PVC Insulated Cables

KEYSTONE CABLE
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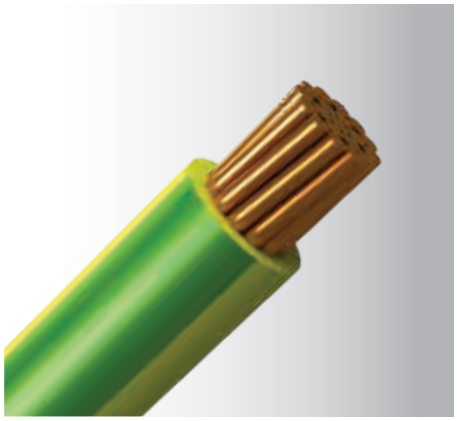
450/750V Single-Core
PVC Insulated, Non-Sheathed Cable

Description: CU/PVC
Model Code: PVC



Application :	This cable is used in light fitting, and in switching and control equipment. It can be installed on cable trays, in conduit, and cable trunking.
Voltage rating :	450/750V
Construction :	Plain annealed copper (IEC 60228 Class 2), PVC insulated cable
Insulation colour :	Brown, Black, Grey, Blue, Green/Yellow (Other colour upon request)
Specification :	SS 358-3, IEC 60227-3, IEC 60332-1-2
Operating temperature :	70˚C

Conductor			Insulation	Part No.	Approx. Overall Diam.	Approx. Weight
Nominal Area	No./Diam. of Strand	Approx. Diam.	Thickness			
(mm^2)	(no./mm)	(mm)	(mm)		(mm)	(kg/km)
1.5	7/0.53	1.59	0.7	**0701**30**	3.1	22
2.5	7/0.67	2.01	0.8	**0801**30**	3.7	34
4	7/0.85	2.55	0.8	**0901**30**	4.3	50
6	7/1.04	3.12	0.8	**1001**30**	4.8	70
10	7/1.35	4.05	1.0	**1101**30**	6.2	124
16	7/1.70	5.10	1.0	**1201**30**	7.2	183
25 (cs)	7/2.14	6.20	1.2	**1301**30**	9.0	280
35 (cs)	19/1.53	7.30	1.2	**1401**30**	10.0	380
50 (cs)	19/1.78	8.20	1.4	**1501**30**	11.2	500
70 (cs)	19/2.14	10.00	1.4	**1601**30**	13.0	715
95 (cs)	19/2.52	11.80	1.6	**1701**30**	15.2	990
120 (cs)	37/2.03	13.00	1.6	**1801**30**	16.4	1220
150 (cs)	37/2.25	14.40	1.8	**1901**30**	18.3	1500
185 (cs)	37/2.52	16.20	2.0	**2001**30**	20.4	1890
240 (cs)	61/2.25	18.80	2.2	**2101**30**	23.4	2460
300 (cs)	61/2.52	21.20	2.4	**2201**30**	26.4	3080
400 (cs)	61/2.85	24.30	2.6	**2301**30**	30.0	3920
500 (cs)	61/3.20	27.40	2.8	**2401**30**	33.5	4920
630	127/2.52	32.76	2.8	**2501**30**	38.7	6260

**Stands for colour code: Brown (01) Black (02) Grey (03) Blue (04) Green/Yellow (05)

Current rating and voltage drop
Please refer to Table 2 & 3 (Page 51)

(cs) : Circular Compact Stranded Conductor

Current Rating and Voltage Drop

PVC Insulated Cables
Single-Core, Unarmoured

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Single-Core Cables with PVC Insulation, Unarmoured, with or without Sheath 450/750V or 0.6/1kV

Table 2 : Current-Carrying Capacities (Amp)
[CU/PVC or CU/PVC/PVC Cables]

Conductor Operating Temperature : 70°C
Ambient Temperature : 30°C

BS EN 50525-2-31 (BS 6004)
IEC 60502-1 (BS 6346)
SS 358-3

Conductor Cross-sectional Area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc.)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc.)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray horizontal or vertical)		Reference Method 12 (in free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, 1-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, 1-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, 1-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, 1-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, 1-phase a.c. or d.c. or 3 cables 3-phase a.c.	2 cables, 1-phase a.c. or d.c. or 3 cables 3-phase a.c.	3 cables trefoil, 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm²	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	19.5	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	126	112	146	130	110
35	99	89	125	110	141	129	156	141	181	162	137
50	119	108	151	134	182	167	191	172	219	197	167
70	151	136	192	171	234	214	246	223	281	254	216
95	182	164	232	207	284	261	300	273	341	311	264
120	210	188	269	239	330	303	349	318	396	362	308
150	240	216	300	262	381	349	404	369	456	419	356
185	273	245	341	296	436	400	463	424	521	480	409
240	320	286	400	346	515	472	549	504	615	569	485
300	367	328	458	394	594	545	635	584	709	659	561
400	-	-	546	467	694	634	732	679	852	795	656
500	-	-	626	533	792	723	835	778	982	920	749
630	-	-	720	611	904	826	953	892	1138	1070	855
800	-	-	-	-	1030	943	1086	1020	1265	1188	971
1000	-	-	-	-	1154	1058	1216	1149	1420	1337	1079

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 23 (Page 62)

Table 3 : Voltage Drop (Per Amp, Per Meter)
[CU/PVC or CU/PVC/PVC Cables]

Conductor Operating Temperature : 70°C

BS EN 50525-2-31 (BS 6004)
IEC 60502-1 (BS 6346)
SS 358-3

Conductor Cross-sectional Area	2 cables, d.c.	2 cables,1-phase a.c.									3 or 4 cables, 3-phase a.c.											
		Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall)			Reference Methods 1 & 11 (clipped direct or on trays, touching)			Reference Method 12 (spaced)			Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall)			Reference Methods 1, 11 & 12 (trefoil)			Reference Methods 1 & 11 (flat touching)			Reference Method 12 (flat spaced)		
1	2	3			4			5			6			7			8			9		
mm²	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1	44	44			44			44			38			38			38			38		
1.5	29	29			29			29			25			25			25			25		
2.5	18	18			18			18			15			15			15			15		
4	11	11			11			11			9.5			9.5			9.5			9.5		
6	7.3	7.3			7.3			7.3			6.4			6.4			6.4			6.4		
10	4.4	4.4			4.4			4.4			3.8			3.8			3.8			3.8		
16	2.8	2.8			2.8			2.8			2.4			2.4			2.4			2.4		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.75	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
35	1.25	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
50	0.93	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
70	0.63	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
95	0.46	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
120	0.36	0.39	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
150	0.29	0.31	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
185	0.23	0.25	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
240	0.180	0.195	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
300	0.145	0.160	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
400	0.105	0.130	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
500	0.086	0.110	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
630	0.068	0.094	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
800	0.053	-	-	-	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
1000	0.042	-	-	-	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 : r = resistive component; x = reactive component; z = impedance value

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Table 23 : Correction Factor for Ambient Air Temperature Other Than 30°C to be Applied to the Current-Carrying Capacities for Cables in Free Air

Ambient Temperature	Insulation				
	PVC	XLPE	HT-PVC	Rubber	Rubber
(°C)	(70°C)	(90°C)	(90°C)	(85°C)	(60°C)
10	1.22	1.15	-	-	-
15	1.17	1.12	-	-	-
20	1.12	1.08	-	-	-
25	1.06	1.04	1.03	1.02	-
30	1.00	1.00	1.00	1.00	1.00
35	0.94	0.96	0.97	0.95	0.91
40	0.87	0.91	0.94	0.90	0.82
45	0.79	0.87	0.91	0.85	0.71
50	0.71	0.82	0.87	0.80	0.58
55	0.61	0.76	0.84	0.74	0.41
60	0.50	0.71	0.80	0.67	-
65	0.35	0.65	0.76	0.60	-
70	-	0.58	0.71	0.52	-
75	-	0.50	0.61	0.43	-
80	-	0.41	0.50	0.30	-
85	-	0.29	0.35	-	-

Table 24 : Correction Factor for Ambient Ground Temperature Other Than 15°C to be Applied to the Current-Carrying Capacities for Cables in Ducts or in Ground

Ground Temperature	Insulation	
	PVC	XLPE
(°C)	(70°C)	(90°C)
10	1.04	1.03
15	1.00	1.00
20	0.95	0.97
25	0.90	0.93
30	0.85	0.89
35	0.80	0.86
40	0.74	0.82
45	0.67	0.77
50	0.60	0.73
55	-	0.68
60	-	0.63
65	-	0.58