

# Flexible Cables

450/750V 1-Core ~ 5-Core

EPR Rubber Insulated, Chlorinated Polyethylene Sheathed Neoprene Cable

Description: CU/EPR/CPE

Model Code: H07RN-F



Application :	This flexible cable can be either installed as a fixed or mobile cable under adverse conditions such as in oily, acidic, or alkaline environments.
Voltage rating :	450/750V (0.6/1kV REF IEC 60092-353)
Construction :	Plain annealed copper (IEC 60228 Class 5), EPR rubber insulated, chlorinated polyethylene (CPE) sheathed cable
Insulation colour :	1-Core: White; 2-Core: Brown, Blue; 3-Core: Brown, Blue, Green/Yellow; 4-Core: Brown, Black, Grey, Green/Yellow; 5-Core: Brown, Black, Grey, Blue, Green/Yellow; (Other colour upon request)
Sheath colour :	Black
Specification :	BS EN 50525-2-21, IEC 60332-1-2
Operating temperature :	-25°C to 90°C
Certification :	VDE

## 1-CORE [1C]

Conductor	Insulation	Sheath	Part No.	Approx. Overall Diam.	Approx. Weight
Nominal Area	Thickness	Thickness		(mm)	(kg/km)
(mm <sup>2</sup> )	(mm)	(mm)			
1.5	0.8	1.4	<b>07019686</b>	6.0	50
2.5	0.9	1.4	<b>08019686</b>	6.5	65
4	1.0	1.5	<b>09019686</b>	7.5	90
6	1.0	1.6	<b>10019686</b>	8.5	115
10	1.2	1.8	<b>11019686</b>	10.0	180
16	1.2	1.9	<b>12019686</b>	11.5	255
25	1.4	2.0	<b>13019686</b>	13.0	365
35	1.4	2.2	<b>14019686</b>	15.0	485
50	1.6	2.4	<b>15019686</b>	17.0	680
70	1.6	2.6	<b>16019686</b>	19.0	900
95	1.8	2.8	<b>17019686</b>	21.5	1160
120	1.8	3.0	<b>18019686</b>	23.5	1460
150	2.0	3.2	<b>19019686</b>	25.5	1800
185	2.2	3.4	<b>20019686</b>	28.5	2200
240	2.4	3.5	<b>21019686</b>	31.5	2830
300	2.6	3.6	<b>22019686</b>	34.0	3480
400	2.8	3.8	<b>23019686</b>	38.5	4500
500	3.0	4.0	<b>24019686</b>	44.0	5800

**Current rating and voltage drop**  
Please refer to Table 20 & 21 (Page 63)

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<b>2-CORE [2C]</b> (Brown, Blue) (1-phase and neutral)					
Conductor	Insulation	Sheath	Part No.	Approx. Overall Diam.	Approx. Weight
Nominal Area	Thickness	Thickness		(mm)	(kg/km)
(mm <sup>2</sup> )	(mm)	(mm)			
1	0.8	1.3	<b>06028501</b>	8.3	90
1.5	0.8	1.5	<b>07028501</b>	9.2	115
2.5	0.9	1.7	<b>08028501</b>	11.0	165
4	1.0	1.8	<b>09028501</b>	12.6	230
6	1.0	2.0	<b>10028501</b>	14.2	300
10	1.2	3.1	<b>11028501</b>	19.2	545
16	1.2	3.3	<b>12028501</b>	22.0	765
25	1.4	3.6	<b>13028501</b>	25.4	1090

<b>3-CORE [3G]</b> (Brown, Blue, Green/Yellow) (1-phase and earth)					
Conductor	Insulation	Sheath	Part No.	Approx. Overall Diam.	Approx. Weight
Nominal Area	Thickness	Thickness		(mm)	(kg/km)
(mm <sup>2</sup> )	(mm)	(mm)			
1	0.8	1.4	<b>06038502</b>	9.0	110
1.5	0.8	1.6	<b>07038502</b>	10.0	140
2.5	0.9	1.8	<b>08038502</b>	12.0	200
4	1.0	1.9	<b>09038502</b>	13.5	280
6	1.0	2.1	<b>10038502</b>	15.5	375
10	1.2	3.3	<b>11038502</b>	20.5	675
16	1.2	3.5	<b>12038502</b>	23.5	950
25	1.4	3.8	<b>13038502</b>	27.5	1360
35	1.4	4.1	<b>14038502</b>	30.5	1795
50	1.6	4.5	<b>15038502</b>	35.0	2480
70	1.6	4.8	<b>16038502</b>	39.0	3285
95	1.8	5.3	<b>17038502</b>	45.3	4210
120	1.8	5.6	<b>18038502</b>	49.0	5280
150	2.0	6.0	<b>19038502</b>	60.0	6420

**Current rating and voltage drop**  
Please refer to Table 22 & 23 (Page 64)

# Flexible Cables

450/750V 1-Core ~ 5-Core

EPR Rubber Insulated, Chlorinated Polyethylene Sheathed Neoprene Cable

Description: CU/EPR/CPE

Model Code: H07RN-F

## 4-CORE [4G]

(Brown, Black, Grey, Green/Yellow) (3-phase and earth)

Conductor	Insulation	Sheath	Part No.	Approx. Overall Diam.	Approx. Weight
Nominal Area	Thickness	Thickness		(mm)	(kg/km)
(mm <sup>2</sup> )	(mm)	(mm)			
1	0.8	1.5	<b>06048503</b>	10.0	135
1.5	0.8	1.7	<b>07048503</b>	11.0	170
2.5	0.9	1.9	<b>08048503</b>	13.0	250
4	1.0	2.0	<b>09048503</b>	15.0	350
6	1.0	2.3	<b>10048503</b>	17.0	470
10	1.2	3.4	<b>11048503</b>	22.5	830
16	1.2	3.6	<b>12048503</b>	25.5	1170
25	1.4	4.1	<b>13048503</b>	30.0	1700
35	1.4	4.4	<b>14048503</b>	34.0	2300
50	1.6	4.8	<b>15048503</b>	39.0	3160
70	1.6	5.2	<b>16048503</b>	43.5	4200
95	1.8	5.9	<b>17048503</b>	50.0	5450
120	1.8	6.0	<b>18048503</b>	54.0	6770

## 5-CORE [5G]

(Brown, Black, Grey, Blue, Green/Yellow) (3-phase, neutral and earth)

Conductor	Insulation	Sheath	Part No.	Approx. Overall Diam.	Approx. Weight
Nominal Area	Thickness	Thickness		(mm)	(kg/km)
(mm <sup>2</sup> )	(mm)	(mm)			
1	0.8	1.6	<b>06058504</b>	11.0	160
1.5	0.8	1.8	<b>07058504</b>	12.0	205
2.5	0.9	2.0	<b>08058504</b>	14.5	300
4	1.0	2.2	<b>09058504</b>	16.5	420
6	1.0	2.5	<b>10058504</b>	19.0	580
10	1.2	3.6	<b>11058504</b>	25.0	1120
16	1.2	3.9	<b>12058504</b>	28.0	1440
25	1.4	4.4	<b>13058504</b>	33.5	2120

**Current rating and voltage drop**  
Please refer to Table 22 & 23 (Page 64)

# Current Rating and Voltage Drop

EPR Insulated Cables



tel (65) 6367 0107 fax (65) 6365 2963  
www.keystone-cable.com

Single-Core EPR Insulated, Chlorinated Polyethylene Outersheath Neoprene Cable 450/750V or 0.6/1kV

**Table 20 : Current-Carrying Capacities (Amp)**  
**[CU/EPR/CPE Cables]**

Conductor Operating Temperature : 90°C  
Ambient Temperature : 30°C

BS EN 50525-2-21

Conductor Cross-sectional Area	Reference Method 3 (enclosed in conduit etc. in or on a wall)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray) Horizontal or Vertical		Reference Method 12 (in free air)	
	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 or 4 cables, 3-phase a.c. flat spaced horizontal or vertical	3 cables trefoil, 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm <sup>2</sup>	A	A	A	A	A	A	A	A
1	17	15	19	17.5	-	-	-	-
1.5	22	19.5	25	23	-	-	-	-
2.5	30	27	34	31	-	-	-	-
4	40	36	45	42	-	-	-	-
6	52	46	59	54	-	-	-	-
10	72	63	81	75	-	-	-	-
16	96	85	108	100	-	-	-	-
25	127	112	143	133	153	140	154	134
35	157	138	177	164	189	174	192	167
50	190	167	215	199	229	211	235	204
70	242	213	274	254	293	269	303	262
95	293	258	332	308	356	327	370	320
120	339	298	384	357	412	379	431	373
150	372	334	442	411	475	437	499	432
185	428	379	519	469	542	499	573	495
240	510	443	607	553	639	589	679	587
300	593	506	695	636	735	679	786	680
400	719	602	827	755	860	798	929	799
500	835	689	946	865	989	918	1081	919
630	975	791	1088	996	1143	1062	1263	1060

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 25 (Page 66)

**Table 21 : Voltage Drop (Per Amp Per Meter)**  
**[CU/EPR/CPE Cables]**

Conductor Operating Temperature : 90°C

BS EN 50525-2-21

Conductor Cross-sectional Area	2 cables, d.c.	2 cables, 1-phase a.c.						3 or 4 cables, 3-phase a.c.														
		Reference Method 3 (enclosed in conduit etc. in or on a wall)			Reference Methods 1 & 11 (clipped direct or on trays, touching)			Reference Method 12 (spaced*)	Reference Method 3 (enclosed in conduit etc. in or on a wall)	Reference Method 1, 11 & 12 (in trefoil touching)			Reference Methods 1 & 11 (flat and touching)			Reference Method 12 (flat spaced*)						
1	2	3			4			5	6	7			8			9						
mm <sup>2</sup>	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	46	46			46			-	40	40			40			-						
1.5	31	31			31			-	26	26			26			-						
2.5	18	18			18			-	16	16			16			-						
4	12	12			12			-	10	10			10			-						
6	7.7	7.7			7.7			-	6.7	6.7			6.7			-						
10	4.6	4.6			4.6			-	4.0	4.0			4.0			-						
16	2.9	2.9			2.9			-	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	1.80	1.85	0.32	1.90	1.85	0.20	1.85	1.85	0.29	1.85	1.60	0.28	1.65	1.60	0.175	1.60	1.60	0.25	1.60	1.60	0.32	1.65
35	1.30	1.35	0.31	1.40	1.30	0.195	1.35	1.30	0.28	1.35	1.15	0.27	1.20	1.15	0.170	1.15	1.15	0.24	1.15	1.15	0.32	1.20
50	0.95	1.00	0.30	1.05	0.97	0.190	0.99	0.97	0.28	1.00	0.87	0.26	0.91	0.84	0.165	0.86	0.84	0.24	0.88	0.84	0.32	0.90
70	0.65	0.68	0.29	0.74	0.66	0.185	0.69	0.66	0.27	0.72	0.60	0.25	0.65	0.57	0.160	0.60	0.57	0.24	0.62	0.57	0.31	0.65
95	0.48	0.51	0.28	0.58	0.49	0.180	0.52	0.49	0.27	0.56	0.44	0.25	0.51	0.43	0.155	0.45	0.43	0.23	0.48	0.42	0.31	0.52
120	0.38	0.40	0.27	0.49	0.39	0.175	0.43	0.39	0.26	0.47	0.35	0.24	0.43	0.34	0.155	0.37	0.34	0.23	0.41	0.34	0.30	0.45
150	0.30	0.33	0.27	0.42	0.31	0.175	0.36	0.31	0.26	0.40	0.29	0.24	0.37	0.27	0.150	0.31	0.27	0.23	0.35	0.27	0.30	0.40
185	0.25	0.27	0.27	0.38	0.25	0.170	0.30	0.25	0.26	0.36	0.23	0.23	0.33	0.22	0.150	0.26	0.22	0.22	0.31	0.22	0.30	0.37
240	0.190	0.21	0.26	0.33	0.195	0.165	0.26	0.195	0.25	0.32	0.180	0.23	0.29	0.170	0.145	0.22	0.170	0.22	0.28	0.170	0.30	0.34
300	0.150	0.170	0.26	0.31	0.155	0.165	0.23	0.155	0.25	0.29	0.150	0.23	0.27	0.135	0.140	0.195	0.135	0.22	0.26	0.135	0.29	0.32
400	0.115	0.140	0.26	0.30	0.125	0.160	0.20	0.120	0.25	0.28	0.130	0.22	0.26	0.110	0.140	0.175	0.110	0.21	0.24	0.105	0.29	0.31
500	0.091	0.115	0.26	0.28	0.100	0.155	0.185	0.097	0.24	0.26	0.105	0.22	0.24	0.089	0.135	0.165	0.089	0.21	0.23	0.085	0.29	0.30
630	0.072	0.100	0.25	0.27	0.082	0.155	0.175	0.077	0.24	0.25	0.085	0.22	0.24	0.073	0.135	0.155	0.073	0.21	0.22	0.067	0.28	0.29

Note : r = resistive component; x = reactive component; z = impedance value

**Table 25 : 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 (°C)	Insulation				
	PVC (70°C)	XLPE (90°C)	HT-PVC (90°C)	Rubber (85°C)	Rubber (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 26 : 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 (°C)	Insulation	
	PVC (70°C)	XLPE (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