

NV/NH disconnectors with fuses

NV/NH horizontal fuse-switch disconnectors KVL

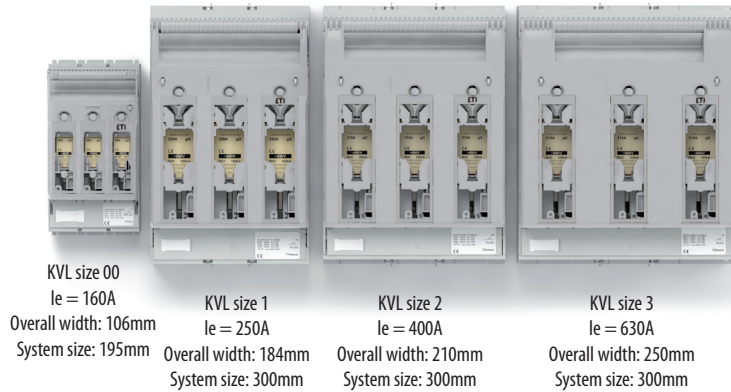
Uniform cover cutout

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 baseplates and DIN rails (for busbars see chapter ETIBUSBAR).

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

Baseplate and DIN-rail mounting

KVL disconnectors have multiple mounting holes for variability of installations. KVL-00 and KVL-1 can also be mounted on two parallel DIN-rails.



Practical advantages



- Easy voltage measurements**
- Easy access with standard voltage Testers.
 - Window in the handle is movable.
 - Protection degree IP2XC in normal operating condition

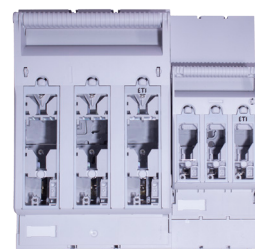


- Safety lock**
- Prevents unauthorized operation
 - Can be used for all sizes

- Simple and practical parking position**
- Safe parking position of the handle
 - Accidental reclosing not possible

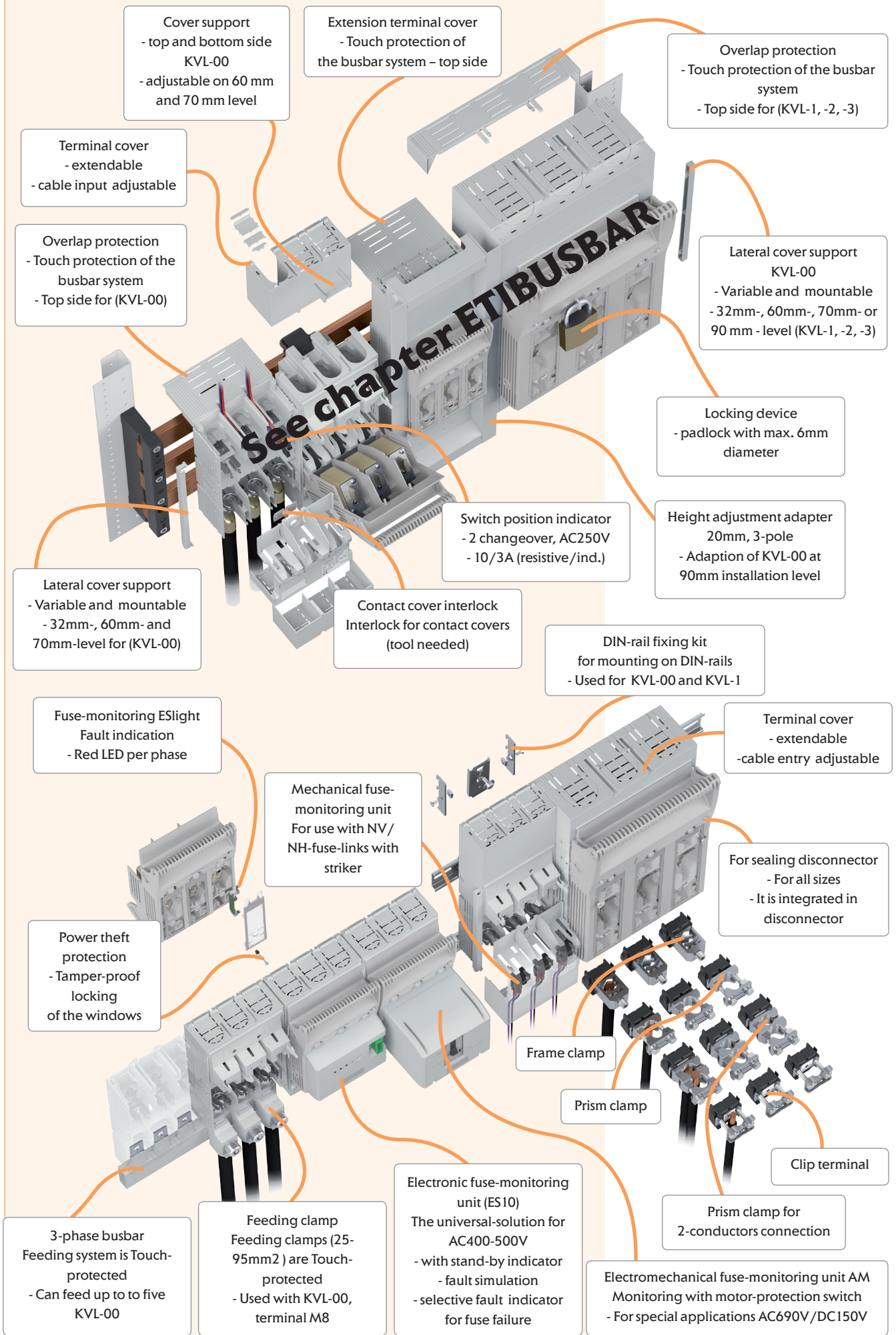


- Montage on DIN rails**
- Time saving installation
 - KVL-00 and KVL-1 can fit on the same TH rails



New generation!

NV/NH disconnectors with fuses



NV/NH



BC95-BC95



3-pole, Baseplate mounting

Size	Code No.	Type	Weight [kg]	Packaging [pcs]
00	001690870	KVL-00 3p M8-M8	0,63	1
	001690871	KVL-00 3p BC95-BC95	0,67	1
1	001690872	KVL-1 3p M10-M10	2,03	1
2	001690873	KVL-2 3p M10-M10	3,42	1
3	001690874	KVL-3 3p M10-M10	3,95	1

3-pole, Baseplate mounting, LED indication

Size	Code No.	Type	Weight [kg]	Packaging [pcs]
00	001690880	KVL-00 3p M8-M8 LED	0,66	1
	001690881	KVL-00 3p BC95-BC95 LED	0,8	1
1	001690882	KVL-1 3p M10-M10 LED	2,06	1
2	001690883	KVL-2 3p M10-M10 LED	3,45	1
3	001690884	KVL-3 3p M10-M10 LED	3,92	1

1-pole, Baseplate mounting

Size	Code No.	Type	Weight [kg]	Packaging [pcs]
00	001690890	KVL-00 1p M8-M8	0,31	2
1	001690891	KVL-1 1p M10-M10	0,93	1
2-3	001690892	KVL-3 1p M10-M10	1,57	1

2-pole, Baseplate mounting

Size	Code No.	Type	Weight [kg]	Packaging [pcs]
00	001690895	KVL-00 2p M8-M8	0,72	1
1	001690896	KVL-1 2p M10-M10	1,88	1
2-3	001690897	KVL-3 2p M10-M10	3,19	1

4-pole, Baseplate mounting

Size	Code No.	Type	Weight [kg]	Packaging [pcs]
00	001690900	KVL-00 4p M8-M8	1,19	1
1	001690901	KVL-1 4p M10-M10	2,91	1
2-3	001690902	KVL-3 4p M10-M10	5,76	1

Accessories for KVL

Type	Code No.	Description	Packaging [pcs]
SP KVL00	001692701	Clip terminal, 1,5 – 70 mm ² Cu	set=3
SP KVL1	001692702	Clip terminal, 25 – 150 mm ² Cu	set=3
SP KVL2	001692703	Clip terminal, 25 – 240 mm ² Cu	set=3
SP KVL3	001692704	Clip terminal, 11x21 mm ² Cu	set=3
SP KVL00 P1	001692760	Prism clamp, 10 – 70 mm ² Al/Cu	set=3
SP KVL1 P1	001692761	Prism clamp, 70 – 150 mm ² Al/Cu	set=3
SP KVL2 P1	001692762	Prism clamp, 120 – 240 mm ² Al/Cu	set=3
SP KVL3 P1	001692763	Prism clamp, 120 – 300 mm ² Al/Cu	set=3
SP KVL1 P2	001692764	Prism clamp for 2-conductors connection, 2x70 – 95 mm ² Al/Cu	set=3
SP KVL2 P2	001692765	Prism clamp for 2-conductors connection, 2x120 – 150 mm ² Al/Cu	set=3
SP KVL3 P2	001692766	Prism clamp for 2-conductors connection, 2x120 – 240 mm ² Al/Cu	set=3
SP KVL-1 V	001690940	Frame clamp, 35-150mm ² Al/Cu	set=3
SP KVL-23 V	001690941	Frame clamp, 95-300mm ² Al/Cu	set=3
SP KVL-00 FC95	001690942	Feeding clamp, 25-95mm ² Cu/Al, isolated, terminal M8,*	set=3
I22 KVL-00 3p	001690943	Phase busbars, 2 x 3pole KVL-00 50mm ²	5
I23 KVL-00 3p	001690944	Phase busbars, 3 x 3pole KVL-00 50mm ²	5
I24 KVL-00 3p	001690945	Phase busbars, 4 x 3pole KVL-00 50mm ²	3
I25 KVL-00 3p	001690946	Phase busbars, 5 x 3pole KVL-00 50mm ²	3
MST KVL-00 1p	001690947	Switch position indicator, 1-pole, size 00,**	1
MST KVL-00 3p	001690948	Switch position indicator, 3-pole, size 00,**	1
MST KVL-123 1p/2p/3p	001690949	Switch position indicator, 1/2/3 -pole, size 1, 2, 3,**	1
MFM KVL-00 1p/2p/3p	001690950	Mechanical fuse monitor, size 00,**	3
MFM KVL-123 1p/2p/3p	001690951	Mechanical fuse monitor, size 1, 2, 3,**,***	3
PRS KVL-00 3p L	001690952	Terminal cover, 3-pole, variable to open, Length 66mm, size 00	2
PRS KVL-00 3p S	001690953	Terminal cover, 3-pole, variable to open, Length 36mm, size 00	2
PRS KVL-1 3p	001690954	Terminal cover, 3-pole, variable to open, Length 42mm, size 1	2
PRS KVL-2 3p	001690955	Terminal cover, 3-pole, variable to open, Length 42mm, size 2	2
PRS KVL-3 3p	001690956	Terminal cover, 3-pole, variable to open, Length 42mm, size 3	2
PRS KVL-00 1p L	001690957	Terminal cover, 1-pole, variable to open, Length 66mm, size 00	2
PRS KVL-00 1p S	001690958	Terminal cover, 1-pole, variable to open, Length 36mm, size 00	2
PRS KVL-1 1p	001690959	Terminal cover, 1-pole, variable to open, Length 42mm, size 1	2
PRS KVL-3 1p	001690960	Terminal cover, 1-pole, variable to open, Length 42mm, size 3	2
DIN KVL-00 100-150	001690964	DIN rail fixing parts, For mounting on DIN rails, size 00	1
DIN KVL-1 100-150	001690965	DIN rail fixing parts, For mounting on DIN rails, size 1	1
EFMU KVL-00 3p	001690966	Electronic fuse monitoring unit, 3-pole, size 00,****	1
EFMU KVL-1 3p	001690967	Electronic fuse monitoring unit, 3-pole, size 1,****	1
EFMU KVL-2 3p	001690968	Electronic fuse monitoring unit, 3-pole, size 2,****	1
EFMU KVL-3 3p	001690969	Electronic fuse monitoring unit, 3-pole, size 3,****	1
MPFEMU KVL-00 3p	001690974	Elektromechanical fuse monitoring unit (AM), 3-pole, size 00,****	1
MPFEMU KVL-1 3p	001690975	Elektromechanical fuse monitoring unit (AM), 3-pole, size 1,****	1
MPFEMU KVL-2 3p	001690976	Elektromechanical fuse monitoring unit (AM), 3-pole, size 2,****	1
MPFEMU KVL-3 3p	001690977	Elektromechanical fuse monitoring unit (AM), 3-pole, size 3,****	1
CK KVL-00 2p/4p	001690970	Connecting kit 2- and 4-pole, For making of 2- and 4-pole disconnectors, size 00	1
CK KVL-123 2p/4p	001690971	Connecting kit 2- and 4-pole, For making of 2- and 4-pole disconnectors, size 1, 2, 3	1
LP KVL-00123	001690972	Interlock device, locking with padlock, diameter 6mm max., size 00, 1, 2, 3	10
IC KVL-00123	001690973	Contact cover interlock, only be operated by tool, size 00-3	10

* Feeding clamp, AC690V/DC1000V-250A

** 1 Changeover, AC250V, 10/3A (ohmic/ind.)

*** Only in combination with ETI fuse-links with striker-pin; not in combination with frame-clamp or 2-wire-prism clamp.

**** For monitoring of fuse-links with live gripping lugs



SP KVL



SP KVL...P1



DIN KVL-00 100-150



SP KVL-1 V



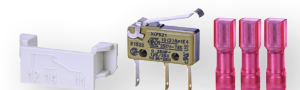
SP KVL-23 V



SP KVL-00 FC95



I22 KVL-00 3p



MST KVL- ...



MFM KVL-123 1p 2p 3p



PRS KVL-... 3p

Technical data

Horizontal fuse-switch disconnecter type KVL size 00, 1, 2, 3 (baseplate mounting)

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

Size	00						1							
Technical Characteristics														
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	210						325					
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 - 3W, 3P - 9W						1P - 5W, 3P - 15W					
Power loss at 80% I _{th} (without fuse-links), **	P _v	W	1P - 1,9W, 3P - 5,8W						1P - 3,2W, 3P - 9,6W					
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					
Fuse links														
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					
Cable terminal														
Flat terminal-Screw			M8						M10					
Tightening torque	Ma	Nm	12-15						30-35					
Clip terminal, Clamping cross-section		mm ²	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 ²	(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 ²							(SP KVL1 P2); 2 x (10-150) Al/Cu					
Tightening torque	Ma	Nm							(SP KVL1 P2); 4,5					
Frame clamp, Clamping cross-section		mm ²	1,5-95 Al/Cu, (Al 95: max. 125A), *****						35-150 Al/Cu					
Torque	Ma	Nm	4,5						12					
Degree of Protection, front side device														
Front cover close	-	-	IP20						IP20					
Front cover open	-	-	IP10						IP10					
With clamp- and lateral cover	-	-	IP2XC						IP2XC					
Operating condition														
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				
Technical Characteristics										
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	520				910			
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 - 9W, 3P - 28W				1P - 17W, 3P - 51W			
Power loss at 80% Ith (without fuse-links), **	P_v	W	1P - 6 W, 3P - 17,9 W				1P - 10,9 W, 3P - 32,6 W			
Rated impulse withstand voltage	U_{mp}	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			
Fuse links										
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			
Cable terminal										
Flat terminal-Screw			M10				M10 / M12			
Tightening torque	M_a	Nm	30-35				30-35			
Clip terminal, Clamping cross-section		mm ²	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 ²	(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 ²	(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 ²	95-300 Al/Cu				95-300 Al/Cu			
Torque	M_a	Nm	20				20			
Degree of Protection, front side device										
Front cover close	-	-	IP20				IP20			
Front cover open	-	-	IP10				IP10			
With clamp- and lateral cover	-	-	IP2XC				IP2XC			
Operating condition										
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.

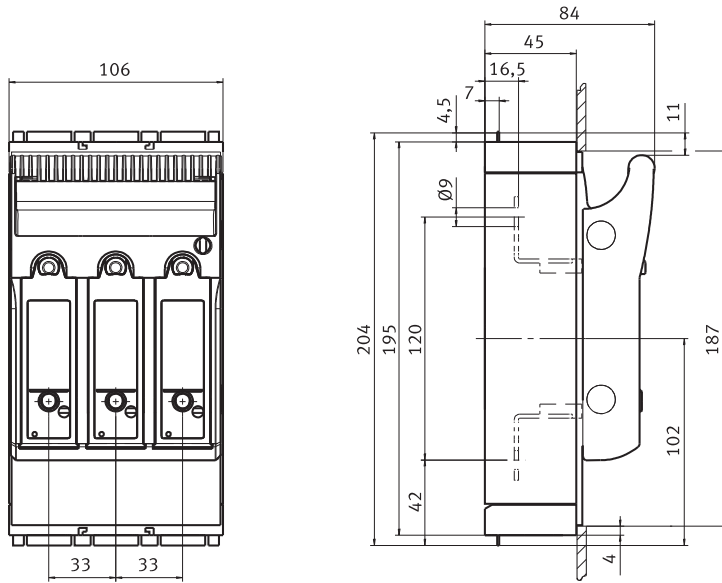
*** minimum distance to earthed, conductive parts: Lateral: 20mm/Above: 50mm

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

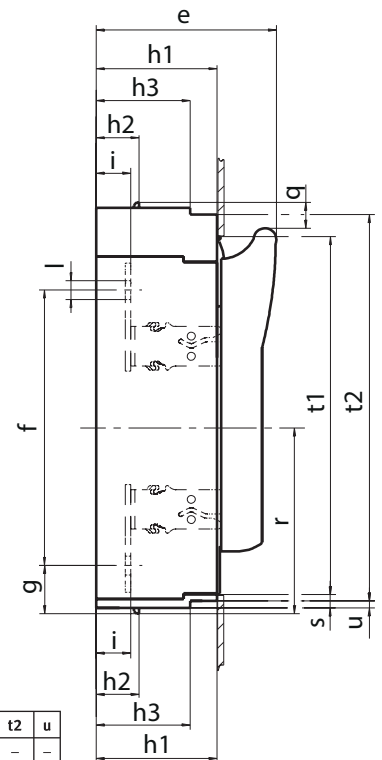
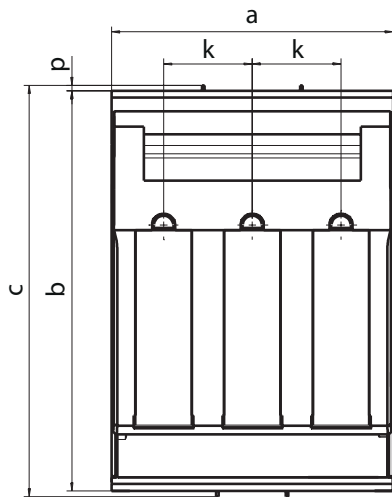
**** Type tested with NH fuse-links characteristic gG

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

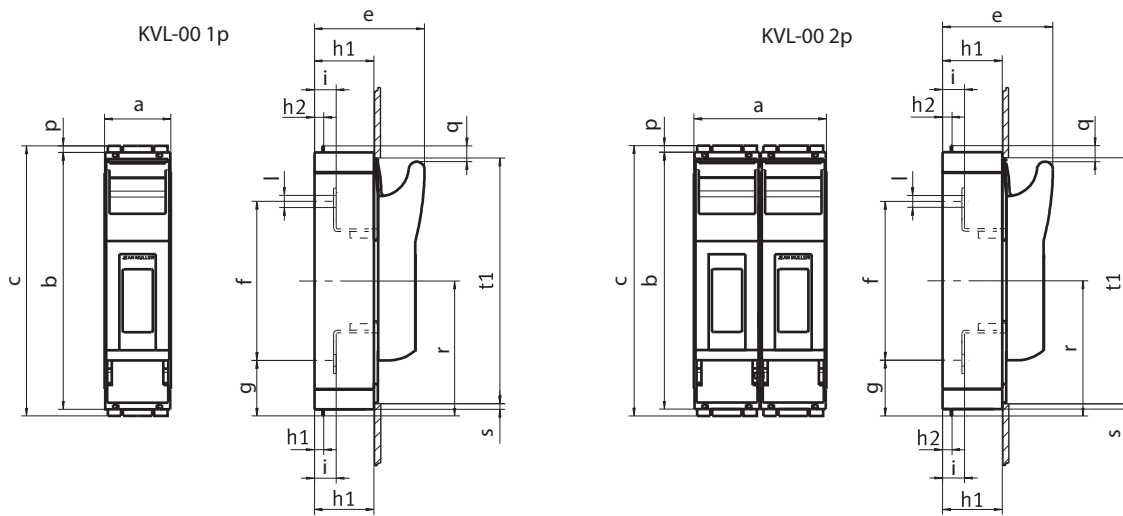
Technical data



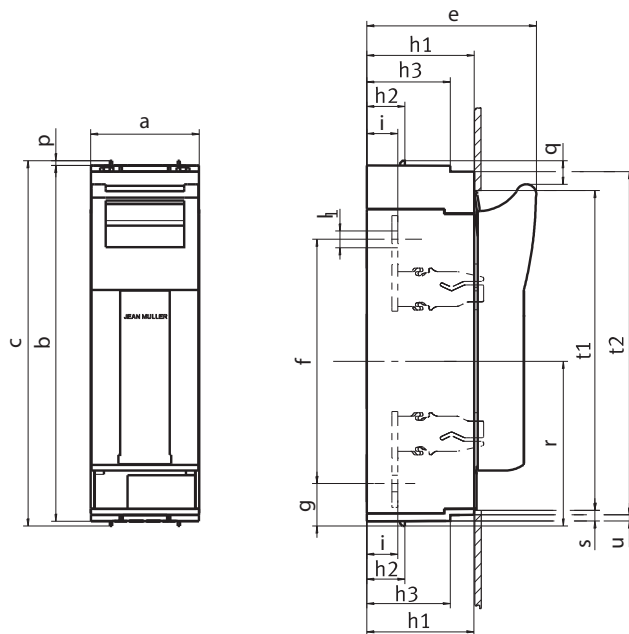
KVL-00 3p M8-M8
KVL-00 3p BC95-BC95
KVL-00 3p M8-M8 LED
KVL-00 3p BC95-BC95 LED



	a	b	c	e	f	g	h1	h2	h3	i	k	l	p	q	r	s	t1	t2	u
KVL-1 3p M10-M10 (LED)	184	298	306	117	185	46	70	32	-	25	58	Ø10,5	4	19	138	5	272	-	-
KVL-2 3p M10-M10 (LED)	210	298	306	134	205	36	90	32	70	26	66	Ø14	4	19	138	10	268	288	5
KVL-3 3p M10-M10 (LED)	250	298	306	143	205	36	90	32	70	26	82	Ø14	4	19	138	10	268	288	5

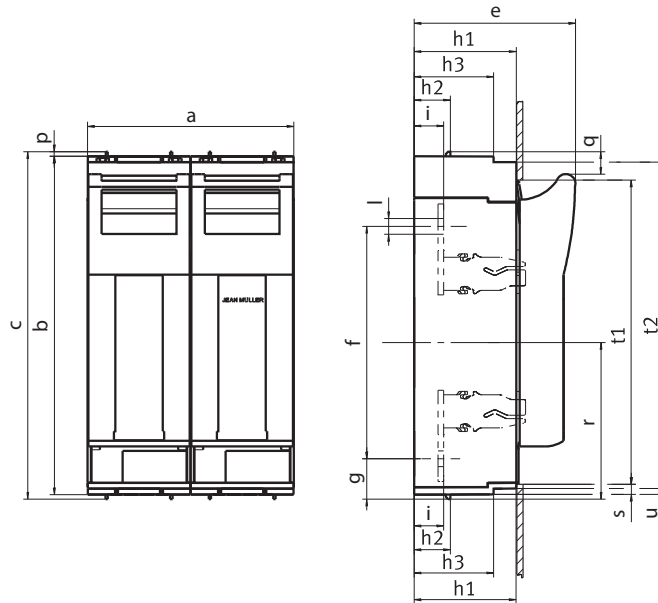


	a	b	c	e	f	g	h1	h2	h3	i	l	p	q	r	s	t1
KVL-00 1p M8-M8	50	195	204	84	120	42	45	7	-	16,5	∅9	4,5	12	102	5	187
KVL-00 2p M8-M8	100	195	204	84	120	42	45	7	-	16,5	∅9	4,5	12	102	5	187

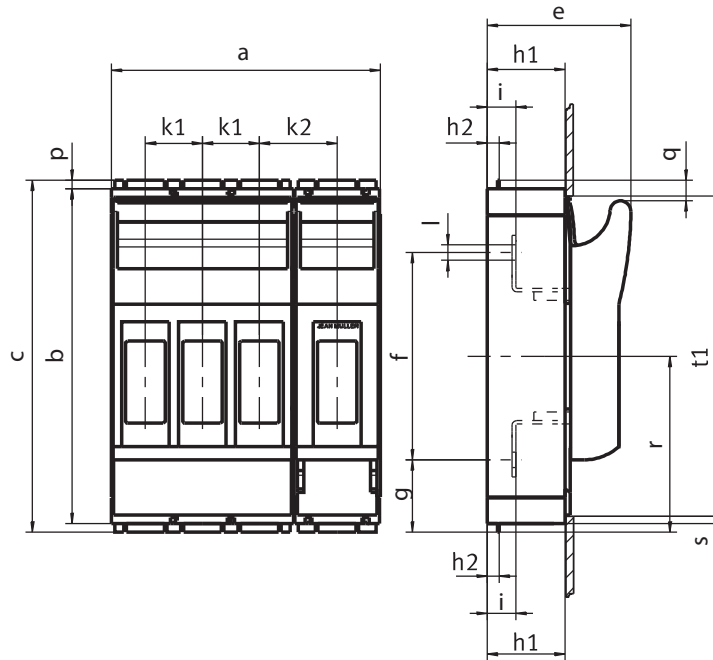


	a	b	c	e	f	g	h1	h2	h3	i	l	p	q	r	s	t1	t2	u
KVL-1 1p M10-M10	69	298	306	117	185	46	70	32	-	25	∅10,5	4	19	138	5	272	-	-
KVL-3 1p M10-M10	91	298	306	143	205	36	90	32	70	26	∅14	4	19	138	10	268	288	5

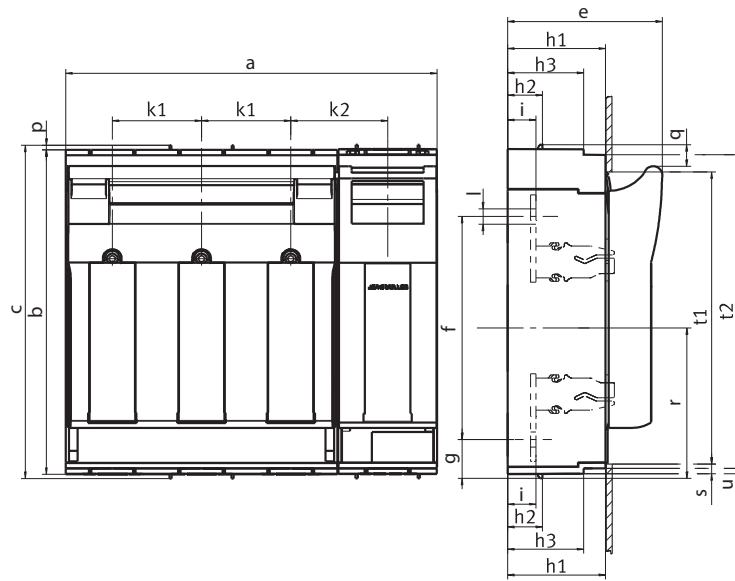
Technical data



	a	b	c	e	f	g	h1	h2	h3	i	l	p	q	r	s	t1	t2	u
KVL-1 2p M10-M10	138	298	306	117	185	46	70	32	-	25	∅10,5	4	19	138	5	272	-	-
KVL-3 2p M10-M10	182	298	306	143	205	36	90	32	70	26	∅14	4	19	138	10	268	288	5



	a	b	c	e	f	g	h1	h2	h3	k1	k2	i	l	p	q	r	s	t1	t2	u
KVL-00 4p M8-M8	156	195	204	84	120	42	45	7	-	33	45	16,5	∅9	4,5	12	102	5	187	-	-



	a	b	c	e	f	g	h1	h2	h3	k1	k2	i	l	p	q	r	s	t1	t2	u
KVL-1 4p	254	298	306	117	185	46	70	32	-	58	69	25	Ø10,5	4	19	138	5	272	-	-
KVL-3 4p	341,5	298	306	143	205	36	90	32	70	82	89	26	Ø14	4	19	138	10	268	288	5

Technical data - Feeding clamps

Technical Characteristics

Max. electrical load			AC690V/DC1000V-250A
Heat deflection temp.			125°C UL94: V0
Comparative tracking index			600

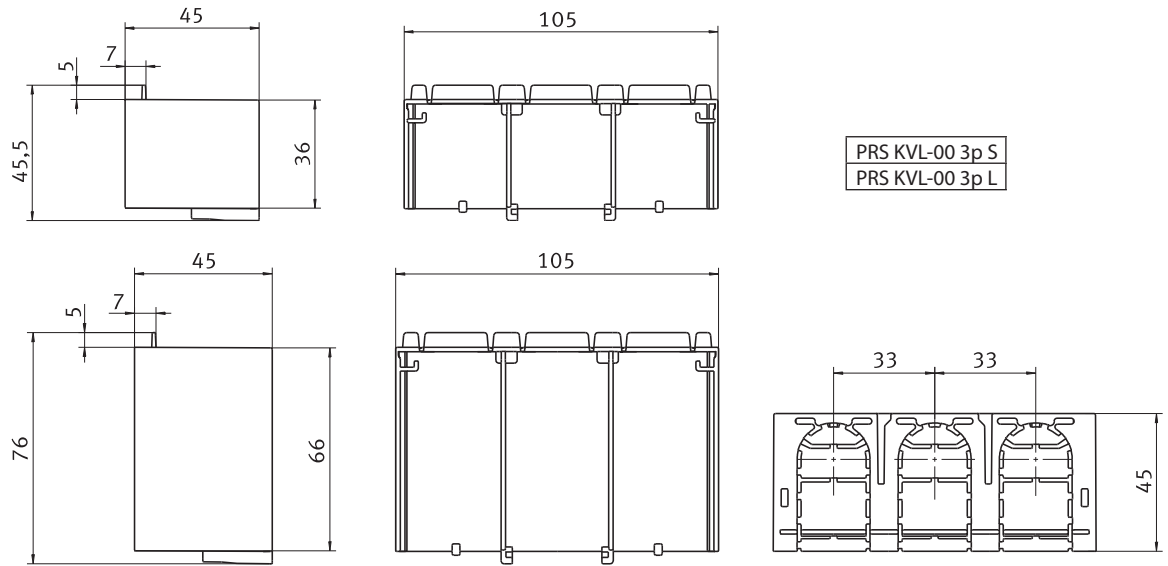
Cross sections

Conductor - Max. Diameter Ø14 mm			
single wire		mm ²	25 - 95
multi wire		mm ²	25 - 95
fine wire (with end sleeve)		mm ²	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

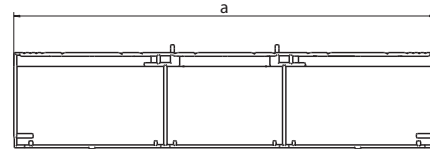
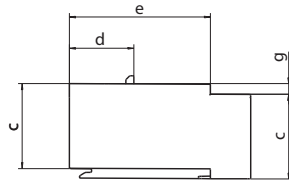
Important

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.

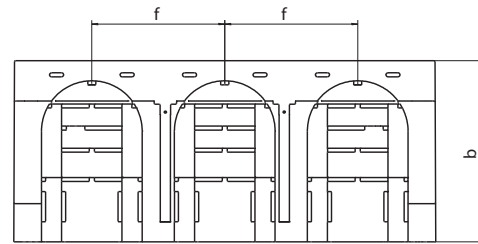
Technical data



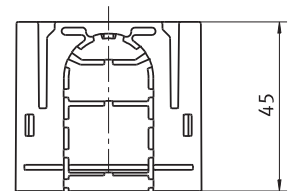
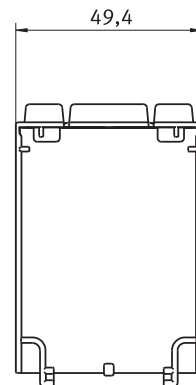
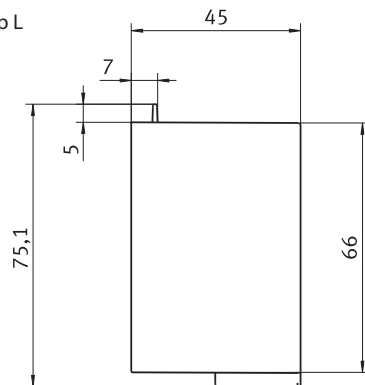
PRS KVL-00 3p S
PRS KVL-00 3p L



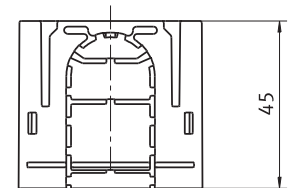
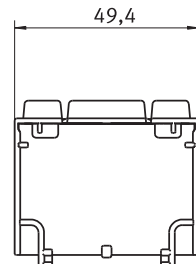
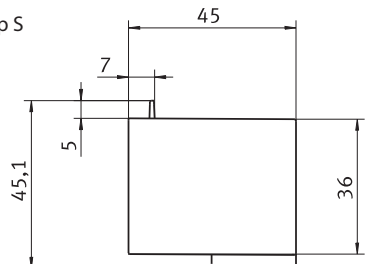
	a	b	c	d	e	f	g
PRS KVL-1 3p	184	70	42	32	-	58	-
PRS KVL-2 3p	210	90	42	32	70	66	5
PRS KVL-3 3p	250	90	42	32	70	82	5



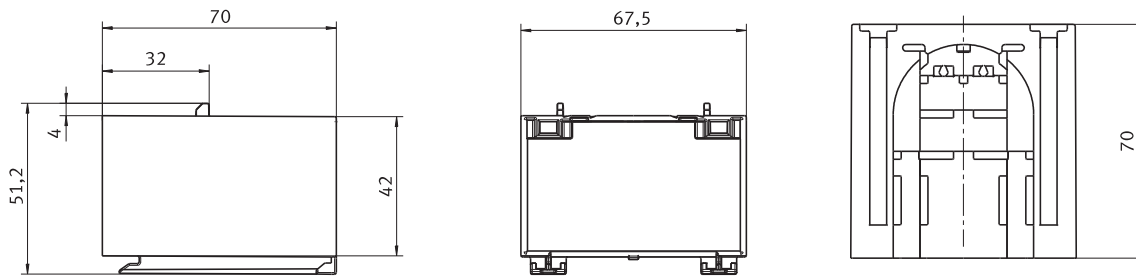
PRS KVL-00 1p L



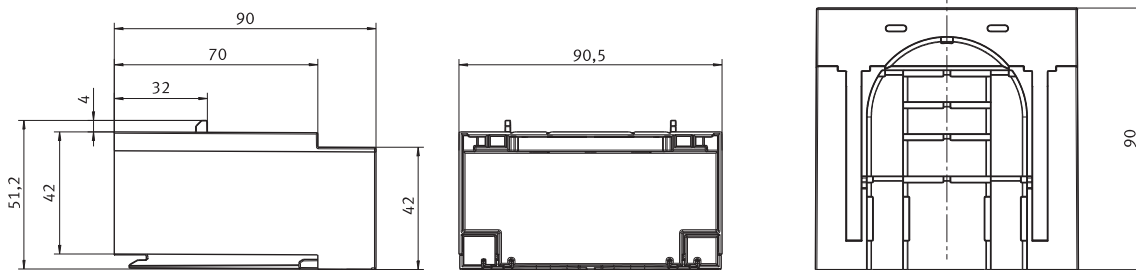
PRS KVL-00 1p S



PRS KVL-1 1p



PRS KVL-3 1p



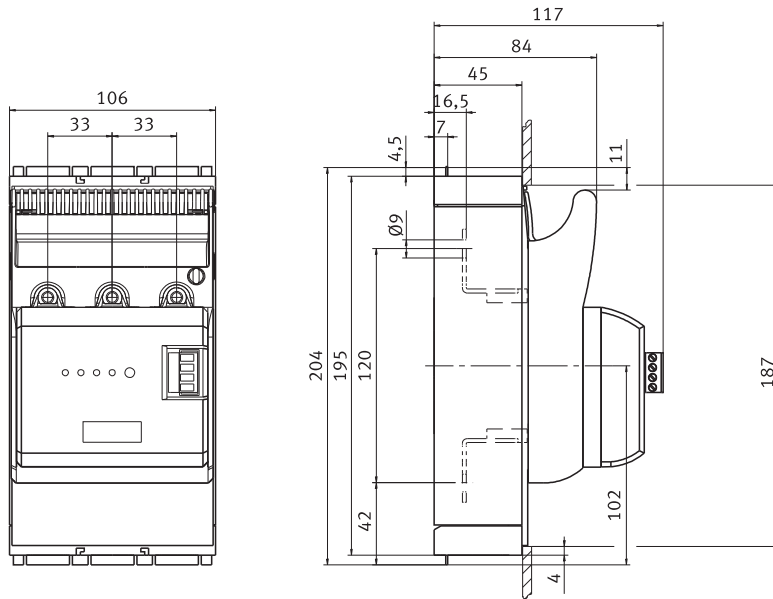
Technical data - Electronic fuse monitoring unit EFMU KVL

Technical Characteristics

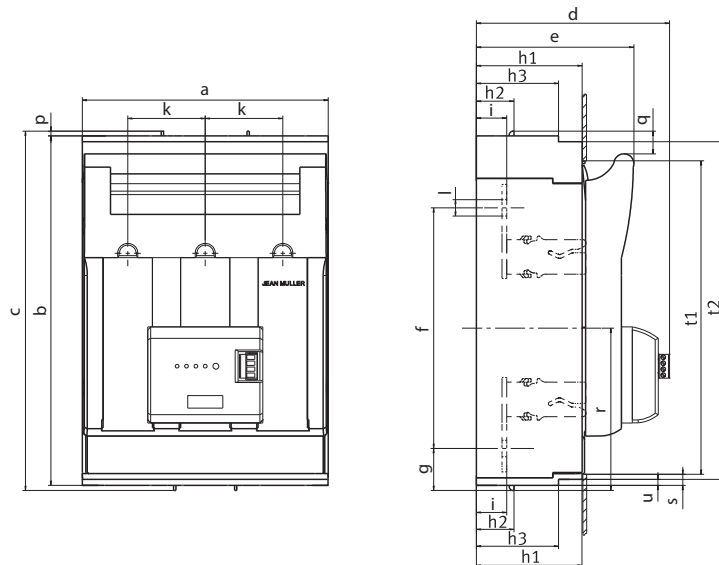
Rated operational voltage	U_e	V	AC400-500 (+/-10%)
Power supply			Self-powered
Input power		VA	1,5
Overvoltage category			230/400 V : III , (4kV) 500 V : II , (4kV)
Rated frequency	f	Hz	50-60
Input resistance			>1k Ohm/V
Output channels			
Relay output			1NC/1NO
Maximum voltage		V	AC250/DC24
Maximum switching current		A	1
General data			
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
Operating conditions			
Ambient temperature	T_{amb}	°C	-5 ... +55

No single detection of parallel connected fuses!

Technical data



KVL-00 3p M8-M8 + EFMU KVL-00 3p
 KVL-00 3p BC95-BC95 + EFMU KVL-00 3p



	a	b	c	d	e	f	g	h1	h2	h3	i	k	l	p	q	r	s	t1	t2	u
KVL-1 3p M10-M10 + EFMU KVL-1 3p	184	298	306	148	117	185	46	70	32	-	25	58	Ø10,5	4	19	138	5	272	-	-
KVL-2 3p M10-M10 + EFMU KVL-2 3p	210	298	306	165	134	205	36	90	32	70	26	66	Ø14	4	19	138	10	268	288	5
KVL-3 3p M10-M10 + EFMU KVL-3 3p	250	298	306	173	143	205	36	90	32	70	26	82	Ø14	4	19	138	10	268	288	5

Technical data - Electromechanical fuse monitoring unit MPFMU KVL

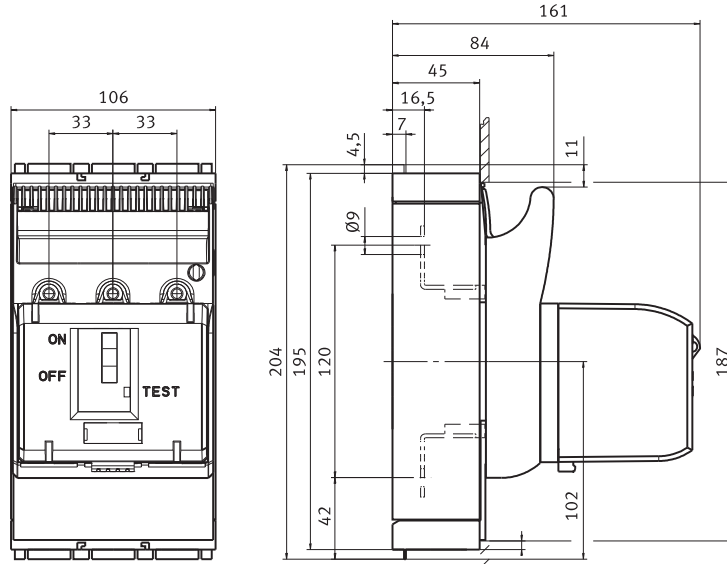
Technical Characteristics

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)
Output channels			
Relay output			1NC/1NO
Maximum voltage		V	AC230/DC24
Maximum switching current		A	AC3/DC1

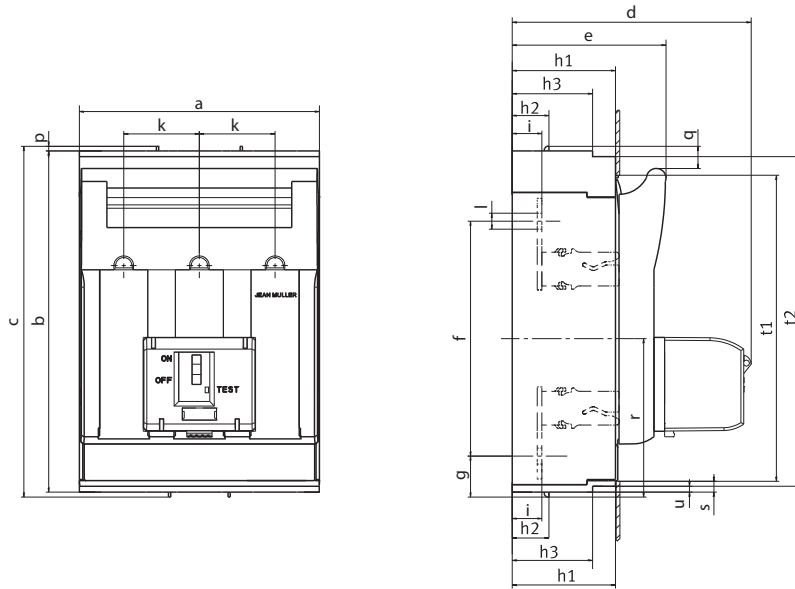
No single detection of parallel connected fuses!

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.



KVL-00 3p M8-M8 + MPFMU KVL-00 3p
KVL-00 3p BC95-BC95 + MPFMU KVL-00 3p



	a	b	c	d	e	f	g	h1	h2	h3	i	k	l	p	q	r	s	t1	t2	u
KVL-1 3p M10-M10 + MPFMU KVL-1 3p	184	298	306	192	117	185	46	70	32	-	25	58	Ø10,5	4	19	138	5	272	-	-
KVL-2 3p M10-M10 + MPFMU KVL-2 3p	210	298	306	209	134	205	36	90	32	70	26	66	Ø14	4	19	138	10	268	288	5
KVL-3 3p M10-M10 + MPFMU KVL-3 3p	250	298	306	217	143	205	36	90	32	70	26	82	Ø14	4	19	138	10	268	288	5