



## 19" subrack, 6 U single row

- high stability
- basic kit with a wide range of accessories
- easy and quick assembly
- depth mounting increment  $d = 10\text{mm}$
- side panels with twist lock for module rails



## Specifications

### Application:

for plug-in units in compliance with IEC 60297-3-101/-102/-103 and IEEE 1101.10/1101.11

### Material/Finish:

Side panels: aluminium 2,5 mm transparent chromated  
 Module rail: aluminium extrusion transparent chromated  
 Front fixing brackets: aluminium extrusion transparent chromated

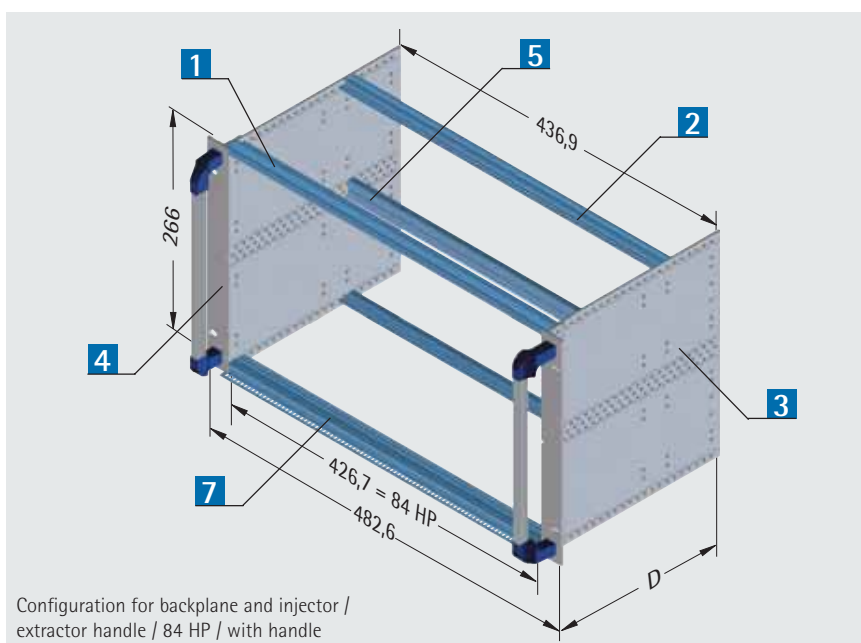
Delivery: kit

## Accessories

Expansion kit for 6 U subrack p. 38  
 Cover panels EMC p. 36  
 Rear panels p. 36  
 EMC contact gaskets p. 40  
 Card guides p. 44  
 Insulating strips p. 43

## Suitable components

Front panels p. 62  
 Injector / extractor handle p. 72  
 Sub-units p. 73  
 EMC plug-in units p. 78



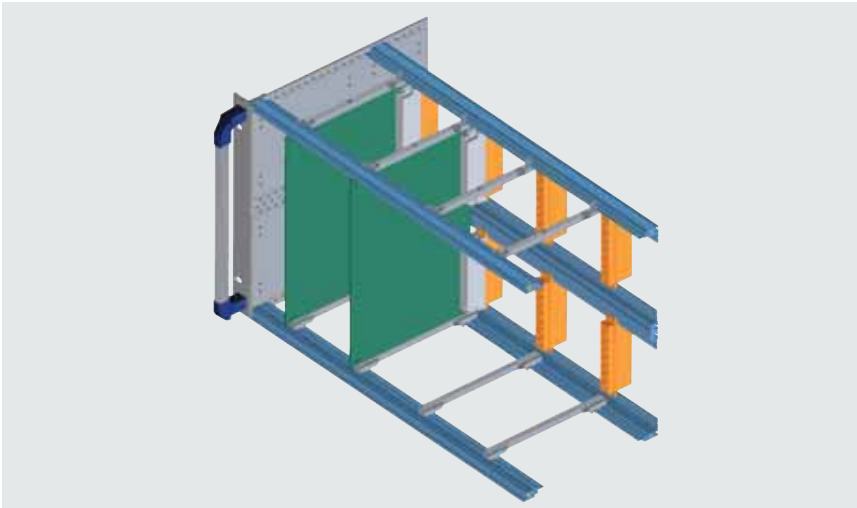
## Included in delivery

Item	Pc.	Description
1	2	Module rails, front
2	2	Module rails, rear
3	2	Side panels
4	2	Front bracket with or without handle
5	1	Mounting rail
6	8	Oval-head screws M 4 x 12 self-locking

Item	Pc.	Description
7	2	Threaded inserts, M 2.5 7 mm x 2 mm
8	4	Threaded inserts, M 2.5 5 mm x 1,5 mm (for rear BUS module rail)
9		Assembly material



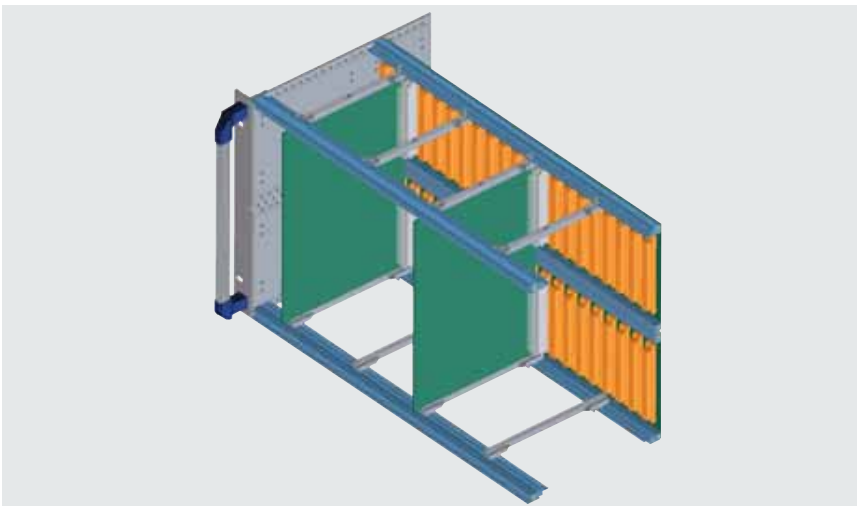
### Configuration for connectors according to DIN 41612



**front**  
standard module rails 241-022  
threaded inserts, M 2.5

**rear**  
narrow module rails 241-019  
and support rail with integrated mounting  
rails for connectors in compliance with  
DIN 41612

### Configuration for backplane

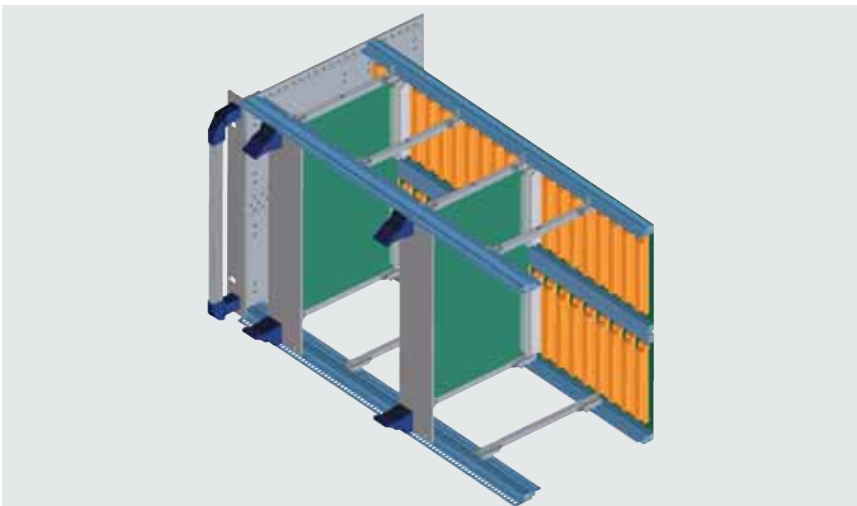


**front**  
standard module rails 241-022  
threaded inserts, M 2.5

**rear**  
BUS module rails 241-013  
threaded inserts, M 2.5

and BUS support rail 241-020  
threaded inserts, M 2.5

### Configuration for backplane and injector / extractor handle



**front**  
standard module rails 241-049  
with 10mm clearance for insertion/  
extraction handle  
threaded inserts, M 2.5

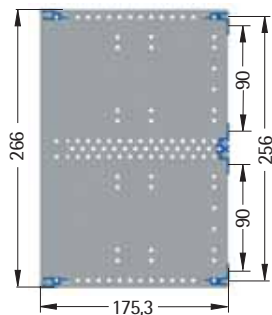
**rear**  
BUS module rails 241-013  
threaded inserts, M 2.5

and BUS support rail 241-020  
threaded inserts, M 2.5

**Note:** Please order insulating strips or EMC gas-kets separately (see p. 43).

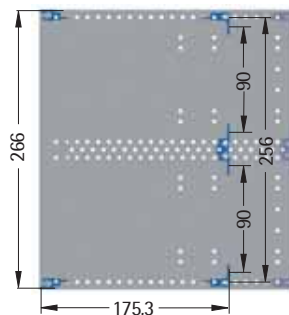


### 176 mm depth



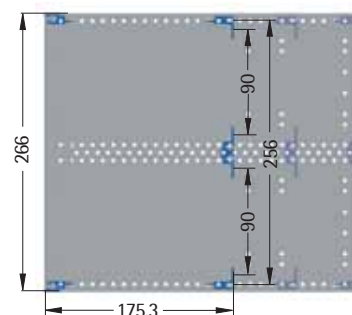
Description	Part no.
84 HP, with handle	24-5614-11
84 HP, without handle	24-5611-11

### 236 mm depth



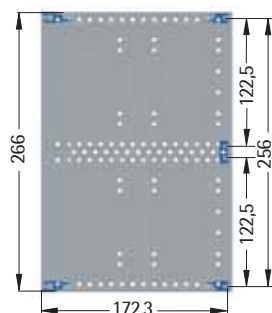
Description	Part no.
84 HP, with handle	24-5615-11
84 HP, without handle	24-5612-11

### 296 mm depth



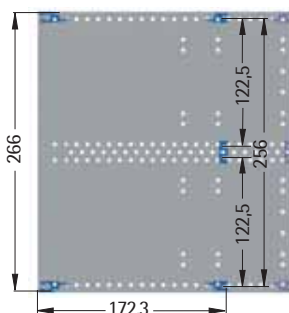
Description	Part no.
84 HP, with handle	24-5616-11
84 HP, without handle	24-5613-11

### 176 mm depth



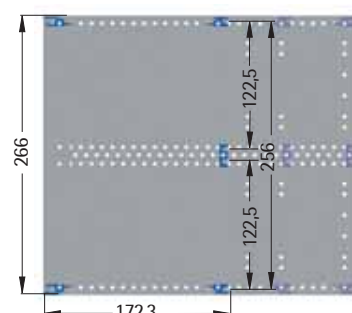
Description	Part no.
84 HP, with handle	24-5614-21
84 HP, without handle	24-5611-21

### 236 mm depth



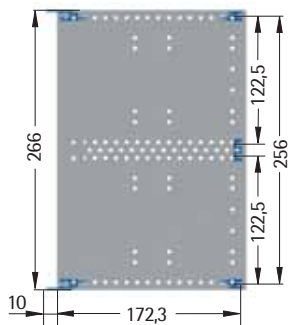
Description	Part no.
84 HP, with handle	24-5615-21
84 HP, without handle	24-5612-21

### 296 mm depth



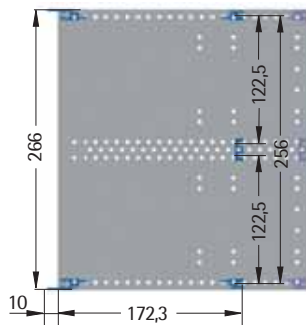
Description	Part no.
84 HP, with handle	24-5616-21
84 HP, without handle	24-5613-21

### 176 mm depth



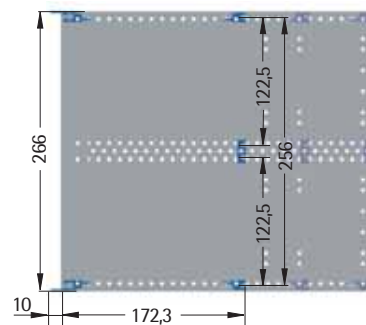
Description	Part no.
84 HP, with handle	24-5614-31
84 HP, without handle	24-5611-31

### 236 mm depth



Description	Part no.
84 HP, with handle	24-5615-31
84 HP, without handle	24-5612-31

### 296 mm depth



Description	Part no.
84 HP, with handle	24-5616-31
84 HP, without handle	24-5613-31

**Note:** Other depths available on request. All drawings shown in side view. The lighter colour rear rails show optional installation positions.



## 245 • 19" subrack 6 U, double row



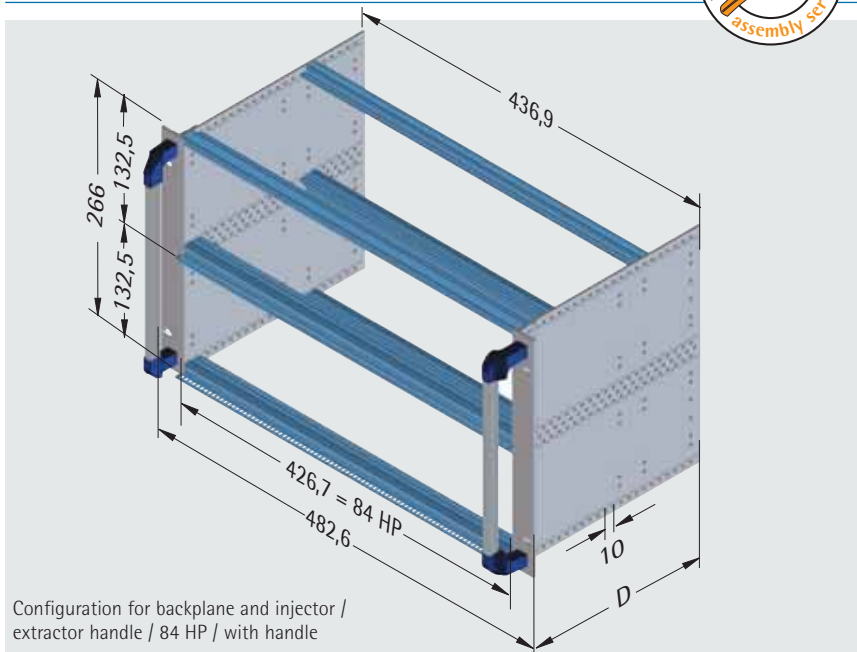
Sample configuration: Configuration for backplane / 84 HP / without handle



### 19" subrack 6 U, double row

- high flexibility
- can be extended to EMC model, even between 2 x 3 U front partitions
- depth mounting increment  $d = 10\text{mm}$
- side panels with twist lock for module rails

### Specifications



Configuration for backplane and injector / extractor handle / 84 HP / with handle

### Application:

for plug-in units in compliance with IEC 60297-3-101/-102/-103 and IEEE 1101.10/1101.11

### Material/Finish:

Side panels: aluminium 2,5 mm transparent chromated  
 Module rail: aluminium extrusion transparent chromated  
 Front brackets: aluminium extrusion transparent chromated

Delivery: kit

### Accessories

Cover panels EMC	p. 36
Rear panels	p. 36
EMC contact gaskets	p. 40
Card guides	p. 44
Insulating strips	p. 43

### Suitable components

Front panels	p. 62
Injector / extractor handle	p. 72
Sub-units	p. 73
EMC plug-in units	p. 78

### Included in delivery

Item	Pc.	Description
1	4	Module rails, front
2	4	Module rails, rear
3	2	Side panels
4	2	Front brackets with or without handle
5	16	Oval-head screws M 4 x 12 self-locking

Item	Pc.	Description
6	4	Threaded inserts, M 2.5 7 mm x 2 mm
7	4	Threaded inserts, M 2.5 5 mm x 1,5 mm (for rear BUS module rail)
8		Assembly material



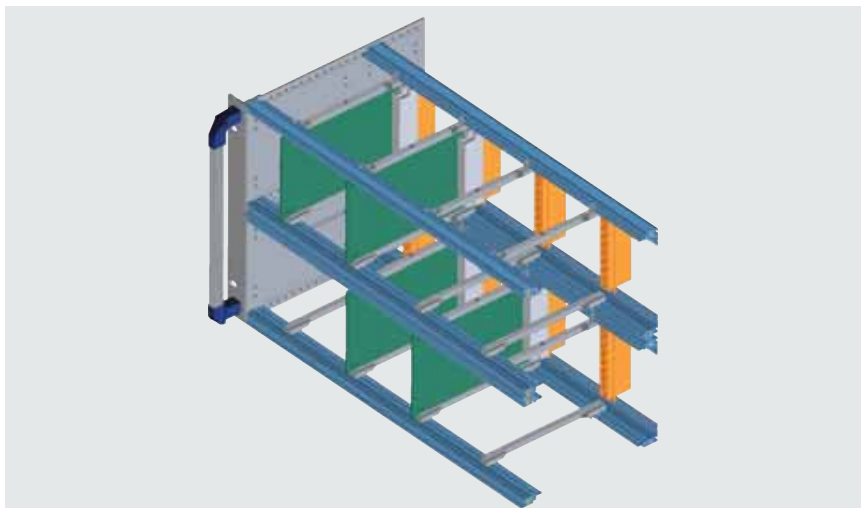
### Configuration for connectors according to DIN 41612

**front**

standard module rails 241-022  
threaded inserts, M 2.5

**rear**

narrow module rails 241-019  
with integrated mounting rails for  
plug-in connections in compliance  
with DIN 41612



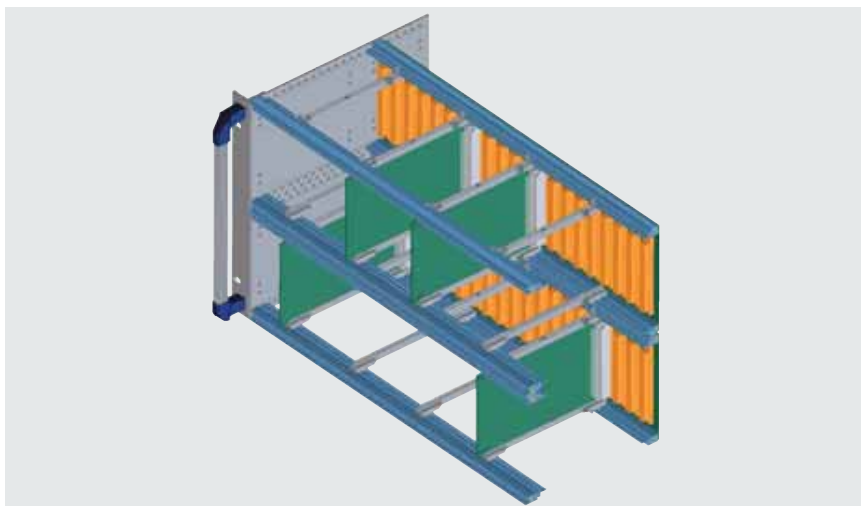
### Configuration for backplane

**front**

standard module rails 241-022  
threaded inserts, M 2.5

**rear**

BUS module rails 241-013  
threaded inserts, M 2.5



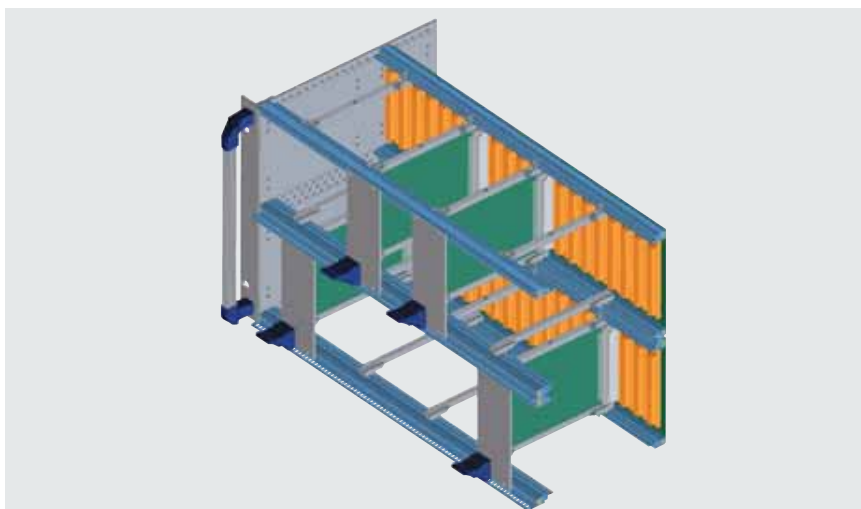
### Configuration for backplane and injector / extractor handle

**front**

standard module rails 241-022,  
standard module rails 241-049  
with 10mm clearance for handles for  
inserting/ removing cards  
threaded inserts, M 2.5

**rear**

BUS module rails 241-013  
threaded inserts, M 2.5

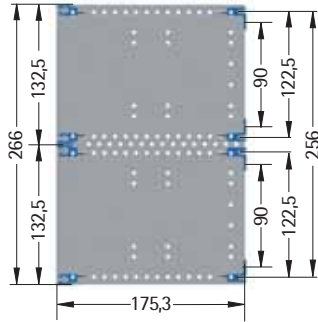


**Note:** Please order insulating strips or EMC gas-kets separately (see p. 43).



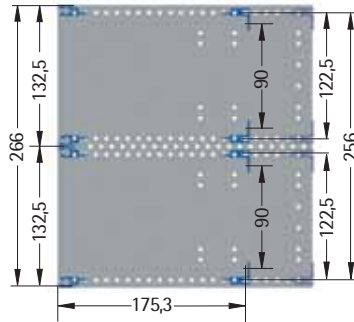
Configuration for connectors according to DIN 41612

176 mm depth



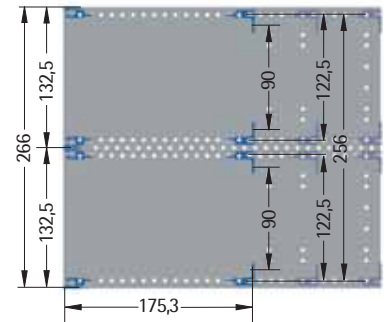
Description	Part no.
84 HP, with handle	24-5614-12
84 HP, without handle	24-5611-12

236 mm depth



Description	Part no.
84 HP, with handle	24-5615-12
84 HP, without handle	24-5612-12

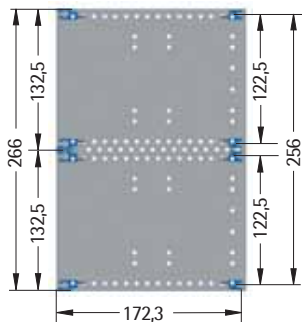
296 mm depth



Description	Part no.
84 HP, with handle	24-5616-12
84 HP, without handle	24-5613-12

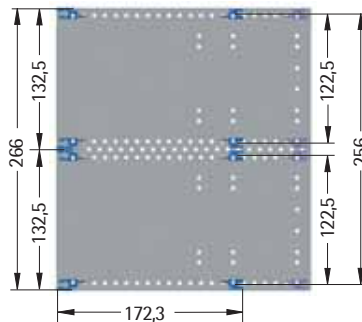
Configuration for backplane

176 mm depth



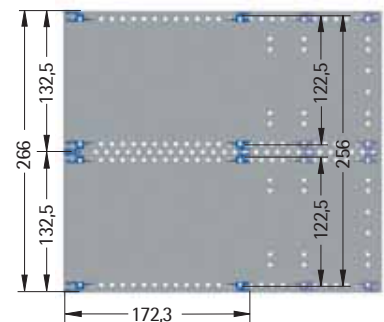
Description	Part no.
84 HP, with handle	24-5614-22
84 HP, without handle	24-5611-22

236 mm depth



Description	Part no.
84 HP, with handle	24-5615-22
84 HP, without handle	24-5612-22

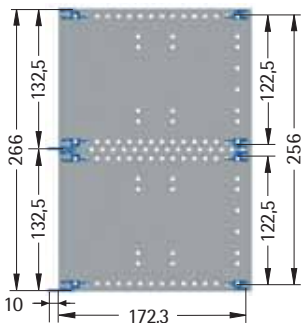
296 mm depth



Description	Part no.
84 HP, with handle	24-5616-22
84 HP, without handle	24-5613-22

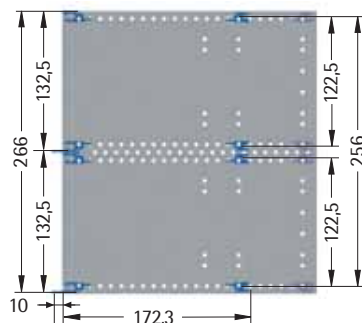
Configuration for backplane and injector / extractor handle

176 mm depth



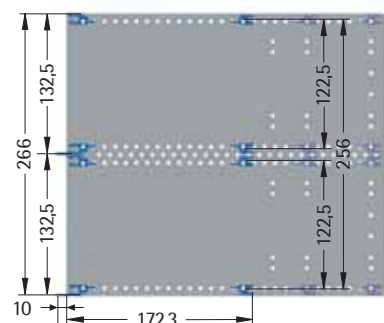
Description	Part no.
84 HP, with handle	24-5614-32
84 HP, without handle	24-5611-32

236 mm depth



Description	Part no.
84 HP, with handle	24-5615-32
84 HP, without handle	24-5612-32

296 mm depth



Description	Part no.
84 HP, with handle	24-5616-32
84 HP, without handle	24-5613-32



## 19" subrack with 2 x 3 U expansion kit

- high flexibility
- depth mounting increment  $d = 10\text{ mm}$
- can be expanded to EMC model, even between the front 2 x 3 U partitions
- side panels with twist lock for module rails

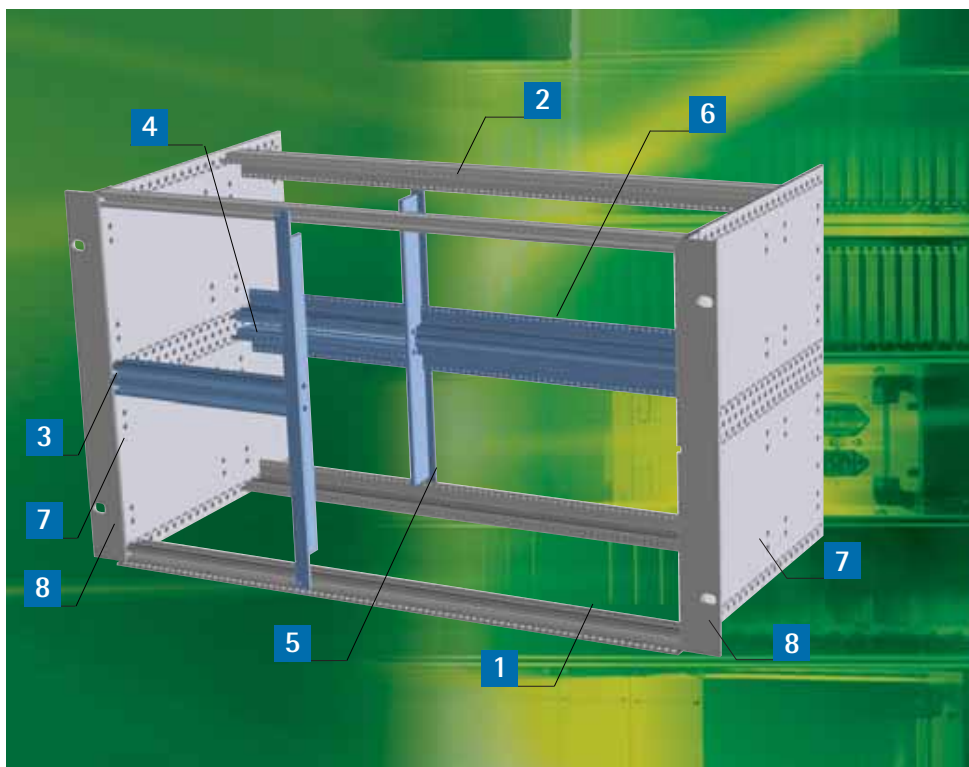
### Application:

for plug-in units in compliance with IEC 60297-3-101/-102/-103 and IEEE 1101.10/1101.11

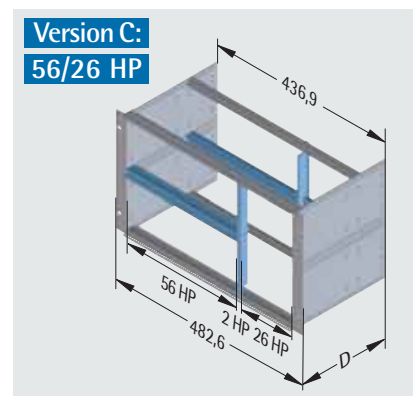
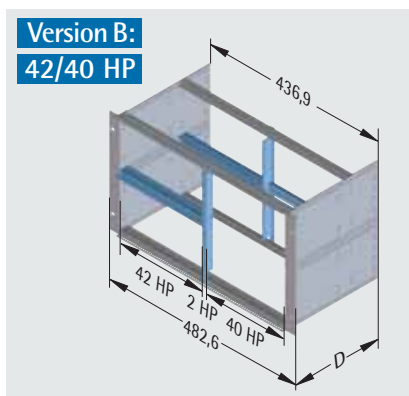
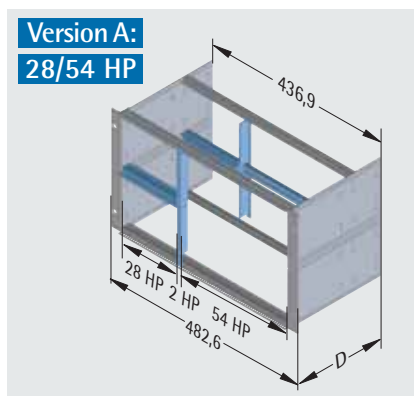
- Euroboards, 100 mm x 160 mm
- double Euroboards, 233.35 mm x 160 mm

### Material/Finish:

Side panels: aluminium 2,5 mm transparent chromated  
 Module rail: aluminium extrusion transparent chromated  
 Front brackets: aluminium extrusion transparent chromated  
 Delivery: kit



## Specifications



## Accessories

Cover panels EMC	p. 36
Rear panels	p. 36
EMC contact gaskets	p. 40
Card guides	p. 44
Insulating strips	p. 43

## Suitable components

Front panels	p. 62
Injector / extractor handle	p. 72
Sub-units	p. 73
EMC plug-in units	p. 78

## Included in delivery

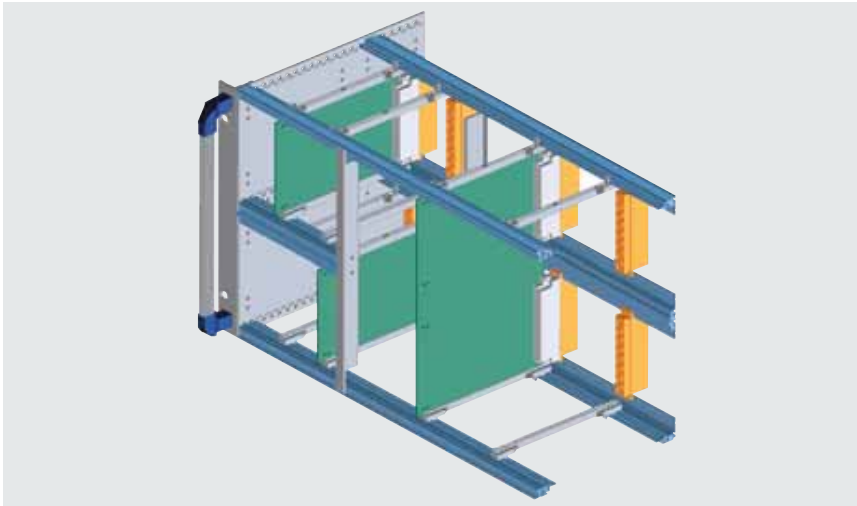
Item	Pc.	Description
1	2	Module rails, front, 85 HP
2	2	Module rails, rear, 85 HP
3	2	Module rails, front 29/43/57 HP
4	2	Module rails, rear 29/43/57 HP
5	2	Mounting struts
6	1	Support rail 55,5/41,5/27,5 HP
7	2	Side panels
8	2	Front bracket with / without handle
9	17	Oval-head screws M 4 x 12

Item	Pc.	Description
10	2	Threaded inserts M 2.5 84 HP
11	2	Threaded inserts M 2.5 84 HP (for rear BUS module rail)
12	2	Threaded inserts M 2.5 27/41/55 HP
13	2	Threaded inserts M 2,5 54/40/26 HP (for rear BUS module rail)
14	2	Threaded inserts M 2.5 55/41/27 HP (for rear BUS support rail)
15		Assembly material

**Note:** By use of front brackets, the usable width is reduced to 82 HP.



### Configuration for connectors according to DIN 41612



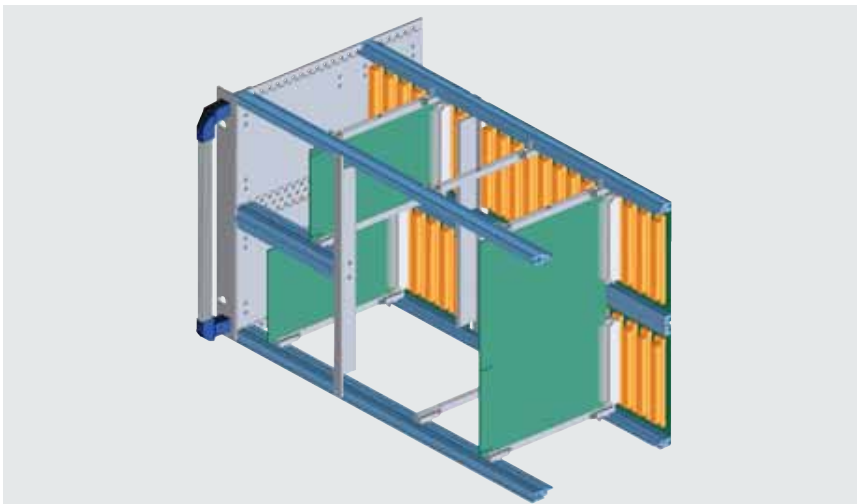
**front**

standard module rails 241-022  
threaded inserts, M 2.5

**rear**

narrow module rails 241-019 and  
support rail with integrated mounting  
rails for connectors in compliance with  
DIN 41612

### Configuration for backplane



**front**

standard module rails 241-022  
threaded inserts, M 2.5

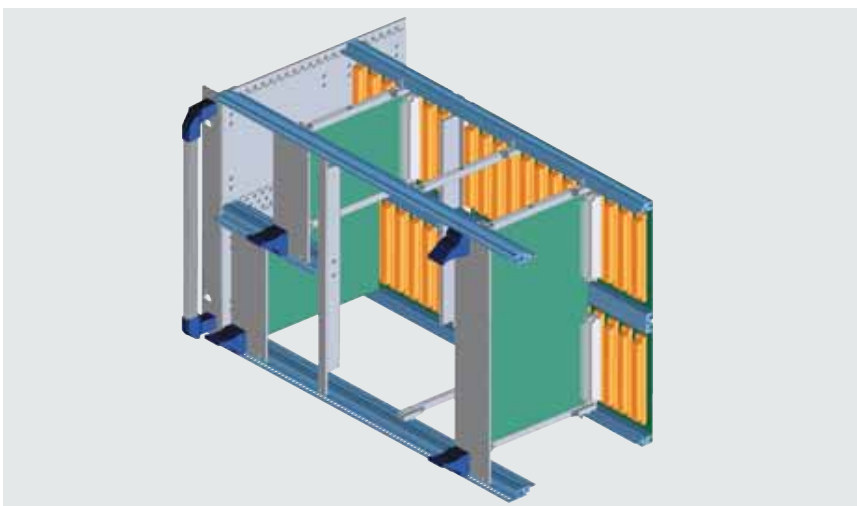
**rear**

BUS module rails 241-013  
threaded inserts, M 2.5

and BUS support rail 241-020  
threaded inserts, M 2.5

**Note:** Please order insulating strips or EMC gas-kets separately (see p. 43).

### Configuration for backplane and injector / extractor handle



**front**

standard module rails 241-022,  
standard module rail 241-049  
with 10mm clearance for insertion/  
extraction handle and for threaded  
threaded inserts, M 2.5

**rear**

BUS module rails 241-013  
threaded inserts, M 2.5

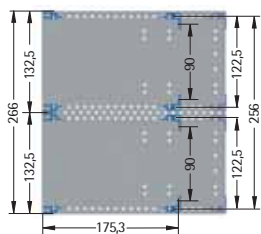
and BUS support rail 241-020  
threaded inserts, M 2.5

**Note:** Please order insulating strips or EMC gas-kets separately (see p. 43).



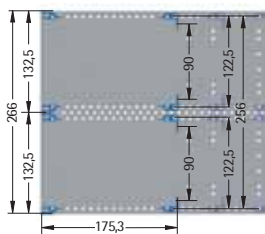


## 236 mm depth



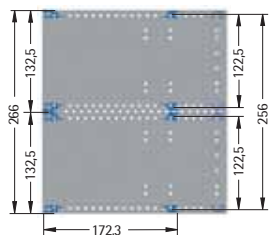
Description	Part no.
<b>A</b> 28/54 HP, with handle	24-5615-13
28/54 HP, without handle	24-5612-13
<b>B</b> 42/40 HP, with handle	24-5615-14
42/40 HP, without handle	24-5612-14
<b>C</b> 56/26 HP, with handle	24-5615-15
56/26 HP, without handle	24-5612-15

## 296 mm depth



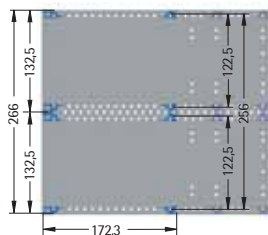
Description	Part no.
<b>A</b> 28/54 HP, with handle	24-5616-13
28/54 HP, without handle	24-5613-13
<b>B</b> 42/40 HP, with handle	24-5616-14
42/40 HP, without handle	24-5613-14
<b>C</b> 56/26 HP, with handle	24-5616-15
56/26 HP, without handle	24-5613-15

## 236 mm depth



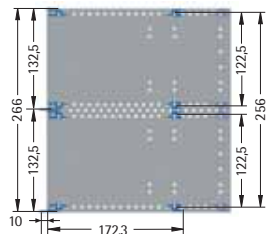
Description	Part no.
<b>A</b> 28/54 HP, with handle	24-5615-23
28/54 HP, without handle	24-5612-23
<b>B</b> 42/40 HP, with handle	24-5615-24
42/40 HP, without handle	24-5612-24
<b>C</b> 56/26 HP, with handle	24-5615-25
56/26 HP, without handle	24-5612-25

## 296 mm depth



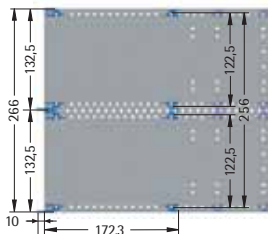
Description	Part no.
<b>A</b> 28/54 HP, with handle	24-5616-23
28/54 HP, without handle	24-5613-23
<b>B</b> 42/40 HP, with handle	24-5616-24
42/40 HP, without handle	24-5613-24
<b>C</b> 56/26 HP, with handle	24-5616-25
56/26 HP, without handle	24-5613-25

## 236 mm depth



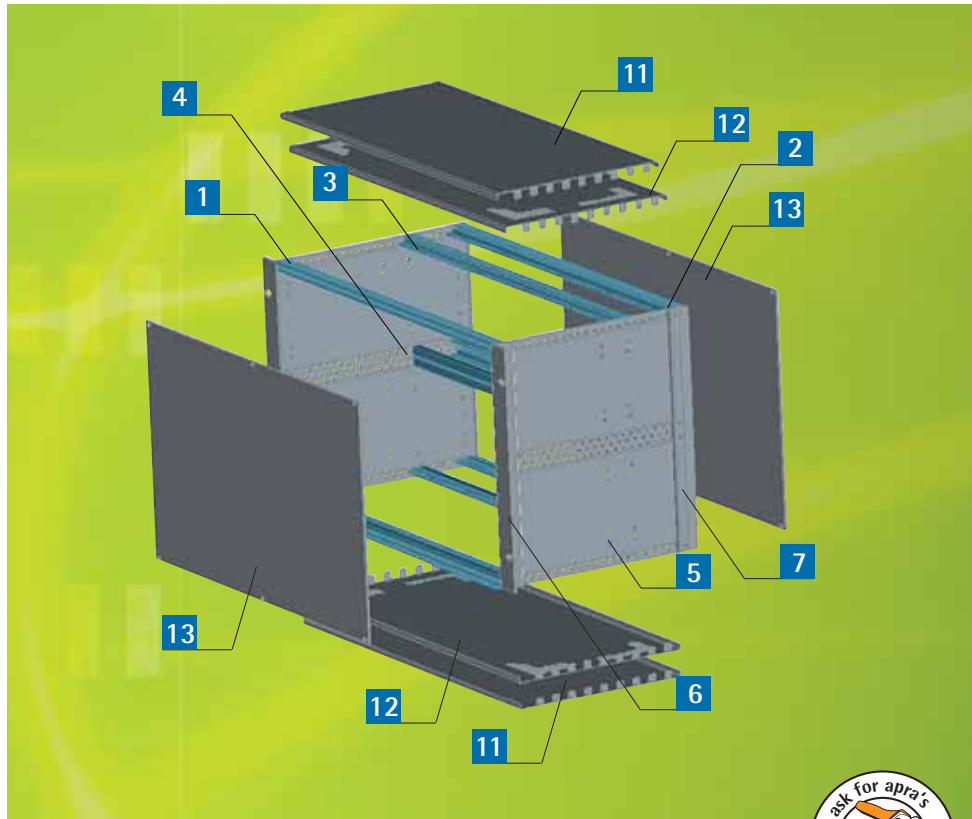
Description	Part no.
<b>A</b> 28/54 HP, with handle	24-5615-33
28/54 HP, without handle	24-5612-33
<b>B</b> 42/40 HP, with handle	24-5615-34
42/40 HP, without handle	24-5612-34
<b>C</b> 56/26 HP, with handle	24-5615-35
56/26 HP, without handle	24-5612-35

## 296 mm depth



Description	Part no.
<b>A</b> 28/54 HP, with handle	24-5616-33
28/54 HP, without handle	24-5613-33
<b>B</b> 42/40 HP, with handle	24-5616-34
42/40 HP, without handle	24-5613-34
<b>C</b> 56/26 HP, with handle	24-5616-35
56/26 HP, without handle	24-5613-35

**Note:** Other depths available on request. All drawings shown in side view. The lighter colour rear rails show optional installation positions.



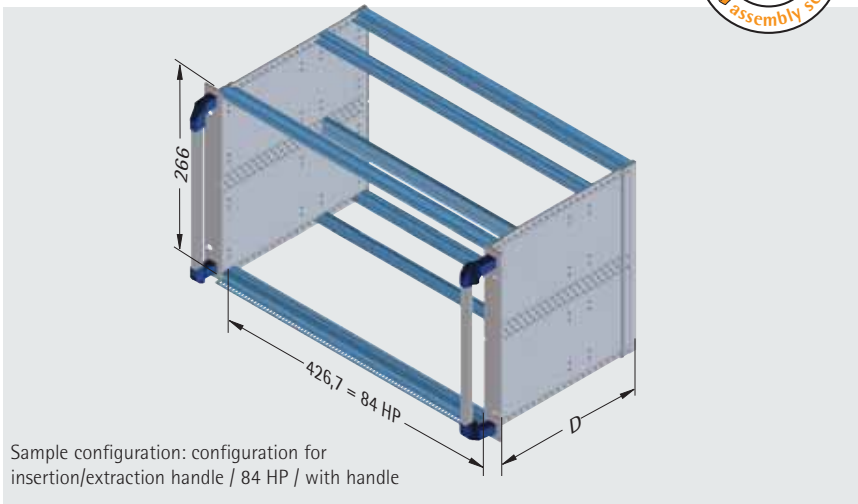
19" subrack, 6 U, 84 HP - EMC

- protection against electromagnetic environmental influences
- protects the environment from internal radiation
- chromated surfaces connect all components
- expanded EMC delivery:
  - module rails, rear **2**
  - cover bracket **7**
- side panels with twist lock for module rails

**Shielding attenuation measurement:**

An independent institute conducted shielding attenuation measurements on the subrack in compliance with VG 95373 Part 15 in the frequency range of 30 MHz to 1000 MHz. The resulting shielding attenuation curve is available on request.

Specifications



**Application:**

for plug-in units in compliance with IEC 60297-3-101/-102/-103 and IEEE 1101.10/1101.11

**Material:**

- Side panels: aluminium 2,5 mm transparent chromated
- Module rail: aluminium extrusion transparent chromated
- Front / cover bracket: aluminium extrusion transparent chromated

**Delivery:** kit

Included in delivery

Item	Pc.	Description
<b>1</b>	2	Module rails, front
<b>2</b>	2	Module rails, rear
<b>3</b>	2	Module rails, middle
<b>4</b>	1	Support rail, middle
<b>5</b>	2	Side panels
<b>6</b>	2	Front bracket with or without handle
<b>7</b>	2	Rear bracket

Item	Pc.	Description
<b>8</b>	4	Threaded inserts, M 2.5 7 mm x 2 mm
<b>9</b>	4	Threaded inserts, M 2.5 5 mm x 1,5 mm (for middle BUS module rail)
<b>10</b>	14	Oval-head screws M 4 x 12 self-locking Assembly material

**Note:**

For high EMC shielding, please order cover plates, front plates and other EMC-shielding material separately (see page 40).



### Configuration for connectors according to DIN 41612

**front**

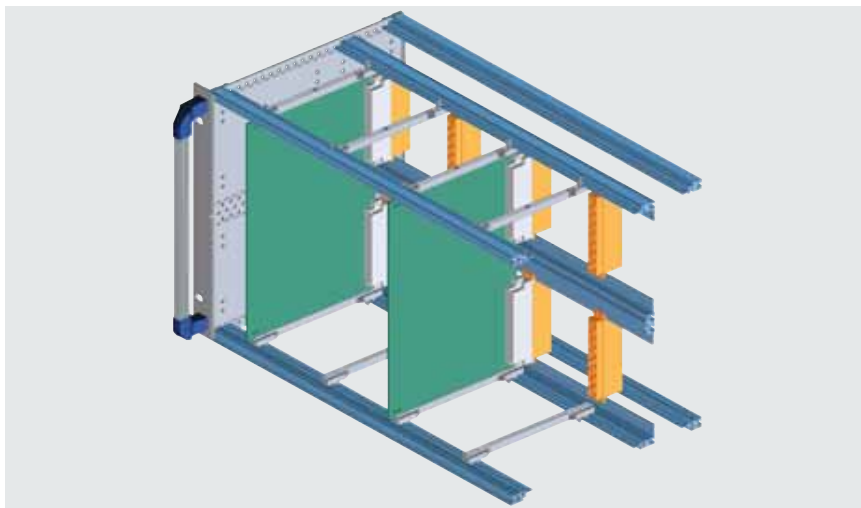
standard module rails 241-022  
threaded inserts, M 2.5

**middle**

narrow module rails 241-019  
and support rail 241-008  
with integrated mounting rails for con-  
nectors in compliance with DIN 41612

**rear**

standard module rails 241-022  
threaded inserts, M 2.5



### Configuration for backplane

**front**

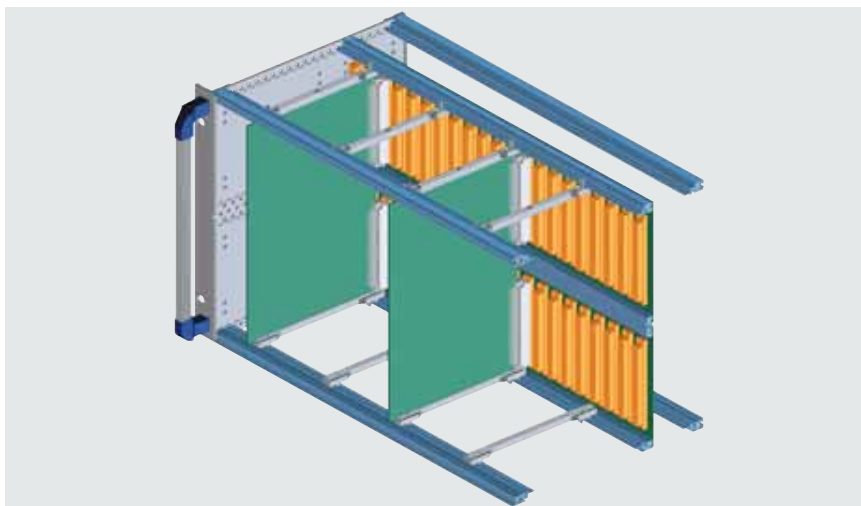
standard module rails 241-022  
threaded inserts, M 2.5

**middle**

BUS module rails 241-013,  
BUS support rail 241-020  
threaded inserts, M 2.5

**rear**

standard module rails 241-022  
threaded inserts, M 2.5



### Configuration for backplane and injector / extractor handle

**front**

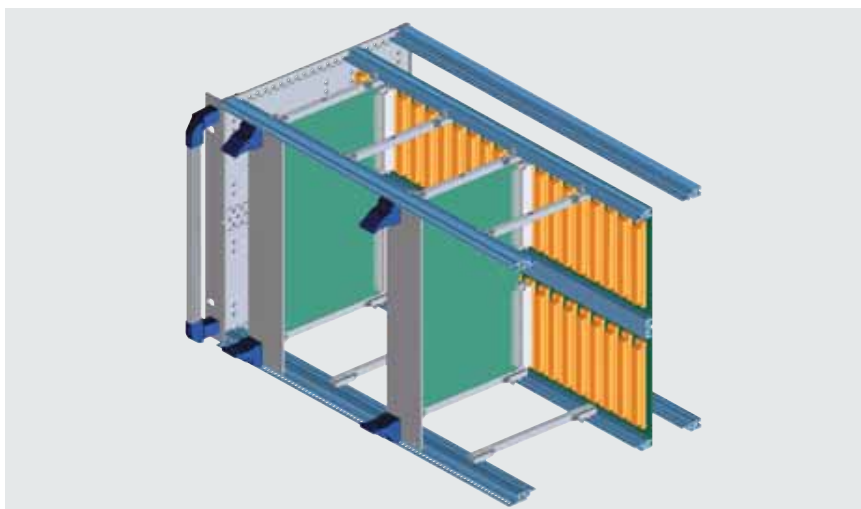
standard module rails 241-049  
with 10mm clearance for insertion/  
extraction handle  
threaded inserts, M 2.5

**middle**

BUS module rails 241-013,  
BUS support rail 241-020  
threaded inserts, M 2.5

**rear**

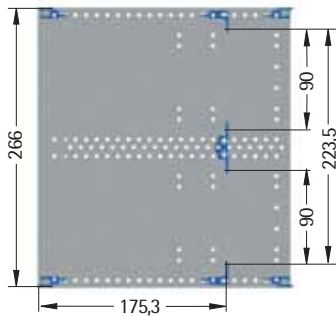
standard module rail 241-022  
threaded inserts, M 2.5





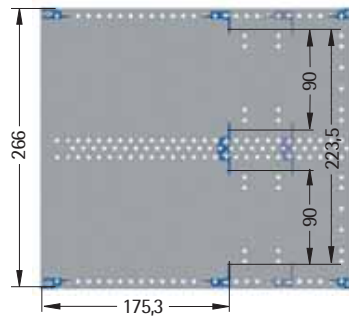
**Configuration for connectors according to DIN 41612**

236 mm depth



Description	Part no.
84 HP, with handle	24-5615-16
84 HP, without handle	24-5611-16

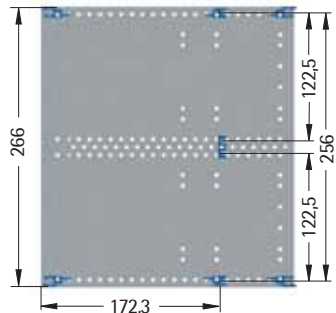
296 mm depth



Description	Part no.
84 HP, with handle	24-5616-16
84 HP, without handle	24-5612-16

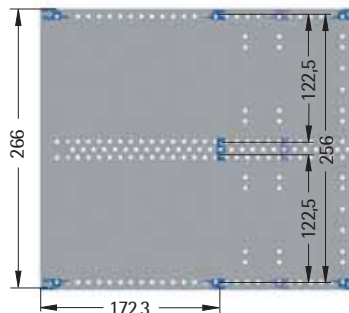
**Configuration for backplane**

236 mm depth



Description	Part no.
84 HP, with handle	24-5615-26
84 HP, without handle	24-5611-26

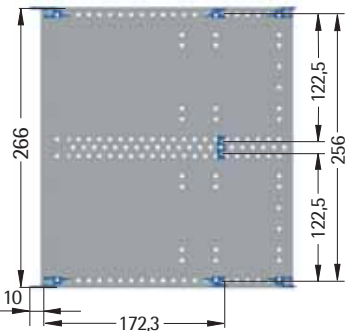
296 mm depth



Description	Part no.
84 HP, with handle	24-5616-26
84 HP, without handle	24-5612-26

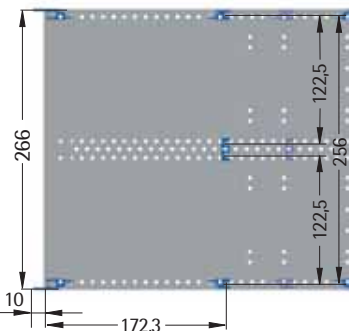
**Configuration for backplane and injector / extractor handle**

236 mm depth



Description	Part no.
84 HP, with handle	24-5615-36
84 HP, without handle	24-5611-36

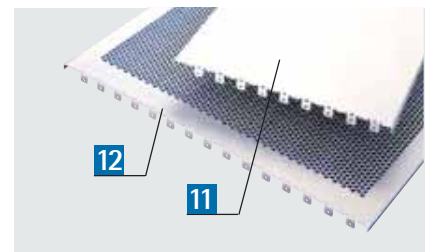
296 mm depth



Description	Part no.
84 HP, with handle	24-5616-36
84 HP, without handle	24-5612-36

**Accessories**

**Cover panel EMC, 84 HP**



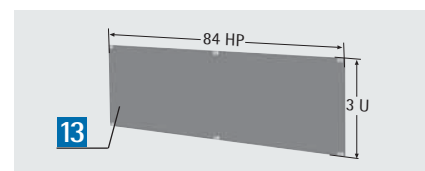
The ventilated EMC cover panels have honeycomb perforations, which allow maximum air flow. They also provide good EMC protection.

**Finish:** transparent chromated  
**Material:** aluminium

Item	Pc.	Description
11	1	Cover panel, solid
		<b>Depth</b> <b>D=236 mm</b> <b>D=296 mm</b>
		<b>Part no.</b> 24-5012-40    24-5013-40

Item	Pc.	Description
12	1	Cover panel, ventilated
		<b>Depth</b> <b>D=236 mm</b> <b>D=296 mm</b>
		<b>Part no.</b> 24-5012-48    24-5013-48

**Front/rear 2, 84 HP**

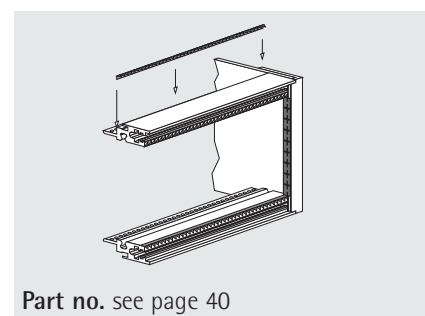


**Finish:** anodized exterior, transparent chromated interior

**Material:** aluminium 2.5 mm

Item	Pc.	Height	Part no.
13	1	6 U	24-3884-16

**EMC contact gasket set**



**Part no.** see page 40