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Fuse holders and fuses



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

	Sec. - Page
Fuse holders	
AC fuse holders	12 - 2
AC fuse holders class CC for the North American market	12 - 3
DC fuse holders for photovoltaic applications	12 - 4
Fuses for photovoltaic applications	**12 - 4**
Accessories	**12 - 5**
Dimensions	**12 - 6**
Wiring diagrams	**12 - 6**
Technical characteristics	**12 - 7**

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Page 12-2

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.



Page 12-3

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.



Page 12-4

DC FUSE HOLDERS FOR PHOTOVOLTAIC APPLICATIONS

- Version without indicator: 1P, 2P
- Version with indicator: 1P, 2P
- For 10x38mm IEC class gPV fuses
- IEC rated current: 32A
- IEC rated voltage: 1000VDC
- IEC utilisation category: DC20B.



Page 12-4

DC FUSES FOR PHOTOVOLTAIC APPLICATIONS

- 10x38mm, IEC class gPV
- Rated current: 20A
- Rated voltage: 1000VDC.

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Fuse holders UL Recognized and CSA Certified



FB01 F...

FB01 F 1PL



FB02 A...

FB02 A 1PL



FB03 A...

FB03 A 1PL

Order code	Pole arrange-ment	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. IEC 32A rated current at 690VAC.					
FB01 F 1P	1P	—	1	12	0.066
FB01 F 1PL	1P	YES	1	12	0.065
FB01 A 1M	1P+N	—	1	12	0.062
FB01 F 1N	1P+N	—	2	6	0.134
FB01 F 2P	2P	—	2	6	0.132
FB01 F 3P	3P	—	3	4	0.188
FB01 F 3N	3P+N	—	4	3	0.260
For 14x51mm fuses. IEC 50A rated current at 690VAC.					
FB02 A 1P	1P	—	1.5	6	0.113
FB02 A 1PL	1P	YES	1.5	6	0.114
FB02 A 1N	1P+N	—	3	3	0.237
FB02 A 2P	2P	—	3	3	0.224
FB02 A 3P	3P	—	4.5	2	0.335
FB02 A 3N	3P+N	—	6	1	0.460
For 22x58mm fuses. IEC 100A rated current at 690VAC❶.					
FB03 A 1P❶	1P	—	2	6	0.167
FB03 A 1PL❶	1P	YES	2	6	0.167
FB03 A 1N❶	1P+N	—	4	3	0.354
FB03 A 2P❶	2P	—	4	3	0.334
FB03 A 3P❶	3P	—	6	2	0.500
FB03 A 3N❶	3P+N	—	8	1	0.720

❶ 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 (FB01 A 1M excluded)
  - 400VAC (FB01 A 1M only)
- IEC rated current In:
  - FB01 A 1M: 32A
  - FB01 F: 32A
  - FB02 A: 50A
  - FB03 A: 100A❶
- IEC utilisation category:
  - FB01 A 1M: AC22B 400V
  - FB01 F: AC22B 500V, AC21B 690V
  - FB02 A: AC22B 500V, AC21B 690V
  - FB03 A: AC21B 690V
- Suitable for IEC fuse class: gG and aM
- IEC degree of protection: IP20.

Certifications and compliance

Certifications obtained: EAC.

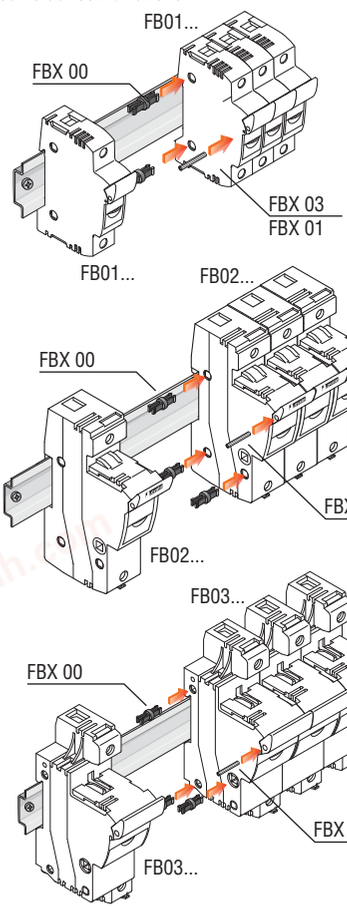
Type	CSA certified (File 252040 class 3211)	UL Recognized for USA and Canada (cURus - File E343395)
FB01 F...	●	●
FB02 A...	—	●
FB03 A...	—	●

● Certification obtained.

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

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

Fuse holder combinations



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Fuse holders


FB01 B...


FB01 B 1PL

Order code	Pole arrange-ment	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. IEC 32A rated current at 690VAC.					
FB01 B 1P	1P	—	1	12	0.062
FB01 B 1PL	1P	YES	1	12	0.064
FB01 B 1N	1P+N	—	2	6	0.127
FB01 B 2P	2P	—	2	6	0.128
FB01 B 3P	3P	—	3	4	0.185
FB01 B 3N	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.

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

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


FB01 G...


FB01 G 1PL

Order code	Pole arrange-ment	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. IEC 30A rated current at 600VAC.					
FB01 G 1P	1P	—	1	12	0.070
FB01 G 1PL	1P	YES	1	12	0.072
FB01 G 2P	2P	—	2	6	0.140
FB01 G 3P	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 60269-1, IEC 60269-2, IEC/EN 60947-1, IEC/EN 60947-3, UL 4248-1, UL 4248-4, CSA C22.2 n°4248.1, CSA C22.2 n°4248.4.

12 Fuse holders and fuses

DC fuse holders for photovoltaic applications.

Fuse holders for photovolatic applications
UL Listed / CSA certified



FB01 D...



FB01 D 1PL

Order code	Pole arrange-ment	Status indicator	DIN size	Qty per pkg	Wt
			n°	n°	[kg]
For 10x38mm fuses. IEC 32A rated current at 1000VDC.					
FB01 D 1P	1P	—	1	12	0.064
FB01 D 1PL	1P	YES	1	12	0.065
FB01 D 2P	2P	—	2	6	0.127
FB01 D 2PL	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 60269-1, IEC 60269-2, IEC/EN 60947-1, IEC/EN 60947-3, UL 4248-1, UL4248-18, CSA C22.2 n° 4248-1, CSA C22.2 n° 4248-18.

Fuses for photovoltaic applications



FE01 D...

Order code	Rated current In	Qty per pkg	Wt
	[A]	n°	[kg]
10x38mm fuses. IEC 30kA breaking capacity at 1000VDC.			
FE01 D 00200	2	10	0.008
FE01 D 00400	4	10	0.008
FE01 D 00600	6	10	0.008
FE01 D 00800	8	10	0.008
FE01 D 01000	10	10	0.008
FE01 D 01200	12	10	0.008
FE01 D 01600	16	10	0.008
FE01 D 02000	20	10	0.008

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

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

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Accessories



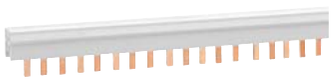
FBX 00



FBX 01
FBX 03



FBX 02



P1X 90 33



P1X 91 33



P1X 92 01



P1X 92 10



P1X 92 02

Order code	Description	Qty per pkg	Wt
		n°	[kg]
FBX 00	Coupling clip for 10x38, 14x51 and 22x58mm sizes	100	0.003
FBX 01	Coupling pin for 10x38mm size type FB01 A1M, FB01 B1P and FB01 B1PL only	100	0.005
FBX 02	Coupling pin for 14x51 and 22x58mm sizes	100	0.008
FBX 03	Coupling pin for 10x38mm size types FB01 F, FB01 G, FB01 D only	100	0.005
For FB01 F, FB01 A1M, FB01 B and FB01 G types, AC duty.			
P1X 90 31❶	Single-pole supply busbar	10	0.160
P1X 90 32❶	Two-pole supply busbar	10	0.320
P1X 90 33❶	Three-pole supply busbar	10	0.474
P1X 90 34❶	Four-pole supply busbar	10	0.600
P1X 90 90❶	P1RC4P + 8 P1MB1MB supply busbar	10	0.158
P1X 91 30❶	Kit of 5 isolating covers for unused busbar terminals	10	0.030
P1X 91 31❶	End cap for P1X9031	50	0.001
P1X 91 32❶	End cap for P1X9032	50	0.001
P1X 91 33❶	End cap for P1X9033	50	0.001
P1X 91 34❶	End cap for P1X9034	50	0.001
P1X 92 01❶	Single-pole terminal for busbar supply; conductor cross section 25mm² max.	25	0.010
P1X 92 10❶	Single-pole terminal for supplying busbar; conductor cross section 25mm² max.; left entry	25	0.010
P1X 92 02❶	Single-pole terminal for busbar supply; conductor cross section 50mm² max.	25	0.022

General and operational characteristics

SINGLE-POLE SUPPLY BUSBAR
- Rated operational voltage Ue: 1000V
- Central point of power supply: 100A max.
- Side point of power supply: 63A max.
- Spacing: 17.5mm/0.69”
- Busbar section: 10mm²
- For paralleling connection
- For 57 modules, 1000mm/39.37” long (57 1P breakers)
- Length can be cut in shorter sections.

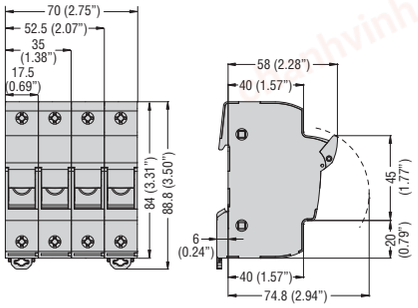
TWO-POLE, THREE-POLE AND FOUR-POLE SUPPLY BUSBARS
- Rated operational voltage Ue: 690V
- Central point of power supply: 100A max.
- Side point of power supply: 63A max.
- Pitch: 18mm/0.71”
- Busbar section: 10mm²
- For paralleling connection
- Two-pole: for 56 modules, 1000mm/39.37” long (28 2P fuseholders)
- 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.

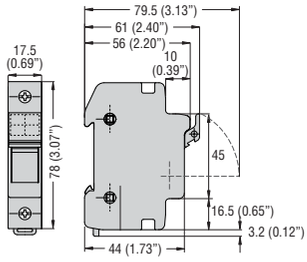
❶ See technical characteristics under derating factor of FB01... type for derating factor.

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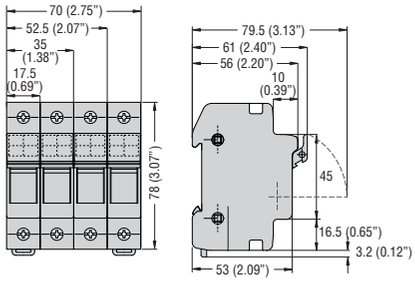
FB01 F... FB01 G... FB01 D...



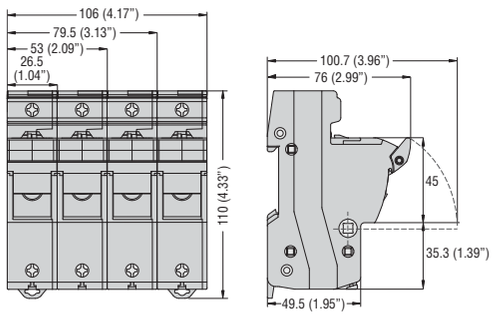
FB01 A1M



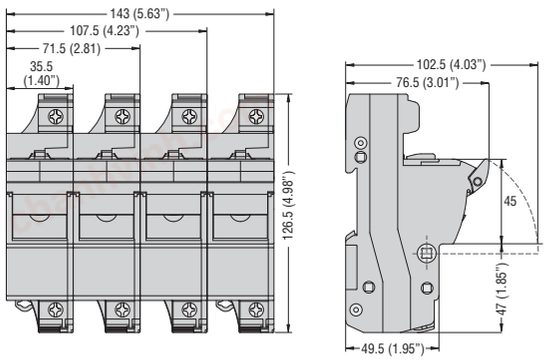
FB01 B...



FB02 A...

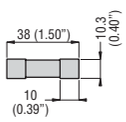


FB03 A...

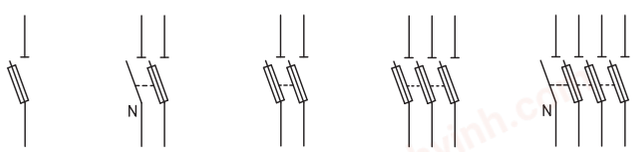


FUSES

FE01 D 0...



Wiring diagrams



1P 1P+N 2P 3P 3P+N

TYPE		FB01 F... - FB01 A1M	FB01 B...	FB02 A...	FB03 A...	FB01 G...	FB01 D...
Range		AC				Class CC (AC)	DC
IEC maximum rated current In		32A		50A	100A ❷	30A	32A
IEC maximum rated voltage Un		690VAC; 400VAC ❶	690VAC			600VAC	1000VDC
IEC utilisation category		AC22B 500V; AC21B 690V; AC22B 400V ❶			AC21B 690V	AC22B 500V; AC21B 690V	DC20B 1000VDC
Maximum power dissipation		3W		5W	9.5W	3W	4W
Derating factor of current In for different ambient temperatures	20°C	1					
	30°C	0.95					
	40°C	0.9					
	50°C	0.8					
	60°C	0.7					
	70°C	0.5					
Derating factor of current In for side-by-side fuse holders - number of poles	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
CONNECTIONS							
Maximum tightening torque		2.5Nm; 2Nm ❶ / 22lbin		3Nm / 26lbin	4Nm / 35lbin	2.5Nm / 22lbin	
Maximum conductor cross section	flexible/stranded	1x16mm²; 1x6mm² ❶ / 8AWG		1x25mm² / 6AWG	1x35mm² / 2AWG	1x16mm² / 8AWG	1x16mm² / 8AWG
	rigid/solid	1x16mm²; 1x10mm² ❶ / 8AWG		1x35mm² / 8AWG	1x50mm² / 1AWG	1x16mm² / 8AWG	1x16mm² / 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 60715)					

❶ Values valid only for FB01 A 1M type.

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

TECHNICAL CHARACTERISTICS FOR FE01 D... FUSES

TYPE	Rated current [A]	Power consumption at 0.7 In [W]	Power consumption at In [W]	Prearcing I^2t [A^2s]	Total I^2t at 1000VDC [A^2s]
FE01 D 00200	2	0.78	1.45	0.62	1
FE01 D 00400	4	0.64	1.57	6.9	11
FE01 D 00600	6	0.76	1.84	24	38
FE01 D 00800	8	0.8	1.92	62	99
FE01 D 01000	10	0.94	2.2	10	48
FE01 D 01200	12	0.98	2.4	18	94
FE01 D 01600	16	1.1	2.7	46	110
FE01 D 02000	20	1.2	2.9	118	282

TIME-CURRENT CHARACTERISTICS FOR FE01 D... FUSES

