

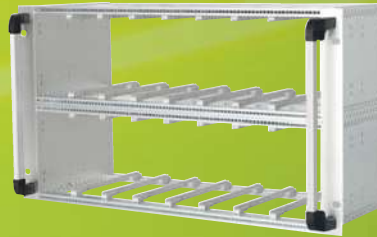
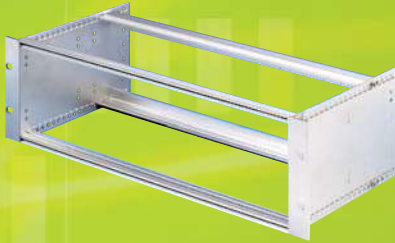
19" Electronic Packaging



... the perfect shell for valuable electronics



19" subracks



3 U subrack 245

page 4

- Width: 84 HP or 42 HP
- can be used for backplanes and connectors in compliance with DIN 41612
- available as:
 - standard subrack 4
 - for wall mounting 8
 - EMC subrack 10

6 U subrack 245

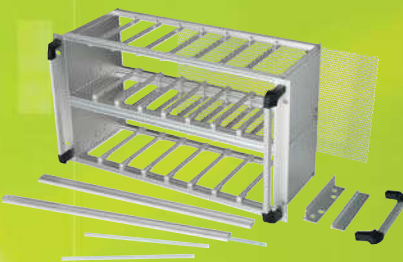
page 13

- Width: 84 HP
- can be used for backplanes and connectors in compliance with DIN 41612
- available as:
 - single-row subrack 13
 - double-row subrack 16
 - subrack with expansion kit 19
 - EMC subrack 22

2 U subrack 245

page 25

- Width: 84 HP or 42 HP
- Depth: 236 / 296 mm
- can be used for backplanes and connectors in compliance with DIN 41612
- horizontal expansion kits 3 U / 6 U available



Individual Configuration 245

page 27

Based on a wide range of components you will be able to exactly fit your needs. Just contact us if there are any questions about customizing your sub-rack.

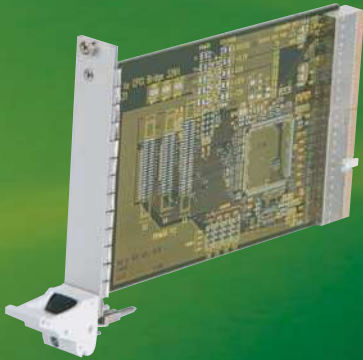
Frames

page 51

- easy installation into instrument panels or front doors
- The frame is designed for the installation of active components, plug-in units or Euroboards 100 x 160 mm.



Plug-in units



Front panels, handles

page 53

- Front panels.....54
- EMC front panels57
- Front panels IEEE.....62
- Profile front panels IEEE63
- injector / extractor handle IEEE64

Systems



VME bus systems

page 75

- 3 U 76
- 7 U 77

CompactPCI systems

page 78

- 1 U 78
- 1 U ATX 79
- 2 U 80
- 3 U 81
- 6 U 82
- 7 U 83
- 8 U 84
- Desktop system 3 U 85



Sub-units, plug-in units

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- EMC Sub-units 3 U / 6 U65
- Sub-units 3 U68
- Sub-units 6 U69
- EMC plug-in units 3 U / 6 U.....70
- plug-in units 3 U.....72
- plug-in units 6 U.....73



System development

page 86

- Based on customer's requirements, apra-norm designs complete systems with electromechanical and electronic components. This includes modifying or redesign of existing products but also the complete new design of enclosure systems.
- In addition to this, we offer system integration of components such as cabling, connectors, switches, backplanes, power supplies, control units and cooling solutions.



19" subrack 245



Reference analyses

The standard subrack 245-312-11 underwent the following reference analyses:

- DIN EN 50155
Railway use of electrical equipment on rail vehicles
the following were tested: vibrations · broadband noise · long-term test Fh
shock stressing – Ea test in compliance with DIN 61 373

- DIN EN 61587-1
Electromechanical designs for electronic systems:
Tests for mechanical, climate and safety requirements for cabinets, racks and plug-in units
Requirements for shock and vibration stability:
the following were tested: dynamic tests, DL 4 · resonance analysis – test Fc
sine wave-form – test Fc
vibrations, sine wave-form – test Fc
shock stressing – test Ea
static test SL1: maximum deflection < 0.4mm

19" subrack 245

- for plug-in units in compliance with IEC 297-3-101/-102/-103 and IEEE 1101.10/1101.11
- EMC-compliant design
- complete solutions with integrated ventilation
- wide range of standard products
- individual configurations available
- also available as VME bus or CompactPCI system
- wide range of accessories

All tests were passed with excellent results.
The independent test laboratory did not discover any defects.



19" subrack, 3 U

- 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
- Please ask for our assembly service.



Specifications

Application:

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

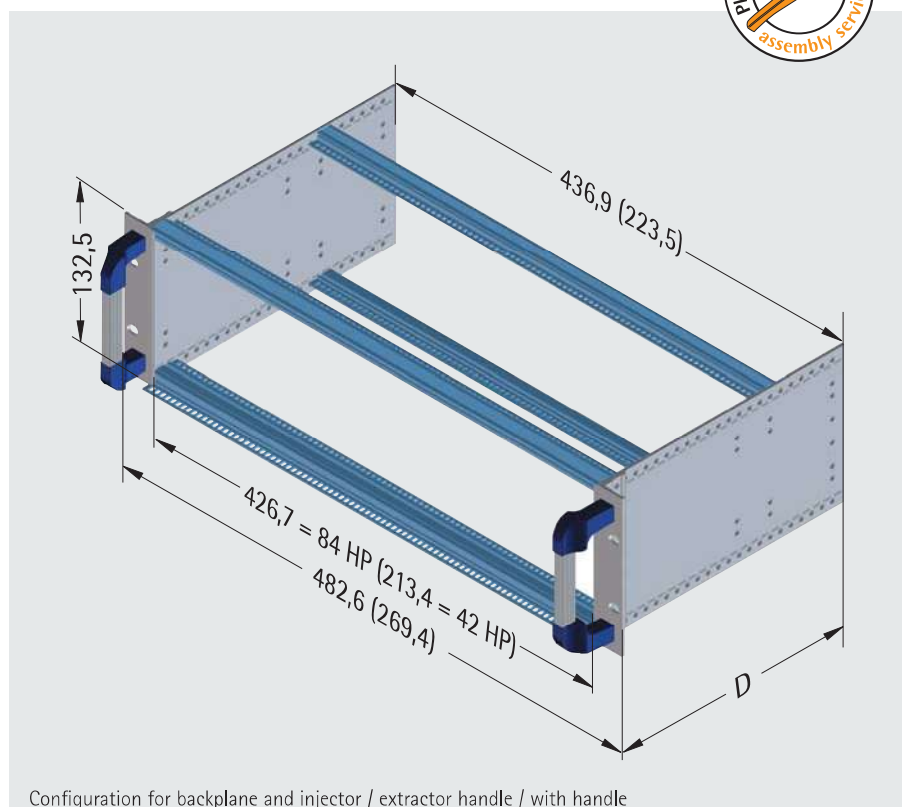
Material/Finish:

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

Delivery: kit

Included in delivery

Item	Pc.	Description
1	2	Module rails, front
2	2	Module rails, rear
3	2	Side panels
4	2	Front fixing bracket with or without handle
5	8	Oval-head screws, M 4 x 12 self-locking
6	2	Threaded inserts, M 2.5 7 mm x 2 mm
7	2	Threaded inserts, M 2.5 5 mm x 1,5 mm (for rear BUS module rails)
8		Assembly material



Accessories

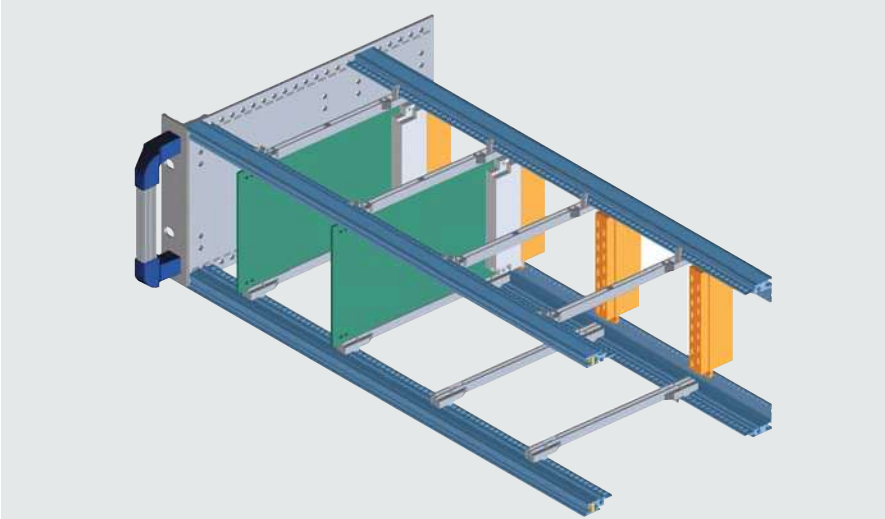
Expansion kit for 3 U subracks p. 38
 Cover panels EMC p. 36
 Rear panels p. 36
 Card guides p. 44
 Insulating strips p. 43

Suitable components

Front panels p. 54
 Injector / extractor handle p. 64
 Sub-units p. 65
 EMC plug-in units p. 70



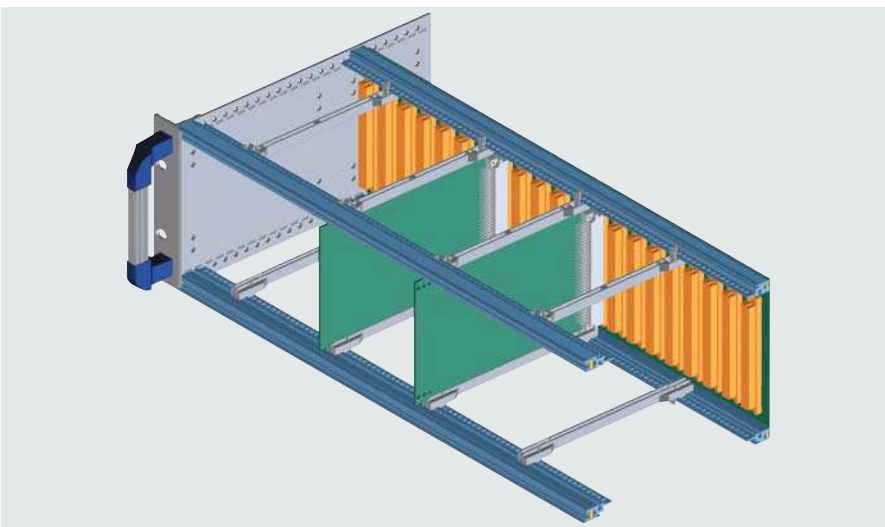
Configuration for connectors according to DIN 41612



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

rear
narrow module rails 241-019
with built-in mounting rails for connectors in compliance with
DIN 41612

Configuration for backplane

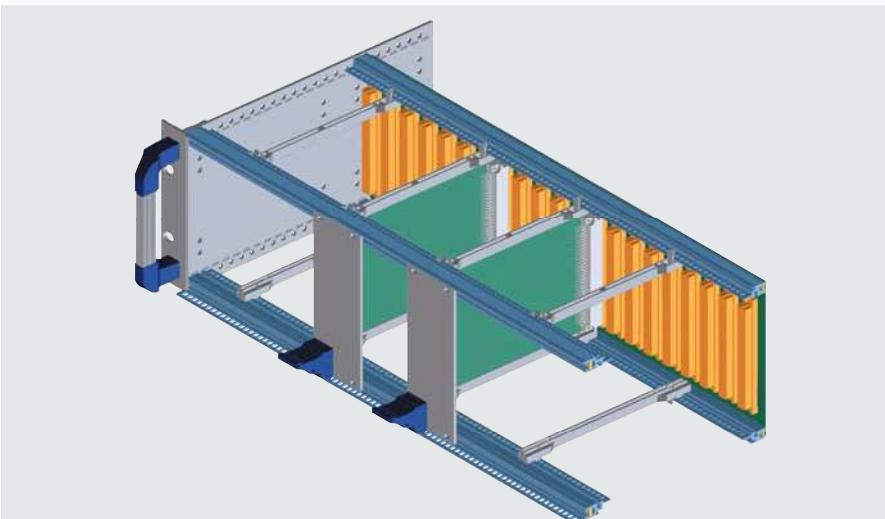


front
standard module rails 241-022
threaded inserts, M 2.5

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

Note: Please order insulating strips (see p. 43) or
EMC gaskets (see p. 40) separately.

Configuration for backplane and injector / extractor handle



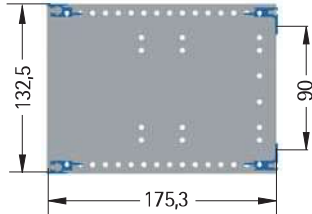
front
standard module rail 241-022,
standard module rail 241-049
with 10mm clearance for insertion/
extraction handle
threaded inserts, M 2.5

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

Note: Please order insulating strips (see p. 43) or
EMC gaskets (see p. 40) separately.

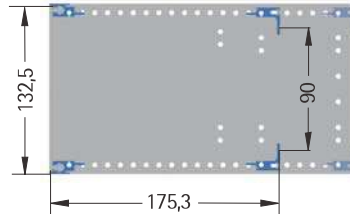


176 mm depth



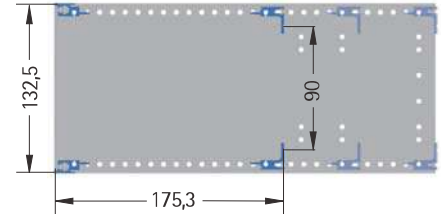
Description	Part no.
84 HP, with handle	245-314-11
84 HP, without handle	245-311-11
42 HP, with handle	245-334-11
42 HP, without handle	245-331-11

236 mm depth



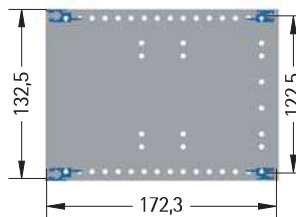
Description	Part no.
84 HP, with handle	245-315-11
84 HP, without handle	245-312-11
42 HP, with handle	245-335-11
42 HP, without handle	245-332-11

296 mm depth



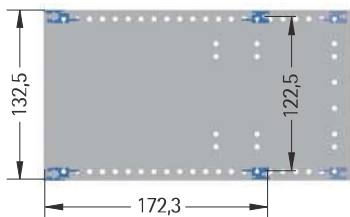
Description	Part no.
84 HP, with handle	245-316-11
84 HP, without handle	245-313-11
42 HP, with handle	245-336-11
42 HP, without handle	245-333-11

176 mm depth



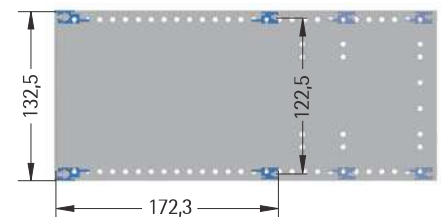
Description	Part no.
84 HP, with handle	245-314-21
84 HP, without handle	245-311-21
42 HP, with handle	245-334-21
42 HP, without handle	245-331-21

236 mm depth



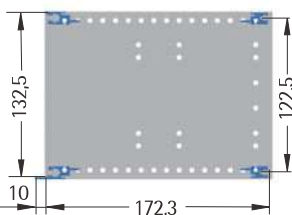
Description	Part no.
84 HP, with handle	245-315-21
84 HP, without handle	245-312-21
42 HP, with handle	245-335-21
42 HP, without handle	245-332-21

296 mm depth



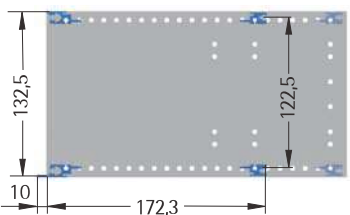
Description	Part no.
84 HP, with handle	245-316-21
84 HP, without handle	245-313-21
42 HP, with handle	245-336-21
42 HP, without handle	245-333-21

176 mm depth



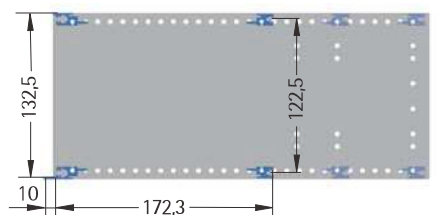
Description	Part no.
84 HP, with handle	245-314-31
84 HP, without handle	245-311-31
42 HP, with handle	245-334-31
42 HP, without handle	245-331-31

236 mm depth



Description	Part no.
84 HP, with handle	245-315-31
84 HP, without handle	245-312-31
42 HP, with handle	245-335-31
42 HP, without handle	245-332-31

296 mm depth

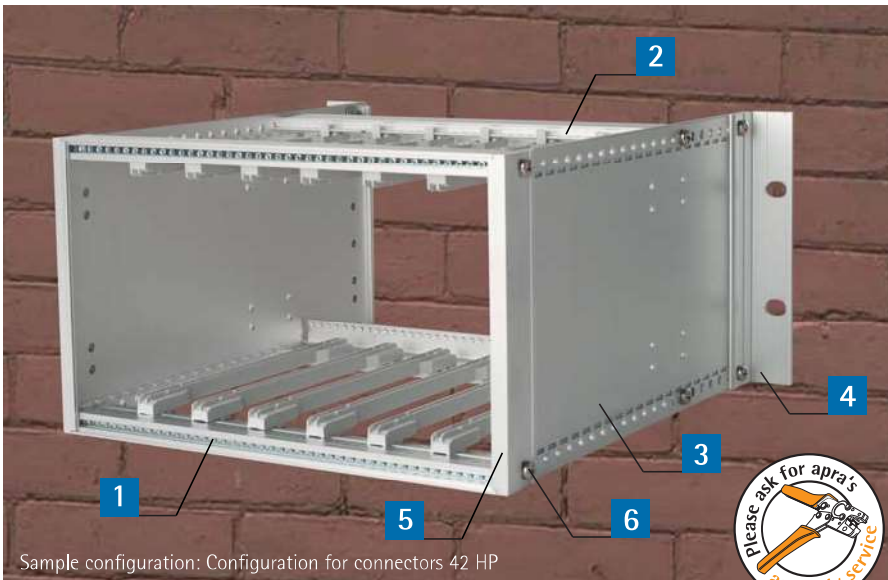


Description	Part no.
84 HP, with handle	245-316-31
84 HP, without handle	245-313-31
42 HP, with handle	245-336-31
42 HP, without handle	245-333-31

Note: All drawings shown in side view. The lighter colour rear rails show optional installation positions. Please order insulating strips (p.40) and EMC gaskets (p.43) separately.



245 • 19" subrack 3 U, for wall mounting

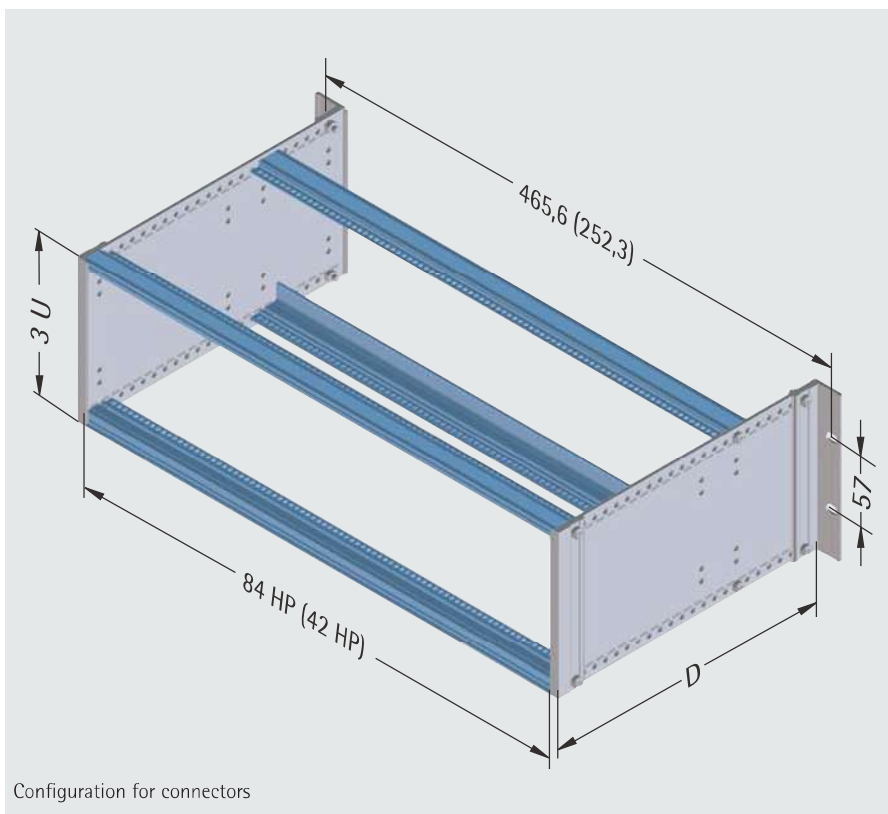


Sample configuration: Configuration for connectors 42 HP

19" subrack 3 U for wall mounting

- depth mounting increment $d = 10\text{mm}$
- can be easily expanded
- side panels with twist lock for module rails

Specifications



Configuration for connectors

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 / cover, bracket: aluminium extrusion transparent chromated

Delivery: kit

Included in delivery

Item	Pc.	Description
1	2	Module rails, front
2	2	Module rails, rear
3	2	Side panels
4	2	Front bracket
5	2	Rear bracket
6	8	Oval-head screws M 4 x 12 self-locking

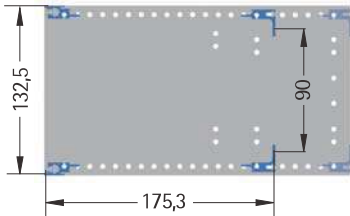
Item	Pc.	Description
7	2	Threaded inserts, M 2.5 7 mm x 2 mm
8	2	Threaded inserts, M 2.5 5 mm x 1,5 mm (for rear BUS module rail)
9		Assembly material

Note: Please order insulating strips (see p. 43) or EMC gaskets (see p. 40) separately.



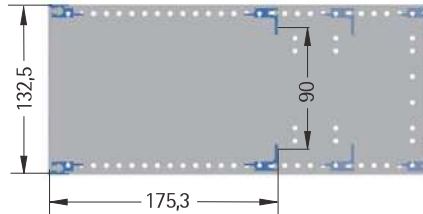
Configuration for connectors according to DIN 41612

236 mm depth



Description	Part no.
84 HP	245-312-17
42 HP	245-332-17

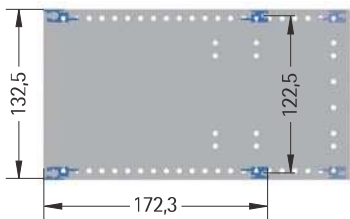
296 mm depth



Description	Part no.
84 HP	245-313-17
42 HP	245-333-17

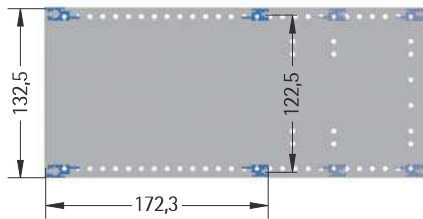
Configuration for backplane

236 mm depth



Description	Part no.
84 HP	245-312-27
42 HP	245-332-27

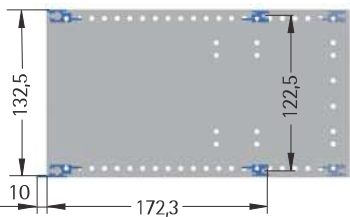
296 mm depth



Description	Part no.
84 HP	245-313-27
42 HP	245-333-27

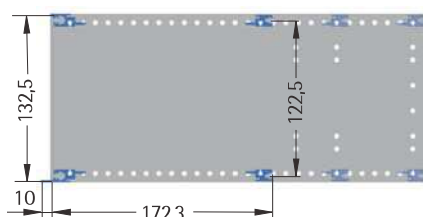
Configuration for backplane and injector / extractor handle

236 mm depth



Description	Part no.
84 HP	245-312-37
42 HP	245-332-37

296 mm depth



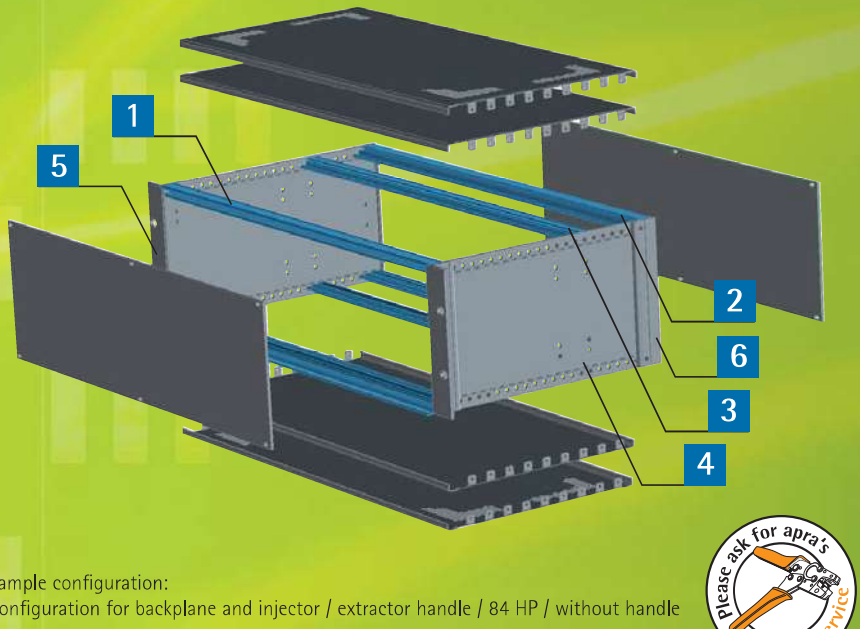
Description	Part no.
84 HP	245-313-37
42 HP	245-333-37

Accessories

6 U expansion kit for 3 U subracks	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. 54
Injector / extractor handle	p. 64
Sub-units	p. 65
EMC plug-in units	p. 70

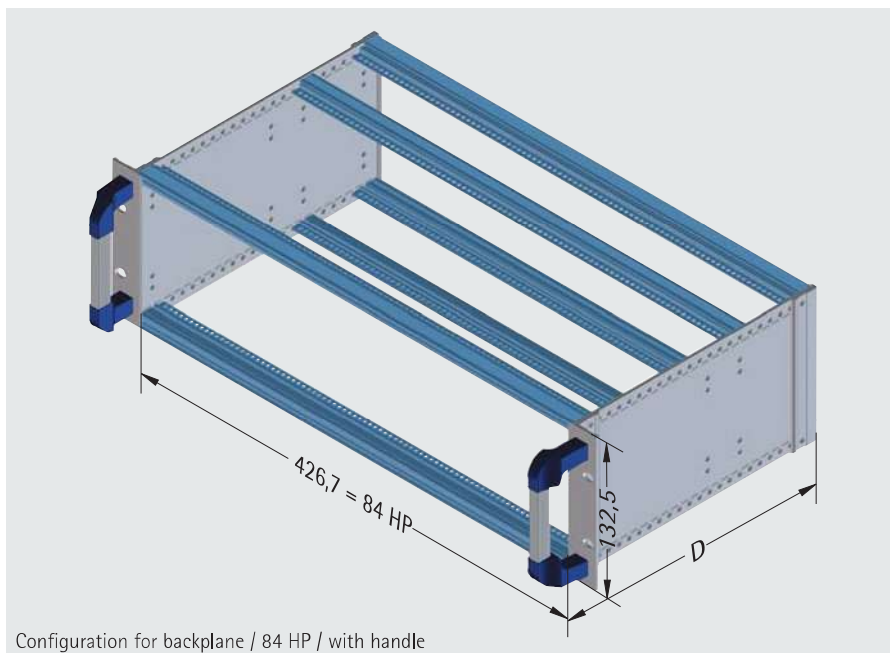


Sample configuration:
Configuration for backplane and injector / extractor handle / 84 HP / without handle

19" subrack, 3 U, 84 HP – EMC

- protection against electromagnetic environmental influences
- protects the environment from internal radiation
- chromated surfaces connect all components
- expanded EMC delivery:
 - module rail, rear **2**
 - cover bracket **6**
- side panels with twist lock for module rails

Specifications



Configuration for backplane / 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 / cover bracket: aluminium extrusion transparent chromated

Delivery:

kit

Included in delivery

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

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

Note: For high EMC shielding, please order cover plates (see p. 36), front plates (see p. 57) and other EMC-shielding material (see p. 40 and 43) separately.



Configuration for connectors according to DIN 41612

front

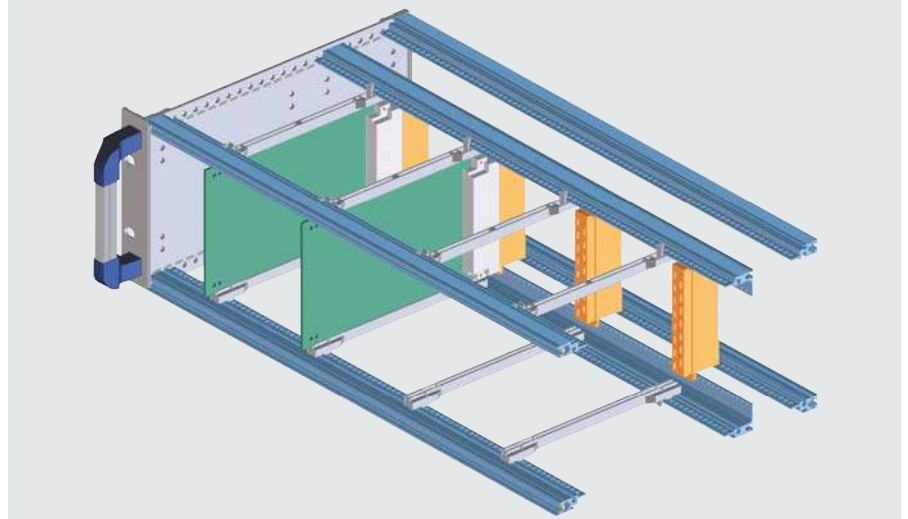
standard module rails 241-022
threaded inserts, M 2.5

middle

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

rear

standard module rails 241-022
threaded inserts, M 2.5



Configuration for backplane

front

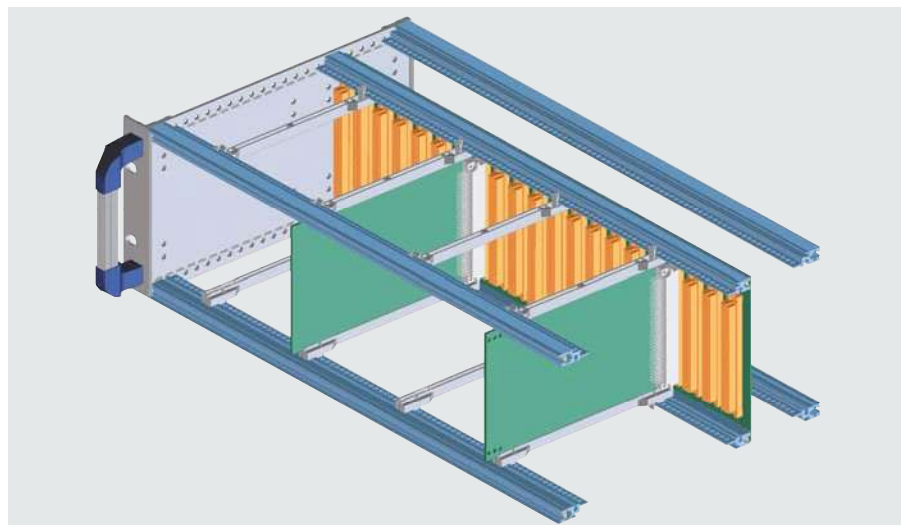
standard module rails 241-022
threaded inserts, M 2.5

middle

BUS module rails 241-013
threaded inserts, M 2.5

rear

standard module rails 241-022
threaded inserts, M 2.5



Configuration for backplane and injector / extractor handle

front

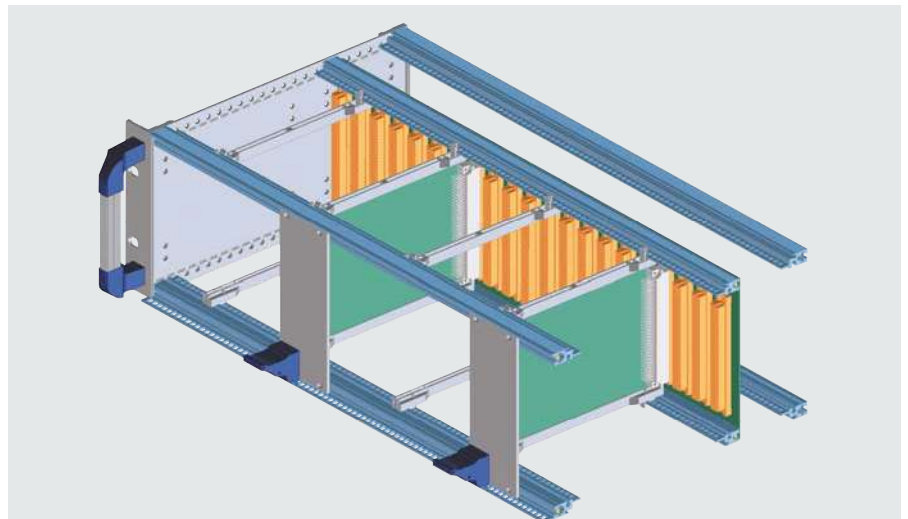
standard module rail 241-022,
standard module rail 241-049
with 10 mm clearance for insertion/
extraction handle
threaded inserts, M 2.5

middle

BUS module rails 241-013
threaded inserts, M 2.5

rear

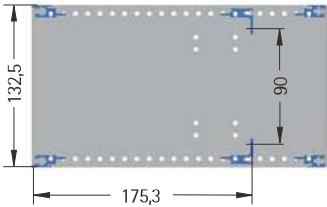
standard module rails 241-022
threaded inserts, M 2.5



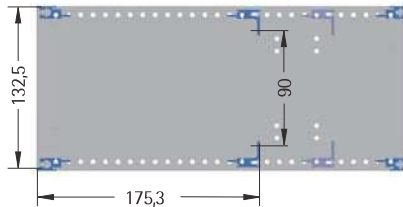


Configuration for connectors according to DIN 41612

236 mm depth



296 mm depth

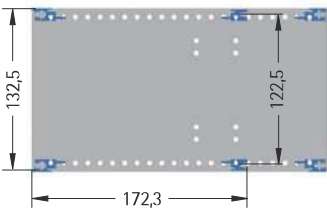


Description	Part no.
84 HP, with handle	245-315-16
84 HP, without handle	245-312-16

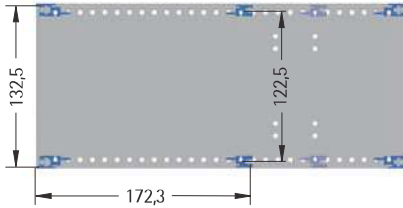
Description	Part no.
84 HP, with handle	245-316-16
84 HP, without handle	245-313-16

Configuration for backplane

236 mm depth



296 mm depth

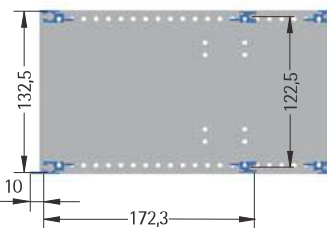


Description	Part no.
84 HP, with handle	245-315-26
84 HP, without handle	245-312-26

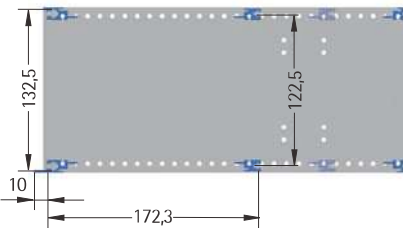
Description	Part no.
84 HP, with handle	245-316-26
84 HP, without handle	245-313-26

Configuration for backplane and injector / extractor handle

236 mm depth



296 mm depth



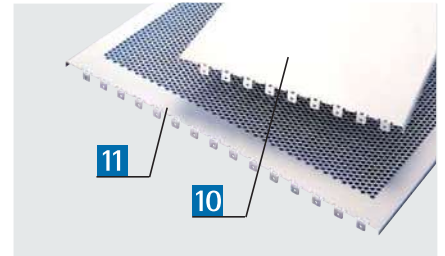
Description	Part no.
84 HP, with handle	245-315-36
84 HP, without handle	245-312-36

Description	Part no.
84 HP, with handle	245-316-36
84 HP, without handle	245-313-36

Note: All drawings shown in side view. The lighter colour rear rails show optional installation positions.

Accessories

Cover panel EMC, 84 HP



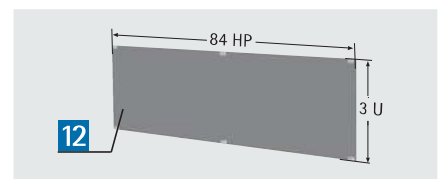
The ventilated EMC cover panels have honeycomb perforations, which allow maximum air flow. They also provide good EMC protection.

Finish: transparent chromated
Material: aluminium

Item	Pc.	Description
10	1	Cover panel, solid
Depth	D=236 mm	D=296 mm
Part no.	245-012-40	245-013-40

Item	Pc.	Description
11	1	Cover panel, ventilated
Depth	D=236 mm	D=296 mm
Part no.	245-012-48	245-013-48

Front/rear 2, 84 HP

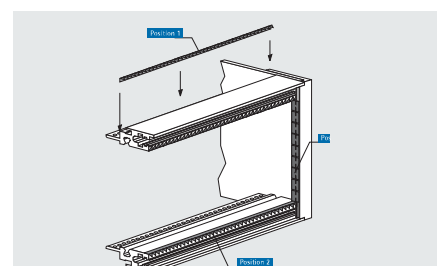


Finish: anodized exterior, transparent chromated interior

Material: aluminium 2,5 mm

Item	Pc.	Height	Part no.
12	1	6 U	243-884-16

EMC contact gasket set



Part no. see page 40



**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

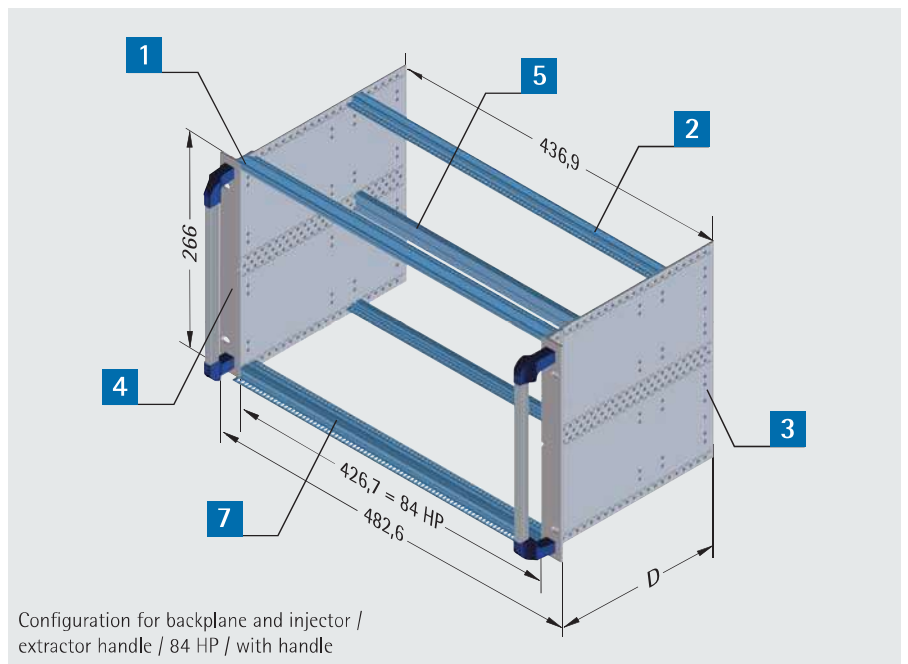
Delivery: kit

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. 54
- Injector / extractor handle p. 64
- Sub-units p. 65
- EMC plug-in units p. 70



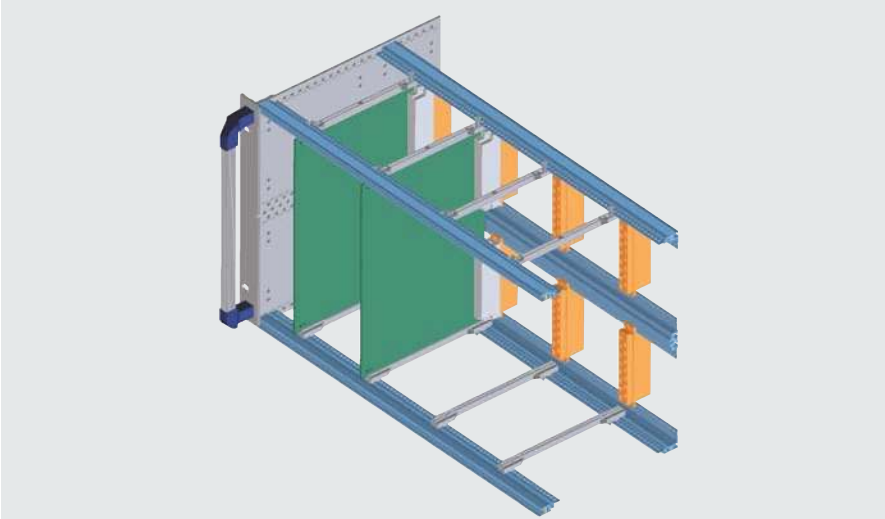
Included in delivery

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



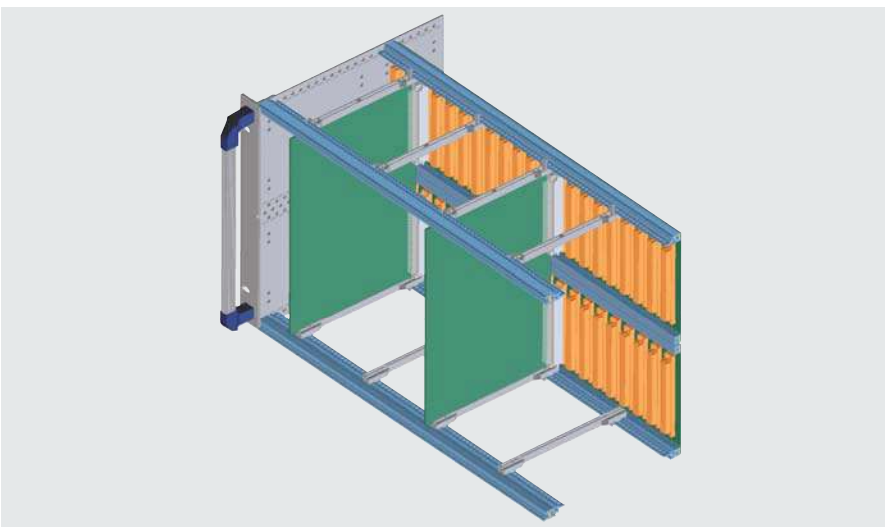
Configuration for connectors according to DIN 41612



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

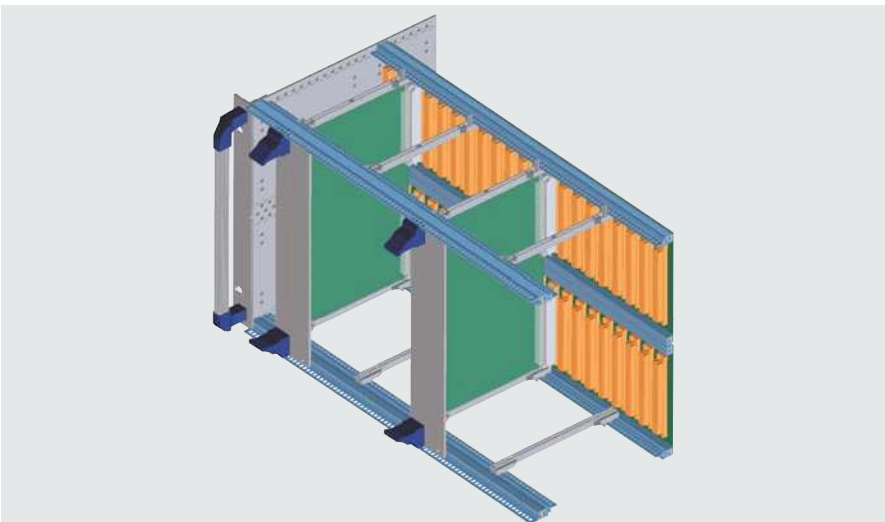


front
standard module rails 241-022
threaded inserts, M 2.5

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

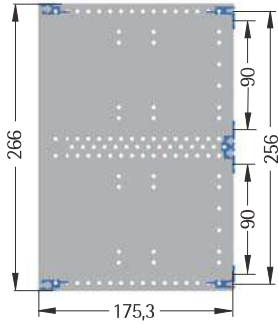
rear
BUS module rails 241-013
threaded inserts, M 2.5

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

Note: Please order insulating strips (see p. 43) or
EMC gaskets (see p. 40) separately.

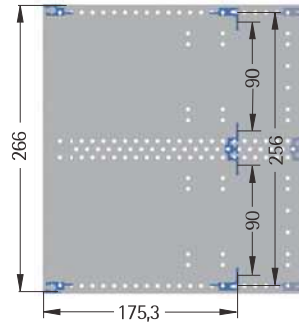


176 mm depth



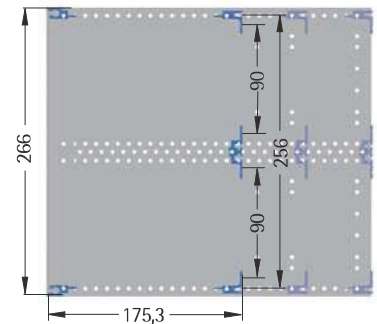
Description	Part no.
84 HP, with handle	245-614-11
84 HP, without handle	245-611-11

236 mm depth



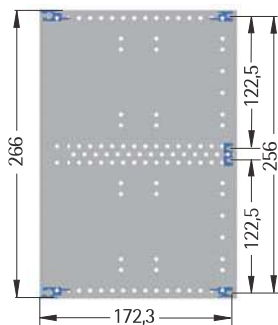
Description	Part no.
84 HP, with handle	245-615-11
84 HP, without handle	245-612-11

296 mm depth



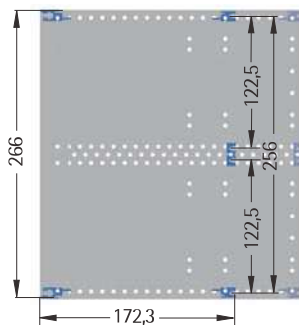
Description	Part no.
84 HP, with handle	245-616-11
84 HP, without handle	245-613-11

176 mm depth



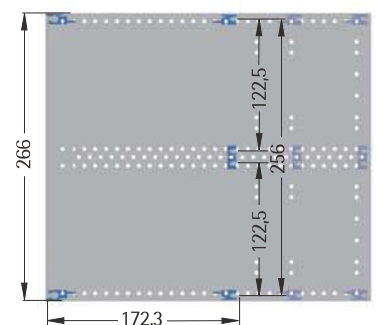
Description	Part no.
84 HP, with handle	245-614-21
84 HP, without handle	245-611-21

236 mm depth



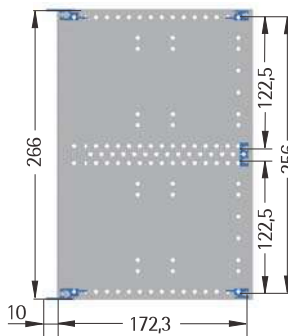
Description	Part no.
84 HP, with handle	245-615-21
84 HP, without handle	245-612-21

296 mm depth



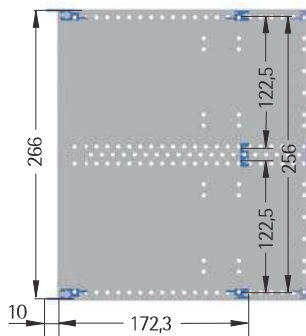
Description	Part no.
84 HP, with handle	245-616-21
84 HP, without handle	245-613-21

176 mm depth



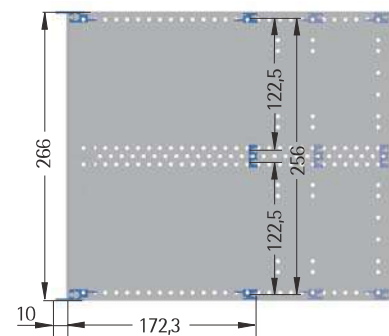
Description	Part no.
84 HP, with handle	245-614-31
84 HP, without handle	245-611-31

236 mm depth



Description	Part no.
84 HP, with handle	245-615-31
84 HP, without handle	245-612-31

296 mm depth

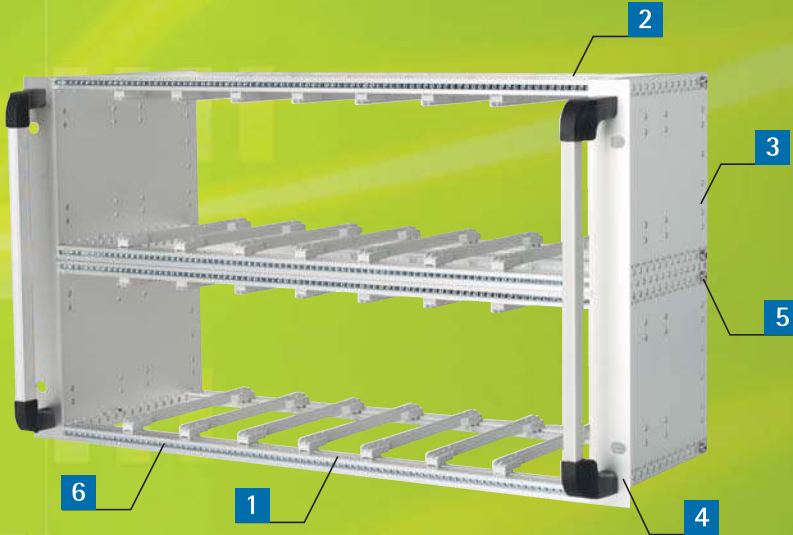


Description	Part no.
84 HP, with handle	245-616-31
84 HP, without handle	245-613-31

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

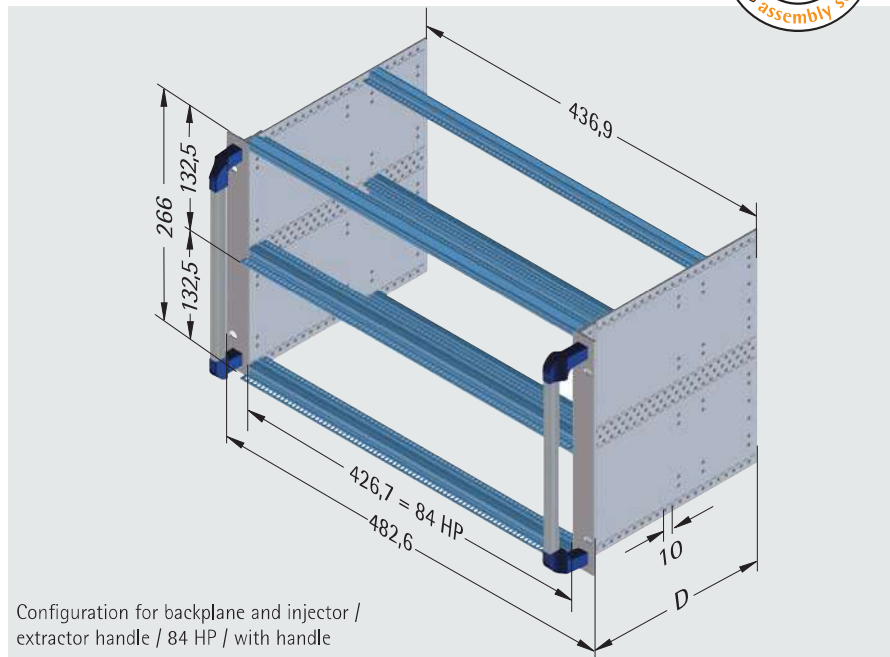


Sample configuration: Configuration for backplane / 84 HP / with handle

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. 54
Injector / extractor handle	p. 64
Sub-units	p. 65
EMC plug-in units	p. 70

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



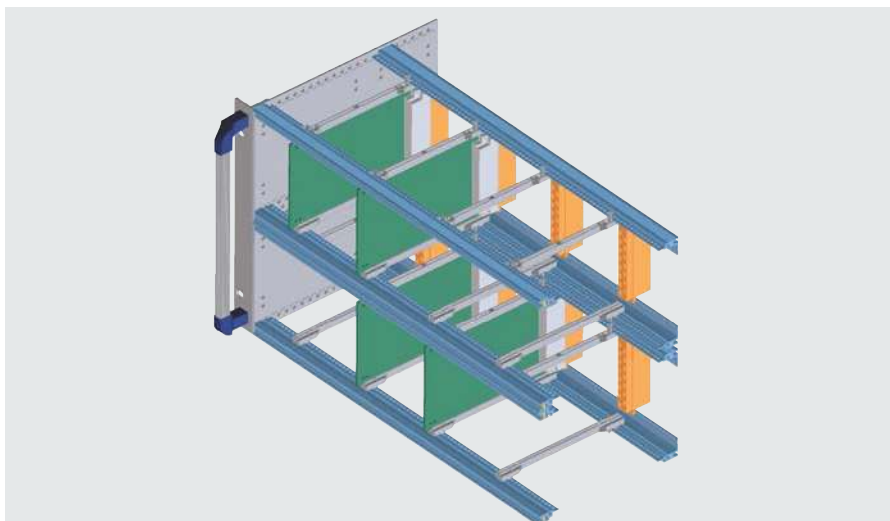
Configuration for connectors according to DIN 41612

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



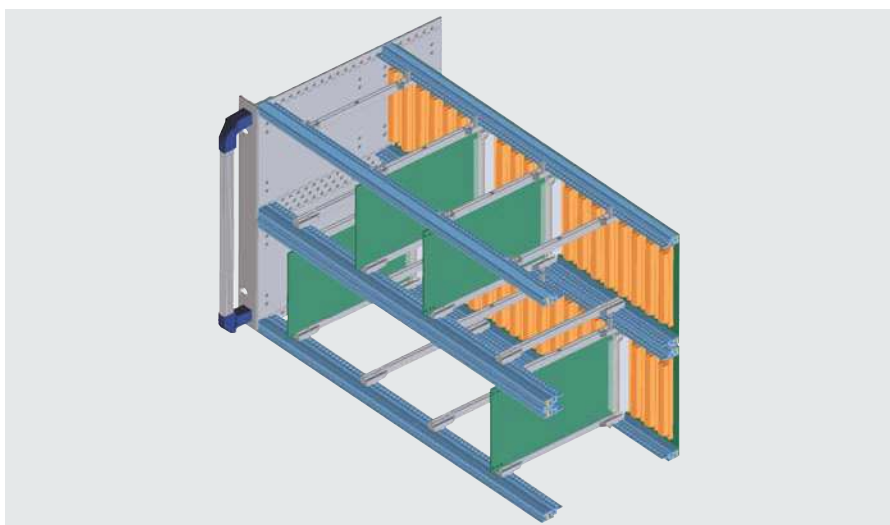
Configuration for backplane

front

standard module rails 241-022
threaded inserts, M 2.5

rear

BUS module rails 241-013
threaded inserts, M 2.5



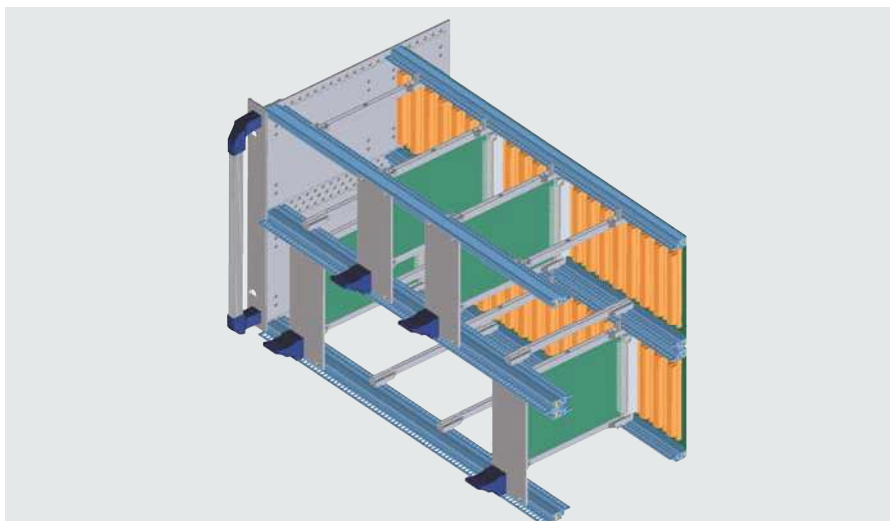
Configuration for backplane and injector / extractor handle

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

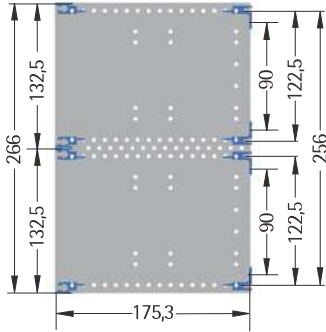


Note: Please order insulating strips (see p. 43) or
EMC gaskets (see p. 40) separately.

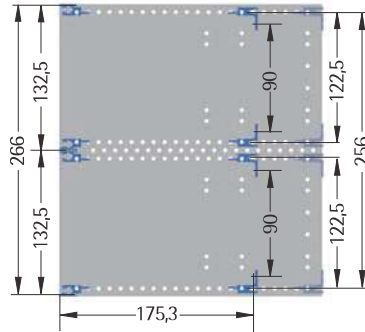


Configuration for connectors according to DIN 41612

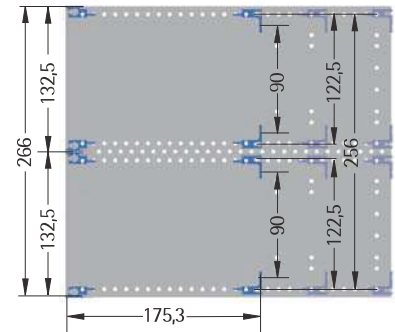
176 mm depth



236 mm depth



296 mm depth



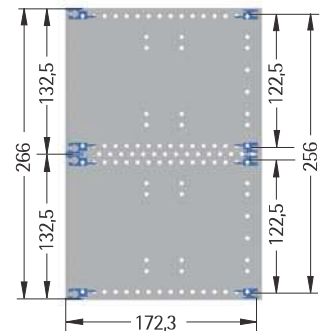
Description	Part no.
84 HP, with handle	245-614-12
84 HP, without handle	245-611-12

Description	Part no.
84 HP, with handle	245-615-12
84 HP, without handle	245-612-12

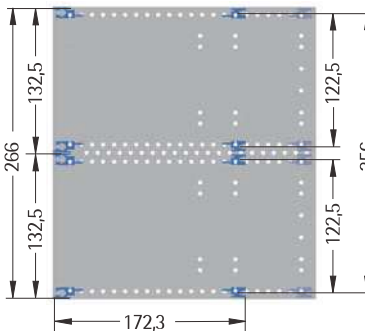
Description	Part no.
84 HP, with handle	245-616-12
84 HP, without handle	245-613-12

Configuration for backplane

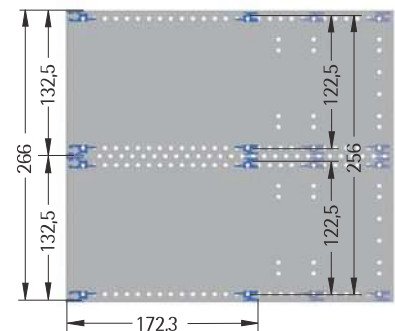
176 mm depth



236 mm depth



296 mm depth



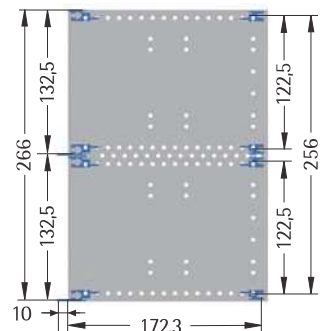
Description	Part no.
84 HP, with handle	245-614-22
84 HP, without handle	245-611-22

Description	Part no.
84 HP, with handle	245-615-22
84 HP, without handle	245-612-22

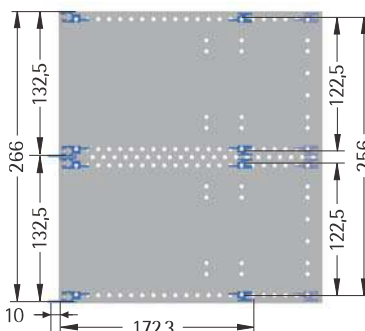
Description	Part no.
84 HP, with handle	245-616-22
84 HP, without handle	245-613-22

Configuration for backplane and injector / extractor handle

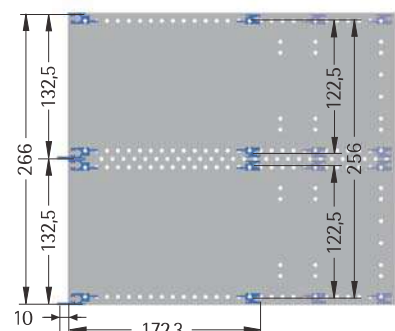
176 mm depth



236 mm depth



296 mm depth



Description	Part no.
84 HP, with handle	245-614-32
84 HP, without handle	245-611-32

Description	Part no.
84 HP, with handle	245-615-32
84 HP, without handle	245-612-32

Description	Part no.
84 HP, with handle	245-616-32
84 HP, without handle	245-613-32



19" subrack 6 U with 2 x 3 U expansion kit • 245



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

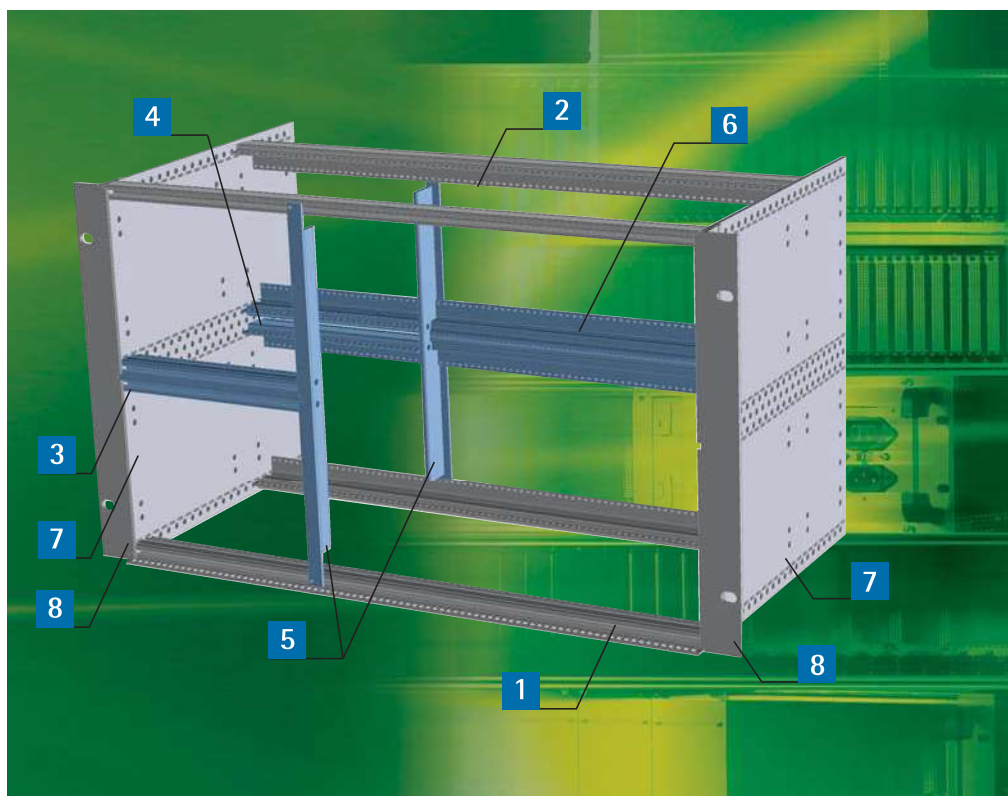
Material/Finish:

Side panels: aluminium 2,5 mm transparent chromated

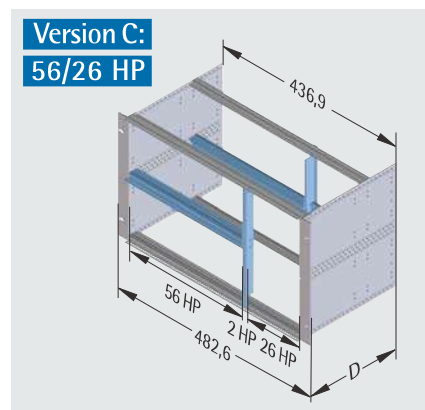
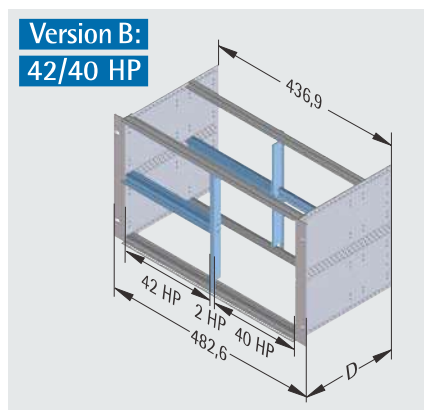
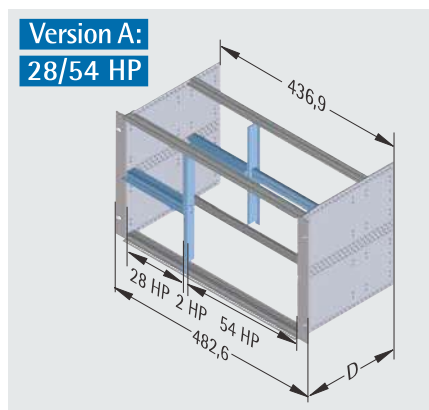
Module rail: aluminium extrusion transparent chromated

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. 54
Injector / extractor handle	p. 64
Sub-units	p. 65
EMC plug-in units	p. 70

Included in delivery

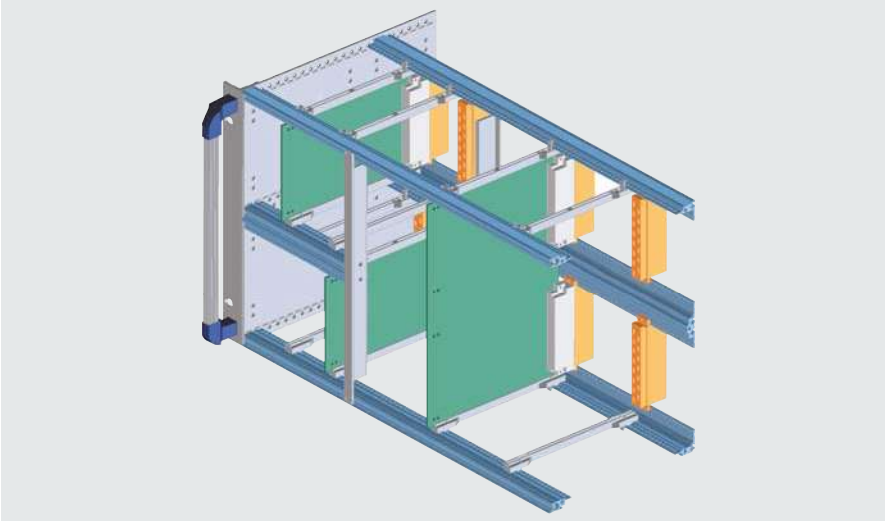
Item	Pc.	Description
1	2	Module rails, front, 85 HP
2	2	Module rails, rear, 85 HP
3	2	Module rails, front 29/43/57 HP
4	2	Module rails, rear 29/43/57 HP
5	2	Mounting struts
6	1	Support rail 55,5/41,5/27,5 HP
7	2	Side panels
8	2	Front bracket with / without handle
9	17	Oval-head screws M 4 x 12

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.



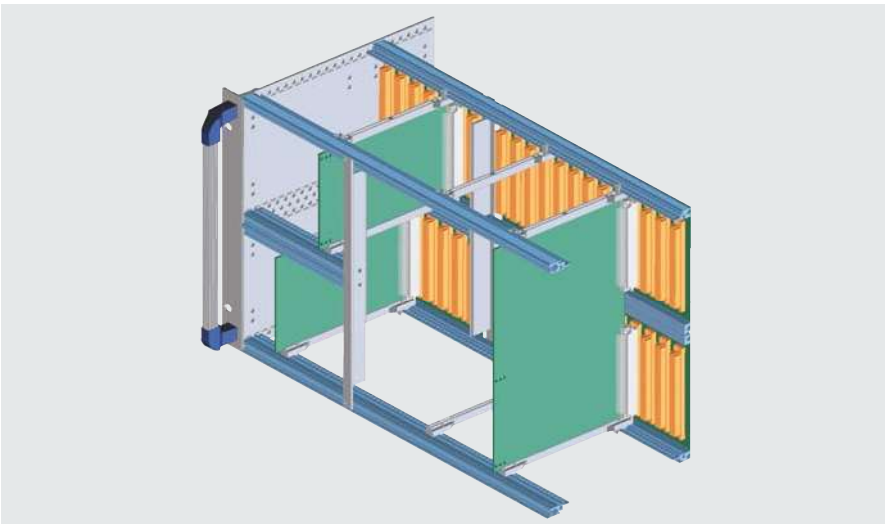
Configuration for connectors according to DIN 41612



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



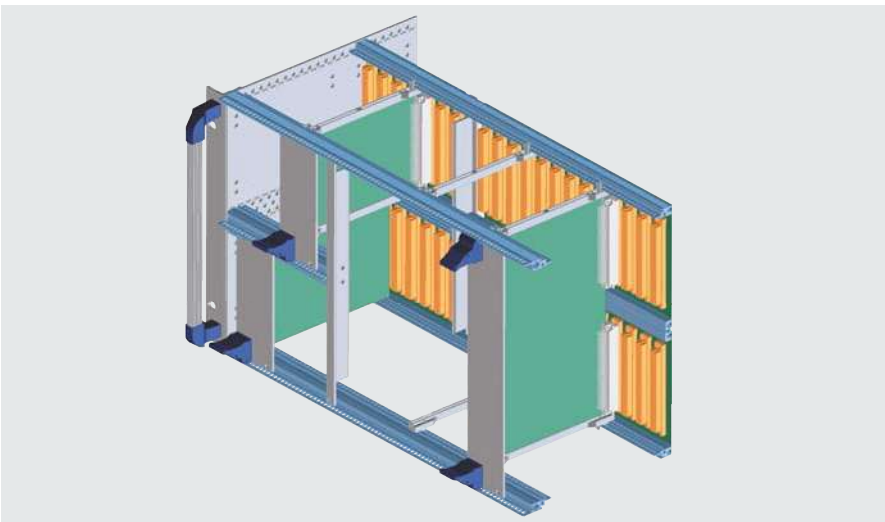
front
standard module rails 241-022
threaded inserts, M 2.5

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 (see p. 43) or
EMC gaskets (see p. 40) separately.

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
inserts, M 2.5

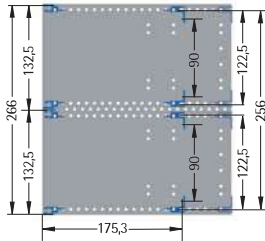
rear
BUS module rails 241-013
threaded inserts, M 2.5

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

Note: Please order insulating strips (see p. 43) or
EMC gaskets (see p. 40) separately.

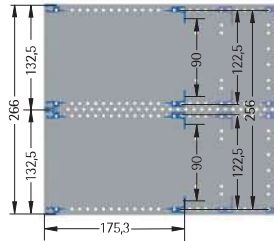


236 mm depth



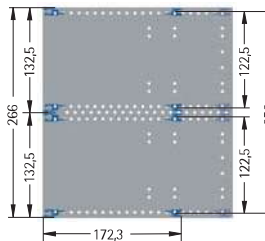
	Description	Part no.
A	28/54 HP, with handle	245-615-13
	28/54 HP, without handle	245-612-13
B	42/40 HP, with handle	245-615-14
	42/40 HP, without handle	245-612-14
C	56/26 HP, with handle	245-615-15
	56/26 HP, without handle	245-612-15

296 mm depth



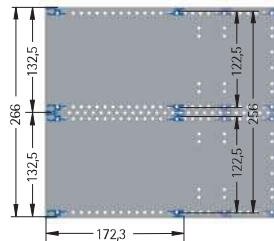
	Description	Part no.
A	28/54 HP, with handle	245-616-13
	28/54 HP, without handle	245-613-13
B	42/40 HP, with handle	245-616-14
	42/40 HP, without handle	245-613-14
C	56/26 HP, with handle	245-616-15
	56/26 HP, without handle	245-613-15

236 mm depth



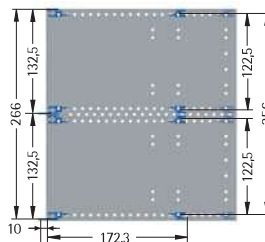
	Description	Part no.
A	28/54 HP, with handle	245-615-23
	28/54 HP, without handle	245-612-23
B	42/40 HP, with handle	245-615-24
	42/40 HP, without handle	245-612-24
C	56/26 HP, with handle	245-615-25
	56/26 HP, without handle	245-612-25

296 mm depth



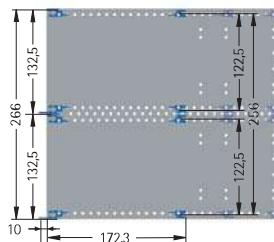
	Description	Part no.
A	28/54 HP, with handle	245-616-23
	28/54 HP, without handle	245-613-23
B	42/40 HP, with handle	245-616-24
	42/40 HP, without handle	245-613-24
C	56/26 HP, with handle	245-616-25
	56/26 HP, without handle	245-613-25

236 mm depth



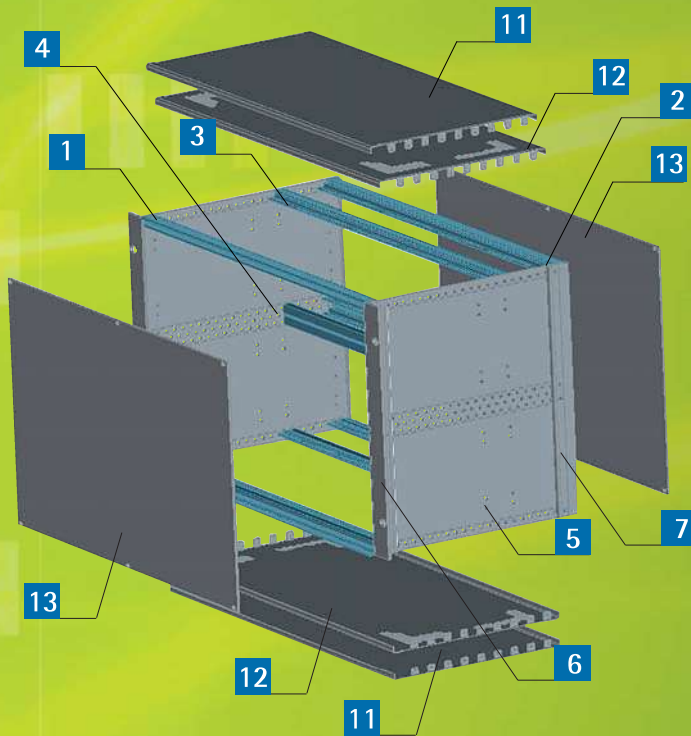
	Description	Part no.
A	28/54 HP, with handle	245-615-33
	28/54 HP, without handle	245-612-33
B	42/40 HP, with handle	245-615-34
	42/40 HP, without handle	245-612-34
C	56/26 HP, with handle	245-615-35
	56/26 HP, without handle	245-612-35

296 mm depth



	Description	Part no.
A	28/54 HP, with handle	245-616-33
	28/54 HP, without handle	245-613-33
B	42/40 HP, with handle	245-616-34
	42/40 HP, without handle	245-613-34
C	56/26 HP, with handle	245-616-35
	56/26 HP, without handle	245-613-35

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

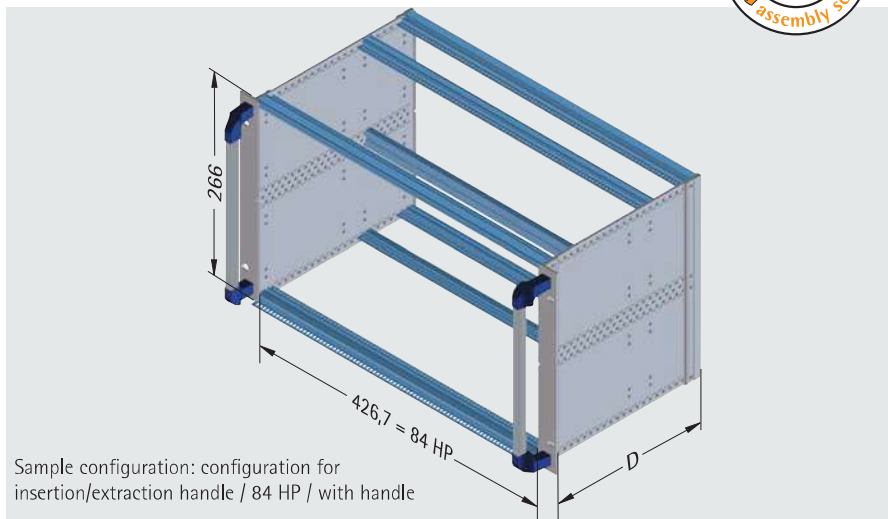


19" subrack, 6 U, 84 HP - EMC

- 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



Sample configuration: configuration for insertion/extraction 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:

- 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
1	2	Module rails, front
2	2	Module rails, rear
3	2	Module rails, middle
4	1	Support rail, middle
5	2	Side panels
6	2	Front bracket with or without handle
7	2	Rear bracket

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

Note: For high EMC shielding, please order cover plates (see p. 36), front plates (see p. 57) and other EMC-shielding material (see p. 40 and 43) separately.



Configuration for connectors according to DIN 41612

front

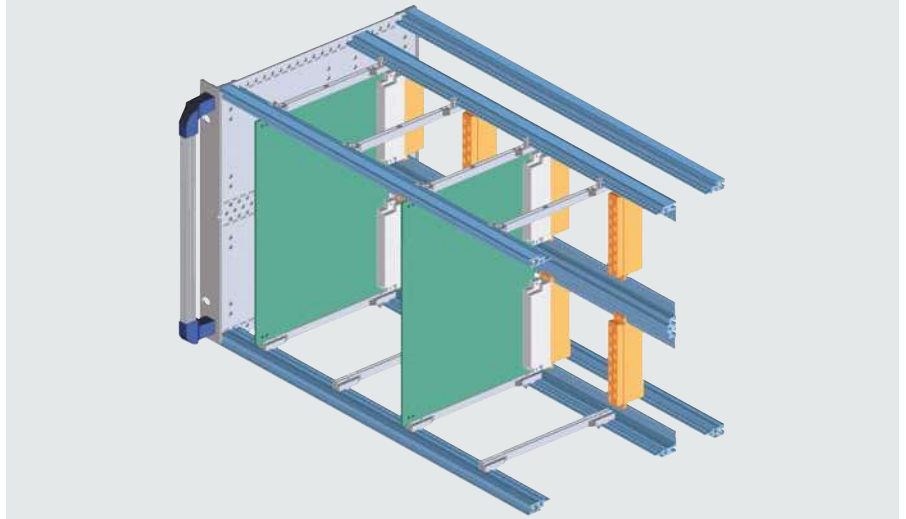
standard module rails 241-022
threaded inserts, M 2.5

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

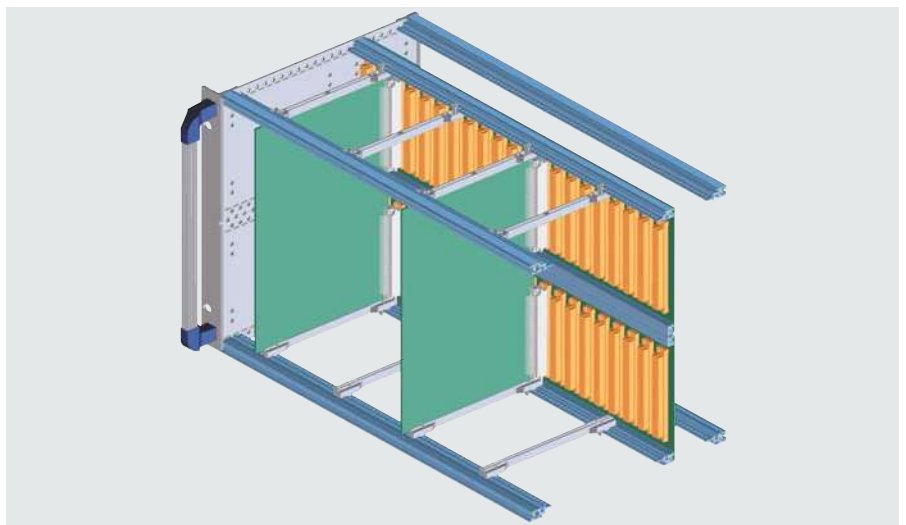
standard module rails 241-022
threaded inserts, M 2.5

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

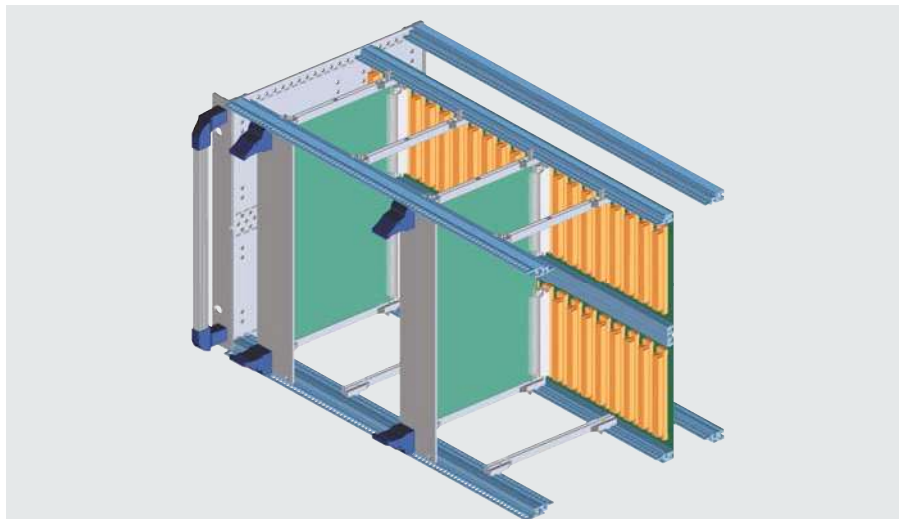
standard module rails 241-049
with 10mm clearance for insertion/
extraction handle
threaded inserts, M 2.5

middle

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

rear

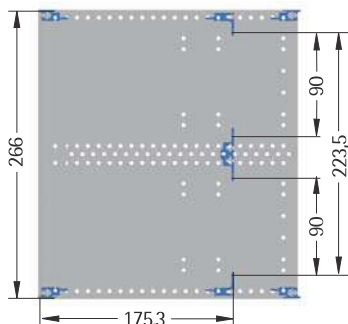
standard module rail 241-022
threaded inserts, M 2.5





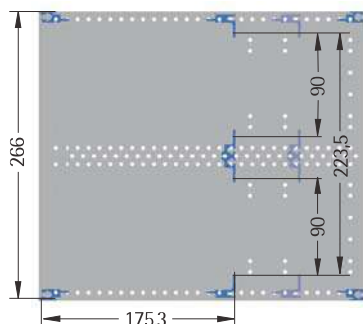
Configuration for connectors according to DIN 41612

236 mm depth



Description	Part no.
84 HP, with handle	245-615-16
84 HP, without handle	245-611-16

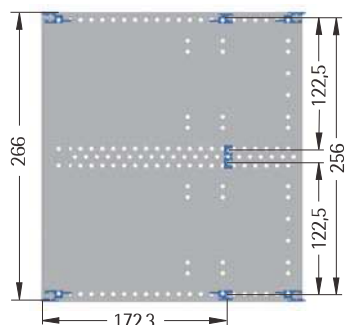
296 mm depth



Description	Part no.
84 HP, with handle	245-616-16
84 HP, without handle	245-612-16

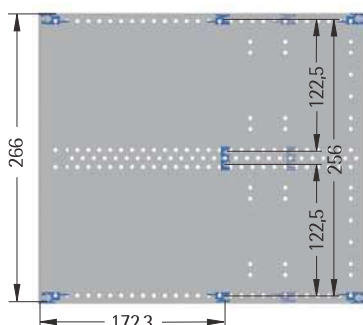
Configuration for backplane

236 mm depth



Description	Part no.
84 HP, with handle	245-615-26
84 HP, without handle	245-611-26

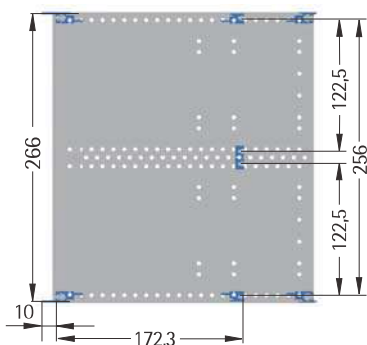
296 mm depth



Description	Part no.
84 HP, with handle	245-616-26
84 HP, without handle	245-612-26

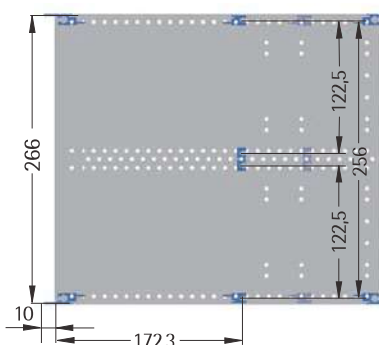
Configuration for backplane and injector / extractor handle

236 mm depth



Description	Part no.
84 HP, with handle	245-615-36
84 HP, without handle	245-611-36

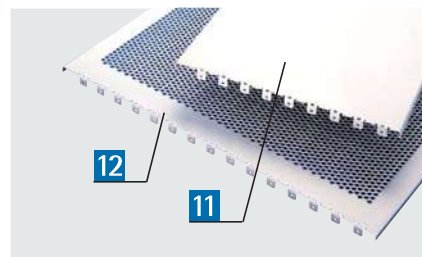
296 mm depth



Description	Part no.
84 HP, with handle	245-616-36
84 HP, without handle	245-612-36

Accessories

Cover panel EMC, 84 HP



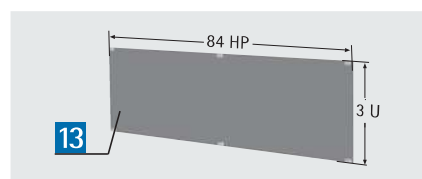
The ventilated EMC cover panels have honeycomb perforations, which allow maximum air flow. They also provide good EMC protection.

Finish: transparent chromated
Material: aluminium

Item	Pc.	Description
11	1	Cover panel, solid
Depth	D=236 mm	D=296 mm
Part no.	245-012-40	245-013-40

Item	Pc.	Description
12	1	Cover panel, ventilated
Depth	D=236 mm	D=296 mm
Part no.	245-012-48	245-013-48

Front/rear 2, 84 HP

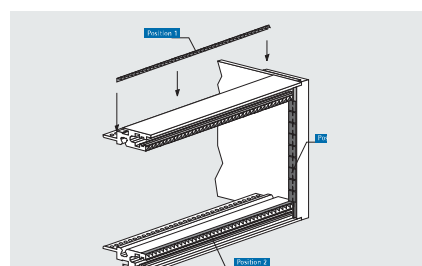


Finish: anodized exterior, transparent chromated interior

Material: aluminium 2,5 mm

Item	Pc.	Height	Part no.
13	1	6 U	243-884-16

EMC contact gasket set



Part no. see page 40



19" subrack 2 U, 84 HP

- ventilated side panels with fan option
- ideal for installing subracks vertically in appropriate 19" apra-norm wall-mounted enclosures
- 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 / rear bracket: aluminium extrusion transparent chromated

Delivery:

Versions

front

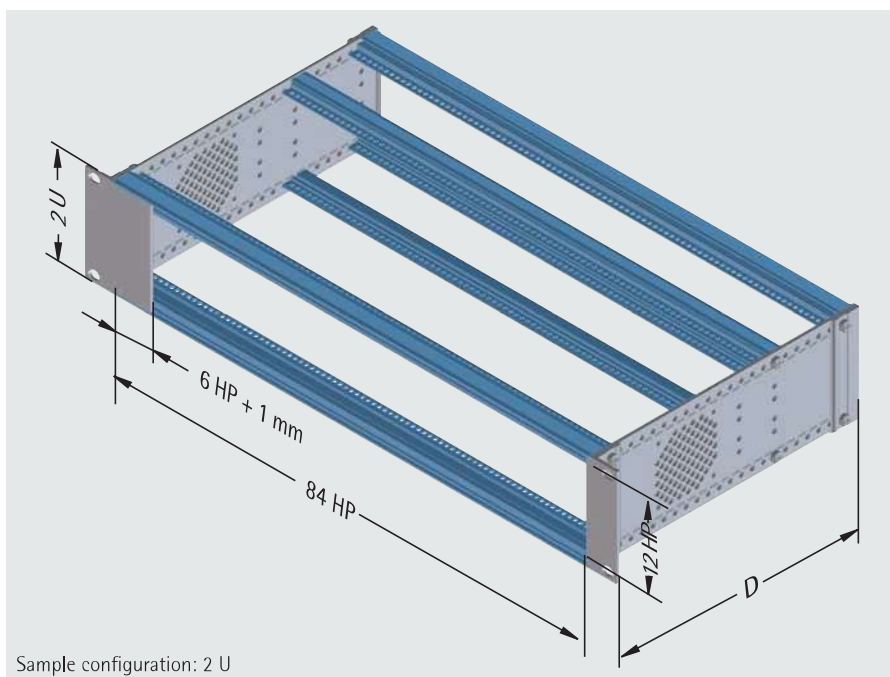
standard module rails 241-022
 threaded inserts, M 2,5

middle

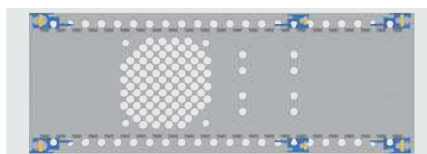
BUS module rails 241-013
 threaded inserts, M 2,5

rear

standard module rails 241-022
 threaded inserts, M 2,5



Included in delivery



Description	Part no.
D=236 mm	245-212-28
D=296 mm	245-213-28

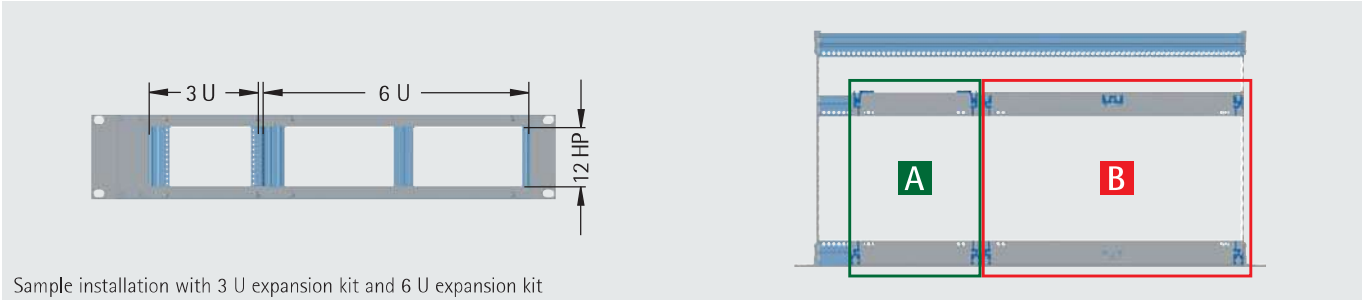
Item	Pc.	Description
1	2	Module rails, front
2	2	Module rails, rear
3	2	Module rails, middle
4	2	Side panels, ventilated
5	1	Front panel 6 HP
6	2	Front bracket
7	2	Rear bracket
8	4	Threaded inserts, M 2.5 7 mm x 2 mm

Item	Pc.	Description
9	2	Threaded inserts, M 2.5 5 mm x 1,5 mm (for rear BUS module rail)
10	12	Oval-head screws M 4 x 12 self-locking
11		Assembly material



Accessories

Expansion kits



Sample installation with 3 U expansion kit and 6 U expansion kit

- for installing Euroboards or double Euroboards horizontally in a 2 U sub-rack
- the following combinations are possible in 84 HP subracks:

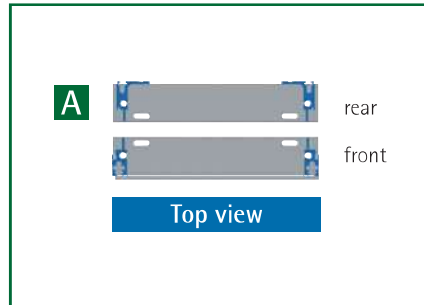
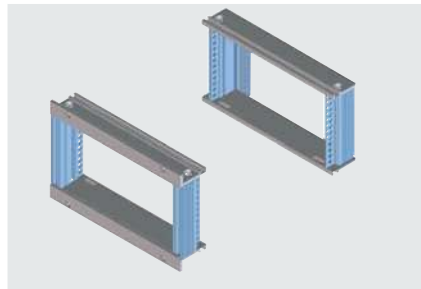
one 3 U expansion kit + one 6 U expansion kit

up to three 3 U expansion kits

Note: Horizontal expansion kits for 3 U subracks on p. 38.

Expansion kit, 3 U/12 HP

- for installing Euroboards horizontally



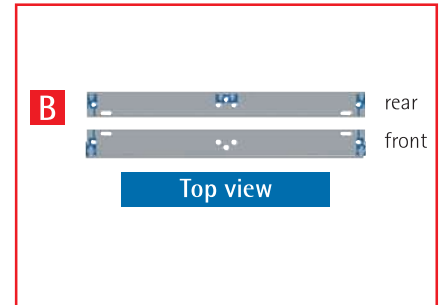
front standard module rails
profile no. 241-022

rear narrow module rails
with integrated mounting rail for connectors in compliance with DIN 41612, profile no. 241-019

Part no.
245-312-61

Expansion kit, 6 U/12 HP

- for installing double Euroboards horizontally

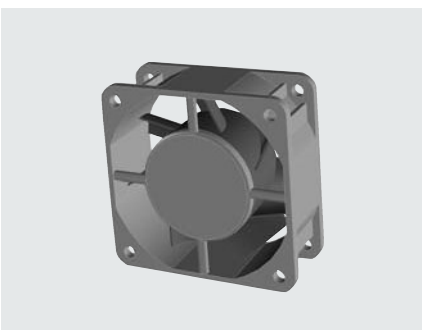


front standard module rails
profile no. 241-022

rear BUS module rails
profile no. 241-013 and BUS support rail
profile no. 241-020

Part no.
245-612-62

Fan, 12V



- for mounting on side panel
- flow rate: 40m³/h
- noise level: 40dB(A)
- assembly material included

Dimensions mm	Part no.
60 x 60 x 25	230-825

Accessories

Cover panels EMC	p. 36
EMC contact gaskets	p. 40
Card guides	p. 44

Suitable components

Front panels	p. 54
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Note: Other expansion kits available on request.

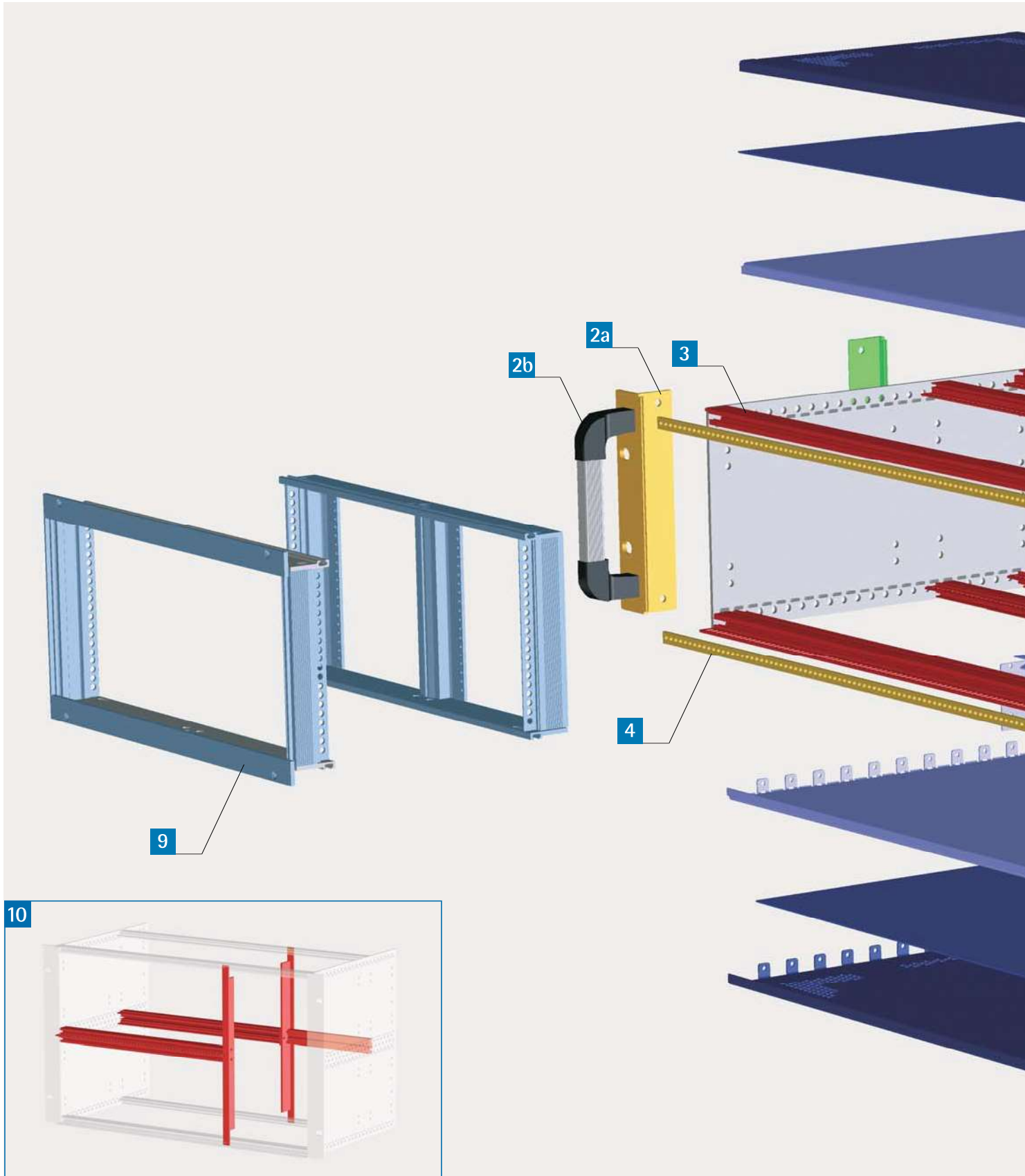
Individual configuration 245

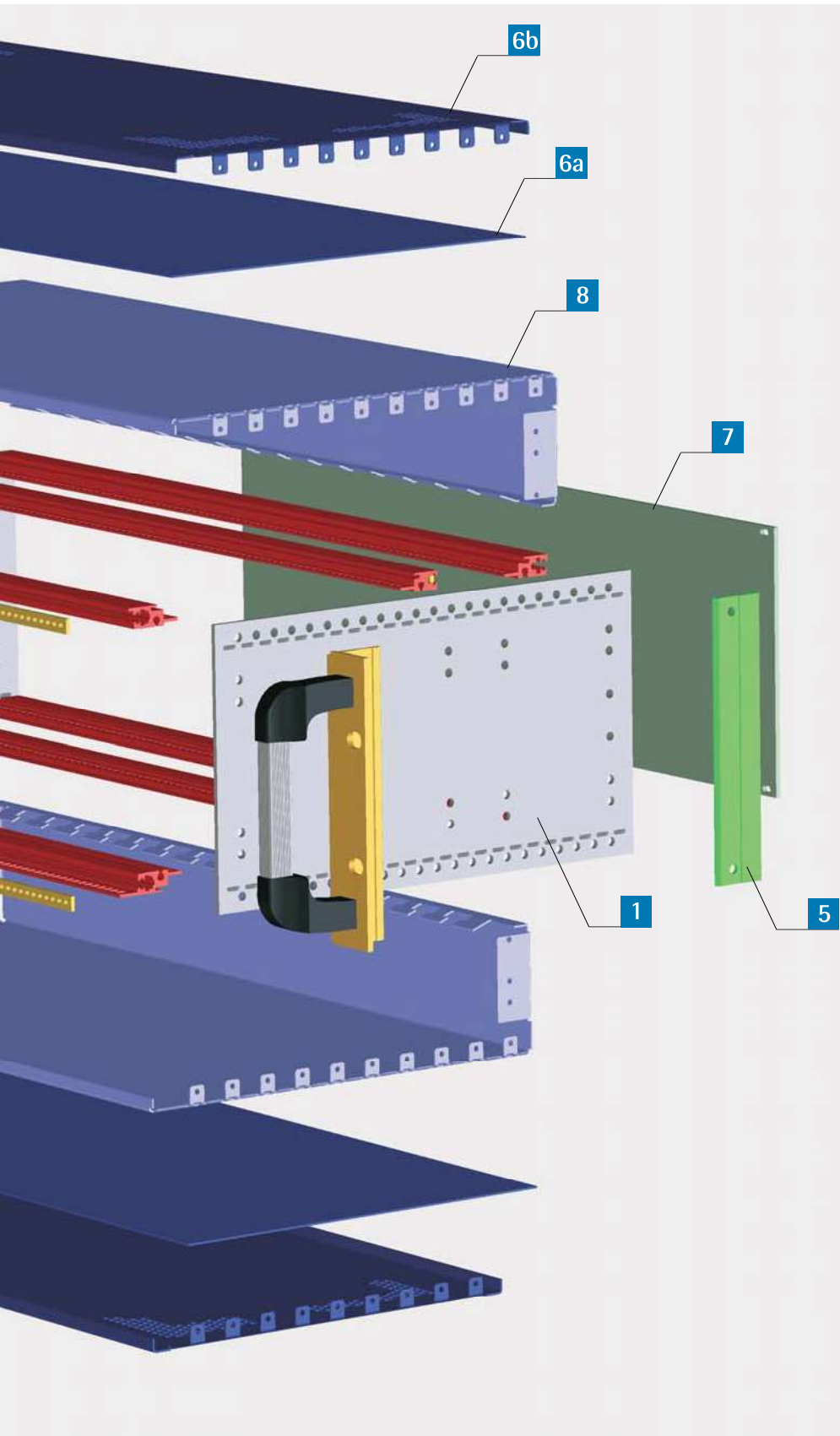




245 • 19" subrack, individual configuration

Individual configuration: Design your customized subrack 245.





Item	Description	Seite
1	Side panel	30
2a	Front bracket	31
2b	Front panel handle	31
3	Module rails	32
4	Threaded inserts	33
5	Rear bracket	34
6a	Cover panel	35
6b	Cover panel EMC	36
7	Rear panel	36
8	Combination covers	37
9	Horizontal expansion kit (3 U)	38
10	Vertical expansion kit (6 U)	39
11	EMC contact gaskets (not shown in drawing)	40
12	Assembly material (not shown in drawing)	40
Accessories (not shown in drawing)		
	Z-rails	42
	Insulating strips	43
	Contact strips	43
	Card guides:	
	- Standard	44
	- integrated	45
	- with coding	46
	- divided	46
	Card lock	49
	Extraction handle	49
	Group lock	49
	Extension kit	50
	Connecting kit	50

Other dimensions and electromechanical components on request!



Customized front panels including print, foils, input systems or keyboards –

please ask for our front panel express!





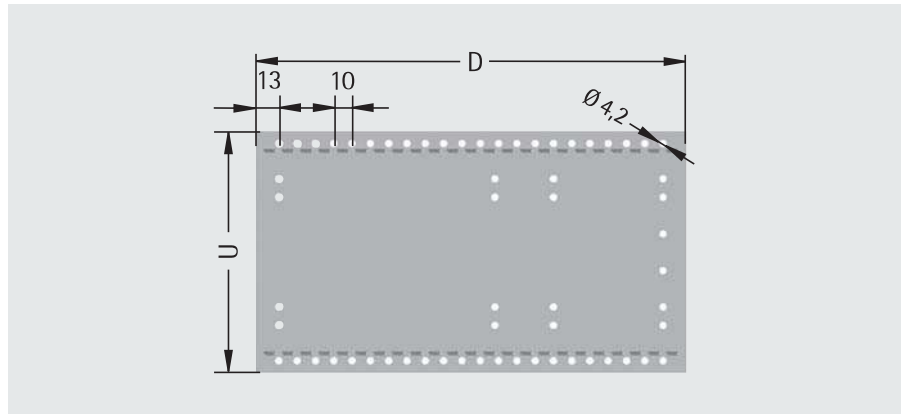
1a Side panel, solid

- Side panels can be expanded by use of the expansion kit (see page 50)

Finish: transparent chromated

Material: aluminium 2,5 mm

Other dimensions on request!



U	H mm	D mm	Part no.
3	132,5	176	245-301-50
		236	245-302-50
		296	245-303-50
		356	245-304-50
4 (3+2x 1/2)	177	296	245-403-50
		356	245-404-50
6	266	176	245-601-50
		236	245-602-50
		296	245-603-50
		356	245-604-50
7	310,5	296	245-703-50
		356	245-704-50

1b Side panel, perforated

- prepared with ventilation holes and studs for the mounting of fans
- Side panels can be expanded by use of the expansion kit (see page 50)

Finish: transparent chromated

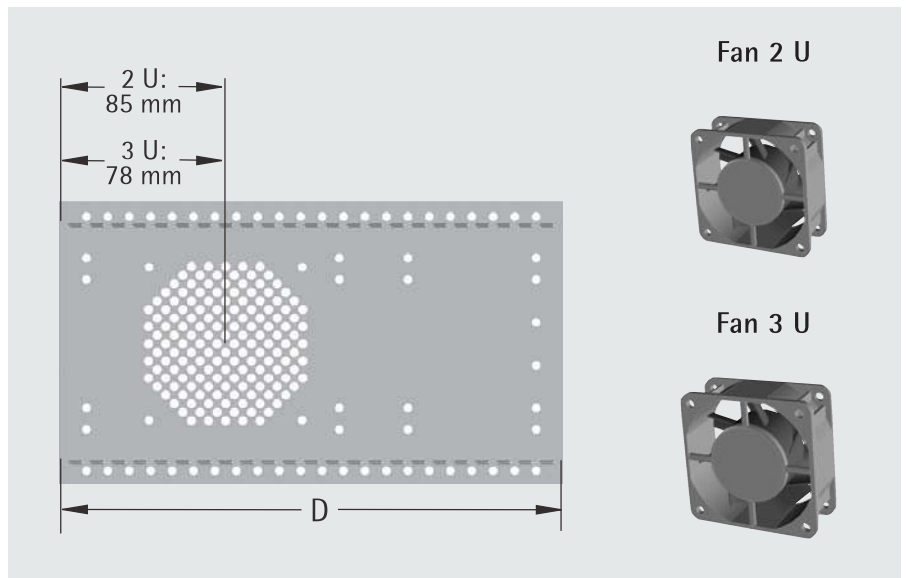
Material: aluminium 2,5 mm

Matching fan, 2 U

- Dimensions: 60 x 60 x 25 mm
- Voltage: 12 V
- Flow rate: 40 m³/h

Matching fan, 3 U

- Dimensions: 80 x 80 x 25 mm
- Voltage: 12 V
- Flow rate: 58 m³/h

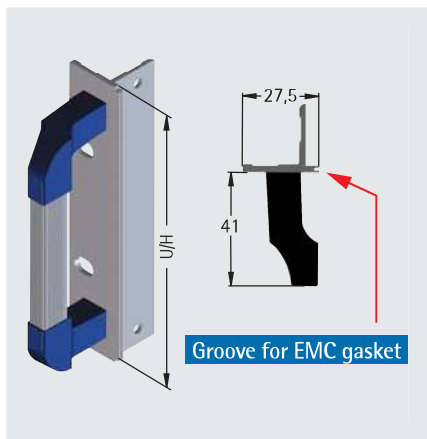


U	H mm	D mm	Side panel perforated	Fan 2 U 60x60x25 mm	Fan 3 U 80x80x25 mm
2	88	236	245-202-50	230-825	-
		296	245-203-50	230-825	-
3	132,5	176	245-301-58	-	230-828
		236	245-302-58	-	230-828
		296	245-303-58	-	230-828
		356	245-304-58	-	230-828



2a/b Front bracket

bracket with handle



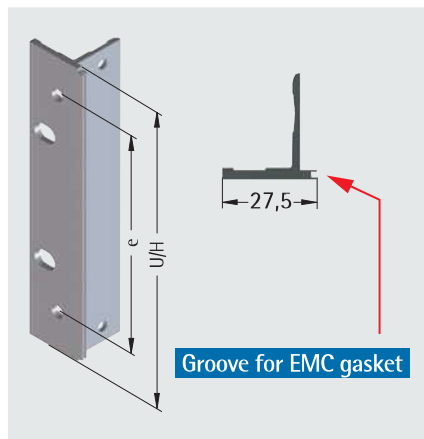
- with integrated groove for inserting EMC contact gaskets **11** (see p. 40)

Material: aluminium/plastic

Finish: transparent chromated

U	H mm	Part no. (1 piece)
3	132,5	241-002-23
4	177	-
4 (3+2x 1/2)	177	241-002-34
6	266	241-002-26
7	310,5	-
7 (6+2x 1/2)	310,5	241-002-37

bracket with holes for handle



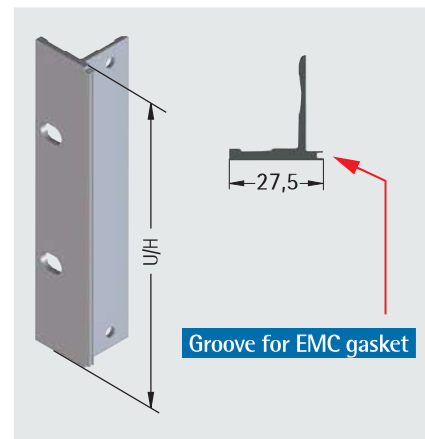
- with integrated groove for inserting EMC contact gaskets **11** (see p. 40)

Material: aluminium/plastic

Finish: transparent chromated

U	H mm	Dist. b/w holes mm	Part no. (1 piece)
3	132,5	98	241-002-03
4	177	142,5	241-002-04
4 (3+2x 1/2)	177	142,5	241-002-44
6	266	231,5	241-002-06
7	310,5	276	241-002-07
7 (6+2x 1/2)	310,5	276	241-002-47

bracket without holes for handle



- with integrated groove for inserting EMC contact gaskets **11** (see p. 40)

Material: aluminium/plastic

Finish: transparent chromated

U	H mm	Part no. (1 piece)
2	2	241-002-12
3	132,5	241-002-13
4	177	241-002-14
4 (3+2x 1/2)	177	241-002-54
6	266	241-002-16
7	310,5	241-002-17
7 (6+2x 1/2)	310,5	241-002-57

2b Front panel handle

- fits 19" front panels, subracks and 19" plug-in units
- with a combined installation of 19" plug-in units and subracks, the handle has an elegant and smooth profile (see illustration)

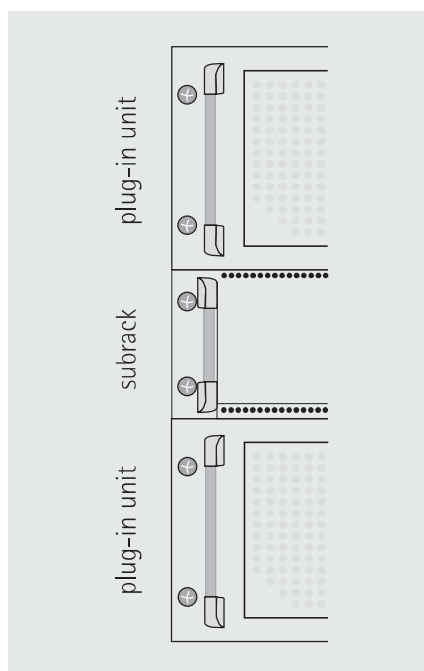
Material:

End pieces: plastic, black

Handle extrusion: anodized aluminium

Included in delivery

Item	Pc.	Description
1	2	End pieces
2	1	Handle extrusion



Size U	Dist. between holes mm	Part no. (1 piece)
3	98	611-336-00
4	142,5	611-334-00
6	231,5	611-337-00
7	276	611-337-10

Description	Part no.
matching oval head screws M 5 x 12	630-121 (100 pieces)



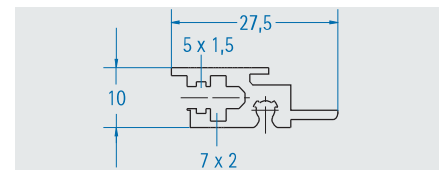
3 Module rails



Standard module rail

- for mounting plug-in units and back panels
- with grooves for threaded inserts / sliding nuts
- printed with HP-division for easy assembly of card guides
- mounting in upper or lower position possible

Finish: transparent chromated



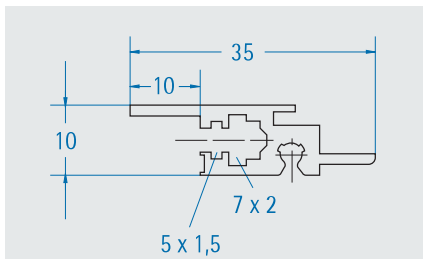
HP	Length mm	Part no.
85	431,9	241-022-01
64	325,2	241-022-05
57	289,7	241-022-02
43	218,5	241-022-03
29	147,4	241-022-04

Standard module rail with 10 mm extension

- for plug-in units with IEEE-handle
- with grooves for threaded inserts / sliding nuts
- printed with HP-division for easy assembly of card guides
- mounting in upper or lower position possible

Matching IEEE handles: see page 64!

Finish: transparent chromated



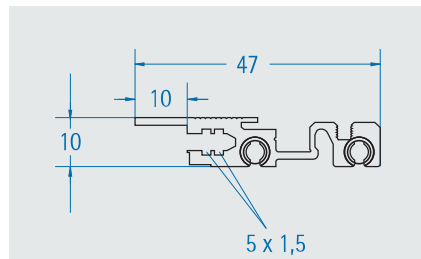
HP	Length mm	Part no.
85	431,9	241-049-85
64	325,2	241-049-64
57	289,7	241-049-57
43	218,5	241-049-43
29	147,4	241-049-29

Reinforced module rail with 10 mm extension

- for plug-in units with IEEE-handle
- for higher mechanical loads
- with grooves for threaded inserts / sliding nuts
- printed with HP-division for easy assembly of card guides
- mounting in upper or lower position possible

Matching IEEE handles: see page 64!

Finish: transparent chromated

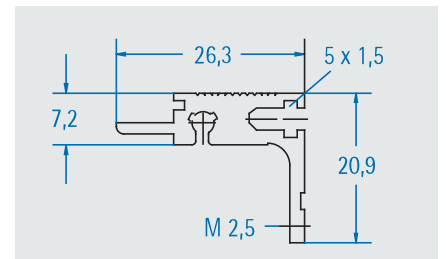


HP	Length mm	Part no.
85	431,9	241-500-85
64	325,2	241-500-64
57	289,7	241-500-57
43	218,5	241-500-43
29	147,4	241-500-29

Narrow module rail, integrated

- with integrated mounting rail for connectors according to DIN 41612 and EN 60603
- with grooves for threaded inserts / sliding nuts
- printed with HP-division for easy assembly of card guides
- mounting in upper or lower position possible

Finish: transparent chromated



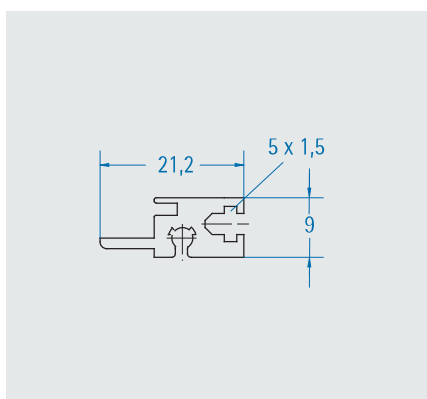
HP	Length mm	Part no.
85	431,9	267-919-01
64	325,2	267-919-05
57	289,7	267-919-02
43	218,5	267-919-03
29	147,4	267-919-04



BUS module rail

- for mounting BUS boards and back-planes using EMC gaskets, mounting rails or insulating strips (see section beginning on p. 42)
- with grooves for threaded inserts / sliding nuts
- printed with HP-division for easy assembly of card guides
- mounting in upper or lower position

Finish: transparent chromated

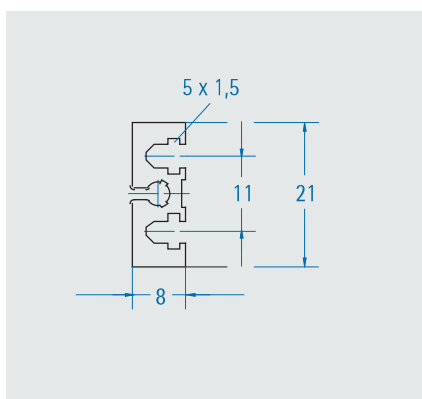


HP	Length mm	Part no.
85	431,9	241-013-01
64	325,2	241-013-05
57	289,7	241-013-02
43	218,5	241-013-03
29	147,4	241-013-04

BUS support rail

- for mounting BUS boards and back-planes using EMC gaskets, mounting rails or insulating strips (see section beginning on p. 42)
- with grooves for threaded inserts / sliding nuts
- mounting in middle position

Finish: transparent chromated

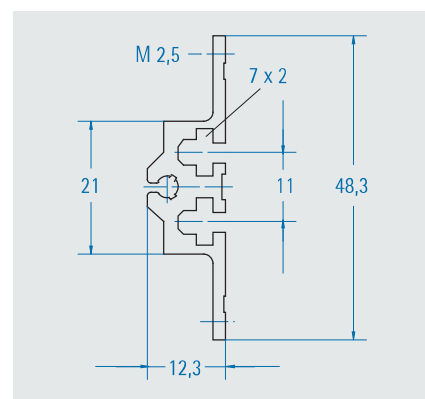


HP	Length mm	Part no.
85	431,9	241-020-01
64	325,2	241-020-64
57	289,7	241-020-57
43	218,5	241-020-43
29	147,4	241-020-29

Support rail connectors

- with integrated mounting rail for plug-in connections in compliance with DIN 41612 and EN 60603
- with grooves for threaded inserts / sliding nuts
- mounting in middle position

Finish: transparent chromated



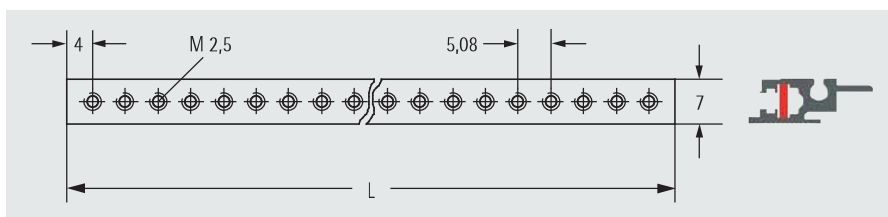
HP	Length mm	Part no.
85	431,9	241-108-85
64	325,2	241-108-64
57	289,7	241-108-57
43	218,5	241-108-43
29	147,4	241-108-29

Note: Module rails are 1 HP longer than the subrack's nominal width. Other lengths available on request.

4 Threaded inserts M 2.5

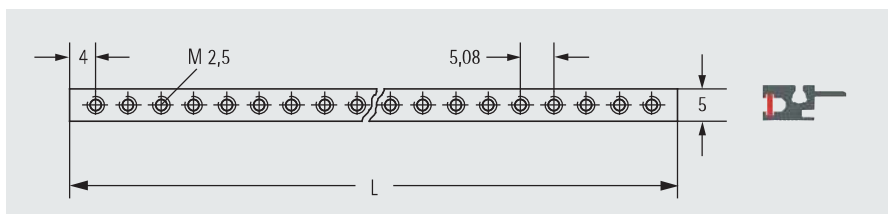
M 2.5 Threaded inserts 7 x 2 mm (for standard module rails)

HP	Length L mm	Part no.
85	429,9	240-051
64	323,2	240-055
57	287,7	240-052
43	216,5	240-053
29	145,4	240-054



M 2.5 Threaded inserts 5 x 1,5 mm (for bus module rails and support rails)

HP	Length L mm	Part no.
85	429,9	240-061
64	323,2	240-065
57	287,7	240-062
43	216,5	240-063
29	145,4	240-064

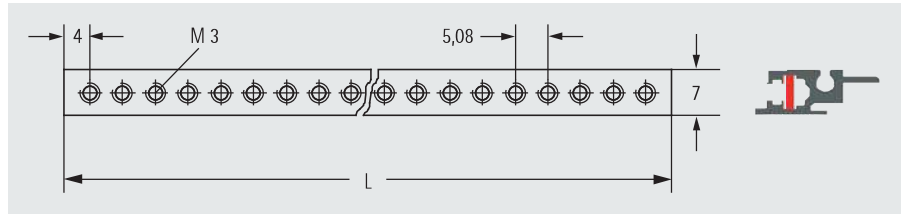




4 Threaded inserts M 3

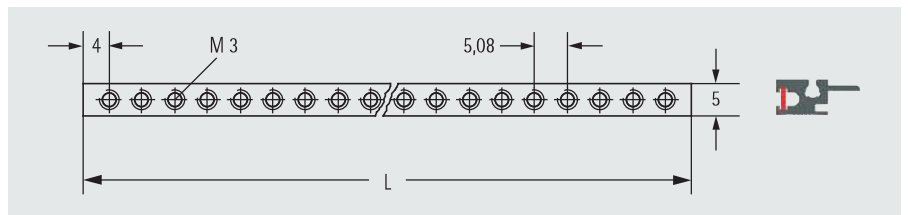
M 3 Threaded inserts 7 x 2 mm (for standard module rails)

HP	Length L mm	Part no.
85	429,9	240-059-85
64	323,2	240-059-64
57	287,7	240-059-57
43	216,5	240-059-43
29	145,4	240-059-29

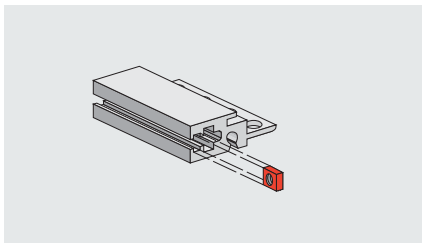


M 3 Threaded inserts 5 x 1,5 mm (for bus module rails and support rails)

HP	Length L mm	Part no.
85	429,9	240-069-85
64	323,2	240-069-64
57	287,7	240-069-57
43	216,5	240-069-43
29	145,4	240-069-29



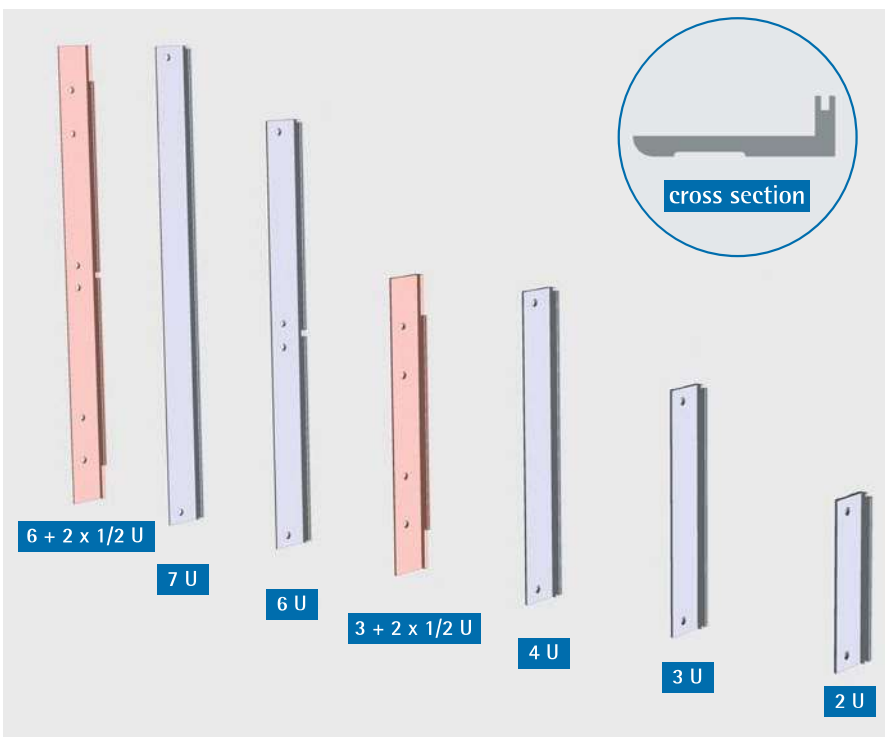
Sliding nut M 2,5



- Sliding nuts are alternatively usable instead of threaded inserts.
- Nuts can be inserted in the grooves of the module rail.

Groove	Description	Part no. (100 pieces)
5 x 1,5	sliding nut M 2,5	630-192
7 x 2	nut holder with nut M 2,5	250-704

5 Rear bracket



- for covering the gap between the side panel and the rear panels
- with groove for EMC contact gaskets **11** (see p. 40) for EMC protection of the rear side

Finish: transparent chromated

Material: aluminium

Note:
Please order contact gaskets separately (see p. 40).

U	H mm	Part no. (1 pc.)
2	88	241-037-02
3	132,5	241-037-03
4	177	241-037-04
4	177	241-037-54
3 + 2 x 1/2		
6	266	241-037-06
7	310,5	241-037-07
7	310,5	241-037-57
6 + 2 x 1/2		



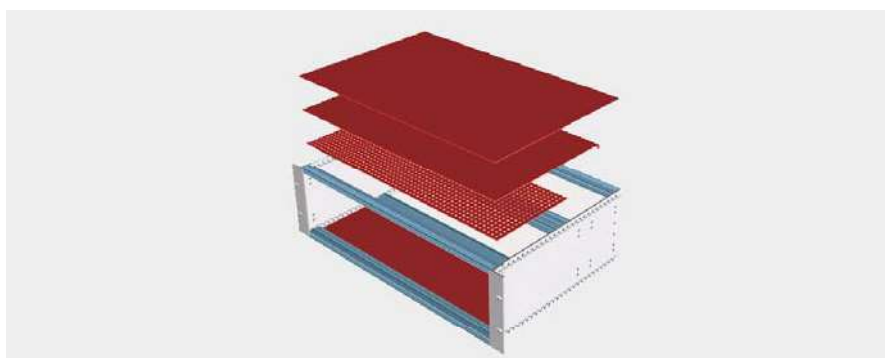
6a Cover panel

- for mechanical shielding of subracks
- perforated or solid

Finish: transparent chromated

Material: perforated aluminium panel or aluminium panel

Degree of protection: IP 30: solid
IP 20: perforated



Application	84 HP		42 HP	
	solid	perforated	solid	perforated
Card depth 160 mm DIN 41612 plug-in connector 	245-011-10	245-011-18	245-031-10	245-031-18
Card depth 160 mm BUS 	240-662-85	240-468-85	240-662-43	240-468-43
Card depth 220 mm DIN 41612 plug-in connector 	245-012-10	245-012-18	245-032-10	245-032-18
Card depth 220 mm BUS 	240-672-85	240-478-85	240-672-43	240-478-43
Card depth 160 mm / 220 mm DIN 41612 plug-in connector Standard 	240-671-85	240-475-85	240-671-43	240-475-43
Card depth 160 mm / 220 mm BUS Standard 	240-671-85	240-475-85	240-671-43	240-475-43
Card depth 220 mm DIN 41612 plug-in connector Standard 	245-013-10	245-013-18	245-033-10	245-033-18
Card depth 220 mm BUS Standard 	245-013-10	245-013-18	245-033-10	245-033-18
Card depth > 220mm Standard 	245-014-10	245-014-18	-	-



6b EMC cover panel

- perforated/solid
- with honeycomb perforations for optimum air flow (approx. 63%)
- EMC-compliant design
- incl. assembly material

Finish: transparent chromated

Material: aluminium

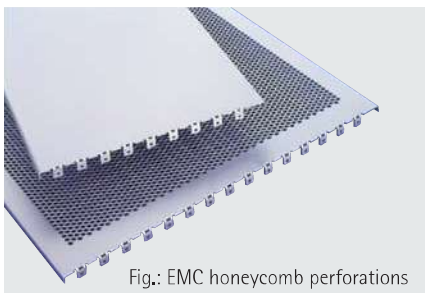
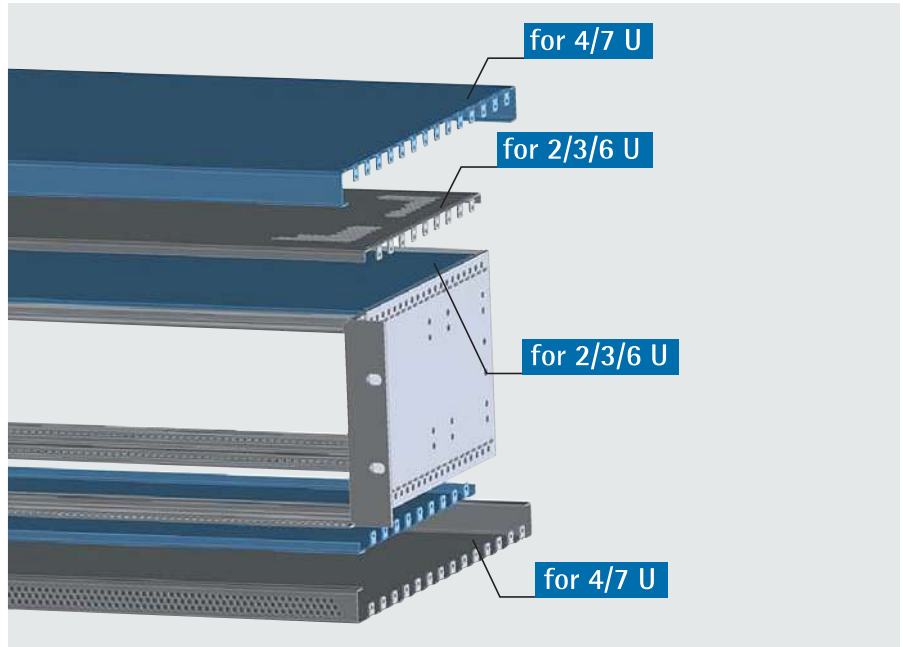


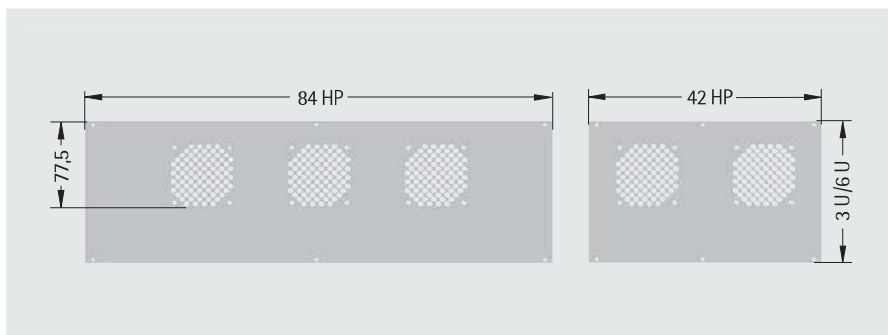
Fig.: EMC honeycomb perforations



Order information

Depth \ Height	Part no. 84 HP				Part no. 42 HP		
	D=176 mm	D=236 mm	D=296 mm	D=356 mm	D=176 mm	D=236 mm	D=296 mm
2, 3, 6 U perforated	245-011-48	245-012-48	245-013-48	245-014-48	245-031-48	245-032-48	245-033-48
solid	245-011-40	245-012-40	245-013-40	245-014-40	245-031-40	245-032-40	245-033-40
4 U, 7 U perforated	-	-	245-413-48	-	-	-	-
solid	-	-	245-413-40	-	-	-	-

7 Rear panel



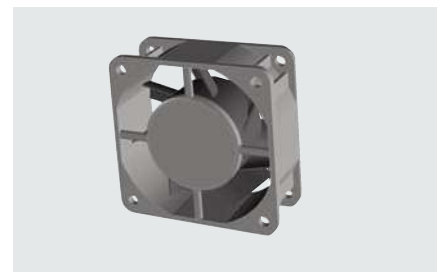
- up to 3 fans can be installed in 84 HP subracks and 2 fans in 42 HP
- incl. assembly material

Finish:
Front side: anodized
Rear side: transparent chromated

Material: aluminium, 2,5mm

HP	Rear panel perforated		Rear panel solid	
	3 U	6 U	3 U	6 U
84	243-803-01	243-806-01	243-084-45	243-684-45
42	243-803-02	243-806-02	243-042-45	243-642-45

Matching fan, 12V



- for installation in the rear panel
- high-power **PAPST** fan
- flow rate: 40m³/h
- noise level: 40dB(A)
- W x H x D: 60 mm x 60 mm x 25 mm
- incl. assembly material

Description	Part no.
Fan 12 V	230-825



8 Combination cover

- top/bottom cover with integrated rear panel
- no rear module rails required
- integrated cable management bar with straps (see fig. 1)
- customized, shielded cable access opening due to flexible EMC textile seal (see fig. 2)
- entry for cables up to 10 mm in diameter
- incl. assembly material

Finish: transparent chromated

Material: aluminium

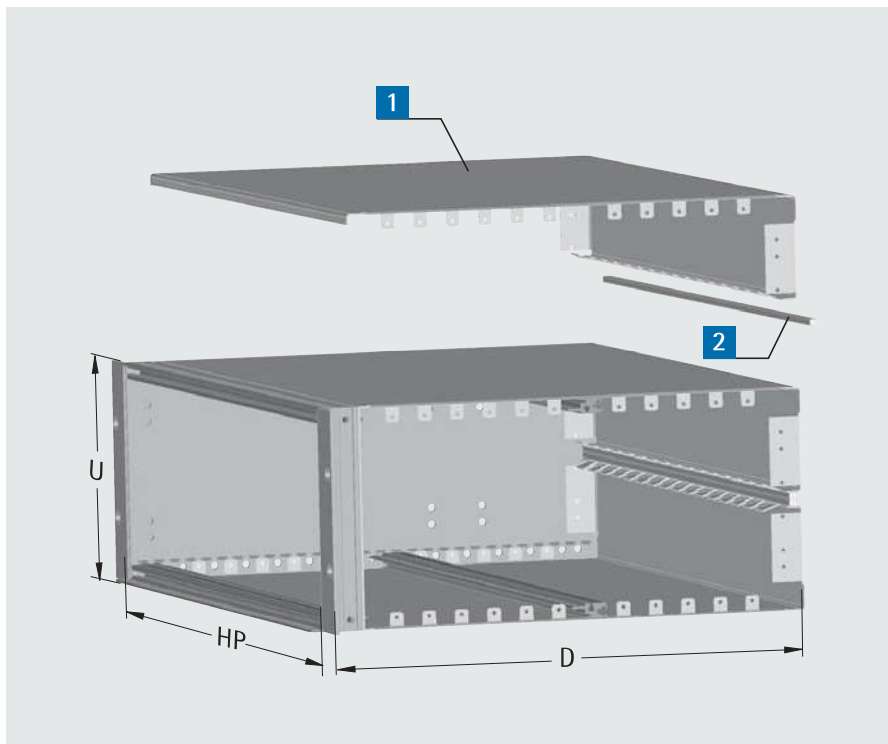


Fig. 1: integrated cable management bar with straps

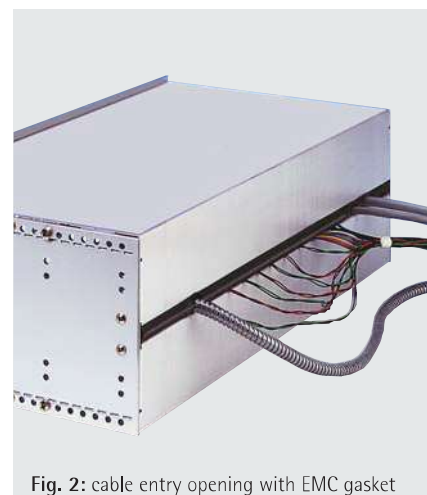


Fig. 2: cable entry opening with EMC gasket

Included in delivery

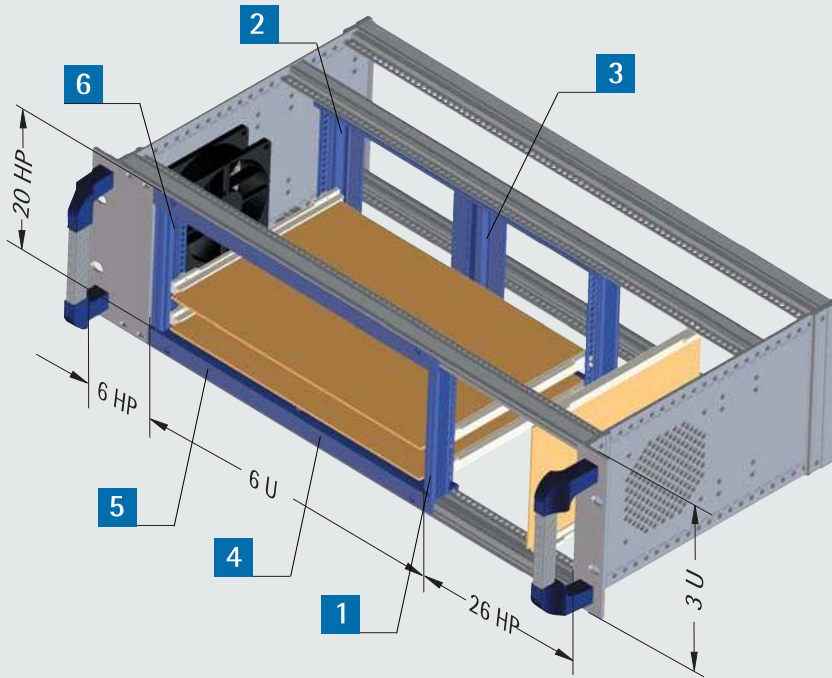
Item	Pc.	Description
1	1	Combination cover
2	1	EMC textile gasket
3		Assembly material

Order information

Height \ Depth	Part no. 84 HP		Part no. 42 HP		
	D=236 mm	D=296 mm	D=236 mm	D=296 mm	
3 U	perforated	245-312-48	245-313-48	245-332-48	245-333-48
	solid	245-312-40	245-313-40	245-332-40	245-333-40
6 U	perforated	245-612-48	245-613-48	245-632-48	245-633-48
	solid	245-612-40	245-613-40	245-632-40	245-633-40



9 Horizontal expansion kit 6 U/20 HP



Sample configuration: 6 U expansion kit

- for installation in 3 U subracks with BUS module rail
- for installing double Euroboards horizontally
- PCB's cooled optimally when installed in a subrack with perforated side panels (see fig.)

Application:

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

Finish:

Module rails, support rails and flat rails: transparent chromated

Panels:

anodized exterior
transparent chromated interior

Delivery: kit

Order information

Model 1	Model 2
front standard module rails profile no. 241-022	front standard module rails profile no. 241-022
rear narrow module rails with integrated mounting rails profile no. 241-019 and support rail with integrated mounting rail, pro- file no. 241-008 for plug-in connections in compliance with DIN 41612	rear BUS module rails profile no. 241-013 and BUS support rail profile no. 241-020
Depth 236 mm	Depth 236 mm
Part no. 245-620-61	Part no. 245-620-62

Included in delivery

Item	Pc.	Description
1	2	Module rails, front
2	2	Module rails, rear
3	1	Support rail, rear
4	4	Flat rails, chromated
5	2	Panels, anodized exterior chromated interior
6	2	Threaded inserts M 2,5 7 mm x 2 mm
7	4	Threaded inserts M 2,5 5 mm x 1,5 mm (Model 2)
8		Assembly material

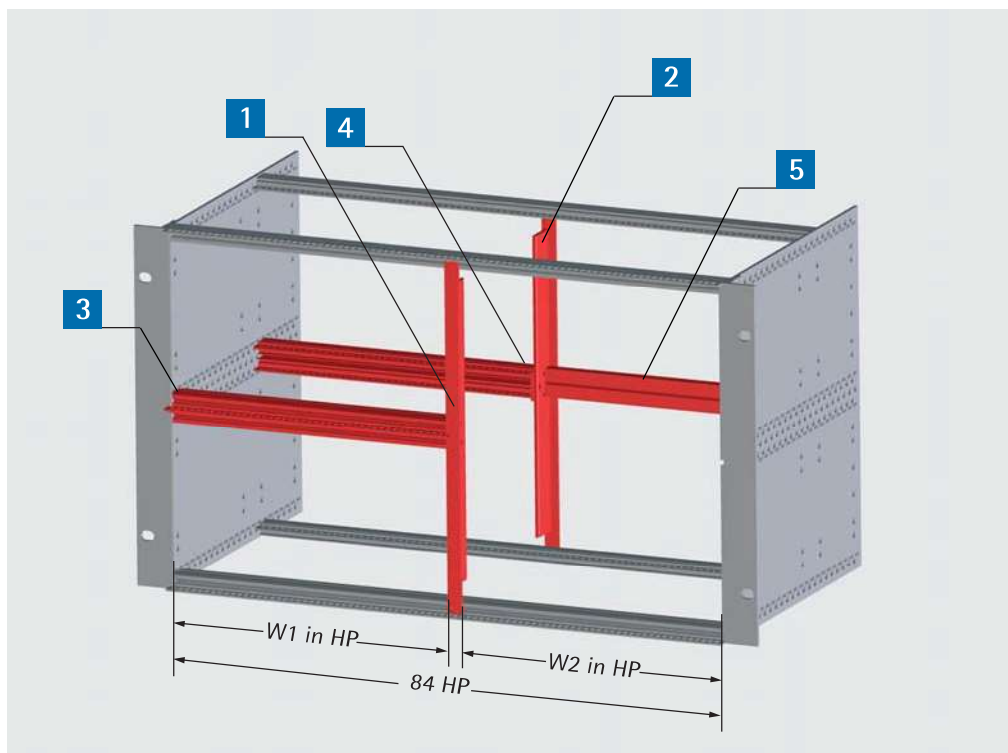


10 Vertical expansion kit 2 x 3 U

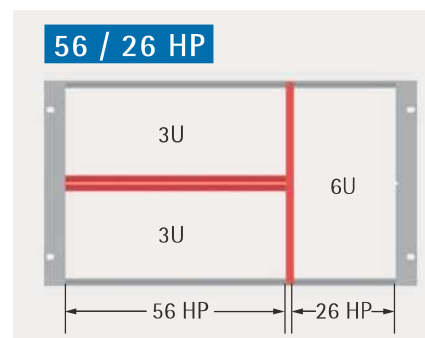
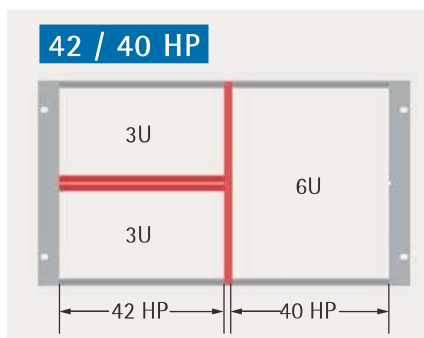
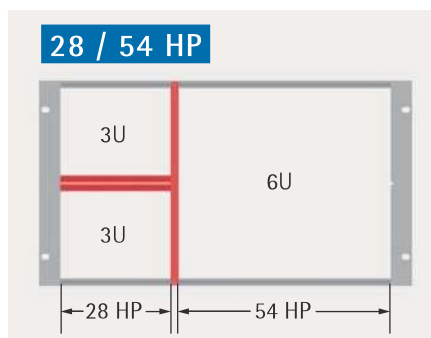
- for the separation of the 6 U installation space into 2 x 3 U and 1x 6 U

Application:

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



Versions



Mounting struts

Item		Part no.
1	front mounting strut	241-087
2	rear mounting strut for narrow module rail with integrated mounting rail	241-088
	rear mounting strut for BUS module rail	241-089

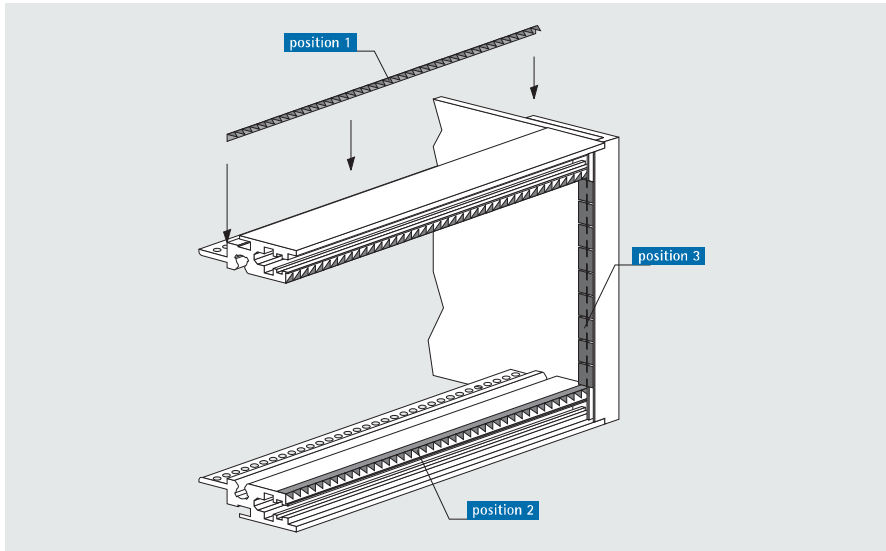
Module rails

Installation space B1	Installation space B2	Standard module rail	Threaded insert M 2,5	Narrow module rail with integrated mounting rail	BUS Module rail	Threaded insert M 2,5	Mounting rail integrated	support rail BUS	Threaded insert M2.5
2x 3 U	6 U	Item 3			Item 4		Item 5		
28 HP	54 HP	241-022-04	240-054	267-919-04	241-013-04	240-064	241-108-02	241-020-02	250-060-54
42 HP	40 HP	241-022-03	240-053	267-919-03	241-013-03	240-063	241-108-03	241-020-03	250-060-40
56 HP	26 HP	241-022-02	240-052	267-919-02	241-013-02	240-062	241-108-04	241-020-04	250-060-26

Note: By use of the mounting rails, the usable installation space will be reduced to 82 HP.



11 EMC contact gaskets



High-quality EMC contact gaskets increase shield attenuation by bringing individual components into continuous contact with each other.

Material:
Copper Beryllium

Finish:
tin-plated

Position 1

Horizontal EMC contact gasket 1 contacts module rail and cover panel.

HP	Length mm	Part no.
84	427	671-182
63	318	671-163
42	210,3	671-142

Position 2

Horizontal EMC contact gasket 2 contacts module rail and front panel or rear panel.

HP	Length mm	Part no.
84	427	671-183
63	318	671-164
42	204	671-143

Position 3

Vertical EMC contact gasket for connecting all front panels with each other and with the front or rear brackets.

U	Length mm	Part no.
3	97,0	671-184
6	232,0	671-185

EMC contact gasket set

- for fitting a complete 3 U or 6 U single-row subrack

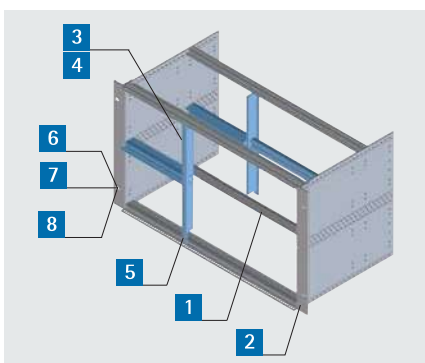
Description	HP	Part no.
Set for 19" subrack 3 U	84	671-190
	63	671-191
	42	671-192
Set for 19" subrack 6 U	84	671-193
	63	671-194
	42	671-195

Included in delivery

Pc.	Description
4	Position 1
4	Position 2
4	Position 3

Note: For EMC front panels, see page 57.

12 Mounting screws for subracks



Item	Description	Part no. (100 pc.)
1	Oval-head screw, M 4 x 12, self-locking	630-096
2	Countersunk screw, M 5 x 12 (for mounting handle)	630-121
3	Oval-head screw, M 2.5 x 10	630-094
4	Washer, 2,6 diameter	630-152
5	Countersunk screw, M 4 x 10	630-119
6	Oval-head screw, M 5 x 16	630-098
7	Decorative washer with collar	610-095
8	Captive nut, M 5 for increasing the mounting bracket thickness 0.7 mm - 1.7 mm	630-359
8	Captive nut, M 5 for increasing the mounting bracket thickness 1.8 mm - 2.6 mm	630-362

Note: For your custom subrack design, you will find additional components and parts beginning at page 41