



Fuse holders and fuses

Fuse holders

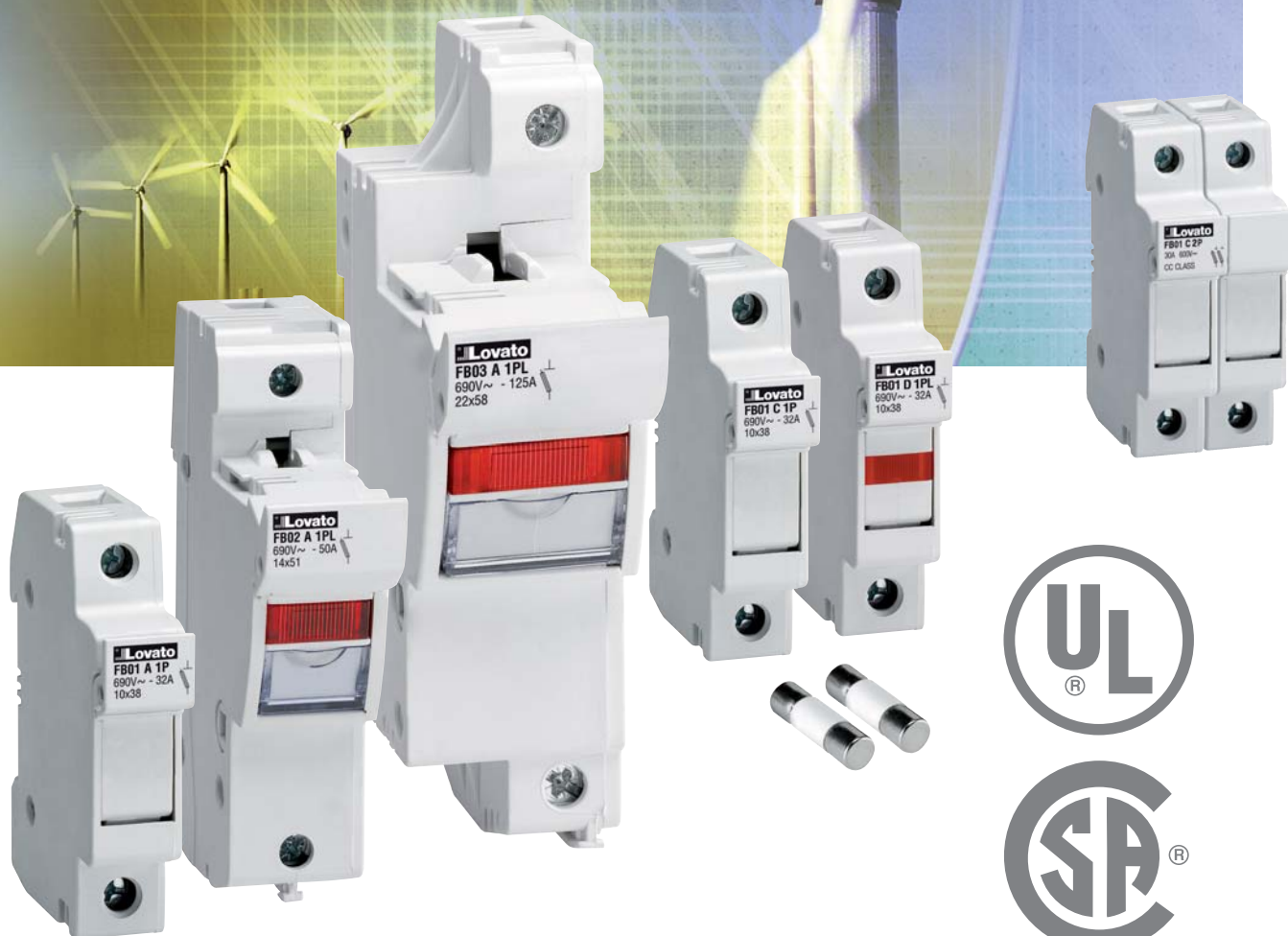


- ◆ Modular concept for quick assembly of different versions based on various requirements.
- ◆ Compact size compliant with standards for electrical equipment.
- ◆ DIN rail mounting and removal ease.
- ◆ IP20 protection degree, finger safe.
- ◆ Sealable cover in open or closed position to increase user's 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 / 690VAC	1000VDC	600VAC
Rated current	32A	50A	125A	32A	20A	30A
Utilisation category	AC-22B 500V AC-21B 690V		-	DC-20B 1000VDC AC-21B 690V	DC-20B 1000VDC	AC-22B 500V AC-21B 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.

All the fuse holders are certified for the North-American market (UL Listed, UL Recognized and CSA). Furthermore, there is a non-certified version in 10x38mm size available too.

 **Lovato**
electric



Fuse holders RANGE AC

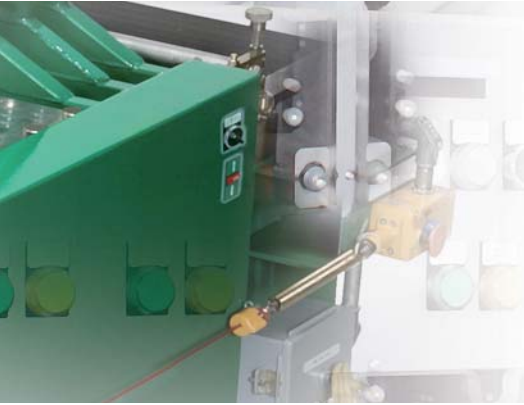
LOVATO Electric AC fuse-holder range is suitable for class gG fuses, to protect cables and conductors, and for class aM fuses, to protect motor starting.

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	AC-22B 500V, AC-21B 690V		AC-22B 500V, AC-21B 690V	AC-21B 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		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 60947-1, IEC/EN 60947-3, RoHS directive, UL512, CSA C22.2 n°39			



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

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 60947-1, IEC/EN 60947-3, UL512, RoHS directives, CSA 22.2 n° 39



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
Main characteristics	
- Rated voltage	1000VDC / 690VAC
- Rated current	32A
- Utilisation category	DC-20B 1000VDC, AC-21B 690V
- Suitable for fuses	10x38 gPV
- Maximum conductor cross section	16mm ² flexible/stranded, 25mm ² rigid/solid
Compliant with standards	
	IEC/EN 60947-1, IEC/EN 60947-3, RoHS directive



Fuses
RANGE

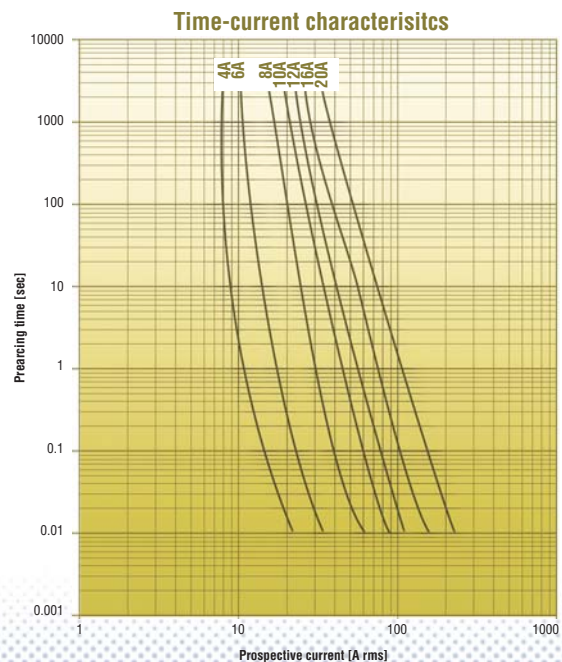
DC
DC



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

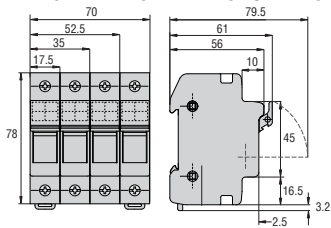


TECHNICAL CHARACTERISTICS

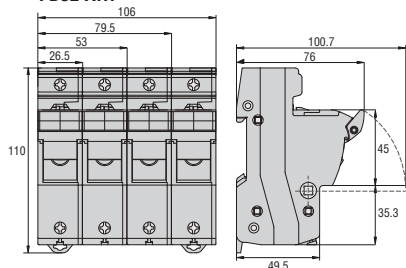
Type	FB01 A...	FB01 B...	FB02 A...	FB03 A...	FB01 C...	FB01 D...	
Range	AC	AC	AC	AC	Class CC (AC)	DC	
Certifications obtained	UR, CSA	–	cURus	cURus	UL, CSA	–	
Maximum power dissipation	3W	3W	5W	9.5W	3W	4W	
	20°C	1	1	1	1	1	
	30°C	0.95	0.95	0.95	0.95	0.95	
Derating factor of current I _e for different ambient temperatures	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	
	1-3	1	1	1	1	1	
Derating factor of current I _e for sid-by-side fuse holders - n° poles	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	2.5Nm/22lbin	3Nm/26lbin	4Nm/35lbin	2.5Nm/22lbin	2.5Nm/22lbin	
Maximum conductor cross section	flexible/stranded	1-16mm ² /8 AWG	1-16mm ² /6 AWG	1-25mm ² /4 AWG	1-35mm ² /2 AWG	1-16mm ² /8 AWG	1-16mm ² /6 AWG
	rigid/solid	1-25mm ² /8 AWG	1-25mm ² /4 AWG	1-35mm ² /2 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	

DIMENSIONS

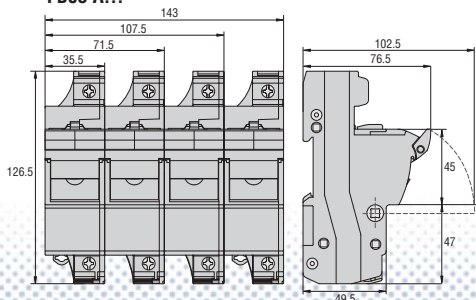
FB01 A... FB01 B... FB01 C... FB01 D...



FB02 A...

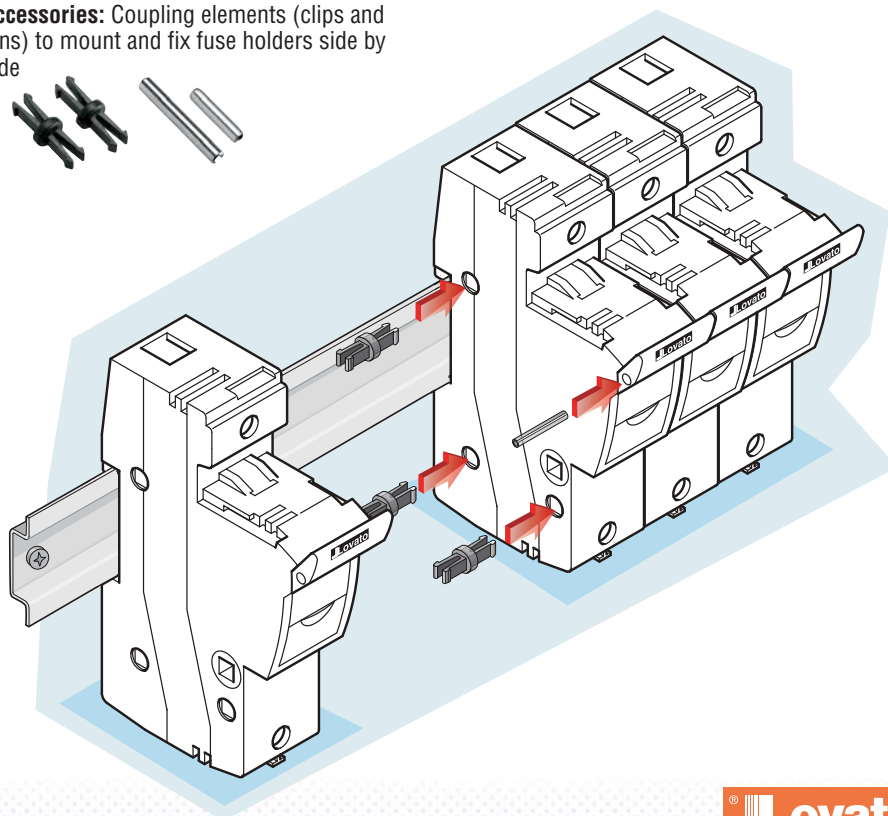


FB03 A...



ASSEMBLY

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



HOW TO ORDER

FUSE HOLDERS

Order code	Pole arrangement	DIN modules n°	Status indicator	Rated voltage Ue [V]	Rated nominale le [A]	Qty per pkg n°	Weight [kg]
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Fuse holder (fuse disconnecter), 10x38, certified by UR and CSA.

FB01 A 1P	1 pole	1	–	690VAC	32	12	0.750
FB01 A 1PL	1 pole	1	Yes	690VAC	32	12	0.750
FB01 A 1N	1 pole + N	2	–	690VAC	32	6	0.750
FB01 A 2P	2 poles	2	–	690VAC	32	6	0.750
FB01 A 3P	3 poles	3	–	690VAC	32	4	0.750
FB01 A 3N	3 poles + N	4	–	690VAC	32	3	0.750

Fuse holder (fuse disconnecter), 14x51, certified by cURus.

FB02 A 1P	1 pole	1.5	–	690VAC	50	6	1.000
FB02 A 1PL	1 pole	1.5	Yes	690VAC	50	6	1.000
FB02 A 1N	1 pole + N	3	–	690VAC	50	3	1.000
FB02 A 2P	2 poles	3	–	690VAC	50	3	1.000
FB02 A 3P	3 poles	4.5	–	690VAC	50	2	1.000
FB02 A 3N	3 poles + N	6	–	690VAC	50	1	0.650

Fuse holder (fuse disconnecter), 22x58, certified byt cURus.

FB03 A 1P	1 pole	2	–	690VAC	125	6	1.050
FB03 A 1PL	1 pole	2	Yes	690VAC	125	6	1.050
FB03 A 1N	1 pole + N	4	–	690VAC	125	3	1.050
FB03 A 2P	2 poles	4	–	690VAC	125	3	1.050
FB03 A 3P	3 poles	6	–	690VAC	125	2	1.050
FB03 A 3N	3 poles + N	8	–	690VAC	125	1	0.70c

Fuse holder (fuse disconnecter), class CC, certified by UL and CSA.

FB01 C 1P	1 pole	1	–	600VAC	30	12	0.750
FB01 C 1PL	1 pole	1	Yes	600VAC	30	12	0.750
FB01 C 2P	2 poles	2	–	600VAC	30	6	0.750
FB01 C 3P	3 poles	3	–	600VAC	30	4	0.750

Fuse holder (fuse disconnecter), 10x38.

FB01 B 1P	1 pole	1	–	690VAC	32	12	0.750
FB01 B 1PL	1 pole	1	Yes	690VAC	32	12	0.750
FB01 B 1N	1 pole + N	2	–	690VAC	32	6	0.750
FB01 B 2P	2 poles	2	–	690VAC	32	6	0.750
FB01 B 3P	3 poles	3	–	690VAC	32	4	0.750
FB01 B 3N	3 poles + N	4	–	690VAC	32	3	0.750

Fuse holder (fuse disconnecter), 10x38, for photovoltaic applications.

FB01 D 1P	1 pole	1	–	1000VDC	32	12	0.750
FB01 D 1PL	1 pole	1	Yes	1000VDC	32	12	0.750
FB01 D 2P	2 poles	2	–	1000VDC	32	6	0.750

FUSES FOR PHOTOVOLTAIC APPLICATIONS

Order code	Rated breaking capacity [kA]	Rated voltage Ue [V]	Rated current le [A]	Qty per pkg n°	Weight [kg]
FE01 D 00200	30	1000VDC	2	10	0.130
FE01 D 00400	30	1000VDC	4	10	0.130
FE01 D 00600	30	1000VDC	6	10	0.130
FE01 D 00800	30	1000VDC	8	10	0.130
FE01 D 01000	30	1000VDC	10	10	0.130
FE01 D 01200	30	1000VDC	12	10	0.130
FE01 D 01600	30	1000VDC	16	10	0.130
FE01 D 02000	30	1000VDC	20	10	0.130

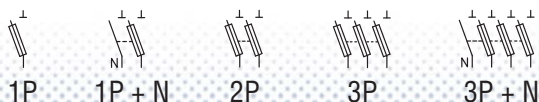
ACCESSORIES

Order code	Description	Qty per pkg n°	Weight [kg]
FBX 00	Coupling clip for 10x38, 14x51 and 22x58 sizes	100	0.050
FBX 01	Coupling pin for 10x38 size	100	0.130
FBX 02	Coupling pin for 14x51 and 22x58 sizes	100	0.150

N.B. Two clips FBX 00 and one pin FBX 01 are needed to couple two fuse holder FB01... types.

Three clips FBX 00 and one pin FBX 02 are needed to couple two fuse holder FB02... and FB03... types.

WIRING DIAGRAMS





2011



Switch disconnectors
16 to 1600A



Modular digital multimeters



Flush-mount digital multimeters
and power analyzers



Energy meters



Automatic transfer switch
controllers



Switching power supplies




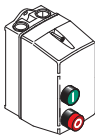








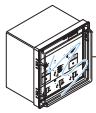

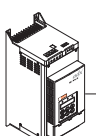




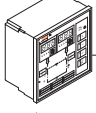


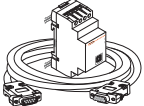


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