

Fluorine-containing copolymer Insulated High Temperature Control Cables

◆ Standard

Fluorine-containing copolymer Insulated High Temperature Control Cable is manufactured according to Q/320412HLC008.

◆ Application

Fluorine-containing copolymer insulated high-temperature control cables are used in control and supervisor circuits under rated voltage (U_0/U):450/750V as connection cables and transmission lines of electric equipment and instrument automatic control system. They have good resistance high/low temperature, acid and alkali, oil, extended burning, and widely used in petrol chemical, power, metallurgical industries, etc. national pillar industry and infrastructure construction under the high-temperature and severe conditions.

◆ Product Property

- (1) Rated voltage (U_0/U): 450V/750V.
- (2) Max. Allowable working temperature: 200 °C.
- (3) Min. ambient temperature: Fixed laid-up is -60°C, non-fixed installation laid-up is -20°C
- (4) Install temperature: no less than -25°C
- (5) Recommended allowable bending radius: no less than 8 times of outer diameter.

◆ Technical Data

Item	Unit	Technical index									
DC resistance of conductor at 20℃ ≤	Ω/km	mm ²	0.75		1.0		1.5		2.5		
		Plated layer	Non-tinned	Tinned	Non-tinned	Tinned	Non-tinned	Tinned	Non-tinned	Tinned	
		A ,B 类	24.5	24.7	18.1	18.2	12.1	12.2	7.41	7.56	
		R 类	26.0	26.7	19.5	20.0	13.3	13.7	7.98	8.21	
Test voltage	kV/5min	3.0									

◆ Type and Name, Structure and Diameter

1. Type and Name (Table 2)

Table 2

Type	Name
HCKFC2	Copper conductor fluorine-containing copolymer insulated and sheathed control cables
HCKFC2R	Copper conductor fluorine-containing copolymer insulated and sheathed control flexible cables
HCKFC2P	Copper conductor fluorine-containing copolymer insulated and sheathed copper braid control cables

HCKFC2P ₂	Copper conductor fluorine-containing copolymer insulated and sheathed copper tape screened control cables
HCKFC2RP	Copper conductor fluorine-containing copolymer insulated and sheathed copper wire braid control flexible cables
NH-HCKFC2	Copper conductor fluorine-containing copolymer insulated and sheathed fire resistant control cables
NH-HCKFC2R	Copper conductor fluorine-containing copolymer insulated and sheathed fire resistant control flexible cables
HCKFCS _F	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed control cables
HCKFCS _F R	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed control flexible cables
HCKFCS _F P	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper wire braid control cables
HCKFCS _F RP	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper braid control flexible cables
HCKFCS _F P ₂	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper tape screened control cables
HCKFCS _F RP ₂	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper tape screened control flexible cables
ZR-HCKFCS _F	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed flame retardant control cables
ZR-HCKFCS _F R	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed flame retardant control flexible cables
ZR-HCKFCS _F P	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper wire braid flame retardant control cables
ZR-HCKFCS _F RP	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper wire braid flame retardant control flexible cables
ZR-HCKFCS _F P ₂	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper tape screened flame retardant control cables
ZR-HCKFCS _F RP ₂	Copper conductor fluorine-containing copolymer insulated silicone rubber sheathed copper tape screened flame retardant control flexible cables

2. Structure Size and Weight (Table 3~6)

Table 3

HCKFC2 HCKFC2R

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFC2	HCKFC2R	HCKFC2	HCKFC2R
2×0.75	1/0.97	7/0.37	24/0.20	5.2	5.6	48	54
2×1.0	1/1.13	7/0.43	32/0.20	5.8	6.2	56	65
2×1.5	1/1.38	7/0.52	30/0.25	6.4	6.8	71	78
2×2.5	1/1.78	7/0.68	50/0.25	7.4	8.0	98	110

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFC2	HCKFC2R	HCKFC2	HCKFC2R
3×0.75	1/0.97	7/0.37	24/0.20	5.5	6.0	60	67
3×1.0	1/1.13	7/0.43	32/0.20	6.2	6.6	72	81
3×1.5	1/1.38	7/0.52	30/0.25	6.9	7.3	93	100
3×2.5	1/1.78	7/0.68	50/0.25	8.0	8.6	133	141
4×0.75	1/0.97	7/0.37	24/0.20	6.1	6.6	72	78
4×1.0	1/1.13	7/0.43	32/0.20	6.8	7.3	88	100
4×1.5	1/1.38	7/0.52	30/0.25	7.6	8.1	115	123
4×2.5	1/1.78	7/0.68	50/0.25	8.8	9.6	166	178
5×0.75	1/0.97	7/0.37	24/0.20	6.4	6.9	83	93
5×1.0	1/1.13	7/0.43	32/0.20	7.2	7.7	104	117
5×1.5	1/1.38	7/0.52	30/0.25	8.0	8.6	137	146
5×2.5	1/1.78	7/0.68	50/0.25	9.4	10.2	200	214
7×0.75	1/0.97	7/0.37	24/0.20	6.9	7.5	106	118
7×1.0	1/1.13	7/0.43	32/0.20	7.8	8.4	134	150
7×1.5	1/1.38	7/0.52	30/0.25	8.7	9.3	180	188
7×2.5	1/1.78	7/0.68	50/0.25	10.2	11.1	264	283
8×0.75	1/0.97	7/0.37	24/0.20	7.3	7.9	119	131
8×1.0	1/1.13	7/0.43	32/0.20	8.2	8.8	151	168
8×1.5	1/1.38	7/0.52	30/0.25	9.2	9.8	203	212
8×2.5	1/1.78	7/0.68	50/0.25	10.8	12.0	298	321
10×0.75	1/0.97	7/0.37	24/0.20	7.9	8.6	142	157
10×1.0	1/1.13	7/0.43	32/0.20	9.0	9.8	180	202
10×1.5	1/1.38	7/0.52	30/0.25	10.1	10.8	244	258
10×2.5	1/1.78	7/0.68	50/0.25	12.3	13.5	365	401
12×0.75	1/0.97	7/0.37	24/0.20	8.6	9.4	167	182
12×1.0	1/1.13	7/0.43	32/0.20	9.8	10.6	210	236
12×1.5	1/1.38	7/0.52	30/0.25	11.2	12.41	291	305
12×2.5	1/1.78	7/0.68	50/0.25	13.4	14.7	440	471

Table 4
HCKFC2P HCKFC2RP

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFC2P	HCKFC2RP	HCKFC2P	HCKFC2RP
2×0.75	1/0.97	7/0.37	24/0.20	5.4	5.8	62	68
2×1.0	1/1.13	7/0.43	32/0.20	6.0	6.4	72	80
2×1.5	1/1.38	7/0.52	30/0.25	6.6	7.0	89	94
2×2.5	1/1.78	7/0.68	50/0.25	7.6	8.2	120	130
3×0.75	1/0.97	7/0.37	24/0.20	5.7	6.2	74	81
3×1.0	1/1.13	7/0.43	32/0.20	6.4	6.8	90	97
3×1.5	1/1.38	7/0.52	30/0.25	7.1	7.5	113	119
3×2.5	1/1.78	7/0.68	50/0.25	8.2	8.8	157	166
4×0.75	1/0.97	7/0.37	24/0.20	6.3	6.8	89	96
4×1.0	1/1.13	7/0.43	32/0.20	7.0	7.5	108	119
4×1.5	1/1.38	7/0.52	30/0.25	7.8	8.3	138	146
4×2.5	1/1.78	7/0.68	50/0.25	9.0	9.8	194	206
5×0.75	1/0.97	7/0.37	24/0.20	6.6	7.1	101	110
5×1.0	1/1.13	7/0.43	32/0.20	7.4	7.9	126	138
5×1.5	1/1.38	7/0.52	30/0.25	8.2	8.8	162	170
5×2.5	1/1.78	7/0.68	50/0.25	9.6	10.4	230	244
7×0.75	1/0.97	7/0.37	24/0.20	7.1	7.7	126	137
7×1.0	1/1.13	7/0.43	32/0.20	8.0	8.6	158	174
7×1.5	1/1.38	7/0.52	30/0.25	8.9	9.5	268	216
7×2.5	1/1.78	7/0.68	50/0.25	10.4	11.3	298	219
8×0.75	1/0.97	7/0.37	24/0.20	7.5	8.1	140	151
8×1.0	1/1.13	7/0.43	32/0.20	8.4	9.0	174	192
8×1.5	1/1.38	7/0.52	30/0.25	9.4	10.0	232	240
8×2.5	1/1.78	7/0.68	50/0.25	11.0	12.3	334	371
10×0.75	1/0.97	7/0.37	24/0.20	8.1	8.8	166	181
10×1.0	1/1.13	7/0.43	32/0.20	9.2	10.0	208	230
10×1.5	1/1.38	7/0.52	30/0.25	10.3	11.0	277	290
10×2.5	1/1.78	7/0.68	50/0.25	12.7	13.8	415	156
12×0.75	1/0.97	7/0.37	24/0.20	8.8	9.6	195	210
12×1.0	1/1.13	7/0.43	32/0.20	10.0	10.8	242	268
12×1.5	1/1.38	7/0.52	30/0.25	11.4	12.4	329	355
12×2.5	1/1.78	7/0.68	50/0.25	13.8	15.0	496	532

Table 5
HCKFCS_F HCKFCS_FR

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFCS _F	HCKFCS _F R	HCKFCS _F	HCKFCS _F R
2×0.75	1/0.97	7/0.37	24/0.20	7.2	7.6	64	71
2×1.0	1/1.13	7/0.43	32/0.20	7.8	8.2	74	83
2×1.5	1/1.38	7/0.52	30/0.25	8.4	8.8	91	96
2×2.5	1/1.78	7/0.68	50/0.25	9.4	10.0	119	130
3×0.75	1/0.97	7/0.37	24/0.20	7.5	8.0	76	83
3×1.0	1/1.13	7/0.43	32/0.20	8.2	8.6	91	101
3×1.5	1/1.38	7/0.52	30/0.25	8.9	9.3	113	120
3×2.5	1/1.78	7/0.68	50/0.25	10.0	10.6	155	167
4×0.75	1/0.97	7/0.37	24/0.20	8.1	8.6	90	100
4×1.0	1/1.13	7/0.43	32/0.20	8.8	9.3	108	118
4×1.5	1/1.38	7/0.52	30/0.25	9.6	10.1	139	147
4×2.5	1/1.78	7/0.68	50/0.25	10.8	11.6	190	206
5×0.75	1/0.97	7/0.37	24/0.20	8.4	8.9	102	112
5×1.0	1/1.13	7/0.43	32/0.20	9.2	9.7	125	139
5×1.5	1/1.38	7/0.52	30/0.25	10.0	10.6	160	171
5×2.5	1/1.78	7/0.68	50/0.25	11.4	12.2	225	243
7×0.75	1/0.97	7/0.37	24/0.20	8.9	9.5	127	140
7×1.0	1/1.13	7/0.43	32/0.20	9.8	10.4	156	173
7×1.5	1/1.38	7/0.52	30/0.25	10.7	11.3	204	215
7×2.5	1/1.78	7/0.68	50/0.25	12.2	13.1	293	313
8×0.75	1/0.97	7/0.37	24/0.20	9.3	9.9	140	154
8×1.0	1/1.13	7/0.43	32/0.20	10.2	10.8	172	191
8×1.5	1/1.38	7/0.52	30/0.25	11.2	11.8	227	239
8×2.5	1/1.78	7/0.68	50/0.25	12.8	14.1	327	358
10×0.75	1/0.97	7/0.37	24/0.20	9.9	10.8	163	180
10×1.0	1/1.13	7/0.43	32/0.20	11.0	11.7	204	230
10×1.5	1/1.38	7/0.52	30/0.25	12.1	12.8	272	287
10×2.5	1/1.78	7/0.68	50/0.25	14.2	15.4	401	433
12×0.75	1/0.97	7/0.37	24/0.20	10.6	11.4	183	206
12×1.0	1/1.13	7/0.43	32/0.20	11.8	12.6	237	264
12×1.5	1/1.38	7/0.52	30/0.25	13.0	14.2	318	343
12×2.5	1/1.78	7/0.68	50/0.25	15.4	17.0	468	509
14×0.75	1/0.97	7/0.37	24/0.20	11.3	12.2	214	235
14×1.0	1/1.13	7/0.43	32/0.20	12.6	13.9	272	312
14×1.5	1/1.38	7/0.52	30/0.25	14.3	15.2	370	388
14×2.5	1/1.78	7/0.68	50/0.25	16.9	18.4	538	585

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFCS _F	HCKFCS _F R	HCKFCS _F	HCKFCS _F R
16×0.75	1/0.97	7/0.37	24/0.20	11.8	12.7	239	262
16×1.0	1/1.13	7/0.43	32/0.20	13.4	14.6	303	347
16×1.5	1/1.38	7/0.52	30/0.25	15.0	16.0	410	435
16×2.5	1/1.78	7/0.68	50/0.25	17.8	19.2	606	669
19×0.75	1/0.97	7/0.37	24/0.20	12.3	13.7	273	316
19×1.0	1/1.13	7/0.43	32/0.20	14.2	15.2	355	395
19×1.5	1/1.38	7/0.52	30/0.25	15.7	17.1	471	504
19×2.5	1/1.78	7/0.68	50/0.25	18.6	20.1	703	772
24×0.75	1/0.97	7/0.37	24/0.20	14.4	15.6	341	378
24×1.0	1/1.13	7/0.43	32/0.20	16.6	17.8	432	487
24×1.5	1/1.38	7/0.52	30/0.25	18.4	19.6	488	641
24×2.5	1/1.78	7/0.68	50/0.25	21.4	23.2	896	960
27×0.75	1/0.97	7/0.37	24/0.20	14.7	16.4	375	417
27×1.0	1/1.13	7/0.43	32/0.20	17.0	18.2	477	546
27×1.5	1/1.38	7/0.52	30/0.25	18.9	20.1	649	703
27×2.5	1/1.78	7/0.68	50/0.25	22.0	24.2	992	1070
30×0.75	1/0.97	7/0.37	24/0.20	15.3	16.8	406	451
30×1.0	1/1.13	7/0.43	32/0.20	17.4	18.7	521	603
30×1.5	1/1.38	7/0.52	30/0.25	19.3	20.6	729	769
30×2.5	1/1.78	7/0.68	50/0.25	22.5	24.8	1088	1185
37×0.75	1/0.97	7/0.37	24/0.20	16.5	17.9	486	544
37×1.0	1/1.13	7/0.43	32/0.20	18.6	20.0	623	719
37×1.5	1/1.38	7/0.52	30/0.25	20.7	22.1	875	920
37×2.5	1/1.78	7/0.68	50/0.25	24.6	26.7	1347	1430

Table 6
HCKFCS_FP HCKFCS_FRP

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFCS _F P	HCKFCS _F RP	HCKFCS _F P	HCKFCS _F RP
2×0.75	1/0.97	7/0.37	24/0.20	7.4	7.8	77	85
2×1.0	1/1.13	7/0.43	32/0.20	8.0	8.4	90	98
2×1.5	1/1.38	7/0.52	30/0.25	8.6	9.0	109	114
2×2.5	1/1.78	7/0.68	50/0.25	9.6	10.2	141	151
3×0.75	1/0.97	7/0.37	24/0.20	7.7	8.2	91	98
3×1.0	1/1.13	7/0.43	32/0.20	8.4	8.8	109	117
3×1.5	1/1.38	7/0.52	30/0.25	9.1	9.5	133	139
3×2.5	1/1.78	7/0.68	50/0.25	10.2	10.8	180	190

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFCS _P P	HCKFCS _P RP	HCKFCS _P P	HCKFCS _P RP
4×0.75	1/0.97	7/0.37	24/0.20	8.3	8.8	107	116
4×1.0	1/1.13	7/0.43	32/0.20	9.0	9.5	128	139
4×1.5	1/1.38	7/0.52	30/0.25	9.8	10.3	163	168
4×2.5	1/1.78	7/0.68	50/0.25	11.0	11.8	218	233
5×0.75	1/0.97	7/0.37	24/0.20	8.6	9.1	120	130
5×1.0	1/1.13	7/0.43	32/0.20	9.4	9.9	150	159
5×1.5	1/1.38	7/0.52	30/0.25	10.2	10.8	185	194
5×2.5	1/1.78	7/0.68	50/0.25	11.6	12.4	256	273
7×0.75	1/0.97	7/0.37	24/0.20	9.1	9.7	148	160
7×1.0	1/1.13	7/0.43	32/0.20	1.0	10.6	180	196
7×1.5	1/1.38	7/0.52	30/0.25	10.9	11.5	232	241
7×2.5	1/1.78	7/0.68	50/0.25	12.4	13.3	327	347
8×0.75	1/0.97	7/0.37	24/0.20	9.5	10.1	162	174
8×1.0	1/1.13	7/0.43	32/0.20	10.4	11.0	198	216
8×1.5	1/1.38	7/0.52	30/0.25	11.4	12.0	256	267
8×2.5	1/1.78	7/0.68	50/0.25	13.0	14.5	363	404
10×0.75	1/0.97	7/0.37	24/0.20	10.1	10.8	187	204
10×1.0	1/1.13	7/0.43	32/0.20	11.2	11.9	232	257
10×1.5	1/1.38	7/0.52	30/0.25	12.3	13.0	305	319
10×2.5	1/1.78	7/0.68	50/0.25	14.7	15.8	453	486
12×0.75	1/0.97	7/0.37	24/0.20	10.8	11.6	207	233
12×1.0	1/1.13	7/0.43	32/0.20	12.0	12.8	269	297
12×1.5	1/1.38	7/0.52	30/0.25	13.1	14.6	354	389
12×2.5	1/1.78	7/0.68	50/0.25	15.8	17.4	523	572
14×0.75	1/0.97	7/0.37	24/0.20	11.5	12.4	243	265
14×1.0	1/1.13	7/0.43	32/0.20	12.8	14.3	308	357
14×1.5	1/1.38	7/0.52	30/0.25	14.7	15.6	422	441
14×2.5	1/1.78	7/0.68	50/0.25	17.3	18.6	599	653
16×0.75	1/0.97	7/0.37	24/0.20	12.0	12.9	271	294
16×1.0	1/1.13	7/0.43	32/0.20	13.6	15.0	340	395
16×1.5	1/1.38	7/0.52	30/0.25	15.4	16.4	465	493
16×2.5	1/1.78	7/0.68	50/0.25	18.2	19.6	672	742
19×0.75	1/0.97	7/0.37	24/0.20	12.5	14.1	306	352
19×1.0	1/1.13	7/0.43	32/0.20	14.6	15.6	407	447
19×1.5	1/1.38	7/0.52	30/0.25	16.1	17.5	528	568
19×2.5	1/1.78	7/0.68	50/0.25	19.0	20.5	773	851
24×0.75	1/0.97	7/0.37	24/0.20	14.8	16.0	393	433
24×1.0	1/1.13	7/0.43	32/0.20	17.0	18.2	493	555
24×1.5	1/1.38	7/0.52	30/0.25	18.8	20.0	558	717
24×2.5	1/1.78	7/0.68	50/0.25	21.8	23.6	981	1054

Core × nominal Section mm ²	Structure No./Diameter (mm)			Approx. Diameter (mm)		Approx. Weight kg/km	
	A	B	R	HCKFCS _F P	HCKFCS _F RP	HCKFCS _F P	HCKFCS _F RP
27×0.75	1/0.97	7/0.37	24/0.20	15.1	16.8	430	477
27×1.0	1/1.13	7/0.43	32/0.20	17.4	18.6	540	615
27×1.5	1/1.38	7/0.52	30/0.25	19.3	20.5	720	782
27×2.5	1/1.78	7/0.68	50/0.25	22.4	24.6	1080	1169
30×0.75	1/0.97	7/0.37	24/0.20	15.7	17.2	461	514
30×1.0	1/1.13	7/0.43	32/0.20	17.8	19.1	587	674
30×1.5	1/1.38	7/0.52	30/0.25	19.7	21.0	805	850
30×2.5	1/1.78	7/0.68	50/0.25	22.9	25.2	1179	1288
37×0.75	1/0.97	7/0.37	24/0.20	16.9	18.3	547	612
37×1.0	1/1.13	7/0.43	32/0.20	19.0	20.4	693	798
37×1.5	1/1.38	7/0.52	30/0.25	21.1	22.5	956	1010
37×2.5	1/1.78	7/0.68	50/0.25	25.0	27.1	1417	1541