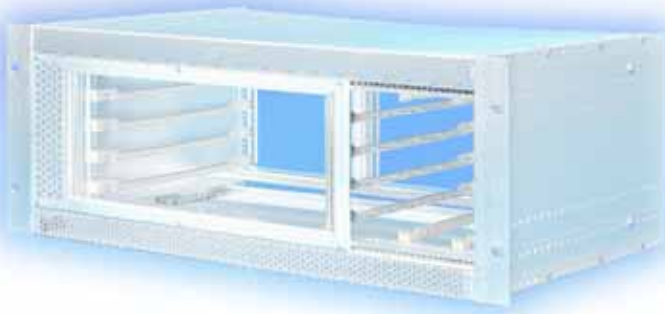


# Subracks

## Features



The modular concept of Ripac subracks facilitates a wide range of application options with a minimum of components.

All Ripac subracks are based on the same horizontal rails and system components.

The difference lies in the design of the side panels and installation options.

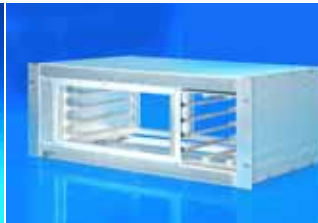
The subracks are shock and vibration-tested and comply with IEC 60 297-3-101, -102, -103.

**3.5**  
**B**  
**Subracks**

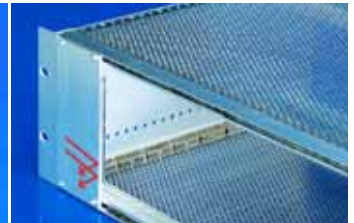
### Design features, Ripac Vario and Vario EMC



**Depth-variable system installation** is supported by the 10 mm pitch pattern of holes in the side panels.



**Complex applications** thanks to numerous size variants and system accessories.



**EMC shielding** via horizontal and vertical EMC gaskets. May also be retrofitted.

### Design features, Ripac Compact



**Top-hat rail mounting**  
Rear adaptors allow simple snap-mounting directly onto the top-hat rail.



**Mounting on mounting plates**  
Machined keyholes for direct mounting on mounting plates.



**EMC version** optional.

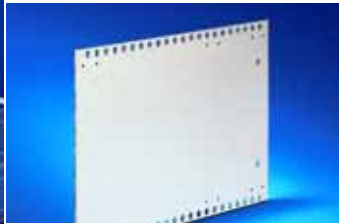
### Design features, Ripac Vario Mobil



- The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155 (electronic equipment in rail vehicles). Construction of the tested subracks conforms to IEC 60 297-3 and IEC 61 587.

- Vibration and shock-tested to: IEC 600-68-2-6, test Fc IEC 600-68-2-27, test Ea
- Supply includes: Subrack, fully assembled.

### Design features, Ripac ECO



**Side panels of sheet steel, zinc-plated.** Flanges of aluminium, clear-chromated. Mounting positions for 160 and 220 mm board formats.

**Simple cover mounting:** Slides easily into the horizontal rails.

### Design features, Ripac Solid



The **Ripac Solid** subracks ensure the protection of high-quality electronics even under extreme loads. This is made possible thanks

to the double screw fastening of the horizontal rails. Mechanical load test to IEC 61 587-1, requirement level SL 1.

Shock- and vibration-tested to IEC 61 373 (DIN EN 60 155), category 1, class B.

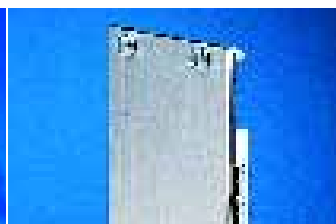
### System installation, accessories



**Guide rails** of plastic or aluminium, also keyable.

**Covers** vented or solid, snap-fastening or screw-fastening.

**ESD contacts** for guide rails, to remove electrostatic charges.



**Keys** for keying the board-type plug-in units.

**Front panels** in various versions, e.g. with handles, vented or for EMC applications.

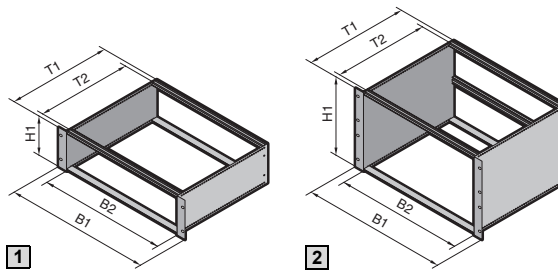
**Injector/extractor handles** self-latching, of plastic or aluminium.



**Mounting kits** for combined installation of Euroboards and double Euroboards, horizontal or vertical.

# Subracks

## Ripac ECO 3 U, 6 U, sheet steel



### Material/surface finish:

Side panels:  
1.5 mm sheet steel, zinc-plated  
Flanges/horizontal rails:  
Extruded aluminium section,  
clear-chromated

### Supply includes:

Side panels, flanges, horizontal  
rails, threaded inserts.

**Detailed parts lists,**  
see page 1269.

### Tests:

Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

### Standards:

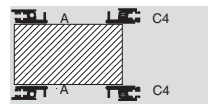
Ripac subracks are based on  
the system dimensions of  
IEC 60 297-3.



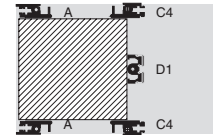
### Also required:

Insulating strips and contact  
strips (for installing  
backplanes), see page 571.  
Z rail (for installing connectors),  
see page 570.

**Detailed drawing,**  
see page 1269.



1 For backplane



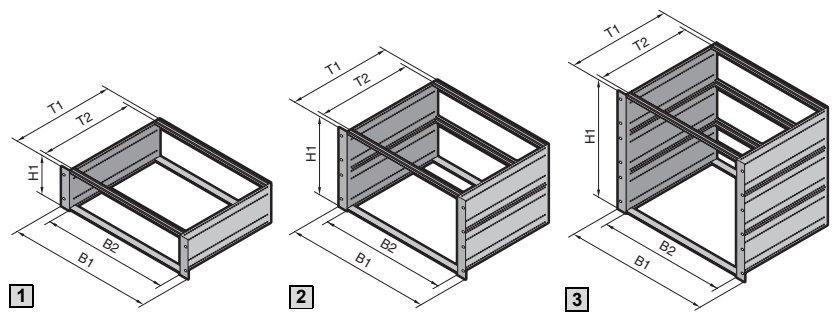
2 For backplane

					Model No. RP		Page
					1	2	
U (H1)					3	6	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane	
482.6 (19")	84	175	150	160	<b>3688.114</b>	<b>3688.116</b>	
		235	210	220	<b>3688.115</b>	<b>3688.117</b>	

### Accessories

Trim section rear, 3 U		3688.112	562
Trim section rear, 6 U		3688.113	562
Z rail		3684.602	570
Insulating strips		3684.611	571
Cover, perforated, for 175 mm depth		3688.105	581
Cover, perforated, for 210 mm depth		3688.106	581
Cover, solid, for 175 mm depth		3688.107	581
Cover, solid, for 210 mm depth		3688.108	581
Mounting clips for covers		3688.109	581
Assembly screw for mounting clips		9902.188	581
Guide rails			575
Horizontal rails			558

## Ripac Vario 3 U, 6 U, 9 U



**EMC** upgradeable

**Material/surface finish:**

Side panels:  
2.5 mm aluminium, clear-chromated 482.6 mm (19") flanges and horizontal rails:  
Extruded aluminium section, clear-chromated

**Supply includes:**

Flanges, side panels, horizontal rails, threaded inserts, insulating strips or Z rails.

**Detailed parts lists,**  
see page 1270.

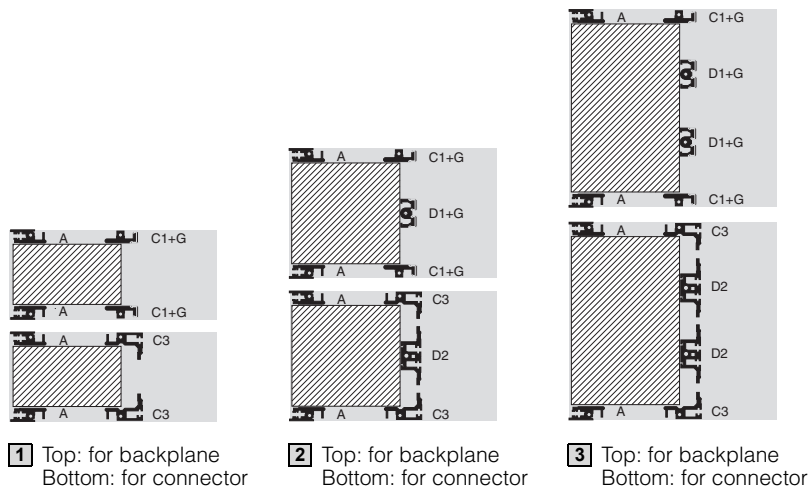
**Tests:**

Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

Ripac subracks are based on the system dimensions of IEC 60 297-3.

**Detailed drawing,**  
see page 1269.

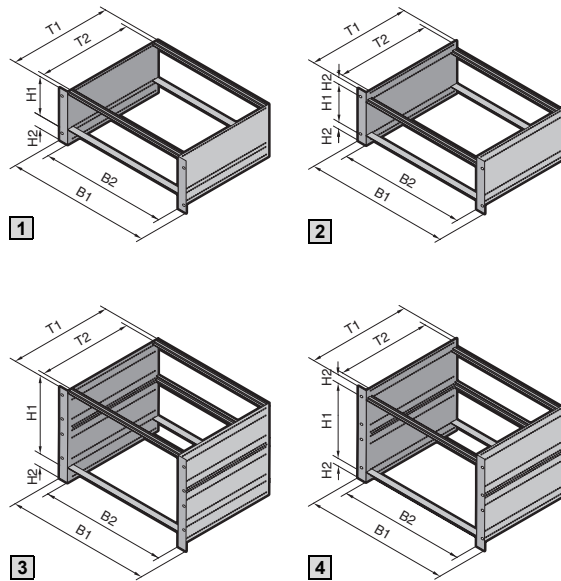


**B**  
**3.5**  
**Subracks**

					Model No. RP					
					1		2		3	
					3	3	6	6	9	9
Height (H1) mm					132		265.35		398.70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2
482.6 (19")	84	185	160	160	3684.020	3684.034	3684.043	3684.056	-	-
		225	200	160	3684.021	3684.035	3684.044	3684.057	-	-
		245	220	220	3684.022	3684.036	3684.045	3684.058	-	-
		285	260	220	3684.023	3685.281	3684.046	-	-	-
		305	280	280	3685.231	3685.233	3685.238	3685.240	-	-
		345	320	280	3684.024	-	3684.047	-	3684.051	3684.059
		365	340	340	3685.232	3685.234	3685.239	-	-	-
		405	380	340	3684.025	-	3684.048	-	3684.052	3684.060
		465	440	400	3684.026	-	3684.049	-	3684.053	3684.061
		525	500	400	3684.027	-	3684.050	-	3684.054	-
		585	560	400	-	-	-	-	3684.055	-

# Subracks

## Ripac Vario 4 U, 7 U



### Material/surface finish:

Side panels:  
2.5 mm aluminium, clear-chromated 482.6 mm (19")  
flanges and horizontal rails:  
Extruded aluminium section, clear-chromated

### Supply includes:

Flanges, side panels, horizontal rails, threaded inserts, insulating strips or Z rails.

**Detailed parts lists,**  
see page 1270.

### Tests:

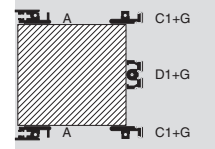
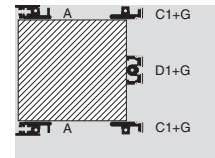
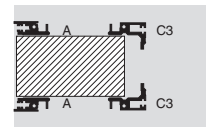
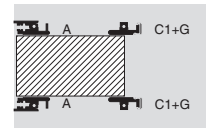
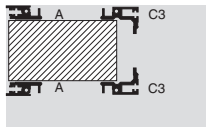
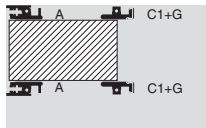
Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

### Standards:

Ripac subracks are based on the system dimensions of IEC 60 297-3.

**Detailed drawing,**  
see page 1269.

**EMC** upgradeable



**1** Top: for backplane  
Bottom: for connector  
(3 U + 1 U)

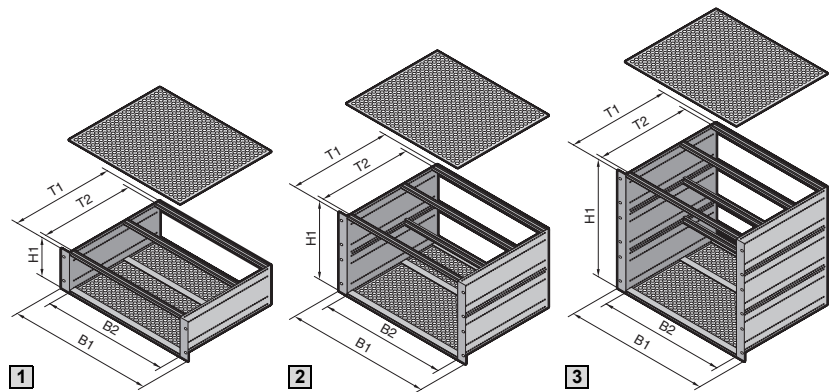
**2** Top: for backplane  
Bottom: for connector  
(3 U + 2 x 1/2 U)

**3** Top: for backplane  
(6 U + 1 U)

**4** Bottom: for backplane  
(6 U + 2 x 1/2 U)

U (H1 + H2)					Model No. RP					
					1		2		3	4
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	4 (3 + 1) For backplane	4 (3 + 1) For connector IEC 60 603-2	4 (3 + 2 x 1/2) For backplane	4 (3 + 2 x 1/2) For connector IEC 60 603-2	7 (6 + 1) For backplane	7 (6 + 2 x 1/2) For backplane
482.6 (19")	84	245	220	220	<b>3685.235</b>	-	-	-	-	-
		285	260	220	<b>3684.028</b>	<b>3684.037</b>	<b>3684.031</b>	<b>3684.040</b>	-	-
		305	280	280	<b>3685.236</b>	-	-	-	-	-
		345	320	280	<b>3684.029</b>	<b>3684.038</b>	<b>3684.032</b>	<b>3684.041</b>	-	-
		365	340	340	<b>3685.237</b>	-	-	-	-	-
		405	380	340	<b>3684.030</b>	<b>3684.039</b>	<b>3684.033</b>	<b>3684.042</b>	<b>3684.064</b>	<b>3684.062</b>
		465	440	400	-	-	-	-	<b>3684.065</b>	<b>3684.063</b>

## Ripac Vario EMC 3 U, 6 U, 9 U



### Material/surface finish:

Side panels:  
2.5 mm aluminium, clear-chromated  
Flanges and horizontal rails:  
Extruded aluminium section, clear-chromated  
Covers: Aluminium, unplated

### Supply includes:

Flanges, rear trim, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, insulating strips.

### Detailed parts lists, see page 1270.

### Tests:

Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

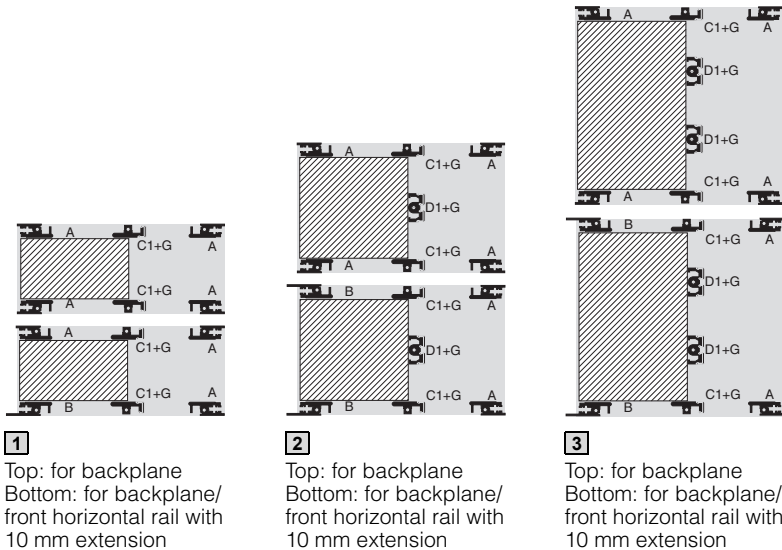
### Standards:

Ripac subracks are based on the system dimensions of IEC 60 297-3.

### Detailed drawing, see page 1269.

### EMC diagram, see page 331.

**EMC**



**1**  
Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

**2**  
Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

**3**  
Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

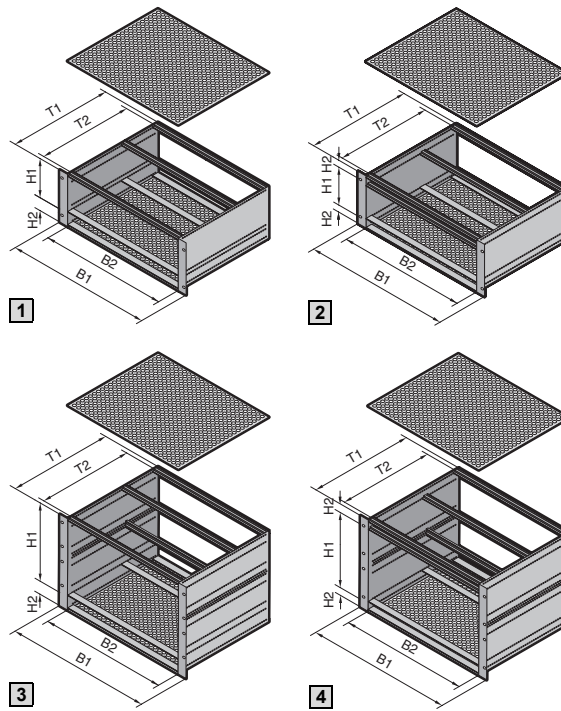
**B**  
**3.5**  
**Subracks**

					Model No. RP					
					<b>1</b>		<b>2</b>		<b>3</b>	
<b>U</b>					<b>3</b>		<b>6</b>		<b>9</b>	
<b>Height (H1) mm</b>					132		265.35		398.70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>
482.6 (19")	84	245	220	160	<b>3684.128</b>	<b>3684.142</b>	<b>3684.156</b>	<b>3684.169</b>	–	–
		285	260	220	<b>3684.129</b>	<b>3684.143</b>	<b>3684.157</b>	<b>3684.170</b>	–	–
		305	280	220	<b>3685.241</b>	<b>3685.243</b>	<b>3685.242</b>	<b>3685.244</b>	–	–
		345	320	280	<b>3684.130</b>	<b>3684.144</b>	<b>3684.158</b>	<b>3684.171</b>	<b>3684.162</b>	<b>3684.175</b>
		405	380	340	<b>3684.131</b>	<b>3684.145</b>	<b>3684.159</b>	<b>3684.172</b>	<b>3684.163</b>	<b>3684.176</b>
		465	440	400	<b>3684.132</b>	<b>3684.146</b>	<b>3684.160</b>	<b>3684.173</b>	<b>3684.164</b>	<b>3684.177</b>
		525	500	400	<b>3684.133</b>	<b>3684.147</b>	<b>3684.161</b>	<b>3684.174</b>	<b>3684.165</b>	<b>3684.178</b>
		585	560	400	–	–	–	–	<b>3684.166</b>	<b>3684.179</b>

<sup>1)</sup> Front horizontal rails with 10 mm extension for injector/extractor handles (B).

# Subracks

## Ripac Vario EMC 4 U, 7 U



### Material/surface finish:

Side panels:  
2.5 mm aluminium, clear-chromated  
Flanges and horizontal rails:  
Extruded aluminium section, clear-chromated  
Covers: Aluminium, unplated

### Supply includes:

Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips.

### Detailed parts lists, see page 1270.

### Tests:

Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

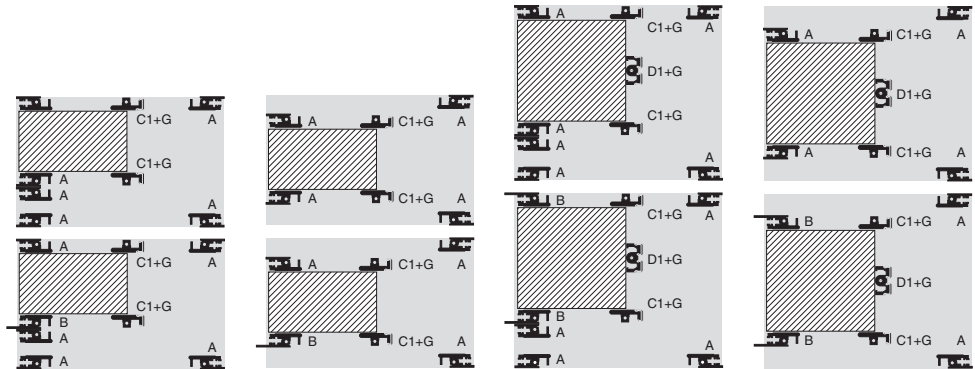
### Standards:

Ripac subracks are based on the system dimensions of IEC 60 297-3.

### Detailed drawing, see page 1269.

### EMC diagram, see page 331.

**EMC**



**1** Top: for backplane  
bottom: for backplane/  
front horizontal rail with  
10 mm extension

**2** Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

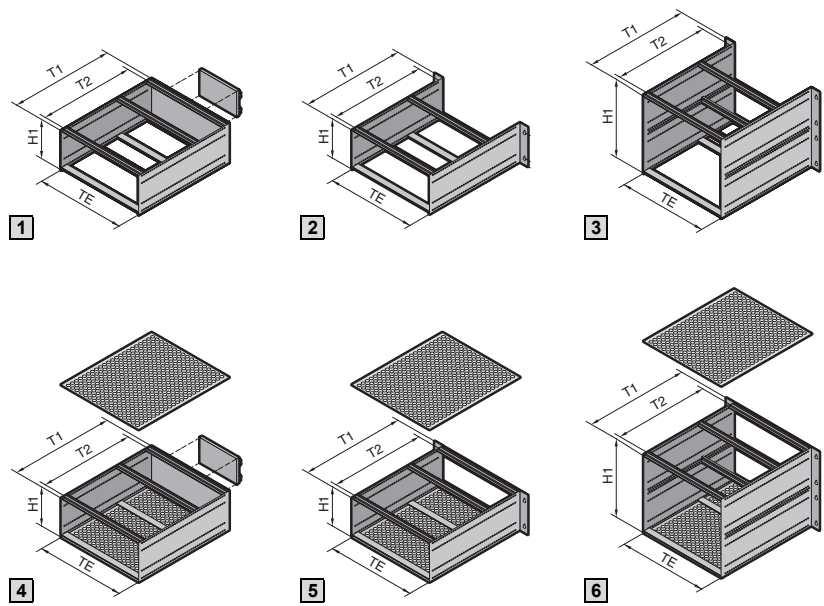
**3** Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

**4** Top: for backplane  
Bottom: for backplane/  
front horizontal rail with  
10 mm extension

					Model No. RP							
					<b>1</b>		<b>2</b>		<b>3</b>		<b>4</b>	
<b>U</b> (H1 + H2)					<b>4</b> (3 + 1)	<b>4</b> (3 + 1)	<b>4</b> (3 + 2 x 1/2)	<b>4</b> (3 + 2 x 1/2)	<b>7</b> (6 + 1)	<b>7</b> (6 + 1)	<b>7</b> (6 + 2 x 1/2)	<b>7</b> (6 + 2 x 1/2)
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>
482,6 (19")	84	285	260	220	<b>3684.134</b>	<b>3684.148</b>	<b>3684.137</b>	<b>3684.151</b>	<b>3684.187</b>	<b>3684.192</b>	-	-
		345	320	280	<b>3684.135</b>	<b>3684.149</b>	<b>3684.138</b>	<b>3684.152</b>	<b>3684.188</b>	<b>3684.193</b>	<b>3684.189</b>	<b>3684.196</b>
		405	380	340	<b>3684.136</b>	<b>3684.150</b>	<b>3684.139</b>	<b>3684.153</b>	<b>3684.180</b>	<b>3684.194</b>	<b>3684.190</b>	<b>3684.197</b>
		465	440	400	-	-	-	-	<b>3684.181</b>	<b>3684.195</b>	<b>3684.191</b>	<b>3684.198</b>

<sup>1)</sup>Front horizontal rails with 10 mm extension for injector/extractor handles (B).

## Ripac Compact 3 U, 6 U



**Material/surface finish:**

Side panels:  
2.5 mm aluminium, clear-chromated  
Flanges and horizontal rails:  
Extruded aluminium section, clear-chromated

**Supply includes:**

Side panels, rear trims, flanges for mounting plates or top-hat rail adaptors, EMC front/rear panels, EMC gaskets, covers, horizontal rails, threaded inserts, insulating strips.

**Detailed parts lists,**

see page 1271.

**Tests:**

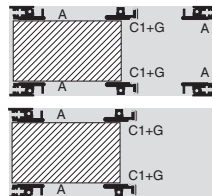
Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

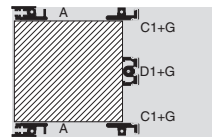
Ripac subracks are based on the system dimensions of IEC 60 297-3.

**Detailed drawing,**

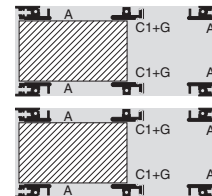
see page 1269/1271.



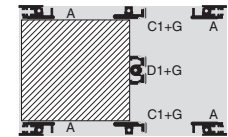
**1** Top:  
for top-hat rail  
**2** Bottom:  
for mounting plate



**3** For mounting plate



**4** Top:  
EMC for top-hat rail  
**5** Bottom:  
EMC for mounting plate



**6** EMC for mounting plate

**1 4**  
Ripac Compact 3 U for top-hat rail  
**2 3 5 6**  
Ripac Compact 3 U for mounting plate

Subracks  
3.5  
B

			Model No. RP					Model No. RP EMC				
			<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>U</b>			<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>6</b>
<b>Height (H1) mm</b>			132					265.35				
<b>HP</b>			21	21	42	42	42	21	21	42	42	42
<b>Attachment</b>			Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate	Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate
Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane									
225	200	160	<b>3687.667</b>	<b>3687.669</b>	<b>3687.671</b>	<b>3687.673</b>	<b>3687.680</b>	<b>3687.682</b>	<b>3687.684</b>	<b>3687.686</b>	<b>3687.688</b>	<b>3687.690</b>
285	260	220	<b>3687.668</b>	<b>3687.670</b>	<b>3687.672</b>	<b>3687.674</b>	<b>3687.681</b>	<b>3687.683</b>	<b>3687.685</b>	<b>3687.687</b>	<b>3687.689</b>	<b>3687.691</b>

# Subracks

## Ripac Vario Mobil 3 U, 6 U, for mobile use



### Material/surface finish:

Side panels:  
2.5 mm aluminium, clear-chromated 482.6 mm (19") flanges and horizontal rails:  
Extruded aluminium section, clear-chromated  
Covers: Aluminium, unplated

### Supply includes:

Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips, fully assembled

### Detailed parts lists,

see page 1272.

### Tests:

Vibration and shock-tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea  
The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155, 1996 (Electronic Equipment in Rail Vehicles). The configuration of the tested subracks conforms to IEC 48 D.

### Standards:

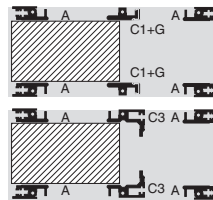
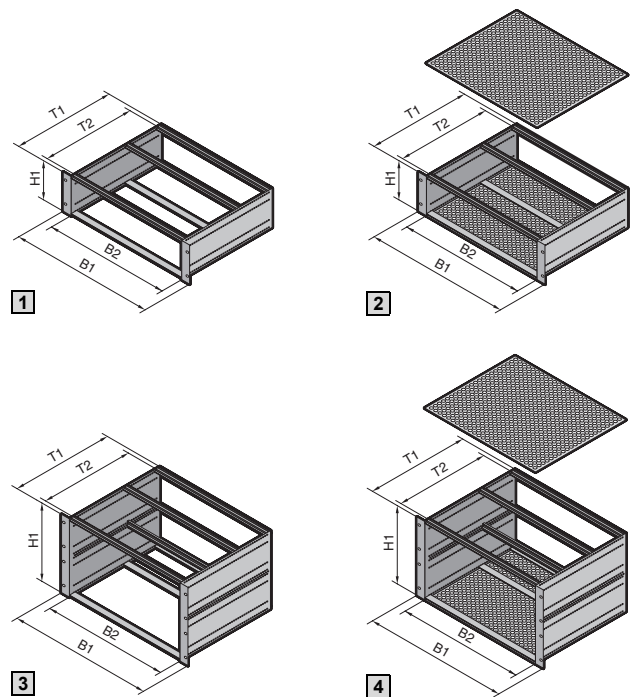
Ripac subracks are based on the system dimensions of IEC 60 297-3.

### Note:

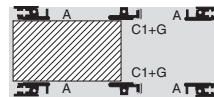
The subracks are supplied fully assembled.

### Detailed drawing,

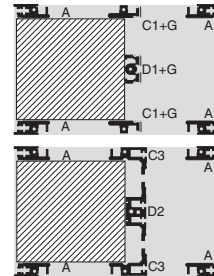
see page 1269/1272.



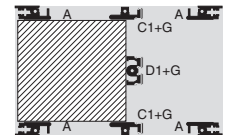
1 Top:  
for backplane  
Bottom:  
for connector



2 EMC for backplane



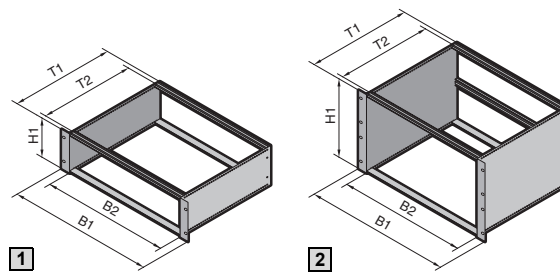
3 Top:  
for backplane  
Bottom:  
for connector



4 EMC for backplane

					Model No. RP		Model No. RP EMC	Model No. RP		Model No. RP EMC
					1	2	3	4	5	6
<b>U</b>					3	3	3	6	6	6
<b>Height (H1) mm</b>					132			265.35		
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connectors IEC 60 603-2	For backplane	For backplane	For connectors IEC 60 603-2	For backplane
482.6 (19")	84	245	220	220	<b>3687.782</b>	<b>3687.780</b>	<b>3687.784</b>	<b>3687.783</b>	<b>3687.781</b>	<b>3687.785</b>

## Ripac Solid 3 U, 6 U, for extreme loads



**EMC** upgradeable

**A Ripac Solid subrack ensures that your top quality electronics are well protected, even with extreme loads, by using horizontal rails with dual screw fastening.**

**Material/surface finish:**

Side panels: 2.5 mm aluminium, clear-chromated 482.6 mm (19") flanges and horizontal rails: Extruded aluminium section, clear-chromated

**Supply includes:**

Flanges, side panels, horizontal rails, threaded inserts.

**Detailed parts lists,** see page 1272.

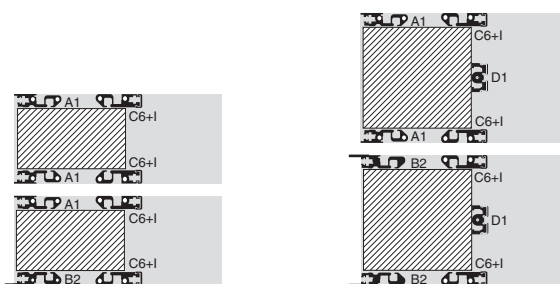
**Tests:**

- Mechanical load tests undertaken as per IEC 61 587-1, requirement level SL1. Result: Passed (the measured static bowing under load rating is less than the standard rating of 0.4 mm)
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B. Result: No damage occurred.

**Standards:**

Ripac Solid subracks are based on system dimensions stipulated in IEC 60 297-3-101.

**Detailed drawing,** see page 1269/1272.



**1** Top: Horizontal rails at front with short lip  
Bottom: Horizontal rails at front with 10 mm extension

**2** Top: Horizontal rails at front with short lip  
Bottom: Horizontal rails at front with 10 mm extension



**Horizontal rails** with dual screw fastening

**! Also required:**

Insulating strips (for installing backplanes), see page 571.  
Z rails (for installing connectors), see page 570.

					Model No. RP			
					<b>1</b>		<b>2</b>	
<b>U</b>					<b>3</b>	<b>3</b>	<b>6</b>	<b>6</b>
<b>Height (H1) mm</b>					132		265.35	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	Front rail with short lip	Front rail with 10 mm extension	Front rail with short lip	Front rail with 10 mm extension
482.6 (19")	84	245	220	220	<b>9908.517</b>	<b>9908.518</b>	<b>9908.521</b>	<b>9908.520</b>

# Subracks, individual components

## Table of horizontal rails

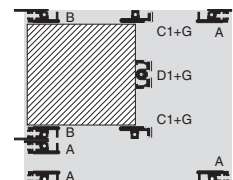
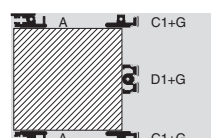
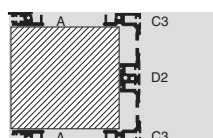
### Ripac extrusion system: Complete, simple and easy to manage

To fit all subrack systems as well as the Ripac Vario-Module instrument case/system enclosure range

Main sections	A	A1	B	B1	B2	C1	C2
	Front horizontal rail	Front horizontal rail, with double screw fastening	Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	Double front horizontal rail, with 10 mm extension	Front horizontal rail, with 10 mm extension, with double screw fastening	Rear horizontal rail	Rear horizontal rail, reinforced version
	Page 563	Page 563	Page 564	Page 564	Page 565	Page 565	Page 566
<b>Additional sections</b>							
<b>E</b> Rear adaptor rail, centre, to accommodate guide rails 	-	-	-	-	-	-	-
Page 569							
<b>F</b> Z rail for connector 	-	-	-	-	-		
Page 570							
<b>G</b> Insulating strips <sup>1)</sup> 	-	-	-	-	-		
Page 571							
<b>H</b> Conductive strips <sup>1)</sup> 	-	-	-	-	-		
Page 571							
<b>I</b> Threaded insert 						-	
Page 570							
<b>J</b> Identification strips 							
Page 570							
<b>K</b> EMC gaskets, horizontal 						-	-
Page 573							

<sup>1)</sup> For conductive or insulated attachment of backplanes.

All system requirements may be covered with just a few basic types of horizontal rail. A cost-effective, easy-to-manage range.



























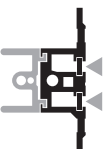








# Subracks, individual components

## Table of horizontal rails

### Ripac extrusion system: Complete, simple and easy to manage

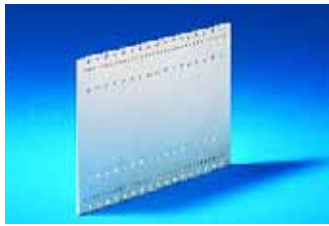
To fit all subrack systems as well as the Ripac Vario-Module instrument case/system enclosure range

Main sections	C3 Rear horizontal rail, with integral Z rail	C4 Rear horizontal rail, with channel, for Ripac ECO	C5 Rear horizontal rail, with integral Z rail, for Ripac ECO	C6 Rear horizontal rail, with double screw fastening	D1 Rear horizontal rail, centre	D2 Rear horizontal rail, centre, with integral Z rail	
	Page 568	Page 567	Page 567	Page 566	Page 568	Page 569	
<b>Additional sections</b>							
<b>E</b> Rear adaptor rail, centre, to accommodate guide rails  Page 569	-	-	-	-			
<b>F</b> Z rail for connector  Page 570	-		-			-	
<b>G</b> Insulating strips <sup>1)</sup>  Page 571	-		-			-	
<b>H</b> Conductive strips <sup>1)</sup>  Page 571	-		-			-	
<b>I</b> Threaded insert  Page 570					-		
<b>J</b> Identification strips  Page 570			-		-	-	
<b>K</b> EMC gaskets, horizontal  Page 573	-		-	-	-	-	

<sup>1)</sup> For conductive or insulated attachment of backplanes.

# Subracks, individual components

## Side panels and flanges



### Side panels

For Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid

Mounting holes and anti-twist half-shears on a 10 mm pitch pattern.

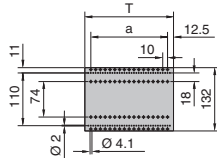
### Material:

2.5 mm aluminium, clear-chromated

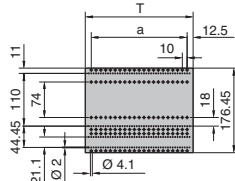
			Model No. RP								
U			3	4 (3 + 1)	4 (3 + 2 x 1/2)	6	7 (6 + 1)	7 (6 + 2 x 1/2)	9	10	11
D (T) mm	a <sup>1)</sup> mm	Packs of									
185	160	1	3684.511	-	-	3684.529	-	-	-	-	-
225	200	1	3684.512	3685.793	3685.890	3684.530	3685.896	3685.893	3685.797	-	-
245	220	1	3684.513	3685.850	3685.891	3684.531	3685.897	3685.894	-	-	-
285	260	1	3684.514	3684.523	3684.526	3684.532	3685.743	3685.895	-	-	-
305	280	1	3684.515	3685.794	-	3684.533	-	-	3685.798	-	-
345	320	1	3684.516	3684.524	3684.527	3684.534	3685.744	3685.745	3684.547	-	-
365	340	1	3684.517	3685.795	-	3684.535	-	-	3685.799	-	-
405	380	1	3684.518	3684.525	3684.528	3684.536	3684.541	3684.543	3684.548	3684.545	-
425	400	1	3684.519	-	-	3684.537	-	-	-	-	-
465	440	1	3684.520	3685.796	3685.892	3684.538	3684.542	3684.544	3684.549	3684.546	3684.552
525	500	1	3684.521	-	-	3684.539	3685.898	3685.959	3684.550	3685.899	3684.553
585	560	1	3684.522	-	-	3684.540	-	-	3684.551	-	3684.554

<sup>1)</sup> a = Distance between the first and last mounting hole.

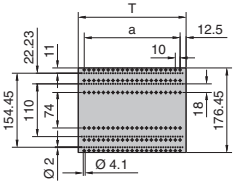
3 U



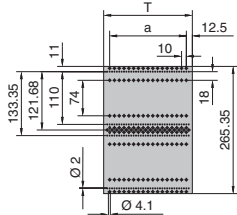
4 U (3 U + 1 U)



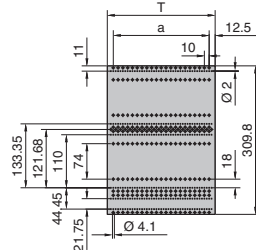
4 U (3 U + 2 x 1/2 U)



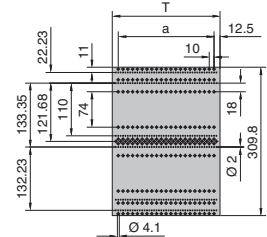
6 U



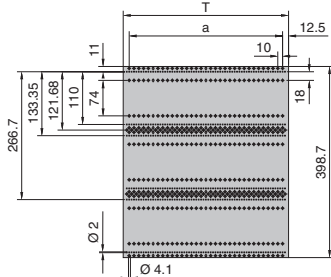
7 U (6 U + 1 U)



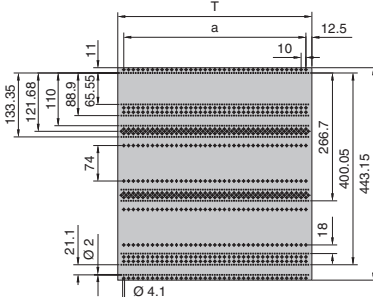
7 U (6 U + 2 x 1/2 U)



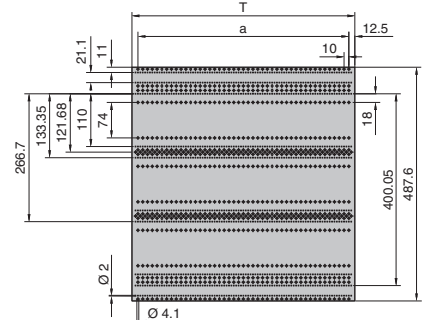
9 U



10 U

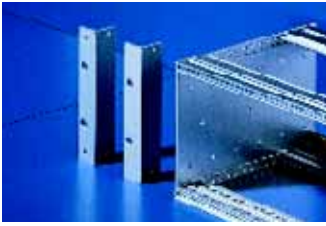


11 U



# Subracks, individual components

## Side panels and flanges

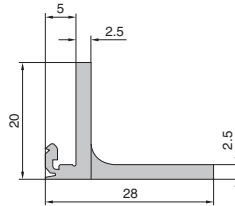
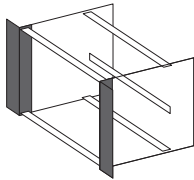


### Flange, 482.6 mm (19")

To fit all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks. With integral channel to accommodate EMC gaskets.

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated



U	Packs of	Model No. RP	
		with handle holes	without handle holes
2	1	-	3684.614
3	1	3684.622	3684.615
4	1	3684.623	3684.616
6	1	3684.624	3684.617
7	1	3684.625	3684.618
9	1	-	3684.619
10	1	-	3684.620
11	1	-	3684.621

#### + Accessories:

EMC gaskets, vertical, see page 572.

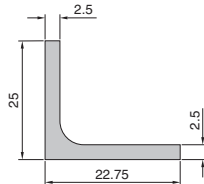
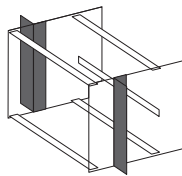


### Flange, 482.6 mm (19") set-back

To fit all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated



U	Packs of	Model No. RP
3	1	3684.626
4	1	3684.627
6	1	3684.628
7	1	3684.629
9	1	3684.630
10	1	3684.631
11	1	3684.632

#### ! Also required:

Assembly screws, nuts and washers, packs of 4 sets, Model No. RP 3687.015, see page 611.



### Side panels

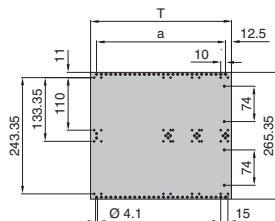
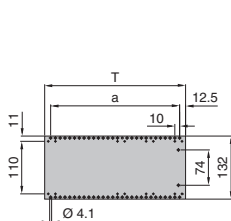
#### for Ripac ECO

Mounting holes for 160/220 mm PCB installation. Consistent pitch pattern of holes top and bottom for cover attachment.

**Material:**  
1.5 mm sheet steel, zinc-plated, passivated

D (T) mm	a <sup>1)</sup> mm	Packs of	Max. PCB depth mm	Model No. RP	
				3 U	6 U
175	150	1	160	3688.100	3688.102
235	210	1	220	3688.101	3688.103

<sup>1)</sup> a = Distance between the first and last mounting hole.

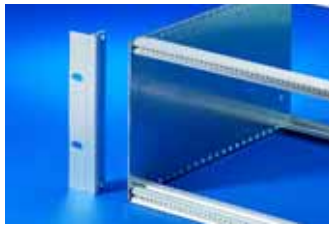


#### + Accessories:

Flange for Ripac ECO, see page 562.

# Subracks, individual components

## Side panels and flanges

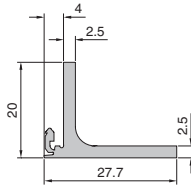


### Flange, 482.6 mm (19") for Ripac ECO

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated

U	Packs of	Model No. RP
3	1	<b>3688.110</b>
6	1	<b>3688.111</b>



### Handles

#### for subracks and component shelves

For fitting on the subrack flange with handle holes and on all component shelves.

**Material:**  
Die-cast zinc

**Surface finish:**  
Spray-finished, silver-grey

**Supply includes:**  
Assembly parts.

For	Packs of	Model No. RP
Subracks 3 U and 4 U	2	<b>3636.010</b>
Component shelves		
Subracks 6 U and 7 U	2	<b>3666.010</b>



### Trim section, rear

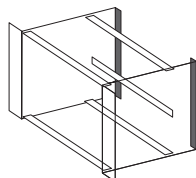
To fit all subrack versions. Ensures 84 HP fit at the rear of the subrack. With integral channel to accommodate EMC gaskets.

**Material:**  
Extruded aluminium section

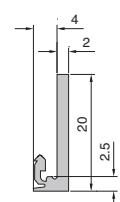
**Surface finish:**  
Clear-chromated

For all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks

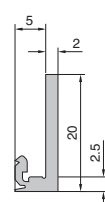
U	Model No. RP	
	Packs of 1	Packs of 2
2	<b>3684.633</b>	-
3	<b>3684.634</b>	<b>3685.276</b>
4	<b>3684.635</b>	-
6	<b>3684.636</b>	<b>3685.277</b>
7	<b>3684.637</b>	-
9	<b>3684.638</b>	-
10	<b>3684.639</b>	-
11	<b>3684.640</b>	-



Ripac ECO



Ripac Vario

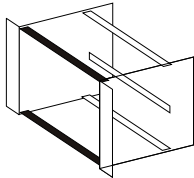


For Ripac ECO subracks

U	Packs of	Model No. RP
3	1	<b>3688.112</b>
6	1	<b>3688.113</b>

### Accessories:

EMC gaskets, vertical,  
see page 572.



### Front horizontal rail (A)

To accommodate guide rails and for the attachment of front panels.

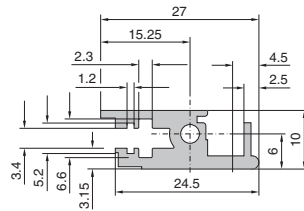
- Front projection 2.5 mm corresponding to IEC 60 297-3
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
4 (left)	1	<b>3684.592</b>
4 (right)	1	<b>3684.955</b>
8 (left)	1	<b>3684.593</b>
8 (right)	1	<b>3684.956</b>
12	1	<b>3684.594</b>
16	1	<b>3684.595</b>
20	1	<b>3684.596</b>
21	1	<b>3685.985</b>
40	1	<b>3684.960</b>
42	1	<b>3684.560</b>
63	1	<b>3684.561</b>
84	1	<b>3684.562</b>
84	2	<b>3685.267<sup>1)</sup></b>
192	1	<b>3688.000<sup>2)</sup></b>

<sup>1)</sup>Including 4 assembly screws

<sup>2)</sup>Anodised



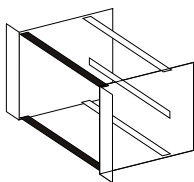
**Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.



**Accessories:**

Threaded inserts (packs of 1), see page 570.



### Front horizontal rail, with double screw fastening (A1)

To accommodate guide rails and for the attachment of front panels. The double screw fastening ensures a high level of stability even under extreme loads.

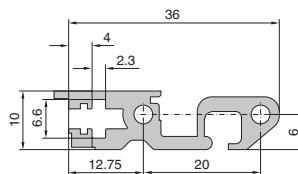
- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B
- Front projection 2.5 mm corresponding to IEC 60 297-3-101
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated



Usable width (HP)	Packs of	Model No. RP
84	1	<b>9908.721</b>



**Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

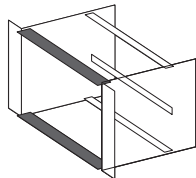


**Accessories:**

Threaded inserts, Model No. RP 3684.610 (packs of 1), see page 570.

# Subracks, individual components

## Horizontal rails



### Front horizontal rail, with 10 mm extension (B)

for type IV, IVs and VII injector/extractor handle

To accommodate guide rails and for the attachment of front panels.

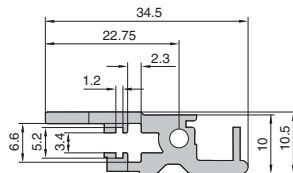
- Front projection and pitch pattern of holes based on IEEE 1101.10 and IEC 60 297-3-101, for the use of injector/extractor handles type IV and VII
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

#### Material:

Extruded aluminium section

#### Surface finish:

Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
40	1	<b>3684.961</b>
42	1	<b>3684.565</b>
63	1	<b>3684.566</b>
84	1	<b>3684.567</b>
84	2	<b>3685.269<sup>1)</sup></b>
192	1	<b>3688.001<sup>2)</sup></b>

<sup>1)</sup>Including 4 assembly screws

<sup>2)</sup>Anodised



#### Also required:

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.



#### Accessories:

Threaded inserts (packs of 1), see page 570.



### Double front horizontal rail, with 10 mm extension (B1)

To accommodate guide rails and for the attachment of front panels.

- Front projection and pitch pattern of holes based on IEEE 1101.10 and IEC 60 297-3-101, for the use of injector/extractor handles type IV and VII
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

#### Material:

Extruded aluminium section

#### Surface finish:

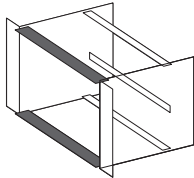
Clear-chromated

Usable width (HP)	Packs of	Model No. RP
84	1	<b>3687.724</b>



#### Also required:

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.



### Front horizontal rail, with 10 mm extension (B2), with double screw fastening

for type IV, IVs and VII injector/extractor handle

To accommodate guide rails and for the attachment of front panels. The double screw fastening ensures a high level of stability even under extreme loads.

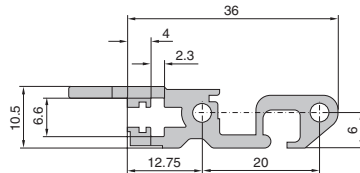
- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B
- Front projection and pitch pattern of holes based on IEC 60 297-3-101, for the use of injector/extractor handles type IV and VII
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated



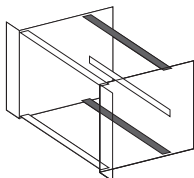
Usable width (HP)	Packs of	Model No. RP
84	1	9908.722

**! Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

**+ Accessories:**

Threaded inserts, Model No. RP 3684.610 (packs of 1), see page 570.



### Rear horizontal rail (C1)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes.

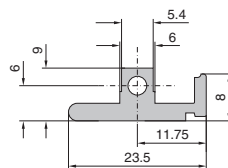
- Tapped holes M2.5 on a 1 HP pitch pattern
- HP pitch pattern of holes for the precise installation of guide rails
- M2.5 thread for the installation of Z rails or backplanes
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
21	1	3685.991
40	1	3684.962
42	1	3684.570
63	1	3684.571
84	1	3684.572
84	2	3685.268 <sup>1)</sup>
192	1	3688.002 <sup>2)</sup>

<sup>1)</sup> Including 4 assembly screws  
<sup>2)</sup> Anodised

**! Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

# Subracks, individual components

## Horizontal rails

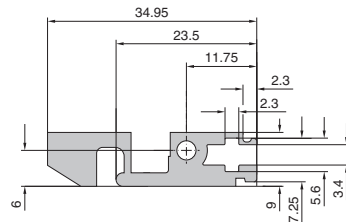
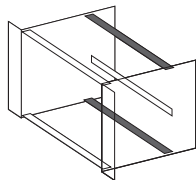


### Rear horizontal rail, reinforced version (C2)

For use with high loads.

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
42	1	3687.604
63	1	3687.605
84	1	3687.606

#### ! Also required:

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

#### + Accessories:

Threaded inserts (packs of 2), see page 570.



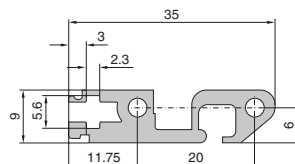
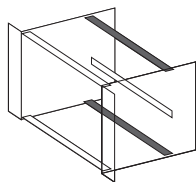
### Rear horizontal rail, with double screw fastening (C6)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes. The double screw fastening ensures a high level of stability even under extreme loads.

- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 60 155), Category 1, Class B
- Tapped holes M2.5 on an HP pitch pattern
- HP pitch pattern of holes for the precise installation of guide rails
- M2.5 thread for the installation of Z rails or backplanes
- M4 thread on end face
- Straight-through core hole

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
84	1	9908.723

#### ! Also required:

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

#### + Accessories:

Threaded inserts, Model No. RP 3604.830 (packs of 2), see page 570.



### Rear horizontal rail, with channel, for Ripac ECO (C4)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes.

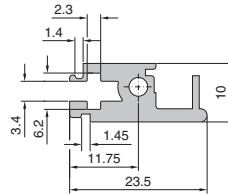
- HP pitch pattern of holes for the precise installation of guide rails
- Channel for slide-in covers
- For mounting backplanes/Z rails, threaded inserts (RP 3684.610) are additionally required
- M4 thread on end face
- Straight-through core hole
- Not suitable for mounting under covers

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated



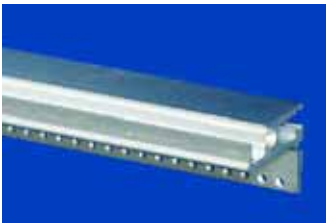
Usable width (HP)	Packs of	Model No. RP
84	1	3688.104

**! Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

**+ Accessories:**

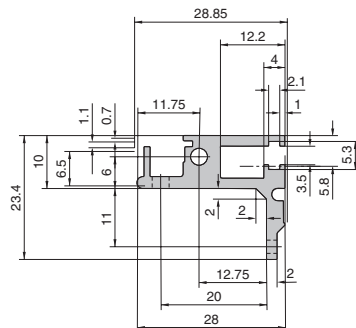
Threaded inserts, Model No. RP 3684.610 (packs of 1), see page 570.



### Rear horizontal rail, with integral Z rail, for Ripac ECO (C5)

To accommodate guide rails. Integral Z rail for mounting connectors to IEC 60 603-2.

- HP pitch pattern of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for connector mounting
- M4 thread on end face
- Straight-through core hole



Usable width (HP)	Packs of	Model No. RP
84	1	9901.991

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated

**! Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

# Subracks, individual components

## Horizontal rails



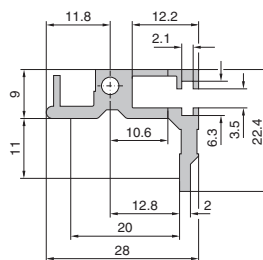
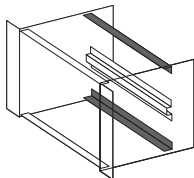
### Rear horizontal rail, with integral Z rail (C3)

To accommodate guide rails. Integral Z rail for mounting connectors to IEC 60 603-2.

- HP pitch pattern of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for connector mounting
- M4 thread on end face
- Straight-through core hole

**Material:**  
Extruded aluminium section

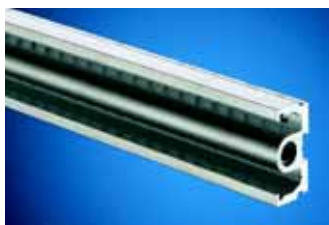
**Surface finish:**  
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
42	1	<b>3686.191</b>
63	1	<b>3686.919</b>
84	1	<b>3686.159</b>

**! Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.



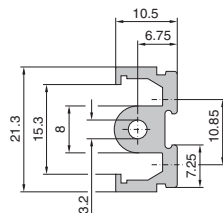
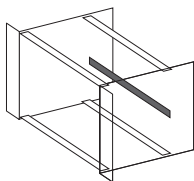
### Rear horizontal rail, centre (D1)

When using 6 U PCBs or box-type plug-in units. Facility for the attachment of Z rails, insulating strips or conductive strips.

- 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP for cutting to the required length

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
40	1	<b>3684.963</b>
42	1	<b>3684.580</b>
63	1	<b>3684.581</b>
84	1	<b>3684.582</b>
84	1	<b>3685.270<sup>1)</sup></b>
858.5 mm	1	<b>3684.579</b>
192	1	<b>3688.003<sup>2)</sup></b>

<sup>1)</sup>Including 2 assembly screws  
<sup>2)</sup>Anodised

**! Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.



### Rear horizontal rail, centre, with integral Z rail (D2)

When using 6 U PCBs or box-type plug-in units. Integral Z rail for mounting connectors to IEC 60 603-2.

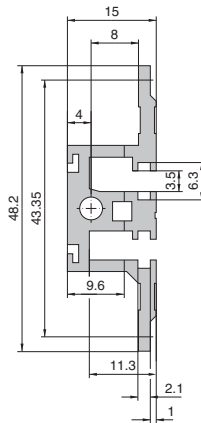
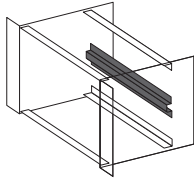
- 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated



Usable width (HP)	Packs of	Model No. RP
42	1	<b>3687.600</b>
63	1	<b>3687.601</b>
84	1	<b>3687.602</b>
858.5 mm	1	<b>3687.603</b>



**Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.



### Rear adaptor rail, centre (E)

When subdividing 6 U into 2 x 3 U, the adaptor rail accommodates the guide rails when fastened to the centre horizontal rail.

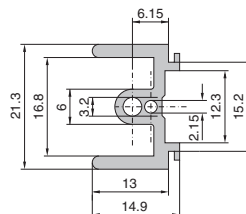
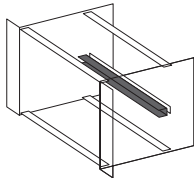
- HP pitch pattern of holes for the precise installation of guide rails
- M4 and M2.5 thread on the end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
12	1	<b>3684.587</b>
16	1	<b>3684.588</b>
20	1	<b>3684.589</b>
40	1	<b>3684.964</b>
42	1	<b>3684.590</b>
63	1	<b>3686.005</b>
84	1	<b>3684.591</b>
84	1	<b>3685.272<sup>1)</sup></b>
858.5 mm	1	<b>3684.584</b>
192	1	<b>3688.004<sup>2)</sup></b>

<sup>1)</sup> Including 2 assembly screws

<sup>2)</sup> Anodised



**Also required:**

Assembly screws M4 x 12, packs of 100, Model No. RP 3654.300, see page 610.

# Subracks, individual components

## Horizontal rails

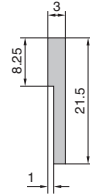


### Z rail for connector IEC 60 603-2 (F)

With 84 x M2.5 threaded holes.

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
4	1	<b>3684.597</b>
8	1	<b>3684.598</b>
20	1	<b>3684.599</b>
40	1	<b>3684.965</b>
42	1	<b>3684.600</b>
63	1	<b>3684.601</b>
84	1	<b>3684.602</b>
84	2	<b>3685.271</b>

### ! Also required:

Assembly screws M2.5 x 6, packs of 100, Model No. RP 3654.340, see page 610.



### Threaded insert (I)

With M2.5 threaded holes on an HP pitch pattern. For sliding into the horizontal rail. There are two threaded insert versions, which are distinguished by their height.

**Material:**  
Sheet steel, zinc-plated

Usable width (HP)	Packs of	Model No. RP	
		6 mm	5 mm
		for horizontal rails	
		Type A, A1, B, B2, C4	Type C2, C6
4	1	<b>3684.603</b>	–
8	1	<b>3684.604</b>	–
12	1	<b>3684.605</b>	–
16	1	<b>3684.606</b>	–
20	1	<b>3684.607</b>	–
21	1	<b>3686.149</b>	–
40	1	<b>3684.966</b>	–
42	1	<b>3684.608</b>	<b>3687.616</b>
63	1	<b>3684.609</b>	<b>3687.617</b>
84	1	<b>3684.610</b>	–
84	2	–	<b>3604.830</b>

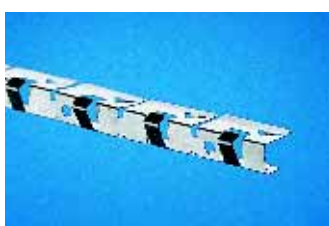


### Identification strip (J)

To identify the slots on the subrack, self-adhesive. The following versions are available.

- 4 mm wide:
- for horizontal rails
  - for rear horizontal rails
- 2 mm wide:
- for front horizontal rails (channel on front face)

For horizontal rail	Width mm	Label	Packs of	Model No. RP
Front	4	1 ... 84	1	<b>3687.575</b>
Rear	4	1 ... 168	1	<b>3687.577</b>
Front	4	84 ... 1	1	<b>3687.574</b>
Front	2	1 ... 84	1	<b>3687.576</b>

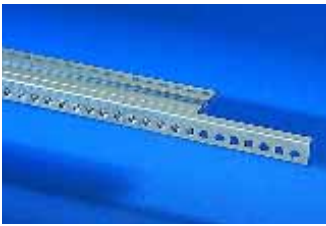


### EMC gaskets, horizontal (K)

see page 573.

# Subracks, individual components

## Horizontal rails



### Conductive strip (H)

For conductive mounting of backplanes.

- 84 HP
- Slides onto the rear horizontal rail

**Material:**  
Aluminium

Usable width (HP)	Packs of	Model No. RP
84	1	<b>3684.612</b>
84	2	<b>3685.273</b>



### Insulating strip (G)

For insulated mounting of backplanes.

- 21 HP
- Slides onto the rear horizontal rail

**Material:**  
Plastic, self-extinguishing to UL 94-V0

Usable width (HP)	Packs of	Model No. RP
21	1	<b>3684.611</b>
21	8	<b>3685.274</b>

Rear horizontal rail, centre, fitted with insulating strips (top) and conductive strips (bottom).



### Punched strip

**Material:**  
Aluminium

Usable width (HP)	Packs of	Model No. RP
84	2	<b>3685.275</b>

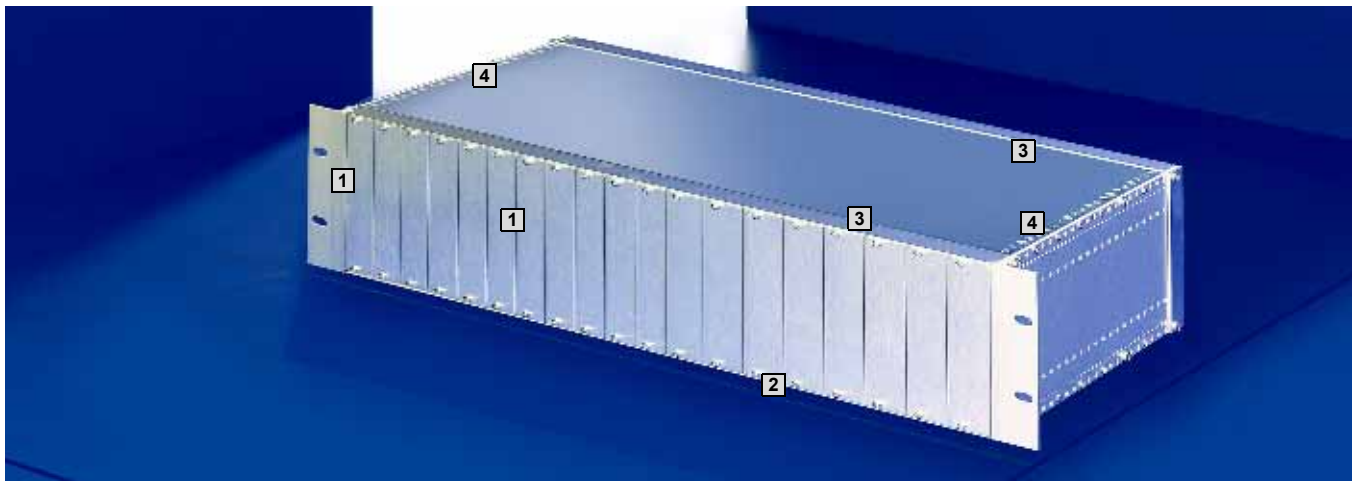


B  
3.5

Subracks, individual components

# Subrack accessories

## Components for EMC installation



EMC (electromagnetic compatibility) refers to the ability of an electrical device to function satisfactorily in its electromagnetic environment without influencing or being influenced by this environment more than is admissible.

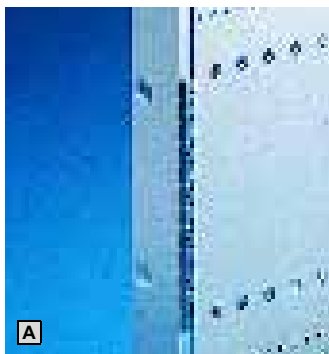
These requirements were taken into account when developing the Rittal subracks. They are made entirely from metal and coated with a conductive surface finish.

Stainless steel EMC gaskets ensure conductive connection of the separate parts.

- 1 EMC gaskets, vertical
- 2 EMC gaskets, horizontal
- 3 EMC gaskets for covers
- 4 Mounting blocks

B  
3.5

Subrack accessories



### EMC gaskets, vertical

To ensure EMC protection between the subrack side panel and the front/rear panels. There are two versions available.

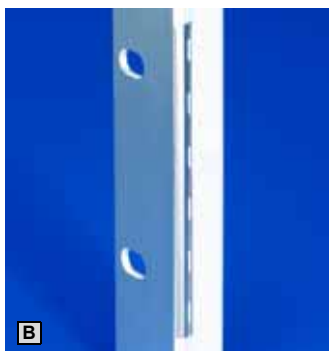
Suitable for mounting on:

- 482.6 mm (19") flanges for subracks
- Corner trims, rear
- EMC contact strip
- U-channel front panels
- Trim panels for Ripac Vario-Module
- Flanges for Ripac Vario-Module

**Material:**

Stainless steel

**German patent**  
no. 101 15 525 and  
no. 198 46 627  
**US patent no. 6,500,012**  
**US patent no. 7,044,753**

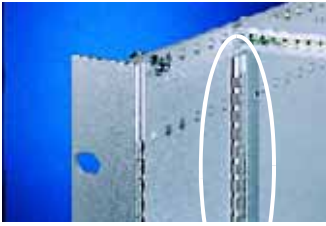


**A** Version 1: Segmented

U	Model No. RP Packs of 1	Model No. RP Packs of 10
1	3686.973	3684.236
2	3686.974	3684.237
3	3686.975	3684.238
4	3686.976	3684.239
6	3686.977	3684.240
7	3686.978	3684.241
9	3686.979	3684.242
10	3686.980	3684.243
11	3686.981	3684.244

**B** Version 2: One-piece

U	Model No. RP Packs of 1
2	3688.610
3	3688.611
4	3688.612
5	3688.613
6	3688.614
7	3688.615
8	3688.634
9	3688.616
10	3688.609
11	3688.633
12	3688.606



### EMC contact strip

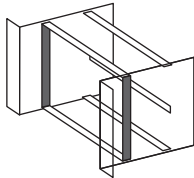
To ensure EMC protection when horizontal rails are set-back. Integral channel to accommodate EMC gaskets.

**Material:**

Extruded aluminium section, clear-chromated

**Note:**

2 sections are required for each subrack.

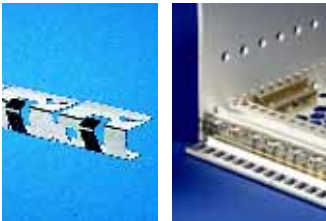


U	Packs of	Model No. RP
3	1	<b>3684.643</b>
6	1	<b>3684.644</b>
9	1	<b>3684.645</b>



**Also required:**

EMC gaskets, vertical, see page 572.  
Assembly screws M3 x 6, packs of 100, Model No. RP 3684.233, see page 610.



### EMC gaskets, horizontal (K)

For horizontal EMC protection. For snap-fastening onto the front horizontal rails.

**Material:**

Stainless steel

**European patent no. 0 937 375**

**with validity for DE**

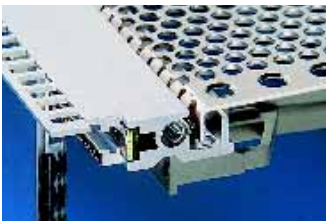
**US patent no. 6,137,052**

**Chinese patent**

**no. ZL 97 1 98582.0**



Usable width (HP)	Packs of	Model No. RP
For top/bottom horizontal rail		
40	1	<b>3684.974</b>
84	1	<b>3684.808</b>
84	10	<b>3684.246</b>
For sub-division of 6 U into 2 x 3 U, between 2 horizontal rails		
84	1	<b>3685.789</b>
84	10	<b>3685.229</b>



### EMC gaskets for covers

For EMC shielding between the horizontal rails and covers.

**Material:**

Stainless steel



HP	Packs of	Model No. RP
84	10	<b>3684.245</b>



### Mounting blocks

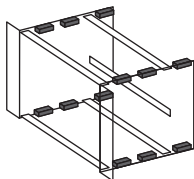
For mounting covers, versions 1 – 4, on the subrack side panel.

**Material:**

Die-cast zinc, nickel-plated

**Note:**

For EMC applications, mounting blocks must be fitted across the entire subrack depth. The table here shows the number of mounting blocks required to install 1 cover plate with EMC shielding.



	Packs of	Model No. RP
Mounting blocks 28.5 mm long	10	<b>3684.234</b>



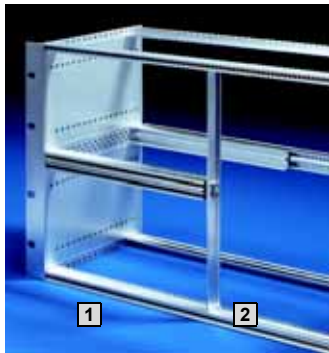
**Also required:**

Assembly screws M3 x 6, packs of 100, Model No. RP 3684.233, see page 610.

Number of mounting blocks for max. EMC protection	Cover plate depth mm
4	142
8	192
10	212
12	252
14	272
16	312
18	332
20	372
24	432
28	492
32	552

# Subrack accessories

## Mounting kits



### Vertical divider kit

For the combined installation of single and double Euroboards in 6 U and 9 U subracks.

**Material:**  
Aluminium, clear-chromated

**Supply includes:**  
2 front horizontal rails,  
1 adaptor rail,  
2 threaded inserts,  
1 vertical support (from 12 HP),  
assembly parts.

**+ Accessories:**

Front panel, see page 574.  
EMC gaskets, horizontal, see page 573.

6 U (2 x 3 U)

HP	HP	Model No. RP
1 (2 x 3 U)	2 (6 U)	
14	68	3684.220
21	61	3684.221
28	54	3684.222
40	42	3684.223
42	40	3684.224

9 U (1 x 6 U + 1 x 3 U)

HP	HP	Model No. RP
(9 U)	(1 x 6 + 1 x 3 U)	
80	4	3684.225
76	8	3684.226
70	12	3684.227
66	16	3684.228
62	20	3684.229



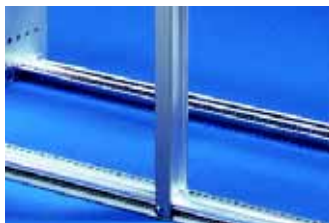
### Vertical support

Required for the combined installation of single, double and triple Euroboards in one subrack.

**Material:**  
Aluminium, extruded

**Surface finish:**  
Clear-chromated

U	Packs of	Model No. RP
6	1	3684.678
9	1	3684.679



### Front panel

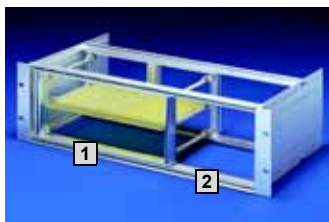
To conceal the vertical support of the vertical divider kit.

**Material:**  
Aluminium, anodised

**Supply includes:**  
Assembly parts.

U	HP	Packs of	Model No. RP
6	2	1	3685.176
9	2	1	3685.286

**EMC version,**  
see page 604.



### Horizontal mounting kit

For the horizontal installation of 6 U/9 U PCBs in 3 U/4 U subracks.

**1** Horizontal installation space:  
3 U subrack: 20 HP (5 slots)  
4 U subrack: 28 HP (7 slots)

**2** Vertical installation space:  
(when installing double Eurocards)  
31 HP (without trim frame)  
28 HP (with trim frame)

**Material:**  
Aluminium, clear-chromated

**Supply includes:**  
2 horizontal rails, front,  
2 horizontal rails, rear,  
1 or 2 horizontal rails, rear, centre,  
2 threaded inserts,  
4 or 6 insulating strips,  
4 connecting parts,  
assembly parts.

For backplane assembly  
with standard horizontal rail, front

U horizontal	Model No. RP	
	For 3 U subrack	For 4 U subrack
6	3684.206	3684.208
9	3684.207	3684.209

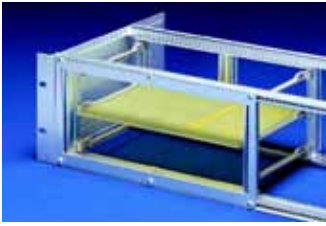
For backplane assembly,  
front horizontal rail with 10 mm extension

U horizontal	Model No. RP	
	For 3 U subrack	For 4 U subrack
6	3684.210	3684.212
9	3684.211	3684.213

**+ Accessories:**

Trim frame,  
see page 575.

## Mounting kits/guide rails



### Trim frame

#### for horizontal mounting kit

To conceal the front sections of the horizontal mounting kit.

#### Material:

Aluminium, anodised

U horizontal	HP	Model No. RP	
		For 3 U subrack	For 4 U subrack
6	56	<b>3685.783</b>	<b>3685.785</b>
9	84	<b>3685.784</b>	<b>3685.786</b>



#### Also required:

Collar screws and plastic collars, packs of 100 sets, Model No. RP 3658.160, see page 610.



### Trim frame, vented

#### for horizontal mounting kit

To conceal the front sections of the horizontal mounting kit.

#### Material:

Aluminium

#### Surface finish:

Anodised, clear-chromated (EMC version)

#### Supply includes:

EMC accessories (with EMC version).



U horizontal	HP	Model No. RP	
		For 3 U subrack	For 4 U subrack
6	63	<b>3685.787</b>	<b>3685.788</b>



#### Also required:

Collar screws and plastic collars, packs of 100 sets, Model No. RP 3658.160, see page 610.

#### EMC version

U horizontal	HP	Model No. RP	
		For 3 U subrack	For 4 U subrack
6	63	<b>3685.291</b>	<b>3685.292</b>



#### Also required:

Centering screws, packs of 100, Model No. RP 3687.050, see page 611.



### Plastic guide rails

For 160, 220 and 280 mm PCBs up to 2 mm nominal thickness.

2 versions are available:

- Snap-in fastening and screw-fastening
- Snap-in fastening

#### Material:

Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP	
		Snap-in fastening/ screw-fastening <sup>1)</sup>	Snap-in fastening
160	1	<b>3684.657</b>	<b>3684.654</b>
220	1	<b>3684.658</b>	<b>3684.655</b>
280	1	<b>3684.659</b>	<b>3684.656</b>



#### Also required:

<sup>1)</sup> Assembly screws, packs of 100, Model No. RP 3654.360, see page 610.



### Plastic guide rails

#### for contact spring fitting

For 160, 220 and 280 mm PCBs up to 2 mm nominal thickness. By installing contact springs, an electrical connection can be made between the PCB and the assembly.

#### Material:

Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP
160	1	<b>3684.660</b>
220	1	<b>3684.661</b>
280	1	<b>3684.662</b>



#### Accessories:

Contact springs, see page 576.

# Subrack accessories

## Guide rails

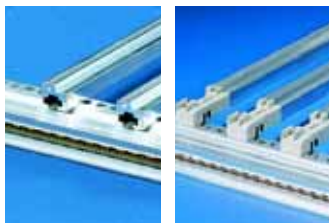


### Contact springs

For electrical connection between the PCB and the subrack, or to discharge static charges from the PCB.

Suitable for installation in "guide rails for contact spring fitting" and "end pieces for guide rails".

Packs of	Model No. RP
10	<b>3687.726</b>



1

2

### Guide rails, aluminium

For high loads. Suitable for nominal PCB thicknesses from 1.6 mm. A distinction is made between guide rails for and without end pieces. The guide rails without end pieces are screw-fastened directly into the horizontal rail.

**Material:**  
Aluminium

PCB depth mm	Packs of	Model No. RP	
		1 Without end piece <sup>1)</sup>	2 For end pieces
160	1	<b>3687.526</b>	<b>3684.663</b>
220	1	<b>3687.527</b>	<b>3684.664</b>
280	1	<b>3687.528</b>	<b>3684.665</b>
1000	1	<b>3684.666</b>	–

#### ! Also required:

<sup>1)</sup> Screw M2.5 x 6, packs of 100, Model No. RP 3654.340, see page 610.

<sup>1)</sup> Nut M2.5, packs of 100, Model No. RP 3654.370, see page 610.

<sup>1)</sup> Retaining cage M2.5, packs of 100, Model No. RP 9901.417, see page 610.



### End pieces

**for guide rails, aluminium**  
To discharge static charges, contact springs RP 3687.726 may be used.

**Material:**  
Polycarbonate, base material UL 94-V1

	Packs of	Model No. RP
End piece, front	1	<b>3684.668</b>
End piece, rear	1	<b>3685.759</b>

#### + Accessories:

Contact springs, see page 576.



### Keyable guide rails, plastic,

Guide rails 4 HP, keyable, to IEEE 1101.10.

- For 1.6 – 2.0 mm nominal thickness
- Chambers for the installation of keys
- Option of installing ESD contacts to discharge static charges
- Narrow design for maximum air flow
- Various colour variants to identify the slots:
  - Red for system slot
  - Green for power supply
  - Yellow and grey for board-type plug-in units

**Material:**  
Polycarbonate, base material to UL 94-V0

**Note:**  
Only for use in conjunction with type IV, IVs, VII injector/extractor handles.

#### + Accessories:

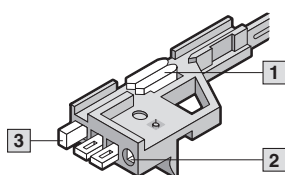
Keys, see page 580.  
ESD contact, see page 579.  
Extractor handles type IV, IVs, VII, see page 594 – 596.



1 ESD contact for guide rails

2 ESD contact for front panel

3 Keys



For PCB depth mm	Packs of	Model No. RP			
		Grey	Red	Green	Yellow
160	10	<b>3685.257</b>	–	–	–
220	10	<b>3685.258</b>	–	–	–
280	10	<b>3685.259</b>	–	–	–
160	1	<b>3684.669</b>	<b>3686.063</b>	<b>3688.055</b>	<b>3689.089</b>
220	1	<b>3684.953</b>	<b>9902.240</b>	–	<b>3689.091</b>
280	1	<b>3684.954</b>	–	–	<b>3689.093</b>



### Keyable guide rails

#### with 1/2 HP offset

Guide rails with 1/2 HP offset for use in telecom applications. This allows PCBs to be populated on both sides. Green guide rails with offset are prescribed in the CompactPCI specification (PICMG 2.11) for the installation of power supply units.

- For 1.6 – 2.0 mm PCB thickness
- 4 HP x 160/220 mm
- Narrow design for maximum air flow
- Chambers for the installation of keys
- Option of installing ESD contacts to discharge static charges

#### Material:

Polycarbonate, base material to UL 94-V0

#### Note:

Only suitable for use in conjunction with extractor handles type IV, IVs, VII with 1/2 HP offset.

For PCB depth mm	Packs of	Colour	Model No. RP
160	1	Grey	<b>3686.137</b>
		Yellow	<b>3689.090</b>
		Green	<b>3687.832</b>
220	1	Grey	<b>3686.136</b>
		Yellow	<b>3689.092</b>



#### Accessories:

Keys, see page 580.

ESD contact, see page 579.

Extractor handles type IVs, VII with 1/2 HP offset, see page 595 – 596.



### Keyable guide rails

#### for rear I/O assemblies

Guide rails 4 HP, keyable, to IEEE 1101.10. Prepared to accommodate a ground contact for assembly of a plug-type connection.

- For 1.6 – 2.0 mm nominal thickness
- For 80 mm deep PCBs
- Chambers for the installation of keys
- Option of installing ESD contacts to discharge static charges
- Narrow design for maximum air flow
- For CPCI or VME applications

#### Material:

Polycarbonate, base material to UL 94-V0

#### Note:

Only for use in conjunction with type IV, IVs, VII injector/extractor handles.

Colour	For PCB depth mm	Packs of	Model No. RP	
			Guide rails	
			Top	Bottom
Grey	80	1	<b>3687.936</b>	<b>3687.937</b>
Yellow	80	1	<b>3689.097</b>	<b>3689.098</b>



#### Accessories:

Keys, see page 580.

ESD contact, see page 579.

Ground contact, see page 577.

Extractor handles type IV, IVs, VII, see page 594 – 596.



### Ground contact

Ensures a plug-in ground connection. UL-approved.

#### Material:

Die-cast zinc

#### Supply includes:

Grounding bush, contact spring.

#### Note:

Only suitable for use in conjunction with keyable guide rails for rear I/O assemblies.

	Model No. RP	
	1 set	50 sets
Grounding bush and contact spring	<b>3689.036</b>	<b>3687.951</b>



#### Also required:

Assembly screws 3.5 x 12 mm, packs of 50, Model No. RP 3684.109, see page 610.



# Subrack accessories

## Guide rails



### Keyable guide rails, aluminium, three-part

Keyable guide rails with aluminium centre part, for high mechanical loads. Suitable for 1.6 – 2.0 mm PCB thickness.

The guide rails are compiled from the following individual components:

- 1 2 end pieces,
- 2 1 aluminium centre part,
- 3 Insulating centre part(s)



### 1 End pieces

#### for three-part guide rails

For 1.6 – 2.0 mm PCB thickness.

#### Material:

Polycarbonate, base material to UL 94-V0



### 2 Aluminium centre part

#### for three-part guide rails

For 1.6 – 2.0 mm PCB thickness.

#### Material:

Aluminium, unplated



### 3 Insulated centre part

#### for three-part guide rails

The insulating centre part is pushed onto the aluminium centre piece. Length: 60 mm.

#### Material:

Plastic, self-extinguishing to UL 94-V0

	Packs of	Model No. RP
	10 pairs	<b>3685.265</b>
Front end piece	1	<b>3685.790</b>
Rear end piece	1	<b>3684.670</b>

#### Note:

A front and a rear end piece is required for each guide rail.

For PCB depth mm	Model No. RP	
	Packs of 1	Packs of 10
220	<b>3684.673</b>	<b>3685.260</b>
280	<b>3684.674</b>	<b>3685.261</b>
340	<b>3684.675</b>	<b>3685.262</b>
400	<b>3684.676</b>	<b>3685.263</b>
1000	<b>3684.672</b>	–

Packs of	Model No. RP
1	<b>3684.677</b>
10	<b>3685.264</b>

For PCB depth mm	Number of insulating strips required
160	1
220	2
280	3
340	4
400	5



### Guide rails for 4.4"

Snap-fastening guide rails to accommodate PCBs and assemblies with a height of 4.4".

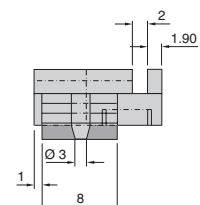
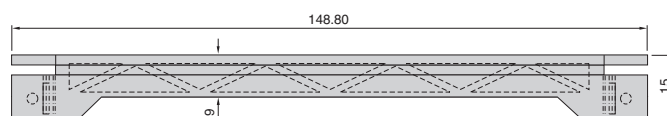
#### Material:

Macrolon

#### Colour:

Dark grey

For PCB depth mm	Packs of	Model No. RP
160	1	<b>3686.990</b>





### Guide rails

#### for box type plug-in units

For PCB thickness 1.6 mm.  
For insertion into covers with vent slots  
(from 12 HP), see page 608.

**Material:**  
Noryl

For PCB depth mm	Packs of	Model No. RP
160	10	<b>3606.140</b>
220	10	<b>3606.200</b>



### Air block panel

#### for unused slots

To conceal unused slots and prevent unwanted airflow. The air block panel simply snaps into position on the guide rails.

**Material:**  
Polycarbonate, self-extinguishing to UL 94-V0

**Colour:**  
Blue

**Note:**  
Not suitable for use in conjunction with guide rails with 1/2 HP offset.

For guide rail	Packs of	Model No. RP
160 mm	1	<b>3687.924</b>



### ESD contacts

#### for installation in keyable guide rails.

To discharge static charges.

- 1 ESD clip in the guide rail**  
For permanent direct discharge from the PCB.
- 2 ESD contact for front panel**  
To discharge static charges in conjunction with the ESD pin. For insertion into the end piece of the guide rail.
- 3 ESD pin**
- 4 Keys**

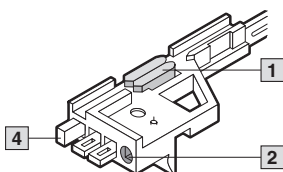
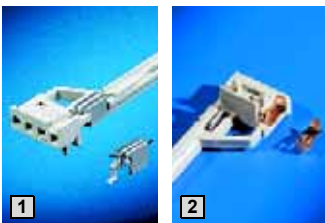
**Material:**

- 1** Stainless steel
- 2** Tin bronze, tin-plated

ESD contact for	Packs of	Model No. RP
Guide rail	50	<b>3684.204</b>
Front panel	50	<b>3684.205</b>

**Note:**

Only for use in conjunction with extractor handle with ESD pin (type IV, IVs, VII), see page 594 – 596.



# Subrack accessories

## Keying/PCB ejectors

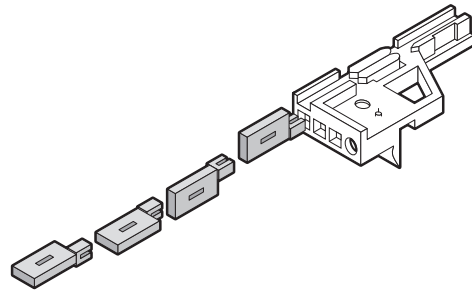


### Keys

Keys are used for coding of board-type plug-in units and prevent the use of assemblies in incorrect slots. The keys are inserted into the chambers of the keyable guide rails and the injector/extractor handles, types IV, IVs and VII (4 positions are possible). This produces 64 keying combinations per guide rail. When keying the top and bottom guide rail, 4096 potential combinations are possible.

**Standards:**  
IEEE 1101.10, IEC 60 297-5-104

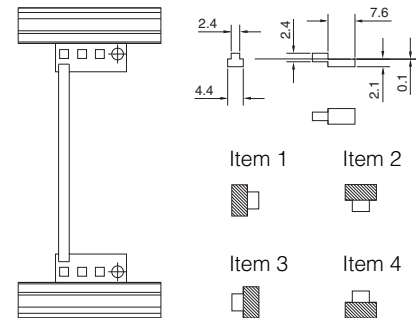
**Material:**  
Plastic, PBTP, basic material to UL 94-V0



Colour	Packs of	Model No. RP
Grey	100	<b>3684.325</b>
Red	100	<b>3684.326</b>

### + Accessories:

Keying tool, see below.



### Keying tool

For simple assembly of keys. Up to 3 coding keys may be fitted simultaneously. An integral alignment pin makes positioning easier.

**Material:**  
Polycarbonate, base material to UL 94-V0

Packs of	Model No. RP
1	<b>3687.956</b>

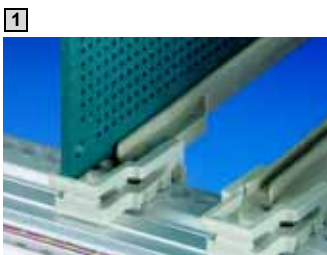


### PCB ejector/retainer

The two-piece PCB ejector is used for securing and extracting PCBs without front panels. The base section may also be used separately for board retention only.

**Material:**  
Polycarbonate, base material to UL 94-V0

	Packs of	Model No. RP
<b>1</b> PCB ejector/retainer	10	<b>3687.014</b>
<b>2</b> PCB retainer	10	<b>3687.052</b>





### Covers

#### For Ripac ECO subracks

To cover the overall subrack depth.

- Optionally perforated or solid
- The plates slide into the horizontal rails
- Mounting clips may optionally be used for additional support.

#### Material:

Sheet steel, zinc-plated, passivated



HP	For side panel depth mm	Model No. RP	
		Perforated	Solid
84	175	<b>3688.105</b>	<b>3688.107</b>
84	235	<b>3688.106</b>	<b>3688.108</b>

#### Accessories:

Mounting clips

Packs of	Model No. RP
1	<b>3688.109</b>

Assembly screws for mounting clips

Packs of	Model No. RP
1	<b>9902.188</b>



### Covers version 1

For all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks

To cover the overall subrack depth (EMC application) or as connector protection.

- Flat design for top and bottom
- Optionally solid or perforated
- For mounting on the subrack side panel with the aid of mounting blocks.

#### Material:

1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

#### Each set includes:

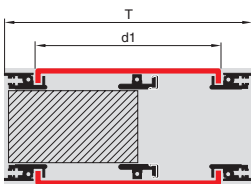
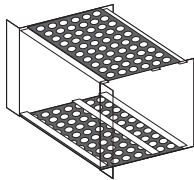
2 cover plates,  
8 mounting blocks @ 28.5 mm,  
24 assembly screws.

#### Each individual unit includes:

1 cover.

#### Note:

For EMC applications, additional mounting blocks must be fitted across the entire subrack depth.



HP	For side panel depth (T) mm	Cover depth (d1) mm	Model No. RP			
			Single piece <sup>1)</sup>		Set	
			Perforated	Solid	Perforated	Solid
21	225	192	<b>3687.618</b>	<b>3687.620</b>	-	-
21	285	252	<b>3687.619</b>	<b>3687.621</b>	-	-
42	175	142	<b>3684.957</b>	<b>3687.626</b>	-	-
42	225	192	<b>3687.623</b>	<b>3687.627</b>	-	-
42	245	212	<b>3684.958</b>	<b>3687.628</b>	-	-
42	285	252	<b>3685.642</b>	<b>3687.629</b>	-	-
84	175	142	<b>3684.681</b>	<b>3684.680</b>	<b>3685.245</b>	<b>3685.250</b>
84	225	192	<b>3684.694</b>	<b>3684.683</b>	-	-
84	235	202	<b>3685.851</b>	<b>3685.813</b>	-	-
84	245	212	<b>3684.695</b>	<b>3684.684</b>	<b>3685.246</b>	<b>3685.251</b>
84	285	252	<b>3684.696</b>	<b>3684.685</b>	-	-
84	295	262	<b>3685.855</b>	<b>3685.814</b>	-	-
84	305	272	<b>3685.852</b>	<b>3684.686</b>	<b>3685.247</b>	<b>3685.252</b>
84	345	312	<b>3684.698</b>	<b>3684.687</b>	-	-
84	365	332	<b>3685.853</b>	<b>3684.688</b>	<b>3685.248</b>	<b>3685.253</b>
84	405	372	<b>3684.700</b>	<b>3684.689</b>	<b>3685.249</b>	<b>3685.254</b>
84	465	432	<b>3684.701</b>	<b>3684.691</b>	-	-
84	525	492	<b>3684.702</b>	<b>3684.692</b>	-	-
84	585	552	<b>3684.703</b>	<b>3684.693</b>	-	-

#### Also required:

- <sup>1)</sup> Mounting blocks, see page 573.
- <sup>1)</sup> EMC gaskets for cover plates, see page 573.
- <sup>1)</sup> Assembly screws, packs of 100, Model No. RP 3684.233, see page 610.

# Subrack accessories

## Covers



### Covers version 2

For all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks

#### To cover the PCB depth.

- Flat design for top and bottom
- Optionally solid or perforated
- For mounting on the subrack side panel with the aid of mounting blocks.

#### Material:

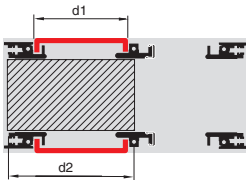
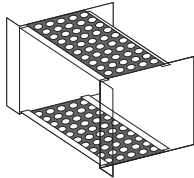
1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

#### Each set includes:

2 cover plates,  
8 mounting blocks @ 28.5 mm,  
24 assembly screws.

#### Each individual unit includes:

1 cover.



HP	For PCB depth (d2) mm	Cover depth (d1) mm	Model No. RP			
			Single piece <sup>1)</sup>		Set	
			Perforated	Solid	Perforated	Solid
21	160	142	<b>3687.630</b>	<b>3687.634</b>	-	-
21	220	202	<b>3687.631</b>	<b>3687.635</b>	-	-
42	160	142	<b>3684.957</b>	<b>3687.626</b>	-	-
42	220	202	<b>3687.633</b>	<b>3687.637</b>	-	-
42	280	262	<b>3687.638</b>	<b>3687.639</b>	-	-
84	160	142	<b>3684.681</b>	<b>3684.680</b>	<b>3685.245</b>	<b>3685.250</b>
84	220	202	<b>3685.851</b>	<b>3685.813</b>	-	-
84	280	262	<b>3685.855</b>	<b>3685.814</b>	-	-
84	340	322	<b>3685.856</b>	-	-	-
84	400	382	<b>3685.857</b>	-	-	-



#### Also required:

<sup>1)</sup> Mounting blocks, see page 573.

<sup>1)</sup> Assembly screws, packs of 100, Model No. RP 3684.233, see page 610.

3.5 B Subrack accessories



### Covers version 3

For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.

#### To cover the overall subrack depth (EMC application).

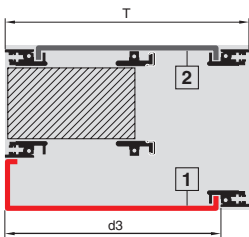
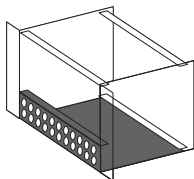
- Cover with 1 U edge fold (item 1), to conceal the 1 U area in the subrack
- A version 1 flat cover (item 2) is additionally required.
- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 1), 7 U (6 + 1)
- For mounting on the subrack side panel with the aid of mounting blocks.

#### Material:

1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

#### Note:

For EMC applications, mounting blocks must be fitted across the entire subrack depth.

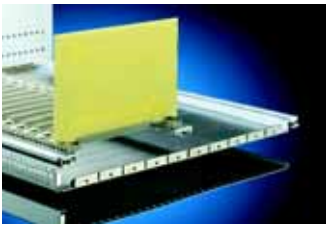


HP	For side panel depth (T) mm	Cover depth (d3) mm	Model No. RP	
			Perforated	Solid
84	285	270	<b>3684.720</b>	<b>3684.714</b>
84	345	330	<b>3684.721</b>	<b>3684.715</b>
84	405	390	<b>3684.722</b>	<b>3684.716</b>
84	465	450	<b>3684.723</b>	<b>3684.717</b>
84	525	510	<b>3684.724</b>	<b>3684.718</b>
84	585	570	<b>3684.725</b>	<b>3684.719</b>



#### Also required:

Mounting blocks, see page 573.  
EMC gaskets for covers, see page 573.  
Assembly screws, packs of 100, Model No. RP 3684.233, see page 610.  
Cover, version 1, see page 581.



### Covers version 4

For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.

**To cover the overall subrack depth** (EMC application).

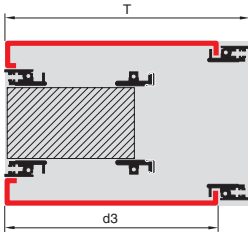
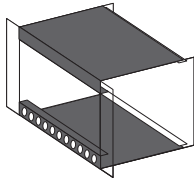
- Cover top/bottom with 1/2 U edge fold to cover the 1/2 U section in the subrack
- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 2 x 1/2), 7 U (6 + 2 x 1/2)
- For mounting on the subrack side panel with the aid of mounting blocks.

**Material:**

1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

**Note:**

For EMC applications, mounting blocks must be fitted across the entire subrack depth.



HP	For side panel depth (T) mm	Cover depth (d3) mm	Model No. RP	
			Perforated	Solid
84	285	270	<b>3684.732</b>	<b>3684.726</b>
84	345	330	<b>3684.733</b>	<b>3684.727</b>
84	405	390	<b>3684.734</b>	<b>3684.728</b>
84	465	450	<b>3684.735</b>	<b>3684.729</b>
84	525	510	<b>3684.736</b>	<b>3684.730</b>
84	585	570	<b>3684.737</b>	<b>3684.731</b>



**Also required:**

Mounting blocks, see page 573.  
 EMC gaskets for covers, see page 573.  
 Assembly screws, packs of 100, Model No. RP 3684.233, see page 610.



### Covers version 5

**(snap-fastening)**

For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.

**To cover the overall subrack depth or PCB depth.**

Simple assembly:

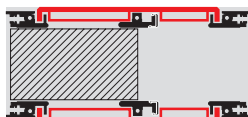
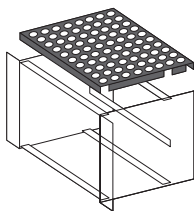
- Side edge fold with half shears facilitates fast assembly (without mounting blocks) by simply snap-fastening.
- Side notches for fitting horizontal rails in 160, 220 or 280 mm depth.
- Optionally solid or perforated.

**Material:**

1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

**Supply includes:**

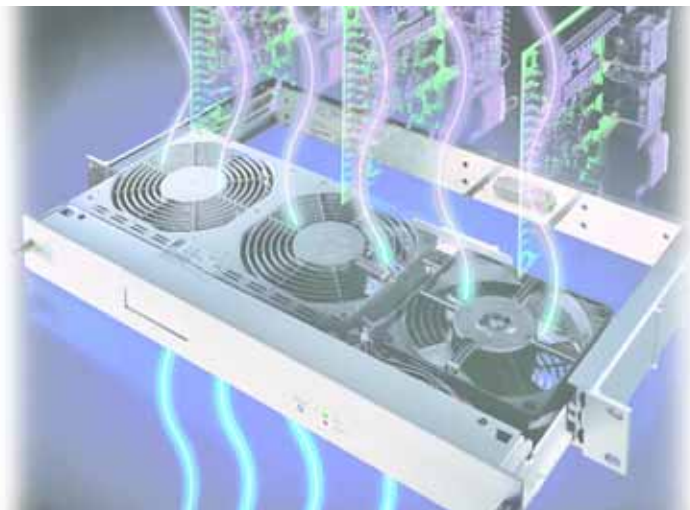
2 gaskets



HP	Position of side notches for horizontal rails mm	For side panel depth mm	Model No. RP	
			Perforated	Solid
21	160	175/185	<b>3687.624</b>	–
21	160/220	235	<b>3687.692</b>	–
42	160	175/185	<b>3687.625</b>	–
42	160/220	235	<b>3687.677</b>	–
42	160	245	<b>3687.640</b>	–
84	160	175/185	<b>3687.641</b>	<b>3687.647</b>
84	160	245	<b>3687.642</b>	<b>3687.648</b>
84	160/220	235	<b>3687.643</b>	<b>3687.649</b>
84	160/220	285	<b>3687.644</b>	<b>3687.650</b>
84	160/220	305	<b>3687.645</b>	<b>3687.651</b>
84	160/220/280	345	<b>3687.646</b>	<b>3687.652</b>

# Subrack climate control

## Features



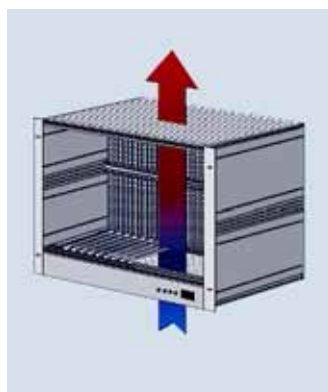
Heat shortens the service life of equipment leading to failure, and also diminishes the high performance of electronics.

The problem lies in high heat losses and compact installation spaces. For this reason, effective heat dissipation is vital to ensure long service life and operational reliability.

As well as the components shown below, Rittal system climate control also offers a range of other 482.6 mm (19") cooling systems and rack-mounted fans.

System climate control, see from page 628.

3 B  
Subrack climate control



### Vertical ventilation



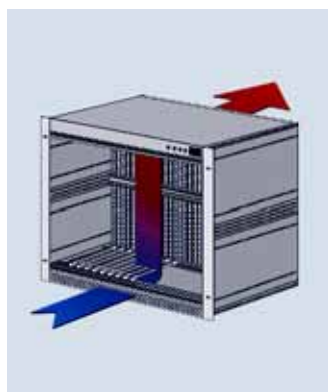
**Rack-mounted fans** are installed below the subrack in the enclosure. This ensures permanent air circulation to prevent the formation of hotspots.



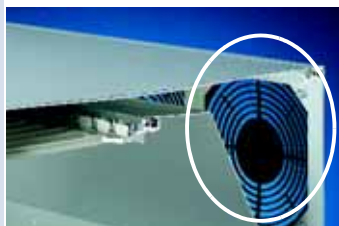
**Fans** are installed directly in the subrack, below or above the PCBs, with the aid of fan mounting plates, thereby preventing heat accumulation.



**AC and DC fans** in various output categories, can be retrofitted.



### Diagonal cooling



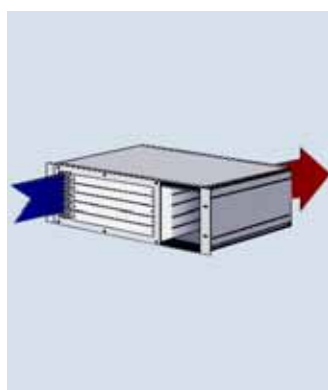
The **air baffle plate** in combination with . . .



. . . the **air block panel** ensures targeted air routing inside the subrack.



**RiCool high-capacity fan** for heat losses of 700 W or more.



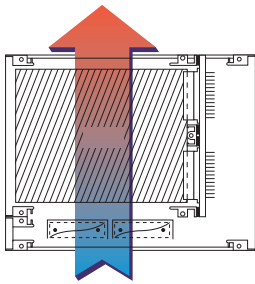
**Front and rear panels** for ventilation – also available in an EMC version.



**Rear panels** with cut-outs for the installation of 80 or 120 mm fans.



A **finger guard or EMC shielding plate** may be used to cover the fan cut-outs.



## Vertical cooling from bottom to top

- Air flow via normal convection or forced cooling devices in the enclosure or housing outside of the subrack.

- Vertical forced air flow, supported by fans installed at the bottom of the subrack (1 U). For the cooling of enclosures and housings, rack-mounted fans, see page 699 and rack-mounted cooling units, see page 698, are available.



## Fan mounting plate

For the installation of 120 mm fans and filter modules in 4 U and 7 U subracks. For mounting on the subrack side panels.

**Material:**  
1.5 mm aluminium, anodised

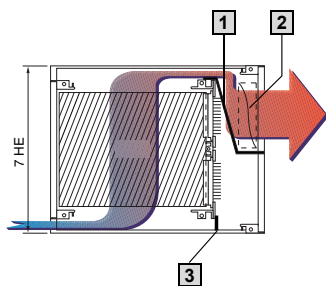
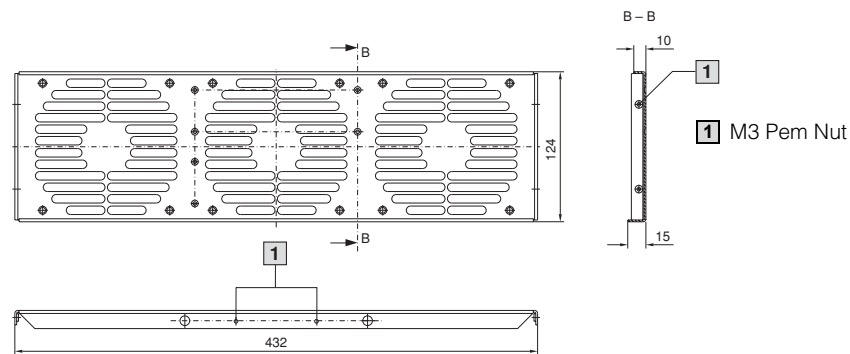


U	For PCB depth mm	No. of fan mounting plates required	HP	Model No. RP
1	160	1	84	3684.317
	220	1		
	280	2		
	340	2		
	400	3		

### ! Also required:

1 terminal block is required for each subrack.

Packs of	Model No. RP
1	3686.805

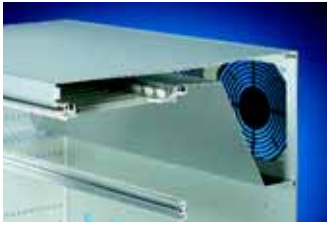


## Diagonal cooling from front to back

Diagonal air flow from front to back allows individual cooling of PCBs in vertical installation position. An air baffle and air partition ensure controlled air flow.

- 1 Air baffle, see page 586.
- 2 Fan (mounted on the rear panel), see page 588.
- 3 Air partition, see page 586.

# Subrack climate control



## Air baffle

For controlled air flow in 7 U subracks.  
For mounting on subrack side panels with the aid of mounting blocks.

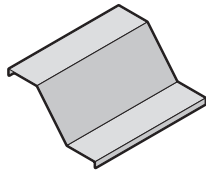
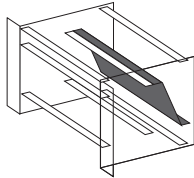
**Material:**  
1 mm aluminium

**Supply includes:**  
Assembly parts.

Subrack depth mm	Model No. RP
285	<b>3685.302</b>
345	<b>3685.303</b>
405	<b>3684.320</b>
465	<b>3684.321</b>
525	<b>3684.322</b>

**!** **Also required:**

Mounting blocks,  
see page 573.



## Air partition

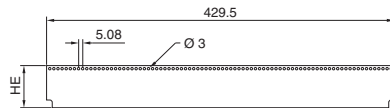
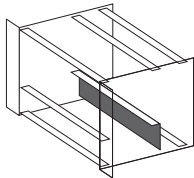
For controlled air flow in the subrack. The partitions are mounted on the horizontal rails together with the backplanes.

**Material:**  
Epoxy

U	Model No. RP
1/2	<b>3684.870</b>
1	<b>3684.871</b>
3	<b>3684.872</b>

**!** **Also required:**

Fastening screws and washers, packs of 100,  
Model No. RP 3684.019,  
see page 610.



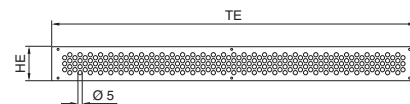
HE = U



## Front/rear panels for ventilation

**Material:**  
2.5 mm aluminium

**Surface finish:**  
Anodised,  
clear-chromated (EMC version)



### Scope of supply of the EMC version:

1 front panel,  
1 contact strip,  
1 gasket strip,  
1 vertical EMC gasket,  
assembly parts.

**EMC**

U	HP	Packs of	Model No. RP
1	84	1	<b>3684.812</b>
2	84	1	<b>3684.813</b>
3	84	1	<b>3684.814</b>

**!** **Also required:**

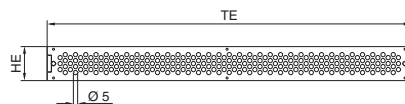
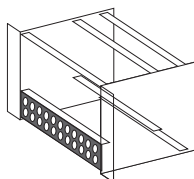
Screws and collars,  
packs of 100 sets, Model No. RP 3658.160,  
see page 610.

### EMC version:

U	HP	Packs of	Model No. RP
1	84	1	<b>3684.281</b>
2	84	1	<b>3684.282</b>
3	84	1	<b>3684.283</b>

**!** **Also required:**

For EMC centering screws,  
see page 611.



HE = U  
TE = HP

3 B  
5

Subrack climate control

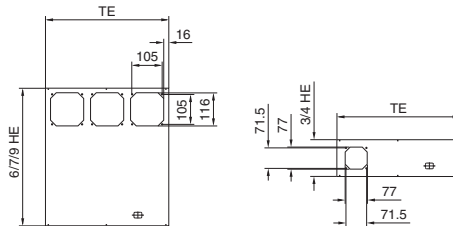
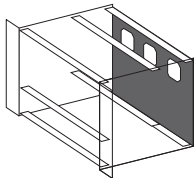


## Rear panels for fan installation

**Material:**  
2.5 mm aluminium

**Surface finish:**  
Anodised,  
clear-chromated (EMC version)

**EMC version supply includes:**  
1 rear panel,  
1 contact strip,  
1 gasket strip,  
1 vertical EMC gasket,  
assembly parts.



HE = U  
TE = HP



U	HP	For fans mm	Packs of	Model No. RP
3	85	80	1	<b>3684.839</b>
4	85	80	1	<b>3684.840</b>
6	85	120	1	<b>3684.841</b>
7	85	120	1	<b>3684.842</b>

**! Also required:**

Screws and collars,  
packs of 100 sets, Model No. RP 3658.160,  
see page 610.

**EMC version:**

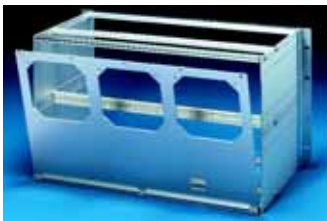
U	HP	For fans mm	Packs of	Model No. RP
3	84	80	1	<b>3684.284</b>
4	84	80	1	<b>3684.285</b>
6	84	120	1	<b>3684.286</b>
7	84	120	1	<b>3684.287</b>

**! Also required:**

For EMC centering screws,  
see page 611.

**+ Accessories:**

Fans,  
see page 588.



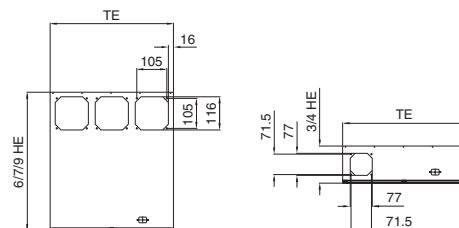
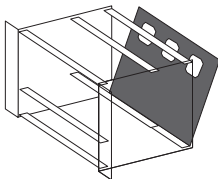
## Rear panels, horizontally hinged for fan installation

**Material:**  
2.5 mm aluminium

**Surface finish:**  
Anodised,  
clear-chromated (EMC version)

**Supply includes:**  
1 rear panel,  
1 set of hinges,  
assembly parts.

**EMC version supply includes:**  
1 rear panel,  
1 contact strip,  
1 gasket strip,  
1 vertical EMC gasket,  
1 set of hinges,  
assembly parts.



HE = U  
TE = HP



U	HP	For fans mm	Packs of	Model No. RP
3	85	80	1	<b>3684.304</b>
4	85	80	1	<b>3684.305</b>
6	85	120	1	<b>3684.306</b>
7	85	120	1	<b>3684.307</b>

**! Also required:**

Screws and collars,  
packs of 100 sets, Model No. RP 3658.160,  
see page 610.

**EMC version:**

U	HP	For fans mm	Packs of	Model No. RP
3	84	80	1	<b>3684.311</b>
4	84	80	1	<b>3684.312</b>
6	84	120	1	<b>3684.313</b>
7	84	120	1	<b>3684.314</b>

**! Also required:**

For EMC centering screws,  
see page 611.

**+ Accessories:**

Fans,  
see page 588.

# Subrack climate control



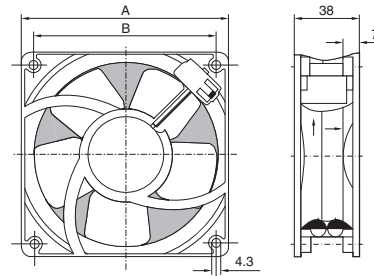
## AC fans

For subracks and microcomputer systems.

**Supply includes:**  
1 fan without connection cable.

**! Also required:**

Assembly screws,  
packs of 1 set, Model No. RP 3685.197,  
see page 611.



### AC fans

Fan mm	Dimensions		Bearing	Rated voltage V/Hz	Power watts	Noise level dB (A)	Temperature range °C	Volume flow m³/h	Model No. RP
	A mm	B mm							
80	79.5	71.5	Ball bearing	115/60	11.0	42	-40 to +95	57	<b>3686.645</b>
80	79.5	71.5	Ball bearing	230/50	12.0	37	-40 to +90	48	<b>3686.646</b>
120	119.0	105.0	Ball bearing	115/60	18.0	51	-40 to +90	180	<b>3686.643</b>
120	119.0	105.0	Ball bearing	230/50	19.0	47	-40 to +85	160	<b>3686.644</b>

### Connection cable

Cable length mm	Packs of	Model No. RP
610	1	<b>3686.658</b>
1000	1	<b>3686.659</b>

B  
3.5

Subrack climate control



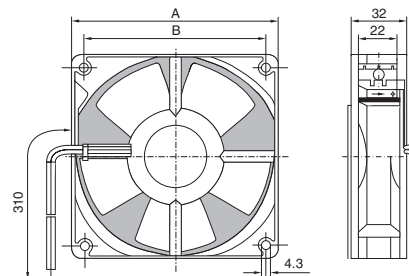
## DC fans

Optionally available with temperature-dependent speed control via additional temperature sensor.

**Supply includes:**  
1 fan with connection cable (310 mm).

**! Also required:**

Assembly screws,  
packs of 1 set, Model No. RP 3685.197,  
see page 611.  
Temperature sensor for DC fans with speed control, see page 589.



### DC fan with speed control and alarm signal

Fan mm	Dimensions		Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m³/h	Model No. RP
	A mm	B mm									
80	79.5	71.5	Ball bearing	12	8.0 – 14.0	2.2	34	-20 to +65	65	48	<b>3686.649</b>
80	79.5	71.5	Ball bearing	24	21.6 – 26.4	2.4	36	-20 to +65	65	54	<b>3686.650</b>
120	119.0	104.8	Ball bearing	12	8.0 – 12.6	5.4	45	-20 to +65	65	170	<b>3686.647</b>
120	119.0	104.8	Ball bearing	24	21.0 – 27.0	5.4	45	-20 to +65	65	170	<b>3686.648</b>

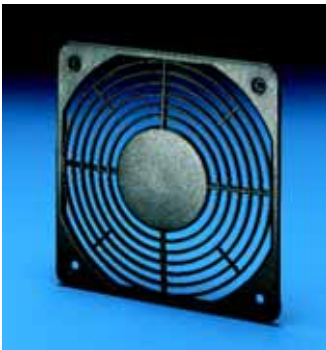
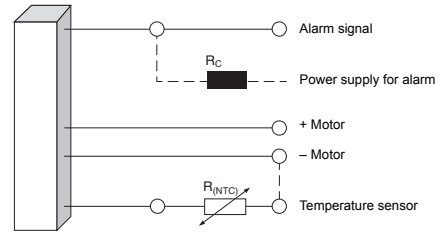
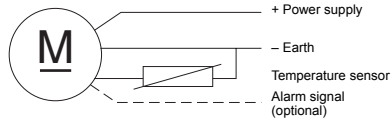
### DC fan without speed control and without alarm signal

Fan mm	Dimensions		Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m³/h	Model No. RP
	A mm	B mm									
80	79.5	71.5	Ball bearing	12	6.0 – 15.0	1.8	34	-20 to +75	75	48	<b>3687.612</b>
80	79.5	71.5	Ball bearing	24	12.0 – 28.0	2.1	34	-20 to +75	75	48	<b>3687.613</b>
120	119.0	104.8	Ball bearing	12	6.0 – 15.0	2.6	39	-20 to +75	75	140	<b>3687.614</b>
120	119.0	104.8	Ball bearing	24	12.0 – 28.0	2.6	39	-20 to +75	75	140	<b>3687.615</b>

## Temperature sensor

For DC fans 12/24 V with speed control.

Voltage	Packs of	Model No. RP
12 V/24 V (DC)	1	<b>3686.657</b>



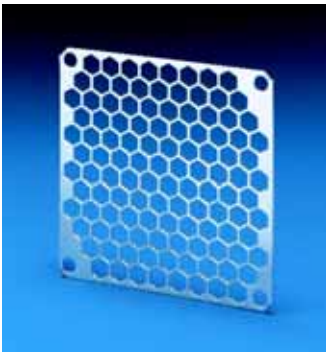
## Finger guard

For AC fans and DC fans.

**Material:**  
Polyamide, self-extinguishing to UL 94-V0

**Colour:**  
Black

For fans mm	Packs of	Model No. RP
80	1	<b>3686.656</b>
120	1	<b>3686.655</b>

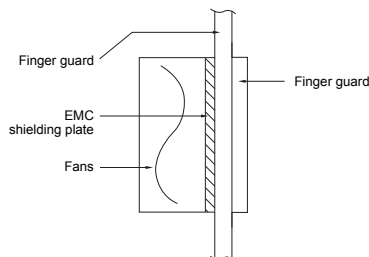


## EMC shielding plate

For AC fans and DC fans.

**Material:**  
1 mm aluminium, clear-chromated

For fans mm	Packs of	Model No. RP
80	1	<b>3686.359</b>
120	1	<b>3686.329</b>



## Air block panel

for unused slots  
see page 579.



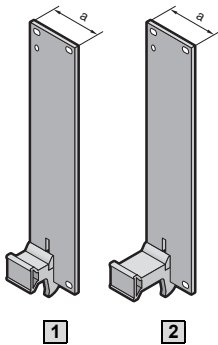


### Flat front panels with type I or II extractor handle

Complete modular systems

**Material:**  
Front panel: 2.5 mm aluminium, anodised  
Handle: Plastic, black

**Supply includes:**  
1 front panel,  
2 handles (1 with 3 U),  
1 set of assembly parts,  
1 PCB holder (for 3 U).

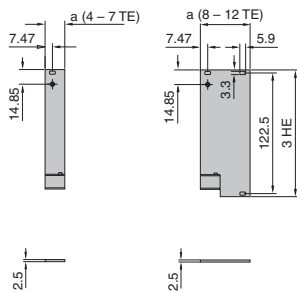


U	HP	a mm	Model No. RP	
			1 Type I	2 Type II
3	4	20.0	3684.330	3684.358
3	5	25.1	3684.331	3684.359
3	6	30.2	3684.332	3684.360
3	7	35.3	3684.333	3684.361
3	8	40.3	3684.334	3684.362
3	10	50.5	3684.335	3684.363
3	12	60.7	3684.336	3684.364
6	4	20.0	3684.337	3684.365
6	5	25.1	3684.338	3684.366
6	6	30.2	3684.339	3684.367
6	7	35.3	3684.340	3684.368
6	8	40.3	3684.341	3684.369
6	10	50.5	3684.342	3684.370
6	12	60.7	3684.343	3684.371
9	4	20.0	-	3684.372
9	8	40.3	-	3684.373

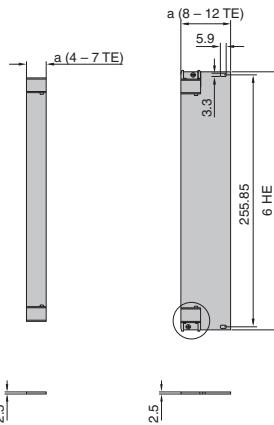
B  
3.5  
Subrack accessories

### Front panels with type I, II or IV, IVs, VII extractor handles

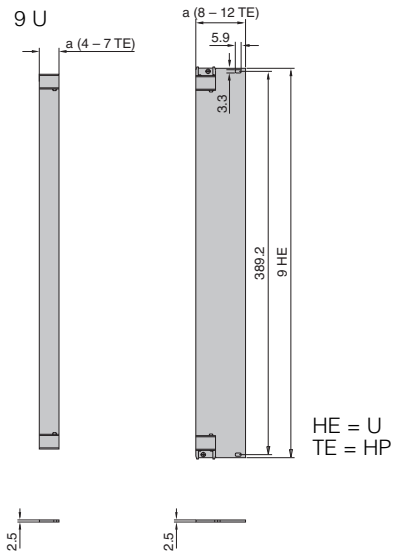
3 U



6 U

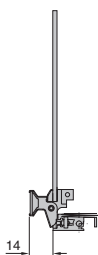


9 U

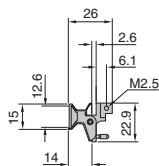


### Extractor handles

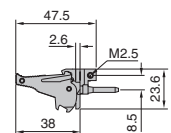
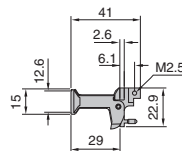
Type I



Type II

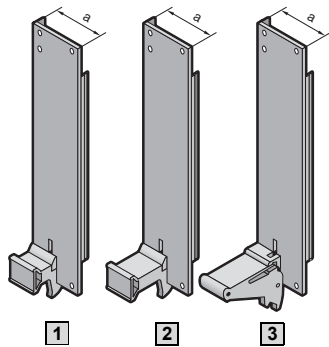


Type IV/IVs



# Subrack accessories

## Front panels, handles



### U-channel front panels with type I, II extractor handle or type IV injector/extractor handle

Complete modular systems

#### Material:

Front panel: Extruded aluminium section,  
clear-chromated, or aluminium film  
Handle: Plastic, black

#### Supply includes:

- 1 front panel,
- 2 handles (1 with 3 U),
- 1 EMC gasket, vertical, version 1
- 1 set of assembly parts,
- 1 PCB holder (for 3 U).



#### Note:

Detailed description of the laminated front panels,  
see page 590.

U	HP	a mm	Model No. RP				
			1 Type I		2 Type II	3 Type IV <sup>1)</sup>	
			Clear- chromated	Laminated		Clear- chromated	Laminated
3	4	20.0	3684.344	9909.268	3684.374	3684.413	9909.280
3	5	25.1	3684.345	9909.269	3684.375	3684.414	9909.281
3	6	30.2	3684.346	9909.270	3684.376	3684.415	9909.282
3	7	35.3	3684.347	–	3684.377	3684.416	–
3	8	40.3	3684.348	9909.271	3684.378	3684.417	9909.283
3	10	50.5	3684.349	9909.272	3684.379	3684.418	9909.284
3	12	60.7	3684.350	9909.273	3684.380	3684.419	9909.285
6	4	20.0	3684.351	9909.274	3684.381	3684.420	9909.286
6	5	25.1	3684.352	9909.275	3684.382	3684.421	9909.287
6	6	30.2	3684.353	9909.276	3684.383	3684.422	9909.288
6	7	35.3	3684.354	–	3684.384	3684.423	–
6	8	40.3	3684.355	9909.277	3684.385	3684.424	9909.289
6	10	50.5	3684.356	9909.278	3684.386	3684.425	9909.290
6	12	60.7	3684.357	9909.279	3684.387	3684.426	9909.291
9	4	20.0	–	–	3684.388	3684.427	9909.292
9	5	25.1	–	–	–	3684.428	9909.293
9	6	30.2	–	–	–	3684.429	9909.294
9	7	35.3	–	–	–	3684.430	–
9	8	40.3	–	–	3684.389	3684.431	9909.295
9	10	50.5	–	–	–	3684.432	9909.296
9	12	60.7	–	–	–	3684.433	9909.297

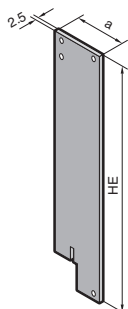
<sup>1)</sup> Can only be inserted in conjunction with front horizontal rails, with 10 mm roof (B), see page 564.

Detailed drawing,  
see page 593.

### Flat front panels for type I, II, IV, IVs or VII handles

#### Material:

2.5 mm aluminium, anodised



HP	a mm	Model No. RP		
		3 U	6 U	9 U
4	20.0	3685.500	3685.508	3685.516
5	25.1	3685.501	3685.509	3685.517
6	30.2	3685.502	3685.510	3685.518
7	35.3	3685.503	3685.511	3685.519
8	40.3	3685.504	3685.512	3685.520
10	50.5	3685.505	3685.513	3685.521
12	60.7	3685.506	3685.514	3685.522

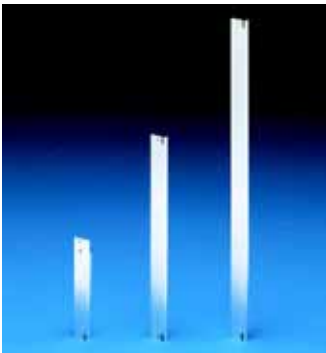
Detailed drawing,  
see page 591.



#### Also required:

From front panel widths of 4 HP (at 3 U) and 7 HP (at 6 U):  
Collar screws and plastic collars,  
packs of 100 sets, Model No. RP 3658.160,  
see page 610.  
For 3 U front panels:  
PCB holder set, see page 602.

HE = U



### U-channel front panels for type I, II, IV, IVs or VII handles

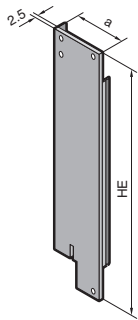
**Material:**  
2.5 mm extruded aluminium section,  
clear-chromated or with aluminium film.



**Note:**

Detailed description of the laminated front panels,  
see page 590.

HP	a mm	Model No. RP					
		3 U		6 U		9 U	
		Clear- chromated	Laminated	Clear- chromated	Laminated	Clear- chromated	Laminated
4	20.0	<b>3685.524</b>	<b>9909.298</b>	<b>3685.532</b>	<b>9909.304</b>	<b>3685.540</b>	<b>9909.310</b>
5	25.1	<b>3685.525</b>	<b>9909.299</b>	<b>3685.533</b>	<b>9909.305</b>	<b>3685.541</b>	<b>9909.311</b>
6	30.2	<b>3685.526</b>	<b>9909.300</b>	<b>3685.534</b>	<b>9909.306</b>	<b>3685.542</b>	<b>9909.312</b>
7	35.3	<b>3685.527</b>	–	<b>3685.535</b>	–	<b>3685.543</b>	–
8	40.3	<b>3685.528</b>	<b>9909.301</b>	<b>3685.536</b>	<b>9909.307</b>	<b>3685.544</b>	<b>9909.313</b>
10	50.5	<b>3685.529</b>	<b>9909.302</b>	<b>3685.537</b>	<b>9909.308</b>	<b>3685.545</b>	<b>9909.314</b>
12	60.7	<b>3685.530</b>	<b>9909.303</b>	<b>3685.538</b>	<b>9909.309</b>	<b>3685.546</b>	<b>9909.315</b>



**Also required:**

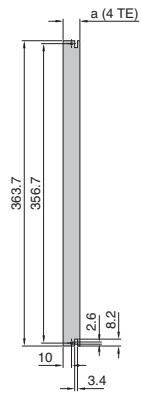
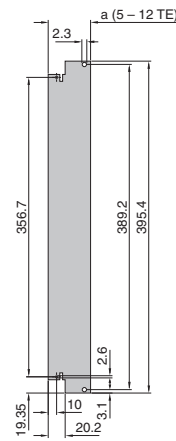
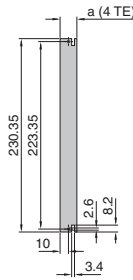
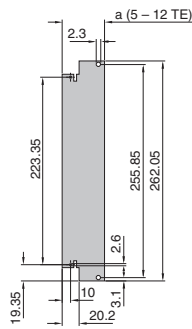
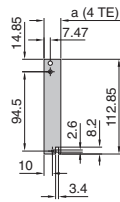
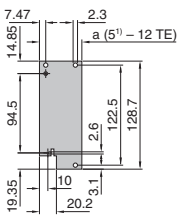
From front panel width 4 HP (for 3 U) and 8 HP (for 6 U):  
Slotted centering screws,  
packs of 100, Model No. RP 3687.050,  
see page 611.  
Posidrive centering screws,  
packs of 100, Model No. RP 3687.051,  
see page 611.  
EMC gaskets,  
see page 572.  
For 3 U front panels:  
PCB holder set,  
see page 602.

**Front panels for type I, II, IV, IVs or VII handles**

3 U

6 U

9 U



1) 2.3 mm drilled hole not contained in versions 5 – 7 HP.

HE = U  
TE = HP

# Subrack accessories

## Front panels, handles

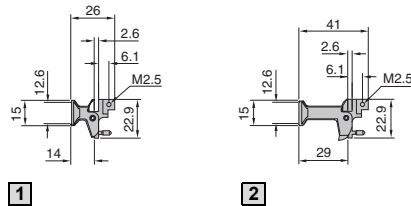
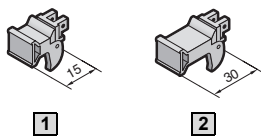


### Extractor handle type I and type II

- Suitable for flat front panels/U-channel front panels
- With removal function
- May be used in combination with horizontal rails with 10 mm extension.

**Supply includes:**  
Assembly parts.

**Note:**  
With 3 U, only one extractor handle is required.



#### 1 Type I extractor handle, 15 mm

Colour	Packs of	Model No. RP
Grey	1	3685.587
Black	1	3685.589

#### 2 Type II extractor handle, 30 mm

Colour	Packs of	Model No. RP
Grey	1	3685.588
Black	1	3685.590

#### + Accessories:

Identification strips for extractor handles, see page 595.



### Injector/extractor handle type IV

#### Handles with micro-switch

For inserting and removing connectors with a large number of pins.

- Insertion/removal function
- Integral microswitch for "live insertion" applications
- Self-activation of the micro-switch during insertion/removal
- ESD pin to dissipate static charges before contacting the connectors and for precise positioning of the board type plug-in unit
- Keyable
- Integral PCB attachment
- Self-locking
- Bayable

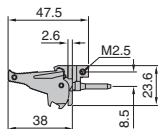
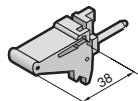
#### Handle without micro-switch

Description see above. Micro-switch, may be retrofitted.

**Supply includes:**  
1 handle without or with micro-switch, assembly parts.

#### Note:

- Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 564.
- With 3 U front panels, only one extractor handle is required.



#### Handles with micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	Top	1	3686.905
Grey	Bottom	1	3686.904
Black	Top	1	3686.907
Black	Bottom	1	3686.906

#### Handle without micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	Top	1	3686.901
Grey	Bottom	1	3686.900
Black	Top	1	3686.903
Black	Bottom	1	3686.902

#### + Accessories:

Keys, see page 580.  
Keyable guide rails, see page 576.  
Micro-switches, see page 596.  
Connector pin for baying, see page 595.



### Injector/extractor handle type IV

#### 8 HP, bayed

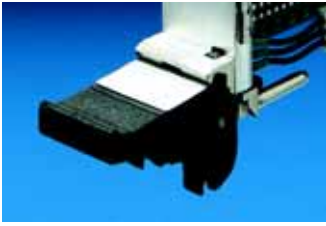
Suitable for front panels 4 HP that must be connected to another mechanically.

**Supply includes:**  
2 bayed handles, fully assembled.

Colour	Installation	Packs of	Model No. RP
Black	Bottom	1	3686.908
Black	Top	1	3686.909

#### + Accessories:

Connector pin for baying, see page 595.



**Identification strips**  
for type I, II extractor handle and  
type IV injector/extractor handle  
Width 4 HP

Packs of	Model No. RP
100	3684.328



### Injector/extractor handle type IVs

**with push-button**

For inserting and removing connectors with a large number of pins. A metal insert ensures reliable functioning, even at forces of up to 815 N.

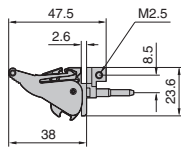
- Insertion/removal function
- Push-button for locking and unlocking the board type plug-in unit (cannot be extracted in the locked position)
- Optionally with 1/2 HP offset PCB attachment, e. g. for component mounting on both sides
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges before contacting the connectors and for precise positioning of the board type plug-in unit
- Keyable
- Integral PCB attachment
- Bayable

**Material:**  
Plastic/metal

**Supply includes:**  
Assembly parts.

**Note:**

- Insertion only when used with front horizontal rails, with 10 mm extension (B), see page 564.
- With 3 U front panels, only one extractor handle is required.



**Handles without offset**

Installation	Packs of	Model No. RP
Top	1	3688.770
Bottom	1	3688.771

**Handles with 1/2 HP offset**

Installation	Packs of	Model No. RP
Top	1	3688.772
Bottom	1	3688.773

**+ Accessories:**

Keys,  
see page 580.  
Keyable guide rails,  
see page 576.  
Keyable guide rails with 1/2 HP offset,  
see page 577.  
Micro-switches,  
see page 596.  
Connector pin for buying,  
see page 595.



### Connection pin

for injector/extractor handles,  
types IV, IVs and VII

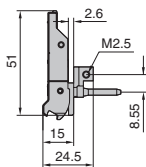
The connection pin can be used to connect injector/extractor handles, types IV, IVs and VII.

**Material:**  
Steel

Packs of	Model No. RP
20	3685.319

# Subrack accessories

## Front panels, handles



### Injector/extractor handle type VII

#### Plastic (telecom)

For inserting and removing connectors with a large number of pins. This handle was specifically designed for use in telecom applications.

- Insertion/removal function
- Optionally with 1/2 HP offset PCB attachment, e. g. for component mounting on both sides
- Minimum front space requirements, due to fold-up handle
- Keyable
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Large labelling area on the front

#### Material:

Plastic

#### Supply includes:

Assembly parts.

#### Note:

Insertion only when used with front horizontal rails, with 10 mm extension (B), see page 564.

#### Handles without offset

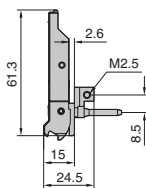
Installation	Packs of	Model No. RP
Top	1	3688.784
Bottom	1	3688.785

#### Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	3688.780
Bottom	1	3688.781

#### + Accessories:

Keys, see page 580.  
Keyable guide rails, see page 576.  
Keyable guide rails with 1/2 HP offset, see page 577.  
Micro-switches, see page 596.  
Connector pin for buying, see page 595.



### Injector/extractor handle type VII

#### Metal (telecom)

For inserting and removing PCBs with a high connector pin-count (up to 815 N). This handle was specifically designed for use in telecom applications.

- Insertion/removal function
- Optionally with 1/2 HP offset PCB attachment, e. g. for component mounting on both sides
- Minimum front space requirements, due to fold-up handle
- Codeable
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Metal design for use in aggressive atmospheres

#### Material:

Die-cast zinc

#### Supply includes:

Assembly parts.

#### Note:

Insertion only when used with front horizontal rails, with 10 mm extension (B), see page 564.

#### Handles without offset

Installation	Packs of	Model No. RP
Top	1	3688.790
Bottom	1	3688.791

#### Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	3688.786
Bottom	1	3688.787

#### + Accessories:

Keys, see page 580.  
Keyable guide rails, see page 576.  
Keyable guide rails with 1/2 HP offset, see page 577.  
Micro-switches, see page 596.  
Connector pin for buying, see page 595.



### Micro-switch

For "live insertion" applications. Installation in injector/extractor handles, types IV, IVs and VII. May also be retrofitted.

#### Technical specifications:

Switching load: 50 mA 30 V DC  
Service life:  
At nominal load: 30.000  
mechanical: 50.000

Packs of	Model No. RP
10	3684.410

#### ! Also required:

Micro-switch mounting clip, see page 597.



### Micro-switch

#### with cable and connector

For "live insertion" applications. Installation in injector/extractor handles, types IV, IVs and VII.

#### Supply includes:

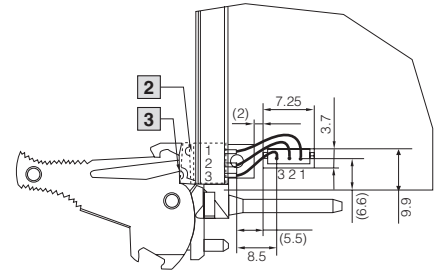
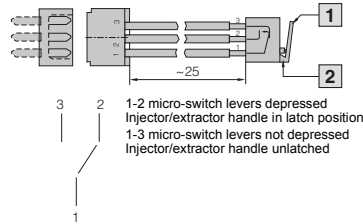
Micro-switch, connector type Molex 51021-0300, mounting clips, 3 cables, 25 mm x #32 AWG, fully assembled.

Packs of	<b>Model No. RP</b>
1 set	<b>3686.536</b>

#### ! Also required:

Micro-switch mounting clip, see page 597.

- 1 Lever not depressed
- 2 Lever hinge
- 3 Lever contact point



### Micro-switch mounting clip

For mounting micro-switches in handles.

Packs of	<b>Model No. RP</b>
10	<b>3684.411</b>



### Plastic covers

#### for PCBs

For mechanical protection of the component side and of the EMC gaskets. Attachment holes as per CPCI or VME-specifications. Optionally available as perforated or solid version.

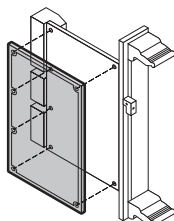
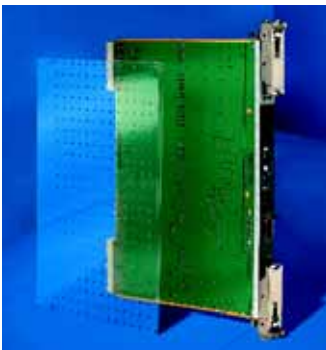
#### Material:

0.3 mm plastic, anti-static  
Maximum temperature up to 65°C

<sup>1)</sup> 0.5 mm plastic, anti-static UL 94-V0, maximum temperature up to 65°C

<sup>2)</sup> 0.5 mm plastic, anti-static UL 94-V0, maximum temperature up to 120°C

For PCBs	Packs of	Model No. RP			
		for CPCI			for VME
		Perforated <sup>1)</sup>	Solid <sup>1)</sup>	Solid	Solid
3 U x 160 mm	1	<b>3687.932</b>	<b>3686.572</b>	<b>3685.966</b>	<b>3685.626</b>
	5	-	-	-	<b>3685.279</b>
3 U x 220 mm	1	-	-	-	<b>3685.805</b>
	5	-	-	-	<b>3685.266</b>
6 U x 80 mm	1	<b>3687.933</b>	<b>3686.573</b>	<b>3686.037</b>	<b>3686.146</b>
	1	<b>3687.934</b>	<b>3686.574</b>	<b>3685.967</b>	<b>3685.627</b>
6 U x 160 mm	1	<b>9905.574<sup>2)</sup></b>	<b>9905.990<sup>2)</sup></b>	-	-
	5	-	-	-	<b>3685.280</b>
6 U x 220 mm	1	-	-	-	<b>3685.824</b>
	5	-	-	-	<b>3685.000</b>



#### ! Also required:

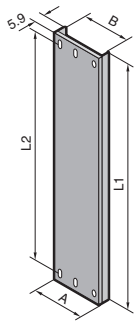
Required for mounting the perforated CPCI covers:

#### Mounting clips

Packs of	<b>Model No. RP</b>
100	<b>3687.955</b>

# Subrack accessories

## Front panels, handles

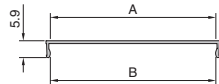
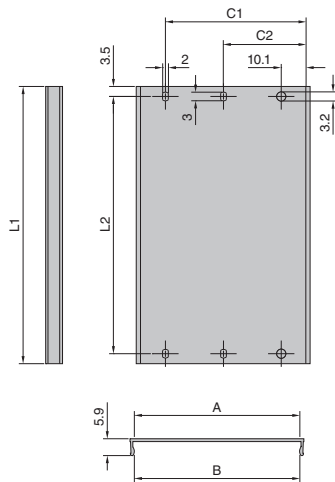


### Front panels for type III extractor handle

**Material:**  
1.0 mm extruded aluminium section

**Surface finish:**  
Untreated

HP	A mm	B mm	C1 mm	C2 mm	Model No. RP		
					3 U	6 U	9 U
3	15.20	12.20	-	-	<b>3685.548</b>	<b>3685.555</b>	-
4	20.22	17.20	-	-	<b>3685.549</b>	<b>3685.556</b>	<b>3685.562</b>
5	25.28	22.28	-	22.68	<b>3685.550</b>	<b>3685.557</b>	<b>3685.563</b>
6	30.36	27.36	-	25.22	<b>3685.551</b>	<b>3685.558</b>	<b>3685.564</b>
8	40.52	37.52	-	30.30	<b>3685.552</b>	<b>3685.559</b>	<b>3685.566</b>
10	50.68	47.68	40.46	25.22	<b>3685.553</b>	<b>3685.560</b>	<b>3685.567</b>
12	60.84	57.84	50.62	30.30	<b>3685.554</b>	<b>3685.561</b>	<b>3685.568</b>
L1 mm					97.00	230.35	363.70
L2 mm					90.00	223.35	356.70



Subrack accessories

3 B

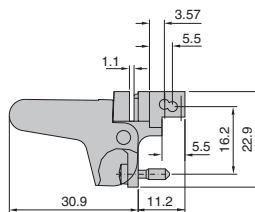
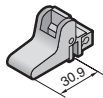


### Type III handle, extractor

**Material:**  
Fibreglass-reinforced polycarbonate  
Base section nickel-plated ABS

**Colour:**  
Grey

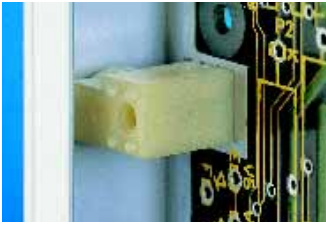
HP	Packs of	Model No. RP
3	1	<b>3685.591</b>
4	1	<b>3685.592</b>



### Covers for panel end spaces

**Material:**  
Fibreglass-reinforced polycarbonate

HP	Width mm	Packs of	Model No. RP
1	5	1	<b>3687.529</b>
2	10.08	1	<b>3687.530</b>
4	20.24	1	<b>3687.531</b>



### Universal holder for front panel support

**Material:**  
Nickel-plated plastic

HP	Packs of	Model No. RP
4	1	3687.545



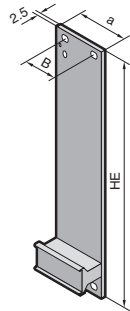
### Flat front panels with type V handle and PCB holder

Complete modular systems

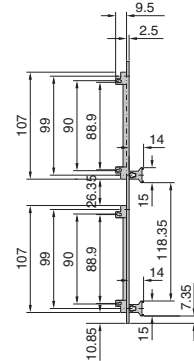
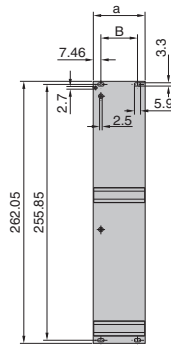
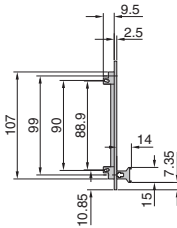
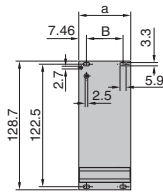
**Material:**  
Front panel: 2.5 mm aluminium, natural-anodised  
Handle: Aluminium, natural-anodised  
PCB holder: Polycarbonate

**Supply includes:**  
1 front panel,  
1 handle (2 with 6 U),  
1 PCB holder (2 with 6 U),  
assembly parts.

HP	a mm	W (B) mm	Model No. RP	
			3 U H = 128.7	6 U H = 262.05
3	14.9	-	<b>3652.000</b>	<b>3652.200</b>
4	20.0	-	<b>3652.010</b>	<b>3652.210</b>
5	25.1	-	<b>3652.020</b>	<b>3652.220</b>
6	30.1	-	<b>3652.030</b>	<b>3652.230</b>
7	35.2	-	<b>3652.040</b>	<b>3652.240</b>
8	40.3	-	<b>3652.050</b>	<b>3652.250</b>
10	50.5	35.6	<b>3652.060</b>	<b>3652.260</b>
12	60.6	45.7	<b>3652.070</b>	<b>3652.270</b>
14	70.8	55.9	<b>3652.080</b>	-



HE = U

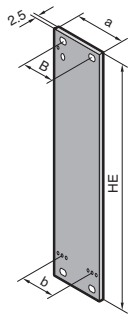


### + Accessories:

Identification strips for handles,  
see page 601.

# Subrack accessories

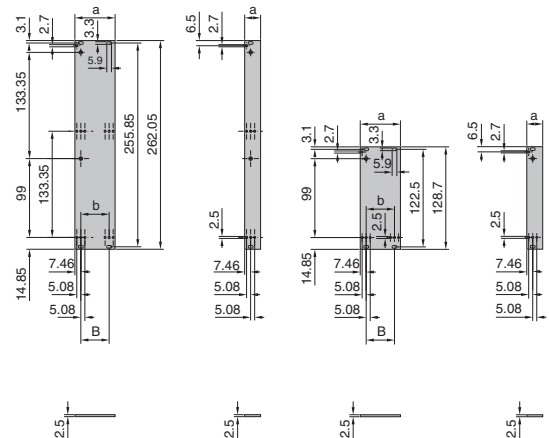
## Front panels, handles



HE = U

### Flat front panels for type V and VI handle

**Material:**  
2.5 mm aluminium, anodised



HP	a mm	W (B) mm	b mm	Packs of	Model No. RP	
					3 U	6 U
3	14.9	-	-	1	<b>3685.569</b>	<b>3685.578</b>
4	20.0	-	-	1	<b>3685.570</b>	<b>3685.579</b>
5	25.1	-	-	1	<b>3685.571</b>	<b>3685.580</b>
6	30.2	-	15.2	1	<b>3685.572</b>	<b>3685.581</b>
7	35.2	-	20.3	1	<b>3685.573</b>	<b>3685.582</b>
8	40.3	-	25.4	1	<b>3685.574</b>	<b>3685.583</b>
10	50.5	35.6	35.6	1	<b>3685.575</b>	<b>3685.584</b>
12	60.6	45.7	45.7	1	<b>3685.576</b>	<b>3685.585</b>
14	70.8	55.9	55.9	1	<b>3685.577</b>	<b>3685.586</b>

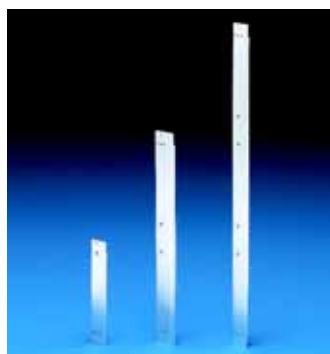
**!** **Also required:**

Collar screws and plastic collars,  
packs of 100 sets, Model No. RP 3658.160,  
see page 610.

**+** **Accessories:**

Handles type V,  
see page 601.  
Handles type VI,  
see page 602.

3.5 B Subrack accessories



### U-channel front panels for type V and VI handle

**Material:**  
2.5 mm aluminium, clear-chromated

**Supply includes:**  
1 vertical EMC gasket, version 1.



HP	a mm	W (B) mm	Packs of	Model No. RP	
				3 U	6 U
4	20.0	-	1	<b>3687.655</b>	<b>3687.660</b>
6	30.2	-	1	<b>3687.656</b>	<b>3687.661</b>
8	40.3	-	1	<b>3687.657</b>	<b>3687.662</b>
10	50.5	35.6	1	<b>3687.658</b>	<b>3687.663</b>
12	60.6	45.7	1	<b>3687.659</b>	<b>3687.664</b>

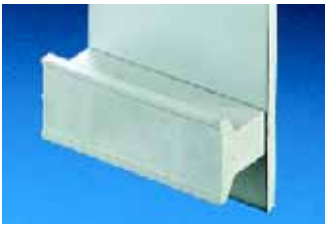
**!** **Also required:**

Slotted centering screws,  
packs of 100, Model No. RP 3687.050,  
see page 611.

**+** **Accessories:**

Handles type V,  
see page 601.  
Handles type VI,  
see page 602.

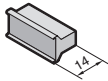
**Detailed drawing,**  
see above.



### Type V handle

**Plastic**

**Material:**  
Plastic



HP	Colour	Packs of	Model No. RP
3	Grey	1	3685.490
4	Grey	1	3685.491
8	Grey	1	3685.492
12	Grey	1	3685.493
20	Grey	1	3685.494
3	Black	1	3685.495
4	Black	1	3685.496
8	Black	1	3685.497
12	Black	1	3685.498
20	Black	1	3685.499



#### Also required:

Mounting kit,  
packs of 1 set, Model No. RP 3687.519,  
see page 610.

### Identification strips

for type V handle, plastic  
self-adhesive

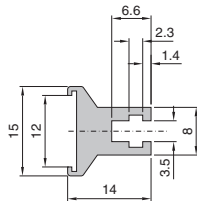
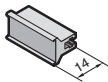
HP	Packs of	Model No. RP
24	1	3687.693



### Type V handle

**Aluminium**

**Material:**  
Aluminium, anodised.



HP	Model No. RP	HP	Model No. RP
3	3685.595	12	3685.602
4	3685.596	14	3685.603
5	3685.597	21	3685.761
6	3685.598	28	3685.762
7	3685.599	42	3685.763
8	3685.600	1 m	3685.604
10	3685.601		



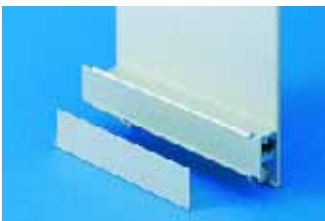
#### Also required:

Mounting kit,  
packs of 1 set, Model No. RP 3687.146,  
(from 6 HP 2 packs required),  
see page 611.

### Identification strips

for type V handle, aluminium  
For individual labelling of the handles.

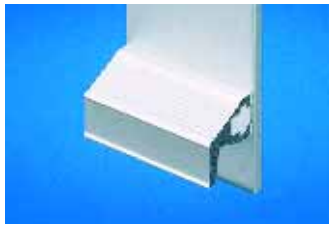
**Material:**  
0.5 mm aluminium, anodised



HP	Packs of	Model No. RP
3	1	3685.746
4	1	3685.747
5	1	3685.748
6	1	3685.749
7	1	3685.750
8	1	3685.751
10	1	3685.752
12	1	3685.753
14	1	3685.754
21	1	3685.755
28	1	3685.756
42	1	3685.757
1 m	1	3685.758
0.5 m	5	3606.300

# Subrack accessories

## Front panels, handles

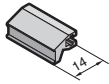
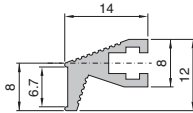


### Type VI handle

**Aluminium**

**Material:**

Aluminium, anodised.

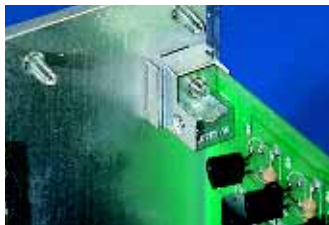


HP	Model No. RP	HP	Model No. RP
3	<b>3685.605</b>	12	<b>3685.612</b>
4	<b>3685.606</b>	14	<b>3685.613</b>
5	<b>3685.607</b>	21	<b>3685.614</b>
6	<b>3685.608</b>	28	<b>3685.615</b>
7	<b>3685.609</b>	42	<b>3685.616</b>
8	<b>3685.610</b>	84	<b>3685.617</b>
10	<b>3685.611</b>	1 m	<b>3685.618</b>



**Also required:**

Mounting kit,  
packs of 1 set, Model No. RP 3687.146,  
(from 6 HP 2 packs required),  
see page 611.



### PCB holder kit

For attaching the PCB to front panels with handle types I, II, IV, IVs, VII.

**Material:**

Die-cast

**Note:**

Only required at the top with 3 U front panels.

Packs of	Model No. RP
10	<b>3685.198</b>



**Also required:**

For attaching the PCB to the PCB holder:  
Pan-head screws,  
packs of 100, Model No. RP 3654.320,  
see page 610.  
For attaching the front panel to the PCB holder:  
Pan-head screws,  
packs of 100, Model No. RP 3685.282,  
see page 611.



### PCB holder

**For front panels**

For attaching PCBs to front panels  
(handle type V, VI).

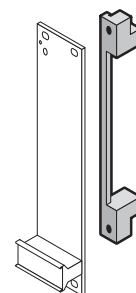
**Material:**

Noryl

**Supply includes:**

Assembly parts.

Packs of	Model No. RP
10	<b>3606.330</b>



B  
3.5

Subrack accessories

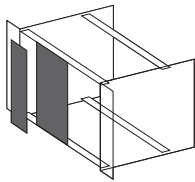
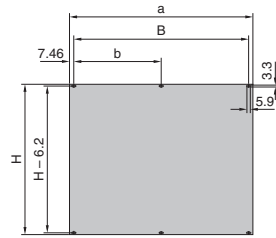


### Front panels

as filler panel, flat

**Material:**

2.5 mm aluminium, natural-anodised.



**Also required:**

Collar screws and plastic collars, packs of 100 sets, Model No. RP 3658.160, see page 610.

HP	a mm	W (B) mm	b mm	Model No. RP						
				1 U H = 39.8	2 U H = 84.25	3 U H = 128.7	4 U H = 173.15	6 U H = 262.05	7 U H = 306.5	9 U H = 395.4
2	9.8	-	-	-	-	3684.889	-	3684.911	-	3684.738
3	14.9	-	-	-	-	3684.890	-	3684.912	-	-
4	20.0	-	-	-	-	3684.891	-	3684.913	-	3684.739
5	25.1	-	-	-	-	3684.892	-	3684.914	-	-
6	30.1	-	-	-	-	3684.893	-	3684.915	-	-
7	35.2	-	-	-	-	3684.894	-	3684.916	-	-
8	40.3	-	-	-	-	3684.895	-	3684.917	-	3684.740
10	50.5	35.6	-	-	-	3684.896	-	3684.918	-	-
12	60.6	45.7	-	-	-	3684.897	-	3684.919	-	3684.741
14	70.8	55.9	-	-	-	3684.898	-	3684.920	-	-
20	101.3	86.4	-	-	-	3684.899	-	3684.921	-	-
21	106.4	91.4	-	-	-	3685.350	3684.900	3684.922	-	-
24	121.7	106.7	-	-	-	3685.429	-	-	-	-
27	136.8	121.9	-	-	-	-	3684.901	-	3684.923	-
28	141.9	127.0	-	-	-	-	3684.902	-	3684.924	-
40	202.9	188.0	-	-	-	-	3684.903	-	3684.976	-
42	213.0	198.1	-	-	-	3684.885	3684.887	3684.904	3684.908	3684.925
60	304.5	289.6	-	-	-	-	3684.905	-	-	-
63	319.7	304.8	152.4	-	-	-	3684.906	3684.909	3684.926	3684.929
84	426.4	411.5	203.2	3684.886	3684.888	3684.907	3684.910	3684.927	3684.930	3684.743
85	431.5	431.5	203.2	-	-	3684.744	3684.745	3684.746	3684.747	3684.748

# Subrack accessories

## Front panels, handles



### Front panels

as filler panels, U-shaped

**Material:**

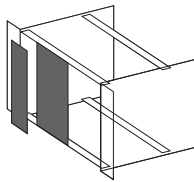
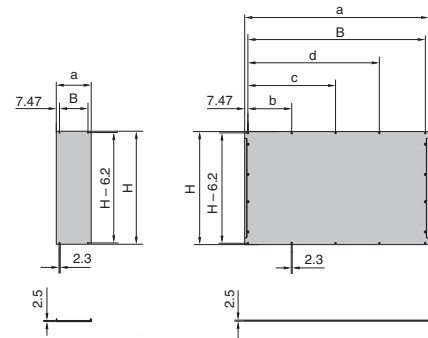
2.5 mm extruded aluminium section, clear-chromated or with aluminium film.

**Supply includes:**

- 1 front panel, one-piece (with 2 – 14 HP version) or three-piece (with > 14 HP version),
- 1 vertical EMC gasket, version 1,
- 1 contact strip (three-piece only)
- 1 gasket strip (three-piece only).

**Note:**

Detailed description of the laminated front panels, see page 590.



**Also required:**

Slotted centering screws, packs of 100, Model No. RP 3687.050, see page 611.

3.5 B

Subrack accessories

HP	a mm	W (B) mm	b mm	c mm	d mm	Model No. RP								
						1 U H = 39.8	2 U H = 84.25	3 U H = 128.7		4 U H = 173.15	6 U H = 262.05		7 U H = 306.5	9 U H = 395.4
								Clear-chromated	Laminated		Clear-chromated	Laminated		
2	9.8	-	-	-	-	-	-	3685.177	9909.316	-	3685.185	9909.325	-	3685.193
3	14.9	-	-	-	-	-	-	3686.138	9909.317	-	3686.139	9909.326	-	3686.140
4	20.0	-	-	-	-	-	-	3685.178	9909.318	-	3685.186	9909.327	-	3685.194
5	25.1	-	-	-	-	-	-	3685.179	9909.319	-	3685.187	9909.328	-	-
6	30.1	-	-	-	-	-	-	3685.180	9909.320	-	3685.188	9909.329	-	-
7	35.2	-	-	-	-	-	-	3685.181	-	-	3685.189	-	-	-
8	40.3	25.4	-	-	-	-	-	3685.182	9909.321	-	3685.190	9909.330	-	3685.195
10	50.5	35.6	-	-	-	-	-	3685.183	9909.322	-	3685.191	9909.331	-	-
12	60.6	45.7	-	-	-	-	-	3685.184	9909.323	-	3685.192	9909.332	-	3685.196
14	70.8	55.9	-	-	-	-	-	3684.249	9909.324	-	3684.258	9909.333	-	3684.278
16	80.9	66.0	-	-	-	-	-	3685.348	-	-	3685.349	-	-	-
20	101.3	86.4	-	-	-	-	-	3684.250	-	-	3684.259	-	-	3684.279
21	106.4	91.4	-	-	-	-	-	3684.272	-	-	3684.275	-	-	-
28	141.9	127.0	61.0	-	-	-	-	3684.251	-	-	3684.260	-	-	-
40	202.9	188.0	91.5	-	-	-	-	3684.273	-	-	3684.276	-	-	3684.280
42	213.0	198.1	96.5	-	-	-	-	3684.252	-	3684.255	3684.261	-	3684.264	3684.267
60	304.5	289.6	96.5	193.0	-	-	-	3684.274	-	-	3684.277	-	-	-
63	319.7	304.8	101.6	203.2	-	-	-	3684.253	-	3684.256	3684.262	-	3684.265	3684.268
84	426.4	411.5	101.6	203.2	304.8	3684.247	3684.248	3684.254	-	3684.257	3684.263	-	3684.266	3684.269

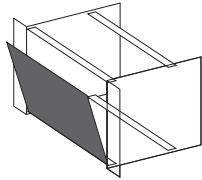


### Front panels

#### Hinged

**Material:**  
2.5 mm aluminium, anodised

**Supply includes:**  
1 set of hinges,  
assembly parts.

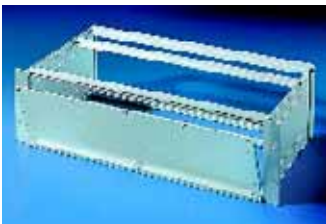


U	HP	Model No. RP	
		vertically hinged	horizontally hinged
3	42 <sup>1)</sup>	<b>3652.600</b>	<b>3652.500</b>
3	84 <sup>1)</sup>	<b>3652.610</b>	<b>3652.510</b>
3	85	-	<b>3684.291</b>
4	85	-	<b>3684.292</b>
6	42 <sup>1)</sup>	<b>3652.620</b>	<b>3652.520</b>
6	84 <sup>1)</sup>	<b>3652.630</b>	<b>3652.530</b>
6	85	-	<b>3684.293</b>
7	85	-	<b>3684.294</b>
9	85	-	<b>3684.295</b>



#### Also required:

<sup>1)</sup> With rear mounting of 42 HP and 84 HP front panels, additional trim sections must be attached at the rear of the subrack.  
Rear trim sections, see page 562.

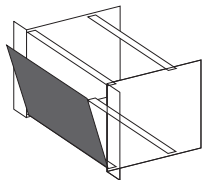


### EMC front panels

#### Hinged

**Material:**  
2.5 mm aluminium,  
clear-chromated

**Supply includes:**  
1 front panel,  
1 set of hinges,  
1 contact strip,  
1 gasket strip,  
1 vertical EMC gasket, version 1,  
assembly parts.



U	HP	Model No. RP
		horizontally hinged
3	84	<b>3684.298</b>
4	84	<b>3684.299</b>
6	84	<b>3684.300</b>
7	84	<b>3684.301</b>
9	84	<b>3684.302</b>



### Mezzanine front panels

#### Die-cast zinc

For PCI mezzanine cards (PMC).

Conforms to IEEE 1386

**Material:**  
Die-cast zinc

Packs of	Model No. RP
1	<b>3688.659</b>



#### Accessories:

EMC seals,  
see page 606.  
Assembly screws M2.5 x 6,  
packs of 100, Model No. RP 3654.340,  
see page 610.

# Subrack accessories

## Front panels, handles



### Mezzanine front panels

#### Extruded aluminium section

For PCI mezzanine cards (PMC).

Conforms to IEEE 1386

#### Material/surface finish:

Extruded aluminium section, clear-chromated

Packs of	Model No. RP
1	<b>3688.658</b>

#### + Accessories:

EMC seals, see page 606.  
Assembly screws M2.5 x 6, packs of 100, Model No. RP 3654.340, see page 610.

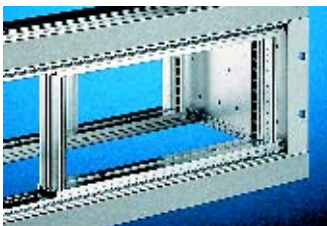


### Support spacers

#### for mezzanine cards

10 mm, for mounting mezzanine cards.

Packs of	Model No. RP
1	<b>3688.663</b>



### Door cut-out trim

#### for subracks installed indoors

#### Material:

Aluminium

Width	Packs of	Model No. UN
269.2 mm (1 1/2 19")	2	<b>3634.060</b>
482.6 mm (19")	2	<b>3634.070</b>



### Covers

#### for mezzanine cut-outs

To conceal unused mezzanine cut-outs. The covers are simply clipped into the cut-outs.

#### Material:

Stainless steel

Packs of	Model No. RP
1	<b>3688.660</b>



### EMC seals

#### for mezzanine front panels

can be inserted into the all-round channel of the mezzanine front panels.

#### Material/surface finish:

Sealing ring made of conductive carbon filled silicon, sealing gasket made from stainless steel.

Design	Packs of	Model No. RP
Sealing ring	1	<b>3688.661</b>
Sealing gasket	1	<b>3688.662</b>

## Ripac box type plug-in units – individual components



### Vertical drive chassis

- For the installation of drives or CD-ROMs.  
May be installed in all Ripac subracks.
- Optionally prepared for EMC or non-EMC
  - Accomodation for 3 1/2" or 5 1/4" drives or CD-ROM, vertical
  - Front panel and support plate integrated

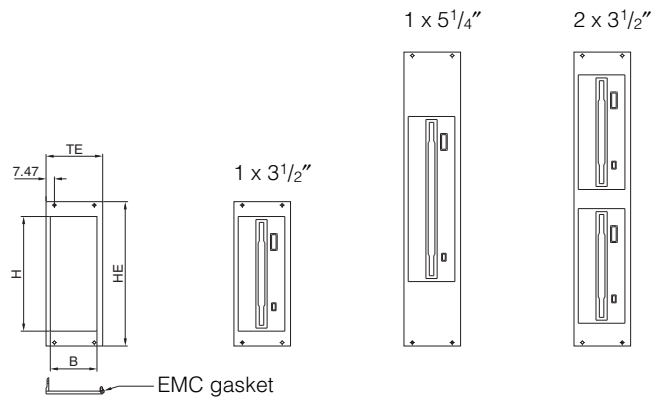
**Material:**  
Front panel: 2.5 mm aluminium  
Support plate: Aluminium

**Surface finish:**  
Clear-chromated

**Supply includes:**  
1 front panel with support plate,  
1 EMC gasket (with EMC modules),  
assembly parts.



Installation drives	Font panel		Depth drive approx. mm	Front panel cut-out		Model No. RP	
	U (HE)	HP (TE)		Height (H) mm	Width (B) mm	EMC	Non-EMC
1 x 3 1/2"	3	8	160	102	26	<b>3684.469</b>	<b>3685.078</b>
1 x 5 1/4"	6	10	220	147	41.5	<b>3684.481</b>	<b>3685.090</b>
1 x 3 1/2"	3	8	160	-	-	-	<b>3685.091</b>
	3	10	160	-	-	-	<b>3685.092</b>
2 x 3 1/2"	6	8	160	-	-	-	<b>3685.095</b>
	6	10	160	-	-	-	<b>3685.096</b>



B  
3.5  
Subrack accessories



### Guide rails

**for drive chassis**  
For routing drive chassis in the subrack.

**Material:**  
Aluminium

**Supply includes:**  
Press-fit pin.

For installation depth mm	Packs of	Model No. RP
160	1	<b>3686.989</b>

**Note:**  
Two guide rails are required for each drive chassis.  
Guide rails 4.4" for plastic drives, see page 578.

**! Also required:**

Assembly screws,  
packs of 100, Model No. RP 3654.340,  
see page 610.



### PCB holder

**for box type plug-in units**  
For fastening PCBs in box type plug-in units.

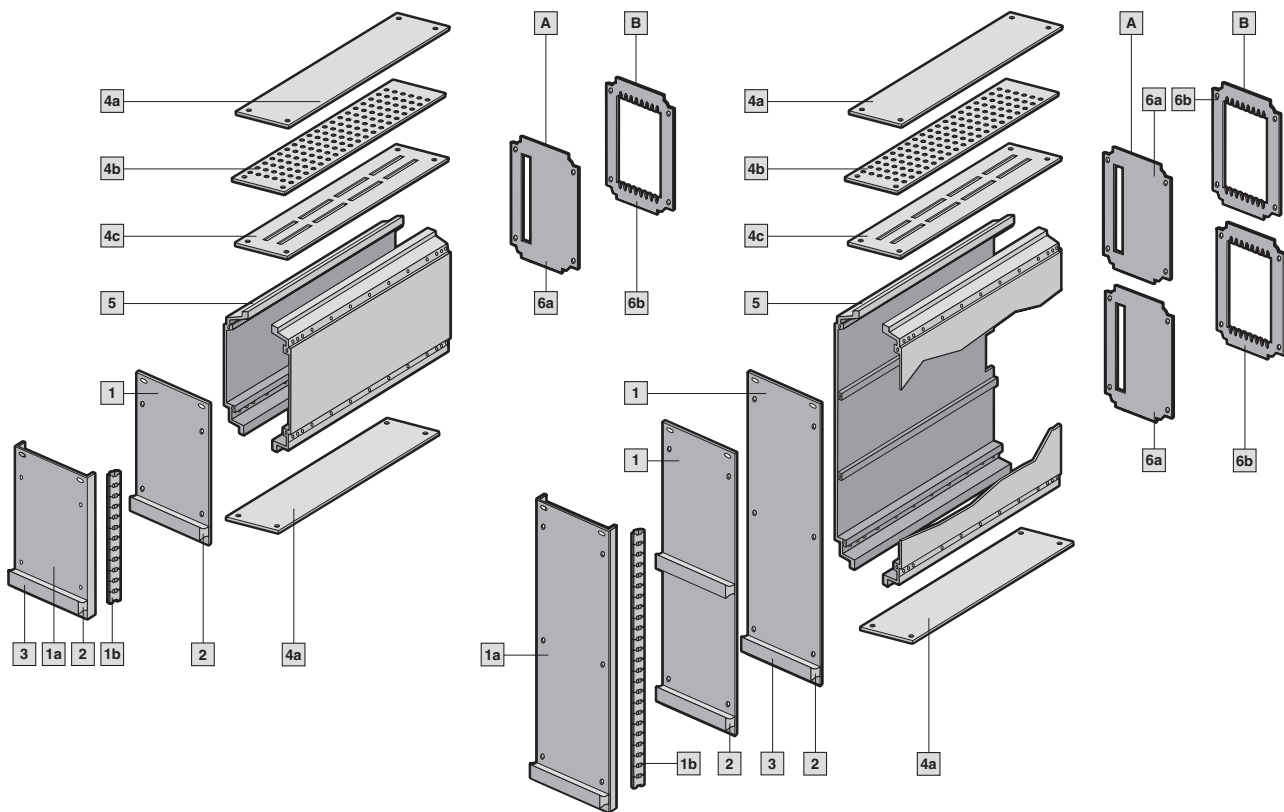
**Material:**  
PBTP, basic material to UL 94-V0

**Supply includes:**  
Assembly parts.

Packs of	Model No. RP
2	<b>3606.321</b>

# Subrack accessories

## Ripac box type plug-in units – individual components



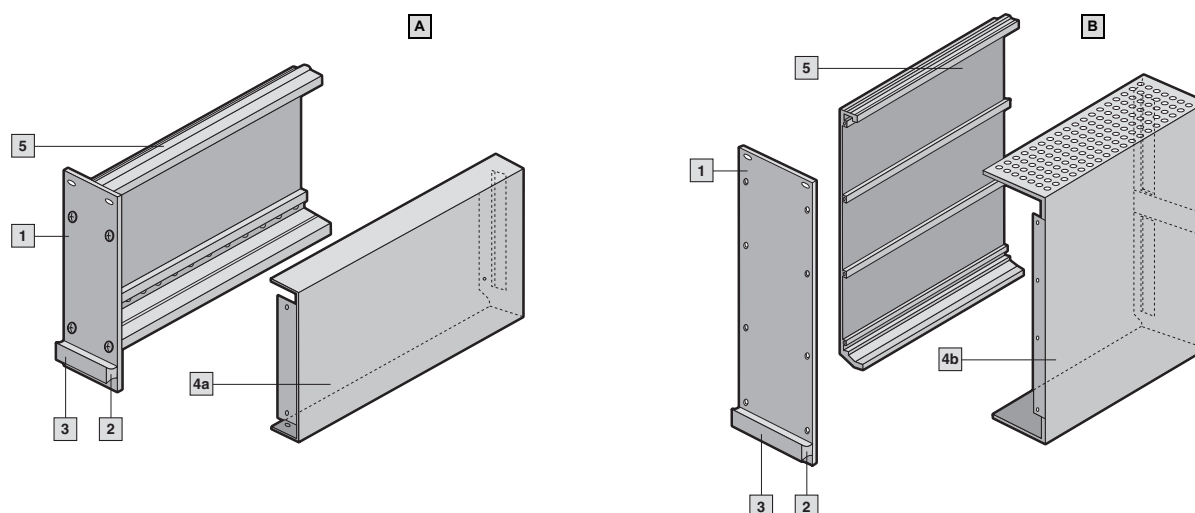
Ripac box type plug-in units, types I and II in 3 U and 6 U, individual components

Type I for one connector/type II for several connectors											
Box type plug-in units, individual components	A	B	Packs of	8 HP	10 HP	12 HP	14 HP	21 HP	28 HP	42 HP	Page
	Type I	Type II									
<b>Front panels</b> of 2.5 mm aluminium, anodised surface finish											
for 3 U	■	■	1	3685.769	3685.629	3685.630	3685.631	3685.636	3685.637	3685.638	–
1 for 6 U (for 1 handle)	■	■	1	3685.767	3685.633	3685.634	3685.635	3685.639	3685.640	3685.641	–
for 6 U (for 2 handles)	■	■	1	–	3687.520	3687.521	3687.522	3687.523	3687.524	3687.525	–
<b>EMC front panels</b> of 2.5 mm aluminium, surface finish clear-chromated (only for use in conjunction with 10 HP box type plug-in unit)											
1a for 3 U/10 HP box type plug-in units	■	■	1	–	–	3687.587	–	–	–	–	–
for 6 U/10 HP box type plug-in units	■	■	1	–	–	3687.588	–	–	–	–	–
<b>EMC gaskets, vertical, for front panels</b>											
1b for 3 U	■	■	1	–	–	3686.975	–	–	–	–	572
for 6 U	■	■	1	–	–	3686.977	–	–	–	–	572
<b>Handle type V</b>											
2 of aluminium, anodised surface finish	■	■	1	3685.600	3685.601	3685.602	3685.603	3685.761	3685.762	3685.763	601
of plastic	■	■	1	3685.492	–	3685.493	–	3685.494	–	–	601
<b>Identification strips</b>											
3 of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.751	3685.752	3685.753	3685.754	3685.755	3685.756	3685.757	601
<b>Covers</b> 4a 4b of 1 mm aluminium, untreated 4c of 1.2 mm sheet steel, painted, RAL 9006 (with vent slots)											
4a unvented, for board depth 160 mm	■	■	1	3687.555	3685.689	3685.690	3685.691	3685.692	3685.693	3685.694	–
unvented, for board depth 220 mm	■	■	1	3687.562	3685.701	3685.702	3685.703	3685.704	3685.705	3685.706	–
4b vented, for board depth 160 mm	■	■	1	3687.585	3685.683	3685.684	3685.685	3685.686	3685.687	3685.688	–
vented, for board depth 220 mm	■	■	1	–	3685.695	3685.696	3685.697	3685.698	3685.699	3685.700	–
4c vent slots for guide rails, for board depth 160 mm	■	■	1	–	3687.556	3687.557	3687.558	3687.559	3687.560	3687.561	–
vent slots for guide rails, for board depth 220 mm	■	■	1	–	3687.563	3687.564	3687.565	3687.566	3687.567	3687.568	–
<b>Side panel</b> of extruded aluminium section, anodised surface finish											
5 3 U, for board depth 160 mm	■	■	1	–	–	–	–	3685.645	–	–	–
6 U, for board depth 160 mm	■	■	1	–	–	–	–	3685.648	–	–	–
3 U, for board depth 220 mm	■	■	1	–	–	–	–	3685.646	–	–	–
6 U, for board depth 220 mm	■	■	1	–	–	–	–	3685.649	–	–	–
<b>Rear panel</b> 6a of 2.0 mm aluminium, untreated 6b of 1.2 mm sheet steel, spray-finished											
6a for 1 connector	■	–	1	3687.536	3685.707	3685.708	3685.709	3685.710	3685.711	3685.712	–
6b for several connectors	–	■	1	–	–	–	–	3687.537	3687.538	3687.539	–

Assembly parts for box type plug-in units, see page 609

PCB holder for box type plug-in units, see page 607

## Ripac box type plug-in units – individual components



### Ripac box type plug-in units, types V and VI in 3 U and 6 U, individual components

Type V with cover (unvented)/type VI with cover (vented)											
Box type plug-in units, individual components	A Type V	B Type VI	Packs of	6 HP	7 HP	8 HP	10 HP	12 HP	14 HP	Page	
<b>Front panels</b> of 2.5 mm aluminium, anodised surface finish											
1 for 3 U	■	■	1	3685.768	3685.628	3685.769	3685.629	3685.630	3685.631	–	
1 for 6 U	■	■	1	3685.766	3685.632	3685.767	3685.633	3685.634	3685.635	–	
<b>Handle type V</b>											
2 of aluminium, anodised surface finish	■	■	1	3685.598	3685.599	3685.600	3685.601	3685.602	3685.603	601	
2 of plastic	■	■	1	–	–	3685.492	–	3685.493	–	601	
<b>Identification strips</b> for 3 U											
3 of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.749	3685.750	3685.751	3685.752	3685.753	3685.754	601	
<b>Cover</b> of 1 mm aluminium, clear-chromated surface finish											
4a unvented, 3 U, for board depth 160 mm	■	–	1	3685.774	3685.658	3685.776	3685.659	3685.660	3685.661	–	
4a unvented, 3 U, for board depth 220 mm	■	–	1	3685.775	3685.674	3685.777	3685.675	3685.676	3685.677	–	
4a unvented, 6 U, for board depth 160 mm	■	–	1	3685.717	3685.662	3685.764	3685.663	3685.664	3685.665	–	
4a unvented, 6 U, for board depth 220 mm	■	–	1	3685.718	3685.678	3685.765	3685.679	3685.680	3685.681	–	
4b vented, 3 U, for board depth 160 mm	–	■	1	3685.770	3685.650	3685.772	3685.651	3685.652	3685.653	–	
4b vented, 3 U, for board depth 220 mm	–	■	1	3685.771	3685.666	3685.773	3685.667	3685.668	3685.669	–	
4b vented, 6 U, for board depth 160 mm	–	■	1	3685.713	3685.654	3685.715	3685.655	3685.656	3685.657	–	
4b vented, 6 U, for board depth 220 mm	–	■	1	3685.714	3685.670	3685.716	3685.671	3685.672	3685.673	–	
<b>Side panel</b> of extruded aluminium section, anodised surface finish											
5 3 U, for board depth 160 mm	■	■	1				3685.645			–	
5 6 U, for board depth 160 mm	■	■	1				3685.648			–	
5 3 U, for board depth 220 mm	■	■	1				3685.646			–	
5 6 U, for board depth 220 mm	■	■	1				3685.649			–	

### Assembly parts for box type plug-in unit types I, II, V, VI




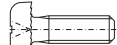



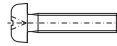


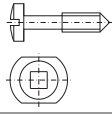






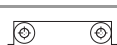

Description	for installation of:	Packs of	Model No. RP	
Assembly kit for box type plug-in unit I/II, 3 U	Box type plug-in units, type I/II, 3 U	1 set	3687.589	–
Assembly kit for box type plug-in unit I/II, 6 U	Box type plug-in units, type I/II, 6 U	1 set	3687.590	–
Assembly kit for box type plug-in unit type V/VI	Box type plug-in units, type V/VI	1 set	3685.294	–
Assembly kit for box type plug-in unit with EMC front panel	Box type plug-in unit with EMC front panel	1 set	3687.591	–
Assembly kit for plastic handles	Plastic handles on box type plug-in units	1 set	3687.519	610

**Guide rails for box type plug-in units**, see page 579

For more screws, see page 610

# Assembly parts

## Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Front panels to unit side panels	Oval csk-screw ISO 7047-4.8-Z-A2K	M3 x 8 	<b>3606.550</b>	100
Rear panels to box-type plug-in units	Panhead screw ISO 7045-4.8-Z-A2K	M3 x 8 	<b>3606.560</b>	100
PCB holders (plastic) to front panels, top	Oval csk-screw ISO 7047-4.8-Z-A2K	M2.5 x 10 	<b>3606.610</b>	100
– Horizontal rails to side panels – Divider panels to horizontal rails – Horizontal rails to vertical supports	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2K	M4 x 12 	<b>3654.300</b>	100
– PCBs to PCB holders (die-cast for 3 U), top – PCBs to extractor handles with 6 U	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 8 	<b>3654.320</b>	100
– PCB holder (plastic) to type V/VI handles, bottom – PCBs to PCB holders (plastic) – Backplanes to threaded inserts	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 10 	<b>3654.330</b>	100
– Connectors to Z rails – Z rails to horizontal rails – Type V/VI handles to partial front panels, bottom right for ≥ 5 HP – Aluminium guide rails to horizontal rails – Mezzanine front panels	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 6 	<b>3654.340</b>	100
Aluminium guide rails to horizontal rails (fastening of square nuts)	Retaining cage	M2.5	<b>9901.417</b>	100
Handle type V (plastic) to front panels and box type plug-in units	Mounting kit for type V handle (plastic):  Cover black Cover grey Hex nut Screw Screw Square nut DIN 562-04-A2K	M2.5 M2.5 x 16 M2.5 x 12 M2.5	<b>3687.519</b>	1 set
Connectors to PCBs	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 12 	<b>3654.350</b>	100
Guide rails (plastic) to horizontal rails	Screw for plastic WN 1413	M2.2 x 6 	<b>3654.360</b>	100
– Flat front panels to handles type V, VI – Aluminium guide rails to horizontal rails	Square nut DIN 562-A2K	M2.5 	<b>3654.370</b>	100
– Flat front panels to horizontal rails – Trim frame to conceal the front sections of the horizontal mounting kit	Captive screws (cheese-head) and plastic collars	M2.5 x 11 	<b>3658.160</b>	100 sets
Flat front panels	Plastic collars		<b>3687.021</b>	100
PCB to type III handle	Screw for plastic WN 1412	3.0 x 8 	<b>3658.190</b>	100
– PCBs to PCB holders (plastic) – PCB holders to front panels, top	Hex nut ISO 4032-8	M2.5 	<b>3658.210</b>	100
– Backplanes to threaded inserts – Air partitions to horizontal rails	Mounting kit for backplanes:  Panhead posidrive screw ISO 7045-4.8-Z-A2K  Washer PE, natural DIN 125	M2.5 x 6   2.7 	<b>3684.019</b>	100
– Covers to mounting blocks – EMC contact strips	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M3 x 6 	<b>3684.233</b>	100
Covers to side panels	Mounting block		<b>3684.234</b>	10
Type V/VI handle to front panels	Bracket		<b>3684.435</b>	100
Female connector to PCB attachment	Pop rivet DIN 7340-B-CuZn	2.5 x 0.3 x 10	<b>3684.482</b>	100
Ground contact to keyable guide rails	Fastening screw for ground contact	3.5 x 12	<b>3684.109</b>	50

