

## Fire Resistant Control Cable

### ◆ Standard

Fire resistant control cable is manufactured according to Q/320412HLC005.

### ◆ Application

Fire resistant cable has high ability of fire resistance, when direct burning, it doesn't show short-circuit and broken fault in the certain time, therefore, when the fire happens, it can insure the system run safely, it is helpful for putting out fire and decrease loss. It can be used to connect the electrical appliances applied in locations such as huge building, petrol, chemical, power and so on that needs high ability of fire resistant. Long-time working temperature of cable is  $-40^{\circ}\text{C} \sim 500^{\circ}\text{C}$ ,  $-40^{\circ}\text{C} \sim 800^{\circ}\text{C}$ .

### ◆ Product Property

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

(2) The highest long-term permitted working temperature:

Flame retardant PVC insulated and sheathed:  $70^{\circ}\text{C}$  and  $105^{\circ}\text{C}$ ; cross-linked polyolefin insulated:  $90^{\circ}\text{C}$ ;

Fluoroplastic insulated and sheathed:  $200^{\circ}\text{C}$  and  $260^{\circ}\text{C}$ ;

Fluoroplastic insulated and  $105^{\circ}\text{C}$  PVC sheathed:  $105^{\circ}\text{C}$ ;

Halogen-free low-smoke flame retardant polyolefin insulated and sheathed:  $70^{\circ}\text{C}$

Halogen-free low-smoke flame retardant cross-linked polyolefin insulated and sheathed:  $90^{\circ}\text{C}$  and  $125^{\circ}\text{C}$ .

(3) The lowest environment temperature:

Flame retardant PVC insulated and sheathed: fixed laying  $-40^{\circ}\text{C}$ ; non-fixed laying  $-15^{\circ}\text{C}$

Fluoroplastic insulated and sheathed: fixed laying  $-60^{\circ}\text{C}$ ; non-fixed laying  $-20^{\circ}\text{C}$

(4) Installation laying temperature: not less than  $0^{\circ}\text{C}$

(5) Fire resistant performance: according to ICE60331

(6) Permitted minimum bending radius:

No less than 6 times of outer diameter for non-armored、 interlock or braid cable

No less than 12 times of outer diameter for copper tape screened or steel wire and steel tape armored cable

No less than 8 times outer diameter for fluoroplastic insulated and sheathed cable

### ◆ Product code and Explanation

K-Control cable    B-Glass fiber yarn    F<sub>4</sub>-F<sub>4</sub> film    M-Mica tape    F-F<sub>46</sub>    P-screen

### ◆ Technical Data

1. Technical Parameters (Table 1)

Item	Unit	Technical parameters
Conductor DC resistance ( $20^{\circ}\text{C}$ ) $\leq$	$\Omega/\text{km}$	Table 2
Tested voltage	kV	3.0/5min
Insulation resistant ( $20^{\circ}\text{C}$ ) $\geq$	$\text{M}\Omega \cdot \text{km}$	1000
Fire resistant		IEC 60331

characteristic		
Flame retardant characteristic		IEC 60332

## 2. Conductor Type (Table 2)

Table 2

Nominal section (mm <sup>2</sup> )	Conductor type		At 20°C, conductor resistance ≤(Ω/km)	
	Class	No./diameter mm	Non-tinned	Tinned
0.75	1	1/0.97	24.5	24.8
0.75	2	7/0.37	24.5	24.5
0.75	5	24/0.20	26.0	26.7
1.0	1	1/1.13	18.1	18.1
1.0	2	7/0.43	19.1	18.2
1.0	5	32/0.20	19.5	20.0
1.5	1	1/1.38	12.1	12.2
1.5	2	7/0.52	12.1	12.2
1.5	5	30/0.25	13.3	13.7
2.5	1	1/1.78	7.41	7.50
2.5	2	7/0.68	7.41	7.56
2.5	5	50/0.25	7.98	8.21
4	1	1/2.25	4.60	4.70
4	2	7/0.85	4.61	5.09
6	1	1/2.76	3.08	3.11
6	2	7/1.04	3.08	3.11
10	5	7/1.35	1.83	1.84

## ◆ Type and Name, Structure and Diameter

### 1. Type and Name (Table 3)

Table 3

Type	Name
ZR-HCMKF <sub>4</sub> B	F <sub>4</sub> insulated and sheathed glass fiber yarn braid glass fiber tape and mica tape wrapped flame retardant fire resistant control cable
ZR-HCMKF <sub>4</sub> BP	F <sub>4</sub> insulated and sheathed glass fiber yarn braid glass fiber tape and mica tape wrapped copper wire braid flame retardant sheathed fire resistant control cable
ZR-HCMKF <sub>4</sub> BR	F <sub>4</sub> insulated and sheathed glass fiber yarn braid glass fiber tape and mica tape wrapped flame retardant fire resistant control flexible cable
ZR-HCMKF <sub>4</sub> BRP	F <sub>4</sub> insulated and sheathed glass fiber yarn braid glass fiber tape and mica tape wrapped copper wire braid flame retardant sheathed fire resistant control flexible cable
HCMKF <sub>4</sub> F	Soluble F <sub>4</sub> insulated and inner sheathed F <sub>46</sub> sheathed mica tape wrapped control cable (Fireproof)

HCMKF <sub>4</sub> FP	Soluble F <sub>4</sub> insulated and inner sheathed F <sub>46</sub> sheathed mica tape wrapped copper wire braid screening control cable
HCMKF <sub>4</sub> FP	Soluble F <sub>4</sub> insulated and inner sheathed F <sub>46</sub> sheathed mica tape wrapped fire resistant control flexible cable
HCMKF <sub>4</sub> FRP	Soluble F <sub>4</sub> insulated and inner sheathed F <sub>46</sub> sheathed mica tape wrapped copper wire braid fire resistant control flexible cable

## 2. Structure and Diameter (Table 4~6)

Table 4

Nominal cross-sectional area of conductor (mm <sup>2</sup> )	Conductor structure No./diameter mm		Max. diameter (mm)							
	A	R	ZR-HCMKF <sub>4</sub> B	ZR-HCMKF <sub>4</sub> BP	ZR-HCMKF <sub>4</sub> BR	ZR-HCMKF <sub>4</sub> BRP	HCMKF <sub>F46</sub>	HCMKF <sub>F46P</sub>	HCMKF <sub>F46P</sub>	HCMKF <sub>F46RP</sub>
2×0.5	1/0.80	16×0.2	8.4	8.7	8.8	9.4	5.9	6.4	7.2	8.4
2×0.75	1/0.97	24×0.2	8.7	9.2	9.2	9.8	6.7	7.2	7.7	8.8
2×1.0	1/1.13	32×0.2	9.3	9.6	10.0	10.5	7.1	7.6	8.0	9.6
2×1.5	1/1.37	30×0.25	9.8	10.2	10.6	11.5	7.5	8.1	8.8	10.3
2×2.5	1/1.76	49×0.26	10.4	10.7	11.2	12.4	9.3	9.8	9.6	10.9
2×4	1/2.24	56×0.30	11.5	11.8	12.9	14.5	10.4	11.0	11.0	12.0
2×6	1/2.76	84×0.30	13.2	13.6	14.2	15.6	11.6	12.2	12.2	13.2
10×0.5	1/0.80	16×0.2	13.5	14.0	14.5	14.9	9.9	10.4	11.2	12.0
10×0.75	1/0.97	24×0.2	14.3	14.8	15.4	16.0	11.6	11.2	12.0	12.6
10×1.0	1/1.13	32×0.2	15.0	15.6	16.2	16.8	12.6	13.2	12.8	13.4
10×1.5	1/1.37	30×0.25	16.2	16.9	18.0	18.6	13.4	14.3	13.7	14.2
10×2.5	1/1.76	49×0.26	17.8	18.3	20.6	21.2	15.2	16.7	15.4	16.6
10×4	1/2.24	56×0.30	22.0	22.5	23.3	23.7	16.9	17.5	18.3	19.5
10×6	1/2.76	84×0.30	24.6	25.2	26.1	26.8	20.0	21.6	21.2	22.3

Note: we can produce 0.2-10mm<sup>2</sup> 2-61cores, for example: The outer diameter of armored cable shall be added 4mm.

### ◆ Delivery Length

Under the consultation of any length to delivery.