

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 fuse-switches 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. Microswitches 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)

1 pole horizontal fuse disconnects

Size	For Fuses	Current Rating (A)	Terminal	Connection Capacity(mm ²)	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

3 pole and 4 pole horizontal fuse disconnects

Size	For Fuses	Current Rating (A)	Terminal	Connection Capacity(mm ²)	Part No.
000	DIN000	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)

3 pole horizontal fuse disconnects - 60mm centres busbar mount

Size	For Fuses	Current Rating (A)	Cable Connection	Connection Capacity(mm²)	Connection to Busbars	Part No.
000	DIN000	100	Bottom clamp	1.5 - 50	Snap-on	LTL000-3/9/60/ AU/F57/5

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 disconnecter 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)

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

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)



LTT00-1/9



LTT00-1/9R



LTT00-2/9

Accessories



Description	Size	Part No.
Clamp terminal		
1,5-70 mm ² Cu	LTL00	S00
25-150 mm ² Cu	LTL1	S1
25-240 mm ² Cu	LTL2	S2
Bar 11 x 21	LTL3	S3



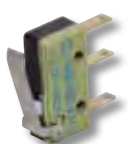
Prism clamp		
10-70 mm ² Al/Cu	LTL00	P0070
70-150 mm ² Al/Cu	LTL1	P1
120-240 mm ² Al/Cu	LTL2	P2
120-300 mm ² Al/Cu	LTL3	P3



Prism clamp for 2-conductors connection		
2 x 70-150 mm ² Al/Cu	LTL1	P12
2 x 120-240 mm ² Al/Cu	LTL2	P22
2 x 120-300 mm ² 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 microswitch		
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	LTL00	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	LTL000	LTL000 Busbar	LTL4a-1250	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 Current		A	160	125	1250	1600
Thermal rating with fuse links		A	160	125	1250	1600
Thermal rating with solid links		A	160	160	1250	1600
Rated frequency		Hz	40-60			
Rated AC insulation		V	AC690	AC500	AC800	
Power loss at max current not including fuse or link		W	7	18	32	52
Power loss at 80% max current not including fuse or link		W	4.5	11.5	20.5	33.3
Rated withstand voltage		kV	8			
Utilisation category	AC-22B 400V		160A			
	AC-22B 500V		100A	125A	1250A	1600A
	AC-22B 690V					
	AC-21B 690V		125A		1000A	1000A
	DC-21B 440V					
	DC-22B 220V			100A		
No switching under load	DC-20B 1000V				1250A	1600A
Rated conditional short circuit current		kA	63	50	35	35
Max. power loss per fuse link		W	10	8	110	164
Flat Bolt terminal	Bolt Diameter		M8		M16	2xM12
	Cable lug	mm ²	1x10-70		400	400
	Flat bar	mm			80x30	80x30
	Tightening Torque	Nm	12-15		50-60	35-40
Clamp S type copper			S000-16 S000-50	F50		
Cu	Cross Section	mm ²	6-16 25-50	1.5-50		
Tightening torque		Nm	2.6	2.6		
Clamp P type copper & aluminium	Single		P000-35 P000-70			
	Double		P000-2-35 P000-2-50			
Cu/Al	Cross section	mm ²	10-35 50-70 2x25-35Cu 2x50 Cu			
	Double Clamp					
Tightening torque		Nm	4.5			
Front side IP	Closed Position		IP20			
	Open position		IP10			
Operating temperature		°C	-25/+70			
Actuation			Dependent manual operation			
Mounting position			Vertical or horizontal			
Altitude		M	Up to 2000			
Pollution degree			3			
Overvoltage category			III			

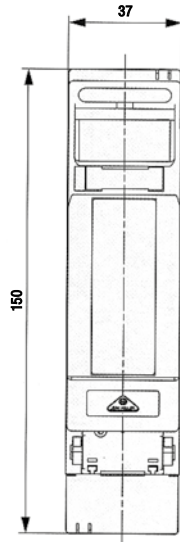
Accessories - Micro switches			
Switch Position Indicator		EV-LT00, EV-LTL123-1	EV-LTL123-3, EV-LTL4A
Fuse Blown Position Indicator		K-LTL**-1/H	K-LTL**-3/H, K-LTL4A
Rated Current @ 250V AC	A	5	5
Rated Current @ 110V DC	A	0.35	0.35

Terminal with connecting lug						
	AL/Cu Cable [mm ²]				Allen Key	Tightening Torque (Nm)
	Rounded Stranded	Sector Stranded	Round Solid	Sector Solid		
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

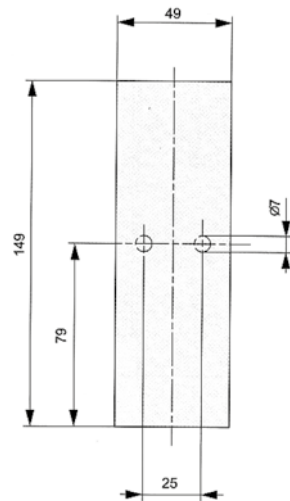
Fuse switches DIN-Rail mount			
		WH-AMB1/10 JM WH-AMB3/10 JM	WH-AMB1/22 JM WH-AMB3/22 JM
Rated Current @ 690V AC		32A	100A
Application Category		AC-22B (650V)	AC-21B (690V)
Conditional Rated Short Circuit Current		100kA (400V)	120kA (500V)
Terminal Capacity		1x 1.5 - 25mm ²	1x 4 - 50mm ²

DIMENSIONS

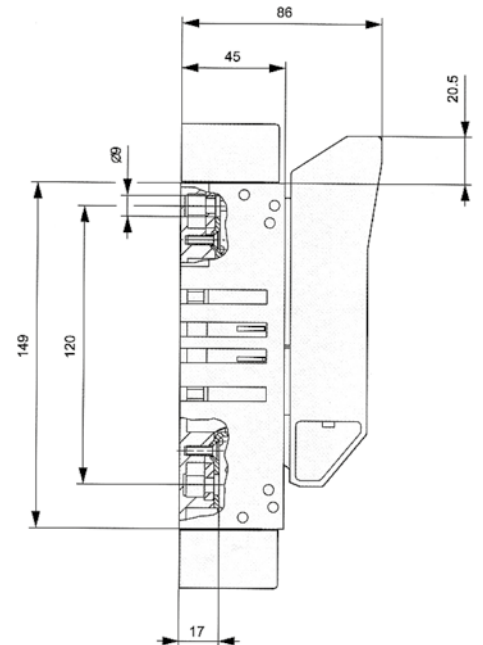
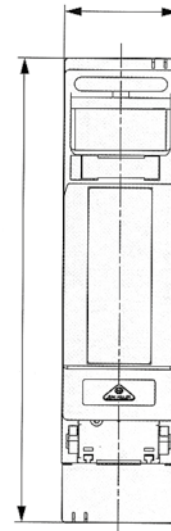
LTL000-1/9



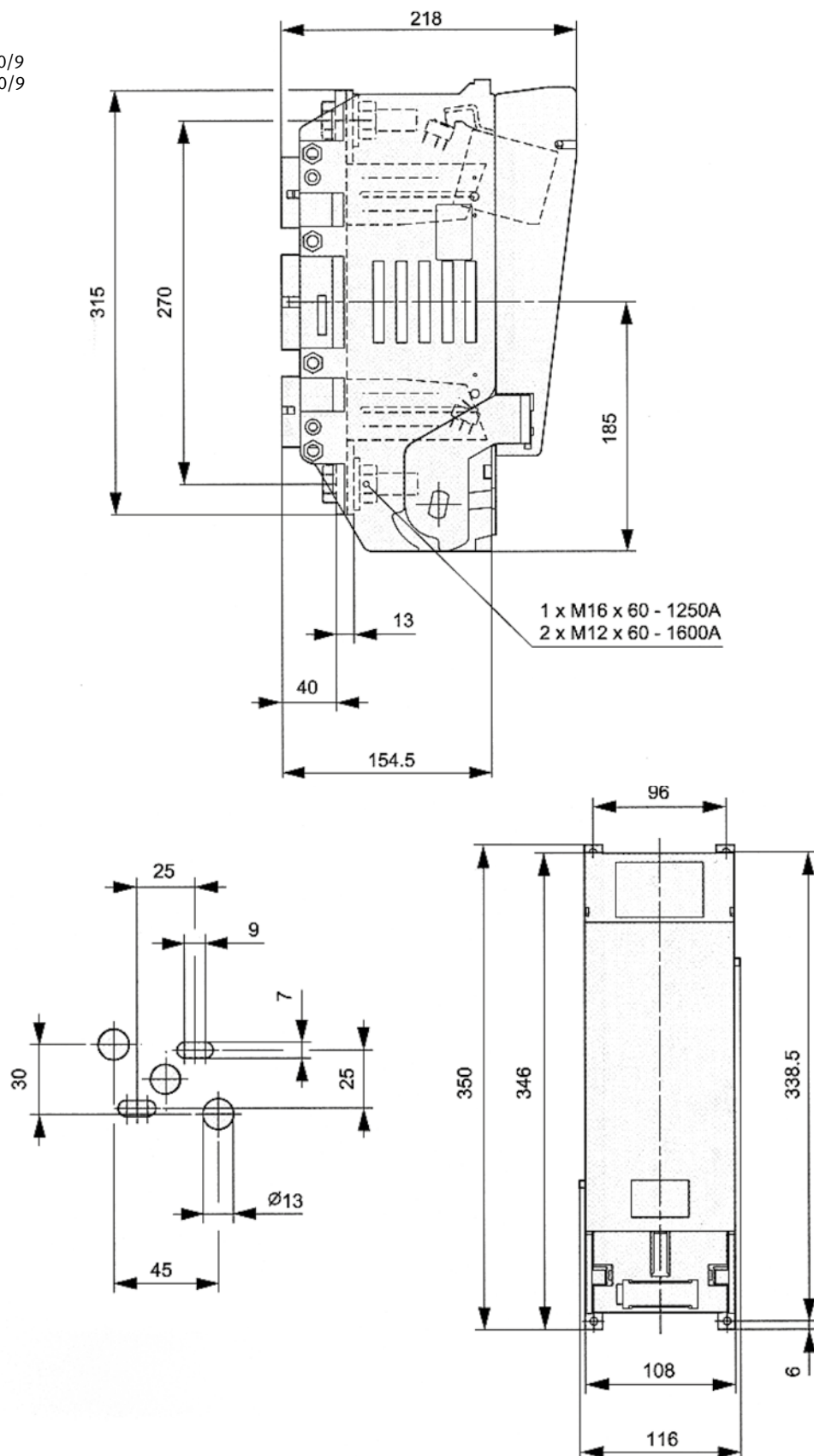
LTL00-1/9



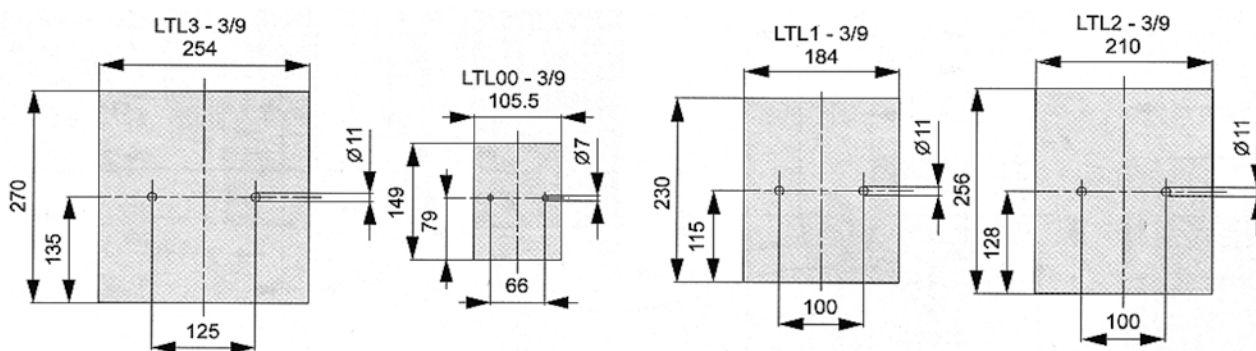
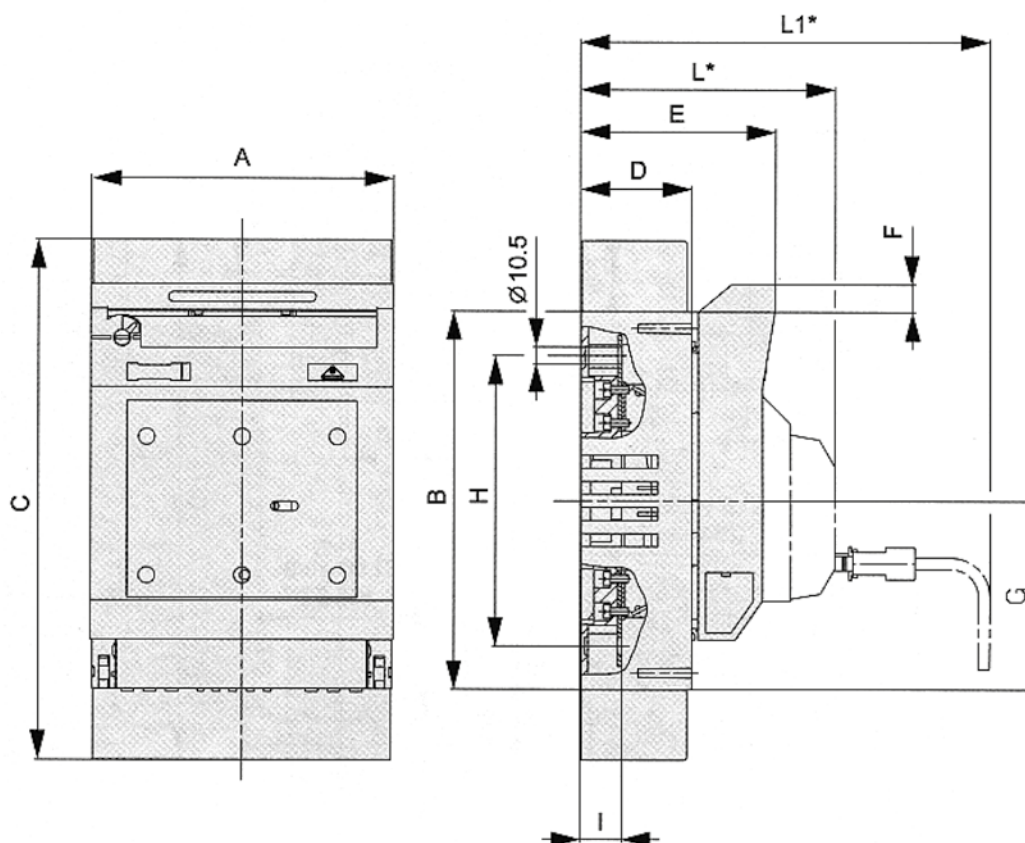
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LTL4a-1/1250/9
LTL4a-1/1600/9

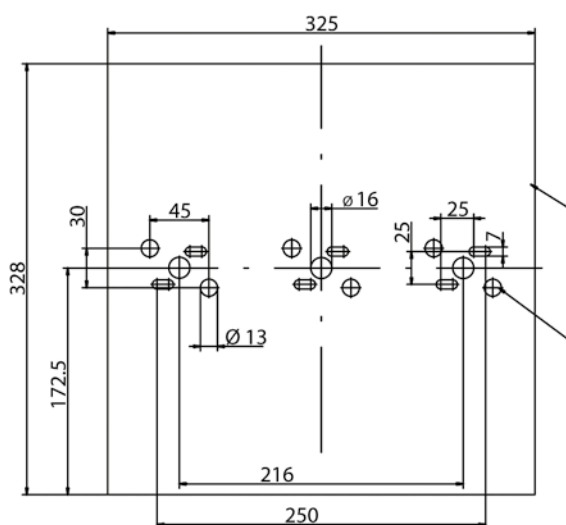
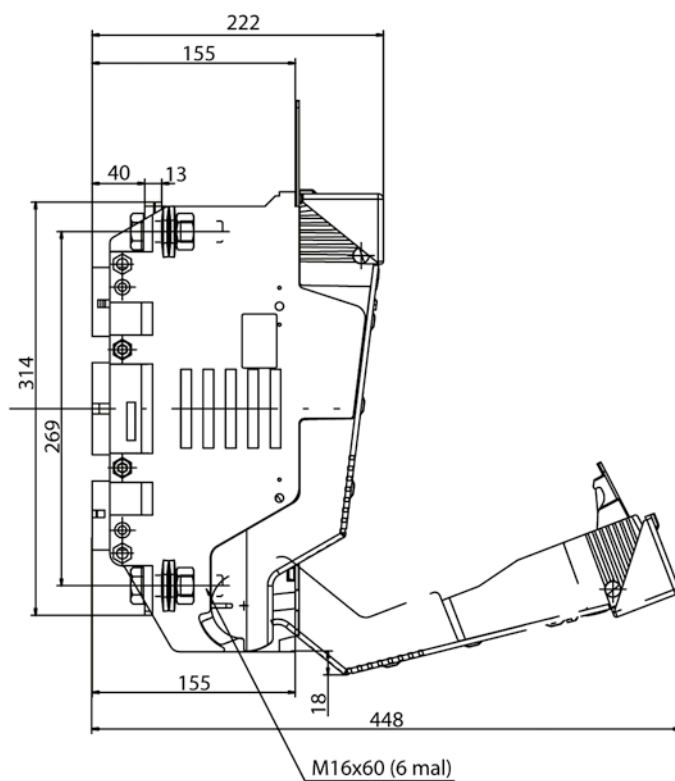
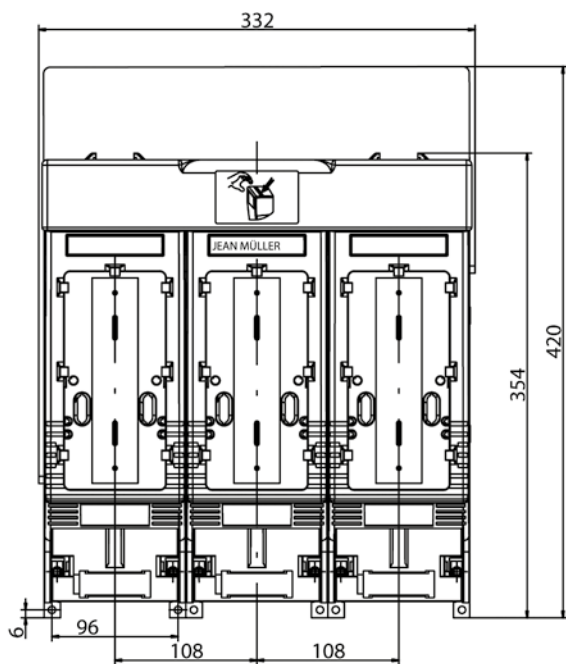


LTL00-3/9
LTL1-3/9
LTL2-3/9
LTL3-3/9

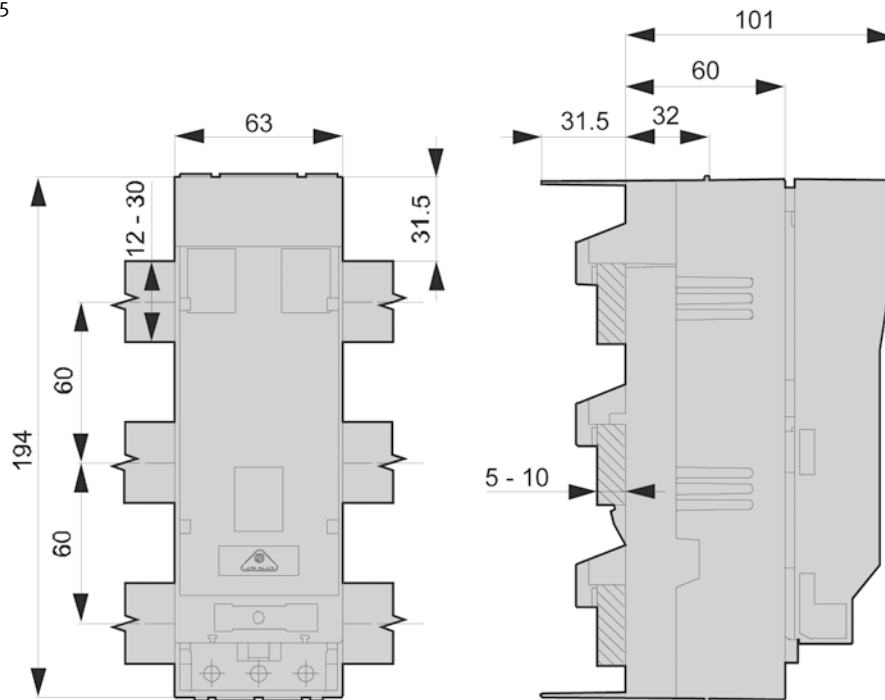


	A	B	C	D	E	F	G	H	I
LTL000-3/9	89	139	150	48	78.5	0	70	112	15
LTL00-3/9	105.5	149	200	45	86	20.5	74.5	120	17
LTL1-3/9	184	230	317	68	119	16.5	115	177	25
LTL2-3/9	210	256	397	81	133	16.5	128	205	25
LTL3-3/9	254	270	430	96	147	9	135	220.5	30.5

LTL4A-3X3/1250/9
LTL4A-3X3/1600/9



LTL000-3/9/60/F57/F5



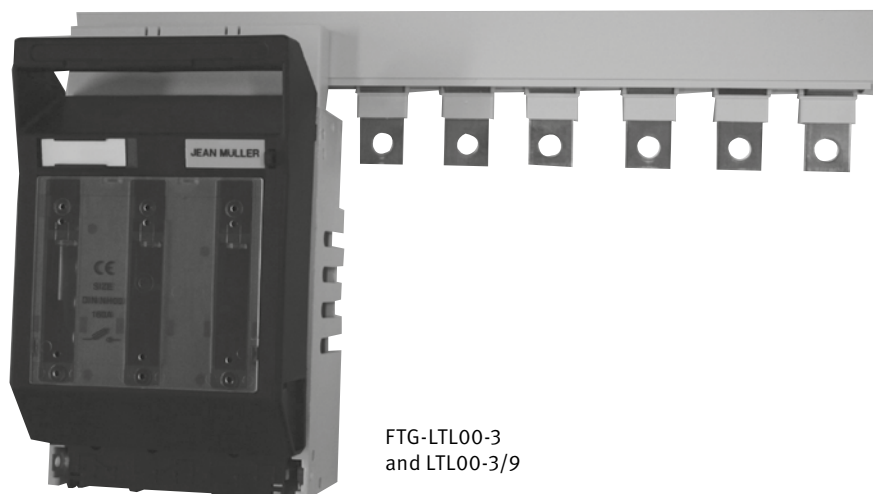
Comb busbars

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 Busbars		
For LTL00		GO-LTL00-FTG
For LTL000		Cover not available



FTG-LTL00-3
and LTL00-3/9

Also available in KETO Range. Refer to page 58