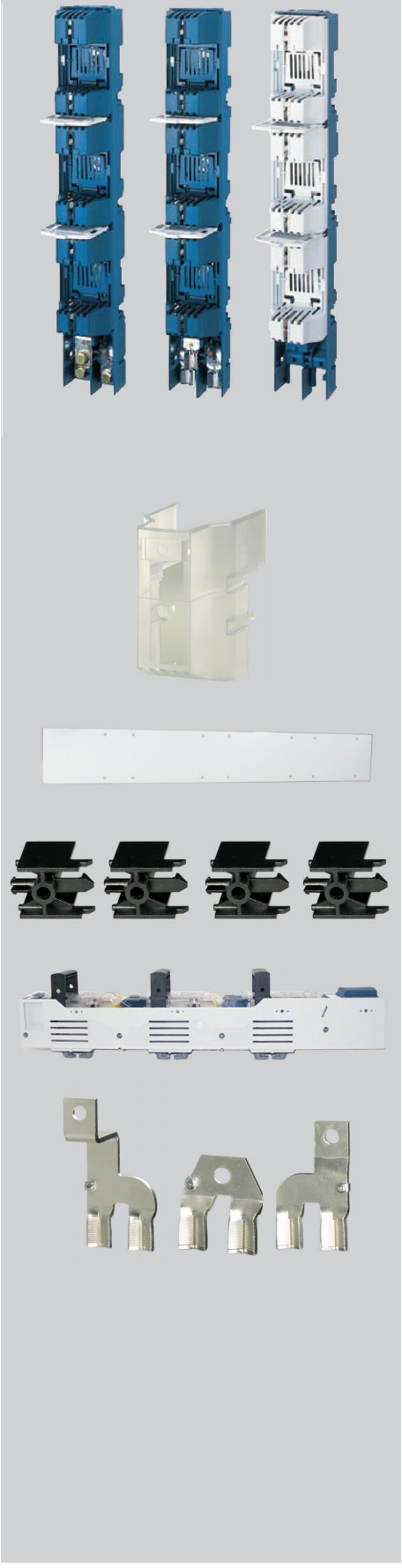
FUSE-RAILS SIZE 1 UP TO 250 A, 2 UP TO 400 A, 3 UP TO 630 A



Fuse-rails FR. are suitable for application in disconnecting cabinets or low-voltage distribution switchboards with busbar spacing 185 mm.

- Fully protected against accidental contact. They meet the requirements for safe disconnection.
- Mounting width 100 mm.
- Safe fuse-link handling (in inserting the fuse-link first leans against insulating covers).
- Possibility of additional rebuild of the fuse-rail into a fuse switch-disconnector by simple addition of the superstructure. NL-FD.../3. without dismantling from busbars.
- Possibility of addition of measuring adapters with current transformers see page F13.
- FR1 connection to busbars by screws M10/20 Nm, FR2 and FR3 M12/28 Nm. Connection for cable lugs max. ø 40 mm and busbars of width max. 30 mm.
- The fuse switch-disconnectors of vertical design of busbar systems (contact version LL) do not extend mounting width 100 mm, and are differentiated by grey contact covers.
- They enable mounting and check of connections without dismounting of adjacent devices, and without removing the contact cover.

Standard equipment:

- Contact covers.
- Interpole barriers.
- Outlet description label.

Fuse-rails

Type	Product code	I_n [A]	Outlet terminals	Busbar spacing [mm]	Weight [kg]	Package [pcs]
FR1-3K/LM	11211		pressed-in nuts with screws M10		3.620	1
FR1-3K/LW	11212	**250**	V-shaped terminals for clamp 5845*	**185**	3.520	1
FR1-3K/LL	11213		switch-disconnector of busbar systems		2.740	1
FR2-3K/LM	11214		pressed-in nuts with screws M12		3.630	1
FR2-3K/LW	11215	**400**	V-shaped terminals for clamp 5845*	**185**	3.530	1
FR2-3K/LL	11216		switch-disconnector of busbar systems		2.750	1
FR3-3K/LM	11217		pressed-in nuts with screws M12		4.060	1
FR3-3K/LW	11218	**630**	V-shaped terminals for clamp 5845*	**185**	4.140	1
FR3-3K/LL	11219		switch-disconnector of busbar systems		2.840	1

* The shaped clamps must be ordered separately see page D27.

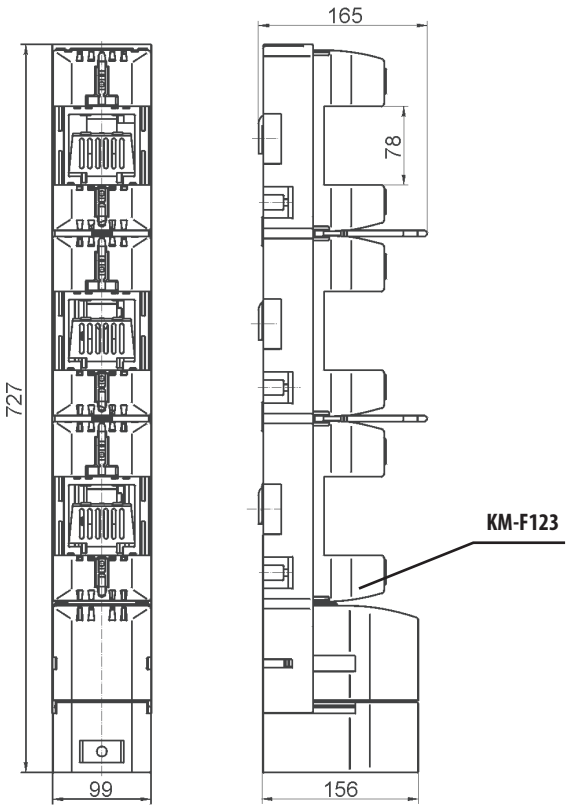
Accessories

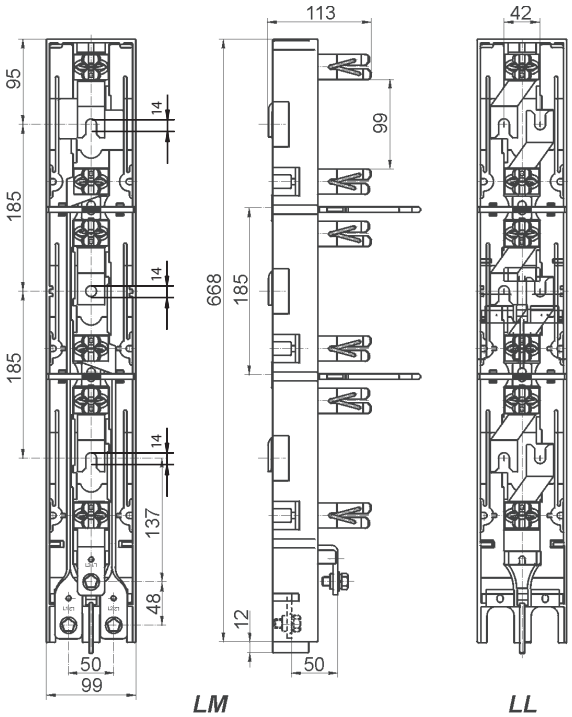
Description	Type	Product code	Weight [kg]	Package [pcs]
Connecting space cover transparent, used for covering of the outlet connection space	**KPT-F123**	40854	0.145	1
Free place cover, intended for covering of the switchboard free place between two fuse-rails, width 100 mm	**KM-F123**	11277	0.230	1
Free place cover clips, for attachment of the free place cover KM-F123 to switch-disconnector (set of 4 pcs)	**CM-F123**	11278	0.006	1
Switch-disconnector superstructure, it enables rebuild of the fuse-rail FR1 and FR2 into a fuse switch-disconnector FD1 and FD2 (1-pole control)	**NL-FD12/31**	11270	2.100	1
Switch-disconnector superstructure, it enables rebuild of the fuse-rail FR1 and FR2 into a fuse switch-disconnector FD1 and FD2 (3-pole control)	**NL-FD12/33**	11271	2.300	1
Switch-disconnector superstructure, it enables rebuild of the fuse-rail FR3 into a fuse switch-disconnector FD3 (1-pole control)	**NL-FD3/31**	39325	2.100	1
Switch-disconnector superstructure, it enables direct connection by two Cu or Al conductors up to 240 mm² without cable lugs by means of clamps (the shaped clamps must be ordered separately)	**NL-FD3/33**	39326	2.300	1
Connecting set, It enables direct connection by two parallel Cu or Al conductors up to 240 mm² without cable lugs by means of clamps (the shaped clamps must be ordered separately)	**WD-FD**	14901	0.720	1

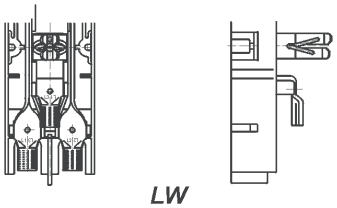
Specifications

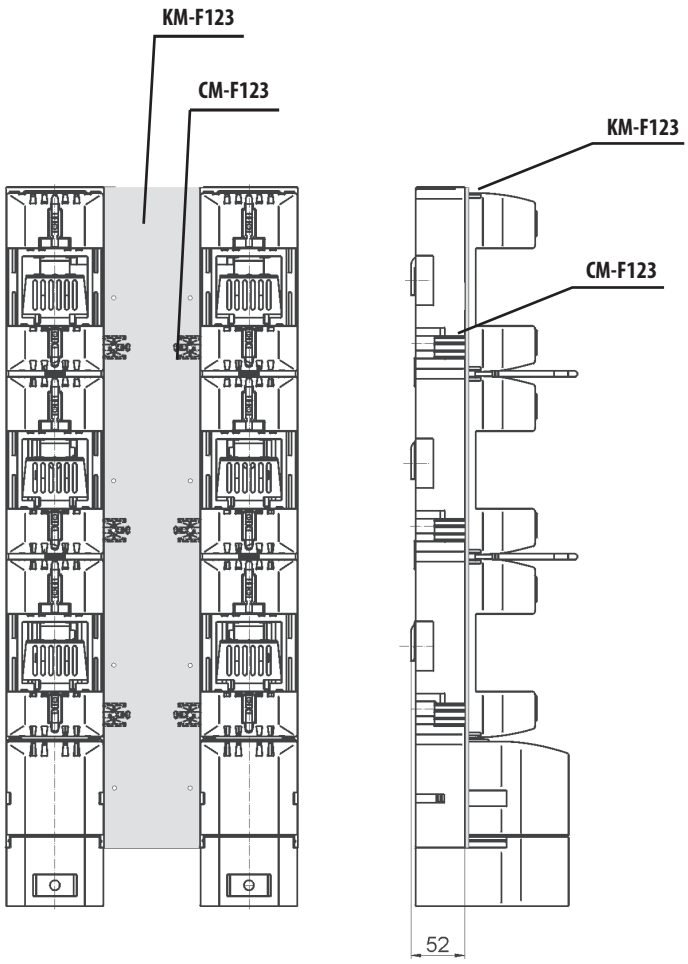
Type		FR1	FR2	FR3
Rated current	I_n	250 A	400 A	630 A
Rated voltage (a.c./d.c.)	U_n		690 V	
Rated thermal current with disconnecting link ZP.../cross-section	I_{th}	400 A/240 mm²	560 A/2x 185 mm²	800 A/2x 185 mm²
Rated frequency	f_n		40 ÷ 60 Hz	
Rated insulation voltage	U_i		1000 V a.c.	
Fuse-link size		1	2	3
Max. power losses of the fuse-link	P_v	32 W	45 W	60 W
Degree of protection			IP 20	
Operating ambient temperature			-25 ÷ +55 °C	
Standards			IEC 60269-1, -2	
Approval marks			EAC CE	

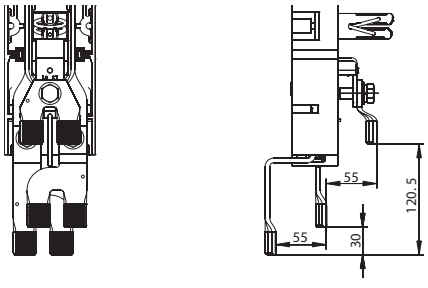
FUSE-RAILS SIZE 1 UP TO 250 A, 2 UP TO 400 A, 3 UP TO 630 A











MINIMAL CONNECTING CROSS-SECTION OF FUSE SWITCH-DISCONNECTORS

Minimal connecting cross-section of cables of fuse switch-disconnectors for cylindrical fuse-links

Fuse-links I_n [A]	Fuse switch-disconnectors for cylindrical fuse-links			Cable S [mm²]	
	OPVA10	OPVA14	OPVA22	Cu	Al
0.25	x	x		1	-
0.5	x	x		1	-
1	x	x		1	-
2	x	x		1	-
4	x	x		1	-
6	x	x		1	-
8	x	x		1	-
10	x	x		1.5	-
12	x	x		1.5	-
16	x	x	x	2.5	-
20	x	x	x	2.5	-
25	x	x	x	4	-
32	x	x	x	4	-
40		x	x	10	-
50		x	x	10	16
63		x	x	16	25
80			x	25	35
100			x	35	50
125			x	50	70

Notes:
1) Applies to ambient temperature of swich-disconnectors max. 40 °C
2) Applies to HRC fuse-links PVA10, PV10, PV14, PV22

Minimal connecting cross-section of cables and busbars of fuse switch-disconnectors and fuse rails

Fuse-links I_n [A]	Fuse switch-disconnectors and fuse-rails									Cable S [mm²]		Busbar w x h	
	FH000	FH00	FH1	FH2	FH3	FD00 FR00	FD1 FR1	FD2 FR2	FD3 FR3	Cu	Al	Cu	Al
4	x	x				x				1	-	-	-
6	x	x	x			x	x			1	-	-	-
8	x	x	x			x	x			1	-	-	-
10	x	x	x			x	x			1.5	-	-	-
12	x	x	x			x	x			1.5	-	-	-
16	x	x	x			x	x			2.5	-	-	-
20	x	x	x			x	x			2.5	-	-	-
25	x	x	x			x	x			4	-	-	-
32	x	x	x	x		x	x	x		4	-	-	-
35	x	x	x	x		x	x	x		6	-	-	-
40	x	x	x	x		x	x	x		10	-	-	-
50	x	x	x	x		x	x	x		10	16	-	-
63	x	x	x	x		x	x	x		16	25	-	-
80	x	x	x	x	x	x	x	x	x	25	35	-	-
100	x	x	x	x	x	x	x	x	x	35	50	20 x 2	25 x 2
125	x	x	x	x	x	x	x	x	x	50	70	25 x 2	25 x 3
160	x	x	x	x	x	x	x	x	x	70	95	25 x 3	25 x 4
200			x	x	x		x	x	x	95	120	25 x 4	25 x 5
224			x	x	x		x	x	x	95	120	25 x 4	25 x 5
250			x	x	x		x	x	x	120	150	25 x 5	25 x 6
315				x	x			x	x	150	185	32 x 5	32 x 6
350				x	x			x	x	185	240	32 x 6	32 x 8
400				x	x			x	x	240	2x 150	32 x 8	40 x 8
500					x				x	2x 150	2x 185	2x 30 x 5	2x 40 x 5
630					x				x	2x 185	2x 240	2x 40 x 5	2x 40 x 8

Notes:
1) Applies to ambient temperature of swich-disconnectors max. 40 °C
2) Applies to HRC fuse-links PNA, PHNA