

氟塑料绝缘耐高温控制电缆
Fluoroplastic insulated high temperature resistant control cable

产品用途

本产品适用于交流额定电压450/750V及以下电压等级的连接线和自动控制系统的传输线。具有耐油、耐水、耐酸、耐碱及各类腐蚀性气体、耐老化、不燃等特殊性能。产品广泛应用于冶金、电力、石化等行业。

Application

This product is applied for electrical instrumentation cables and automatic control system transmission lines of rated voltage up to and including A.C. 450/750V. Has properties of oil resistant, waterproof, abrasion resistant, acid and alkali and all kinds of corrosive gas resistant, ageing resistant, non-combustion. Thus it is widely used in metal refining, electric power, petro-chem industry etc.

使用特性

1. 额定电压U0/U为450/750V, 0.6/1kV
2. 正常运行时, 导体最高工作温度(电缆额定工作温度)为200℃
3. 电缆最低使用环境温度:
-60℃(氟塑料绝缘护套型);
-30℃(聚氯乙烯护套型)
4. 电缆安装敷设温度应不低于0℃(氟塑料、硅橡胶护套电缆不低于-25℃)
5. 电缆允许弯曲半径: 无铠装或编绞屏蔽结构的电缆, 应不小于电缆外径的10倍; 有铠装或编绞屏蔽结构的电缆, 应不小于电缆外径的15倍。

Service property

1. The rated voltage U0/U of the cable should be 0.6/1kV
2. Maximum allowed operating temperature of cable conductor when normal operating should be 200°C
3. Cable minimum operating temperature:
Fluoroplastics and silicon rubber sheathed cable: -60°C
PVC sheathed cable: -30°C
4. Cable laying temperature should be not less than 0°C (Fluoroplastics and silicon rubber sheathed cable should be not less than -25°C)
5. Allowed bending radius of non-armored or non-braided shielded cable should be not less than 10 times outer diameter of the cable, of armored or wrapped shielded cable should be not less than 15 times outer diameter of the cable.

基本型号及名称 Type and description

型号 Type	名称 Description
KFF	氟塑料绝缘聚氯乙烯护套耐高温控制电缆 Copper core fluoroplastics insulated and sheathed high temperature resistant control cable
KFFP	氟塑料绝缘聚氯乙烯护套屏蔽耐高温控制电缆 Copper core fluoroplastics insulated and sheathed copper wire braided shielded high temperature resistant control cable
KFFP2	氟塑料绝缘聚氯乙烯护套铠装耐高温控制电缆 Copper core fluoroplastics insulated and sheathed copper wire braided shielded high temperature resistant control cable
KFFR	氟塑料绝缘聚氯乙烯护套耐高温控制电缆 Copper core fluoroplastics insulated and sheathed armored high temperature resistant flexible control cable
KFFRP	氟塑料绝缘聚氯乙烯护套铠装屏蔽耐高温控制电缆 Copper core fluoroplastics insulated and sheathed copper wire braided shielded armored high temperature resistant flexible control cable
ia-KFFRP	氟塑料绝缘聚氯乙烯护套铠装屏蔽本安型控制电缆 Copper core fluoroplastics insulated and sheathed copper wire braided armored high temperature resistant intrinsically safe flexible control cable
KFV	氟塑料绝缘聚氯乙烯护套耐高温控制电缆 Copper core fluoroplastics insulated PVC sheathed high temperature resistant control cable
KFV22	氟塑料绝缘聚氯乙烯护套铠装耐高温控制电缆 Copper core fluoroplastics insulated PVC sheathed steel tape armored high temperature resistant control cable

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地址: 安徽省芜湖市无为县大渡口镇工业园区
电话: 0551-6648278 传真: 0551-6648903
E-mail: amul@amul.com 邮编: 238311

续上表Continued

型号 Type	名称 Description
KFVP	氟塑料绝缘聚氯乙烯护套屏蔽耐高温控制电缆 Copper core fluoroplastics insulated PVC sheathed high temperature resistant control cable
KFVR	氟塑料绝缘聚氯乙烯护套铠装耐高温控制电缆 Copper core fluoroplastics insulated PVC sheathed high temperature resistant flexible control cable
KFG	氟塑料绝缘聚氯乙烯护套耐高温控制电缆 Copper core fluoroplastics insulated silicon rubber sheathed high temperature resistant control cable
KFGRP	氟塑料绝缘聚氯乙烯护套铠装屏蔽耐高温控制电缆 Copper core fluoroplastics insulated silicon rubber sheathed high temperature resistant control cable

注: 表中未列型号按下表的型号说明编制。
Note: The type not listed in the table should be comprised according to following type explanation.

代号名称和含义 Code and meaning

代号 Code	说明 Description
系列代号 Series coding	K 控制电缆 Control cable
	Z(A/B/C) 阻燃(A/B/C)级 Flame retardant grade (A/B/C)
燃烧特性 Burning characteristic	N 耐火 Fire resistant
	ia 本安 Intrinsically safe
导体 Conductor	— 第1种或第2种导体 Class 1 and 2 copper conductor
	R 铝导体 Aluminum conductor
绝缘 Insulation	F 氟塑料绝缘 Fluoroplastic insulation
	V 聚氯乙烯护套 PVC sheath
	G 硅橡胶护套 Silicon rubber sheath
护套或内护套 Sheath or inner sheath	P 铜丝编织屏蔽 Copper wire braided shield
	P2 铜带屏蔽层 Copper tape wrapped shield
	P3 铝塑复合带铠装 Aluminum polyester composite film wrapped shielded
	2 钢带铠装 Steel tape armor
	3 钢丝铠装 Steel wire armor
	9 镀锌钢带铠装 Galvanized steel wire braided armor
外护套 Outer sheath	2 聚氯乙烯护套 PVC sheath
	4 硅橡胶护套 Silicon rubber sheath

产品结构示意图 Structure diagram



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第二章 控制电缆

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主要技术指标

1. 20℃时导体直流电阻符合GB/T3956规定
2. 成缆电缆绝缘电阻20℃时应不小于3000Ω.km
3. 额定电压450/750V成缆电缆应经受交流2.5kV电压试验5min不击穿; 额定电压0.6/1kV成缆电缆应经受交流2.5kV电压试验5min不击穿;

Main technical index

1. Conductor d.c. resistance at 20 °C complies with stipulations of GB/T3956.
2. Finished cable insulation resistance constant at 20°C should be not less than 3000Ω.km.
3. 450/750V finished cable should withstand a.c. 2.5kV for 5 minutes without puncture. 0.6/1kV finished cable should withstand a.c. 3.5kV for 5 minutes without puncture.

基本电缆规格和结构参数 Cable specification and structural parameter

芯数×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)		电缆参考重量 Cable reference weight (kg/km)		芯数×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)		电缆参考重量 Cable reference weight (kg/km)	
	KFFP	KFFP2	KFFP	KFFP2		KFFP	KFFP2	KFFP	KFFP2
2×0.75	5.4	5.6	64	63	7×1.0	7.5	8.0	156	155
2×1.0	6.0	6.1	76	75	7×1.5	8.2	8.8	200	197
2×1.5	6.5	6.6	95	93	7×2.5	9.7	10.2	287	284
2×2.5	7.4	7.6	125	122	7×4	11.7	12.2	430	425
2×4	8.6	8.8	174	170	7×6	13.5	14.0	615	593
2×6	9.8	10.0	233	228	8×0.75	7.2	7.8	139	138
3×0.75	5.7	5.8	79	78	8×1.0	8.1	8.6	175	173
3×1.0	6.3	6.4	95	93	8×1.5	8.9	9.4	225	222
3×1.5	6.8	6.9	116	113	8×2.5	10.7	11.0	332	320
3×2.5	7.8	8.0	157	153	8×4	12.6	13.2	501	481
3×4	9.1	9.3	224	220	8×6	14.6	15.2	696	671
3×6	10.4	10.6	301	295	10×0.75	8.4	8.9	175	173
4×0.75	5.7	6.3	84	96	10×1.0	9.4	10.0	220	217
4×1.0	6.8	6.9	118	116	10×1.5	10.4	11.0	285	281
4×1.5	7.4	7.5	144	141	10×2.5	12.5	13.1	433	413
4×2.5	8.5	8.7	197	193	10×4	14.9	15.5	632	607
4×4	9.9	10.1	287	282	10×6	17.7	17.9	907	850
4×6	11.6	11.6	395	380	12×0.75	8.6	9.2	193	191
5×0.75	6.6	6.8	104	101	12×1.0	9.7	10.3	246	242
5×1.0	7.3	7.5	128	125	12×1.5	10.9	12.5	287	287
5×1.5	8.0	8.1	162	158	12×2.5	13.0	14.6	437	437
5×2.5	9.3	9.4	226	224	12×4	15.5	17.1	655	655
5×4	10.9	11.0	330	324	12×6	18.4	20.0	959	959
5×6	12.9	12.9	481	459	14×0.75	9.2	10.8	10.4	195
6×0.75	6.7	7.3	118	117	14×1.0	10.3	11.9	115	252
6×1.0	7.5	8.0	147	145	14×1.5	11.4	13.0	126	331
6×1.5	8.2	8.8	187	185	14×2.5	13.7	15.3	503	503
6×2.5	9.7	10.2	267	263	14×4	16.3	17.9	719	758
6×4	11.7	12.2	396	391	14×6	19.4	21.0	1108	1108
6×6	13.5	14.0	563	541	16×0.75	9.6	11.7	10.8	219
7×0.75	6.7	7.3	124	124	16×1.0	10.9	12.5	121	283

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地址: 安徽省芜湖市无为县大渡口镇工业园区
电话: 0551-6648278 传真: 0551-6648903
E-mail: amul@amul.com 邮编: 238311

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芯数×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)		电缆参考重量 Cable reference weight (kg/km)		芯数×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)		电缆参考重量 Cable reference weight (kg/km)	
	KFFP	KFFP2	KFFP	KFFP2		KFFP	KFFP2	KFFP	KFFP2
16×1.5	12.7	12.7	435	413	37×1.0	16.0	16.0	675	646
16×2.5	15.1	15.0	643	606	37×1.5	18.2	17.7	915	854
19×0.75	10.5	10.6	380	374	37×2.5	21.5	21.5	1052	1311
19×1.0	12.0	11.9	368	353	44×0.75	15.9	15.8	614	585
19×1.5	13.4	13.4	496	472	44×1.0	18.3	17.9	821	760
19×2.5	15.8	15.8	725	696	44×1.5	20.3	20.3	1076	1038
24×0.75	12.5	12.5	375	354	44×2.5	24.4	24.1	1623	1547
24×1.0	14.1	14.0	478	453	48×0.75	16.1	16.1	658	628
24×1.5	15.5	15.5	620	595	48×1.0	18.6	18.2	881	818
24×2.5	18.9	18.8	940	905	48×1.5	20.7	20.6	1157	1118
27×0.75	12.8	12.7	405	382	48×2.5	24.8	24.5	1748	1671
27×1.0	14.4	14.3	518	493	52×0.75	16.6	16.5	704	674
27×1.5	15.9	15.9	676	647	52×1.0	19.1	19.1	942	907
27×2.5	19.3	19.2	1026	990	52×1.5	21.2	21.2	1240	1200
30×0.75	13.2	13.2	443	419	52×2.5	25.5	25.2	1876	1797
30×1.0	14.9	14.8	568	541	61×0.75	17.9	17.5	835	775
30×1.5	16.5	16.4	742	712	61×1.0	20.3	20.2	1082	1044
30×2.5	20.0	19.9	1126	1089	61×1.5	22.5	22.5	1428	1386
37×0.75	14.2	14.1	523	498	61×2.5	27.4	26.8	2207	2081

芯数×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)		电缆参考重量 Cable reference weight (kg/km)		芯数×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)		电缆参考重量 Cable reference weight (kg/km)					
	KFF	KFG	KFV	KFF		KFG	KFV	KFF	KFG	KFV			
2×0.75	5.1	6.7	6.3	50	63	58	4×1.0	6.5	8.1	7.7	100	114	106
2×1.0	5.7	7.3	6.9	61	74	68	4×1.5	7.1	8.7	8.3	124	139	131
2×1.5	6.2	7.8	7.4	78	91	85	4×2.5	8.2	9.8	9.4	174	190	182
2×2.5	7.1	8.7	8.3	104	119	112	4×4	9.6	11.2	10.8	258	277	265
2×4	8.3	9.9	9.5	150	166	157	4×6	11.1	12.7	12.3	353	374	361
2×6	9.5	11.1	10.7	205	221	213	5×0.75	6.3	7.9	7.5	86	100	95
3×0.75	5.4	7.0	6.6	65	77	71	5×1.0	7.0	8.6	8.2	108	123	117
3×1.0	6.0	7.6	7.2	79	92	86	5×1.5	7.7	9.3	8.9	139	156	149
3×1.5	6.5	8.1	7.7	97	111	105	5×2.5	9.0	10.6	10.2	200	218	211
3×2.5	7.5	9.1	8.7	135	151	144	5×4	10.6	12.2	11.8	299	319	310
3×4	8.8	10.4	10.0	199	216	207	5×6	12.4	14.0	14.0	429	449	432
3×6	10.1	11.7	11.3	271	290	280	6×0.75	6.8	8.4	8.0	101	115	110
4×0.75	5.8	7.4	7.0	82	95	88	6×1.0	7.6	9.2	8.8	127	143	136

地址: 安徽省芜湖市无为县大渡口镇工业园区
电话: 0551-6648278 传真: 0551-6648903
E-mail: amul@amul.com 邮编: 238311

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第二章 控制电缆

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线芯×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)			电缆参考重量 Cable reference weight (kg/km)			线芯×标称截面 Number of cores × nominal cross section area (mm ²)	电缆参考外径 Cable reference diameter (mm)			电缆参考重量 Cable reference weight (kg/km)		
	KFF	KFG	KFV	KFF	KFG	KFV		KFF	KFG	KFV	KFF	KFG	KFV
6×1.5	8.3	9.9	9.5	165	182	174	16×2.5	14.5	16.1	16.1	572	594	600
6×2.5	9.8	11.4	11.0	240	259	250	19×0.75	10.2	11.8	11.4	250	270	339
6×4	11.6	13.2	12.8	355	376	365	19×1.0	11.5	13.1	12.7	325	347	263
6×6	13.6	15.2	15.2	509	530	532	19×1.5	12.9	14.5	14.5	442	461	469
7×0.75	6.8	8.4	8.0	107	122	117	19×2.5	15.3	16.9	16.9	660	683	691
7×1.0	7.6	9.2	8.8	136	152	147	24×0.75	12.0	13.6	13.6	325	344	349
7×1.5	8.3	9.9	9.5	177	194	189	24×1.0	13.6	15.2	15.2	421	442	448
7×2.5	9.8	11.4	11.0	260	279	273	24×1.5	15.1	16.7	16.7	560	582	588
7×4	11.6	13.2	12.8	389	410	403	24×2.5	18.4	20.0	20.0	862	877	887
7×6	13.6	15.2	15.2	561	581	589	27×0.75	12.3	13.9	13.9	353	372	379
8×0.75	7.3	8.9	8.5	120	136	131	27×1.0	13.9	15.5	15.5	460	481	488
8×1.0	8.2	9.8	9.4	154	170	165	27×1.5	15.4	17.0	17.0	611	634	642
8×1.5	9.0	10.6	10.2	200	218	212	27×2.5	18.8	20.4	20.4	947	962	974
8×2.5	10.6	12.2	11.8	295	315	308	30×0.75	12.7	14.3	14.3	389	409	415
8×4	12.7	14.3	14.3	451	470	477	30×1.0	14.4	16.0	16.0	507	529	536
8×6	14.7	16.3	16.3	636	658	666	30×1.5	16.0	17.6	17.6	674	698	705
10×0.75	8.5	10.1	9.7	152	169	162	30×2.5	19.5	21.1	21.1	1044	1060	1072
10×1.0	9.5	11.1	10.7	194	213	205	37×0.75	13.7	15.3	15.3	466	486	494
10×1.5	10.5	12.1	11.7	255	276	266	37×1.0	15.5	17.1	17.1	609	632	641
10×2.5	12.6	14.2	14.2	383	402	407	37×1.5	17.3	18.9	18.9	814	839	848
10×4	15.0	16.6	16.6	572	594	598	37×2.5	21.0	22.6	22.6	1262	1279	1293
10×6	17.4	19.0	19.0	809	834	838	44×0.75	15.4	17.0	17.0	549	572	580
12×0.75	8.7	10.3	9.9	170	187	181	44×1.0	17.4	19.0	19.0	719	744	754
12×1.0	9.8	11.4	11.0	219	238	231	44×1.5	19.8	21.4	21.4	992	1008	1021
12×1.5	10.9	12.5	12.1	287	308	301	44×2.5	23.7	25.3	25.3	1492	1510	1525
12×2.5	13.0	14.6	14.6	437	457	464	48×0.75	15.6	17.2	17.2	592	615	623
12×4	15.5	17.1	17.1	655	678	687	48×1.0	17.7	19.3	19.3	777	802	812
12×6	18.4	20.0	20.0	959	974	986	48×1.5	20.2	21.8	21.8	1071	1087	1101
14×0.75	9.2	10.8	10.4	195	213	207	48×2.5	24.3	25.7	25.7	1643	1633	1648
14×1.0	10.3	11.9	11.5	252	272	264	52×0.75	16.1	17.7	17.7	636	659	668
14×1.5	11.4	13.0	12.6	331	353	344	52×1.0	18.6	20.2	20.2	864	879	892
14×2.5	13.7	15.3	15.3	503	524	531	52×1.5	20.7	22.3	22.3	1152	1169	1182
14×4	16.3	17.9	17.9	758	782	790	52×2.5	24.8	26.4	26.4	1739	1758	1774
14×6	19.4	21.0	21.0	1108	1123	1135	61×0.75	17.0	18.6	18.6	735	760	769
16×0.75	9.6	11.2	10.8	219	237	230	61×1.0	19.8	21.4	21.4	998	1014	1027
16×1.0	10.9	12.5	12.1	283	303	296	61×1.5	22.0	23.6	23.6	1334	1352	1366
16×1.5	12.2	13.8	13.8	384	403	409	61×2.5	26.3	27.9	27.9	2020	2039	2056