



CHUANRONG
川熔电气

CATALOGUE OF PRODUCTS

产品选型手册



以科技求发展!

以质量求生存!

TAKING THE SCIENCE TO
DEVELOP AND QUALITY TO SEEK
THE EXISTENCE

YUEQING

C





COMPANY PROFILE

企业简介

浙江川熔电气有限公司是生产国内外专用的3.6KV-40.5KV线路保护器和变压器保护的各
种高压限流熔断器、高压熔丝、电力熔断器专用高压熔断器、电动机保护高压限流熔断器、
电压互感器保护高压限流熔断器、避雷器、真空断路器、负荷开关公司。

公司各项技术性能符合ANSIC37, 42、DIN43625、BS2692、IEC282-2-1995、IEC60644、
IEC60270、IEC60282-1、IEC269-2和GB15166.1、GB15166.2、GB15166.5、GB13593、
DLT640-1997、VDE0636标准及相关技术条件。

公司技术力量雄厚，生产工艺先进，产品规格齐全，并根据用户要求，试制和生产新的
产品，“川熔”牌产品已在国内为用户享有较高的声誉，产品销往各省市电力公司，在各省
市形成了完整的销售网络，建立了良好的业务往来，新型高压熔丝，高压限流熔断器出口东
南亚、中东、非洲、欧洲等国家和地区。

公司本着“以科技求发展，以质量求生存”的原则，坚持“用户至上、保证质量、用心
服务”的宗旨，竭诚欢迎海内外客商前来洽谈合作，共同致力于电力事业的繁荣发展，共创
辉煌。

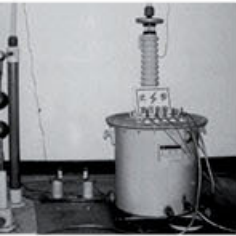
Yueqing Chuanrong Electrical Co.,LTD. Is products various voltage-grade high-voltage for 3.6KV-
40.5KV line and transformer protection;high-voltage fuse specially for power capacitor high voltage limiting
current fuse formotor protection and high-voltage limiting .Current fuse for mutual inductor protection.

Yueqing Chuanrong Electrical Co.,LTD conform to these standards of ANSIC37,42、DIN43625、
BS2692、IEC282-2-1995、IEC60644、IEC60270、IEC60282-1、IEC269-2 和 GB15166.1、GB15166.2、
GB15166.5、GB13593、DLT640-1997、VDE0636

The Company has a long history,abundant technical strenght, advances production technol-
ogy and complete product sizes. We also can make and product the new products as the user is
demand."chuanrong" brand products have got a high reputation from the users at home and abroad. The
products sell well on the power departments of provinces in the whole country and have formed a complete
distribution network,established a good business relations. We are the first one who export the new-type
high-voltage fuse and limiting current fuse to South Ease Asia,Middle East, South Africa and Europe etc, the
products selling demand occupies the pioneer at the same trades os the whole country,

The company insists on the principle of "taking the science to develop and quality to seek the existene",
keeps the aim of "user first,quality first, best service and credit". We sincerely welcome the customers at
home and abroad to come her eto make business and cooperate so as to create the brilliance together for
the power curse.

HUAN



EQUIPMENT

检测设备

精心、精意、出精品、连接世界，开拓创新

Products fine work meticulously precise creative.



PRODUCT CONTENTS

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用途及特点、订货须知

Use and characteristic ordering must know



电压互感器保护用高压限流熔断器

High Voltage Limit-Current Fuse For Instruments Transformer Protection



变压器保护用高压限流熔断器

High Voltage Limit-Current Fuse For Protection Transformer



全范围保护用高压限流熔断器

High Voltage Limit-Current Fuse For Wholly-scope Protection Transformer

E 28-39

F 40-42

G 43-51

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电动机保护用高压限流熔断器

High Voltage Limit-Current Fuse For Protection Electrical Motor



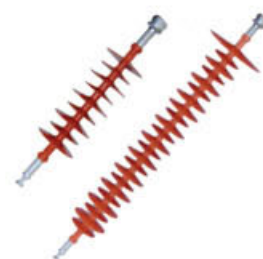
SF6 环网柜上下熔丝座及配件

SF6 circuit cabinet top and bottom of fuse and element parts



油浸式变压器保护用高压限流熔断器

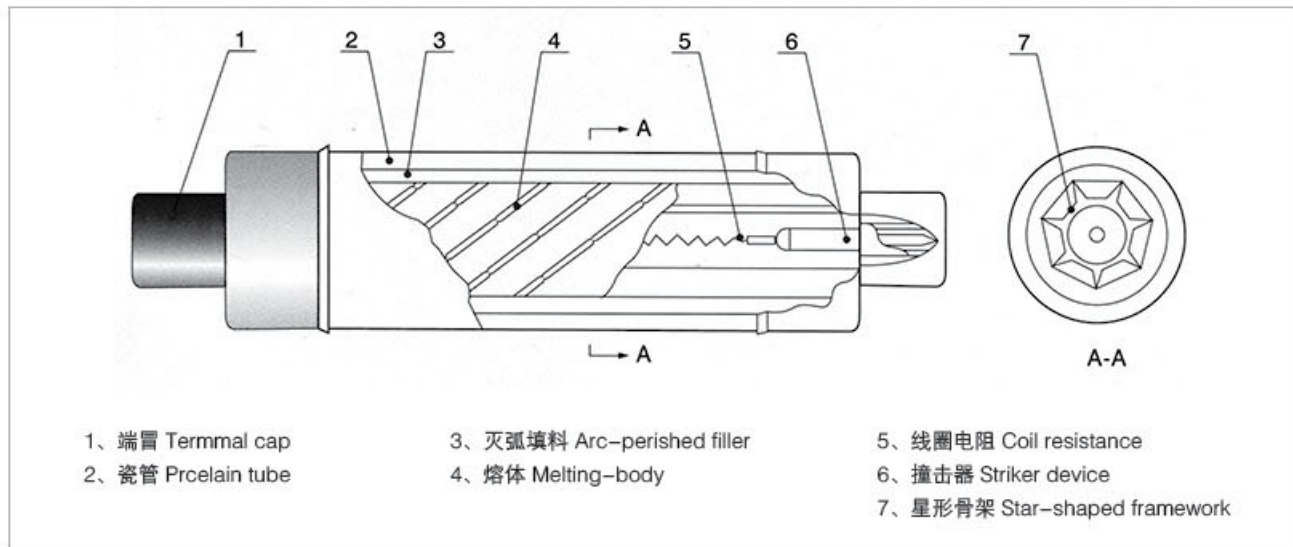
High voltage limit-current fuse for protection oil-immersed type voltage transformer



其它

The others

产品结构示意图 | The Demonstrated Diagram Of Product' s Structure



产品用途 | Products Usage

本产品使用于户内交流 50Hz~60Hz，额定电压 3.6~40. 可与其它波爱护电器（如真空断路器，负荷开关等）配合使用。作为高压电动机，电力变压器，电压互感器及其它电力设备的过载或短路保护元件。

This product can be used in indoor system of Ac50Hz~60Hz and rated voltage of 3.6~40.5KV, and it could be cooperation-used with other protection electric device (such as vacuum connector, road switch ect) to be overload or short circuits protection components of high-voltage motor, power transformer, instruments, and other electrical equipment.

新型高压限流熔断器产品特点 | Products Characteristics Of New High-voltage Limit-current Fuse

- 分段能力高，开断电流可达 63KA.
- 功耗小、温升低。
- 动作特快，安-秒特性要比国内目前生产的同类产品动作快，例如额定电流 100A 的熔断体，通以 1000A 预期电流，弧前时间不超 0.1S
- 安-秒特性误差小于 $\pm 10\%$ 。
- 配有弹簧式撞击器，该撞击器具有接触面大，压强小等优点。因此，在推动开关联锁动作时，不会产生将开关与撞针接触面打碎后击穿的情况发生。
- 规格标准化。
- 有较大的限流作用。

- With high broken-ability, the broken current can achieve 63KA.
- Small power-consumption, low temperature-rising.
- With fast motion properties, its ampere-second performance is faster than domestically produces product of same kind at present. Taking fuse component with rated current being 100A for example, the pre-arc time doesn't exceed 0.1s sif electrified with 1000A anticipated current.
- The ampere-second per for man ce error is with in $\pm 10\%$
- Matched with spring type collision device. This collision device own properties of big contacted surface and small intensity of pressure. Consequently, smashing or puncturing switch and striker would not occur when operator pushes switch for link-lock motion
- Specification standardization.
- Own big limit-current function.

- 产品性能符合 GB15166.2 国家标准及 IEC60282-1 国际标准。
- 能可靠开断最小开断电流至额定开断电流之间的任何故障电流。
另外, 还可根据用户需求, 生产各类非标准产品。

- The product's performance is up to GB151600.2 and IEC60282-1 standard.
- Could break down reliably any fault current from minimum broken current to rated to rated broken circuit, additionally our could produce various non-standard product awarding to user's demand.

订货须知 | Order Notice

- 订货时请注明产品名称、型号、规格、数量及是否带熔断器配件。
- 我公司除供应本系列产品外, 还可按用户使用要求, 生产各类特种熔断器。

- The name, type, specification, quantity and whether having fuse fittings or not of the ordered product in order process.
- Besides this products, our company could produce various specialized fuse device according to user demand.

型号说明 | Type Instruction



Rated current :A
Rated voltage :KV
Design number
Protected object: T-transformer protection M-MO-TOR protection P-instruments transformer protection
Use place :indoor
product's name :fuse
Structure characteristic :limit-current type



Connection way: J-inserted way, O、F、D-bus bar, O、F-plane wiring terminal, C、D-bent-hook wiring terminal
device:A, H-having, N-not having
Length: F=254mm L=292mm G=359mm N=403mm
Diameter: D=51mm K=76mm
Protected object :S,A,V-transformer protection W-motor protection

High Voltage Limit-Current Fuse For Instruments Transformer Protection

电压互感器保护用高压限流熔断器



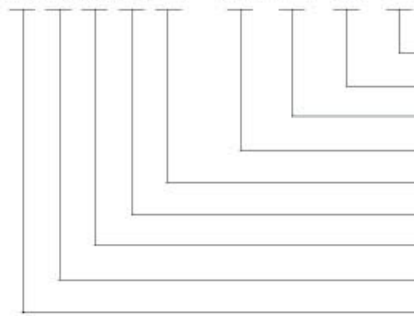
产品用途 | Products Usage

本产品使用于户内交流 50Hz, 额定电压 3.6-40.KV 系统作为电压互感器的过载及短路保护之用。(通过了国家高压电器质量监督检测中心型式试验, 产品符合 GB15166.2 和 IEC282-1)。

This product can be used in indoor system of Ac50Hz and rated voltage of 3.6-40.5KV to protect the voltage mutual-inductor from over loading and circuit break. (tested by-inductor from overloading and circuit break. (Tested by National high-voltage quality Supervising and Testing Center, in accordance with GB15166.2 and IEC282-1).

型号说明 | Type Instruction

X R N P □ - **12** / □ - **50** - □



- 管号 1= $\phi 25$ 、 $\phi 30$ 、 $\phi 40$
- 额定开断电流: KA Rated brake current(KA)
- 额定电流: A Rated current (A)
- 额定电压: KV Rated voltage(KV)
- 设计序号 Designing sequence number
- 电压互感器保护用: The P,T, protection purpose
- 户内使用 Indoor use
- 熔断器: Fuse
- 限流式: Limit-current type

基本参数 | Basic Parameters

表 1 Table1

型号 Type	额定电压 (KV) Rated Voltage(KV)	额定电流 (A) Rated current(A)	额定最大开断电流(KA) Rated brake current(KA)	外形尺寸 Size
XRNP1-□□-□-1	7.2(3.6)12	0.2、0.3、0.5、1、2、3.15	50	见图 1 See chart1
XRNP1-□/□-□-1	24	0.2、0.3、0.5、1、2、3.15	50	见图 2 See chart1
XRNP1-□/□-□-2	12	2、3.15	50	见图 3 See chart3
XRNP6-□/□-□-1	40.5	0.2、0.3、0.5、1、2、3.15	31.5	见图 4($\Phi 25$) See chart4
XRNP6-□/□-□-3		0.2、0.3、0.5、1、2、3.15 4、5		见图 5($\Phi 30$) See chart5
XRNP6-□/□-□-4		0.2、0.5、1、2、3.15、5、6.3		见图 6($\Phi 41$) See chart6

注: 其中 7.2KV、12KV($\Phi 25$ 管径) 有三种非标准接线形式见图 7

安装及外形尺寸 | Outline And Installation Size

XRNP1-12/□-50-1

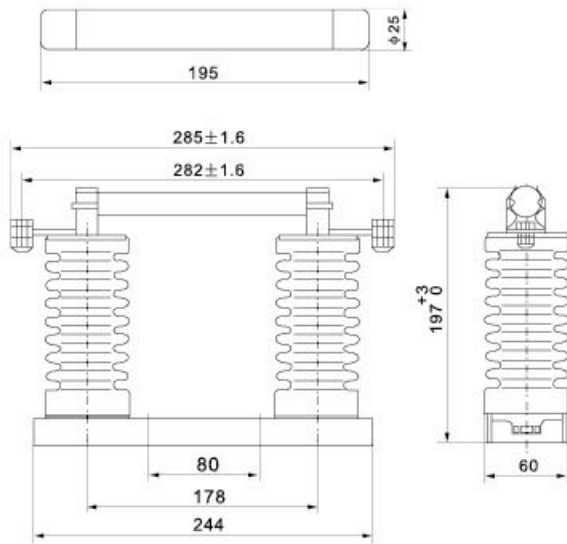


图 1

XRNP1-24/□-50-1

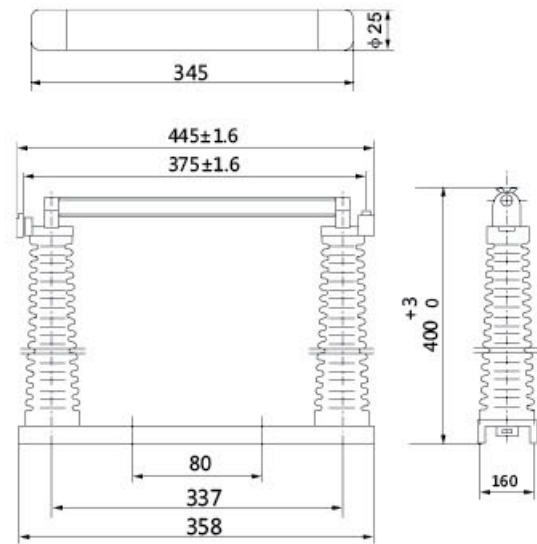


图 2

XRNP1-12/□-50-2

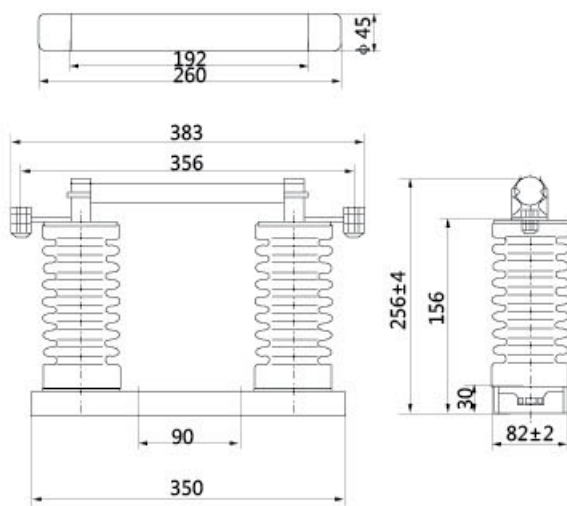


图 3

XRNP6-40.5/□-31.5-1

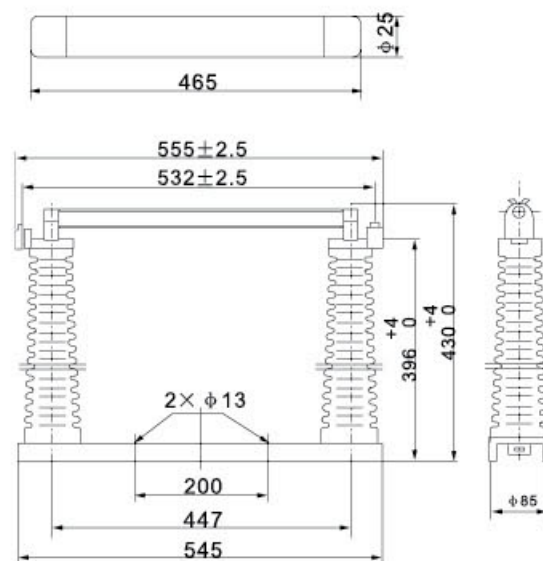


图 4

安装及外形尺寸 | Outline And Installation Size

XRNP6-40.5/□-31.5-3

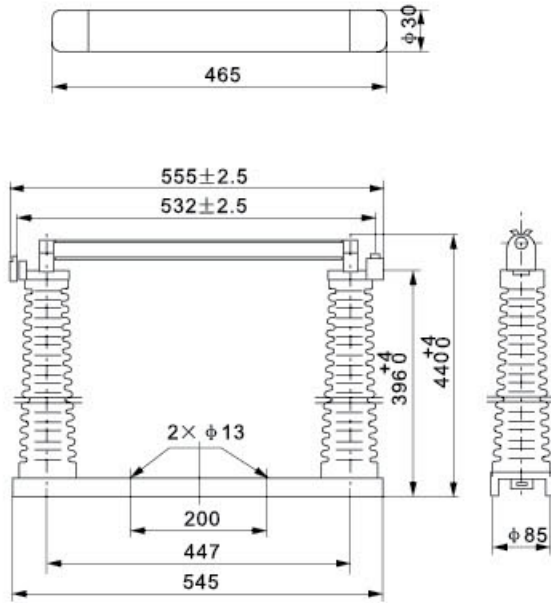


图 5

XRNP6-40.5/□-31.5-4

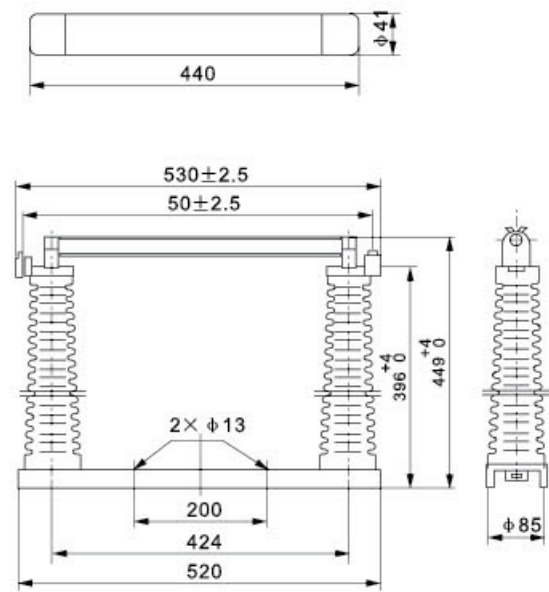


图 6

XRNP-7.2, 12KV/0.5A~5A-50KA

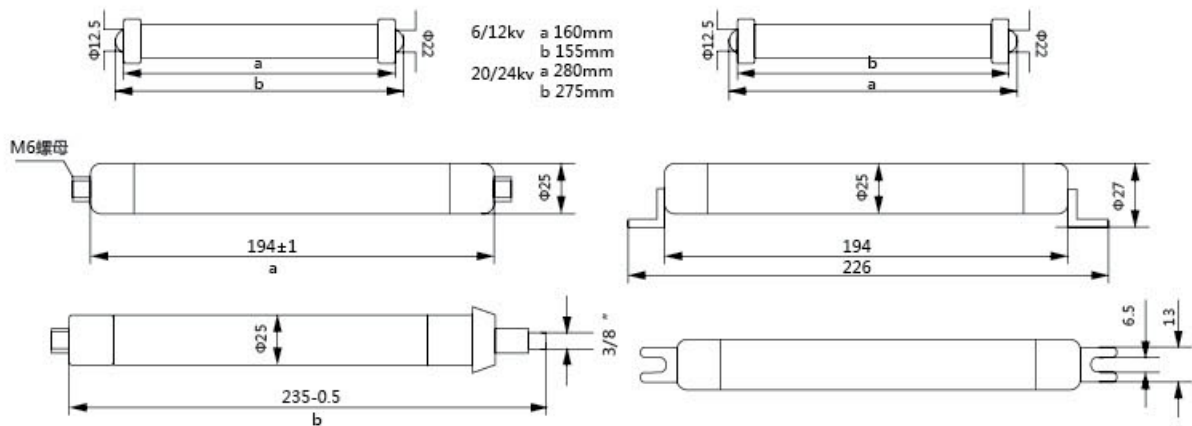
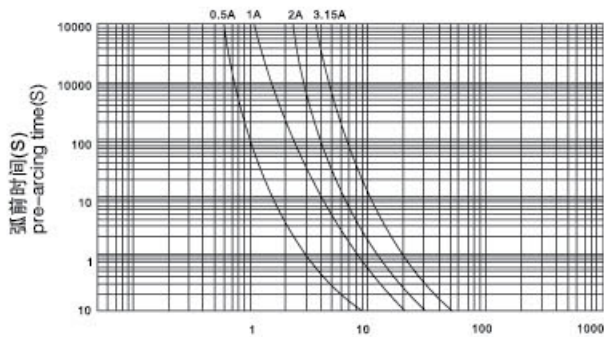


图 7

特性曲线图 | Property Curve Diagram

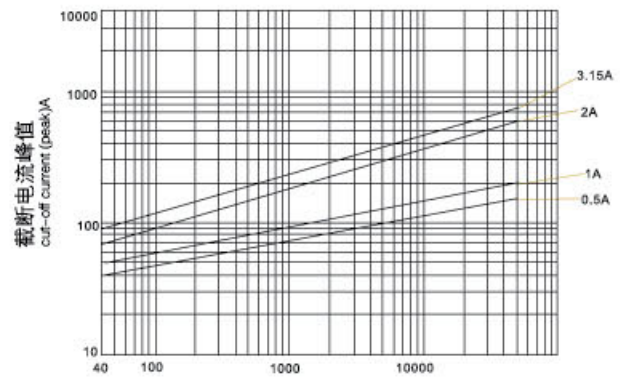
XRNP-7.2KV



预期电流有效值 (A) Prospective current(rms)A

图 8 时间电流特性

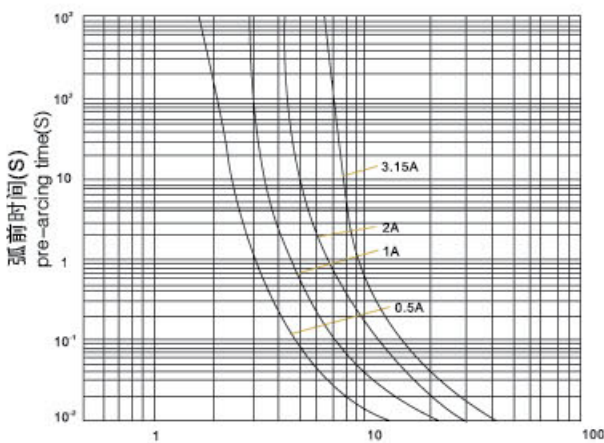
XRNP-7.2KV



预期电流有效值 (A) Prospective current(rms)A

图 9 限流特性

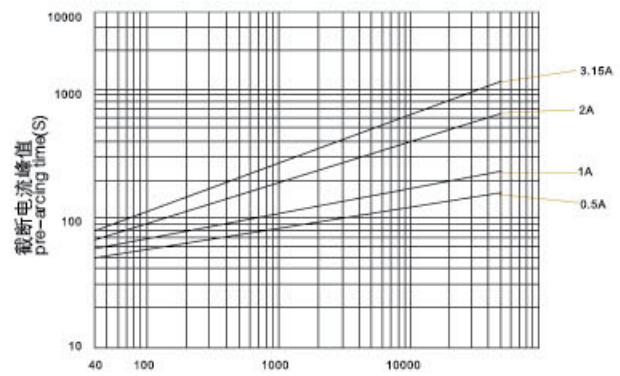
XRNP-12KV



预期电流有效值 (A) Prospective current(rms)A

图 10 时间电流特性

XRNP-12KV

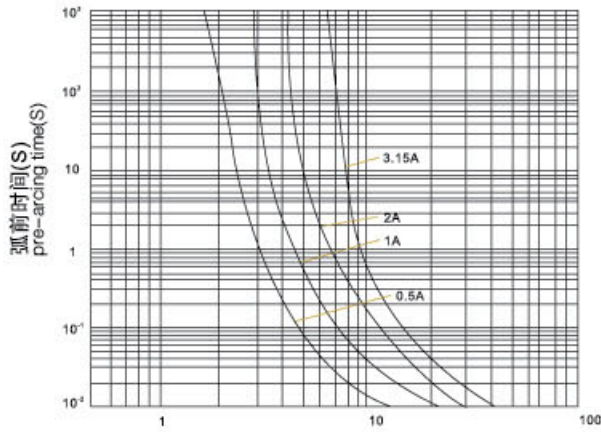


预期电流有效值 (A) Prospective current(rms)A

图 11 限流特性

特性曲线图 | Property Curve Diagram

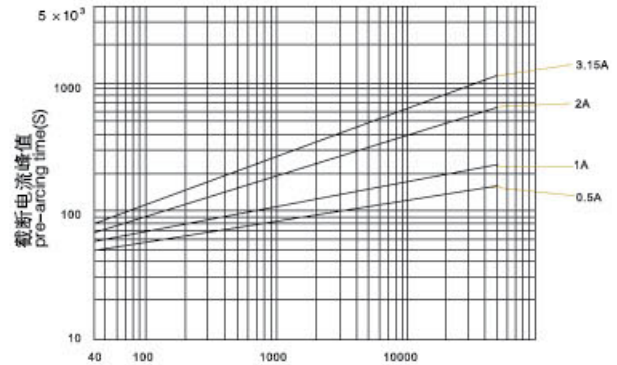
XRNP-24KV



预期电流有效值 (A) Prospective current(rms)A

图 12 时间电流特性

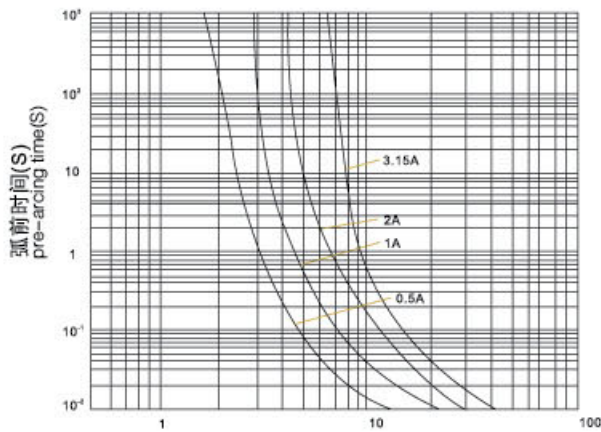
XRNP-24KV



预期电流有效值 (A) Prospective current(rms)A

图 13 时间电流特性

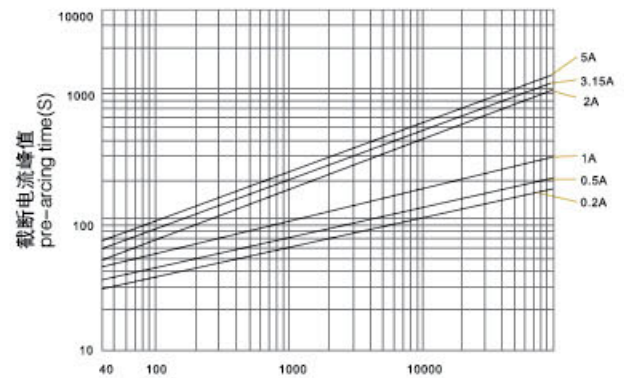
XRNP-40.5KV



预期电流有效值 (A) Prospective current(rms)A

图 14 时间电流特性

XRNP-40.5KV



预期电流有效值 (A) Prospective current(rms)A

图 15 时间电流特性

High Voltage Limit-Current Fuse For Protection Transformer (Germany Din Standard)

变压器保护用高压限流熔断器 (德国 DIN 标准)

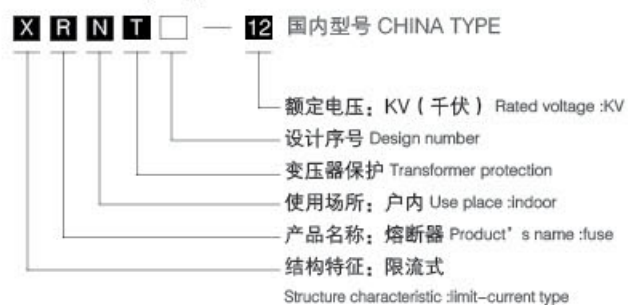


产品用途 | Products Usage

本产品适用于户内交流 50Hz, 额定电压为 3.6KV、7.2KV、12KV、24KV、40.5KV 系统, 可与其它开关、电器, 如负荷开关、真空接触器配合使用, 作为电力变压器及其它电器设备短路、过载的保护元件, 又是高压开关柜、环网柜、高、低压预装式变电站必备的配套产品。

It can be used indoor system of 50HZ and rated voltage of 3.6KV ,7.2KV,12KV,24KV,40.5KV:Used together with other switch facilities such as loading switches, vacuum contactors, it can protect electric transformers and other electric facilities against overloading or circuit break. It is also a necessary accessory for high-voltage switch.

型号说明 | Type Instruction



基本参数 | Basic parameters

表 1 Table1

型号 Type	同等型号 Counterpart	额定电压 (KV) Rated Voltage(KV)	熔断器额定电流 (A) Rated current of the fuse (A)	熔体额定电流 (A) Rated current of the fuse link(A)
XRNT-12	SDLAJ	12	40	3.15、6.3、10、16、20、25、31.5、40
XRNT-12	SDLAJ	12	100	50、63、71、80、100、(125)
XRNT-12	SDLAJ	12	125	125、160、200、250
XRNT-24		24	200	3.15、6.3、10、16、20、25、31.5、40、50、63、80、100、125、160、200
XRNT-40.5		40.5	125	3.15、6.3、10、16、20、25、31.5、40、50、63、80、100、125、160、200

安装及外形尺寸 | Outline And Installation Size

XRNT □ -12 熔断器

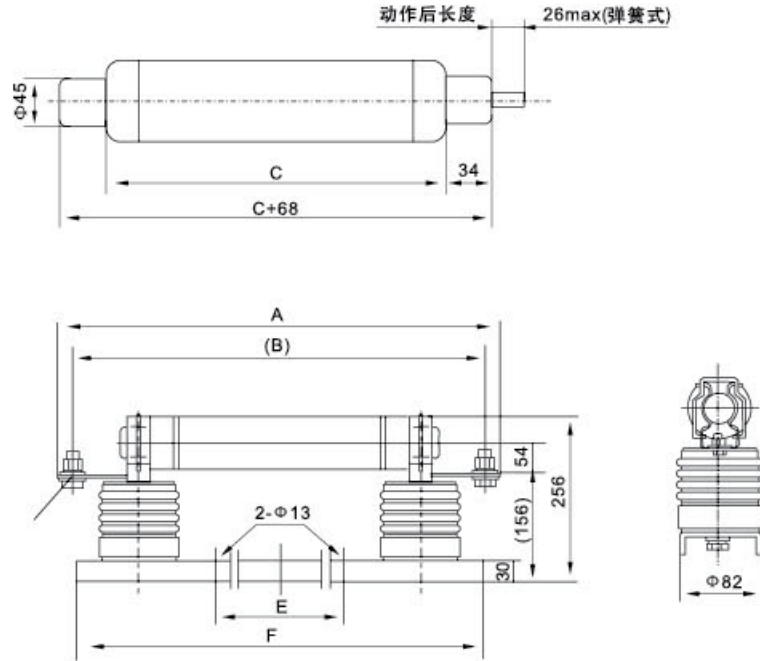


图 1

XRNT □ 40.5 熔断器

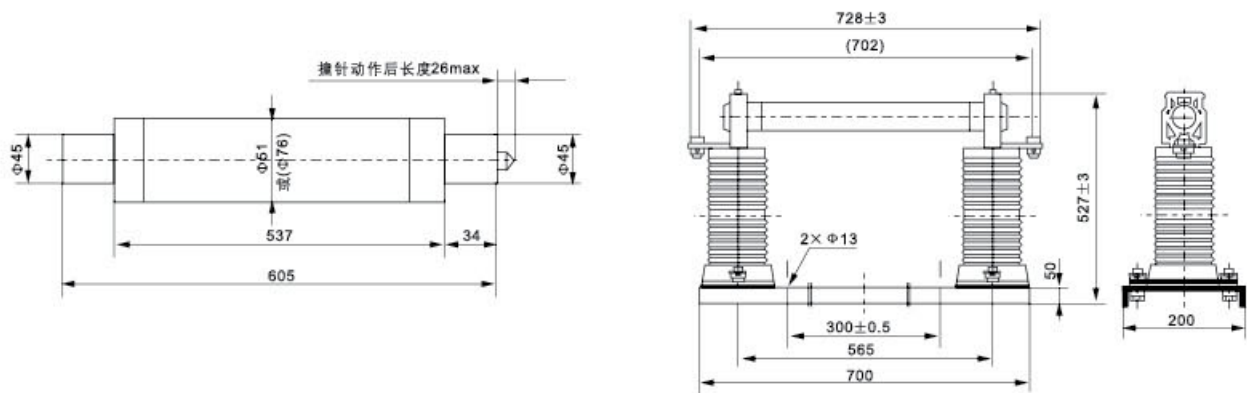


图 2

技术数据 | Technique Data

表 2 Table 2

型号 Type	额定电压 Rated voltage UN (KV)	额定电流 Rated voltage IN (A)	直径 × 长度 L D × L (mm	额定开断电流 (KA) Rated breaking current		
XRNT1	3.6/7.2	6.3	Φ51 × 192 标准尺寸	63		
		10				
		16				
		20				
		25				
		31.5				
		40				
		50				
		63	Φ76 × 192 标准尺寸	63		
		80				
		100				
		125				
		160	Φ88 × 192 标准尺寸	50		
		*200				
		*250	Φ51 × 292 标准尺寸	63		
		6.3				
		10				
		16				
		20				
		25				
		31.5				
		40				
		50				
		63				
		80			Φ76 × 292 标准尺寸	63
		100				
		125				
		160				
		*200			Φ88 × 292 标准尺寸	50
		*250				
*315						
*355						
100	Φ76 × 442	63				
125						
160						
*200	Φ88 × 442	50				
*250						
*315						
*355						
400						
*500						



High Voltage Limit-Current Fuse For Protection Transformer (Germany Din Standard)

变压器保护用高压限流熔断器 (德国 DIN 标准)

技术数据 | Technique Data

表 3 Table 3

型号 Type	额定电压 Rated voltage UN (KV)	额定电流 Rated voltage IN (A)	直径 × 长度 L D × L (mm)	额定开断电流 (KA) Rated breaking current	国外参考型号 Foreign reference model				
XRNT1	3.6/7.2	6.3	Φ51 × 192	6.3	SDLAJ				
		10							
		16							
		20	Φ78 × 192						
		25							
		31.5							
		40							
		2	Φ51 × 292 标准尺寸			6.3			
		3.15							
		6.3							
		10							
		20							
		31.5							
		40							
		50	Φ63 × 292 Φ63 × 292 标准尺寸				6.3	SFLAJ	
		63							
		80							
		100							
		125	Φ88 × 292 标准尺寸		50		SKLAJ		
		*160							
		*200							
		6.3			Φ88 × 292 标准尺寸			63	高压中置柜专用 高压限流熔断器
		10							
		16							
		20				Φ51 × 442			
		25							
		31.5							
		40							
		50	Φ78 × 442 标准尺寸						
		63							
		80							
		100							
		125			Φ88 × 442 标准尺寸				
160									
*200	50								
*250									
100	Φ76 × 537	63							
125									
160									
*200			50						
*250									
*315									
			Φ88 × 537						

技术数据 | Technique Data

表 4 Table 4

型号 Type	额定电压 Rated voltage UN (KV)	额定电流 Rated voltage IN (A)	直径 × 长度 L D × L (mm	额定开断电流 (KA) Rated breaking current
XRNT1	24	6.3	Φ51 × 442 标准尺寸	63
		10		
		16		
		20		
		25		
		31.5		
		40		
		50	Φ78 × 442 标准尺寸	63
		63		
		80		
		100		
		125	Φ88 × 442 标准尺寸	40
		160		
		200		
		0.3	Φ51 × 537	63
		10		
		16		
		20		
		25		
		31.5		
		40		
		50	Φ78 × 537	40
		63		
		80		
		100		
		125	Φ88 × 537	40
		160		
		*200	Φ51 × 442	31.5
		6.3		
		10		
16	Φ51 × 537 标准尺寸	40		
6.3				
10				
16				
20	Φ78 × 537 标准尺寸	40		
25				
31.5				
40	Φ88 × 537 标准尺寸	40		
50				
63				
80				
100				

(*) 请注意降容使用，可参看熔断器的合理选用。



High Voltage Limit-Current Fuse For Protection Transformer (Germany Din Standard)

变压器保护用高压限流熔断器 (德国 DIN 标准)

技术数据 | Technique Data

表 5 Table 5

变压器容量 KVA Transformer capacity	变压器初级电压 7.2KV Transformer primary voltage	
	熔断器额定电压 KV Fuse rated current	熔断器额定电流 A Rated current of fuse
100	7.2	20
125		20
160		25
200		31.5
250		40
300/315		50
400		71
500		80
630		100
750/800		140
1000		160
1250		200

表 6 Table 6

变压器容量 KVA Transformer capacity	变压器初级电压 12KV Transformer primary voltage	
	熔断器额定电压 KV Fuse rated current	熔断器额定电流 A Rated current of fuse
100	12	16
125		16
160		16
200		20
250		25
300/315		31.5
400		40
500		50
630		63
750/800		80
1000		100
1250		125
1500/1600		160
2000	200	

技术数据 | Technique Data

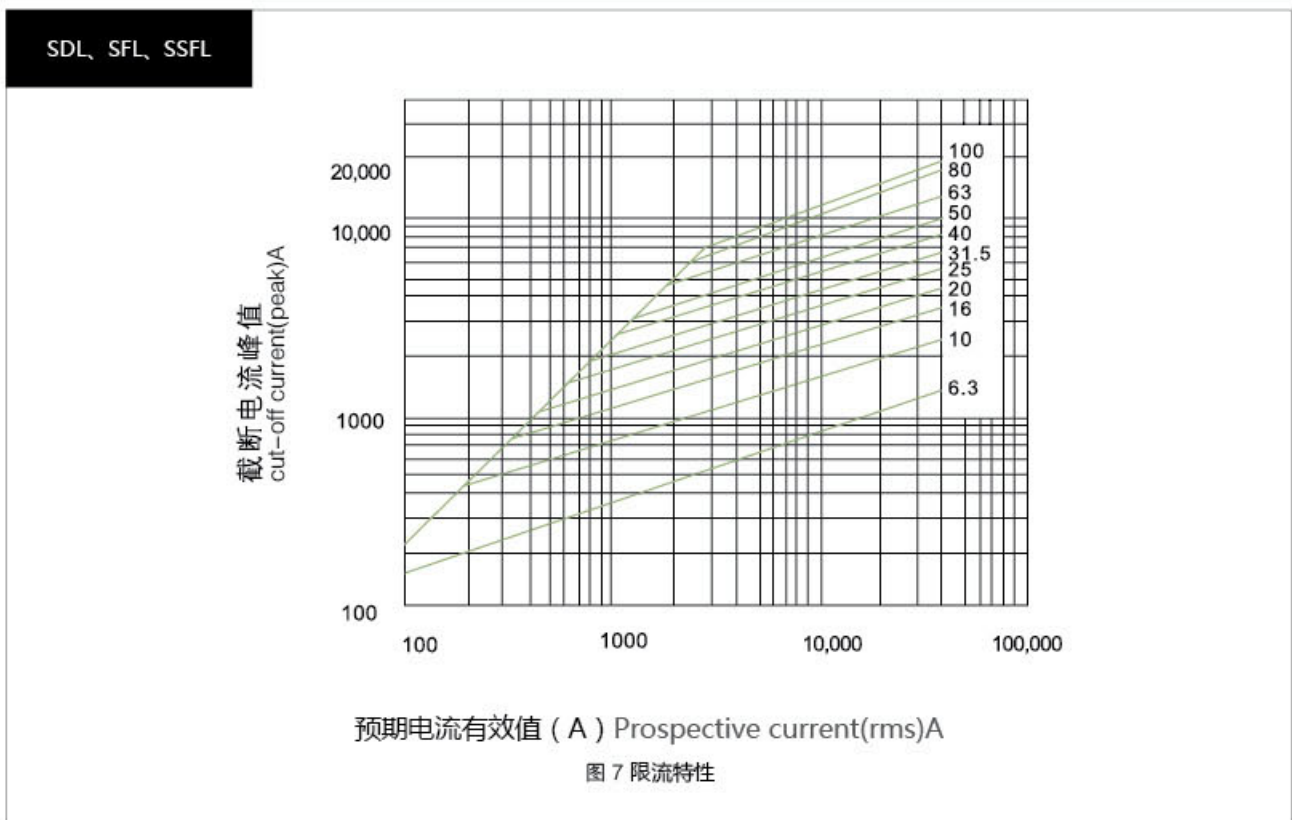
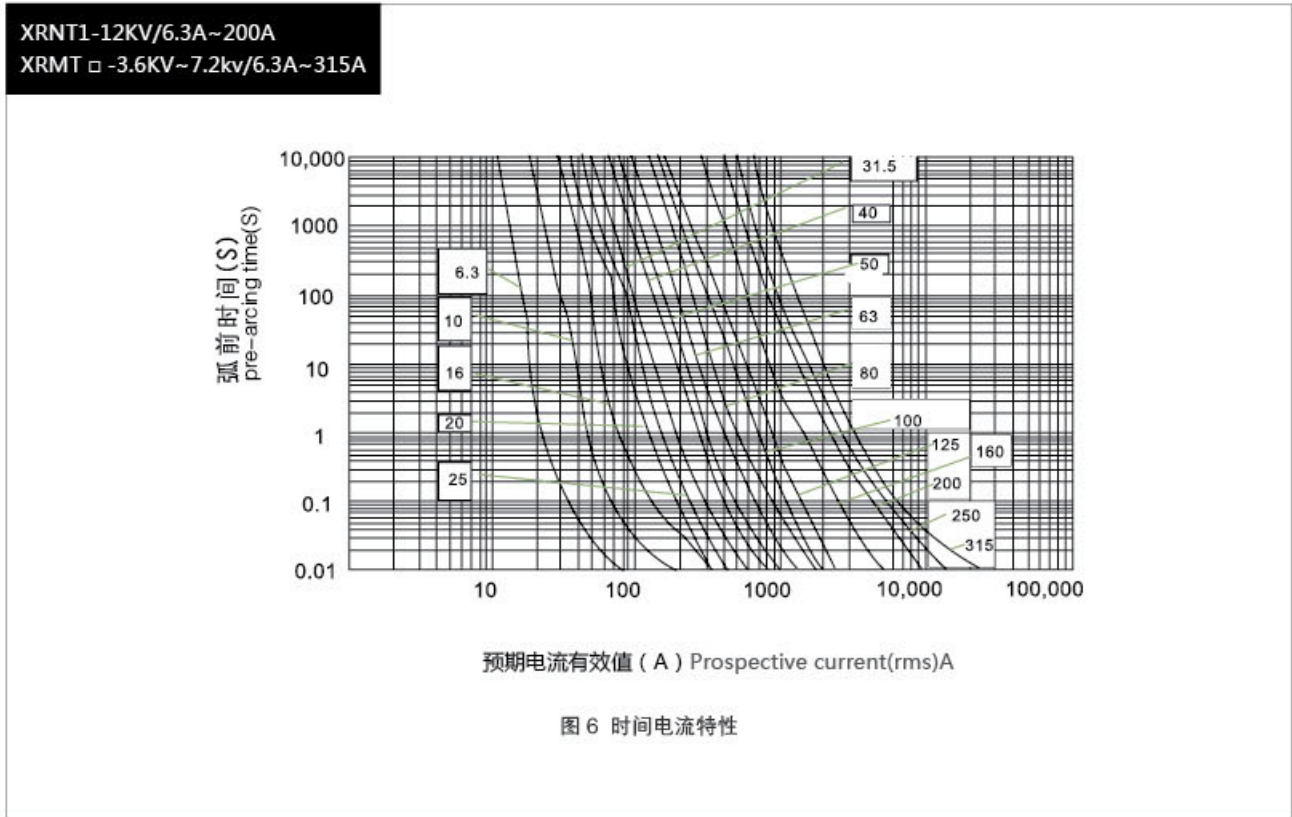
表 7 Table 7

变压器容量 KVA Transformer capacity	变压器初级电压 24KV Transformer primary voltage	
	熔断器额定电压 KV Fuse rated current	熔断器额定电流 A Rated current of fuse
100	24	6.3
125		6.3
160		10
200		10
250		16
300/315		16
400		20
500		25
630		31.5
750/800		40
1000		50
1250		63
1500/1600		80
2000		100
2500		125
3150		160
4000		200

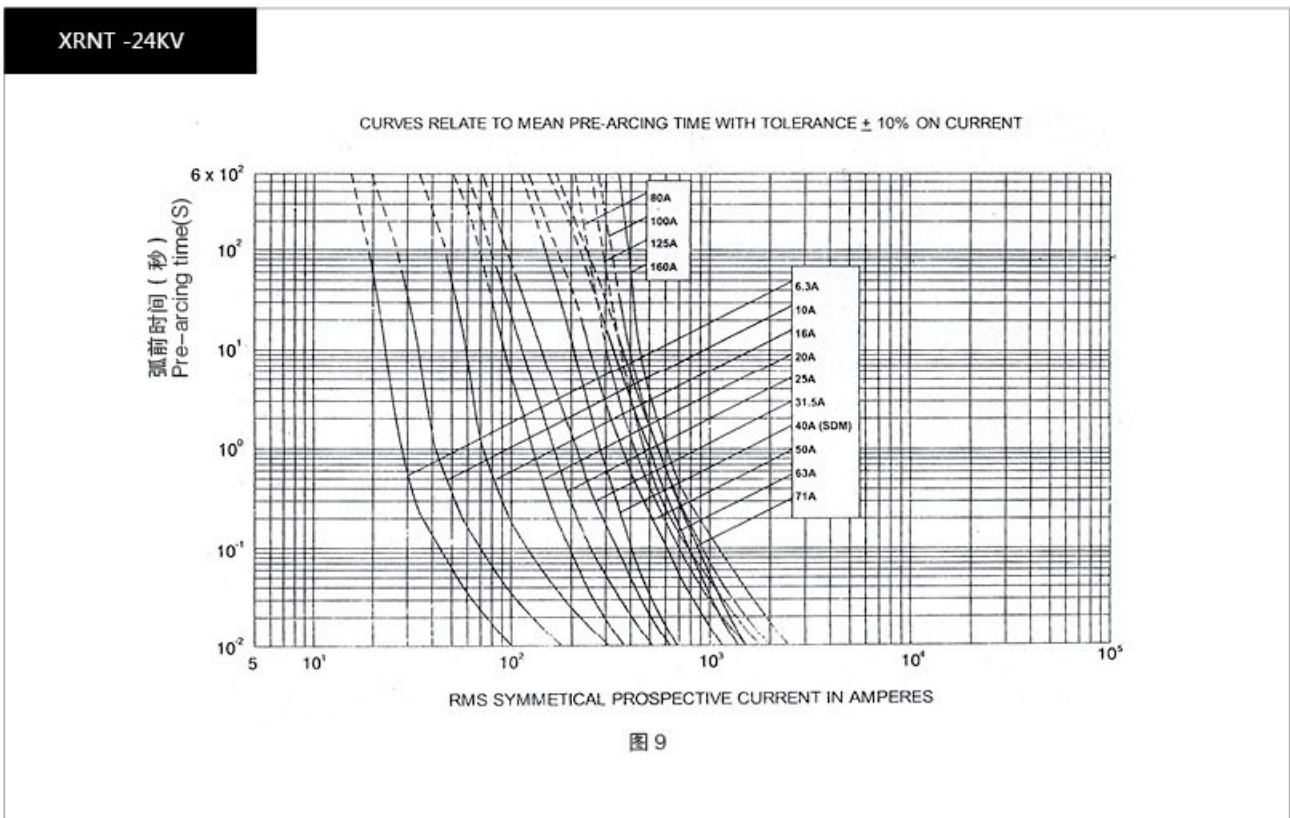
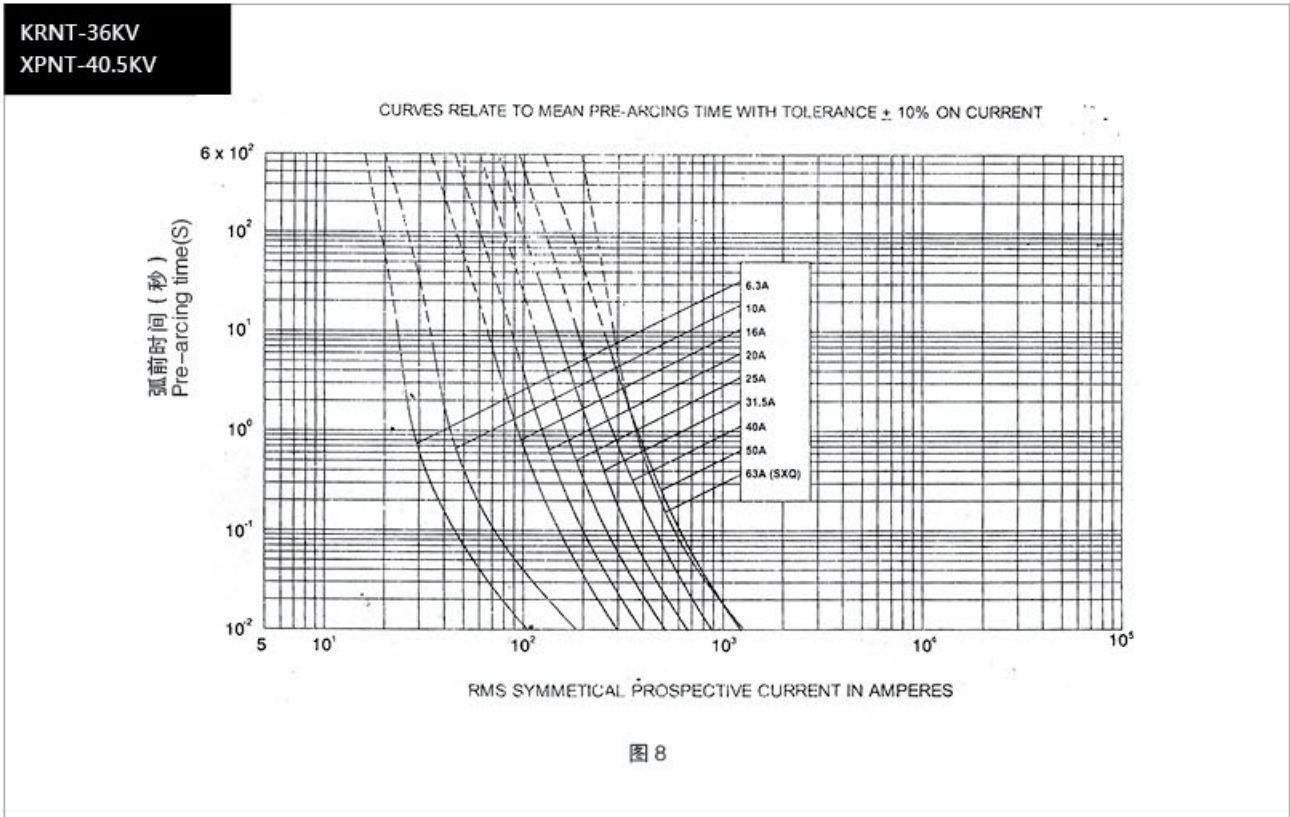
表 8 Table 8

变压器容量 KVA Transformer capacity	变压器初级电压 40.5KV Transformer primary voltage	
	熔断器额定电压 KV Fuse rated current	熔断器额定电流 A Rated current of fuse
50	35	2
100		3.15
125		5
160		5-6.3
200		6.3
250		8-10
315		10-12
400		12-16
500		16
630		20-25
800		25-31.5
1000		31.5-40
1250		40-50
1600		50
2000		63

特性曲线图 | Property Curve Diagram



特性曲线图 | Property Curve Diagram



High Voltage Limit-Current Fuse For Protection Transformer (England BS Standard)

变压器保护用高压限流熔断器 (英国 BS 标准)



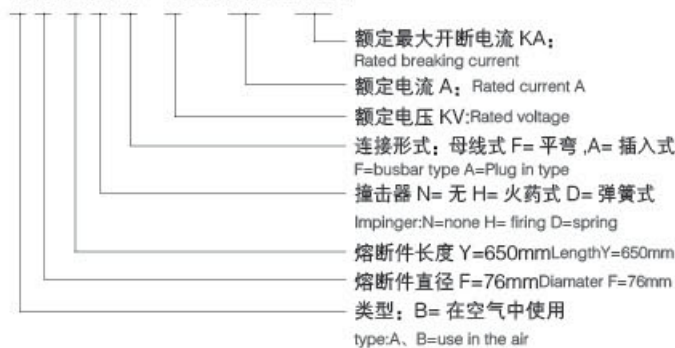
产品用途 | Products Usage

本产品适用于户内交流 50Hz, 额定电压 40.5KV 系统, 可与其它保护电器 (如: 负荷开关, 真空接触器等) 配合使用作为电力变压器及其它电力设备的过载或短路保护。

These devices are suitable for a.c.50HZ, rated voltage 40.5 power systems and they can be used with other protection electric apparatus (such as load switch, vacuum contactor) as protection of transformer and other power equipment against overload or short-circuits.

型号说明 | Type Instruction

□□□□□ - □ kV/ □ A-31.5kA



X R N T □ - □ kV/ □ A-31.5kA



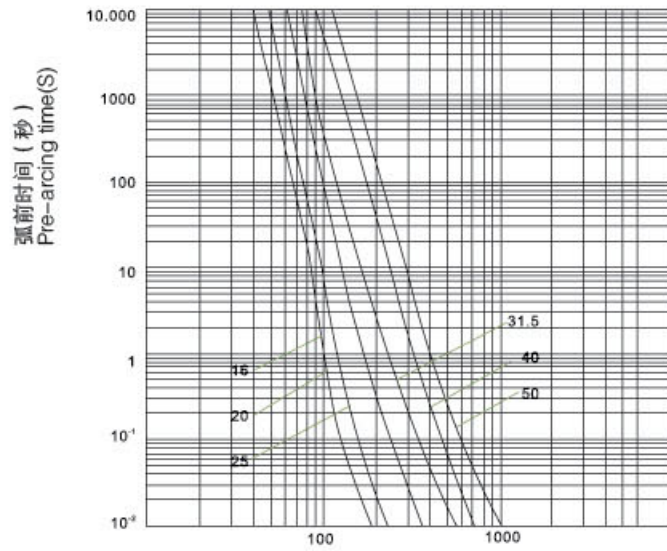
基本参数 | Basic Parameters

表 9 Table 9

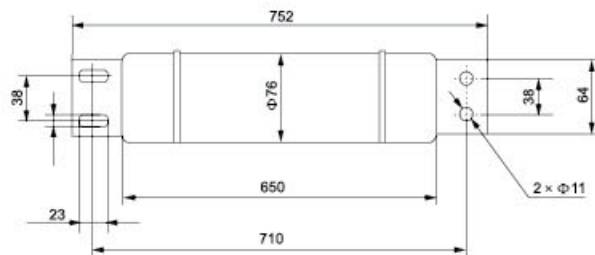
型号 Type	额定电压 A Rated voltage	熔断件额定电流 A Rated current of the fuse link(A)	主要参数 mm Main parameter		额定最大开断 电流 kA Rated breaking current	外形尺寸 Overall dimension
			长度 length	直径 diameter		
BFY □ -40.5KV/ □ A	40.5	3.15、6.3、10、16、20、25、31.5、40、50	650	p76	31.5	插入式见图 10
XRNT □ -40.5 KV/ □ A -31.5-1						母线式见图 11
						见图 12

特性曲线图 | Property Curve Diagram

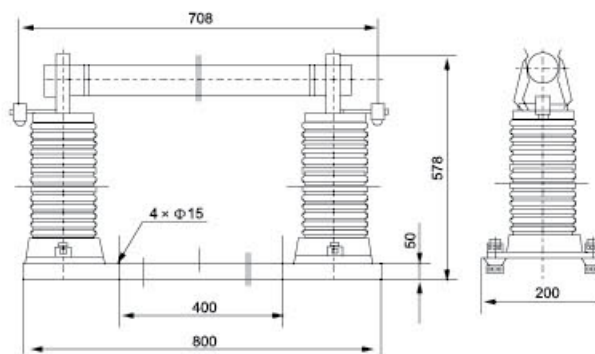
BFY □ -40.5
XRNT □ -40.5



40.5KV 熔断件



40.5KV 熔断器



High Voltage Limit-Current Fuse For Protection Transformer (England BS Standard)

变压器保护用高压限流熔断器 (英国 BS 标准)



产品用途 | Products Usage

本产品适用于户内交流 50Hz, 额定电压为 3.6KV、7.2KV、12KV 系统, 可与其它保护电器 (如: 负荷开关, 真空接触器等) 配合使用作为电力变压器及其它电力设备的过载或短路保护。

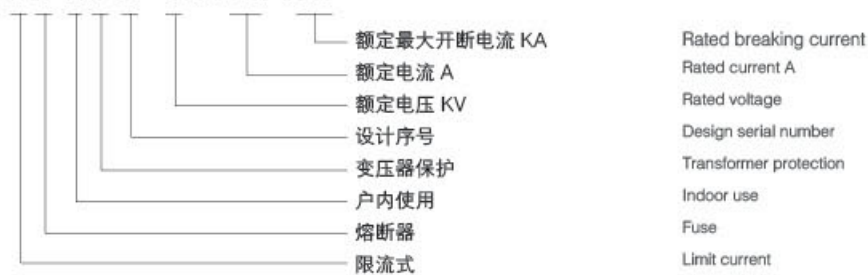
These devices are suitable for a.c.50HZ, rated voltage 3.6KV、7.2KV、12KV power systems and they can be used with other protection electric apparatus (such as load switch, vacuum contactor) as protection of transformer and other power equipment against overload or short-circuits.

型号说明 | Type Instruction

□□□□□ - □ kV/□ A-50kA



X R N T □ - □ kV/□ A-50kA



基本参数 | Basic Parameters

表 10 Table 10

型号 Type	等同型号 Same type	额定电压 kV Rated voltage	熔断件额定电流 A Rated current of the fuse link(A)	主要参数 mm Main parameter		额定最大开断电流 kA Rated break current KA
				C	ΦD	
XRNT □ -3.6	ADF *□	3.6	6.3、10、16、20、25、31.5、40	254		
	ADG *□		6.3、10、16、20、25、31.5、40、50、63、80、100	359		
XRNT □ -7.2	ADF *□	7.2	6.3、10、16、20、25、31.5、40、50、63	254	Φ51	50
	BDG *□		6.3、10、16、20、25、31.5、40、50、63、80	359		
	AFF *□		80、100	254		
	BFG *□		100	359	Φ76	
	BKG *□		125、140、160			
XRNT □ -12	BDG *□	12	6.3、10、16、20、22.4、25、31.5、35.5、40、45、50	359	Φ51	
XRNT □ -12	BFG *□	12	56、63、71、80、90、100	359	Φ76	
	AKG *□		112、125			
	AKG *□		160、200			

注：1、以上单管额定参数，可根据用户需要采用固定结构将熔断器并联，以得到高的额定电流值；
2、* 代表撞击器的不同种类

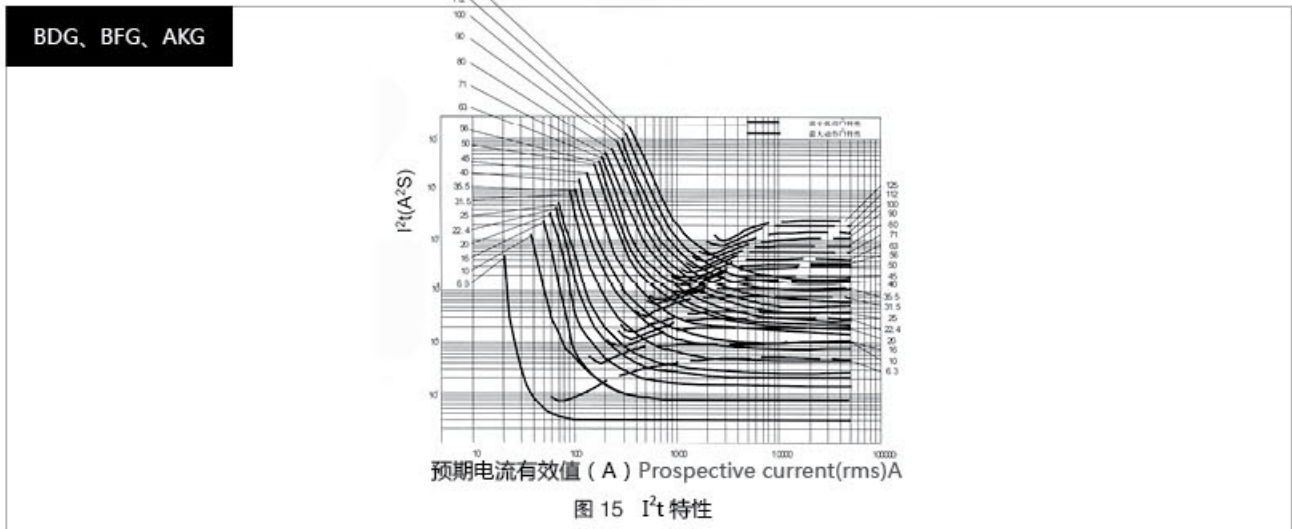
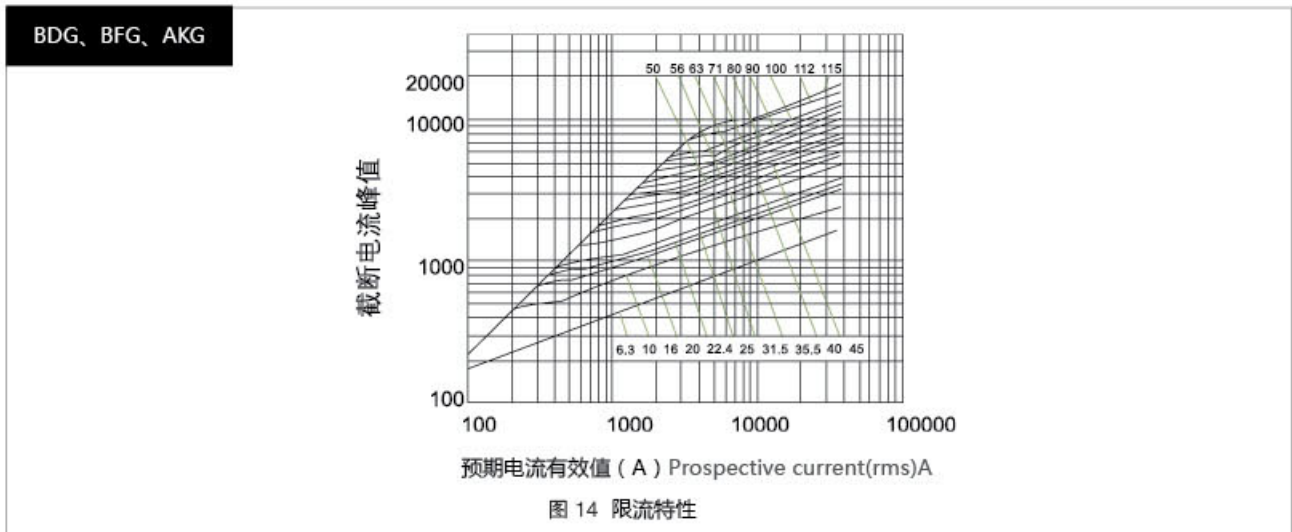
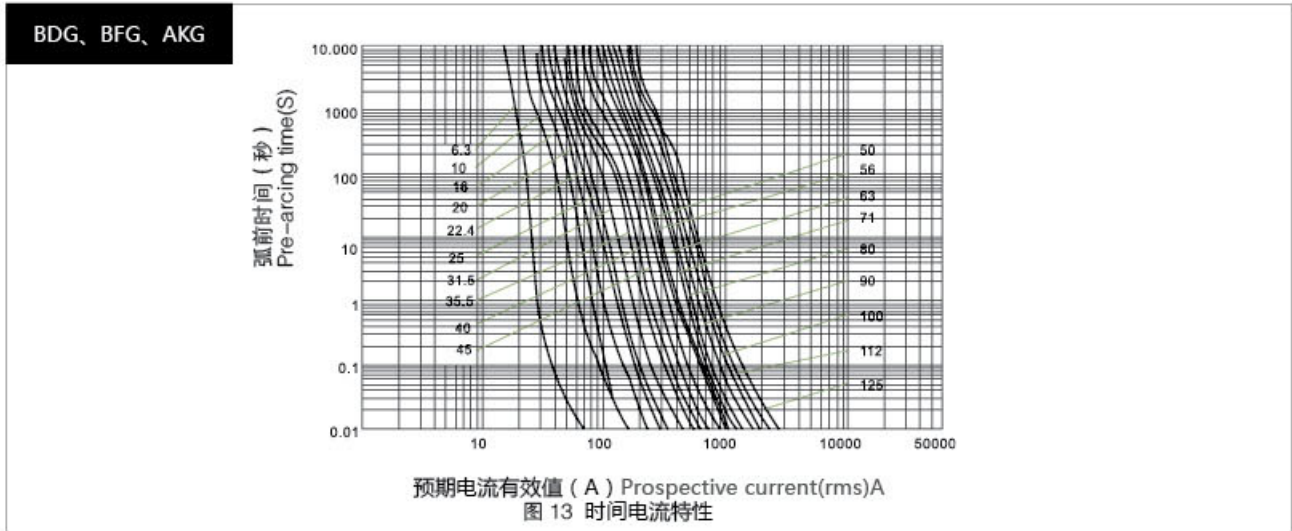
Note: 1. As for the rated value of above single tube, fixed structure can be used to make the fuse in parallel connection according to user's requirement, so as to obtain higher rated current;
2. * Denotes different types of striker.

熔断器的选用 | The Selection of Fuse

表 11 Table 11

变压器容量 kVA transformer capacity	变压器初级电压 3.6kV Transformer primary voltage		变压器容量 kVA transformer capacity	变压器初级电压 7.2kV Transformer primary voltage		
	熔断器额定电压 kV Fuse rated current	熔断器额定电流 A Rated current of fuse		熔断器额定电压 kV Fuse rated current	熔断器额定电流 A Rated current of fuse	
100	3.6	31.5	100	7.2	20	
125		40	125		20	
160		50	160		25	
200		63	200		31.5	
250		80	250		40	
300/315		90	300/315		50	
					400	71
					500	80
			630		100	
			750/800		140	
			1000	160		
变压器容量 kVA transformer capacity	变压器初级电压 12kV Transformer primary voltage					
	熔断器额定电压 kV Fuse rated current KA	熔断器额定电流 A Rated current of fuse A				
100	12	16				
125		16				
160		16				
200		20				
250		25				
300/315		31.5				
400		40				
500		50				
630		63				
750/800		71				
1000		90				
1250		112				
1500/1600		125				

特性曲线图 | Property Curve Diagram



安装及外形尺寸 | Outline And Installation Size

表 12

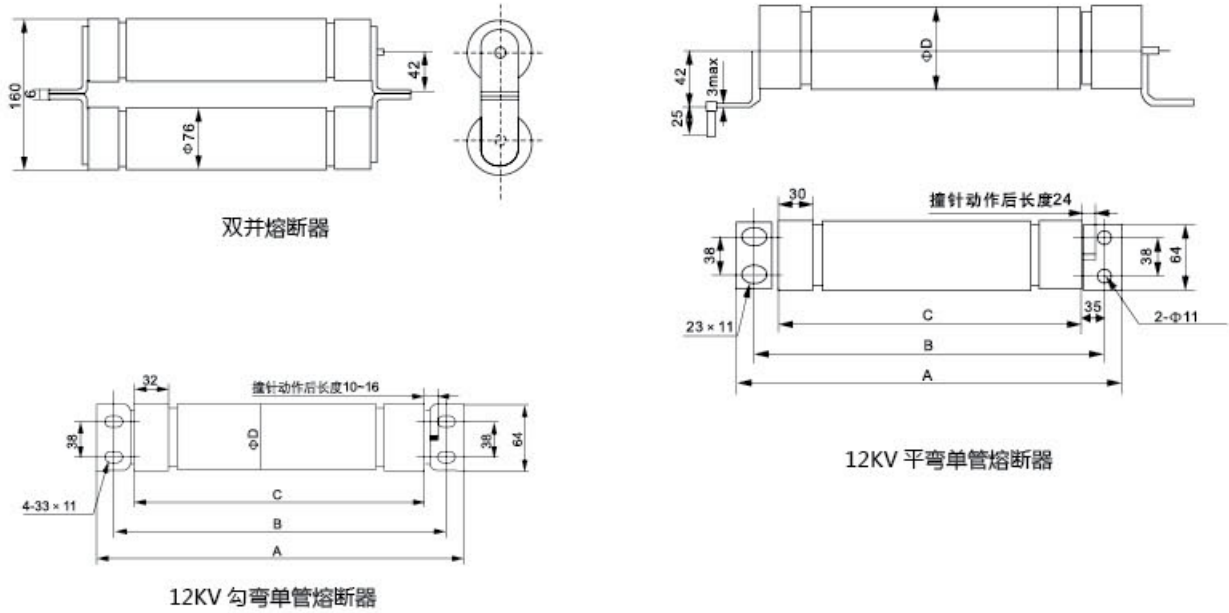
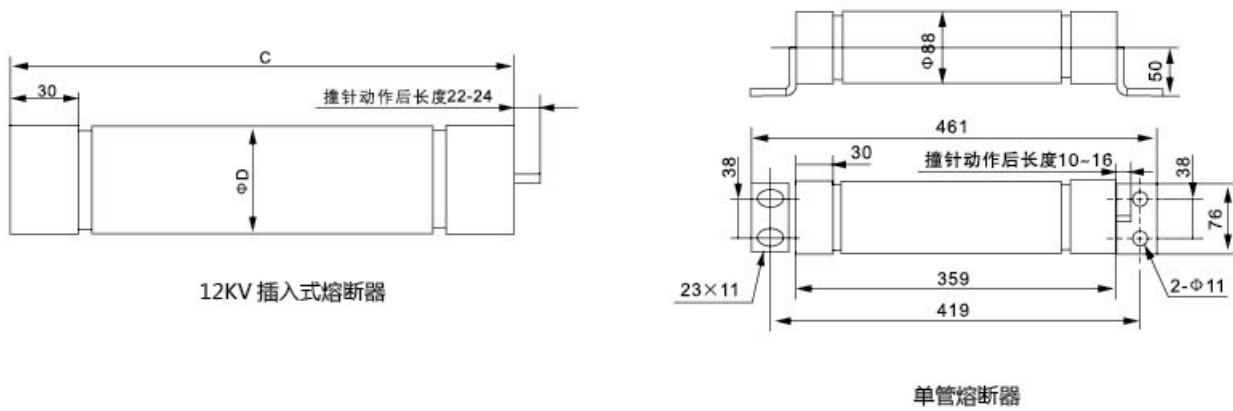


表 12 Table 12

型号 Type	A	B	C	ΦD
ADF	356	314	254	51
BDG	461	419	359	51
AFF	356	314	254	76
BFG	461	419	359	76
A(B)KG	461	419	359	76

表 13



High Voltage Limit-Current Fuse For Protection Transformer (England BS Standard)

变压器保护用高压限流熔断器 (英国 BS 标准)

表 13

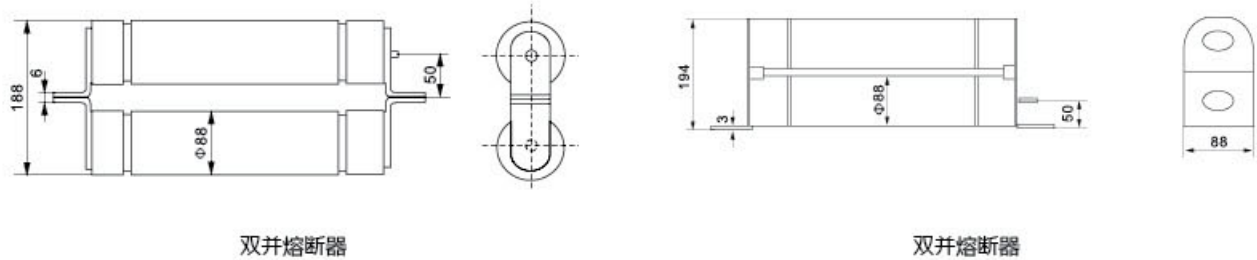


表 13 Table 13

型号 Type	A	B	C	ΦD
ADF	356	314	254	51
ADG	461	419	359	51
BDG	461	419	359	76
AFF	356	314	254	76
BFG	461	419	359	76
A(B)KG	461	419	359	76

熔断器的选用 | The Selection of Fuse

表 14 Table 14

变压器容量 KVA Transformer capacity KVA	7.2KV	12KV
	熔断器额定电流 A Rated current of the fuse (A)	熔断器额定电流 A Rated current of the fuse (A)
100	20	16
125	20	16
160	25	16
200	31.5	20
250	40	25
315	50	31.5
400	71	40
500	80	50
630	100	63
800	140	71
1000	160	90
1250		112
1600		125

High Voltage Limit-Current Fuse For Wholly-scope Protection Transformer

全范围保护用高压限流熔断器

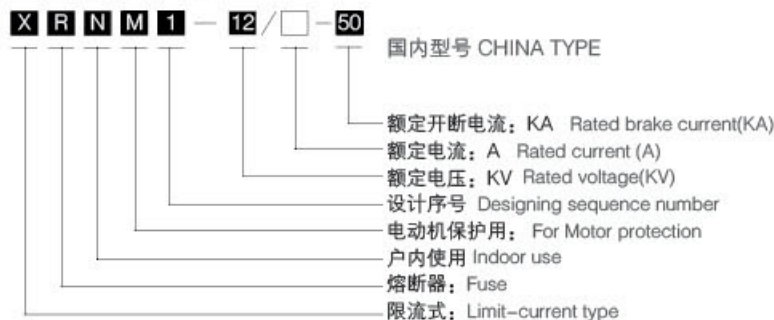


产品用途 | Products Usage

本产品适用于户内交流 50Hz, 额定电压 12KV 系统, 可与其它保护电器 (如: 负荷开关, 真空充气柜等) 配合使用作为电力变压器及其它电力设备的过载或短路保护。

These devices are suitable for a.c.50HZ, rated voltage 40.5 power systems and they can be used with other protection electric apparatus (such as load switch, vacuum contactor) as protection of transformer and other power equipment against overload or short- circuits.

型号说明 | Type Instruction



基本参数 | Basic parameters

表 1 Table 1

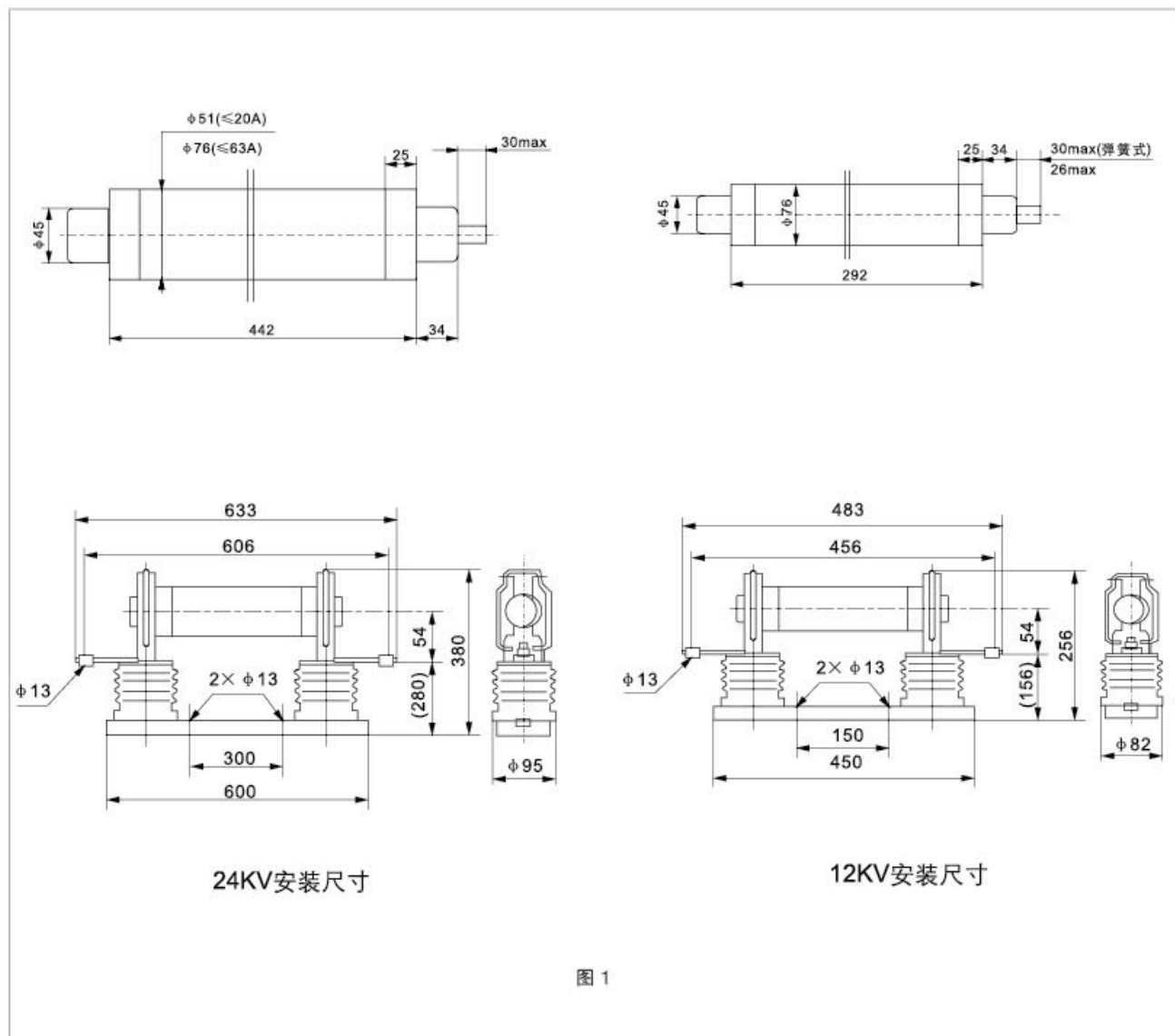
额定电压 (KV) Rated voltage	熔断器额定电流 (A) Rated current of the fuse (A)	熔体额定电流 (A) Rated current of the fuse link(A)	额定开断电流 KA Rated break current KA
12	63	10、16、20、25、25、31.5、40、50、63	50

选用原则 | Selecting Principles

表 2 Table 2

变压器初级电压 12KV primary voltage of the transformer 12KV		
变压器容量 KVA Transformer capacity KVA	熔断器额定电流 A Fuse rated current (A)	熔断器型号 Fuse type
< 125	10	
160	16	
200-250	20	
315	25	
400	31.5	
500	40	
630	50	
800	63	

安装及外形尺寸 | Outline And Installation Size

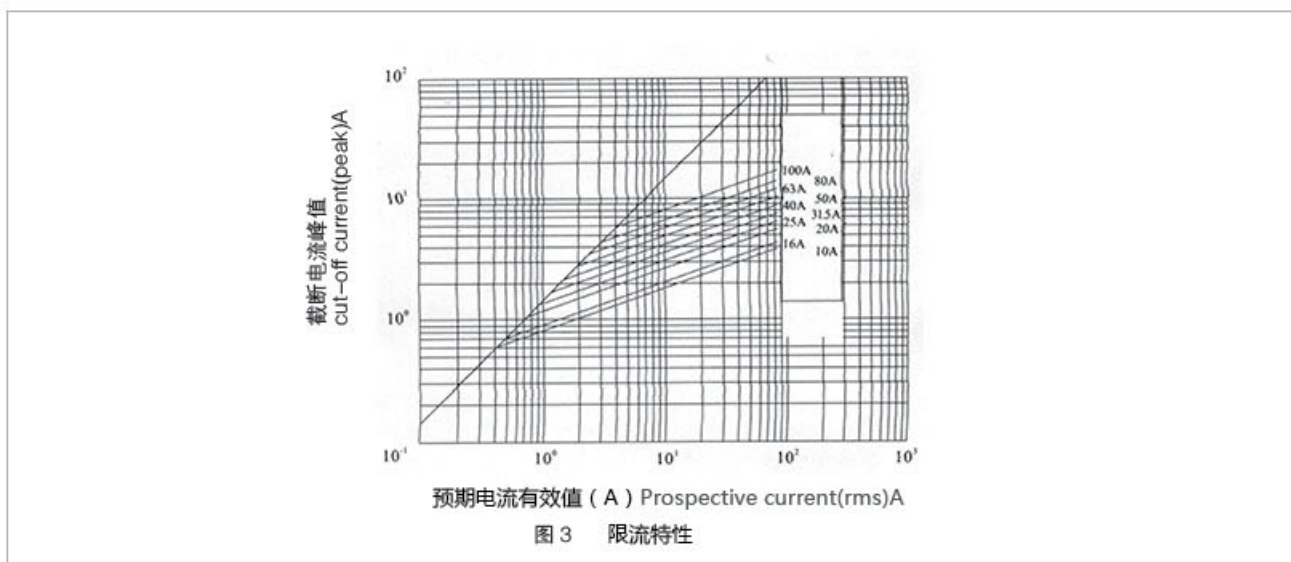
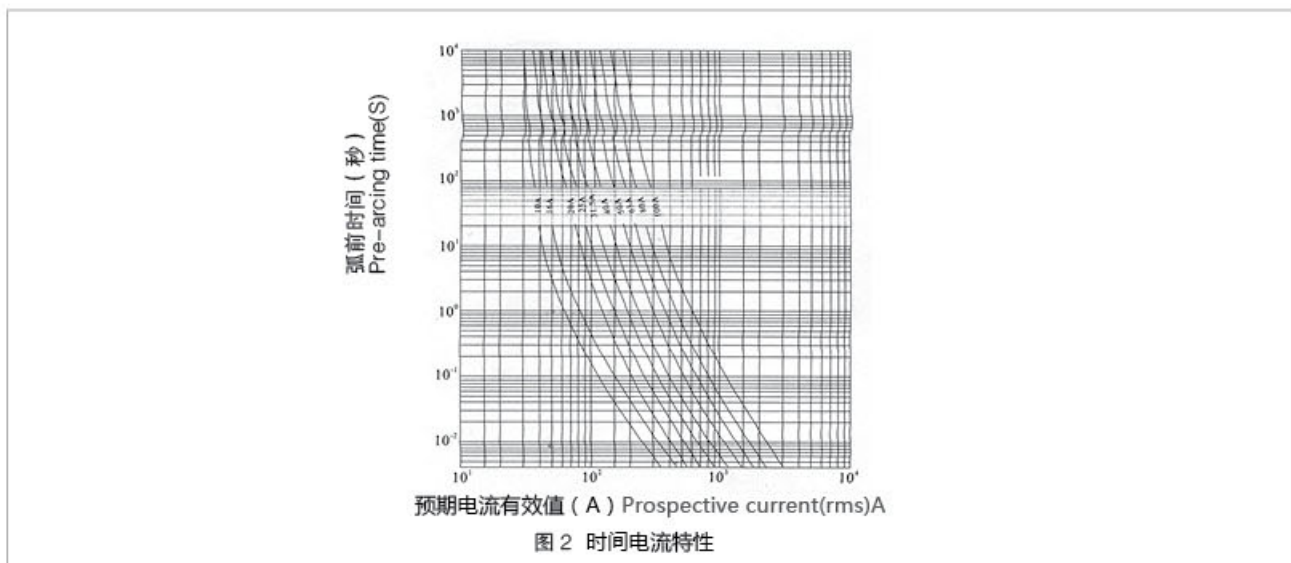


技术数据 | Technique Data

表 3 Table 3

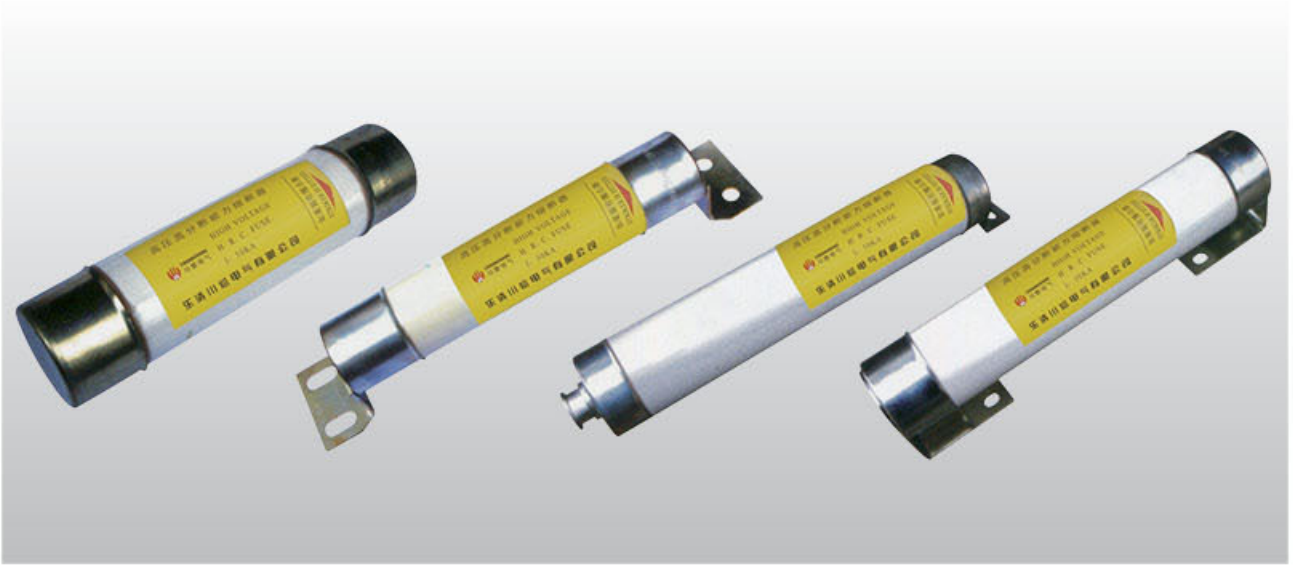
型号 Type	额定电压 UN (KV) Rated voltage	额定电流 IN (A) rated current	直径 d (mm) diameter	国外参考型号 Foreign referencet type
XRNT □	12	10	76	FFLAJ
		16		
		20		
		31.5		
		40		
		50		
		63	88	
		80		
		100		

特性曲线图 | Property Curve Diagram



High Voltage Limit-Current Fuse For Protection Electrical Motor(England BS Standard)

电动机保护用高压限流熔断器(英国BS标准)



产品用途 | Products Usage

本产品适用于户内外交流 50Hz, 额定电压 3.6KV 系统及 7.2KV 12Kv 的系统, 可与其它保护电器 (开关、真空断路器等) 配合使用, 作为 高压电动机及其它电力设备的过载或短路等的保护元件。

These devices are suitable for a.c.50HZ, rated voltage 3.6KV, 7.2KV, 12KV power systems and they can be used with other protection electric apparatus (such as load switch, vacuum contactor) as protection of transformer and other power equipment against overload or short-circuits.

型号说明 | Type Instruction

X R N M 1 - □ / □ - **50**



W □ □ □ □



基本参数 | Basic Parameters

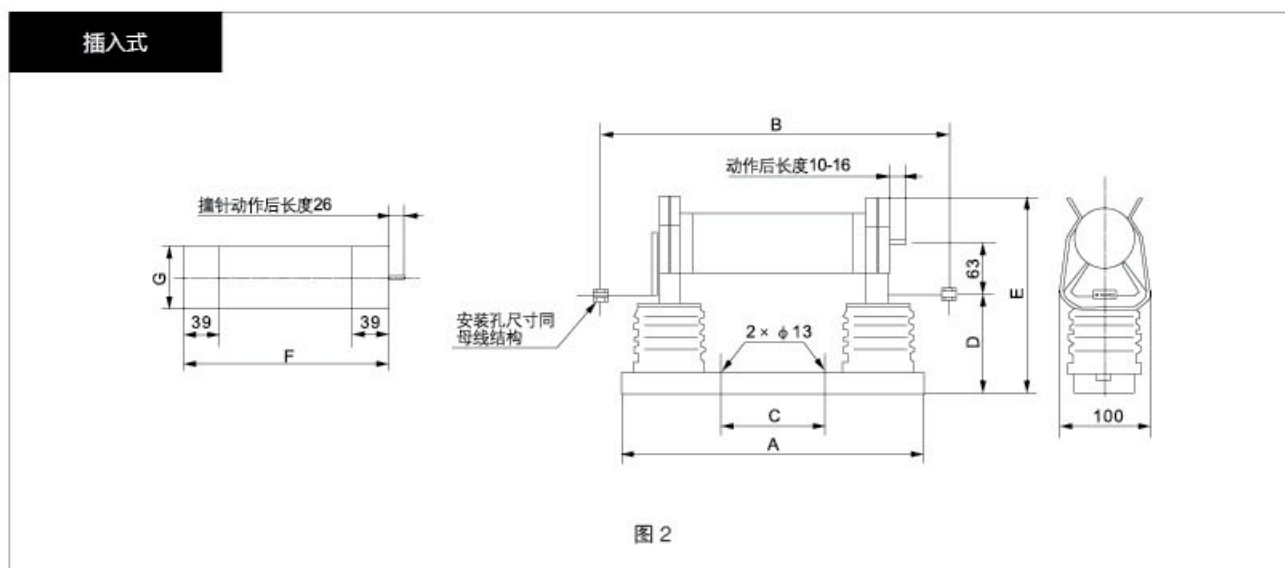
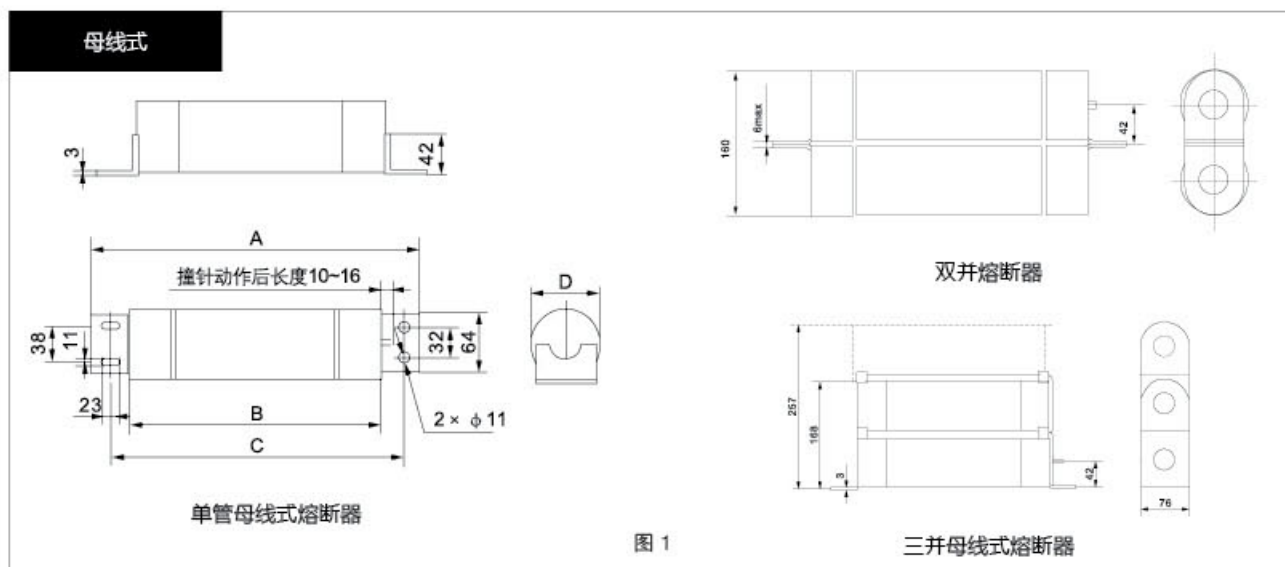
表 1 Table 1

	国内型号 Foreign TYPE	额定电压 (KV) Rated voltage KV	额定开断电流 KA Rated break current KA	熔断器额定电流 A Rated current of the fuse (A)	熔体额定电流 (A) Rated current of the fuse link (A)	主要尺寸 Major dimensions			
						A	B	C	D
XRNM1- 3.6	WDF.0	3.6	50	125	63, 100, 125	337 (390)	254 (312)	305 (340)	51
	WFF.0			200	125, 160, 200				76
	WKF.0			400	250, 315, 355, 400				76
XRNM1- 7.2	WFF.0	7.2		160	25, 31.5, 40, 50, 63,80, 100, 125, 160	486 (500)	403 (461)	454 (150)	76
	WKN.0	12		315	200, 224, 250, 315				

注：以上是单管额定参数，可根据用户需要采用额定结构将熔断器并联，以得到高的额定电流值。

The above is rated parameters for single pipe, the fuses can be parallel connected by fixed structure to get high rated current .

安装及外形尺寸 | Outline And Installation Size





High Voltage Limit-Current Fuse For Protection Electrical Motor(England BS Standard)

电动机保护用高压限流熔断器(英国BS标准)

基本参数 | Basic Parameters

表 2 Table 2

型号 Type	额定电压 UN(KV) Rated voltage KV	额定电流 IN(A) Rated current	直径 × 长度 d × L(mm)	A(mm)	C(mm)	额定开断电流 KA Rated break current KA	国外参考型号 Foreign referencet type	
XRNM1	3.6	50	Φ51 × 254 标准尺寸	337	305	63	WDFHO	
		63						
		80						
		100						
		125						
		160	Φ76 × 254 标准尺寸			50	WKFHO	
		200						
		224						
		250						
		315						
		355						
		400						
	7.2	7.2	25	Φ76 × 403 标准尺寸	486	454	63	WFNHO
			31.5					
			40					
			50					
			63					
			80					
			100					
			125					
			160					
			200					
			224					
			250	Φ76 × 403 Φ88 × 403			50	WDNHO
	315							
	12	12	25	Φ76 × 403 标准尺寸	486	454	63	
			31.5					
			40					
			50					
			63					
			80					
			100					
			125					
160								
200								
224								
50								

主要技术特点 | Main Technical Characteristics

- 熔断器在规定的使用条件下，能可靠分断最小开断电流 (1.6-3) I_n 至 K_A 额定开断电流之间的任何故障电流。
- 时间 - 电流特性如下图，最小开断电流以上部分为虚线表示。
- 限流特性如下图
- I^2t 特性如下图
- In required working conditions, the fuse can break any fault current between the minimum break current 1.6-3 and the rated break current.
- See Chart for time-current property. The section above the minimum break current is by dotted line.
- See Chart for current limn property.
- See Chart for I^2t property.

特性曲线图 | Property Curve Diagram

WFN、WKN

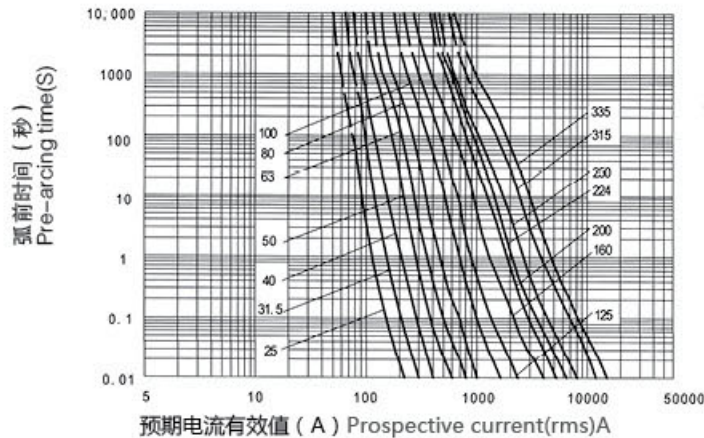


图3 时间电流特性

WDF、WFF、WKF

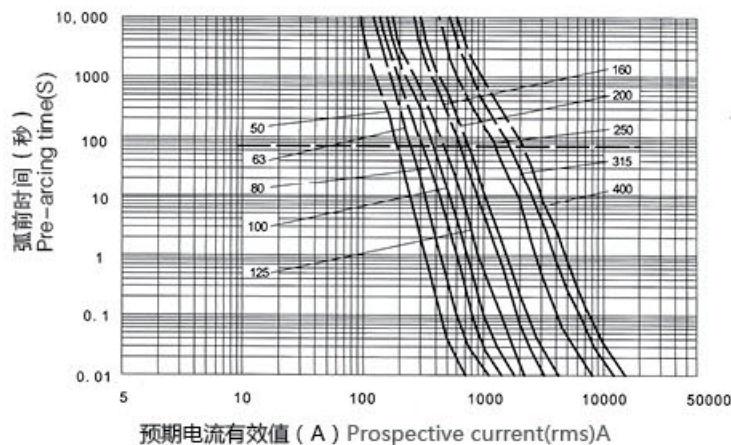
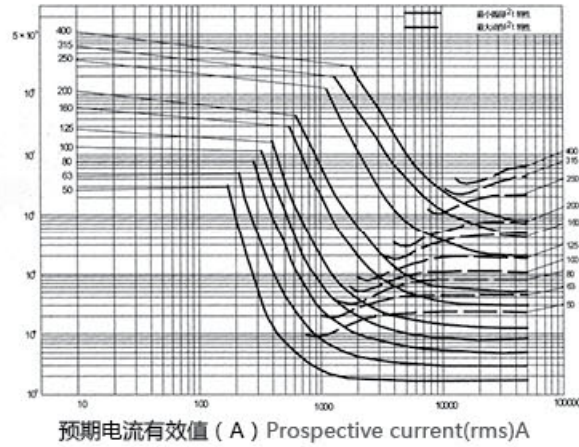


图4 时间电流特性

特性曲线图 | Property Curve Diagram

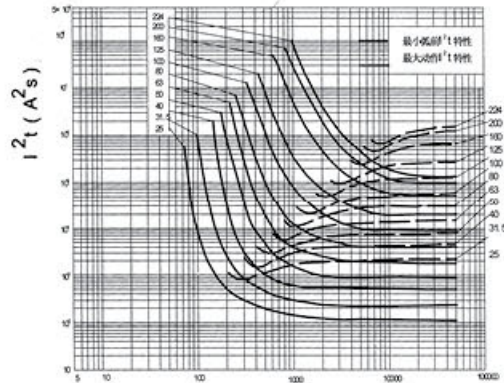
WDF、WFF、WKF



预期电流有效值 (A) Prospective current(rms)A

图 5 I²t 特性

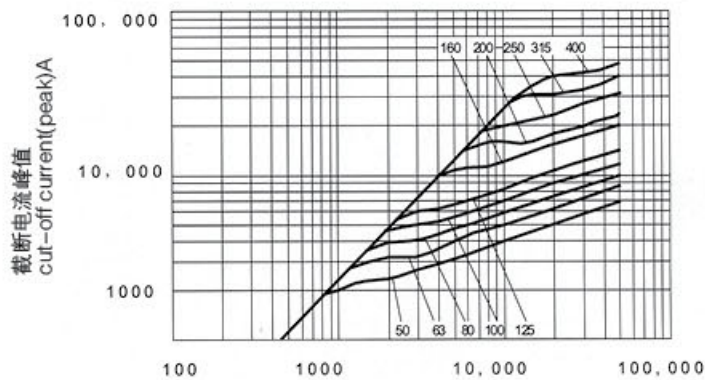
WFN、WKN



预期电流有效值 (A) Prospective current(rms)A

图 6 I²t 特性

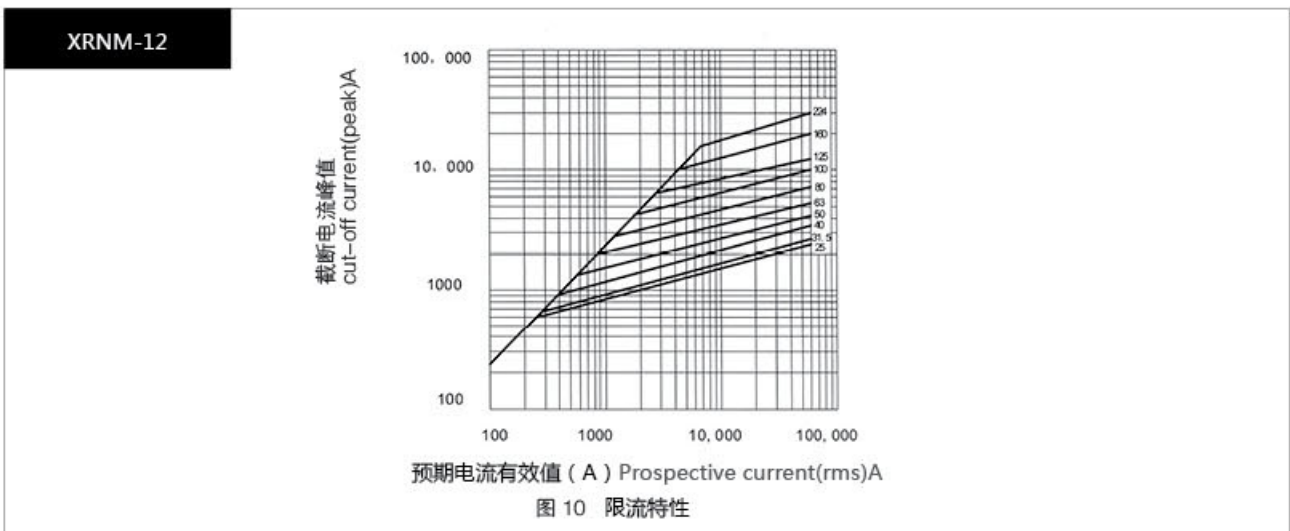
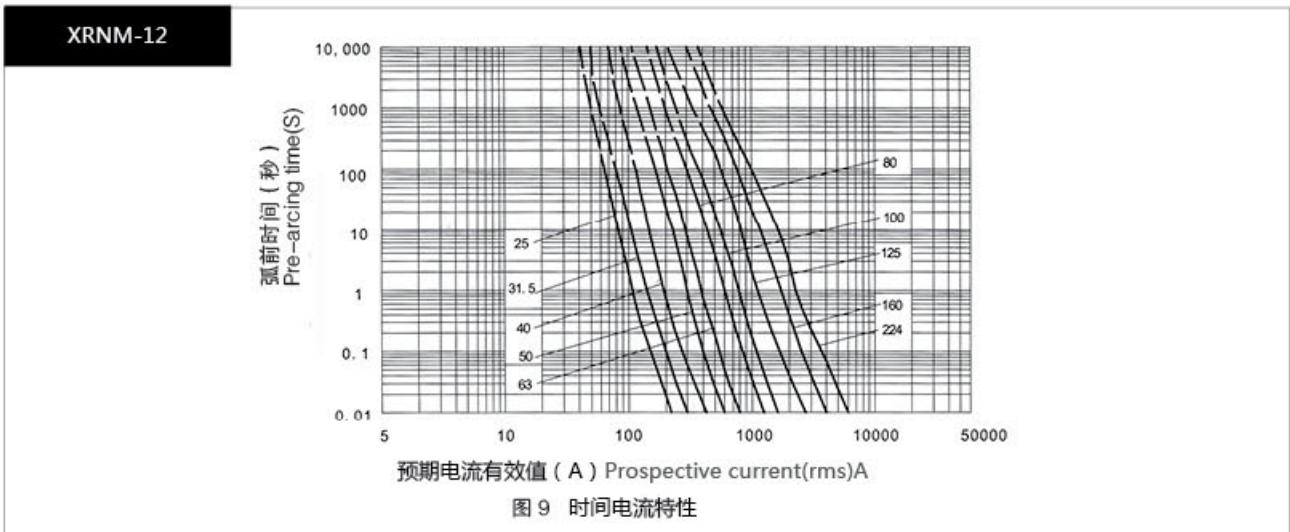
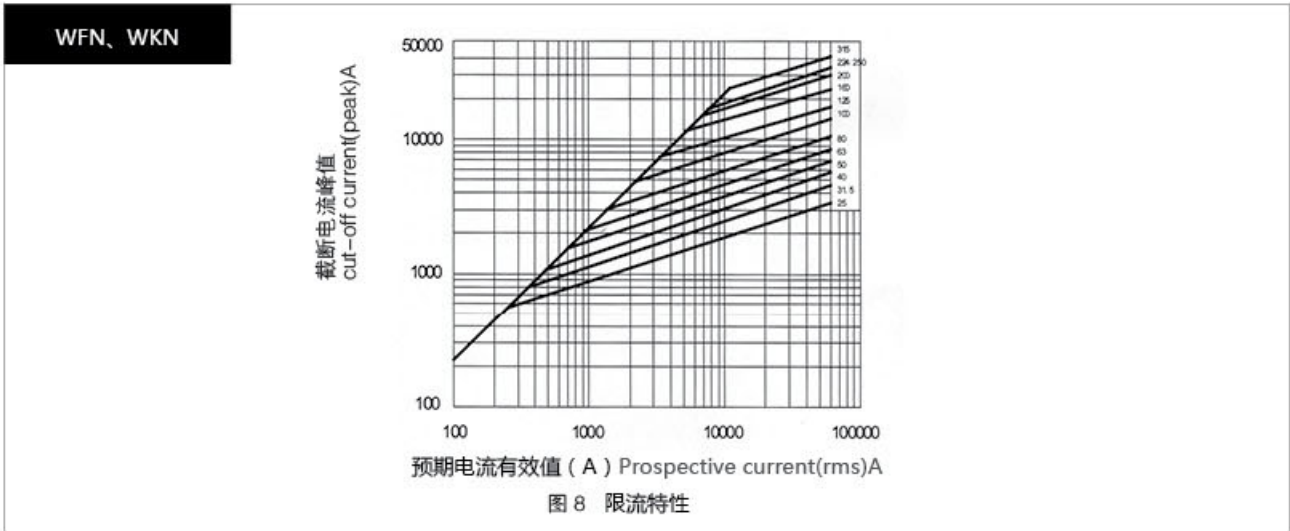
WDF、WFF、WKF



预期电流有效值 (A) Prospective current(rms)A

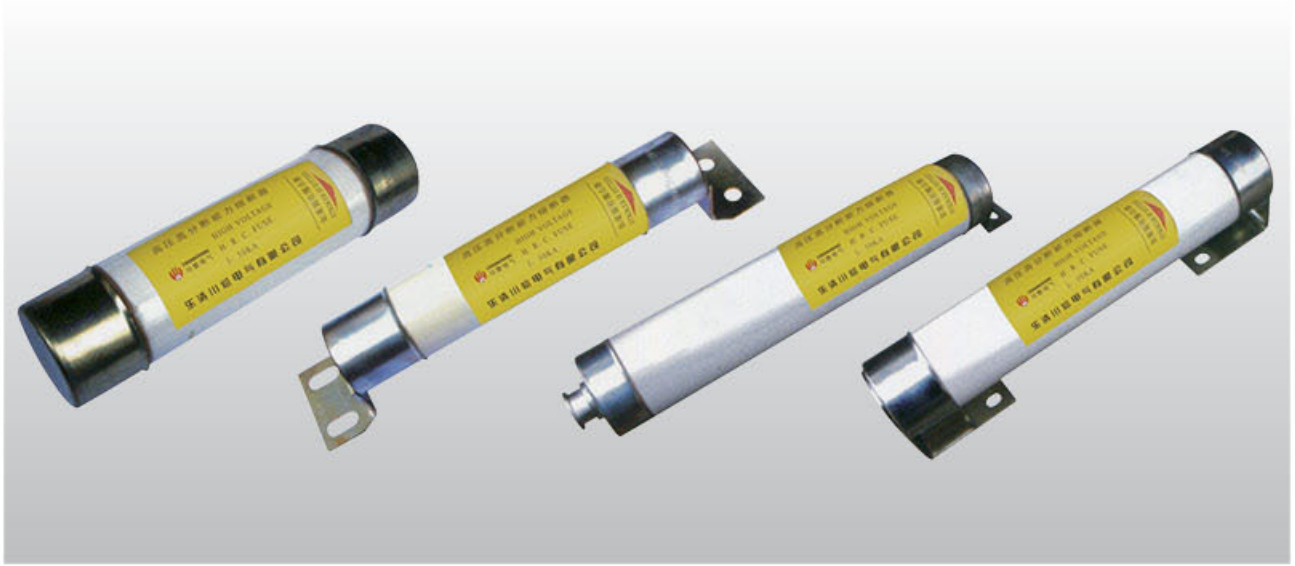
图 7 限流特性

特性曲线图 | Property Curve Diagram



High Voltage Limit-Current Fuse For Protection Electrical Motor(Germany DIN Standard)

电动机保护用高压限流熔断器 (德国 DIN 标准)



产品用途 | Products Usage

本产品适用于户内外交流 50Hz, 额定电压 3.6KV 系统及 7.2KV、12KV 的系统, 可与其它保护电器 (开关、真空断路器等) 配合使用, 作为高压电动机及其它电力设备的过载或短路等的保护元件。

These devices are suitable for a.c.50HZ, rated voltage 3.6KV、7.2KV、12KV power systems and they can be used with other protection electric apparatus (such as load switch, vacuum contactor) as protection of transformer and other power equipment against overload or short-circuits.

型号说明 | Type Instruction

X R N M 1 — □ kV / □ A — □ kA



W □ □ □ □ □ kV / □ A — □ kA



基本参数 | Basic Parameters

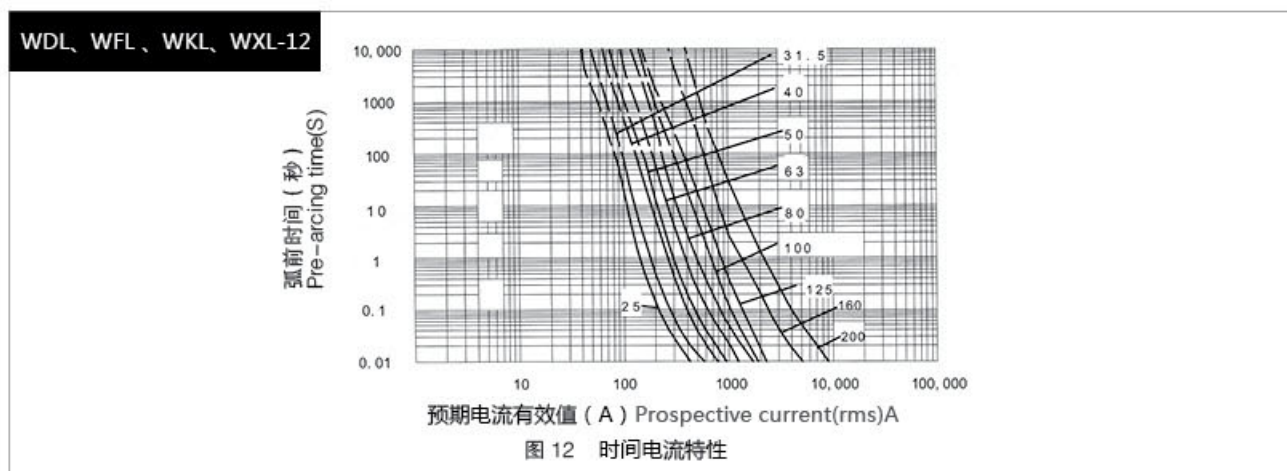
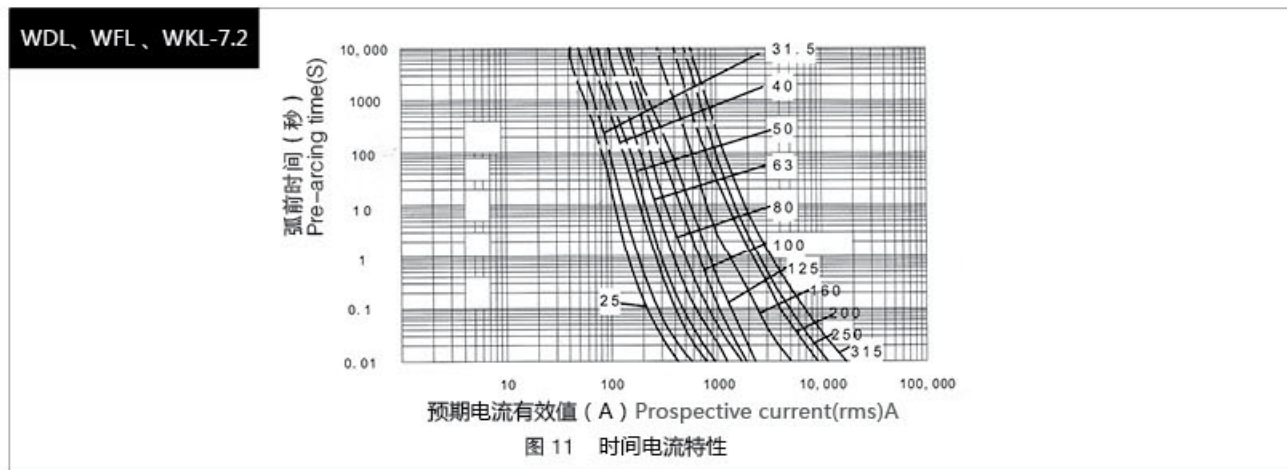
表 3 Table 3

型号	额定电压 (kV)Rated voltage KV	熔断件额定电流 (A)Rated current of the fuse (A)	额定最大开断电流 (kA)Rated break current KA
WDL * J	7.2	25、31.5、40、50、63	50
	12		
WFL * J	7.2	50、63、80、100	
	12		
WKL * J	7.2	125、160	
	12		
WXL * J	7.2	160、200、224、250、315	
	12	160、200	

表 4 Table 4

型号	额定电压 (kV)Rated voltage KV	熔断件额定电流 (A)Rated current of the fuse (A)	额定最大开断电流 (kA)Rated break current KA
WFM * J	7.2	25、31.5、40、50、63、80、100、125、160	50
	12	25、31.5、40、50、63、80、100	
WKM * J	7.2	200、224、250、315	
	12	125、160	
WXM * J	7.2		
	12	200、224	

特性曲线图 | Property Curve Diagram



特性曲线图 | Property Curve Diagram

WFM-12、WKM-12

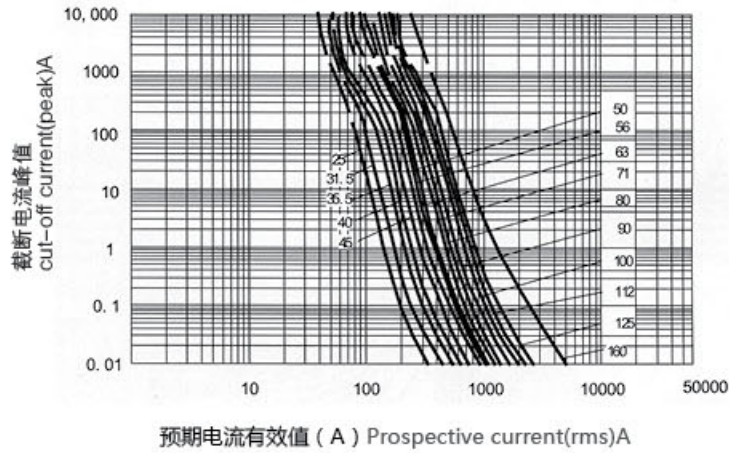


图 13 限流特性

WFM-12、WKM-12

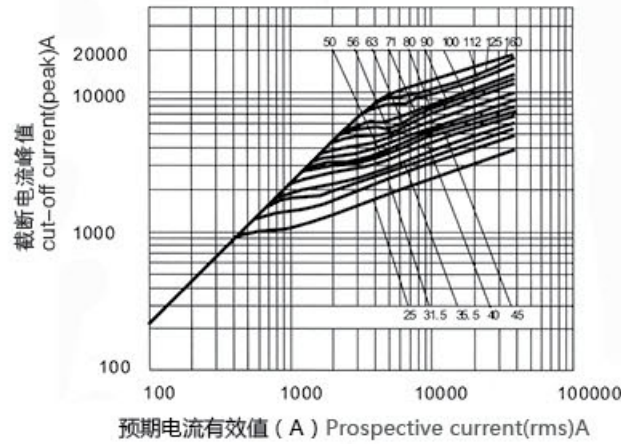


图 14 限流特性

WFM-12、WKM-12

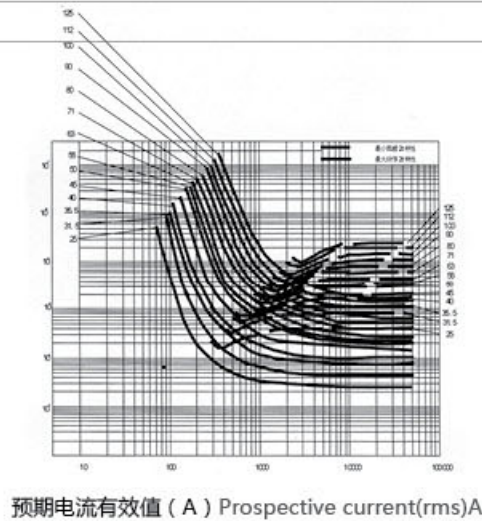


图 15 I²t 特性

安装及外形尺寸 | Outline And Installation Size

熔断件

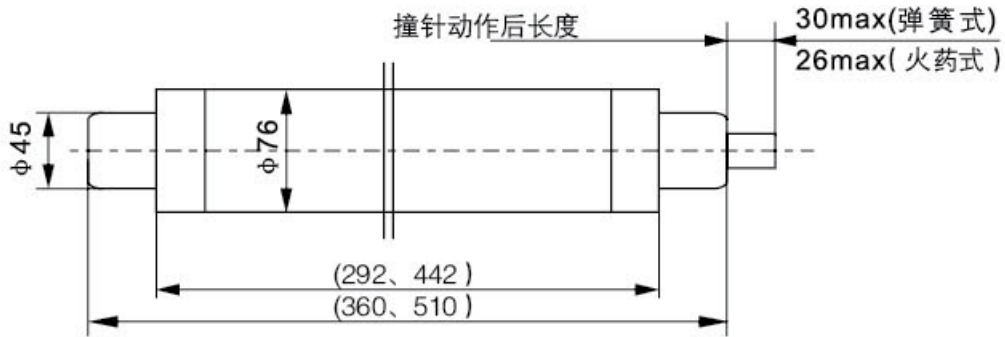


图 16

$\phi 76 \times 292$ 熔断器

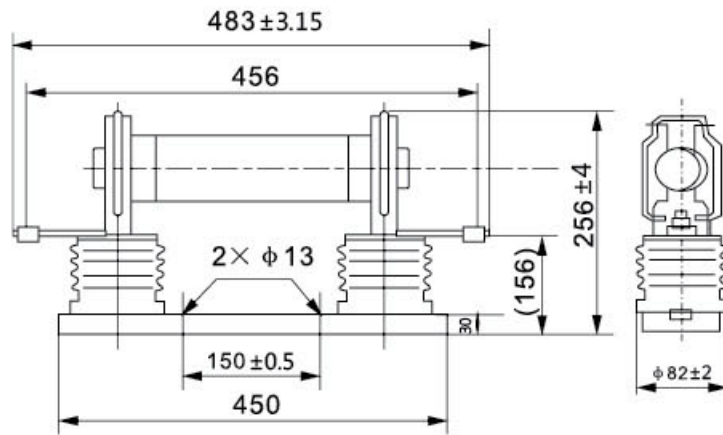


图 17

$\phi 76 \times 442$ 熔断器

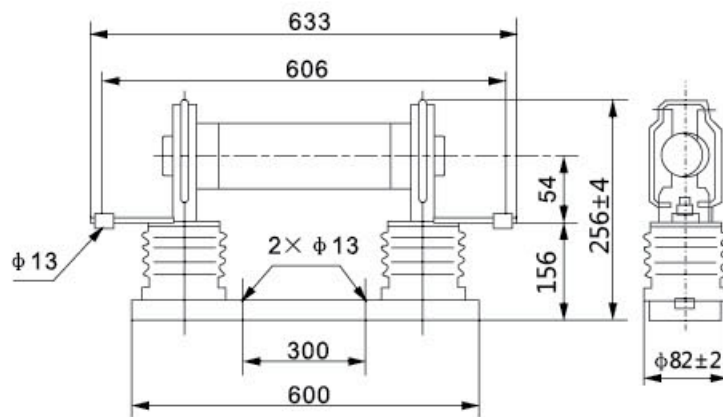


图 18

熔断器的使用 | The Use Of Fuse

用于直接起动的熔断器额定电流的使用按如下公式。

$$I_y = N I_n \delta$$

其中: I_n —电动机满载电流

δ —综合系数如表 5

N —起动电流与满载电流之比, 通常 $N=6$

I_y —在起动时间内的电流值

See following formula for the rated current of fuse for direct start.

$$I_y = N I_n \delta$$

In which, I_n —current in full load of motor

δ —coefficient of colligation shown as table 5

N —ratio of starting current and full load current, generally

$N=6$

I_y —current during start

表 5 Table 5

每小时起动次数 n	2	4	8	16
δ	1.17	1.9	2.1	2.3

将起动时间对应的 I_y 值的点绘制在时间电流特性曲线上, 点所对应的曲线或靠近这一点右边的曲线即是所使用的熔断器, 熔断器额定电流应大于 1.3 倍电动机的满载电流。

When drawing the point of I_y value corresponding to start time on the time-current characteristic curve, the curve corresponding to the point or curve next to the right side of the point is the fuse used, the rated current of fuse shall be more than 1.3 times of full load current of motor.

安装及外形尺寸 | Outline And Installation Size

高压熔断器信号指示装置, 通过与高压熔断器连接, 其上的微型开关, 可以监控高压熔断器的工作状态。利用绝缘柔性可弯曲传动装置, 将熔断器撞击器的运动传至微型开关, 微型开关有一对交流 250V / 5A 一常开一常闭的转换接点。

本装置撞击器端可以利用连接板 1 配套高压弹簧夹触头安装, 此配件螺孔直接与高压熔断器弹簧夹触头螺孔相匹配, 不必另外钻孔; 也可利用连接板 2, 高压熔断器无需任何改变, 不管插入式还是母线式接线均可直接对接完成。微动开关端, 统一根据高压熔断器的供电电压, 可安装在距熔断器 500mm 的最大范围内, 另需在底板或其他安装位置配作两个 M5 安装螺孔即可。

The micro-switch on high voltage fuse signal indication device, through connection with high voltage fuse can monitor work state of high voltage fuse. The insulated flexible drive device can be used to transmit the movement of fuse striker to micro-switch, which owns one pair of AC 250V/5A NO NC change-over contact.

This striker end can be mounted with connecting plate 1 equipped with high voltage fuse spring clamp contact, as the tap hole of the former is directly matched with that of the latter, so that it's unnecessary to open hole; connecting plate 2 can also be used without any change of high voltage fuse, it can be jointed directly either through plug-in or bus type connection way. The micro-switch end can be mounted 500m far away from fuse at most according to supply voltage of high voltage fuse, with only two 5M mounting holes opened at the board plate or other mounting positions in addition.

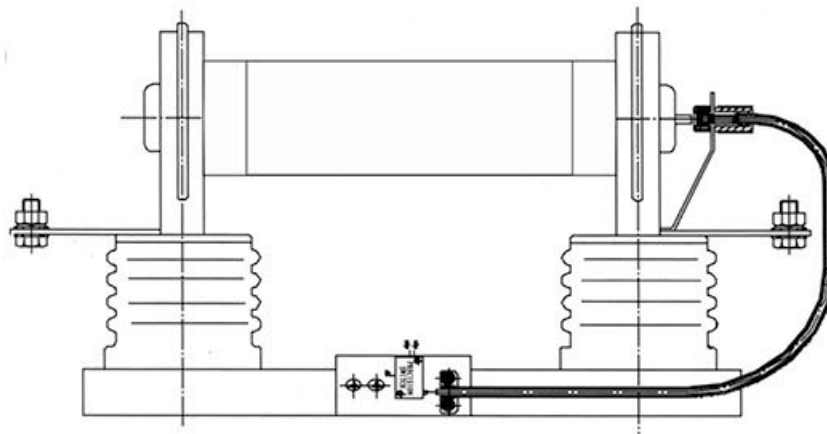
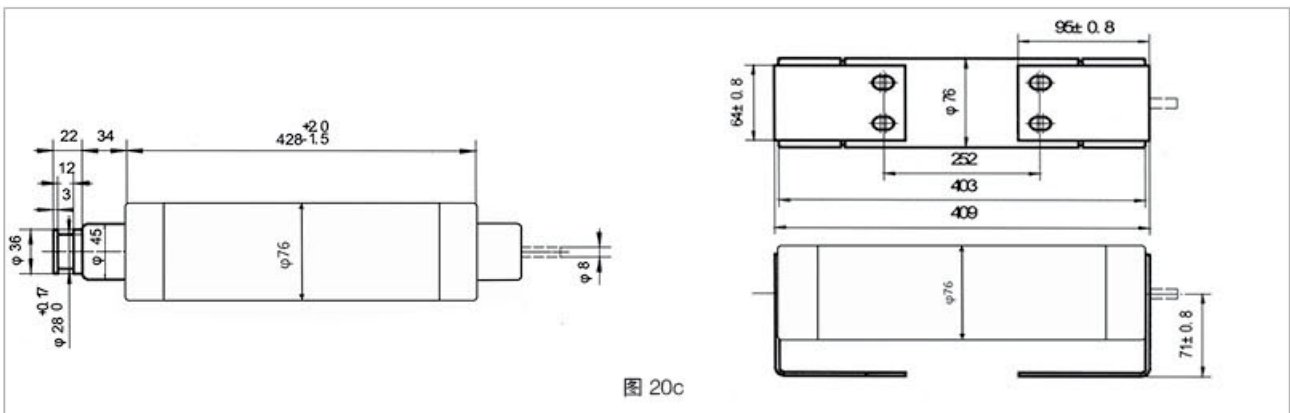
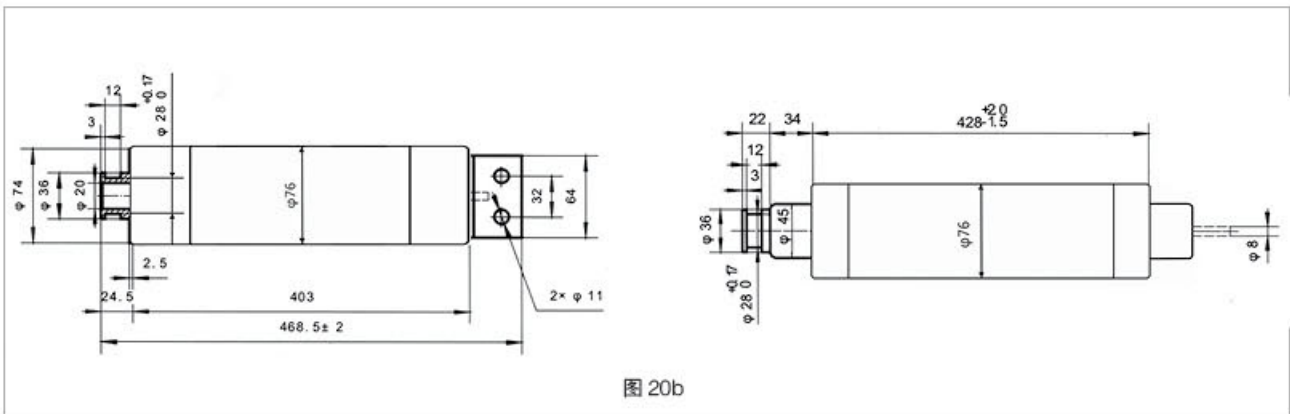
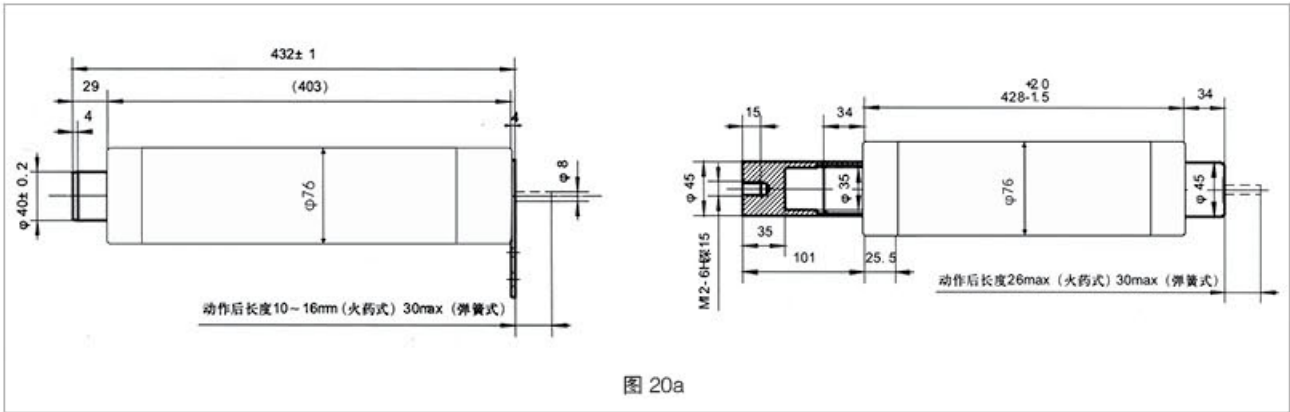


图 19

根据客户需要提供的其它形式的接线形式 |



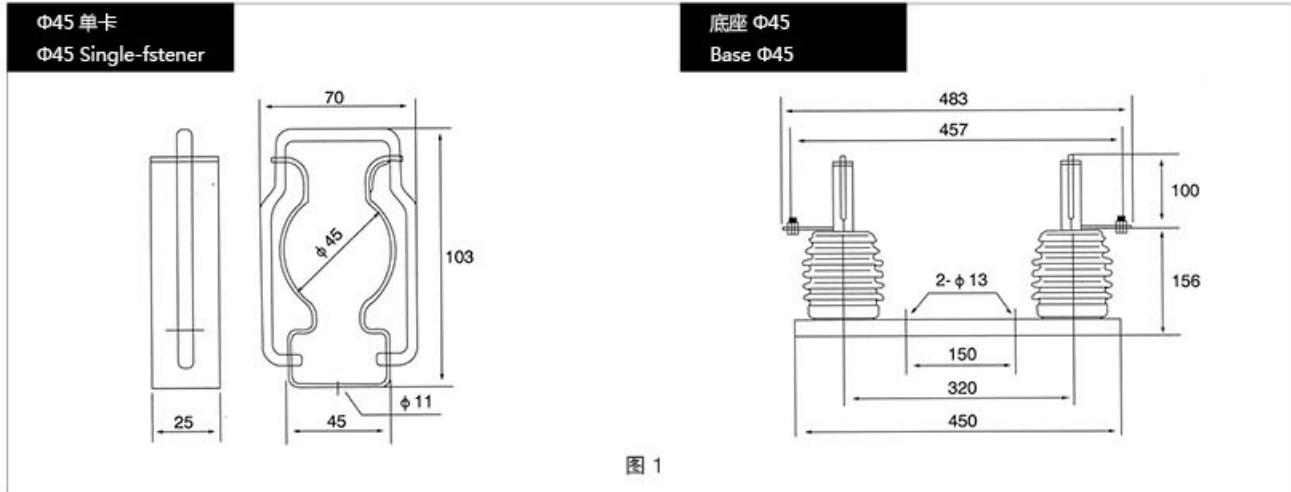
型号 Type	额定电压 (kV) Rated voltage KV	熔断件额定电流 (A) Fuse rated current KA	额定最大 开断电流 (kA)
WFN * J	7.2	25、31.5、40、50、63、 80、100、125、160	50
	12	25、31.5、40、50、63、 80、100	
WKN * J	7.2	200、224、250、315	
	12	125、160	
WXN * J	7.2		
	12	200、224	

型号 Type	额定电压 (kV) Rated voltage	熔断件额定电流 (A) Fuse rated current KA	额定最大 开断电流 (kA)
WFZ * J	7.2	25、31.5、40、50、63、 80、100、125、160	50
	12	25、31.5、40、50、63 、80、100	
WKZ * J	7.2	200、224、250、315	
	12	125、160	
WXZ * J	7.2		
	12	200	

单卡与底座 | Single-fastener And Support Base Date

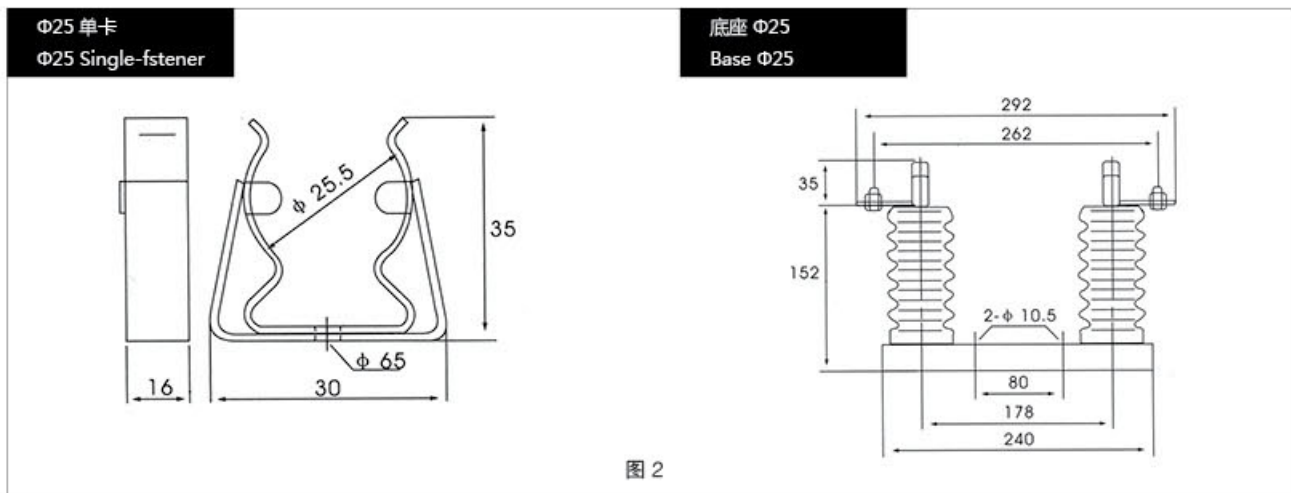
德国 DIN 标准熔断器用单卡及底座 (熔断器长度 L=292mm) 示图

The demonstrated diagram of Germany DIN fuse' single-fastener and base(fuse' s length L=292mm)



XRNP1-12 熔断器用单卡及底座示图

The demonstrated diagram of XRNP1-12 fuse' single fastener and base



单卡与底座 | The Parameter Form of Single-fastener And Base

表 1 Table 1

序号 Serial NO.	名称 / 规格 (mm) Name/ specification(mm)	备注 Remarks
1	Φ25 单卡 Φ25 Single-fastener	可供电压互感器保护熔断器用 Applied to fuse protecting voltage transformer
2	Φ45 单卡 Φ45 Single-fastener	可供电压互感器、变压器、电动机保护熔断器用 Applied to fuse protecting volt power transtormer、transformer and motor
3	Φ76 单卡 Φ76 Single-fastener	可供变压器、电动机保护熔断器用 Applied to fuse protecting volt power transtormer and motor
4	Φ25 单卡 Φ25 Single-fastener	可供电压互感器保护熔断器用 Applied to fuse protecting volt transformer
5	Φ45 单卡 Φ45 Single-fastener	可供电压互感器、变压器、电动机保护熔断器用 Applied to fuse protecting volt power transtormer、transformer and motor
6	Φ76 单卡 Φ76 Single-fastener	可供电压互感器、电动机保护熔断器用 Applied to fuse protecting transtormer and motor

单卡与底座 | Single-fastener And Support Base Date

英国 BS 标准熔断器用单卡及底座

The demonstrated diagram of England BS fuse single-fastener and base

Φ76 单卡

Φ76 Single-fastener

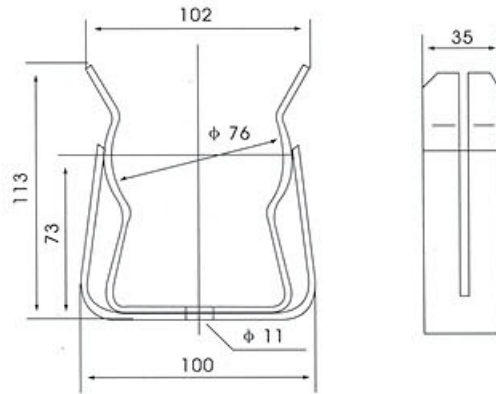


图 3

底座 Φ76

Base Φ76

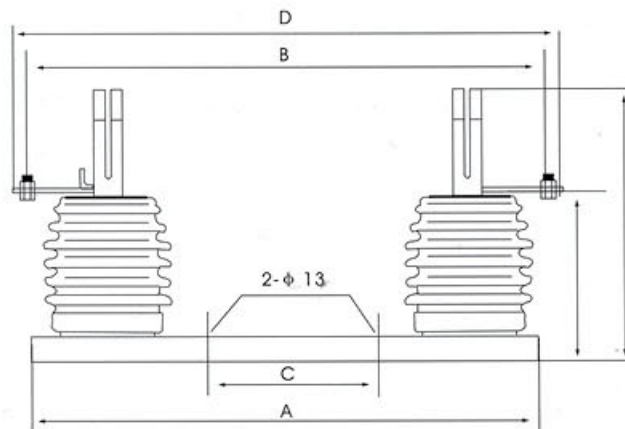


图 4

单卡与底座 | The Parameter Form of Single-fastener And Base

表 2 Table 2

尺寸代码	序号 尺寸 (mm)	A	B	C	D
XRNM1-3.6(WFF、WKF)		390	312	340	344
XRNM1-7.2(WFN、WKN)		500	461	150	493
XRNM1-12(BFG、AKG)		455	417	150	449

SF6 Circnlay Circuit Cabinet Top And Bottom Of Fuse And Fitting

SF6 环网柜上下熔丝座及配件

上熔丝座 U 型接头



上熔丝座



下熔丝座



下熔丝座



卡座弧板

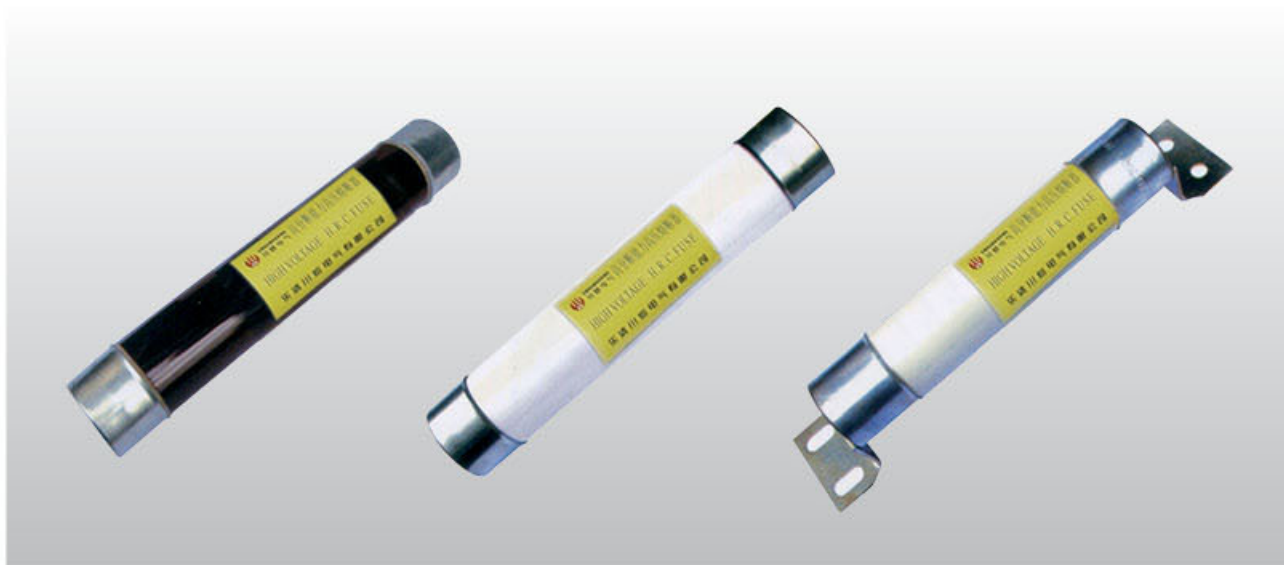


梅花卡座 (长、短两种)



High Voltage Limit-Current Fuse For Protection Oil-immersed Type Transformer

油浸式变压器保护用高压限流熔断器



产品用途 | Products Usage

本产品适用交流 50Hz，额定电压 10KV，在变压器中与其它保护电器（如：负荷开关等）配合使用，作为电力变压器及其它电力设备的过载或短路保护。主要用于美式箱变中作后备保护用。

The product can be used in system with AC 50Hz and rated voltage of 10KV, used together with other protection electric facilities (such as loading switches). It can protect electric transformers and other electric facilities against overloading or circuit break. It is mainly used in American style box transformers as backup protection.

型号说明 | Type Instruction

O **□** **G**

熔断器长度：G=359mm，254mm Length of the fuse
 熔断器的直径：F,F φ 76mm，φ 63mm Diameter of the fuse
 用于油中 Used in oil

基本参数 | Basic Parameters

表 1 Table 1

型号 Type	额定电压 (KV) Rated voltage KV	最高工作电压 (KV) Max working voltage KV	熔断器额定电流 (KA) Fuse rated current KA	熔体额定电流 (A) Rated current of fuse link A
OFG	10	12	125	63、80、100、125
			200	160、200

主要技术特点 | Major Technical Characteristics

- 熔断器在规定的条件下，能可靠分断最小开断电流 (2.5-5) I_n 至额定开断电流为 50KA 之间的任何故障电流。
- 熔断器时间 - 电流特性如图 3，最小开断电流以上部分为虚线。
- 限流特性如图 4。

- The fuse link can break any problem current between the minimum break current (2.5-5) I_n to rated break current 50KA.
- See chart 3 for the fuse time-current property. The upper section above the minimum break current is broken line.
- See chart 4 for limn current property.

安装及外形尺寸 | Outline And Installation Size

XRNT □、 OFG、 OKG

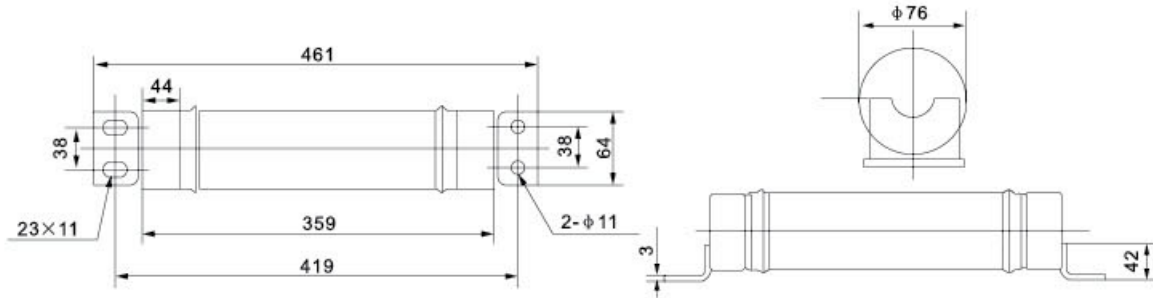


图 1

XRNT □

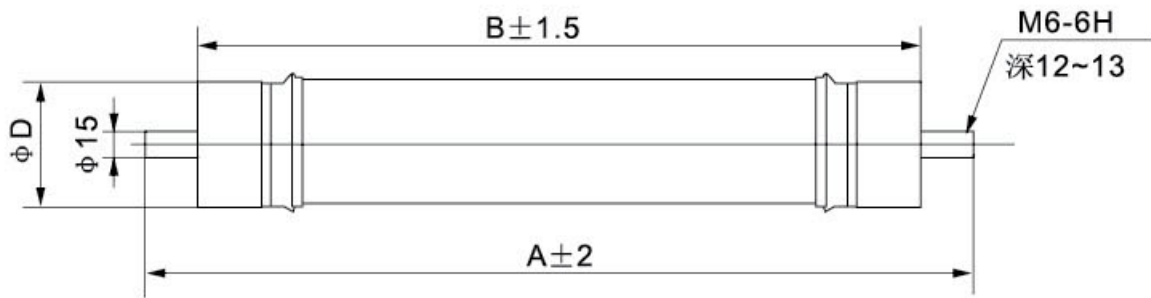
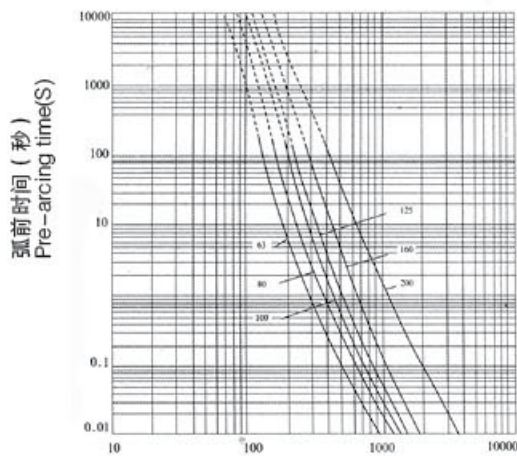


图 2

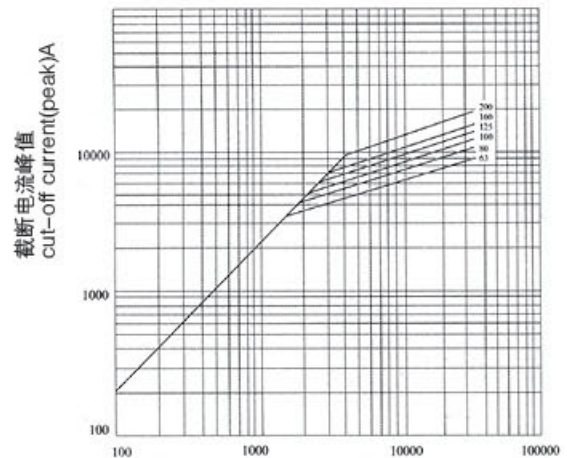
OFG.OKG



预期电流有效值 (A) Prospective current(rms)A

图 3 时间电流特性

OFG.OKG

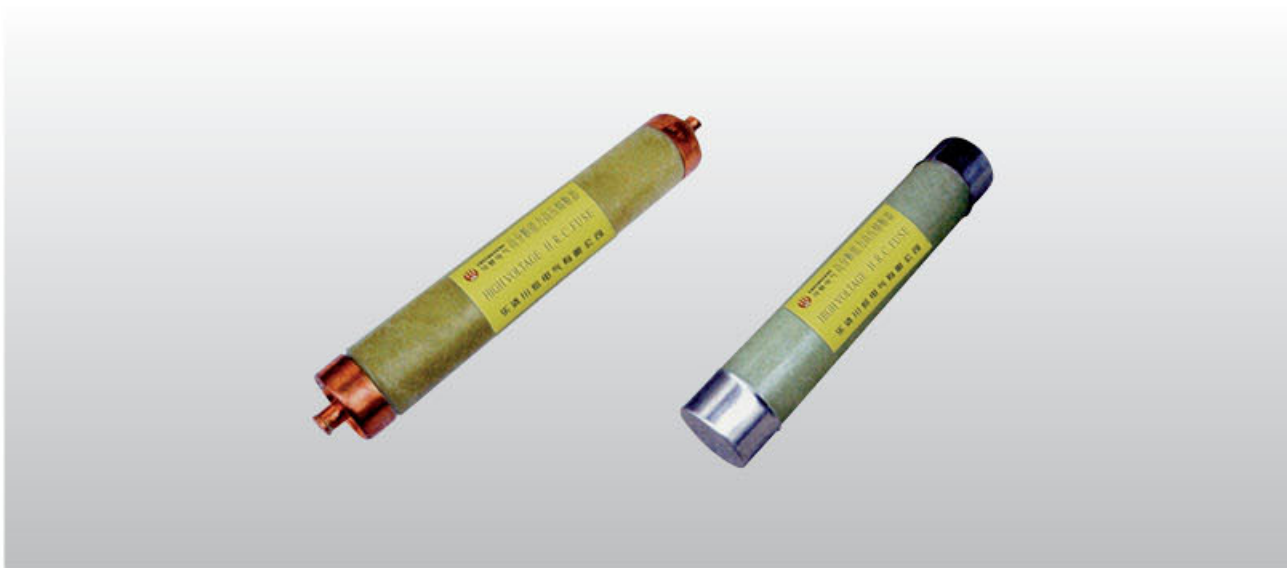


预期电流有效值 (A) Prospective current(rms)A

图 4 限流特性

High Voltage Limit-Current Fuse For Protection Oil-immersed Type Transformer

油浸式变压器保护用高压限流熔断器



概述 | General

CRR3 (XRNT5)-15.5 油浸式变压器短路保护用高压限流后备熔断件 (以下简称熔断件) 适用于交流 50Hz, 额定电压 15.5KV, 额定电流至 75A 的高压户内电力系统, 作为电力变压器的短路保护。它与 CRR4(PRNTI3)-15.5 油浸式变压器过载保护用高压熔断器串联可提供全范围保护。

CRR3(XRNT5)-15.5H.V.current-limiting back-up fuse for short-circuit protection of oil-immersed transformer(here-under fuse) is available for H.V. Indoor electric system,with rated voltage 15.5Kv, rated current up to 175A, 50Hz a.c..It is used for protecting from short-circuit for power transformer. It can offer protection of all-round together in series with CRR4(PRNTI3)-15.5 H.V.fuse for overload protection of oil-immersed transformer.

标准 | Standard

符合 GB15166.2 交流高压熔断器 限流式熔断器

Accord with GB15166.2 Alternating-current high-voltage fuses Current-limiting fuse

订货号 | Order Number

表 2 Table 2

额定电流 (A) Rated Current	订货号 Order Number
31.5	CRR3-31.5
40	CRR3-40
50	CRR3-50
63	CRR3-63
80	CRR3-80
100	CRR3-100
125	CRR3-125
150	CRR3-150
175	CRR3-175

基本参数 | Basic Parameters

表 3 Table 3

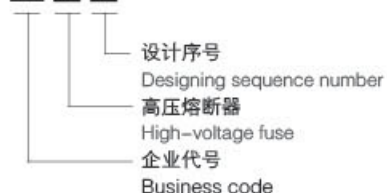
额定电压 KV Rated voltage KV	熔断器额定电流 A Fuse rated current KA	熔体额定电流 A Rated current of fuse link A	外形尺寸 Size	额定短路开断电流 A
17.2	125	31.5、40、50、63、80、100、125	图 1	50
	175	150、175	图 2	

型号说明 | Type Instruction

X R N T 5 - 15.5 / □



CR R 3



H.V. Current-limiting Back-up Fuse For Short-circuit Protection Of Oil-immersed Transformer

油浸式变压器短路保护用高压限流后备熔断件

熔断器的选用 | Applying For Appropriate Fuse

CRR3、CRR4 熔断器的选用推荐

用于 10KV 级油浸式变压器初级端熔断器的一般选用指南

表 4 Table 4

变压器容量 (KVA) Transformer capacity	额定电流 (A) Rated current	CRR3 额定电流 (A) CRR3 Rated current	CRR4 额定电流 (A) CRR4 Rated current
50	2.75	31.5	6.3
100	5.5	40	10
160	8.8	63	16
200	11.0	80/63	25A
250	13.7	80	25A
315	17.3	100	40A
400	22.0	125	40A
500	27.5	150	50A
630	34.6	175	63A
800	44.0	100 双拼	63A
1000	55.0	100 双拼	100A
1250	68.7	125 双拼	140A

安装及外形尺寸 | Outline And Installation Size

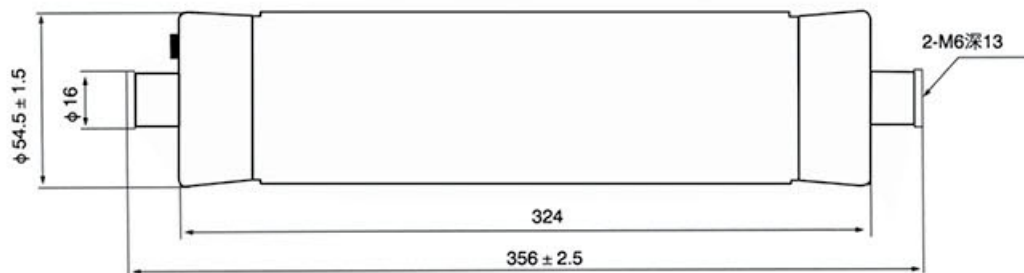


图 5

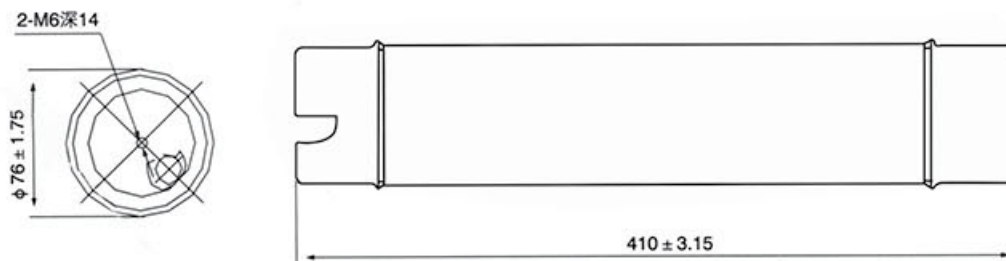


图 6

熔断器的结构 | Construction

熔断器为螺栓连接结构

熔断器是由熔体、熔管、帽、石英砂、骨架、密封圈等组成。熔体由纯银加工成高精度的变截面带状体。熔体有序地缠绕在骨架上，放置在熔管内，管内填充满石英砂作为灭弧介质。为适应浸入变压器油中使用，在帽和熔管之间采用密封圈，并用耐油、耐高温的胶粘剂粘接，设置两道密封防线来确保可靠封口。

Bolt Connection Structure of Fuse

The fuse is composed of fuse element, fuse tube, cap, silica sand, frame and seal ring. The fuse element is made into high precision variable cross-section shoestring with pure silver. The fuse element is wound on the frame in right order, which is put into the fuse tube, and silica sand is fully filled into the tube as arc-extinguishing medium. For use of oil-immersed transformer, seal ring shall be used between cap and fuse tube, which shall be jointed with oil-proof and high temperature resistant adhesive, two sealing defensive lines shall be set to ensure reliable seal.

熔断器的安装、使用、维护 |

熔断器推荐水平安装

- 当熔断器断后，必须换上型号尺码和参数相同的新熔断器，切勿以其它器件代替，在更换熔断器时，发现熔断器的熔管发黄属于正常现象。

- 对三相安装的熔断器，除非已肯定仅其中一只承担过故障电流，否则即使一只熔断器动作，其它两只均应更换。

- 熔断器的额定电流至 175A。当用户需要更大电流等级时，推荐使用双拼熔断器。同时在使用双拼时要考虑到温度相互影响因素，般要熔断器降容 10% -20%使用。

Horizontal Installation Is Recommended for Fuse

After blowout of fuse, new fuse of the same model number and parameter shall be replaced, don't use other component instead, it's normal if fuse tube found yellow when replacing fuse.

For the installation of three-phase-fuse, unless only one of them has certainly taken any fault current, otherwise, the other two should be replaced too even if only one fuse acts.

The rated current of fuse is up to 175A. When the user needs more current level, double-fuse is recommended. At the same time in use of double-fuse, temperature influence factor shall be taken into account, and the fuse shall be used after 10-20% derating.

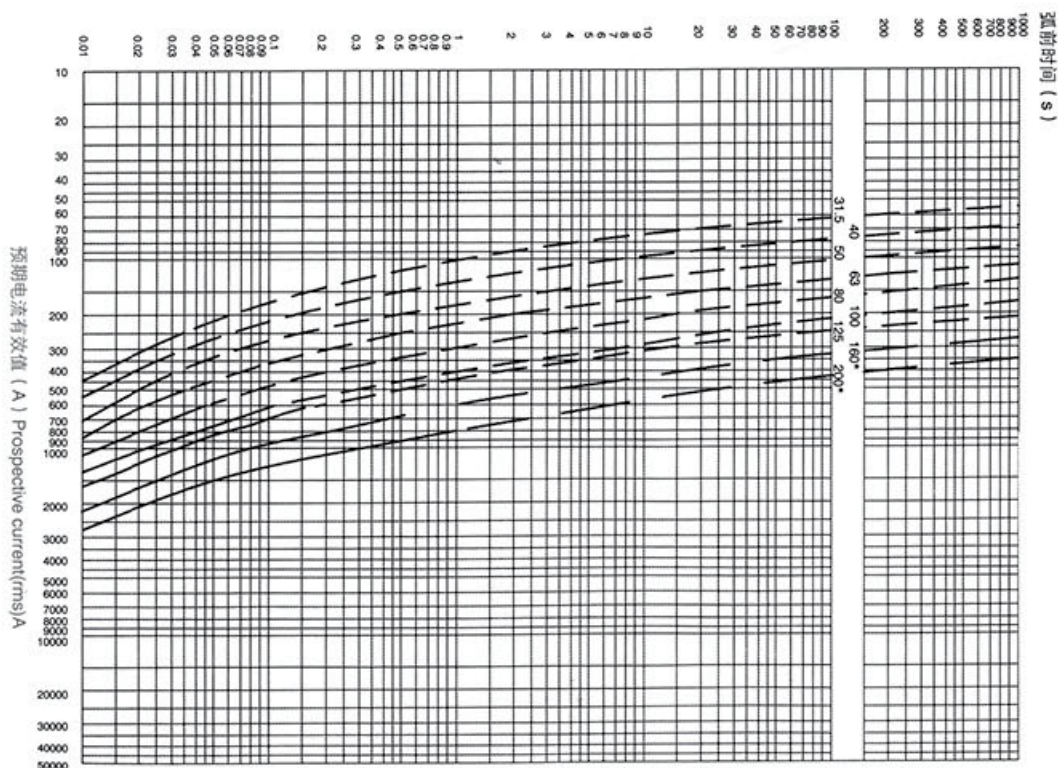


图 7

H.V. Current-limiting Back-up Fuse For Short-circuit Protection Of Oil-immersed Transformer

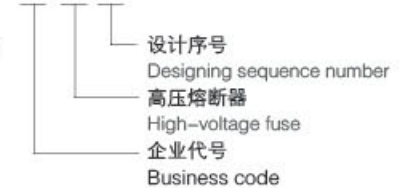
油浸式变压器短路保护用高压限流后备熔断器

型号说明 | Type Instruction

X R N T 5 - 15.5 / □



CR R 3



熔断器的性能 | Performance

熔断器不允许单独使用，必须与后备熔断器串联组成全范围熔断器。在组合上应充分考虑熔断器和后备熔断器的保护特性。图 1 为熔断器和后备熔断器的时间 - 电流特性曲线。图中 A 点为两曲线的交点。B 点为后备熔断器的额定最小开断电流。C 点为熔断器额定最大开断电流。当熔断器与后备熔断件组合使用时，首先 A 点必须存在，其次 B 点位于 A 点之上，C 点位于 A 点之下。

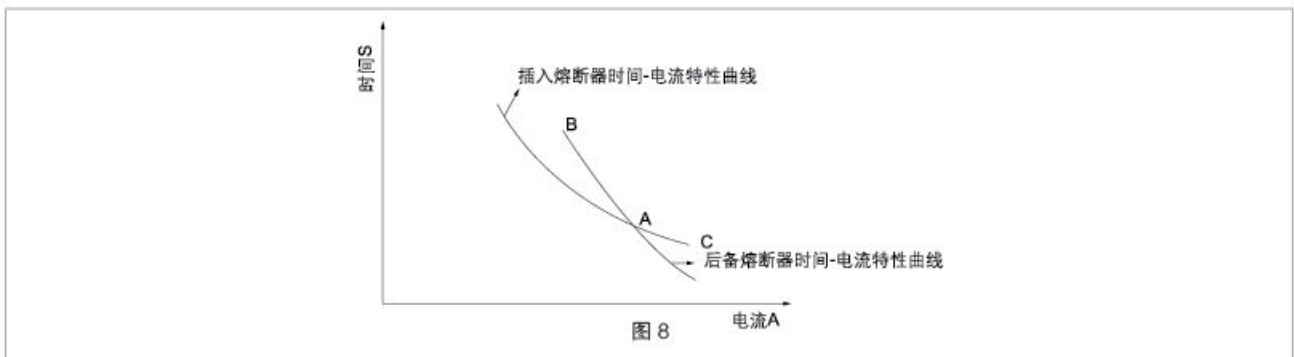
Fuse can't be used alone. It must be used in series with the back-up fuse to become protection of all-a round. In using, the characteristic of the fuse and the back-up fuse must be considered enough. Figure the time-current characteristic of the fuse and the back-up fuse. A in figure is a point of the meeting two curves. B is min. breaking capacity current of the back-up fuse-link C is rated max. breaking capacity current of the fuse. When fuse will be used in series with the back-up fuse-link, first the point A must be existence, second the point B is above the point A and the point C is below the point A.

订货号 | Order number

表 5 Table 5

额定电流 A Rated current	熔断件订货路号 Fuse-link Order number	STR4 底座订货号 Fuse-base Order number
6.3	STR4-6.3	STR4-D
10	STR4-10	
16	STR4-16	
25	STR4-25	
40	STR4-40	
50	STR4-50	
63	STR4-63	
100	STR4-100	
140	STR4-140	

熔断与后备熔断器保护特性配合图



概述 | General

CRR4(PRNT13)-15.5 油浸式变压器过载保护用高压熔断器 (以下简称熔断器) 适用于交流 50Hz, 额定电压 15.5KV, 额定电流至 140A 的高压户内电力系统, 它必须与 CRR3(XRNT5)-15.5 油浸式变压器短路保护后备熔断器 (以下简称后备熔断器) 串联才能组成作为电力变压器的过载和短路保护, 即提供全范围保护。熔断器在全范围保护作用中仅用来保护变压器二次侧短路故障及小范围的故障电流。

CRR4(PRNT13)-15.5H.V. Fuse For Overload Protection Of Oil-immersed Transformer(here-under fuse) is available for H.V.indoor electric system, with rated voltage 15.5KV, rated current up to 140A, 50Hz a.c..It is used for protecting from overload and short-circuit for power transformer .It can offer protection of all-round together in series with CRR3 (XRNT5)- 15.5H.V. current-limiting back-up fuse for short-circuit protection of oil-immersed transformer(here-under back-up fuse). In the protection of all-round fuse is only used protection to short-circuit malfunction of the secondary side of transformer and malfunction current of the small area.

标准 | Standard

符合 GB15166.3 交流高压熔断器喷射式熔断器

Accord with GB15166.3 Alternating-current high-voltage fuses Expulsion fuse

熔断器的结构 | Construction

熔断器为插杆式结构。它由熔断件、底座、手柄组成, 熔断件帽的一端为喇叭形, 另一端为漏斗形。熔断件插入手柄中的螺丝管内, 喇叭形帽端与手柄的握柄部分通过螺纹可靠接触。漏斗形帽通过展平帽的上端与螺丝管接触良好, 用末端螺栓加以固定。手柄插入底座, 转动手柄的锁扣, 锁住熔断器

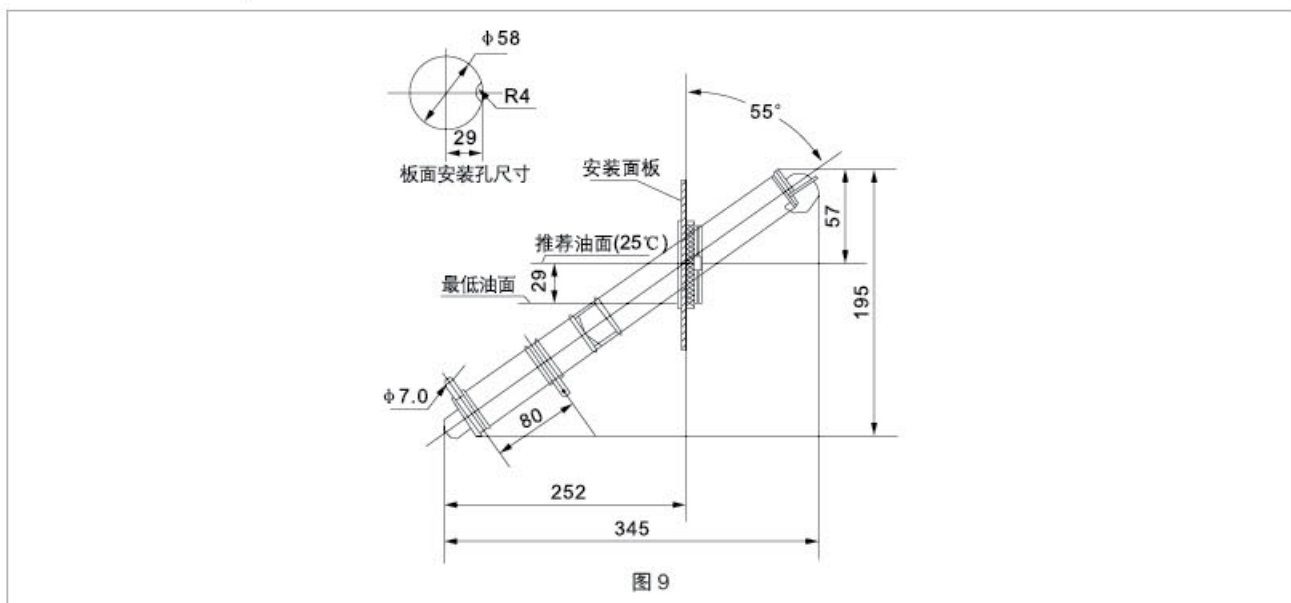
Construction of fuse is insertion. The fuse consist of a fuse-link a fuse-base and a fuse-carrier. Fuse' s plugs are contact flare and tulip tip.

基本参数 | Basic Parameters

表 6 Table 6

额定电压 (KV) Rated voltage	最高电压 (KV) MAX.voltage	熔断器额定电流 (A) Rated current of the fuse-link
15.5	17.2	140
熔体额定电流 A Rated current of the fuse-element		使用环境 Operating condition
6.3、10、16、25 40、50、63、100、140		变压器油中 in the transformer oil
额定最大开断电流 KA Rated short-circuit breaking capacity current		
2.5		

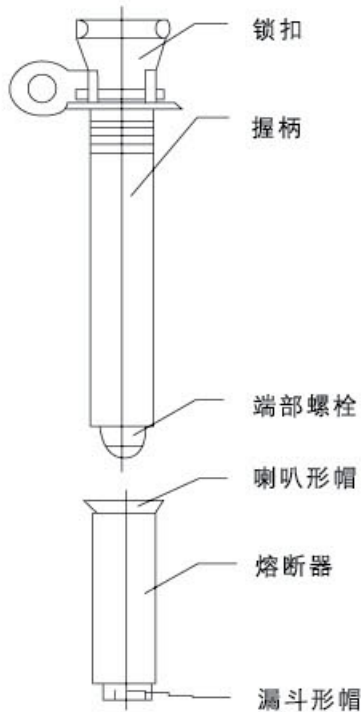
安装及外形尺寸 | Outline And Installation Size



H.V. Current-limiting back-up fuse for short-circuit protection of Oil-immersed Transformer

油浸式变压器短路保护用高压限流后备熔断器

熔断器的安装 | Wedge



步骤

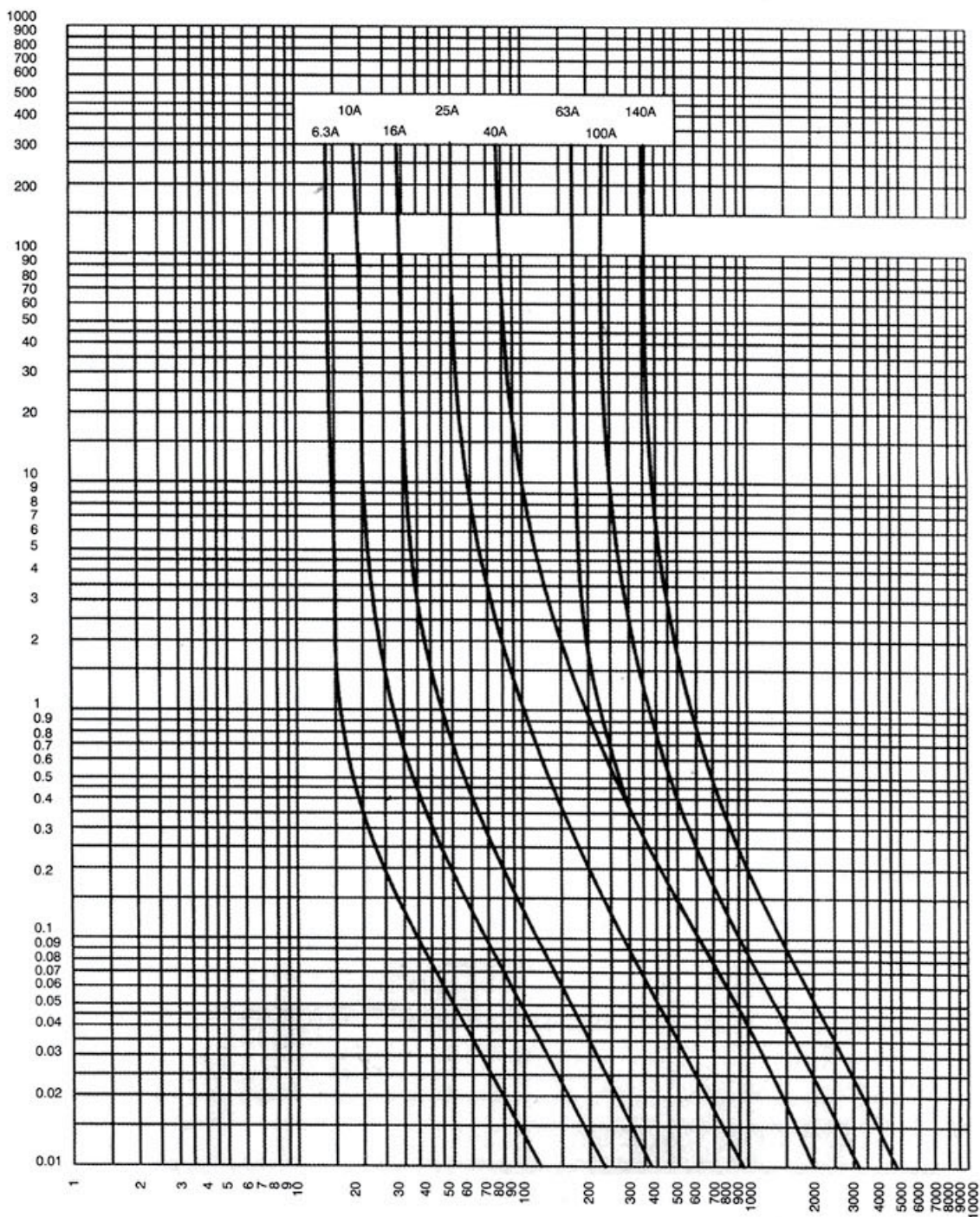
- 打开手柄上的锁扣，从底座中拔出手柄；
- 用扳手旋松手柄中螺丝管和末端螺栓；
- 松开螺丝管和末端螺栓；
- 把熔断件插入螺丝管内；
- 熔断件的喇叭形帽必须装在螺丝管和握柄之间；
- 用扳手固定握柄，扭矩约 5.6—7.9N.m。
- 展开熔断件漏斗形帽。
- 用一个扳手卡住螺丝管端部螺栓，用另一个扳手旋紧末端螺栓，扭矩约 5.6—7.9N.m。
- 把手柄插入底座，转动手柄的锁扣，锁住熔断器。
- Unlock fuse holder latch handle, draw the fuse holder out from the base.
- Use a wrench to remove fuse cartridge from fuse cartridge and end plug.
- Remove fuse cartridge and end plug.
- Insert fuse link into fuse cartridge.
- Fuse-link's trumpet tip must be fixed between fuse cartridge and fuse cartridge holder.
- Use a wrench to tighten fuse cartridge holder using 5.6–7.9N.m of torque.
- Spread tulip tip.
- Use a wrench to straighten edge plug and the other tighten end plug using 5.6–7.9N.m of torque
- Insert handle into the base, rotate fuse holder latch handle; and lock the fuse.

注意事项 | Notice

- 熔断器手柄插入底座应用力插到位，压紧并旋转锁扣使手柄在锁住位置时确保不锈钢垫圈在熔断器管的肩节处，手柄闭锁在肩节处，以保证箱变全密封，不进潮气。
- 当熔断器装在油箱内，油箱内的油面应在图 3 所示的范围内。
- 当熔断器动作后需要更换熔断件，打开手柄上的锁扣，转动手柄 90°，以消除密封垫圈和外管间的粘附作用，拔出手柄。
- 当熔断件熔断后，必须换上型号和规格等参数相同的新熔断件，切勿以其它器件代替。
- 对三相安装的熔断器，除非已肯定仅其中一只承担过故障电流，否则即使一只熔断器动作，其它两只均应更换。
- 熔断器的开断会引起油的变质、污染和碳化。
- A slight resistance may occur when inserting fuse-link into cartridge. When the fuse cartridge holder is locked, the steel's packing ring is the shoulder of the fuse cartridge. So the bin can be ensured to sealed and not be into wet air.
- When the fuse is into the oil bin, the oil level in the oil bin is as shown in Figure 3.
- When replacing fuse-link, unlock fuse holder, turn fuse holder 90 in the housing to break the seal between the seal packing ring and housing, draw the fuse holder out.
- If damaged, the type and main technical data of the new fuse-link must be same completely, not to replace by the other.
- The fuse in three phase, one of fuses is damaged, the other will be replaced, unless one of them has been known to be breaking Operation.
- Breaking of fuse will be cause the metamorphosis of oil, pollution and carburation

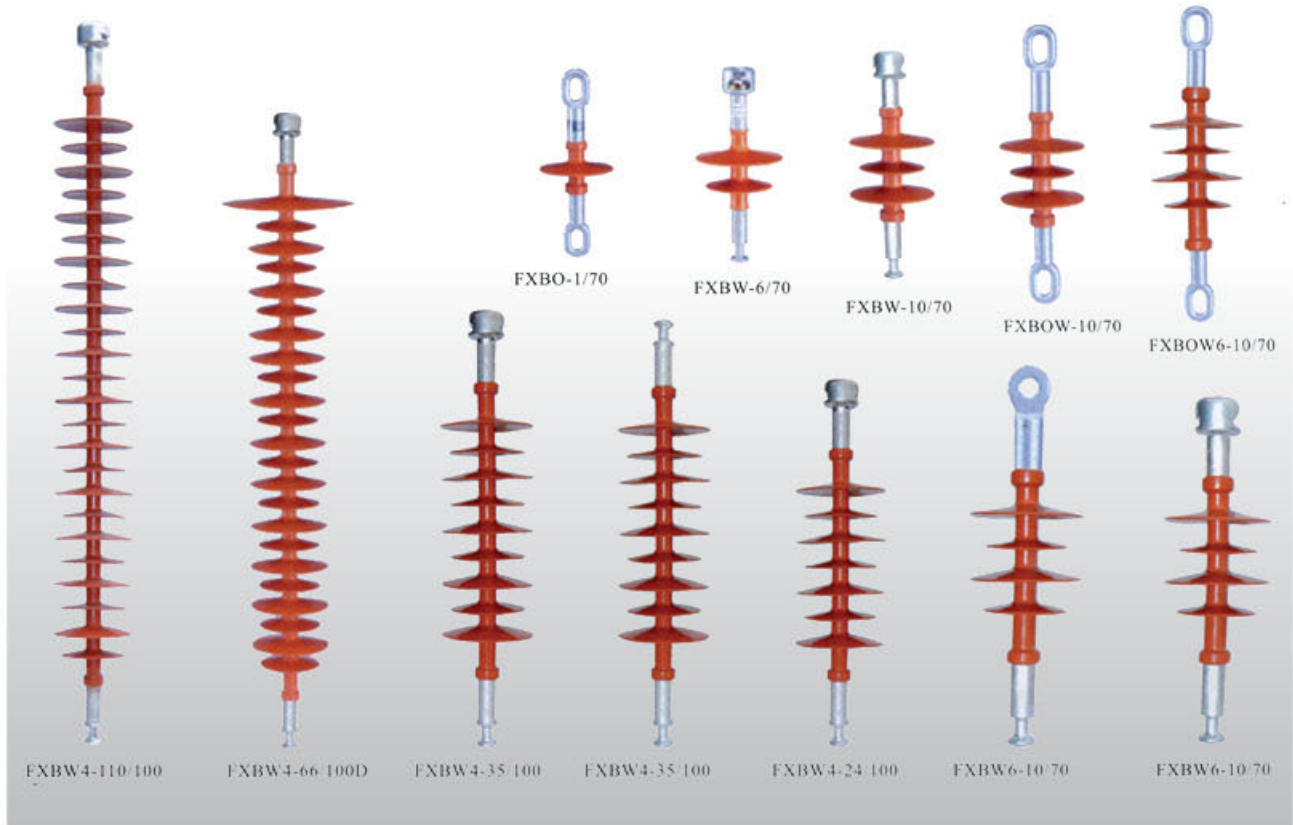
时间电流特性曲线 | The Time Current Characteristic Of The Fuse

弧前时间 (S)



预期电流有效值 (A)

图 10



结构与特点 | Structure and characteristics

复合绝缘子系列产品由环氧树脂玻璃纤维引拔棒、硅橡胶伞裙、金属件三部分组成，本公司采用国际先进的金具压接技术和硅橡胶伞套裙整体一次成型工艺生产，提高了复合绝缘子的可靠性和生产效率，产品强度高、体积小、重量轻、外形美观。

注：特殊规格可按客户需要的图纸生产。

Composite insulator includes epoxy glass fiber pull rod, silicon rubber umbrella skirt and metal parts. The company adopts the international advanced fitting press-in technology and silicon rubber umbrella skirt once forming production. It is to improve the reliability of the composite insulator and production efficiency, and high strength, small size, light weight and beautiful appearance.

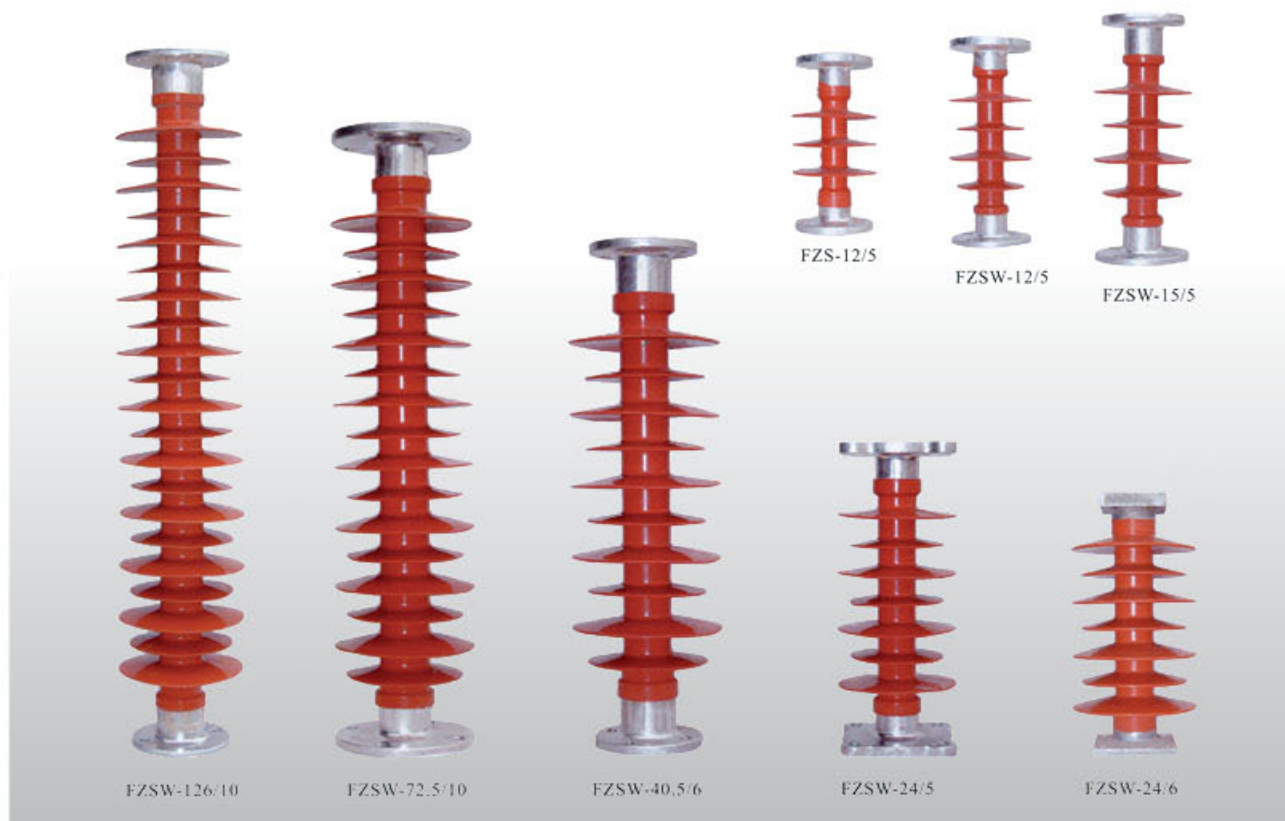
Note: Special specifications can be users need to drawing production.

悬式绝缘子主要型式尺寸和机电性能 | Size and technical data of suspension insulators

型号 Type	额定电压 Rated voltage (kV)	额定机械拉伸负荷 Rated mechanical tensio load (KN)	连接标记结构 Structure of coupling marks	结构高度 Structure height (mm)	最小电弧距离 Min, Electric arc distance (mm)	最小公称爬电距离 Min nominal creepage distance (mm)	雷电全波冲击耐受电压(峰值)不小于 Full wave lightning impulse withstand voltage (peak value not less than(kV))	工频 1min 温耐受电压(有效值)不小于 1 min power frequency wet withstand voltage not less than (kV)	均压环(个) Nos of voltage divider ring
FXBW6-10/70	10	70	16	380 ± 15	190	480	115	45	无 N/A
FXBW4-35/100	35	100	16	670 ± 15	450	1260	230	95	无 N/A
FXBW4-66/100	66	100	16	940 ± 15	685	1870	410	185	无 N/A
FXBW4-110/100	110	100	16	1240 ± 15	1015	3150	550	230	协议 Negotiable
FXBW4-220/100	220	100	16	2240 ± 30	1950	6300	1000	395	协议 Negotiable
FXBW4-220/160	220	160	20	2240 ± 30	1950	6300	1000	395	协议 Negotiable
FXBW4-330/100	330	100	16	2930 ± 40	2550	9075	1425	570	协议 Negotiable
FXBW4-330/160	330	160	20	2990 ± 40	2600	9075	1425	570	协议 Negotiable
FXBW4-500/160	500	160	20	4450 ± 50	4000	13750	2250	740	协议 Negotiable

Composite Rod Post Insulators

复合棒形支柱绝缘子



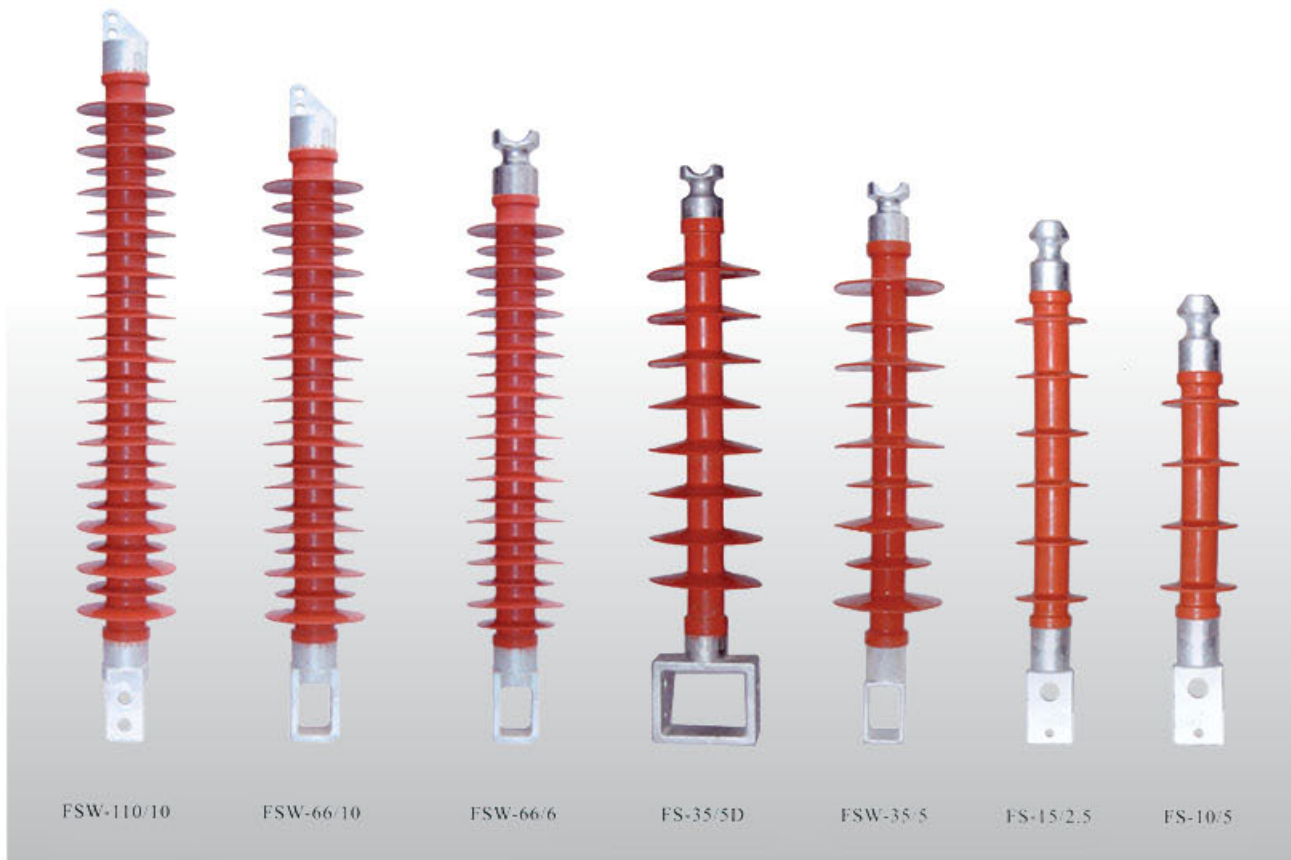
结构与特点 | Structure and characteristics

本产品适用于电站设施，具有良好的憎水性，抗老化性、耐漏电起痕性和耐电蚀损性，具有很高的抗弯强度，其抗冲击性能、防震和防脆性能好，重量轻、安装方便，其顶部和底部安装尺寸可与相应的瓷支柱尺寸相同。

These products ,applicable to substation,have good characteristics of water hydrophobe,aging resistance,tracking resistance,and corrosive. They have high electrical performance: silicone rubber sheds are good in hydrophobe and have water floating capacity,heavy pollution resistance,can prevent flash over due to pollution. It can work on the severely polluted sites with out special clearing. The top and bottom installation sizes can designed same to those of porcelain post insulators.

棒形支柱绝缘子主要型式尺寸和机电性能 | Rod post size and technical insulators

型号 Type	高度 Height (mm)	最小电弧 距离 Min, Electric arc dis- tance (mm)	最小公称爬 电距离 Min nomi- nal creepage distance (mm)	额定机械破坏负荷 Rated mechanical falling load		工频电压 Power frequency withstand voltage		标准雷电冲击全波耐受电 压 (峰值)kV Full wave lightning impulse withstand voltage (peak value)(kV)	设备最高运 行电压 kV Highest operating of equipment (kV)
				弯曲 Bent (kN)	扭转 Distortion (kN)	1min 湿耐 受 1min wet kv	1min 干耐 受 1min Dry (kV)		
FZSW-12/2.5	225	129	300	5	0.6	30	42	75	12
FZSW-40.5/6	445	345	1050	6	1.5	80	100	185	40.5
FZSW-72.5/6	770	635	1830	6	2.0	140	165	325	72.5
FZSW-126/10	1220	1060	3180	10	4.0	185	265	450	126



结构与特点 | Structure and characteristics

本产品适用于城网技术改造，能有效地利用城市狭窄的走廊面积升压送电，可降低杆塔高度，由于其弯曲强度高，可防止瓷横担容易出现的断裂事故，而且耐污性能好。

These products are applicable to urban power network reconstruction where streets are narrow. It can take advantage of urban narrow power distribution corridor, lower the necessary height of pole or tower. With high bending strength, they can avoid rupture accident taken place for porcelain insulators. Moreover, they are of good pollution resistance.

横担绝缘子主要型式尺寸和机电性能 | Sizes and technical data of pin insulators

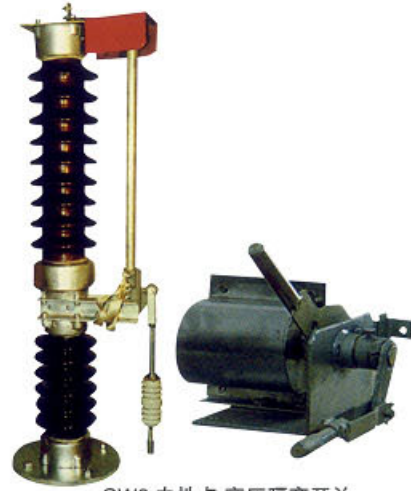
型号 Type	线槽与安装孔 中心距离 Central distance between channel and installation hole (mm)	最小电弧 距离 Min, Electric arc distance (mm)	最小公称爬电距 离 Min nominal creepage distance (mm)	安装孔径 ϕ Installation hole diameter (mm)	额定弯曲耐受负荷 Rated bent with stand load (kN)	工频耐受电压(有 准备值) 1min power frequency wet withstand voltage (kV)	标准雷电冲击全波耐受电 压(峰值)kV Full wave lightning impulse withstand voltage (peak value)(kV)
FSW ₃ -10/2.5	390	274	362	18	2.5	45	165
FSW ₃ -10/5	400	280	410	18	5.0	50	185
FSW ₃ -35/5	620	490	1060	22	5.0	100	265
FSW ₃ -66/10	890	735	1815	23	6.0	185	410
FSW ₃ -100/10	1240	1070	3180	24	10	230	550

Outdoors High-voltage Disconnecting Switch

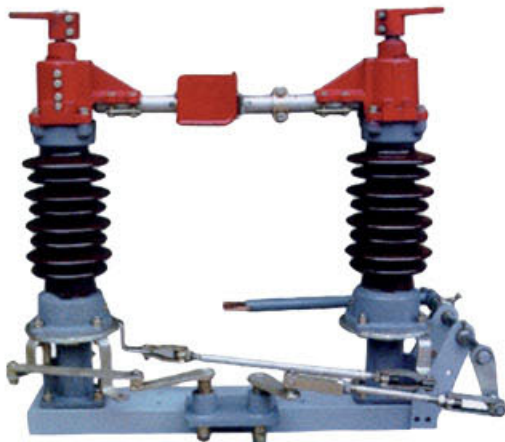
户外高压隔离开关



GW4-12 户外高压隔离开关
High voltage disconnecting switch



GW8 中性点 高压隔离开关
High voltage disconnecting switch



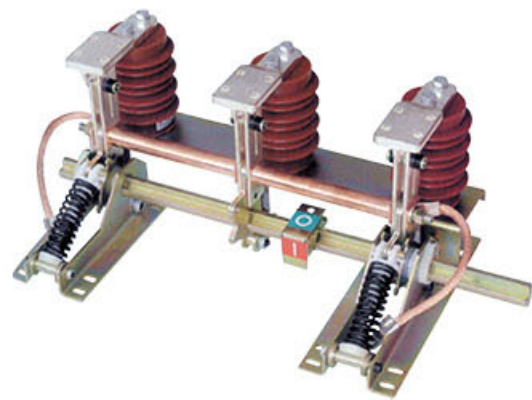
GW4-17.2 户外高压隔离开关
High voltage disconnecting switch



GW5 户外高压隔离开关
High voltage disconnecting switch



GW4-40.5 户外高压隔离开关
High voltage disconnecting switch



JN15-12 型户内高压接地开关
High voltage disconnecting switch

Outdoor HV Vacuum Breaker (Recloser, Sectionalizer)

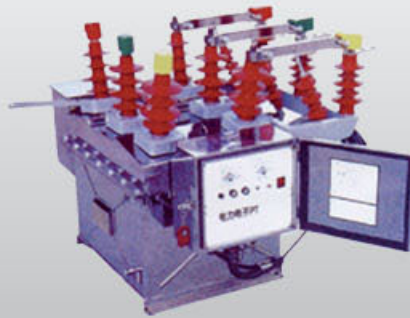
ZW8-12 户外真空断路器 (重合器、分段器)



ZW8-12G/630



ZW8-12/630



ZW8-12G/630PC



ZW8-12/630 电子 PT

主要用途 | Main application

ZW8-12/□型户外高压真空断路器用于交流 50Hz、电压 10~12kV 的三相电力系统，作为分断、关合负荷电流之用，它具有过载及短路保护功能，还可根据用户需要配装浪涌电流延时保护器和加装避雷器或隔离开关即断路器与隔离开关组合等。

ZW8-12/□ Series Outdoor HV Vacuum Automatic Circuit Reclosers, are used for switching on/off load current, overload current and short circuit current in three-phase power systems with AC 50Hz and rated voltage 10~12kV Matching with recloser controllers, the breaker can identify current characteristics and realize repetitious autoeclosing or permanent fault isolation. With its own PT power.

使用环境条件 | Use Circumstance Condition

- 环境温度: +40°C ~ -40°C;
- 海拔高度: ≤ 2000m(若海拔增高,则额定绝缘水平相应提高);
- 风压: ≤ 700Pa(相当于风速 34m/s);
- 地震烈度: ≤ VIII;
- 污秽等级: IV;
- 最大日温差: ≤ 25°C;

- Ambient temperature: +40°C ~ -40°C;
- Altitude: ≤ 2000m(If the place is at higher altitude, enhance rated insulation level);
- Wind pressure: ≤ 700Pa(Equivalent to wind speed 34m/s);
- Earthquake intensity: ≤ VIII;
- Pollution class IV;
- Maximum day temperature difference: ≤ 25°C;

Outdoor HV Vacuum Breaker (Recloser, Sectionalizer)

ZW32-12 户外真空断路器 (重合器、分段器)



ZW32-12/630 PT

ZW32-24G/630

ZW32-24/630


主要用途 | Main application

ZW32 型户外高压真空断路器为额定电压 12kV、15kV 三相交流 50Hz~60Hz 的户外配电设备，它适用于变电站及工矿企业配电系统中作保护和控制之用，及农村电网频繁操作的场所，还可作为环网供电单元和终端设备，其电能的分配、控制和电气设备的保护作用。当断路器与隔离开关组合后，也可作为分段开关使用。主要用来开断、关合电力系统中的负荷电流、过载电流、短路电流。真空灭弧室采用专利密封技术，外绝缘采用硅橡胶套管，寿命长，可靠性高，耐候性好，便于运输，性价比高；操作机构采用小型化、高可靠弹簧操作机构，结构简单，机械寿命可达 2000 次；若采用先进的永磁机构，机械性能更稳定可靠；并可装有手动分、合闸机构，必要时可现场手动分、合闸操作。本断路器可与控制器配套即成重合器，实现遥控、遥测、遥调“四遥”功能。产品特点：无燃烧和爆炸危险、免维护、体积小、重量轻（小于 100kg）、寿命长（万次）、安全可靠、操作简单、维护及安装方便。

The ZW32 outdoor HV vacuum breaker is a kind of outdoor power distribution equipments on rated voltage 12kV,15kV and three-phase AC 50Hz~60Hz.It is used for protecting and controlling distribution systems in transformer substations and industrial and mining enterprises. It can also be used for frequently operation in country electric networks. And it can be used as a ring network power supply unit and terminal unit to distribute electric energy, control and protect electric equipments. Combining with the disconnecting switch, it can be used as a section switch for switching off /on load current,over-load current and short circuit current in power systems. Its vacuum explosion chamber uses patented sealing technique. Its external insulation uses silicon rubber pipes with long life,high reliability and weather ability. It is convenient to transport and has a high cost performance ratio. Using compact and high reliability spring operation mechanism, the operating mechanism structure is simple and has long life up to 20000 times. If using advanced permanent magnetism mechanisms, it will have more reliable mechanical property. And it can install manual switch on /off mechanisms to switch on /off in the field in need of . Matching with controllers, the breaker can be an automatic circuit recloser to realize remote controlling ,remote measurement,remote signaling and remote regulating. The product,features: non burning and explosion hazard, non maintenance, small size, light weight(less than 100kg),long life (more than 10000 times),safe and reliable, simple operation and installation.

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 采用生态纸印刷



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