



# ratiopac - Internal mounting

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propac .....2.11.0  
**ratiopac .....2.12.0**  
cardpac .....2.13.0  
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Accessories .....2.17.0

Subrack ..... 2.20.0

19" chassis..... 2.50.0

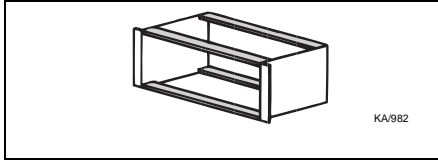
Modules ..... 2.60.0

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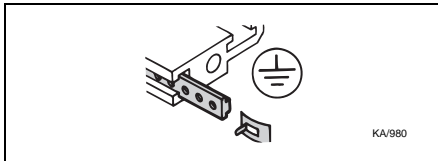
Appendix..... 2.80.0

## Overview of Components Internal Mounting

For installation of partial width front panels, plug-in units and frame-type 5 plug-in units, you will need the following components; refer to:

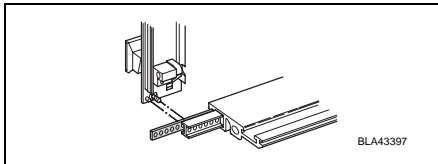


**Horizontal rail, central rail and Z-rails**



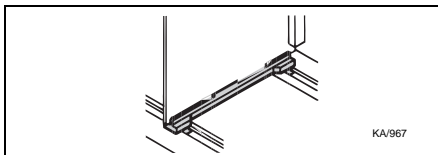
**Threaded strip**

- For mounting components



**Perforated strips**

- For centring shielded components



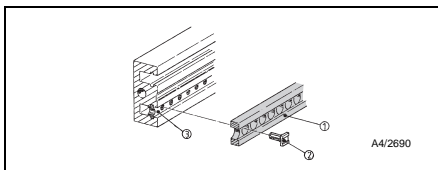
**Guide rails for printed circuit boards**

- for engaging in horizontal rails



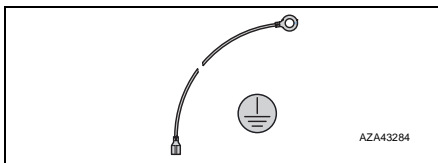
**Z and perforated rails**

- For mounting of connectors complying with DIN 41612



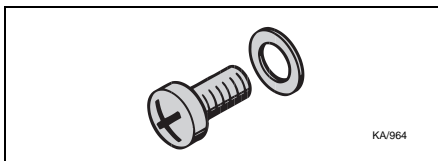
**Insulation strips, clips**

- For insulated mounting of components

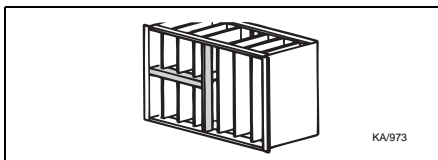


**Earthing kit**

- Protective earth connection



**Mounting parts**



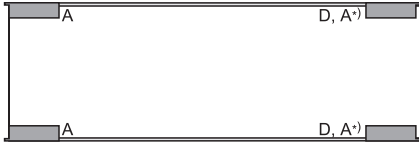
**Subdivided extension**

- For mixed board installation



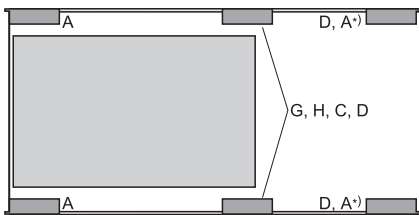
## Assembly positions for horizontal rails

2 U



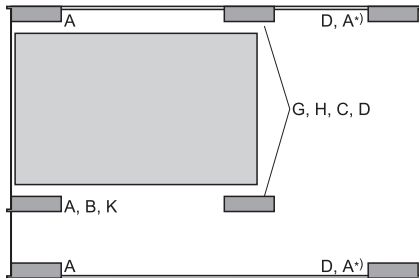
RPA46442

3 U



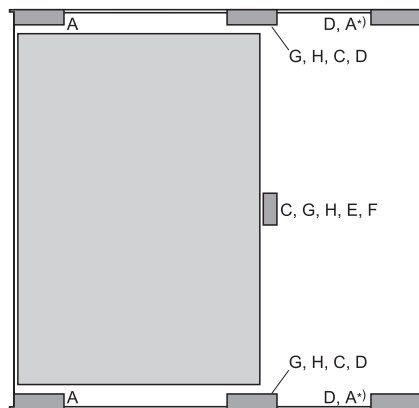
RPA46443

4 U (3 + 1)



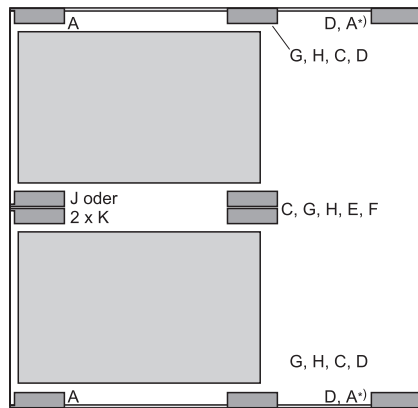
RPA46444

6 U



RPA46545

6 U (2 x 3)



RPA46441

A\* with ratiopac dual only

### Case

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Case 3 U .....	2.12.3
Case 4 U .....	2.12.4
Case 6 U .....	2.12.5
dual – case 3 U .....	2.12.6
dual – case 4 U .....	2.12.7
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### Front panels/ rear panels

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EMC contact strip .....	2.12.22
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### Accessories

Cable holder .....	2.12.24
Handles .....	2.12.24

### Mounting parts .....

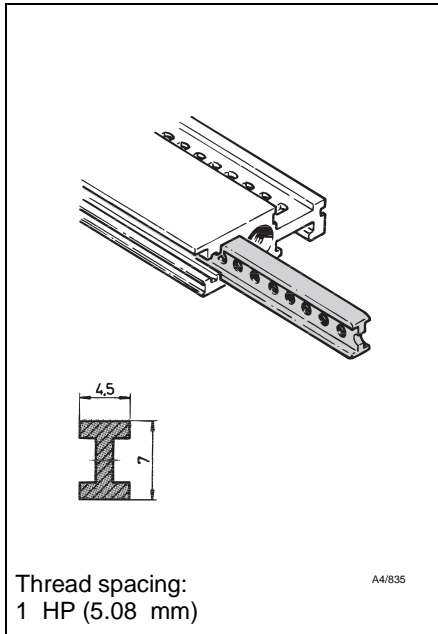
Subdivided extension .....	2.36.17
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# ratiofac - Internal mounting



## Threaded insert, double T, M 2.5

- Can only be used for front horizontal rails
- Extended mounting possibility for other assemblies

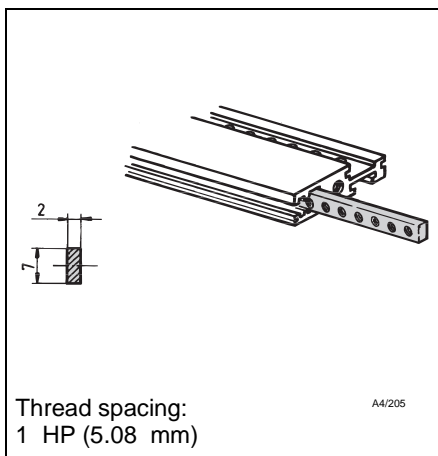
Usable HP	Length mm	Order No.
28	146,8	<b>30829-035</b>
42	217,9	<b>30829-049</b>
63	324,6	<b>30829-070</b>
84	431,3	<b>30829-091</b>

### Delivery comprises

Qty	Description	Material	Surface
1	Threaded strip	Steel section	zinc-plated

### Note

The collar screws for mounting partial width front panels must be 12.3 mm long.



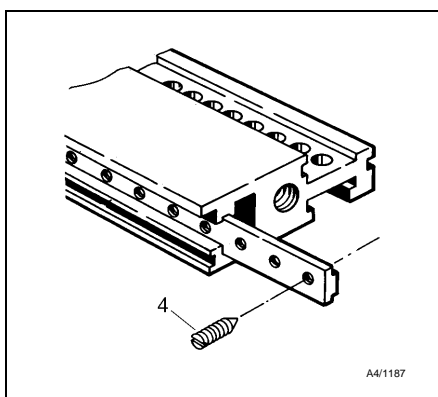
## Threaded insert, M 3

- Can only be used for front horizontal rails
- M 3 does not conform to the 19" standard

Usable HP	Length mm	Order No.
84	431,3	<b>30821-589</b>

### Delivery comprises

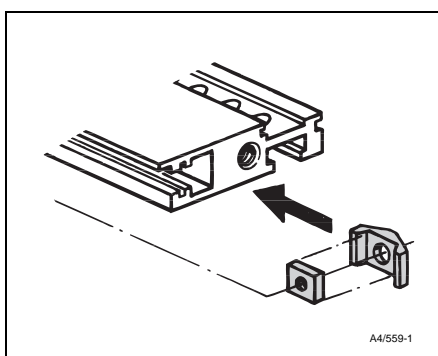
Qty	Description	Material	Surface
1	Threaded strip	Steel section	zinc-plated



## Grub screw

- For fixing the threaded insert
- Required for conductive connections in the case of anodised horizontal rails

Description	Thread	Order no.	
		(20 pieces)	(100 pieces)
Grub screw DIN 553	M 2.5	<b>21100-275</b>	<b>21100-276</b>
	M 3	-	<b>21100-646</b>



## Slide nut

- Alternative to threaded insert
  - Mounting possibility on front horizontal rail
- Material:** Square nut made of steel; slide made of polyamide

Dimension	Surface	Square nut with slide	
		Pieces	Order No.
M 2.5	SW 5	100	<b>21100-425</b>
	SW 7	100	<b>21100-112</b>
M 3	SW 7	100	<b>21100-289</b>

## Case

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Case 6 U .....	2.12.5
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Z and perforated rails .....	2.12.20
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EMC contact strip .....	2.12.22
EMC contact strip .....	2.12.23
Earthing kit .....	2.12.23

## Accessories

Cable holder .....	2.12.24
Handles .....	2.12.24

## Mounting parts .....

Subdivided extension .....	2.36.17
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 protega ..... 2.15.0  
 projet ..... 2.16.0  
 Accessories ..... 2.17.0

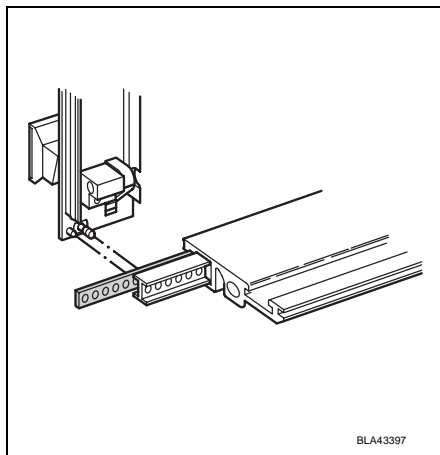
Subrack ..... 2.20.0

19" chassis ..... 2.50.0

Modules ..... 2.60.0

Accessories .... 2.70.0

Appendix ..... 2.80.0



BLA43397

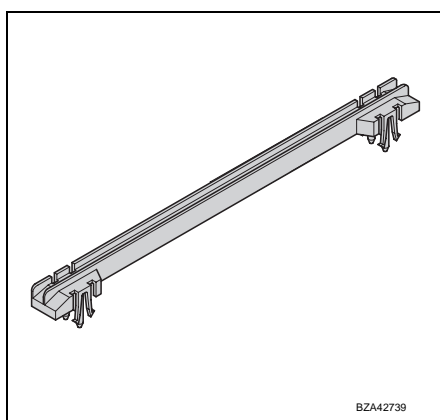
## Perforated strips

- For centering the shielded plug-in units, front panels and rear panels via guide dowels

Usable HP	Length mm	Order No.
42	218,44	<b>30845-211</b>
63	325,12	<b>30845-232</b>
84	431,80	<b>30845-253</b>

## Delivery comprises

Qty	Description	Material
1	Perforated strips	Al 1 mm



BZA42739

## Guide rail for printed circuit boards

- Standard version for engaging in horizontal rails

Board height mm	Groove width mm	Material	Colour	Order no. (1 piece)
160	2	PBTP UL 94 V-0	grey	<b>60817-103</b>
220	2	PBTP UL 94 V-0	grey	<b>60817-149</b>

## Note

For further guide rails, refer to Chapter, Subracks, europac accessories – guide rail

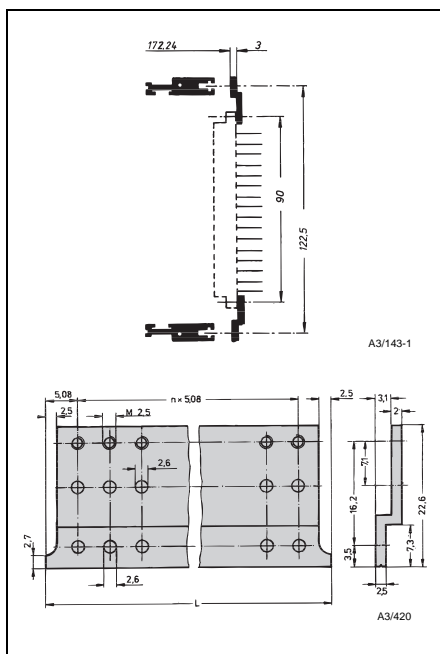


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## Z and perforated rails

For mounting of connectors complying with

- EN 60603 (DIN 41 612)
- DIN 41 617



A3/143-1

A3/420

## Z-rails

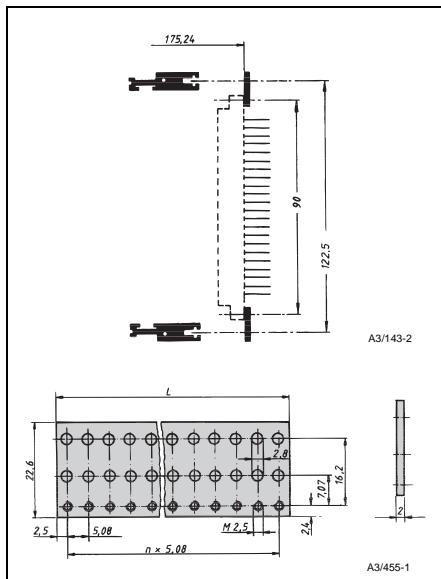
- For connectors as per EN 60603

Usable HP	Length mm	Order No.
40	203,2	<b>30822-045</b>
60	304,8	<b>30822-065</b>
84	426,7	<b>30822-089</b>

## Delivery comprises

Qty	Description	Material	Surface
1	Z-rails	Al	anodised





## Perforated rail

■ For connectors as per EN 60603

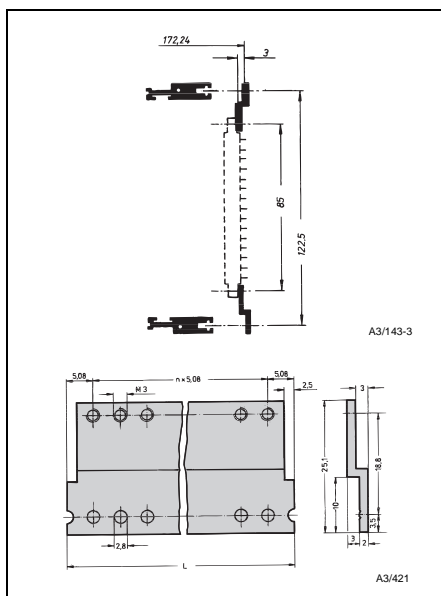
Usable HP	Length mm	Order No.
30	152,4	<b>30822-201</b>
40	203,2	<b>30822-202</b>
60	304,8	<b>30822-204</b>
84	426,7	<b>30822-206</b>

### Note

Standardised space only in connection with (rear) horizontal rail with recessed mounting plane.

### Delivery comprises

Qty	Description	Material	Surface
1	Perforated rail	Al	clearchromated



## Z-rails

■ For connectors as per DIN 41 617

Usable HP	Length mm	Order No.
40	203,2	<b>30819-763</b>
60	304,8	<b>30819-783</b>
84	426,7	<b>30819-808</b>

### Delivery comprises

Qty	Description	Material	Surface
1	Z-rails	Al	anodised

## Assembly kit for Z- and perforated rails

■ Mounting is by means of threaded inserts or slide nuts

Description	Remarks	Order No.
Square nut with slide M 2.5		<b>21100-425</b> (100 pieces)
Threaded insert M 2.5; 84 HP		<b>30819-594</b> (1 piece)
Cylinder head screw with slot M 2.5	for central rail with central threaded hole	<b>21100-146</b> (100 pieces)
Cylinder head screw with slot M 2.5 × 5	for horizontal rail with 2 or 3 threaded holes and Z- or perforated rail for connectors as per DIN 41 612, 41 617	<b>21100-624</b> (100 pieces)

### Note

For other part lengths, refer to Threaded inserts or insulation strips.

## Case

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Case 3 U .....	2.12.3
Case 4 U .....	2.12.4
Case 6 U .....	2.12.5
dual – case 3 U .....	2.12.6
dual – case 4 U .....	2.12.7
dual – case 6 U .....	2.12.8

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Perforated strips.....	2.12.20
Guide rail for printed circuit boards .....	2.12.20
Z and perforated rails .....	2.12.20
Insulation strip ...	2.12.22
EMC contact strip .....	2.12.22
EMC contact strip .....	2.12.23
Earthing kit .....	2.12.23

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Handles .....	2.12.24

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# ratiopac - Internal mounting

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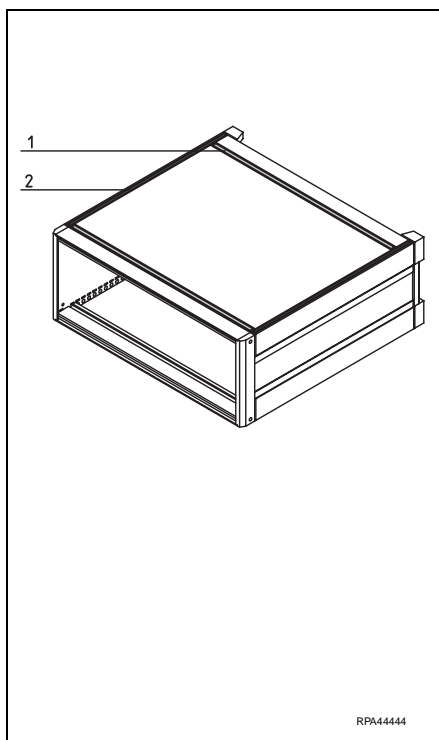
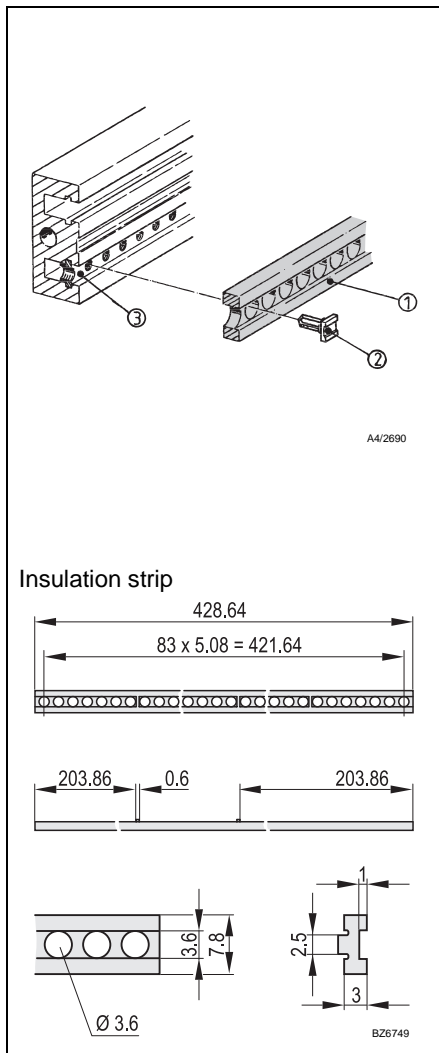
Subrack ..... 2.20.0

19" chassis ..... 2.50.0

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Accessories .... 2.70.0

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## Insulation strip

- For insulated mounting of backplanes or mounting metal plates as holders for connectors
- Setting up standardised mounting depth for plug-in units in the subrack

Usable HP	Length mm	Order No.
20	101,5	<b>30835-109</b>
28	144,2	<b>30835-110</b>
42	210,2	<b>60817-118</b>
84	428,6	<b>60817-061</b>

## Delivery comprises

Item	Qty	Description	Material	Colour
1	1	Insulation strip	PBTP UL 94 V-0	grey

## Clips

For fixing the insulation strip (Item 1) on the threaded insert (Item 3).

Item	Description	Order No.
2	Clips	<b>21100-824</b>

## Delivery comprises

Item	Qty	Description	Material	Colour
2	100 units	Clips	PPO UL 94 V-0	red

## EMC contact strip

EMC contract strips are always needed for EMC extension of ratiopac and ratiopac dual.

For sealing between:

- Horizontal rails and cover plate
- Side panels and cover plate

## Note

EMC contact strips are always needed for extension with EMC full-width front panels.

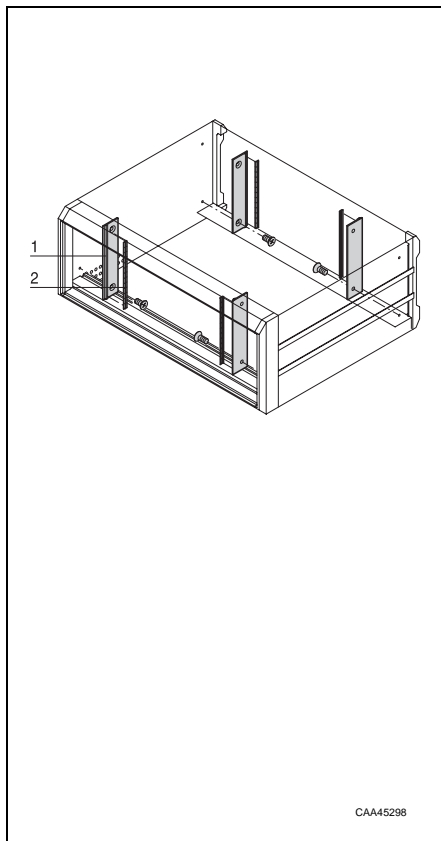
Case depth HP	Order No. (1 kit)
42	<b>20842-938</b>
63	<b>20842-939</b>
84	<b>20842-940</b>

## Delivery comprises

Item	Qty	Description	Material
1	4	Contact strip	Stainless steel
2	4	Contact strip	Stainless steel

Delivery: In kit form

# ratiopac - Internal mounting



## EMC contact strip

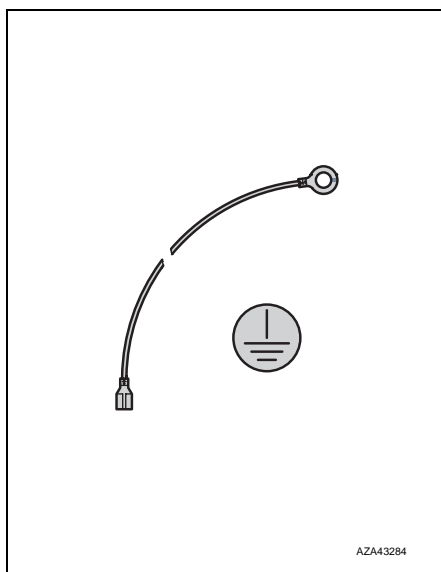
- EMC contact strips are also needed as well as the EMC sealing kit for extension with EMC full-width front panels

Case height U	Use	Requirement	Order No.
2	Front and rear mounting dual	1 set/kit each	<b>20845-840</b>
3	Front and rear mounting dual	1 set/kit each	<b>20845-841</b>
4	Front and rear mounting dual	1 set/kit each	<b>20845-843</b>
6	Front or rear mounting dual with 6 U	1 set/kit each	<b>20845-844</b>
	Front or rear mounting dual with 2 x 3 U	2 kits/sets each	<b>20845-841</b>

### Delivery comprises

Item	Qty	Description	Material	Remarks
1	1	Contact strip	Aluminium extrusion	1 kit/set "Contact strip"
2	1	EMC contact strip	Stainless steel	
-	1 Set	Mounting parts		

Delivery: Kit



## Earthing kit

Establishes earth connections between side panels, base and cover plates and rear panel.

The earth connections comply with:

- EN 50178 / VDE 0160
- EN 60 950 / VDE 0805,
- EN 61 010 Part 1 / VDE 0411 Part 1

Compliance performed at VDE.

Description	Order No. (1 kit)
Earthing kit	<b>21101-033</b>

### Delivery comprises

Qty	Description	Material	Surface
1 kit	Earthing kit	Cu wire 1.5 mm <sup>2</sup> PVC sleeve	green/yellow

## Case

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Case 6 U .....	2.12.5
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dual – case 4 U .....	2.12.7
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EMC contact strip .....	2.12.23
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Handles .....	2.12.24

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# ratiofac - Accessories

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 Accessories ..... 2.17.0

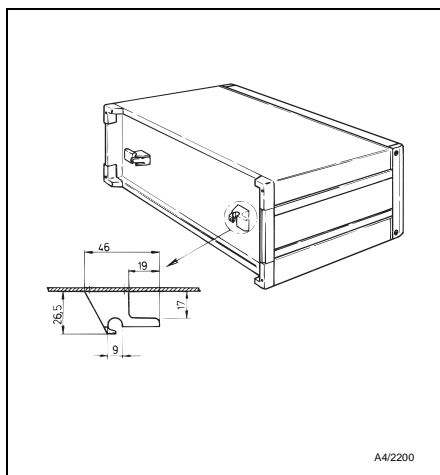
Subrack ..... 2.20.0

19" chassis ..... 2.50.0

Modules ..... 2.60.0

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## Cable holder

Order no. **20842-109**

### Delivery comprises

Qty	Description	Material	Surface	Remarks
2 units	Cable bracket	ABS UL 94 V-0	coloured RAL 7030	Notch device for cable between 8 mm and 12 mm
1	Drilling template			Two holes must be drilled in the rear panel for each bracket
1 Set	Mounting parts			

Delivery: Kit

## Handles

Choose between:

- Front handles
- Strap handle
- Tip-up carrying handle

## Front handle

Description	Case height U	Order No. (1 kit)
Front handle	2	*
	3	<b>20842-058</b>
	4	<b>20842-061</b>
	6	*

\* Available on request

### Delivery comprises

Qty	Description	Material	Surface
2 pieces	Front handle	Diecast aluminium	powder-coated, RAL7030
1 kit	Mounting parts		

Delivery: In kit form

## Front handle with 19" mounting bracket

Description	Case height U	Order No. (1 kit)
Front handle with 19" mounting bracket	2	<b>20842-056</b>
	3	<b>20842-059</b>
	4	<b>20842-062</b>
	6	<b>20842-065</b>

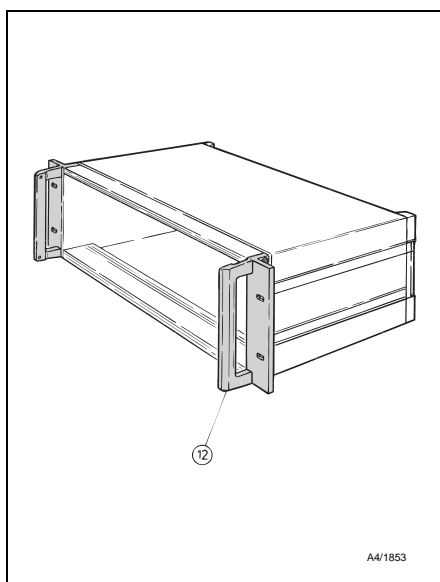
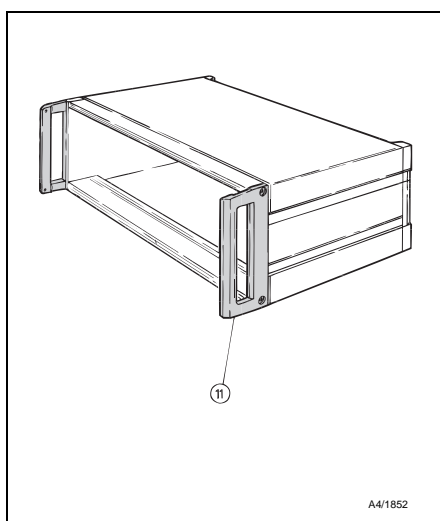
### Delivery comprises

Qty	Description	Material	Surface
2 pieces	19" mounting bracket with front handle	Diecast aluminium	powder-coated, RAL7030
1 kit	Mounting parts		

Delivery: In kit form

### Note

No slide rails can be used for installation in cabinets and 19" cases.





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## Strap handle

- Can be retrofitted without mechanical reworking of the case
- Load-carrying capacity 20 kg

Description	Enclosure depth mm	Order No. for case height	
		3 U	4 U
Strap handle	266	*	*
	326	<b>20842-100</b>	<b>20842-105</b>
	386	<b>20842-101</b>	<b>20842-106</b>
	446	*	*

\* Available on request

## Delivery comprises

Qty	Description	Material	Surface
1	Handle section	Steel spring (flexible plastic, grey)	plastic-sheathed
1	Cover for side panel	Steel plate	painted RAL 7035
1 Set	Mounting parts		

**Delivery:** In kit form

## Tip-up carrying handle

- Handle bar, plastic-sheathed
- For ratiopac case 3 U
- Can be retrofitted without mechanical reworking of the case
- Handle bar can be adjusted in grid of 30° by pressing button
- Load-carrying capacity 25 kg

Description	Case height U	Case width HP	Order No.
Handle bar plastic-sheathed	3	42	<b>20842-387</b>
		63	<b>20842-388</b>
		84	<b>20842-389</b>

## Note

Anodised handle bar available on request.

## Delivery comprises

Qty	Description	Material	Surface	Remarks
1	Handle bar	Aluminium extrusion	plastic-sheathed	Surface depending on design
2	Handle side part	Diecast zinc	Satin chrome-plated	
2	Safety insert	St 1.5 mm	black	
1 kit	Mounting parts			

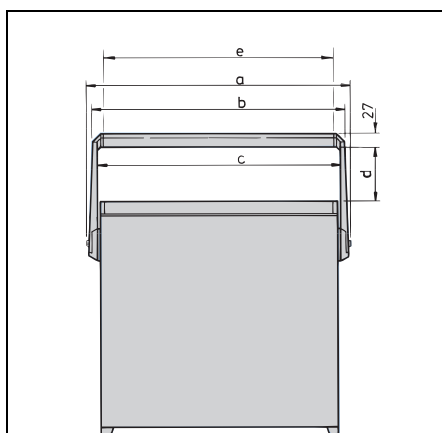
**Delivery:** In kit form

## Note

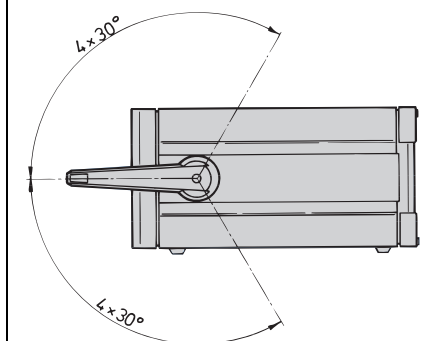
Order assembly kit for mounting handle separately.

## Assembly kit for mounting handle

Description	Case height U	Case depth U	Order No.
Assembly kit	3	266	<b>20842-399</b>
		326	<b>20842-400</b>
		386	<b>20842-401</b>



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## Case

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