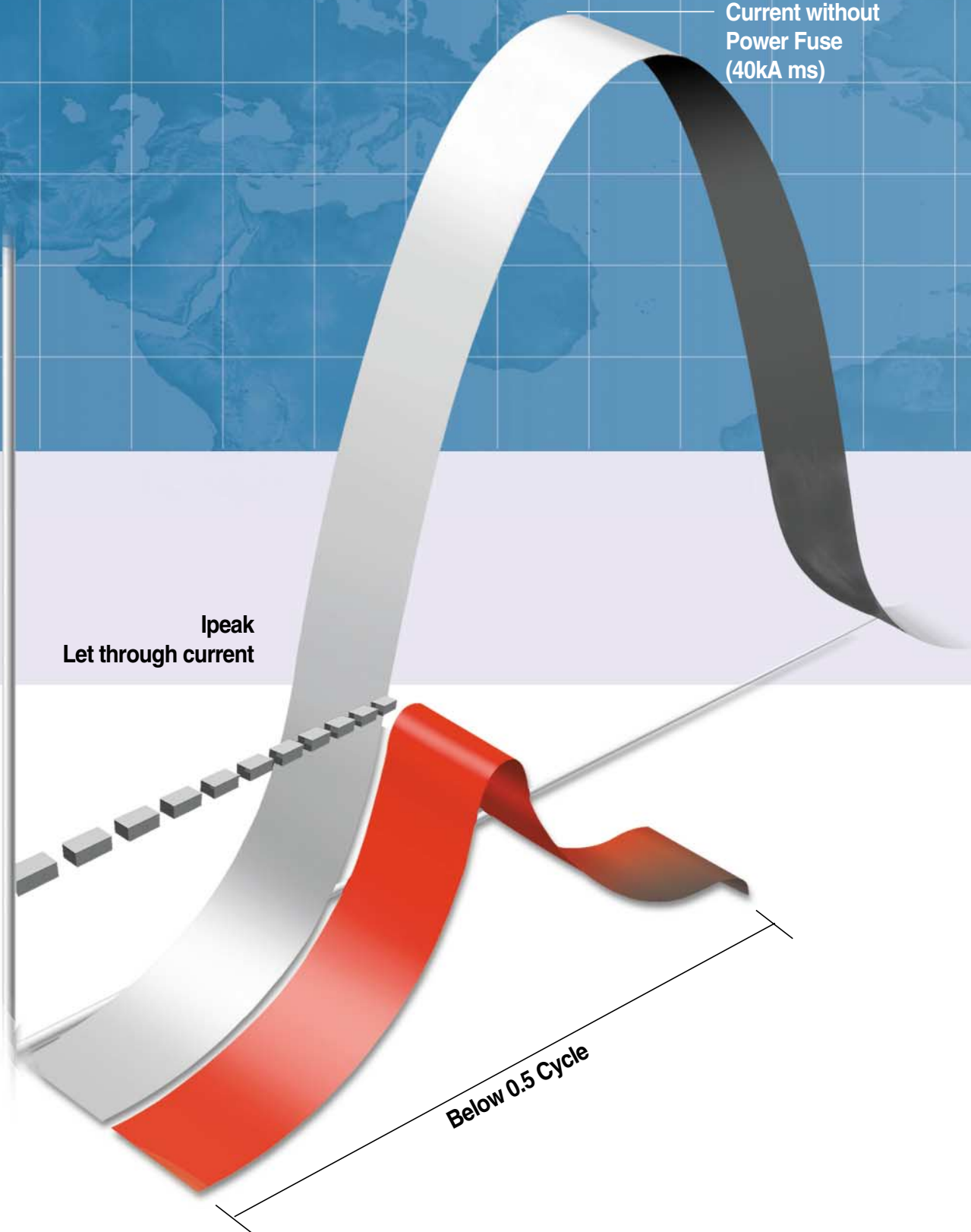




Prime-MEC
LS HRC Power Fuses

LS HRC Power Fuse >>



Rated voltage(kV)	3.6			7.2			24		
Initiation of arcing(degree)	56°	85°	90°	45°	70°	89°	47°	85°	85°
Ipeak(kA)	6.5	7.2	7.3	5.2	6.0	7.3	5.1	7.2	7.2
Power Factor	0.07 ~ 0.15								

- Test current : 40kA
- Basis : 63A
- I peak : Let through current(under the short circuit test)

Features

- The LS HRC Power Fuses belong to the PRIME MEC series. It interrupts high currents before the first loop of fault current has reached its natural peak value and therefore cuts down the required withstand capacity of the associated equipment on the electric system.
- Though small in size, it has a high breaking capacity and its enclosed type is suitable for use inside of the panel board.
- PRIME MEC fuses are equipped with striker pins for trip indicators as well as for operating the related load break switches.
- Link type fuse holder enables easy maintenance and high stability when replacing the fuses.
- With Fuse Checker, checking the conditions of a fuse in the panel board or by telecommunication is possible.(Optional)



Applied standards

- IEC 282-1, DIN 43625, BS 2692, KSC 4612

Applications

- Transformer protection
 - To protect against short circuit current in the secondary part of a transformer and fault current in the transformer circuit.
- Condenser protection
 - To protect against fault current in the condenser circuit.
- Motor protection
 - To protect against fault current in the motor circuit
- Cable protection
 - Fault current protection secures the cable

LS HRC Power Fuses

Ratings

Type	Rated voltage (kV)	Fuse link					Fuse holder				
		Rated current (A)	Dimensions		Weight (kg)	Breaking current (kA, rms)	Minimum breaking current (A)	Type	Rated voltage (kV)	Rated current (A)	Insulation level (BIL, kV)
			A	B							
LFL-3/6G-5B	3.6/7.2	5	192	55	1	40	5In	LFH-6G-D1HB	7.2	100	60
LFL-3/6G-10B		10									
LFL-3/6G-20B		20									
LFL-3/6G-30B		30									
LFL-3/6G-40B		40									
LFL-3/6G-50B		50									
LFL-3/6G-60B		63	192	77	2						
LFL-3/6G-75B		75									
LFL-3/6G-100B		100									
LFL-3/6G-125B		125	292	77	2.8	LFH-6G-D2HB	200				
LFL-3G-160B	160										
LFL-3G-200B	200										
LFL-6G-160B	7.2	160	292	77	2.8	LFH-6G-D2HB	200				
LFL-6G-200B		200									
LFL-20G-5B	24	5	442	55	2	40	5In	LFH-20G-D2HB	24	200	125
LFL-20G-10B		10									
LFL-20G-16B		16									
LFL-20G-20B		20									
LFL-20G-25B		25									
LFL-20G-30B		30	442	77	4.2						
LFL-20G-40B		40									
LFL-20G-50B		50									
LFL-20G-60B		63	442	87	5.1	25	6In				
LFL-20G-75C		75									
LFL-20G-100C		100									
LFL-20G-125B		125									
LFL-20G-160B		160									
LFL-20G-200B		200	537	87	5.5	LFH-20G-D2HC					

- Note) 1. Application site : Indoor use
 2. Refer to the column "B" in the table for inside diameters of Hook rings
 3. Models highlighted can be applied to 3.6 or 7.2kV



Basic conditions for selecting the Power Fuses

- The rated current of a Power Fuse should be higher than sum of the total rated current of the electric equipment on the circuit.
- Back-up protection with electric equipment on the circuit.
 - Set the operating characteristics of the Power Fuses to satisfy the over-current characteristics of the protected loads on the circuit. Also, set the occurred calories, by the I²t operation, to be smaller than the short-circuit intensity of the electric equipment and circuit.
 - When using the Power Fuses for backup usage with other protective equipment, set the operating times of the protective equipment below the minimum breaking current to be faster than those of the Power Fuses.

For transformer protection

Phase	Circuit voltage (kV)	Transformer capacity (kVA)	Applied fuses	Circuit voltage (kV)	Transformer capacity (kVA)	Applied fuses	Circuit voltage (kV)	Transformer capacity (kVA)	Applied fuses
1 φ	3.3	4~8	LFL-3/6G-5B	6.6	8~16	LFL-3/6G-5B	22.9	20~43	LFL-20G-5B
		6~13	LFL-3/6G-10B		13~25	LFL-3/6G-10B		43~90	LFL-20G-10B
		-	-		-	-		87~180	LFL-20G-16B
		15~31	LFL-3/6G-20B		30~62	LFL-3/6G-20B		99~206	LFL-20G-20B
		-	-		-	-		130~269	LFL-20G-25B
		21~42	LFL-3/6G-30B		40~84	LFL-3/6G-30B		149~310	LFL-20G-30B
		40~82	LFL-3/6G-40B		80~165	LFL-3/6G-40B		267~557	LFL-20G-40B
		49~102	LFL-3/6G-50B		98~204	LFL-3/6G-50B		345~719	LFL-20G-50B
		66~137	LFL-3/6G-60B		132~275	LFL-3/6G-60B		430~897	LFL-20G-60B
		68~165	LFL-3/6G-75B		134~330	LFL-3/6G-75B		580~1145	LFL-20G-75B
		128~220	LFL-3/6G-100B		256~440	LFL-3/6G-100B		923~1527	LFL-20G-100B
		151~275	LFL-3/6G-125B		302~550	LFL-3/6G-125B		1364~1908	LFL-20G-125B
		211~352	LFL-3/6G-160B		425~704	LFL-3/6G-160B		2125~2443	LFL-20G-160B
		265~4402	LFL-3/6G-200B		437~880	LFL-3/6G-200B		2650~3050	LFL-20G-200B
3 φ	3.3	6.7~14	LFL-3/6G-5B	6.6	13~28	LFL-3/6G-5B	22.9	36~75	LFL-20G-5B
		11~22	LFL-3/6G-10B		21~44	LFL-3/6G-10B		75~157	LFL-20G-10B
		-	-		-	-		151~313	LFL-20G-16B
		25~53	LFL-3/6G-20B		51~107	LFL-3/6G-20B		172~358	LFL-20G-20B
		-	-		-	-		224~466	LFL-20G-25B
		35~73	LFL-3/6G-30B		70~145	LFL-3/6G-30B		258~538	LFL-20G-30B
		69~143	LFL-3/6G-40B		137~286	LFL-3/6G-40B		464~965	LFL-20G-40B
		85~77	LFL-3/6G-50B		170~354	LFL-3/6G-50B		598~1246	LFL-20G-50B
		114~238	LFL-3/6G-60B		229~476	LFL-3/6G-60B		745~1554	LFL-20G-60B
		117~285	LFL-3/6G-75B		233~571	LFL-3/6G-75B		1000~1983	LFL-20G-75B
		222~381	LFL-3/6G-100B		443~762	LFL-3/6G-100B		1600~2645	LFL-20G-100B
		261~476	LFL-3/6G-125B		522~952	LFL-3/6G-125B		2362~3304	LFL-20G-125B
		365~610	LFL-3G-160B		735~1220	LFL-6G-160B		3680~4232	LFL-20G-160B
		459~762	LFL-3G-200B		755~1520	LFL-6G-200B		4593~5287	LFL-20G-200B

Selecting conditions

- The inrush current of a transformer is selected assuming that the current is 10 times that of the full-load transformer current in 0.1sec.
- The rated current of the Power Fuses is selected to continuously flow at 1.5times of the transformer rated current.
- Power Fuses for protecting against short-circuit in the secondary part of a transformer are selected assuming that the current is 25times that of the transformer rated current in 2seconds.

Note) 1. Models highlighted can be applied to 3.6 or 7.2kV

LS HRC Power Fuses

Conditions of selection

For condenser protection

Phase	Circuit voltage (kV)	Transformer capacity (kVA)	Applied fuses	Circuit voltage (kV)	Condenser capacity (kVA)	Applied fuses	Circuit voltage (kV)	Condenser capacity (kVA)	Applied fuses
3φ	3.3	~9.8	LFL-3/6G-5B	6.6	~19	LFL-3/6G-5B	22.9	~46	LFL-20G-5B
		9.8~12	LFL-3/6G-10B		19~24	LFL-3/6G-10B		46~83	LFL-20G-10B
		-	-		-	-		64~172	LFL-20G-16B
		12~31	LFL-3/6G-20B		24~61	LFL-3/6G-20B		83~203	LFL-20G-20B
		-	-		-	-		193~272	LFL-20G-25B
		31~46	LFL-3/6G-30B		61~92	LFL-3/6G-30B		203~317	LFL-20G-30B
		46~64	LFL-3/6G-40B		92~128	LFL-3/6G-40B		317~425	LFL-20G-40B
		64~81	LFL-3/6G-50B		128~163	LFL-3/6G-50B		425~564	LFL-20G-50B
		81~105	LFL-3/6G-60B		163~210	LFL-3/6G-60B		564~710	LFL-20G-60B
		105~150	LFL-3/6G-75B		210~300	LFL-3/6G-75B		710~1021	LFL-20G-75B
		150~222	LFL-3/6G-100B		300~445	LFL-3/6G-100B		1021~1655	LFL-20G-100B
		222~275	LFL-3/6G-125B		445~550	LFL-3/6G-125B		1655~2370	LFL-20G-125B
		275~370	LFL-3G-160B		550~742	LFL-6G-160B		2370~3170	LFL-20G-160B
		370~500	LFL-3G-200B		742~1000	LFL-6G-200B		3170~4000	LFL-20G-200B

Selecting conditions

- The inrush current of a condenser is selected to withstand 71time of the condenser rated current in 0.002sec.
- The rated current of the Power Fuses is selected to continuously flow at 1.43 times of the condenser rated current.

Note) 1. Models highlighted can be applied to 3.6 or 7.2kV

For motor protection

Phase	Circuit voltage (kV)	Motor output (kVA)	Applied fuses	Circuit voltage (kV)	Motor output (kVA)	Applied fuses
3φ	3.3	4.3~7.2	LFL-3/6G-5B	6.6	8.7~15	LFL-3/6G-5B
		7.2~19	LFL-3/6G-10B		15~25	LFL-3/6G-10B
		19~39	LFL-3/6G-20B		25~65	LFL-3/6G-20B
		34~64	LFL-3/6G-30B		65~88	LFL-3/6G-30B
		64~87	LFL-3/6G-40B		88~183	LFL-3/6G-40B
		87~109	LFL-3/6G-50B		183~225	LFL-3/6G-50B
		106~149	LFL-3/6G-60B		219~304	LFL-3/6G-60B
		139~199	LFL-3/6G-75B		288~407	LFL-3/6G-75B
		185~288	LFL-3/6G-100B		377~604	LFL-3/6G-100B
		229~344	LFL-3/6G-125B		474~721	LFL-3/6G-125B
		268~471	LFL-3G-160B		614~1015	LFL-6G-160B
		293~518	LFL-3G-200B		958~1502	LFL-6G-200B

Selecting conditions

- The starting current of a motor is selected to withstand 5 times of the full-loads current in 10sec.

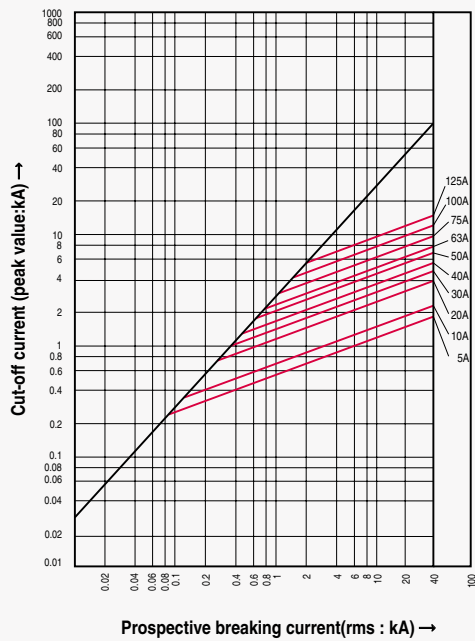
Note) 1. Models highlighted can be applied to 3.6 or 7.2kV

For cable protection

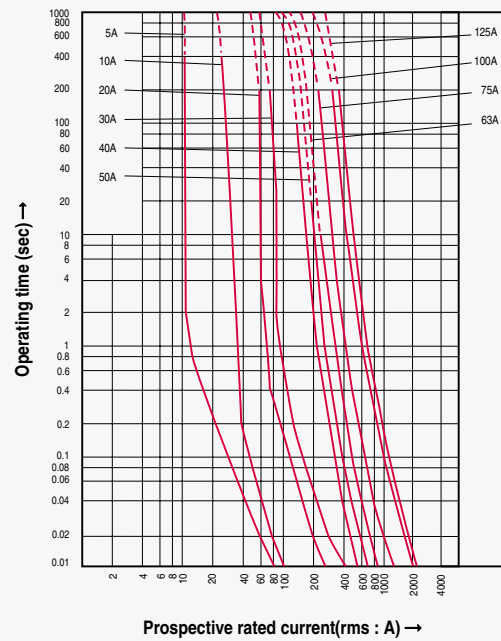
Cable diameter (mm ²)	Rated(A) current of PF (A)
0.8	40
1.6	50
2	75
3.5	100
5.5	150
8	200
22	200

- Under the short-circuit condition, the power fuse breaks the circuit in high speed. Therefore, with relatively high rated current, the Power Fuse protects small size cables.
- Selected to protect from above 10 times of the short-circuit current.

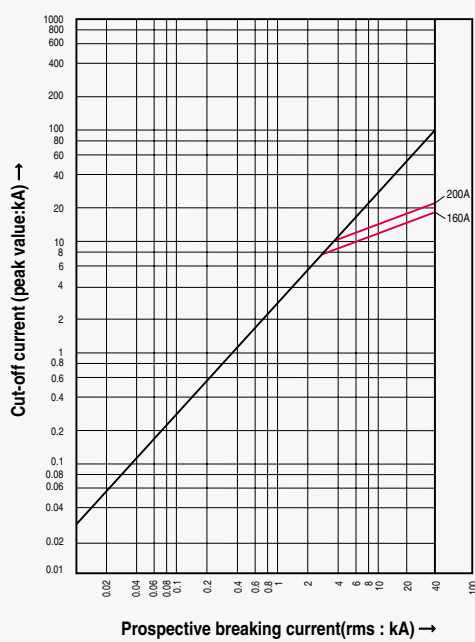
3.6/7.2kV Cut-off characteristics



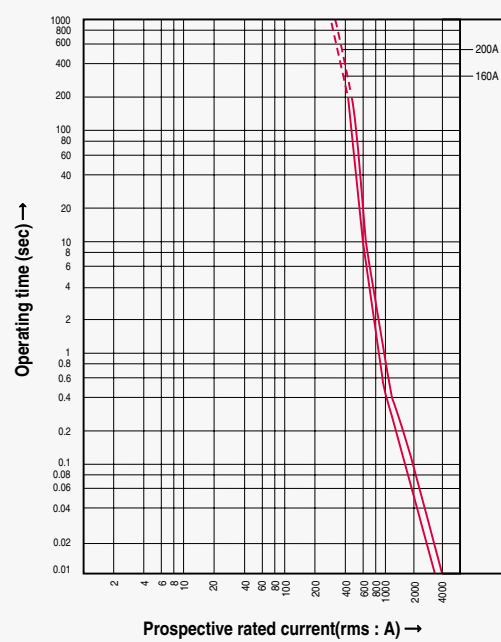
3.6/7.2kV Pre-arcing time-current characteristics



3.6kV Cut-off characteristics



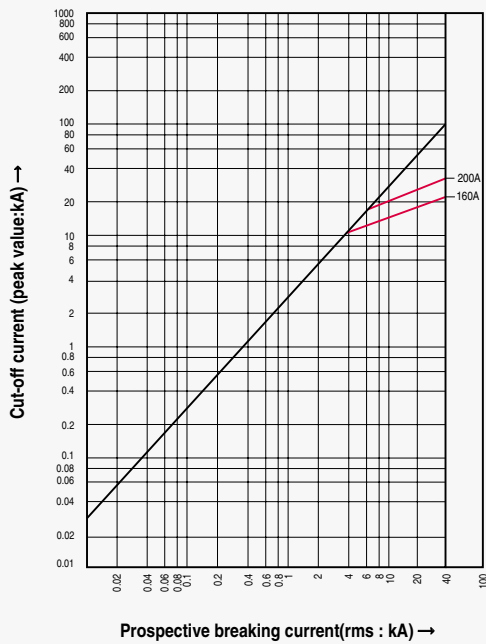
3.6kV Pre-arcing time-current characteristics



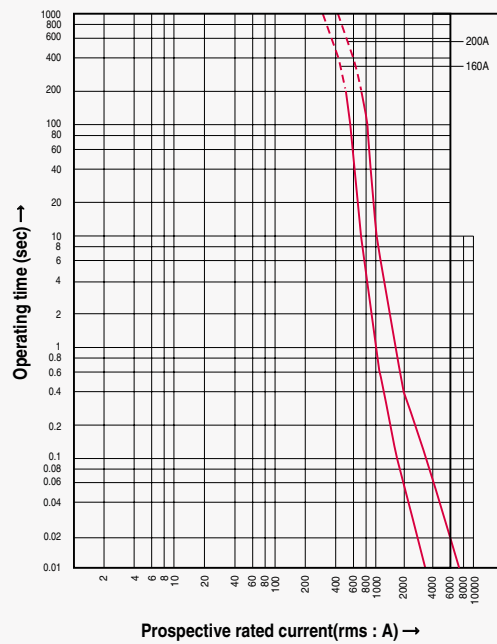
LS HRC Power Fuses

Characteristics curves

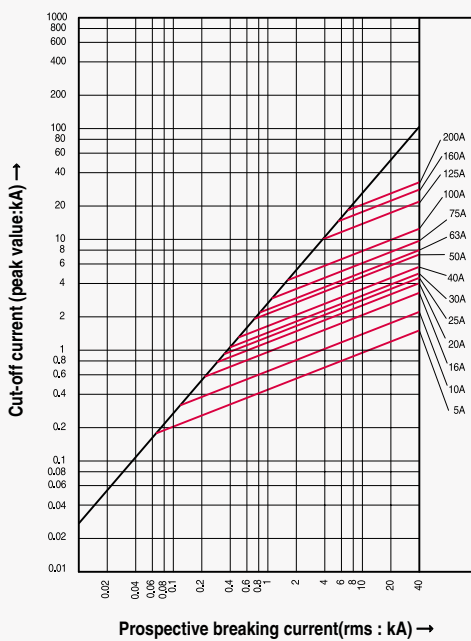
7.2kV Cut-off characteristics



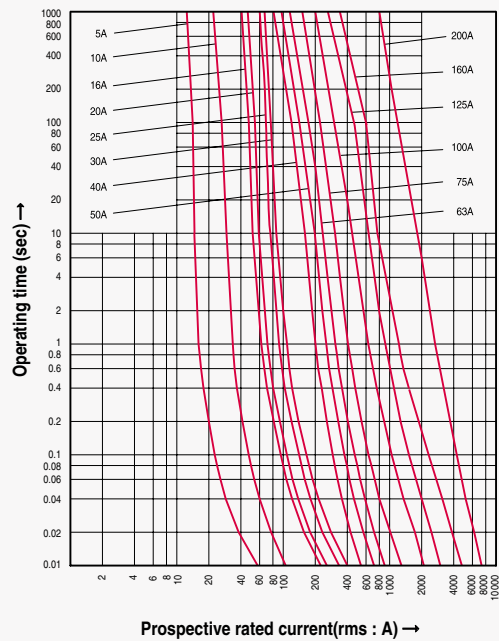
7.2kV Pre-arcing time-current characteristics



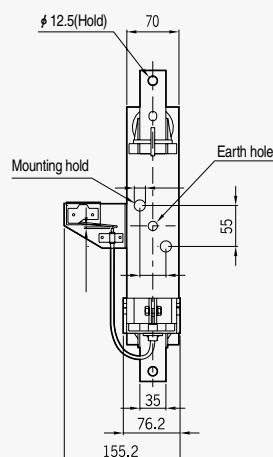
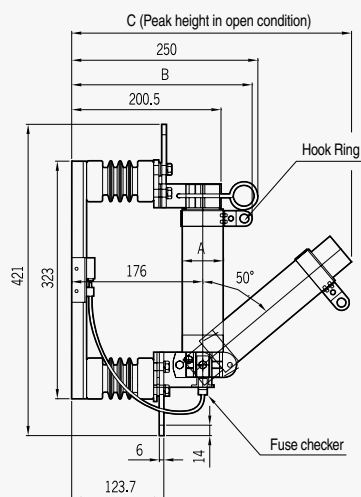
24kV Cut-off characteristics



24kV Pre-arcing time-current characteristics

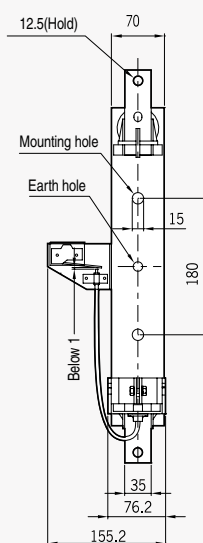
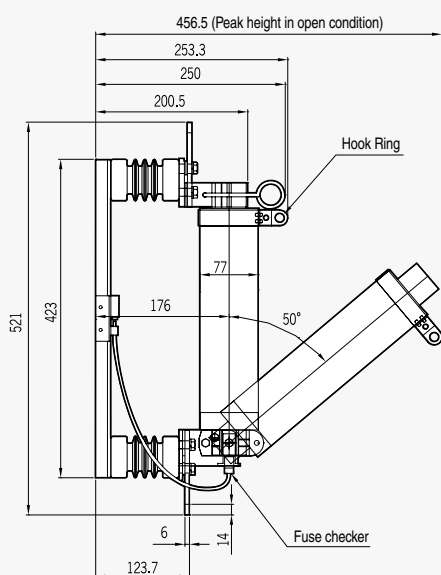


Indoor use Power Fuse holder LFH-6G-D1HB Type



Fuse size(A)	B	C
φ 55	242.3	376
φ 77	253.3	380

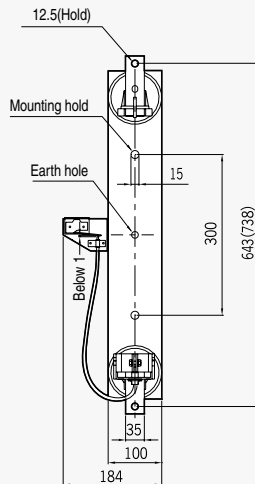
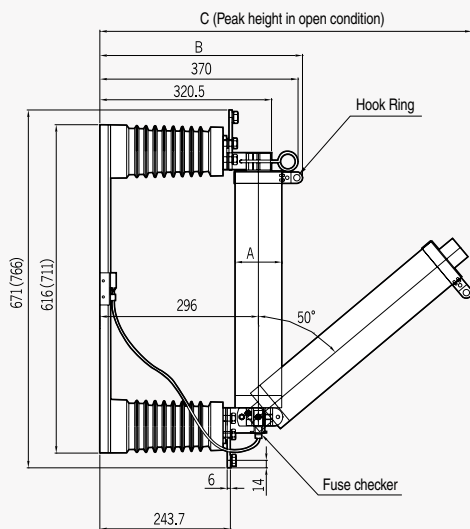
Indoor use Power Fuse holder LFH-6G-D2HB Type



LS HRC Power Fuses

Fuse holder dimensions

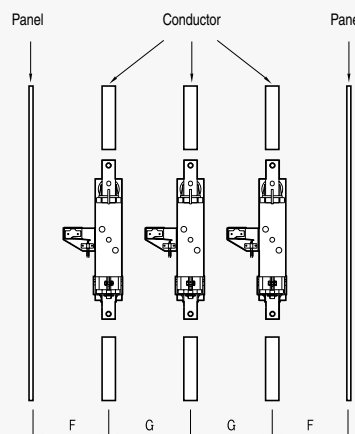
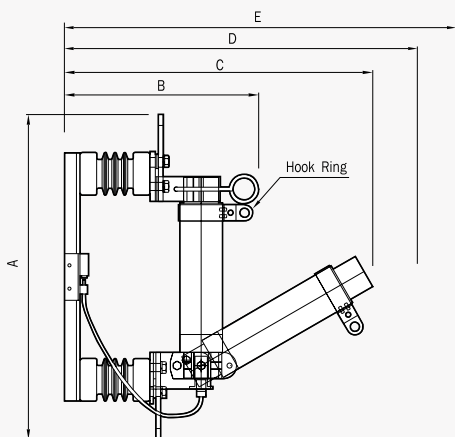
Indoor use Power Fuse holder LFH20-D2HB(C) Type



Fuse size(A)	B	C
φ 55	362.3	687.5
φ 77	373.3	691.6
φ 87	378.3	695(768)

Note) Dimension in () is for LFH-20G-D2HC

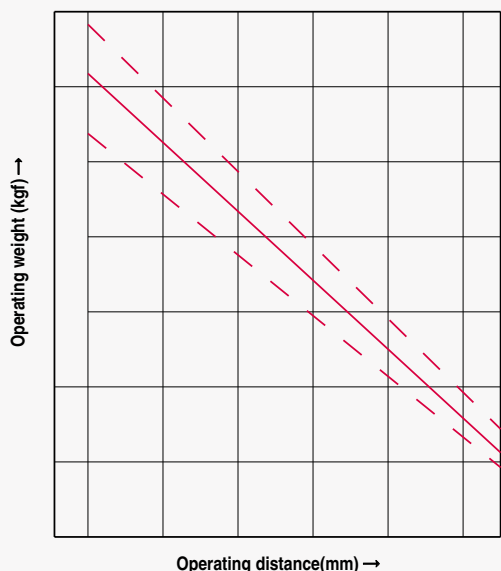
Power Fuse holder



D: Minimum insulation distance in opening
E: Minimum insulation distance in closing

PH Holder type	Rated voltage (kV)	Rated current (A)	Circuit voltage (kV)	Insulation level (BIL, kV)	Dimensions(mm)							Applied fuse
					A	B	C	D	E	F	G	
LFH-6G-D1HB	7.2	100	3.3	45	421	250	376	323	477	97	130	LFL-3/6G-5B, 10B, 20B, 30B, 40B, 50B
			3.3	45	421	254	380	334	477	97	130	LFL-3/6G-60B, 75B, 100B
			6.6	60	421	250	376	349	503	123	158	LFL-3/6G-5B, 10B, 20B, 30B, 40B, 50B
			6.6	60	421	254	380	360	503	123	158	LFL-3/6G-60B, 75B, 100B
LFH-6G-D2HB	7.2	200	3.3	45	521	254	457	334	564	97	130	LFL-3/6G-125B, LFL-3G-160B, 200B
			6.6	60	521	254	457	360	590	123	158	LFL-3/6G-125B, LFL-6G-160B, 200B
LFH-20G-D2HB	24	200	22.9	125	671	363	688	586	934	-	260	LFL-20G-5B, 10B, 16B, 20B
					671	374	692	597	957	-	260	LFL-20G-25B, 30B, 40B, 50B, 60B
					671	379	695	602	957	-	260	LFL-20G-75C, 100C 125B, 160B
LFH-6G-D2HB					766	379	768	602	957	-	260	LFL-20G-200B

Striker operating characteristics



Operating characteristics of the Power Fuses

The characteristics of the Power Fuses are native and fixed. Therefore it can not be regulated like a circuit breaker or over-load relay. When ordering, please select the Power Fuses with proper current and operating characteristics by considering its usage and circuit condition.

Breaking a small current.

Power Fuses are not adequate to protect small current. So, the manufacturer specifies and guarantees the minimum breaking current by regulation.

- 1) Select the rated current of the Power Fuse, which does not operate below the minimum breaking current.
- 2) Protect the current below the minimum value by use of other protective equipment.

Types of P/F Link & P/F Holder

P/F Link

LFL — **6** — **G** — **50** — **B**

Model name **Rated voltage** **General use** **Rated current** **Revision No.**

Rated voltage	
3/6	3.6/7.2kV
3	3.6kV
6	7.2kV
20	24kV

Rated current			
5	5A	50	50A
10	10A	60	63A
16	16A	75	75A
20	20A	100	100A
25	25A	125	125A
30	30A	160	160A
40	40A	200	200A

P/F Holder

LFH — **6** — **G** — **D** — **1H** — **B** — **1** — **5**

Model name **Rated voltage** **General use** **Indoor use** **Revision No.** **Rated current** **Fuse Checker** **Hook Ring**

Rated voltage	
3/6	3.6/7.2kV
20	24kV

Revision No.	
B	-
C	200A(24kV)

Rated current	
1H	100A
2H	200A

Fuse Checker	
0	Without
1	With

Hook Ring	
5	∅ 55
7	∅ 77
8	∅ 87

Green Innovators of Innovation



Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact a qualified service technician when you need maintenance. Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

LSIS Co., Ltd.

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