



**Front panels**

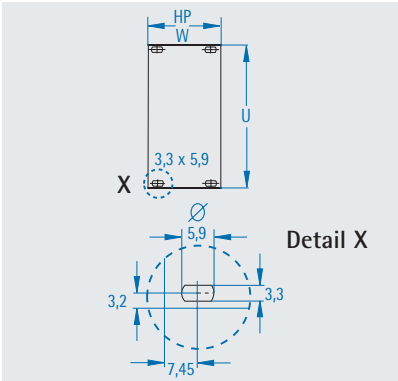
- anodized front  
transparent chromated rear

**Material:** aluminium 2,5 mm  
**Delivery:** not assembled

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

please ask for our front panel express!

**Type A**

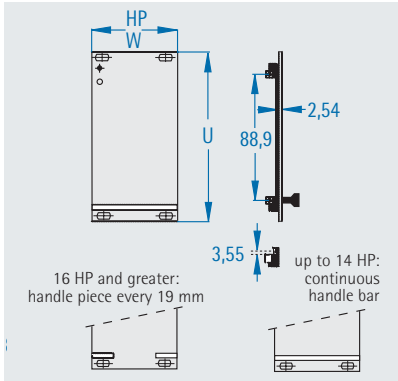


Included in delivery

Item	Pc.	Description
1	1	Front panel

**Type C**

- plastic handle bar
- plastic PCB mounting plate



Included in 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

**Order information**

HP	Width 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	-		24-3002-45	-	-	24-3602-45	-
3	15,0	-		24-3003-45	24-3703-45	-	24-3603-45	24-3603-65
4	20,1	-		24-3004-45	24-3704-45	24-3404-45	24-3604-45	24-3604-65
5	25,1	-		24-3005-45	24-3705-45	-	24-3605-45	24-3605-65
6	30,2	-		24-3006-45	24-3706-45	-	24-3606-45	24-3606-65
7	35,2	-		24-3007-45	24-3707-45	-	24-3607-45	24-3607-65
8	40,3	-		24-3008-45	24-3708-45	24-3408-45	24-3608-45	24-3608-65
10	50,4	-		24-3010-45	24-3710-45	-	24-3610-45	24-3610-65
12	60,6	-		24-3012-45	24-3712-45	-	24-3612-45	24-3612-65
14	70,8	24-3214-45		24-3014-45	24-3714-45	24-3414-45	24-3614-45	24-3614-65
16	80,8	-		24-3016-45	24-3716-45	-	24-3616-45	24-3616-65
18	91,1	-		24-3018-45	24-3718-45	-	24-3618-45	24-3618-65
20	101,2	-		24-3020-45	24-3720-45	-	24-3620-45	24-3620-65
21	106,3	-		24-3021-45	24-3721-45	24-3421-45	24-3621-45	24-3621-65
24	121,5	-		24-3024-45	24-3724-45	24-3424-45	24-3624-45	-
26	131,7	-		24-3026-45	-	-	24-3626-45	-
28	142,0	24-3228-45		24-3028-45	24-3728-45	24-3428-45	24-3628-45	24-3628-65
30	152,0	-		24-3030-45	-	-	24-3630-45	-
35	177,5	-		24-3035-45	-	-	24-3635-45	-
40	202,8	-		24-3040-45	-	-	24-3640-45	-
42	213,0	24-3242-45		24-3042-45	24-3742-45	24-3442-45	24-3642-45	24-3642-65
48	243,5	-		24-3048-45	-	-	24-3648-45	-
54	274,0	-		24-3054-45	-	-	24-3654-45	-
56	284,1	24-3256-45		24-3056-45	-	-	24-3656-45	-
63	319,7	24-3263-45		24-3063-45	24-3763-45	24-3463-45	24-3663-45	24-3663-65
84	426,4	24-3284-45		24-3084-45	24-3784-45	24-3484-45	24-3684-45	24-3684-65



### EMC front panels

- anodized front, transparent chromated rear
- with side grooves for clipping on EMC contact gaskets

**Material:** aluminium, 2.5mm  
**Delivery:** not assembled

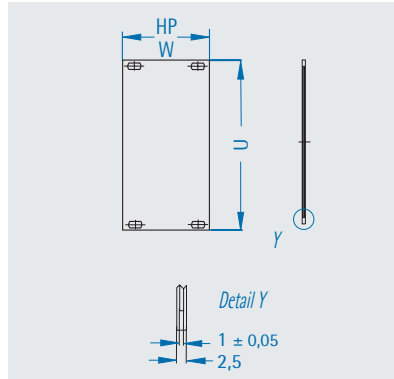


Customized front panels including print, foils, input systems or keyboards –

please ask for our front panel express!



### Type A - EMC

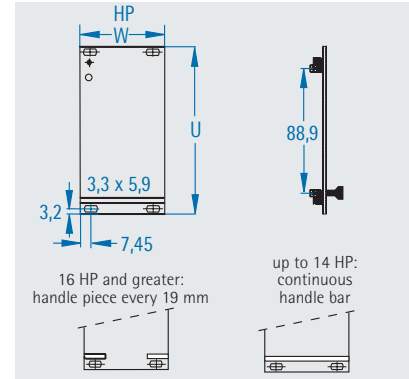


Included in delivery

Item	Pc.	Description
1	1	Front panel

### Type C - EMC

- plastic handle bar
- PCB mounting bracket



Included in 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

### Order information

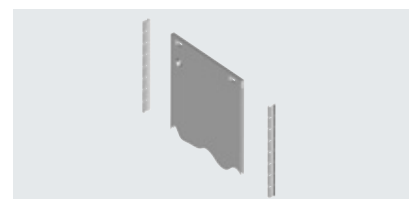
HP	Width mm	3 U H = 129,0 mm		6 U H = 262,5 mm	
		Type A	Type C	Type A	Type C
2	10,0	24-3802-13	-	-	-
3	15,0	24-3803-13	-	24-3803-16	-
4	20,1	24-3804-13	24-3804-33	24-3804-16	24-3804-36
5	25,1	24-3805-13	24-3805-33	24-3805-16	24-3805-36
6	30,2	24-3806-13	24-3806-33	24-3806-16	24-3806-36
7	35,2	24-3807-13	24-3807-33	24-3807-16	24-3807-36
8	40,3	24-3808-13	24-3808-33	24-3808-16	24-3808-36
10	50,4	24-3810-13	24-3810-33	24-3810-16	24-3810-36
12	60,6	24-3812-13	24-3812-33	24-3812-16	24-3812-36
14	70,8	24-3814-13	24-3814-33	24-3814-16	24-3814-36
16	80,8	24-3816-13	24-3816-33	24-3816-16	24-3816-36
21	106,3	24-3821-13	-	24-3821-16	-
28	142,0	24-3828-13	-	24-3828-16	-
42	213,0	24-3842-13	-	24-3842-16	-
63	319,7	24-3863-13	-	24-3863-16	-
84	426,4	24-3884-13	-	24-3884-16	-

### Accessories

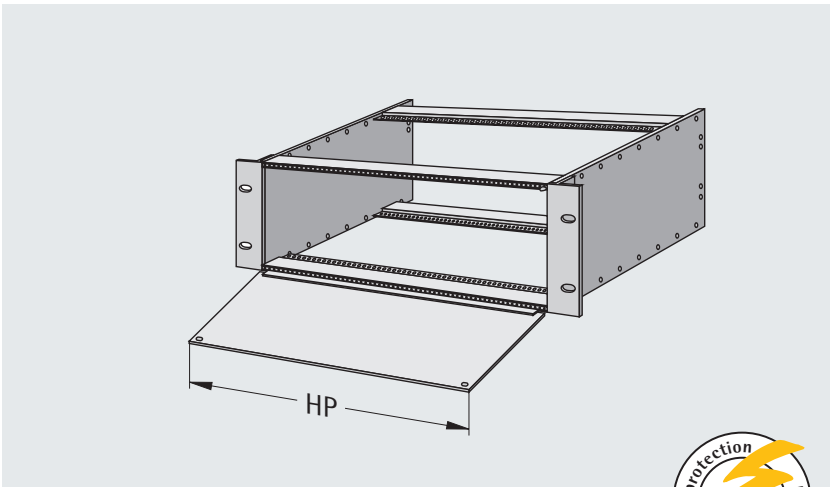
#### EMC contact gaskets

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

U	Length mm	Part no. (1 piece)
3	97	671-184
6	232	671-185



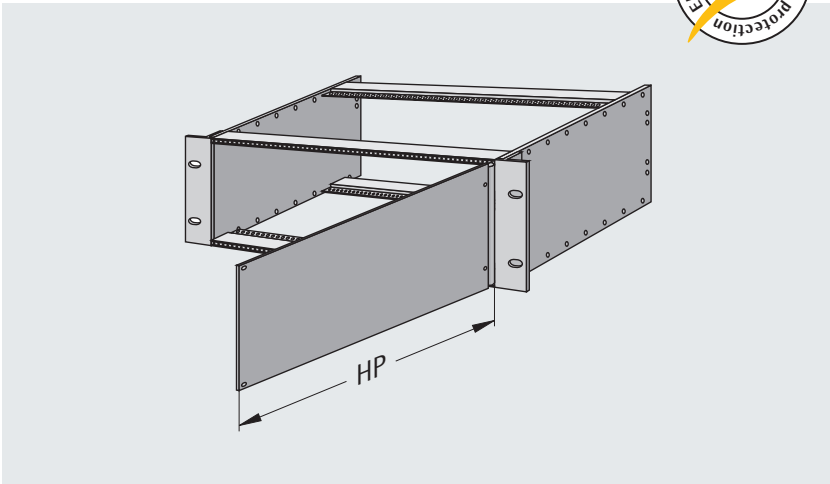
**Note:** See p. 67 for matching screw holder and neck screws.



### Front panel, bottom-hinged

- with side groove for EMC gaskets
  - 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:** anodized front  
transparent chromated rear

Width (W)	Part no.	
	3 U	6 U
42 HP	24-4342-13	24-4742-16
84 HP	24-4384-13	24-4784-16

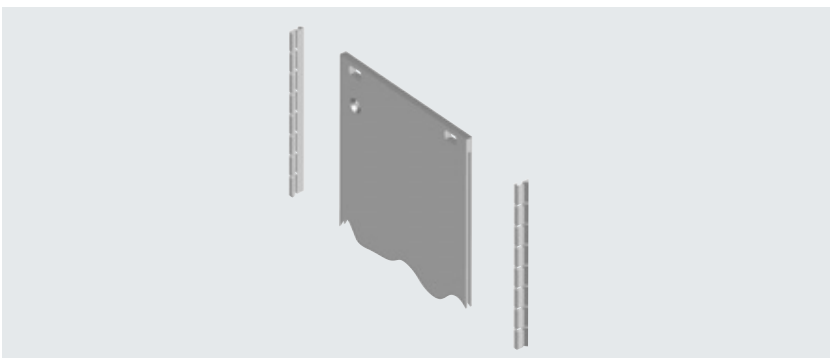


### Front panels, hinged

- with side slit for EMC gaskets
  - 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:** anodized front  
transparent chromated rear

Width (W)	Part no.	
	3 U	6 U
42 HP	24-4142-13	24-4542-16
84 HP	24-4184-13	24-4584-16

### Accessories



### EMC contact gasket

The contact gaskets are clipped into the side grooves so that the front panels contact one another.

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



Custom designed front panels including silk screen printing, foils or input systems on request.





## Fastening front panels

### 1 Screw holder, plastic

- fits all front panels with hole  $\emptyset$  5,9 mm x 3,3 mm
- can be pressed-in manually

<b>Part no. (100 pc.) white</b>
25-0697-02

<b>Part no. (100 pc.) black</b>
25-0697-05

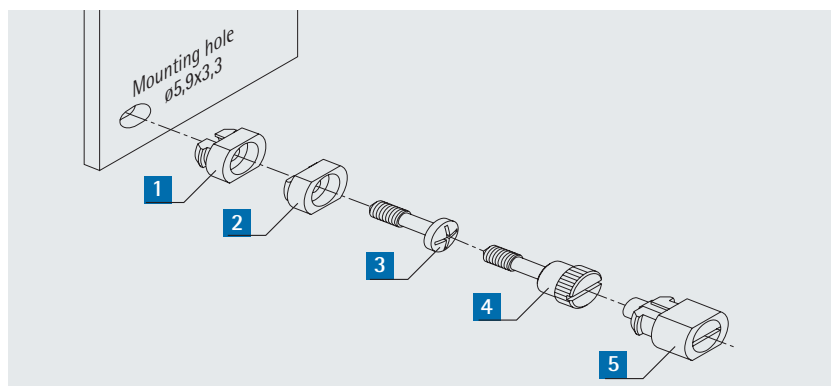
### 2 Screw holder, brass

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

Description	Part no.
1 piece	250-697
100 piece	25-0697-03

- when ordering front panels and screws, panels come fitted with screw holders

<b>Part no. (1 piece)</b>
25-0697-04



### 3 Neck screw, M 2.5 x 12

- Phillips head
- nickel-plated

<b>Part no. (100 pc.)</b>
250-602

### 4 Knurled screw M 2.5

- knurled and slotted
- nickel-plated brass

<b>Part no. (100 pc.)</b>
25-0611-02

### 5 Quick closure

- 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

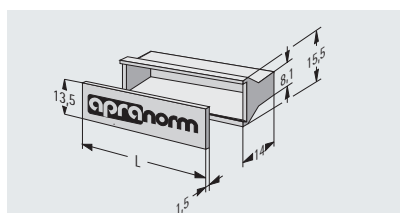
**Finish:** RAL 7035 light grey

<b>Part no. (100 pc)</b>
25-0607-00

## Handle bar, plastic

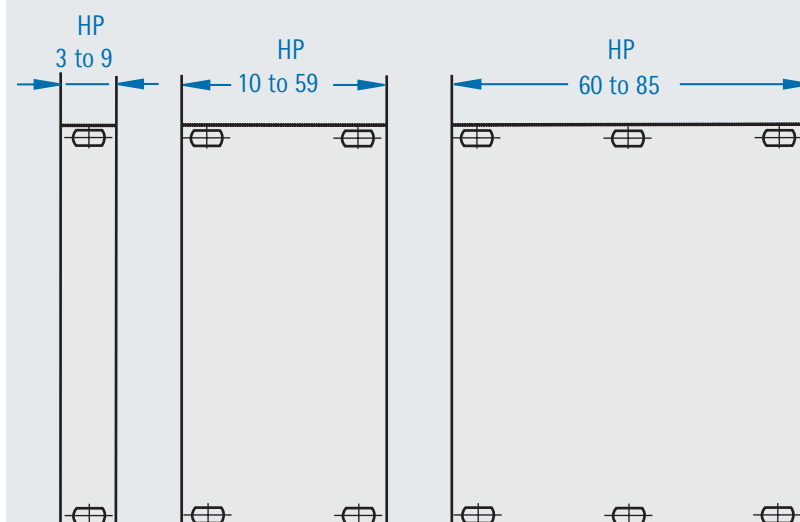
- with insertable aluminium strip allowing easy custom printing
- handle centred easily using painted positioning pins

**Finish:** handle bar, grey aluminium strips, 2.5mm, natural colour anodized



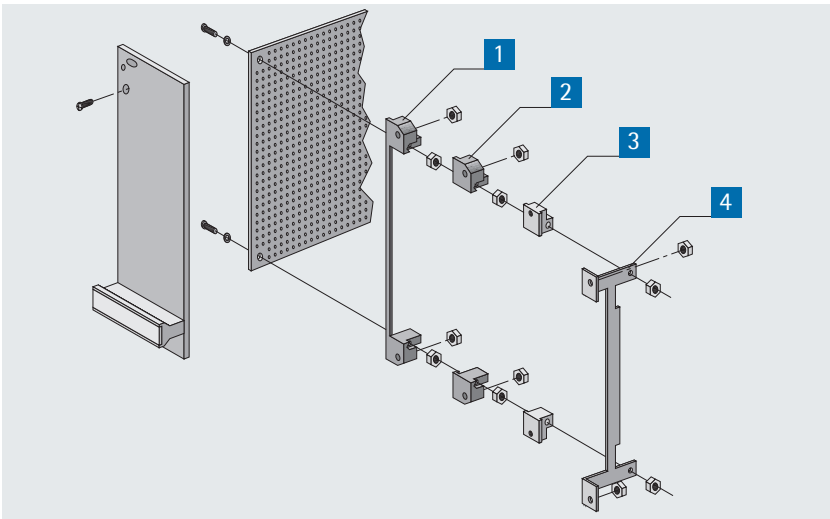
HP	Length (L) mm	Part no.
3	13,9	25-0750-03
4	19,1	25-0750-04
5	24,1	25-0750-05
6	30,0	25-0750-06
7	34,2	25-0750-07
8	39,3	25-0750-08
10	49,5	25-0750-10
12	59,7	25-0750-12
14	69,9	25-0750-14

Number of fixing holes for the positioning pins vary according to the number of screw holders and/or screws required in the front panel





PCB mounting bracket



3 PCB mounting bracket

- zinc die cast
- Attention:** can only be used with handle bar 25-0750-... (see p. 67)
- if the front panel is designed as an electrical conductor, it can be integrated into the contact-voltage protection or screening measures using a conductor track on the PCB
- with M 2.5 thread for fixing front panel and PCB

Description	Part no. (1 piece)
PCB mounting plate	250-698

1 PCB mounting bracket

- plastic, single piece

Description	Part no. (1 piece)
PCB mounting plate	250-701

2 PCB mounting bracket

- plastic, divided

Description	Part no. (pair)
PCB mounting plate	250-700

4 PCB mounting bracket

- sheet steel, galvanized
- for 20 mm deeper installation

Description	Part no. (1 piece)
PCB mounting plate	250-702

Assembly material for items 1 - 4  
250-707

PCB cover

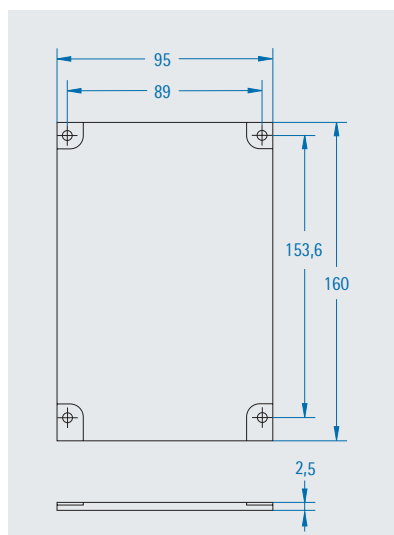
- protects the PCB's solder side
- electrically insulated
- protects from damage and short circuits
- can be coated with copper conductive paint
- fits 100 x 160 mm, 233,35 x 160 mm, 100 x 220 mm and 233,35 x 220 mm PCBs with plug-in connection in compliance with DIN 41612

**Material:** plastic, black  
Plastic, black UL 94 V-0

**Surface resistance:** 10<sup>15</sup> Ohm

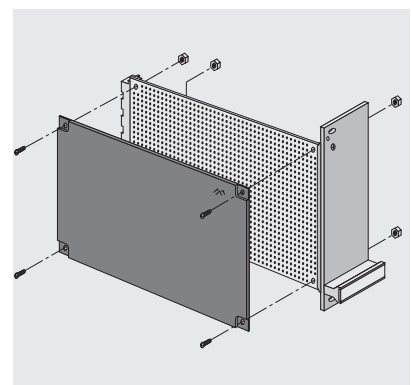
**ASTM D 149 dielectric strength:**  
20 kV

**DIN 53460 heat distortion temperature:**  
130 °C



PCB cover, shortened model

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

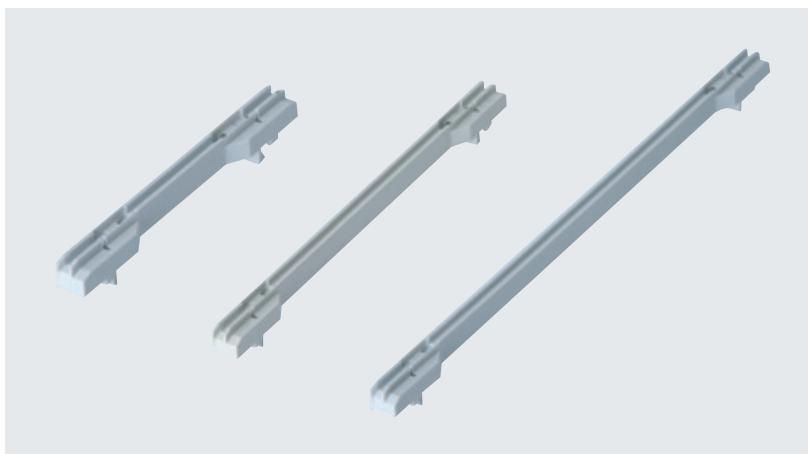


Part no.
258-199

Description	Part no.
for PCB 100 x 160 mm	258-200
for PCB 100 x 160 mm, with copper conductive paint	25-8200-51
for PCB 100 x 220 mm	258-250
for PCB 100 x 220 mm, with copper conductive paint	25-8250-51
Assembly material for PCB cover	250-711



Card guides



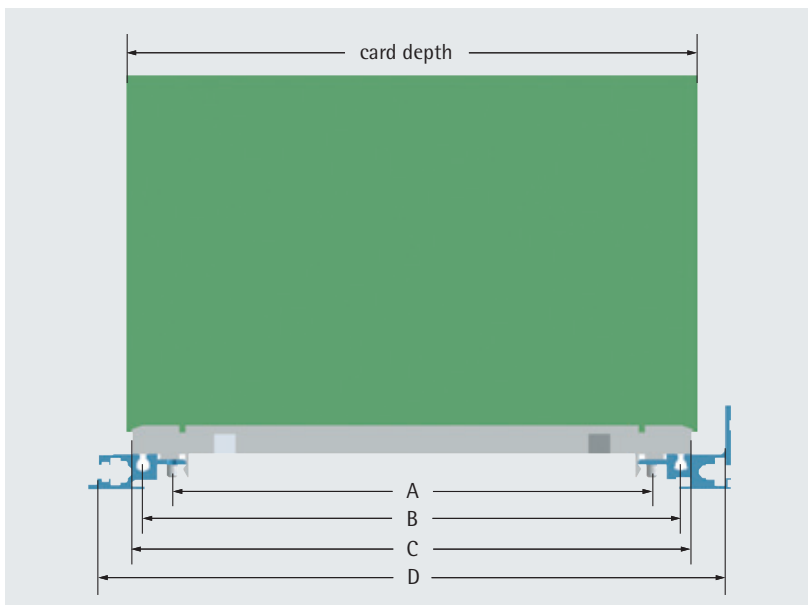
Available card guides:

- Standard card guide
- integrated card guide
- card guide with coding
- divided card guide

Standard card guide

- for installing plug-in modules in compliance with IEC 297-3-101/-102/-103
- Groove width 2,6 mm for PCB thickness 1,6 mm
- for each card guide two ESD clips can be mounted, in order to achieve totally four ESD contact points for the PCB
- card guides can be easily assembled with the module rails by simple clip-fixation. If required, card guides can be secured with additional screws

Colour: similar RAL 7035 light grey  
Material: plastic, Valox UL 94-V 0



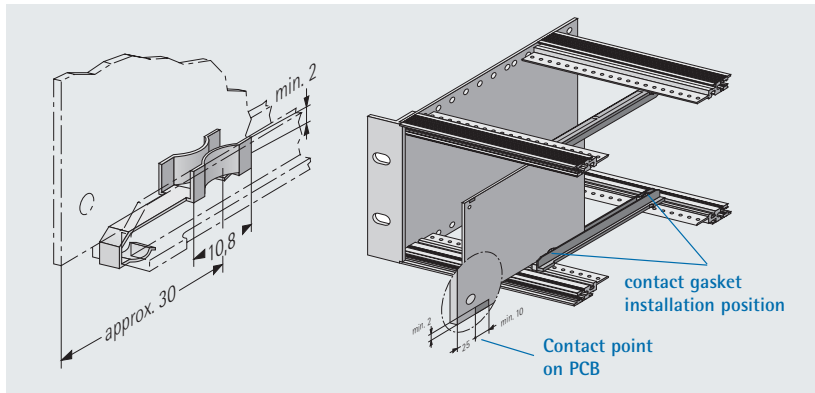
for Card depth mm	Part no.
220	24-0406-00
160	24-0401-00
100	24-0402-00

for Card depth mm	Dimensions mm			
	A	B	C	D
220	194	210	216,5	235,3
160	134	150	156,5	175,3
100	74	90	96,5	115,3



### ESD clips for card guide

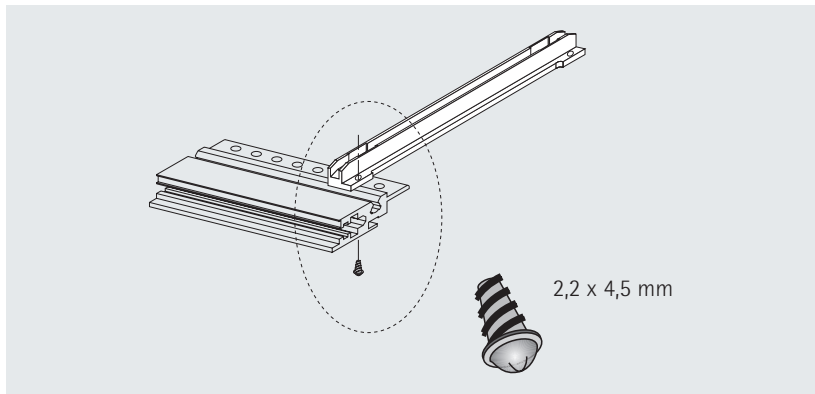
- allows PCB and module rail to contact at up to 4 positions
- two contact gaskets per card guide possible



<b>Part no. (1 piece)</b>
24-0400-00

### Plastic connecting screw

- for fastening standard card guides



<b>Part no. (100 pc.)</b>
631-200

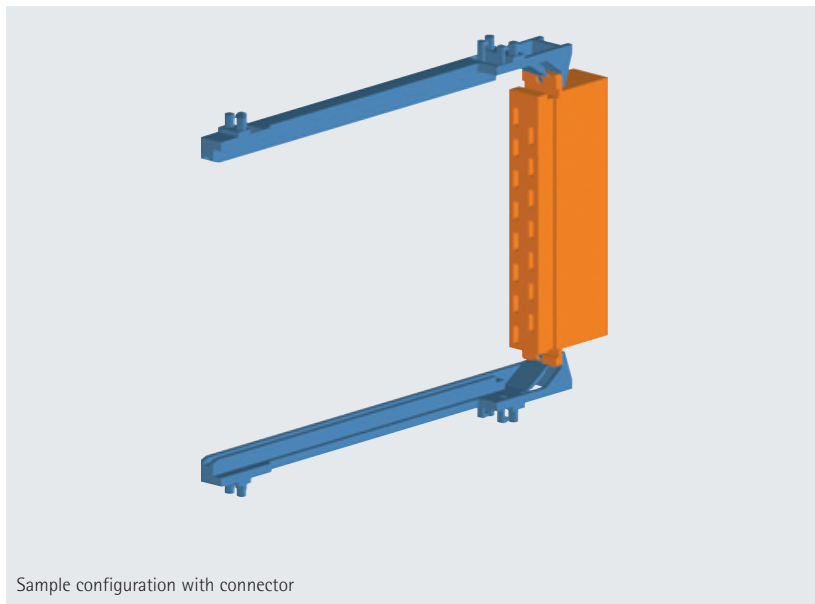
### Card guide, integrated

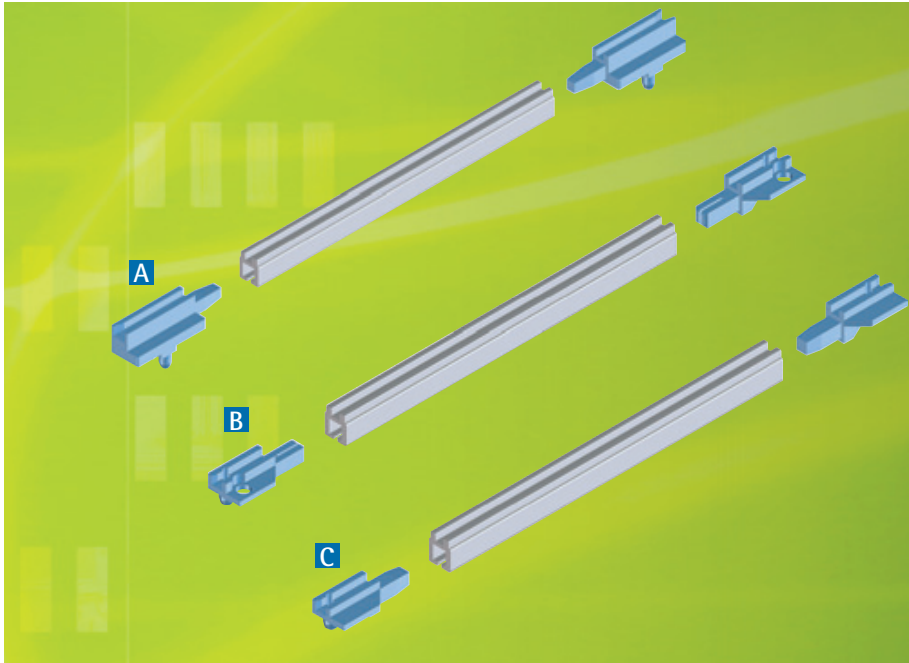
- with integrated attachment for connectors in compliance with DIN 41612 (cannot be used with profile no. 241-019)
- can be used instead of a z-shaped module rail or the integrated module rail
- particularly suitable for extending a plug-in location of a 3 U backplane (for example power supply)

**Colour:** similar RAL 7035 light grey

**Material:** plastic, Valox UL 94-V 0

for card depth mm	Part no. (pair)
160	24-0407-00
220	24-0408-00

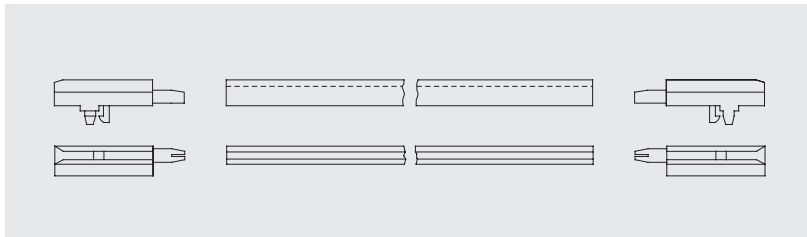




**Divided card guides**

- consists of 2 end pieces and an aluminium or plastic middle extrusion piece

**A** Divided card guide (standard) for any card depth



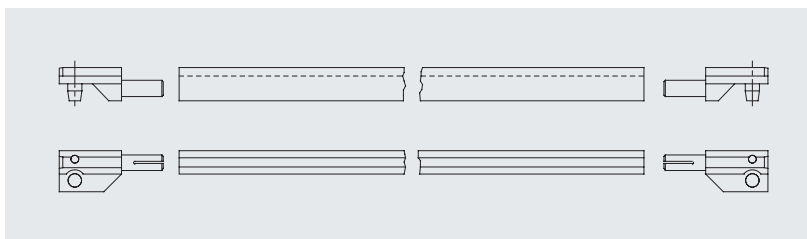
End pieces (plastic)

Part no. (pair)
250-721

Extrusion piece 1000 mm for adjusting

Material	Part no.
aluminium	24-0005-00
plastic	25-0723-00

**B** Card guide for ISEP PCB's (PCB height in 3 U subracks is 110.49 mm)



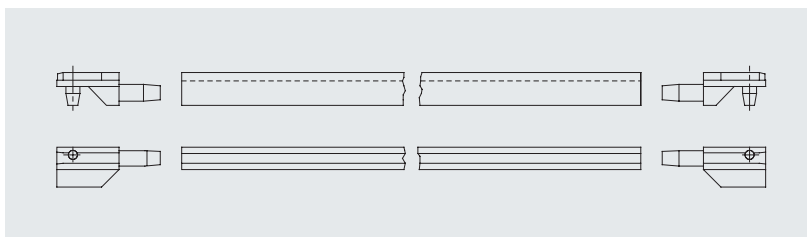
End pieces (plastic)

Part no. (pair)
250-722

Extrusion piece 1000 mm for adjusting

Material	Part no.
aluminium	24-0005-00
plastic	25-0723-00

**C** Card guide for 112.5mm installation headroom in 3 U subrack



End pieces (plastic)

Part no. (pair)
250-724

Extrusion piece 1000 mm for adjusting

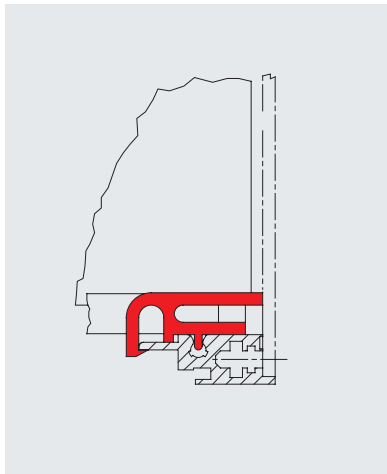
Material	Part no.
aluminium	24-0005-00
plastic	25-0723-00



### PCB lock

- can be used with front panels
- for fastening PCB's to prevent them from falling out
- snaps into place easily

**Material:** plastic, UL 94-V 0  
**Colour:** similar RAL 7035 light grey

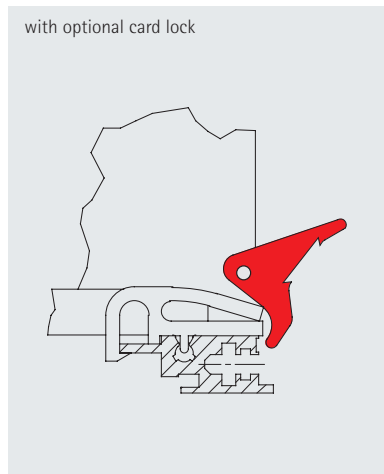


**Part no. (1 piece)**  
250-716

### Extraction handle

- for extracting PCB's
- the optional PCB lock is opened automatically
- with space for attaching designation strips

**Material:** plastic  
**Finish:** black

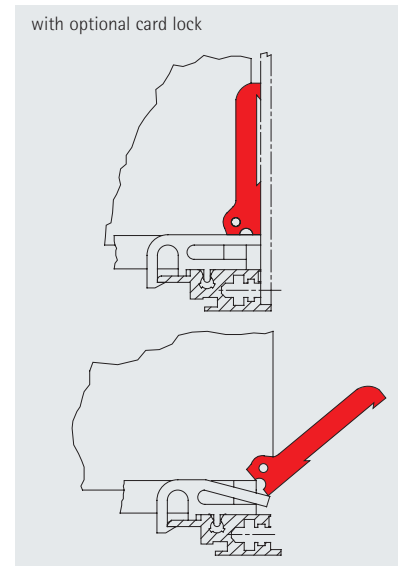


**Part no. (1 piece)**  
250-715

### Extraction handle, flat version

- can be used with front panels
- the optional PCB lock is opened automatically

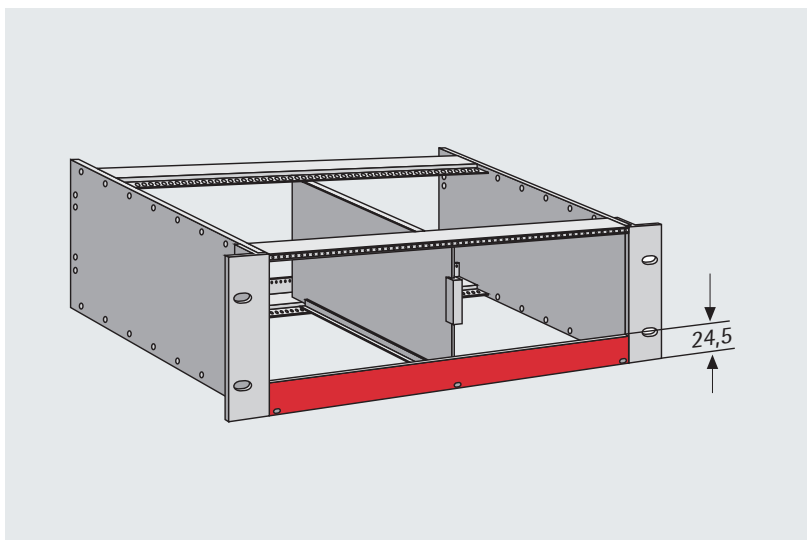
**Material:** plastic, UL 94-V 0  
**Colour:** similar RAL 7035 light grey



**Part no. (1 piece)**  
250-717

**Note:** cannot be used with front plates.

### Group lock extrusion



- the aluminium group lock extrusion secures all PCB's
- can be printed with customer-specific information if required

#### Included in delivery

Pc.	Description
1	Group lock extrusion, anodized
1	Rubber seal
3/4	Knurled screw
3/4	Screw holder

HP	Part no.
84	24-0110-84
63	24-0110-63
42	24-0110-42



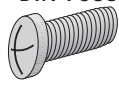
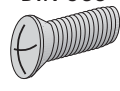
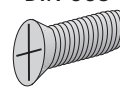
## Schrauben

Folgende Schrauben und Montageteile werden bei den verschiedenen Montage-möglichkeiten der apra-Produkte benö-tigt.







Sofern diese bei den einzelnen Produkte nicht schon zum Lieferumfang gehörig gekennzeichnet sind, können sie ent-sprechend folgender Schraubenliste bestellt werden.

**Hinweis:** Packungseinheit: jeweils 100 Stück







\*mit Unterkopfverzahnung zur Schraubensicherung

Gewinde x Länge  mm	Linsenschraube DIN 7985 	Linsensenkschraube DIN 966 		Senkschraube DIN 965 
	vernickelt/ verzinkt	vernickelt	schwarz verzinkt	verzinkt
M 2,5 x 6	630-092	630-125	-	630-116
M 2,5 x 8	630-078	630-127	-	-
M 2,5 x 10	630-094	630-126	-	-
M 2,5 x 12	630-082	-	-	-
M 2,5 x 16	630-080	-	-	-
M 3 x 8	630-095	-	-	630-117
M 4 x 6	630-804	630-128	630-137	630-118
M 4 x 8	630-081	630-135	-	-
M 4 x 10	630-093	630-132	630-138	630-119
M 4 x 12	630-096*	630-131*	630-139	630-120
M 4 x 16	630-079	630-133	630-140	-
M 4 x 20	630-089	630-134	630-141	-
M 5 x 8	630-056	-	-	-
M 5 x 12	630-097	630-136	-	630-121
M 5 x 16	630-098	-	-	-
M 5 x 25	630-062	-	630-142	-
M 6 x 12	630-091	-	-	-
M 6 x 16	630-099	-	-	-

## Muttern

Gewinde	Sechskant- mutter DIN 934 	Vierkant- mutter DIN 562 	Kombi- mutter 	Käfigmutter		
				Blechstärke 0,7 - 1,7 mm 	Blechstärke 1,8 - 2,6 mm 	Blechstärke 1,8 - 2,6 mm mit Kon- taktecken 
M 2,5	630-182	630-192	-	-	-	-
M 3	630-183	630-193	-	-	-	-
M 4	630-184	630-194	630-199	630-358	630-361	-
M 5	630-185	630-190	630-201	630-359	630-362	630-445
M 6	630-186	-	630-196	630-360	630-363	630-446
M 8	630-187	-	630-200	-	-	-
M 10	630-188	-	-	-	-	-

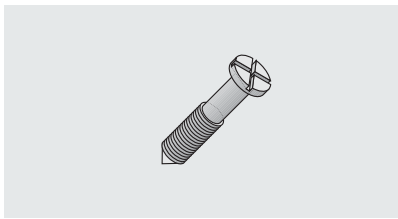
## Scheiben

Gewinde	Federnde Zahnscheibe DIN 6797 	Scheiben DIN 125 	Breite Scheiben DIN 9021 	Zierscheibe 	Zierscheibe 	Zierscheibe mit Kragen 
	verzinkt	verzinkt	vernickelt	Kunststoff schwarz	Messing verchromt	Kunststoff schwarz
M 2,5	-	630-152	-	-	-	-
M 3	-	630-153	630-165	-	-	-
M 4	630-146	630-154	630-166	610-093	610-091	-
M 5	630-147	630-155	630-167	610-094	610-092	610-095
M 6	630-148	630-156	630-168	-	-	610-096
M 8	-	630-157	630-169	-	-	-
M 10	-	630-158	630-170	-	-	-

**Hinweis:** Zierscheiben dienen als Unterlage für Linsenkopfschrauben M 5, M 6 zur Befestigung von 19"-Frontplatten, Einschüben, usw.



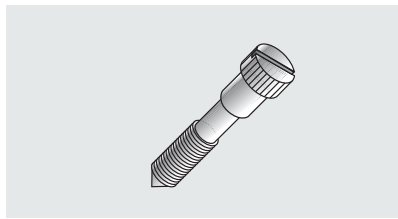
**Halsschraube, vernickelt**



- für Teilfrontplattenbefestigung

Größe	Bestell-Nr. (100 Stück)
M 2,5	250-602

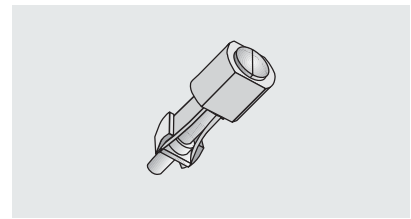
**Rändelschraube, vernickelt**



- für Teilfrontplattenbefestigung

Größe	Bestell-Nr. (100 Stück)
M 2,5	25-0611-02

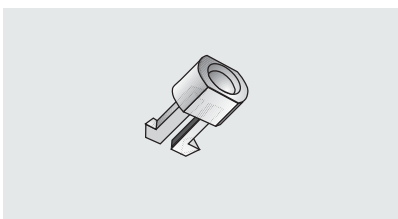
**Schnellverschluss**



- für Teilfrontplattenbefestigung

Bestell-Nr. (100 Stück)
25-0607-00

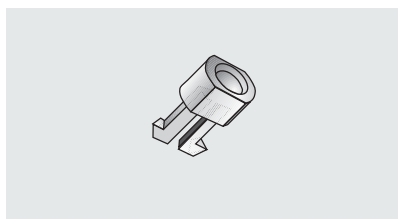
**Schraubenhalter, Kunststoff**



- zum Einpressen in Teilfrontplatten

Bestell-Nr. (100 Stück)
25-0697-02

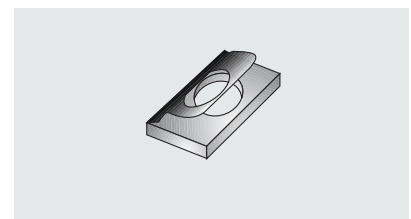
**Schraubenhalter, Messing**



- zum Einpressen in Teilfrontplatten
- vernickelt

Bestell-Nr. (100 Stück)
25-0697-03

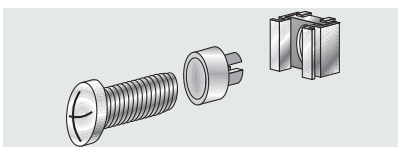
**Federmutter M 5**



- zum Einschieben in die Profalnuten der Schranksysteme 110 oder 316

Bestell-Nr. (1 Stück)
630-015

**Schraubenset M 6 (50-fach)**

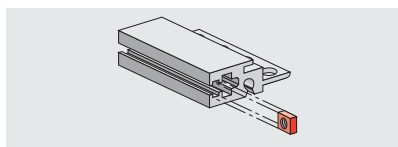


**Lieferumfang:**

- 50 Linsenschrauben M 6 x 16
- 50 Käfigmuttern M 6 – 8
- 50 Zierscheiben M 6 mit Kragen

Bestell-Nr.
630-994

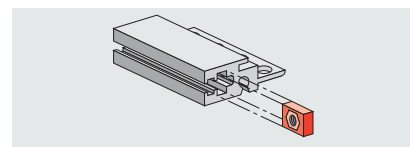
**Vierkantmutter M 2,5**



- passend als Schiebemutter für Nut 5 x 1,5
- nicht einsetzbar in Verbindung mit Teilfrontplattenverschraubung und Schraubenhalter

Bestell-Nr. (100 Stück)
630-192

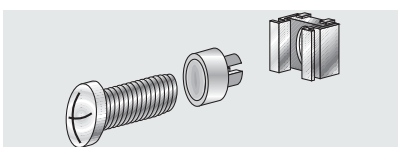
**Mutterhalter mit Mutter M 2,5**



- passend als Schiebemutter für Nut 7 x 2
- bestehend aus Sechskantmutter M 2,5 und Kunststoffmutterhalter

Bestell-Nr. (100 Stück)
250-704

**Schraubenset M 5 (50-fach)**

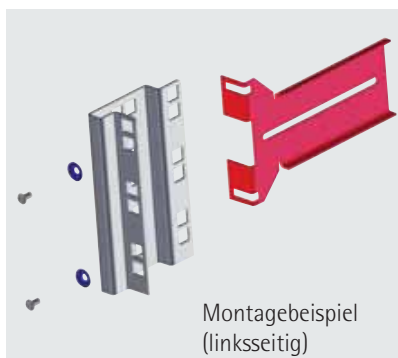


**Lieferumfang:**

- 50 Linsenschrauben M 5 x 12
- 50 Käfigmuttern M 5 – 8
- 50 Zierscheiben M 5 mit Kragen

Bestell-Nr.
630-991

**19"-Montageset aprafix (50-fach)**



Montagebeispiel (linksseitig)

- gebrauchsmustergeschützt
- zur nahezu bündigen Montage von z.B. Gleitschienen, Fachböden oder Teleskopschienenhalterungen
- bestehend aus aprafix-Scheibe und Senkschraube M 4 x 10

Bestell-Nr.
63-0075-50