

# Low Voltage Fuses

## AFaC and BaC types

### AFaC and BaC type current-limiting fuses

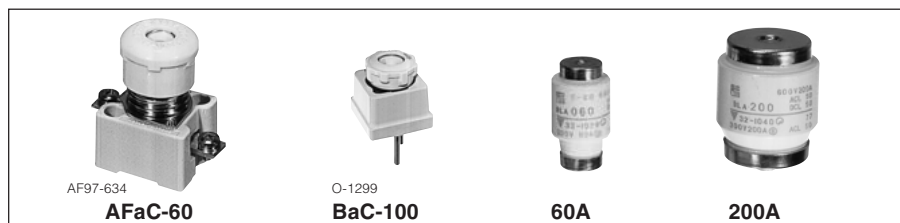
600V AC/DC, 3–400 Amps

#### ■ Description

The AFaC and BaC type have an excellent current-limiting performance with an interrupting capacity as high as 100kA at 600V AC/DC. They are suitable for power circuits and control circuit applications including general power cubicles, distribution equipment, motor starters, load centers and control centers. The fuse assembly comprises base, screw cap, fuse link and adapter ring. The universal surface mounting terminals are provided with screws while the rear connection type are supplied with stud bolts. The fuse link can easily and safely be replaced by simply removing a screw cap.

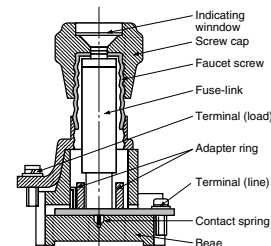
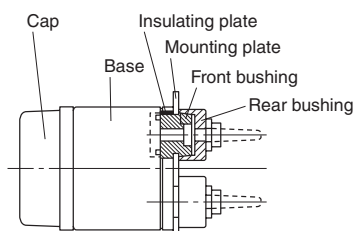
The diameter of the solid ferrule fuse link varies according to the rated current. The higher the rating, the greater the diameter.

As a safety feature the screw cap can only be tightened when the fuse link matches with the adapter ring located inside the base. This prevents the cap from being tightened even when fuse



Rear connection type

Surface connection type



Thickness of mounting plate: 3.2mm or less

link with larger ratings is inserted. The operating blown indication tip can be observed through the screw cap window. The tip color indicates the current rating – for instance, pink indicates 3A and red 10A. The tip is ejected to show that the fuse has blown. Both the base and the screw cap are made from a high class

porcelain insulating material to ensure trouble-free operation. The fuse can be replaced without isolating the circuit. Since the fuse link is housed in a highly reliable porcelain barrel it is strong mechanically and thermally with no danger of explosion or production of noxious gases when blown.

#### ■ Components of AFaC and BaC type

Parts	FA776		SD-39	SD-39		SDO 0091M	SD-63
Rated current (A)	Fuse-link		Screw cap	Base		Adapter ring	
	Type	Color of indicator	Type	Surface connection Type	Rear connection Type	Type	Color of adapter ring
3	<b>BLA003</b>	Pink	<b>Pa30</b>	<b>AFa30</b>	<b>Ba30</b>	<b>R3</b>	Pink
5	<b>BLA005</b>	Brown				<b>R5</b>	Brown
10	<b>BLA010</b>	Red				<b>R10</b>	Red
15	<b>BLA015</b>	Gray				<b>R15</b>	Gray
20	<b>BLA020</b>	Blue				<b>R20</b>	Blue
30	<b>BLA030</b>	Violet				—	—
40	<b>BLA040</b>	Black	<b>Pa60</b>	<b>AFa60</b>	<b>Ba60</b>	<b>R40</b>	Black
60	<b>BLA060</b>	Light red				—	—
75	<b>BLA075</b>	Silver	<b>Pa100</b>	<b>AFa100</b>	<b>Ba100</b>	<b>R75</b>	Silver
100	<b>BLA100</b>	Red				—	—
125	<b>BLA125</b>	Yellow	<b>Pa200</b>	<b>AFa200</b>	<b>Ba200</b>	<b>R125</b>	Yellow
150	<b>BLA150</b>	Light red				<b>R150</b>	Light red
200	<b>BLA200</b>	Blue				—	—
250	<b>BLA250</b>	Green	<b>Pa400</b>	<b>AFa400</b>	<b>Ba400</b>	<b>R250</b>	Green
300	<b>BLA300</b>	White				<b>R300</b>	White
400	<b>BLA400</b>	Black				—	—

#### Minimum ordering quantity

• Fuse-link	BLA003 to 030	100 pcs.	• Base	AFa30 Ba30	100 pcs.
	BLA 040, 060	20		AFa60 Ba60	50
	BLA 075 to 200	10		AFa100 Ba100	10
	BLA 250 to 400	5		AFa200 Ba200	5
				AFa400 Ba400	1
• Screw cap	Pa30	100 pcs.	• Adapter ring	R3 to 20, R75	100 pcs.
	Pa60	50		R40, R125 to 300	50
	Pa100	10			
	Pa200	5			
	Pa400	1			

## Specifications

Fuse-link Type	Rated current (A)	Rated voltage	Interrupting capacity (kA)	Max. interrupting $I^2 t$ (Amp <sup>2</sup> x sec.)
BLA003	3	600V AC DC	100	28
BLA005	5			110
BLA010	10			500
BLA015	15	100	100	750
BLA020	20			$1.3 \times 10^3$
BLA030	30			$5 \times 10^3$
BLA040	40	100	100	$9.2 \times 10^3$
BLA060	60			$27 \times 10^3$
BLA075	75	100	100	$70 \times 10^3$
BLA100	100			$100 \times 10^3$
BLA125	125	50	50	$290 \times 10^3$
BLA150	150			$390 \times 10^3$
BLA200	200			$500 \times 10^3$
BLA250	250	20	20	$1800 \times 10^3$
BLA300	300			$2200 \times 10^3$
BLA400	400			$3000 \times 10^3$

## Ordering information

Specify the following:

1. Type number

### Fuse-link BLA 003

#### Rated current

Ex. 003 : 3 Amps  
075 : 75 Amps  
200 : 200 Amps

#### Fuse-link

### Base AFa 30

#### Frame size

30: For 3 to 30A  
60: For 40, 60A  
100: For 75, 100A  
200: For 125, 150, 200A  
400: For 250, 300, 400A

#### Connection

AFa: Surface  
Ba : Rear

### Screw cap Pa 30

#### Frame size

30: For 3 to 30A  
60: For 40, 60A  
100: For 75, 100A  
200: For 125, 150, 200A  
400: For 250, 300, 400A

#### Screw cap

## Mounting on steel panel

To mount a rear connection base Ba on a steel panel, an insulating plate and some bushings are used. Kits for 30, 60, 100, 200 and 400A base are available. Please specify your base type when ordering.

Two front bushings are used with 100, 200 and 400A base only.

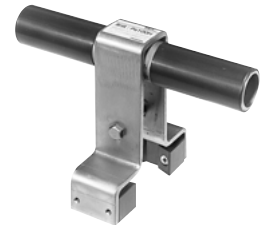
Example: Insulating plate and bushings for Ba30



## Tightening tool

It is recommended that fuses with ratings of over 100A be tightened with a special tool since there is the possibility of overheating if the screw cap is not adequately tightened. This exclusive use tool is sold separately.

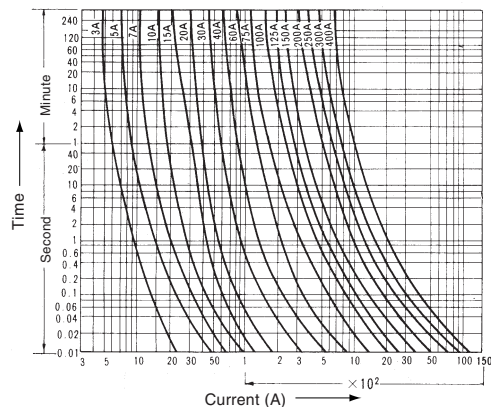
Type	Screw cap type
Pa100H	Pa100
Pa200H	Pa200
Pa400H	Pa400



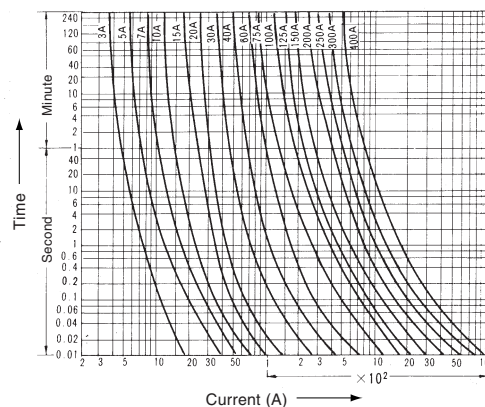
AF90-316

## Characteristic curves

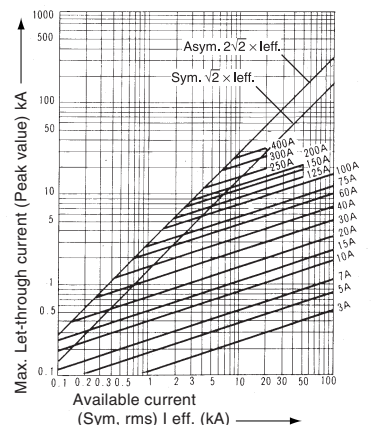
### Melting time-current characteristic



### Permissible time-current characteristic



### Current-limiting characteristic





## FCF, FCK type current-limiting fuses

500V AC

FCF Up to 60 Amps

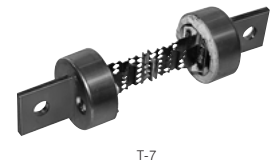
FCK Up to 600 Amps

### ■ Description

FCF and FCK HRC fuses use a specially designed low-temperature melting element, a feature of 'dual element' fuses. There is no fuse deterioration due to overcurrent phenomena such as rush current at the time of motor starting and they also feature time-lag operation characteristics. They operate rapidly and positively in the face of destructive short circuit currents. Since they are current-limiting fuses with a high capacity of 50kA (FCF types: 1 – 60 Amps) they are suitable for many types of power and control circuits. The fuse link is housed in a ceramic barrel with



excellent thermal and mechanical characteristics and is packed in silica sand which prevents arcing. Thus there are no fears of explosion or production of noxious gases. The FCF's link end is a solid ferrule-type and available in 1 – 60 Amps ratings. The FCK is a center blade-type and available in 3 – 600 Amps ratings. The fuse links for the 75 Amps FCK and larger sizes are provided with a blown fuse indicator.



### ■ Ordering information

Specify the following:

1. Type number

### FCF series

Rated current (A)	Interrupting capacity (kA)	Fuse-link Type
1	50	FCF2-1
3		FCF2-3
5		FCF2-5
10		FCF2-10
15		FCF2-15
20		FCF2-20
30		FCF2-30
40		FCF2-40
50		FCF2-50
60		FCF2-60

Note: Minimum ordering quantity  
Fuse-link: 100 pcs.

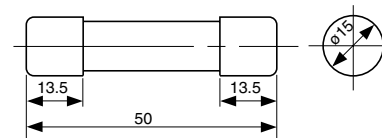
### FCK series

Rated current (A)	Interrupting capacity (kA)	Fuse-link Type
3	35	FCK2-3
5		FCK2-5
10		FCK2-10
15		FCK2-15
20		FCK2-20
30		FCK2-30
40	50	FCK2-40
50		FCK2-50
60		FCK2-60
75		FCK2-75
100	600	FCK2-100
125		FCK2-125
150		FCK2-150
200		FCK2-200
250		FCK2-250
300		FCK2-300
400		FCK2-400
500		FCK2-500
600		FCK2-600

Note: Minimum ordering quantity  
Fuse-link: 100 pcs.

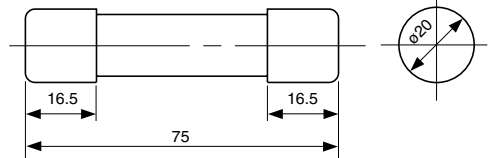
### ■ Dimensions, mm

#### ● Fuse-link FCF2-1 to 30



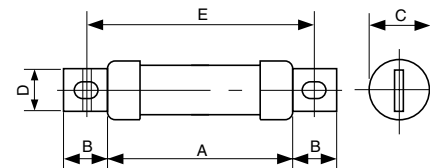
Mass: 20g

#### FCF2-40 to 60



Mass: 80g

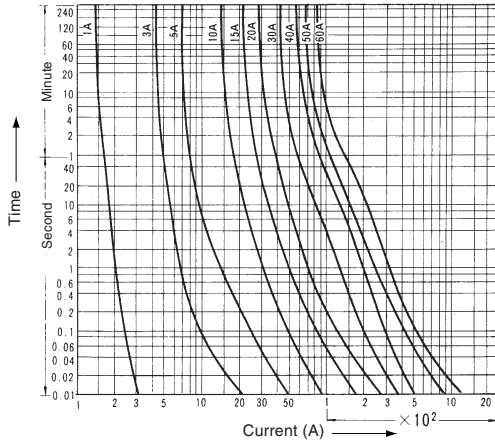
#### ● Fuse-link FCK2-3 to 600



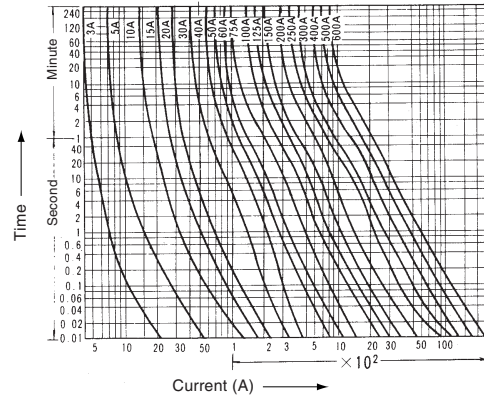
Type	A	B	C	D	E	Mass (g)
FCK2-3 to 30	50	15	ø19.8	13	66.5	35
FCK2-40 to 60	75	19	ø24.9	16	96	95
FCK2-75, 100	95	25	ø31	20	122.5	180
FCK2-125 to 200	110	35	ø45	30	148.5	470
FCK2-250 to 400	120	50	ø63	40	170	1100
FCK2-500, 600	145	60	ø75	50	205	2000

# Low Voltage Fuses FCF and FCK types

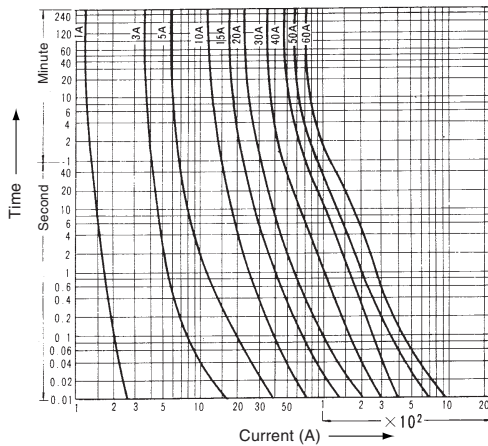
- Characteristic curves
  - FCF type
- Melting time-current characteristic



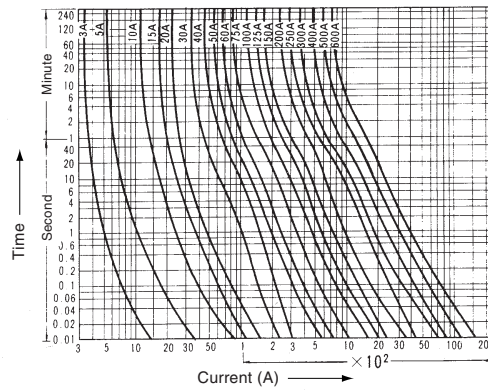
- FCK type
- Melting time-current characteristic



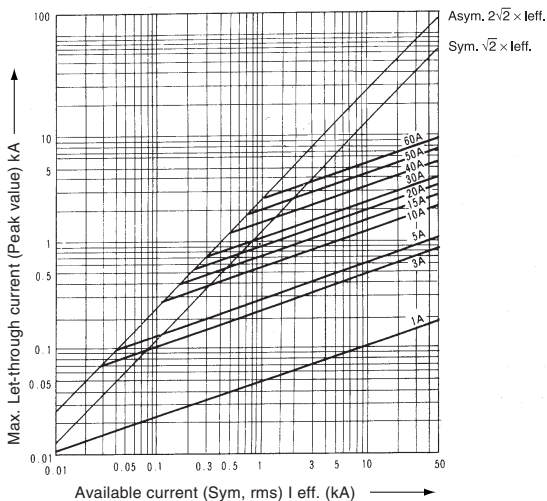
Permissible time-current characteristic



Permissible time-current characteristic



Current limiting characterisitc



Current limiting characterisitc

