

CONNECT AND PROTECT

Frame Type Plug-in Units

01/2024

Frame type plug-in units – Kits

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130961416 130962301 130962310 130961413
130962236 108230748 130961515

19" modules are mechanical components that serve to carry one or more circuit boards. The boards housed in a module are thus combined into a larger electronic function unit that is self-contained and testable. Mechanical dimensions conform to IEC 60297-3-101 / IEEE 1101.1/11 standards, i.e. the so-called 19" standard. These function units are integrated into the subrack or case; their dimensions likewise form a component of IEC 60297-3-101 / IEEE 1101.1/11.

The dimension obligations of the standard give only little freedom for individual design of frame type plug-in units. The aim is therefore to make optimum use of what freedoms regarding dimensions it does allow, e.g.

- to maximise the internal space of a plug-in unit and thus create maximum space for electronic components, or
- to ensure optimal EMC shielding with minimum loss of mounting space to the shielding components

Standards

- IEC 60297-3-101 / IEEE 1101.1/11

Width	5 HP		6 HP		7 HP		8 HP		10 HP		12 HP		14 HP		21 HP		28 HP		42 HP	
Height in U	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6
Frame-type plug-in units PRO	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Frame type plug-in units PRO with cooling fins	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-
Frame-type plug-in units PRO with hood	X	X	X	X	X	X	-	-	X	X	X	X	X	X	-	-	-	-	-	-
HF frame-type plug-in units	-	-	-	-	X	-	-	-	X	-	X	-	X	-	X	-	X	-	-	-

Frame type plug-in units – Kits

OVERVIEW

FRAME-TYPE PLUG-IN UNITS TO HOUSE PRINTED BOARDS

- For PCBs in euroboard format
- Kits or configuration from single components
- Front panels: unshielded or EMC shielded



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130962301

FRAME-TYPE PLUG-IN UNITS PRO

- Kit or configuration from single components in 3 U and 6 U, 8 ... 42 HP
- Shielded and unshielded versions
- Side panel with screw on option for top / bottom cover (page 7.70)
- For one or several PCBs or one or several connectors
- Various possibilities for combining the individual components

NEW

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Frame type plug-in units
PRO

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NEW

HF plug-in units

Kits 3 U 7.92

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Accessories for plug-in units
see page 7.52



130961413

130961515

PLUG-IN UNITS PRO WITH HOOD

- Kit in 3 U and 6 U, 5 ... 14 HP
- Shielded and unshielded versions
- For one PCB with one connector
- Various possibilities for combining the individual components

HF FRAME-TYPE PLUG-IN UNITS

- Kit or configuration from single components in 3 U, 7 ... 28 HP
- For shielding against high-frequency radiation
- Tube with cooling fins, in extruded aluminium
- For one or more PCBs, one or more connectors



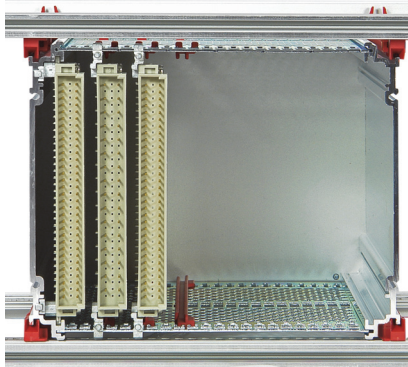
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SERVICEPLUS

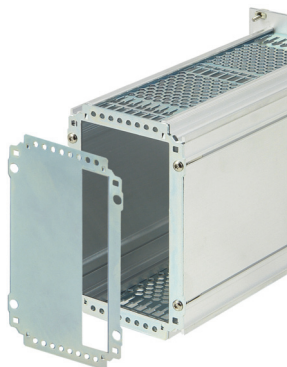
- e.g. individual configuration and assembly
- e.g. modification (special colours)
- e.g. customised solutions with modified frame-type plug-in units (special sizes)

Frame type plug-in units

THE NEW GENERATION



Rear view: frame type plug-in unit mounted in subrack

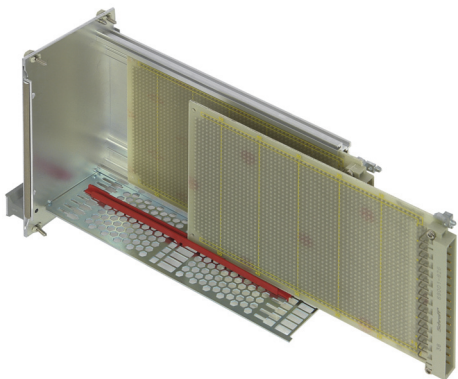


04808013 04808014

The frame type plug-in units conform to IEC 60297-3-101. They serve to house standardized PCBs and bulky components. Because of the standardized assembly dimensions the frame type plug-in units can be mounted on guide rails, to be pushed into the subrack, in any order and using any plug-in unit. The robust Al extrusion construction is especially suited for heavy components and the rough handling as "Field Replaceable Unit".

Details

The EMC version of the front panel was improved for frequencies over 1 GHz by using a conductive textile gasket and a robust U-shaped front panel



Board for slot 1 fixes to the side panel; further boards are fixed with guide rails

04808012

Push-in cover plates for quick fitting

Handles to be bolted-on from the front, easy mounting

Optimised air flow rate thanks to slender extruded side panels and large perforation areas in the cover plates, a perforation degree of up to 65 % is possible

3 cover plate versions (solid (1), perforated (2), perforated for guide rail mounting (3)). Versions 1 + 3 can be screwed on to side panels

Width of frame-type plug-in units from 8 HP

To achieve a higher airflow rate, exceptionally slender guide rails are used to fix the boards

From slot 2 guide rails can be positioned in HP grid

Easy fixing of the boards in the frame-type plug-in units; only 2 x 1 screws per board are needed to fix the boards

3 rear panel variants (solid, for one DIN connector, for multiple DIN connectors)

The flat rear panel enables simple reworking (e.g. punching); the rear panel can be removed without removing the PCBs

For better EMC contacting between rear panel and cover plate and to increase the stability of broad frame-type plug-in units, a rear panel retainer is available

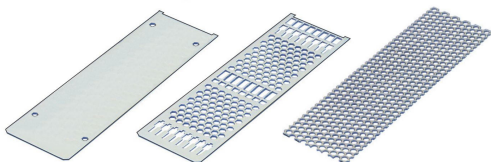
Use of Torx screws for secure machine mounting

Note:

Frame type plug-in units cannot be combined with guide rails for CompactPCI or VME64x applications (width 4 HP)



04808011



Sliding cover plates

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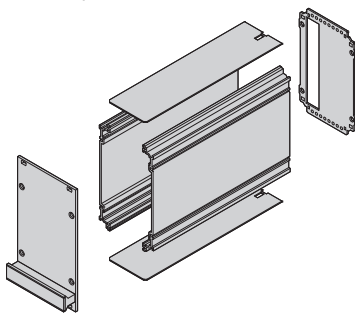


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Frame type plug-in units

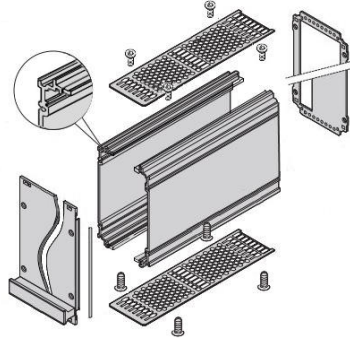
COMPARISON: FRAME-TYPE PLUG-IN UNITS PRO/FRAME-TYPE PLUG-IN UNITS PRO WITH HOOD

Frame-type plug-in units PRO



Cover plate, slide-in option

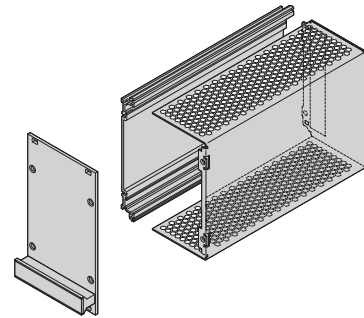
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Cover plate, screw-on option

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Frame-type plug-in units PRO with hood (shielded)



04808115

For one or multiple PCBs

Only for one PCB

Modular, at least 6 components
(front panel, 2 side panels, 2 cover plates, rear panel)

Only 3 components
(front panel, left hand side panel, hood with integrated rear panel)

Identical front panel and front handle

Identical front panel and front handle

Identical left hand side panel (Al extrusion)

Identical left hand side panel (Al extrusion)

Side panel on right hand side (Al extrusion)

Hood on right hand side (Al sheet)

Separate rear panel

Hood includes rear panel

Widths from 8 HP to 42 HP

Widths from 5 HP to 14 HP

Guiding in subrack/case with 4 guide rails; left and right side panels

Guiding in subrack/case with 2 guide rails;
left side panel

3 rear panel variants (for one DIN connector, for multiple DIN connectors,
rear panel without cut-out)

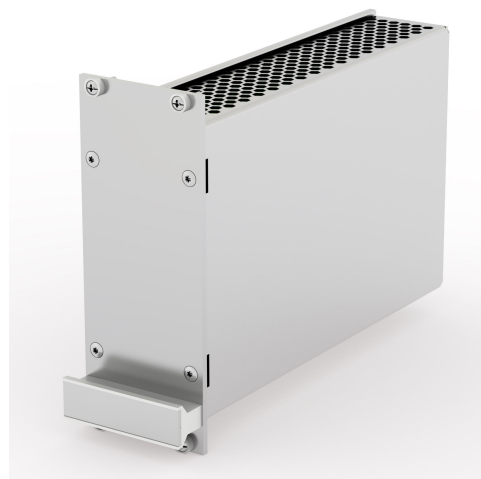
1 rear panel variant (for one DIN connector)

3 cover plate versions (solid (1), perforated (2), perforated for guide rail
mounting (3)). On request, versions 1+3 can be screwed on to side panels

2 cover versions (solid and perforated). Please see service plus table
page 7.86



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Frame type plug-in units PRO

FRAME TYPE PLUG-IN UNITS PRO, 3 U KITS, FRONT PANEL SHIELDED (TEXTILE GASKET)

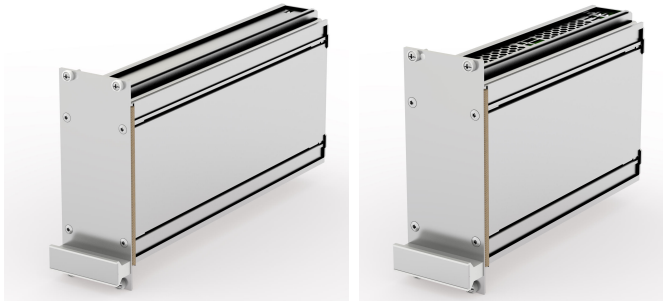
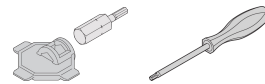


Illustration shows 10 HP width, side panel depth 227 and 167 mm

- Extruded side panels with groove to right and left, to insert a PCB (board position in accordance with standard in left side panel only)
- 2 board depths: 160 mm and 220 mm
- 2 cover plate versions
 - with perforation, for guide rails (5a, airflow rate approx. 60 %); please order guide rails separately
 - Without perforation (5b)
- 2 rear panel versions
 - With cut-out for one connector (3a, in accordance with EN 60603-2, DIN 41612)
 - With cut-out for multiple connectors (3b, in accordance with EN 60603-2, DIN 41612)

DELIVERY COMPRISES (Kit)

Item	Qty	Description
1	1	Front panel, U profile anodised, rear conductive, alignment pin pressed-in
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3a	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for oneconnector, incl. PCB fixing (slot 1)
3b	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for multiple connectors, incl. PCB fixing (slot 1 and slot 2), incl. 2 guide rails rear panel fastener
3c	2	
4	2	Side panel, Al extrusion, colourless passivated, with groove for one PCB
5a	2	Cover plate, St, zinc-plated, 1.0 mm, with perforation
5b	2	Cover plate, St, zinc-plated, 1.0 mm, without perforation
6	1	EMC sealing (textile)
7	1	Assembly kit (*)



Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

ORDER INFORMATION

	Rear panel	Height	Width	Cover plate without perforation		Cover plate with perforation, for guide rails	
				107887669		107887758	
Side panel depth		U	HP	167 mm deep Part no.	227 mm deep Part no.	167 mm deep Part no.	227 mm deep Part no.
	3a	3	8	24813-408	24813-458	24813-208	24813-258
		3	10	24813-410	24813-460	24813-210	24813-260
		3	12	24813-412	24813-462	24813-212	24813-262
		3	14	24813-414	24813-464	24813-214	24813-264
		3	21	24813-421	24813-471	24813-221	24813-271
		3	28	24813-428	24813-478	24813-228	24813-278
	3b/3c	3	42	24813-442	24813-492	24813-242	24813-292
		3	8	-	-	24813-308	24813-358
		3	10	-	-	24813-310	24813-360
		3	12	-	-	24813-312	24813-362
		3	14	-	-	24813-314	24813-364
		3	21	-	-	24813-321	24813-371
		3	28	-	-	24813-328	24813-378
		3	42	-	-	24813-342	24813-392

EMC gasket stainless steel, for U-shaped front panel
 1 Kit, 3U, 10pcs **21102-105**

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.73

Frame type plug-in units PRO

FRAME TYPE PLUG-IN UNITS PRO, 6 U KITS, FRONT PANEL SHIELDED (TEXTILE GASKET)

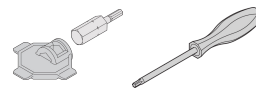
- Extruded side panels with groove to right and left, to insert a PCB (board position in accordance with standard in left side panel only)
- 2 board depths: 160 mm and 220 mm
- 2 cover plate versions
 - With perforation, for guide rails (5a, airflow rate approx. 60 %),
 - please order guide rails separately
 - Without perforation (5b)
- 2 rear panel versions
 - With cut-out for one connector (3a; in accordance with EN 60603-2, DIN 41612)
 - With cut-out for multiple connectors (3b; in accordance with EN 60603-2, DIN 41612)
 - 6 U has cut-outs for connectors at top and bottom

DELIVERY COMPRISES (Kit)

Item	Qty	Description
1	1	Front panel, U profile anodised, rear conductive, alignment pin pressed-in
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3a	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for one connector, incl. PCB fixing (slot 1)
3b	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for multiple connectors, incl. PCB fixing (slot 1 and slot 2), incl. 2 guide rails rear panel fastener
3c	2	
4	2	Side panel, Al extrusion, colourless passivated, with groove for one PCB
5a	2	Cover plate, St, zinc-plated, 1.0 mm, with perforation
5b	2	Cover plate, St, zinc-plated, 1.0 mm, without perforation
6	1	EMC sealing (textile)
7	1	Assembly kit (*)

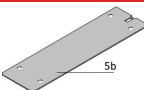
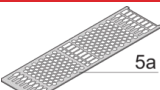
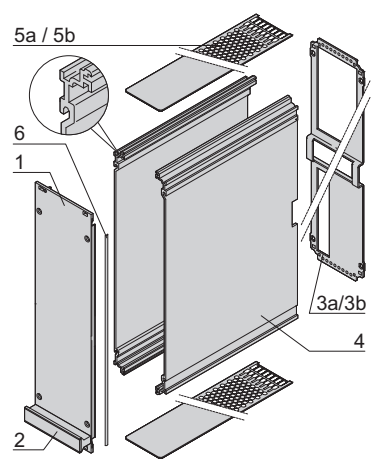
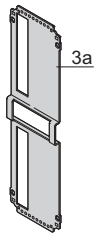
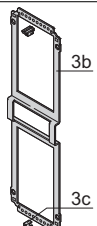


Illustration shows 10 HP width, side panel depth 227 and 167 mm



Screw Driver, Torx 8, **64560-026**
Assembly Tool, Torx 8, **24812-650**

ORDER INFORMATION

	Rear panel	Height	Width	Cover plate without perforation		Cover plate with perforation, for guide rails	
							
				107887669	107887758		
Side panel depth		U	HP	167 mm deep	227 mm deep	167 mm deep	227 mm deep
				Part no.	Part no.	Part no.	Part no.
	 04808117	6	8	24813-908	24813-958	24813-708	24813-758
		6	10	24813-910	24813-960	24813-710	24813-760
		6	12	24813-912	24813-962	24813-712	24813-762
		6	14	24813-914	24813-964	24813-714	24813-764
		6	21	24813-921	24813-971	24813-721	24813-771
		6	28	24813-928	24813-978	24813-728	24813-778
	 04808059	6	42	24813-942	24813-992	24813-742	24813-792
		6	8	-	-	24813-808	24813-858
		6	10	-	-	24813-810	24813-860
		6	12	-	-	24813-812	24813-862
		6	14	-	-	24813-814	24813-864
		6	21	-	-	24813-821	24813-871
		6	28	-	-	24813-828	24813-878
		6	42	-	-	24813-842	24813-892

EMC gasket stainless steel, for U-shaped front panel
1 Kit, 6U, 10pcs **21102-107**

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.73

Frame type plug-in units PRO

FRAME TYPE PLUG-IN UNITS PRO, 3 U KITS, SHIELDED / NON SHIELDED, WITH SCREW-ON OPTION



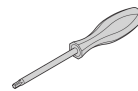
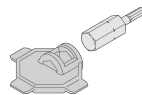
135205278

Illustration shows 12 HP width, shielded version, side panel depth 167 mm

- Extruded side panels with groove to right and left, to insert a PCB (board position in accordance with standard in left side panel only). Screw-on option for top / bottom covers
- 2 board depths: 160 mm and 220 mm
- With perforation, for guide rail assembly (please order the guide rails separately)
- 1 Rear Panel with one cut-out for one DIN connector (conform with EN 60603-2, DIN 41612)

LIEFERUMFANG (Bausatz)

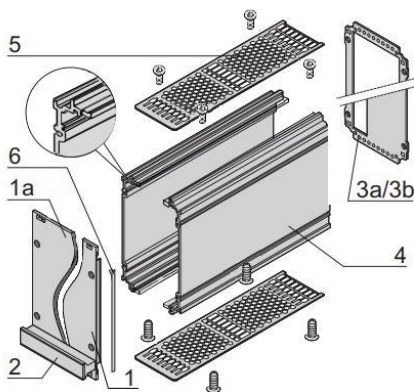
Pos.	Menge	Beschreibung
1	1	Front panel, U profile anodised, rear conductive, alignment pin pressed-in (EMC shielded)
1a	1	Front panel, Al, 2.5 mm, anodised, cut edges plain
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3a	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for one connector, incl. PCB fixing (slot 1).
3b	1	Cut-out for Multiple Connectors
4	2	Side panel, Al extrusion, colourless passivated, Side panel with screw-on option for fixing of the top / bottom covers
5	2	Cover plate, with screw-on option, St, zinc-plated, 1.0 mm, with perforation (Guide rails can be assembled)
6	1	EMC sealing (textile)
7	1	Assembly kit



Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

107888226 110434981

ORDER INFORMATIONEN



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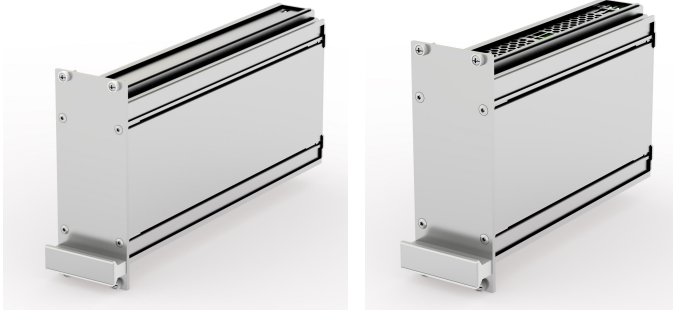
	Height	Width	Shielded Version (U-shaped Front Panel)		Unshielded Version (Flat Front Panel)	
			167 mm deep	227 mm deep	167 mm deep	227 mm deep
Side panel depth	U	HP	Part-No.	Part-No.	Part-No.	Part-No.
3a	3	12	24813-245	-	-	-
3a	3	14	24813-246	-	24812-246	-
3a	3	21	-	24813-297	24812-247	-
3a	3	28	-	-	24812-248	-
3b	3	21	-	24813-397	-	-

EMC gasket stainless steel, for U-shaped front panel
21102-105

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.73

Frame type plug-in units PRO

FRAME-TYPE PLUG-IN UNITS PRO, 3 U KITS, FRONT PANEL UNSHIELDED



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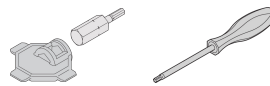
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Illustration shows 10 HP width, side panel depth 227 and 167 mm

- Extruded side panels with groove to right and left, to insert a PCB (board position in accordance with standard in left side panel only)
- 2 board depths: 160 mm and 220 mm
- 2 cover plate versions
 - with perforation, for guide rails (5a, airflow approx. 60 %); please order guide rails separately
 - Without perforation (5b)
- 2 rear panel versions
 - With cut-out for one connector (3a, in accordance with EN 60603-2, DIN 41612)
 - With cut-out for multiple connectors (3b, in accordance with EN 60603-2, DIN 41612)

DELIVERY COMPRISES (Kit)

Item	Qty	Description
1	1	Front panel, Al, 2.5 mm, anodised, cut edges plain
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3a	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for one connector, incl. PCB fixing (slot 1)
3b	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for multiple connectors, incl. PCB fixing (slot 1 and slot 2), incl. 2 guide rails rear panel fastener
3c	2	
4	2	Side panel, Al extrusion, colourless passivated, with groove for one PCB
5a	2	Cover plate, St, zinc-plated, 1.0 mm, with perforation
5b	2	Cover plate, St, zinc-plated, 1.0 mm, without perforation
6	1	Assembly kit (*)



107888226 110434981

 Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

ORDER INFORMATION

	Rear panel	Height	Width	Cover plate without perforation		Cover plate with perforation, for guide rails	
				167 mm deep	227 mm deep	167 mm deep	227 mm deep
Side panel depth	U	HP	Part no.	Part no.	Part no.	Part no.	
		3	8	24812-408	24812-458	24812-208	24812-258
		3	10	24812-410	24812-460	24812-210	24812-260
		3	12	24812-412	24812-462	24812-212	24812-262
		3	14	24812-414	24812-464	24812-214	24812-264
		3	21	24812-421	24812-471	24812-221	24812-271
		3	28	24812-428	24812-478	24812-228	24812-278
		3	42	24812-442	24812-492	24812-242	24812-292
		3	8	-	-	24812-308	24812-358
		3	10	-	-	24812-310	24812-360
		3	12	-	-	24812-312	24812-362
		3	14	-	-	24812-314	24812-364
		3	21	-	-	24812-321	24812-371
	3	28	-	-	24812-328	24812-378	
	3	42	-	-	24812-342	24812-392	

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.73

Frame type plug-in units PRO

FRAME TYPE PLUG-IN UNITS PRO, 6 U KITS, FRONT PANEL UNSHIELDED



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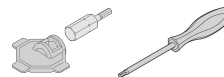
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Illustration shows 10 HP width, side panel depth 227 and 167 mm

- Extruded side panels with groove to right and left, to insert a PCB (board position in accordance with standard in left side panel only)
- 2 board depths: 160 mm and 220 mm
- 2 cover plate versions
 - with perforation, for guide rails (5a, airflow approx. 60 %); please order guide rails separately
 - Without perforation (5b)
- 2 rear panel versions
 - With cut-out for one connector (3a; in accordance with EN 60603-2, DIN 41612)
 - With cut-out for multiple connectors (3b; in accordance with EN 60603-2, DIN 41612)
 - 6 U has cut-outs for connectors at top and bottom

DELIVERY COMPRISES (Kit)

Item	Qty	Description
1	1	Front panel, Al, 2.5 mm, anodised, cut edges plain
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3a	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for one connector, incl. PCB fixing (slot 1)
3b	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for multiple connectors, incl. PCB fixing (slot 1 and slot 2), incl. 2 guide rails rear panel fastener
3c	2	
4	2	Side panel, Al extrusion, colourless passivated, with groove for one PCB
5a	2	Cover plate, St, zinc-plated, 1.0 mm, with perforation
5b	2	Cover plate, St, zinc-plated, 1.0 mm, without perforation
6	1	Assembly kit (*)


 Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

107888226 110434981

ORDER INFORMATION

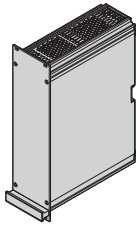
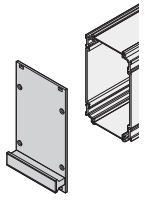
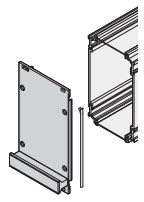
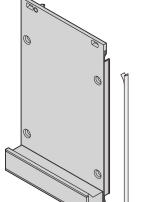
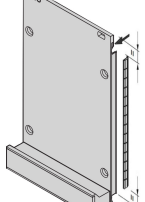
	Rear panel	Height	Width	Cover plate without perforation		Cover plate with perforation, for guide rails	
				167 mm deep Part no.	227 mm deep Part no.	167 mm deep Part no.	227 mm deep Part no.
Side panel depth		U	HP				
		6	8	24812-908	24812-958	24812-708	24812-758
		6	10	24812-910	24812-960	24812-710	24812-760
		6	12	24812-912	24812-962	24812-712	24812-762
		6	14	24812-914	24812-964	24812-714	24812-764
		6	21	24812-921	24812-971	24812-721	24812-771
		6	28	24812-928	24812-978	24812-728	24812-778
		6	42	24812-942	24812-992	24812-742	24812-792
		6	8	-	-	24812-808	24812-858
		6	10	-	-	24812-810	24812-860
		6	12	-	-	24812-812	24812-862
		6	14	-	-	24812-814	24812-864
		6	21	-	-	24812-821	24812-871
		6	28	-	-	24812-828	24812-878
		6	42	-	-	24812-842	24812-892

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.73

Frame type plug-in units PRO ServicePLUS

INDIVIDUAL COMPONENTS

FRONT PANELS, FRONT HANDLES

	Front panel		Shieldable front panel, U profile				Trapeziform handle, grey (without extraction function)	
	unshielded		Front panel	EMC shielding - textile, for front panel and 19" bracket/rear profile	EMC shielding - stainless steel, for front panel and 19" bracket/rear profile		Grey	Black
 04808124  04808060  04808061  04808062  04808063	Al, 2.5 mm, front anodized, rear anodized, cut edges blank	Al extrusion, alignment pin pressed-in, front anodised, rear conductive	always fixed laterally on the front panel, in the groove of the profile, textile gasket, core: foam, TPE foam; sleeve: textile cladding with CuNi coating, UL 94 V-0 temperature range -40 ... 70 °C	Easy mounting by clipping the gasket onto the right front panel bracket stainless steel gasket		Handle: PC, UL 94 V0; EN 45545-2, R22- R24, HL3 identification plate: Al, 1.5 mm, anodised, cut edges plain; please order clip separately (included in mounting kit for five plug-in units or individual parts) 7.75		
	Supplied quantity for assembly of 5 frame type plug-in units							
	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	PU 10 pieces	PU 100 pieces	PU 10 pieces	PU 100 pieces	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾
3 U Height								
PCB depth 160 mm								
8	34812-108	34813-108					20808-062	20808-083
10	34812-110	34813-110					20808-004	20808-085
12	34812-112	34813-112					20808-064	20808-086
14	34812-114	34813-114	21101-853	21101-854	21102-105	21102-106	20808-065	20808-087
21	34812-121	34813-121					20808-066	20808-088
28	34812-128	34813-128					20808-067	20808-089
42	34812-142	34813-142					20808-068	20808-091
PCB depth 220 mm								
8	34812-108	34813-108					20808-062	20808-083
10	34812-110	34813-110					20808-004	20808-085
12	34812-112	34813-112					20808-064	20808-086
14	34812-114	34813-114	21101-853	21101-854	21102-105	21102-106	20808-065	20808-087
21	34812-121	34813-121					20808-066	20808-088
28	34812-128	34813-128					20808-067	20808-089
42	34812-142	34813-142					20808-068	20808-091
6 U Height								
PCB depth 160 mm								
8	34812-608	34813-608					20808-062	20808-083
10	34812-610	34813-610					20808-004	20808-085
12	34812-612	34813-612					20808-064	20808-086
14	34812-614	34813-614	21101-855	21101-856	21102-107	21102-108	20808-065	20808-087
21	34812-621	34813-621					20808-066	20808-088
28	34812-628	34813-628					20808-067	20808-089
42	34812-642	34813-642					20808-068	20808-091
PCB depth 220 mm								
8	34812-608	34813-608					20808-062	20808-083
10	34812-610	34813-610					20808-004	20808-085
12	34812-612	34813-612					20808-064	20808-086
14	34812-614	34813-614	21101-855	21101-856	21102-107	21102-108	20808-065	20808-087
21	34812-621	34813-621					20808-066	20808-088
28	34812-628	34813-628					20808-067	20808-089
42	34812-642	34813-642					20808-068	20808-091
Dimensions see page	7.80	7.80					7.80	7.80

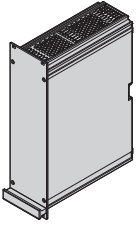

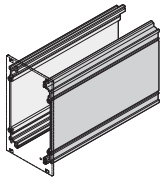

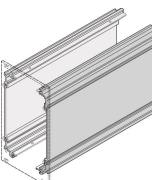
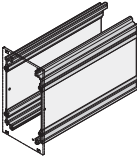
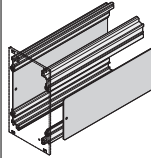
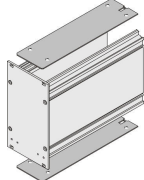
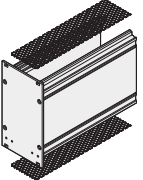
1) SPQ (standard pack quantity): Order number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ) Please order at least the SPQ quantity or a multiple thereof
Order number includes one packaging unit (PU); delivery is exclusively made in PU



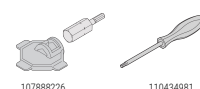
Screw Driver, Torx 8, **64560-026**
Assembly Tool, Torx 8, **24812-650**

Frame type plug-in units PRO ServicePLUS

INDIVIDUAL COMPONENTS
SIDE PANELS, COVER PLATES, GUIDE RAILS

	Extruded side panel		Extruded side panel for screw on covers		Side panel, corner profile and side plate		Cover plate	
	Left	Right	Left	Right	Corner profile	Side plate	Without perforation	With perforation
 04808124  108909312  tbd  135592973  137452826  04808066  04808067  137452824  04808070	Al extrusion, colourless passivated, with groove for one PCB; 3 U symmetrical; 6 U asymmetrical, right and left side panel different)		Al-profile, passivated, colourless, with bar for fixing screw-on cover covers. With groove for one PCB (S1); 3U symmetrical)		Al extrusion, colourless passivated, with groove for one PCB, please order side plate separately		St, 1 mm, zinc-plated, is inserted into side panel rear angle	
	St, 1.0 mm, zinc-plated; PCB only possible in slot 1		St, 1.2 mm, Al, airflow rate in perforated area approx. 65%; PCB only possible in slot 1		1 piece (SPQ 10) ¹⁾		1 piece (SPQ 5) ¹⁾	
Supplied quantity for assembly of 5 frame type plug-in units								
3 U Height PCB depth 160 mm								
8							34812-408	34812-958
10							34812-410	34812-960
12							34812-412	34812-962
14	34812-100	34812-100	34812-300	34812-300	34812-102	34812-103	34812-414	34812-964
21	1 piece (SPQ 10) ¹⁾	1 piece (SPQ 10) ¹⁾					34812-421	34812-971
28							34812-428	34812-978
42							34812-442	34812-992
PCB depth 220 mm								
8							34813-408	34813-958
10							34813-410	34813-960
12							34813-412	34813-962
14	34813-100	34813-100	34813-300	34813-300	34813-102	34813-103	34813-414	34813-964
21	1 piece (SPQ 10) ¹⁾	1 piece (SPQ 10) ¹⁾					34813-421	34813-971
28							34813-428	34813-978
42							34813-442	34813-992
6 U Height PCB depth 160 mm								
8							34812-408	34812-958
10							34812-410	34812-960
12							34812-412	34812-962
14	34812-600	34812-601	-	-	34812-102	34812-603	34812-414	34812-964
21	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾					34812-421	34812-971
28							34812-428	34812-978
42							34812-442	34812-992
PCB depth 220 mm								
8							34813-408	34813-958
10							34813-410	34813-960
12							34813-412	34813-962
14	34813-600	34813-601	-	-	34813-102	34813-603	34813-414	34813-964
21	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾					34813-421	34813-971
28							34813-428	34813-978
42							34813-442	34813-992
Dimensions see page	7.78	7.78	7.78	7.78	7.79	7.79	7.82	7.82

1) SPQ (standard pack quantity): Order number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ) Please order at least the SPQ quantity or a multiple thereof
 Order number includes one packaging unit (PU); delivery is exclusively made in PU



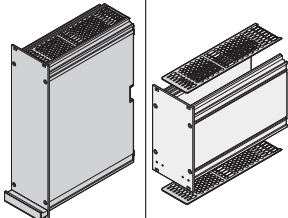

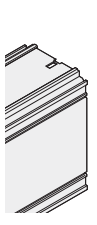
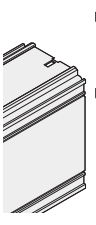
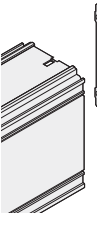
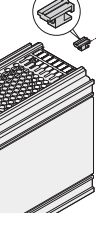
Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

Part number in bold face type: ready for despatch within 2 working days
 Part number in normal type: ready for despatch within 10 working days

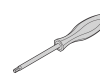
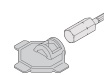
Frame type plug-in units PRO ServicePLUS

INDIVIDUAL COMPONENTS

REAR PANELS, ASSEMBLY MATERIAL

	With perforation for guide rails		Rear panel			Rear panel fastener for connection of rear panel with cover plate	Assembly kit
	Cover plate	Guide rail	Without cut-out	Cut-out for one connector	Cut-out for multiple connectors		
 04808124 04808069 St, 1.0 mm, zinc-plated; air flow rate in perforated area approx. 60 %; please order snap-in guide rails separately Supplied quantity for assembly of 5 frame type plug-in units	 04808074 PBT, UL 94 V-0, red, groove width 2 mm, PCB fixing required from slot 2, see page 7.76	 04808073 St, 1.5 mm, zinc-plated	 04808071 St, 1.5 mm, zinc-plated	 04808072 St, 1.5 mm, zinc-plated, for EN 60603 (DIN 41612) connectors, types: B, C, D, F, H, Q, R, S	 04808123 10 rear panel fasteners, Zn die-cast; 10 fixing screws; not suitable for cover plate with perforation	For mounting of five 3 U or 6 U frame type plug-in units from ServicePLUS components: Front panel, rear panel, side panel, cover plate and handle, Delivery includes: 40x screw 3x20, Torx, self-tapping; 30x plastic nipples; 30x neck screw M2.5x12.3; 10x fixing clip; 10x pan head screw M2.5x10, Torx, 40 x screw M2.5x6, Torx8 description see page 7.75	
	1 piece (SPQ 10) ¹⁾	PU 10 pieces	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	PU 1 kit	PU 1 kit
3 U Height							
PCB depth 160 mm							
8	34812-908	24812-101	34813-208	34812-208	34812-308	24812-401	24812-100
10	34812-910		34813-210	34812-210	34812-310		
12	34812-912		34813-212	34812-212	34812-312		
14	34812-914		34813-214	34812-214	34812-314		
21	34812-921		34813-221	34812-221	34812-321		
28	34812-928		34813-228	34812-228	34812-328		
42	34812-942		34813-242	34812-242	34812-342		
PCB depth 220 mm							
8	34813-908	24812-101	34813-208	34812-208	34812-308	24812-401	24812-100
10	34813-910		34813-210	34812-210	34812-310		
12	34813-912		34813-212	34812-212	34812-312		
14	34813-914		34813-214	34812-214	34812-314		
21	34813-921		34813-221	34812-221	34812-321		
28	34813-928		34813-228	34812-228	34812-328		
42	34813-942		34813-242	34812-242	34812-342		
6 U Height							
PCB depth 160 mm							
8	34812-908	24812-101	34813-708	34812-708	34812-808	24812-401	24812-100
10	34812-910		34813-710	34812-710	34812-810		
12	34812-912		34813-712	34812-712	34812-812		
14	34812-914		34813-714	34812-714	34812-814		
21	34812-921		34813-721	34812-721	34812-821		
28	34812-928		34813-728	34812-728	34812-828		
42	34812-942		34813-742	34812-742	34812-842		
PCB depth 220 mm							
8	34813-908	24812-101	34813-708	34812-708	34812-808	24812-401	24812-100
10	34813-910		34813-710	34812-710	34812-810		
12	34813-912		34813-712	34812-712	34812-812		
14	34813-914		34813-714	34812-714	34812-814		
21	34813-921		34813-721	34812-721	34812-821		
28	34813-928		34813-728	34812-728	34812-828		
42	34813-942		34813-742	34812-742	34812-842		
Dimensions see page	7.82		7.82	7.81	7.81		

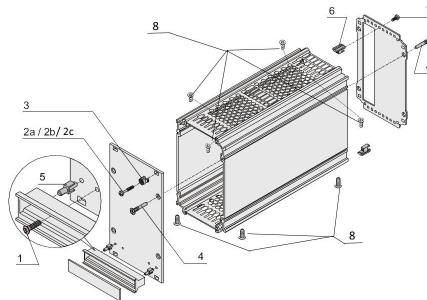
1) SPQ (standard pack quantity): Order number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ) Please order at least the SPQ quantity or a multiple thereof Order number includes one packaging unit (PU); delivery is exclusively made in PU



Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

107888226

110434981

INDIVIDUAL COMPONENTS
FIXING MATERIAL (100 PIECES)


04808085

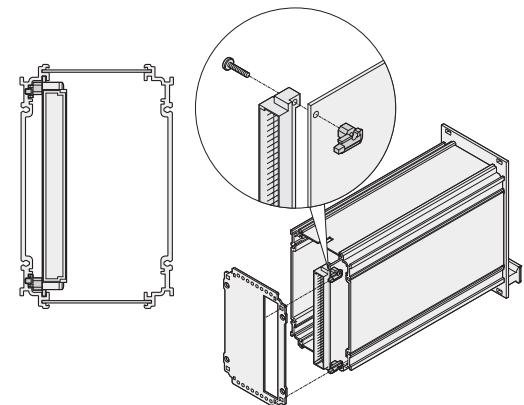
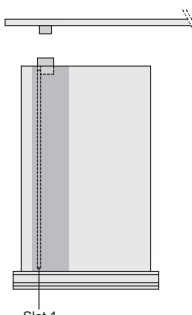
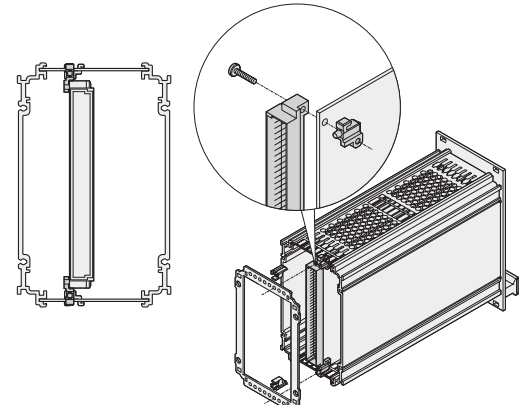
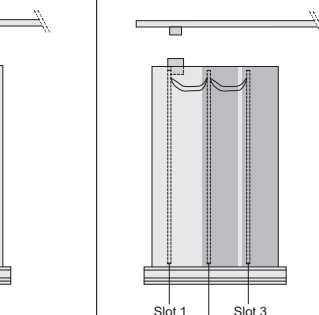
Fixing parts	Item		Required quantity per plug-in unit	Description	Qty/PU	Part No.
Fixing parts for mounting the module in subrack or case						
Torx panhead screw, M2.5 x 10, St, zinc-plated, self-forming thread	1		2	Assembly of handle on front panel	100	24560-179
Collar screws pozidrive/slot (Philips) M2.5 x 12.3, St, nickel-plated	2a		4 / 6*	Mounting of front panel on horizontal rail	100	21102-026
Slotted Pozidrive collar screw M2.5 x 12.3, St, nickel-plated	2b		4 / 6*	Mounting of front panel on horizontal rail	100	21101-101
Torx 8, collar screw M2.5 x 12.3, St, nickel-plated	2c		4 / 6*	Mounting of front panel on horizontal rail	100	21101-782
Plastic sleeves for form hole 5.9 x 3.3, PA, UL 94 V-2, grey	3		4 / 6* (6* = 42HP)	Is needed to fix collar screws	100	21100-464
Fixing parts for mounting the module (Frame Type PIU)						
Torx raised countersunk panhead screw, T8 3 x 20, St, nickel-plated	4		8	Assembly of front panel and rear panel on extruded side panel/rear extrusion of side panel	100	24812-501
Fixing clip for trapeziform plastic handle PPE UL 94 V-0, black	5		2	Alignment aid for handle on front panel	100	21101-239
Rear panel fastener Zn die-cast	6		2	To stabilise rear panel with wide frame-type plug-in units	100	24812-402
Torx panhead screw, T8 M2.5 x 10, St, nickel-plated	7		2	To fix rear panel fastener or board fixing	100	24560-148
Torx panhead screw, T8 M2.5 x 5, St, nickel-plated	8		8	To fix the screw-on top covers to the side panels	100	24812-751
Board support (slot 1) Zn die-cast			2	Board support (slot 1) see page 7.76	50 Pair	24812-202
Board support (from slot 2) Zn die-cast			2	Board support (from slot 2) see page 7.76	50 Pair	24812-302
Torx panhead screw, T8 M2.5 x 6, St, nickel-plated			2	is needed for board fixing without connector see page 7.76	100	24560-178
Torx T8, Screw driver			1			64560-026
Torx T8, -Assembly tool			1			24812-650

Further collar screws and sleeves see page 7.107

Frame type plug-in units PRO ServicePLUS

INDIVIDUAL COMPONENTS

BOARD FIXING

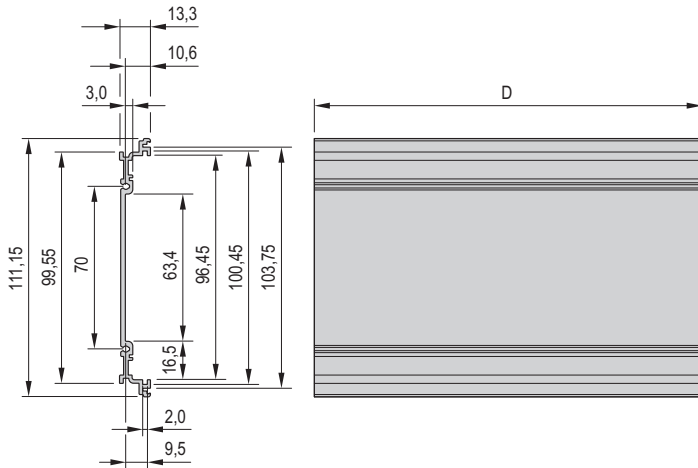
	Board fixing slot 1	Board fixing from slot 2	
	  <p style="text-align: center;">Slot 1</p> <p style="text-align: right;"><small>04808118 04808109 04808129</small></p> <p>Zn die-cast, Torx panhead screw M2.5 x 10; PCB is pushed into the guiding groove of the left side panel/ side panel rear angle, is fixed with rear panel</p>	  <p style="text-align: center;">Slot 1 Slot 2 Slot 3</p> <p style="text-align: center;">Slot 2</p> <p style="text-align: right;"><small>04808119 04808110 bga42785 kaa46417</small></p> <p>With connector from slot 2</p> <p>Without connector from slot 2</p> <p>Zn die-cast, Torx panhead screw M2.5 x 10; PCB is pushed into guide rail, is fixed with rear panel</p>	
Height	PU 5 pair	PU 5 pair	
3 U + 6 U	24812-201	24812-301	
Assembly kits		With connector from slot 2	Without connector from slot 2
Torx panhead screw, M2.5 x 6, St, nickel-plated, PU 100 pieces; is needed for board fixing without connector	24560-178	-	24560-178
Connector mounting on PCB, for 6 U frame type plug-in units (centre) Torx panhead screw M2.5 x 10, nut M2.5; PU 10 pieces (screw + nut)	24812-600	24812-600	
To fix a shortened PCB to slot 1 (side panel profile) the die-cast holder can be used. 10 x die-cast holder (1), 20 x screw M2.5 x 7, 5 (2) x PCB fixation, 10 x (3) screw M2.5 x 10 (4), 1 x mounting tool (5)	24812-750		
Please note: 2 or 4 holes must be drilled in the side panel depending on the depth of the PCB.		Remark: The screw connection with kit 24812-750 makes an electrically conductive connection between the side wall of the cassette and the printed circuit board (PCB).	

Frame type plug-in units PRO

DIMENSIONS

SIDE PANEL

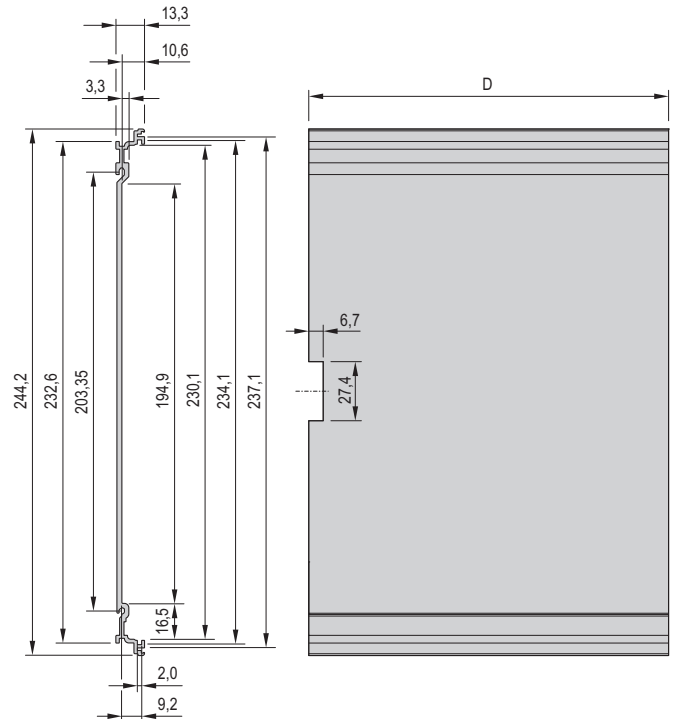
3 U



Depth = 167/227 mm

04808101

6 U

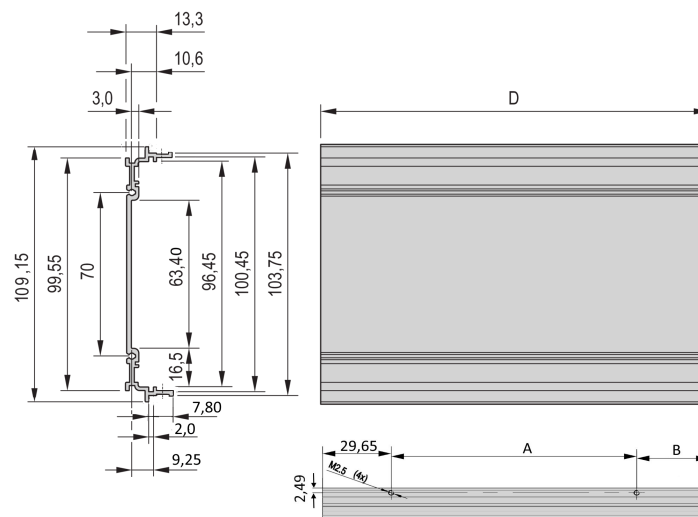


04808102

DIMENSIONS

SIDE PANEL WITH SCREW ON OPTION

3 U

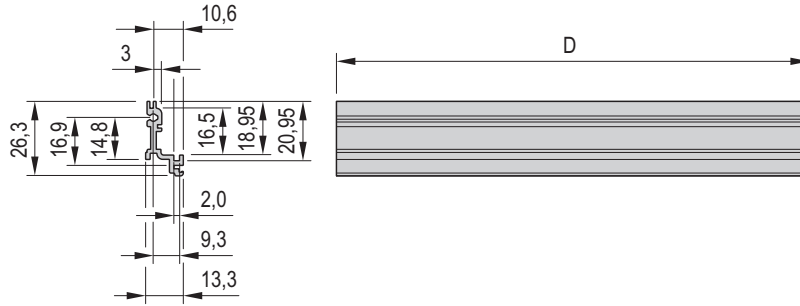


134397199

D	A	B
167	106,10	31,15
227	170,65	26,60

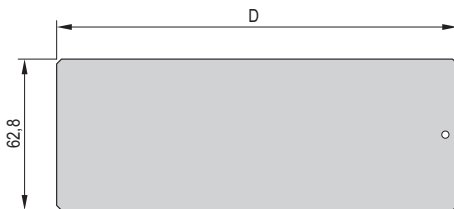
Depth = 167/227 mm

Frame type plug-in units PRO

DIMENSIONS
SIDE PANEL REAR ANGLE


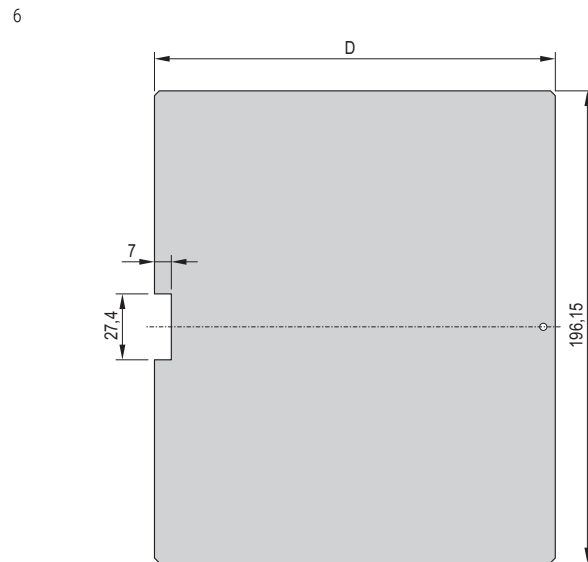
Depth = 167/227 mm

04808103

DIMENSIONS
SIDE PLATE


3 U for side panel rear angle

04808100

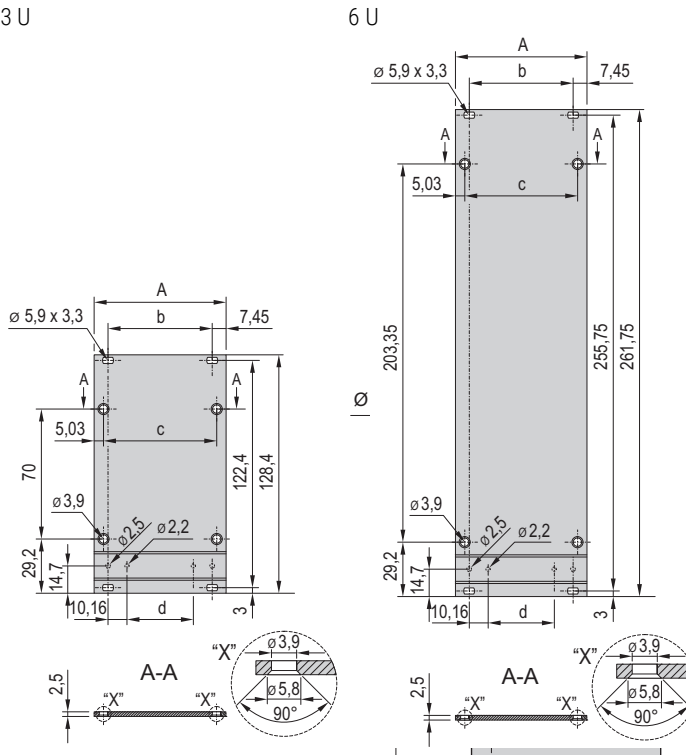


6 U for side panel rear angle

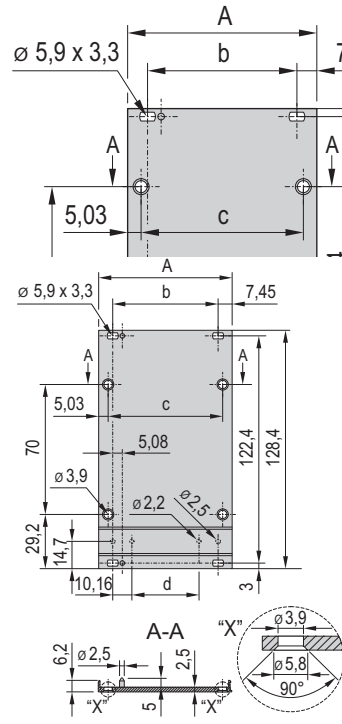
04808099

Frame type plug-in units PRO

DIMENSIONS
FRONT PANELS

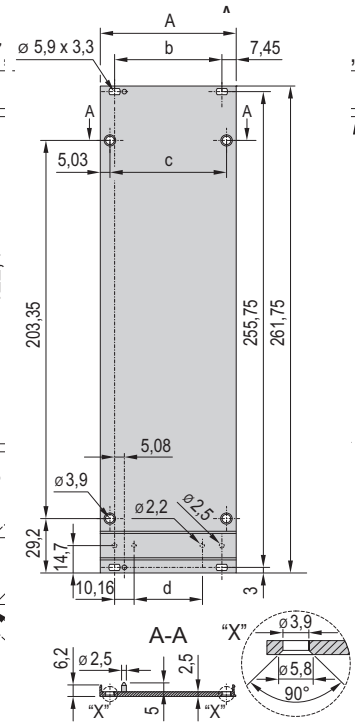
 Unshielded
3 U


04808086

 Shieldable, for EMC textile gasket
3 U


04808087

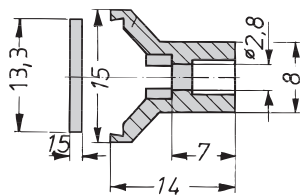
6 U



04808088

04808089

Width	A	b	c	d
	mm	mm	mm	mm
8 HP	40.30	25.40	30.24	5.08
10 HP	50.46	35.56	40.40	15.24
12 HP	60.62	45.72	50.56	25.40
14 HP	70.78	55.88	60.72	35.56
21 HP	106.34	91.44	96.28	71.12
28 HP	141.90	127.00	131.84	106.68
42 HP	213.02	198.12	202.96	177.80

DIMENSIONS
FRONT HANDLE


A4-328e

Dimensions table

Width	Width
HP	mm
8 HP	39.2
10 HP	49.4
12 HP	59.6
14 HP	69.7
21 HP	105.2
28 HP	140.8
42 HP	212.0

Frame type plug-in units PRO

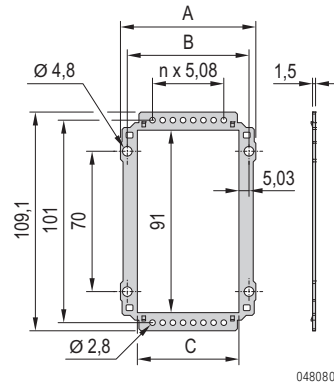
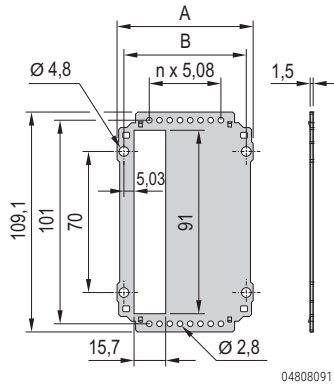
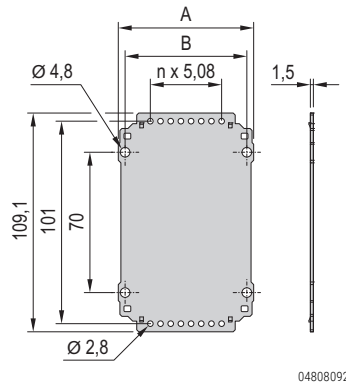
DIMENSIONS

REAR PANEL 3 U

Without cut-out

For one connector

For multiple connectors



Dimensions table

	A	B	C	n
HP	mm	mm	mm	
8 HP	37.04	30.24	20.18	1
10 HP	47.20	40.40	30.34	3
12 HP	57.36	50.56	40.50	5
14 HP	67.52	60.72	50.66	7
21 HP	103.08	96.28	86.22	14
28 HP	138.64	131.84	121.78	21
42 HP	209.76	202.96	192.90	35

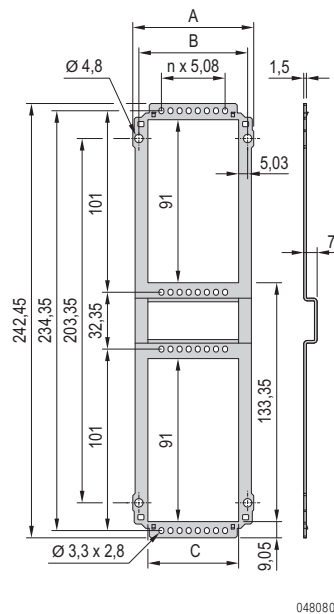
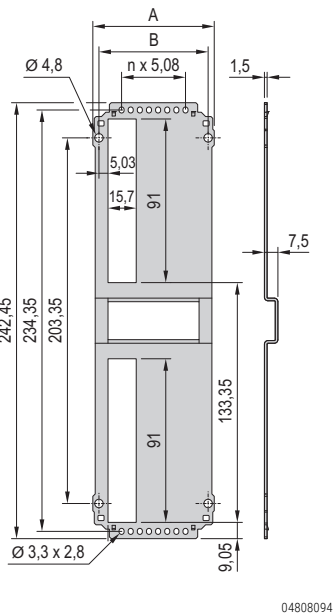
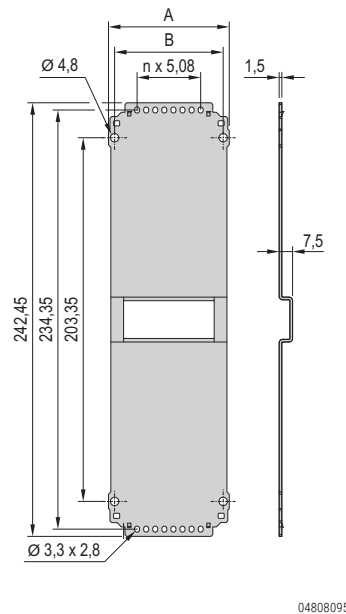
DIMENSIONS

REAR PANEL 6 U

Without cut-out

For one connector

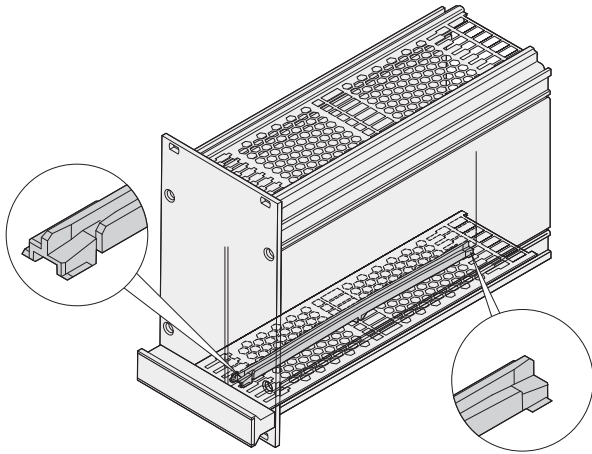
For multiple connectors



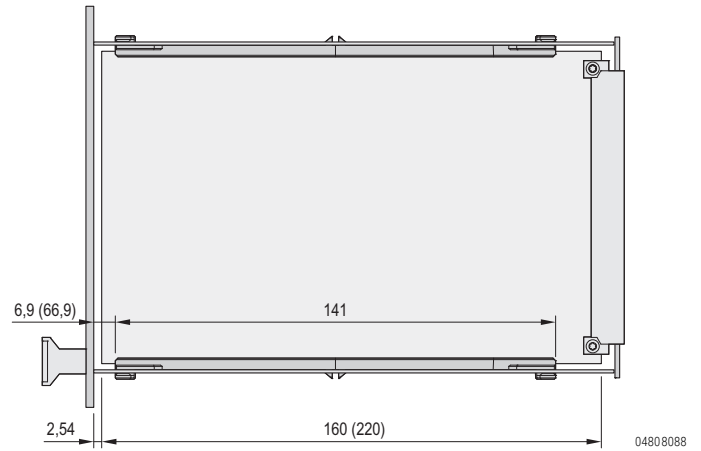
Dimensions table

	A	B	C	n
HP	mm	mm	mm	
8 HP	37.04	30.24	20.18	1
10 HP	47.20	40.40	30.34	3
12 HP	57.36	50.56	40.50	5
14 HP	67.52	60.72	50.66	7
21 HP	103.08	96.28	86.22	14
28 HP	138.64	131.84	121.78	21
42 HP	209.76	202.96	192.90	35

Frame type plug-in units PRO

DIMENSIONS
GUIDE RAIL


04808096



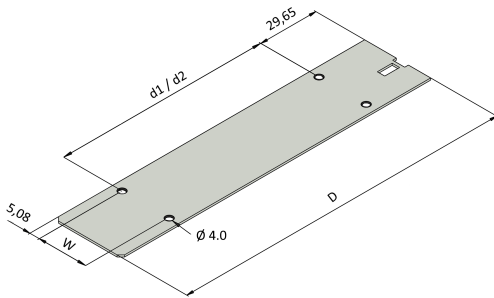
04808088

DIMENSIONS
COVER PLATES

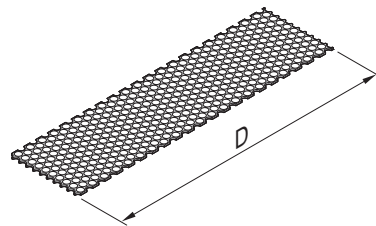
without perforation

with perforation

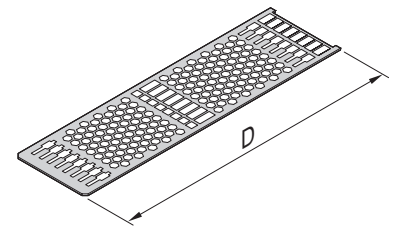
for guide rail mounting



134909377



04808106



04808105

D = 167/227 mm

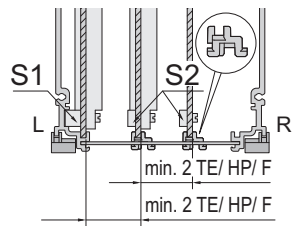
HP	W
8	5,08
10	15,24
12	25,40
14	35,56
21	71,12
28	106,68
42	177,80

135274874

Frame type plug-in units PRO

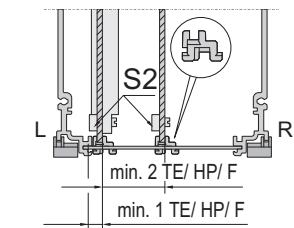
DIMENSIONS
MOUNTING INSTRUCTIONS FOR GUIDE RAILS IN FRAME TYPE PLUG-IN UNITS

Slot 1 + slot 2



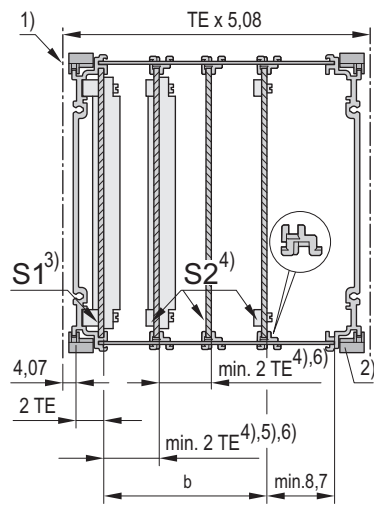
04809050

Slot 2



04809051

Front view



04808107

- Mounting pitch for guide rails: 1 HP
- Min. distance between 2 guide rails: 2 HP

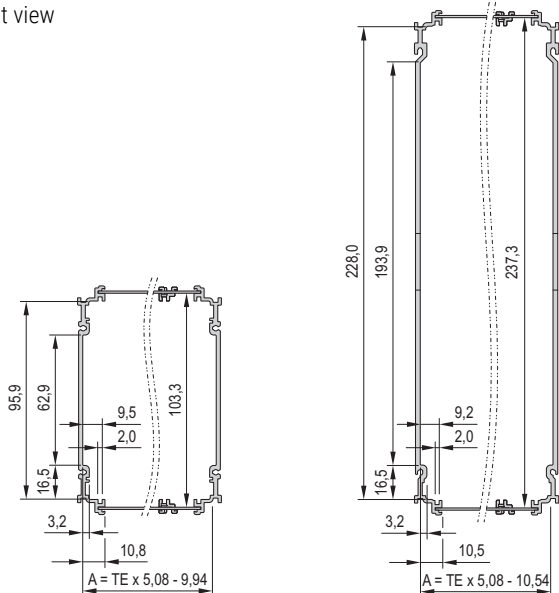
Width of frame type plug-in unit HP	b mm	Max. number of PCBs mountable	
		slot 1	from slot 2
8	-	1	1
	5.08	-	1 ⁵⁾
10	10.16	1	1 ⁶⁾
	15.24	-	2 ⁵⁾⁶⁾
12	20.32	1	2 ⁶⁾
	25.40	-	3 ⁵⁾⁶⁾
14	30.48	1	3 ⁶⁾
	35.56	-	4 ⁵⁾⁶⁾
21	71.12	1	7 ⁶⁾
	66.04	-	7 ⁵⁾⁶⁾
28	101.60	1	10 ⁶⁾
	106.68	-	11 ⁵⁾⁶⁾
42	172.72	1	17 ⁶⁾
	177.80	-	18 ⁵⁾⁶⁾

TE = HP = F

- 1) Division line
- 2) Guide rail rotated by 180° from standard position
- 3) The first PCB is held in the extruded side panel, corresponds to standard position (slot 1)
- 4) All additional PCBs are fitted into guide rails (from slot 2)
- 5) Min. 1 HP where slot 1 is not used (slot 2)
- 6) Dependent on construction of connector used (not every connector allows a 2 HP fitting)

DIMENSIONS
MOUNTING SPACE FRAME-TYPE PLUG-IN UNIT 3 U/6 U

Front view



04808097

04808098

DIMENSIONS TABLE

Height U	Width		A mm
	HP		
3	8		30.70
	10		40.86
	12		51.02
	14		61.18
	21		96.74
	3	28	
6	8		30.10
	10		40.26
	12		50.42
	14		60.58
	21		96.14
	6	28	
6	42		202.82

Frame type plug-in units PRO with hood

FRAME TYPE PLUG-IN UNITS PRO WITH HOOD, 3/6 U, FRONT PANEL SHIELDED (TEXTILE GASKET)



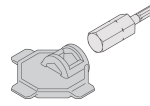
130961454

130961515

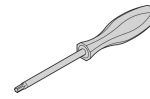
- Protects a PCB against mechanical damage and deflects electrostatic discharge; for euroboard formats
- Suitable in all subracks and these cases: ratiopacPRO/-air, propacPRO and compacPRO
- Useable connectors in accordance with EN 60603-2 (DIN 41612)
- 2 depths, for 160 mm and 220 mm boards

DELIVERY COMPRISES (kit)

Item	Qty	Description
1	1	Front panel, U profile, 2.5 mm, front anodised, rear conductive, alignment pin pressed-in
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3	1	Side panel, Al extrusion, colourless passivated, with groove for one PCB
4	1	Hood, Al, 1 mm, with perforation, rear panel integrated
5	1	EMC textile gasket
6	1	Assembly kit (*) (incl. PCB fixing for slot 1)



107888226



110434981

Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

Illustration shows 10HP / 7 HP width, side panel depth 167 mm

ORDER INFORMATION

5 HP	6 ... 14 HP	Height	Width	Depth = 167 mm	Depth = 227 mm	
		U	HP	Part no.	Part no.	
		3	5	24813-005	24813-055	
		3	6	24813-006	24813-056	
		3	7	24813-007	24813-057	
		3	10	24813-010	24813-060	
		3	12	24813-012	24813-062	
		3	14	24813-014	24813-064	
			6	5	24813-505	24813-555
			6	6	24813-506	24813-556
			6	7	24813-507	24813-557
			6	10	24813-510	24813-560
			6	12	24813-512	24813-562
			6	14	24813-514	24813-564

EMC gasket stainless steel, for U-shaped front panel
 1 Kit, 3U, 10pcs **21102-105**
 1 Kit, 6U, 10pcs **21102-107**

- Dimension drawings see from page 7.89

Frame type plug-in units PRO with hood

PLUG-IN UNITS PRO WITH HOOD, 3/6 U, FRONT PANEL UNSHIELDED



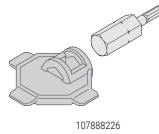
130961413

130961436

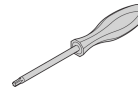
- Protects a PCB against mechanical damage and deflects electrostatic discharge; for euroboard formats
- Suitable in all subracks and these cases: ratiopacPRO/-air, propacPRO and compacPRO
- Useable connectors in accordance with EN 60603-2 (DIN 41612)
- 2 depths, for 160 mm or 220 mm board

DELIVERY COMPRISES (kit)

Item	Qty	Description
1	1	Front panel, Al, 2.5 mm, anodised, cut edges plain
2	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3
3	1	Side panel, Al extrusion, colourless passivated, with groove for one PCB
4	1	Hood, Al, 1 mm, with perforation, rear panel integrated
5	1	Assembly kit (*) (incl. PCB fixing for slot 1)



107888226

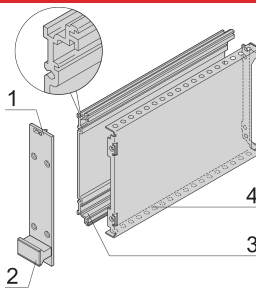
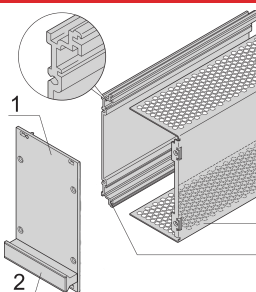
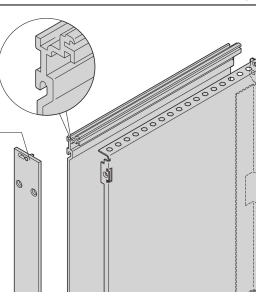
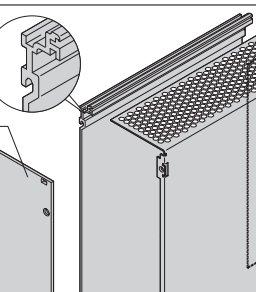


110434981

Screw Driver, Torx 8, **64560-026**
 Assembly Tool, Torx 8, **24812-650**

Illustration shows 10HP / 7 HP width, side panel depth 167 mm

ORDER INFORMATION


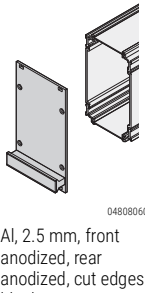
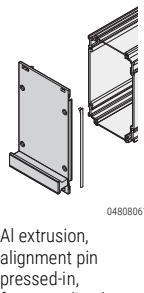
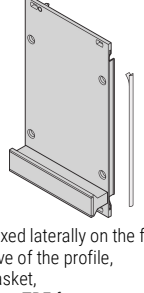
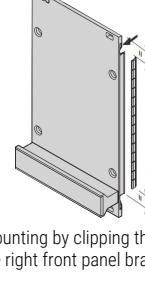
5 HP	6 ... 14 HP	Height U	Width HP	Depth = 167 mm Part no.	Depth = 227 mm Part no.
		3	5	24812-005	24812-055
		3	6	24812-006	24812-056
		3	7	24812-007	24812-057
		3	10	24812-010	24812-060
		3	12	24812-012	24812-062
		3	14	24812-014	24812-064
		6	5	24812-505	24812-555
		6	6	24812-506	24812-556
		6	7	24812-507	24812-557
		6	10	24812-510	24812-560
		6	12	24812-512	24812-562
		6	14	24812-514	24812-564

- Dimension drawings see from page 7.89

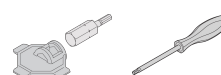
Frame type plug-in units PRO ServicePLUS

INDIVIDUAL COMPONENTS

FRONT PANELS, FRONT HANDLES

	Front panel		Shieldable front panel, U profile				Trapeziform handle, grey (without extraction function)	
	unshielded		Front panel	EMC shielding - textile, for front panel and 19" bracket/rear profile	EMC shielding - stainless steel, for front panel and 19" bracket/rear profile		Grey	Black
 <p>130961413</p>  <p>04808060</p>  <p>04808061</p>  <p>04808062</p>  <p>04808063</p> <p>Al, 2.5 mm, front anodized, rear anodized, cut edges blank</p> <p>Al extrusion, alignment pin pressed-in, front anodised, rear conductive</p> <p>always fixed laterally on the front panel, in the groove of the profile, textile gasket, core: foam, TPE foam; sleeve: textile cladding with CuNi coating, UL 94 V-0 temperature range -40 ... 70 °C</p> <p>Easy mounting by clipping the gasket onto the right front panel bracket</p> <p>temperature range -200 ... +160 °C</p> <p>Handle: PC, UL 94 V0; EN 45545-2, R22- R24, HL3 identification plate: Al, 1.5 mm, anodised, cut edges plain; please order clip separately (included in mounting kit for five plug-in units or individual parts) 7.75</p>	<p>Supplied quantity for assembly of 5 frame type plug-in units</p>	<p>1 piece (SPQ 5)¹⁾</p>	<p>1 piece (SPQ 5)¹⁾</p>	<p>Temperature range -40... +70 °C</p> <p>PU 10 pieces PU 100 pieces</p>	<p>Temperature range -200... +160 °C</p> <p>PU 10 pieces PU 100 pieces</p>	<p>1 piece (SPQ 5)¹⁾</p>	<p>1 piece (SPQ 5)¹⁾</p>	
3 U Height								
PCB depth 160 mm								
5	34812-105	34813-105					20808-003	20808-080
6	34812-106	34813-106					20808-060	20808-081
7	34812-107	34813-107					20808-061	20808-082
10	34812-110	34813-110	21101-853	21101-854	21102-105	21102-106	20808-004	20808-085
12	34812-112	34813-112					20808-064	20808-086
14	34812-114	34813-114					20808-065	20808-087
PCB depth 220 mm								
5	34812-105	34813-105					20808-003	20808-080
6	34812-106	34813-106					20808-060	20808-081
7	34812-107	34813-107					20808-061	20808-082
10	34812-110	34813-110	21101-853	21101-854	21102-105	21102-106	20808-004	20808-085
12	34812-112	34813-112					20808-064	20808-086
14	34812-114	34813-114					20808-065	20808-087
6 U Height								
PCB depth 160 mm								
5	34812-605	34813-605					20808-003	20808-080
6	34812-606	34813-606					20808-060	20808-081
7	34812-607	34813-607					20808-061	20808-082
10	34812-610	34813-610	21101-855	21101-856	21102-107	21102-108	20808-004	20808-085
12	34812-612	34813-612					20808-064	20808-086
14	34812-614	34813-614					20808-065	20808-087
PCB depth 220 mm								
5	34812-605	34813-605					20808-003	20808-080
6	34812-606	34813-606					20808-060	20808-081
7	34812-607	34813-607					20808-061	20808-082
10	34812-610	34813-610	21101-855	21101-856	21102-107	21102-108	20808-004	20808-085
12	34812-612	34813-612					20808-064	20808-086
14	34812-614	34813-614					20808-065	20808-087
Dimensions see page	7.79	7.79					7.89	7.89

1) SPQ (standard pack quantity): Order number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ) Please order at least the SPQ quantity or a multiple thereof
Order number includes one packaging unit (PU); delivery is exclusively made in PU





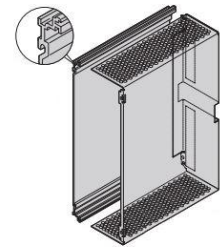


Screw Driver, Torx 8, **64560-026**
Assembly Tool, Torx 8, **24812-650**

Frame type plug-in units PRO ServicePLUS

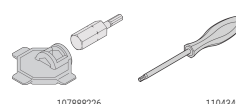
SCHROFF

INDIVIDUAL COMPONENTS

SIDE PANEL AND HOODS

	Side panel profile left	Hood with Perforation	Hood without Perforation	Assembly Kit
  <p>130961413</p> <p>130961515</p> <p>Supplied quantity for assembly of 5 frame type plug-in units</p>	 <p>137452920</p> <p>Al extrusion, colourless passivated, with groove for one PCB;</p>	 <p>136537976</p> <p>Hood, bottom and top perforated, Aluminium 1mm, with cut-out on the rear side for one DIN-connector, EN 60603-2 (DIN 41612)</p>	 <p>136536460</p> <p>Hood, solid version, Aluminium 1mm, with cut-out on the rear side for one DIN-connector EN 60603-2 (DIN 41612)</p>	<p>For mounting of five 3 U or 6 U frame type plug-in units from ServicePLUS components: Front panel, side panel, hood, rear panel, and handle plus assembly instruction</p>
	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	
3 U Height				
HP	PCB depth 160 mm			
5	34812-100	34812-005	34812-055	24812-850
6	34812-100	34812-006	34812-056	24812-850
7	34812-100	34812-007	34812-057	24812-850
10	34812-100	34812-010	34812-058	24812-850
12	34812-100	34812-012	34812-059	24812-850
14	34812-100	34812-014	34812-060	24812-850
	PCB depth 220 mm			
5	34813-100	34813-005	34813-055	24812-850
6	34813-100	34813-006	34813-056	24812-850
7	34813-100	34813-007	34813-057	24812-850
10	34813-100	34813-010	34813-058	24812-850
12	34813-100	34813-012	34813-059	24812-850
14	34813-100	34813-014	34813-060	24812-850
6 U Height				
HP	PCB depth 160 mm			
5	34812-600	34812-505	34812-555	24812-850
6	34812-600	34812-506	34812-556	24812-850
7	34812-600	34812-507	34812-557	24812-850
10	34812-600	34812-510	34812-558	24812-850
12	34812-600	34812-512	34812-559	24812-850
14	34812-600	34812-514	34812-560	24812-850
	PCB depth 220 mm			
5	34813-600	34813-505	34813-555	24812-850
6	34813-600	34813-506	34813-556	24812-850
7	34813-600	34813-507	34813-557	24812-850
10	34813-600	34813-510	34813-558	24812-850
12	34813-600	34813-512	34813-559	24812-850
14	34813-600	34813-514	34813-560	24812-850
Dimensions see page	7.88	7.89	7.89	

1) SPQ (standard pack quantity): Order number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ) Please order at least the SPQ quantity or a multiple thereof
Order number includes one packaging unit (PU); delivery is exclusively made in PU



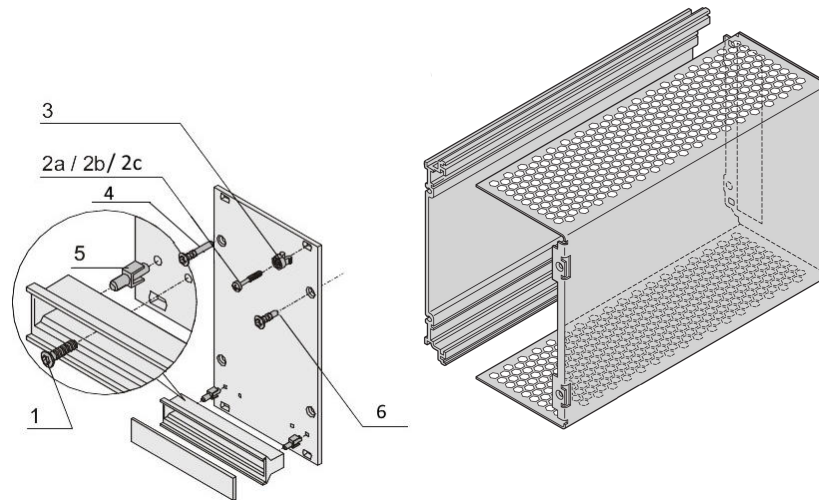
Screw Driver, Torx 8, **64560-026**
Assembly Tool, Torx 8, **24812-650**











Frame type plug-in units PRO ServicePLUS

SCHROFF

INDIVIDUAL COMPONENTS

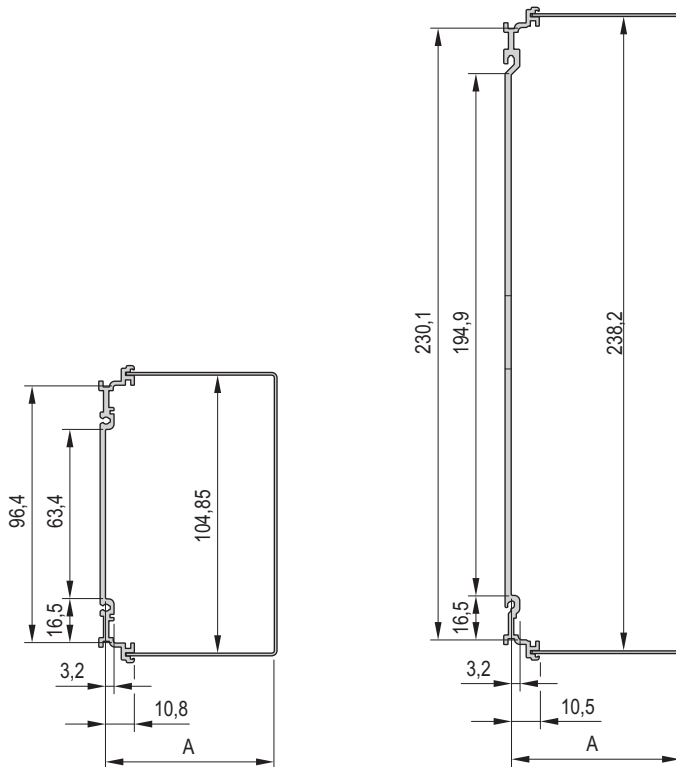
FIXING MATERIAL (100 PIECES)



Fixing parts	Item		Required quantity per plug-in unit	Description	Qty/PU	Part No.
Fixing parts for mounting the module in subrack or case						
Torx panhead screw, M2.5 x 10, St, zinc-plated, self-forming thread	1		2	Assembly of handle on front panel	100	24560-179
Collar screws pozidrive/slot (Phillips) M2.5 x 12.3, St, nickel-plated	2a		4	Mounting of front panel on horizontal rail	100	21102-026
Slotted Pozidrive collar screw M2.5 x 12.3, St, nickel-plated	2b		4	Mounting of front panel on horizontal rail	100	21101-101
Torx 8, collar screw M2.5 x 12.3, St, nickel-plated	2c		4	Mounting of front panel on horizontal rail	100	21101-782
Plastic sleeves for form hole 5.9 x 3.3, PA, UL 94 V-2, grey	3		4	Is needed to fix collar screws	100	21100-464
Fixing parts for mounting the module (Frame Type PIU)						
Torx raised countersunk panhead screw, T8 3 x 20, St, nickel-plated	4		4	Assembly of front panel and rear panel on extruded side panel/rear extrusion of side panel	100	24812-501
Fixing clip for trapeziform plastic handle PPE UL 94 V-0, black	5		2	Alignment aid for handle on front panel	100	21101-239
Torx-countersunk panhead screw, T8, 3 x 8, St, nickel-plated	6		2	Assembly of front panel and rear panel on the hood	100	21191-589
Torx-T8, Screw driver					1	64560-026
Torx T8, -Assembly tool					1	24812-650

• Other screws and sleeves page 7.107

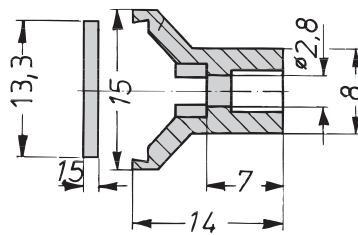
Frame type plug-in units PRO with hood

DIMENSIONS
CROSS-SECTION FRAME-TYPE PLUG-IN UNITS PRO WITH HOOD 3 U/6 U


04808080

04808082

Height U	Width HP	A mm
3	5	17.52
3	6	22.60
3	7	27.68
3	10	42.92
3	12	53.08
3	14	63.24
<hr/>		
6	5	17.22
6	6	22.30
6	7	27.38
6	10	42.62
6	12	57.78
6	14	62.94

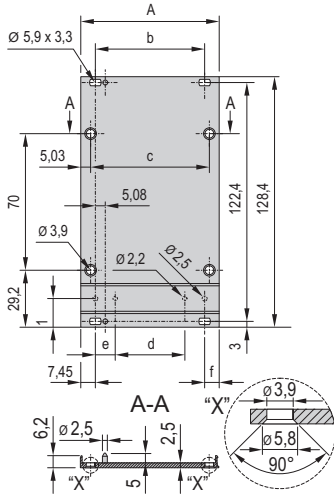
DIMENSIONS
FRONT HANDLE


a4-328e

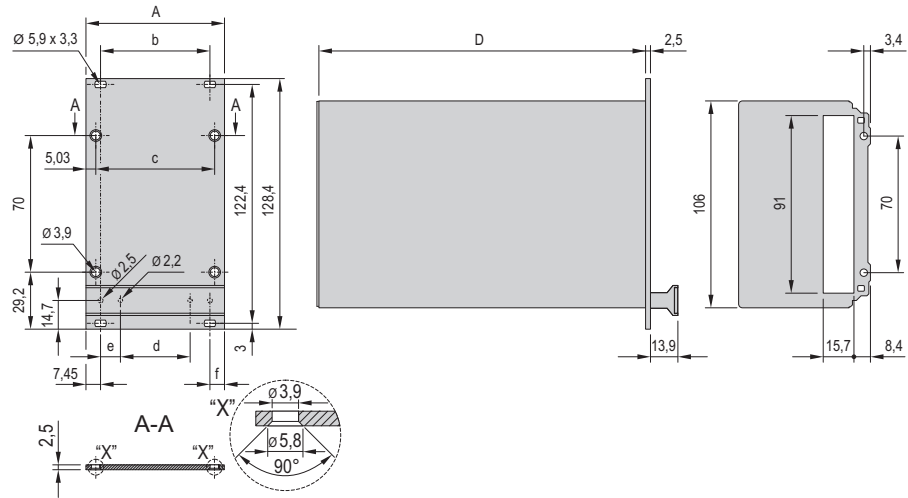
DIMENSIONS TABLE

Width HP	Width mm
5	24.0
6	29.0
7	34.1
10	49.4
12	59.6
14	69.7

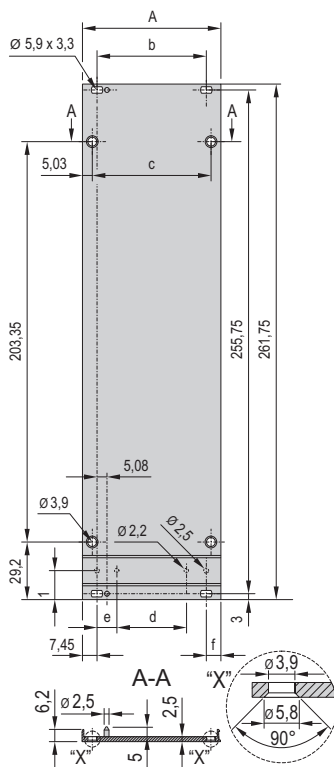
Frame type plug-in units PRO with hood

DIMENSIONS
3/6 U FRAME-TYPE PLUG-IN UNITS PRO WITH HOOD
3 U Front panel shieldable
3 U Front panel unshielded


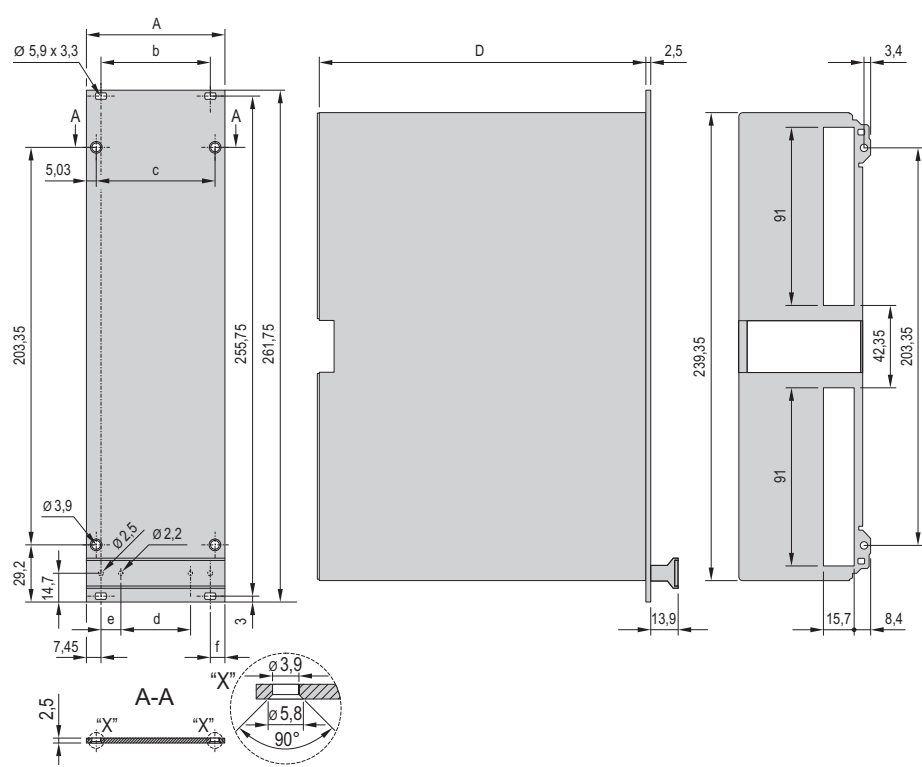
04808052



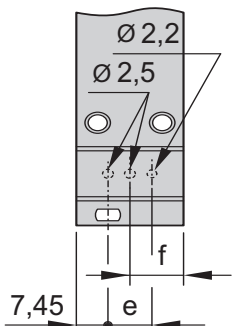
04808111

6 U Front panel shieldable
6 U Front panel unshielded


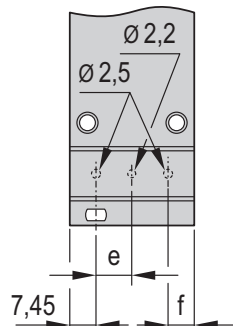
04809053



04808112

Front panel
5 HP
6 + 7 HP


04809067



04809066

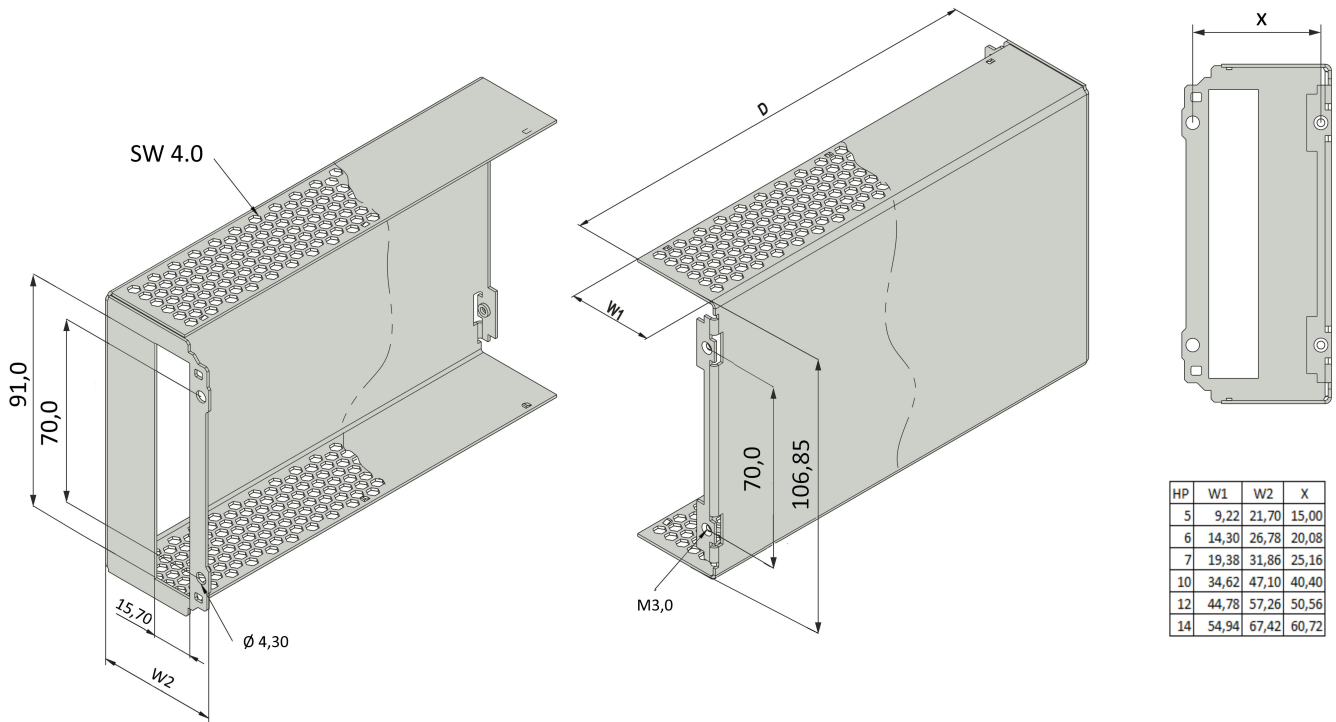
Dimensions table

5	25.06	-	15.00	-	10.16	12.53	167 mm/ 227 mm
6	30.14	-	20.08	-	10.16	7.45	
7	35.22	-	25.16	-	10.16	7.45	
10	50.46	35.56	40.40	15.24	10.16	7.45	
12	60.62	45.72	50.56	25.40	10.16	7.45	
14	70.78	55.88	60.72	35.56	10.16	7.45	

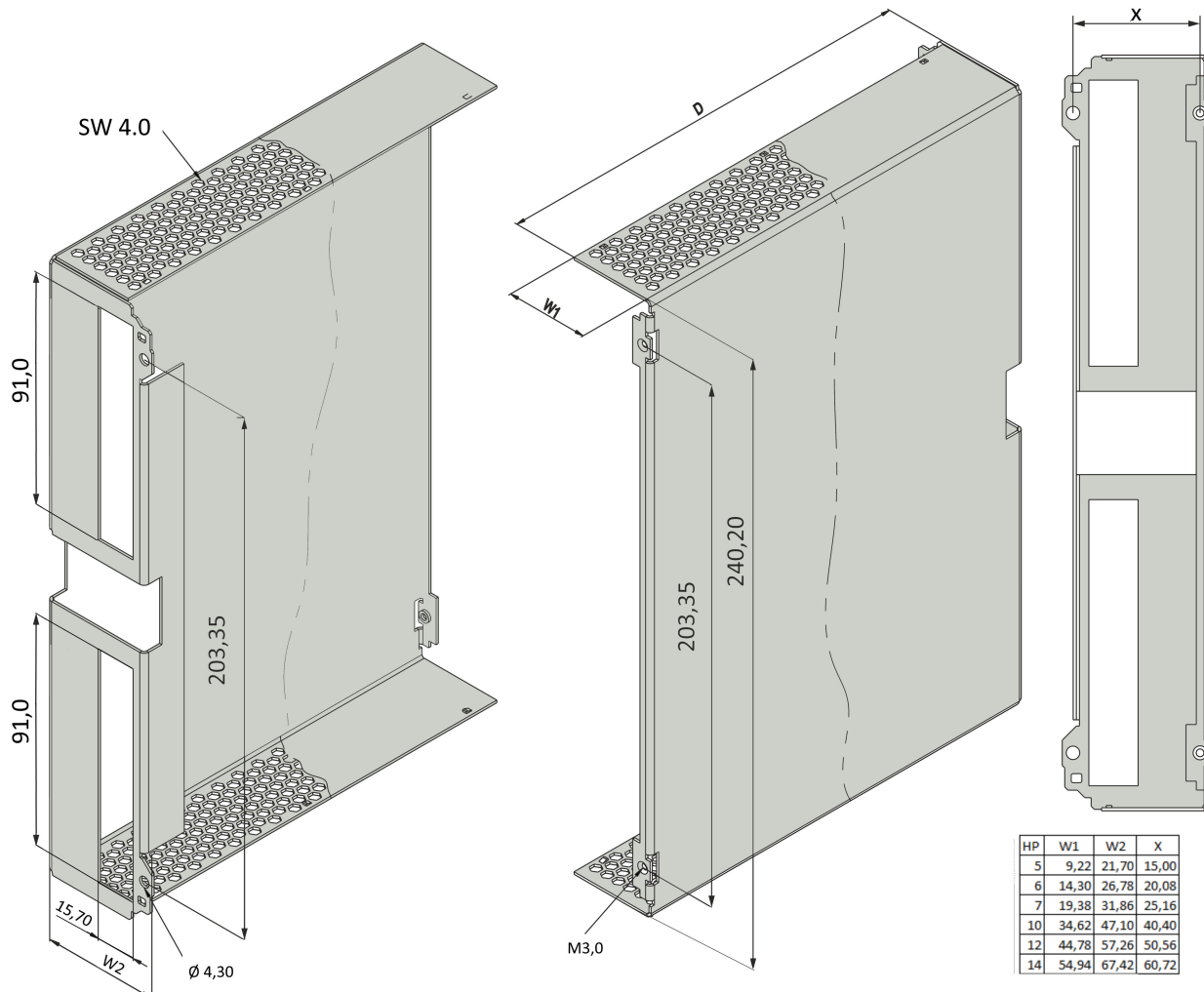
Frame type plug-in units PRO with hood

DIMENSIONS
3/6 U HOOD WITH / WITHOUT PERFORATION

D = 168 / 228



134909378



134909379

HF frame type plug-in units

HF FRAME TYPE PLUG-IN UNITS, 3 U KITS, FRONT PANEL SHIELDED



108230748

- With high shielding from high-frequency radiation
- To accept boards in HP grid increments
- Solid body on all sides, with cooling fins

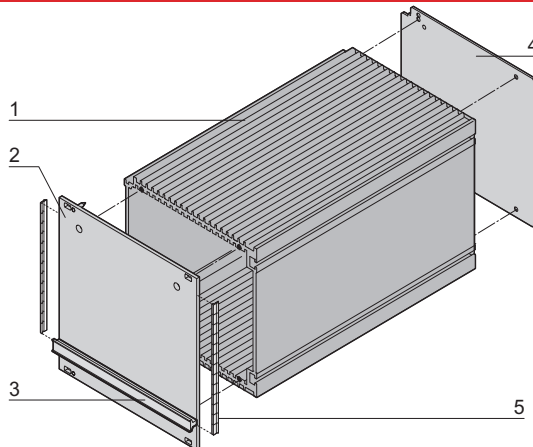
DELIVERY COMPRISES (kit)

Item	Qty	Description
1	1	Body tube, Al extrusion, black anodised, cut edges plain
2	1	Front panel, Al, 2.5 mm, with lateral grooves for EMC gasket (stainless steel), alignment pin pressed-in, front anodised, rear iridescent green chromated
3	1	Handle, grey, (RAL 7035), PC, UL 94 V0, EN 45545-2, R22-R24, HL3 identification plate, Al, anodised, cut edges plain
4	1	Rear panel, Al, 1.5 mm, etched without cut-outs
5	2	EMC gasket (steel, stainless)
6	1	Assembly kit

TECHNICAL DATA

HF plug-in unit	Thermal resistance K/W	
	Depth = 167 mm	Depth = 227 mm
7	1.68	1.51
10	1.62	1.46
12	1.56	1.40
14	1.50	1.35
21	1.06	0.95
28	0.94	0.85

ORDER INFORMATION



04802050

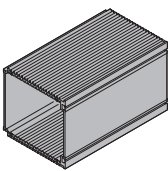
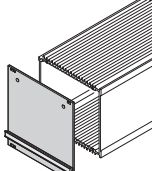
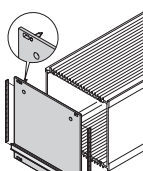
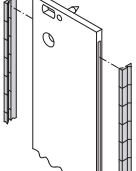

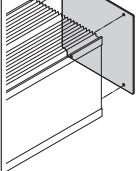
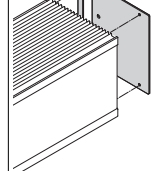
Height U	Width HP	Depth = 167 mm Part no.	Depth = 227 mm Part no.
3	7	20809-529	20809-536
3	10	20809-530	20809-537
3	12	20809-531	20809-538
3	14	20809-532	20809-539
3	21	20809-533	20809-540
3	28	20809-534	20809-541

NOTE

- Dimension drawings see from page 7.96

HF frame type plug-in units ServicePLUS

INDIVIDUAL COMPONENTS
HF BODY TUBE, FRONT PANELS WITH HANDLE, REAR PANELS
ORDER INFORMATION

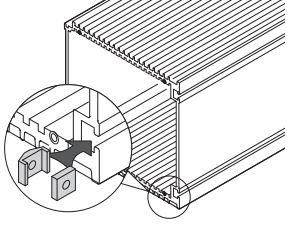
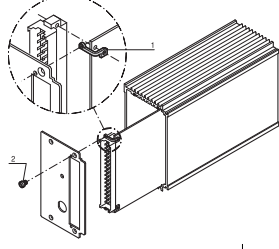
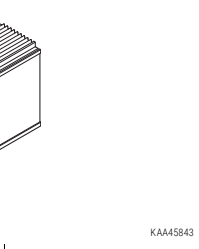
		HF body tube	Shieldable front panel, with handle	Shieldable front panel, with handle for EMC gasket (stainless steel)	EMC gasket (stainless steel)	Assembly tool	Rear panel without cut-out	Rear panel with cut-out
		 KAA45832	 KAA45831	 04807074	 bga45760	 135542978	 04807075	 KAA45834
		Al extrusion, black anodised, cut edges plain	Al, 2.5 mm, front anodised, rear iridescent green chromated; static handle, grey, PPE, UL 94 V-1	Al, 2.5 mm, front anodised, rear iridescent green chromated, with lateral grooves for stainless steel EMC gasket (please order separately), alignment pin pressed-in, trapeziform handle, grey, PPE, UL 94 V-1	inserted laterally into the grooves of the front panel	to mount the stainless steel EMC gasket	Al, 1.5 mm, etched	Al, 2.5 mm, etched, cut-out for connector types EN 60603 (DIN 41612); 7 HP: B, C, D, R; 10 - 28 HP: B, C, D, R, F, H, MF, MH
Height U	Width HP	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾	PU 100 pieces	1 piece	1 piece (SPQ 5) ¹⁾	1 piece (SPQ 5) ¹⁾
PCB depth 160 mm								
3	7	30809-667	20838-001	20838-093	21101-705	24560-270	30809-635	30809-641
	10	30809-677	20838-002	20838-094			30809-636	30809-642
	12	30809-675	20838-003	20838-095			30809-637	30809-643
	14	30809-673	20838-004	20838-096			30809-638	30809-644
	21	30809-671	20838-005	20838-097			30809-639	30809-645
	28	30809-669	20838-006	20838-098			30809-640	30809-646
PCB depth 220 mm								
3	7	30809-668	20838-001	20838-093	21101-705	24560-270	30809-635	30809-641
	10	30809-678	20838-002	20838-094			30809-636	30809-642
	12	30809-676	20838-003	20838-095			30809-637	30809-643
	14	30809-674	20838-004	20838-096			30809-638	30809-644
	21	30809-672	20838-005	20838-097			30809-639	30809-645
	28	30809-670	20838-006	20838-098			30809-640	30809-646
Dimensions see page		7.96	7.97				7.96	

1) SPQ (standard pack quantity): Part number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ); please order at least the SPQ quantity or a multiple

Part no. includes one packing unit (PU); delivery is exclusively made in PU

HF frame type plug-in units

INDIVIDUAL COMPONENTS
SLIDE NUTS, FIXING FOR PCBs, MOUNTING KIT
ORDER INFORMATION

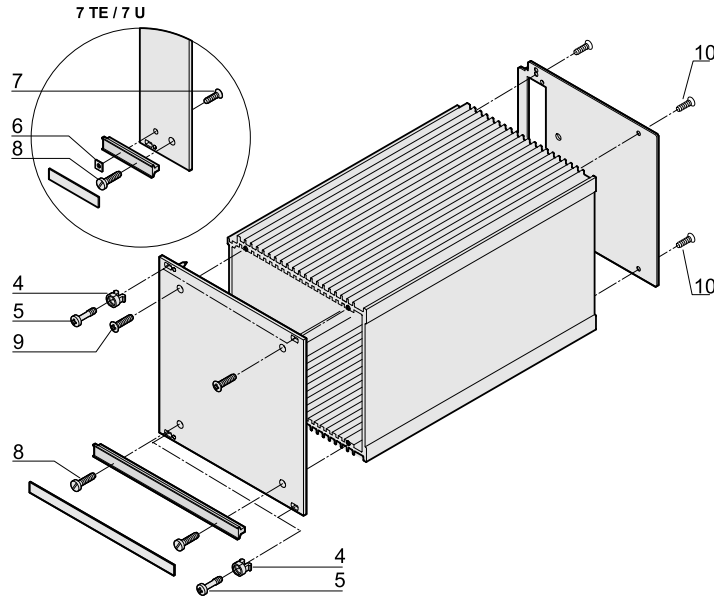
		Slide nut		Fixing for PCBs		Complete assembly kit	Fixing material for one HF frame type plug-in unit
		M 2.5	M 3	Individual components top	bottom		
		 <p>width across flats (WAF) 7, for insertion into HF body tube, top and bottom, provides lateral fixing (on right)</p>		 <p>bracket (stainless steel), 1.5 mm; please order retention screws separately</p>		 <p>bracket top and bottom (stainless steel), 1.5 mm; incl. two cheesehead screws M2.5 x 4</p>	for complete assembly of a 3 U HF frame type plug-in unit: front panel, rear panel and handle, description see page 7.92
Height U	Width HP	PU 100 pieces	PU 100 pieces	1 piece (SPQ 10) ¹⁾	1 piece (SPQ 10) ¹⁾	PU 1 kit	PU 1 kit
3	7 10 12 14 21 28	21100-112	21100-289	30809-701	30809-700	21101-937	21100-105
Accessories							
Cheesehead screw M2.5 x 4, St, nickel-plated, PU 100 pieces		-	-	21100-431	21100-431	-	-

1) SPQ (standard pack quantity): Part number includes 1 piece, but delivery is exclusively made in standard pack quantity (SPQ);









please order at least the SPQ quantity or a multiple

Part no. includes one packing unit (PU); delivery is exclusively made in PU

HF frame type plug-in units

INDIVIDUAL COMPONENTS
FIXING MATERIAL (100 PIECES)
ORDER INFORMATION


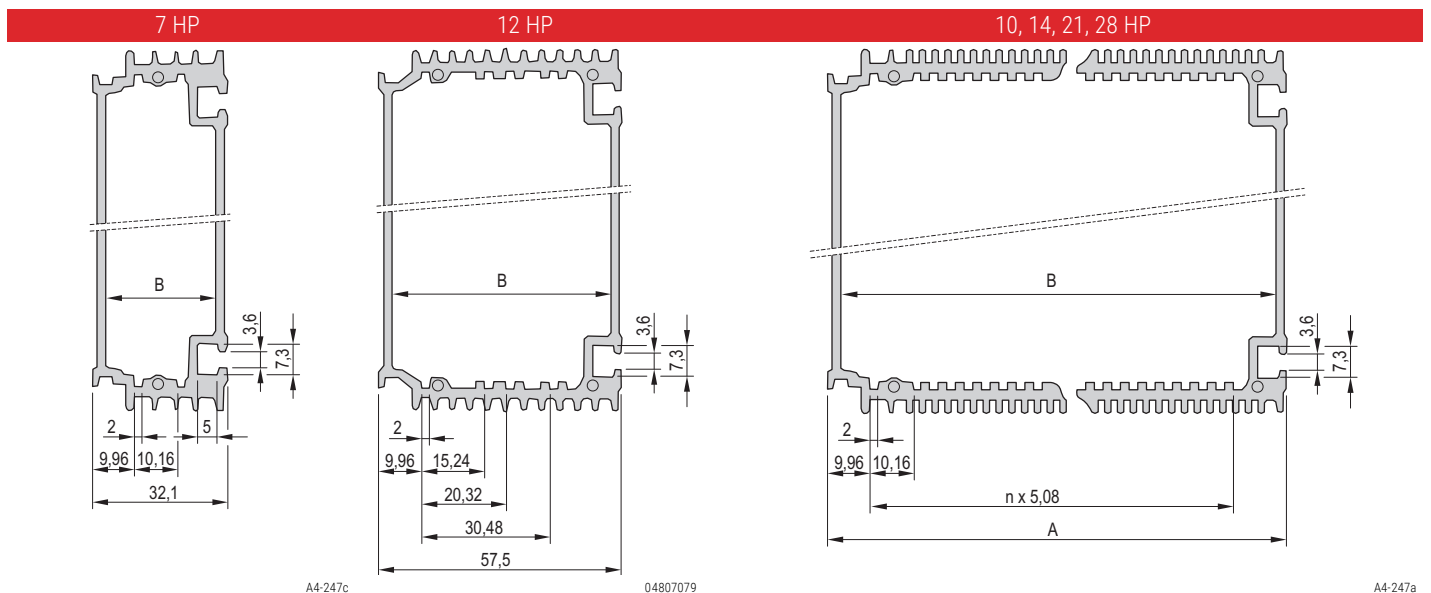
04802054

Description	Item		Required quantity per plug-in unit	Description	Qty/PU	Part no.
Fixing parts for mounting the module in subrack or case						
Plastic sleeve for form hole 5.9 x 3.3, PA, UL 94 V-2, grey	4		2 at 7 HP	Front panel is fitted to horizontal rail with threaded insert pushed in to front	100	21100-464
			4 at > 7 HP			
Collar screws pozidrive/slot (Philips) M2.5 x 12.3, St, nickel-plated	5		2 at 7 HP	Mounting of front panel on horizontal rail with threaded insert pushed in to front	100	21102-026
			4 at > 7 HP			
Pozidrive/slotted collar screw M2.5 x 12.3, St, nickel-plated	5		2 at 7 HP	Front panel is fitted to horizontal rail with threaded insert pushed in to rear in the standard position	100	21101-101
			4 at > 7 HP			
Fixing parts for mounting the module						
Square nut DIN 562, M2.5, St, nickel-plated	6		1 at 7 HP	To mount handle on front panel	100	21100-359
Pozidrive countersunk screw M2.5 x 12, St, nickel-plated	7		1 at 7 HP	To mount handle on front panel	100	21100-507
Slotted cheesehead screw M2.5 x 16, St, nickel-plated	8		1 at 7 HP	To mount handle and front panel on HF body tube	100	21100-150
			2 at > 7 HP			
Raised Pozidrive countersunk panhead screw M2.5 x 8, St, nickel-plated	9		2	To mount front panel on HF body tube	100	21100-429
Pozidrive countersunk screw M2.5 x 6, St, nickel-plated	10		4	To mount rear panel on HF body tube	100	21100-515

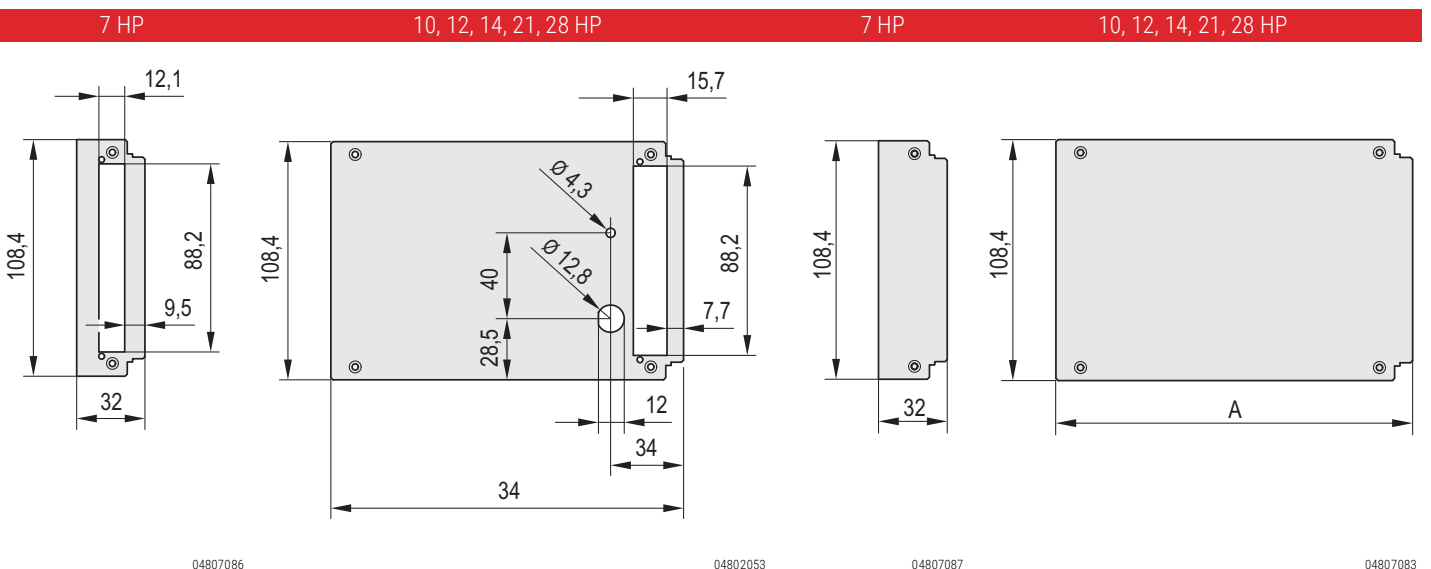
NOTE

- Further collar screws and sleeves see page 7.107

HF frame type plug-in units

DIMENSIONS
HF BODY TUBE


Dimensions table						
Dimension	7 HP	10 HP	12 HP	14 HP	21 HP	28 HP
mm						
n	-	3 x 5.08	-	7 x 5.08	14 x 5.08	21 x 5.08
A	-	47.34	-	67.66	103.22	138.78
B	26.34	41.58	51.74	61.90	97.46	133.02

DIMENSIONS
REAR PANEL WITH/WITHOUT CUT-OUT FOR CONNECTOR


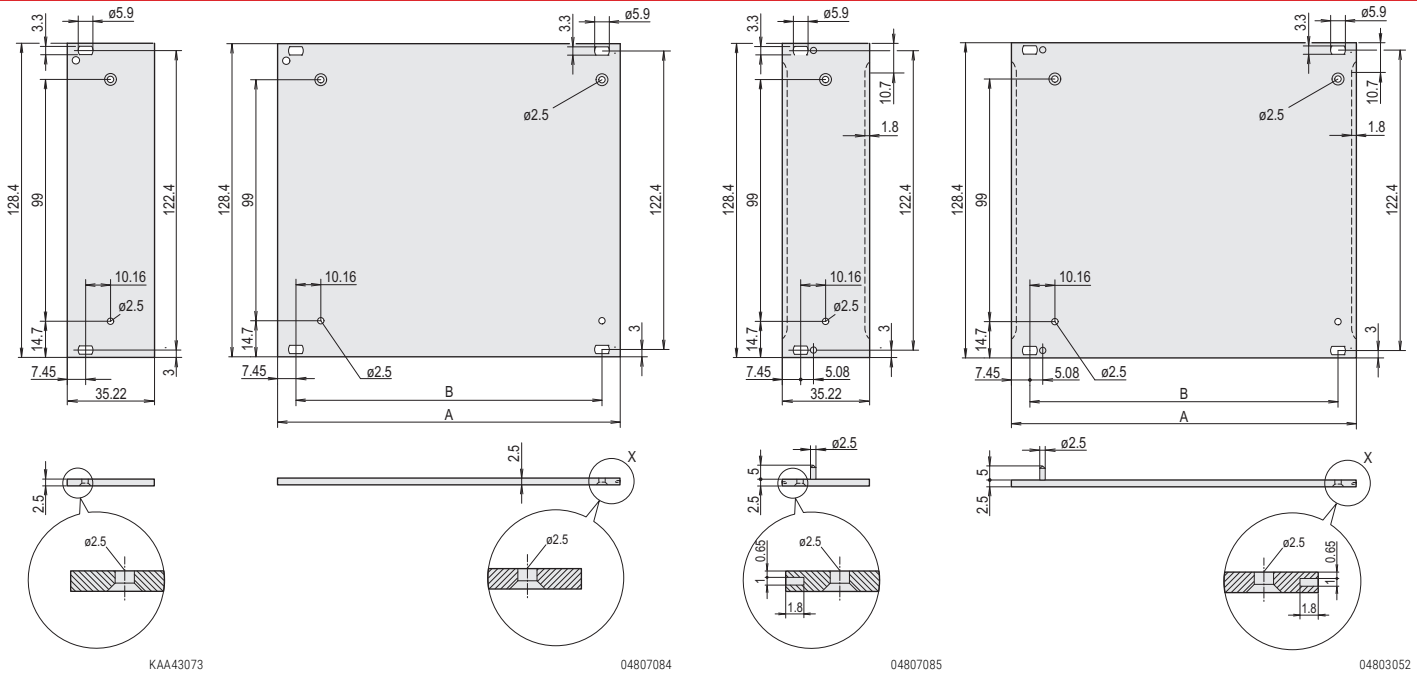
Dimensions table	
Width	A
mm	
7 HP	32.00
10 HP	47.24
12 HP	57.40
14 HP	67.40
21 HP	103.12
28 HP	136.68

HF frame type plug-in units

DIMENSIONS

FRONT PANELS

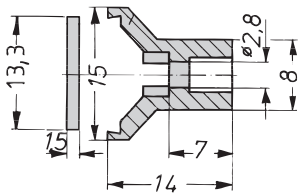
Unshielded 7 HP	10, 12, 14, 21, 28 HP	Shieldable, slotted for EMC stainless steel gasket 7 HP	10, 12, 14, 21, 28 HP
--------------------	-----------------------	------------------------------------------------------------	-----------------------



Dimensions table		
Width	A	w
	mm	mm
7 HP	32.22	-
10 HP	50.46	35.56
12 HP	60.62	45.72
14 HP	70.78	55.88
21 HP	106.34	91.44
28 HP	141.90	127.00

DIMENSIONS

FRONT HANDLE

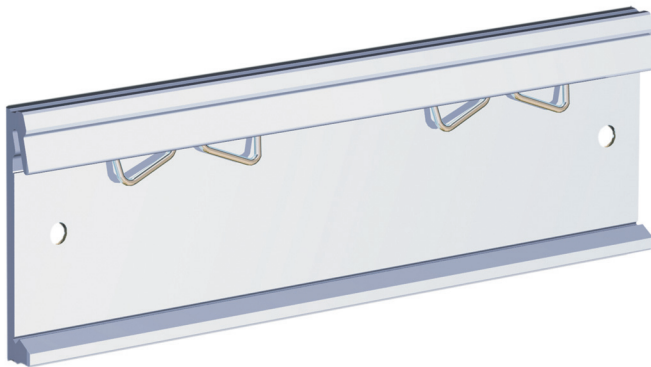


A4-328e

Dimensions table	
Width	Width
HP	mm
10 HP	49.4
12 HP	59.6
14 HP	69.7
21 HP	105.2
28 HP	140.8

HF frame type plug-in units

ADAPTOR FOR HORIZONTAL RAIL MOUNTING



- For fitting of e.g. subracks, wall mounted cases, frame type plug-in units or PSUs on a horizontal rail with lip
- Adaptor is bolted to the desired product and can then be clipped onto the lipped horizontal rail (DIN 43880)

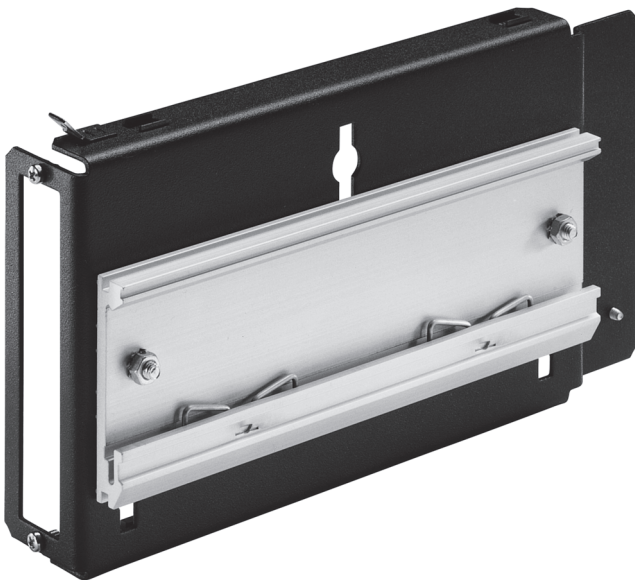
DELIVERY COMPRISES

Item	Qty	Description
1	1	Adaptor, Al extrusion, length 160 mm
1	1	Fixing material

ORDER INFORMATION

Description	Part no.
Adaptor for horizontal rail mounting	11000-002

04812021



Example: horizontal rail adaptor with lip for 19" PSU

11395007

North America

Warwick, RI, USA

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San Diego, CA, USA

Tel +1.858.740.2400

Europe, Middle East & India

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