

## Fluor-Silicone Rubber Insulated Control Cables

### ◆ Standard

Fluor-Silicone rubber insulated control cable is manufactured according to Q/320412HLC010.

### ◆ Application

This product is oxygen-free copper or tinned copper conductor, fluor-silicone rubber insulation, flame retardant PVC sheath, resistant to high temperature and low temperature, corrosion, oil, radiation, ozone, aging, high-performance flame retardant insulation, etc.. it is widely used for electric power, metallurgy, petroleum, chemical, thermal power, industrial enterprises and metallurgical and other places, at high temperature, low temperature and acid, alkali, water and corrosive gas environment for electrical instrumentation and automation control system signal transmission line.

### ◆ Product Property

(1) AC rated voltage ( $U_0/U$ ): 450/750V.

(2) Max. Working temperature:

Silicon rubber insulated and sheathed:  $-60^{\circ}\text{C}\sim 200^{\circ}\text{C}$

Silicon rubber insulated PVC sheathed cable:  $\leq 105^{\circ}\text{C}$

(3) Cable laying and ambient temperature: Silicon rubber insulated and sheathed shall not be less than  $-60^{\circ}\text{C}$ , PVC sheathed cables shall not be less than  $-10^{\circ}\text{C}$ .

(4) Fire resistant feature:

Conform with IEC60331: at  $750^{\circ}\text{C}$ , burning 3h, cooling time 12h, voltage 500V, current 3A, no breakdown.

Conform with GB/T12666: at  $950\sim 1000^{\circ}\text{C}$ , burning 1.5h, voltage 500V, current 3A, no breakdown.

(5) The cables permitted bend radius:

No less than 12 times of outer diameter for non-armored cables.

No less than 6 times of outer diameter for flexible cables.

### ◆ Technical Data

1. Main Technical Index (Table 1)

Table 1

Item	Unit	Technical index								
		Sectional mm	0.75		1.0		1.5		2.5	
Conductor DC resistance at $20^{\circ}\text{C}\leq$	$\Omega/\text{km}$	Type	Non-tinned	Tinned	Non-tinned	Tinned	Non-tinned	Tinned	Non-tinned	Tinned
		A、B	24.5	24.7	18.1	18.2	12.1	12.2	7.41	7.56
		R	26.0	26.7	19.5	20.0	13.3	13.7	7.98	8.21
		Test voltage	kV/5min	3.0						
Insulation resistance( $\text{M}\Omega\cdot\text{KM}$ )		$20^{\circ}\text{C} \geq 30$								

## 2. Specification.

Nominal section mm <sup>2</sup>	Type			
	HCKSF <sub>F</sub> 2、HCKSF <sub>F</sub> V、 HCKSF <sub>F</sub> 2R、HCKSF <sub>F</sub> VR	HCKSF <sub>F</sub> 2P、 HCKSF <sub>F</sub> VP、 HCKSF <sub>F</sub> 2RP、 HCKSF <sub>F</sub> VRP	HCKSF <sub>F</sub> 2P <sub>2</sub> 、 HCKSF <sub>F</sub> VP <sub>2</sub> 、 HCKSF <sub>F</sub> 2VRP <sub>2</sub>	HCKSF <sub>F</sub> V <sub>22</sub> 、 HCKSF <sub>F</sub> VP <sub>2-22</sub> 、 HCKSF <sub>F</sub> V <sub>22</sub>
0.75	2~37	2~37	4~37	4~37
1.0				
1.5				
2.5				
4				
6		2~14	4~24	4~24

Note: The same for flame retardant and fire resistant type.

## ◆ Type and Name, Structure and Diameter

### 1. Type and Name

Type	Product name	Main application scope
HCKSF <sub>F</sub> 2	Fluor-Silicone rubber insulated and sheathed control cables	High temperature endurance, fixed laid up
HCKSF <sub>F</sub> 2R	Fluor-Silicone rubber insulated and sheathed control flexible cables	Available in mobile places
HCKSF <sub>F</sub> 2P	Fluor-Silicone rubber insulated and sheathed copper wire braid control cables	Place where screening is required
HCKSF <sub>F</sub> 2RP	Fluor-Silicone rubber insulated and sheathed copper wire braid control flexible cables	
HCKSF <sub>F</sub> 2P <sub>2</sub>	Fluor-Silicone rubber insulated and sheathed Cu-tape screened control cables	
HCKSF <sub>F</sub> V	Fluor-Silicone rubber insulated PVC sheathed control cables	Place where ambient temperature is high
HCKSF <sub>F</sub> VR	Fluor-Silicone rubber insulated PVC sheathed control flexible cables	
HCKSF <sub>F</sub> VP	Fluor-Silicone rubber insulated PVC sheathed copper wire braid control cables	Place where screening is required
HCKSF <sub>F</sub> VRP	Fluor-Silicone rubber insulated PVC sheathed copper wire braid control flexible cables	
HCKSF <sub>F</sub> VP <sub>2</sub>	Fluor-Silicone rubber insulated PVC sheathed copper tape screened control cables	
HCKSF <sub>F</sub> VRP <sub>2</sub>	Fluor-Silicone rubber insulated PVC sheathed copper tape screened control flexible cables	Place where mechanical protection is needed
HCKSF <sub>F</sub> V <sub>22</sub>	Fluor-Silicone rubber insulated PVC sheathed steel tape armored control cables	
HCKSF <sub>F</sub> VP <sub>2-22</sub>	Fluor-Silicone rubber insulated PVC sheathed copper tape screened control cables	Place where long vertical distance
HCKSF <sub>F</sub> V <sub>32</sub>	Fluor-Silicone rubber insulated PVC sheathed steel wire armored control cables	
ZR-HCKSF <sub>F</sub> 2	Fluor-Silicone rubber insulated and sheathed flame retardant control cables	Laid up in places where flame retardant and fire resistant is required
NH-HCKSF <sub>F</sub> 2P <sub>2</sub>	Fluor-Silicone rubber insulated and sheathed copper tape screened fire resistant control cables	

Note: The above cables can be produced as flame retardant or fire resistant type.

## 2. Structure Diameter (Table 4)

Table 4

HCKSF<sub>2</sub> (ZR-HCKSF<sub>2</sub>), HCKSF<sub>2</sub>P (ZR-HCKSF<sub>2</sub>P), NH-HCKSF<sub>2</sub>, NH-HCKSF<sub>2</sub>P

Core× area mm <sup>2</sup>	Conductor structure		Max. outer diameter mm			
	Type	No./Diameter (mm)	HCKSF <sub>2</sub> ZR-HCKSF <sub>2</sub>	HCKSF <sub>2</sub> P ZR-HCKSF <sub>2</sub> P	NH-HCKSF <sub>2</sub>	NH-HCKSF <sub>2</sub> P
2×0.75	A	1/0.97	6.6	7.1	7.6	8.1
	R	24/0.20	7.1	7.6	8.1	8.6
2×1.0	A	1/1.13	7.2	7.7	8.1	8.6
	R	32/0.20	7.7	8.2	9.1	9.6
2×1.5	A	1/1.38	7.7	8.4	9.5	10.0
	R	30/0.25	8.1	8.6	9.9	10.4
2×2.5	A	1/1.78	9.1	9.6	10.3	10.8
	R	49/0.25	10.0	10.5	11.2	11.7
2×4	B	7/0.85	10.8	11.3	12.8	13.3
	R	49/0.32	11.3	11.8	13.5	14.0
2×6	B	7/1.04	11.9	12.4	14.3	14.8
	R	84/0.30	13.8	14.3	15.1	15.6
3×0.75	A	1/0.97	6.9	7.4	8.0	8.5
	R	24/0.20	7.4	7.9	8.5	9.0
3×1.0	A	1/1.13	7.5	8.0	8.4	8.8
	R	32/0.20	8.1	8.6	9.5	10.0
3×1.5	A	1/1.38	8.0	8.5	9.9	10.4
	R	30/0.25	9.1	9.6	10.4	10.9
3×2.5	A	1/1.78	9.5	10.0	10.8	11.3
	R	49/0.25	10.5	11.0	11.8	12.3
3×4	B	7/0.85	11.4	11.9	13.4	14.0
	R	49/0.32	11.9	12.4	14.2	14.6
3×6	B	7/1.04	13.2	13.7	15.1	15.6
	R	84/0.30	14.5	15.0	16.5	17.0
4×0.75	A	1/0.97	7.4	7.9	8.6	9.1
	R	24/0.20	8.0	8.5	9.2	9.7
4×1.0	A	1/1.13	8.0	8.5	9.6	10.6
	R	32/0.20	9.3	9.8	10.2	10.8
4×1.5	A	1/1.38	9.2	9.7	10.7	12.2
	R	30/0.25	9.8	10.3	11.2	13.3
4×2.5	A	1/1.78	10.2	10.7	11.6	15.1
	R	49/0.25	11.3	11.8	12.8	15.9
4×4	B	7/0.85	12.9	13.4	14.6	17.0
	R	49/0.32	13.5	14.0	15.4	18.5
4×6	B	7/1.04	14.3	14.8	16.4	17.0

	R	84/0.30	15.8	16.3	18.0	18.5
5×0.75	A	1/0.97	7.9	8.4	9.9	10.4
	R	24/0.20	9.2	9.7	10.5	11.0
5×1.0	A	1/1.13	9.3	9.8	10.3	10.8
	R	32/0.20	10.0	10.5	11.1	11.6
5×1.5	A	1/1.38	9.9	10.4	11.5	12.0
	R	30/0.25	10.5	11.0	12.7	13.2
5×2.5	A	1/1.78	11.0	11.5	13.7	13.7
	R	49/0.25	12.3	12.8	14.5	15.0
5×4	B	7/0.85	14.0	14.5	15.8	16.3
	R	49/0.32	14.6	15.1	17.1	17.6
5×6	B	7/1.04	15.5	16.0	18.3	18.8
	R	84/0.30	17.6	18.1	20.4	20.9
7×0.75	A	1/0.97	9.1	9.6	10.6	11.1
	R	24/0.20	9.8	10.3	11.3	11.8
7×1.0	A	1/1.13	9.9	10.4	11.1	11.6
	R	32/0.20	10.7	11.2	11.9	12.4
7×1.5	A	1/1.38	10.6	11.1	13.0	13.5
	R	30/0.25	11.3	11.8	13.7	14.2
7×2.5	A	1/1.78	11.8	12.3	14.2	14.7
	R	49/0.25	13.8	14.3	15.6	16.2
7×4	B	7/0.85	15.0	15.5	17.6	18.0
	R	49/0.32	15.7	16.2	18.5	19.4
7×6	B	7/1.04	17.2	17.7	19.9	20.4
	R	84/0.30	19.0	19.6	22.2	22.6
8×0.75	A	1/0.97	9.7	10.2	11.3	11.8
	R	24/0.20	10.4	10.9	12.1	12.6
8×1.0	A	1/1.13	10.5	11.0	11.8	12.3
	R	32/0.20	11.4	11.9	13.3	13.8
8×1.5	A	1/1.38	11.4	11.9	13.9	14.3
	R	30/0.25	12.1	12.6	14.7	15.2
8×2.5	A	1/1.78	13.3	13.8	15.2	15.6
	R	49/0.25	14.8	15.3	17.2	17.7
8×4	B	7/0.85	16.1	16.6	18.8	19.4
	R	49/0.32	17.3	17.8	19.9	20.4
8×6	B	7/1.04	18.4	18.9	21.8	22.3
	R	84/0.30	20.9	21.4	23.9	22.4
10×0.75	A	1/0.97	11.0	11.5	13.6	14.1
	R	24/0.20	11.9	12.4	14.5	15.0
10×1.0	A	1/1.13	12.0	12.5	14.1	14.6
	R	32/0.20	13.7	14.2	15.3	15.8
10×1.5	A	1/1.38	13.6	14.1	16.0	16.5
	R	30/0.25	14.5	15.0	17.3	18.3

10×2.5	A	1/1.78	15.2	15.7	18.0	18.5
	R	49/0.25	17.5	18.0	19.9	20.4
10×4	B	7/0.85	19.1	19.6	22.3	22.8
	R	49/0.32	20.0	20.5	23.6	24.1
10×6	B	7/1.04	21.8	22.3	25.4	25.6
	R	84/0.30	24.3	24.8	28.5	29.0
12×0.75	A	1/0.97	11.3	11.8	13.9	14.4
	R	24/0.20	12.2	12.7	14.9	15.4
12×1.0	A	1/1.13	12.9	13.4	14.6	15.1
	R	32/0.20	14.1	14.6	15.7	16.2
12×1.5	A	1/1.38	14.0	14.5	16.5	17.0
	R	30/0.25	14.9	15.4	17.8	18.3
12×2.5	A	1/1.78	15.6	16.1	18.5	19.0
	R	49/0.25	18.0	18.5	20.9	21.4
12×4	B	7/0.85	19.7	20.5	23.0	23.5
	R	49/0.32	20.1	20.6	24.3	24.8
12×6	B	7/1.04	22.4	22.9	26.8	27.3
	R	84/0.30	25.6	26.1	30.0	30.5
14×0.75	A	1/0.97	11.8	12.3	14.7	15.1
	R	24/0.20	13.4	13.9	15.6	16.1
14×1.0	A	1/1.13	13.5	14.0	15.3	15.8
	R	32/0.20	14.7	15.2	16.4	17.0
14×1.5	A	1/1.38	14.6	15.1	17.6	18.2
	R	30/0.25	15.6	16.1	18.6	19.1
14×2.5	A	1/1.78	16.4	16.9	19.4	19.9
	R	49/0.25	18.8	19.3	21.9	22.4
14×4	B	7/0.85	21.0	21.5	24.1	24.6
	R	49/0.32	22.0	22.5	26.2	26.6
14×6	B	7/1.04	23.5	24.0	25.6	26.1
	R	84/0.30	26.9	27.4	31.5	32.0
16×0.75	A	1/0.97	12.9	13.4	15.2	15.7
	R	24/0.20	14.0	14.5	16.3	16.8
16×1.0	A	1/1.13	14.1	14.6	16.0	16.5
	R	32/0.20	15.4	15.9	17.7	18.2
16×1.5	A	1/1.38	15.3	15.8	18.5	19.0
	R	30/0.25	16.3	16.8	19.5	20.0
16×2.5	A	1/1.78	17.6	18.1	20.8	21.3
	R	49/0.25	19.8	20.3	23.0	23.0
16×4	B	7/0.85	22.1	22.6	25.3	25.8
	R	49/0.32	23.1	23.6	27.5	28.0
19×0.75	A	1/0.97	13.4	14.0	16.0	16.0
	R	24/0.20	14.6	15.1	17.1	17.6
19×1.0	A	1/1.13	14.8	15.3	17.2	17.8
	R	32/0.20	16.1	16.6	18.5	19.5

19×1.5	A	1/1.38	16.0	16.5	19.4	19.9
	R	30/0.25	17.5	18.0	20.9	21.4
19×2.5	A	1/1.78	18.4	18.9	21.8	22.3
	R	49/0.25	21.2	21.7	24.2	24.6
19×4	B	7/0.85	23.2	23.7	27.2	27.8
	R	49/0.32	24.3	24.8	28.9	29.4
24×0.75	A	1/0.97	15.3	15.8	18.7	19.2
	R	24/0.20	16.7	17.2	20.3	21.0
24×1.0	A	1/1.13	17.3	17.8	19.7	20.2
	R	32/0.20	18.9	19.4	21.7	22.2
24×1.5	A	1/1.38	18.8	19.3	22.8	23.8
	R	30/0.25	20.5	21.0	24.1	24.6
24×2.5	A	1/1.78	21.6	22.1	25.8	29.1
	R	49/0.25	24.1	24.6	28.6	32.7
27×0.75	A	1/0.97	15.6	16.1	19.1	19.6
	R	24/0.20	17.4	17.9	20.9	21.4
27×1.0	A	1/1.13	17.6	18.1	20.1	20.6
	R	32/0.20	19.3	19.8	22.1	22.6
27×1.5	A	1/1.38	19.1	19.6	23.2	23.7
	R	30/0.25	20.9	21.4	25.2	25.7
27×2.5	A	1/1.78	22.0	22.5	26.4	26.9
	R	49/0.25	24.9	25.4	29.8	30.3
30×0.75	A	1/0.97	16.1	16.6	19.7	20.2
	R	24/0.20	17.6	18.1	21.6	22.1
30×1.0	A	1/1.13	18.2	18.7	21.1	21.6
	R	32/0.20	19.9	20.4	22.9	23.4
30×1.5	A	1/1.38	19.8	20.3	24.0	24.5
	R	30/0.25	21.6	22.1	26.0	26.5
37×0.75	A	1/1.78	17.6	18.1	21.5	22.0
	R	49/0.25	19.2	19.7	23.1	23.6
37×1.0	A	1/0.97	19.4	19.9	22.6	23.1
	R	24/0.20	21.7	22.2	25.1	25.6
37×1.5	A	1/1.13	21.6	22.1	26.4	26.9
	R	32/0.20	23.1	23.6	27.9	28.4