Fire-resistant control cable

Ⅰ. Characteristics and application:

The product has high fire-resistant ability. Even when cable is on fire, break-circuit or short-circuit failure will not occur in a certain period of time. It is helpful to fire extinguish and reducing damage in case of fire disaster.

It is used in the places where fire danger exists and fire-proof safety is highly required as well as in electrical equipment and control system.

Ⅱ. Implemented standard

Enterprise standard

Fire-resistant performance is tested according to GB/T19666-2005 and IEC60331 Standard

Flame-retardant performance is tested according to GB/T19666-2005 Standard

Ⅲ. Operating characteristics

1. Rated AC voltage: U_0/U 450/750
2. The highest long-term permitted operating temperature:
   Flame-retardant PVC insulation and sheath: 70℃ and 105℃ two types;
   Cross linked-polyethylene: 90℃;
   Fluoroplastic insulation and sheath: 200℃ and 260℃ two types;
   Fluoroplastic insulation and 105℃ PVC sheath: 105℃;
   Halogen-free and low smoke flame-retardant polyolefin: 70℃;
   Halogen-free and low smoke flame-retardant cross-linked polyolefin.
3. The lowest environment temperature:
   PVC insulation and sheath: Fixed deploying -40℃; Non-Fixed deploying -15℃
   Fluoroplastic insulation and sheath: Fixed deploying -60℃; Non-Fixed deploying -20℃
4. Mounting deploying temperature: Not under 0℃
5. Fire-resistant performance meets the stipulation in the standard of

IEC60331	and GB/T19666-2005
Flame temperature 750℃	Flame temperature 750℃
Burning time 3hours	Burning time 90min
Cooling time 12hours	Additive voltage: Rated voltage
Additive voltage: Rated voltage	Additive current: 2A
Additive current: 3A	

6. Permitted minimum bending radius:

Not smaller than 6 times outer diameter for non-armored, interlock or braiding armored cable and 12 times outer diameter for copper tape shieldeded or steel wire winding, steel tape wrapping armored cable, 8 times outer diameter for fluoroplastic insulated and sheathed cable.

Ⅳ. Main technical parameters

Property Item	Unit	Technical Parameters					
Conductor DC resistance(20℃) ≤	Ω/km	Standard cross section mm^2	0.5	0.75	1.0	1.5	2.5
		A type conductor	36.0	24.5	18.1	12.1	7.41
		R type conductor	39.0	26.0	19.5	13.3	7.98
Tested Voltage	kV	3.0 5min					
Insulation resistance≥	MΩ.km	1000					
Fire-resistance characteristics		GB/T 19666-2005 class A or B					
Flame-retardant Characteristics		A or B class (Tested according to GB/T 19666-2005 standard)					

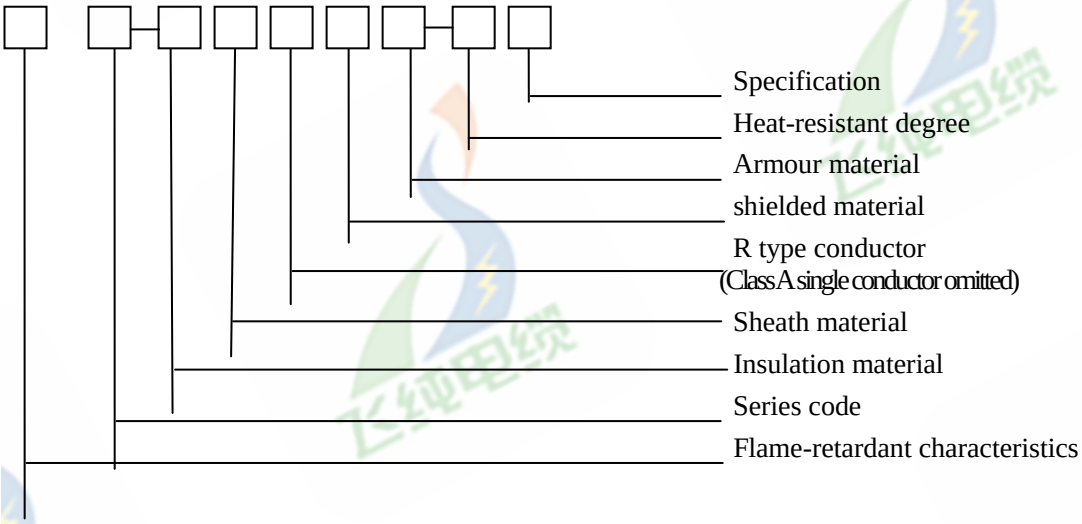
Ⅴ. Basic type and product name:

Type	Product Name
ZAN-KVV	Copper core flame-retardant PVC insulated and sheathed class A fire-resistant control cable

ZAN-KVVR	Copper core flame-retardant PVC insulated and sheathed class A fire-resistant control flexible cable
ZAN-KVVP	Copper core flame-retardant PVC insulated and sheathed copper wire braiding shielded class A fire-resistant control cable
ZAN-KVVRP	Copper core flame-retardant PVC insulated and sheathed copper wire braiding shielded class A fire-resistant control flexible cable
ZAN-KVVP$_2$	Copper core flame-retardant PVC insulated and sheathed copper tape wrapped shielded class A fire-resistant control cable
ZAN-KVVRP$_2$	Copper core flame-retardant PVC insulated and sheathed copper tape wrapped shielded class A fire-resistant control flexible cable
Type	Product Name
N-KFF	Copper core fluoroplastic insulated and sheathed fire-resistant control cable
N-KFFR	Copper core fluoroplastic insulated and sheathed fire-resistant control flexible cable
N-KFFP	Copper core fluoroplastic insulated and sheathed tin plated copper wire braiding shielded fire-resistant control cable
N-KFFRP	Copper core fluoroplastic insulated and sheathed tin plated copper wire braiding shielded fire-resistant control flexible cable
N-KFFP$_2$	Copper core fluoroplastic insulated and sheathed copper tape wrapped shielded fire-resistant control cable
N-KFFRP$_2$	Copper core fluoroplastic insulated and sheathed copper tape wrapped shielded fire-resistant control flexible cable
ZAN-KFV	Copper core fluoroplastic insulated and flame-retardant PVC sheathed class A fire-resistant control cable
ZAN-KFVR	Copper core fluoroplastic insulated and flame-retardant PVC sheathed class A fire-resistant control flexible cable
ZAN-KFVP	Copper core fluoroplastic insulated and flame-retardant PVC sheathed copper wire or tin plated copper wire braiding shielded class A fire-resistant control cable
ZAN-KFVRP	Copper core fluoroplastic insulated and flame-retardant PVC sheathed copper wire or tin plated copper wire braiding shielded class A fire-resistant control flexible cable
ZAN-KFVP$_2$	Copper core fluoroplastic insulated and flame-retardant PVC sheathed copper tape wrapped shieldeded class A fire-resistant control cable
ZAN-KFVRP$_2$	Copper core fluoroplastic insulated and flame-retardant PVC sheathed copper tape wrapped shieldeded class A fire-resistant control flexible cable
DDZN-KVV	Copper core low halogen and low smoke flame-retardant PVC insulated and sheathed class A fire-resistant control cable
DDZN-KVVR	Copper core low halogen and low smoke flame-retardant PVC insulated and sheathed fire-resistant control flexible cable
DDZN-KVVP	Copper core low halogen and low smoke flame-retardant PVC insulated and sheathed copper wire braiding shielded fire-resistant control cable
DDZN-KVVRP	Copper core low halogen and low smoke flame-retardant PVC insulated and sheathed copper wire braiding shielded fire-resistant control flexible cable
DDZN-KVVP$_2$	Copper core low halogen and low smoke flame-retardant PVC insulated and sheathed copper tape wrapped shielded fire-resistant control cable
DDZN-KVVRP$_2$	Copper core low halogen and low smoke flame-retardant PVC insulated and sheathed copper tape wrapped shielded fire-resistant control flexible cable
WDZN-KYY	Copper core halogen-free and low smoke flame-retardant polyolefin insulated and sheathed fire-resistant control cable
WDZN-KYYR	Copper core halogen-free and low smoke flame-retardant polyolefin insulated and sheathed fire-resistant control flexible cable
Type	Product Name
WDZN-KYYP	Copper core halogen-free and low smoke flame-retardant polyolefin insulated and sheathed copper wire braiding shielded fire-resistant control cable

WDZN-KYYRP	Copper core halogen-free and low smoke flame-retardant polyolefin insulated and sheathed copper wire braiding shielded fire-resistant control flexible cable
WDZN-KYYP$_2$	Copper core halogen-free and low smoke flame-retardant polyolefin insulated and sheathed copper tape wrapped shielded fire-resistant control cable
WDZN-KYYRP$_2$	Copper core halogen-free and low smoke flame-retardant polyolefin insulated and sheathed copper tape wrapped shielded fire-resistant control flexible cable
ZAN-KYJV	Copper core XLPE insulated and flame-retardant PVC sheathed class A fire-resistant control cable
ZAN-KYJVR	Copper core XLPE insulated and flame-retardant PVC sheathed class A fire-resistant control flexible cable
ZAN-KYJVP	Copper core XLPE insulated and flame-retardant PVC sheathed copper wire braiding shielded class A fire-resistant control cable
ZAN-KYJVRP	Copper core XLPE insulated and flame-retardant PVC sheathed copper wire braiding shielded class A fire-resistant control flexible cable
ZAN-KYJVP$_2$	Copper core XLPE insulated and flame-retardant PVC sheathed copper tape wrapped shielded class A fire-resistant control cable
ZAN-KYJVRP$_2$	Copper core XLPE insulated and flame-retardant PVC sheathed copper tape wrapped shielded class A fire-resistant control flexible cable
Note：1. All the cables of above types may be armored 2.The insulation and sheath material of the product basic type also include YJ halogen-free and low smoke flame-retardant cross-linked polyolefin.	

Ⅵ. Type illustration



● Code and its indication

Item	Code	Code Indication
Flame-retardant Characteristics	/	Non flame-retardant (omission)
	ZA	Class A flame-retardant
	ZB	Class B flame-retardant
	ZC	Class C flame-retardant
	ZD	Class D flame-retardant
	DDZ	Low halogen and low smoke flame retardant
	WDZ	Halogen-free and low smoke flame retardant

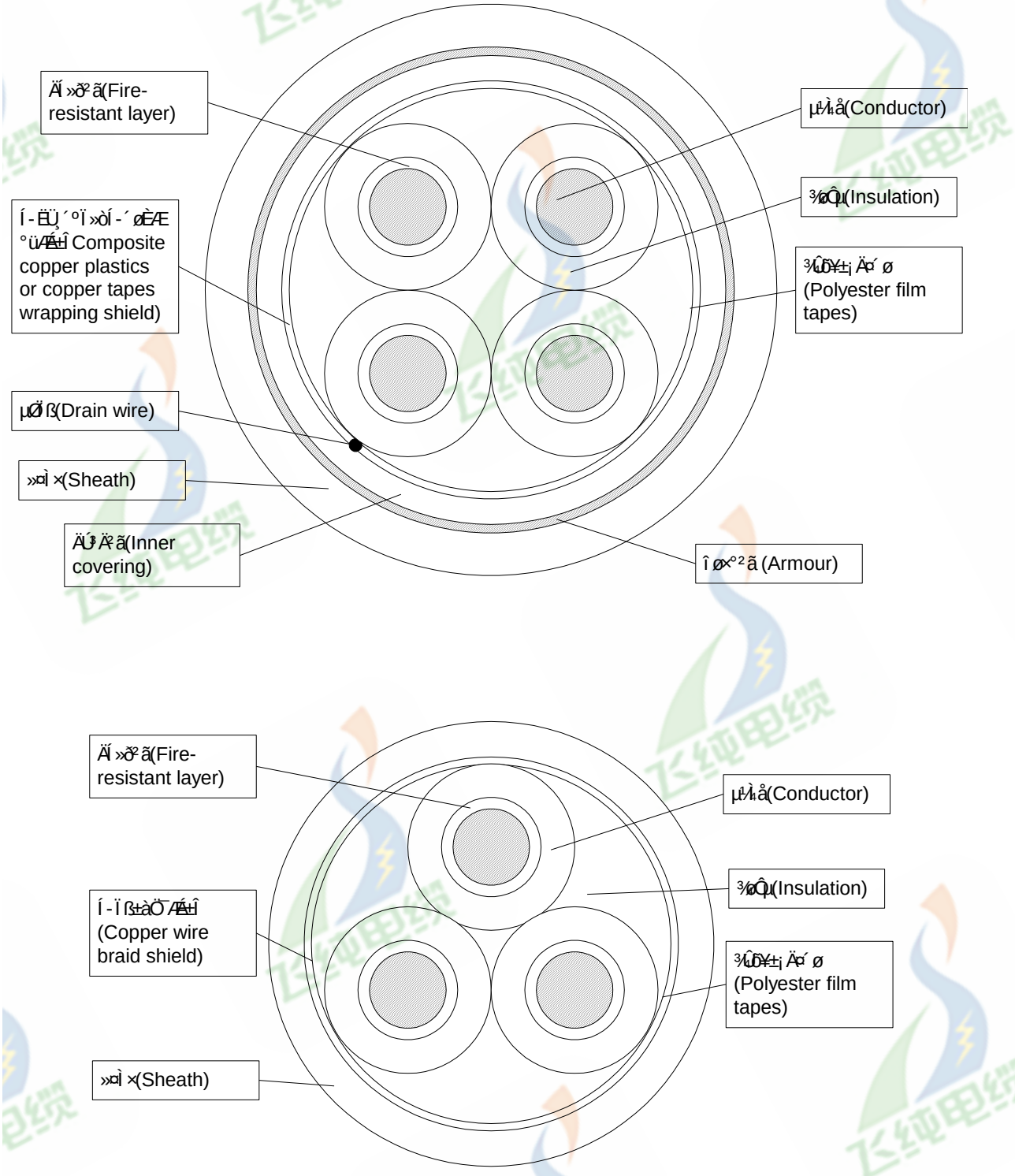
Website Address www.feichuncables.com
Whatsapp Account +86 138 5608 5607 & +86 138 5512 3218
Email Address ziyu.huang@feichuncables.com & zihao.yang@feichuncables.com

	Illustration	Among the bundle-burning test class A, B, C, D, class A is the best. DDZ, WDZ are also classified to class A, B, C, D, for example DDZA, WDZB. We mainly produce class A or B cables.
Series Code	N-K	fire-resistant control cable
Insulation material	V	Flame-retardant PVC or low halogen and low smoke flame-retardant PVC
	YJ	XLPE
	Y	Halogen-free and low smoke flame-retardant polyolefin
	F	F_{46} or PFA
Sheath material	V	Flame-retardant PVC or low halogen and low smoke flame-retardant PVC
	Y	Halogen-free and low smoke flame-retardant polyolefin (YJ - cross-linked)
	F	F_{46} or PFA
shielded material	P	Copper wire or tin plated copper wire braiding
	P_2	Copper tape
Armour material	12	Interlocked steel tape armored PVC sheath
	13	Interlocked steel tape armored PE sheath
	22	Steel tape wrapped armored PVC sheath
	23	Steel tape wrapped armored PE sheath
	32	Winding steel wire armored PVC sheath
	33	Winding steel wire armored PE sheath
	92	braiding steel wire armored PVC sheath
	93	braiding steel wire armored PE sheath
Item	Code	Code Indication
	52	Interlocked aluminum or aluminum-alloy tape armored PVC sheath
	53	Interlocked aluminum or aluminum-alloy tape armored PE sheath
	Other	If the sheath is made from other material, the armored is indicated in the same way as above. Sheath is signified by "4", without concrete meaning. For example, the braiding steel wire armored fluoroplastic sheath may be indicated as "94".
Heat-resistant degree	70	The highest operating temperature is 70℃(omitted)
	90	The highest operating temperature is 90℃
	105	The highest operating temperature is 105℃
	125	The highest operating temperature is 125℃
	200	The highest operating temperature is 200℃
	260	The highest operating temperature is 260℃
Specification		No. of cores ×Standard cross section of conductor mm^2

Ⅶ. Identification example:

1. Copper core, low halogen and low smoke flame-retardant PVC insulated and sheathed, copper wire braiding shielded class A fire-resistant control cable, 8 cores, single thread, standard cross section of conductor 1.5mm^2, indicated as: DDZN-KVVP 8×1.5
2. Copper core, fluoroplastic insulated and sheathed, copper wire braiding shielded class A fire-resistant Control flexible cable, 12 cores, multiple threads copper conductor, standard cross section of conductor 2.5mm^2, indicated as: N-KFFRP-200 12×2.5

Ⅷ. The structure:



Ⅸ. Structure size and reference weight

1. N-KVVP, N-KVVRP, N-KYJVP, N-KYJVRP, N-KYYP, N-KYYRP, N-KVVP$_2$, N-KVVRP$_2$, N-KYJVP$_2$ N-KYJVRP$_2$, N-KYYP$_2$, N-KYYRP$_2$, N-KVV$_{22}$, N-KYJV$_{22}$, N-KYY$_{22}$

No. of cores ×Standard	Structure of core (No. of	Maximum outer diameter mm	Reference weight kg/km

cross section mm^2	threads/diameter) mm		N-KVV(R)P N-KYJV(R)P N-KYY(R)P	N-KVV(R)P_2 N-KYJV(R)P_2 N-KYY(R)P_2	N-KVV_{22} N-KYJV_{22} N-KYY_{22}	N-KVV(R)P N-KYJV(R)P N-KYY(R)P	N-KVV(R)P_2 N-KYJV(R)P_2 N-KYY(R)P_2	N-KVV_{22} N-KYJV_{22} N-KYY_{22}
	A	R						
2×0.5	1/0.80	16/0.20	12.2	14.5	16.0	245	274	564
2×0.75	1/0.97	24/0.20	13.2	15.4	17.0	259	290	590
2×1.0	1/1.13	32/0.20	14.5	16.2	18.2	275	308	628
2×1.5	1/1.38	30/0.25	15.3	17.5	19.0	316	375	678
2×2.5	1/1.78	49/0.26	16.4	18.6	20.2	381	447	776
3×0.5	1/0.80	16/0.20	12.7	15.0	16.4	291	332	632
3×0.75	1/0.97	24/0.20	13.7	16.0	17.4	310	354	663
3×1.0	1/1.13	32/0.20	15.0	17.0	18.7	335	380	715
3×1.5	1/1.38	30/0.25	16.0	18.3	19.7	383	434	787
3×2.5	1/1.78	49/0.26	17.6	20.0	21.8	515	572	924
4×0.5	1/0.80	16/0.20	14.1	16.0	17.8	347	380	736
4×0.75	1/0.97	24/0.20	15.2	17.0	19.0	372	418	778
4×1.0	1/1.13	32/0.20	16.2	18.0	20.0	438	488	843
4×1.5	1/1.38	30/0.25	18.2	20.0	22.4	504	560	921
4×2.5	1/1.78	49/0.26	19.6	22.0	24.0	619	680	1070
5×0.5	1/0.80	16/0.20	15.2	17.0	19.0	445	492	850
5×0.75	1/0.97	24/0.20	16.8	18.8	20.8	476	527	891
5×1.0	1/1.13	32/0.20	18.0	19.8	22.2	506	562	958
5×1.5	1/1.38	30/0.25	19.7	21.6	24.0	585	647	1040
5×2.5	1/1.78	49/0.26	21.2	23.0	25.4	727	795	1210
7×0.5	1/0.80	16/0.20	16.8	18.0	20.0	537	587	958
7×0.75	1/0.97	24/0.20	17.6	19.5	20.8	578	634	1030
7×1.0	1/1.13	32/0.20	18.8	20.7	22.7	617	678	1090
7×1.5	1/1.38	30/0.25	20.8	23.0	24.6	722	790	1210
7×2.5	1/1.78	49/0.26	22.9	25.3	26.8	913	988	1420
8×0.5	1/0.80	16/0.20	17.3	19.2	21.0	595	650	1065
8×0.75	1/0.97	24/0.20	18.8	20.7	21.7	641	702	1120
8×1.0	1/1.13	32/0.20	20.2	22.6	22.5	685	752	1215
8×1.5	1/1.38	30/0.25	22.3	24.9	23.5	805	880	1335
8×2.5	1/1.78	49/0.26	24.6	27.0	26.0	1025	1107	1585
10×0.5	1/0.80	16/0.20	20.0	20.0	23.0	719	774	1250
10×0.75	1/0.97	24/0.20	21.7	24.4	24.5	777	850	1330
10×1.0	1/1.13	32/0.20	23.8	26.0	25.0	900	978	1470
10×1.5	1/1.38	30/0.25	26.4	28.6	26.8	1050	1140	1645
10×2.5	1/1.78	49/0.26	28.6	33.0	29.5	1340	1438	1990

2. N-KFVP, N-KFVP_2, N-KFV_{22}, N-KFVRP, N-KFVRP_2

No. of cores×Standard cross section mm^2	Structure of core (No. of threads/diameter) Mm		Maximum outer diameter mm			Reference weight kg/km		
	A	R	N-KFVP N-KFVRP	N-KFVP2 N-KFVRP_2	N-KFV_{22}	N-KFVP N-KFVRP	N-KFV_P N-KFVRP_2	N-KFV_{22}
2×0.5	1/0.80	16/0.20	11.4	13.3	15.3	233	265	564
2×0.75	1/0.97	24/0.20	11.8	13.7	15.8	246	272	590
2×1.0	1/1.13	32/0.20	12.6	14.5	16.5	261	285	628

FEICHUN SPECIAL CABLES
Website Address www.feichuncables.com
Whatsapp Account +86 138 5608 5607 & +86 138 5512 3218
Email Address ziyu.huang@feichuncables.com & zihao.yang@feichuncables.com

2×1.5	1/1.38	30/0.25	13.6	15.5	17.5	300	341	679
2×2.5	1/1.78	49/0.26	14.7	16.6	18.6	362	408	776
3×0.5	1/0.80	16/0.20	11.8	13.8	15.7	276	310	632
3×0.75	1/0.97	24/0.20	12.3	14.3	16.2	295	332	663
3×1.0	1/1.13	32/0.20	13.2	15.2	17.2	318	362	715
3×1.5	1/1.38	30/0.25	14.2	16.2	18.2	364	410	787
3×2.5	1/1.78	49/0.26	15.4	17.5	19.3	489	536	924
4×0.5	1/0.80	16/0.20	12.6	14.6	16.5	330	367	736
4×0.75	1/0.97	24/0.20	13.2	15.2	17.2	354	395	778
4×1.0	1/1.13	32/0.20	14.2	16.2	18.2	416	458	843
4×1.5	1/1.38	30/0.25	15.3	17.3	19.3	478	524	921
4×2.5	1/1.78	49/0.26	16.6	18.5	20.5	588	654	1070
5×0.5	1/0.80	16/0.20	13.5	15.4	17.5	423	464	850
5×0.75	1/0.97	24/0.20	14.1	16.0	18.2	452	485	891
5×1.0	1/1.13	32/0.20	15.2	17.0	19.2	481	528	958
5×1.5	1/1.38	30/0.25	17.0	19.0	21.0	556	607	1040
5×2.5	1/1.78	49/0.26	18.5	20.4	22.5	691	748	1210
7×0.5	1/0.80	16/0.20	14.5	16.3	18.8	510	555	958
7×0.75	1/0.97	24/0.20	15.0	17.0	19.5	549	608	1030
7×1.0	1/1.13	32/0.20	16.8	18.8	21.2	586	648	1090
7×1.5	1/1.38	30/0.25	18.3	20.0	22.5	686	757	1210
7×2.5	1/1.78	49/0.26	20.0	21.6	24.0	867	947	1420
8×0.5	1/0.80	16/0.20	15.3	17.2	19.6	565	625	1065
8×0.75	1/0.97	24/0.20	16.2	17.9	20.3	609	674	1120
8×1.0	1/1.13	32/0.20	17.9	19.3	21.8	651	720	1215
8×1.5	1/1.38	30/0.25	20.8	21.7	22.8	765	844	1335
8×2.5	1/1.78	49/0.26	22.8	23.8	25.0	974	1063	1585
10×0.5	1/0.80	16/0.20	17.5	19.4	21.4	683	753	1250
10×0.75	1/0.97	24/0.20	18.3	20.2	22.2	738	814	1330
10×1.0	1/1.13	32/0.20	20.0	22.6	24.6	855	942	1470
10×1.5	1/1.38	30/0.25	22.4	24.6	26.6	1000	1093	1645
10×2.5	1/1.78	49/0.26	24.6	26.8	28.8	1270	1143	1990

3. N-KFFP, N-KFFRP, N-KFFP$_2$, N-KFFRP$_2$

No. of cores × Standard Cross section mm^2	Structure of core (No. of threads/diameter) mm		Maximum outer diameter mm		Reference weight kg/km	
	A	R	N-KFFP N-KFFRP	N-KFFP$_2$ N-KFFRP$_2$	N-KFFP N-KFFRP	N-KFFP$_2$ N-KFFRP$_2$
2×0.5	1/0.80	16/0.20	8.0	7.7	221	252
2×0.75	1/0.97	24/0.20	8.5	8.2	234	258
2×1.0	1/1.13	32/0.20	9.3	9.0	248	271
2×1.5	1/1.38	30/0.25	10.1	9.8	285	324
2×2.5	1/1.78	49/0.26	10.8	10.5	344	388
3×0.5	1/0.80	16/0.20	8.5	8.2	262	295
3×0.75	1/0.97	24/0.20	9.0	8.6	280	315
3×1.0	1/1.13	32/0.20	9.8	9.5	302	344
3×1.5	1/1.38	30/0.25	10.7	10.4	346	390
3×2.5	1/1.78	49/0.26	11.5	11.2	465	509
4×0.5	1/0.80	16/0.20	9.3	9.0	314	349
4×0.75	1/0.97	24/0.20	10.0	9.7	336	375
4×1.0	1/1.13	32/0.20	10.8	10.5	395	435
4×1.5	1/1.38	30/0.25	11.6	11.2	454	498
4×2.5	1/1.78	49/0.26	12.6	12.2	559	621
5×0.5	1/0.80	16/0.20	10.1	9.8	402	441
5×0.75	1/0.97	24/0.20	10.7	10.4	429	461

5×1.0	1/1.13	32/0.20	11.8	11.5	457	502
5×1.5	1/1.38	30/0.25	12.8	12.5	528	577
5×2.5	1/1.78	49/0.26	13.8	13.5	656	711
7×0.5	1/0.80	16/0.20	11.2	10.8	485	527
7×0.75	1/0.97	24/0.20	11.8	11.5	522	578
7×1.0	1/1.13	32/0.20	12.9	12.6	557	616
7×1.5	1/1.38	30/0.25	14.0	13.8	652	719
7×2.5	1/1.78	49/0.26	15.2	14.8	780	900
8×0.5	1/0.80	16/0.20	12.0	11.7	536	593
8×0.75	1/0.97	24/0.20	12.6	12.3	579	640
8×1.0	1/1.13	32/0.20	14.0	13.7	618	684
8×1.5	1/1.38	30/0.25	15.2	14.8	727	801
8×2.5	1/1.78	49/0.26	16.6	16.2	925	1009

Website Address www.feichuncables.com
Whatsapp Account +86 138 5608 5607 & +86 138 5512 3218
Email Address ziyu.huang@feichuncables.com & zihao.yang@feichuncables.com