



19" subrack 245



Reference analyses

The standard subrack 24-5312-11
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

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

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



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.



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



Specifications

Application:

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

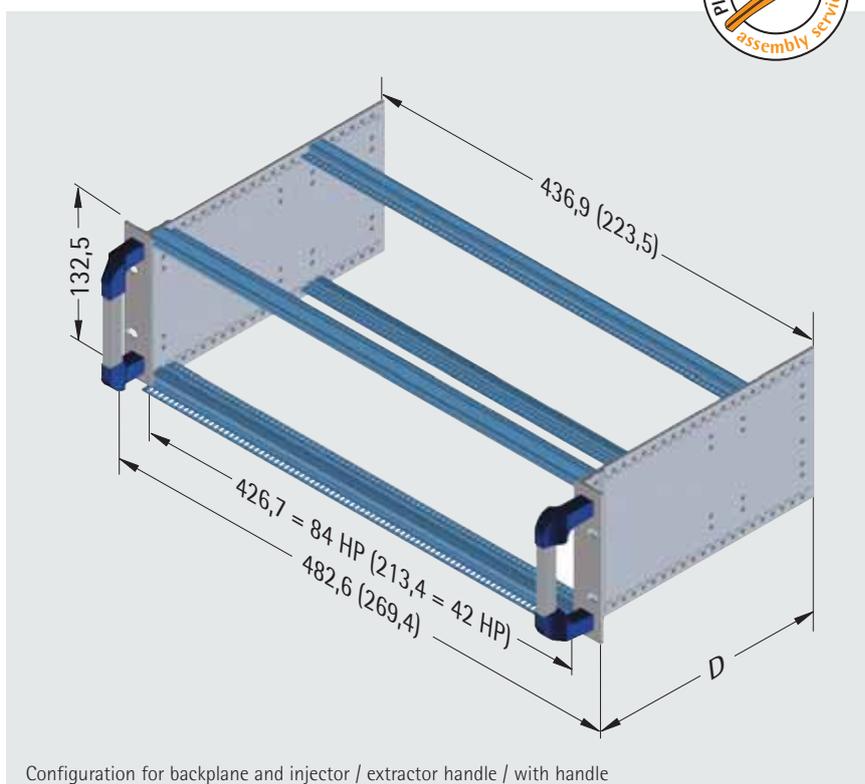
Material/Finish:

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



Configuration for backplane and injector / extractor handle / with handle

Accessories

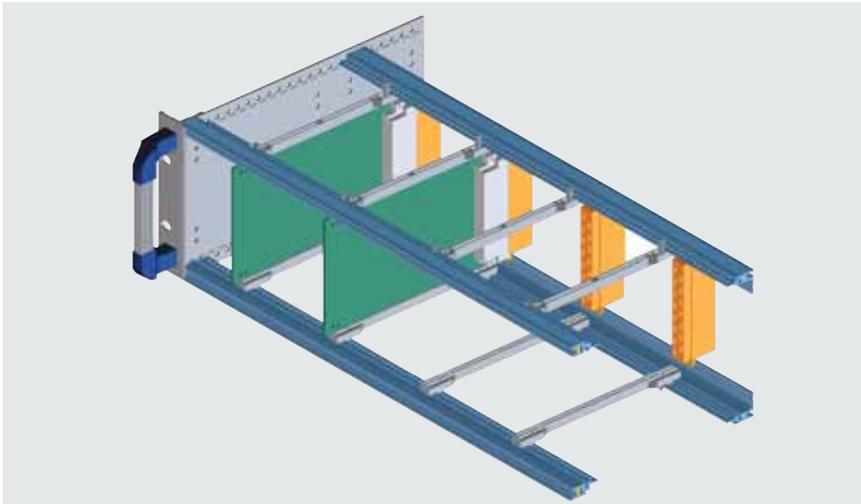
Expansion kit for 3 U subracks p. 38
 Cover panels EMC p. 36
 Rear panels p. 36
 Card guides p. 44
 Insulating strips p. 43

Suitable components

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



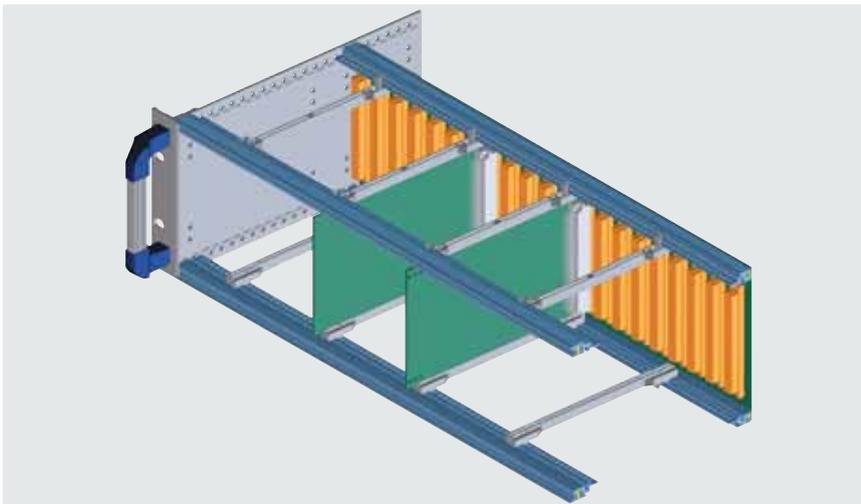
Configuration for connectors according to DIN 41612



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

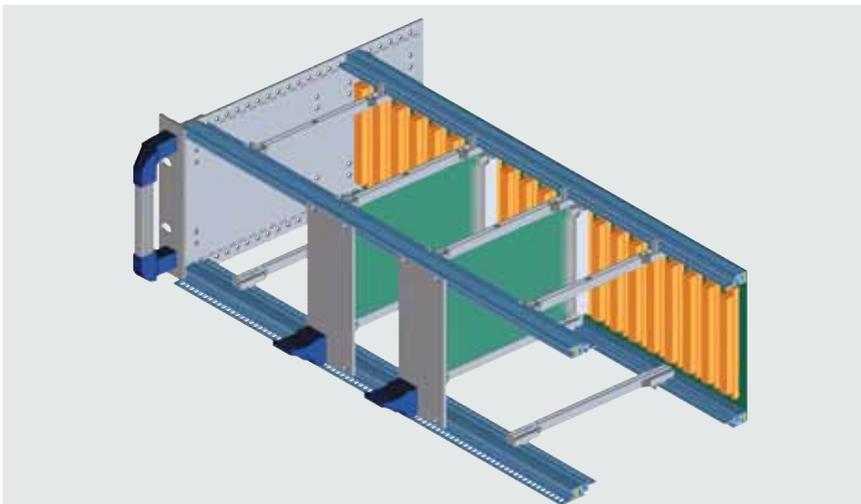


front
standard module rails 241-022
threaded inserts, M 2.5

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

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

Configuration for backplane and injector / extractor handle



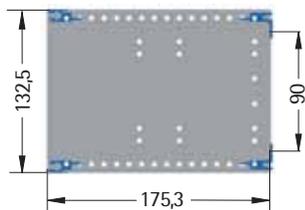
front
standard module rail 241-022,
standard module rail 241-049
with 10mm clearance for insertion/
extraction handle
threaded inserts, M 2.5

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

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

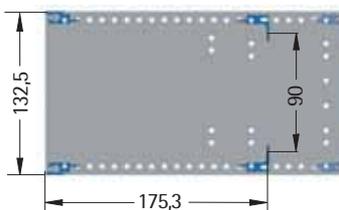


176 mm depth



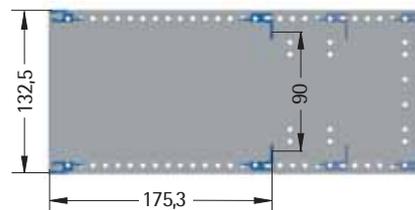
Description	Part no.
84 HP, with handle	24-5314-11
84 HP, without handle	24-5311-11
42 HP, with handle	24-5334-11
42 HP, without handle	24-5331-11

236 mm depth



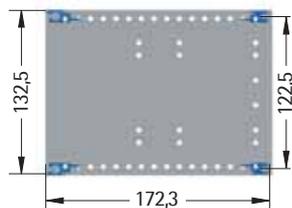
Description	Part no.
84 HP, with handle	24-5315-11
84 HP, without handle	24-5312-11
42 HP, with handle	24-5335-11
42 HP, without handle	24-5332-11

296 mm depth



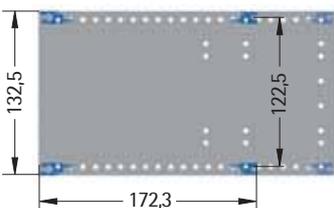
Description	Part no.
84 HP, with handle	24-5316-11
84 HP, without handle	24-5313-11
42 HP, with handle	24-5336-11
42 HP, without handle	24-5333-11

176 mm depth



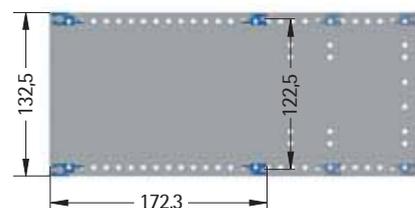
Description	Part no.
84 HP, with handle	24-5314-21
84 HP, without handle	24-5311-21
42 HP, with handle	24-5334-21
42 HP, without handle	24-5331-21

236 mm depth



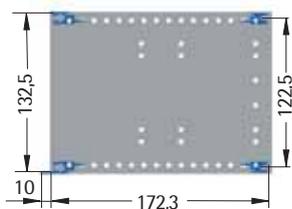
Description	Part no.
84 HP, with handle	24-5315-21
84 HP, without handle	24-5312-21
42 HP, with handle	24-5335-21
42 HP, without handle	24-5332-21

296 mm depth



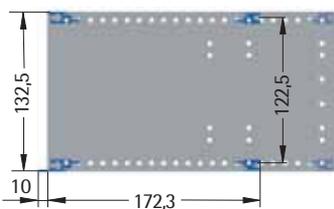
Description	Part no.
84 HP, with handle	24-5316-21
84 HP, without handle	24-5313-21
42 HP, with handle	24-5336-21
42 HP, without handle	24-5333-21

176 mm depth



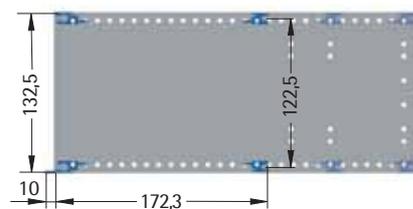
Description	Part no.
84 HP, with handle	24-5314-31
84 HP, without handle	24-5311-31
42 HP, with handle	24-5334-31
42 HP, without handle	24-5331-31

236 mm depth



Description	Part no.
84 HP, with handle	24-5315-31
84 HP, without handle	24-5312-31
42 HP, with handle	24-5335-31
42 HP, without handle	24-5332-31

296 mm depth

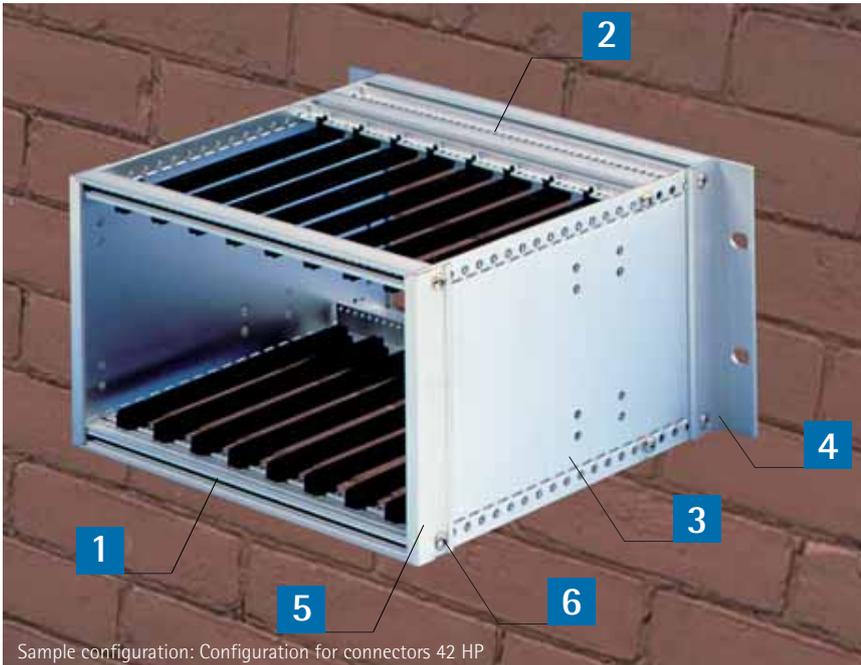


Description	Part no.
84 HP, with handle	24-5316-31
84 HP, without handle	24-5313-31
42 HP, with handle	24-5336-31
42 HP, without handle	24-5333-31

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



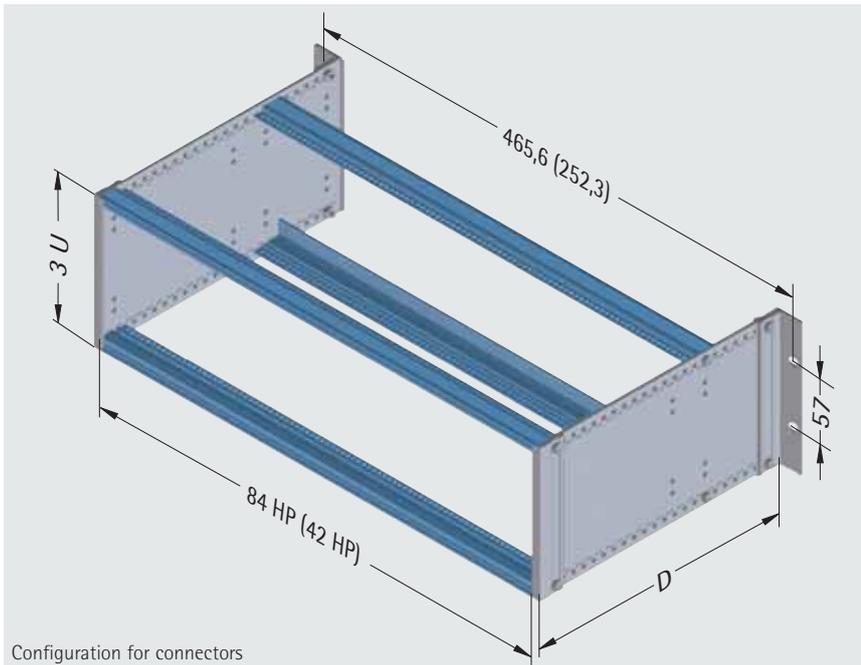
245 • 19" subrack 3 U, for wall mounting



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

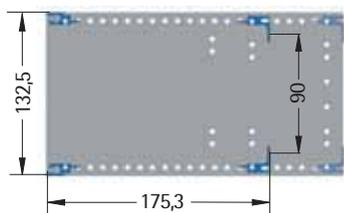
Item	Pc.	Description
7	2	Threaded inserts, M 2.5 7 mm x 2 mm
8	2	Threaded inserts, M 2.5 5 mm x 1,5 mm (for rear BUS module rail)
9		Assembly material

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



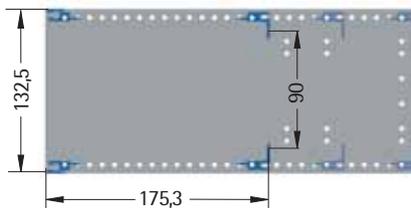
Configuration for connectors according to DIN 41612

236 mm depth



Description	Part no.
84 HP	24-5312-17
42 HP	24-5332-17

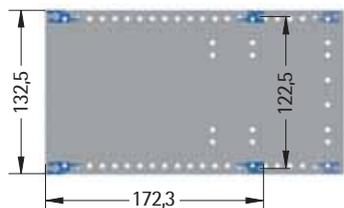
296 mm depth



Description	Part no.
84 HP	24-5313-17
42 HP	24-5333-17

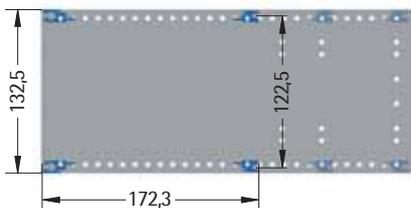
Configuration for backplane

236 mm depth



Description	Part no.
84 HP	24-5312-27
42 HP	24-5332-27

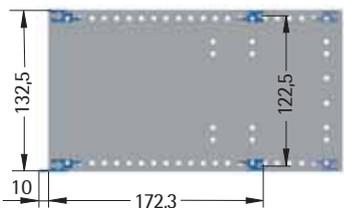
296 mm depth



Description	Part no.
84 HP	24-5313-27
42 HP	24-5333-27

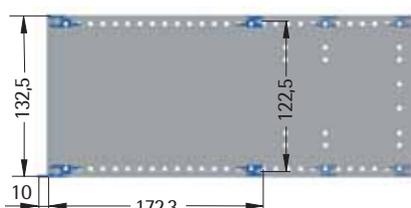
Configuration for backplane and injector / extractor handle

236 mm depth



Description	Part no.
84 HP	24-5312-37
42 HP	24-5332-37

296 mm depth



Description	Part no.
84 HP	24-5313-37
42 HP	24-5333-37

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

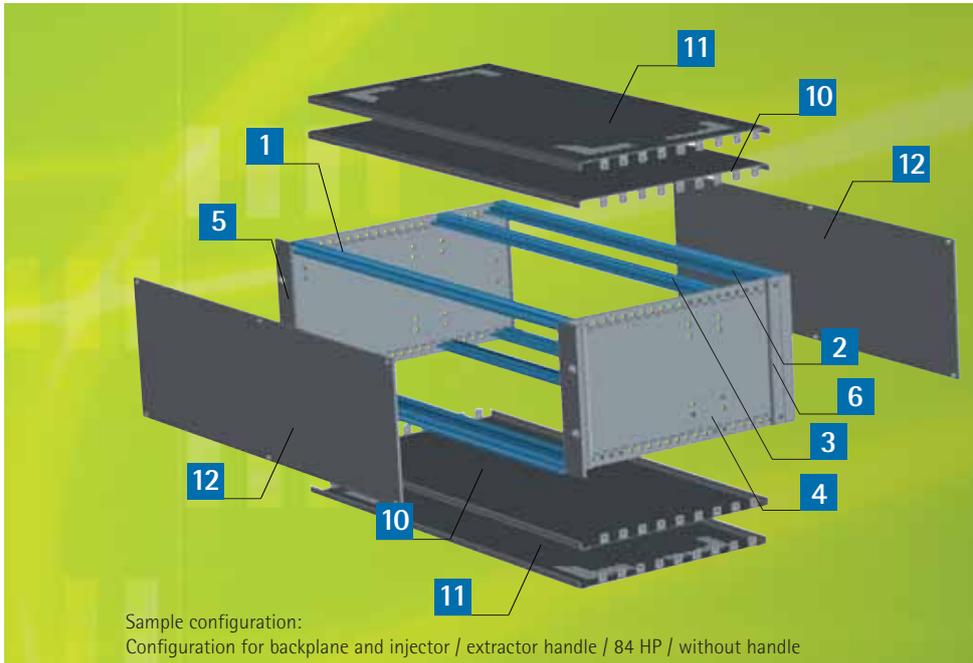
Suitable components

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

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



245 • 19" subrack 3 U, EMC basic structure

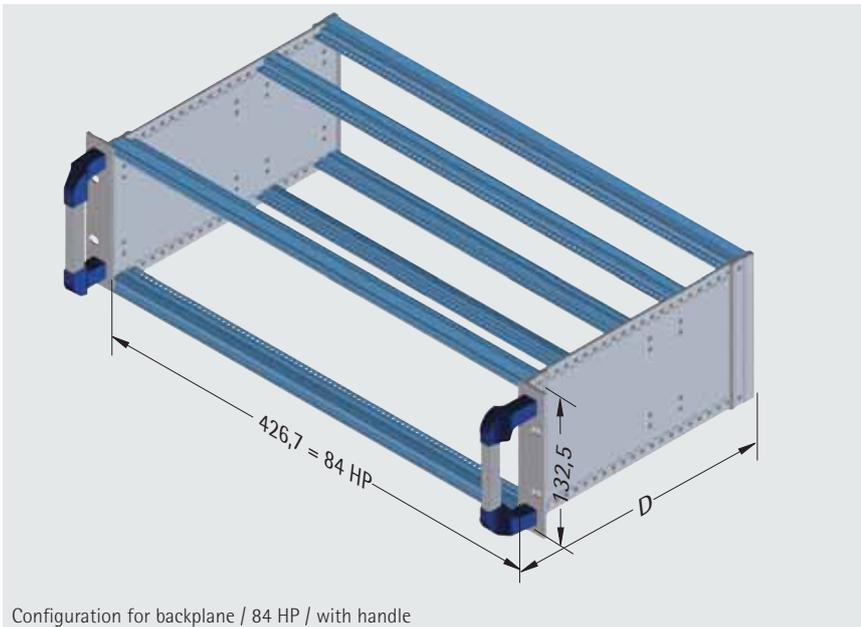


Sample configuration:
Configuration for backplane and injector / extractor handle / 84 HP / without handle

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, front plates and other EMC-shielding material separately (see page 40).



Configuration for connectors according to DIN 41612

front

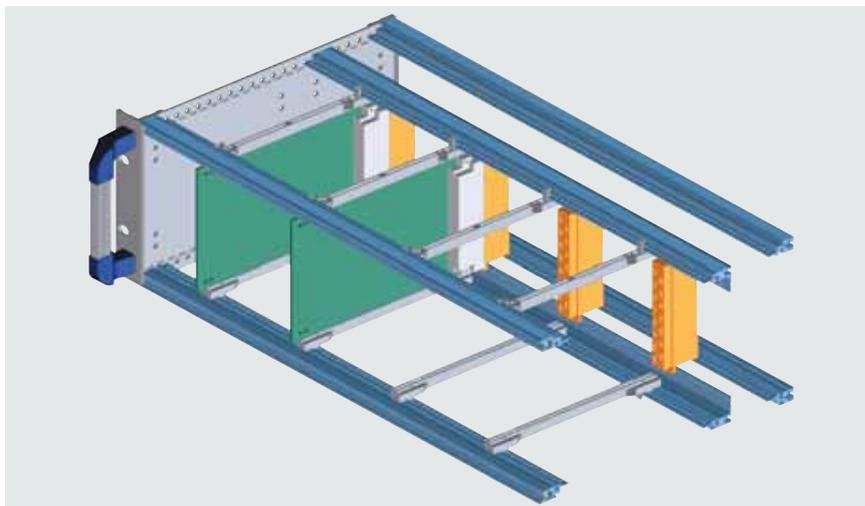
standard module rails 241-022
threaded inserts, M 2.5

middle

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

rear

standard module rails 241-022



Configuration for backplane

front

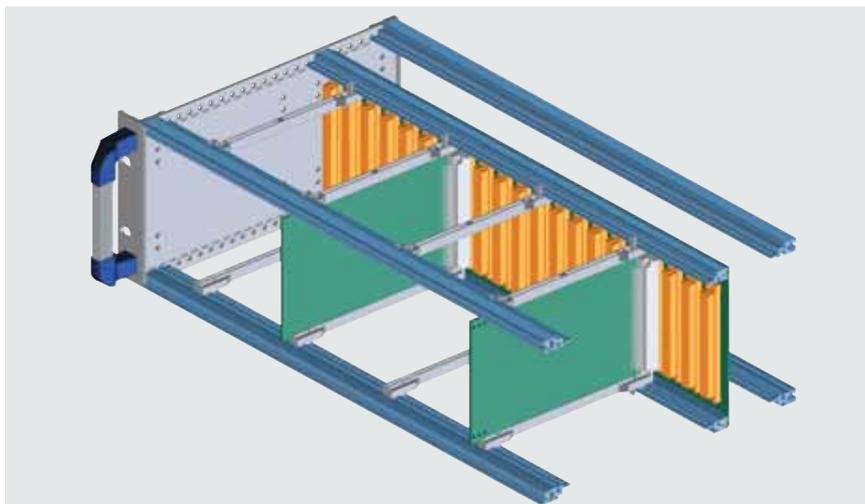
standard module rails 241-022
threaded inserts, M 2.5

middle

BUS module rails 241-013
threaded inserts, M 2.5

rear

standard module rails 241-022



Configuration for backplane and injector / extractor handle

front

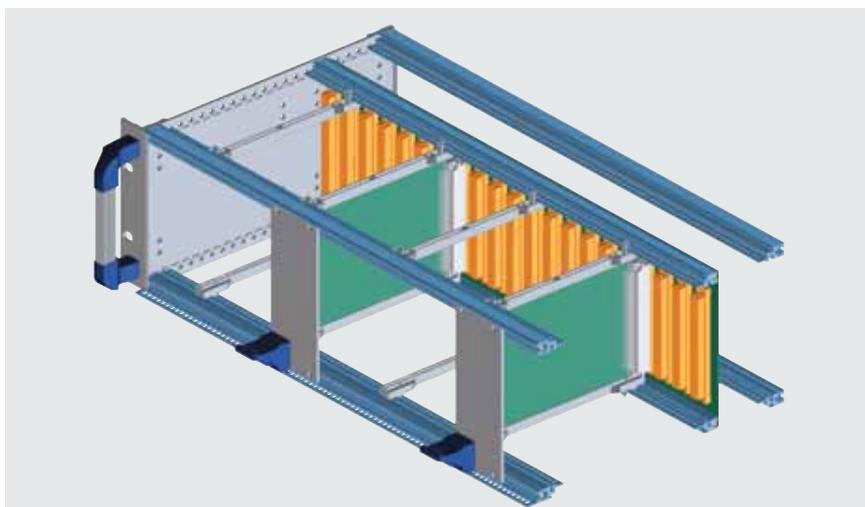
standard module rail 241-022,
standard module rail 241-049
with 10 mm clearance for insertion/
extraction handle
threaded inserts, M 2.5

middle

BUS module rails 241-013
threaded inserts, M 2.5

rear

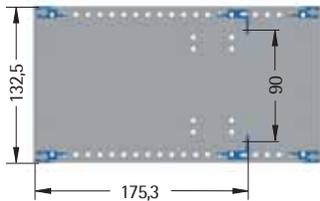
standard module rails 241-022



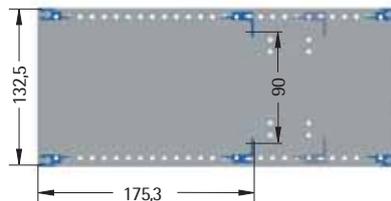


Configuration for connectors according to DIN 41612

236 mm depth



296 mm depth

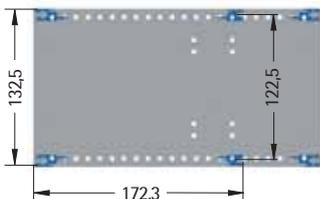


Description	Part no.
84 HP, with handle	24-5315-16
84 HP, without handle	24-5312-16

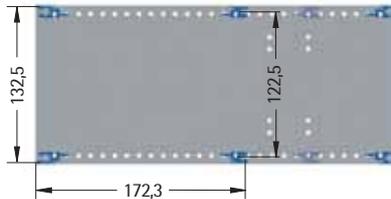
Description	Part no.
84 HP, with handle	24-5316-16
84 HP, without handle	24-5313-16

Configuration for backplane

236 mm depth



296 mm depth

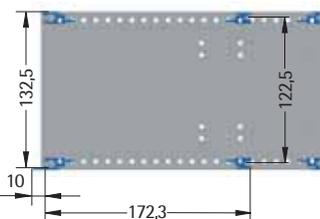


Description	Part no.
84 HP, with handle	24-5315-26
84 HP, without handle	24-5312-26

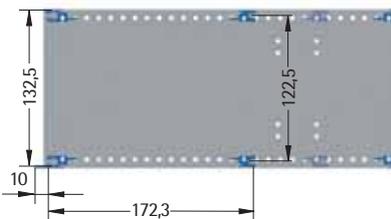
Description	Part no.
84 HP, with handle	24-5316-26
84 HP, without handle	24-5313-26

Configuration for backplane and injector / extractor handle

236 mm depth



296 mm depth

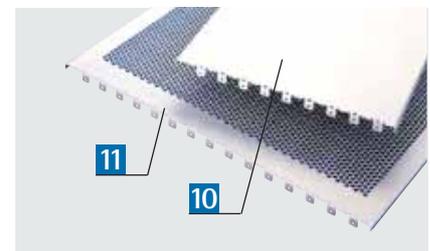


Description	Part no.
84 HP, with handle	24-5315-36
84 HP, without handle	24-5312-36

Description	Part no.
84 HP, with handle	24-5316-36
84 HP, without handle	24-5313-36

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
10	1	Cover panel, solid
Depth		D=236 mm D=296 mm
Part no.		24-5012-40 24-5013-40

Item	Pc.	Description
11	1	Cover panel, perforated
Depth		D=236 mm D=296 mm
Part no.		24-5012-48 24-5013-48

Front/rear shielding panel, 84 HP

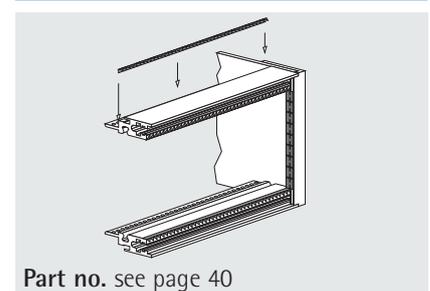


Finish: anodized exterior, transparent chromated interior

Material: aluminium, 2,5mm

Item	Pc.	Height	Part no.
12	1	3 U	24-3884-13

EMC contact gasket set



Part no. see page 40

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