



- Modular size for 10x38, 10x85, 14x51, 14x85 and 22x58mm fuses
- Finger safe - IEC IP20 degree of protection against accidental contact with live parts and with sealable cover for operator safety
- Version with status indicator to quickly determine if the fuse is still operative or needs to be replaced
- UL and CSA certified versions
- Versions for photovoltaic applications.

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#### AC FUSE HOLDERS

- Version without indicator: 1P, 1P+N, 2P, 3P, 3P+N
- Version with indicator: 1P
- For fuses 10x38, 14x51 and 22x58mm IEC class gG or aM.
- IEC rated current: 32A, 50A, 100A
- IEC rated voltage: 690VAC.



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#### AC FUSE HOLDERS CLASS CC FOR THE NORTH AMERICAN MARKET

- Version without indicator: 1P, 2P, 3P
- Version with indicator: 1P
- For 10x38mm UL/CSA class CC fuses
- IEC rated current: 30A
- IEC rated voltage: 600VAC.



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#### DC FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS

- Version without indicator: 1P, 2P
- Version with indicator: 1P, 2P
- For 10x38, 10x85 and 14x85mm IEC class gPV fuses
- IEC rated current: 32A
- IEC rated voltage: 1000VDC and 1500VDC
- IEC utilisation category: DC20B.



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#### DC FUSES FOR PHOTOVOLTAIC APPLICATIONS

- 10x38mm, IEC class gPV
- 10x85 and 14x85mm, IEC class gPV
- Rated current: 20A
- Rated voltage: 1000VDC and 1500VDC.

### Fuse holders UL Recognized



FB01F... FB01F1PL



FB02A... FB02A1PL



FB03A... FB03A1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]

For 10x38mm fuses.  
IEC 32A rated current at 690VAC.

<b>FB01F1P</b>	1P	—	1	12	0.066
<b>FB01F1PL</b>	1P	YES	1	12	0.065
<b>FB01F1M</b> Ⓢ	1P+N	—	1	12	0.062
<b>FB01F1N</b>	1P+N	—	2	6	0.134
<b>FB01F2P</b>	2P	—	2	6	0.132
<b>FB01F3P</b>	3P	—	3	4	0.188
<b>FB01F3N</b>	3P+N	—	4	3	0.260

For 14x51mm fuses.  
IEC 50A rated current at 690VAC.

<b>FB02A1P</b>	1P	—	1.5	6	0.113
<b>FB02A1PL</b>	1P	YES	1.5	6	0.114
<b>FB02A1N</b>	1P+N	—	3	3	0.237
<b>FB02A2P</b>	2P	—	3	3	0.224
<b>FB02A3P</b>	3P	—	4.5	2	0.335
<b>FB02A3N</b>	3P+N	—	6	1	0.460

For 22x58mm fuses.  
IEC 100A rated current at 690VAC.

<b>FB03A1P</b>	1P	—	2	6	0.167
<b>FB03A1PL</b>	1P	YES	2	6	0.167
<b>FB03A1N</b>	1P+N	—	4	3	0.354
<b>FB03A2P</b>	2P	—	4	3	0.334
<b>FB03A3P</b>	3P	—	6	2	0.500
<b>FB03A3N</b>	3P+N	—	8	1	0.720

- Ⓢ Not certified cURus.
- Ⓢ Use with gG/aM class 125A fuses, not dissipating more than 12W power.

**NOTE:**  
For FB01 F type: UL Recognized as "Fuseholders - Component". Current rating: 30A. Voltage rating: 750V max. CSA certified as "Fuseholder Assemblies". Current rating: 30A. Voltage rating: 600V max.  
For FB02 A type: UL Recognized as "Fuseholders - Component". Current rating: 50A. Voltage rating: 750V max.  
For FB03 A type: UL Recognized as "Fuseholders - Component". Current rating: 100A. Voltage rating: 750V max.

### Operational characteristics

- IEC rated voltage Un: 690VAC
- IEC rated current In:
  - FB01F: 32A
  - FB02A: 50A
  - FB03A: 100AⓈ
- IEC utilisation category:
  - FB01F: AC22B 500V, AC21B 690V
  - FB02A: AC22B 500V, AC21B 690V
  - FB03A: AC21B 690V
- Suitable for IEC fuse class: gG and aM
- IEC degree of protection: IP20.

### Certifications and compliance

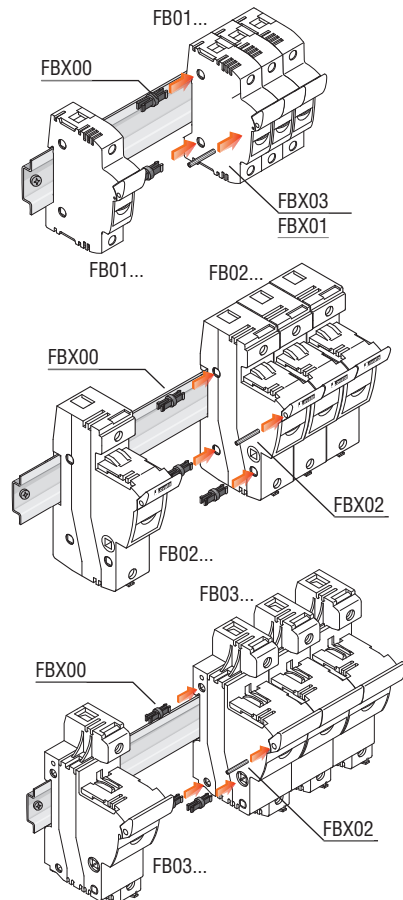
Type	CSA certified (File 252040 class 3211)	UL Recognized for USA and Canada (cURus - File E343395)
FB01F...	●	●
FB02A...	—	●
FB03A...	—	●

● Certification obtained.

cURus - "UL Recognized": Products having this type of marking are intended for use as components of complete workshop-assembled equipment.

Certifications obtained: EAC.  
Compliant with standards: IEC/EN/BS 60269-1, IEC 60269-2, IEC/EN/BS 60947-1, IEC/EN/BS 60947-3, UL 4248-1, UL 4248-4, CSA C22.2 n°4248.1, CSA C22.2 n°4248.4.

### Fuse holder combinations



### Fuse holders



FB01B...

FB01B1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]

For 10x38mm fuses.  
IEC 32A rated current at 690VAC.

<b>FB01B1P</b>	1P	—	1	12	0.062
<b>FB01B1PL</b>	1P	YES	1	12	0.064
<b>FB01B1N</b>	1P+N	—	2	6	0.127
<b>FB01B2P</b>	2P	—	2	6	0.128
<b>FB01B3P</b>	3P	—	3	4	0.185
<b>FB01B3N</b>	3P+N	—	4	3	0.247

#### Operational characteristics

- IEC rated voltage Un: 690VAC
- IEC rated current In: 32A
- IEC utilisation category: AC22B 500V, AC21B 690V
- Suitable for IEC fuse class: gG and aM
- IEC degree of protection IP20.

#### Certifications and compliance

Certifications obtained: EAC.  
Compliant with standards: IEC/EN/BS 60947-1, IEC/EN/BS 60947-3, IEC/EN/BS 60269-1, IEC 60269-2.

### Fuse holders UL Listed and CSA Certified for class CC fuses for the North American market



FB01G...

FB01G1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]

For 10x38mm fuses.  
IEC 30A rated current at 600VAC.

<b>FB01G1P</b>	1P	—	1	12	0.070
<b>FB01G1PL</b>	1P	YES	1	12	0.072
<b>FB01G2P</b>	2P	—	2	6	0.140
<b>FB01G3P</b>	3P	—	3	4	0.210

NOTE: UL Listed and CSA certified as "Fuseholders, Cartridge Fuse" for use with Class CC fuses. Interrupting rating 200,000 Amps rms symmetrical. Voltage rating 600V. Current rating 30A.

#### Operational characteristics

- IEC rated voltage Un: 600VAC
- IEC rated current In: 30A
- IEC utilisation category: AC22B 500V, AC21B 690V
- Suitable for UL/CSA fuse class: CC
- IEC degree of protection IP20.

#### Certifications and compliance

Certifications obtained: UL Listed for USA (UL - File E343395) and CSA certified for Canada only (File 252040 class 6225), EAC.  
Compliant with standards: IEC/EN/BS 60269-1, IEC 60269-2, IEC/EN/BS 60947-1, IEC/EN/BS 60947-3, UL 4248-1, UL 4248-4, CSA C22.2 n°4248.1, CSA C22.2 n°4248.4.

# 13 Fuse holders and fuses

DC fuse holders for photovoltaic applications.

## Fuse holders for photovoltaic applications UL Listed / CSA certified up to 1000VDC



FB01D...      FB01D1PL

Order code	Pole arrangement	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]

For 10x38mm fuses.  
IEC 32A rated current at 1000VDC.

<b>FB01D1P</b>	1P	—	1	12	0.064
<b>FB01D1PL</b>	1P	YES	1	12	0.065
<b>FB01D2P</b>	2P	—	2	6	0.127
<b>FB01D2PL</b>	2P	YES	2	6	0.130

NOTE: UL Listed and CSA certified as "Photovoltaic fuseholders" for use with Photovoltaic Fuses. Interrupting rating 30,000 DC Amps. Voltage rating 1000V. Current rating 30A.

### Operational characteristics

- IEC rated voltage Un: 1000VDC
- IEC rated current In: 32A
- IEC utilisation category: DC20B 1000VDC
- Suitable for IEC fuse class: gPV
- IEC degree of protection: IP20.

### Certifications and compliance

Certifications obtained: UL Listed for USA (UL - File E366062) and CSA certified for Canada (File 252040 class 3211), EAC.  
Compliant with standards: IEC/EN/BS 60269-1, IEC 60269-2, IEC/EN/BS 60947-1, IEC/EN/BS 60947-3, UL 4248-1, UL4248-18, CSA C22.2 n° 4248-1, CSA C22.2 n° 4248-18.

## Fuses for photovoltaic applications up to 1000VDC



FE01D...

Order code	Rated current In	Qty per pkg	Wt
	[A]	n°	[kg]

10x38mm fuses.  
IEC 30kA breaking capacity at 1000VDC.

<b>FE01D00200</b>	2	10	0.008
<b>FE01D00400</b>	4	10	0.008
<b>FE01D00600</b>	6	10	0.008
<b>FE01D00800</b>	8	10	0.008
<b>FE01D01000</b>	10	10	0.008
<b>FE01D01200</b>	12	10	0.008
<b>FE01D01600</b>	16	10	0.008
<b>FE01D02000</b>	20	10	0.008

### Operational characteristics

- IEC rated voltage Un: 1000VDC
- IEC rated current In: 2...20A
- IEC fuse class: gPV.

### Certifications and compliance

Certifications obtained: EAC.  
Compliant with standards: IEC/EN/BS 60269-6.

## Fuse holders for photovoltaic applications up to 1500VDC



FB04D1P      FB04D1PL

**new**

Order code	Pole arrangement	Status indicator	Qty per pkg	Wt
			n°	[kg]

10x85mm and 14x85mm fuses.  
IEC 32A rated current at 1500VDC.

<b>FB04D1P</b>	1P	No	6	0.109
<b>FB04D1PL</b>	1P	Yes	6	0.110

### Operational characteristics

- IEC rated voltage Un: 1500VDC
- IEC rated current In: 32A
- IEC utilisation category: DC20B 1500VDC
- Suitable for IEC fuse class: gPV
- IEC degree of protection: IP20.

### Certifications and compliance

Compliant with standards: IEC/EN/BS 60947-3.

## Fuses for photovoltaic applications up to 1500VDC



FE05D...      FE04D...

**new**

Order code	Rated current In	Qty per pkg	Wt
	[A]	n°	[kg]

10x85mm fuses.  
IEC 10kA breaking capacity at 1500VDC.

<b>FE04D006</b>	6	10	0.019
<b>FE04D010</b>	10	10	0.019
<b>FE04D015</b>	15	10	0.019
<b>FE04D020</b>	20	10	0.019

14x85mm fuses.  
IEC 10kA breaking capacity at 1500VDC.

<b>FE05D020</b>	20	5	0.031
<b>FE05D025</b>	25	5	0.031
<b>FE05D032</b>	32	5	0.031

### Operational characteristics

- IEC rated voltage Un: 1500VDC
- IEC rated current
  - In: 6...20A for 10x85mm version
  - In: 20...32A for 14x85mm version
- Suitable for IEC fuse class: gPV.

### Certifications and compliance

Compliant with standards: IEC/EN/BS 60269-6.

### Accessories



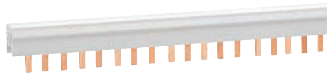
**FBX00**



**FBX01**  
**FBX03**



**FBX02**



**P1X9033**



**P1X9133**



**P1X9201**



**P1X9210**



**P1X9202**

Order code	Description	Qty per pkg	Wt [kg]
<b>FBX00</b>	Coupling clip for 10x38, 14x51 and 22x58mm sizes	100	0.003
<b>FBX01</b>	Coupling pin for 10x38mm size type <b>FB01B1P</b> and <b>FB01B1PL</b> only	100	0.005
<b>FBX02</b>	Coupling pin for 14x51 and 22x58mm sizes	100	0.008
<b>FBX03</b>	Coupling pin for 10x38mm size types <b>FB01F</b> , <b>FB01G</b> , <b>FB01D</b> only	100	0.005
For <b>FB01F</b> , <b>FB01B</b> , <b>FB01D</b> and <b>FB01G</b> types <sup>②</sup> .			
<b>P1X9031</b> ①	Single-pole supply busbar	10	0.160
<b>P1X9032</b> ①	Two-pole supply busbar	10	0.320
<b>P1X9033</b> ①	Three-pole supply busbar	10	0.474
<b>P1X9034</b> ①	Four-pole supply busbar	10	0.600
<b>P1X9130</b> ①	Kit of 5 isolating covers for unused busbar terminals	10	0.030
<b>P1X9131</b> ①	End cap for <b>P1X9031</b>	50	0.001
<b>P1X9132</b> ①	End cap for <b>P1X9032</b>	50	0.001
<b>P1X9133</b> ①	End cap for <b>P1X9033</b>	50	0.001
<b>P1X9134</b> ①	End cap for <b>P1X9034</b>	50	0.001
<b>P1X9201</b> ①	Single-pole terminal for busbar supply; conductor cross section 25mm <sup>2</sup> max.; tightening torque 2Nm	25	0.010
<b>P1X9210</b> ①	Single-pole terminal for supplying busbar; conductor cross section 25mm <sup>2</sup> max.; left entry; tightening torque 2Nm	25	0.010
<b>P1X9202</b> ①	Single-pole terminal for busbar supply; conductor cross section 50mm <sup>2</sup> max.; tightening torque 3.5Nm	25	0.022

### General and operational characteristics

#### SINGLE-POLE SUPPLY BUSBAR

- Rated operational voltage  $U_e$ : 1000V
- Central point of power supply: 100A max.
- Side point of power supply: 63A max.
- Spacing: 17.5mm/0.69"
- Busbar section: 10mm<sup>2</sup>
- For paralleling connection
- For 57 modules, 1000mm/39.37" long (57 1P fuseholders)
- Length can be cut in shorter sections.

#### TWO-POLE, THREE-POLE AND FOUR-POLE SUPPLY BUSBARS

- Rated operational voltage  $U_e$ : 690V
- Central point of power supply: 100A max.
- Side point of power supply: 63A max.
- Spacing: 18mm/0.71"
- Busbar section: 10mm<sup>2</sup>
- For paralleling connection
- Two-pole: for 56 modules, 1000mm/39.37" long (28 2P fuseholders)
- Three-pole: for 57 modules, 1012mm/39.84" long (19 3P fuseholders)
- Four-pole: for 56 modules, 1000mm/39.37" long (14 4P fuseholders)
- Length can be cut in shorter sections.

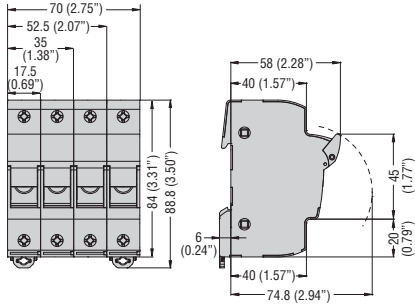
### Certification and compliance

Certifications obtained: EAC.

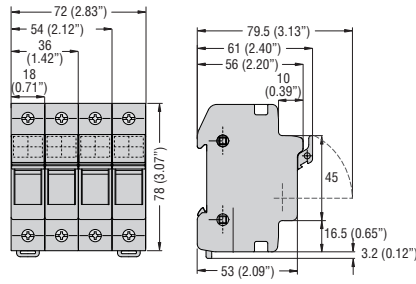
① See technical characteristics under derating factor of **FB01...** type for derating factor.

② When used with **FB01D**, rated operational voltage has to be checked.

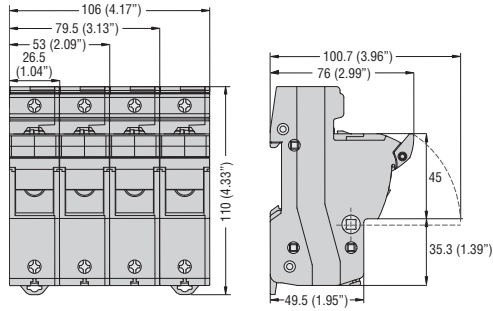
**FB01F... FB01G...**



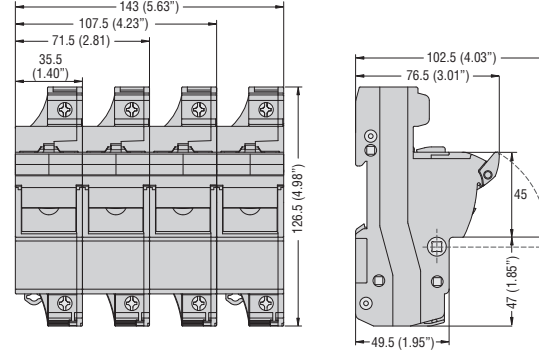
**FB01B...**



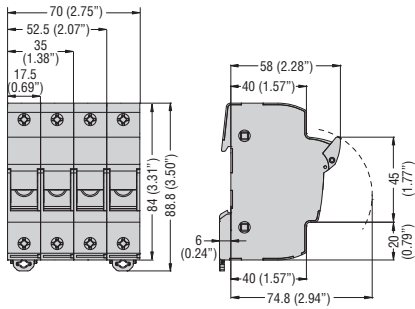
**FB02A...**



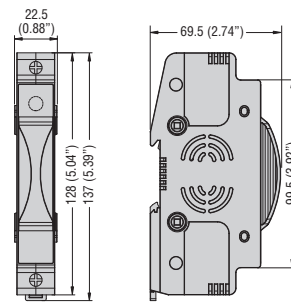
**FB03A...**



**FB01D...**

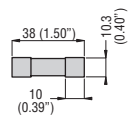


**FB04D...**

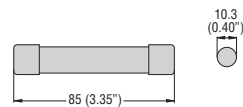


**FUSES**

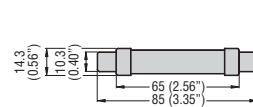
**FE01D0...**



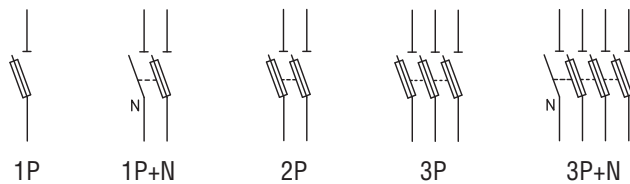
**FE04D...**



**FE05D...**



**Wiring diagrams**



TYPE	FB01F...	FB01B...	FB02A...	FB03A...	FB01G...	FB01D...	FB04D...
Range	AC				Class CC (AC)	DC	DC
IEC maximum rated current In	32A		50A	100A <sup>Ⓢ</sup>	30A	32A	32A
IEC maximum rated voltage Un	690VAC;	690VAC			600VAC	1000VDC	1500VDC
IEC utilisation category	AC22B 500V; AC21B 690V;			AC21B 690V	AC22B 500V; AC21B 690V	DC20B 1000VDC	DC-PV0 1500VDC
Maximum power dissipation	3W		5W	9.5W	3W	4W	8W
Derating factor of current In for different ambient temperatures	20°C	1					1
	30°C	0.95					0.98
	40°C	0.9					0.94
	50°C	0.8					0.88
	60°C	0.7					0.83
Derating factor of current In for side-by-side fuse holders - number of poles	70°C	0.5					0.75
	1-4	1					-
	5-6	0.8					-
	7-9	0.7					-
	≥10	0.6					-
Voltage for status indicator	120...690VAC		230...690VAC		120...600VAC	350...1000VDC	800...1500VDC

### CONNECTIONS

Maximum tightening torque	1.5Nm / 13.3lb.in		3Nm / 26lb.in	4Nm / 35lb.in	2.5Nm / 22lb.in		2.5Nm / 22lb.in
Maximum conductor cross section	flexible/stranded	1x16mm <sup>2</sup> ; 1x6mm <sup>2</sup> / 8AWG		1x25mm <sup>2</sup> / 6AWG	1x35mm <sup>2</sup> / 2AWG	1x16mm <sup>2</sup> / 8AWG	1x16mm <sup>2</sup> / 8AWG
	rigid/solid	1x16mm <sup>2</sup> ; 1x10mm <sup>2</sup> / 8AWG		1x35mm <sup>2</sup> / 8AWG	1x50mm <sup>2</sup> / 1AWG	1x16mm <sup>2</sup> / 8AWG	1x16mm <sup>2</sup> / 8AWG

### AMBIENT CONDITIONS

Operating temperature	-20...+70°C						
Storage temperature	-40...+80°C						
Maximum altitude	3,000m						
Operation position	Any						
Fixing	On 35mm DIN rail (IEC/EN/BS 60715)						

Ⓢ Use with gG/aM class 125A fuses, not dissipating more than 12W power.

### TECHNICAL CHARACTERISTICS FOR FE01D..., FE04D... AND FE05D... FUSES

TYPE	Rated current [A]	Power consumption at 0.7 In [W]	Power consumption at In [W]	Prearcing I <sup>2</sup> t [A <sup>2</sup> s]	Total I <sup>2</sup> t at 1000VDC [A <sup>2</sup> s]
FE01D00200	2	0.78	1.45	0.62	1
FE01D00400	4	0.64	1.57	6.90	11
FE01D00600	6	0.77	1.84	24	38
FE01D00800	8	0.82	2.00	7	17
FE01D01000	10	0.94	2.20	15	48
FE01D01200	12	0.98	2.40	27	68
FE01D01600	16	1.10	2.70	89	165
FE01D02000	20	1.33	3.20	158	294
FE04D006	6	1.1	2.7	68	88
FE04D010	10	1.4	3.5	45	75
FE04D015	15	1.9	2.7	171	295
FE04D020	20	2.0	5.2	240	480
FE05D020	20	2.2	5.3	68	225
FE05D025	25	2.5	6.4	140	458
FE05D032	32	3.1	8.0	270	890