.1 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.)

The above table is in accordance with Table 4E1A from the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm ²	2 CABLES DC mV/A/m	2 CABLES SINGLE-PHASE AC mV/A/m									REFERENCE METHODS C, F AND G mV/A/m											
		Reference Methods A and B enclosed in conduit or trunking)			Reference Methods C, F and G (clipped direct, on tray or in free air)						Reference Methods A and B enclosed in conduit or trunking)			Reference Methods C, F and G (clipped direct, on tray or in free air)								
1.5	31	31			31						27			27			27			27		
2.5	19	19			19						16			16			16			16		
4	12	12			12						10			10			10			10		
6	7.9	7.9			7.9						6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7						4			4			4			4		
16	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
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	0.19	1.60	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	0.18	1.15	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
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
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
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
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
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
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
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
400	0.12	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
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	0.088	0.16	0.18	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

Conductor Operating Temperature: 90°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

* Spacings larger than those specified in Method 12 (see table 4A of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.) will result in larger volt drop.

The above table is in accordance with Table 4E1B from the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

De-Rating Factors

For Ambient Air Temperatures other than 30°C

AMBIENT TEMPERATURE	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C
DE-RATING FACTOR	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58

The above table is in accordance with Table 4B1 of the 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.