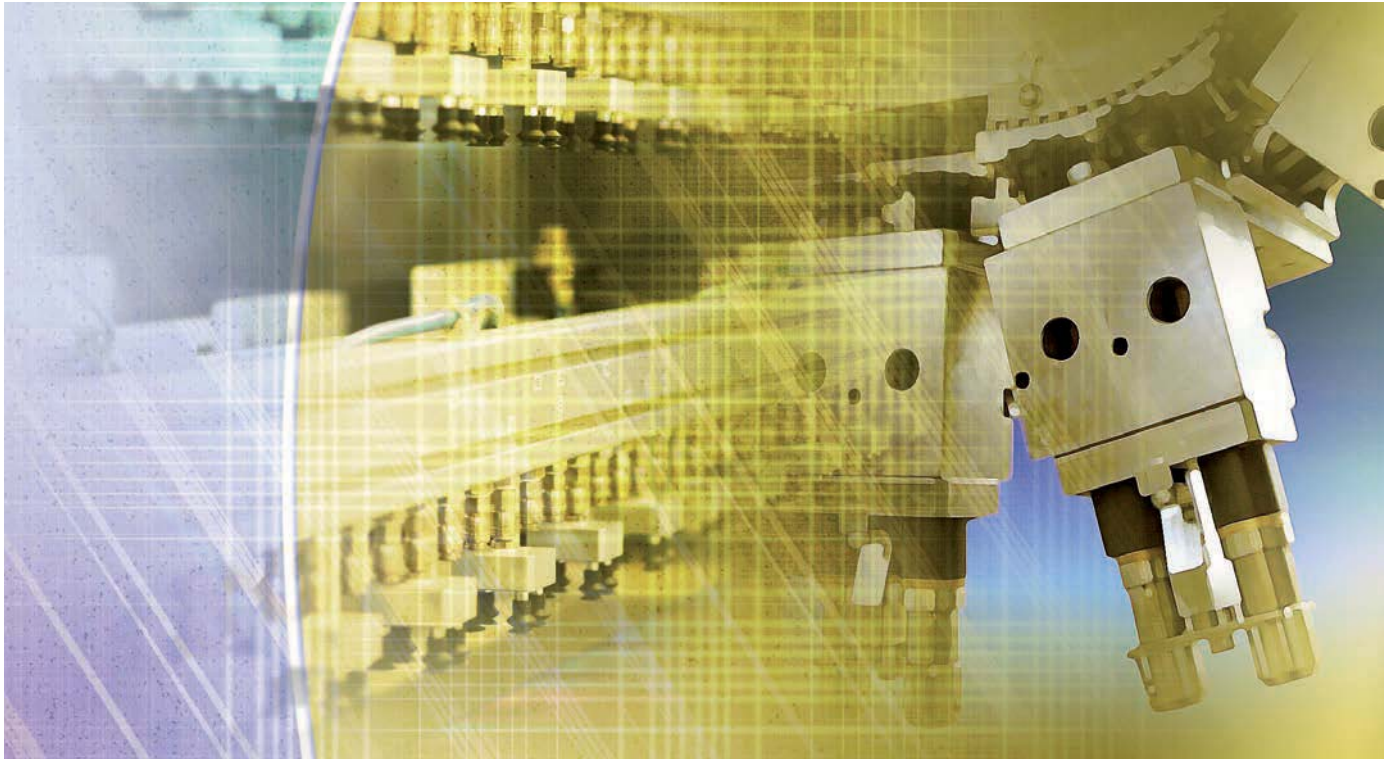




Fuse holders and fuses

Fuse holders



- ◆ Modular concept for quick assembly of different versions based on various requirements.
- ◆ Compact size compliant with standards for electrical equipment.
- ◆ DIN rail mounting and removal ease.
- ◆ IP20 protection degree, finger safe.
- ◆ Sealable cover in open or closed position to increase user's safety.
- ◆ Version with status indicator to quickly determine if the fuse is still operative or needs to be replaced.
- ◆ Ergonomic grip for easy cover opening.
- ◆ Dedicated cylindrical 10x38 DC fuses for photovoltaic systems.
- ◆ UL and CSA certified versions.

Range	AC			DC	DC FUSES	CLASS CC
Fuse size	10x38	14x51	22x58	10x38	10x38	10x38
Type	gG or aM			gPV	gPV	Class CC
Rated voltage	690VAC			1000VDC	1000VDC	600VAC
Rated current	32A	50A	125A	32A	20A	30A
Utilisation category	AC22B 500V AC21B 690V		-	DC20B 1000VDC	DC20B 1000VDC	AC22B 500V AC21B 690V

and fuses



LOVATO Electric fuse holders can be used to protect against overloads and short circuits of electric lines, for motor protection and control and for the protection of electric installations.

This equipment can assure the disconnect function but is not suitable for isolation so cannot be used as switch disconnecter.

The range is available in two versions: with or without fuse status indicator. If the fuse fitted on the holder blows, the failure status is shown by the indicator on the fuse-holder front.

There are some fuse holders certified for the North-American market (UL Listed, UL Recognized and CSA).

Fuse holders RANGE

AC

LOVATO Electric AC fuse-holder range is suitable for class gG fuses, to protect cables and conductors, and for class aM fuses, to protect motor starting.

Function: Overload and short-circuit protection of control circuits, motor controls, electric installations.

Usage: Service industry, electric panels onboard machinery, electric installations in general.



	FB01 A...	FB01 B...	FB02 A...	FB03 A...
Fuse size	10x38		14x51	22x58
Version without indicator			1P, 1P+N, 2P, 3P, 3P+N	
Version with indicator			1P	
Main characteristics				
- Rated voltage	690VAC			
- Rated current	32A		50A	125A
- Utilisation category	AC22B 500V, AC21B 690V ^①		AC22B 500V, AC21B 690V	AC21B 690V
- Suitable for fuses	10x38 gG or aM		14x51 gG or aM	22x58 gG or aM
- Maximum conductor cross section	16mm ² flexible/stranded; 25mm ² rigid/solid ^②		25mm ² flexible/stranded; 35mm ² rigid/solid	35mm ² flexible/stranded; 50mm ² rigid/solid
Certifications obtained	UR, CSA [®]	-	cURus	cURus
Compliant with standards	IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3; UL/CSA C22.2 n° 4248-1 and n° 4248-4 for types certified UR, UL, CSA			

UR: UL Recognized; cURus: UL Recognized for USA and Canada.

^① AC22B 400V only, for FB01 AM.

^② Except FB01 AM.

Fuse holders RANGE

CLASS CC



FB01 C...

LOVATO Electric fuse holders for class CC fuses are used to protect branch circuits, consisting of conductors and components following the last overcurrent protective device protecting a load, in industrial applications which require high breaking capacity.

Suitable only and exclusively for fitting fuses defined as "class CC", quite common on the North American market.

Usage: Service industry, electric panels onboard machinery, electric installations in general.

Fuse size	Class CC
Version without indicator	1P, 2P, 3P
Version with indicator	1P
Main characteristics	
- Rated voltage	600VAC
- Rated current	30A
- Utilisation category	AC-22B 500V, AC-21B 690V
- Suitable for fuses	10x38 class CC
- Maximum conductor cross section	16mm ² flexible/stranded; 25mm ² rigid/solid
Certifications obtained	UL, CSA
Compliant with standards	IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3; UL/CSA C22.2 n° 4248-1 and n° 4248-4



Fuse holders RANGE

DC DC



FB01 D...

LOVATO Electric DC fuse holder range is suitable for 1000VDC rated voltage and gPV class.

Used for overload and short-circuit protection of photovoltaic modules (strings) and the relative connecting cables.

Fuse size	10x38
Version without indicator	1P, 2P
Version with indicator	1P, 2P
Main characteristics	
- Rated voltage	1000VDC
- Rated current	32A
- Utilisation category	DC20B 1000VDC
- Suitable for fuses	10x38 gPV
- Maximum conductor cross section	16mm ² flexible/stranded, 25mm ² rigid/solid
Compliant with standards	
	IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-1, IEC/EN 60947-3.



Fuses RANGE

DC DC



FE01 D 0...

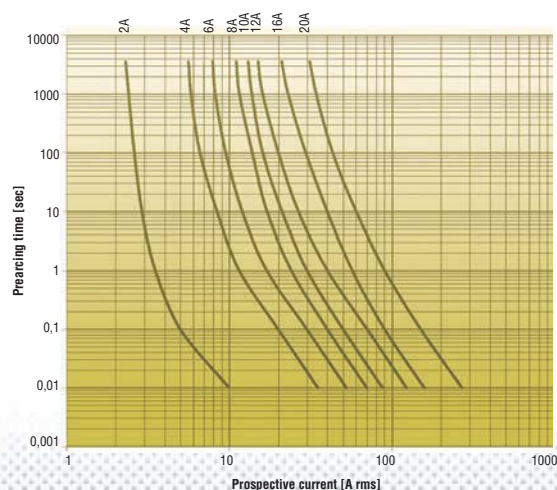
LOVATO Electric offers a range of cylindrical 10x38 fuses dedicated to photovoltaic duty and designed for 1000VDC maximum use.

Contrary to AC type fuses that blow for high overcurrent values, this type of DC fuse is designed to blow with low-intensity overcurrent values, created on photovoltaic cells and panels.

Fuses for photovoltaic application	
Breaking capacity	30kA
Main characteristics	
- Rated voltage	1000VDC
- Rated current	2...20A
Compliant with standards	
	IEC/EN 60269-6



Time-current characteristics

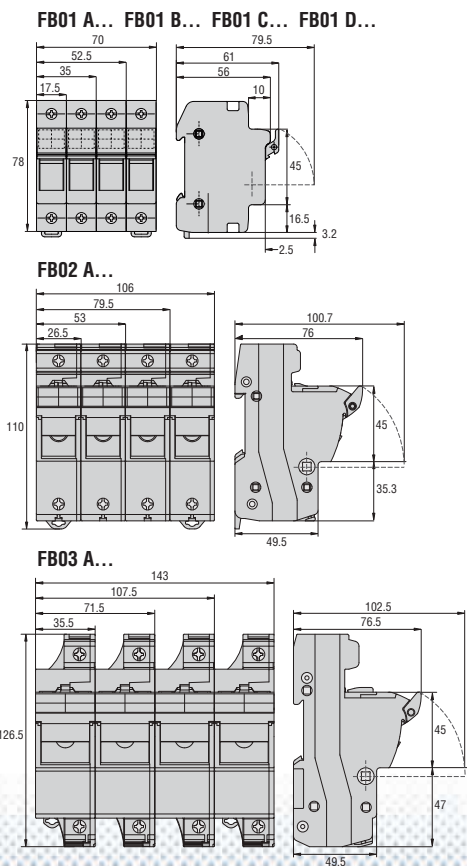


TECHNICAL CHARACTERISTICS

Type	FB01 A...	FB01 B...	FB02 A...	FB03 A...	FB01 C...	FB01 D...	
Range	AC	AC	AC	AC	Class CC (AC)	DC	
Certifications obtained	UR, CSA ^①	–	cURus	cURus	UL, CSA	–	
Maximum power dissipation	3W	3W	5W	9.5W	3W	4W	
Derating factor of current I_n for different ambient temperatures	20°C	1	1	1	1	1	
	30°C	0.95	0.95	0.95	0.95	0.95	
	40°C	0.9	0.9	0.9	0.9	0.9	
	50°C	0.8	0.8	0.8	0.8	0.8	
	60°C	0.7	0.7	0.7	0.7	0.7	
	70°C	0.5	0.5	0.5	0.5	0.5	
Derating factor of current I_n for side-by-side fuse holders - n° poles	1-3	1	1	1	1	1	
	4-6	0.8	0.8	0.8	0.8	0.8	
	7-9	0.7	0.7	0.7	0.7	0.7	
	>10	0.6	0.6	0.6	0.6	0.6	
Voltage for status indicator	120...690VAC	120...690VAC	230...690VAC	230...690VAC	120...600VAC	350...1000VDC	
CONNECTIONS							
Maximum tightening torque	2.5Nm/22lbin 2Nm/18lbin ^②	2.5Nm/22lbin	3Nm/26lbin	4Nm/35lbin	2.5Nm/22lbin	2.5Nm/22lbin	
Maximum conductor cross section	flexible/stranded	1-16mm ² /8 AWG 1-10mm ² /10 AWG ^②	1-16mm ² /6 AWG	1-25mm ² /6 AWG	1-35mm ² /2 AWG	1-16mm ² /8 AWG	1-16mm ² /6 AWG
	rigid/solid	1-25mm ² /8 AWG 1-16mm ² /8 AWG ^②	1-25mm ² /4 AWG	1-35mm ² /8 AWG	1-50mm ² /1 AWG	1-25mm ² /10 AWG	1-25mm ² /4 AWG
AMBIENT CONDITIONS							
Operating temperature	-20...+70°C	-20...+70°C	-20...+70°C	-20...+70°C	-20...+70°C	-20...+70°C	
Storage temperature	-40...+80°C	-40...+80°C	-40...+80°C	-40...+80°C	-40...+80°C	-40...+80°C	
HOUSING							
Din rail mount version	Yes	Yes	Yes	Yes	Yes	Yes	
Degree of protection	IP20	IP20	IP20	IP20	IP20	IP20	

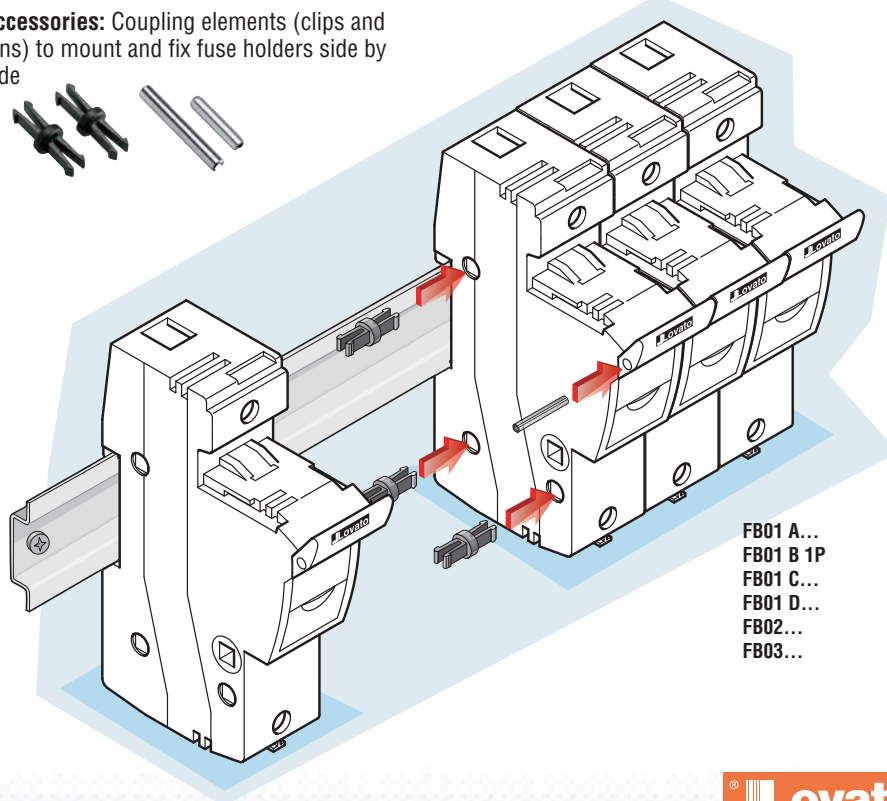
① Except for type FB01 A 1M. ② Values for type FB01 A 1M only.

DIMENSIONS



ASSEMBLY

Accessories: Coupling elements (clips and pins) to mount and fix fuse holders side by side



FB01 A...
FB01 B 1P
FB01 C...
FB01 D...
FB02...
FB03...

HOW TO ORDER

FUSE HOLDERS

Order code	Pole arrangement	DIN modules n°	Status indicator	Rated voltage Un [V]	Rated current In [A]	Qty per pkg n°	Weight [kg]
Fuse holder (fuse disconnecter), 10x38, certified by UR and CSA.							
FB01 A 1P	1 pole	1	–	690VAC	32	12	0.066
FB01 A 1PL	1 pole	1	Yes	690VAC	32	12	0.065
FB01 A 1M ^①	1 pole + N	1	–	400VAC	32	12	0.062
FB01 A 1N	1 pole + N	2	–	690VAC	32	6	0.134
FB01 A 2P	2 poles	2	–	690VAC	32	6	0.132
FB01 A 3P	3 poles	3	–	690VAC	32	4	0.188
FB01 A 3N	3 poles + N	4	–	690VAC	32	3	0.260
Fuse holder (fuse disconnecter), 14x51, certified by cURus.							
FB02 A 1P	1 pole	1.5	–	690VAC	50	6	0.113
FB02 A 1PL	1 pole	1.5	Yes	690VAC	50	6	0.114
FB02 A 1N	1 pole + N	3	–	690VAC	50	3	0.237
FB02 A 2P	2 poles	3	–	690VAC	50	3	0.224
FB02 A 3P	3 poles	4.5	–	690VAC	50	2	0.335
FB02 A 3N	3 poles + N	6	–	690VAC	50	1	0.460
Fuse holder (fuse disconnecter), 22x58, certified by cURus.							
FB03 A 1P	1 pole	2	–	690VAC	125	6	0.167
FB03 A 1PL	1 pole	2	Yes	690VAC	125	6	0.167
FB03 A 1N	1 pole + N	4	–	690VAC	125	3	0.354
FB03 A 2P	2 poles	4	–	690VAC	125	3	0.334
FB03 A 3P	3 poles	6	–	690VAC	125	2	0.500
FB03 A 3N	3 poles + N	8	–	690VAC	125	1	0.210
Fuse holder (fuse disconnecter), class CC, certified by UL and CSA.							
FB01 C 1P	1 pole	1	–	600VAC	30	12	0.070
FB01 C 1PL	1 pole	1	Yes	600VAC	30	12	0.072
FB01 C 2P	2 poles	2	–	600VAC	30	6	0.140
FB01 C 3P	3 poles	3	–	600VAC	30	4	0.210
Fuse holder (fuse disconnecter), 10x38.							
FB01 B 1P	1 pole	1	–	690VAC	32	12	0.062
FB01 B 1PL	1 pole	1	Yes	690VAC	32	12	0.064
FB01 B 1N	1 pole + N	2	–	690VAC	32	6	0.127
FB01 B 2P	2 poles	2	–	690VAC	32	6	0.128
FB01 B 3P	3 poles	3	–	690VAC	32	4	0.185
FB01 B 3N	3 poles + N	4	–	690VAC	32	3	0.247
Fuse holder (fuse disconnecter), 10x38, for photovoltaic applications.							
FB01 D 1P	1 pole	1	–	1000VDC	32	12	0.064
FB01 D 1PL	1 pole	1	Yes	1000VDC	32	12	0.065
FB01 D 2P	2 poles	2	–	1000VDC	32	6	0.127
FB01 D 2PL	2 poli	2	Yes	1000VDC	32	6	0.130

^① Not UR or CSA certified.

FUSES FOR PHOTOVOLTAIC APPLICATIONS

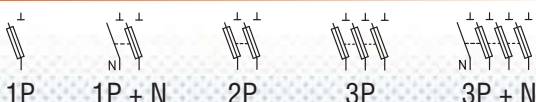
Order code	Rated breaking capacity [kA]	Rated voltage Un [V]	Rated current In [A]	Qty per pkg n°	Weight [kg]
FE01 D 00200	30	1000VDC	2	10	0.008
FE01 D 00400	30	1000VDC	4	10	0.008
FE01 D 00600	30	1000VDC	6	10	0.008
FE01 D 00800	30	1000VDC	8	10	0.008
FE01 D 01000	30	1000VDC	10	10	0.008
FE01 D 01200	30	1000VDC	12	10	0.008
FE01 D 01600	30	1000VDC	16	10	0.008
FE01 D 02000	30	1000VDC	20	10	0.008

ACCESSORIES

Order code	Description	Qty per pkg n°	Weight [kg]
FBX 00	Coupling clip for 10x38, 14x51 and 22x58 sizes	100	0.003
FBX 01	Coupling pin for 10x38 size	100	0.005
FBX 02	Coupling pin for 14x51 and 22x58 sizes	100	0.008

N.B. Two clips FBX 00 and one pin FBX 01 are needed to couple two fuse holder FB01... types except FB01 B 1N/2P/3P/3N. Three clips FBX 00 and one pin FBX 02 are needed to couple two fuse holder FB02... and FB03... types.

WIRING DIAGRAMS



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



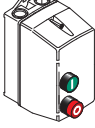

















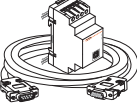
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