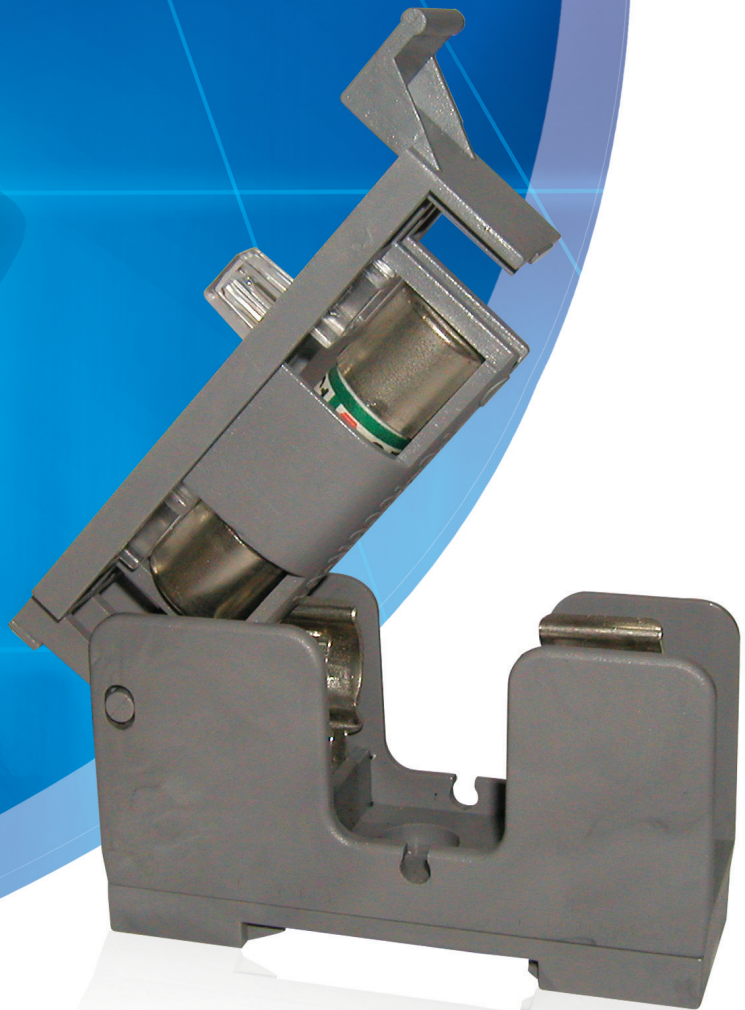


#703-3 Bugok-ri Jangyu-myun Kimhae-city Kyungnam, Korea  
Tel. 82-(0)55-338-3113  
Fax. 82-(0)55-336-9105  
E-mail. [sbfuse@sb21c.com](mailto:sbfuse@sb21c.com)  
**[www.sb21c.com](http://www.sb21c.com)**

Fuse links for Marine & Off-Shore

**SB-C1 &  
FH-1550N  
FH-2075N**





# “ Patient people who rise to the challenge of product innovation with an industrious mindset ”

## **"Patient people who rise to the challenge of product innovation with an industrious mindset"**

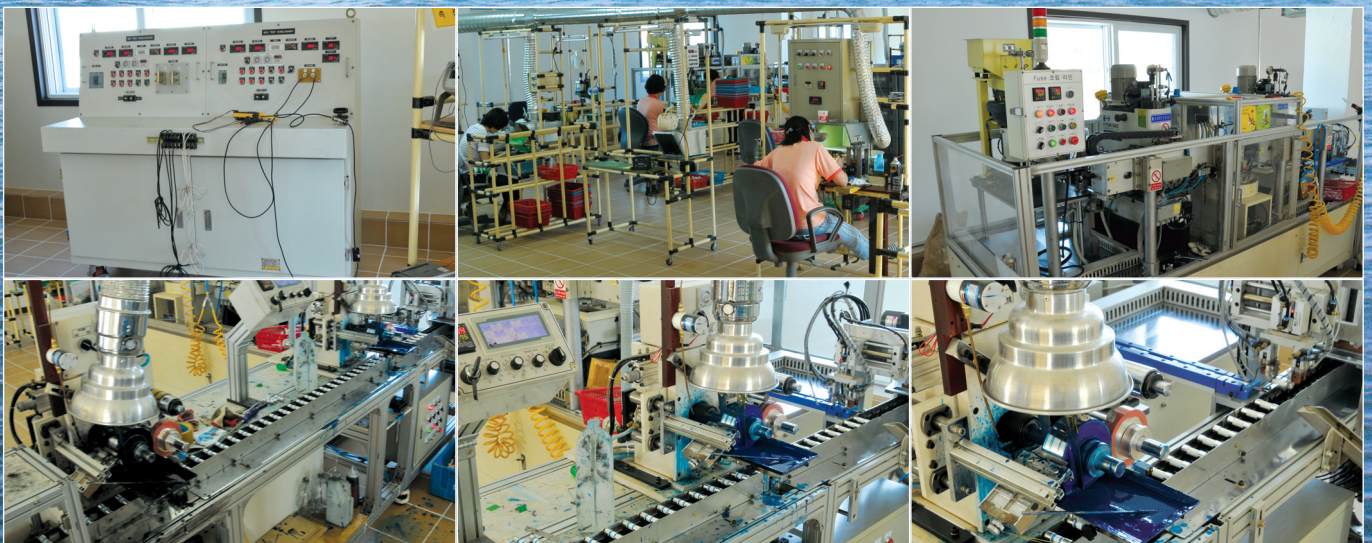
SB Co., Ltd. was established as Sambu Fuse with the management policy of "Let's be patient people who rise to the challenge of product innovation with an industrious mindset" at Youngdo-gu, Busan City in 1990. The company had endeavored to localize fuse-links for ships and had received type approval for AC 500V 10KA fuse-link from the Korean Register of Shipping (KR) in 1992. The company has continuously endeavored to develop fuses for ships since then. Consequently the company has received type approvals for fuse links of the rated voltage of AC 500V DC 250V and rated ampere from 1A to 60A, breaking current of AC 100KA, DC 50KA from ABS, BV, GL, LR, KR, and NK, which is the first in Korea. The company currently supplies the fuses to almost all ships which are built in Korea and offshore. The company is now meeting the challenge to develop innovative products such as electrical parts for ships for its second take off.

We will do our best to become a comprehensive manufacturer of electrical parts for ships with our continuous R&D efforts and provide our customers with our innovative products.

Please continue to encourage us with your constant guidance and assistance in order for us to be a successful company.

Thank you very much.

Park, woon-han, Representative director of SB Co., Ltd.





# Company History

<b>1990. 06</b>	Sambu Fuse was established at Youngdo-gu, Busan City.
<b>1992. 07</b>	Acquired type approval of SC-1 Type Fuse-Links (AC 500V 10KA) from the Korean Register of Shipping (KR).
<b>1997. 05</b>	Korea Electric Power Corporation (KEPCO) approved development test o f electric wire fuse.
<b>1997. 07</b>	The company was qualified as a competitive bidder for electric wire fuse by the Korea Electric Power Corporation.
<b>1998. 03</b>	The company started to supply electric wire fuses to the Korea Electric Power Corporation.
<b>1998. 04</b>	The company participated in INNO-BIZ which is managed by the Small and Medium Business Administration (SMBA).
<b>1999. 09</b>	The company was incorporated and its name was changed to SB Fuse Co.,Ltd Its head office and plant moved to Saha-gu, Busan City.
<b>2000. 02</b>	Company research and development certificate. (Sangihyup 20003023)
<b>2000. 03</b>	Participated in INNO-BIZ (SMBA).
<b>2000.05~10</b>	SB-C1 Type Fuse-Links were approved by ABS, BV, GL, LR, KR, and NK.
<b>2000. 06</b>	Registered utility model. (fuse structure)
<b>2000. 10</b>	ISO 9001 certificate.
<b>2001. 08</b>	INNO-BIZ certificate. (SMBA)
<b>2001. 12</b>	Registered utility model. (Tube type holder)
<b>2002. 05</b>	Specialized Components and Materials Enterprise. (the Ministry of Commerce, Industry and Energy)
<b>2002. 06</b>	Chinese office was established in Zhejiang province, China.
<b>2004. 10</b>	The company name was changed to SB Co., Ltd. and its head office and plant were moved to Saengrim-myeon, Gimhae City, Gyeongnam Province.
<b>2008. 03</b>	The company registered utility model (fuse holder).
<b>2008. 04</b>	China plant was established. (Wezhonu SB Electric Co., Ltd.)
<b>2009. 08</b>	The company head office and plant were moved to Jangyu-myeon, Gimhae City, Gyeongnam Province.

## C.o.n.t.e.n.t.s

02_	CEO Message
03_	Company History / Contents
04~07_	Fuse-Links
08~11_	Fuse-Holder
12~15_	Fuse-Cover & Puller



## ► Model number SB-C1

(Non-renewable cartridge type current limiting fuse-links)

## ► Service Conditions

- The ambient temperature is within the range of the maximum 45°C and the minimum -25°C. Provided that the average temperature during 24H shall not exceed 35°C.
- Not affected by shot

## ► Specifications

- **Rated voltage** AC 500V/DC 250V
- **Rated current** 1A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 15A, 20A, 25A, 30A, 40A, 50A, 60A
- **Rated frequency** 50Hz, 60Hz
- **Rated breaking capacity (Interrupting capacity)** AC 100,000A/DC 500,000A.
- **Classification class** "A" (Fusing factor 1.35In)

## ► Marine/Off-Shore Type Approvals for SB-C1 Fuse Links

- American Bureau of Shipping(ABS)
- Bureau Veritas(BV)
- Germanischer Lloyd(GL)
- Lloyd Register of shipping(LR)
- Korea Register of shipping(KR)
- Nippon Kaiji Kyokai(NK)
- KS A 9001/ISO 9001



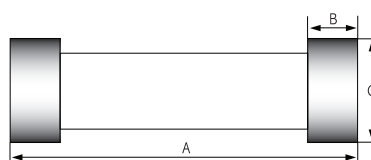
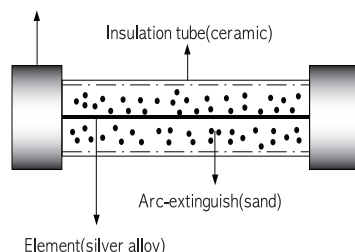
■ Table Standard Ratings

Model Number	Rated voltage(V)	Rated current(A)	Rated frequency(Hz)	Rated breaking capacity(KA)	Fusing factor	Approved number
SB-C1	AC 500 DC 250	1A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 15A, 20A, 25A, 30A, 40A, 50A, 60A	50~60	AC 100 (ACL 100)  DC 50 (DCL 50)	1.35In	ABS 05-BK130633-PDA BV 08716/C0 BV GL 13784-99HH LR 00/00102(E1) KR GCH04247-EL002 NK 00T101 ISO K01-1321

## ► Construction and Dimensions

- The fuse element is made of silver alloy with special treatment applied.
- The insulating tube is made of special ceramics having high heat-resistance and sand is used as arc-extinguishing filler.
- The materials for current carrying metal fitting is of copper alloy.

Out & Inner cap(Sn-plated copper alloy)



■ Table Dimension

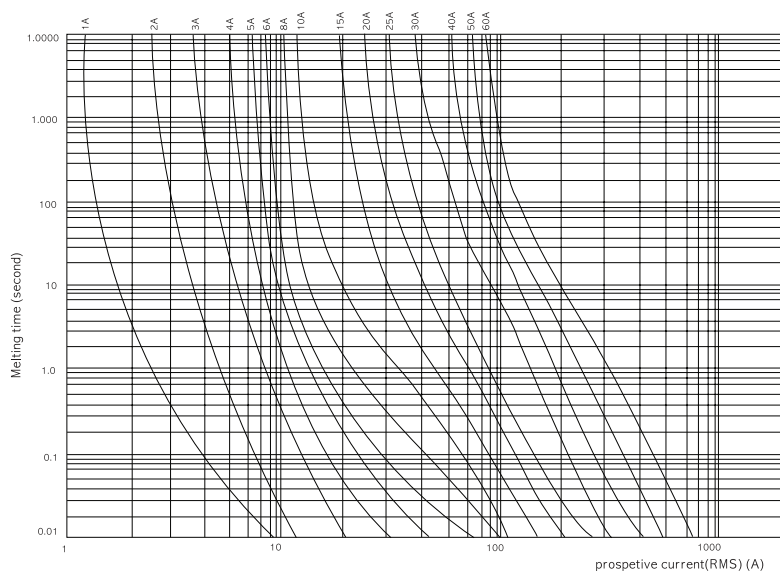
Model Number	Rated current(A)	Dimension(mm)			Weight (g/pc's)
		A	B	C	
SB-C1	1A, 2A, 3A, 4A, 5A, 6A, 8A, 10A, 15A, 20A, 25A, 30A	50	13	15	22
	40A, 50A, 60A	75	16	20	56



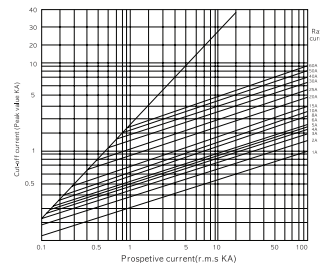


## :: PERFORMANCE

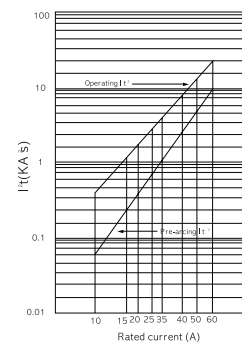
Pre-arcing time/current characteristic  
1-60Amperes, 500VAC(Fusing Factor-1.35In)



Cut-off characteristics



$I^2t$  characteristics

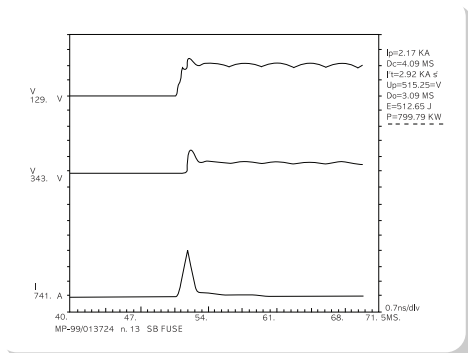


## :: Verification of breaking performance $I_b$ at DC

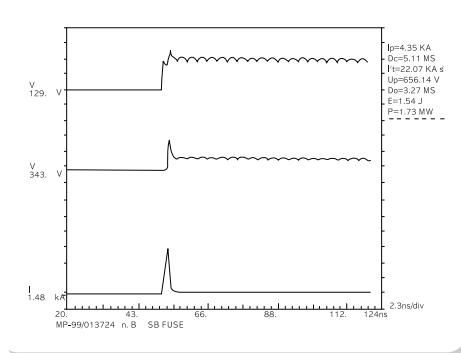
- Applied voltage DC 254V
- Steady-state current 51,980A
- Peak current 52,410A
- Time constant 15.1ms

■ Table

Type	Rated current(A)	Cut-off current(A)	Time(ms)		$I^2t(KA^2S)$		Switching voltage(KV)	Insulation resistance after operation(MΩ)
			pre-arcing	arcing	melting	arcing		
SB-C1	1	142	0.10	0.086	0.00130	0.00080	1.267	>500
	1	144	0.10	0.086	0.00132	0.00028	0.269	>500
	1	144	0.09	0.088	0.00129	0.00032	0.270	>500
	30	2170	1.00	2.690	1.26	1.66	0.515	>500
	30	2180	1.01	2.880	1.32	1.56	0.565	>500
	30	2170	1.01	2.720	1.27	1.60	0.558	>500
	40	2610	1.17	2.430	2.18	2.53	0.571	>500
	40	2530	1.14	2.680	2.08	2.49	0.583	>500
	40	2580	1.16	2.520	2.17	2.64	0.573	>500
	60	4320	1.83	3.280	10.40	10.85	0.646	>500
	60	4350	1.84	3.270	10.72	11.35	0.656	>500
	60	4370	1.89	2.850	10.88	9.73	0.653	>500



Interrupting( $I_b$ ) oscillogram of type SB-C1 30A at DC 250V



Interrupting( $I_b$ ) oscillogram of type SB-C1 60A at DC 250V

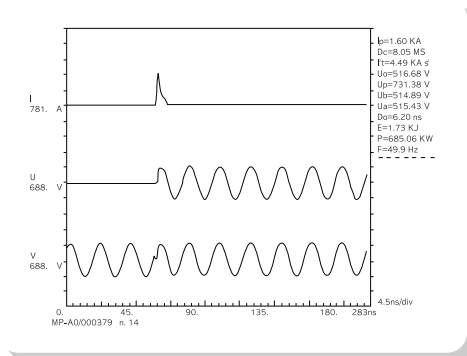


## :: Verification of breaking performance $I_1$ at AC

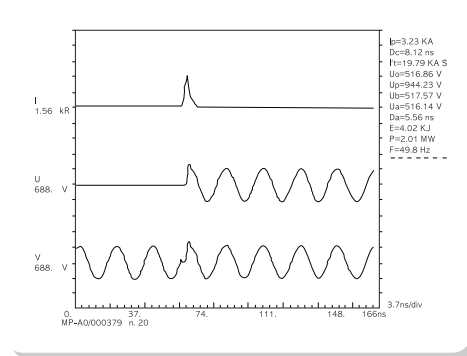
- Applied voltage AC 525V
- Power factor 0.15
- Steady-state current 100,400 A
- Peak current 232,170 A

■ Table

Type	Rated current(A)	Cut-off current(A)	Time(ms)		$I^2t(KA^2S)$		over voltage(KV)	Insulation resistance after operation(MΩ)
			pre-arcing	arcing	melting	arcing		
SB-C1	30	6420	0.15	4.50	1.15	7.35	1170	>500
	30	6720	0.12	3.58	1.30	7.93	1180	>500
	30	6540	0.13	4.38	1.25	7.95	1160	>500
	60	8640	0.3	1.1	6.97	24.66	891	>500
	60	9010	0.3	1.1	7.46	23.98	892	>500
	60	9280	0.31	0.74	7.87	22.33	932	>500



Interrupting( $I_1$ ) oscillogram of type SB-C1 30A at AC 500V

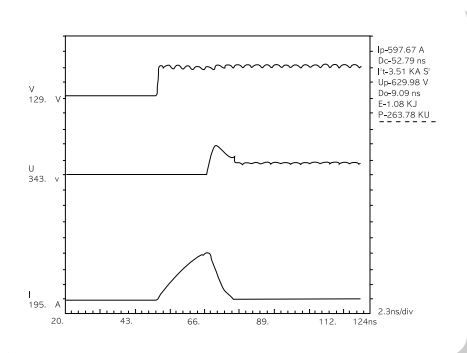


Interrupting( $I_1$ ) oscillogram of type SB-C1 60A at AC 500V

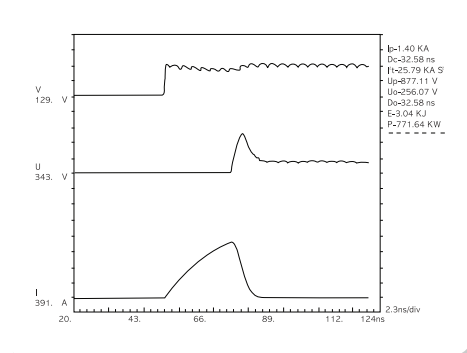
- Applied voltage DC 255V
- Steady-state current 2,000 A
- Peak current 2,010 A
- Time constant 18.9ms

■ Table

Type	Rated current(A)	Cut-off current(A)	Time(ms)		$I^2t(KA^2S)$		Switching voltage(KV)	Insulation resistance after operation(MΩ)
			pre-arcing	arcing	melting	arcing		
SB-C1	30	601	16.47	8.04	2.46	0.98	0.637	>500
	30	598	16.70	8.09	2.49	1.02	0.630	>500
	30	595	16.30	8.30	2.43	1.03	0.637	>500
	60	1410	23.70	10.1	20.90	5.84	0.868	>500
	60	1400	23.30	9.3	20.16	5.63	0.870	>500
	60	1410	23.70	9.4	20.70	5.92	0.865	>500



Interrupting( $I_2$ ) oscillogram of type SB-C1 30A at DC 250V











Interrupting( $I_2$ ) oscillogram of type SB-C1 60A at DC 250V



## :: Ordering Information

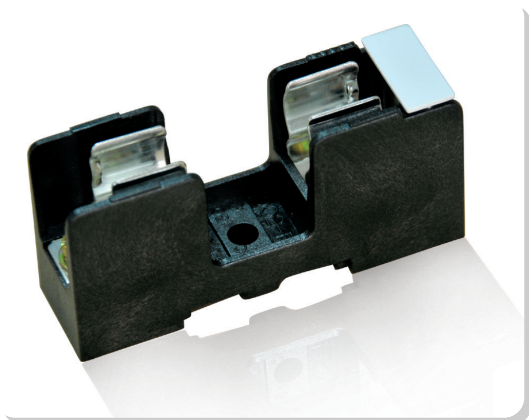


■ Table

Model Number	Rated current(A)	Order Number	Weight(g/pcs)	QT' Y/box(pcs)	Apporoved
SB-C1	1A	1-SB-01	24	20	
	2A	1-SB-02			
	3A	1-SB-03			
	4A	1-SB-04			
	5A	1-SB-05			
	6A	1-SB-06			
	8A	1-SB-08			
	10A	1-SB-10			
	15A	1-SB-15			
	20A	1-SB-20			
	25A	1-SB-25			
	30A	1-SB-30			
	40A	1-SB-40	56	5	
	50A	1-SB-50			
	60A	1-SB-60			



## FH-30C



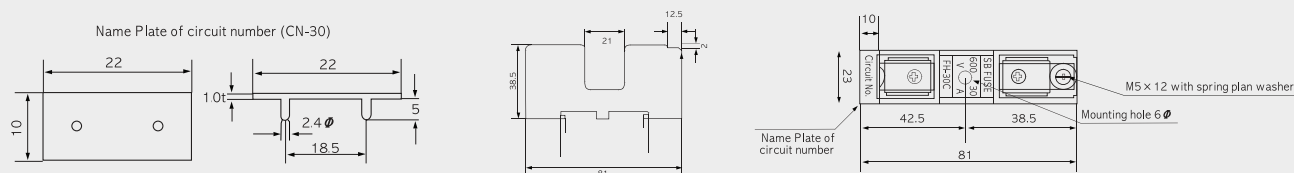
### ► Specifications

Fixing Method	Bottom Mounting
Application Fuse-Links	SB-C1(15Ø×50L)
Rated Voltage	AC 600V / DC 300V
Rated Current	30A Maximum
Clip	Copper with Sn coated
Base	Poly Carbonate UL94 V0 Flammability Rating
Screws	Steel with Zn coated
Name plate of	ABS
Circuit number	

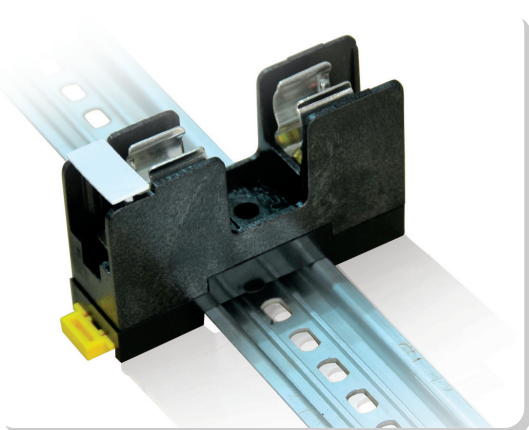
### ► Ordering Information

Order number	Name	Weight(g)	QTY(box)
1-FH-30C	Fuse-holder	50	30 pcs
1-CN-30	Name Plate of circuit number	0.3	100 pcs

### ► Drawing



## FH-30D



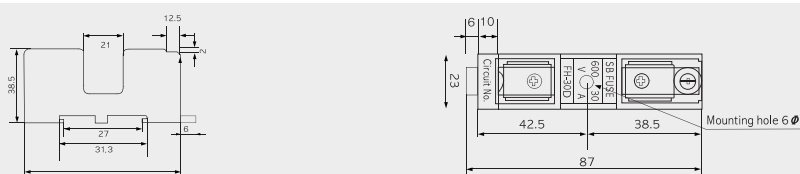
### ► Specifications

Fixing Method	Rail Mounting
Application Fuse-Links	SB-C1(15Ø×50L)
Rated Voltage	AC 600V / DC 300V
Rated Current	30A Maximum
Clip	Copper with Sn coated
Base	Poly Carbonate UL94 V0 Flammability Rating
Screws	Steel with Zn coated
Name plate of	ABS
Circuit number	

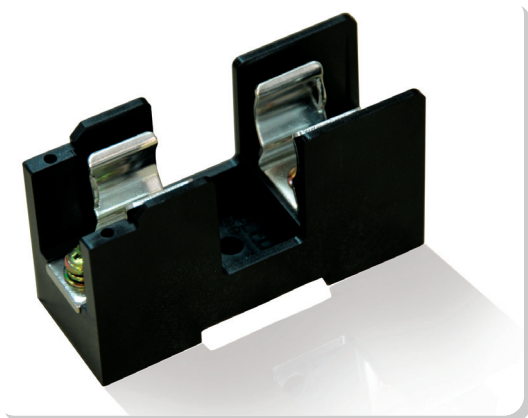
### ► Ordering Information

Order number	Name	Weight(g)	QTY(box)
1-FH-30D	Fuse-holder	62	—
1-CN-30	Name Plate of circuit number	0.3	100 pcs

### ► Drawing



## FH-2060



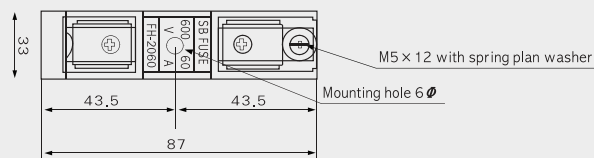
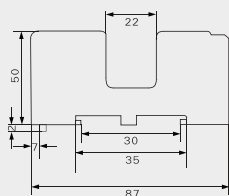
### ► Specifications

Fixing Method	Bottom & Rail Mounting
Application Fuse-Links	Size 20Ø×58L
Rated Voltage	AC 600V / DC 300V
Rated Current	60A Maximum
Clip	Copper with Sn coated
Terminal	Copper alloy with Sn coated
Base	Poly Carbonate UL94 V0 Flammability Rating
Screws	Steel with Zn coated

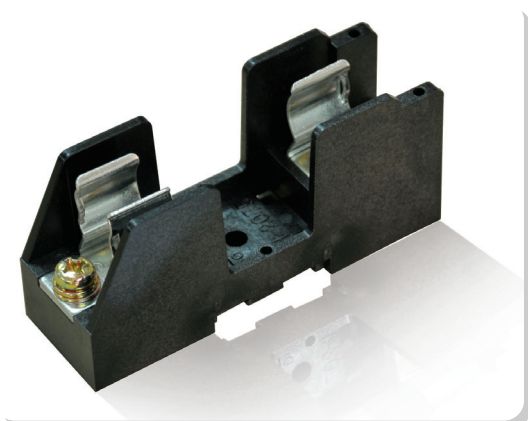
### ► Ordering Information

Order number	Name	Weight(g)	QTY(box)
1-FH-2060	Fuse-holder	106	—

### ► Drawing



## FH-2075



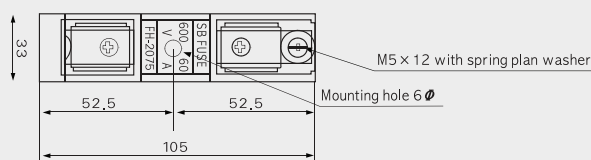
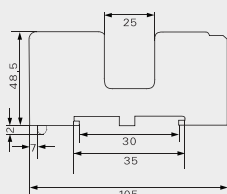
### ► Specifications

Fixing Method	Bottom & Rail Mounting
Application Fuse-Links	Size 20Ø×75L
Rated Voltage	AC 600V / DC 300V
Rated Current	60A Maximum
Clip	Copper with Sn coated
Terminal	Copper alloy with Sn coated
Base	Poly Carbonate UL94 V0 Flammability Rating
Screws	Steel with Zn coated

### ► Ordering Information

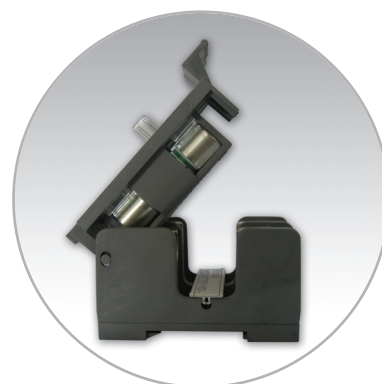
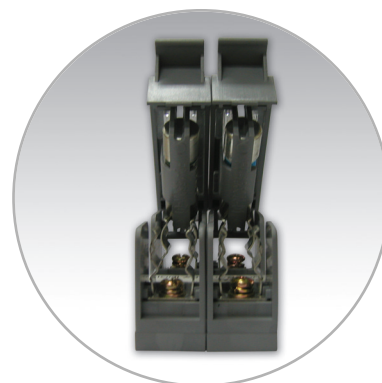
Order number	Name	Weight(g)	QTY(box)
1-FH-2075	Fuse-holder	112	10 pcs

### ► Drawing





## FH-1550N



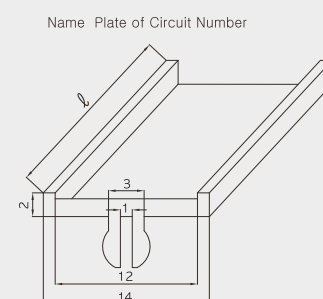
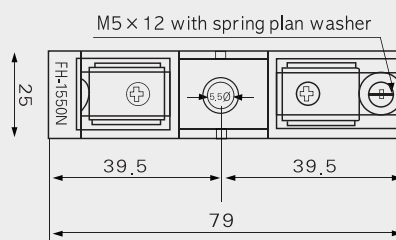
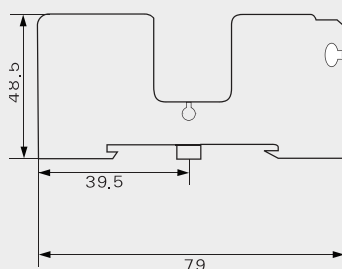
### ► Specifications

Fixing Method	Rail & Bottom Mounting
Application Fuse-Links	SB-C1(15Ø×50L)
Rated Voltage	AC & DC 690V
Rated Current	30A Maximum
Clip	Copper with Sn coated
Base	Poly Carbonate UL94 V0 Flammability Rating
Screws	Steel with Zn coated
Name plate of	ABS
Circuit number	

### ► Ordering Information

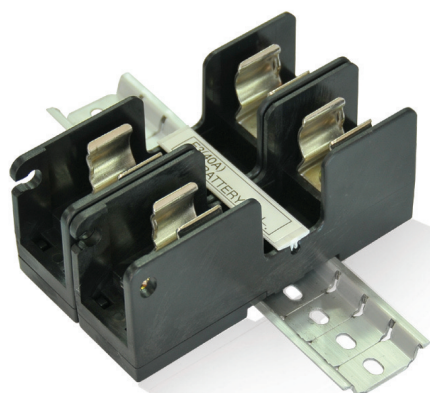
Order number	Name	Weight(g)	QT'Y(box)
1-FH-1550N	Fuse-holder	51g	30 pcs
1-CN-30-1P	Name Plate-30-1P		100 pcs
1-CN-30-2P	Name Plate-30-2P		100 pcs
1-CN-30-3P	Name Plate-30-3P		100 pcs

### ► Drawing



Pole	1P	2P	3P
Ø	24.0	49.0	74.0

## FH-2075N



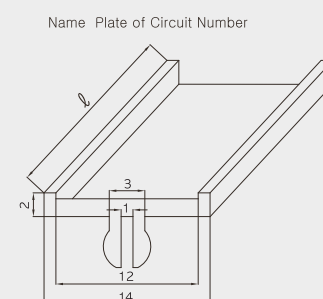
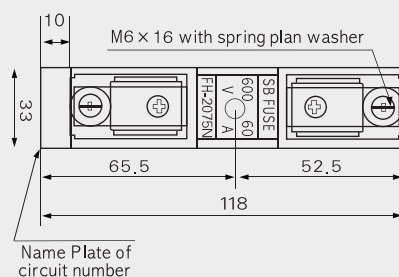
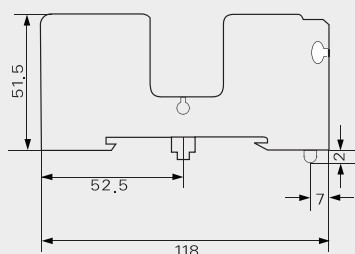
### ► Specifications

Fixing Method	Rail & Bottom Mounting
Application Fuse-Links	SB-C1(20Ø×75L)
Rated Voltage	AC 690V / DC 300V
Rated Current	60A Maximum
Clip	Copper with Sn coated
Terminal	Copper alloy with Sn coated
Base	Poly Carbonate
	UL94 V0 Flammability Rating
Screws	Steel with Zn coated
Name plate of	ABS
Circuit number	

### ► Ordering Information

Order number	Name	Weight(g)	QTY(box)
1-FH-2075N	Fuse-holder	126g	10 pcs
1-CN-60-1P	Name Plate-60-1P		100 pcs
1-CN-60-2P	Name Plate-60-2P		100 pcs
1-CN-60-3P	Name Plate-60-3P		100 pcs

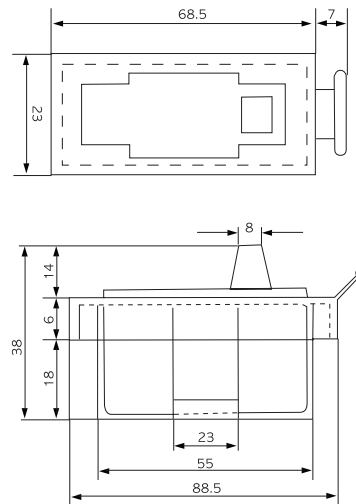
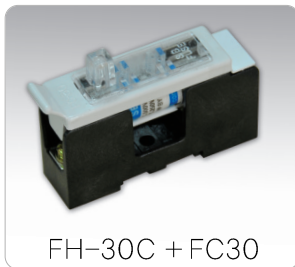
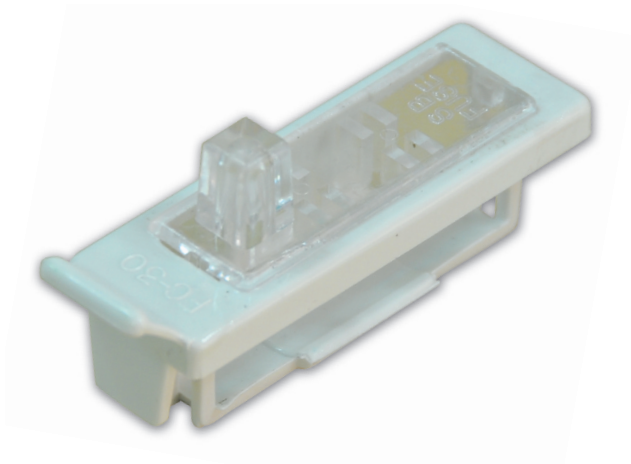
### ► Drawing



Pole	1P	2P	3P
ℓ	32.0	65.0	97.0



## FC-30 (Non Indicating type Fuse-Cover)



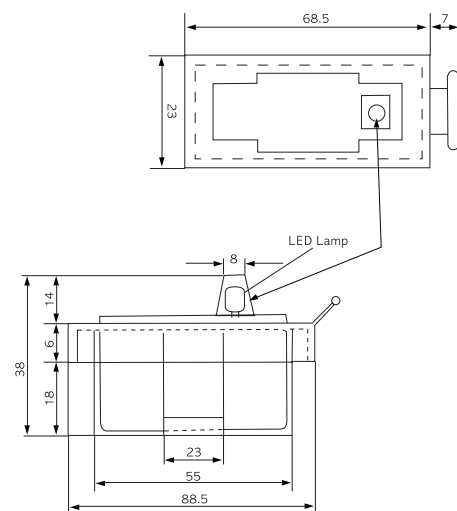
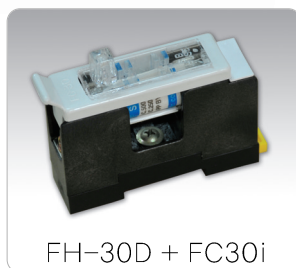
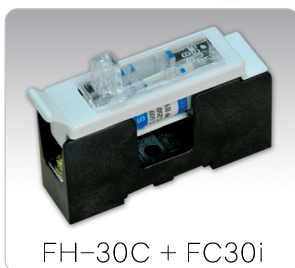
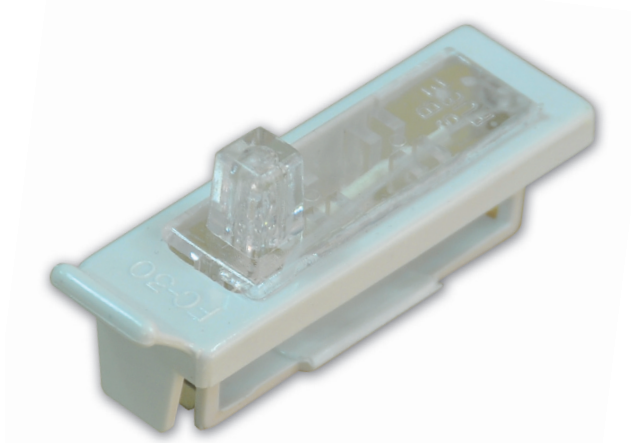
### ► Specifications

Application Fuse-Links SB-C1(15Ø×50L)

Application Fuse Holder FH30C & 30D

Base Poly Carbonate  
UL94 V0 Flammability Rating

## FC-30i (Indicating type Fuse-Cover)



### ► Specifications

Application Fuse-Links SB-C1(15Ø×50L)

Application Fuse Holder FH30C & 30D

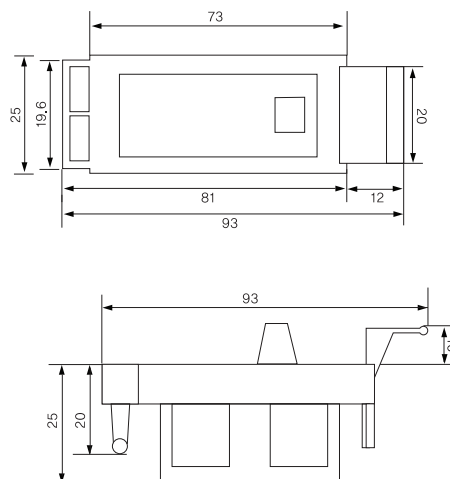
Base Poly Carbonate  
UL94 V0 Flammability Rating

Indicator LED Lamp

### ► Ordering Information

Order number	Name	Weight(g/pc' s)	QT'Y(box)
1-FC-30	Fuse-cover(Non indicator)	10	30 pcs
1-FC-30i	Fuse-cover(With indicator)	11	30 pcs

## FC-1550N (Non Indicating type Fuse-Cover)



FH-1550N + FC1550N

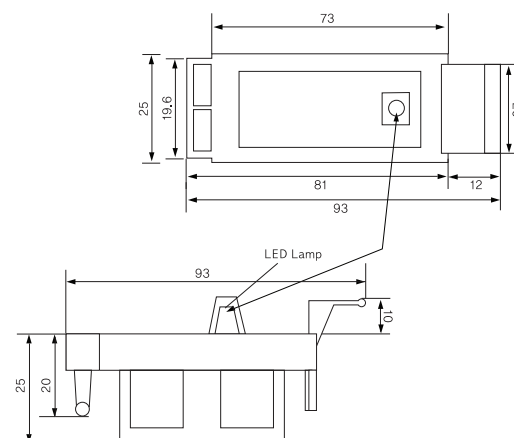
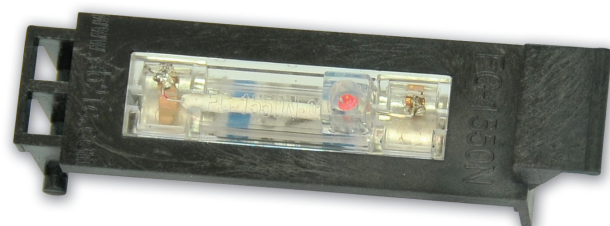
### ► Specifications

Application Fuse-Links SB-C1(15Ø×50L)

Application Fuse Holder FH1550N

Base Poly Carbonate  
UL94 V0 Flammability Rating

## FC-1550N i (Indicating type Fuse-Cover)



FH-1550N + FC1550Ni

### ► Specifications

Application Fuse-Links SB-C1(15Ø×50L)

Application Fuse Holder FH1550N

Base Poly Carbonate  
UL94 V0 Flammability Rating

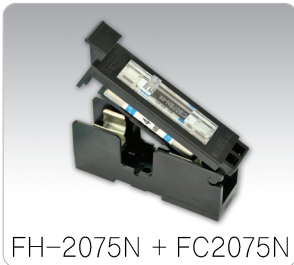
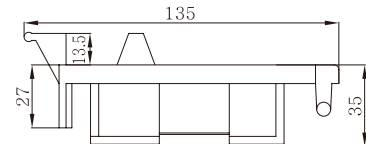
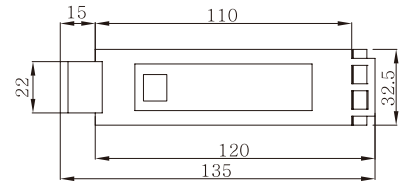
Indicator LED Lamp

### ► Ordering Information

Order number	Name	Weight(g/pc' s)	QT'Y(box)
1-FC-1550N	Fuse-cover(Non indicator)	13	30 pcs
1-FC-1550N i	Fuse-cover(With indicator)	20	30 pcs



## FC-2075N (Non Indicating type Fuse-Cover)



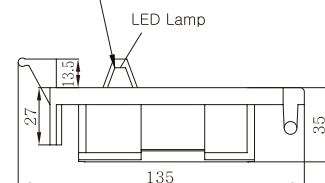
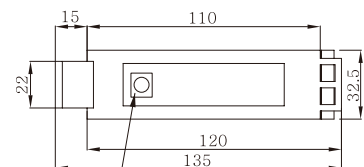
### ► Specifications

Application Fuse-Links SB-C1(20Ø×35L)

Application Fuse Holder FH2075N

Base Poly Carbonate  
UL94 V0 Flammability Rating

## FC-2075N i (Indicating type Fuse-Cover)



### ► Specifications

Application Fuse-Links SB-C1(20Ø×35L)

Application Fuse Holder FH2075N

Base Poly Carbonate  
UL94 V0 Flammability Rating

Indicator LED Lamp

### ► Ordering Information

Order number	Name	Weight(g/pc's)	QT'Y(box)
1-FC-2075N	Fuse-cover(Non indicator)	38	10 pcs
1-FC-2075N i	Fuse-cover(With indicator)	42	10 pcs

## FP-36 (Fuse-Puller)



### ► Specifications

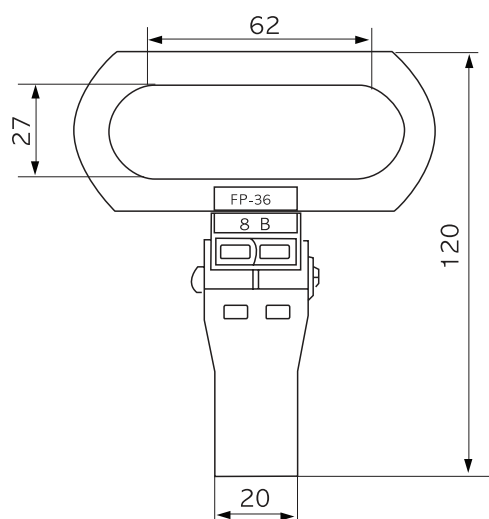
**Application Fuse-Links** SB-C1(15 $\varnothing$ ×50L, 20 $\varnothing$ ×75L)

**Base** ABS  
UL 94 V0 Flammability Rating

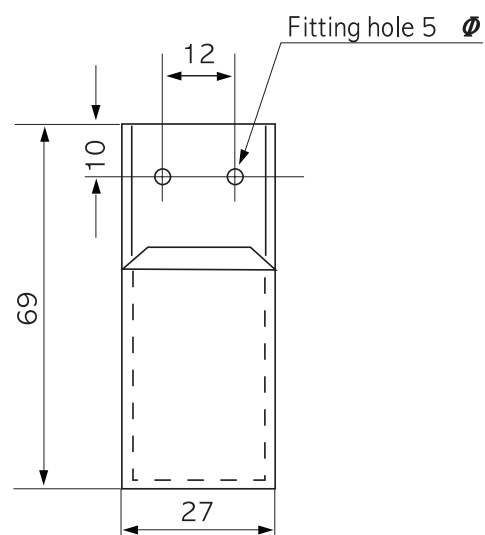
**Clip & Screw** Steel with Zn Coated

**Spring** Stainless Steel

### ► Fuse-puller(FP-36)



### ► Clip(P-30)



### ► Ordering Information

Order number	Name	Weight(g/pc's)	QT'Y(box)
1-FP-36	Fuse-puller	72	10 pc's
1-P-30	Clip	59	—