

2491-X PVC SINGLE CORE FLEXIBLE CABLE H07V-K 450/750V



This PVC sheathed flexible cable serves as internal equipment wire and is commonly used in instrumentation panels of power switchgear. It's designed for flexible panel wiring, including applications in switch control, relay panels, and motor starters. With a single core design and PVC sheath, it offers flexibility and comes in various colors to support different applications.

CONDUCTOR	Plain Copper
STRANDING	Class 5
OUTERSHEATH	PVC
OUTERSHEATH COLOUR	Black, White, Blue, Grey, Violet, Orange, Red, Green/Yellow, Brown, Pink, Yellow, Green
RATED VOLTAGE	750V
MINIMUM BENDING RADIUS	Fixed: 6 x overall diameter
OPERATING TEMPERATURE	Maximum 70°C, Minimum bending 0°C
STANDARDS	BS EN 50525-2-31

SPECIFICATION DATA

Nominal cross sectional area of conductor sqmm	RT on insulation mm	Approx conductor diameter mm	Nominal overall diameter mm	Weight kg/km	Electrical resistance at 20°C OHM/KM	Insulation resistance min at 70°C OHM/KM	Current carrying capacity at 30°C in air or pipe
1.5	0.7	1.3	3.1	21	13.3	0.01	15.5
2.5	0.8	2.0	3.75	33	7.98	0.009	21
4	0.8	2.6	4.4	48	4.95	0.007	28
6	0.8	3.4	4.9	66	3.3	0.006	36
10	1.0	4.4	6.4	112	1.91	0.0056	50
16	1.0	5.7	7.4	167	1.21	0.0046	68
25	1.2	6.9	9.1	254	0.78	0.0044	89
35	1.2	8.1	10.35	340	0.554	0.0038	110
50	1.4	9.8	12.4	485	0.386	0.0037	154
70	1.4	11.6	13.6	674	0.272	0.0032	171
95	1.6	13.3	15.8	894	0.206	0.0032	207
120	1.8	15.1	17.4	1110	0.161	0.0029	239

RATING TABLES

TABLE 4D1A – Single-core 70 °C thermoplastic insulated cables, non-armoured, with or without sheath (COPPER CONDUCTORS)

Ambient temperature: 30 °C
Conductor operating temperature: 70 °C

CURRENT-CARRYING CAPACITY (amperes):

Conductor cross-sectional area	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 (in free air or on a perforated cable tray horizontal or vertical)						
	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		Touching			Spaced by one 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	
1	2	3	4	5	6	7	8	9	10	11	12		
(mm ²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)		
1	11	10.5	13.5	12	15.5	14	-	-	-	-	-		
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-		
2.5	20	18	24	21	27	25	-	-	-	-	-		
4	26	24	32	28	37	33	-	-	-	-	-		
6	34	31	41	36	47	43	-	-	-	-	-		
10	46	42	57	50	65	59	-	-	-	-	-		
16	61	56	76	68	87	79	-	-	-	-	-		
25	80	73	101	89	114	104	131	114	110	146	130		
35	99	89	125	110	141	129	162	143	137	181	162		
50	119	108	151	134	182	167	196	174	167	219	197		
70	151	136	192	171	234	214	251	225	216	281	254		
95	182	164	232	207	284	261	304	275	264	341	311		
120	210	188	269	239	330	303	352	321	308	396	362		
150	240	216	300	262	381	349	406	372	356	456	419		
185	273	245	341	296	436	400	463	427	409	521	480		
240	321	286	400	346	515	472	546	507	485	615	569		
300	367	328	458	394	594	545	629	587	561	709	659		
400	-	-	546	467	694	634	754	689	656	852	795		
500	-	-	626	533	792	723	868	789	749	982	920		
630	-	-	720	611	904	826	1005	905	855	1138	1070		
800	-	-	-	-	1030	943	1086	1020	971	1265	1188		
1000	-	-	-	-	1154	1058	1216	1149	1079	1420	1337		

COPPER CONDUCTORS

NOTE:
For cables having flexible conductors, see section 2.4 of this Appendix for adjustment factors for current-carrying capacity and voltage drop.

TABLE 4D1B

VOLTAGE DROP (per ampere per metre):

Conductor operating temperature: 70 °C

Conductor cross-sectional area 1 (mm ²)	2 cables, DC (mV/A/m)	2 cables, single-phase AC						3 or 4 cables, three-phase AC														
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)			Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)											
		Cables touching			Cables spaced*			Cables touching, Trefoil			Cables touching, Flat			Cables spaced*, Flat								
3 (mV/A/m)	4 (mV/A/m)		5 (mV/A/m)		6 (mV/A/m)			7 (mV/A/m)			8 (mV/A/m)			9 (mV/A/m)								
1	44	44		44		38			38			38			38							
1.5	29	29		29		25			25			25			25							
2.5	18	18		18		15			15			15			15							
4	11	11		11		9.5			9.5			9.5			9.5							
6	7.3	7.3		7.3		6.4			6.4			6.4			6.4							
10	4.4	4.4		4.4		3.8			3.8			3.8			3.8							
16	2.8	2.8		2.8		2.4			2.4			2.4			2.4							
25	1.75	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
35	1.25	1.80	0.33	1.80	1.75	0.20	1.75	1.75	0.29	1.80	1.50	0.29	1.55	1.50	0.175	1.50	1.50	0.25	1.55	1.50	0.32	1.55
50	0.93	1.30	0.31	1.30	1.25	0.195	1.25	1.25	0.28	1.30	1.10	0.27	1.10	1.10	0.170	1.10	1.10	0.24	1.10	1.10	0.32	1.15
70	0.63	0.95	0.30	1.00	0.93	0.190	0.95	0.93	0.28	0.97	0.81	0.26	0.85	0.80	0.165	0.82	0.80	0.24	0.84	0.80	0.32	0.86
95	0.46	0.65	0.29	0.72	0.63	0.185	0.66	0.63	0.27	0.69	0.56	0.25	0.61	0.55	0.160	0.57	0.55	0.24	0.60	0.55	0.31	0.63
120	0.36	0.49	0.28	0.56	0.47	0.180	0.50	0.47	0.27	0.54	0.42	0.24	0.48	0.41	0.155	0.43	0.41	0.23	0.47	0.40	0.31	0.51
150	0.29	0.37	0.27	0.47	0.37	0.175	0.41	0.37	0.26	0.45	0.33	0.23	0.41	0.32	0.150	0.36	0.32	0.23	0.40	0.32	0.30	0.44
185	0.23	0.30	0.27	0.41	0.30	0.175	0.34	0.29	0.26	0.39	0.27	0.23	0.36	0.26	0.150	0.30	0.26	0.23	0.34	0.26	0.30	0.40
240	0.180	0.24	0.27	0.37	0.24	0.170	0.29	0.24	0.26	0.35	0.22	0.23	0.32	0.21	0.145	0.26	0.21	0.22	0.31	0.21	0.30	0.36
300	0.145	0.185	0.26	0.33	0.185	0.165	0.25	0.185	0.25	0.31	0.17	0.23	0.29	0.160	0.145	0.22	0.160	0.22	0.27	0.160	0.29	0.34
400	0.105	0.150	0.26	0.31	0.150	0.165	0.22	0.150	0.25	0.29	0.14	0.23	0.27	0.130	0.140	0.190	0.130	0.22	0.25	0.130	0.29	0.32
500	0.086	0.120	0.26	0.29	0.120	0.160	0.20	0.115	0.25	0.27	0.12	0.22	0.25	0.105	0.140	0.175	0.105	0.21	0.24	0.100	0.29	0.31
630	0.068	0.098	0.26	0.28	0.098	0.155	0.185	0.093	0.24	0.26	0.10	0.22	0.25	0.086	0.135	0.160	0.086	0.21	0.23	0.081	0.29	0.30
800	0.053	0.081	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25	0.08	0.22	0.24	0.072	0.135	0.150	0.072	0.21	0.22	0.066	0.28	0.29
1000	0.042	0.068	-	-	0.068	0.150	0.165	0.061	0.24	0.25	-	-	-	0.060	0.130	0.145	0.060	0.21	0.22	0.053	0.28	0.29
		0.059	0.150	0.160	0.050	0.24	0.24	-	-	-	-	-	-	0.052	0.130	0.140	0.052	0.20	0.21	0.044	0.28	0.28

NOTE: * Spacings larger than one cable diameter will result in a larger voltage drop.

TABLE 4F3A - Flexible cables, non-armoured (COPPER CONDUCTORS)

COPPER CONDUCTORS

CURRENT-CARRYING CAPACITY (amperes): and MASS SUPPORTABLE (kg):

Conductor cross-sectional area 1 (mm ²)	Current-carrying capacity		Maximum mass supportable by twin flexible cable (see Regulations 522.7.2 and 559.5.2) 4 (kg)
	Single-phase AC 2 (A)	Three-phase AC 3 (A)	
0.5	3	3	2
0.75	6	6	3
1	10	10	5
1.25	13	-	5
1.5	16	16	5
2.5	25	20	5
4	32	25	5

Where cable is on a reel see the notes to Table 4F1A.

RATING FACTOR FOR AMBIENT TEMPERATURE

60 °C thermoplastic or thermosetting insulated cable:

Ambient temperature	35 °C	40 °C	45 °C	50 °C	55 °C
Rating factor	0.91	0.82	0.71	0.58	0.41

110 °C flexible cable:

Ambient temperature	35 to 80 °C	85 °C	90 °C	95 °C	100 °C	105 °C
Rating factor	1.0	0.96	0.85	0.74	0.60	0.42

90 °C thermoplastic or thermosetting insulated cable:

Ambient temperature	35 to 50 °C	55 °C	60 °C	65 °C	70 °C
Rating factor	1.0	0.96	0.83	0.67	0.47

150 °C flexible cable:

Ambient temperature	35 to 120 °C	125 °C	130 °C	135 °C	140 °C	145 °C
Rating factor	1.0	0.96	0.85	0.74	0.60	0.42

Glass fibre flexible cable:

Ambient temperature	35 to 50 °C	155 °C	160 °C	165 °C	170 °C	175 °C
Rating factor	1.0	0.92	0.82	0.71	0.57	0.40

TABLE 4F3B

VOLTAGE DROP (per ampere per metre): Conductor operating temperature: 60 °C

Conductor cross-sectional area	DC or single-phase AC	Three-phase AC
1	2	3
(mm ²)	(mV/A/m)	(mV/A/m)
0.5	93	80
0.75	62	54
1	46	40
1.25	37	-
1.5	32	27
2.5	19	16
4	12	10

NOTE: * The tabulated values above are for 60 °C thermoplastic or thermosetting insulated flexible cables and for other types of flexible cable they are to be multiplied by the following factors:

For 90 °C thermoplastic or thermosetting insulated	1.09
110 °C	1.17
150 °C	1.31
185 °C glass fibre	1.43

The information in this datasheet is for guidance only and subject to change without liability. Images provided are representations; actual cable dimensions may vary due to manufacturing tolerances.

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