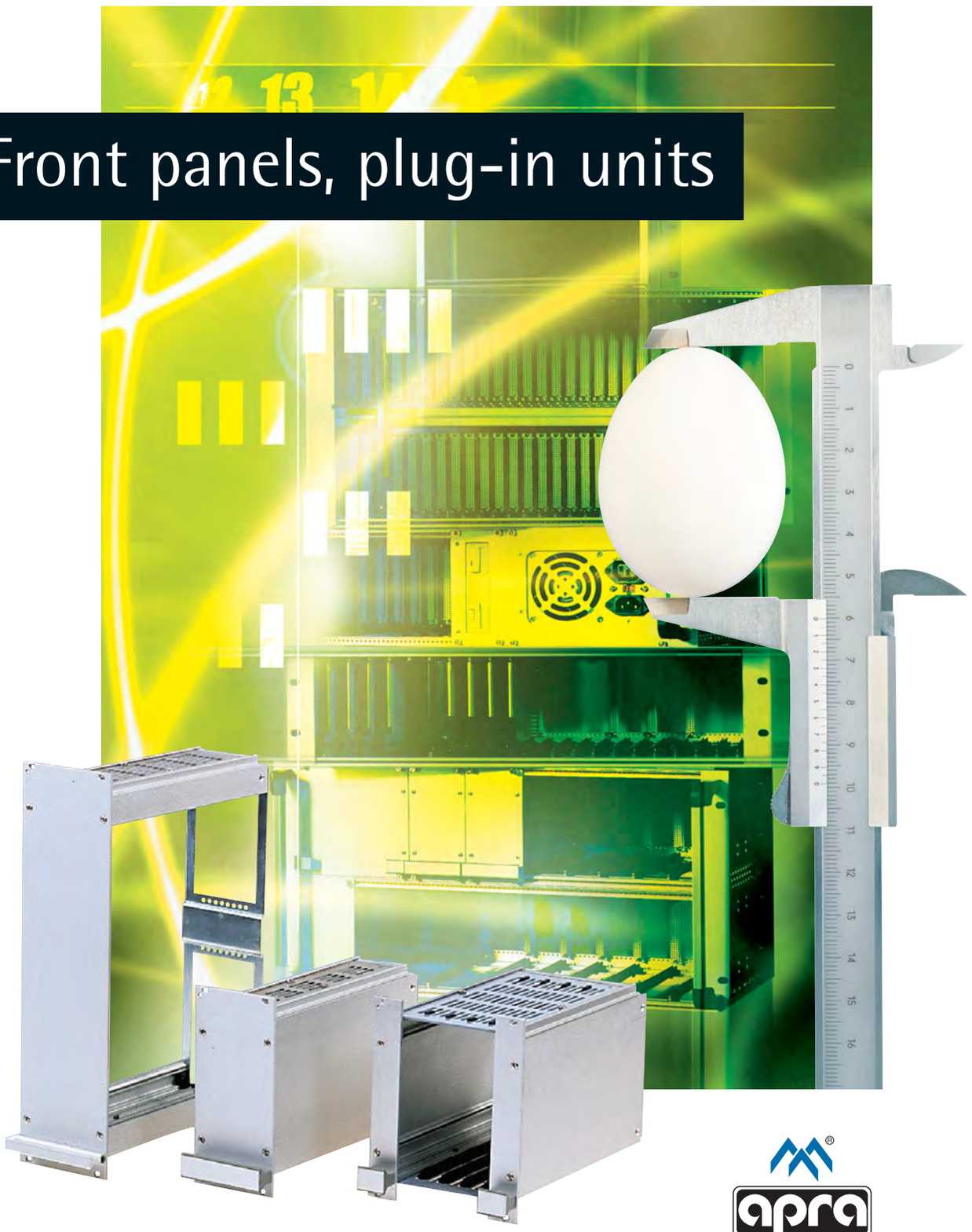
Front panels, plug-in units



apra gruppe

... the perfect shell for valuable electronics

Online front panel service from apra-norm

Create your customised front panel online

(without software download):

www.frontpanel-online.com

Easily design your individual 19" front or blind from aluminium online at **www.frontpanel-online.com**
You will receive the quotation in return - quick and easy!

- Alternatively you may of course also e-mail your CAD data in DXF, DWG, MI, IGS, STP or SAT to: **fp@apra.de**

2 ... and if you want more

- almost **unlimited design possibilities:** front panel with multi-colour print, logos, photos by digital printing, silk or pad printing.

  Printing data as vector data in formats DXF, DWG, PDF, AI or CDR can be used.
  Please transfer all scripts to vector graphics and indicate colour precise.

- large range of materials availabe (sheet metal, aluminium, plastics)
- many mechanical treatments possible: • **milling** • **punching** • **lasing** • **injection moulding**
- surface refinement (galvanising, powder coating)

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Our production possibilities for enclosures and parts made of metal or plastics

Punching, laser cutting

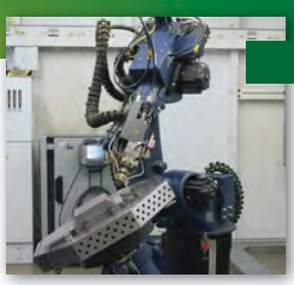
- laser cutting
- punching
- embossing
- marking

Bending

- free bending
- clinching
- settling
- automated bending with robots

Milling / chamfering

- front panel customisation
- cutouts
- space chamfering
- edge chamfering
- surface refinement



Welding

- laser welding
- stud welding
- customary welding

Insertion

- stud bolts
- nuts
- inside thread nuts
- earthing lugs

Surface technology

- powder coating
- wet painting
- chromating

Production possibilities for plastic parts and enclosures

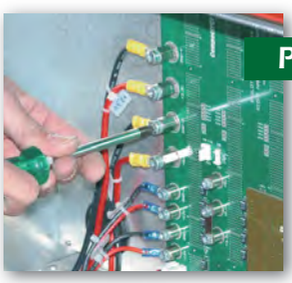
- milling and bending technology
- injection moulding

Prototyping for plastic parts

- vacuum casting of prototypes and small batches
- 3D printing rapid prototyping

Printing/foils

- digital printing
- silk screening
- pad printing
- keypads
- decor foils



Preassembly / tailoring

- switches, pushbuttons, earthing, customised components
- cable assembly
- complete or part assembly
- acc. to customer's specification

243 • Front panel

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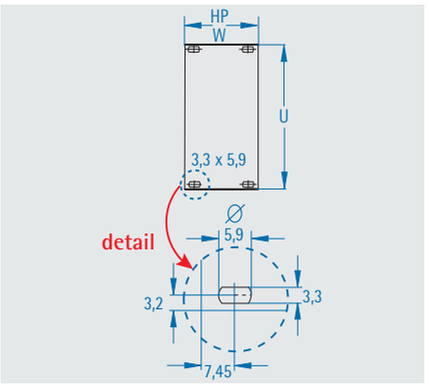
Front panel

- anodised front
- conductive rear

Material:
aluminium 2,5 mm
Delivery:
unmounted

See page 131 for matching screw holder and neck screws.

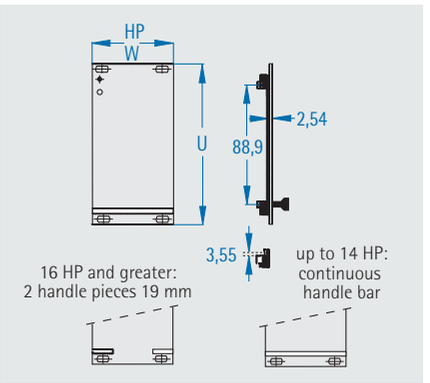
Type A



Delivery

Item	Pc.	Description
1	1	Front panel

Type C



- plastic handle bar
- plastic PCB mounting plate

Delivery

Item	Pc.	Description
1	1	Front panel
2	1/2	Plastic handle
3	1/2	Identification plates
4	1/2	PCB mounting bracket
5		Assembly material

HP	Width W mm	2 U H = 84,5 mm	3 U H = 129,0 mm		4 U H = 173,5 mm	6 U H = 262,5 mm	
		Type A	Type A	Type C	Type A	Type A	Type C
2	10,0	-	243-002-45	-	-	243-602-45	-
3	15,0	-	243-003-45	243-703-45	-	243-603-45	243-603-65
4	20,1	-	243-004-45	243-704-45	243-404-45	243-604-45	243-604-65
5	25,1	-	243-005-45	243-705-45	-	243-605-45	243-605-65
6	30,2	-	243-006-45	243-706-45	-	243-606-45	243-606-65
7	35,2	-	243-007-45	243-707-45	-	243-607-45	243-607-65
8	40,3	-	243-008-45	243-708-45	243-408-45	243-608-45	243-608-65
10	50,4	-	243-010-45	243-710-45	-	243-610-45	243-610-65
12	60,6	-	243-012-45	243-712-45	-	243-612-45	243-612-65
14	70,8	243-214-45	243-014-45	243-714-45	243-414-45	243-614-45	243-614-65
16	80,9	-	243-016-45	243-716-45	-	243-616-45	243-616-65
18	91,1	-	243-018-45	243-718-45	-	243-618-45	243-618-65
20	101,2	-	243-020-45	243-720-45	-	243-620-45	243-620-65
21	106,3	-	243-021-45	243-721-45	243-421-45	243-621-45	243-621-65
24	121,5	-	243-024-45	243-724-45	243-424-45	243-624-45	-
26	131,7	-	243-026-45	-	-	243-626-45	-
28	142,0	243-228-45	243-028-45	243-728-45	243-428-45	243-628-45	243-628-65
30	152,0	-	243-030-45	-	-	243-630-45	-
35	177,5	-	243-035-45	-	-	243-635-45	-
40	202,8	-	243-040-45	-	-	243-640-45	-
42	213,0	243-242-45	243-042-45	243-742-45	243-442-45	243-642-45	243-642-65
48	243,5	-	243-048-45	-	-	243-648-45	-
54	274,0	-	243-054-45	-	-	243-654-45	-
56	284,1	243-256-45	243-056-45	-	-	243-656-45	-
63	319,7	243-263-45	243-063-45	243-763-45	243-463-45	243-663-45	243-663-65
84	426,4	243-284-45	243-084-45	243-784-45	243-484-45	243-684-45	243-684-65

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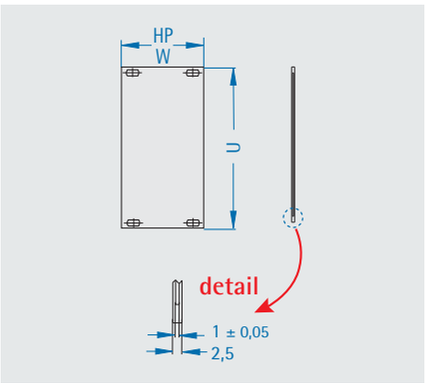
EMC front panel

- anodised front
- conductive rear
- with side grooves for clipping on EMC contact springs

Material:
aluminium 2,5 mm
Delivery:
unmounted

See page 131 for matching screw holder and neck screws.

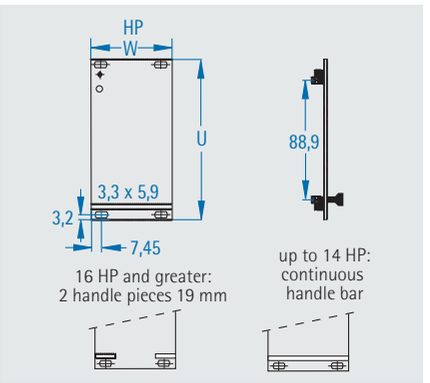
Type A - EMC



Delivery

Item	Pc.	Description
1	1	Front panel

Type C - EMC



- plastic handle bar
- plastic PCB mounting plate

Delivery

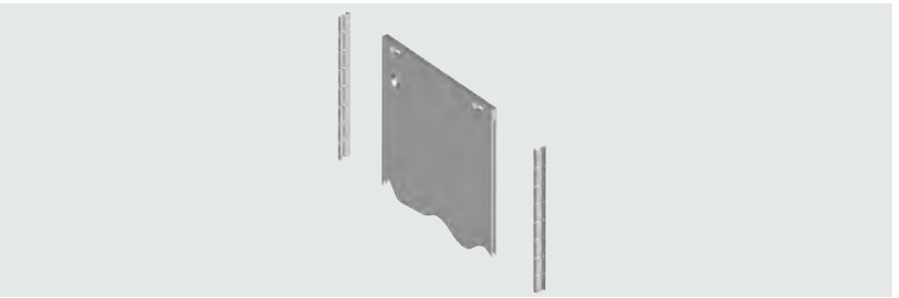
Item	Pc.	Description
1	1	Front panel
2	1/2	Plastic handle
3	1/2	Identification plates
4	2/4	PCB mounting bracket
5		Assembly material

HP	Width W mm	3 U H = 129,0 mm		6 U H = 262,5 mm	
		Type A	Type C	Type A	Type C
2	10,0	243-802-13	-	-	-
3	15,0	243-803-13	-	243-803-16	-
4	20,1	243-804-13	243-804-33	243-804-16	243-804-36
5	25,1	243-805-13	243-805-33	243-805-16	243-805-36
6	30,2	243-806-13	243-806-33	243-806-16	243-806-36
7	35,2	243-807-13	243-807-33	243-807-16	243-807-36
8	40,3	243-808-13	243-808-33	243-808-16	243-808-36
10	50,4	243-810-13	243-810-33	243-810-16	243-810-36
12	60,6	243-812-13	243-812-33	243-812-16	243-812-36
14	70,8	243-814-13	243-814-33	243-814-16	243-814-36
16	80,9	243-816-13	243-816-33	243-816-16	243-816-36
21	106,3	243-821-13	243-821-33	243-821-16	-
28	142,0	243-828-13	-	243-828-16	-
42	213,0	243-842-13	-	243-842-16	-
63	319,7	243-863-13	-	243-863-16	-
84	426,4	243-884-13	-	243-884-16	-

EMC contact springs

The contact springs are clipped onto the side grooves so that the front panels contact one another.

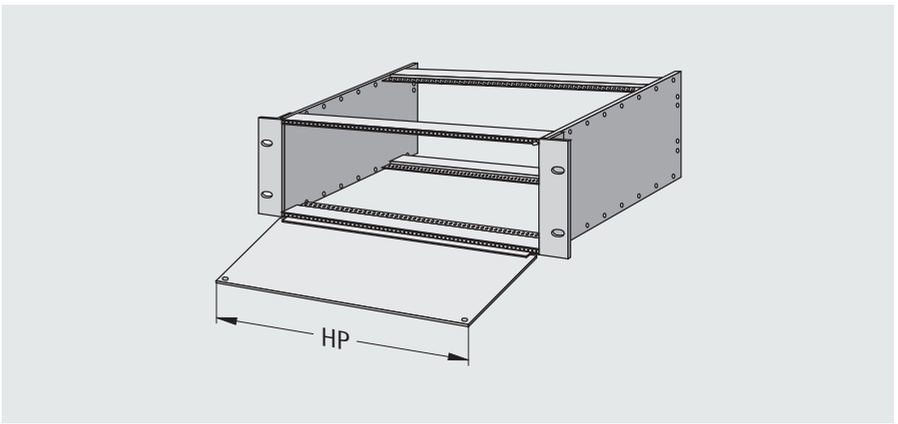
U	L mm	Order no.
3	97	671-184
6	232	671-185



Front panel, bottom-hinged

- with side groove for EMC springs
- can be mounted on top or bottom
- plate is mounted to the module rail; installation width is therefore not decreased
- opening angle = 180° if not limited by other components

Finish:
anodised front, conductive rear

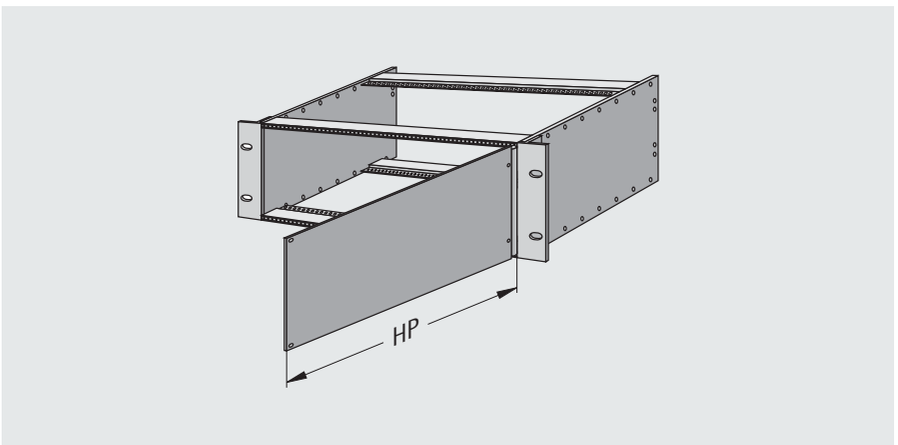


U	HP	Order no.
3	42	244-342-13
3	84	244-384-13
6	42	244-742-16
6	84	244-784-16

Front panels, pivoted

- with side groove for EMC springs
- can be mounted on the right or left
- hinge requires 2 HP width
- mounted on module rails (M 2.5)
- opening angle = 180° if not limited by other components for example handles

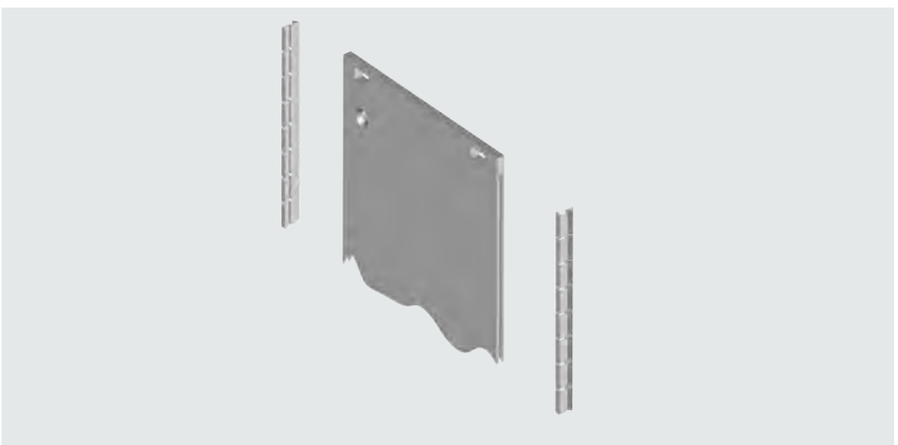
Finish:
anodised front, conductive rear



U	HP	Order no.
3	42	244-142-13
3	84	244-184-13
6	42	244-542-16
6	84	244-584-16

EMC contact springs

The contact springs are clipped onto the side grooves so that the front panels contact one another.



U	L mm	Order no.
3	97	671-184
6	232	671-185

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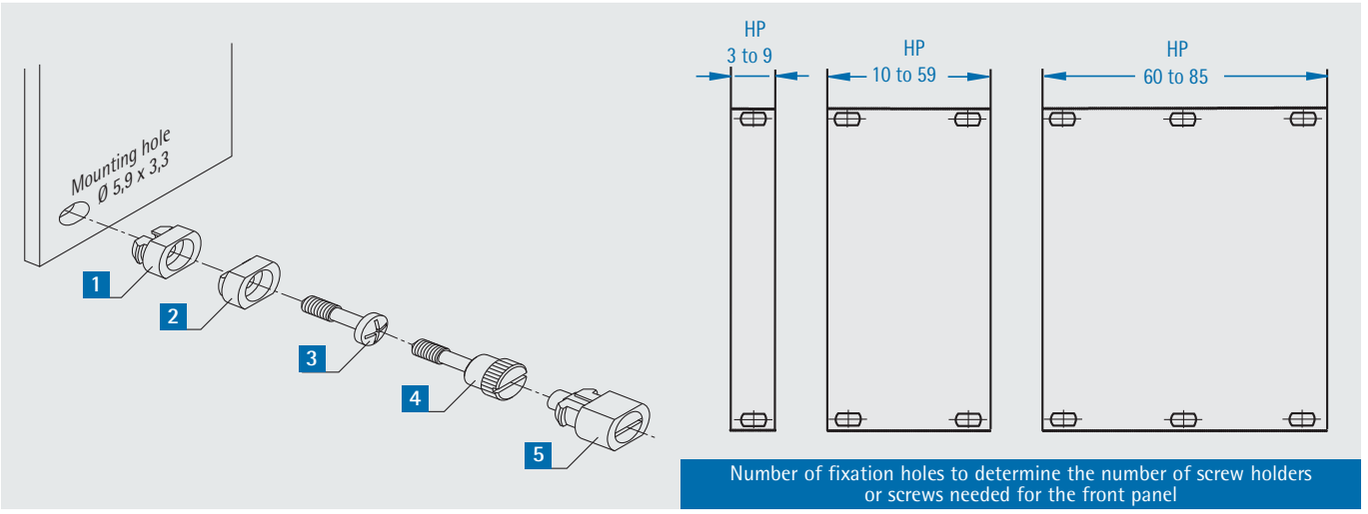
Fastening front panels



Number of fixation holes to determine the number of screw holders or screws needed for the front panel

1 Screw holder, plastic

- fits all front panels with hole Ø 5,9 mm x 3,3 mm
- can be pressed in manually
- packing unit: 100 pieces

Colour	Order no.
light grey	250-697-02
black	250-697-05

2 Screw holder, brass

- fits all front panels with hole Ø 5,9 mm x 3,3 mm
- nickel-plated
- brass screw holders must be pressed into place with a tool or a level press

* When ordering front panels on the same time, the screw holder will be pressed in.

Delivery	Order no.
1 piece	250-697
100 pieces	250-697-03
1 piece	250-697-04*

3 Neck screw, M 2.5 x 12

- recessed head
- nickel-plated
- packing unit: 100 pieces

Order no.
250-602

4 Knurled screw M 2.5 x 12,2

- knurled and slotted
- nickel-plated brass
- packing unit: 100 pieces

Order no.
250-611-02

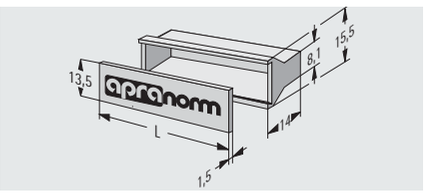
5 Quick closure

- with slot
- no threaded inserts or sliding nuts required
- open and close with a quarter turn
- protected against twisting
- vibration-free
- cannot be lost
- easy and quick mounting
- packing unit = 100 pieces

Finish:
similar to RAL 7035 light grey

Order no.
250-607-00

Handle bar, plastics



Finish:
handle bar: grey
aluminium strips: natural colour anodised

HP	L mm	Order no.
3	13,90	250-750-03
4	19,10	250-750-04
5	24,10	250-750-05
6	30,00	250-750-06
7	34,20	250-750-07
8	39,30	250-750-08
10	49,50	250-750-10
12	59,70	250-750-12
14	69,90	250-750-14

250 • Aluminium handle bar / PCB mounting bracket

Aluminium handle bar

Finish:
naturally coloured anodised

Please order assembly material separately.

Assembly material

Square nut M 2,5
630-192

Oval-head screw M 2,5 x 6
630-092

PCB fixing

1 PCB fixing

- plastics, single piece

Order no.
250-701

2 PCB fixing

- plastics, divided

Order no. (pair)
250-700

3 PCB fixing

- zinc die cast
- if front panel is electroconductive it can be integrated to the contact-voltage protection or shielding using a conductor track on the PCB
- with M 2.5 thread for fixing front panel and PCB

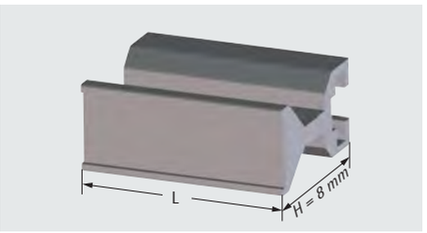
Can only be used with handle bar 250-750-XX (see page 131)

Order no.
250-698

Assembly material for Item 1-3

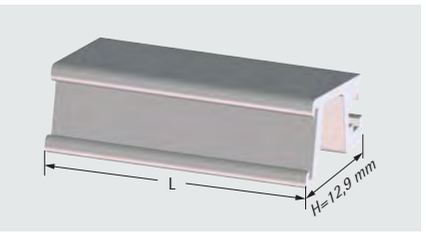
Order no.
250-707

Aluminium handle bar "trapezoidal"

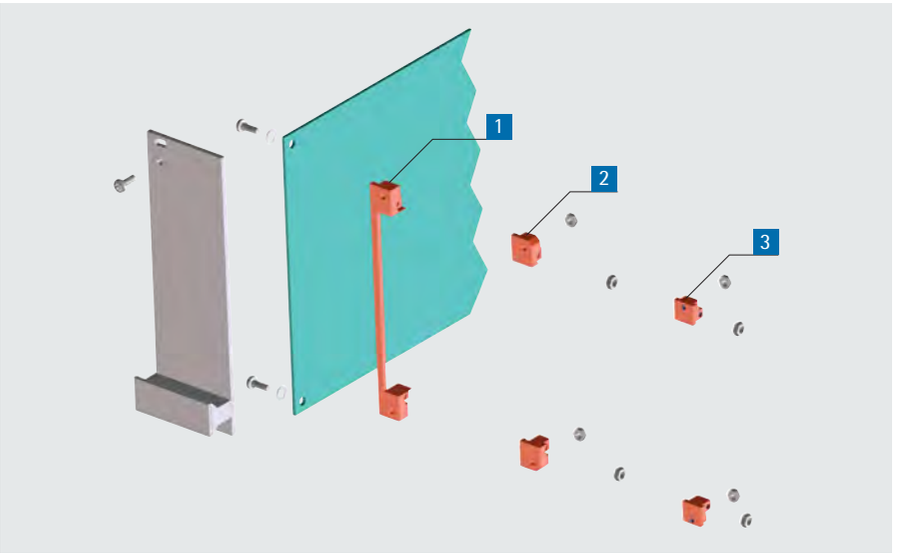


HP	L mm	Order no.
3	14,00	250-653
4	19,10	250-654
5	24,10	250-655
6	29,20	250-656
7	34,20	250-657
8	39,30	250-658
10	49,40	250-660
12	59,60	250-662
14	69,80	250-664

Aluminium handle bar "sloped"



HP	L mm	Order no.
3	14,60	250-680-03
4	19,70	250-680-04
5	24,80	250-680-05
6	29,90	250-680-06
7	35,00	250-680-07
8	40,00	250-680-08
10	50,20	250-680-10
12	60,30	250-680-12
14	70,50	250-680-14



Please order mounting material separately.

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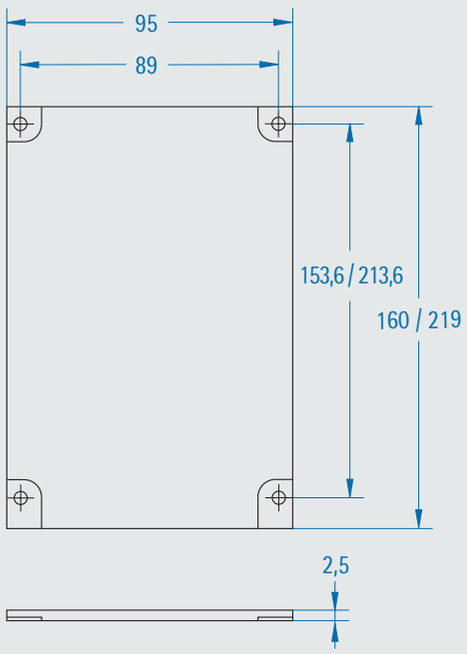
PCB cover

- protects the PCB's solder side
- electrically insulated
- protects from damage and short circuits
- can be coated with copper conductive paint
- fits 100 x 160 mm, 233,35 x 160 mm, 100 x 220 mm and 233,35 x 220 mm PCBs with plug-in connection acc. to IEC 60603-2
- **surface resistance:** 10^{15} Ohm
- **dielectric strength ASTM D 149:** 20 kV
- **heat resistance acc. to DIN 53460:** 130 °C

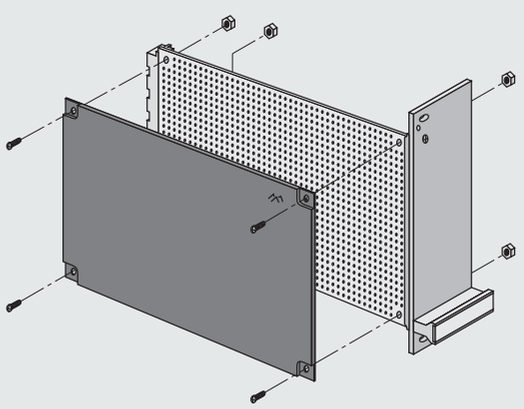
Material:
plastics, flammability rating acc. to UL 94 V-0
Finish:
black



Description	Order no.
For PCB 100 x 160 mm	258-200
For PCB 100 x 160 mm, with copper conductive paint	258-200-51
For PCB 100 x 220 mm	258-250
For PCB 100 x 220 mm, with copper conductive paint	258-250-51
Assembly material	250-711

PCB cover, shortened model

We recommend mounting a 1.5 mm shortened cover when using cards with front panels mounted with plastic PCB mounting plates (item 1) .



Description	Order no.
PCB cover, shortened	258-199
Assembly material	250-711

Plug-in components with IEEE insertion and extraction handle

- fulcrum can change positions for increased leverage to overcome high inserting and withdrawing force
- can be used for subracks with IEEE insertion/ extraction handle function (see page 83)
- works with the following module rails:
  - standard module rail with 10 mm extension (241-049-XX)
  - enforced module rail with 10 mm extension (241-500-XX)

- two types of front panels are available:

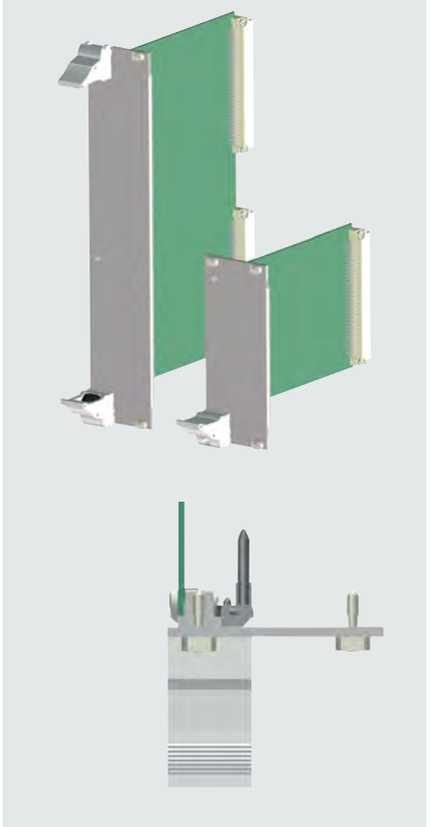
A Front panel IEEE with side groove for EMC contact springs

Material: aluminium
Surface: front side anodised, rear side chromated

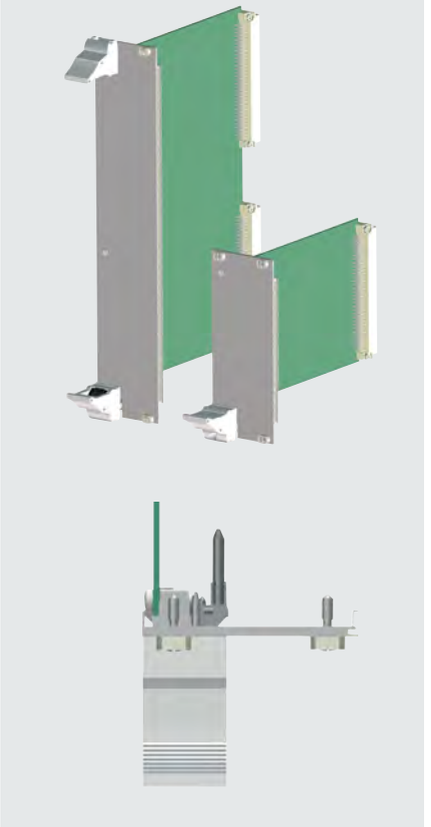
B Profiled front panel IEEE

Material: aluminium profile extrusion
Surface: chromated

A Front panel IEEE



B Profiled front panel IEEE



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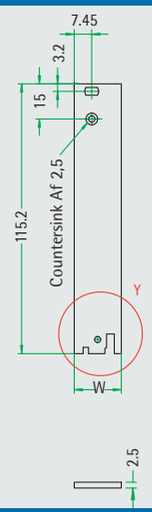
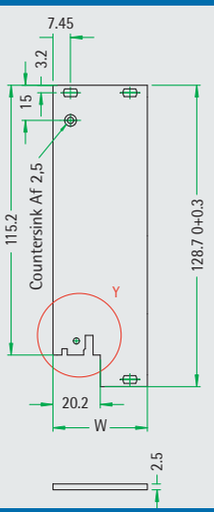
Front panel IEEE with side groove for EMC contact springs

3 U

4 HP

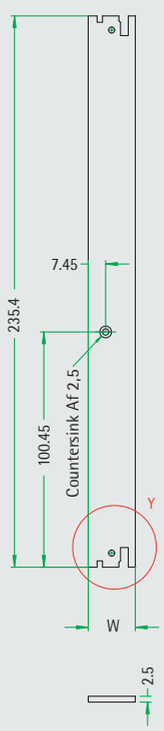


≥ 5 HP

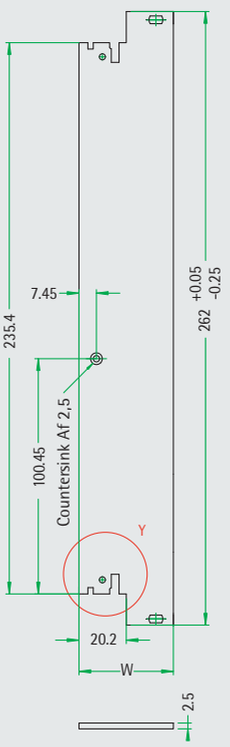


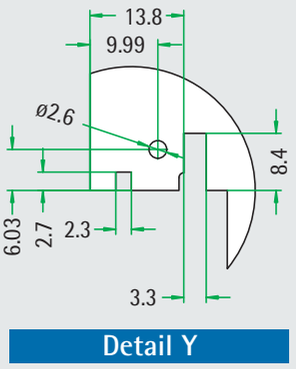
6 U

4 HP



≥ 5 HP





Detail Y

Delivery

Item	Pc.	Description
1	1	Front panel
2	0-3	Screw holder inserted
3	1	PCB mounting bracket
4	0-3	Neck screw M 2,5
5	1	Oval-head countersunk screw M 2,5 x 6

Please order insertion/ extraction handles and EMC contact springs separately.

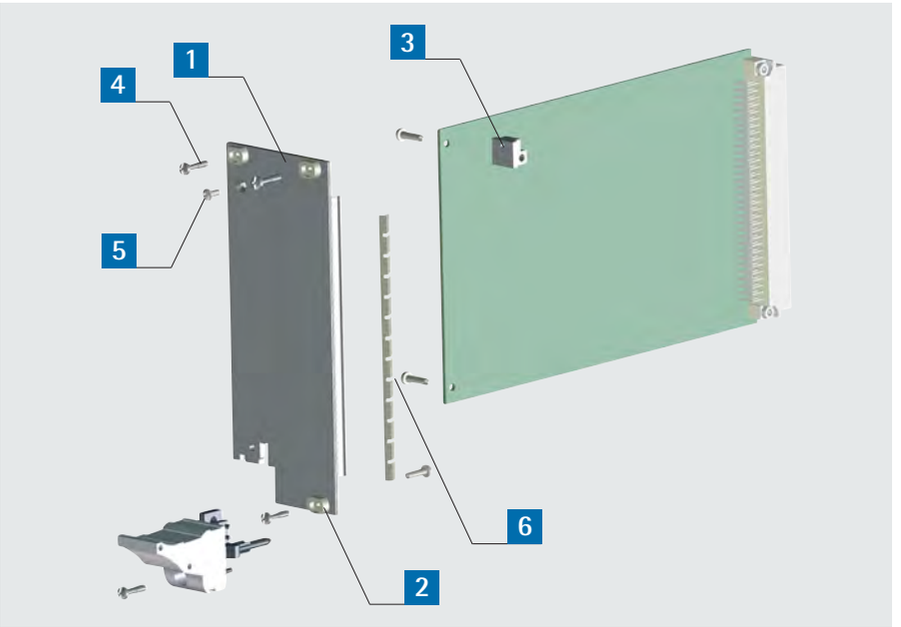
HP	W mm	3 U	6 U
4	20,10	244-604-13	244-604-16
5	25,10	244-605-13	244-605-16
6	30,20	244-606-13	244-606-16
7	35,20	244-607-13	244-607-16
8	40,30	244-608-13	244-608-16
10	50,40	244-610-13	244-610-16
12	60,60	244-612-13	244-612-16

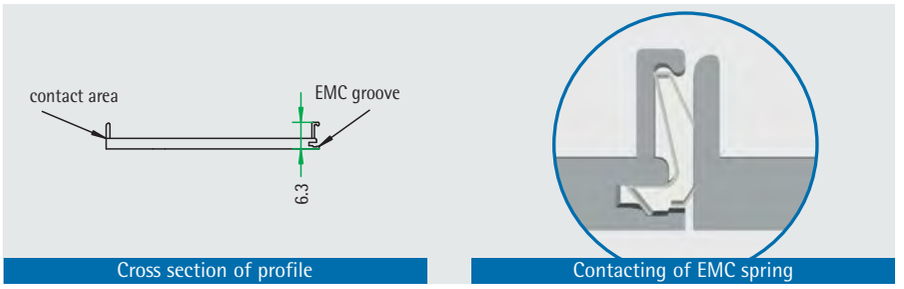
EMC contact springs

U	L mm	Order no.
3	97	671-184
6	232	671-185

Profiled front panel IEEE

Material:
aluminium extrusion





Cross section of profile

Contacting of EMC spring

Other dimensions on request!

Delivery

Item	Pc.	Description
1	1	Profiled front panel
2	0-3	Screw holder, inserted
3	1	PCB bracket
4	0-3	Neck screw M 2.5
5	1	Oval-head countersunk screw M 2.5 x 6
6	1	EMC contact springs

HP	W mm	U	Order no.
4	20,10	3	244-004-03
6	30,20	3	244-006-03
8	40,30	3	244-008-03
4	20,10	6	244-004-06
6	30,20	6	244-006-06
8	40,30	6	244-008-06

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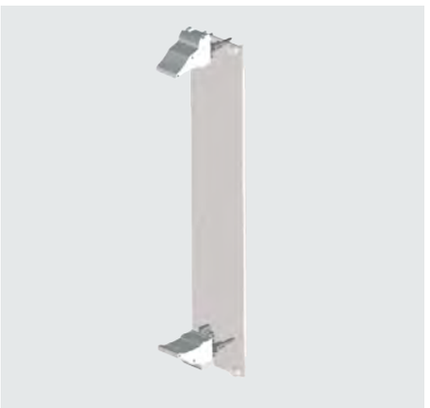
IEEE injection / extraction handle

- the following two versions are available:

1

2

1 Injection / extraction handle without locking function



Colour:
RAL 7035 light grey

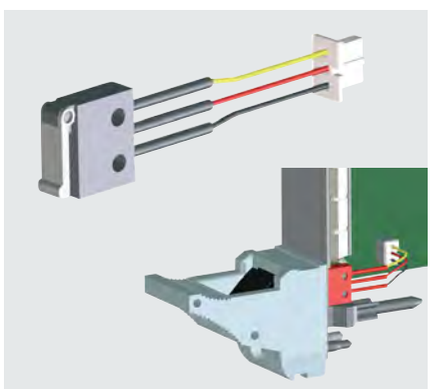
Position on front panel	Order no.
Bottom	611-615
Top	611-616

2 Injection / extraction handle with locking function

Colour:
lever: RAL 7035 light grey
key: RAL 9005 black

Position on front panel	Order no.
Bottom	611-617
Top	611-618

Micro switch

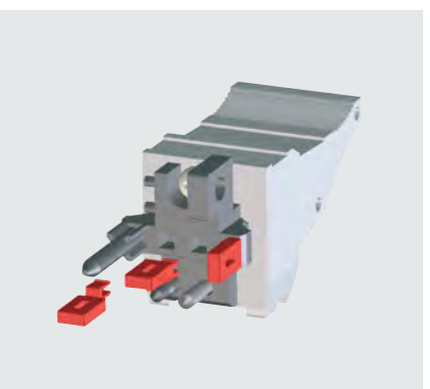


- max. switching current: 50 mA
- temperature range: -25 °C up to 70°C
- mechanical lifetime: 50.000 switches
- electronic lifetime: 20.000 switches

PCB fixing set for 3U

Set includes:
1 PCB bracket
1 screw M 2.5 x 6
2 screws M 2.5 x 10
2 flat washer d=2.6

Coding pins



- packing unit = 100 pieces

Colour:
similar to RAL 7035

The adequate plugs are not included in the delivery.

Order no. (1 piece)
230-245

Order no. (Set)
250-713

Order no.
240-163-50

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EMC compact sub-unit, 3 U

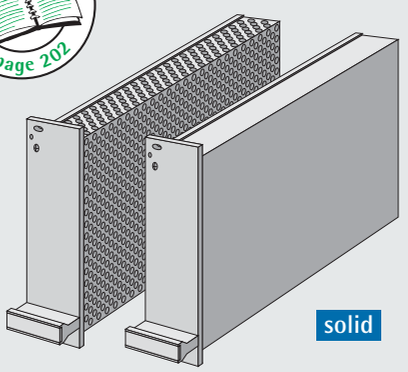
- fits all desktop enclosures and subracks (except ruggedized subrack)
- EMC compliant design
- with side grooves for EMC contact springs
- rear plug-in connection for contact acc. to IEC 60603-2

Application:
for **one** PCB 100 x 160 mm
Material:
front panel: aluminium 2.5 mm
side section: aluminium extrusion
cover panel: aluminium 1.5 mm
handle: plastics with aluminium strip
Finish:
front panel:
anodised front, conductive rear
side section: transparent chromated
cover hood: transparent chromated
Delivery:
unmounted

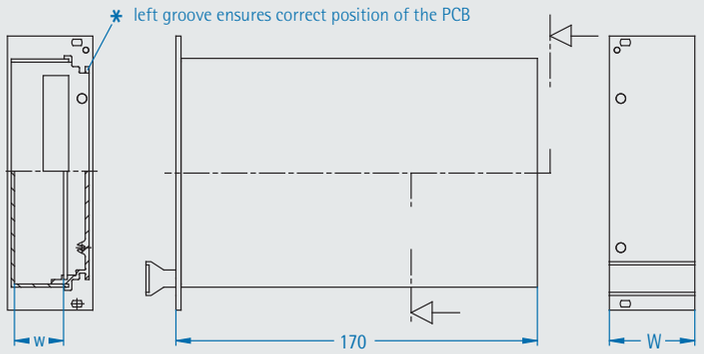
Please ask for apra's assembly service

further information: page 202

perforated



solid



Rear view (cross section)

Side view

Front view

See page 113 for matching contact springs.

Delivery

Item	Pc.	Description
1	1	Front panel with groove for EMC contact spring
2	1	Side extrusion
3	1	Cover
4	1	Handle, plastics
5		Assembly material

HP	W mm	w mm	Feature	Order no.
6	30,20	12,30	solid	247-921-55
8	40,30	22,50	solid	247-923-55
10	50,40	32,60	solid	247-925-55
6	30,20	12,30	perforated	247-931-55
8	40,30	22,50	perforated	247-933-55
10	50,40	32,60	perforated	247-935-55

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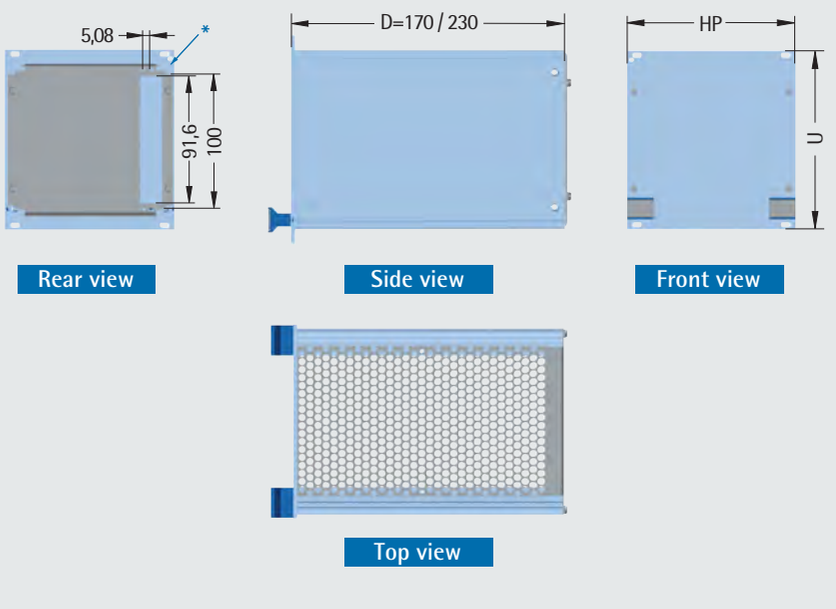
EMC sub-unit 3 U / 6 U

- fits all desktop enclosures and subracks (except ruggedized subrack)
- EMC-compliant design
- with side grooves for EMC contact springs
- rear plug-in connection for contact acc. to DIN 41612
- all components are connected with each other conductively

Application:
for **one** PCB
3 U: 100 x 160 mm or 100 x 220 mm
6 U: 233.35 x 160 mm or 233.35 x 220 mm with plug-in connector acc. to IEC 60603-2
Material:
front panel: aluminium 2.5 mm
side section: aluminium extrusion
rear panel: aluminium 1.5 mm
handle: plastics with aluminium strip
cover panels: aluminium 1.0 mm
Finish:
front panel:
anodised front, conductive rear
side section: transparent chromated
rear panel: transparent chromated
cover panels: transparent chromated
Delivery:
unmounted



* Left groove ensures that the PCB is in the correct position.

247 • EMC sub-unit 3 U / 6 U

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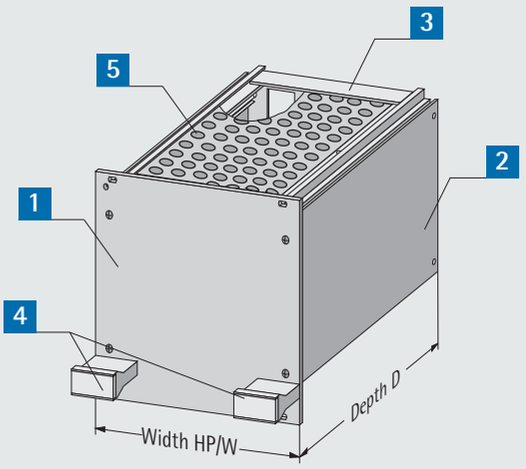
Delivery

Item	Pc.	Description
1	1	Front panel with groove for EMC contact springs
2	2	Side extrusion
3	1	Rear panel
4	1/2	Handle**
5	2	Cover panels, perforated
6	1 set	Assembly material

** The handle is divided in units of 2 x 4 HP at 16 HP and bigger.



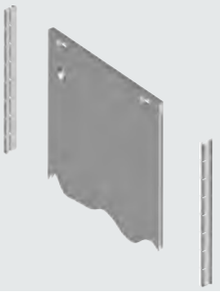
EMC sub-unit 3 U

U	D mm	HP	W mm	Order no.
3	170	12	60,60	247-062-55
		14	70,80	247-064-55
		21	106,30	247-071-55
		24	121,50	247-074-55
		28	142,00	247-078-55
		42	213,00	247-092-55
	230	12	60,60	247-162-55
		14	70,80	247-164-55
		21	106,30	247-171-55
		24	121,50	247-174-55
		28	142,00	247-178-55
		42	213,00	247-192-55
6	170	12	60,60	247-562-55
		14	70,80	247-564-55
		21	106,30	247-571-55
		24	121,50	247-574-55
		28	142,00	247-578-55
		42	213,00	247-592-55
	230	12	60,60	247-662-55
		14	70,80	247-664-55
		21	106,30	247-671-55
		24	121,50	247-674-55
		28	142,00	247-678-55
		42	213,00	247-692-55

EMC contact springs

- fits in the side grooves in the sub-unit front panel

U	L mm	Order no.
3	97	671-184
6	232	671-185



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Sub-unit 3 U

- with closed or open sides

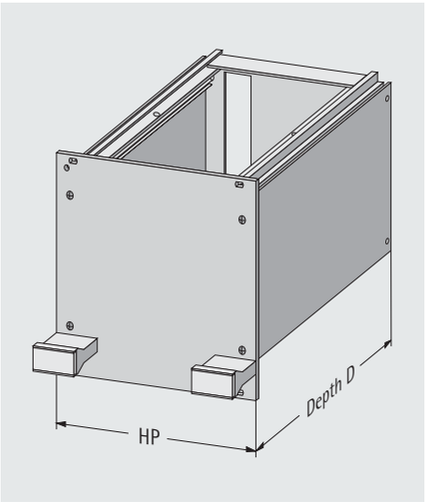
Application:
for **one** PCB 100 x 160 mm or
100 x 220 mm with connector
acc. to IEC 60603-2

Material:
front panel: aluminium 2.5 mm
side section: aluminium extrusion
rear panel: aluminium 1.5 mm
handle: plastics with aluminium strip
Finish:
front panel: anodised
side extrusion: anodised
rear panel: conductive
Delivery:
not assembled

Special sizes or customised cassettes and printing are available on request. Matching side panels as well as top or bottom panels can be found on page 143.

* The handle is divided in units of 2 x 4 HP at 16 HP or bigger

Sub-unit 3 U with closed sides

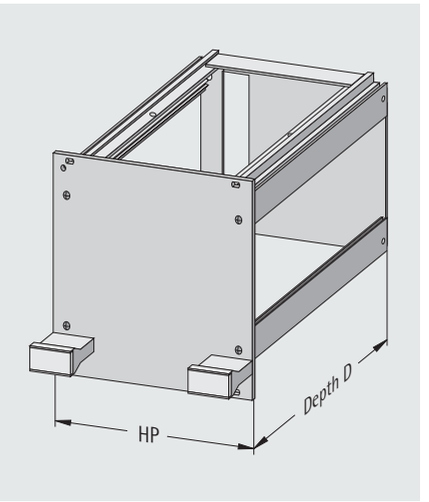


Delivery

Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	2	Aluminium extrusions
4		Assembly material

HP	D mm	Order no.
12	170	247-062
14		247-064
21		247-071
24		247-074
28		247-078
42		247-092
12	230	247-162
14		247-164
21		247-171
24		247-174
28		247-178
42		247-192

Sub-unit 3 U with open sides



Delivery

Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	4	Aluminium extrusions
4		Assembly material

HP	D mm	Order no.
12	170	247-262
14		247-264
21		247-271
24		247-274
28		247-278
42		247-292
12	230	247-362
14		247-364
21		247-371
24		247-374
28		247-378
42		247-392

Sub-unit 6 U

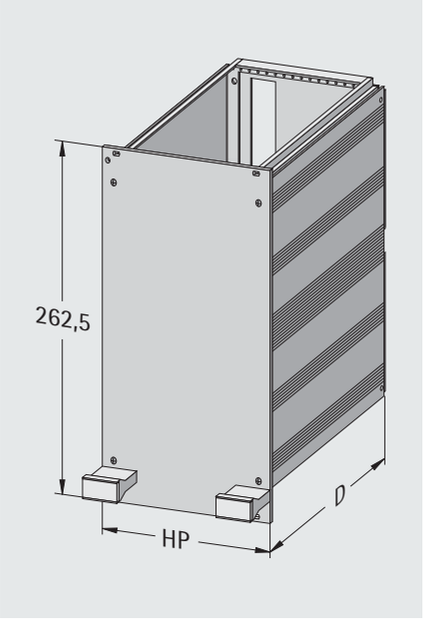
- with closed or open sides

Application:
for **one** PCB 233.35 x 160 mm or 233.35 x 220 mm with connector acc. to IEC 60603-2
Material:
front panel: aluminium 2.5 mm
side section: aluminium extrusion
rear panel: aluminium 1.5 mm
handle: plastics with aluminium strip
Finish:
front panel:
anodised front, conductive rear
side section: anodised
rear panel: conductive
Delivery:
not assembled

Special sizes or customised cassettes and printing are available on request.

** The handle is divided in units of 2 x 4 HP at 16 HP and bigger.

Sub-unit 6 U with closed sides

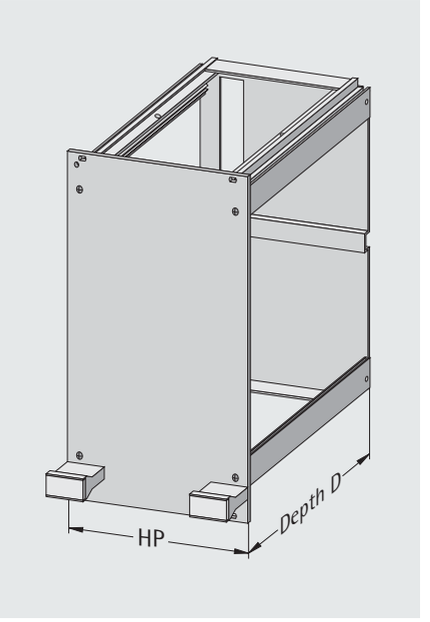


Delivery

Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	2	Aluminium extrusions
4		Assembly material

HP	D mm	Order no.
12	170	247-562-50
14		247-564-50
21		247-571-50
24		247-574-50
28		247-578-50
42		247-592-50
12	230	247-662-50
14		247-664-50
21		247-671-50
24		247-674-50
28		247-678-50
42		247-692-50

Sub-unit 6 U with open sides



Delivery

Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	4	Aluminium extrusions
4		Assembly material

HP	D mm	Order no.
12	170	247-562
14		247-564
21		247-571
24		247-574
28		247-578
42		247-592
12	230	247-662
14		247-664
21		247-671
24		247-674
28		247-678
42		247-692

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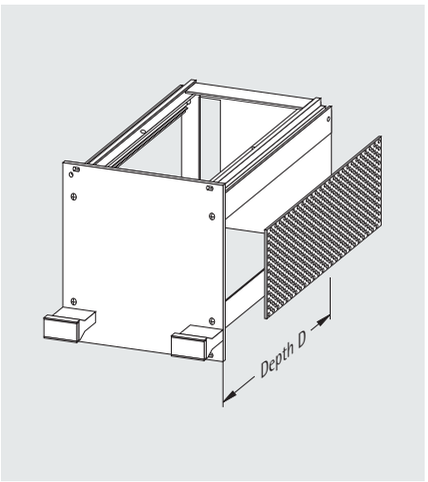
Side panel 3 U, perforated



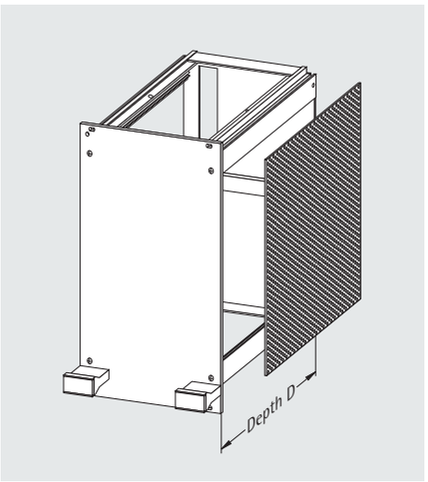
Material:
perforated aluminium panel 1.0 mm
Finish:
transparent chromated

Delivery

Item	Pc.	Description
1	1	Side panel

U	D mm	Order no.
3	170	248-402
3	230	248-502

Side panel 6 U, perforated



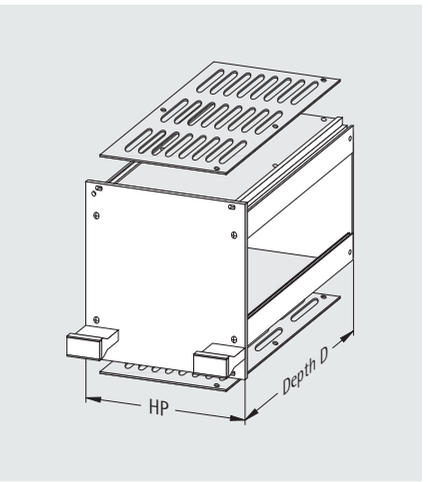
Material:
perforated aluminium panel 1.0 mm
Finish:
transparent chromated

Delivery

Item	Pc.	Description
1	1	Side panel

U	D mm	Order no.
6	170	248-394
6	230	248-494

Top or bottom panel



Material:
aluminium 1.5 mm
Finish:
transparent chromated

Delivery

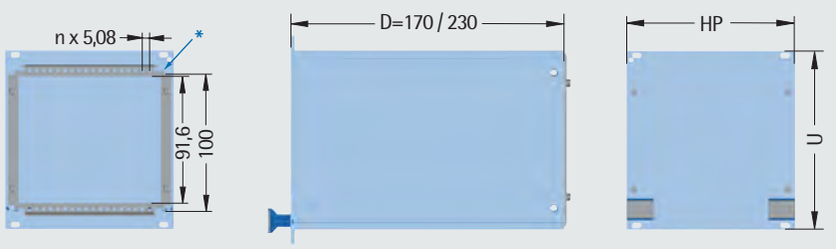
Item	Pc.	Description
1	1	Top or bottom panel

HP	D mm	Feature	Order no.
12	170	closed	248-112-07
14	170		248-114-07
21	170		248-121-07
24	170		248-124-07
28	170		248-128-07
42	170		248-142-07
12	230		248-312-07
14	230		248-314-07
21	230		248-321-07
24	230		248-324-07
28	230		248-328-07
42	230		248-342-07
12	170	perforated	248-112-05
14	170		248-114-05
21	170		248-121-05
24	170		248-124-05
28	170		248-128-05
42	170		248-142-05
12	230		248-312-05
14	230		248-314-05
21	230		248-321-05
24	230		248-324-05
28	230		248-328-05
42	230		248-342-05

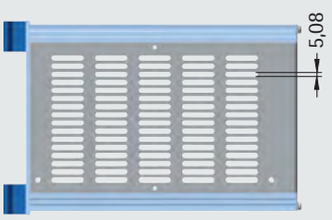
EMC cassette 3 U / 6 U

- fits all desktop enclosures and subracks (except ruggedized subrack)
- EMC compliant design
- with side grooves for EMC springs
- rear panel can hold several female connectors for internal wiring
- with 1 HP mounting grid for internal card guide

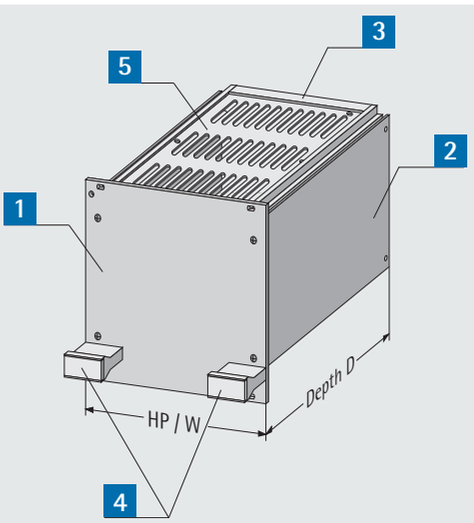
Application:
for **several** PCB's
3 U: 100 x 160 mm or 100 x 220 mm
6 U: 233.35 x 160 mm or 233.35 x 220 mm with connector acc. to IEC 60603-2
Material:
front panel: aluminium, 2.5 mm
side section: aluminium extrusion
rear panel: aluminium, 1.5 mm
handle: plastics with aluminium strip
cover panels: aluminium, 1.5 mm
Finish:
front panel:
anodised front, conductive rear
side section: transparent chromated
rear panel: transparent chromated
cover panels: transparent chromated
Delivery:
not assembled



Rear view | Side view | Front view



Top view



EMC cassette 3 U

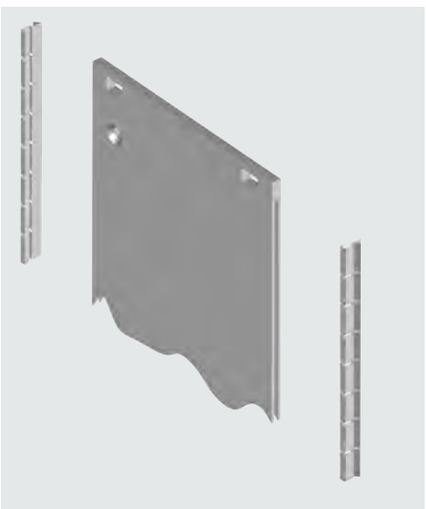
* Left groove ensures that the PCB is in the correct position.
** The handle is divided in units of 2 x 4 HP at 16 HP and bigger.

Delivery

Item	Pc.	Description
1	1	Front panel with groove for EMC contact springs
2	2	Side extrusion
3	1	Rear panel
4	1/2	Handle*
5	2	Cover panels, perforated
6	1 set	Assembly material

U	D mm	HP	W mm	Order no.
3	170	12	60,60	248-062-55
		14	70,80	248-064-55
		21	106,30	248-071-55
		24	121,50	248-074-55
		28	142,00	248-078-55
		42	213,00	248-092-55
	230	12	60,60	248-162-55
		14	70,80	248-164-55
		21	106,30	248-171-55
		24	121,50	248-174-55
		28	142,00	248-178-55
		42	213,00	248-192-55
6	170	12	60,60	248-712-55
		14	70,80	248-714-55
		21	106,30	248-721-55
		24	121,50	248-724-55
		28	142,00	248-728-55
		42	213,00	248-742-55
	230	12	60,60	248-812-55
		14	70,80	248-814-55
		21	106,30	248-821-55
		24	121,50	248-824-55
		28	142,00	248-828-55
		42	213,00	248-842-55

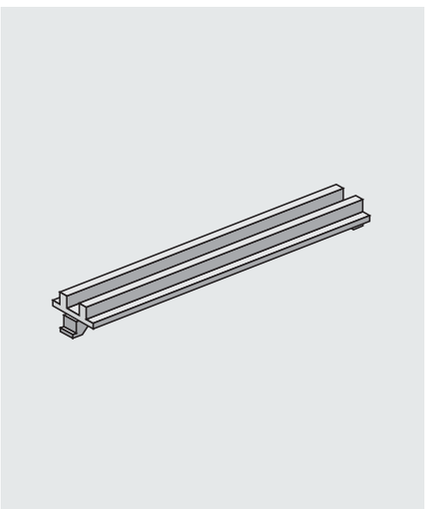
EMC contact spring



- fits in the side groove of the cassette front panel

U	L mm	Order no.
3	97	671-184
6	232	671-185

Internal card guide



- guides cards inside a cassette
- to clip on top/ bottom panel
- packing unit = 1 piece

Order no.
250-712

248 • Cassette 3 U

Cassette 3 U

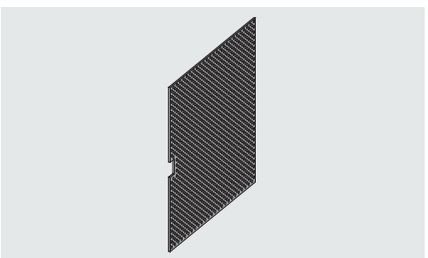
- 2 models are available
  - with open sides
  - with divided front panel
- with 1 HP mounting grid for internal card guide

Material:
front panel: aluminium 2.5 mm
side section: aluminium extrusion
rear panel: aluminium 1.5 mm
cover panels: aluminium 1.5 mm
handle: plastics with aluminium strip
Finish:
front panel:
anodised front, conductive rear
side section: anodised
rear panel: transparent chromated
cover panels: transparent chromated
Delivery: unmounted

Special sizes or customised cassettes and printing are available on request.

*The handle is divided in units of 2 x 4 HP at 16 HP or bigger

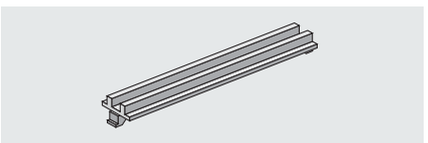
Side panel, perforated



Material:
perforated aluminium panel 1.0 mm
Finish:
transparent chromated

U	D mm	Order no.
3	170	248-402
3	230	248-502

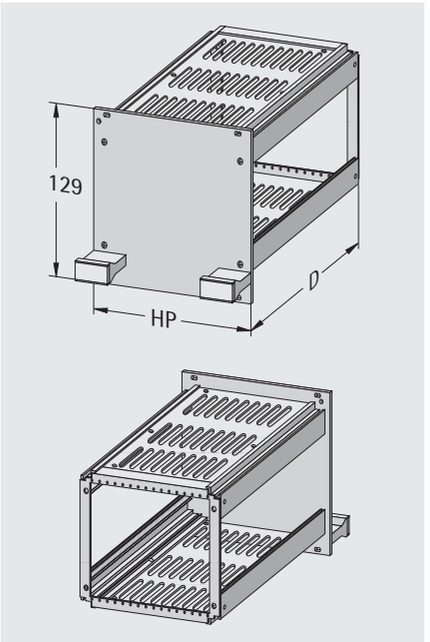
Internal card guide



- guides cards inside a cassette
- to clip on top/ bottom panel
- packing unit = 1 piece

Order no.
250-712

Cassette 3 U with open sides

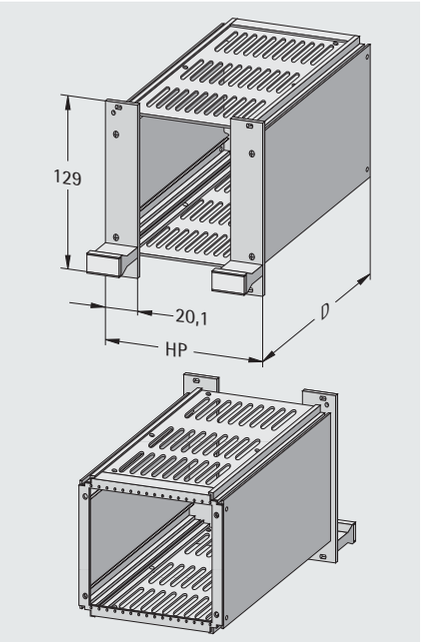


Delivery

Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	4	Aluminium extrusions
4	2	Top / bottom panel, perforated
5		Assembly material

HP	W mm	D mm	Order no.
12	60,60	170	248-462
14	70,80	170	248-464
21	106,30	170	248-471
24	121,50	170	248-474
28	142,00	170	248-478
42	213,00	170	248-482
12	60,60	230	248-562
14	70,80	230	248-564
21	106,30	230	248-571
24	121,50	230	248-574
28	142,00	230	248-578
42	213,00	230	248-592

Cassette 3 U with divided front panel



Delivery

Item	Pc.	Description
1	2	Front panel with plastic handle bar*
2	1	Rear panel
3	2	Aluminium extrusions
4	2	Top / bottom panel, perforated
5		Assembly material

HP	W mm	D mm	Order no.
12	60,60	170	248-262
14	70,80	170	248-264
21	106,30	170	248-271
24	121,50	170	248-274
28	142,00	170	248-278
42	213,00	170	248-292
12	60,60	230	248-362
14	70,80	230	248-364
21	106,30	230	248-371
24	121,50	230	248-374
28	142,00	230	248-378
42	213,00	230	248-382

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Cassette 6 U

- 2 models are available
  - with open sides
  - with closed sides
- with 1 HP mounting grid for internal card guide

Material:
front panel: aluminium 2.5 mm
side section: aluminium extrusion
rear panel : aluminium 1.5 mm
cover panels: aluminium 1.5 mm

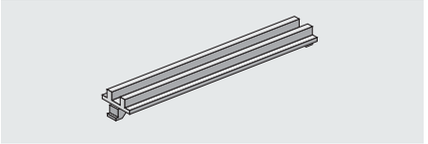
Finish:
front panel:
anodised front, conductive rear
side section: anodised
rear panel: transparent chromated
cover panels: transparent chromated

Delivery: not assembled

Special sizes or customised cassettes and printing are available on request.

* The handle is divided in units of 2 x 4 HP at 16 HP or bigger

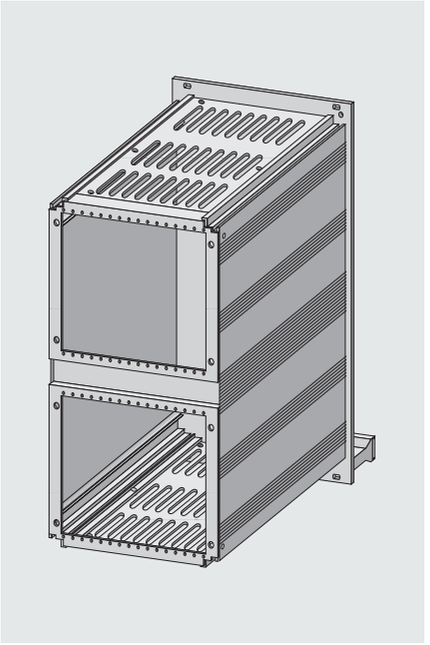
Internal card guide



- guides cards inside a cassette
- to clip on top/ bottom panel
- packing unit = 1 piece

Order no.
250-712

Cassette 6 U with closed sides

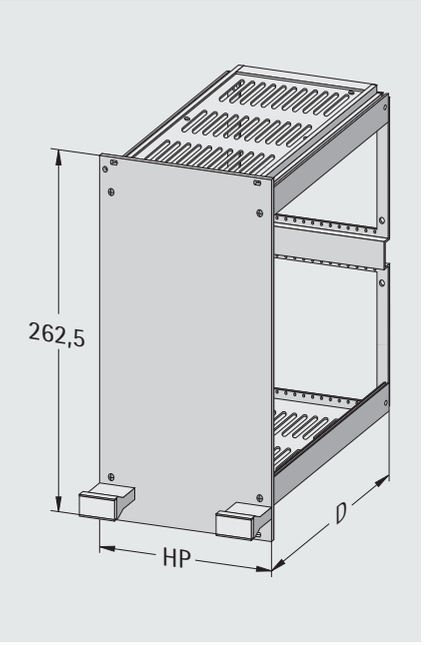


Delivery

Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	2	Aluminium extrusions
4	2	Top / bottom panel, perforated
5		Assembly material

HP	W mm	D mm	Order no.
12	60,60	170	248-712-50
14	70,80	170	248-714-50
21	106,30	170	248-721-50
24	121,50	170	248-724-50
28	142,00	170	248-728-50
42	213,00	170	248-742-50
12	60,60	230	248-812-50
14	70,80	230	248-814-50
21	106,30	230	248-821-50
24	121,50	230	248-824-50
28	142,00	230	248-828-50
42	213,00	230	248-842-50

Cassette 6 U with open sides



Delivery

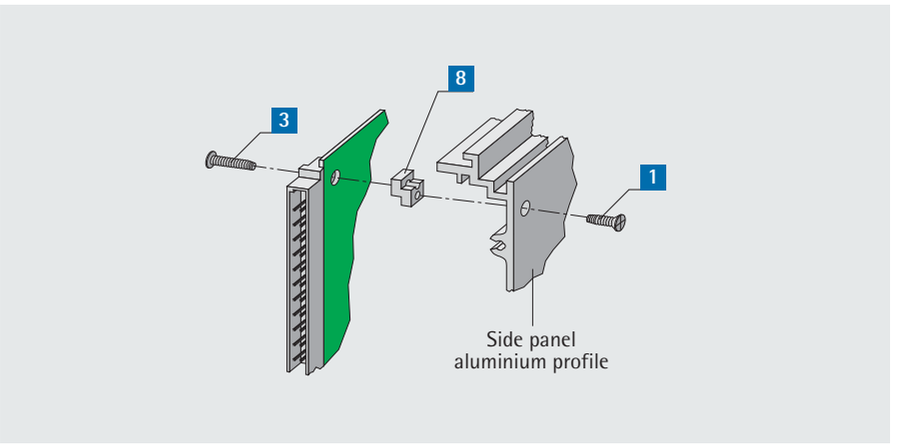
Item	Pc.	Description
1	1	Front panel with plastic handle bar*
2	1	Rear panel
3	4	Aluminium extrusions
4	2	Top / bottom panel, perforated
5		Assembly material

HP	W mm	D mm	Order no.
12	60,60	170	248-712
14	70,80	170	248-714
21	106,30	170	248-721
24	121,50	170	248-724
28	142,00	170	248-728
42	213,00	170	248-742
12	60,60	230	248-812
14	70,80	230	248-814
21	106,30	230	248-821
24	121,50	230	248-824
28	142,00	230	248-828
42	213,00	230	248-842

Model A

PCB is attached to the side of the cassette

Assembly kit A	Order no.
includes: 2x Item 1 2x Item 3 2x Item 8	250-708

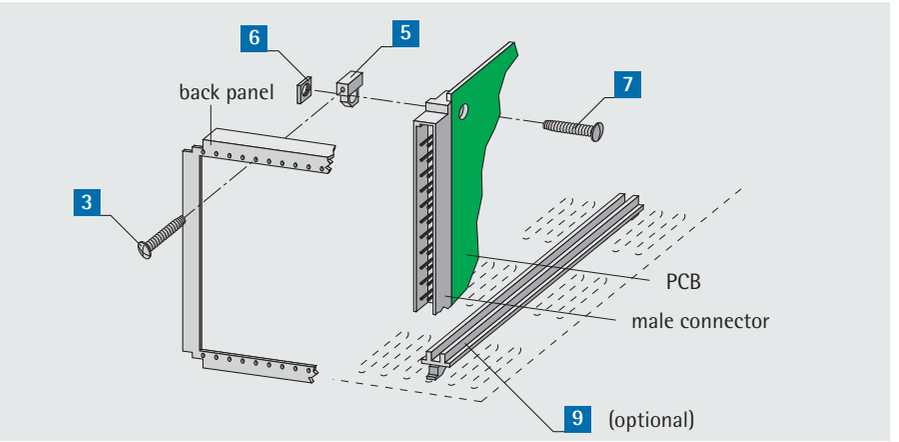


Model B

PCB is attached to the rear of the cassette

- external wiring

Assembly kit B	Order no.
includes: 2x Item 10 2x Item 5 2x Item 6 2x Item 7	250-709

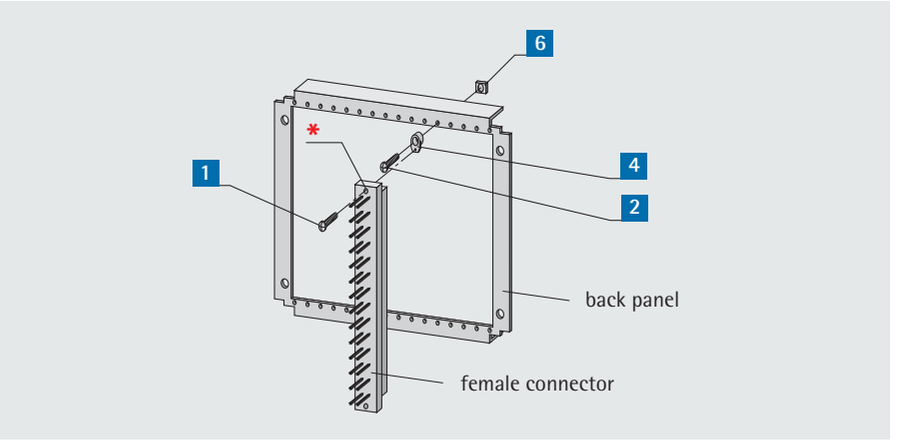


Model C

PCB is attached to the rear of the cassette

- internal wiring

Assembly kit C	Order no.
includes: 2x Item 1 2x Item 2 2x Item 4 2x Item 6	250-710



Item	Description	Order no.	Packing unit
1	Countersunk screw ø 2,2 x 6,5	630-382	100 pieces
2	Countersunk screw M 2,5 x 8	630-127	100 pieces
3	Oval-head screw ø 2,2 x 13	630-383	100 pieces
4	Female connector fixing 32-pole	250-710-01	1 piece
5	Male connector fixing 32-pole	250-709-01	1 piece
6	Square nut M 2,5	630-192	100 pieces
7	Oval-head screw M 2,5 x 16	630-080	100 pieces
8	Bracket	250-708-01	1 piece
9	Internal card guide	250-712	1 piece
10	Oval-head screw ø 2,2 x 9,5	630-381	100 pieces

* Female connector must be counter-bored. Male connector holder fixes male connector with Eurocard in sub-unit and cassette.

Please take note of the quantity of the packing units when ordering individual items