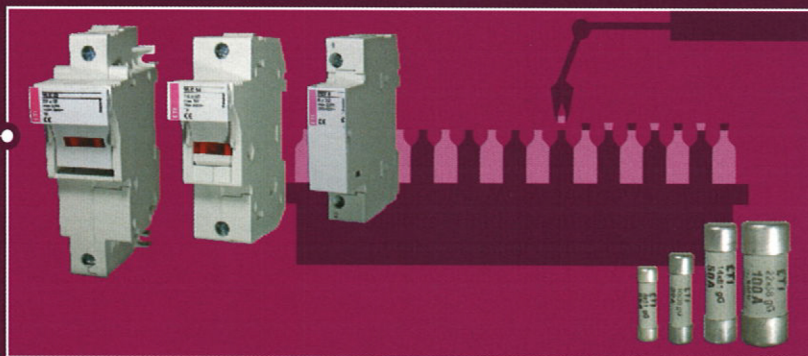


## INDUSTRIAL INSTALLATIONS

High-quality protection of installations and devices in industry is ensured by wide selection of fuse-links and circuit breakers. Particularly important is the wide range of NV/NH fuse-links and switchgear combinations, i.e. fuse blocks and switch disconnectors. We also offer MCB's and power circuit breakers ETIBREAK. And not to forget ETICON contactors, plug-in outfit and line-up terminals SPOJ and overvoltage protection devices ETITEC. As well we can not provide solutions without switch disconnectors ETISWITCH and actuators and indicators ETISIG. The products are internationally certified and carry several quality marks.



# INDUSTRY

## NV/NH horizontal fuse-switch disconnectors KVL for busbar mounting

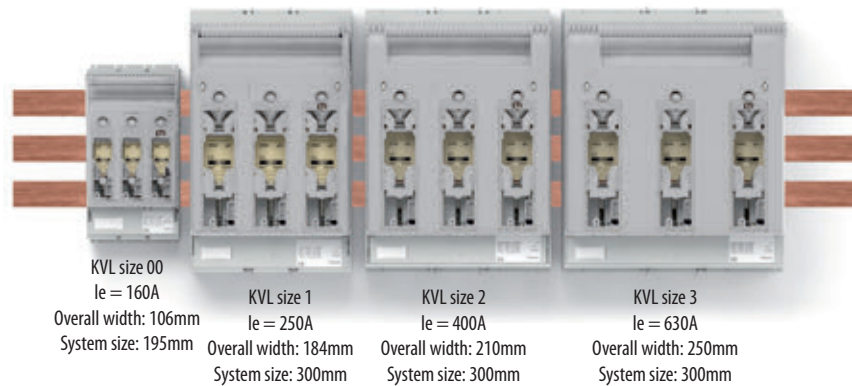
### Uniform cover cutout

KVL - horizontal fuse-switch disconnectors with different sizes can be combined together and form uniform cover cutout. The new assortment contains four cover support levels at 32, 60, 70 and 90 mm above the upper of busbar. KVL fuse-switch disconnectors can be mounted on busbars (for baseplates and DIN rails see chapter NV/NH).

- Available with 1- and 3-pole versions
- Four sizes: size 00, size 1, size 2, size 3
- Use with NV/NH Fuse-links 000, 00, 1, 2, 3

### Busbar mounting

KVL-00 to KVL-3 can be mounted onto 60mm busbar systems - no drilling required

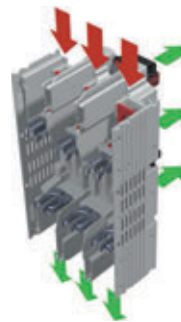


### Practical advantages



#### Uniform cover cutout for all sizes disconnectors

- Changeable installation depth by 4 different field supporting surfaces (32mm, 60mm, 70mm, 90mm)

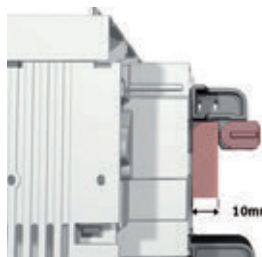


#### Area-saving

- integrated feeding terminal
- Busbar supply and safe outgoing cable outlet
- Busbar supports up to 20mm width, 19mm height max.

#### Easy adjustments

- adjustment to 5mm or 10mm thick bars
- simple modification of cable terminal from bottom side to top side



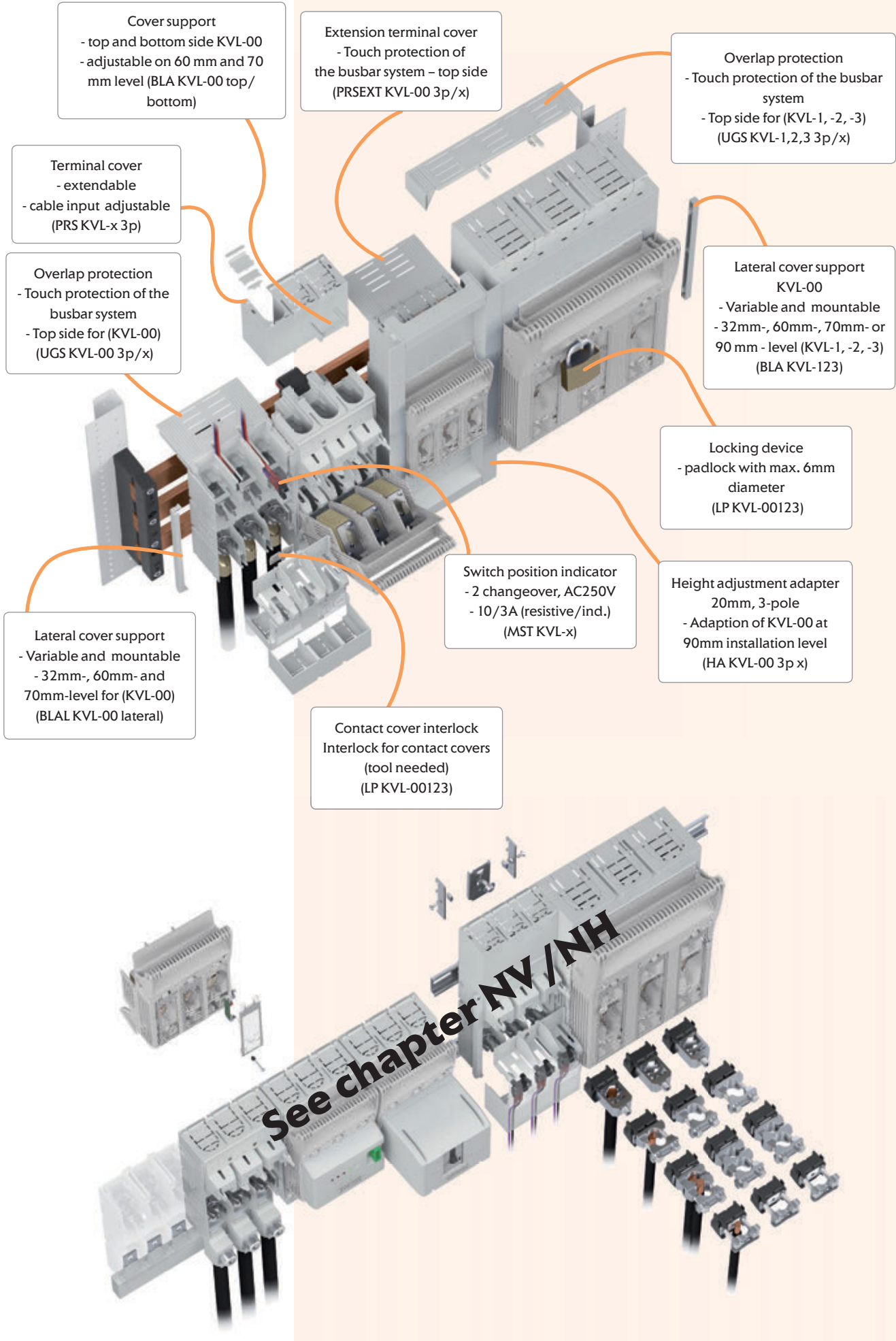
#### Retrofittable switch position indicator

- Dual monitoring in each unit
- Separate circuits function
- Wide range of applications due to high switching capacity 10/3A (resistive/ind.) AC250V



**New generation!**





Cover support  
 - top and bottom side KVL-00  
 - adjustable on 60 mm and 70 mm level (BLA KVL-00 top/bottom)

Extension terminal cover  
 - Touch protection of the busbar system – top side (PRSEXT KVL-00 3p/x)

Overlap protection  
 - Touch protection of the busbar system  
 - Top side for (KVL-1, -2, -3) (UGS KVL-1,2,3 3p/x)

Terminal cover  
 - extendable  
 - cable input adjustable (PRS KVL-x 3p)

Lateral cover support KVL-00  
 - Variable and mountable  
 - 32mm-, 60mm-, 70mm- or 90 mm - level (KVL-1, -2, -3) (BLA KVL-123)

Overlap protection  
 - Touch protection of the busbar system  
 - Top side for (KVL-00) (UGS KVL-00 3p/x)

Locking device  
 - padlock with max. 6mm diameter (LP KVL-00123)

Switch position indicator  
 - 2 changeover, AC250V  
 - 10/3A (resistive/ind.) (MST KVL-x)

Height adjustment adapter  
 20mm, 3-pole  
 - Adaption of KVL-00 at 90mm installation level (HA KVL-00 3p x)

Lateral cover support  
 - Variable and mountable  
 - 32mm-, 60mm- and 70mm-level for (KVL-00) (BLAL KVL-00 lateral)

Contact cover interlock  
 Interlock for contact covers (tool needed) (LP KVL-00123)

**See chapter NV/NH**

## 60 mm busbar system

### 3-pole, 60mm busbar, thickness 5 mm or 10 mm

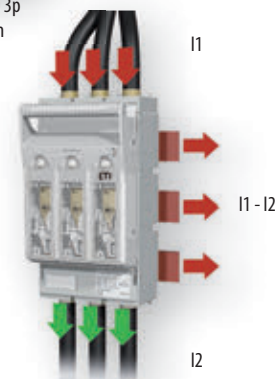
Size	Code No.	Type	Weight [kg]	Packaging [pcs]
00	001696041	HVL-B 000 3p F57 Slim	0,8	1
	001690910	KVL-B-00 3p M8-M8	0,9	1
	001690911	KVL-B-00 3p BC95-BC95	0,92	1
1	001690912	KVL-B-1 3p M10-M10	2,14	1
2	001690913	KVL-B-2 3p M10-M10	3,53	1
3	001690914	KVL-B-3 3p M10-M10	4,13	1



HVL-B 000 3p F57 Slim

### 3-pole, 60mm busbar, Integrated Feeding Terminal

Size	Code No.	Type	Feeding side-Line-I1	Load side I2	I1	I2	Weight [kg]	Packaging [pcs]
00	001690920	KVL-B/FT-00 3p M8-M8	top/bottom	top/bottom	400	160	1,05	1
1	001690921	KVL-B/FT-1 3p M10-M10 TOP	bottom	top	500	250	2,39	1
	001690922	KVL-B/FT-1 3p M10-M10 BOTTOM	top	bottom			2,39	1
2	001690923	KVL-B/FT-2 3p M10-M10 TOP	bottom	top	800	400	3,9	1
	001690924	KVL-B/FT-2 3p M10-M10 BOTTOM	top	bottom			3,9	1
3	001690925	KVL-B/FT-3 3p M10-M10 TOP	bottom	top	1000	630	4,45	1
	001690926	KVL-B/FT-3 3p M10-M10 BOTTOM	top	bottom			4,45	1



### 1-pole busbar

Size	Code No.	Type	Fixation	Weight [kg]	Packaging [pcs]
00	001690930	KVL-B/SF-00 1p M8-M8	screw fixation	0,35	2
	001690931	KVL-B/CF-00 1p M8-M8	clamp fixation	0,39	2
1	001690932	KVL-B/SF-1 1p M10-M10	screw fixation	0,98	1
2-3	001690933	KVL-B/SF-3 1p M10-M10	screw fixation	1,59	1

DO NOT USE WITH 3-pole 60 mm busbar system !!!



!!! ONLY FOR 1-POLE BUSBAR

### Accessories for KVL busbar 60 mm

Type	Code No.	Description	Packaging min order [pcs]
HA KVL-00 3p T/B 340-370	001690980	Height adjusting adapter, 70 to 90mm, 3-pole, System size 340-370mm, top + bottom, size 00	1
HA KVL-00 3p T/B 300	001690981	Height adjusting adapter, 70 to 90mm, 3-pole, System size 300mm, top + bottom, size 00	1
HA KVL-00 3p L/R 340-370	001690982	Height adjusting adapter, 70 to 90mm, 3-pole, System size 340-370mm, right + left, size 00	1
HA KVL-00 3p L/R 300	001690983	Height adjusting adapter, 70 to 90mm, 3-pole, System size 300mm, right + left, size 00	1
PRSEXT KVL-00 3p/34-39	001690984	Terminal cover extension, 3-pole, h1 = 39 or 34mm, size 00, *	2
PRSEXT KVL-00 3p/32	001690985	Terminal cover extension, 3-pole, h1 = 32mm, size 00, *	2
UGS KVL-00 3p/34-39	001690986	Overlap protector for busbar systems, h1 = 39 or 34mm, for terminal F, S00, P00, R95, size 00	2
UGS KVL-00 3p/32	001690987	Overlap protector for busbar systems, h1 = 32mm, for terminal F, S00, P00, R95, size 00	2
UGS KVL-00 3p/R95T/34-39	001690988	Overlap protector for busbar systems, h1 = 39 or 34mm, for terminal R95T, size 00	2
UGS KVL-00 3p/R95T/32	001690989	Overlap protector for busbar systems, h1 = 32mm, for terminal R95T, size 00	2
UGS KVL-1 3p/34-39	001690990	Overlap protector for busbar systems, h1 = 39 or 34mm, size 1	2
UGS KVL-1 3p/32	001690991	Overlap protector for busbar systems, h1 = 32mm, size 1	2
UGS KVL-2 3p/39-34	001690992	Overlap protector for busbar systems, h1 = 39 or 34mm, size 2	2
UGS KVL-2 3p/32	001690993	Overlap protector for busbar systems, h1 = 32mm, size 2	2
UGS KVL-3 3p/39-34	001690994	Overlap protector for busbar systems, h1 = 39 or 34mm, size 3	2
UGS KVL-3 3p/32	001690995	Overlap protector for busbar systems, h1 = 32mm, size 3	2
BLA KVL-00 top/bottom	001690961	Cover support, top or bottom side, level 60mm, 70mm, size 00	10
BLAL KVL-00 lateral	001690962	Cover support, lateral, level 32mm, 60mm, 70mm, size 00	10
BLA KVL-123	001690963	Cover support, top or bottom side, lateral, level 32mm, 60mm, 70mm, size 1, 2, 3	10

\* h1 = Distance top edge busbar to base plate



BLA\_KVL-00\_top-bottom



BLAL\_KVL



HA\_KVL-00 3p T/B 300



## Horizontal fuse-switch disconnecter type KVL size 00, 1, 2, 3

## Technical data (in accordance with IEC/EN 60947-3)

Size	00						1							
<b>Technical Characteristics</b>														
Rated operational voltage	$U_e$	V	400 AC	500 AC	690 AC	250 DC	440 DC	400 AC	500 AC	690 AC	250 DC	440 DC		
Rated operational current	$I_e$	A	160	160	160	160	160	250	250	250	250	250		
Conv. free air thermal current with fuse-links, *	$I_{th}$	A	160						250					
Conv. free air thermal current with solid-links, *	$I_{th}$	A	On request						On request					
Rated frequency	f	Hz	40-60	40-60	40-60	/	/	40-60	40-60	40-60	/	/		
Rated insulation voltage	$U_i$	V	1000 AC						1000 AC					
Total power loss (without fuse)	$P_v$	W	1P - 5 W, 3P - 14 W						1P - 7 W, 3P - 22 W					
Power loss at 80% I <sub>th</sub> (without fuse-links), **	$P_v$	W	1P - 3 W, 3P - 9 W						1P - 4,7 W, 3P - 14,1 W					
Rated impulse withstand voltage	$U_{imp}$	kV	8						8					
Utilisation category***			AC-23B	AC-22B	AC-21B	DC-22B	DC-21B	AC-23B	AC-22B	AC-21B	DC-22B	DC-21B		
Rated conditional short-circuit current, ***, ****		kA	120 (500V), 100 (690V)						120 (500V), 100 (690V)					
Rated short-time withstand current	$I_{cw}$	kA	5/1s						8,6/1s					
<b>Fuse links</b>														
Size - DIN VDE 0636-2	-	-	000/00						1					
Max. rated current (gG)	$I_n$	A	160	160	160	160	160	250	250	250	250	250		
Max. permissible power loss per fuse link	$P_a$	W	12						23					
<b>Cable terminal</b>														
Flat terminal-Screw			M8						M10					
Tightening torque	Ma	Nm	12-15						30-35					
Clip terminal, Clamping cross-section		mm <sup>2</sup>	Round conductor: 1,5-70 Cu, Laminated copper bar: 6 x 9 x 0,8 Cu						Round conductor: 2,5-150 Cu, Laminated copper bar: 6 x 16 x 0,8 Cu					
Tightening torque	Ma	Nm	2,6						9,5					
Prism Clamp, Clamping cross-section		mm <sup>2</sup>	(SP KVL00 P1); 10-70 Al/Cu, 35-95 Al/Cu						(SP KVL1 P1); 10-150 Al/Cu					
Tightening torque	Ma	Nm	(SP KVL00 P1); 2,6						(SP KVL1 P1); 4,5					
Prism Clamp, Clamping cross-section		mm <sup>2</sup>							(SP KVL1 P2); 2 x (10-150) Al/Cu					
Tightening torque	Ma	Nm							(SP KVL1 P2); 4,5					
Frame clamp, Clamping cross-section		mm <sup>2</sup>	1,5-95 Al/Cu, (Al 95: max. 125A)						35-150 Al/Cu					
Torque	Ma	Nm	4,5						12					
<b>Degree of Protection, front side device</b>														
Front cover close	-	-	IP20						IP20					
Front cover open	-	-	IP10						IP10					
With clamp- and lateral cover	-	-	IP2XC						IP2XC					
<b>Operating condition</b>														
Ambient temperature *****	$T_{amb}$	°C	-25 ... +55						-25 ... +55					
Operating condition	-	-	Continuous operation						Continuous operation					
Mounting	-	-	vertical, horizontal						vertical, horizontal					
Altitude	-	m	≤ 2000						≤ 2000					
Pollution degree	-	-	3						3					
Overvoltage category	-	-	III						III					

\* Mounting of several units in low voltage switchgear-combinations, please think about rated diversity factors acc. to DIN EN 61439.

\*\* Reference value for replacement of devices acc. to DIN EN 61439-1 clause 10.10.4.2.

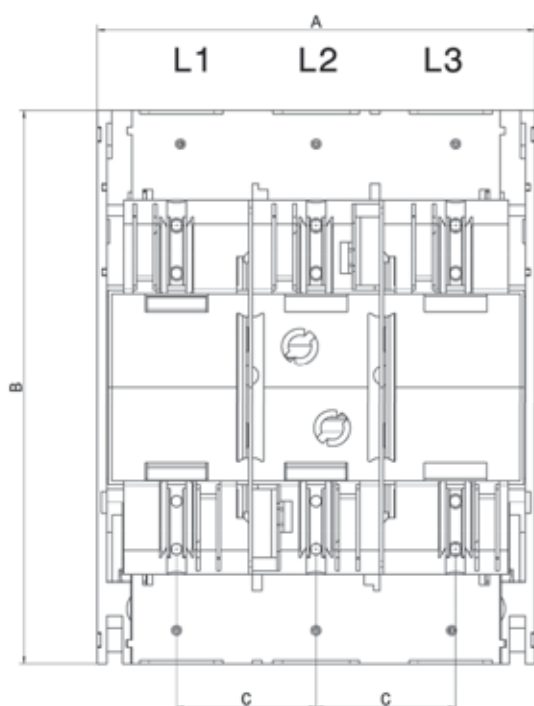
\*\*\* minimum distance to earthed, conductive parts: Lateral: 20mm/Above: 50mm

\*\*\* a) Lateral: 50mm/Above: 100mm

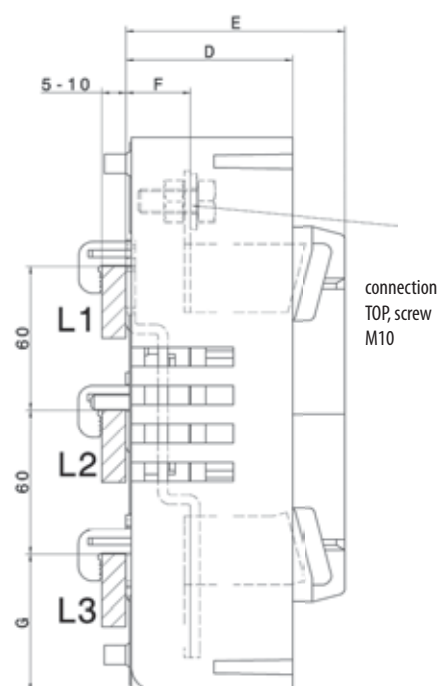
\*\*\*\* Type tested with NH fuse-links characteristic gG

\*\*\*\*\* 35°C Normal temperature, at 55°C with reduced operating current

## Technical data



PTV-B 1 3p M10 TOP, PTV-B 2 3p M10 TOP



	A	B	C	D	E	F	G
PTV-B 1 3p M10 TOP	184	230	58	69	92	27	57
PTV-B 2 3p M10 TOP	210	256	66	83	101	27	68

### Technical data (in accordance with EN 60269-1, EN 60269-2-2)

Technical Specifications				HVL-B 000 3p F57 Slim	
<b>Electrical characteristics</b>					
For NH fuse-links acc. to DIN VDE 0636-2	Size	6000			
Rated operational voltage	Ue	V	500 AC, 220 DC		
Rated operational current 1)	Ie	A	125		
Conv. free air thermal current with fuse-links 1)	Ith	A	125		
Conv. free air thermal current with solid-links 1)	Ith	A	160		
Rated frequency	–	Hz	40-60		
Rated insulation voltage	Ui	V	500 AC		
Total power loss at Ith (without fuse-links)	Pv	W	18		
Rated impulse withstand voltage	Uimp	kV	8		
Utilization category	–	–	AC-22B (500V/125A) DC-22B (220V/100A)		
Rated conditional short-circuit current 2)	–	kA	50		
Rated short-time withstand current	Icw	kA	–		
Max. permis. power loss per fuse-link	Pa	W	8		
<b>Cable terminal</b>					
Clamp	Clamping cross-section	–	mm <sup>2</sup>	F50	○: 1,5-50 Cu / □: 6 x 9 x 0,8
	Tightening torque	–	Nm		26
Degree of protection Front side	Operating condition				IP20
	Switching element open				IP10
<b>Operating conditions</b>					
Ambient temperature 3)	T	°C	-25 ... +55		
Delovno stanje	–	–	Uninterrupted duty		
Actuation	–	–	Dependent manual operation		
Vgradni položaj	–	–	Vertical, horizontal		
Altitude	–	m	< 2000		
Verschmutzungsgrad/Pollution degree	–	–	3		
Überspannungskategorie/Overvoltage category	–	–	III		

1) In case of mounting of several units in low voltage switchgear-combinations, please consider rated diversity factors acc. to EN 61439-1

2) Type tested with NH-fuse-links characteristic gG

3) 35°C Normal temperature, at 55°C with reduced operating current