

## Technical data

### 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	800 AC					800 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, Strip conductor: 6 x 9 x 0,8 Cu					Round conductor: 2,5-150 Cu, Strip conductor: 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 (in accordance with IEC/EN 60947-3)**

Size	2						3			
<b>Technical Characteristics</b>										
Rated operational voltage	$U_e$	V	400 AC	500 AC	690 AC	440 DC	400 AC	500 AC	690 AC	440 DC
Rated operational current	$I_e$	A	400	400	400	400	630	630	630	630
Conv. free air thermal current with fuse-links, *	$I_{th}$	A	400				630			
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	800 AC				800 AC			
Total power loss (without fuse)	$P_v$	W	1P - 12 W, 3P - 36 W				1P - 29 W, 3P - 86 W			
Power loss at 80% I <sub>th</sub> (without fuse-links), **	$P_v$	W	1P - 7,7 W, 3P - 23 W				1P - 18,3 W, 3P - 55 W			
Rated impulse withstand voltage	$U_{imp}$	kV	8				8			
Utilisation category***			AC-23B	AC-22B	AC-21B	DC-22B	AC-23B	AC-22B	AC-21B	DC-22B
Rated conditional short-circuit current, ***, ****		kA	120 (500V), 100 (690V)				120 (500V), 100 (690V)			
Rated short-time withstand current	$I_{cw}$	kA	15/1s				15/1s			
<b>Fuse links</b>										
Size - DIN VDE 0636-2	-	-	2				3			
Max. rated current (gG)	$I_n$	A	400	400	400	400	630	630	630	630
Max. permissible power loss per fuse link	$P_a$	W	34				48			
<b>Cable terminal</b>										
Flat terminal-Screw			M10				M10 / M12			
Tightening torque	$M_a$	Nm	30-35				30-35			
Clip terminal, Clamping cross-section		mm <sup>2</sup>	Round conductor: 25-150 Cu, Strip conductor: 10 x 16 x 0,8 Cu				Strip conductor: 11 x 21 x 1 Cu			
Tightening torque	$M_a$	Nm	23				23			
Prism Clamp, Clamping cross-section		mm <sup>2</sup>	(SP KVL2 P1); 120-240 Al/Cu				(SP KVL3 P1); 120-300 Al/Cu			
Tightening torque	$M_a$	Nm	(SP KVL2 P1); 11				(SP KVL3 P1); 11			
Prism Clamp, Clamping cross-section		mm <sup>2</sup>	(SP KVL2 P2); 2 x (120-150) Al/Cu				(SP KVL3 P2); 2 x (120-240) Al/Cu			
Tightening torque	$M_a$	Nm	(SP KVL2 P2); 11				(SP KVL3 P2); 11			
Frame clamp, Clamping cross-section		mm <sup>2</sup>	95-300 Al/Cu				95-300 Al/Cu			
Torque	$M_a$	Nm	20				20			
<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			
Mounting	-	-					vertical, horizontal			
Altitude	-	m					≤ 2000			
Pollution degree	-	-					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.

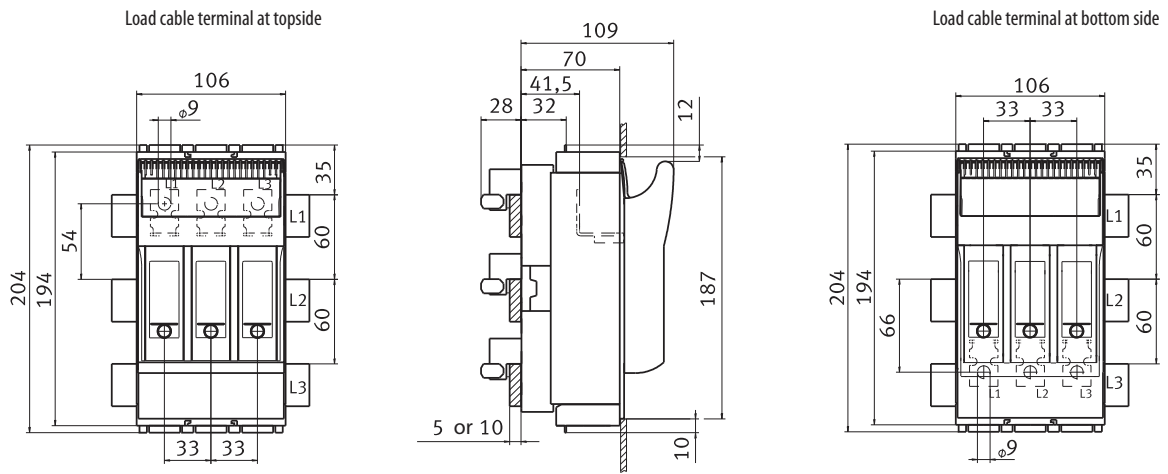
\*\*\* minimum distance to earthed, conductive parts: Lateral: 20mm/Above: 50mm

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

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

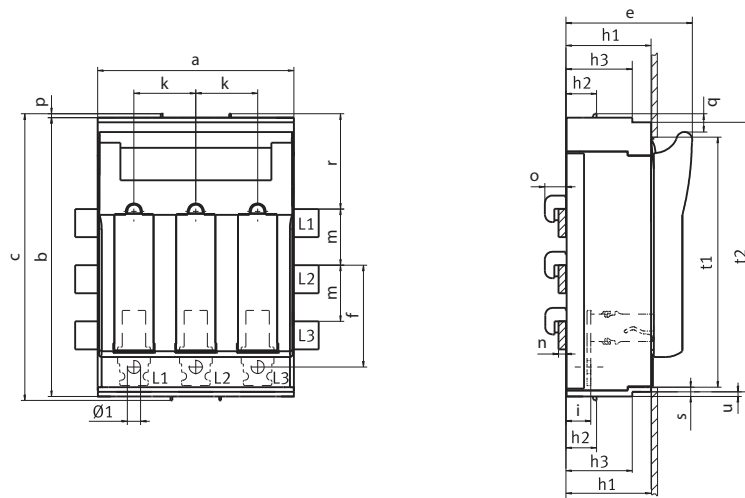
\*\*\*\*\* 35°C Normal temperature, at 55°C with reduced operating current

### Technical data

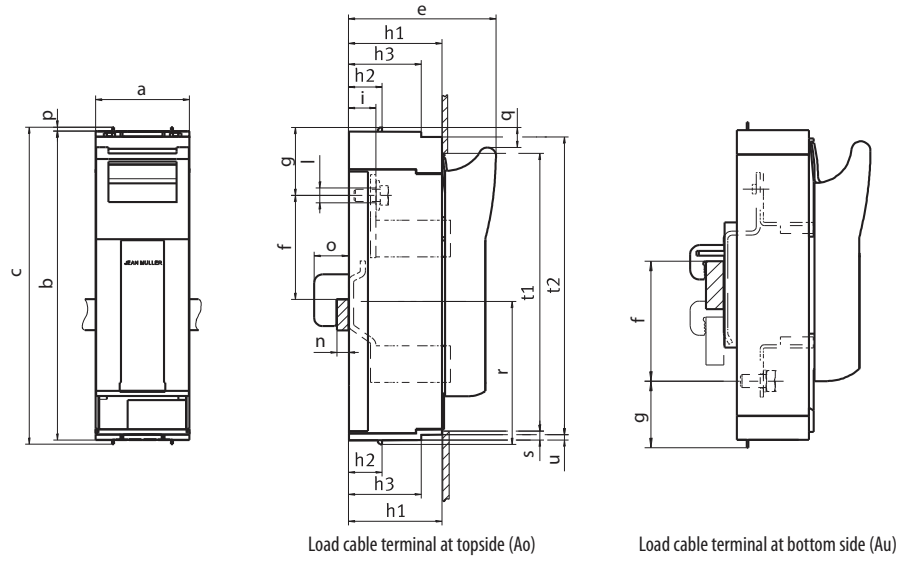


KVL-B-00 3p M8-M8
KVL-B-00 3p BC95-BC95
KVL-B/FT-00 3p M8-M8

Load cable terminal at bottom side

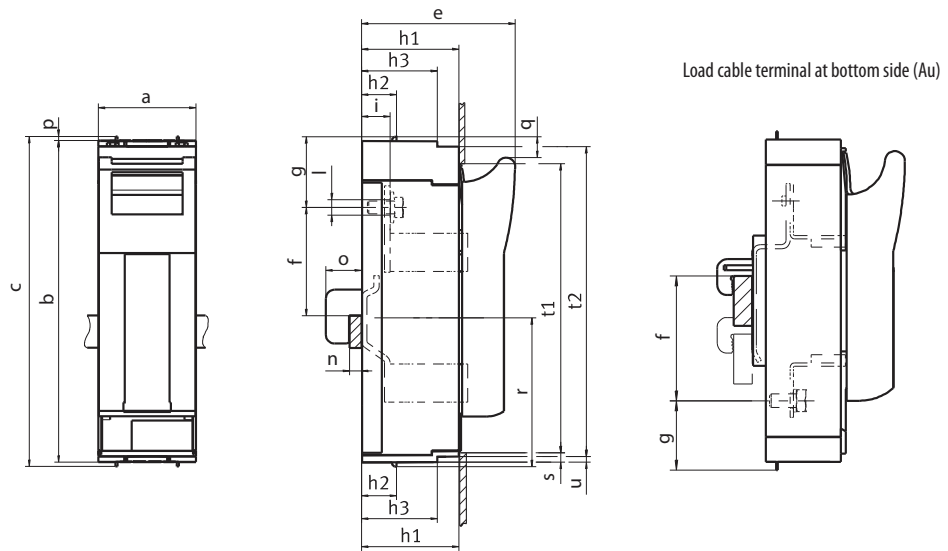


	a	b	c	e	f	h1	h2	h3	i	k	l	m	n	o	p	q	r	s	t1	t2	u
KVL-B-1 3p M10-M10	184	298	306	117	98	70	32	-	25,5	58	Ø10,5	60	4-10	25	4	19	102	5	272	-	-
KVL-B/FT-1 3p M10-M10 TOP																					
KVL-B/FT-1 3p M10-M10 BOTTOM																					
KVL-B-2 3p M10-M10	210	298	306	135	109	90	32	70	26,5	66	Ø14	60	4-10	25	4	19	102	10	268	289	5
KVL-B/FT-2 3p M10-M10 TOP																					
KVL-B/FT-2 3p M10-M10 BOTTOM																					
KVL-B-3 3p M10-M10	250	298	306	143	109	90	32	70	26,5	82	Ø14	60	4-10	25	4	19	102	10	268	289	5



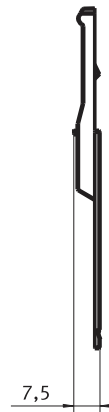
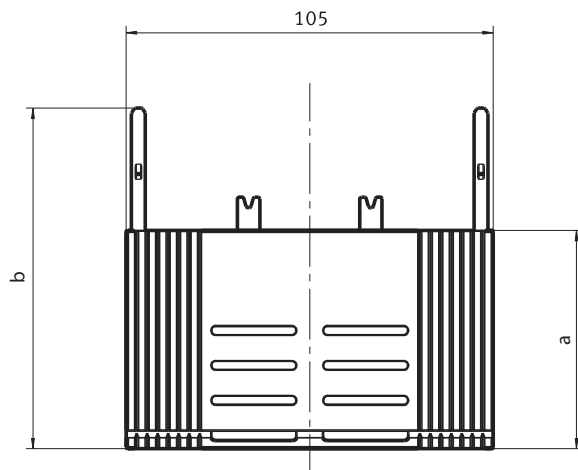
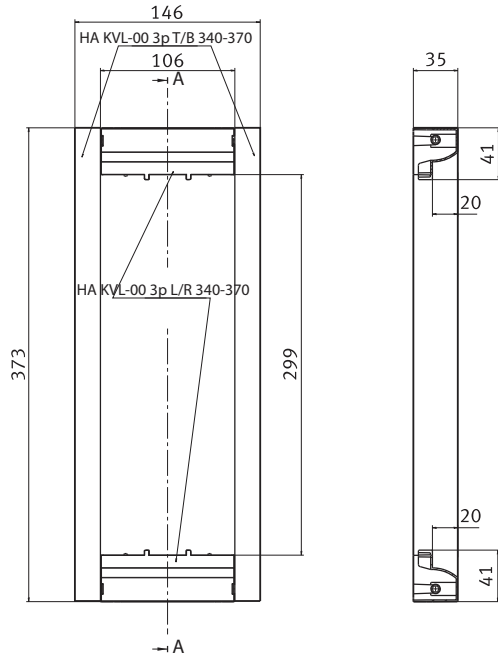
	a	b	c	e	f-Ao	f-Au	g-Ao	g-Au	h1	h2	i	l	n	o	p	q	r	s	t1
KVL-B/SF-00 1p M8-M8	50	195	204	92	45,50,55 ... 75	75,70,65 ... 45	42	42	53	15	24,5	Ø9	4-10	22	4,5	12	102	5	187

Load cable terminal at topside (Ao)

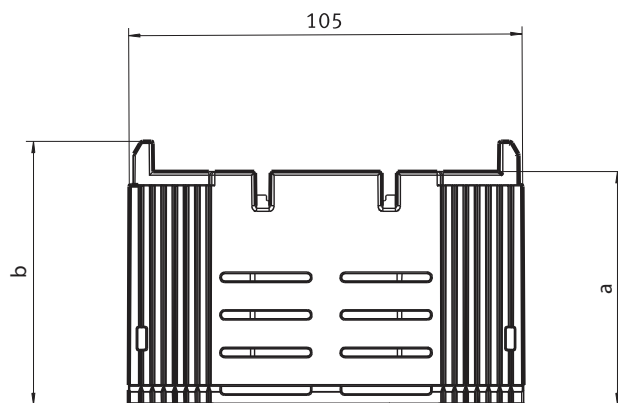


	a	b	c	e	f-Ao	f-Au	g-Ao	g-Au	h1	h2	h3	i	l	n	o	p	q	r	s	t1	t2	u
KVL-B/SF-1 1p M10-M10	69	298	306	117	93	93	76	44	70	32	-	25,5	Ø10,5	5-10	33	4	19	138	5	272	-	-
KVL-B/SF-3 1p M10-M10	91	298	306	143	100	104	66	36	90	32	70	26,5	Ø14	5-10	33	4	19	138	10	268	289	5

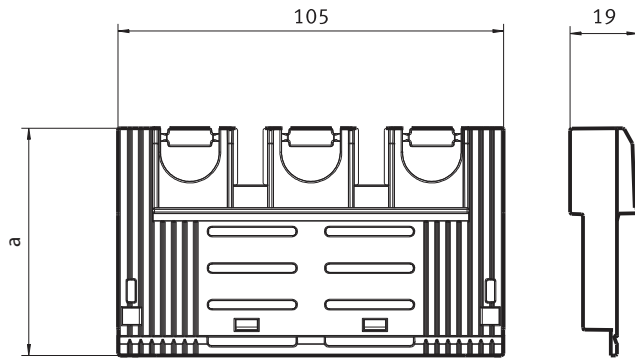
Technical data



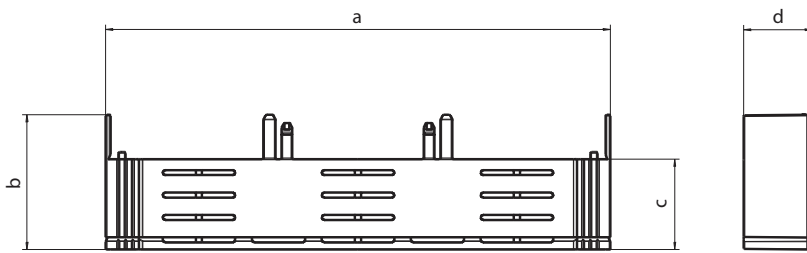
	a	b
PRSEXT KVL-00 3p/34-39	62,5	97,5
PRSEXT KVL-00 3p/32	55,5	90,5



	a	b
UGS KVL-00 3p/34-39	62	70
UGS KVL-00 3p/32	55	63



	a
UGS KVL-00 3p/R95T/34-39	62
UGS KVL-00 3p/R95T/32	55



	a	b	c	d
UGS KVL-1 3p/32	184	51,5	30,5	16
UGS KVL-1 3p/34-39	184	58,5	37,5	16
UGS KVL-2 3p/32	210	49	30,5	28,5
UGS KVL-2 3p/39-34	210	56	37,5	28,5
UGS KVL-3 3p/32	250	49	30,5	28,5
UGS KVL-3 3p/39-34	250	56	37,5	28,5

**Technical data - Feeding clamps**

Technical Characteristics			
Max. electrical load			AC690V/DC1000V-250A
Heat deflection temp.			125°C UL94: V0
Comparative tracking index			600
Cross sections			
Conductor - Max. Diameter Ø14 mm			
single wire		mm <sup>2</sup>	25 - 95
multi wire		mm <sup>2</sup>	25 - 95
fine wire (with end sleeve)		mm <sup>2</sup>	25 - 70
Torque	Ma	Nm	13
Degree of protection			IP20
Regulations			EN 60998-1:2004; EN 60998-2:2004; EN 60999-1:2000; EN 60999-2:2003

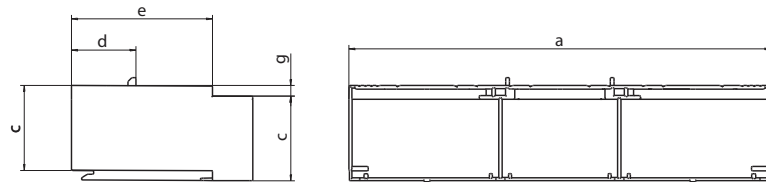
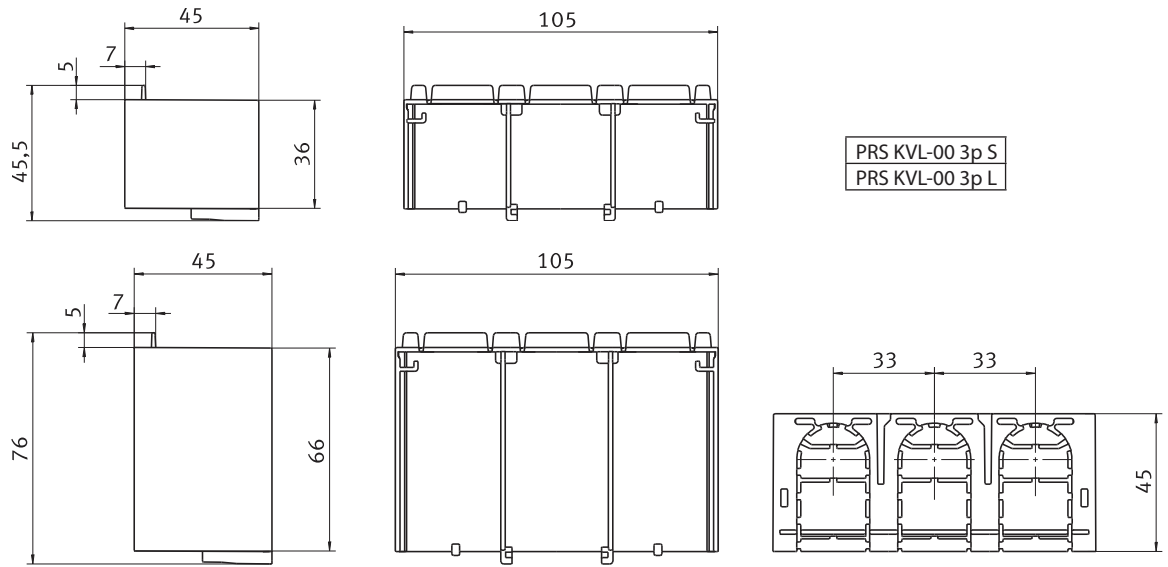
**Important**

This Terminal is suitable for Al and Cu conductors. Please pay attention to the common handling guidelines when connecting the Aluminium conductors. Clean and brush the contact surfaces and lubricate them with an appropriate grease.

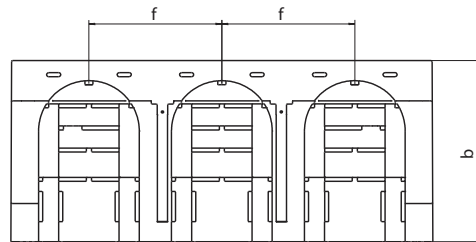
**Technical data - Phase busbars**

Technical Characteristics			
		mm <sup>2</sup>	50
Impulse voltage strenght		kV	≥8,5
Min. air distance		mm	>8
Min. creeping distance		mm	>9
Max. operating voltage		V	AC690
Protection class			IP20
Short circuit rating			IPK=25kA/0,1s, Surge energy capacity IPK, ICC 100kA - NH3 355A gL 500V
Dielectric strenght		kV/mm	≥32
Capacity at 35°C ambient temperature depending of feeding point cross section		mm <sup>2</sup>	50
Busbar lenght		mm	Max. 300
Feeding at beginning/ending			
Max. current Is /Phase		A	250
Connection cross current		mm <sup>2</sup>	95
Other feedings			
Max. feeding current Ie /Phase		A	250
Connection cross current		mm <sup>2</sup>	95
Overtoltage category / degree of pollution			III / 2
Regulations			IEC 60947-1:2007

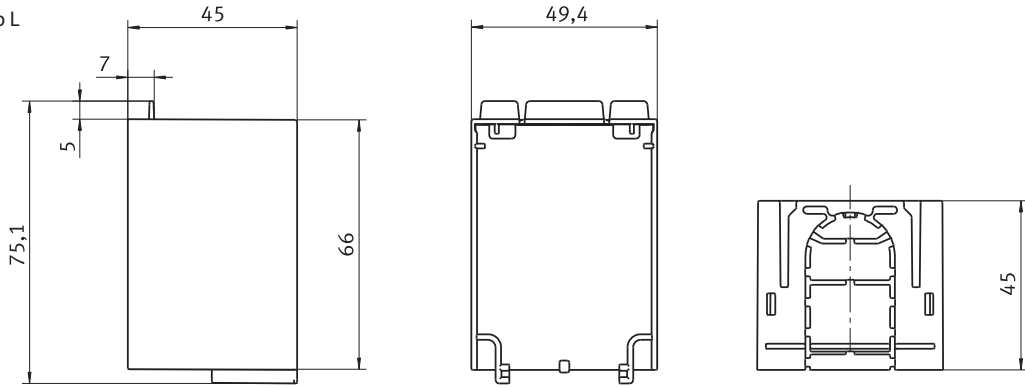
### Technical data



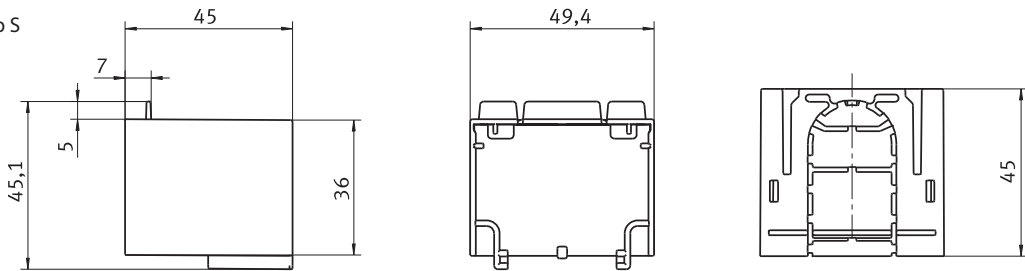
	a	b	c	d	e	f	g
PRS KVL-1 3p	184	70	42	32	-	58	-
PRS KVL-2 3p	210	90	42	32	70	66	5
PRS KVL-3 3p	250	90	42	32	70	82	5



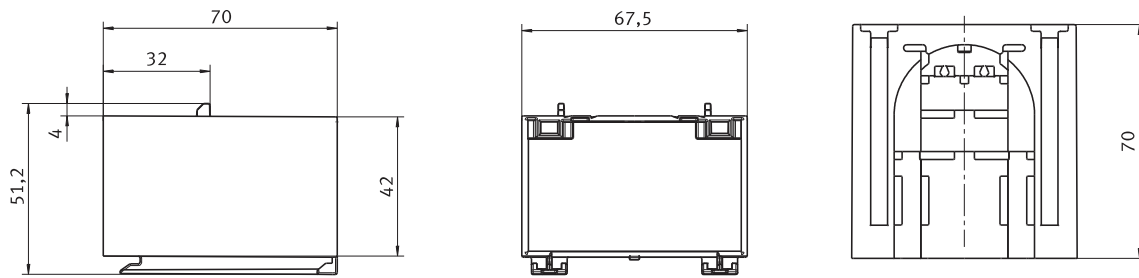
PRS KVL-00 1p L



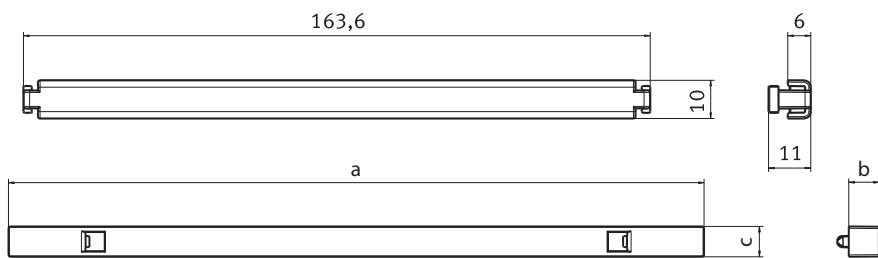
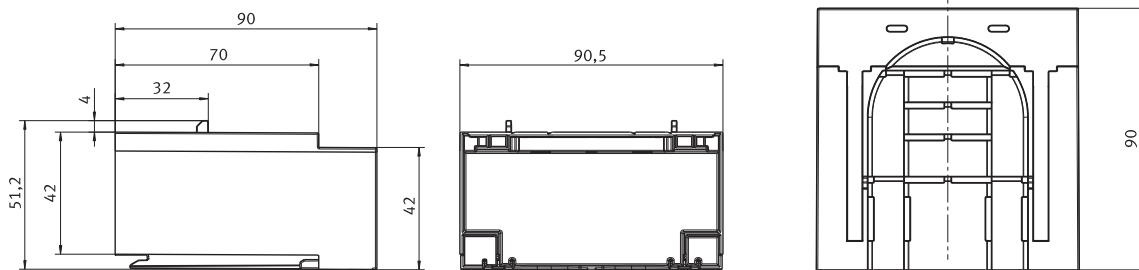
PRS KVL-00 1p S



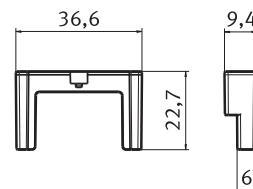
PRS KVL-1 1p



PRS KVL-3 1p



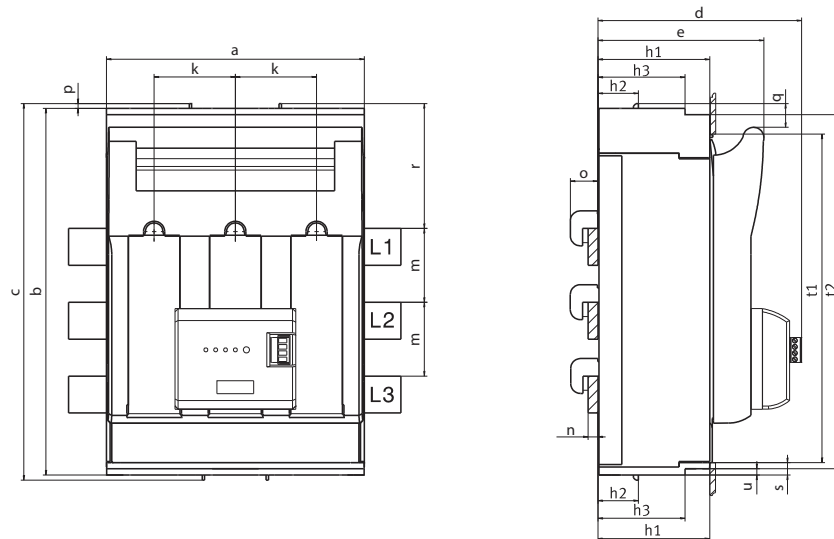
	a	b	c	d	d	d	d	e
BLA KVL-00 top/bottom	183	8	8	32	60	70	-	60
BLAL KVL-00 lateral	183	8	8	32	60	70	90	60
BLA KVL-123	183	8	8	32	60	70	90	60





Technical data - Electronic fuse monitoring unit EFMU KVL			
<b>Technical Characteristics</b>			
Rated operational voltage	$U_c$	V	AC400-500 (+/-10%)
Power supply			Self-powered
Input power		VA	1,5
Overvoltage category			230/400 V : III , (4kV) 500 V : II , (4kV)
Rated frequency	f	Hz	50-60
Input resistance			>1k Ohm/V
<b>Output channels</b>			
Relay output			1NC/1NO
Maximum voltage		V	AC250/DC24
Maximum switching current		A	1
<b>General data</b>			
Operation indicator			1 LED green
Alarm indicator			3 LED (F1, F2, F3) red
Functional test			Test key for relay + LEDs
EMC			IEC 61000-4-5/IEC 61000-4-4
Degree of protection			IP 3X
<b>Operating conditions</b>			
Ambient temperature	$T_{amb}$	$^{\circ}C$	-5 ... +55

No single detection of parallel connected fuses!



	a	b	c	d	e	h1	h2	h3	k	m	n	o	p	q	r	s	t1	t2	u
KVL-B-1 3p M10-M10 + EFMU KVL-1 3p																			
KVL-B/FT-1 3p M10-M10 TOP + EFMU KVL-1 3p	184	298	306	148	117	70	32	-	58	60	4-10	25	4	19	102	5	272	-	-
KVL-B/FT-1 3p M10-M10 BOTTOM + EFMU KVL-1 3p																			
KVL-B-2 3p M10-M10 + EFMU KVL-2 3p																			
KVL-B/FT-2 3p M10-M10 TOP + EFMU KVL-2 3p	210	298	306	165	135	90	32	70	66	60	4-10	25	4	19	102	10	268	289	5
KVL-B/FT-2 3p M10-M10 BOTTOM + EFMU KVL-2 3p																			
KVL-B-3 3p M10-M10 + EFMU KVL-3 3p	250	298	306	173	143	90	32	70	82	60	4-10	25	4	19	102	10	268	289	5

**Technical data - Electromechanical fuse monitoring unit MPFMU KVL**

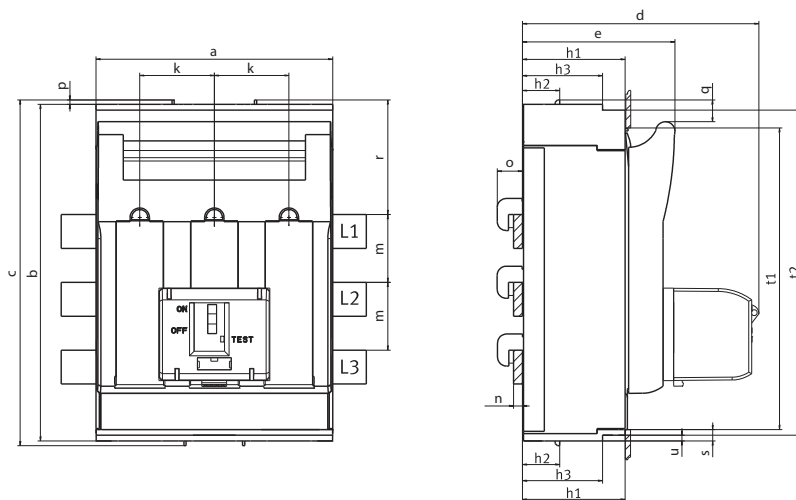
**Technical Characteristics**

Rated operational voltage	$U_e$	V	"AC24...690 DC24...150"
Rated short-circuit breaking capacity	$I_{cn}$	kA	100
Overvoltage category			230/400V : III (4kV) 500V : II (4kV)
<b>Output channels</b>			
Relay output			1NC/1NO
Maximum voltage		V	AC230/DC24
Maximum switching current		A	AC3/DC1

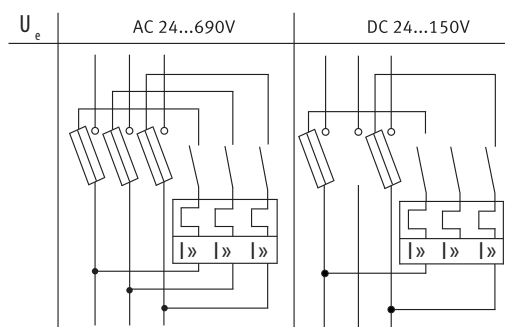
No single detection of parallel connected fuses!

**Safety notes**

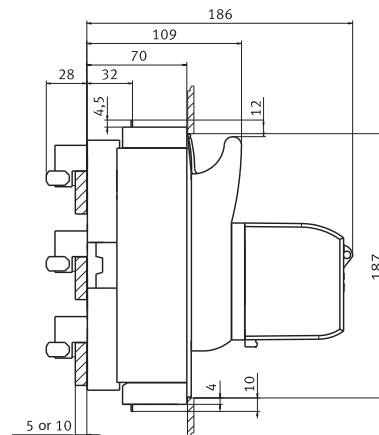
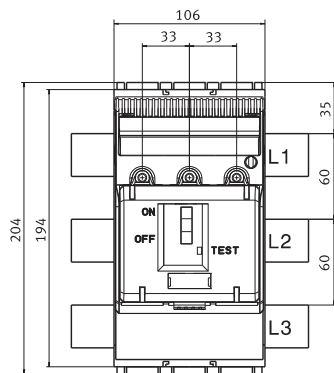
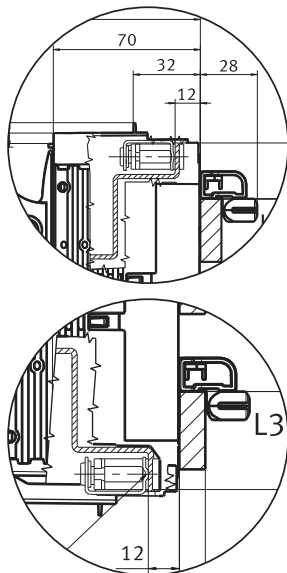
May not be used for safety monitoring in feeders with power control units where, in the event of a fault, it is possible for a DC feedback of >300V (or >600V where 3 current paths are connected in parallel) to occur. If equipment has to be disconnected on the load side of the fuses to be monitored, make sure that no parasitic voltages can arise in the circuit-breaker that is connected in parallel with the fuse-monitoring device.



	a	b	c	d	e	h1	h2	h3	k	m	n	o	p	q	r	s
KVL-B-1 3p M10-M10 + MPFMU KVL-1 3p	184	298	306	192	117	70	32	-	58	60	4-10	25	4	19	102	5
KVL-B/FT-1 3p M10-M10 TOP + MPFMU KVL-1 3p																
KVL-B/FT-1 3p M10-M10 BOTTOM + MPFMU KVL-1 3p																
KVL-B-2 3p M10-M10 + MPFMU KVL-2 3p	210	298	306	209	135	90	32	70	66	60	4-10	25	4	19	102	10
KVL-B/FT-2 3p M10-M10 TOP + MPFMU KVL-2 3p																
KVL-B/FT-2 3p M10-M10 BOTTOM + MPFMU KVL-2 3p																
KVL-B-3 3p M10-M10 + MPFMU KVL-3 3p	250	298	306	217	143	90	32	70	82	60	4-10	25	4	19	102	10



## Technical data



KVL-B-00 3p M8-M8 + MPF MU KVL-00 3p
KVL-B-00 3p BC95-BC95 + MPF MU KVL-00 3p
KVL-B/FT-00 3p M8-M8 + MPF MU KVL-00 3p