



**CONNECT AND PROTECT**

# Frame Type Plug-in Units

  
nvent

**SCHROFF**

# Frame type plug-in units – Kits

## OVERVIEW

### MAIN KATALOG

- Cabinets . . . . . 1
- Wall mounted cases . . . . . 2
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04807002

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



04808008

#### 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/without cooling fins
- For one or several PCBs or one or several connectors
- Various possibilities for combining the individual components



04808009

#### 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



04892005

#### 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

#### 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)

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Introduction:  
Product features,  
product  
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Frame type plug-in units  
PRO

Frame type  
plug-in units PRO,  
shielded/  
unshielded ..... 7.68

Frame-type  
plug-in units PRO  
with hood,  
unshielded ..... 7.85

HF plug-in units

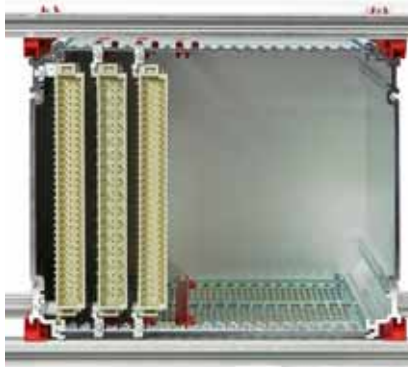
Kits 3 U ..... 7.89

ServicePLUS  
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Accessories for plug-in units  
see page ..... 7.52

# Frame type plug-in units

## THE NEW GENERATION



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

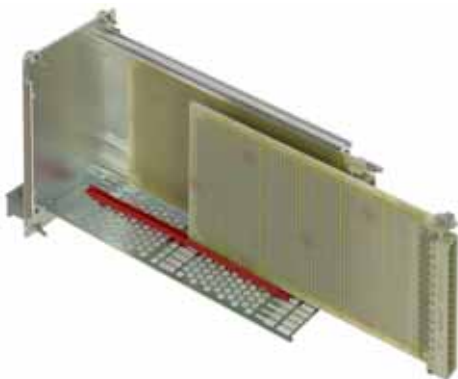


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The frame type plug-in units conform to IEC 60297-3-101. They serve to house standardized PCBs and bulky components. Because of the standardized assembly dimensions the frame type plug-in units can be mounted on guide rails, to be pushed into the subrack, 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, perforated, perforated for guide rail mounting)

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)



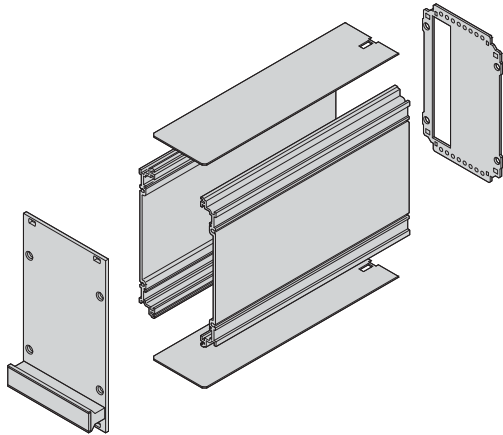
Sliding cover plates

04808011 04808016

# Frame type plug-in units

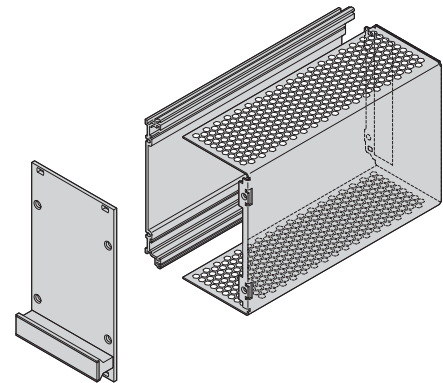
## COMPARISON: FRAME-TYPE PLUG-IN UNITS PRO/FRAME-TYPE PLUG-IN UNITS PRO WITH HOOD

Frame-type plug-in units PRO



04808125

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)

# Frame type plug-in units PRO

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



Illustration shows 12 HP width, side panel depth 167 mm

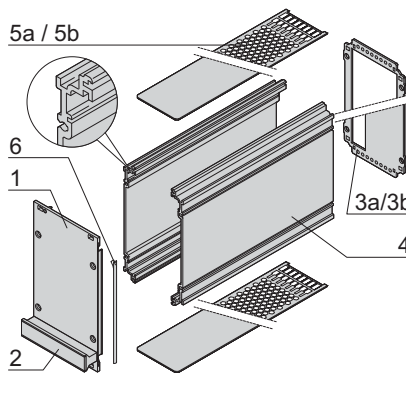
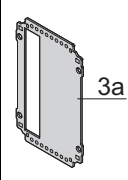
04811007

- 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, PPE, UL 94 V-1
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

### 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
		U	HP	Part no.	Part no.	Part no.	Part no.
		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
		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

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.74

# Frame type plug-in units PRO

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



Illustration shows 12 HP width, side panel depth 167 mm

04811008

- 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, PPE, UL 94 V-1
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

### 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	
		U	HP	Part no.	Part no.	Part no.	Part no.	
		6	8	<b>24813-908</b>	<b>24813-958</b>	<b>24813-708</b>	<b>24813-758</b>	
		6	10	<b>24813-910</b>	<b>24813-960</b>	<b>24813-710</b>	<b>24813-760</b>	
		6	12	<b>24813-912</b>	<b>24813-962</b>	<b>24813-712</b>	<b>24813-762</b>	
		6	14	<b>24813-914</b>	<b>24813-964</b>	<b>24813-714</b>	<b>24813-764</b>	
		6	21	<b>24813-921</b>	<b>24813-971</b>	<b>24813-721</b>	<b>24813-771</b>	
		6	28	<b>24813-928</b>	<b>24813-978</b>	<b>24813-728</b>	<b>24813-778</b>	
		6	42	<b>24813-942</b>	<b>24813-992</b>	<b>24813-742</b>	<b>24813-792</b>	
			6	8	–	–	<b>24813-808</b>	<b>24813-858</b>
			6	10	–	–	<b>24813-810</b>	<b>24813-860</b>
			6	12	–	–	<b>24813-812</b>	<b>24813-862</b>
			6	14	–	–	<b>24813-814</b>	<b>24813-864</b>
			6	21	–	–	<b>24813-821</b>	<b>24813-871</b>
6	28		–	–	<b>24813-828</b>	<b>24813-878</b>		
6	42	–	–	<b>24813-842</b>	<b>24813-892</b>			

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.74

# Frame type plug-in units PRO

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



Illustration shows 12 HP width, side panel depth 167 mm

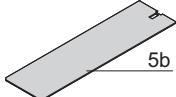
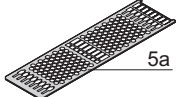
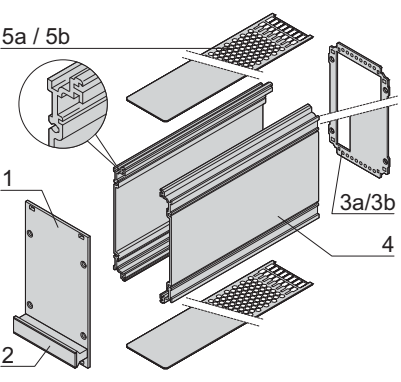
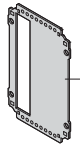
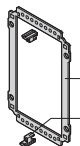
04811009

- 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, PPE, UL 94 V-1
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

### 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.
							
		U	HP				
	 3a	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
	 3b 3c	3	42	24812-442	24812-492	24812-242	24812-292
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		3	12	–	–	24812-312	24812-362
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		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 7.74



# Frame type plug-in units PRO

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



Illustration shows 12 HP width, side panel depth 167 mm

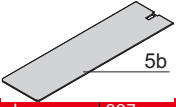

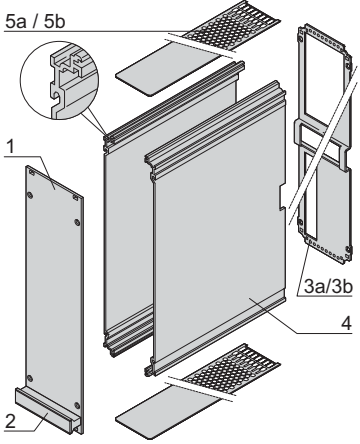
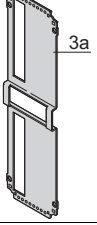
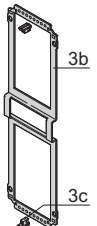
04811010

- 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, PPE, UL 94 V-1
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

### 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
		U	HP	Part no.	Part no.	Part no.	Part no.
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		6	10	<b>24812-910</b>	<b>24812-960</b>	<b>24812-710</b>	<b>24812-760</b>
		6	12	<b>24812-912</b>	<b>24812-962</b>	<b>24812-712</b>	<b>24812-762</b>
		6	14	<b>24812-914</b>	<b>24812-964</b>	<b>24812-714</b>	<b>24812-764</b>
		6	21	<b>24812-921</b>	<b>24812-971</b>	<b>24812-721</b>	<b>24812-771</b>
		6	28	<b>24812-928</b>	<b>24812-978</b>	<b>24812-728</b>	<b>24812-778</b>
		6	42	<b>24812-942</b>	<b>24812-992</b>	<b>24812-742</b>	<b>24812-792</b>
		6	8	–	–	<b>24812-808</b>	<b>24812-858</b>
		6	10	–	–	<b>24812-810</b>	<b>24812-860</b>
		6	12	–	–	<b>24812-812</b>	<b>24812-862</b>
		6	14	–	–	<b>24812-814</b>	<b>24812-864</b>
		6	21	–	–	<b>24812-821</b>	<b>24812-871</b>
		6	28	–	–	<b>24812-828</b>	<b>24812-878</b>
		6	42	–	–	<b>24812-842</b>	<b>24812-892</b>

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.74

# Frame type plug-in units PRO

## FRAME TYPE PLUG-IN UNIT PRO KITS, SIDE PANEL WITH COOLING FINS, FRONT PANEL SHIELDED



Illustration shows 12 HP width, side panel depth 167 mm

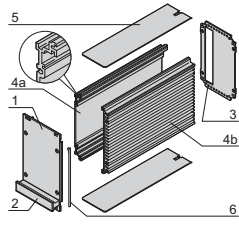
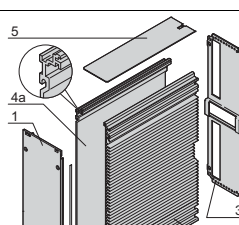
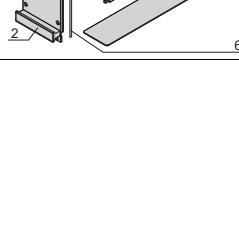

04812018

- Right side panel with cooling fins to improve heat dissipation; left side panel extrusion with groove to insert a PCB (board position in accordance with standard in left side panel only)
- 2 board depths: 160 mm and 220 mm
- Cover plate without perforation
- With cut-out for one connector in accordance with EN 60603-2, DIN 41612
- With 10 W installed heat dissipation loss the internal temperature falls by approx. 5°C

### DELIVERY COMPRISES (Kit)

Item	Qty	Description
1	1	Front panel, U profile anodised, rear conductive, alignment pin pressed-in
2	1	Handle, grey, PPE, UL 94 V-1
3	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for one connector, incl. PCB fixing (slot)
4a	2	Side panel, left, Al extrusion, clear passivated, with groove for one PCB
4b	2	Side panel, right, Al extrusion, clear passivated, with cooling fins
5	2	Cover plate, St, zinc-plated, 1.0 mm
6	1	EMC sealing (textile)
7	1	Assembly kit

### ORDER INFORMATION

	Height U	Width HP	Depth = 167 mm Part no.	Depth = 227 mm Part no.
 <p>04812058</p>	3	14	24813-164	–
 <p>04812058</p>	3	21	24813-171	–
 <p>04812060</p>	6	14	24813-664	24813-614
 <p>04812060</p>	6	21	24813-671	24813-621

### NOTE

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.74

# Frame type plug-in units PRO

## FRAME TYPE PLUG-IN UNITS PRO KITS, SIDE PANEL WITH COOLING FINS, FRONT PANEL UNSHIELDED



- Right side panel with cooling fins to improve heat dissipation; left side panel extrusion with groove for insertion of a PCB (board position in accordance with standard in left side panel only)
- 2 board depths: 160 mm and 220 mm
- Cover plate without perforation
- With cut-out for one connector in accordance with EN 60603-2, DIN 41612
- With 10 W installed heat dissipation loss the internal temperature falls by approx. 5°C

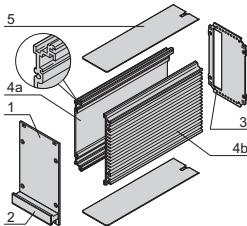
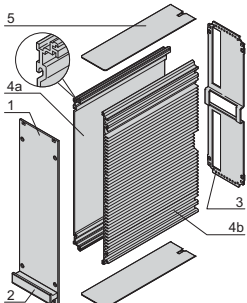
### DELIVERY COMPRISES (Kit)

Item	Qty	Description
1	1	Front panel, Al, 2.5 mm, anodised, cut edges plain
2	1	Handle, grey, PPE, UL 94 V--1
3	1	Rear panel, St, zinc-plated, 1.5 mm, with cut-out for one connector, incl. PCB fixing (slot 1)
4a	2	Side panel, left, Al extrusion, clear passivated, with groove for one PCB
4b	2	Side panel, right, Al extrusion, clear passivated, with cooling fins
5	2	Cover plate, St, zinc-plated, 1.0 mm
6	1	Assembly kit

Illustration shows 12 HP width, side panel depth 167 mm

04812008

### ORDER INFORMATION

	Height U	Width HP	Depth = 167 mm Part no.	Depth = 227 mm Part no.
	3	12	24812-162	–
	3	14	24812-164	–
	3	21	24812-171	–
	6	12	24812-662	24812-612
	6	14	24812-664	24812-614
	6	21	24812-671	24812-621

04812059

04812061

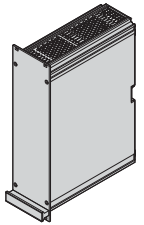
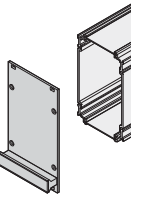
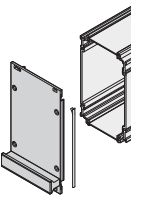
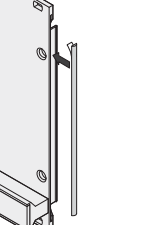
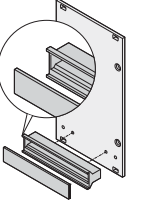
### NOTE

- Description of individual components, guide rails, dimension drawings, other combinations cover plates/rear panels etc. see from page 7.74

# Frame type plug-in units PRO ServicePLUS

## INDIVIDUAL COMPONENTS


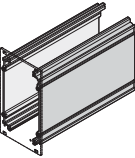
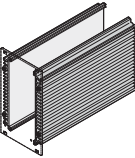
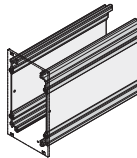
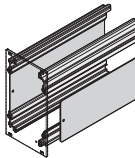
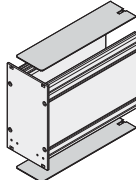
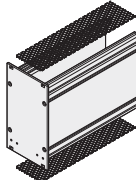
## FRONT PANELS, FRONT HANDLES

	Front panel		Shieldable front panel, U profile		Trapeziform handle, grey (without extraction function)	
	unshielded		Front panel	Textile EMC gasket	Grey	Black
 04808124  04808060  04808061  04808062  04808063	Al, 2.5 mm, front anodised, rear anodised, 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, sleeve: textile cladding with CuNi coating, UL 94 V-0, temperature range -40 ... 70 °C	handle: PPE, UL 94 V-1; 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) 7.77		
Supplied quantity for assembly of 5 frame type plug-in units	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>	PU 10 pieces	PU 100 pieces	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>
<b>3 U Height</b>						
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	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	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
<b>6 U Height</b>						
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	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	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	7.81	7.81			7.82	7.82

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

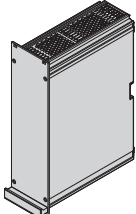
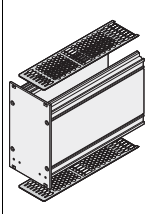

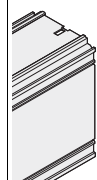
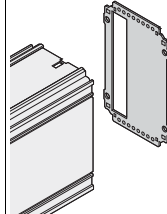
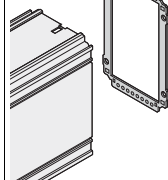
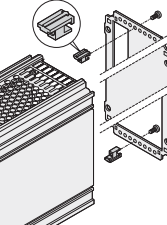
**INDIVIDUAL COMPONENTS**
**SIDE PANELS, COVER PLATES, GUIDE RAILS**

	Extruded side panel		Extruded side panel with cooling fins		Side panel, corner profile and side plate		Cover plate	
	Left	Right	Left	Right	Corner profile	Side plate	Without perforation	With perforation
 04808124   04808065   04811050   04808066   04808067   04808068   04808070	Al extrusion, colourless passivated, with groove for one PCB; 3 U symmetrical; 6 U asymmetrical, right and left side panel different)  Side panels with and without cooling fins can be combined	Al extrusion, colourless passivated, with groove for one PCB; 3 U symmetrical; 6 U asymmetrical  Side panels with and without cooling fins can be combined	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	<b>Supplied quantity for assembly of 5 frame type plug-in units</b>	
	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>
<b>3 U Height</b> PCB depth 160 mm								
8							34812-408	34812-958
10							34812-410	34812-960
12							34812-412	34812-962
14	<b>34812-100</b>	<b>34812-100</b>	<b>34812-200</b>	<b>34812-200</b>	<b>34812-102</b>	<b>34812-103</b>	<b>34812-414</b>	<b>34812-964</b>
21	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>					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	<b>34813-100</b>	<b>34813-100</b>	<b>34813-200</b>	<b>34813-200</b>	<b>34813-102</b>	<b>34813-103</b>	<b>34813-414</b>	<b>34813-964</b>
21	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>					34813-421	34813-971
28							34813-428	34813-978
42							34813-442	34813-992
<b>6 U Height</b> PCB depth 160 mm								
8							34812-408	34812-958
10							34812-410	34812-960
12							34812-412	34812-962
14	<b>34812-600</b>	<b>34812-601</b>	–	<b>34812-701</b>	<b>34812-102</b>	<b>34812-603</b>	<b>34812-414</b>	<b>34812-964</b>
21	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>					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	<b>34813-600</b>	<b>34813-601</b>	–	<b>34813-701</b>	<b>34813-102</b>	<b>34813-603</b>	<b>34813-414</b>	<b>34813-964</b>
21	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>					34813-421	34813-971
28							34813-428	34813-978
42							34813-442	34813-992
Dimensions see page	7.79	7.79	7.79	7.79	7.80	7.80	7.84	7.84

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

# Frame type plug-in units PRO ServicePLUS

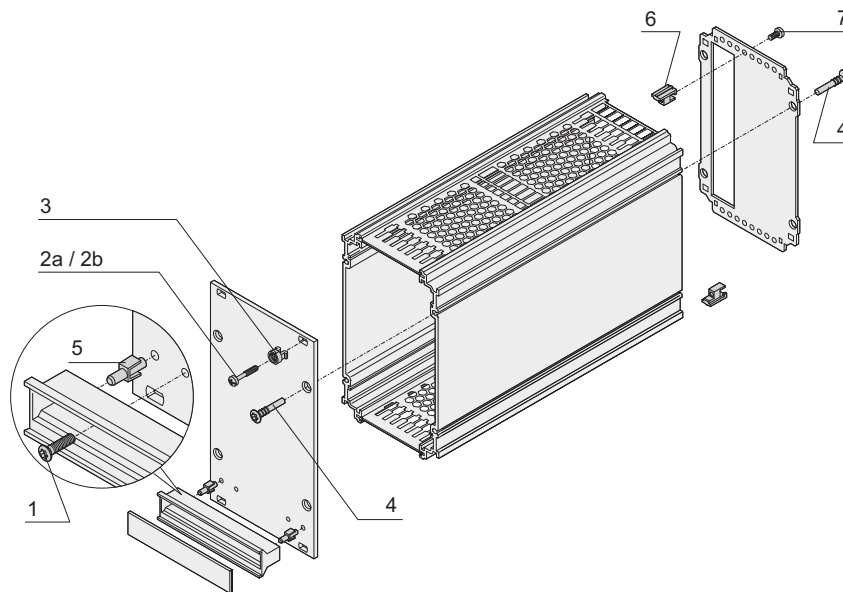
**INDIVIDUAL COMPONENTS**
**REAR PANELS, ASSEMBLY MATERIAL**

	With perforation for guide rails		Rear panel			Rear panel fastener	Assembly kit
	Cover plate	Guide rail	Without cut-out	Cut-out for one connector	Cut-out for multiple connectors	for connection of rear panel with cover plate	
 04808124  04808069  04808074  04808073  04808071  04808072  04808123	St, 1.0 mm, zinc-plated; air flow rate in perforated area approx. 60%; please order snap-in guide rails separately	PBT, UL 94 V-0, red, groove width 2 mm, PCB fixing required from slot 2, see page 7.78	St, 1.5 mm, zinc-plated	St, 1.5 mm, zinc-plated	St, 1.5 mm, zinc-plated, for EN 60603 (DIN 41612) connectors, types: B, C, D, F, H, Q, R, S	10 rear panel fasteners, Zn die-cast; 10 fixing screws; not suitable for cover plate with perforation	for mounting five 3 U or 6 U frame type plug-in units from ServicePLUS components: front panel, rear panel, side panel, cover plate and handle, description see page 7.77
	Supplied quantity for assembly of 5 frame type plug-in units	1 piece (SPQ 10) <sup>1)</sup>	PU 10 pieces	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>	PU 1 kit
<b>3 U Height</b>							
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		
<b>6 U Height</b>							
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	7.84	7.83	7.82	7.82	7.82		














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

**INDIVIDUAL COMPONENTS**
**FIXING MATERIAL (100 PIECES)**


04808085

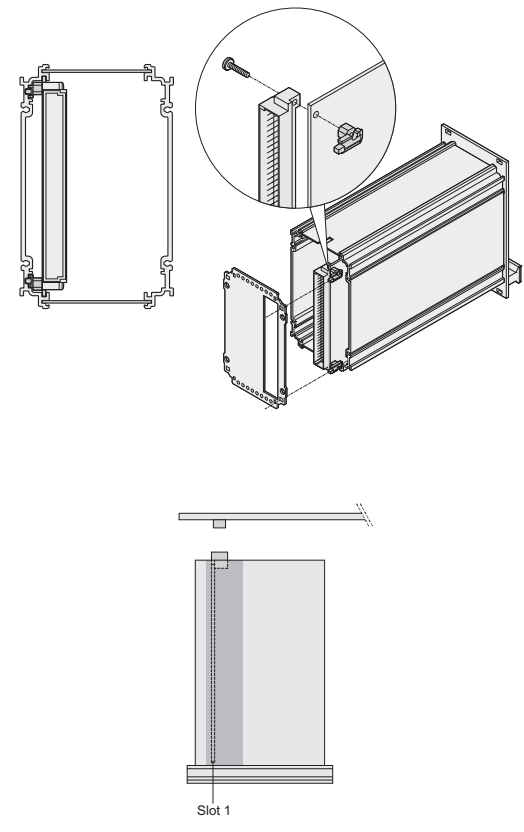
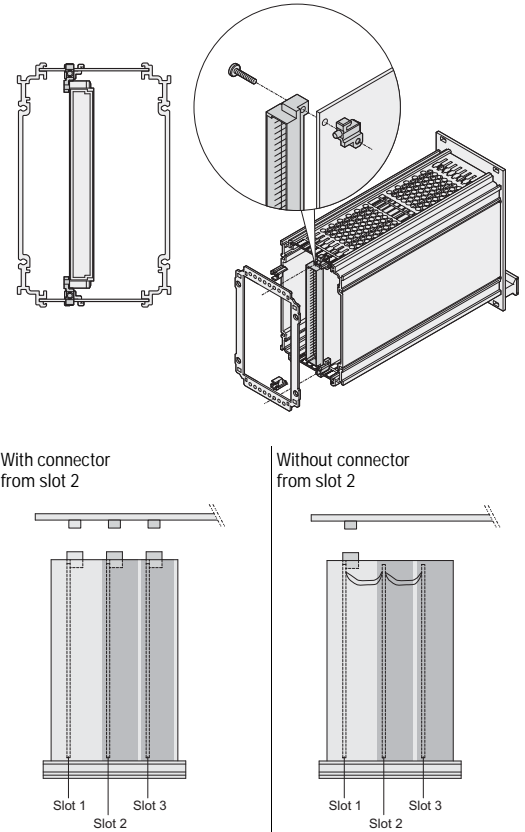

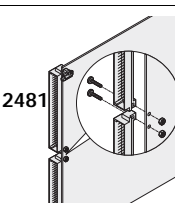
Fixing parts	Item		Required quantity per plug-in unit	Description	Qty/PU	Part no.
<b>Fixing parts for mounting the module in subrack or case</b>						
Torx panhead screw, M2.5 x 10, St, zinc-plated, self-forming thread	1		2	Assembly of handle on front panel	100	<b>24560-179</b>
Pozidrive/slotted collar screw M2.5 x 11, St, nickel-plated	2a		4 / 6*	 Mounting of front panel on horizontal rail with threaded insert pushed in to front	100	<b>21100-748</b>
Pozidrive/slotted collar screw M2.5 x 12.3, St, nickel-plated	2b		4 / 6*	 Front panel is fitted to horizontal rail with threaded insert pushed in to rear in the standard position	100	<b>21101-101</b>
Plastic sleeves for form hole 5.9 x 3.3, PA, UL 94 V-2, grey	3		4 / 6*	Is needed to fix collar screws	100	<b>21100-464</b>
<b>Fixing parts for mounting the module</b>						
Torx raised countersunk panhead screw 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	<b>24812-501</b>
Fixing clip for trapeziform plastic handle PPE UL 94 V 0, black	5		2	Alignment aid for handle on front panel	100	<b>21101-239</b>
Rear panel fastener Zn die-cast	6		2	To stabilise rear panel with wide frame-type plug-in units	100	<b>24812-402</b>
Torx panhead screw M2.5 x 10, St, nickel-plated	7		2	To fix rear panel fastener or board fixing	100	<b>24560-148</b>
Board support (slot 1) Zn die-cast			2	Board support (slot 1) see page 7.78	50 pairs	<b>24812-202</b>
Board support (from slot 2) Zn die-cast			2	Board support (from slot 2) see page 7.78	50 pairs	<b>24812-302</b>
Torx panhead screw M2.5 x 6, St, nickel-plated			2	Is needed for board fixing without connector see page 7.78	100	<b>24560-178</b>

\* on 42 HP EMC shielded frame type plug-in units

- Further collar screws and sleeves see page 7.107

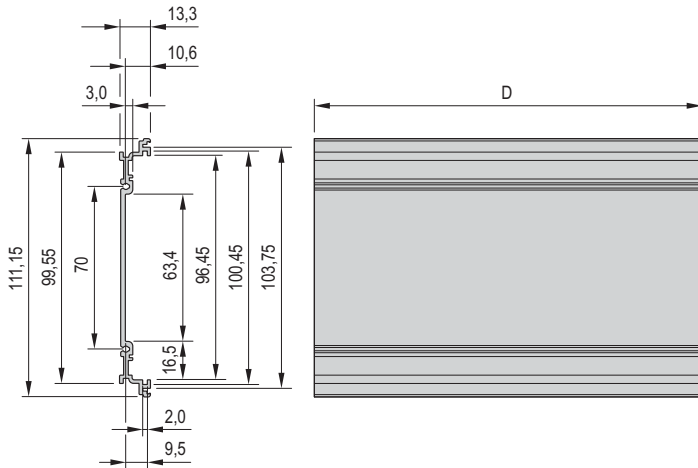
# Frame type plug-in units PRO ServicePLUS

**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: center;"><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;"><small>04808119 04808110 bga42785 kaa46417</small></p> <p>Zn die-cast, Torx panhead screw M2.5 x 10; PCB is pushed into guide rail, is fixed with rear panel</p>		
<b>Height</b>	<b>PU 5 pair</b>	<b>PU 5 pair</b>		
3 U	<b>24812-201</b>	<b>24812-301</b>		
6 U	<b>24812-201</b>	<b>24812-301</b>		
<b>Assembly kits</b>		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	<b>24560-1</b>  <small>aza45940</small>	-	<b>24560-178</b>	
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)	<b>2481</b>  <small>04808120</small>	<b>24812-600</b>		

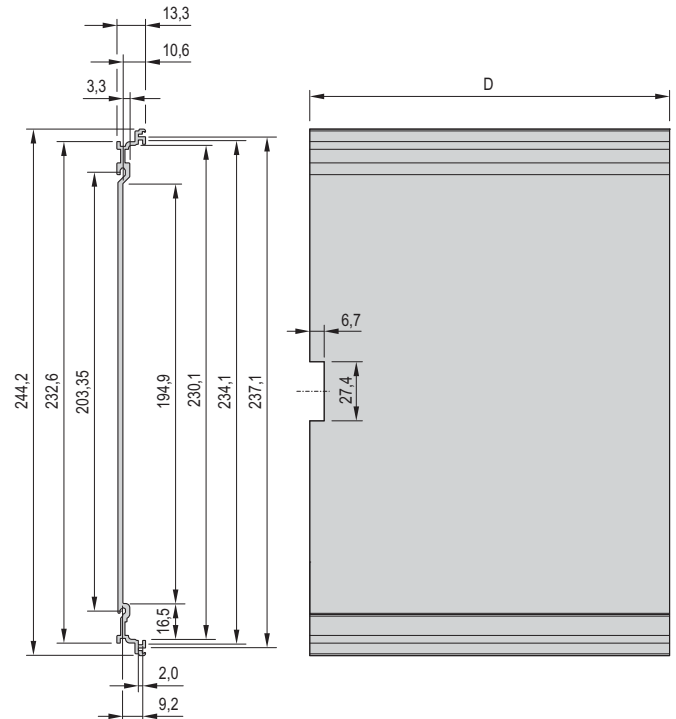


# Frame type plug-in units PRO

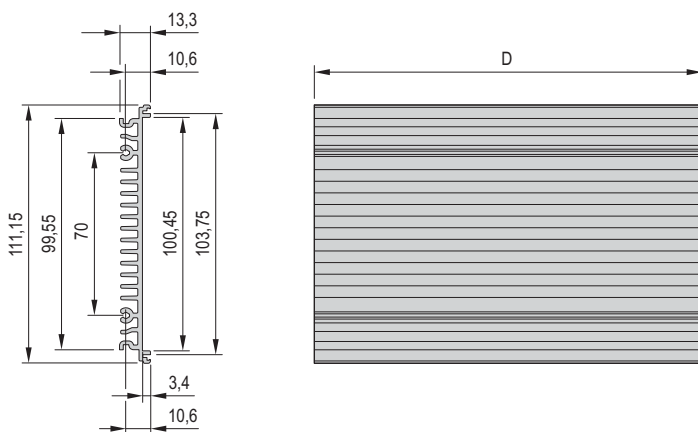
**DIMENSIONS**
**SIDE PANEL WITHOUT COOLING FINS**
**3 U**


Depth = 167/227 mm

04808101

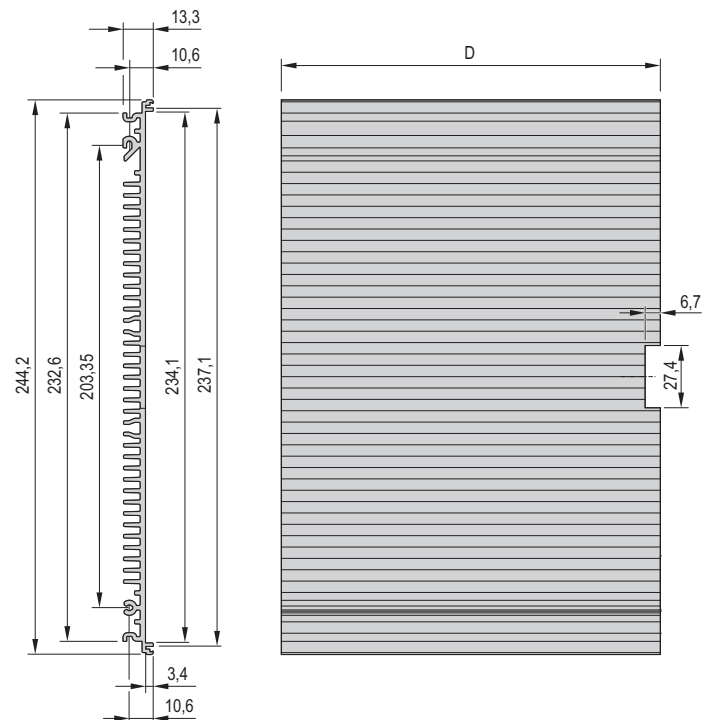
**6 U**


04808102

**DIMENSIONS**
**SIDE PANEL WITH COOLING FINS**
**3 U**


Depth = 167/227 mm

04811051

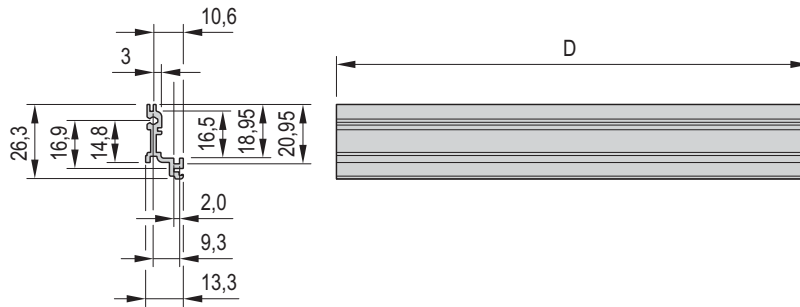
**6 U**


04811052

# Frame type plug-in units PRO

**DIMENSIONS**

**SIDE PANEL REAR ANGLE**

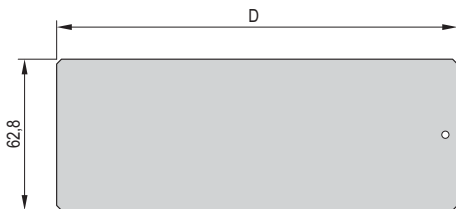


Depth = 167/227 mm

04808103

**DIMENSIONS**

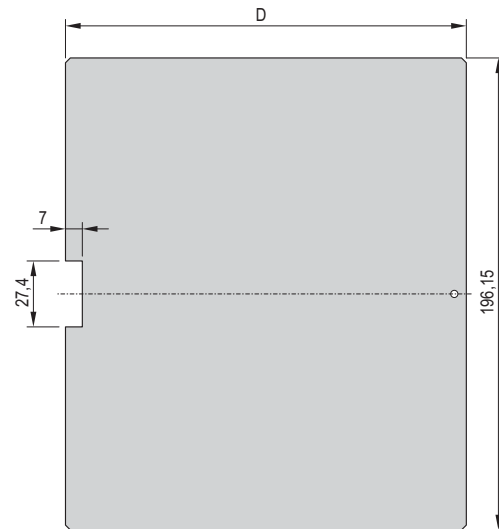
**SIDE PLATE**



3 U for side panel rear angle

04808100

6

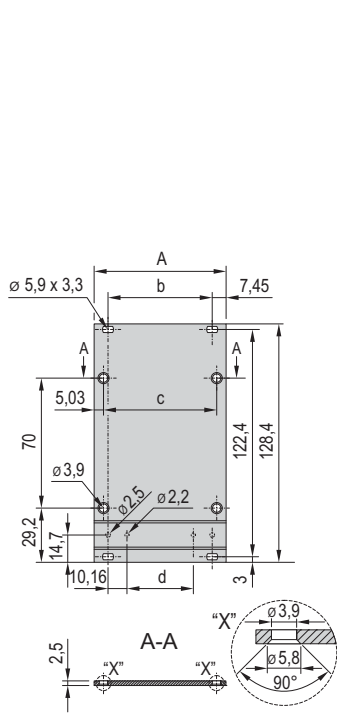


6 U for side panel rear angle

04808099

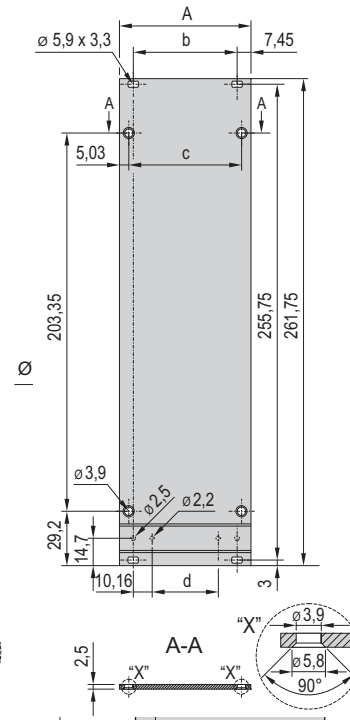
# Frame type plug-in units PRO

**DIMENSIONS**
**FRONT PANELS**

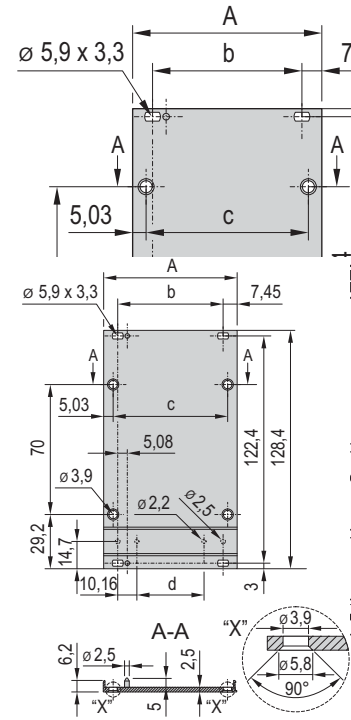
 Unshielded  
3 U


04808086

6 U

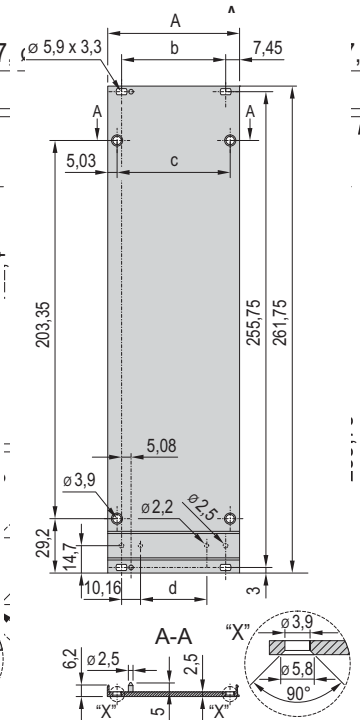


04808087

 Shieldable, for EMC textile gasket  
3 U


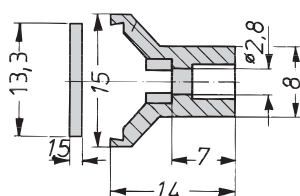
04808088

6 U



04808089

	A	b	c	d
Width	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

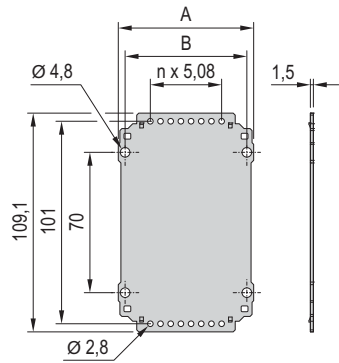
# Frame type plug-in units PRO

**DIMENSIONS**
**REAR PANEL 3 U**

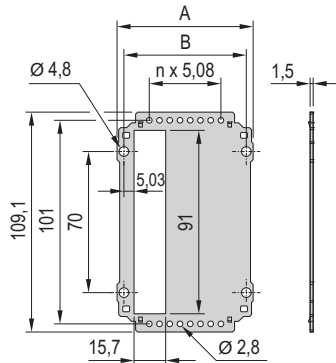
Without cut-out

For one connector

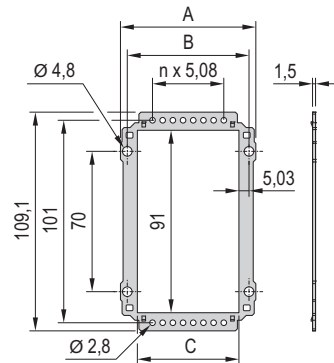
For multiple connectors



04808092



04808091



04808090

**Dimensions table**

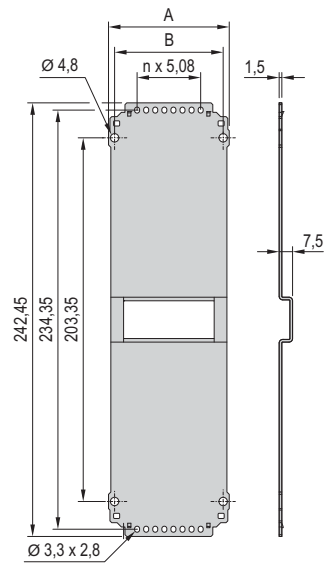
	A	B	C	n
HP	mm	mm	mm	
8 HP	37.04	30.24	20.18	1
10 HP	47.20	40.40	30.34	3
12 HP	57.36	50.56	40.50	5
14 HP	67.52	60.72	50.66	7
21 HP	103.08	96.28	86.22	14
28 HP	138.64	131.84	121.78	21
42 HP	209.76	202.96	192.90	35

**DIMENSIONS**
**REAR PANEL 6 U**

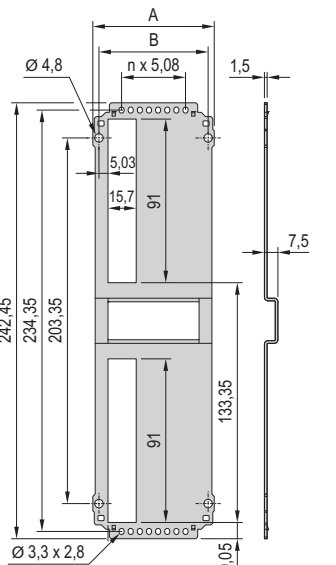
Without cut-out

For one connector

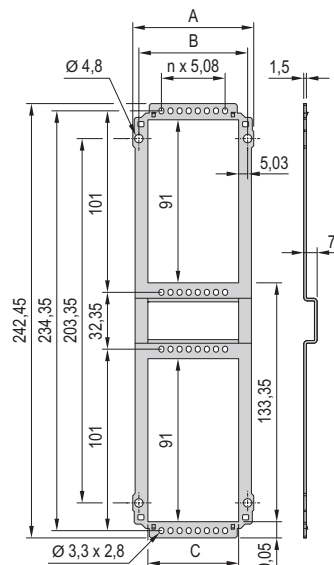
For multiple connectors



04808095



04808094



04808093

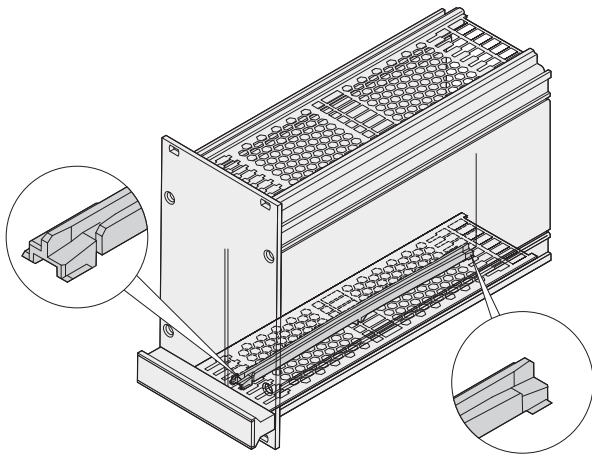
**Dimensions table**

	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

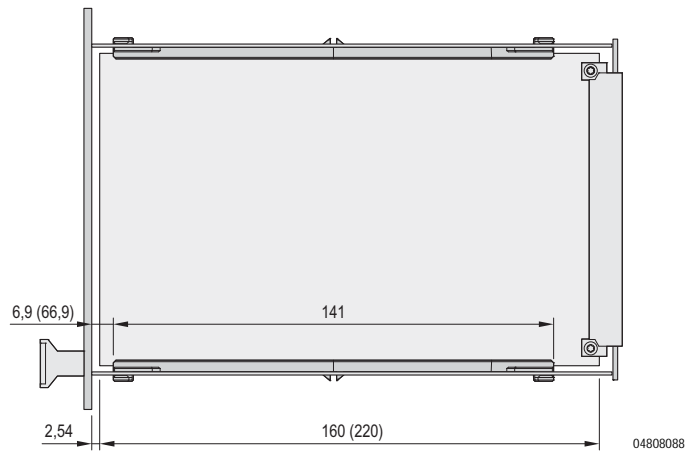
# Frame type plug-in units PRO

**DIMENSIONS**

**GUIDE RAIL**



04808096

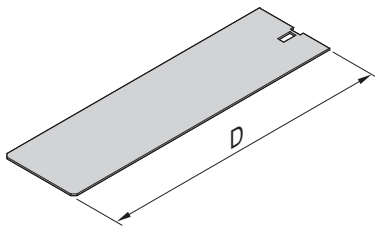


04808088

**DIMENSIONS**

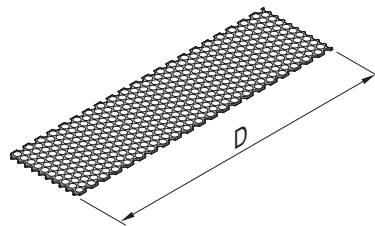
**COVER PLATES**

without perforation



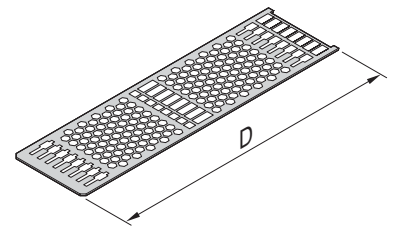
04808104

with perforation



04808106

for guide rail mounting



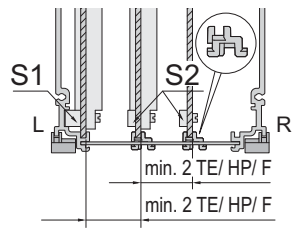
04808105

D = 167/227 mm

# Frame type plug-in units PRO

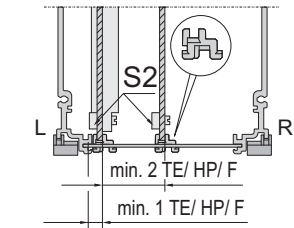
**DIMENSIONS**
**MOUNTING INSTRUCTIONS FOR GUIDE RAILS IN FRAME TYPE PLUG-IN UNITS**

Slot 1 + slot 2



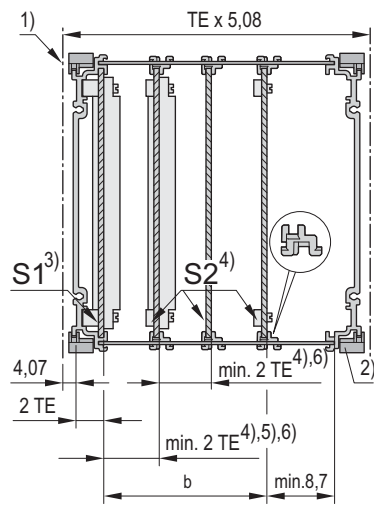
04809050

Slot 2



04809051

Front view



04808107

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

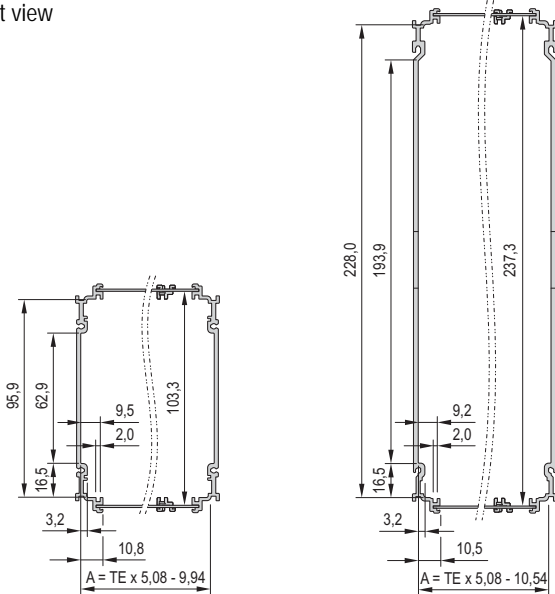
Width of frame type plug-in unit HP	b mm	Max. number of PCBs mountable	
		slot 1	from slot 2
8	5.08	1	1
10	10.16	1	1 <sup>5)</sup>
12	15.24	1	2 <sup>5)6)</sup>
14	20.32	1	2 <sup>6)</sup>
14	25.40	1	3 <sup>5)6)</sup>
14	30.48	1	3 <sup>6)</sup>
14	35.56	1	4 <sup>5)6)</sup>
21	71.12	1	7 <sup>6)</sup>
21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

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 HP	A mm
3	8	30.70
3	10	40.86
3	12	51.02
3	14	61.18
3	21	96.74
3	28	132.30
3	42	203.42
6	8	30.10
6	10	40.26
6	12	50.42
6	14	60.58
6	21	96.14
6	28	131.70
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)



Illustration shows 12 HP width, side panel depth 167 mm

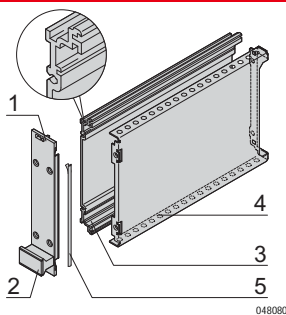
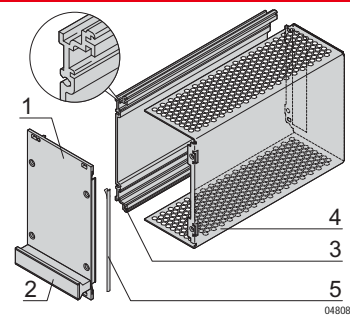
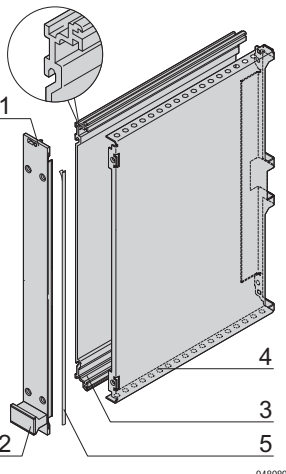
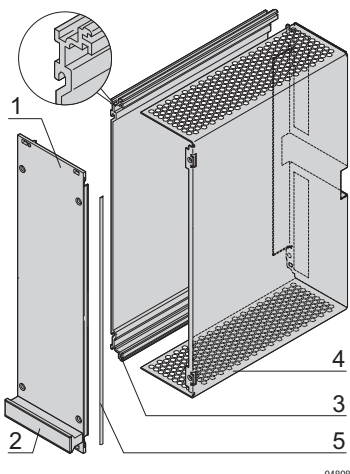
04808007

- 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, PPE, UL 94 V-1
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)

### ORDER INFORMATION

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

- Dimension drawings see from page 7.88

# Frame type plug-in units PRO with hood

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



Illustration shows 12 HP width, side panel depth 167 mm

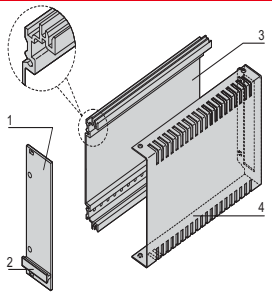
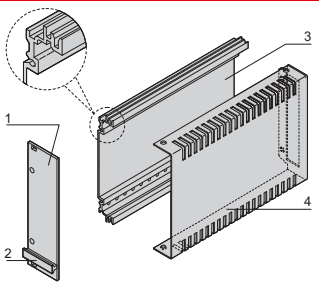
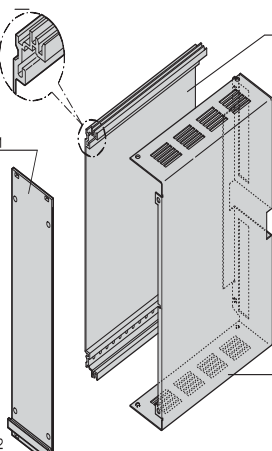
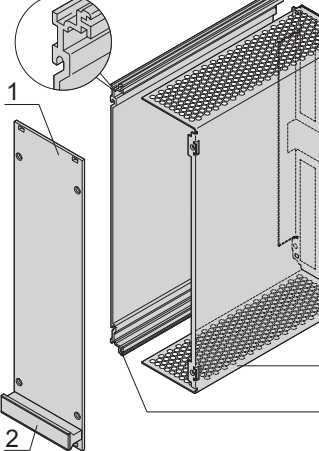
04808002

- 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, PPE, UL 94 V-1
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)

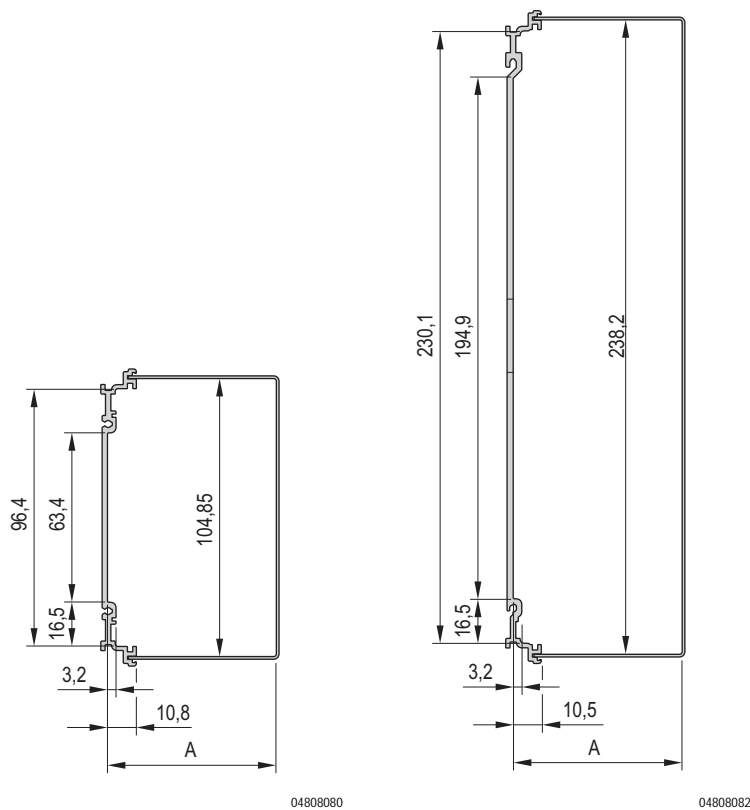
### ORDER INFORMATION

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

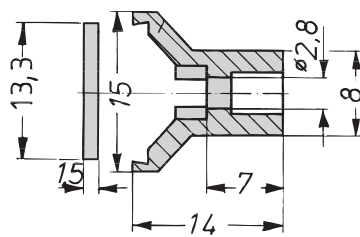
- Dimension drawings see from page 7.88



# Frame type plug-in units PRO with hood

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


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**

**DIMENSIONS TABLE**

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

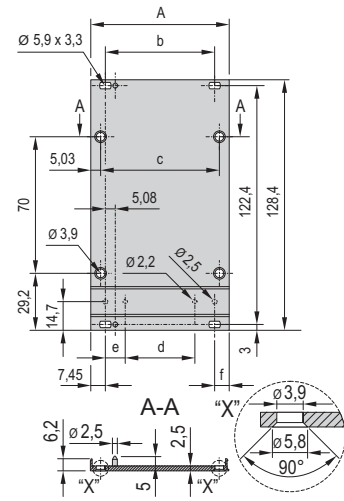
a4-328e

# Frame type plug-in units PRO with hood

## DIMENSIONS

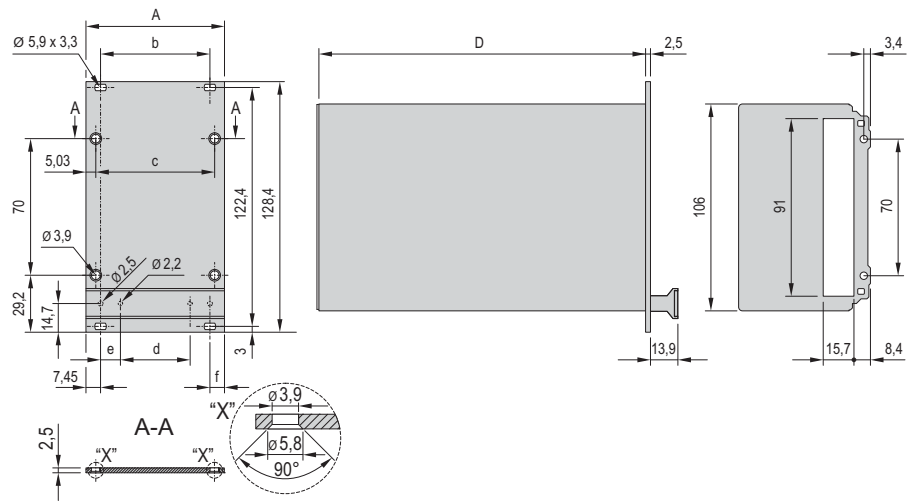
## 3/6 U FRAME-TYPE PLUG-IN UNITS PRO WITH HOOD

3 U Front panel shieldable



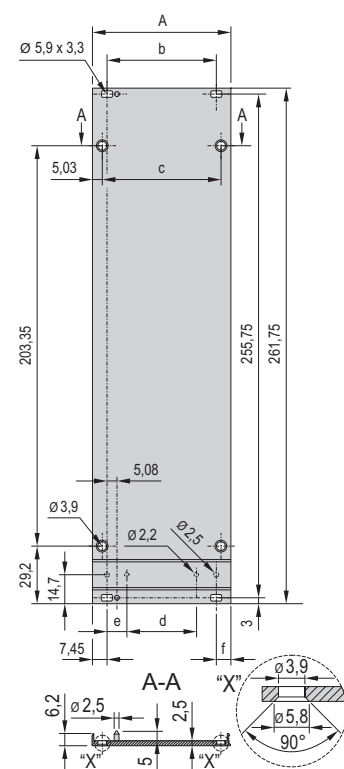
04808052

3 U Front panel unshielded



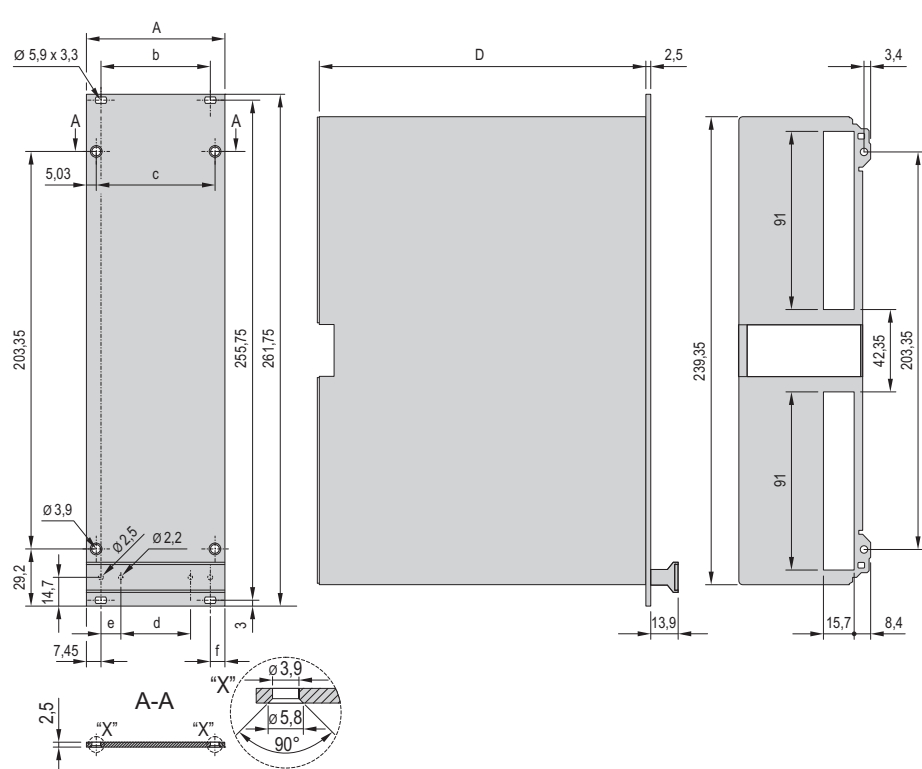
04808111

6 U Front panel shieldable



04809053

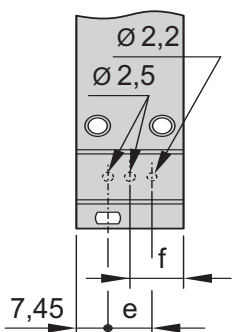
6 U Front panel unshielded



04808112

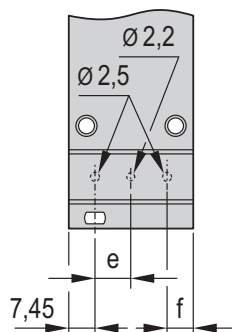
Front panel

5 HP



04809067

6 + 7 HP



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	

# HF frame type plug-in units

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



04892005

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

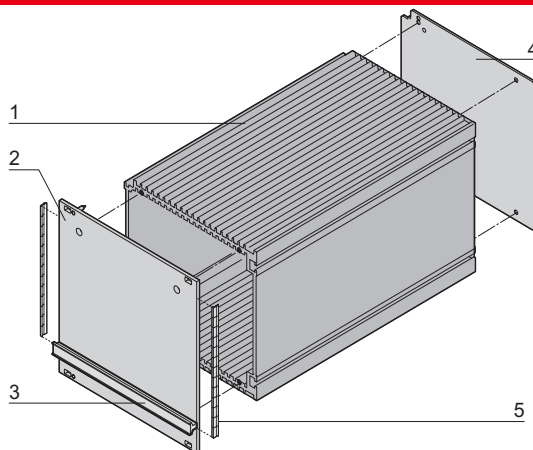
### DELIVERY COMPRISES (kit)

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	Plastic handle, trapeziform, PPE, grey, 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
HP		
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	Width	Depth = 167 mm	Depth = 227 mm
U	HP	Part no.	Part no.
3	7	<b>20809-529</b>	<b>20809-536</b>
3	10	<b>20809-530</b>	<b>20809-537</b>
3	12	<b>20809-531</b>	<b>20809-538</b>
3	14	<b>20809-532</b>	<b>20809-539</b>
3	21	<b>20809-533</b>	<b>20809-540</b>
3	28	<b>20809-534</b>	<b>20809-541</b>

### NOTE

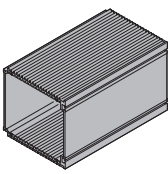
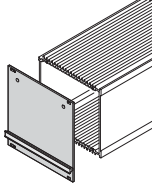
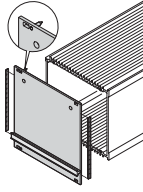
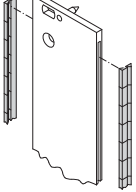
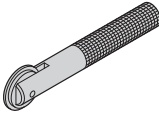
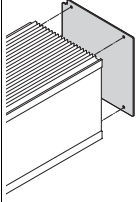
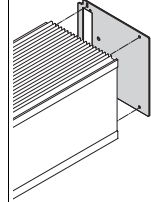
- Dimension drawings see from page 7.94

# HF frame type plug-in units ServicePLUS

INDIVIDUAL  
COMPONENTS

HF BODY TUBE, FRONT PANELS WITH HANDLE, REAR PANELS

## ORDER INFORMATION

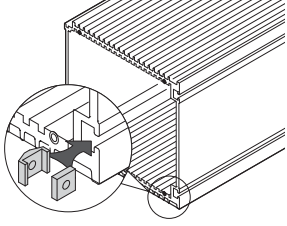
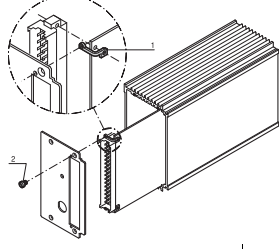
		HF body tube	Shieldable front panel, with handle	Shieldable front panel, with handle		Assembly tool	Rear panel	
				for EMC gasket (stainless steel)	EMC gasket (stainless steel)		without cut-out	with cut-out
		 KAA45832	 KAA45831	 04807074	 bga45760	 aza45937	 04807075	 KAA45834
		Al extrusion, black 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 EMC gasket (stainless steel)	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) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>	PU 100 pieces	1 piece	1 piece (SPQ 5) <sup>1)</sup>	1 piece (SPQ 5) <sup>1)</sup>
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
Depth 1000 mm (without thread for front panel and rear panel)								
3	7	30809-679						
	10	30809-698						
	12	30809-699	-	-	-	-	-	-
	14	30809-680						
	21	30809-681						
	28	30809-682						
Dimensions see page		7.93	7.94				7.93	

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

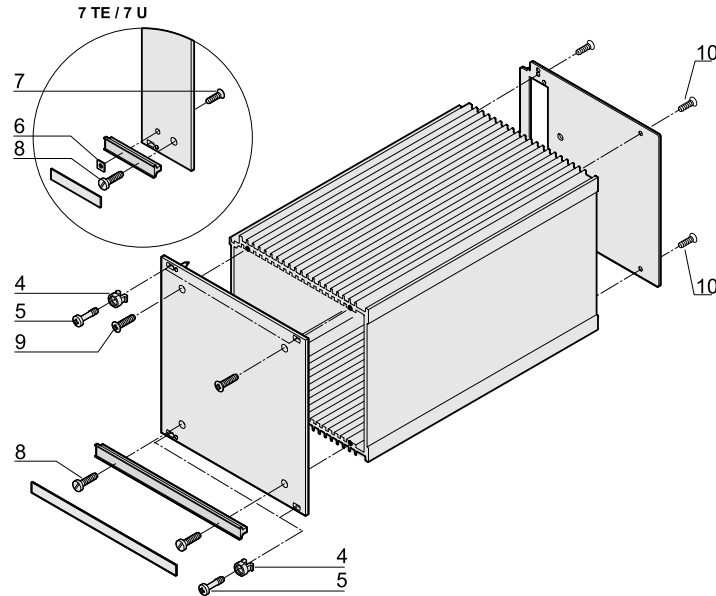
**INDIVIDUAL COMPONENTS**
**SLIDE NUTS, FIXING FOR PCBs, MOUNTING KIT**
**ORDER INFORMATION**

		Slide nut		Fixing for PCBs			Fixing material for one HF frame type plug-in unit	
		M 2.5	M 3	Individual components		Complete assembly kit		
		 width across flats (WAF) 7, for insertion into HF body tube, top and bottom, provides lateral fixing (on right) <small>04807076</small>		top	bottom	 bracket (stainless steel), 1.5 mm; please order retention screws separately <small>KAA45843</small>		bracket top and bottom (stainless steel), 1.5 mm; incl. two cheesehead screws M2.5 x 4
Height U	Width HP	PU 100 pieces	PU 100 pieces	1 piece (SPQ 10) <sup>1)</sup>	1 piece (SPQ 10) <sup>1)</sup>	PU 1 kit	PU 1 kit	
3	7 10 12 14 21 28	<b>21100-112</b>	<b>21100-289</b>	<b>30809-701</b>	<b>30809-700</b>	<b>21101-937</b>	<b>21100-105</b>	
<b>Accessories</b>								
Cheesehead screw M2.5 x 4, St, nickel-plated, PU 100 pieces		–	–	<b>21100-431</b>	<b>21100-431</b>	–	–	












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**


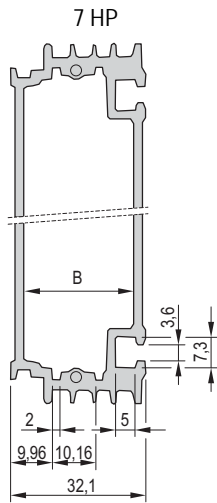
04802054

Description	Item		Required quantity per plug-in unit	Description	Qty/PU	Part no.	
<b>Fixing parts for mounting the module in subrack or case</b>							
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	<b>21100-464</b>
			4 at > 7 HP				
Pozidrive/slotted collar screw M2.5 x 11, St, nickel-plated	5		2 at 7 HP		Front panel is fitted to horizontal rail with threaded insert pushed in to front	100	<b>21100-748</b>
			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	<b>21101-101</b>
			4 at > 7 HP				
<b>Fixing parts for mounting the module</b>							
Square nut DIN 562, M2.5, St, nickel-plated	6		1 at 7 HP		To mount handle on front panel	100	<b>21100-359</b>
Pozidrive countersunk screw M2.5 x 12, St, nickel-plated	7		1 at 7 HP		To mount handle on front panel	100	<b>21100-507</b>
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	<b>21100-150</b>
			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	<b>21100-429</b>
Pozidrive countersunk screw M2.5 x 6, St, nickel-plated	10		4		To mount rear panel on HF body tube	100	<b>21100-515</b>

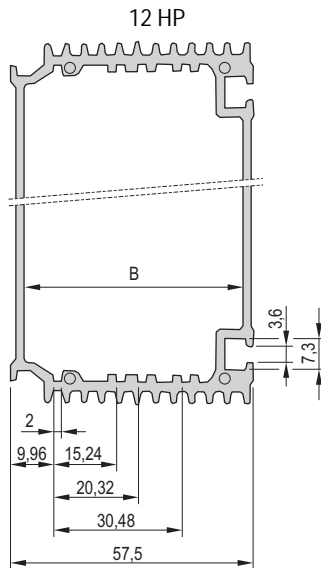
**NOTE**

- Further collar screws and sleeves see page 7.107

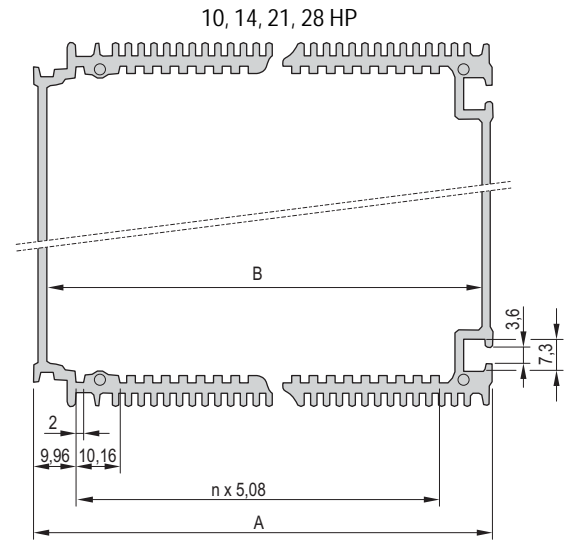
# HF frame type plug-in units

**DIMENSIONS**
**HF BODY TUBE**


A4-247c

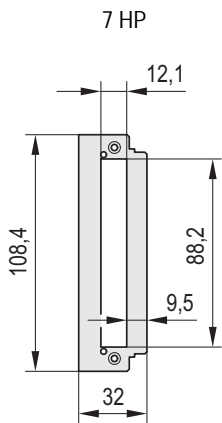


04807079

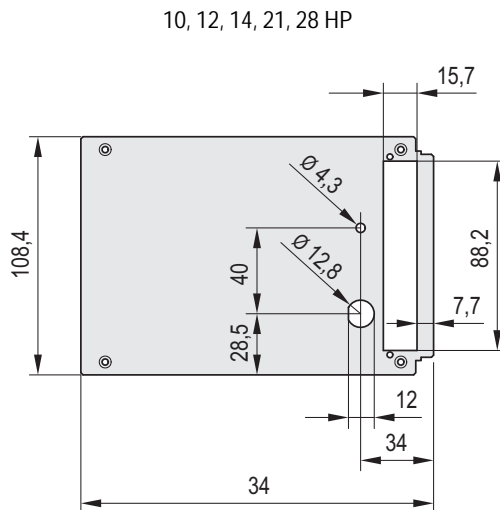


A4-247a

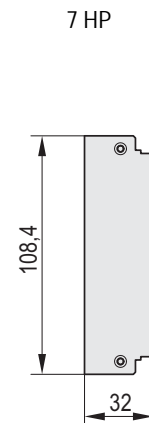
Dimensions table						
Dimension	7 HP	10 HP	12 HP	14 HP	21 HP	28 HP
mm						
n	–	3 × 5.08	–	7 × 5.08	14 × 5.08	21 × 5.08
A	–	47.34	–	67.66	103.22	138.78
B	26.34	41.58	51.74	61.90	97.46	133.02

**DIMENSIONS**
**REAR PANEL WITH/WITHOUT CUT-OUT FOR CONNECTOR**


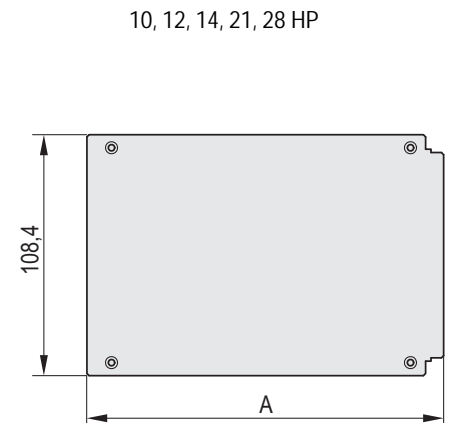
04807086



04802053



04807087



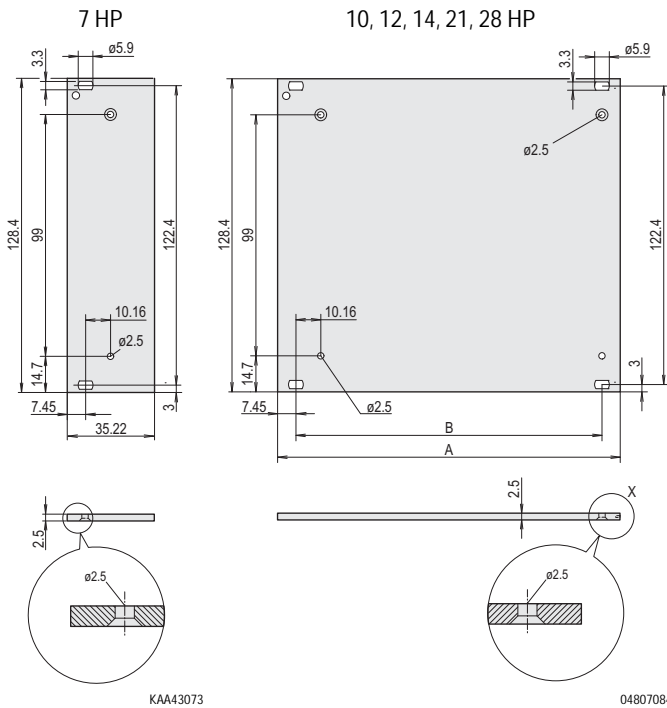
04807083

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

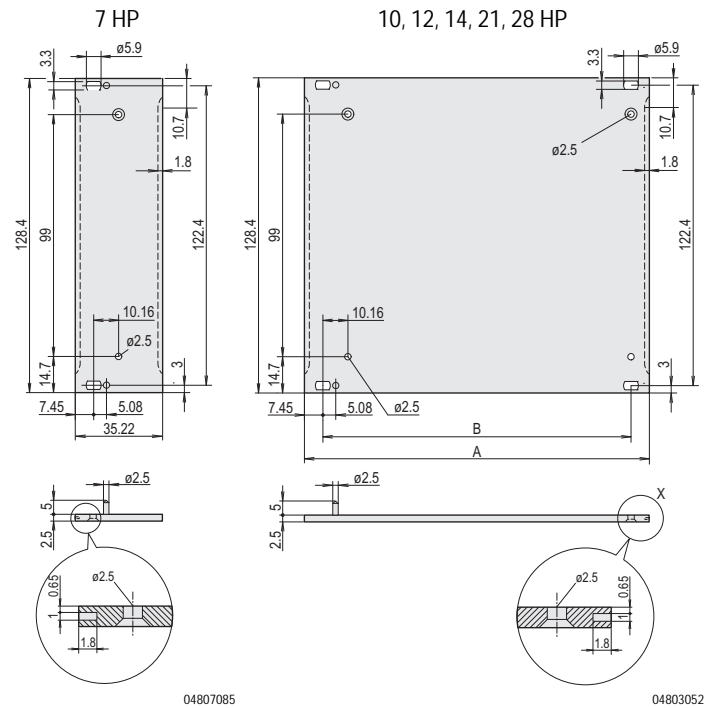
# HF frame type plug-in units

**DIMENSIONS**
**FRONT PANELS**

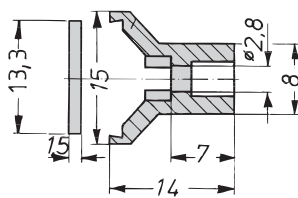
Unshielded



Shieldable, slotted for EMC stainless steel gasket



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	<b>11000-002</b>

04812021



Example: horizontal rail adaptor with lip for 19" PSU

11395007

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