Horizontal fuse disconnects



Horizontal fuse disconnects

Horizontal fuse Disconnects are used in building installations, switchgear and controlgear as well as in power utility networks. The contact system enables safe load break operation using the fuse-links as moving contacts.

The product is safe against finger-touch in closed position and provides a safe and visible isolating distance in open position. Different versions for baseplate mounting, DIN-rail or busbar mounting are available to fit a variety of applications.



Product definition

Horizontal fuse disconnect according to EN60947-3 are single-pole or multipole NH fuse-bases arranged horizontally and equipped with a common fuse-carrier.

Incoming and outgoing contacts are accessible from outside and fitted with terminals for the connection of cables or bars. The feeder side of fuse-switches for busbar mounting is designed to provide mechanical and electrical connection to standardised busbar systems.

Applications

Its compact design makes the horizontal fuse disconnect a perfect feeder switch in low voltage distribution panels, as well as a protective device mounted on standardized busbar systems having 40mm, 60mm or 100mm busbar distance or for meter protection in domestic buildings. Single-pole and two-pole fuse-switches are used for UPS battery protection or in telecom power supplies e.g. 4-pole fuse-switches can be used to disconnect secondary power generators from public networks.

Product advantages

JEAN MÜLLER offers NH fuse-switches in sizes 000 and 4a. The switch size 4a is available in single-pole up to 4-pole design. Executions for baseplate mounting as well as for busbar mounting are available in all sizes. Thanks to the wide product range, tailor-made solutions with respect to current rating, voltage rating and mode of installation can be found for nearly every application.

Insulation parts

Similar to the vertical fuse disconnects all products from size 1 and above, contain only thermosetting materials for insulators supporting live parts because of their high dimensional stability and superior resistance to tracking.

Current carrying parts

Products having rated currents of 400A and above, are equipped with Q-contacts for quasi-independent operation. Q-contacts ensure high short-circuit capability up to 80kA and safe load-break operation. Particularly NH fuseswitches for busbar mounting without separate adapters exhibit very low values for power loss due to their short connecting bars.

Versions/Accessories

Monitoring components allow remote monitoring of switch-position as well as of fuse-links. Mircoswitches or electronic components will be used for fuse monitoring, depending on the application.

Special executions enable size 00 fuse-switches up to 800A rated current in combination with the corresponding fuse-links, thus providing significant savings in space.

1-pole and 3-pole disconnectors up to 1200V, protected against direct access to live parts and safe in operation, provide electric protection of solar power installations.

Horizontal fuse disconnects for panel mounting





General-purpose terminal

• All sizes are equipped with general-purpose flat terminals for cable lugs and direct terminal clamps

Reliable overreach protection

• Optimum touch protection including when feeding from bottom side by retrofit overreach protector

High short-circuit capability

- Fuse protected conditional short-circuit current up to 80kA
- 35kA/1s short-circuit withstand when equipped with solid links





Terminal covers (sold separately) are required for all disconnects (refer to page 86)

Size	For Fuses	Current Rating (A)	Terminal	Connection Capacity(mm²)	Part No.
000	DIN 000	100	Flat terminal M8	max. 95	LTL000-1/9
4A	DIN4A	1250	Flat terminal M16	max. 400	LTL4A-1/9/1250
4A	DIN4A	1600	Flat terminal 2x M12		LTL4A-1/9/1600

1 pole horizontal fuse disconnects

3 pole and **4** pole horizontal fuse disconnects

Size	For Fuses	Current Rating (A)	Terminal	Connection Capacity(mm²)	Part No.
000	DINOOO	160	Flat terminal M8	max. 95	LTL000-3/9
4A	DIN4A	1250	Flat terminal 1xM16	max. 400	LTL4A-3x3/9/1250
4A	DIN4A	1600	Flat terminal 2xM12		LTL4A-3x3/9/1600

Note: for sizes 00 (160A), 1 (250A), 2 (400A), and 3 (630A), refer Keto.

Horizontal fuse disconnects for busbar mounting







Adaptor free installation

• Small installation depth and direct busbar connection ensure low power loss

Compact size 000 fuse-switch

- Space saving 63mm width
- Easy snap-on technique without screws
- For busbars having 5mm or 10mm thickness



Terminal covers (sold separately) are required for all disconnects (refer to page 88)

Size	For Fuses	Current Rating (A)	Cable Connection	Connection Capacity(mm²)	Connection to Busbars	Part No.
000	DINOOO	100	Bottom clamp	1.5 - 50	Snap-on	LTL000-3/9/60/ AU/F57/5

3 pole horizontal fuse disconnects - 60mm centres busbar mount

Note: for sizes 00 (160A), 1 (250A), 2 (400A), and 3 (630A), refer Keto.

Horizontal fuse disconnects - Special versions



Fuse-switch-disconnectors for baseplate monitoring

- For fuse-protected feeding of plug-in modules
- Fast module changing without cable disconnecting

Disconnectors rated 1000V and above

• Proven technology for reliable operation of switchgear rated 1000V and above

Space-saving protection of DC-systems up to 1000V

• 1-pole disconnector for safe feeding of photovoltaic installations

Compact switching devices up to DC 250V rating

- Minimum space required for fuse protection up to 800A with LTT size 00
- Versions for baseplate and busbar mounting as well as feeding on rear side



Terminal covers (sold separately) are required for all disconnects (refer to page 88)

Size	For Fuses	Current Rating (A)	Connection	Terminal	Part No.
00	DC	800	Top and bottom	Flat Terminal M12	LTT00-1/9
00	DC	800	Rear	Flat Terminal M12	LTT00-1/9R
00	DC	800	Top and bottom 2 Pole	Flat Terminal M12	LTT00-2/9
00	DC	750	Top and bottom	Flat Terminal M12	KETO-00-1/F/750A/250V DC (LTT)

1 pole horizontal fuse disconnects for telecom supplies up to 250V DC base mounting



LTT00-1/9





LTT00-2/9

Accessories

Description	Size	Part No.
Clamp terminal		
1,5-70 mm² Cu	LTLOO	S00
25-150 mm ² Cu	LTL1	S1
25-240 mm ² Cu	LTL2	S2
Bar 11 x 21	LTL3	S3



Prism clamp		
10-70 mm² Al/Cu	LTL00	P0070
70-150 mm² Al/Cu	LTL1	P1
120-240 mm² Al/Cu	LTL2	P2
120-300 mm ² Al/Cu	LTL3	P3



Prism clamp for 2-conductors connection		
2 x 70-150 mm² Al/Cu	LTL1	P12
2 x 120-240 mm² Al/Cu	LTL2	P22
2 x 120-300 mm² Al/Cu	LTL3	P32



Switch position indicator		
1- and 3- pole	LTL00	EV-LTL00
1- and 2-pole	LTL1-3	EV-LTL123-1
3-pole	LTL1-3	EV-LTL123-3



Switch position indicator or fuse blown indicating mi	croswitch	
1- and 3- pole	LTL4a	K/EV-LTL/SLTL4A

Fuse blown indicating microswitch (use with striker fuses)				
1-pole	LTL00	K-LTL00-1/H		
1-pole	LTL1	K-LTL1-1/H		
1-pole	LTL3	K-LTL3-1/H		
3-pole	LTLOO	K-LTL00-3/H		
3-pole	LTL1	K-LTL1-3/H		
3-pole	LTL2	K-LTL2-3/H		
3-pole	LTL3	K-LTL3-3/H		



Protective cover, 3-pole, baseplate mounting		
Top and bottom side	LTL000	GOU-LTL000-3
Top and bottom side	LTL4	GOU-LTL4-3



DIN Rail Mounting Kit		
For mounting of NH fuse-switch-disconnectors on DIN rails acc. to EN 50022	LTL00	Z-LTL00-3



TECHNICAL INFORMATION

LTL NH fuse switch-disconnector specification

			Unit	LTL	-000	LTL000 Busbar	LTL4a-125	0 LTL4a-1600	
Accord to standard					EN60947-3				
For NH fuse link				000		000		4a	
Rated operational Voltage			V	AC690 [DC220	AC500 DC220	AC690	AC690	
Rated operational Curre	nt		А	16	0	125	1250	1600	
Thermal rating with fuse	links		А	16	0	125	1250	1600	
Thermal rating with soli	dlinks		А	160		160	1250	1600	
Rated frequency			Hz		40-60				
Rated AC insulation			V	AC6	AC690 AC500 AC800			AC800	
Power loss at max curren including fuse or link	nt not		W	7		18	32	52	
Power loss at 80% max o including fuse or link	current not		W	4.5	5	11.5	20.5	33.3	
Rated withstand voltage			kV			8			
Utilisation category		AC	-22B 400V	160	A				
		AC	-22B 500V	100	A	125A	1250A	1600A	
		AC	-22B 690V						
		AC	-21B 690V	125	Ā		1000A	1000A	
		DC	C-21B 440V						
		DC	-22B 220V			100A			
No switching under load		DC	20B 1000V				1250A	1600A	
Rated conditional short	circuit current		kA	63	3	50	35	35	
Max. power loss per fus	e link		W	10		8	110	164	
Flat Bolt	Bolt Diameter			M	3		M16	2xM12	
terminal	Cable lug		mm2	1x10	-70		400	400	
	Flat bar		mm				80x30	80x30	
Tightening Torque		lne	Nm	12-2	15		50-60	35-40	
Clamp S type copper			<mark>5000-16</mark> 9	5000-50	F50				
Cu	Cross Section		mm2	6-16	25-50	1.5-50			
Tightening torque			Nm	2.0	6	2.6			
Clamp P type copper &	Single			P000-35 F	2000-70				
atunnnun	Double			P000- P000-	2-35 2-50				
Cu/Al	Cross section		mm2	10-35	50-70				
	Double Clamp			2x25-3 2x50	35Cu Cu				
Tightening torque		Nm	4.	5					
Front side IP Closed Position					IP2	0			
Open position				IP:	10				
Operating temperature		°C	-25/+70						
Actuation			Dependent manual operation						
Mounting position			Vertical or horizontal						
Altitude		М	Up to 2000						
Pollution degree			3						
Overvoltage category			III						

Accessories - Micro switches						
Switch Position Indicator Fuse Blown Position Indicator		EV-LT00, EV-LTL123-1 K-LTL**-1/H	EV-LTL123-3, EV-LTL4A K-LTL**-3/H, K-LTL4A			
Rated Current @ 250V AC	А	5	5			
Rated Current @ 110V DC	А	0.35	0.35			

Terminal with connecting lug							
		AL/Cu Cal	Allen Kev	Tightening			
	Rounded Stranded	Sector Stranded	Round Solid	Sector Solid	, , , , , , , , , , , , , , , , , , , ,	Torque (Nm)	
K2G/A	50-185	70-240	50-185	70-240	6 mm	40	
KM2G/AF3040	25-300	25-240	25-150	25-240	6 mm	32	
K2HG/2/AF30	2 x 25-120	2 x 35-120	2 x 25-50	2 x 50-120	6 mm	40	
KV2HG/2/AF30	2 x 12 -185	2 x 12-185	-	-	6 mm	40	

Fuse switches DIN-Rail mount						
	WH-AMB1/10 JM WH-AMB3/10 JM	WH-AMB1/22 JM WH-AMB3/22 JM				
Rated Current @ 690V AC	32A	100A				
Application Category	AC-22B (650V)	AC-21B (690V)				
Conditional Rated Short Circuit Current	100kA (400V)	120kA (500V)				
Terminal Capacity	1x 1.5 - 25mm ²	1x 4 - 50mm ²				



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DIMENSIONS



Befestigungsmasse









	А	В	С	D	E	F	G	Н	
LTL000-3/9	89	139	150	48	78.5	0	70	112	15
LTL00-3/9	105.5	149	200	45	86	20.5	74.5	120	17
LTL1-3/9	184	230	317	68	119	16.5	115	177	25
LTL2-3/9	210	256	397	81	133	16.5	128	205	25
LTL3-3/9	254	270	430	96	147	9	135	220.5	30.5













LTL000-3/9/60/F57/F5

Comb busbars

FTG comb type busbars are constructed of three copper conductors within a single moulding for connection to Jean Müller LTL000-3/9* or LTL00-3/9* horizontal fuse disconnects.

The busbar is rated at 250amps.

Removable end caps allow the busbar to be shortened to intermediate sizes if required.

Description	Part No.
Busbar for LTL000-3/9 100A disconnects	
For connection to 3 disconnects*	FTG-LTL000-3
For connection to 5 disconnects*	FTG-LTL000-5
*(Bottom Feed Only)	
Busbar for LTL00-3/9 160A disconnects	
For connection to 3 disconnects	FTG-LTL00-3
For connection to 5 disconnects	FTG-LTL00-5
*(Top and Bottom Feed)	
Feed terminal	
For cables up to 95mm ² (3x required per disconnect)	FTG-LTL00/F

Terminal covers		
To provide finger protection to disconnect terminals	fitted with FTG Bush	oars
For LTL00		GO-LTL00-FTG
For LTL000		Cover not available



Also available in KETO Range. Refer to page 58