

# HEITEC

ELECTRONICS

CATALOGUE

CHASSIS TECHNOLOGY



**INDUSTRY EXPERTISE**  
IN AUTOMATION,  
DIGITALIZATION  
AND ELECTRONICS



CPCI  
AC-354

Power  
Good



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For reasons of better readability, the language forms male,  
female and diverse (m/f/d) are not used simultaneously.  
All references to persons apply equally to all genders.

# COMPANY OVERVIEW





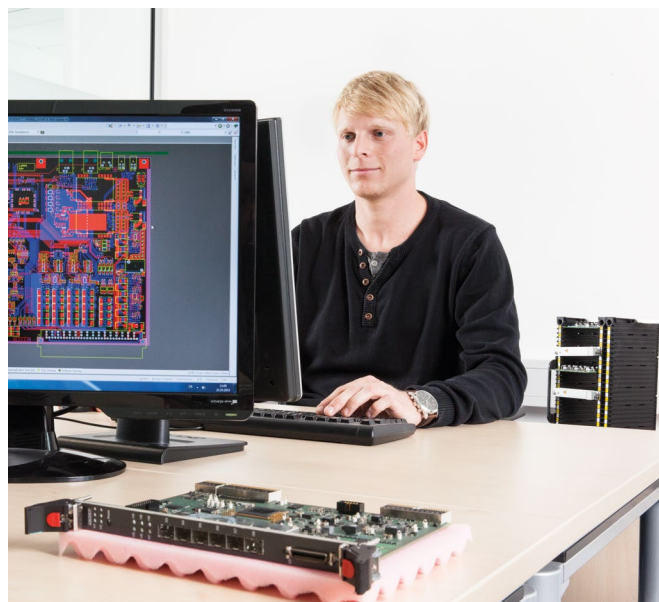
# CORE COMPETENCE

HEITEC is known for industrial expertise in automation, digitalization and electronics and offers solutions, products and services in the fields of software, mechanics and electronics. Its customers improve their productivity and optimise their products with the help of HEITEC's state-of-the-art, reliable and economical system solutions. A work force of over 1200 employees at numerous sites worldwide provides high-quality industry skills close to the customer.

Our experienced employees have in-depth, specialised technical knowledge and are also familiar with the specific requirements of industries such as:

- Systems and machine construction
- Energy technology
- Transportation
- Aerospace technology
- Medical technology
- Information and communication technology
- Measurement and testing technology

We are always finding new applications for this accumulated knowledge and experience, and thus have access to a wealth of tried-and-tested solutions for a variety of fields. Our design and manufacturing processes are audited and certified to meet the requirements of their respective sectors, guaranteeing the robustness and long service life of our products.



# COMPANY OVERVIEW

## AUTOMATION DIGITALIZATION AND ELECTRONICS



### DIGITALIZATION

#### Flexible production planning and control

HEITEC supports you in the digitalization of engineering, production, and business processes in the industrial environment. The HEITEC 4.0 solution portfolio helps you increase the availability and productivity of machines and plants throughout their entire lifecycle, thanks to the gradual, benefit-oriented implementation of Industry 4.0.

HEITEC not only boost productivity, it also create many options for you to successfully implement new business models like digital services with the aid of innovative solutions.

### AUTOMATION

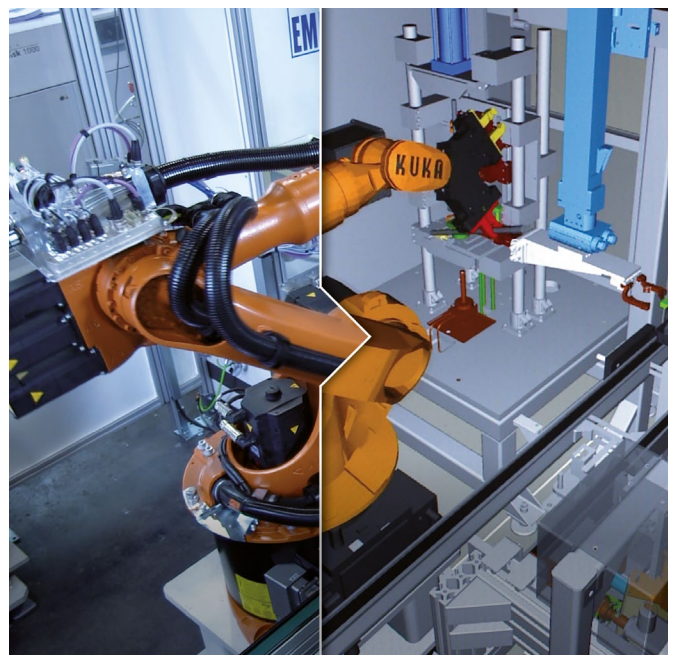
#### Faster to networked production

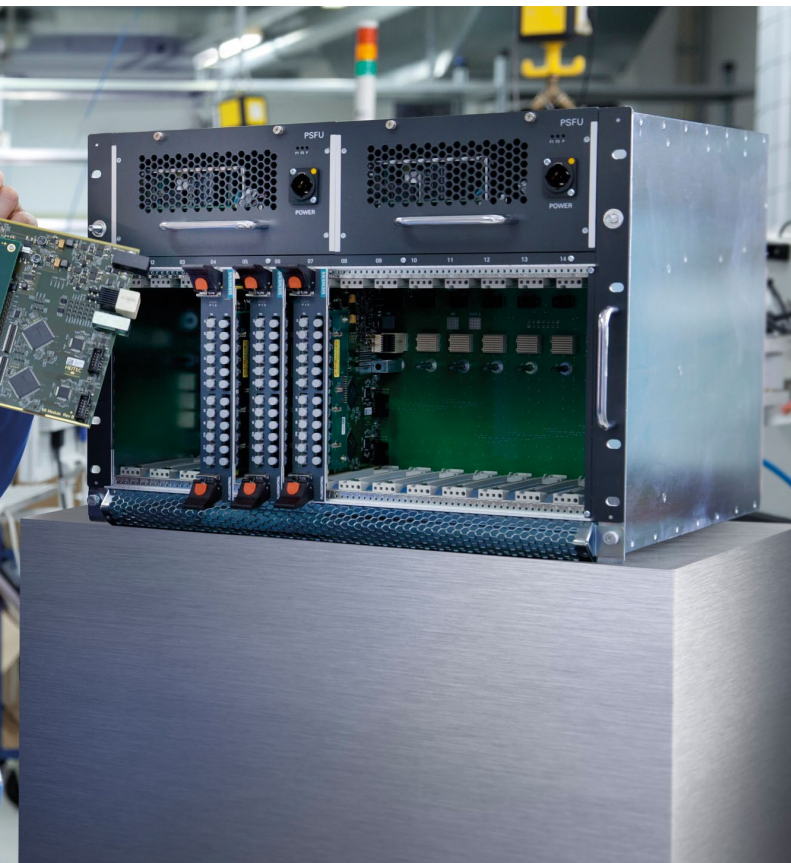
The solution portfolio from HEITEC's Business Unit Automation includes measurement and test engineering, robotics, complete production systems, and energy technology. As experts in automation and information technology, we can offer solutions for rapid production networking under the HEITEC 4.0 banner:

From digital plant and process planning to virtual commissioning and the monitoring of plants and manufacturing processes: our solutions make it possible to develop a smart factory with adaptive machines and systems, as well as decentralised manufacturing controls.

#### Practical, step-by-step introduction of Industry 4.0

- Optimisation of processes, plant and quality
- Shortened commissioning periods
- Reduced throughput times
- Reliable planning thanks to real-time data
- Optimised material and component consumption
- Improved construction quality





What is it that makes HEITEC electronics so special?

**Three areas of expertise** – design, chassis technology and manufacturing – that work together smoothly to meet the increasingly complex requirements of our customers:

**Design:** This is based on our history as an expert service provider in the area of electronic design since the 1980s.

**Chassis technology:** A stable, modular system of chassis technology and an extensive library of proven hardware, software and mechanical building blocks from Rittal's former portfolio of electronic packaging systems.

**Manufacturing:** Since we know how important it is to manufacture products flexibly and yet cost-effectively, particularly when it comes to low and medium module quantities, our portfolio is rounded out by the right manufacturing capacities to meet your needs.

## ELECTRONICS

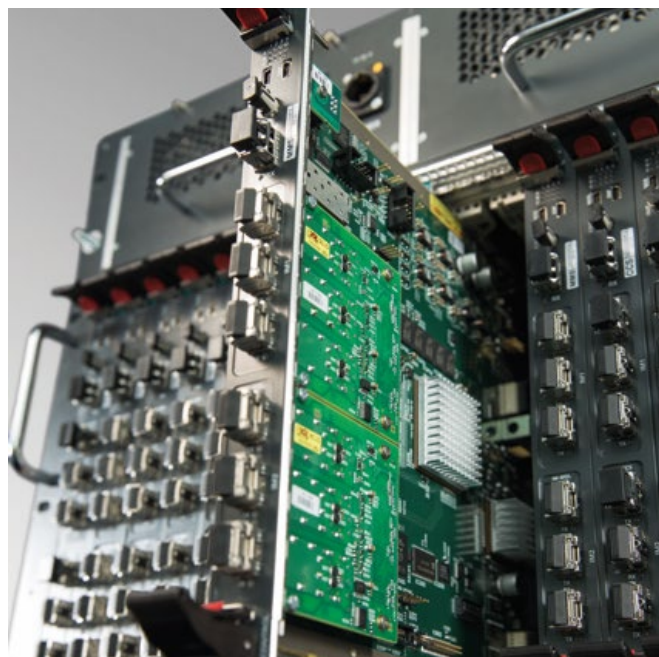
### From idea to product

Our comprehensive portfolio helps you to realise your system solution faster, more cost-effectively, with great flexibility and safety – from the module to the board design, all the way to the complete chassis. Thanks to our extensive experience from many projects, with differing levels of added value in a range of demanding industries and for many different target applications, we understand your specific requirements and reflect them in our solutions.

We have a comprehensive library of proven hardware, software and mechanical building blocks that we can draw on for every solution we create.

### Expertise in tailor-made solutions

- Customer-specific products and solutions implemented faster, safer and cost-effectively
- Products perfectly optimised thanks to in-depth knowledge of the industry – including for demanding, regulated markets
- The same high design and manufacturing quality for both small and large series
- Optimised products with a large test depth
- Ongoing development of products throughout the entire lifecycle



# COMPANY OVERVIEW

## EXPERTISE IN SOFTWARE, MECHANICS AND ELECTRONICS



### INDUSTRY EXPERTISE: WE FOCUS ON THE APPLICATION

Our employees not only have profound technical specialist knowledge, they also have experience in numerous key industries such as:

- Systems and machine construction
- Energy technology
- Transportation
- Aerospace technology
- Medical technology
- Information and communication technology
- Measurement and testing technology

This means we have an in-depth understanding of your requirements – even if these are not always explicitly formulated.

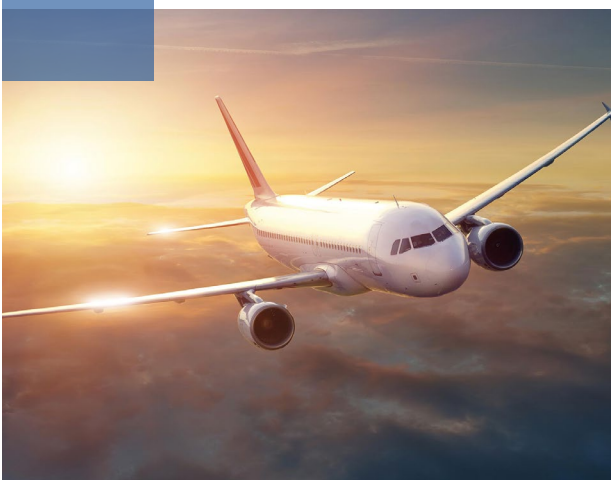
INDUSTRIAL CONTROL



ENERGY



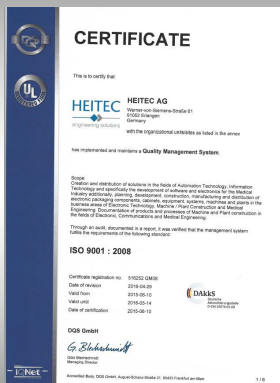
DEFENSE & AEROSPACE



MEDICAL







### QUALITY IS AT THE CORE OF OUR ACTIVITIES

Our products and services are based on established and certified processes, methods and quality management systems. In addition, we have industry-specific process know-how. Our competence in the design and manufacture of the corresponding components and systems is confirmed by a number of certificates.



TRANSPORTATION



COMMUNICATION

Certifications, Standards, Guidelines	
Quality	ISO 9001
	ISO 27001
	EN ISO 13485
Medical	EN 14971
	EN 60601
	EN 62304
Energy	NSQ 100
	KTA-1401
	KTA-3505
Transportation	EN50155/IEC 60571
	EN50128
Aviation & Aerospace	DO-160
	DO-178
	DO-254
Communication	ETSI (European Telecommunications Standards Institute)
Industrial Automation	IEC 61508
	IEC 61000
	NEBS (Network Equipment-Building System)
19-inch-technology	IEC 60297
	IEC 60917
	IEC 61587

## COMPETENCE AND KNOW-HOW

Development of customer-specific systems

Manufacturing and testing of electronic products for batch sizes starting at quantity 1

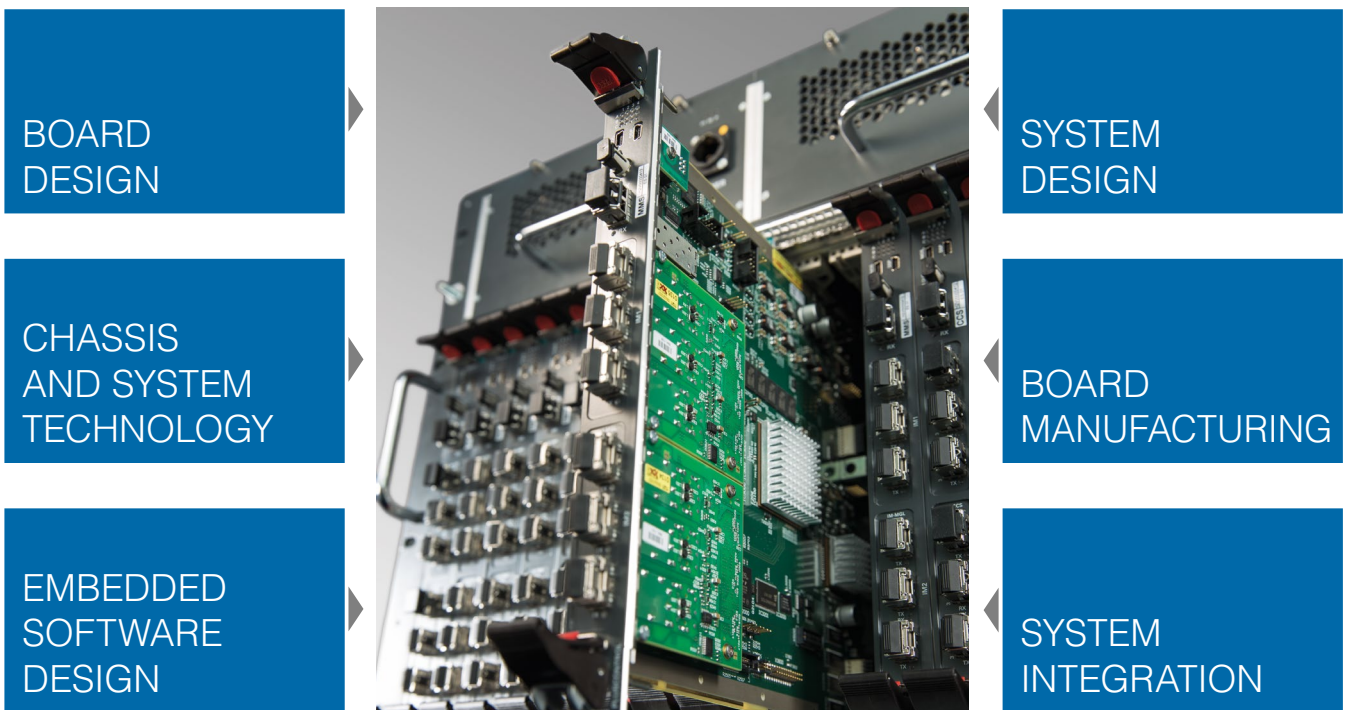
Professional chassis technology from standard products to system solutions

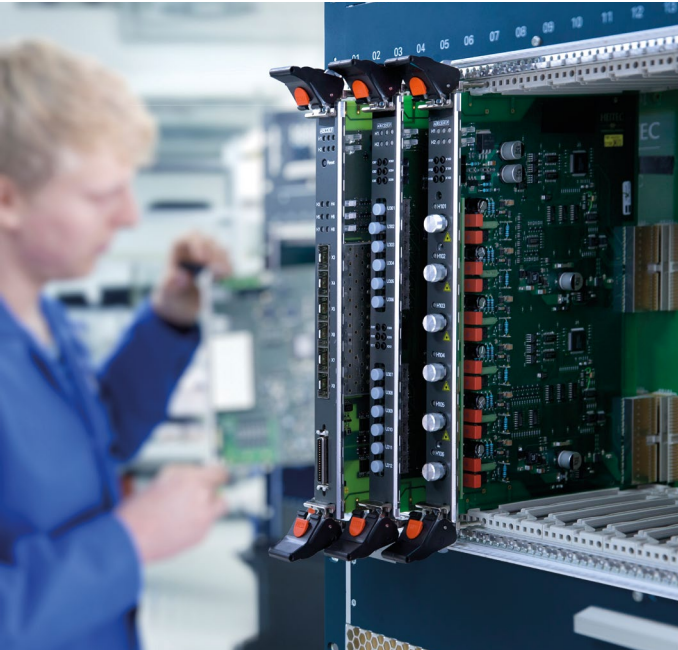
### We help you build the best system solutions

Our experience ranges from defining system architecture to developing and implementing individual components, through to manufacturing and integrating entire systems, throughout their entire life cycle. Coordinated processes guarantee excellent quality and provide the flexibility to adapt rapidly when new application requirements call for it. Our experienced employees have in-depth technical knowledge in their fields and understand the industry-specific requirements. Our design and manufacturing processes are coordinated with these requirements, and are audited and certified.

Our solutions minimize your design and production risks and can be applied to your product at lower cost and on time. We look after your products across their whole life span. We strive to offer you the best system solution every time, one that will give you a lasting competitive edge.

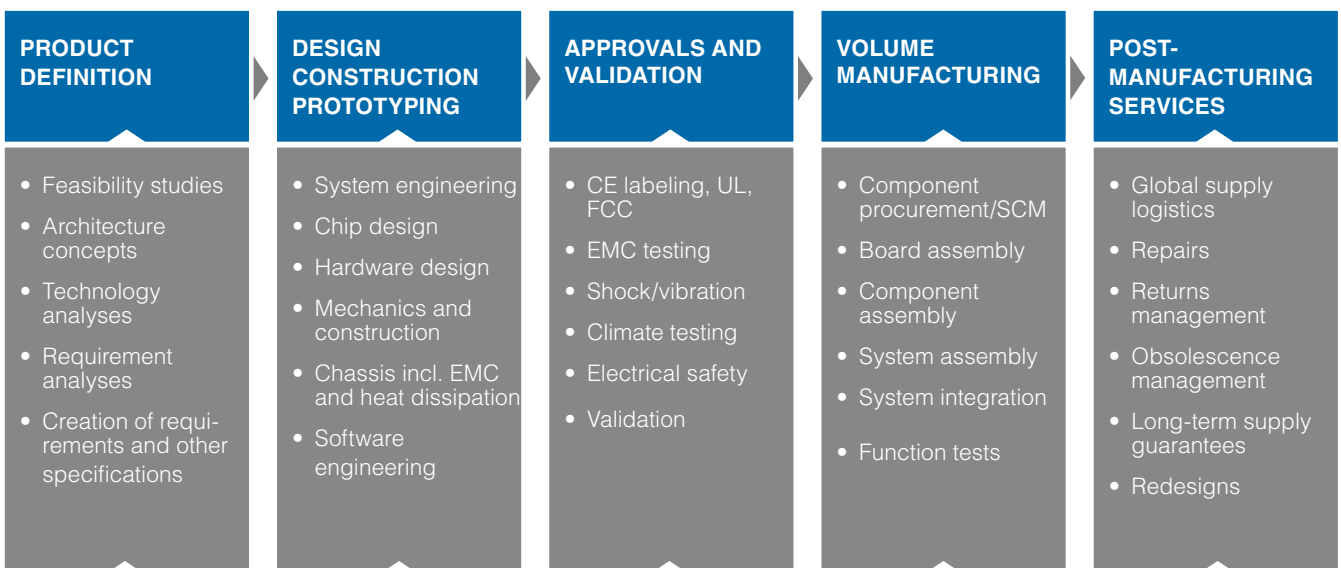
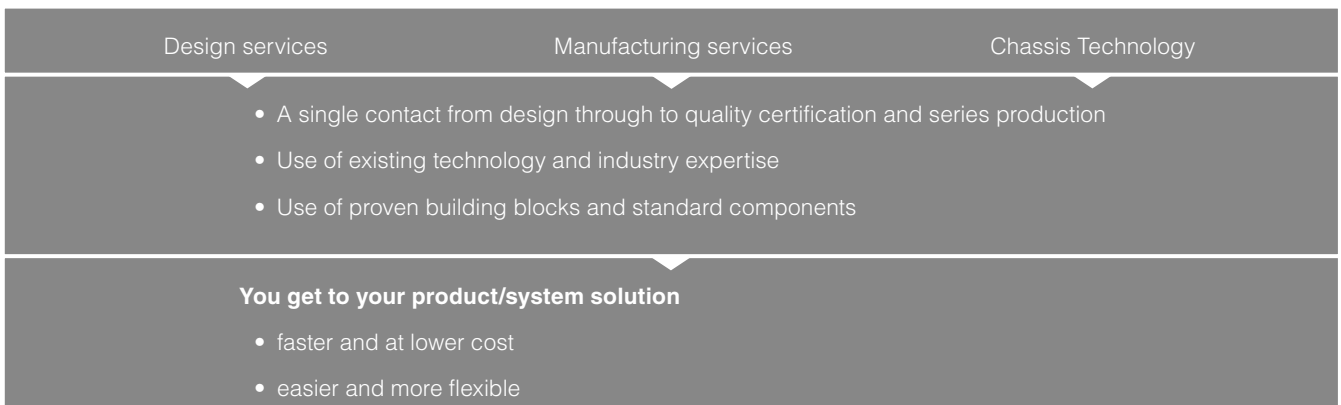
Everything comes with the same quality objective – whether it's for a "simple" board or for a more complex system comprising hardware, software and chassis technology.





### From idea to product: Expertise in tailor-made solutions

To turn your electronic product, which is often not more than a concept at first, into reality, you need reliable partners. We know all the steps and processes needed to make the transition from system design to prototyping, the necessary tests and inspections, through to series production. We know how important it is for design, manufacturing and service interfaces to mesh together. We create targeted industry applications with all the necessary certification. Whether it's electronic modules with the associated firmware, chassis systems in rail-mounted format or any kind of industrial PC for complex, high-availability systems, our teams will be there even after the project is completed to offer consulting, change management, after-sales service and long-term availability. HEITEC can provide everything from a single source – you maintain an overview of your projects and we provide the support and coordinate all the processes.



**Use of building blocks:**

- Library elements (software, mechanics and electronics)
- Wealth of experience from prior projects
- Chassis technology components and system platforms

# COMPANY OVERVIEW

## PARTNERSHIP RITTAL – HEITEC



### YOUR PARTNER FOR ELECTRONIC CHASSIS AND SYSTEMS

The current product portfolio offered by HEITEC AG in the area of electronic packaging systems and chassis is based originally on the corresponding product range from Rittal. Starting in early 2010, HEITEC has been steadily taking over this product range from Rittal and integrating it into its current range of products and services – constantly refining and expanding it. With the establishment of the Chinese subsidiary in 2020, the takeover of the electronic packaging business on an exclusive and global basis was fully completed.



2010

2013

ACQUISITION OF THE CHINESE MARKET WITH OWN BRANCH

RENAMING OF THE PRODUCT BRANDS FROM RIPAC TO HEIPAC

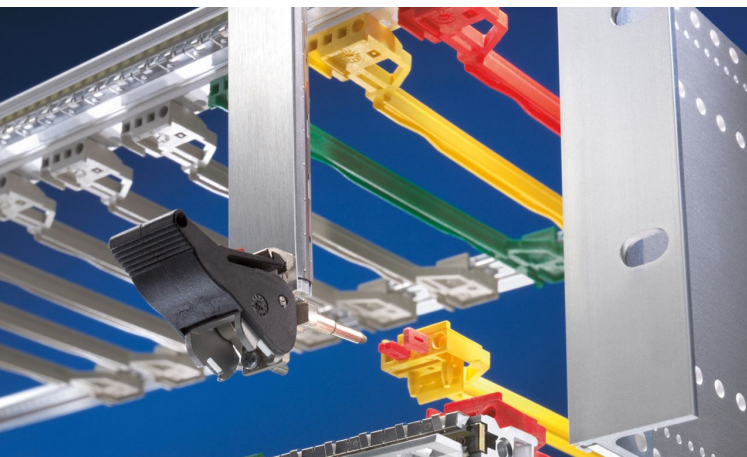
EXPANSION OF THE INTERNATIONAL SALES VIA OWN DISTRIBUTION CHANNELS

STANDARD CATALOG PRODUCTS AND PRODUCT LINE OWNERSHIP



CUSTOMER-SPECIFIC ELECTRONIC PACKAGING SYSTEMS AND COMPONENTS





**CONSISTENCY AND CONTINUITY**

HEITEC not only maintains the original Rittal part numbers but guarantees consistency, product longevity, supply chain security and continuous enhancement of its broad product range.

HEITEC was originally able to guarantee global customer support thanks to its partnership with Rittal subsidiaries abroad. Today, HEITEC has its own global network of sales partners that ensure customer support right around the world.

2015

2016

2020

HEITEC

HEITEC

HEITEC

# COMPANY OVERVIEW

## PRODUCTS AND SERVICES

HEITEC's comprehensive portfolio of standard products and individual solutions gives you professional chassis technology – we “package” your electronics to suit your applications, every time.

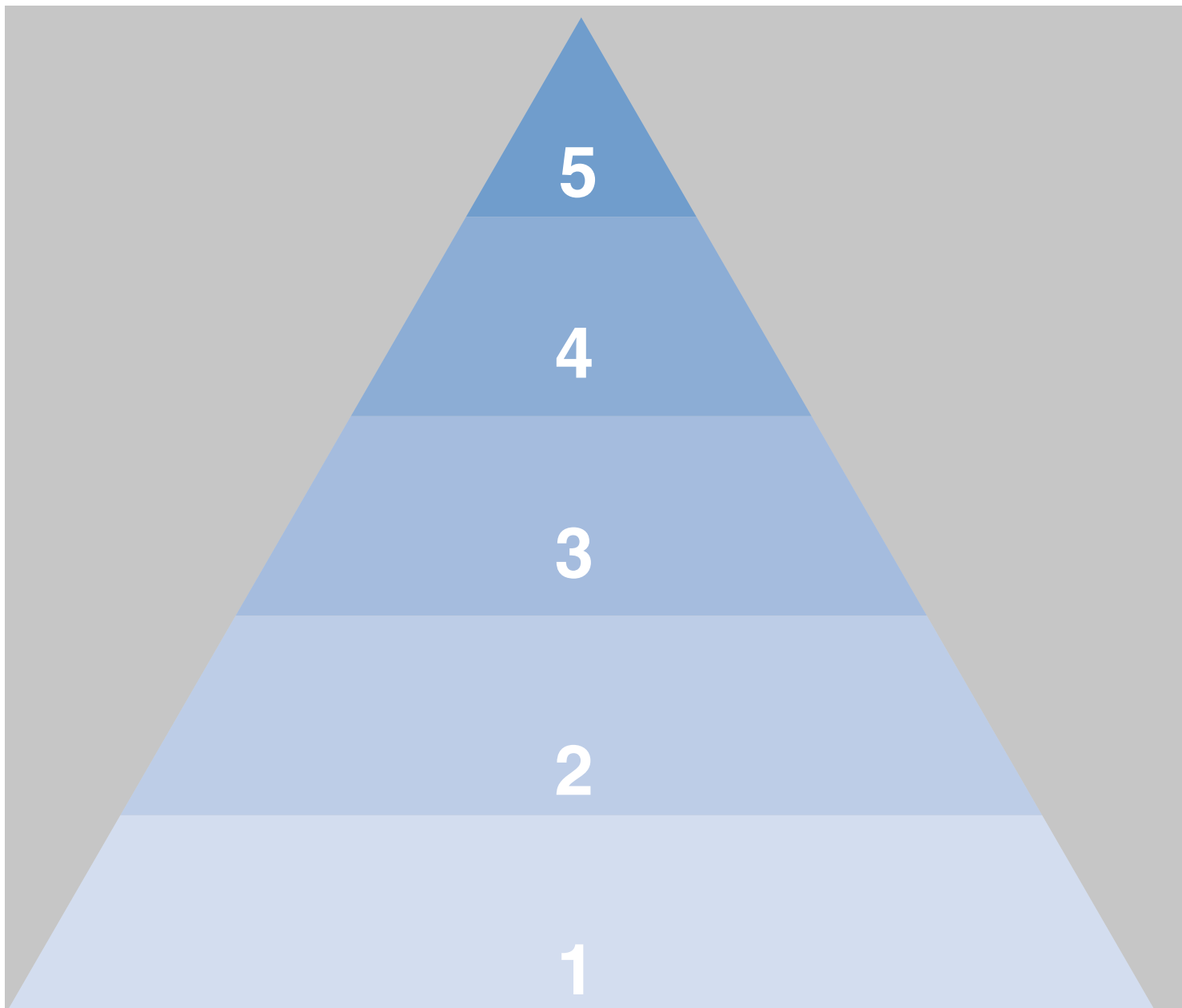
We are constantly expanding this broad spectrum of chassis components, subracks, instrument cases and system enclosures as well as system platforms. We also offer individual adaptations to these products, in addition to special, customer-specific developments.

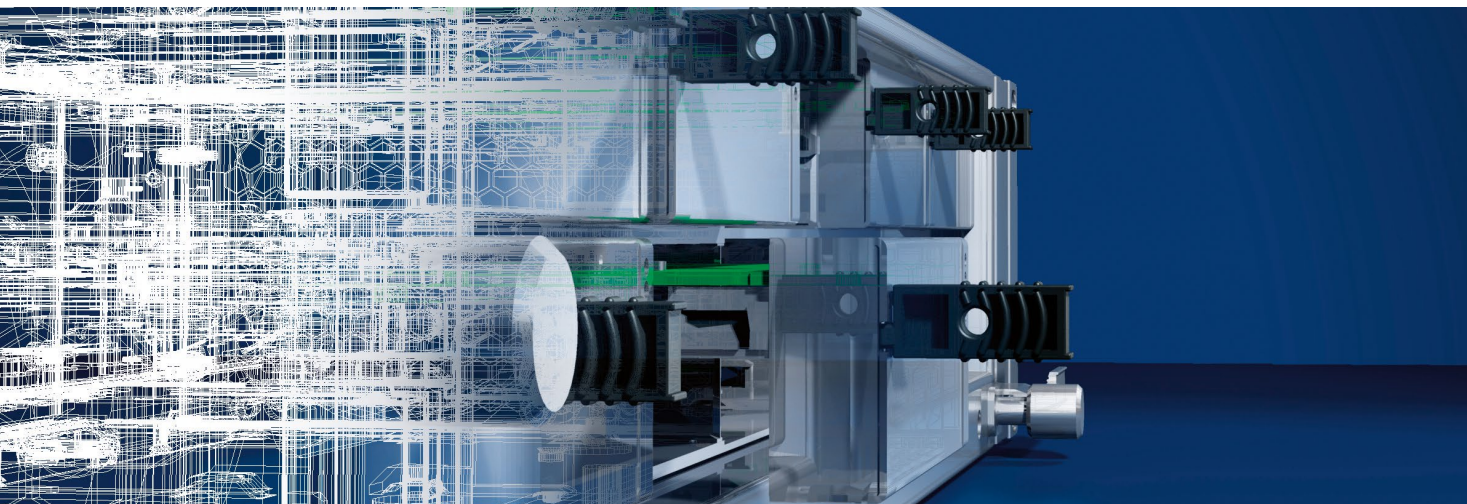
Selecting the right chassis technology is the basis for an efficient end product. Our skills are based on many years of experience covering everything from mechanical

design to ensuring electromagnetic compatibility and effective heat dissipation concepts for highly complex systems. If you would prefer to take responsibility for the bulk of the system integration process yourself, you can order individual components, pre-assembled components or system enclosures from us to suit your requirements. If you prefer pre-integrated or fully integrated solutions, incorporating your own hardware and software if needed, we can provide a complete service through to a customer-specific system solution.

We support you in exactly those areas that match your business model best.

### From components through to the complete system





### SYSTEM SOLUTION

Ready-to-use, fully integrated with hardware and software



### PRE-INTEGRATED SYSTEMS

Partial or full integration of active modules and/or software



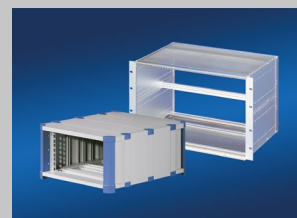
### SYSTEM PLATFORMS

Chassis incl. ventilation/cooling, power supply, backplane



### CHASSIS

Subracks, instrument cases and system enclosures, industrial PC, box-type plug-in units



### COMPONENTS

Individual components and accessories  
e.g. handles, front panels, EMC components



# COMPANY OVERVIEW

## PRODUCTS AND SERVICES

HEITEC is not just a manufacturer of high-quality chassis solutions - it offers much more besides that. Various service offerings maximize customer benefits even from small quantities.

It doesn't matter if you want your preferred components assembled to suit your requirements, or if you need our experienced manufacturing staff to assemble all the mechanical, electrical and electronic components. We also strive to offer a long-term delivery capacity and delivery times to suit customer requirements.

### Configuration

The wide range of variations available for chassis products means they can be combined easily and in many different ways

- Using the watchlist on the website, it is easy to compare products and make inquiries
- Easy-to-follow product tables make it easy to put your desired product together

### Assembly

HEITEC production facilities offer the latest in certified assembly and manufacturing options

- Skilled and reliable assembly, including final inspections, even for small unit quantities
- Assembly of individual parts, wiring, or even complete system configuration – depending on what the customer needs

### Logistics

HEITEC's experienced logistics team can develop individual logistics plans to suit customer requirements

- Holding stocks of critical components for your project means HEITEC can guarantee a long-term delivery capacity
- HEITEC is a known consignor that delivers worldwide

### Customised adaptations and system solutions

HEITEC can provide adjustments from single-part level through to customer-specific system solutions

- Front panel processing, special colors for chassis and decorative elements
- Design and manufacturing of individual, ready-to-use system solutions

Ready-to-use system with integrated hardware and software, e.g.

- Mobile charging station for cars

Subracks/chassis, e.g.

- Small chassis
- Din rail chassis

Customised spare parts processing, e.g.

- Front panel adaptations

#### Individual



#### 19-inch format







Besides a multitude of standard products in this catalogue, we provide individual, tailor-made solutions.

We create custom products, such as custom drilled, milled, or printed front panels, subracks, or system enclosures that meet your exact requirements, as well as system configurations that are tailor-made for your application.

**We create the right product for you!**

Please do not hesitate to contact our specialists.



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[elektronik@heitec.de](mailto:elektronik@heitec.de)



## HeiPac subrack family

A minimum of components – a multitude of applications

# SUBRACKS

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

All HeiPac 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 only exception is the HeiPac EASY subrack system, which is based on a horizontal rail system of its own. All front systems can be universally applied for all subrack families.

The subracks are shock and vibration-tested and comply with IEC 60297-3-101, 102 and 103.

## HeiPac Vario



*Universal 19" subrack system*

- Varied size range
- Flexible design options
- A wealth of accessories
- EMC screening optional

→ Page 20

## HeiPac Vario EMC



*Universal 19" subrack system for EMC applications*

- Varied size range
- Flexible design options
- A wealth of accessories
- EMC screening

→ Page 23

## HeiPac Vario ECO



*Economical 19" subrack system*

- Available in standard sizes
- Extensive accessories
- Low-cost design with galvanized sheet steel
- EMC screening optional

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## HeiPac Vario COMPACT

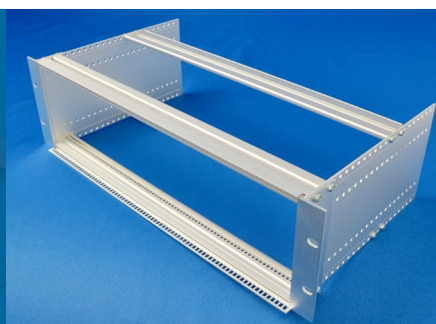


*Compact subrack system in 21 HP and 42 HP*

- For rail or wall mounting
- A wealth of accessories
- EMC screening optional

→ Page 28

## HeiPac Vario HEAVY



*Rugged 19" subrack system for mobile use*

- Increased mechanical strength
- Certified for use in railway applications as per EN 50155
- A wealth of accessories
- EMC screening optional

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## HeiPac EASY



*Economical, rugged 19" subrack system*

- Bolts pre-assembled
- convenient accessories
- Very easy to assemble
- EMC not available

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# SUBRACKS

## HeiPac Vario / Vario EMC



For standard applications/EMC applications or complex installations

### Applications

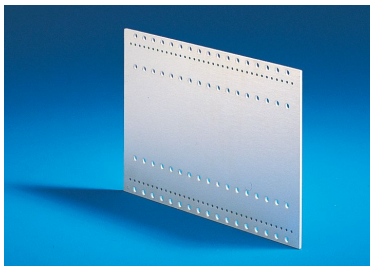
Subrack system for standard applications or complex installations. Suitable for installation of standardised PCBs or plug-in units from 160mm up to 400 mm depth.

### Technical specifications

- 482.6 mm (19") subrack according to IEC 60297-3
- 3, 4, 6, 7 and 9 U
- For board depths up to 400 mm
- Side panels of aluminium, clear-chromated
- 10 mm mounting grids for horizontal rails
- Rear equipment for installation of backplanes or connectors
- Separate 19" flanges
- EMC version including EMC gaskets

### Benefits at a glance

- Side panels with 10 mm mounting grid
- The HeiPac Vario is upgradeable to EMC
- 19" flanges optionally for front/rear mounting
- Wide range of standard sizes available
- For installation of backplanes or connectors
- Broad range of accessories



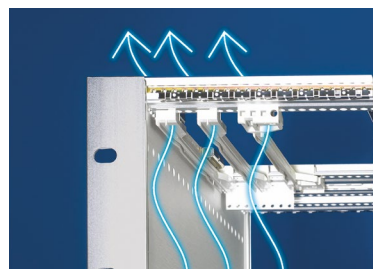
10 mm pitch pattern of holes allows many varieties



Components made of solid aluminium alloy

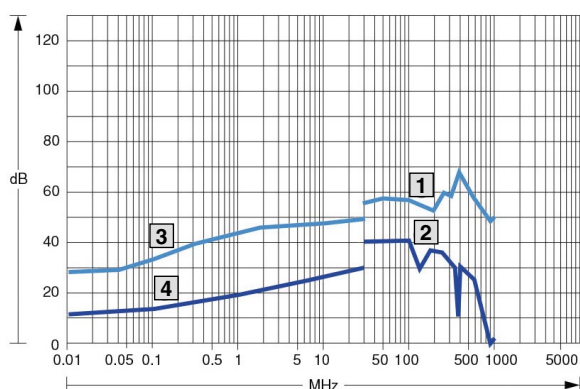


Contact springs made of stainless steel provide high EMC protection



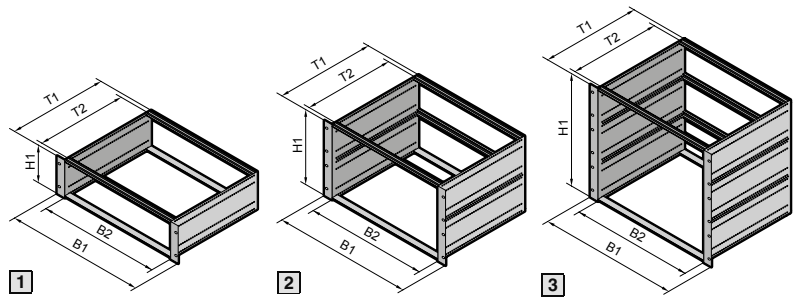
Effective heat dissipation due to open design

## EMC diagram for HeiPac Vario/Vario EMC



- MHz = Frequency  
 dB = HF-attenuation
- 1** E-Field = Electric field (V/m)  
EMC subrack
  - 2** E-Field standard subrack
  - 3** H-Field = Magnetic field (A/m)  
EMC subrack
  - 4** H-Field standard subrack

HeiPac Vario 3 U, 6 U, 9 U



**Material/surface finish**

Side panels: 2.5 mm aluminium, clear-chromated  
 Horizontal rails: Extruded aluminium section, clear-chromated  
 19" flanges: Extruded aluminium section, clear-chromated

**Supply includes**

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

**Tests**

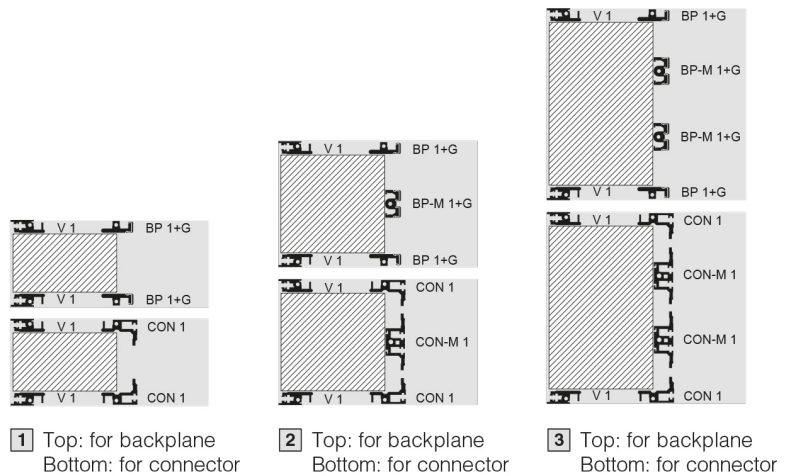
Shock and vibration tested to:  
 IEC 60068-2-6  
 IEC 60068-2-27

**Standards**

HeiPac subracks are based on the system dimensions of IEC 60297-3

**Note**

Upgradeable to EMC



1 Top: for backplane Bottom: for connector  
 2 Top: for backplane Bottom: for connector  
 3 Top: for backplane Bottom: for connector

					Order No.					
					1		2		3	
U					3		6		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 60603-2	For backplane	For connector IEC 60603-2	For backplane	For connector IEC 60603-2
482.6 (19")	84	185	160	160	<b>3684.020</b>	<b>3684.034</b>	<b>3684.043</b>	<b>3684.056</b>	-	-
		225	200	160	<b>3684.021</b>	<b>3684.035</b>	<b>3684.044</b>	<b>3684.057</b>	-	-
		245	220	220	<b>3684.022</b>	<b>3684.036</b>	<b>3684.045</b>	<b>3684.058</b>	-	-
		285	260	220	<b>3684.023</b>	<b>3685.281</b>	<b>3684.046</b>	-	-	-
		305	280	280	<b>3685.231</b>	<b>3685.233</b>	<b>3685.238</b>	<b>3685.240</b>	-	-
		345	320	280	<b>3684.024</b>	-	<b>3684.047</b>	-	<b>3684.051</b>	<b>3684.059</b>
		365	340	340	<b>3685.232</b>	<b>3685.234</b>	<b>3685.239</b>	-	-	-
		405	380	340	<b>3684.025</b>	-	<b>3684.048</b>	-	<b>3684.052</b>	<b>3684.060</b>
		465	440	400	<b>3684.026</b>	-	<b>3684.049</b>	-	<b>3684.053</b>	<b>3684.061</b>
		525	500	400	<b>3684.027</b>	-	<b>3684.050</b>	-	<b>3684.054</b>	-
585	560	400	-	-	-	-	<b>3684.055</b>	-		

Other customised subrack solutions are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at Tel. +49 9126 - 29 34 0 or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# SUBRACKS

## HeiPac Vario

### HeiPac Vario 4 U, 7 U



#### Material/surface finish

Side panels: 2.5 mm aluminium, clear-chromated  
 Horizontal rails: Extruded aluminium section, clear-chromated  
 19" flanges: Extruded aluminium section, clear-chromated

#### Supply includes

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

#### Tests

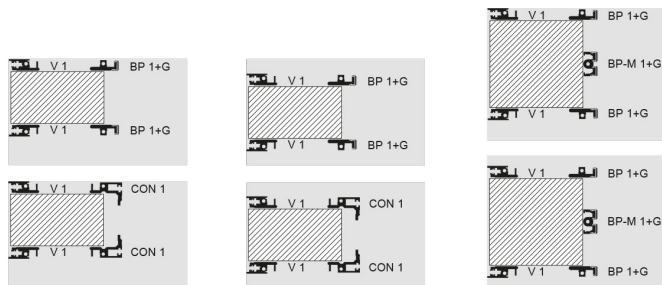
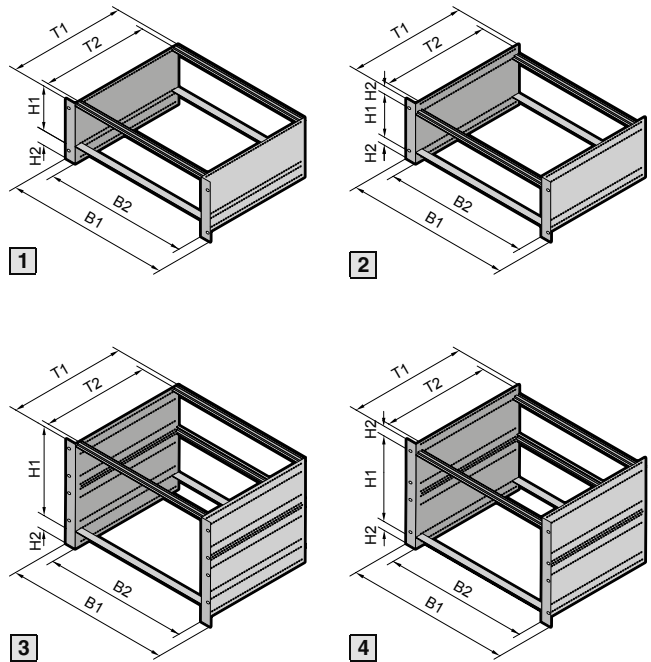
Shock and vibration tested to:  
 IEC 60068-2-6  
 IEC 60068-2-27

#### Standards

HeiPac subracks are based on the system dimensions of IEC 60297-3

#### Note

Upgradeable to EMC

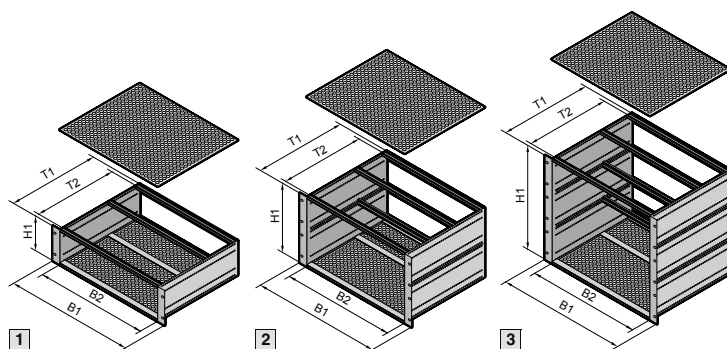


1 Top: for backplane Bottom: for connector  
 2 Top: for backplane Bottom: for connector  
 3 Top: for backplane (6 U + 1 U) Bottom: for backplane (6 U + 2 x 1/2 U)

					Order No.							
					1		2		3		4	
U (H1 + H2)					4 (3 + 1)	4 (3 + 1)	4 (3 + 2 x 1/2)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 2 x 1/2)		
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 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>		

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



**EMC**

### Material/surface finish

Side panels: 2.5 mm aluminium, clear-chromated  
 Horizontal rails: Extruded aluminium section, clear-chromated  
 19" flanges: Extruded aluminium section, clear-chromated  
 Covers: Aluminium, unplated

### Supply includes

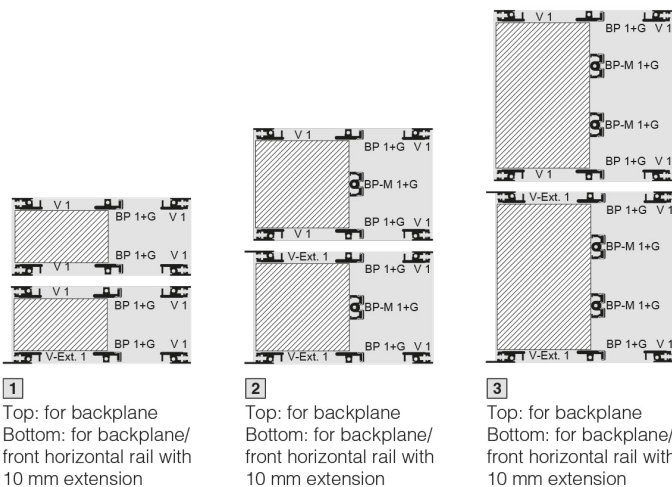
Flanges, rear trim, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips

### Tests

Shock and vibration tested to:  
 IEC 60068-2-6  
 IEC 60068-2-27

### Standards

HeiPac subracks are based on the system dimensions of IEC 60297-3



					Order No.					
					<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

Other customised subrack solutions are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# SUBRACKS

## HeiPac Vario EMC

### HeiPac Vario EMC 4 U, 7 U



#### Material/surface finish

Side panels: 2.5 mm aluminium, clear-chromated  
 Horizontal rails: Extruded aluminium section, clear-chromated  
 19" flanges: Extruded aluminium section, clear-chromated  
 Covers: Aluminium, unplated

#### Supply includes

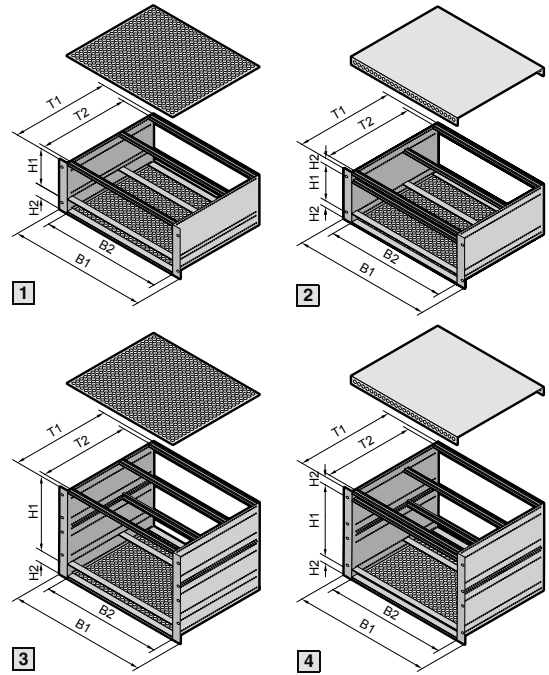
Flanges, rear trim, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips

#### Tests

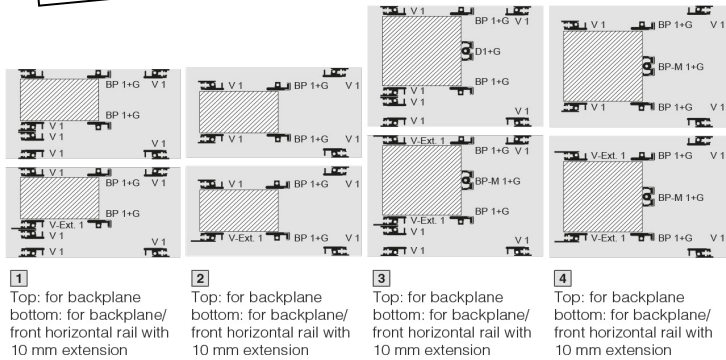
Shock and vibration tested to:  
 IEC 60068-2-6  
 IEC 60068-2-27

#### Standards

HeiPac subracks are based on the system dimensions of IEC 60297-3



**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

					Order No.							
					1		2		3		4	
U (H1+H2)					4 (3 + 1)	4 (3 + 1)	4 (3 + 2 x 1/2)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2 x 1/2)	7 (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

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**Systems for  
CompactPCI**



**Systems for  
CompactPCI Serial**



**Systems for  
VPX/openVPX**



**Systems for  
VME/VME64x**



**Systems for  
ATCA/MTCA**

## BENEFITS AT A GLANCE

HEITEC offers adjustments on single part level up to customized system solutions for various backplane technologies. HeiPac Vario and HeiPac Vario EMC are perfectly suited for expansion as a customized solution.

In the area of backplane architectures, HEITEC can look back on many years of know-how, which includes, for example, systems with ATCA, CPCI/CPCI Serial, VPX/openVPX and VME/VME64x. These technologies enable high scalability, flexibility and reliability in demanding industrial applications.

The systems, which HEITEC develops and manufactures according to customer requirements, contain ventilation/heating concepts tailored to the application, suitable power supplies, the necessary wiring and the complete system assembly including functional test.

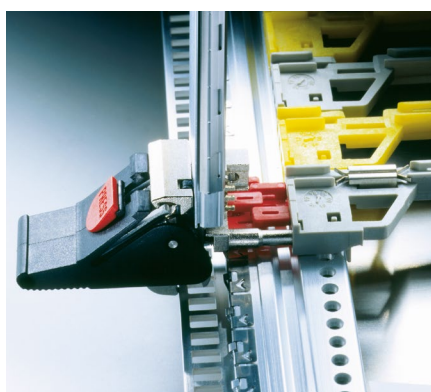
HEITEC manufactures individual parts and housings according to CI specifications:

- Front panel processing like drilling/milling incl. labeling
- Additional customizations such as special heights, depths, widths or mechanical machining are available upon request
- Development and production of individual, application-ready system solutions



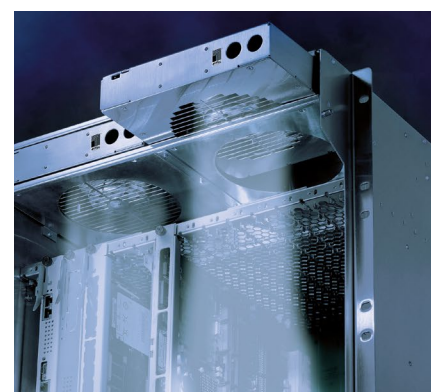
### EMC Features

All components have a conductive surfaces: stainless steel EMC gaskets are connected to the individual components. EMC front panels with EMC gaskets ensure proper contacting.



### ESD Protection

ESD pin and ESD Clip in the guide rail deflect electrostatic charging before contacting the plug-in-unit. ESD Clip in the PCB guide rail provides permanent and direct deflection via the PCB.

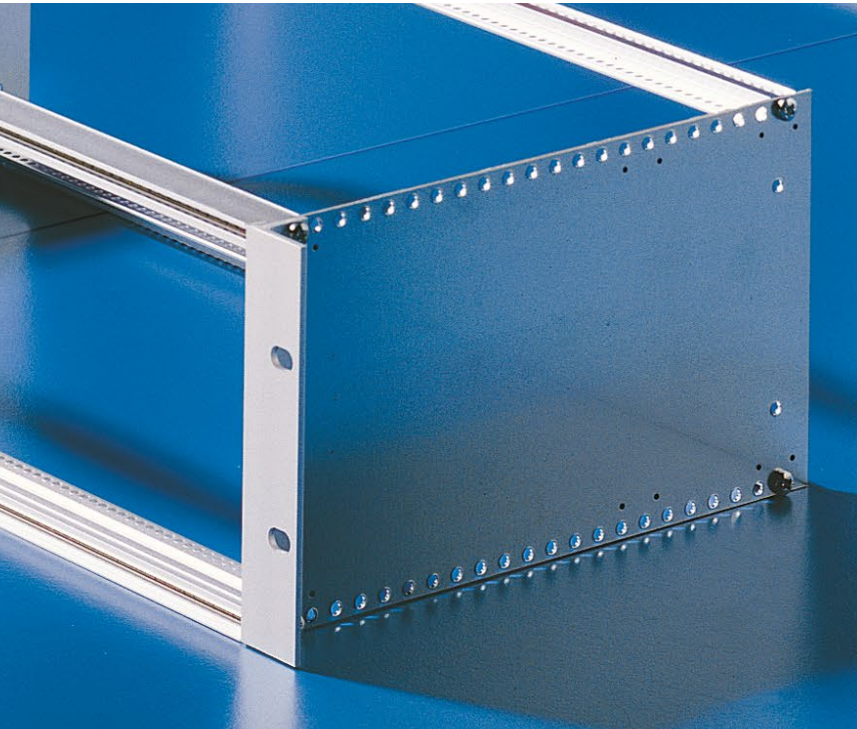


### Ventilation

Small card guides and horizontal rails ensure maximum air flow. Individual ventilation concepts provide well-directed air ducting and ideal heat dissipation - optionally from bottom to top or from front to rear.

# SUBRACKS

## HeiPac Vario ECO



*Economical 19" subrack system for standard applications*

### Applications

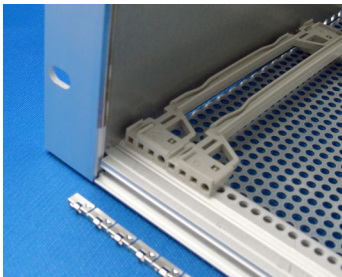
Economical subrack system for standard applications. Suitable for installation of standardised PCBs or plug-in units of 160 and 220 mm depth.

### Technical specifications

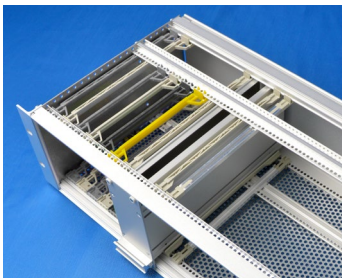
- Based on the HeiPac Vario subrack family, the basic components (horizontal rails) of the HeiPac Vario ECO are partly compatible with the HeiPac Vario.
- 482.6 mm (19") subrack according to DIN 41494, part 5/ IEC 60297-3
- 3 and 6 U
- For board depths: 160 mm and 220 mm
- Side panels of sheet steel, zinc-plated
- Pre-configured assembly points for horizontal rails
- Rear installation for backplanes (or optional for connector mounting)
- Separate 19" flanges

### Benefits at a glance

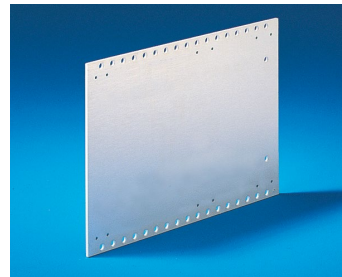
- Fast and easy handling
- Low-cost version
- Upgradable for assembly of backplanes or connectors (see page 79 et seq.)



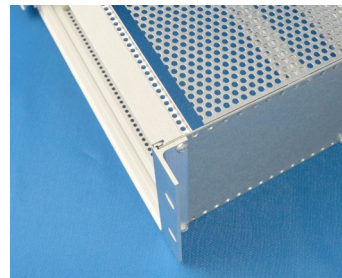
**Optional EMC upgrade ensures high EMC protection**



**A wide range of accessories allow manifold expansions**



**Side panels made of zinc-plated sheet steel**



**Plug-in top covers facilitate an easy assembly**

HeiPac Vario ECO 3 U, 6 U



**Material/surface finish**

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

**Supply includes**

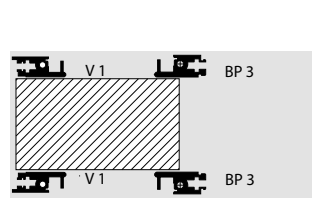
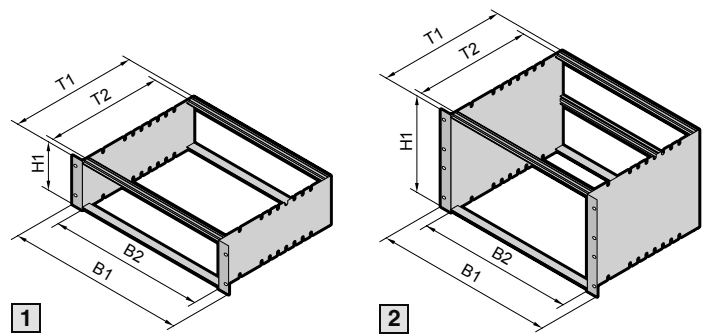
Side panels, flanges, horizontal rails, threaded inserts, assembly screws

**Tests**

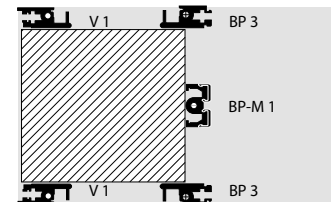
Shock and vibration tested to:  
 IEC 60068-2-6  
 IEC 60068-2-27

**Standards**

HeiPac subracks are based on the system dimensions of IEC 60297-3.



**1** for backplane



**2** for backplane

					Order No.	
					<b>1</b>	<b>2</b>
<b>U (H1)</b>					<b>3</b>	<b>6</b>
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>

Other customised subrack solutions are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# SUBRACKS

## HeiPac Vario COMPACT



For mounting plates or top-hat rails

### Applications

Subrack system for direct mounting in a cabinet. Mounting either on top hat rails or on mounting plate. Suitable for installation of standardised PCBs or plug-in units.

### Technical specifications

- Based on the HeiPac Vario subrack family, the basic components of the HeiPac Vario COMPACT are compatible with the HeiPac Vario.
- Subrack according to IEC 60297-3
- 3 and 6 U
- Side panels of aluminium, clear-chromated
- For board depths up to 160 mm
- Rear equipment for installation of backplanes
- Installation width: 21 and 42 HP

### Benefits at a glance

- Direct mounting on a mounting plate or a top-hat rail
- Variable cable entry from bottom/top for EMC version
- Side panels with 10 mm mounting grids for variable system assembly
- Suitable for mounting backplanes
- Optionally in EMC version



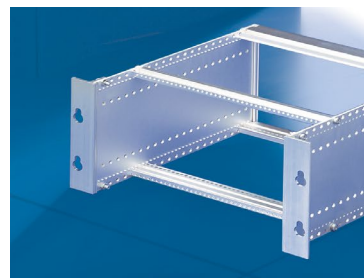
**Compact dimensions in 21 HP and 42 HP**



**Adapter for rail mounting**

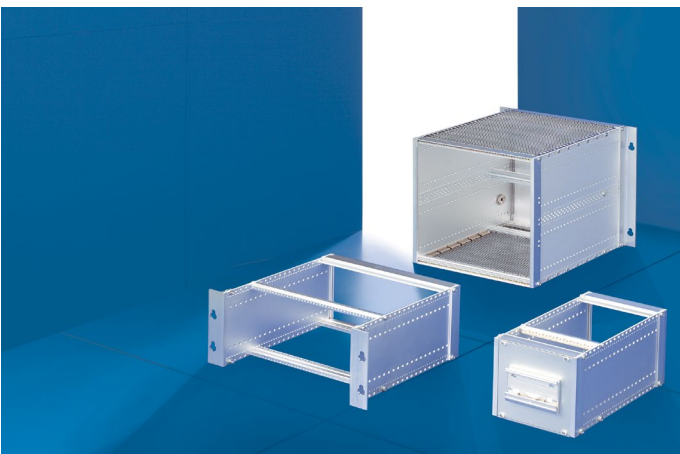


**Contact springs provide high EMC protection**



**Flange for wall-mounting**

## HeiPac Vario Compact 3 U, 6 U



### Material/surface finish

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

### Supply includes

Side panels, horizontal rails, threaded inserts, insulating strips, flanges for mounting plates, front/rear panels for top-hat rail adaptors

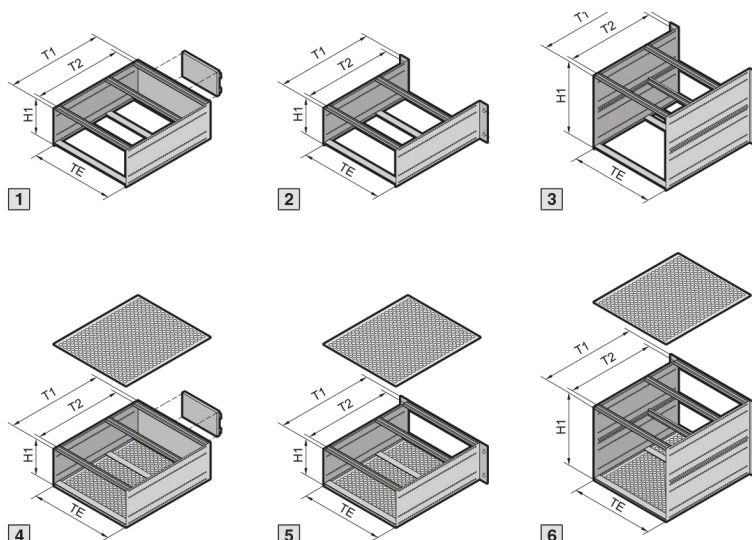
EMC version additional includes:  
 EMC gaskets, covers, front/rear panels, cable entry

### Tests

Shock and vibration tested to:  
 IEC 60068-2-6  
 IEC 60068-2-27

### Standards

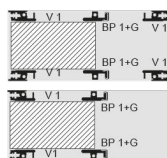
HeiPac subracks are based on the system dimensions of IEC 60297-3.



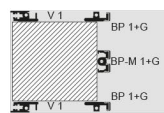
B = Width    HE = U  
 T = Depth    TE = HP

**1 4**  
 HeiPac Compact 3 U for top-hat rail

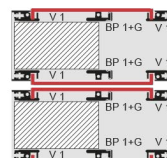
**2 3 5 6**  
 HeiPac Compact 3 U for mounting plate



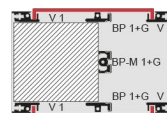
**1** Top: for top-hat rail  
**2** Bottom: for mounting plate



**3** For mounting plate



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



**6** EMC for mounting plate

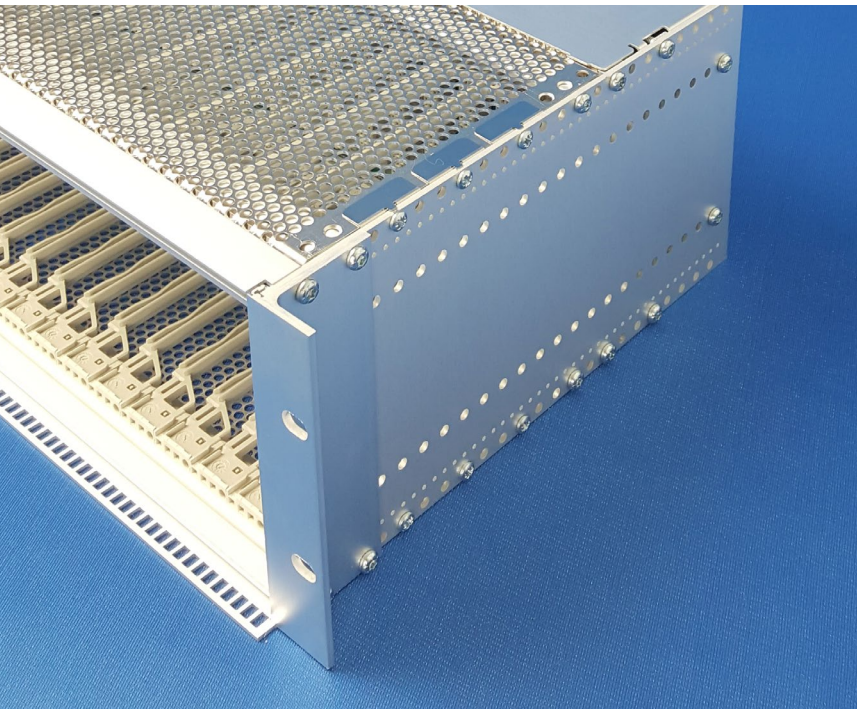


			Order No.					Order No. EMC				
			<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>U</b>			<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>6</b>
<b>Height (H1) mm</b>			132	132	132	132	265.35	132	132	132	132	265.35
<b>HP</b>			21	21	42	42	42	21	21	42	42	42
Attachment			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>

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# SUBRACKS

## HeiPac Vario HEAVY



*For heavy loads in mobile applications and tough ambient conditions*

### Applications

The standard product line HeiPac Vario HEAVY was specifically designed for use under rough environmental conditions and for mobile applications, such as for example railway or naval technologies.

The subrack system is shock and vibration-tested in accordance with EN 50155 and DIN EN 61587-1&2, and is designed to accommodate standardised PCBs.

### Technical specifications

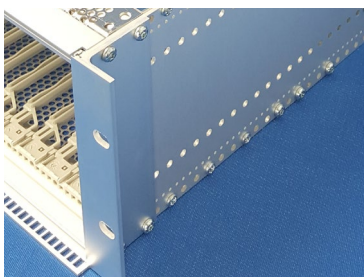
- rack-mount system in accordance with IEC 60297-3
- 3 and 6 U
- Clear-chromated aluminium side panels
- For card formats up to 220 mm deep
- Front horizontal rails with 10 mm extension for injector/extractor handles
- Horizontal rails with double screw fastening
- Reinforced mounting flange
- Rear equipment for installation of backplanes
- Installation width: 84 HP

### Benefits at a glance

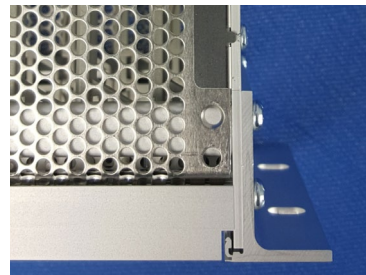
- Side panels with 10 mm mounting grids for variable system assembly
- For mounting backplanes
- Optionally in EMC version



**Extensive accessories allow for a wide range of expansion options**



**Horizontal rails with double screw fastening provide high mechanical strength**



**Reinforced flange ensures high resistance to shock and vibrations**



**EMC can be retrofitted**

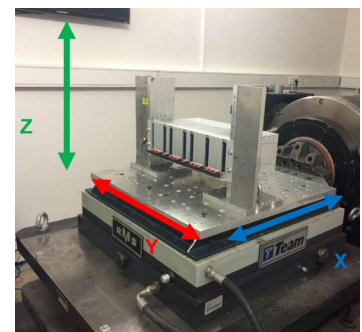
## Shock/vibration profile HeiPac Vario HEAVY

**Shock/vibration testing in accordance with : IEC 61587-1**

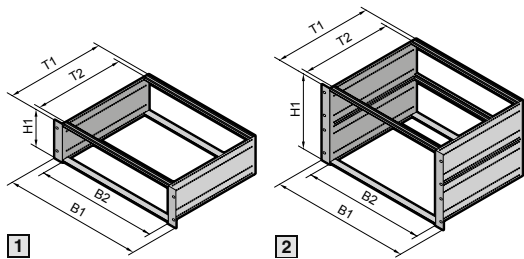
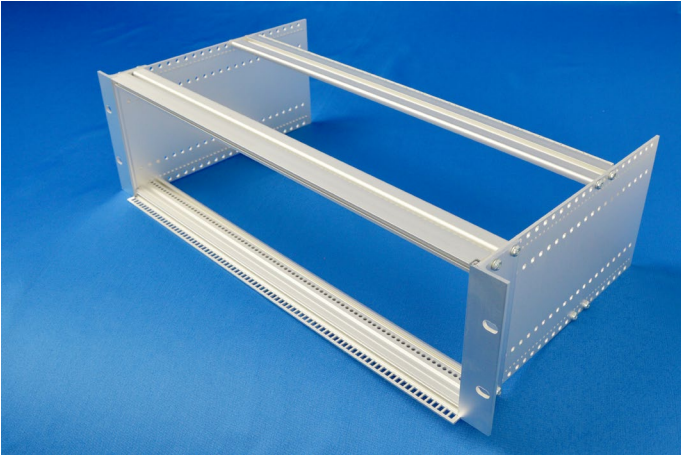
DL2V/DL2S for use in different locations

**Shock/vibration testing in accordance with : EN 50155**

EN 61373, category 1, class B



HeiPac Vario HEAVY 3 U, 6 U



**Material/surface finish**

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

**Supply includes**

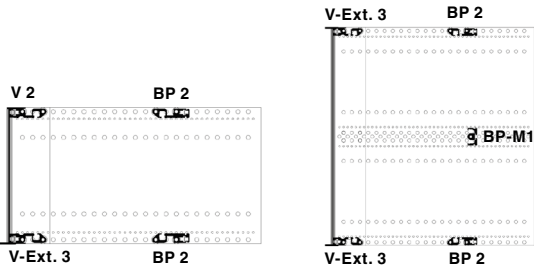
Side panels, flanges, horizontal rails, threaded inserts, assembly screws

**Tests**

Shock and vibration tested in accordance with:  
 DIN EN 61587-1&2  
 EN 50155

**Standards**

HeiPac subracks are based on the system dimensions of IEC 60297-3.



			Order No.		Order No.	
			without handle holes		with handle holes	
			1	2	1	2
<b>U</b>			3	6	3	6
<b>Height (H1) mm</b>			132	265.35	132	265.35
<b>HP</b>			84	84	84	84
Side panel (T1) mm	T2 mm	Max. PCB depth mm				
245	220	160	9921.860	9921.862	9921.864	9921.866
305	280	220	9921.861	9921.863	9921.865	9921.867

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# SUBRACKS

## HeiPac EASY



*Economical, rugged 19" subrack system*

### Applications

Subrack system for standard applications that require easy handling and fast assembly. Suitable for installation of standardised PCBs or plugin units up to 400 mm depth.

### Technical specifications

- 482.6 mm (19") subrack according to IEC 60297-3
- 3 and 6 U
- For board depths: 160 mm, 220 mm, 280 mm, 340 mm, 400 mm
- Fast and easy assembly due to pre-assembled screws and longitudinal holes in the side panels
- Horizontal rails with double screwed joint
- Material: aluminium, noncorrosive
- 60 mm mounting grids for horizontal rails
- Rear horizontal rails with integrated contact surface
- Rear equipment for installation of backplanes or connectors
- Separate 19" flanges

### Benefits at a glance

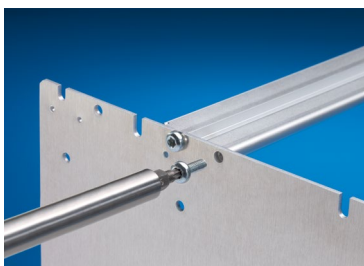
- Fast and easy handling by pre-assembled screws in the horizontal rails
- Top covers easily insertable
- Horizontal rails with integrated contact surface (insulating strips cannot be used)
- Double screw joints of horizontal rails ensure stability even for high loads



**EASY completely assembled in two minutes**



**Top covers easily to retract**



**Horizontal rails with double screwed joint ensure a higher mechanical resistance**



**EASY to handle and yet extremely versatile**

## Requirement Profile HeiPac EASY

### EN 61587-1; Requirement Category C2

Climatic tests: cold, dry and damp heat, cyclic

### EN 61587-1; Requirement Category A1

Industrial climate

### IEC 61587-1; Requirement Category SL1

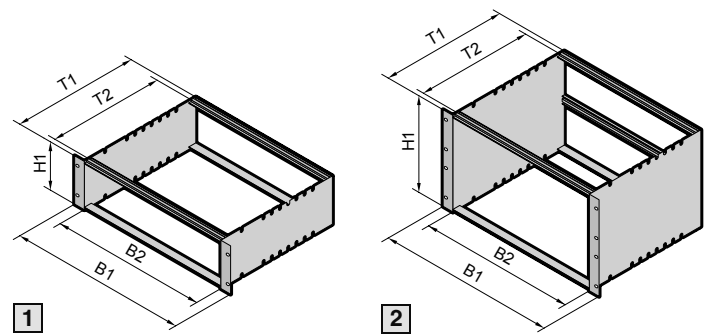
Mechanical tests: mechanical loads (static)

### IEC 61587-1; Requirement Category DL1

Mechanical loads, industrial applications (dynamic)



## HeiPac EASY 3 U, 6 U



### Material/surface finish

Side panels: 2 mm aluminium, unplated  
Horizontal rails: extruded aluminium section, noncorrosive  
Flanges: pre-anodised

### Supply includes

Side panels, flanges, horizontal rails incl. pre-mounted threaded inserts and assembly screws

### Tests

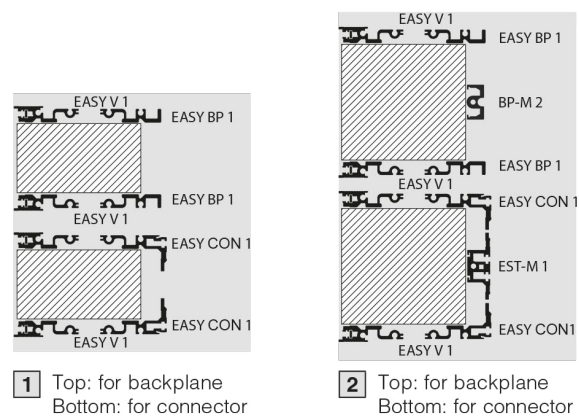
Shock- and vibration tested to:  
IEC 60068-2-6  
IEC 60068-2-27

### Standards

HeiPac subracks are based on the system dimensions of IEC 60297-3

### Note

Backplanes can be mounted directly on the rear horizontal rails. Isolating strips cannot be used.



1 Top: for backplane  
Bottom: for connector

2 Top: for backplane  
Bottom: for connector

					Order No.			
					1		2	
U (H1)					3		6	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60603-2	For backplane	For connector IEC 60603-2
482.6 (19")	84	175	160	160	<b>3634.100</b>	<b>3634.150</b>	<b>3634.180</b>	<b>3634.230</b>
		235	220	220	<b>3634.110</b>	<b>3634.160</b>	<b>3634.190</b>	<b>3634.240</b>
		295	280	280	<b>3634.120</b>	<b>3634.170</b>	<b>3634.200</b>	<b>3634.250</b>
		355	340	340	<b>3634.130</b>	-	<b>3634.210</b>	-
		415	400	400	<b>3634.140</b>	-	<b>3634.220</b>	-

Other customised subrack solutions are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at Tel. +49 9126 - 29 34 0 or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).



**HEITEC Instrument Cases and System Enclosures**

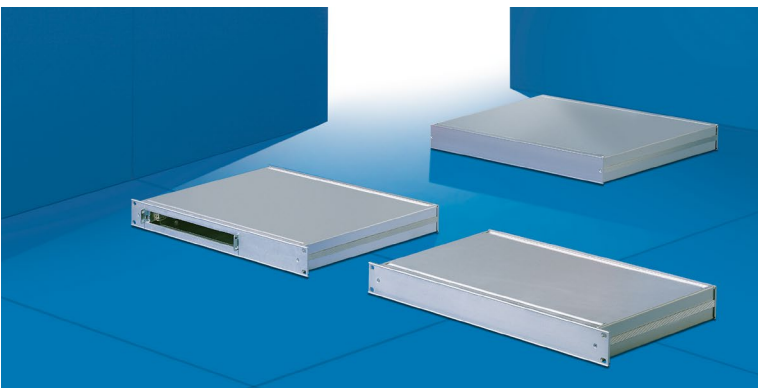
High Functionality and Modern Design

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

The HeiCase instrument case impresses with its modern design and high functionality. Particular features include the numerous colour variants and the all-metal enclosure construction. The HeiPac Vario-Module system enclosure (instrument case or rack-mount enclosure) is fully compatible with the latest HeiPac subrack range, making it ideal for individual configuration and assembly as a microcomputer system.

At just 1 U and 2 U, the HeiBox system enclosure offers a high packaging density in the smallest space.

## HeiBox ALU

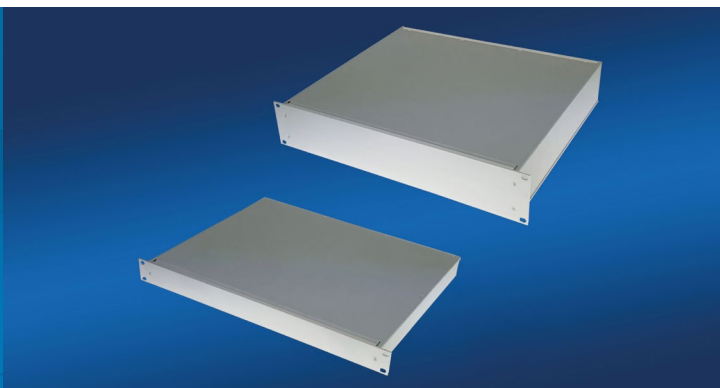


*High-quality 1 U 19" system enclosure*

- Optionally for use as an instrument case or rack-mount enclosure
- For horizontal installation of standardised 6 U boards
- For individual expansion
- High-quality aluminium design
- Extremely easy to assemble
- EMC upgradeable

→ Page 36

## HeiBox ECO



*Economical 1 U and 2 U 19" system enclosure*

- Optionally for use as an instrument case or rack-mount enclosure
- For individual expansion
- Extremely easy to assemble
- Low-cost design made of sheet steel
- EMC upgradeable

→ Page 38

## HeiPac Vario-Module



*Universal 19" system enclosure*

- Optionally for use as an instrument case or rack-mount enclosure
- Varied selection of sizes
- Flexibel design options
- Wide range of accessories
- EMC upgradeable

→ Page 40

## HeiCase



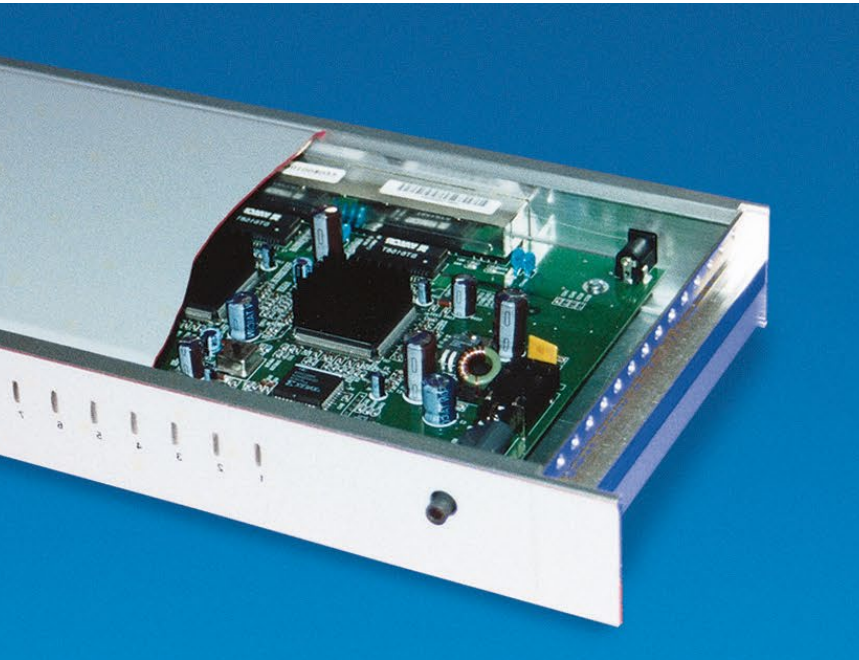
*Universal instrument case*

- Instrument case for the installation of 19"- slide-in assemblies and- elements
- For individual expansion
- Outstanding stability
- Varied selection of sizes
- Flexibel design options
- Wide range of accessories
- Modern design

→ Page 52

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## HeiBox ALU



*Innovative system enclosure for standard applications*

### Applications

The HeiBox ALU is optionally for use as an instrument case or rack-mount enclosure. Accommodates Eurocards/ Double Eurocards (horizontal), switches, patch panels, routers or modems.

### Technical specifications

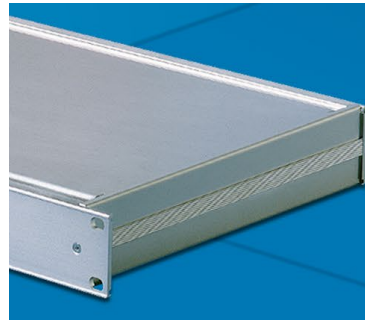
- 19" system enclosure, complies with IEC 60297-3
- Optionally for use as an instrument case or rack-mount enclosure
- Height: 1 U
- Installation width: 84 HP
- Optionally with mounting kit for 1 Double Eurocard
- Mounting plate (accessory) for individual population
- Extruded aluminium section
- Protection category IP 40

### Benefits at a glance

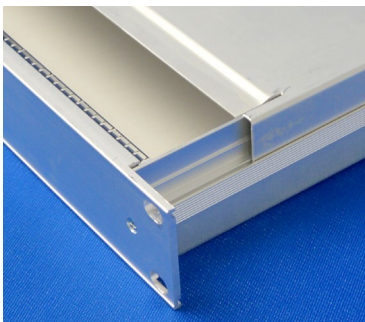
- Minimum space requirement
- Easy and fast mounting
- High-quality design
- EMC upgradeable
- Individual assembly according to customer needs



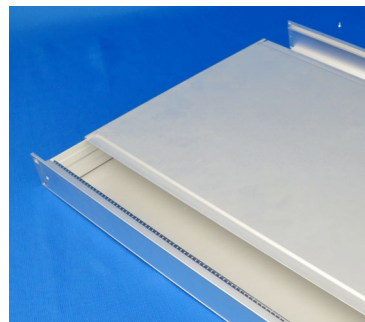
**Installation of standardised 6 U boards with mounting kit**



**Solid, high-quality design of extruded aluminium section**

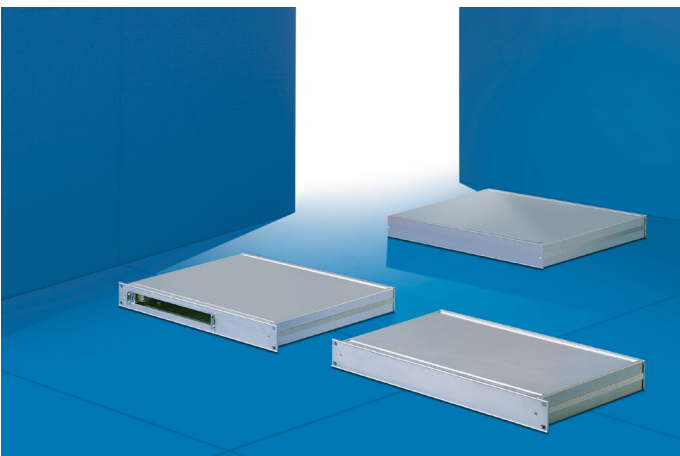


**High EMC protection with additional EMC kit**

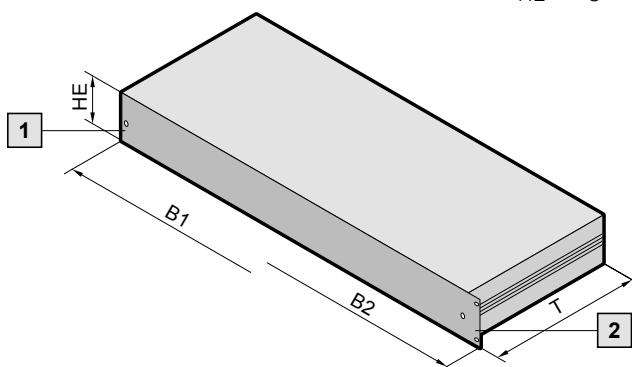


**Easy to assemble with just 4 screws**

### HeiBox system enclosure 1 U



B = Width  
T = Depth  
HE = U



#### Technical specifications

System enclosures 1 U, 150, 200, 250, 300, 350 mm deep. Easy to assemble with just 4 screws. Optionally for use as an instrument case or 19" rack-mount enclosure. Front panel to hold an overlay to conceal the screws. Maximum interior space. Optional EMC upgrades with additional EMC gaskets. Option of installing electronic boards such as 1 VME or CPCI board horizontally.

#### Design

System enclosure 1 U, to IEC 60297-3. Optionally available for 19" rack-mounting in the enclosure or as an instrument case version.

- 1** Equipped as an instrument case
- 2** Equipped as a rack-mount unit

#### Material/surface finish

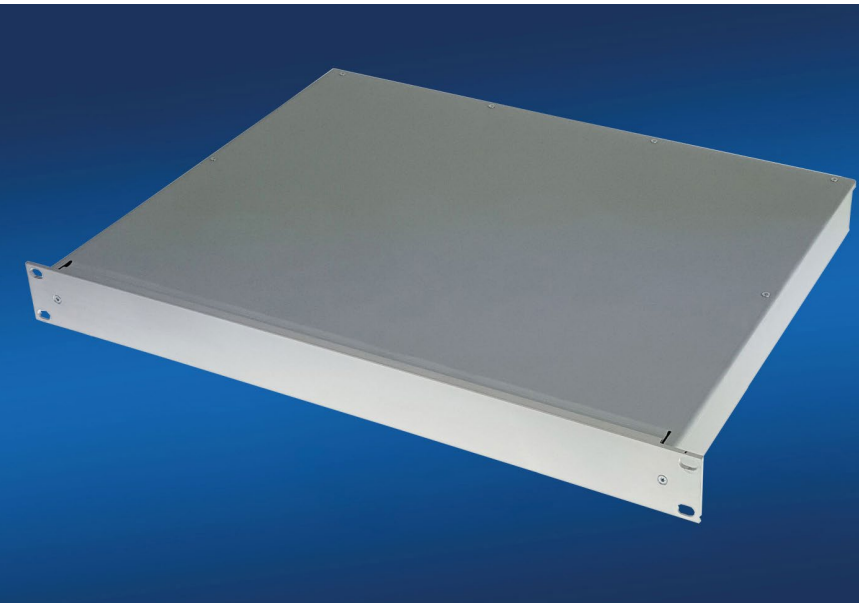
Side panels: Extruded aluminium section, untreated  
Base/cover trays: Aluminium, clear-chromated  
Front/rear panel: Extruded aluminium section, clear-chromated  
Mounting plate: Aluminium

U	1	1	1	1	1	1	1
<b>Width (B1) mm</b>	447	447	447	447	447	447	447
<b>Width (B2) mm</b>	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")
<b>Depth (T) mm</b>	150	200	250	300	350	250	350
<b>Model No. instrument case</b>	<b>3687.819</b>	<b>3687.820</b>	<b>3687.821</b>	<b>3687.822</b>	<b>3687.823</b>	-	-
<b>Model No. rack case</b>	<b>3687.814</b>	<b>3687.815</b>	<b>3687.816</b>	<b>3687.817</b>	<b>3687.818</b>	-	-
<b>Model No. rack-mount including mounting kit for double Euroboards</b>	-	-	-	-	-	<b>3684.072</b>	<b>3684.073</b>
<b>Supply includes</b>							
Side panel	2	2	2	2	2	2	2
Front panel	1	1	1	1	1	1	1
Rear panel	1	1	1	1	1	1	1
Base/cover tray	2	2	2	2	2	2	2
Mounting kit	-	-	-	-	-	1	1
<b>Accessories</b>							
EMC set	<b>9919.999</b>	<b>9919.999</b>	<b>9919.999</b>	<b>9919.999</b>	<b>9919.999</b>	<b>9919.999</b>	<b>9919.999</b>
Mounting plate	<b>3684.074</b>	<b>3684.075</b>	<b>3684.076</b>	<b>3684.077</b>	<b>3684.078</b>	-	-

Other customised solutions regarding dimensions and coloring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## HeiBox ECO



*Well-priced system enclosure for standard applications*

### Applications

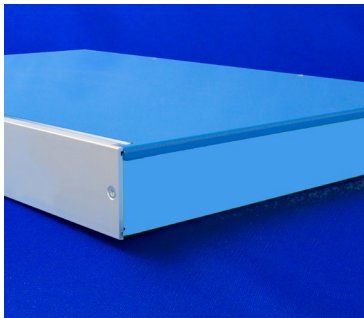
The HeiBox ECO is for use as a rack-mount enclosure. Accommodates Eurocards/Double Eurocards (horizontal), switches, patch panels, routers or modems.

### Technical specifications

- 19" system enclosure, complies with IEC 60297-3
- For use as a rack-mount enclosure
- Height: 1 U and 2 U
- Installation width: 84 HP
- Enclosure made of sheet steel, front panel and rear panel made of extruded aluminium section
- Optionally available as an instrument case or rack-mount enclosure
- Optional: highly effective EMC protection

### Benefits at a glance

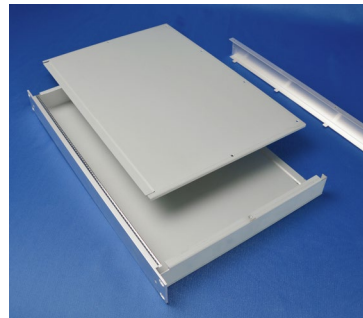
- Minimum space requirement
- Well-priced and solid
- Easy and fast mounting
- EMC upgradeable
- Individual assembly according to customer needs



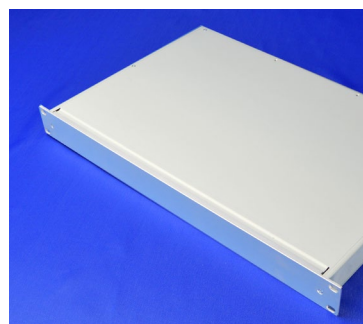
**Available as instrument case with individual spray finish upon request**



**High EMC protection with additional EMC kit**

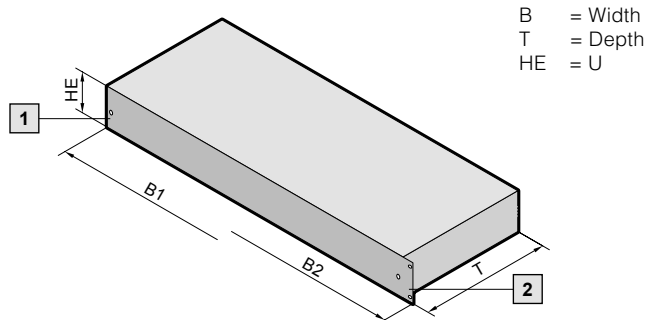
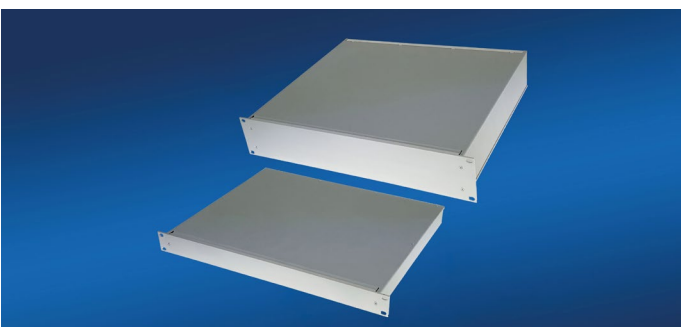


**Easy to assemble with just 4 components**



**Aluminium rear panel easy to process**

### HeiBox ECO system enclosure 1 U and 2 U



#### Technical specifications

System enclosures 1 U and 2 U, 150 mm up to 400 mm deep. Easy to assemble with just 4 components. Optionally for use as an instrument case or 19" rack-mount enclosure. Maximum interior space. Optional EMC upgrades with additional EMC gaskets.

#### Design

System enclosure 1 U and 2 U, to IEC 60297-3. Optionally available for 19" rack-mounting in the enclosure or as an instrument case version on customer request.

#### Supply includes

- Front panel
- Cover
- Base tray
- Rear panel
- Assembly parts

- 1** Equipped as an instrument case
- 2** Equipped as a rack-mount unit

#### Material/surface finish

Base tray: sheet steel  
 Front/rear panel: Extruded aluminium section, clear-chromated  
 Cover: sheet steel

#### Note

Upon request, the HeiBox ECO is also available as 2 U version as well as instrument case with individual spray finish.

Width (B1) mm	Width (B2) mm	Depth (T) mm	Order No.	
			1 U	2 U
447	482,6 (19")	150	<b>9919.795</b>	<b>9922.394</b>
		200	<b>9919.796</b>	<b>9922.395</b>
		250	<b>9919.797</b>	<b>9922.235</b>
		300	<b>9919.798</b>	<b>9922.396</b>
		350	<b>9919.799</b>	<b>9922.397</b>
		400	-	<b>9921.809</b>
		450	-	<b>9920.864</b>

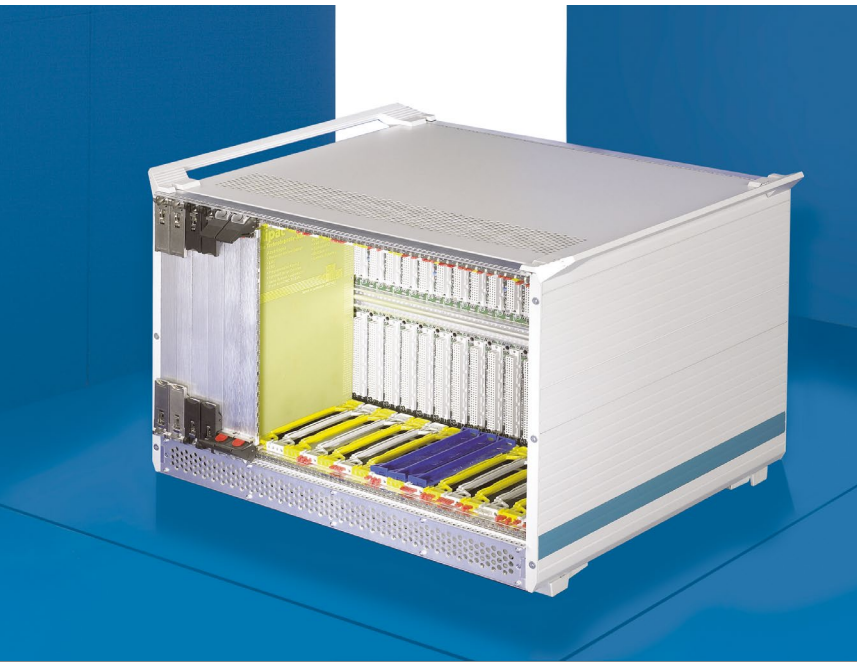
#### Accessories

EMC set **9919.800**

Other customised solutions regarding dimensions and coloring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## HeiPac Vario-Module



Modern system enclosure for mobile and stationary applications

### Applications

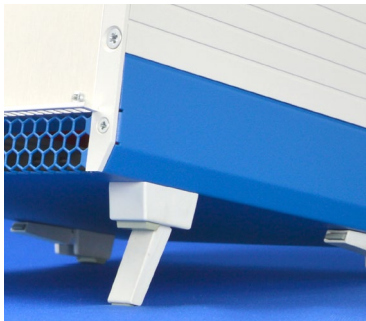
Optionally for use as an instrument case or rack-mount enclosure. Accommodates PCBs or plug-in units. For mobile and stationary applications.

### Technical specifications

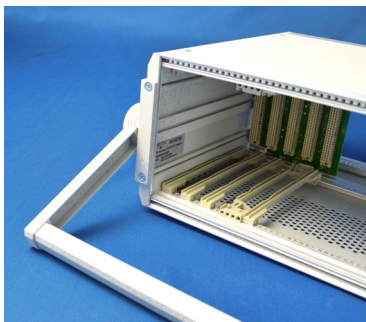
- 19" system enclosure, complies with IEC 60297-3
- Optionally for use as an instrument case or rack-mount enclosure
- Basic case optionally with bottom or top cover
- Height: 2 - 7 U
- Installation width: 42, 63, 84 HP
- Depth: 250 - 430 mm
- Variable depth interior installation
- Extruded aluminium section
- Protection category IP 40

### Benefits at a glance

- Easy modification from instrument case to rack-mount system
- Broad range of accessories
- Aesthetic design
- Basic case with variable expansions
- Optional EMC version



Customization and coloration possible



Interior fittings from the HeiPac Vario range



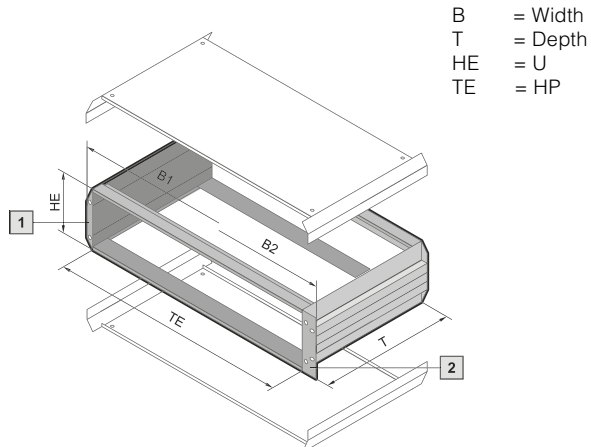
Flange for 19" installation



Front corner trims for assembly as instrument case



### HeiPac Vario-Module 2 U



#### Technical specifications

Optionally for use as an instrument case or rack-mount enclosure. External dimensions to IEC 60297-3 for installation in enclosures, 482,6 mm (19"). Installation dimensions for plug-in units according to IEC 60297-3-101.

#### Protection category

IP 40 for non-vented version.

#### Supply includes

- 2 side panels
- 4 horizontal rails
- 4 threaded inserts
- 2 corner trims for the rear of the enclosure
- Assembly parts

- 1** Equipped as an instrument case
- 2** Equipped as a rack-mount enclosure

#### Material/surface finish

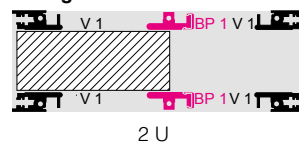
- Side panels: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Horizontal rail: Extruded aluminium section, clear-chromated
- Side trim panels: Extruded aluminium section, spray-finished in grey (RAL 7035)

#### Note

Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see page 68

#### Exemplary horizontal rail configuration

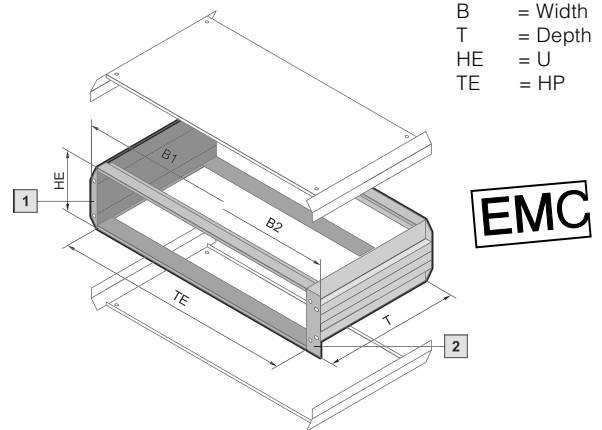


	Packs of	2 U						Page
<b>Installation width (HP)</b>		<b>42</b>	<b>42</b>	<b>63</b>	<b>63</b>	<b>84</b>	<b>84</b>	
<b>Width (B1) mm</b>		235.6	235.6	342.3	342.3	449.0	449.0	
<b>Width (B2) mm</b>		251.6	251.6	358.3	358.3	465.1	465.1	
<b>Depth (T) mm</b>		250.4	310.4	250.4	310.4	250.4	310.4	
<b>Mod.No. VM basic case</b>	1	<b>3982.000</b>	<b>3982.020</b>	<b>3982.290</b>	<b>3982.300</b>	<b>3982.010</b>	<b>3982.030</b>	
<b>Also required</b>								
Top covers								
- with vent holes	1	<b>3982.941</b>	<b>3982.951</b>	<b>3982.942</b>	<b>3982.952</b>	<b>3982.940</b>	<b>3982.950</b>	47
- without vent holes	1	<b>3982.901</b>	<b>3982.911</b>	<b>3982.902</b>	<b>3982.912</b>	<b>3982.900</b>	<b>3982.910</b>	47
Bottom covers								
- with vent holes	1	<b>3982.741</b>	<b>3982.751</b>	<b>3982.742</b>	<b>3982.752</b>	<b>3982.740</b>	<b>3982.750</b>	47
- without vent holes	1	<b>3982.701</b>	<b>3982.711</b>	<b>3982.702</b>	<b>3982.712</b>	<b>3982.700</b>	<b>3982.710</b>	47
Front corner trims for assembly as instrument case	2	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	49
Flanges for configuration as rack-mount system - without handle holes	2	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	48
<b>Accessories</b>								
Front/rear panels	see page 50 - 51							
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	49

Other customised solutions regarding dimensions and colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+499126-29340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

## HeiPac Vario-Module

### HeiPac Vario-Module 2 U, EMC



#### Technical specifications

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60297-3 for installation in enclosures, 482.6 mm (19"). Installation dimensions for plug-in units according to IEC 60297-3-101.

#### Protection category

IP 40 for non-vented version.

#### Supply includes

- 2 side panels
- 4 horizontal rails
- 4 threaded inserts
- 2 corner trims for the rear of the enclosure
- Assembly parts

**1** Equipped as an instrument case

**2** Equipped as a rack-mount enclosure

#### Material/surface finish

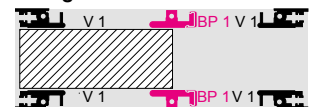
- Side panels: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Horizontal rail: Extruded aluminium section, clear-chromated
- Corner trims: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Contact points: conductive

#### Note

Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see pages 68

#### Exemplary horizontal rail configuration

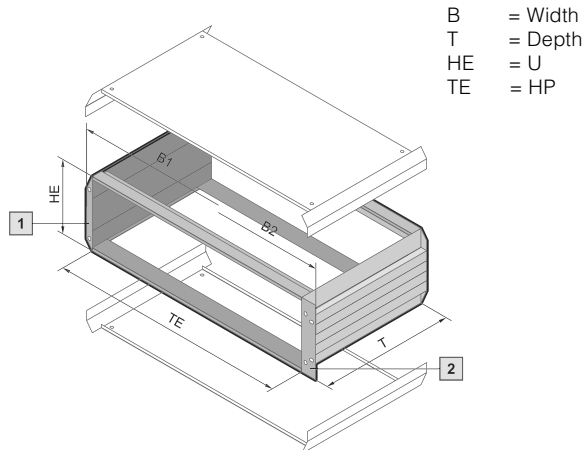


2 U

	Packs of	2 U						Page
<b>Installation width (HP)</b>		<b>42</b>	<b>42</b>	<b>63</b>	<b>63</b>	<b>84</b>	<b>84</b>	
<b>Width (B1) mm</b>		235.6	235.6	342.3	342.3	449.0	449.0	
<b>Width (B2) mm</b>		251.6	251.6	358.3	358.3	465.1	465.1	
<b>Depth (T) mm</b>		250.4	310.4	250.4	310.4	250.4	310.4	
<b>Mod.No. VM basic case EMC</b>	1	<b>3983.000</b>	<b>3983.020</b>	<b>3983.290</b>	<b>3983.300</b>	<b>3983.010</b>	<b>3983.030</b>	
<b>Also required</b>								
Top cover								
- with vent holes	1	<b>3981.941</b>	<b>3981.951</b>	<b>3981.942</b>	<b>3981.952</b>	<b>3981.940</b>	<b>3981.950</b>	47
- without vent holes	1	<b>3981.901</b>	<b>3981.911</b>	<b>3981.902</b>	<b>3981.912</b>	<b>3981.900</b>	<b>3981.910</b>	47
Bottom covers								
- with vent holes	1	<b>3981.741</b>	<b>3981.751</b>	<b>3981.742</b>	<b>3981.752</b>	<b>3981.740</b>	<b>3981.750</b>	47
- without vent holes	1	<b>3981.701</b>	<b>3981.711</b>	<b>3981.702</b>	<b>3981.712</b>	<b>3981.700</b>	<b>3981.710</b>	47
Corner trims for assembly as instrument case	2	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	49
Flanges for configuration as rack-mount enclosure								
- without handle holes	2	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	48
<b>EMC installation</b>								
EMC gaskets, horizontal - for upper/lower horizontal rail	1	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	85
- between covers and horizontal rails	10	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	89
EMC gaskets, vertical	1	<b>3686.974</b>	<b>3686.974</b>	<b>3686.974</b>	<b>3686.974</b>	<b>3686.974</b>	<b>3686.974</b>	51
Front/rear panels EMC	see page 50 - 51							
<b>Accessories</b>								
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	49

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### HeiPac Vario-Module 3 U



#### Technical specifications

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60297-3 for installation in enclosures, 482.6 mm (19"). Installation dimensions for plug-in units according to IEC 60297-3-101.

#### Protection category

IP 40 for non-vented version.

#### Supply includes

- 2 side panels
- 4 horizontal rails
- 4 threaded inserts
- 2 corner trims for the rear of the enclosure
- Assembly parts

- 1** Equipped as an instrument case
- 2** Equipped as a rack-mount enclosure

#### Material/Surface finish

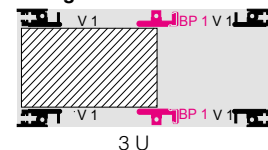
- Side panels: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Horizontal rail: Extruded aluminium section, clear-chromated
- Corner trims: Extruded aluminium section, spray-finished in grey (RAL 7035)

#### Note

Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see pages 68

#### Exemplary horizontal rail configuration



	Packs of	3 U							Page
<b>Installation width (HP)</b>		<b>42</b>	<b>42</b>	<b>63</b>	<b>63</b>	<b>84</b>	<b>84</b>	<b>84</b>	
<b>Width (B1) mm</b>		235.6	235.6	342.3	342.3	449.0	449.0	449.0	
<b>Width (B2) mm</b>		251.6	251.6	358.3	358.3	465.1	465.1	465.1	
<b>Depth (T) mm</b>		250.4	310.4	250.4	310.4	250.4	310.4	370.4	
<b>Mod.No. VM basic case</b>	1	<b>3982.040</b>	<b>3982.070</b>	<b>3982.050</b>	<b>3982.080</b>	<b>3982.060</b>	<b>3982.090</b>	<b>3982.100</b>	
<b>Also required</b>									
Top covers									
- with vent holes	1	<b>3982.941</b>	<b>3982.951</b>	<b>3982.942</b>	<b>3982.952</b>	<b>3982.940</b>	<b>3982.950</b>	<b>3982.960</b>	47
- without vent holes	1	<b>3982.901</b>	<b>3982.911</b>	<b>3982.902</b>	<b>3982.912</b>	<b>3982.900</b>	<b>3982.910</b>	<b>3982.920</b>	47
Bottom covers									
- with vent holes	1	<b>3982.741</b>	<b>3982.751</b>	<b>3982.742</b>	<b>3982.752</b>	<b>3982.740</b>	<b>3982.750</b>	<b>3982.760</b>	47
- without vent holes	1	<b>3982.701</b>	<b>3982.711</b>	<b>3982.702</b>	<b>3982.712</b>	<b>3982.700</b>	<b>3982.710</b>	<b>3982.720</b>	47
Front corner trims for assembly as instrument case	2	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	49
Flanges for configuration as rack-mount system									
- without handle holes	2	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	48
- with handle holes	2	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	
<b>Accessories</b>									
Front/rear panels	see page 50 - 51								
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	49
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	136
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	49

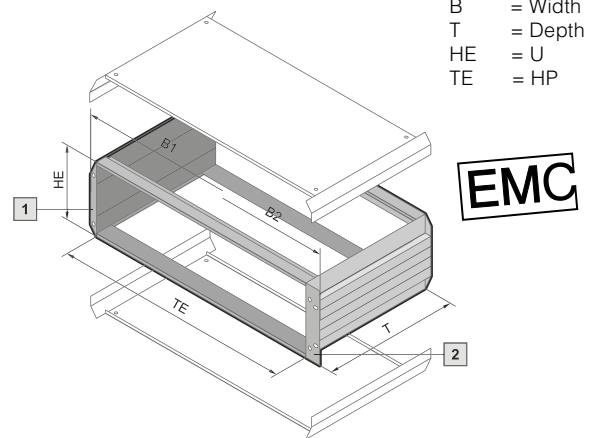
<sup>1)</sup> Only in conjunction with mounting flanges with handle holes.

Other customised solutions regarding dimensions and colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at Tel. +49 9126 - 29 34 0 or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## HeiPac Vario-Module

### HeiPac Vario-Module 3 U, EMC



#### Technical specifications

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60297-3 for installation in enclosures, 482.6 mm (19"). Installation dimensions for plug-in units according to IEC 60297-3-101.

#### Protection category

IP 40 for non-vented version.

#### Supply includes

- 2 side panels
- 4 horizontal rails
- 4 threaded inserts
- 2 corner trims for the rear of the enclosure
- Assembly parts

**1** Equipped as an instrument case

**2** Equipped as a rack-mount enclosure

#### Material/surface finish

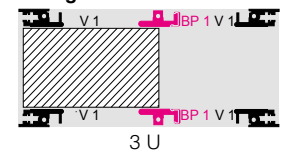
- Side panels: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Horizontal rail: Extruded aluminium section, clear-chromated
- Corner trims: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Contact points: conductive

#### Note

Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see pages 68

#### Exemplary horizontal rail configuration

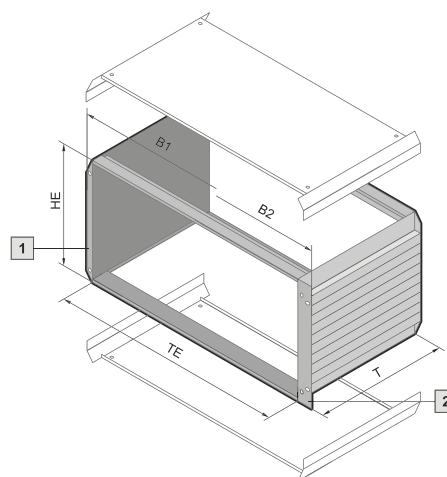


	Packs of	3 U							Page
		42	42	63	63	84	84	84	
<b>Installation width (HP)</b>									
<b>Width (B1) mm</b>		235.6	235.6	342.3	342.3	449.0	449.0	449.0	
<b>Width (B2) mm</b>		251.6	251.6	358.3	358.3	465.1	465.1	465.1	
<b>Depth (T) mm</b>		250.4	310.4	250.4	310.4	250.4	310.4	370.4	
<b>Mod.No. VM basic case EMC</b>	1	<b>3983.040</b>	<b>3983.070</b>	<b>3983.050</b>	<b>3983.080</b>	<b>3983.060</b>	<b>3983.090</b>	<b>3983.100</b>	
<b>Also required</b>									
Top covers									
- with vent holes	1	<b>3981.941</b>	<b>3981.951</b>	<b>3981.942</b>	<b>3981.952</b>	<b>3981.940</b>	<b>3981.950</b>	<b>3981.960</b>	47
- without vent holes	1	<b>3981.901</b>	<b>3981.911</b>	<b>3981.902</b>	<b>3981.912</b>	<b>3981.900</b>	<b>3981.910</b>	<b>3981.920</b>	47
Bottom covers									
- with vent holes	1	<b>3981.741</b>	<b>3981.751</b>	<b>3981.742</b>	<b>3981.752</b>	<b>3981.740</b>	<b>3981.750</b>	<b>3981.760</b>	47
- without vent holes	1	<b>3981.701</b>	<b>3981.711</b>	<b>3981.702</b>	<b>3981.712</b>	<b>3981.700</b>	<b>3981.710</b>	<b>3981.720</b>	47
Front corner trims for assembly as instrument case	2	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	<b>3981.310</b>	49
Flanges for configuration as rack-mount system									
- without handle holes	2	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	<b>3981.210</b>	48
- with handle holes	2	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	<b>3981.260</b>	
<b>EMC installation</b>									
EMC gaskets, horizontal									
- for upper/lower horizontal rail	1	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	85
- between covers and horizontal rails	10	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	89
EMC gaskets, vertical	1	<b>3686.975</b>	<b>3686.975</b>	<b>3686.975</b>	<b>3686.975</b>	<b>3686.975</b>	<b>3686.975</b>	<b>3686.975</b>	51
Front/rear panels EMC	see page 50 - 51								
<b>Accessories</b>									
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	49
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	136
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	49

<sup>1)</sup> Only in conjunction with mounting flanges with handle holes.

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### HeiPac Vario-Module 4 U, 6 U, 7 U



B = Width  
T = Depth  
HE = U  
TE = HP

#### Technical specifications

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60297-3 for installation in enclosures, 482.6 mm (19"). Installation dimensions for plug-in units according to IEC 60297-3-101.

#### Protection category

IP 40 for non-vented version.

#### Supply includes

- 2 side panels
- 4 horizontal rails
- 4 threaded inserts
- 2 corner trims for the rear of the enclosure
- 2 side trims center
- Assembly parts

- 1** Equipped as an instrument case
- 2** Equipped as a rack-mount enclosure

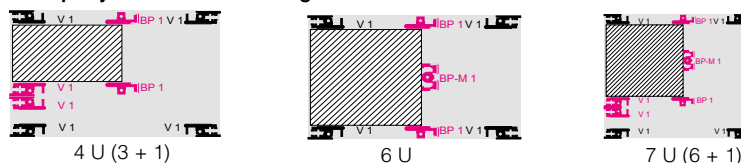
#### Material/Surface finish

- Side panels: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Horizontal rail: Extruded aluminium section, clear-chromated
- Corner trims: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Side trims center: Extruded aluminium section, spray-finished in grey (RAL 7035)

#### Note

Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

#### Exemplary horizontal rail configuration



Horizontal rails for additional installations have to be ordered separately, see pages 68

	Packs of	4 U (3 + 1)			6 U			7 U		Page
<b>Installation width (HP)</b>		<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	
<b>Width (B1) mm</b>		449.0	449.0	449.0	449.0	449.0	449.0	449.0	449.0	
<b>Width (B2) mm</b>		465.1	465.1	465.1	465.1	465.1	465.1	465.1	465.1	
<b>Depth (T) mm</b>		250.4	310.4	370.4	310.4	370.4	430.4	310.4	430.4	
<b>Mod.No. VM basic case</b>	1	<b>3982.110</b>	<b>3982.120</b>	<b>3982.130</b>	<b>3982.140</b>	<b>3982.150</b>	<b>3982.160</b>	<b>3982.170</b>	<b>3982.190</b>	
<b>Also required</b>										
Top covers										
- with vent holes	1	<b>3982.940</b>	<b>3982.950</b>	<b>3982.960</b>	<b>3982.950</b>	<b>3982.960</b>	<b>3982.970</b>	<b>3982.950</b>	<b>3982.970</b>	47
- without vent holes	1	<b>3982.900</b>	<b>3982.910</b>	<b>3982.920</b>	<b>3982.910</b>	<b>3982.920</b>	<b>3982.930</b>	<b>3982.910</b>	<b>3982.930</b>	47
Bottom covers										
- with vent holes	1	<b>3982.740</b>	<b>3982.750</b>	<b>3982.760</b>	<b>3982.750</b>	<b>3982.760</b>	<b>3982.770</b>	<b>3982.750</b>	<b>3982.770</b>	47
- without vent holes	1	<b>3982.700</b>	<b>3982.710</b>	<b>3982.720</b>	<b>3982.710</b>	<b>3982.720</b>	<b>3982.730</b>	<b>3982.710</b>	<b>3982.730</b>	47
Front corner trims for assembly as instrument case	2	<b>3981.320</b>	<b>3981.320</b>	<b>3981.320</b>	<b>3981.330</b>	<b>3981.330</b>	<b>3981.330</b>	<b>3981.340</b>	<b>3981.340</b>	49
Flanges for configuration as rack-mount system										
- without handle holes	2	<b>3981.220</b>	<b>3981.220</b>	<b>3981.220</b>	<b>3981.230</b>	<b>3981.230</b>	<b>3981.230</b>	<b>3981.240</b>	<b>3981.240</b>	48
- with handle holes	2	<b>3981.270</b>	<b>3981.270</b>	<b>3981.270</b>	<b>3981.280</b>	<b>3981.280</b>	<b>3981.280</b>	<b>3981.290</b>	<b>3981.290</b>	48
<b>Accessories</b>										
Front/rear panels	see page 50 - 51									
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	<b>3981.360</b>	<b>3981.370</b>	<b>3981.380</b>	<b>3981.360</b>	<b>3981.380</b>	49
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	136
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	49

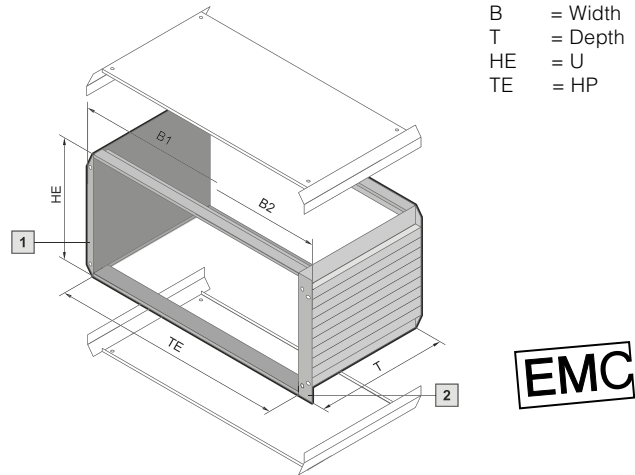
<sup>1)</sup> Only in conjunction with mounting flanges with handle holes.

Other customised solutions regarding dimensions and colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## HeiPac Vario-Module

### HeiPac Vario-Module 4 U, 6 U, 7 U, EMC



#### Technical specifications

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60297-3 for installation in enclosures, 482.6 mm (19"). Installation dimensions for plug-in units according to IEC 60297-3-101.

#### Protection category

IP 40 for non-vented version.

#### Supply includes

- 2 side panels
- 4 horizontal rails
- 4 threaded inserts
- 2 corner trims for the rear of the enclosure
- 2 side trims center
- Assembly parts

**1** Equipped as an instrument case

**2** Equipped as a rack-mount enclosure

#### Material/surface finish

- Side panels: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Horizontal rail: Extruded aluminium section, clear-chromated
- Corner trims: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Side trims center: Extruded aluminium section, spray-finished in grey (RAL 7035)
- Contact points: conductive

#### Note

Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see page 68

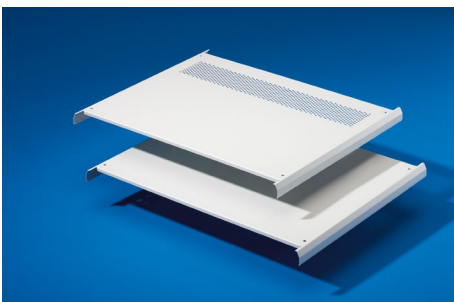
**Exemplary horizontal rail configuration** see page 45

	Packs of	4 U (3 + 1)			6 U			7 U		Page
<b>Installation width (HP)</b>		<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	<b>84</b>	
<b>Width (B1) mm</b>		449,0	449,0	449,0	449,0	449,0	449,0	449,0	449,0	
<b>Width (B2) mm</b>		465,1	465,1	465,1	465,1	465,1	465,1	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	370,4	310,4	370,4	430,4	310,4	430,4	
<b>Mod.No. VM basic case EMC</b>	1	<b>3983.110</b>	<b>3983.120</b>	<b>3983.130</b>	<b>3983.140</b>	<b>3983.150</b>	<b>3983.160</b>	<b>3983.170</b>	<b>3983.190</b>	
<b>Also required</b>										
Top covers										
- with vent holes	1	<b>3981.940</b>	<b>3981.950</b>	<b>3981.960</b>	<b>3981.950</b>	<b>3981.960</b>	<b>3981.970</b>	<b>3981.950</b>	<b>3981.970</b>	47
- without vent holes	1	<b>3981.900</b>	<b>3981.910</b>	<b>3981.920</b>	<b>3981.910</b>	<b>3981.920</b>	<b>3981.930</b>	<b>3981.910</b>	<b>3981.930</b>	47
Bottom covers										
- with vent holes	1	<b>3981.740</b>	<b>3981.750</b>	<b>3981.760</b>	<b>3981.750</b>	<b>3981.760</b>	<b>3981.770</b>	<b>3981.750</b>	<b>3981.770</b>	47
- without vent holes	1	<b>3981.700</b>	<b>3981.710</b>	<b>3981.720</b>	<b>3981.710</b>	<b>3981.720</b>	<b>3981.730</b>	<b>3981.710</b>	<b>3981.730</b>	47
Front corner trims for assembly as instrument case	2	<b>3981.320</b>	<b>3981.320</b>	<b>3981.320</b>	<b>3981.330</b>	<b>3981.330</b>	<b>3981.330</b>	<b>3981.340</b>	<b>3981.340</b>	49
Flanges for configuration as rack-mount system										
- without handle holes	2	<b>3981.220</b>	<b>3981.220</b>	<b>3981.220</b>	<b>3981.230</b>	<b>3981.230</b>	<b>3981.230</b>	<b>3981.240</b>	<b>3981.240</b>	48
- with handle holes	2	<b>3981.270</b>	<b>3981.270</b>	<b>3981.270</b>	<b>3981.280</b>	<b>3981.280</b>	<b>3981.280</b>	<b>3981.290</b>	<b>3981.290</b>	48
<b>EMC installation</b>										
EMC gaskets, horizontal										
- for upper/lower horizontal rail	1	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	85
- between covers and horizontal rails	10	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	89
EMC gaskets, vertical	1	<b>3686.976</b>	<b>3686.976</b>	<b>3686.976</b>	<b>3686.977</b>	<b>3686.977</b>	<b>3686.977</b>	<b>3686.978</b>	<b>3686.978</b>	51
Front/rear panels EMC	see page 50 - 51									
<b>Accessories</b>										
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	<b>3981.360</b>	<b>3981.370</b>	<b>3981.380</b>	<b>3981.360</b>	<b>3981.370</b>	49
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	136
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	49

<sup>1)</sup> Only in conjunction with mounting flanges with handle holes.

Other customised solutions regarding dimensions and colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

## Top covers



For HeiPac Vario-Module

### Standard version - Material

Sheet steel, spray-finished

### Colour

Grey (RAL 7035)

### EMC version - Material

Sheet steel, spray-finished  
Contact points: conductive

**EMC**

### VM standard

HP	Depth mm	Order No.	
		with vent holes	without vent holes
42	250.4	<b>3982.941</b>	<b>3982.901</b>
	310.4	<b>3982.951</b>	<b>3982.911</b>
63	250.4	<b>3982.942</b>	<b>3982.902</b>
	310.4	<b>3982.952</b>	<b>3982.912</b>
84	250.4	<b>3982.940</b>	<b>3982.900</b>
	310.4	<b>3982.950</b>	<b>3982.910</b>
	370.4	<b>3982.960</b>	<b>3982.920</b>
	430.4	<b>3982.970</b>	<b>3982.930</b>

### VM EMC

HP	Depth mm	Order No.	
		with vent holes	without vent holes
42	250.4	<b>3981.941</b>	<b>3981.901</b>
	310.4	<b>3981.951</b>	<b>3981.911</b>
63	250.4	<b>3981.942</b>	<b>3981.902</b>
	310.4	<b>3981.952</b>	<b>3981.912</b>
84	250.4	<b>3981.940</b>	<b>3981.900</b>
	310.4	<b>3981.950</b>	<b>3981.910</b>
	370.4	<b>3981.960</b>	<b>3981.920</b>
	430.4	<b>3981.970</b>	<b>3981.930</b>

## Bottom covers



For HeiPac Vario-Module

### Standard version - Material

Sheet steel, spray-finished

### Colour

Grey (RAL 7035)

### EMC version - Material

Sheet steel, spray-finished  
Contact points: conductive

**EMC**

### VM standard

HP	Depth mm	Order No.	
		with vent holes	without vent holes
42	250.4	<b>3982.741</b>	<b>3982.701</b>
	310.4	<b>3982.751</b>	<b>3982.711</b>
63	250.4	<b>3982.742</b>	<b>3982.702</b>
	310.4	<b>3982.752</b>	<b>3982.712</b>
84	250.4	<b>3982.740</b>	<b>3982.700</b>
	310.4	<b>3982.750</b>	<b>3982.710</b>
	370.4	<b>3982.760</b>	<b>3982.720</b>
	430.4	<b>3982.770</b>	<b>3982.730</b>

### VM EMC

HP	Depth mm	Order No.	
		with vent holes	without vent holes
42	250.4	<b>3981.741</b>	<b>3981.701</b>
	310.4	<b>3981.751</b>	<b>3981.711</b>
63	250.4	<b>3981.742</b>	<b>3981.702</b>
	310.4	<b>3981.752</b>	<b>3981.712</b>
84	250.4	<b>3981.740</b>	<b>3981.700</b>
	310.4	<b>3981.750</b>	<b>3981.710</b>
	370.4	<b>3981.760</b>	<b>3981.720</b>
	430.4	<b>3981.770</b>	<b>3981.730</b>

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## RECOMMENDED ACCESSORIES HeiPac Vario-Module

### Feet



With or without fold-out support stand.  
Support stand load capacity up to 20 kg.

#### Material

Plastic

#### Colour

Grey (RAL 7035)  
Black

#### Supply includes

Assembly parts

Colour	Packs of	Order No.	
		without support stand	with support stand
RAL 7035	2	<b>9919.775</b>	<b>3919.000</b>
Black	2	<b>9920.524</b>	<b>9920.523</b>

### Mounting plate



For mounting heavy components.

#### Material

Aluminium

#### Supply includes

Assembly parts

HP	Depth mm	Pack of	Order No.
42	250	1 St.	<b>3982.370</b>
42	310	1 St.	<b>9921.946</b>
42	370	1 St.	<b>9921.947</b>
42	430	1 St.	<b>9921.948</b>
63	250	1 St.	<b>3982.380</b>
63	310	1 St.	<b>9921.949</b>
63	370	1 St.	<b>9921.950</b>
63	430	1 St.	<b>9921.951</b>
84	250	1 St.	<b>9921.390</b>
84	310	1 St.	<b>9921.952</b>
84	370	1 St.	<b>9921.953</b>
84	430	1 St.	<b>9921.954</b>

### Front flanges



Required when the HeiPac Vario-Module is to be used as a rack-mount enclosure.  
The flanges have a channel to accommodate vertical EMC gaskets.

#### Material

Aluminium, clear-chromated

#### Supply includes

Assembly parts

U	Packs of	Order No.	
		without handle hole	with handle hole
2	2	<b>3981.200</b>	-
3	2	<b>3981.210</b>	<b>3981.260</b>
4	2	<b>3981.220</b>	<b>3981.270</b>
6	2	<b>3981.230</b>	<b>3981.280</b>
7	2	<b>3981.240</b>	<b>3981.290</b>

#### + Accessories

Vertical EMC gasket, see page 88  
Front handles for mounting on front flanges, see page 136



# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## RECOMMENDED ACCESSORIES HeiPac Vario-Module

### Front corner trims



Required when the HeiPac Vario-Module is to be used as a instrument case. The corner trims have a channel to accommodate vertical EMC gaskets.

**Material**

Aluminium, spray-finished

**Colour**

Grey (RAL 7035)

**Supply includes**

Assembly parts

U	Packs of	Order No.
2	2	<b>3981.300</b>
3	2	<b>3981.310</b>
4	2	<b>3981.320</b>
6	2	<b>3981.330</b>
7	2	<b>3981.340</b>

**+ Accessories**

Vertical EMC gasket, see page 88

### Carrying handles



For ergonomic transportation, even with stacked enclosures. May also be used as a support stand. Load capacity: 35 kg

**Material**

Die-cast zinc and Extruded aluminium section

**Colour**

Grey (RAL 7035)

**Note**

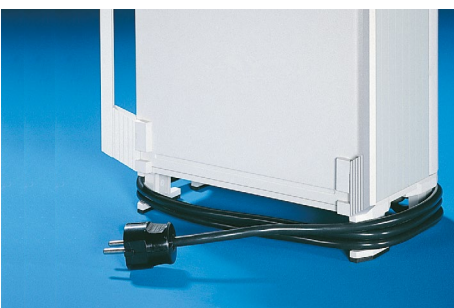
Cannot be used with flanges.

**Supply includes**

Assembly parts

For enclosure depth mm	Packs of	Order No.
250.4	2	<b>3981.350</b>
310.4	2	<b>3981.360</b>
370.4	2	<b>3981.370</b>
430.4	2	<b>3981.380</b>

### Rear feet



For mounting on the rear of the enclosure. Dual function:

- Mechanical protection of the connection components
- Also act as a cable holder during transportation

**Material**

PA, self-extinguishing to UL 94-V0

**Colour**

Grey (RAL 7035)

**Supply includes**

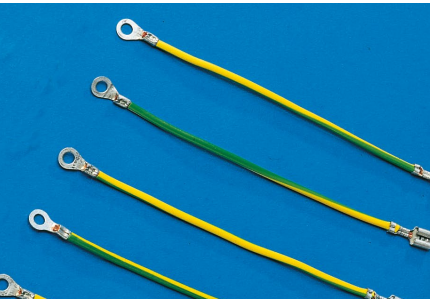
Base stand  
Cover cap  
Self adhesive cable holder  
Assembly parts

Packs of	Order No.
4	<b>3901.000</b>

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## RECOMMENDED ACCESSORIES HeiPac Vario-Module

### Earthing set



For connecting the top and bottom covers to the side panels with PE conductors.

**Supply includes**

Conductor cable green/yellow, 1.5 mm<sup>2</sup>, with washer for screw M4, flat-pin connector  
Assembly parts

Packs of	Length mm	Order No.
5	135	<b>3900.000</b>

### Front panels, hinged



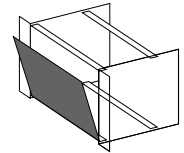
**Material**

2.5 mm aluminium, anodised

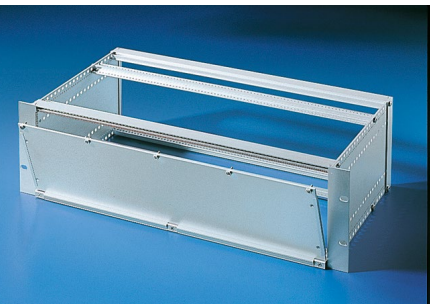
**Supply includes**

1 front panel  
1 set of hinges  
Assembly parts

U	HP	Order No.	
		vertically hinged	horizontally hinged
3	42	<b>3652.600</b>	<b>3652.500</b>
3	84	<b>3652.610</b>	<b>3652.510</b>
6	42	<b>3652.620</b>	<b>3652.520</b>
6	84	<b>3652.630</b>	<b>3652.530</b>



### EMC front/rear panels, hinged



**Material**

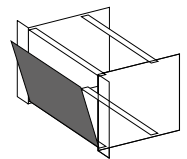
2.5 mm aluminium, clear-chromated

**Supply includes**

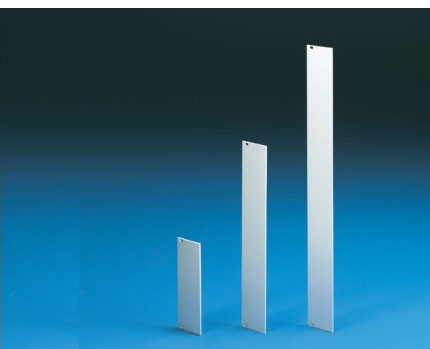
1 front panel  
1 set of hinges  
1 contact strip  
1 gasket strip  
1 vertical EMC gasket, version 1  
Assembly parts

U	HP	Order No.
		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>

**EMC**



### Front panels as filler panel



Front panels as filler panel, flat

**Material**

2.5 mm aluminium, natural-anodised

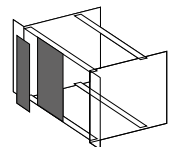
**Note**

Other sizes see page 120.

HP	Order No.				
	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
42	<b>3684.887</b>	<b>3684.904</b>	<b>3684.908</b>	<b>3684.925</b>	<b>3684.928</b>
63	-	<b>3684.906</b>	<b>3684.909</b>	<b>3684.926</b>	<b>3684.929</b>
84	<b>3684.888</b>	<b>3684.907</b>	<b>3684.910</b>	<b>3684.927</b>	<b>3684.930</b>

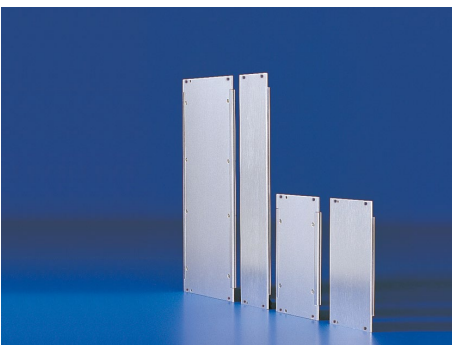
**+ Also required**

Collar screws and plastic collars, packs of 100 sets, order No. 3658.160 see page 140



# INSTRUMENT CASES AND SYSTEM ENCLOSURES RECOMMENDED ACCESSORIES HeiPac Vario-Module

## EMC front panels as filler panels



Front panels as filler panels, U-shaped.

### Material

2.5 mm extruded aluminium section, clear-chromated

### 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

Other sizes see page 121.

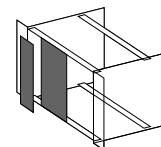


HP	Order No.				
	2 U H = 84.25	3 U H = 128.7	4 U H = 173.15	6 U H = 262.05	7 U H = 306.5
42	-	<b>3684.252</b>	<b>3684.255</b>	<b>3684.261</b>	<b>3684.264</b>
63	-	<b>3684.253</b>	<b>3684.256</b>	<b>3684.262</b>	<b>3684.265</b>
84	<b>3684.248</b>	<b>3684.254</b>	<b>3684.257</b>	<b>3684.263</b>	<b>3684.266</b>

### + Also required

Slotted centering screws, packs of 100, order no. 3687.050 see page 141

Cross-head centering screws, packs of 100, order no. 3687.051 see page 141



## Support stand/carrying handle



To fit HeiPac Vario-Module 3 U, 4 U and 6 U, adjustable on a 30° pitch pattern.

### Material

Extruded aluminium section/die-cast

### Colour

Grey (RAL 7035)

### Supply includes

Assembly parts

### Note

Corner trim for support stands/carrying handles should be ordered separately.  
Not compatible with profile rail with 10 mm extension

For HeiPac Vario-Module HP	Packs of	Order No.
42	1	<b>3981.390</b>
63	1	<b>3981.400</b>
84	1	<b>3981.410</b>

Corner trim for support stand U	Packs of	Order No.
3	2	<b>3981.310</b>
4	2	<b>3981.500</b>
6	2	<b>3981.330</b>

## EMC gaskets, vertical



To ensure EMC protection between the subracks 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

### 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



### Version 1: Segmented

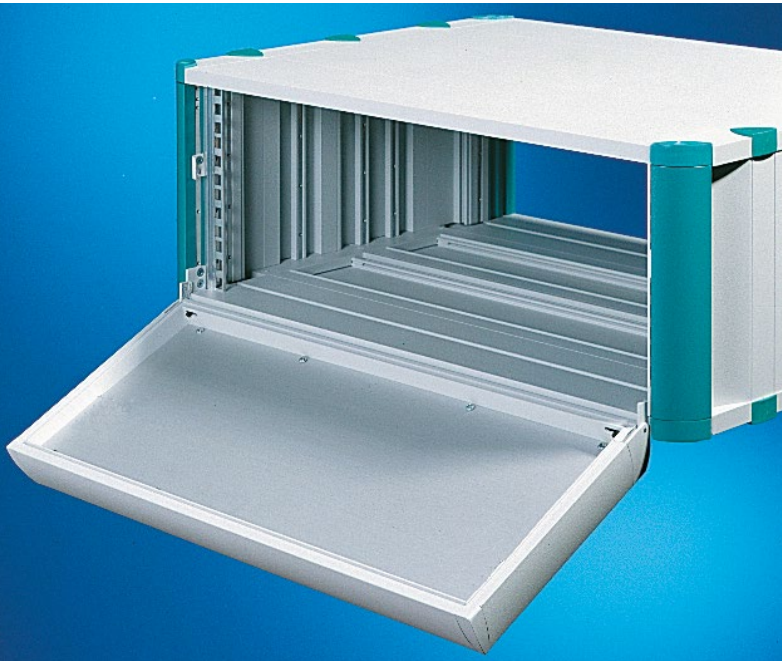
U	Order No. Packs of 1	Order No. Packs of 10
1	<b>3686.973</b>	<b>3684.236</b>
2	<b>3686.974</b>	<b>3684.237</b>
3	<b>3686.975</b>	<b>3684.238</b>
4	<b>3686.976</b>	<b>3684.239</b>
6	<b>3686.977</b>	<b>3684.240</b>
7	<b>3686.978</b>	<b>3684.241</b>
9	<b>3686.979</b>	<b>3684.242</b>
10	<b>3686.980</b>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

### Version 2: One-piece

U	Order No. Packs of 1	Order No. Packs of 10
2	<b>3688.610</b>	-
3	<b>3688.611</b>	<b>9921.942</b>
4	<b>3688.612</b>	-
5	<b>3688.613</b>	-
6	<b>3688.614</b>	<b>9921.943</b>
7	<b>3688.615</b>	-
8	<b>3688.634</b>	-
9	<b>3688.616</b>	<b>9921.944</b>
10	<b>3688.609</b>	-
11	<b>3688.633</b>	-
12	<b>3688.606</b>	-

# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## HeiCase



*Universal instrument case in a timeless design*

### Applications

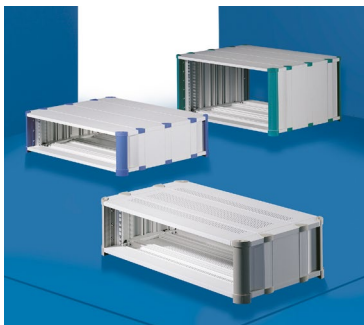
The HeiCase is the HEITEC instrument case of sophisticated design that is suitable for 19" rack-mount systems as well as individual configuration. In combination with rollers and carrying handles the instrument case is particularly easy to transport.

### Technical specifications

- Instrument case, complies with IEC 60297-3
- Height: 1 – 12 HE
- Installation with: ½ 19" and 19"
- Depth: 300 – 540 mm
- Protection category IP 42
- Extruded aluminium section
- Variable depth/height interior installation

### Benefits at a glance

- Outstanding mechanical stability
- Upgradeable to a tower version
- Standard in 3 colours
- Ergonomic handles, bottom- and door types
- Appropriate for mobile and stationary applications



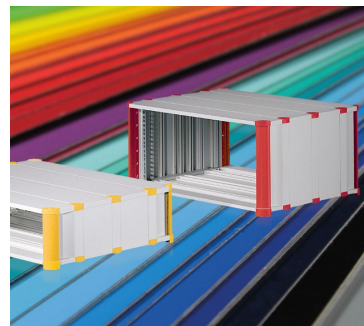
**Flexible sizing through modular design**



**Stable set up from aluminium profiles**



**Wide range of accessories**



**Individual colouring available**

## High flexibility following customer requests



The modular line of standard casings can be manufactured to a height of up to 30 U and a depth of up to 900 mm.

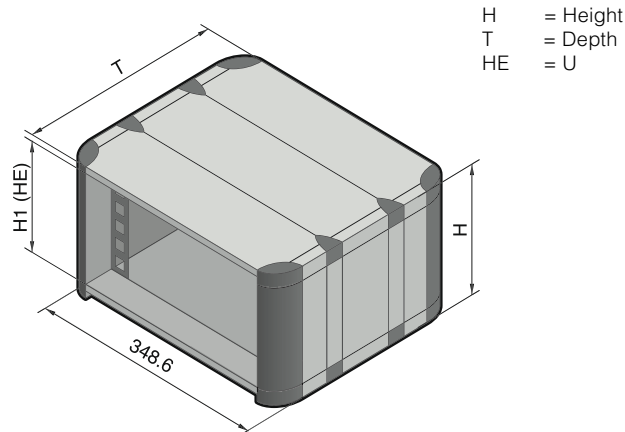
Those maxi-versions are suitable for applications of high packing density as well as a mobile alternative to cabinets. Thanks to their set up of individual, interconnected extruded aluminium sections even the large versions provide a high degree of stability and are scalable not only in height, but also in depth (up to 900 mm), modular in segments of 120 mm.

If necessary, they can be mounted on rollers for mobile applications and can be equipped with specific handles, thus providing mobility and making the enclosure flexibly applicable despite its large dimensions. The carrying handles were tested to a load of 100 kg and are suitable for heavy load applications.

The design of the enclosure can be customised to match the customer's corporate design. Decorative elements (corner trims and plastic parts) and even the system enclosure of the maxi versions can be designed in your desired RAL-color if required.

Due to their solid structure the customised versions meet the requirements for robust instrument case and system enclosures with scalable interior and exterior installations. Through a variety of accessories they can be adapted to the respective requirements.

HeiCase 1/2 19"



**Technical specifications**

Depth: 300 mm, 420mm, 540 mm  
 Installation width: 269.2 mm (1/2 19")  
 Installation options: 269.2 mm (1/2 19")-slide-in equipment to 60 297-3

**Protection category**

IP 42 for unvented version

**Supply includes**

- 2 side panels
  - 2 covers
  - 8 corner caps
  - 16 cover caps
  - 4 feet
  - (300/420/540 mm depth)
  - 4 19" mounting brackets
  - 4 threaded inserts
  - 2 plain inserts,
  - 1 rear panel
- Cases are supplied preassembled

**Colour**

Grey (RAL 7035)

**Decorative colours and corner caps**

- Green (RAL 5018)
- Blue (RAL 5012)
- Grey (RAL 7030)

**Material/surface finish**

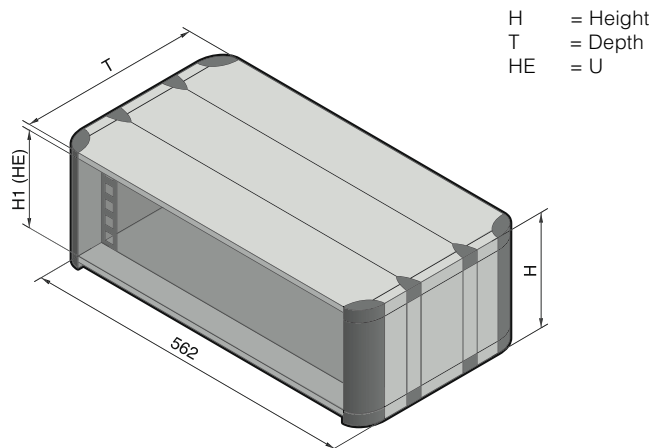
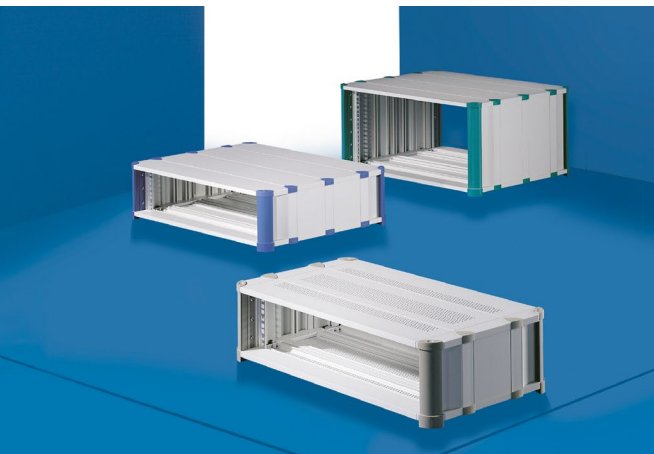
- Covers: Extruded aluminium section/die-cast, spray-finished
- Side panels: Extruded aluminium section, spray-finished
- Corner caps: Plastic
- (19") mounting bracket: Extruded aluminium section, clear-chromated

**Property rights**

German registered design no. 96 09 457  
 UK reg. design no. 2064682  
 US design patents, Des. 402,640 and Des. 423,464  
 Japan. reg. designs no. 1045507 and 1045508

Enclosures for subrack width 269,2 mm (1/2 19")	Packs of	1 U		2 U		3 U			4 U		Page
<b>Height (H) mm</b>		77.5	77.5	121.9	121.9	166.4	166.4	166.4	210.8	210.8	
H1 mm		45.0	45.0	89.4	89.4	133.8	133.8	133.8	178.3	178.3	
<b>Depth (T) mm</b>		300.0	420.0	300.0	540.0	300.0	420.0	540.0	420.0	540.0	
<b>Unvented</b>											
<b>Order No. RAL 5018</b>	1	<b>3750.100</b>	-	<b>3750.200</b>	-	<b>3750.210</b>	<b>3750.300</b>	-	<b>3750.400</b>	-	
<b>Order No. RAL 5012</b>	1	<b>3750.102</b>	-	<b>3750.202</b>	-	<b>3750.212</b>	<b>3750.302</b>	-	<b>3750.402</b>	-	
<b>Order No. RAL 7030</b>	1	<b>3750.104</b>	-	<b>3750.204</b>	-	<b>3750.214</b>	<b>3750.304</b>	-	<b>3750.404</b>	-	
<b>Vented</b>											
<b>Order No. RAL 5018</b>	1	-	<b>3750.110</b>	-	<b>3750.220</b>	-	<b>3750.350</b>	<b>3750.360</b>	-	<b>3750.450</b>	
<b>Order No. RAL 5012</b>	1	-	<b>3750.112</b>	-	<b>3750.222</b>	-	<b>3750.352</b>	<b>3750.362</b>	-	<b>3750.452</b>	
<b>Order No. RAL 7030</b>	1	-	<b>3750.114</b>	-	<b>3750.224</b>	-	<b>3750.354</b>	<b>3750.364</b>	-	<b>3750.454</b>	
Weight (kg)	vented/		3.3	4.2	3.7	5.4	4.1	5.2	6.1	5.8	6.8
	unvented		3.4	4.4	3.8	6.1	4.2	5.4	6.8	6.0	7.5
<b>Accessories</b>											
Support stand/carrying handle	1	see page 60									
Carrying handles, horizontal	2	<b>3751.250</b>	<b>3751.260</b>	<b>3751.250</b>	<b>3751.270</b>	<b>3751.250</b>	<b>3751.260</b>	<b>3751.270</b>	<b>3751.260</b>	<b>3751.270</b>	58
Back panel screw-fastened	1	-	-	-	-	<b>9918.119</b>	<b>9918.119</b>	<b>9918.119</b>	<b>9918.120</b>	<b>9918.120</b>	59
Front door, vertically hinged	1	-	-	-	-	<b>3751.300</b>	<b>3751.300</b>	<b>3751.300</b>	<b>3751.310</b>	<b>3751.310</b>	57
Slide rails	2	<b>3751.500</b>	<b>3751.510</b>	<b>3751.500</b>	<b>3751.520</b>	<b>3751.500</b>	<b>3751.510</b>	<b>3751.520</b>	<b>3751.510</b>	<b>3751.520</b>	56
Mounting angles 19"	2	<b>3751.650</b>	<b>3751.650</b>	<b>3751.660</b>	<b>3751.660</b>	<b>3751.670</b>	<b>3751.670</b>	<b>3751.670</b>	<b>3751.680</b>	<b>3751.680</b>	56
Threaded inserts with M4 thread	8	<b>3751.700</b>	<b>3751.700</b>	<b>3751.710</b>	<b>3751.710</b>	<b>3751.720</b>	<b>3751.720</b>	<b>3751.720</b>	<b>3751.730</b>	<b>3751.730</b>	56
End section	4	-	-	-	-	<b>3751.900</b>	<b>3751.900</b>	<b>3751.900</b>	<b>3751.910</b>	<b>3751.910</b>	58

Other customised solutions regarding dimensions (up to 30 U height and up to 900 mm depth) and colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).



#### Technical specifications

Depth: 300 mm, 420mm, 540 mm  
 Installation width: 482,6 mm (19")  
 Installation options: 482,6 mm (19")-slide-in equipment to IEC 60297-3

#### Protection category

IP 42 for unvented version

#### Supply includes

2 side panels  
 2 covers  
 8 corner caps  
 16 cover caps  
 4 feet  
 (300/420/540 mm depth)  
 4 19" mounting brackets  
 4 threaded inserts  
 2 plain inserts  
 Cases are supplied preassembled

#### Note

For rear installation, order back panel/door separately.

#### Colour

Grey (RAL 7035)

#### Decorative colours and corner caps

Green (RAL 5018)  
 Blue (RAL 5012)  
 Grey (RAL 7030)

#### Material/surface finish

Covers: Extruded aluminium section/die-cast, spray-finished  
 Side panels: Extruded aluminium section, spray-finished  
 Corner caps: Plastic  
 (19") mounting bracket: Extruded aluminium section, clear-chromated

#### Property rights

German registered design no. 96 09 457  
 UK reg. design no. 2064682  
 US design patents, Des. 402,640 and Des. 423,464  
 Japan. reg. designs no. 1045507 and 1045508

Enclosures for subrack width 19"	Packs of	3 U		4 U		6 U			7 U		9 U		12 U	Page
<b>Height (H) mm</b>		166.4	166.4	210.8	210.8	299.7	299.7	299.7	344.2	344.2	433.1	433.1	566.5	
H1 mm		133.8	133.8	178.3	178.3	267.2	267.2	267.2	311.7	311.7	400.6	400.6	534.0	
<b>Depth (T) mm</b>		300.0	420.0	300.0	420.0	300.0	420.0	540.0	420.0	540.0	420.0	540.0	540.0	
<b>Unvented</b>														
<b>Order No. RAL 5018</b>	1	3750.310	3750.320	3750.410	3750.420	3750.600	3750.610	3750.620	3750.700	3750.710	3750.900	3750.910	3750.000	
<b>Order No. RAL 5012</b>	1	3750.312	3750.322	3750.412	3750.422	3750.602	3750.612	3750.622	3750.702	3750.712	3750.902	3750.912	3750.002	
<b>Order No. RAL 7030</b>	1	3750.314	3750.324	3750.414	3750.424	3750.604	3750.614	3750.624	3750.704	3750.714	3750.904	3750.914	3750.004	
<b>Vented</b>														
<b>Order No. RAL 5018</b>	1	3750.330	3750.340	3750.430	3750.440	3750.630	3750.640	3750.650	3750.720	3750.730	3750.920	3750.930	3750.030	
<b>Order No. RAL 5012</b>	1	3750.332	3750.342	3750.432	3750.442	3750.632	3750.642	3750.652	3750.722	3750.732	3750.922	3750.932	3750.032	
<b>Order No. RAL 7030</b>	1	3750.334	3750.344	3750.434	3750.444	3750.634	3750.644	3750.654	3750.724	3750.734	3750.924	3750.934	3750.034	
Weight (kg)	vented/ unvented	5.3 5.4	6.9 7.1	5.7 7.2	7.5 7.7	6.5 6.6	8.5 8.7	10.8 12.2	9.1 9.3	11.5 12.9	10.1 10.3	12.9 14.3	15.0 16.4	
<b>Accessories</b>														
Support stand/carrying handle	1	see page 60												
Carrying handles, horizontal	2	3751.250	3751.260	3751.250	3751.260	3751.250	3751.260	3751.270	3751.260	3751.270	3751.260	3751.270	3751.270	58
Back panel screw-fastened	1	3751.600	3751.600	3751.610	3751.610	3751.620	3751.620	3751.620	3751.630	3751.630	3751.530	3751.530	3751.540	59
Rear door, vertically hinged	1	3751.100	3751.100	3751.110	3751.110	3751.120	3751.120	3751.120	3751.130	3751.130	-	-	-	59
Rear door for fan installation	1	3751.150	3751.150	3751.160	3751.160	3751.170	3751.170	3751.170	3751.180	3751.180	-	-	-	59
Front door, vertically hinged	1	3751.320	3751.320	3751.330	3751.330	3751.340	3751.340	3751.340	3751.350	3751.350	-	-	-	57
Slide rails	2	3751.500	3751.510	3751.500	3751.510	3751.500	3751.510	3751.520	3751.510	3751.520	3751.510	3751.510	3751.520	56
Mounting angles 19"	2	3751.670	3751.670	3751.680	3751.680	3751.690	3751.690	3751.690	3751.640	3751.640	3751.780	3751.780	3751.790	56
Threaded inserts with M4 thread	8	3751.720	3751.720	3751.730	3751.730	3751.740	3751.740	3751.740	3751.750	3751.750	3751.760	3751.760	3751.770	56
End section	2	3751.900	3751.900	3751.910	3751.910	3751.920	3751.920	3751.920	3751.930	3751.930	3751.820	3751.820	3751.830	58

Other customised solutions regarding dimensions (up to 30 U height and up to 900 mm depth) and colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

### Mounting rails



For depth-variable installation of mounting brackets and of mounting plates fixed or extendable.

**Material**

Aluminium, clear-chromated

**Supply includes**

Assembly parts

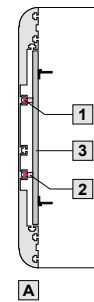
**A** Version for depth-variable mounting angles

- 1** Threaded inserts
- 2** Short spacers
- 3** Mounting rails

For enclosure depth mm	Packs of	Order No.
300	2	<b>3751.400</b>
420	2	<b>3751.410</b>
540	2	<b>3751.420</b>

**+ Also required**

Threaded inserts, see page 56  
Spacers, see below



### Spacers



For the attachment of mounting rails.

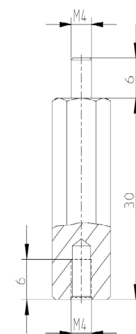
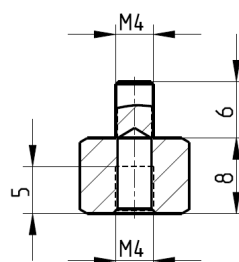
**Material**

Steel, galvanized

Design	Packs of	Order No.
Short for depth-variable mounting bracket	4	<b>3751.450</b>
Long for mounting plate installation (width 409 mm)	4	<b>3751.460</b>

**+ Also required**

Mounting rails, see above



# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## RECOMMENDED ACCESSORIES HeiCase

### Mounting angles for 482,6 mm (19")



For front installation of subracks and blanking plates.

**Material**

Extruded aluminium section, clear-chromated

**Supply includes**

Assembly parts

**Note**

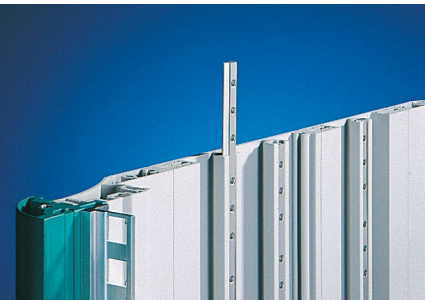
1 pack of threaded inserts and 2 packs of mounting rails and spacers are required for depth-adjustable installation.

For enclosure height U	Packs of	Order No.
1	2	3751.650
2	2	3751.660
3	2	3751.670
4	2	3751.680
6	2	3751.690
7	2	3751.640
9	2	3751.780
12	2	3751.790

**+ Also required**

Threaded inserts, see below  
 Mounting rails, see page 55  
 Spacers, see page 55

### Threaded inserts



*With M4 thread for HeiCase*

For the installation of mounting angles, slide rails, mounting kits, cable ducts etc. Simply slide into the channels in the side panels.

**Material**

Extruded aluminium section, clear-chromated

For enclosure height U	Packs of	Order No.
1	8	3751.700
2	8	3751.710
3	8	3751.720
4	8	3751.730
6	8	3751.740
7	8	3751.750
9	8	3751.760
12	8	3751.770

### Slide rails



To support heavy installed equipment.

**Material**

1.5 mm sheet steel, clear-chromated

**Supply includes**

Assembly parts

For enclosure depth mm	Packs of	Order No.
300	2	3751.500
420	2	3751.510
540	2	3751.520
660	2	9919.472

**+ Also required**

Threaded inserts, see above



### Keyboard lid



Suitable for the installation of 19" keyboards

- Horizontally hinged with security lock
- Removable cover plate

#### Material

Frame section: Extruded aluminium section/  
die-cast, spray-finished  
Base and cover plate: Aluminium, spray-  
finished

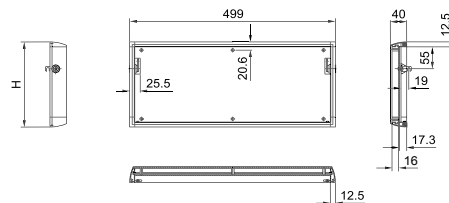
#### Colour

Grey (RAL 7035)

#### Supply includes

Assembly parts

For enclosure width	Height (H) U	Packs of	Order No.
19"	4	1	<b>3751.800</b>
19"	6	1	<b>3751.810</b>



### Front door with smoked acrylic, vertically hinged



For mechanical protection of built-in control components.

- Optionally hinged on the right or left
- With security lock

#### Material

Frame section: Extruded aluminium section,  
spray-finished  
Corner pieces: Die-cast aluminium, spray-  
finished  
Glazed pane: Smoked acrylic

#### Colour

Grey (RAL 7035)

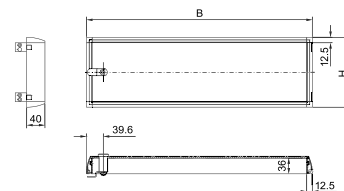
#### Supply includes

Assembly parts

#### Note

The figure shows the 6 U version; solutions smaller than 6 U feature a front door with only one security lock. Other sizes on request.

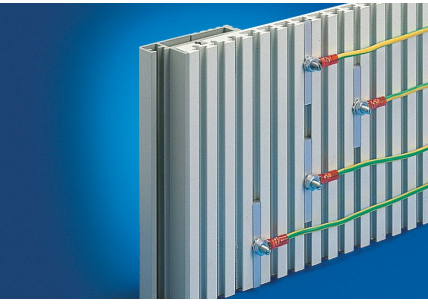
For enclosure width	W mm	Height (H) U	Order No.
½ 19"	295,6	3	<b>3751.300</b>
½ 19"	295,6	4	<b>3751.310</b>
19"	509	3	<b>3751.320</b>
19"	509	4	<b>3751.330</b>
19"	509	5	<b>9918.370</b>
19"	509	6	<b>3751.340</b>
19"	509	7	<b>3751.350</b>



# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## RECOMMENDED ACCESSORIES HeiCase

### Protective conductor connector set



Fits all HeiCase enclosures.  
To meet electrical protective measures.

#### Supply includes

Threaded insert  
Screw, green/yellow  
Connection cable  
Serrated washer  
Nut

Packs of	Order No.
4	3798.000

### Rear trim



To cover the sides to the left and right of the subrack when no rear door or rear panel is used.

#### Material

Extruded aluminium section, spray-finished

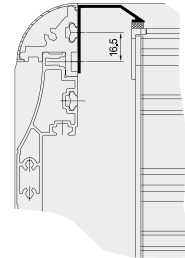
#### Colour

Grey (RAL 7035)

#### Supply includes

Assembly parts

For enclosure height U	Packs of	Order No.
3	2	3751.900
4	2	3751.910
6	2	3751.920
7	2	3751.930
9	2	3751.820
12	2	3751.830



### Carrying handles



Horizontal carrying handles for easy, secure transportation.

- May be retrofitted
- Load capacity up to 100 kg

#### Material

Side parts: Die-cast, spray-finished  
Center part: Extruded aluminium section spray-finished

#### Colour

Grey (RAL 7035)

#### Supply includes

Assembly parts

For enclosure depth mm	Packs of	Order No.
300	2	3751.250
420	2	3751.260
540	2	3751.270

### Back panel, screw-fastened



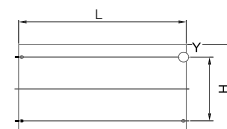
To close off the rear.

**Material**  
Aluminium, 2 mm, natural-anodised

**Supply includes**  
2 19" mounting brackets  
Assembly parts

**Note**  
Other sizes on request.

Height (H) U	Packs of	Order No.	
		enclosure width L = 1/2 19"	enclosure width L = 19"
3	1	<b>9918.119</b>	<b>3751.600</b>
4	1	<b>9918.120</b>	<b>3751.610</b>
6	1	<b>9918.121</b>	<b>3751.620</b>
7	1	<b>9918.122</b>	<b>3751.630</b>
9	1	<b>9918.123</b>	<b>3751.530</b>
12	1	<b>9918.125</b>	<b>3751.540</b>



### Rear door, vertically hinged



To close off the rear.

- Hinged, with security lock
- Optionally hinged on the left or right

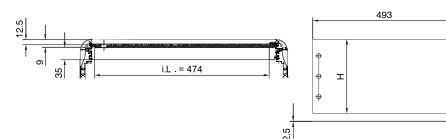
**Material**  
Aluminium, 2.5 mm, spray-finished

**Colour**  
Grey (RAL 7035)

**Supply includes**  
Assembly parts

**Note**  
The picture shows the 3 U version;  
solutions bigger than 3 U feature a rear door with two security locks.  
Other sizes on request.

For enclosure width	Height (H) U	Packs of	Order No.
19"	3	1	<b>3751.100</b>
19"	4	1	<b>3751.110</b>
19"	6	1	<b>3751.120</b>
19"	7	1	<b>3751.130</b>



### Rear door for fan installation



To close off the rear.

- With security lock
- For the installation of two 120 mm fans
- Optionally hinged on the left or right

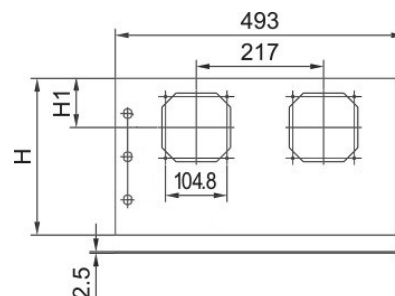
**Material**  
Aluminium, 2.5 mm, spray-finished

**Colour**  
Grey (RAL 7035)

**Supply includes**  
Assembly parts

**Note**  
The picture shows the 6 U version;  
solutions smaller than 6 U feature a rear door with only one security lock.  
Other sizes on request.

For enclosure width	Height (H) U	H1 mm	Order No.
19"	3	66.65	<b>3751.150</b>
19"	4	88.90	<b>3751.160</b>
19"	6	83.50	<b>3751.170</b>
19"	7	83.50	<b>3751.180</b>



# INSTRUMENT CASES AND SYSTEM ENCLOSURES

## RECOMMENDED ACCESSORIES HeiCase

### Aluminium front door, vertically hinged



For mechanical protection of built-in control components.

- Optionally hinged on the right or left
- With security lock

#### Material

Frame section: Extruded aluminium section, spray-finished  
 Corner pieces: Die-cast aluminium, spray-finished  
 Aluminum plate

#### Colour

Grey (RAL 7035)

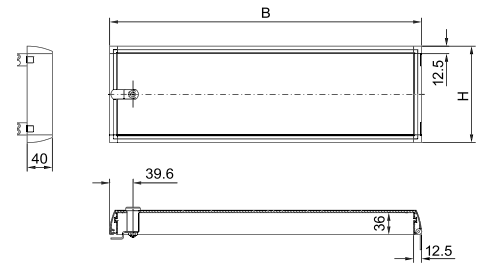
#### Supply includes

Assembly parts

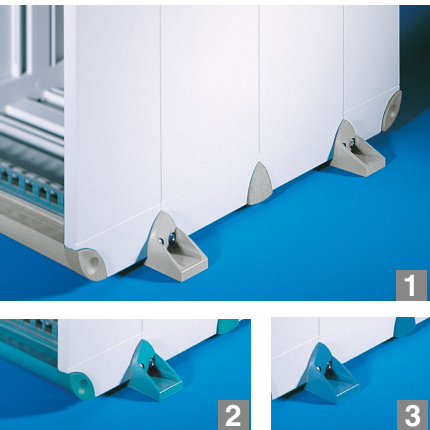
#### Note

The picture shows the 6 U version.  
 Solutions smaller than 6 U feature a front door with only one security lock.  
 Other sizes on request.

For enclosure width	W mm	Height (H) U	Order No.
19"	509	3	<b>3751.360</b>
19"	509	4	<b>3751.370</b>
19"	509	6	<b>3751.380</b>



### Tower feet



For vertical siting of enclosures, may be retrofitted.

#### Material

Plastic self-extinguishing to UL 94-V0

#### Decorative colours

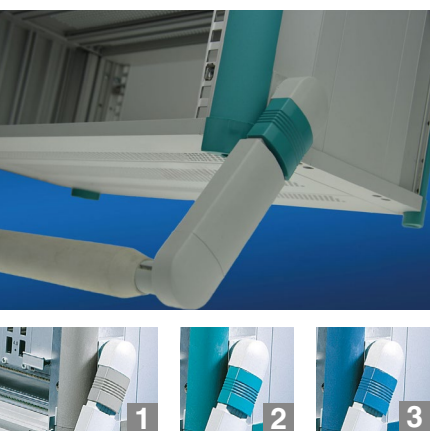
- 1 Grey (RAL 7030)
- 2 Green (RAL 5018)
- 3 Blue (RAL 5012)

#### Supply includes

4 tower feet  
 Assembly parts

Decorative colour RAL	Packs of	Order No.
5018	4	<b>3751.850</b>
5012	4	<b>3751.852</b>
7030	4	<b>3751.854</b>

### Support stand/carrying handles



- Support stand/carrying handle adjustable in 30° increments
- Suitable for retro-fitting to 2 – 7 U
- For ½ 19" and 19" enclosures
- Load capacity 30 kg

#### Material

Hinged part: Die-cast, spray finished in grey (RAL 7035),  
 Center part: Extruded aluminium section, spray finished in grey (RAL 7035) with plastic coating.

#### Decorative colour

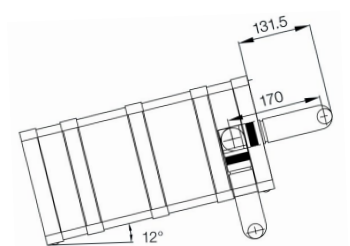
- 1 Grey (RAL 7030)
- 2 Green (RAL 5018)
- 3 Blue (RAL 5012)

#### Supply includes

Assembly parts

For enclosure width	W mm	Colour RAL	Order No.
½ 19"	392	5018	<b>3751.200</b>
½ 19"	392	5012	<b>3751.202</b>
½ 19"	392	7030	<b>3751.204</b>
19"	605	5018	<b>3751.210</b>
19"	605	5012	<b>3751.212</b>
19"	605	7030	<b>3751.214</b>

W = total width handle  
 PU = 1 set





**Systems for  
CompactPCI Serial**



**Systems for  
CompactPCI**



**Systems for  
VPX/openVPX**

## BENEFITS AT A GLANCE

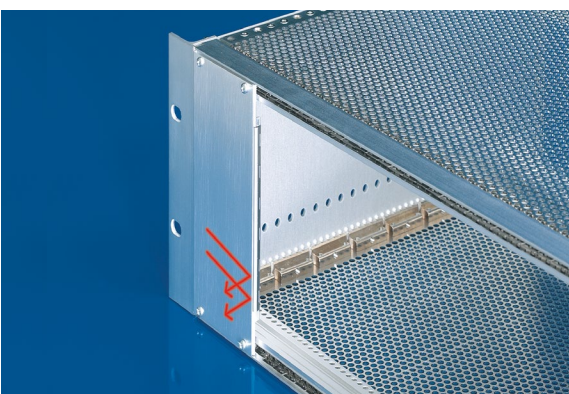
HEITEC offers adjustments on single parts level up to customized system solutions for various backplane technologies. The HeiPac Vario-Module product family is perfectly suited as a customized solution for instrument cases or system enclosures.

In the area of backplane architectures, HEITEC can look back on many years of know-how, which includes, for example, systems with ATCA, CPCI/CPCI Serial, VPX/openVPX and VME/VME64x. These technologies enable high scalability, flexibility and reliability in demanding industrial applications.

The systems, which HEITEC manufactures according to customer requirements, contain ventilation/heating concepts tailored to the application, suitable power supplies, the necessary wiring and the complete system assembly including functional test.

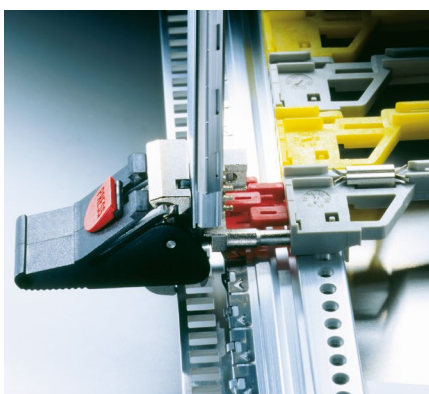
HEITEC manufactures individual parts and housings according to CI specifications:

- Front panel processing such as drilling/milling incl. labeling
- Painting of housings and decorative elements in special colors
- Development and production of individual, application-ready system solution



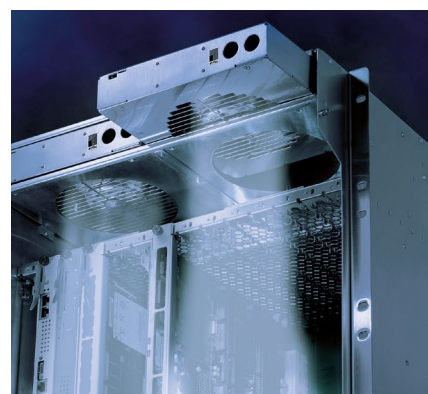
### EMC Features

All components have a conductive surface: stainless steel EMC gaskets connect to the individual components. EMC front panels with EMC gaskets ensure proper contacting.



### ESD Protection

ESD pin and ESD Clip in the guide rail deflect electrostatic charging before contacting the plug in unit. ESD Clip in the PCB guide rail provides permanent and direct deflection via the PCB.



### Ventilation

Small card guides and horizontal rails ensure maximum air flow. Individual ventilation concepts provide well directed air ducting and ideal heat dissipation - optionally from bottom to top or from front to rear.

**HEITEC Components and Accessories**

High performance in every detail

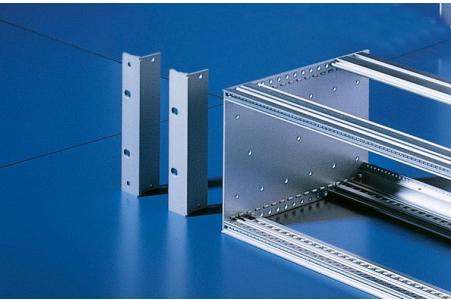


COMPONENTS  
AND ACCESSORIES

Besides complete subrack and system solutions HEITEC offers a wide range of individual components and accessories for setup, mounting and upgrade.

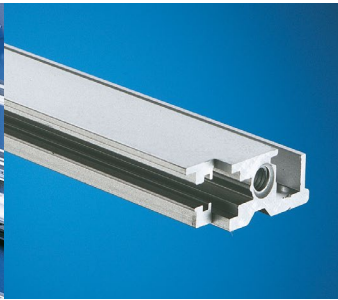
Our inside and outside sales staff will gladly help you to find the right selection of components and support you in compiling the optimum package to fulfill your individual preferences and requirements.

## Side panels and flanges



→ Page 64

## Horizontal rails



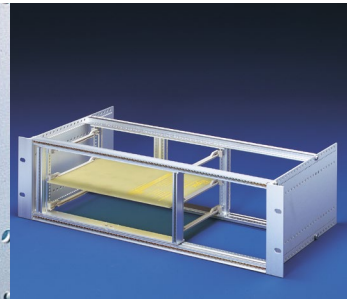
→ Page 70

## Components for EMC installation



→ Page 85

## Extension kits



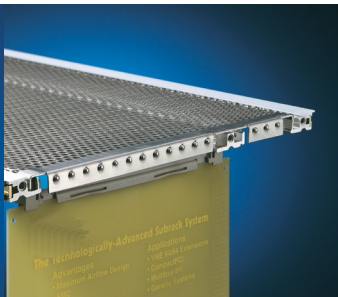
→ Page 94

## Guide rails



→ Page 96

## Covers



→ Page 103

## Front panels, handles



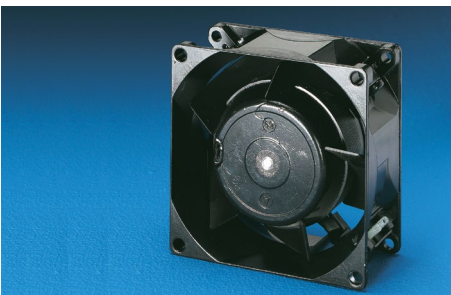
→ Page 107

## Cassettes



→ Page 124

## Ventilation



→ Page 132

## Front handles



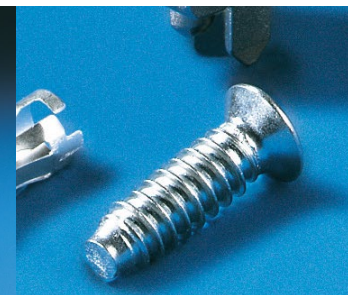
→ Page 136

## Power supplies



→ Page 138

## Assembly parts

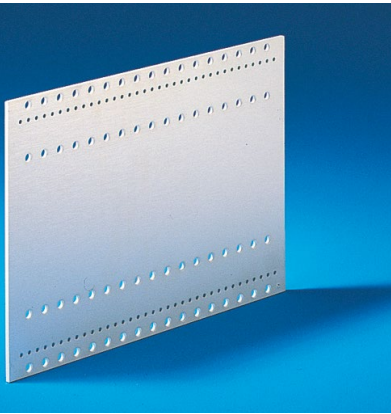


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# COMPONENTS AND ACCESSORIES

## SIDE PANELS

### Side panels for HeiPac Vario



Suitable for HeiPac Vario, EMC, Compact, Heavy and Vario-Module.

Mounting holes in 10mm pitch pattern including anti-twist half-shears for easier assembly.

#### Material

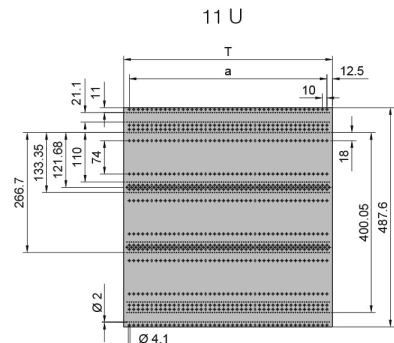
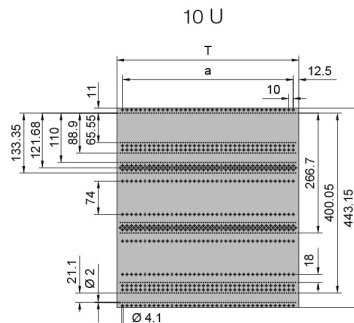
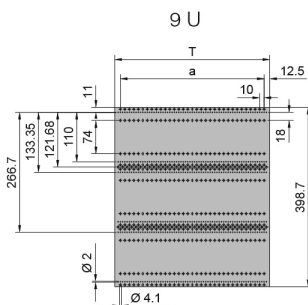
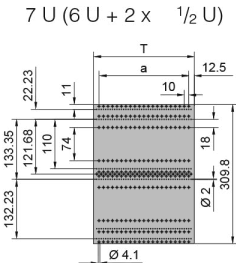
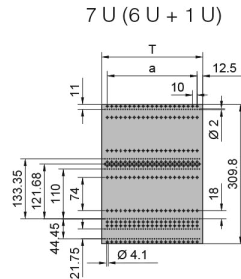
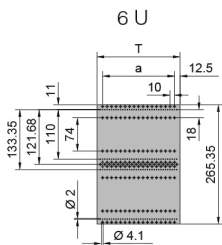
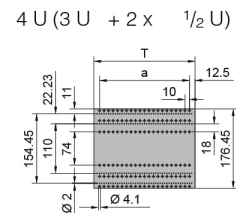
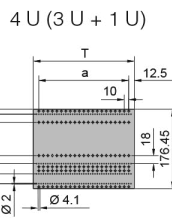
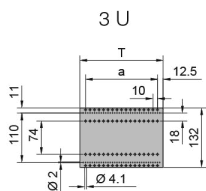
2.5 mm aluminium, clear-chromated

#### + Accessories

Flanges for HeiPac Vario, see page 66

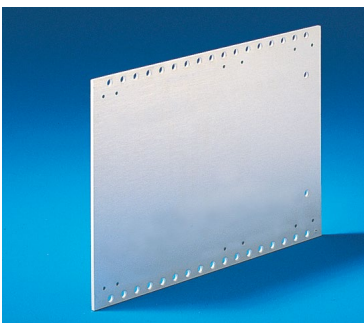
U			Order No.								
D (T) mm	a <sup>1)</sup> mm	Packs of	3	4 (3 + 1)	4 (3 + 2 x 1/2)	6	7 (6 + 1)	7 (6 + 2 x 1/2)	9	10	11
175	150	1	<b>9901.021</b>	-	-	<b>9901.023</b>	-	-	-	-	-
185	160	1	<b>3684.511</b>	-	-	<b>3684.529</b>	-	-	-	-	-
225	200	1	<b>3684.512</b>	<b>3685.793</b>	<b>3685.890</b>	<b>3684.530</b>	<b>3685.896</b>	<b>3685.893</b>	<b>3685.797</b>	-	-
245	220	1	<b>3684.513</b>	<b>3685.850</b>	<b>3685.891</b>	<b>3684.531</b>	<b>3685.897</b>	<b>3685.894</b>	-	-	-
285	260	1	<b>3684.514</b>	<b>3684.523</b>	<b>3684.526</b>	<b>3684.532</b>	<b>3685.743</b>	<b>3685.895</b>	-	-	-
305	280	1	<b>3684.515</b>	<b>3685.794</b>	-	<b>3684.533</b>	-	-	<b>3685.798</b>	-	-
345	320	1	<b>3684.516</b>	<b>3684.524</b>	<b>3684.527</b>	<b>3684.534</b>	<b>3685.744</b>	<b>3685.745</b>	<b>3684.547</b>	-	-
365	340	1	<b>3684.517</b>	<b>3685.795</b>	-	<b>3684.535</b>	-	-	<b>3685.799</b>	-	-
405	380	1	<b>3684.518</b>	<b>3684.525</b>	<b>3684.528</b>	<b>3684.536</b>	<b>3684.541</b>	<b>3684.543</b>	<b>3684.548</b>	<b>3684.545</b>	-
425	400	1	<b>3684.519</b>	-	-	<b>3684.537</b>	-	-	-	-	-
465	440	1	<b>3684.520</b>	<b>3685.796</b>	<b>3685.892</b>	<b>3684.538</b>	<b>3684.542</b>	<b>3684.544</b>	<b>3684.549</b>	<b>3684.546</b>	<b>3684.552</b>
525	500	1	<b>3684.521</b>	<b>9906.727</b>	-	<b>3684.539</b>	<b>3685.898</b>	<b>3685.959</b>	<b>3684.550</b>	<b>3685.899</b>	<b>3684.553</b>
585	560	1	<b>3684.522</b>	<b>9906.914</b>	-	<b>3684.540</b>	-	-	<b>3684.551</b>	-	<b>3684.554</b>

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





### Side panels for HeiPac Vario ECO



Mounting holes on a 10 mm pitch pattern.

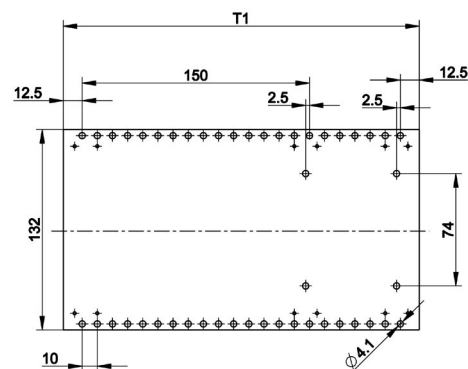
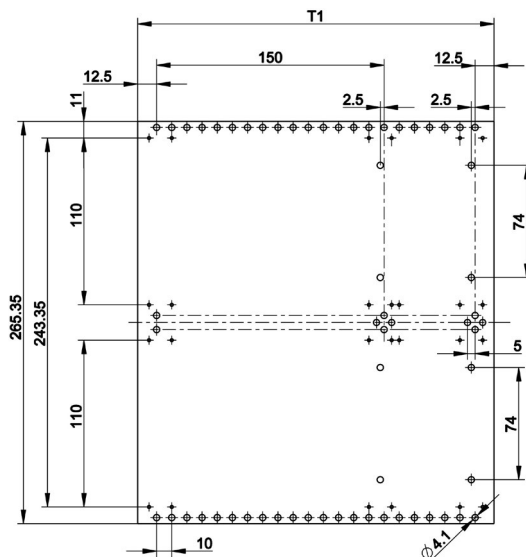
#### Material

1.5 mm sheet steel, zinc-plated

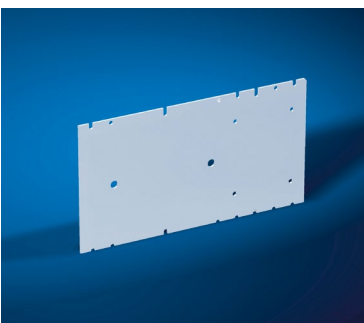
D (T) mm	Packs of	Max. board depth mm	Order No.	
			3 U	6 U
175	1	160	<b>3688.100</b>	<b>3688.102</b>
235	1	220	<b>3688.101</b>	<b>3688.103</b>

#### + Accessories

Flanges for HeiPac ECO, see page 67



### Side panels for HeiPac EASY



Mounting holes on a 60 mm pitch pattern as long holes.

#### Material

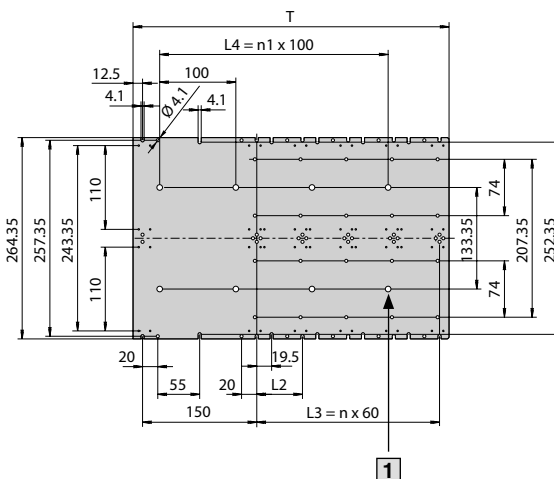
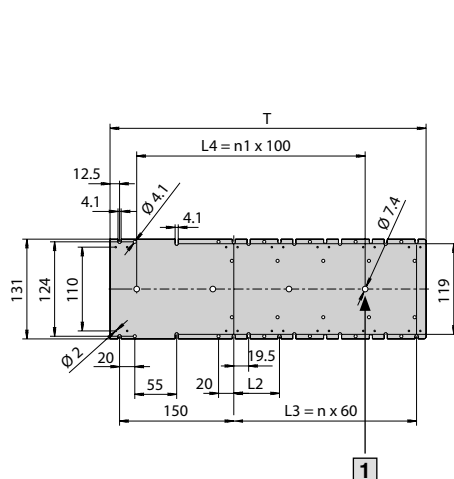
2 mm aluminium, non-corrosive

D (T1) mm	L2	n	n1	Packs of	Max. board depth mm	Order No.	
						3 U	6 U
175	-	-	-	2	160	<b>3634.695</b>	<b>3634.720</b>
235	60	-	-	2	220	<b>3634.700</b>	<b>3634.725</b>
295	60	2	2	2	280	<b>3634.705</b>	<b>3634.730</b>
355	60	3	3	2	340	<b>3634.710</b>	<b>3634.735</b>
415	60	4	3	2	400	<b>3634.715</b>	<b>3634.740</b>

- 1** Mounting holes suitable for threaded insert PEM-FM4-1 for mounting telescopic slides

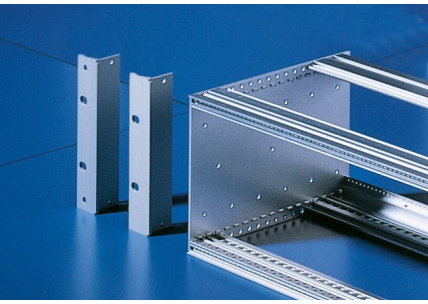
#### + Accessories

Flanges for HeiPac EASY, see page 67



# COMPONENTS AND ACCESSORIES FLANGES

## Flanges 19" for HeiPac Vario



Suitable for HeiPac Vario, EMC, Compact and Vario-Module. With integral channel to accommodate EMC gaskets.

**Material**

Extruded aluminum section

**Surface finish**

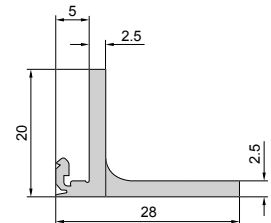
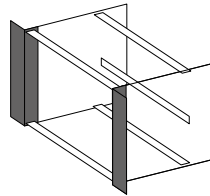
Clear-chromated

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

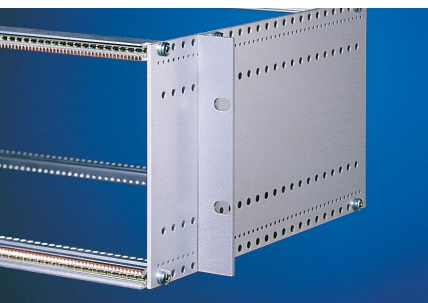
**+ Accessories**

EMC gaskets, vertical, see page 88

Handles for subrack, see page 136



## Flanges 19" for HeiPac Vario, depth-adjustable installation



Suitable for HeiPac Vario, EMC and Compact.

**Material**

Extruded aluminum section

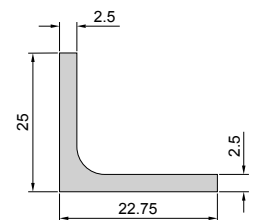
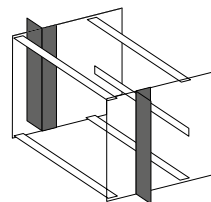
**Surface finish**

Clear-chromated

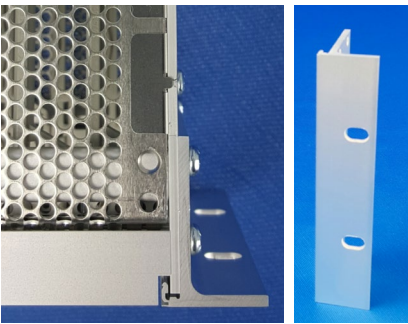
U	Packs of	Order No.
3	1	<b>3684.626</b>
4	1	<b>3684.627</b>
6	1	<b>3684.628</b>
7	1	<b>3684.629</b>
9	1	<b>3684.630</b>
10	1	<b>3684.631</b>
11	1	<b>3684.632</b>

**+ Also required**

Assembly screws, nuts and washers, packs of 4 sets, Order No. 3687.015, see page 141



### Flanges 19" for HeiPac Vario HEAVY, reinforced



Suitable for HeiPac Vario, EMC, Compact and Heavy  
Reinforced flange ensures a high level of stability even under extreme loads.

**Material**

Extruded aluminum section  
3 mm material thickness

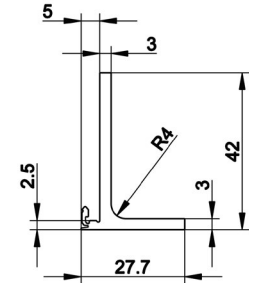
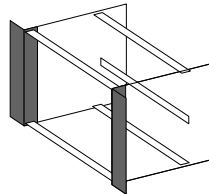
**Surface finish**

Clear-chromated

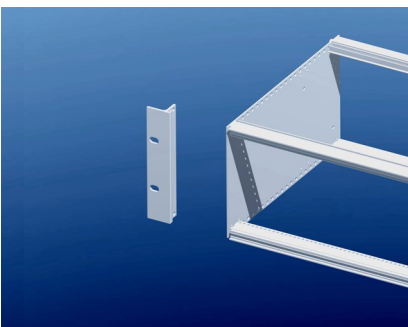
U	Packs of	Order No.	
		with handle holes	without handle holes
3	1	<b>9921.725</b>	<b>9914.268</b>
6	1	<b>9921.726</b>	<b>9921.721</b>

**+ Accessories**

Handles for subrack, see page 136



### Flanges 19" for HeiPac Vario ECO



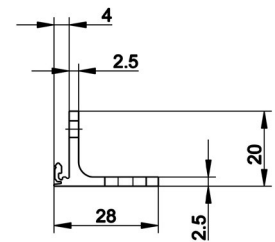
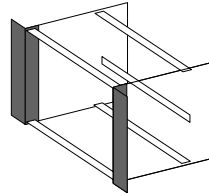
**Material**

Extruded aluminum section

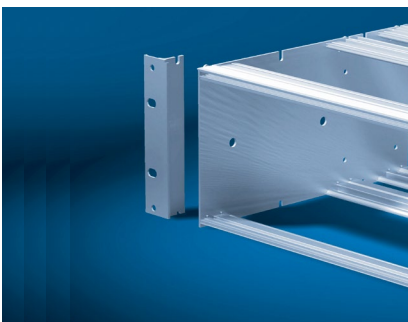
**Surface finish**

Clear-chromated

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



### Flanges 19" for HeiPac EASY



Integrated mounting holes for installation of handles.

**Material**

Extruded aluminium section

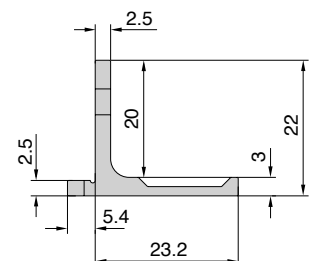
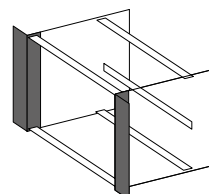
**Surface finish**

Pre-anodised

U	Packs of	Order No.
3	2	<b>3634.745</b>
6	2	<b>3634.750</b>

**+ Accessories**

Handles for subrack, see page 136



# COMPONENTS AND ACCESSORIES

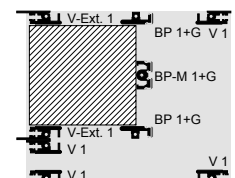
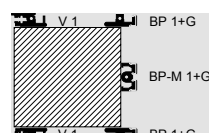
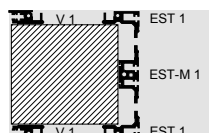
## HORIZONTAL RAILS HeiPac Vario

### Overview horizontal rails HeiPac Vario


























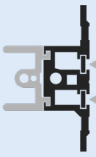






Main sections	V 1 Front horizontal rail	V 2 Front horizontal rail, with double screw fastening	V 3 Double front horizontal rail	V-Ext. 1 Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	V-Ext. 2 Double front horizontal rail, with 10 mm extension	V-Ext. 3 Front horizontal rail, with 10 mm extension, with double screw fastening	V-Ext. 4 Double front horizontal rail, with 10 mm extension	BP 1 Rear horizontal rail	BP 2 Rear horizontal rail, with double screw fastening
	Page 70	Page 70	Page 71	Page 71	Page 72	Page 72	Page 73	Page 73	Page 74
Additional sections									
Adaptor rail, rear center, to accommodate guide rails 	-	-	-	-	-	-	-	-	-
Page 78									
Z rail for connector 	-	-	-	-	-	-	-		
Page 86									
Insulating strip <sup>1)</sup> 	-	-	-	-	-	-	-		
Page 85									
Conductive strip <sup>2)</sup> 	-	-	-	-	-	-	-		
Page 87									
Threaded insert 								-	
Page 86									
Identification strips 									
Page 87									
EMC gaskets, horizontal 								-	-
Page 85									

For <sup>1)</sup>insulated or <sup>2)</sup>conductive 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.



### Overview horizontal rails HeiPac Vario

Main sections	BP 3	BP 4	BP 5	BP-M 1	BP-M 2	CON 1	CON 2	CON-M 1
	Rear horizontal rail	Rear horizontal rail	Rear horizontal rail	Rear horizontal rail, center	Rear horizontal rail, center (also for HeiPac EASY)	Rear horizontal rail, with integral Z rail	Rear horizontal rail, with integral Z rail	Rear horizontal rail, with integral Z rail (also for HeiPac EASY)
	Page 74	Page 75	Page 75	Page 76	Page 76	Page 77	Page 77	Page 78
								
<b>Additional sections</b>								
Adaptor rail, rear center, to accommodate guide rails  Page 78	-	-	-			-	-	
Z rail for connector  Page 86		-	-		-	-	-	-
Insulating strip <sup>1)</sup>  Page 85		-	-		-	-	-	-
Conductive strip <sup>2)</sup>  Page 87		-	-		-	-	-	-
Threaded insert  Page 86		-	-	-	-			
Identification strips  Page 87				-	-		-	-
EMC gaskets, horizontal  Page 85	-	-	-	-	-	-	-	-

For <sup>1)</sup>insulated or <sup>2)</sup>conductive attachment of backplanes.

# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac Vario

### Horizontal rail Vario V 1, front



To accommodate guide rails and for the attachment of front panels

- Front projection 2.5 mm corresponding to IEC 60297-3-101
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

#### Material

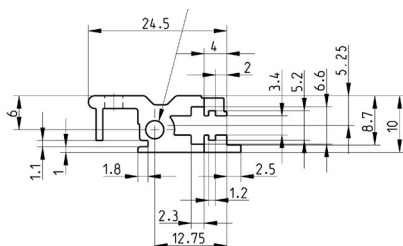
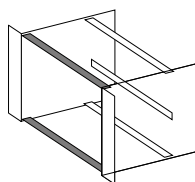
Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.



Usable width (HP)	Packs of	Order No. unprinted	Order No. printed
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>	<b>9921.788<sup>3)</sup></b>
63	1	<b>3684.561</b>	-
84	1	<b>3684.562</b>	<b>9921.789<sup>3)</sup></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

<sup>3)</sup> with HP pattern printing

#### + Also required

Assembly screws M4 x 12, acks of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87  
Gaskets, see page 85

### Horizontal rail Vario V 2, front, with double screw fastening



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.

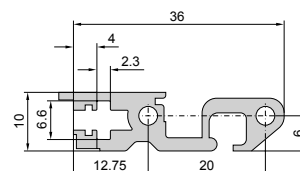
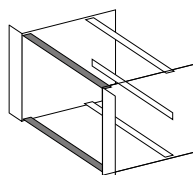
- Front projection 2.5 mm corresponding to IEC 60297-3-101
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated



Usable width (HP)	Packs of	Order No. unprinted	Order No. printed
42	1	<b>9917.695</b>	<b>9921.792</b>
84	1	<b>9908.721</b>	<b>9921.793<sup>1)</sup></b>

<sup>1)</sup> with HP pattern printing

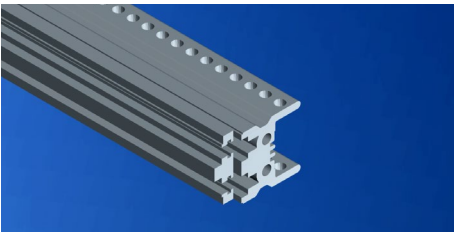
#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87  
Gaskets, see page 85

### Horizontal rail Vario V 3, front



To accommodate guide rails and for the attachment of front panels. For subdivision i. e. 6 U in 2 x 3 U.

- Front projection 2.5 mm corresponding to IEC 60297-3-101
- 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	Order No. unprinted	Order No. printed
84	1	<b>9904.745</b>	<b>9921.799<sup>1)</sup></b>

<sup>1)</sup> with HP pattern printing

#### + Also required

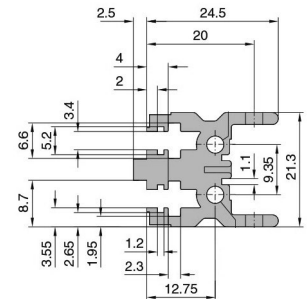
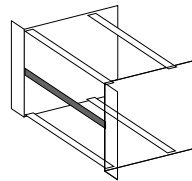
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86

Identification strips, see page 87

Gaskets, see page 85



### Horizontal rail Vario V-Ext. 1, front, with 10 mm extension



For type IV, IVs and VII injector/extractor handle  
To accommodate guide rails and for the attachment of front panels.

- Front projection 10 mm corresponding to IEEE 1101.10 and IEC 60297-3-102
- 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

#### Note

Not compatible with Vario-Module support stand/carrying handle.  
Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.

Usable width (HP)	Packs of	Order No. unprinted	Order No. printed
40	1	<b>3684.961</b>	-
42	1	<b>3684.565</b>	<b>9921.790<sup>3)</sup></b>
63	1	<b>3684.566</b>	-
84	1	<b>3684.567</b>	<b>9921.791<sup>3)</sup></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

<sup>3)</sup> with HP pattern printing

#### + Also required

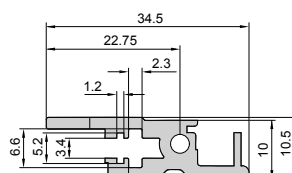
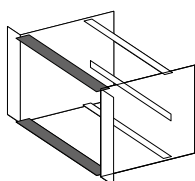
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86

Identification strips, see page 87

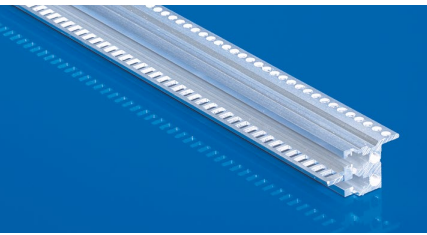
Gaskets, see page 85



# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac Vario

### Horizontal rail Vario V-Ext. 2, with 10 mm extension and double screw fastening, front



For type IV, IVs and VII injector/extractor handle

To accommodate guide rails and for the attachment of front panels. Double screw fastening and an extra high profile section ensure unique stability evens under extreme loads.

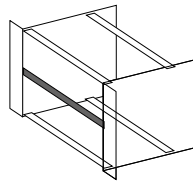
- Front projection 10 mm corresponding to IEEE 1101.10 and IEC 60297-3-102
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated



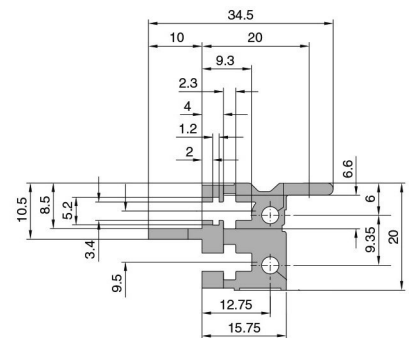
Usable width (HP)	Packs of	Order No.
84	1	<b>3687.724</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87  
Gaskets, see page 85



### Horizontal rail Vario V-Ext. 3, with 10 mm extension and double screw fastening, front



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.

- Front projection 10 mm corresponding to IEEE 1101.10 and IEC 60297-3-102
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

#### Material

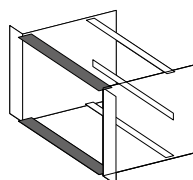
Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Not compatible with Vario-Module support stand/carrying handle



Usable width (HP)	Packs of	Order No. unprinted	Order No. printed
84	1	<b>9908.722</b>	<b>9921.795<sup>1)</sup></b>

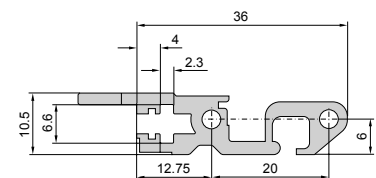
<sup>1)</sup> with HP pattern printing

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

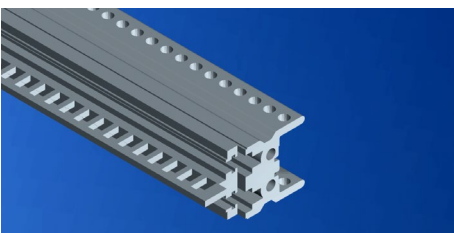
#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87  
Gaskets, see page 85





### Horizontal rail Vario V-Ext. 4, with 10 mm extension and double screw fastening, front



For type IV, IVs and VII injector/extractor handle

For subdivision i. e. 6 U in 2 x 3 U. To accommodate guide rails and for the attachment of front panels

- Front projection 10 mm corresponding to IEEE 1101.10 and IEC 60297-3-102
- 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

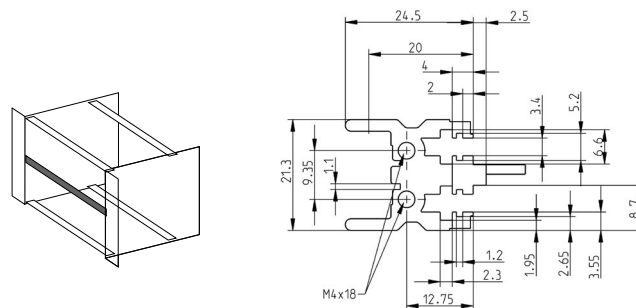
Usable width (HP)	Packs of	Order No.
84	1	<b>3688.704</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87  
Gaskets, see page 85



### Horizontal rail Vario BP 1, for backplane



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

- Tapped holes M2.5 on a 1 HP pitch pattern for mounting backplanes and Z rails
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Applicable for top-mounting under covers
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.

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

1) Including 4 assembly screws

2) Anodised

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Conductive strips, see page 87  
Insulating strips, see page 85  
Identification strips, see page 87  
Z rail, see page 86



# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac Vario

### Horizontal rail Vario BP 2, for backplane



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

- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- For mounting backplanes/Z rails additional threaded inserts (9901.816) are required
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

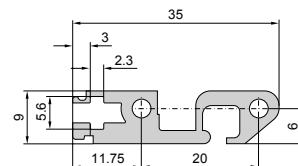
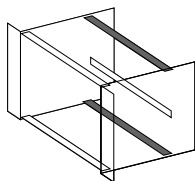
Usable width (HP)	Packs of	Order No.
84	1	9908.723

#### + Also required

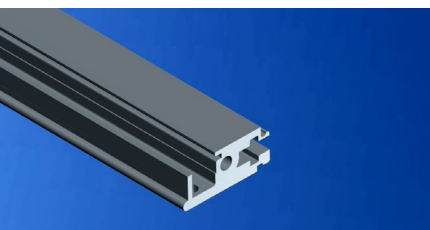
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
 Identification strips, see page 87  
 Insulating strips, see page 85  
 Conductive strips, see page 87  
 Z rail, see page 86



### Horizontal rail Vario BP 3, for backplane



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

- HP pitch pattern of holes for the precise installation of guide rails
- Channel for slide-in covers
- Additional threaded inserts (3684.610) are required for mounting backplanes/Z rails
- M4 thread on end face
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Not suitable for mounting under covers

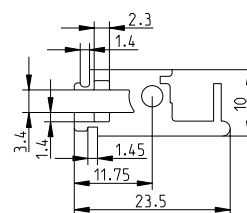
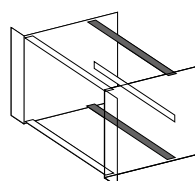
Usable width (HP)	Packs of	Order No.
84	1	3688.104

#### + Also required

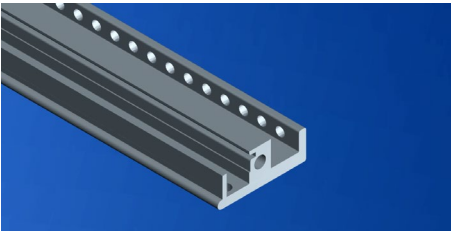
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
 Identification strips, see page 87  
 Insulating strips, see page 85  
 Conductive strips, see page 87  
 Z rail, see page 86



### Horizontal rail Vario BP 4, for conductive mounting of backplanes



To accommodate guide rails and for the conductive attachment of backplanes.

- HP pitch pattern of holes for the precise installation of guide rails
- Tapped holes M2.5 on a HP pitch pattern
- Channel for slide-in covers
- M4 thread on end face
- Straight-through core hole
- For mounting slide-in covers

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Not suitable for mounting under covers  
Due to integrated contact area, insulating strips cannot be used

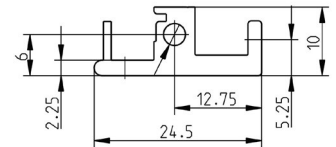
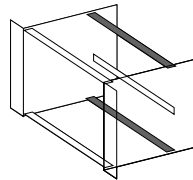
Usable width (HP)	Packs of	Order No.
84	1	<b>9920.069</b>

#### + Also required

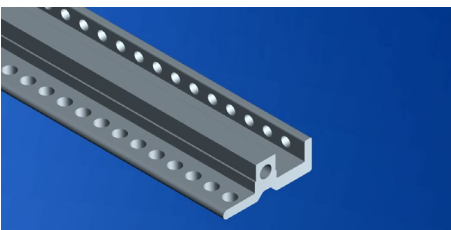
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Identification strips, see page 87



### Horizontal rail Vario BP 5, for conductive mounting of backplanes



To accommodate guide rails and for the conductive mounting of backplanes.

- Tapped holes M2.5 on a HP pitch pattern
- HP pitch pattern of holes for the precise installation of guide rails
- Applicable for top-mounting under covers
- M4 thread on end face
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Due to integrated contact area, insulating strips cannot be used

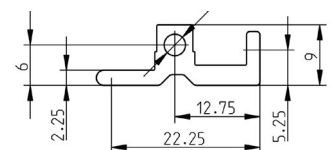
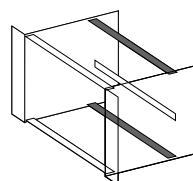
Usable width (HP)	Packs of	Order No.
84	1	<b>9912.522</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Also required

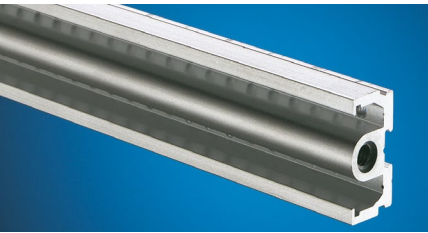
Identification strips, see page 87



# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac Vario

### Horizontal rail Vario BP-M 1, for backplane, center



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

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

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.

Usable width (HP)	Packs of	Order No.
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</b> <sup>1)</sup>
168	1	<b>3684.579</b>
192	1	<b>3688.003</b> <sup>2)</sup>

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

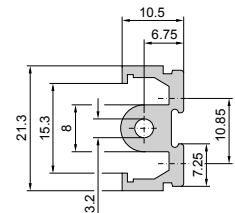
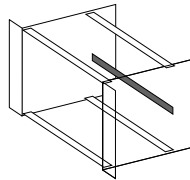
<sup>2)</sup> Anodised

#### + Also required

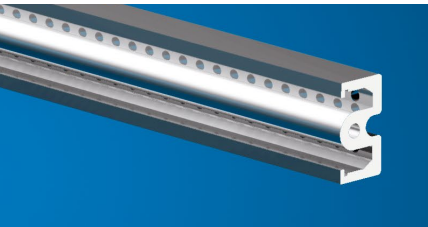
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Insulating strips, see page 85  
 Conductive strips, see page 87  
 Z rails, see page 86  
 Adaptor rail, see page 78



### Horizontal rail Vario BP-M 2, for backplane, center



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

- Tapped holes M2.5
- M4 thread on end face
- Straight-through core hole
- Due to integrated contact area, insulating strips cannot be used

#### Material

Extruded aluminium section

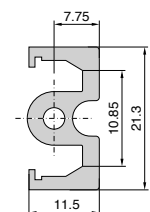
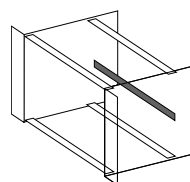
#### Surface finish

Clear-chromated

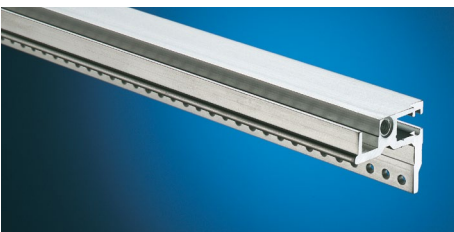
Usable width (HP)	Packs of	Order No.
84	1	<b>9912.523</b>

#### + Accessories

Adaptor rail, see page 78



### Horizontal rail Vario CON 1, with integrated Z rail for connector



To accommodate guide rails. Integrated Z rail for mounting connectors (CON) to IEC 60603-2.

- HP pitch pattern of holes for the precise installation of guide rails
- Tapped holes M2.5 for connector mounting
- Applicable for top-mounting under covers
- M4 thread on end face
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

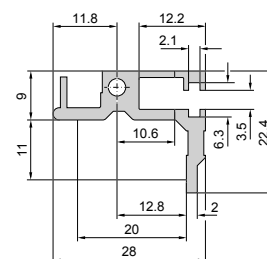
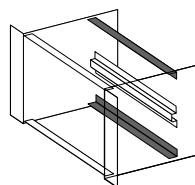
Usable width (HP)	Packs of	Order No.
42	1	<b>3686.191</b>
63	1	<b>3686.919</b>
84	1	<b>3686.159</b>

#### + Also required

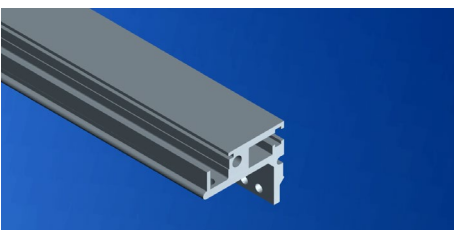
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87



### Horizontal rail Vario CON 2, with integrated Z rail for connector



To accommodate guide rails. Integrated Z rail for mounting connectors (CON) to DIN 41612.

- 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

#### Note

Not suitable for mounting under covers

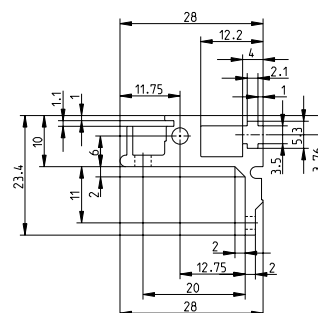
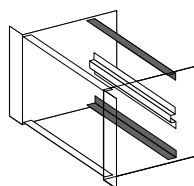
Usable width (HP)	Packs of	Order No.
84	1	<b>9901.991</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86



# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac Vario

### Horizontal rail Vario CON-M 1, with integral Z rail for connector, rear center



When using 6 U PCBs or box-type plug-in units. Integral Z rail for mounting connectors (CON) to IEC 60603-2.

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

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Horizontal rail 168 HP without end face machining. Suitable for individual cutting to length.

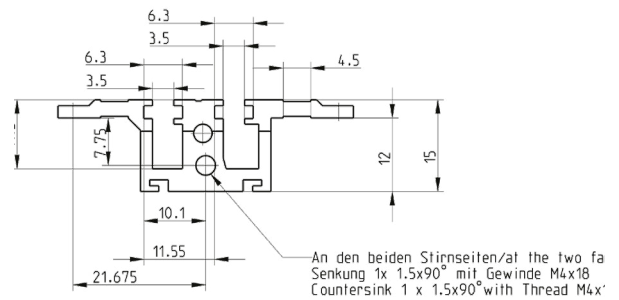
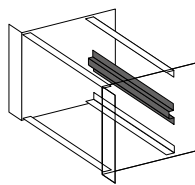
Usable width (HP)	Packs of	Order No.
42	1	<b>3687.600</b>
63	1	<b>3687.601</b>
84	1	<b>3687.602</b>
168	1	<b>3687.603</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Adaptor rail, see below  
Threaded insert, see page 86



### Adaptor rail, rear center



Suitable for horizontal rail Vario BP-M 1, BP-M 2, CON-M 1.

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

- HP pitch pattern of holes for the precise installation of guide rails
- M4 and M2.5 thread on the end face
- Applicable in combination with BP-M 1, BP-M 2 and EST-M 1
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.

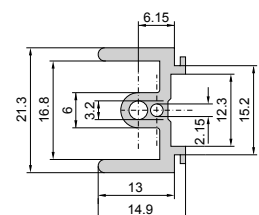
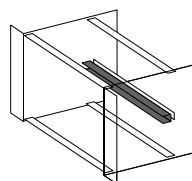
Usable width (HP)	Packs of	Order No.
12	1	<b>3684.587</b>
16	1	<b>3684.588</b>
20	1	<b>3684.589</b>
40	1	<b>3684.964</b>
42	1	<b>3684.590</b>
63	1	<b>3686.005</b>
84	1	<b>3684.591</b>
84	1	<b>3685.272<sup>1)</sup></b>
168	1	<b>3684.584</b>
192	1	<b>3688.004<sup>2)</sup></b>

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

<sup>2)</sup> Anodised

























#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140



# COMPONENTS AND ACCESSORIES HORIZONTAL RAILS HeiPac Vario ECO

## Overview horizontal rails HeiPac Vario ECO

Main sections	V 1	BP 3	CON 2	BP-M 1
	Front horizontal rail	Rear horizontal rail	Rear horizontal rail, with integral Z rail	Rear horizontal rail, center
	Page 81	Page 81	Page 80	Page 80
<b>Additional sections</b>				
Adaptor rail, rear center, to accommodate guide rails 	-	-	-	
Page 78				
Z rail for connector 	-		-	
Page 86				
Insulating strip <sup>1)</sup> 	-		-	
Page 85				
Conductive strip <sup>2)</sup> 	-		-	
Page 87				
Threaded insert 				-
Page 86				
Identification strips 			-	-
Page 87				
EMC gaskets, horizontal 		-	-	-
Page 85				

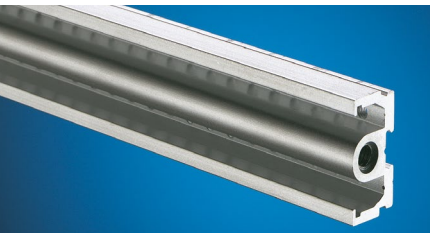
For <sup>1)</sup>insulated or <sup>2)</sup>conductive attachment of backplanes.

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

# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac Vario ECO

### Horizontal rail Vario BP-M 1, for backplane, center



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

- 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	Order No.
84	1	<b>3684.582</b>
84	1	<b>3685.270</b> <sup>1)</sup>

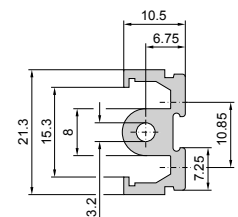
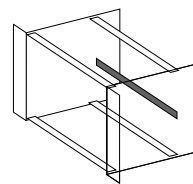
<sup>1)</sup> Including 2 assembly screws

#### + Also required

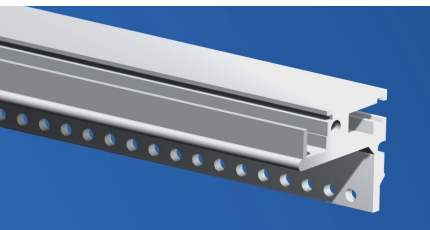
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Conductive strips, see page 87  
 Insulating strips, see page 85  
 Z rails, see page 86  
 Adaptor rail, see page 78



### Horizontal rail Vario CON 2, with integral Z rail for connector



To accommodate guide rails. Integral Z rail for mounting connectors (CON) to IEC 41612.

- HP pitch pattern of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for connector mounting
- Not suitable for mounting under covers
- M4 thread on end face
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Not suitable for mounting under covers.

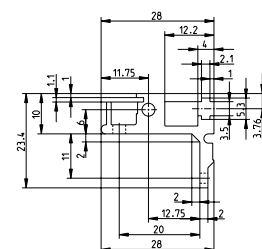
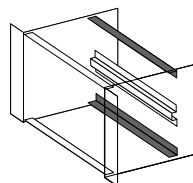
Usable width (HP)	Packs of	Order No.
84	1	<b>9901.991</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86





### Horizontal rail Vario V 1, front



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

- Front projection 2.5 mm corresponding to IEC 60297-3-101
- 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

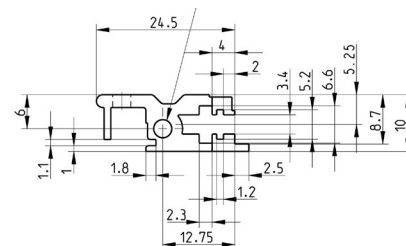
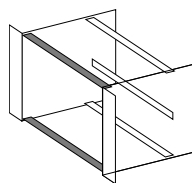
Usable width (HP)	Packs of	Order No.
84	1	<b>3684.562</b>

#### + Also required

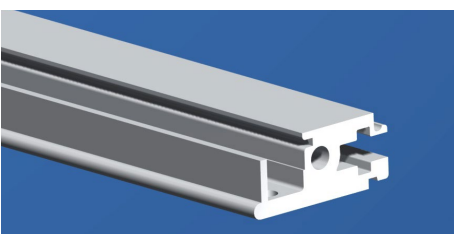
Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories

Threaded inserts, see page 86  
Identification strips, see page 87  
Gaskets, see page 85



### Horizontal rail Vario BP 3, for backplane, with integral channel for slide-in covers



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

- HP pitch pattern of holes for the precise installation of guide rails
- Channel for slide-in covers
- M4 thread on end face
- Straight-through core hole

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

#### Note

Not suitable for mounting under covers.  
Additional threaded inserts are required for mounting backplanes/Z rails.

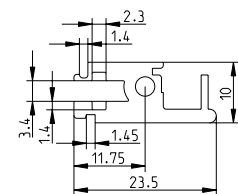
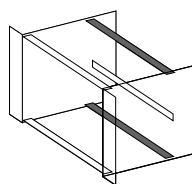
Usable width (HP)	Packs of	Order No.
84	1	<b>3688.104</b>

#### + Also required

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 140

#### + Accessories









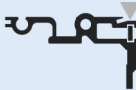
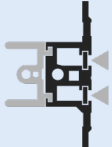



Threaded inserts, see page 86  
Identification strips, see page 87  
Conductive strips, see page 87  
Insulating strips, see page 85  
Z rails, see page 86  
Gaskets, see page 85



# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac EASY

### Overview horizontal rails HeiPac EASY

Main sections	<b>EASY V 1</b> Front horizontal rail, with double screw fastening	<b>EASY BP 1</b> Rear horizontal rail, with double screw fastening, for mounting backplanes	<b>EASY CON 1</b> Rear horizontal rail, with double screw fastening, with integral Z rail	<b>Vario CON-M 1</b> Rear horizontal rail, with integral Z rail	<b>Vario BP-M 2</b> Rear horizontal rail, center	<b>EASY H 1</b> Rear horizontal rail, with double screw fastening, for mounting rear panels
Additional sections	PageSeite 83	PageSeite 83	PageSeite 84	PageSeite 78	PageSeite 76	PageSeite 84
 Page 78	-	-	-			-
 Page 86	-	-	-	-	-	-
 Page 85	-	-	-	-	-	-
 Page 87	-	-	-	-	-	-
 Page 86		-			-	
 Page 87	-	-	-	-	-	-
 Page 85	-	-	-	-	-	-

For <sup>1)</sup>insulated or <sup>2)</sup>conductive attachment of backplanes.

### Horizontal rail EASY V 1, with double screw fastening, front



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

- Pre-assembled screws M 4x16 for fast mounting on the subrack side panel
- Front excess length 2.5 mm corresponding to IEC 60297-3
- HP pitch pattern of holes for the precise installation of guide rails
- On request with double screw fastening to ensure a high stability
- M4 thread on end face
- Straight-through core hole for optional double screw fastening

#### Material

Extruded aluminium section

#### Surface finish

Non-corrosive

#### Supply includes

2 horizontal rails with pre-assembled threaded inserts and screws M4 x 16

Usable width (HP)	Packs of	Order No. unprinted	Order No. printed
84	2	3634.600	9921.803 <sup>1)</sup>

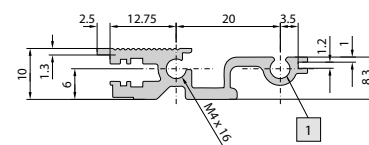
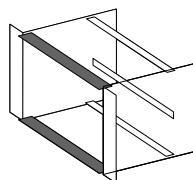
<sup>1)</sup> with HP pattern printing

#### + Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634.430 (packs of 100)

#### + Accessories

Threaded inserts, see page 86



1 Core hole M4

### Horizontal rail EASY BP 1, with double screw fastening, for backplane



To accommodate guide rails and for the attachment of backplanes.

- Pre-assembled screws M4 x 16 for fast mounting on the subrack side panel
- Tapped holes M2.5 in 1 HP pitch pattern for mounting backplanes
- HP pitch pattern of holes for the precise installation of guide rails
- On request with double screw fastening to ensure a high stability
- M4 thread on end face
- Height of the profile allows cover extension
- Straight-through core hole for optional double screw fastening

#### Material

Extruded aluminium section

#### Surface finish

Non-corrosive

#### Supply includes

2 horizontal rails with pre-assembled threaded inserts and screws M4 x 16

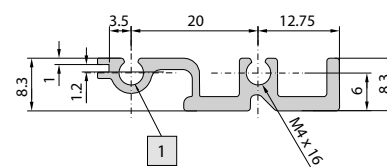
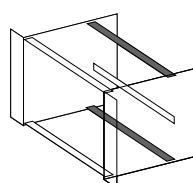
#### Note

Due to integrated contact area, insulating strips cannot be used

Usable width (HP)	Packs of	Order No.
84	2	3634.615

#### + Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634.430 (packs of 100)

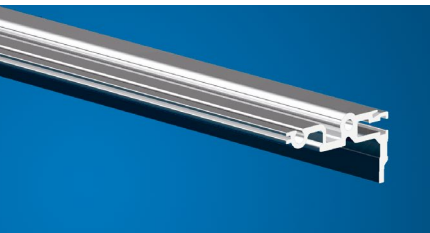


1 Core hole M4

# COMPONENTS AND ACCESSORIES

## HORIZONTAL RAILS HeiPac EASY

### Horizontal rail EASY CON 1, with integral Z rail for connector, with double screw fastening



To accommodate guide rails, integral Z rail for the attachment of connectors (CON). Integral Z rail for mounting connectors (CON) to IEC 60603-2.

- Pre-assembled screws M4 x 16 for fast mounting on the subrack side panel
- On request with double screw fastening to ensure a high stability
- HP pitch pattern of holes for precise mounting of guide rails
- M4 thread on end face
- Straight-through core hole for optional double screw fastening
- Height of the profile allows cover extension

#### Material

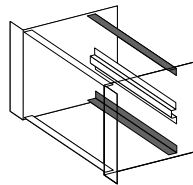
Extruded aluminium section

#### Surface finish

Non-corrosive

#### Supply includes

2 horizontal rails with pre-assembled screws M4 x 16



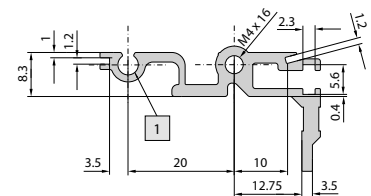
Usable width (HP)	Packs of	Order No.
84	2	<b>3634.620</b>

#### + Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634.430 (packs of 100)

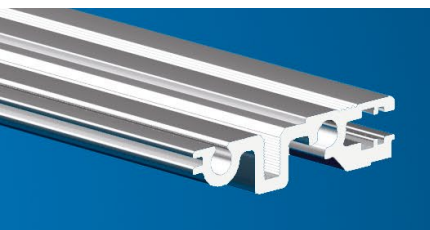
#### + Accessories

Threaded inserts, see page 86



1 Core hole M4

### Horizontal rail EASY H 1, with double screw fastening, for mounting rear panels



To accommodate rear front panels.

- With channel for mounting top covers see page 106 Covers EASY version 2
- On request with double screw fastening to ensure a high stability
- Straight-through core hole for optional double screw fastening
- M4 thread on end face
- Pre-assembled screws M4 x 16 for fast mounting on the subrack side panel

#### Material

Extruded aluminium section

#### Surface finish

Non-corrosive

#### Supply includes

2 horizontal rails with threaded inserts and screws M4 x 16

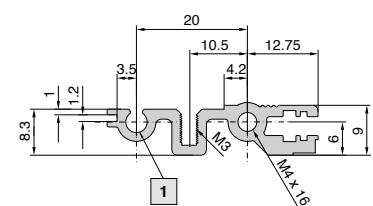
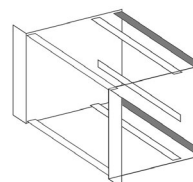
Usable width (HP)	Packs of	Order No.
84	1	<b>3634.510</b>

#### + Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634.430 (packs of 100)

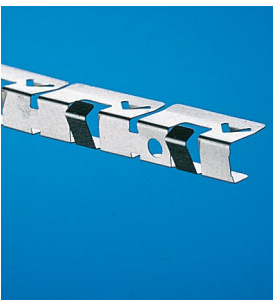
#### + Accessories

Threaded inserts, see page 86



1 Core hole M4

### EMC gaskets for front horizontal rails



**EMC**

Suitable for horizontal rails  
Vario V 1, 2, 3, V-Ext. 1, 2, 3, 4.

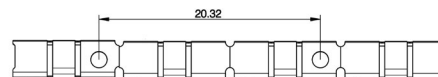
For horizontal EMC protection.  
For snapfastening onto the front  
horizontal rails.

**Material**

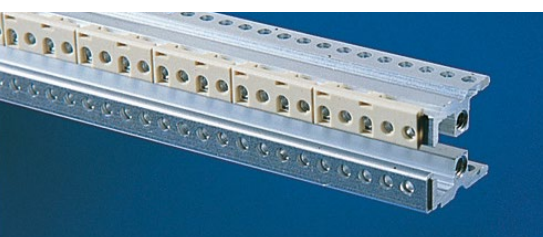
Stainless steel

**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	Order No.
For top/bottom horizontal rail		
40	1	<b>3684.974</b>
40	10	<b>9921.945</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>



### Insulating strip



Suitable for horizontal rails  
Vario BP 1, 2, 3, BP-M 1.

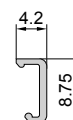
For insulated mounting of  
backplanes.

- 21 HP
- Slides onto the rear horizontal rail

**Material**

Plastic, self-extinguishing  
to UL 94-V0

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



# COMPONENTS AND ACCESSORIES

## ACCESSORIES FOR HORIZONTAL RAILS

### Z rail for connector, IEC 60 603-2



Suitable for horizontal rails Vario BP 1, 2, 3 and BP-M 1.

With M2.5 threaded holes.  
For the assembly of single connectors according to IEC 60603-2.

#### Material

Extruded aluminium section

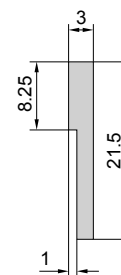
#### Surface finish

Clear-chromated

Usable width (HP)	Packs of	Order No.
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, order no. 3654.340, see page 140



### Threaded insert



Suitable for horizontal rails Vario 1, 2, 3, V-Ext. 1, 2, 3, 4, BP 2, 3, CON 1, 2 and CON-M 1.

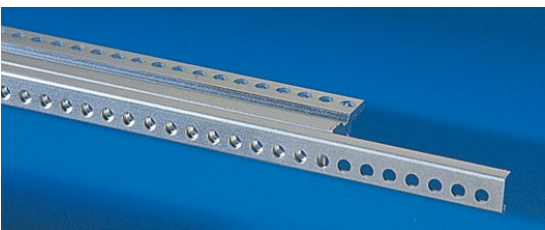
With M2.5 threaded holes on an HP pitch pattern. For sliding into the horizontal rail. There are two threaded insert versions, which are distinguished by their height.

#### Material

Sheet steel, zinc-plated

Usable width (HP)	Packs of	Order No.	
		6 x 2 mm	5 x 2 mm
		for subracks	
		Vario Vario EMC ECO Compact HEAVY	EASY
3	1	<b>3684.603</b>	-
7	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>	-
63	1	<b>3684.609</b>	-
84	1	<b>3684.610</b>	<b>9901.816</b>

### Conductive strip



Suitable for horizontal rails Vario BP 1, 2, 3 and BP-M 1.

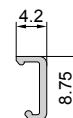
For conductive mounting of backplanes.

- 84 HP
- Slides onto the rear horizontal rail

#### Material

Aluminium

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



### Identification strip



Suitable for horizontal rails Vario 1, 2, 3, V-Ext. 1, 3, 4, BP 1, 2, 3, 4, 5 and CON 1.

To identify the slots on the subrack, self-adhesive.

The following versions are available:

4 mm wide:

- for front 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	Order No.
Front	4	1 ... 83	1	<b>3687.575</b>
Rear	4	1 ... 167	1	<b>3687.577</b>
Front	4	83 ... 1	1	<b>3687.574</b>
Front	2	1 ... 84	1	<b>3687.576</b>

### Perforated strip



Perforated strips with 2.9 mm diameter holes in HP pitch pattern. Holes for centering shielded plug-in modules.

#### Material

Aluminium

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



# COMPONENTS AND ACCESSORIES

## COMPONENTS FOR EMC INSTALLATION

### EMC gaskets, vertical



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

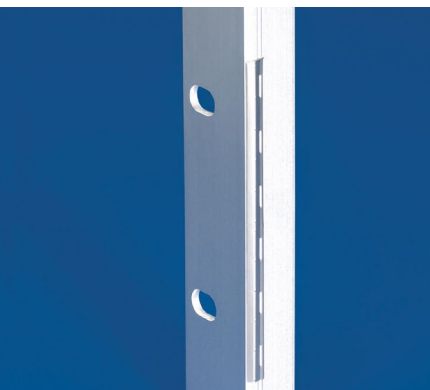
Suitable for mounting on:

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



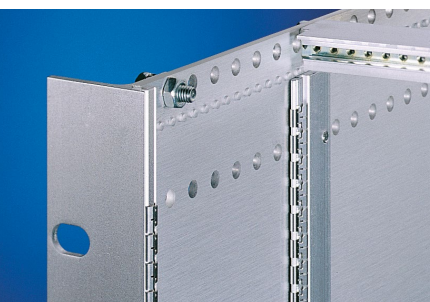
#### Version 1: Segmented

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

#### Version 2: One-piece

U	Order No. Packs of 1	Order No. Packs of 10
2	<b>3688.610</b>	-
3	<b>3688.611</b>	<b>9921.942</b>
4	<b>3688.612</b>	-
5	<b>3688.613</b>	-
6	<b>3688.614</b>	<b>9921.943</b>
7	<b>3688.615</b>	-
8	<b>3688.634</b>	-
9	<b>3688.616</b>	<b>9921.944</b>
10	<b>3688.609</b>	-
11	<b>3688.633</b>	-
12	<b>3688.606</b>	-

### EMC contact strip, depth-adjustable installation



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

#### Material

Extruded aluminium section

#### Surface finish

Clear-chromated

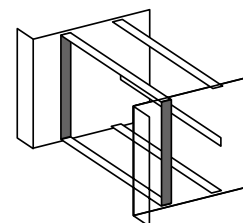
#### Note

2 sections are required for each subrack.

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

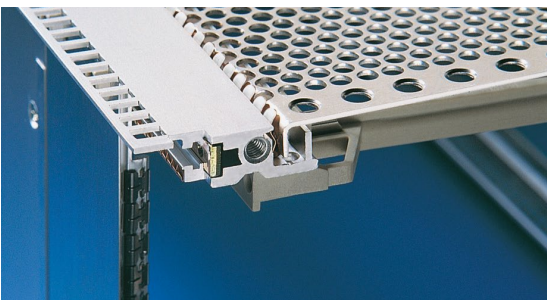
#### + Also required

EMC gaskets, vertical, see above  
Assembly screws M3 x 6, packs of 100, order no. 3684.233, see page 140





### EMC gaskets for covers

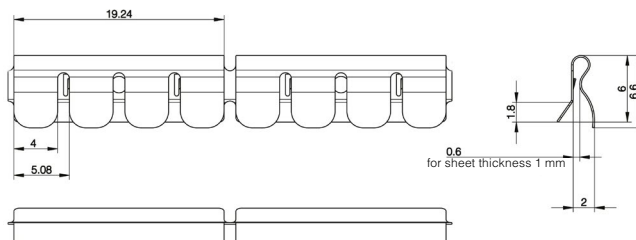


For EMC shielding between the horizontal rails and covers.

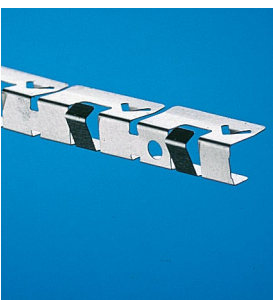
**Material**  
Stainless steel

HP	Packs of	Order No.
40	1	<b>3684.975</b>
84	1	<b>3684.807</b>
84	10	<b>3684.245</b>

**EMC**



### EMC gaskets for front horizontal rails



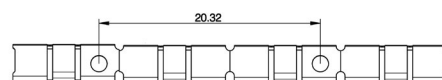
For horizontal EMC protection.  
For snapfastening onto the front horizontal rails.

**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	Order No.
For top/bottom horizontal rail		
40	1	<b>3684.974</b>
40	10	<b>9921.945</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>

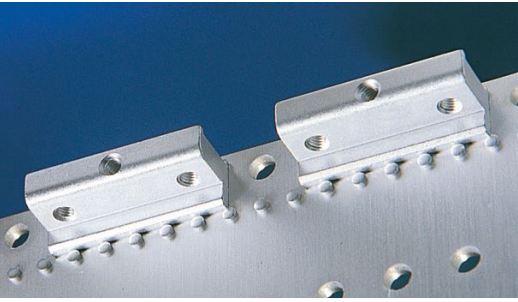
**EMC**



# COMPONENTS AND ACCESSORIES

## MOUNTING COVERS/COMPONENTS FOR EMC INSTALLATION

### Mounting blocks for cover plates



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

**Material**

Die-cast zinc

**Surface finish**

Nickel-plated

**Note**

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

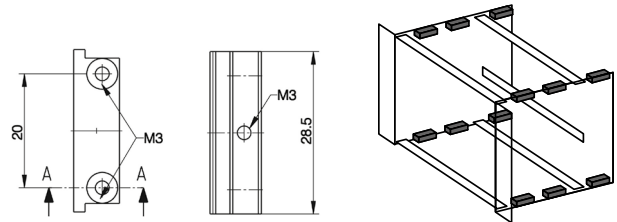
	Packs of	Order No.
Mounting blocks 28.5 mm long	10	<b>3684.234</b>

Approximate 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

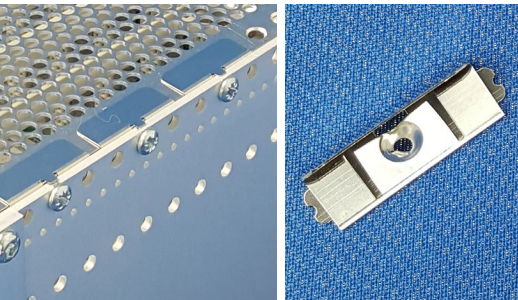


**+ Also required**

Assembly screws M3 x 6, packs of 100, order no. 3684.233, see page 140



### Mounting clips for cover plates



For mounting covers on the subrack side panel. Compatible with cover plate versions 1-4 and the ECO and EASY versions. Sheet metal blanks 0.8-1.0 mm thickness.

**Material**

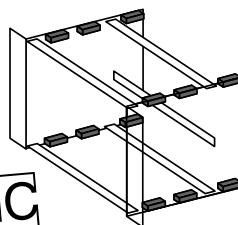
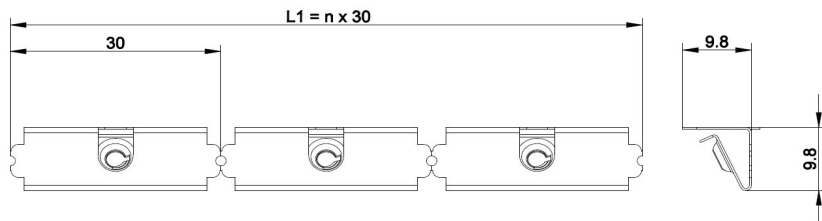
Stainless steel

**Note**

For EMC applications, mounting clips must be fitted across the full depth of the subrack.

Length mm	Packs of	Order No.
30	1	<b>3688.109</b>
30	50	<b>3634.450</b>

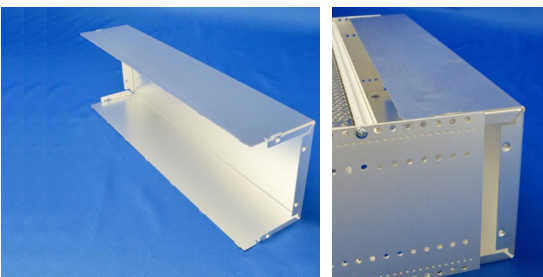
Recommended number of mounting clips for max. EMC protection	Cover plate depth mm
4	142
8	192
10	212
12	252
14	272
16	312
18	332
20	372
24	432
28	492
32	552



**+ Also required**

Assembly screws, order no. 9921.879, see page 140

### Back cover



For HeiPac Vario, EMC and Heavy.

Ensures cover for back of subrack.

**Material**

Aluminium

**Surface finish**

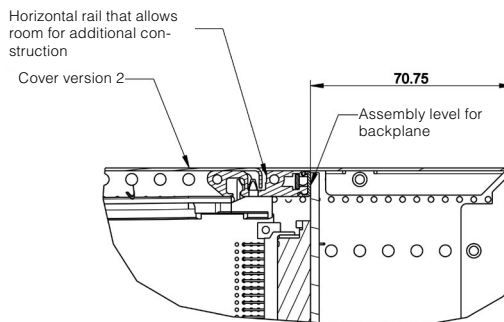
Clear-chromated

**Note**

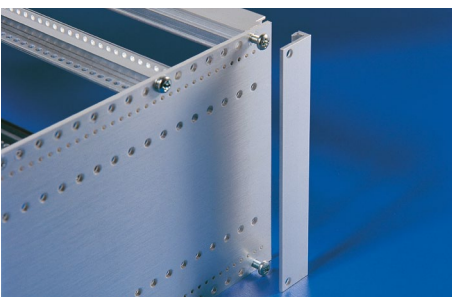
The side panel depth required is obtained by taking the length of the plug-in units used, and adding 85 mm (refer to table). A precondition is the use of a horizontal rail that allows room for additional construction.

U	Packs of	Order No.
3	1	<b>9921.685</b>
6	1	<b>9921.710</b>

PCB depth mm	Side panel depth mm
160	245
220	305
280	365



### Trim section, rear



For HeiPac Vario ECO.

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

**Material**

Extruded aluminium section

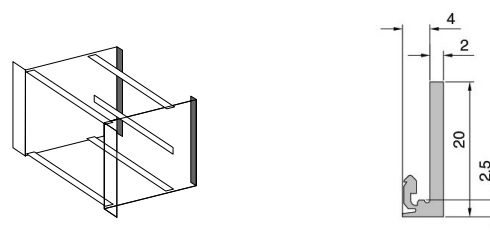
**Surface finish**

Clear-chromated

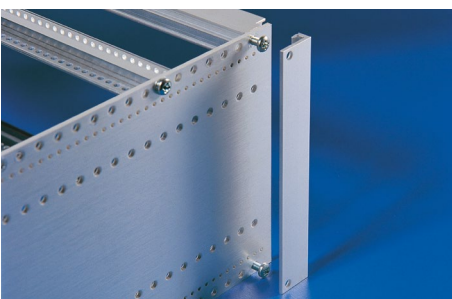
U	Packs of	Order No.
3	1	<b>3688.112</b>
6	1	<b>3688.113</b>

**+ Accessories**

EMC gaskets, vertical, see page 88



### Trim section, rear



For HeiPac Vario, EMC, Compact and Heavy.

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

**Material**

Extruded aluminium section

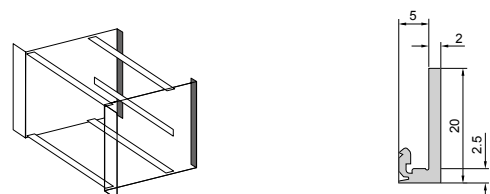
**Surface finish**

Clear-chromated

U	Order No.	
	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>	-

**+ Accessories**

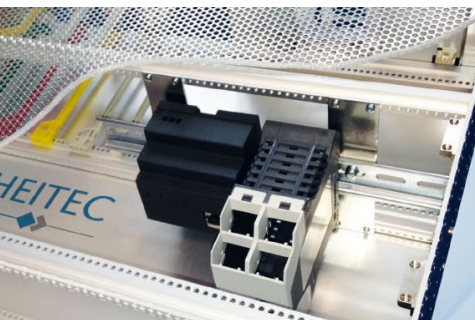
EMC gaskets, vertical, see page 88



# COMPONENTS AND ACCESSORIES

## TOP-HAT RAIL MOUNTING

### Fixing for HeiPac top-hat rail version 1



Rail holder to mount a top-hat rail on the horizontal subrack rails.

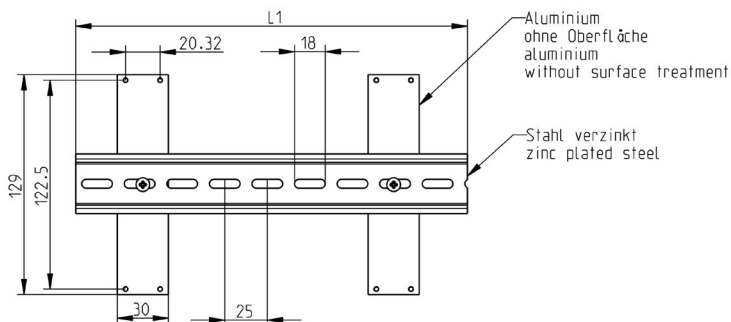
#### Material

Rail holder: Aluminium, not surface-coated  
Top-hat rail: steel, zinc-plated

#### Supply includes

2 rail holders  
1 top-hat rail, perforated  
Assembly parts

Height	Top-hat width mm	L1 mm	Top-hat height mm	Packs of	Order No.
3 U	35	100	7.5	1	<b>9918.814</b>
3 U	35	200	7.5	1	<b>9918.815</b>
3 U	35	300	7.5	1	<b>9918.816</b>
3 U	35	400	7.5	1	<b>9918.817</b>
3 U	35	100	15	1	<b>9918.818</b>
3 U	35	200	15	1	<b>9918.819</b>
3 U	35	300	15	1	<b>9918.820</b>
3 U	35	400	15	1	<b>9918.821</b>



### Fixing for HeiPac top-hat rail version 2



Fixing bracket to mount a top-hat rail on the subrack side panel.

#### Material

Fixing bracket: steel plate, zinc-plated

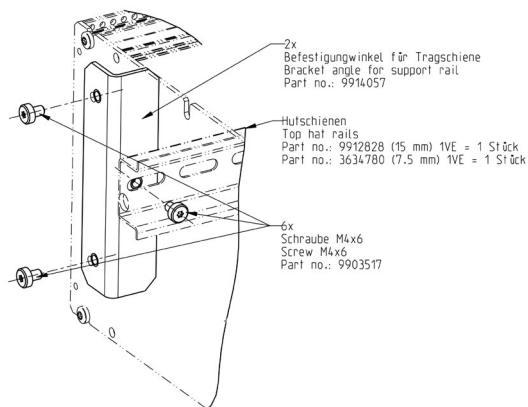
#### Supply includes

2 fixing brackets  
Assembly parts

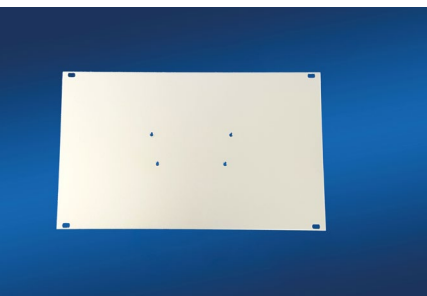
Packs of	Order No.
1 set	<b>3634.770</b>

#### + Also required

Top-hat rail, packs of 1, see page 93



### Back panel for top-hat rail mounting



For HeiPac Vario COMPACT subracks

For top-hat rail mounting of subracks

#### Material

Aluminium, clear-chromated

		Order No.	
U	3	3	
Width HP	Packs of	Non-EMC	EMC
21	1	<b>3687.742</b>	<b>3687.750</b>
42	1	<b>3687.744</b>	<b>3687.751</b>

#### + Also required

Top-hat rail adapter, packs of 1, Order no. 3687.739, see page 93

### Top-hat rail adapter



Top-hat rail adapter to directly mount a component or device on a top-hat rail.

**Material**

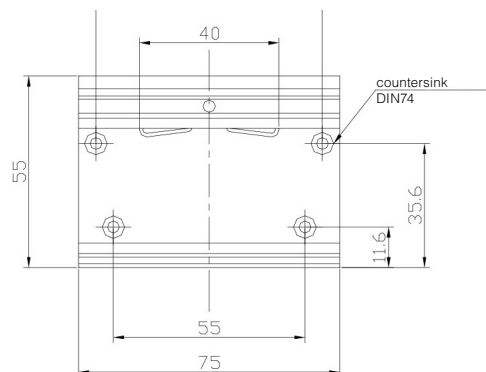
Extruded aluminium section

Packs of	Order No.
1	<b>3687.739</b>

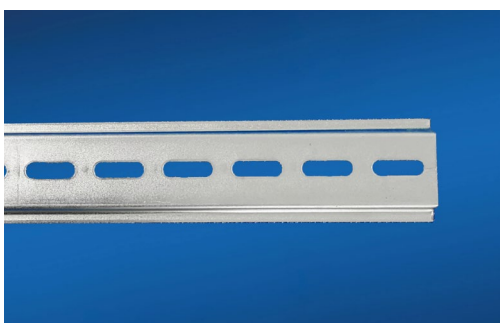
**+ Also required**

Assembly screws, packs of 100, Order no. 3606.550, see page 140

Back panel for top-hat rail mounting, see page 92



### Top-hat rail



Suitable for HeiPac top-hat application Version 2

**Material**

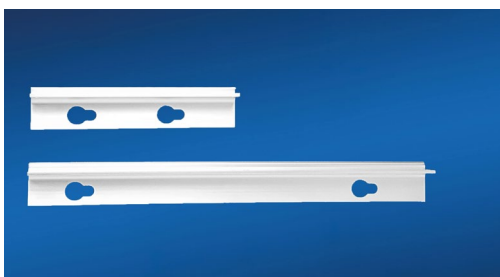
Steel

**Surface finish**

Zinc-plated

For Width	Dimensions mm	Packs of	Order No.
84 HP	35 x 7.5 x 425	1	<b>3634.780</b>
84 HP	35 x 15 x 425	1	<b>9912.828</b>

### Flange 19" for HeiPac Vario COMPACT, mounting plate



**Material**

Extruded aluminium section

**Surface finish**

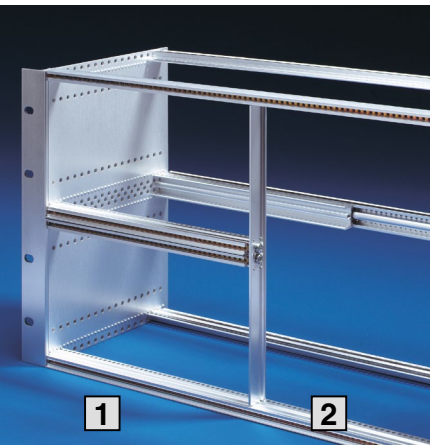
Clear-chromated

Version	Packs of	Order No.	
		3 U	6 U
left	1	<b>3687.776</b>	<b>3687.800</b>
right	1	<b>3687.743</b>	<b>3687.777</b>

# COMPONENTS AND ACCESSORIES

## MOUNTING KITS

### Vertical divider kit



For the combined installation of single and double Eurocards 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

6 U (2 x 3 U)

HP	HP	Order No.
<b>1</b> (2 x 3 U)	<b>2</b> (6 U)	
14	68	<b>3684.220</b>
21	61	<b>3684.221</b>
28	54	<b>3684.222</b>
40	42	<b>3684.223</b>
42	40	<b>3684.224</b>

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

HP	HP	Order No.
(1 x 6 + 1 x 3 U)	(9 U)	
4	80	<b>3684.225</b>
8	76	<b>3684.226</b>
12	70	<b>3684.227</b>
16	66	<b>3684.228</b>
20	62	<b>3684.229</b>

#### + Accessories

Front panel, see page below  
EMC gaskets, horizontal, see page 89

### Vertical support



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

#### Material

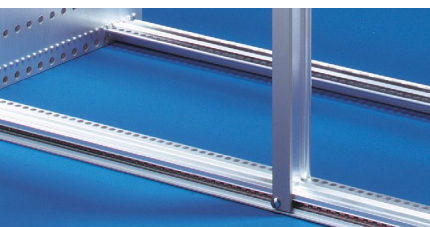
Aluminium, extruded

#### Surface finish

Clear-chromated

U	Packs of	Order No.
6	1	<b>3684.678</b>
9	1	<b>3684.679</b>

### Front panel to conceal the vertical support of the vertical divider kit



To conceal the vertical support of the vertical divider kit.

#### Material

Aluminium, extruded

#### Supply includes

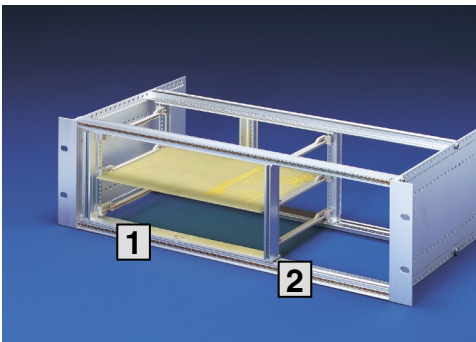
Assembly parts

#### Note

EMC version, see page 121

U	HP	Packs of	Order No.
6	2	1	<b>3685.176</b>
9	2	1	<b>3685.286</b>

### Horizontal mounting kit



For 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, center  
2 threaded inserts  
4 or 6 insulating strips  
4 connecting parts  
assembly parts

For backplane assembly  
with standard horizontal rail, front

U horizontal	Order No.	
	for 3 U subrack	for 4 U subrack
6	<b>3684.206</b>	<b>3684.208</b>
9	<b>3684.207</b>	<b>3684.209</b>

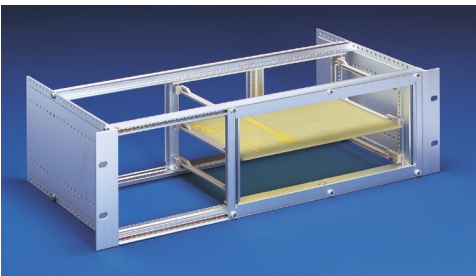
For backplane assembly  
Horizontal rail front, with 10 mm extension

U horizontal	Order No.	
	for 3 U subrack	for 4 U subrack
6	<b>3684.210</b>	<b>3684.212</b>
9	<b>3684.211</b>	<b>3684.213</b>

**+ Accessories**

Trim frame, see below

### Trim frame for horizontal mounting kit



To conceal the front sections of the  
horizontal mounting kit.

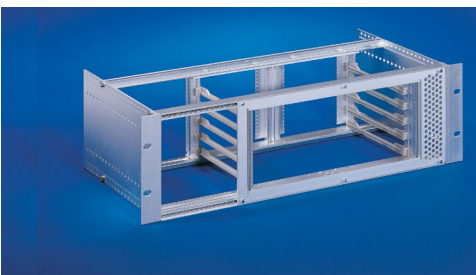
**Material**  
Aluminium, anodised

U horizontal	HP	Order No.	
		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, order no. 3658.160, see page 140

### Trim frame for horizontal mounting kit, vented



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	Order No.	
		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, order no. 3658.160, see page 140

EMC version

U horizontal	HP	Order No.	
		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, order no. 3687.050, see page 141

# COMPONENTS AND ACCESSORIES

## GUIDE RAILS

### Guide rails, plastic



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

For PCB depth mm	Packs of	Order No.	
		Snap-in fastening/ screw-fastening <sup>1)</sup>	Snap-in fastening
100	1	-	<b>3688.005</b>
160	10	<b>3688.048</b>	<b>3688.045</b>
220	10	<b>3688.049</b>	<b>3688.046</b>
280	10	<b>3688.052</b>	<b>3688.047</b>

#### + Also required

<sup>1)</sup> Assembly screws, packs of 100, order no. 3654.360, see page 140

### Guide rails for contact spring fitting, plastic



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

For PCB depth mm	Packs of	Order No.
160	10	<b>3688.048</b>
220	10	<b>3688.049</b>
280	10	<b>3688.052</b>

#### + Also required

Contact springs, order no. 3687.726, see page 96

### 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
- End pieces for guide rails

#### Material

Copper-tin alloy

Packs of	Order No.
1	<b>3687.548</b>
10	<b>3687.726</b>

### Guide rails, Aluminium



1

2

For high loads. Suitable for nominal PCB thicknesses of 1.6 mm. A distinction is made between guide rails for and without end pieces.

The guide rails without end pieces are screwfastened directly into the horizontal rail.

#### Material

Aluminium

For PCB depth mm	Packs of	Order No.	
		1 Without end piece <sup>1)</sup>	2 For end pieces
160	10	<b>3688.064</b>	<b>3688.057</b>
220	10	<b>3651.120</b>	<b>3688.058</b>
280	10	<b>3651.160</b>	<b>3688.059</b>
1000	1	<b>3684.666</b>	-

#### + Also required

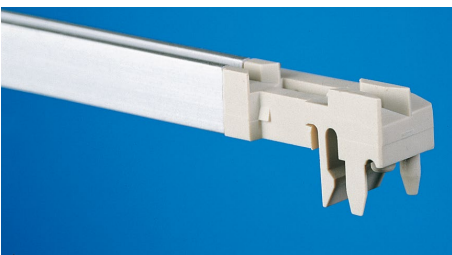
<sup>1)</sup> Screw M2.5 x 6, packs of 100, order no. 3654.340, see page 140

<sup>1)</sup> Nut M2.5, packs of 100, order no. 3654.370, see page 140

<sup>1)</sup> Retaining cage M2.5, packs of 100, order no. 9901.417, see page 140



### End pieces for aluminium guide rails, plastic



Mounting contact springs ensures an electrical connection between the PCB and the subrack.

#### Material

Polycarbonate  
Base material UL 94-V1

#### Supply includes

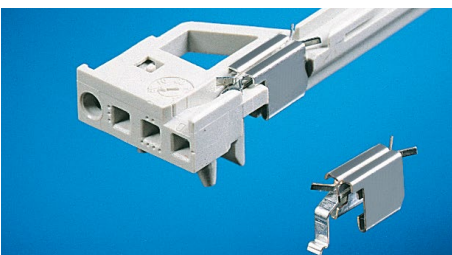
End piece, front  
End piece, rear

Version	Packs of	Order No.
End piece, front + rear	10	<b>3688.028</b>

#### + Also required

Contact springs, order no. 3687.726, see page 96

### Keyable guide rails 4 HP, plastic



Guide rails 4 HP, keyable, to IEEE 1101.10.

- For 1.6 – 2.4 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

- 1** ESD contact for guide rails
- 2** ESD contact for front panel
- 3** Keys

#### Material

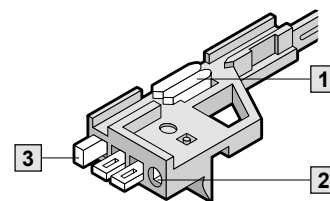
Polycarbonate  
Base material to UL 94-V0

#### Colour

Grey (RAL 7035)  
Red (RAL 3000)  
Green  
Yellow

#### Note

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



For PCB depth mm	Packs of	Order No.			
		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>

Other customised solutions regarding colouring are available upon request. Please get in contact with one of our sales representatives for further assistance by phone or by mail at [Tel. +49 9126 - 29 34 0](tel:+49912629340) or [electronics-quote@heitec.de](mailto:electronics-quote@heitec.de).

#### + Accessories

Keys, see page 101  
ESD contact, see page 101  
Extractor handles type IV, IVs, VII, see page 110 et seq.

# COMPONENTS AND ACCESSORIES

## GUIDE RAILS

### Keyable guide rails with ½ HP offset



Guide rails with ½ 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 width for 160/220 mm PCB
- 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

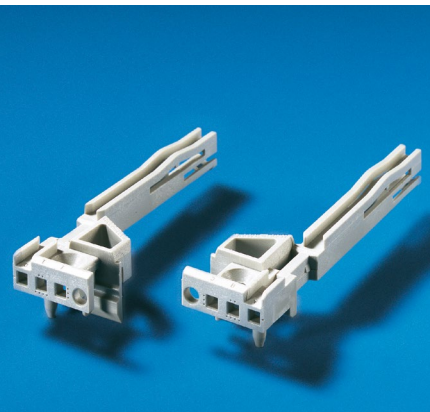
Only suitable for use in conjunction with extractor handles type IV, IVs, VII with ½ HP offset.

For PCB depth mm	Packs of	Colour	Order No.
160	10	Grey	<b>3688.062</b>
	1	Yellow	<b>3689.090</b>
	1	Green	<b>3687.832</b>
220	10	Grey	<b>3688.060</b>
	1	Yellow	<b>3689.092</b>

#### + Accessories

Keys, see page 101  
ESD contact, see page 101  
Extractor handles Type IVs, VII with ½ HP offset, see page 111

### 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

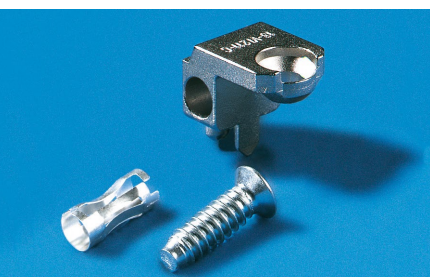
Only for use in conjunction with type IV, IVs, VII injector/extractor handles.  
Not suitable for horizontal rails with double screw-fastening.

Colour	For PCB depth mm	Packs of	Order No.	
			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 101  
ESD contact, see page 101  
Extractor handles type IV, IVs, VII, see page 110 et seq.

### Ground contact



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

#### Material

Die-cast zinc

#### Supply includes

Grounding bush and contact spring.

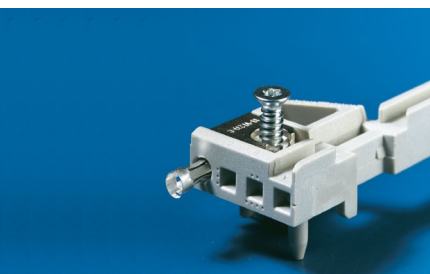
#### Note

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

Version	Order No.	
	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, order no. 3684.109, see page 140



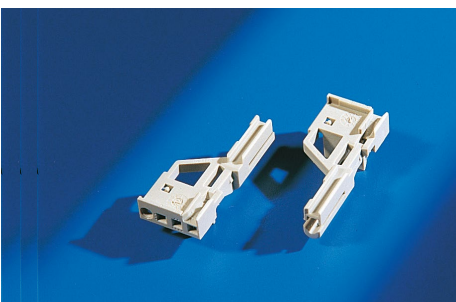
### Keyable guide rails, aluminium, three-part



Keyable guide rails with aluminium center 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 center part
- 3 Insulating center 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

##### Note

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

Version	Packs of	Order No.
Front + rear end piece	10 pairs	<b>3685.265</b>
Front end piece	1	<b>3685.790</b>
Rear end piece	1	<b>3684.670</b>



#### 2 Aluminium center part

##### For three-part guide rails

For 1.6 – 2.0 mm PCB thickness

##### Material

Aluminium, unplated

For PCB depth mm	Order No.	
	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>	-



#### 3 Insulated center part

##### For three-part guide rails

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

##### Material

Plastic, self-extinguishing to UL 94-V0

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

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

# COMPONENTS AND ACCESSORIES

## GUIDE RAILS

### Guide rails for 4.4" drive modules



Snap-fastening guide rails to accommodate PCBs and assemblies with a height of 4.4" (111.76 mm).

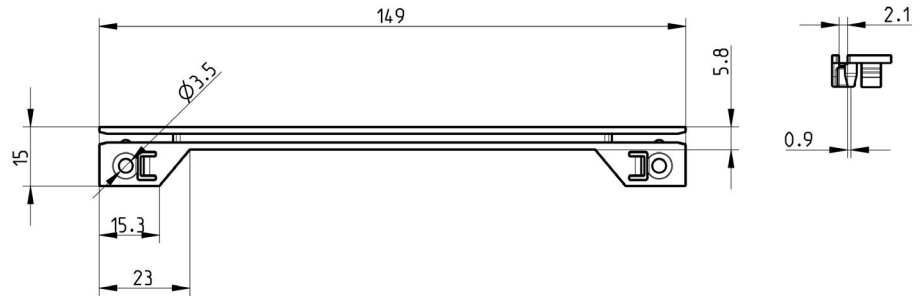
**Material**

Polycarbonate  
Base material to UL 94-V0

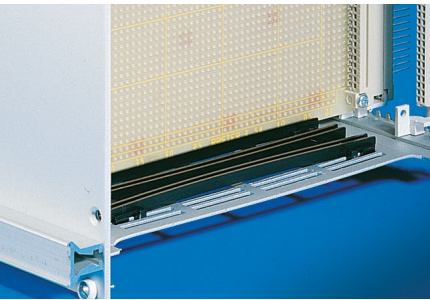
**Colour**

Grey (RAL 7032)

For PCB depth mm	Packs of	Order No.
160	1	9919.834



### Guide rails for box type plug-in units



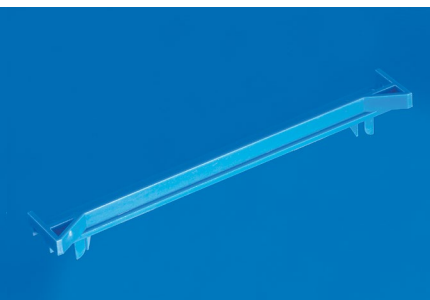
For PCB thickness 1.6 mm.  
For insertion into covers with vent slots (from 12 HP), see page 126.

**Material**

Noryl

For PCB depth mm	Packs of	Order No.
160	10	3606.140
220	10	3606.200

### Air block panel for 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

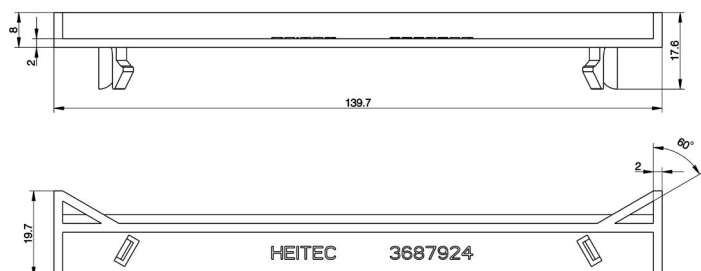
**Colour**

Blue

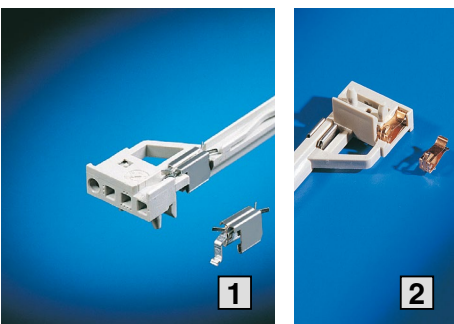
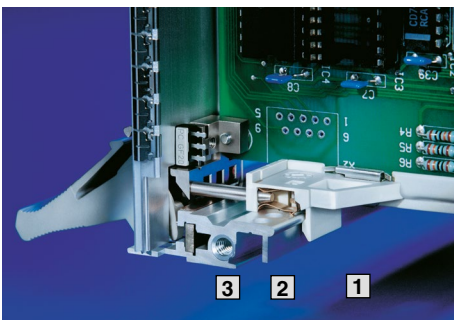
**Note**

Can only be used in conjunction with keyable guide rails 4 HP/160 mm.  
Not suitable for use in conjunction with guide rails with 1/2 HP offset.

For keyable guide rail mm	Packs of	Order No.
160	1	3687.924



### ESD contacts



For installation in keyable guide rails.  
To discharge static charges.

**1 ESD contact 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**

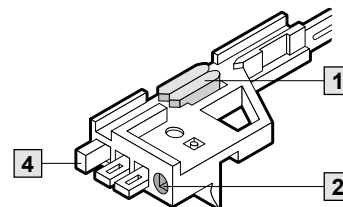
#### Material

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

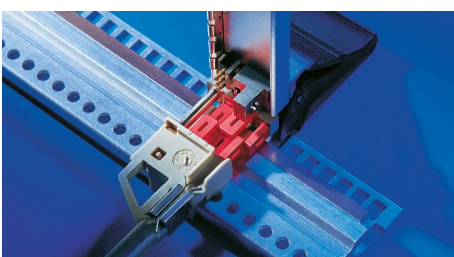
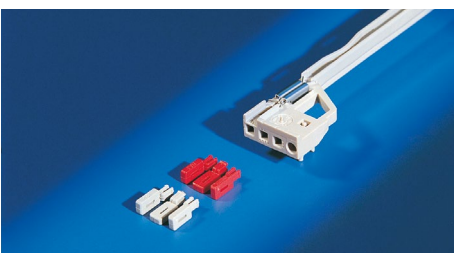
#### Note

Only for use in conjunction with extractor handle with ESD pin (type IV, IVs, VII), see page 110 et seq.

ESD clip for	Packs of	Order No.
Guide rail	50	<b>3684.204</b>
Front panel	50	<b>3684.205</b>



### 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 60297-5-104

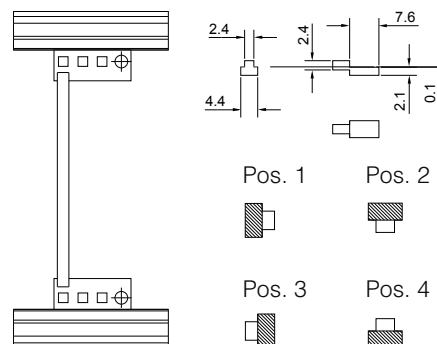
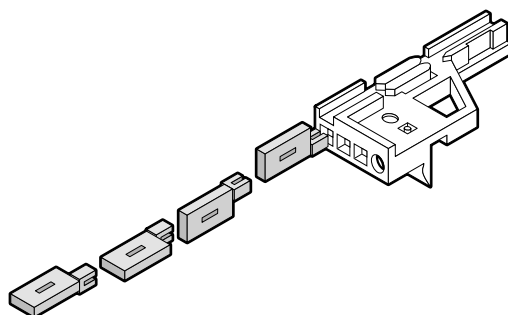
#### Material

Plastic, PBTP  
Base material to UL 94-V0

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

#### + Accessories

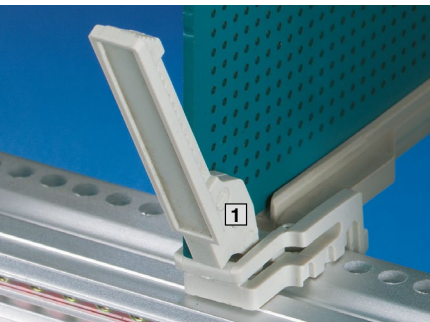
Keying tool, see page 102



# COMPONENTS AND ACCESSORIES

## ACCESSORIES FOR KEYABLE GUIDE RAILS

### 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.

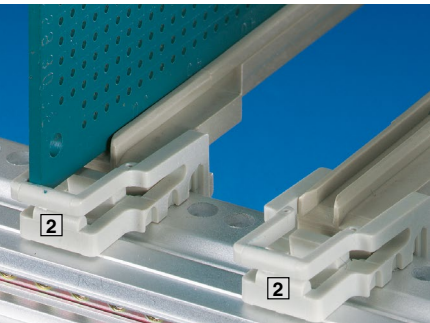
#### Material

Polycarbonate  
Base material to UL 94-V0

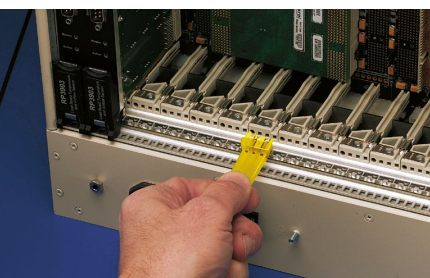
#### Note

Only suitable for guide rails 2 HP

Version	Packs of	Order No.
1 PCB ejector/retainer	10	3687.014
2 PCB retainer	1	3686.003
2 PCB retainer	10	3687.052



### 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	Order No.
1	3687.956

## Covers version 1



For subracks HeiPac Vario, Vario EMC, COMPACT and HEAVY

**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  
26 assembly screws

### Individual unit includes

1 cover plate

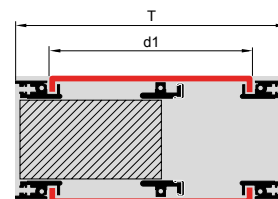
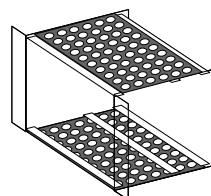
### Note

For EMC applications, additional mounting blocks must be fitted across the entire subrack depth. Not suitable for HeiPac EASY and ECO, see page 106.

HP	For side panel depth (T) mm	Cover depth (d1) mm	Order No.			
			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>	-	-

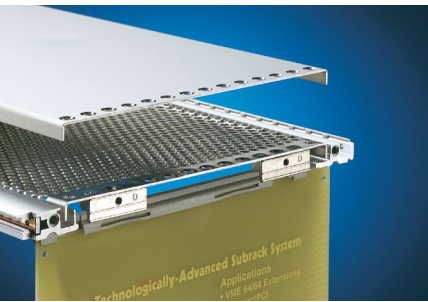
### + Also required

- <sup>1)</sup> Mounting blocks, see page 90
- <sup>1)</sup> EMC gaskets for cover plates, see page 89
- <sup>1)</sup> Assembly screws, packs of 100, order no. 3684.233, see page 140



# COMPONENTS AND ACCESSORIES COVERS

## Covers version 2



For subracks HeiPac Vario, Vario EMC, COMPACT and HEAVY

### 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  
26 assembly screws

### Individual unit includes

1 cover plate

### Note

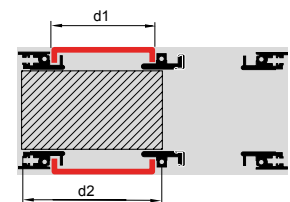
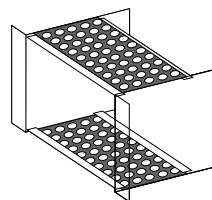
Not suitable for HeiPac EASY and ECO, see page 106.

HP	For PCB depth (d2) mm	Cover depth (d1) mm	Order No.			
			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>	-	-	-

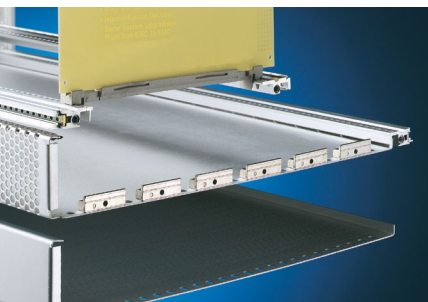
### + Also required

<sup>1)</sup> Mounting blocks, see page 90

<sup>1)</sup> Assembly screws, packs of 100, order no. 3684.233, see page 140



## Covers version 3



For subracks HeiPac Vario and Vario EMC

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

- 1 Cover with 1 U edge fold (item 1), to conceal the 1 U area in the subrack
  - 2 A version 1 fl at 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.

Not suitable for HeiPac EASY and ECO, see page 106.

### Individual unit includes

1 cover plate

HP	For side panel depth (T) mm	Cover depth (d3) mm	Order No.	
			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>

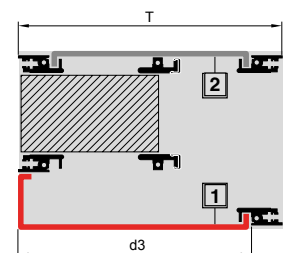
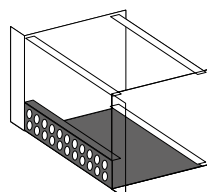
### + Also required

Mounting blocks, see page 90

EMC gaskets for covers, see page 89

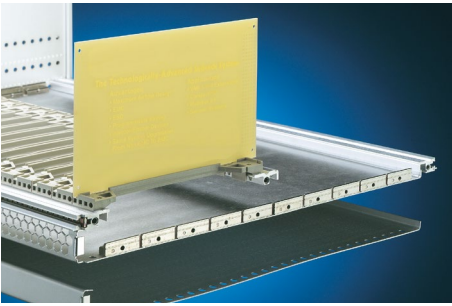
Assembly screws, packs of 100, order no. 3684.233, see page 140

Cover, version 1, see page 103





## Covers version 4



For subracks HeiPac Vario and Vario EMC

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

- Cover top/bottom with ½ U edge fold to cover the ½ U section in the subrack
- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 2 x ½), 7 U (6 + 2 x ½)
- 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.

Not suitable for HeiPac EASY and ECO, see page 106.

### Individual unit includes

1 cover plate

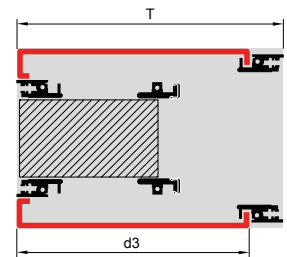
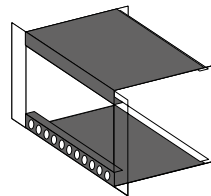
HP	For side panel depth (T) mm	Cover depth (d3) mm	Order No.	
			Perforated	Solid
84	285	270	<b>3684.732</b>	<b>3684.726</b>
84	345	330	<b>3684.733</b>	<b>3684.727</b>
84	405	390	<b>3684.734</b>	<b>3684.728</b>
84	465	450	<b>3684.735</b>	<b>3684.729</b>
84	525	510	<b>3684.736</b>	<b>3684.730</b>
84	585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

### + Also required

Mounting blocks, see page 90

EMC gaskets for covers, see page 89

Assembly screws, packs of 100, order no. 3684.233, see page 140



## Covers version 5



For subracks HeiPac Vario, Vario EMC, ECO, COMPACT and HEAVY

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

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.

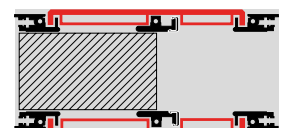
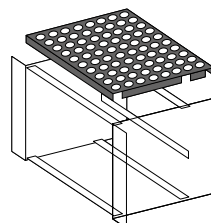
### Supply includes

2 gaskets

### Note

Not suitable for HeiPac EASY, see page 106.

HP	Position of side notches for horizontal rails mm	For side panel depth mm	Order No.	
			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>



# COMPONENTS AND ACCESSORIES COVERS

## Covers for HeiPac EASY



Perforated or solid.  
Optionally with screwed fastening clips on the side panels for additional support.

### Material

0.8 mm aluminium

### Supply includes

2 cover plates

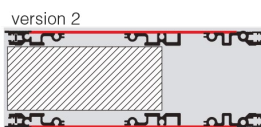
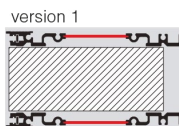
### Cover plates

#### version 1 (slide-in)

The covers are simply slid into the front and rear horizontal rails for mounting backplanes/connectors.

#### version 2 (slide-in/screw-in)

For mounting additional rear horizontal rails on the rear panels. The horizontal rails for backplane/connector assembly are top-mounted. The covers are slid in the front horizontal rails and screwed in the rear horizontal rails for rear panel mounting.



### Version 1

HP	For side panel depth mm	Order No.	
		Perforated	Solid
84	175	<b>3634.685</b>	<b>3634.675</b>
84	235	<b>3634.690</b>	<b>3634.680</b>

### Version 2

HP	For side panel depth mm	Order No.	
		Perforated <sup>1)</sup>	Solid <sup>1)</sup>
84	175	<b>3634.650</b>	<b>3634.625</b>
84	235	<b>3634.655</b>	<b>3634.630</b>
84	295	<b>3634.660</b>	<b>3634.635</b>
84	355	<b>3634.665</b>	<b>3634.640</b>
84	415	<b>3634.670</b>	<b>3634.645</b>

### + Also required

<sup>1)</sup> assembly screws, packs of 100  
order no. 3684.233, see page 140

### + Accessories

Fastening clips see page 90

Fastening clips

Packs of	Order No.
50	<b>3634.450</b>

Assembly screws for fastening clips

Packs of	Order No.
100	<b>9921.879</b>

## Covers for HeiPac Vario ECO



To cover the overall subrack depth.  
Perforated or solid.  
The covers are slid into the horizontal rails.  
Optionally with screwed fastening clips for additional support.

### Material

0.8 mm sheet steel

### Surface finish

Zinc-plated

### Supply includes

1 cover plate



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

### + Accessories

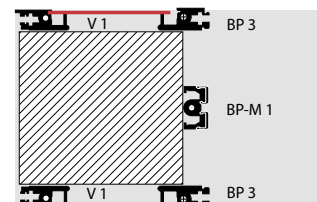
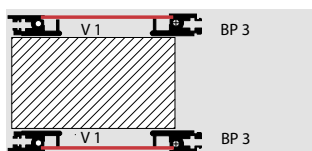
Fastening clips see page 90

Fastening clips

Packs of	Order No.
50	<b>3634.450</b>

Assembly screws for fastening clips

Packs of	Order No.
100	<b>9921.879</b>



## Flat front panels with extractor handle



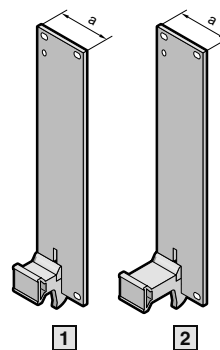
With type I or II extractor handle.  
Complete modular systems.

### Material

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

### Supply includes

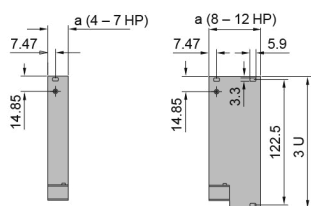
- 1 front panel
- 2 handles (1 with 3 U)
- 1 set of assembly parts
- 1 PCB holder (for 3 U)



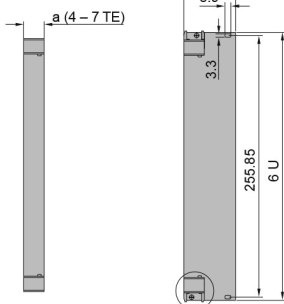
U	HP	a mm	Order No.	
			1 Type I	2 Type II
3	4	20.0	<b>3684.330</b>	<b>3684.358</b>
3	5	25.1	<b>3684.331</b>	<b>3684.359</b>
3	6	30.2	<b>3684.332</b>	<b>3684.360</b>
3	7	35.3	<b>3684.333</b>	<b>3684.361</b>
3	8	40.3	<b>3684.334</b>	<b>3684.362</b>
3	10	50.5	<b>3684.335</b>	<b>3684.363</b>
3	12	60.7	<b>3684.336</b>	<b>3684.364</b>
6	4	20.0	<b>3684.337</b>	<b>3684.365</b>
6	5	25.1	<b>3684.338</b>	<b>3684.366</b>
6	6	30.2	<b>3684.339</b>	<b>3684.367</b>
6	7	35.2	<b>3684.340</b>	<b>3684.368</b>
6	8	40.3	<b>3684.341</b>	<b>3684.369</b>
6	10	50.5	<b>3684.342</b>	<b>3684.370</b>
6	12	60.7	<b>3684.343</b>	<b>3684.371</b>
9	4	20.0	-	<b>3684.372</b>
9	8	40.3	-	<b>3684.373</b>

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

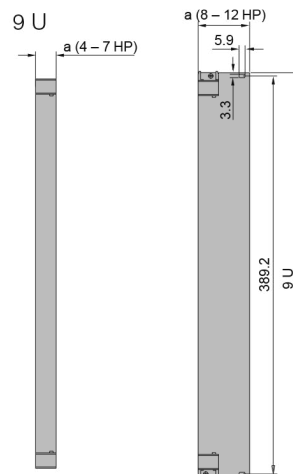
3 U



6 U

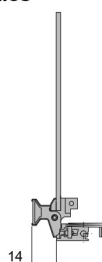


9 U

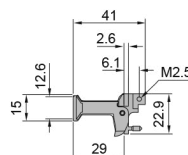
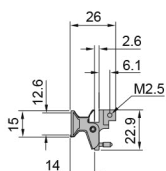


### Extractor handles

Type I



Type II



# COMPONENTS AND ACCESSORIES

## FRONT PANELS AND HANDLES

### EMC U-channel front panels with injector/extractor handle



With type I, II extractor handle or type IV injector/extractor handle.  
Complete modular systems.

#### Material

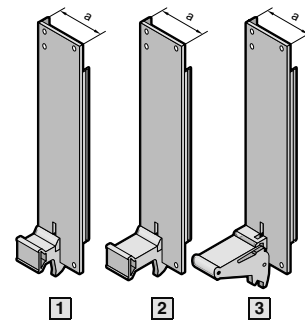
Front panel: extruded aluminium, section, clear-chromated  
Handle: plastic, black

#### 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)

#### Detailed drawing

see page 110 et seq.

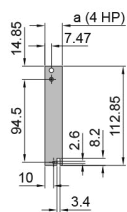
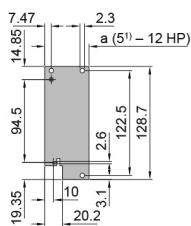


U	HP	a mm	Order No.		
			1 Type I	2 Type II	3 Type IV <sup>1)</sup>
3	4	20.0	3684.344	3684.374	3684.413
3	5	25.1	3684.345	3684.375	3684.414
3	6	30.2	3684.346	3684.376	3684.415
3	7	35.3	3684.347	3684.377	3684.416
3	8	40.3	3684.348	3684.378	3684.417
3	10	50.5	3684.349	3684.379	3684.418
3	12	60.7	3684.350	3684.380	3684.419
6	4	20.0	3684.351	3684.381	3684.420
6	5	25.1	3684.352	3684.382	3684.421
6	6	30.2	3684.353	3684.383	3684.422
6	7	35.2	3684.354	3684.384	3684.423
6	8	40.3	3684.355	3684.385	3684.424
6	10	50.5	3684.356	3684.386	3684.425
6	12	60.7	3684.357	3684.387	3684.426
9	4	20.0	-	3684.388	3684.427
9	5	25.1	-	-	3684.428
9	6	30.2	-	-	3684.429
9	7	35.3	-	-	3684.430
9	8	40.3	-	3684.389	3684.431
9	10	50.5	-	-	3684.432
9	12	60.7	-	-	3684.433

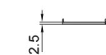
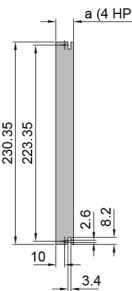
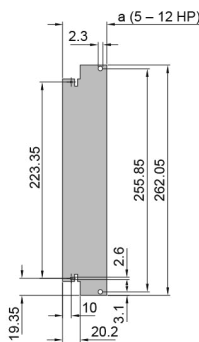
<sup>1)</sup>Can only be inserted in conjunction with front horizontal rails, with 10 mm extension (Vario V-Ext. 1), see page 71

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

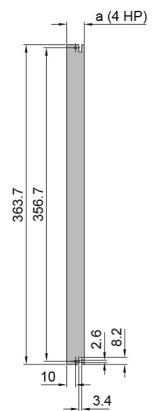
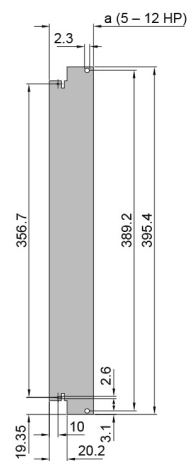
3 U



6 U

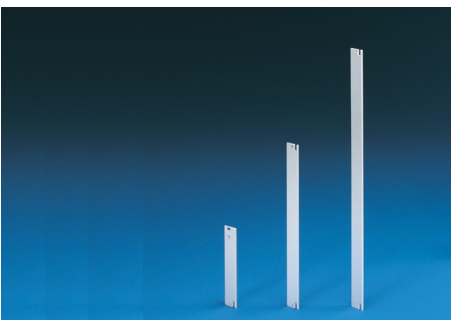


9 U



<sup>1)</sup> 2.3 mm drilled hole not contained in versions 5 – 7 HP.

## Flat front panels for handles



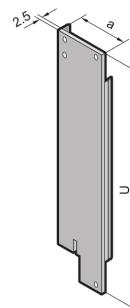
For type I, II extractor handle or type IV, IVs or VII injector/extractor handle.

### Material

2.5 mm aluminium, anodised

### Detailed drawing front panel

see page 107



### + Also required

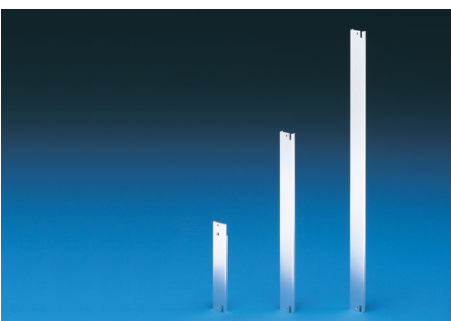
From front panel widths of 4 HP (at 3 U) and 8 HP (at 6 U):  
Collar screws and plastic collars, packs of 100 sets, order no. 3658.160, see page 140

For 3 U front panels:

PCB holder set, see page 119

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

## U-channel front panels for handles



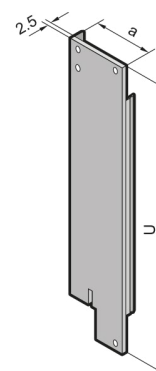
For type I, II extractor handle or type IV, IVs or VII injector/extractor handle.

### Material

2.5 mm extruded aluminium section, clear-chromated

### Detailed drawing front panel

see page 108



### + Also required

From front panel width 4 HP (for 3 U) and 8 HP (for 6 U):

Slotted centering screws, packs of 100, order no. 3687.050, see page 141

Posidrive centering screws, packs of 100, order no. 3687.051, see page 141

EMC gaskets, see page 88

For 3 U front panels:

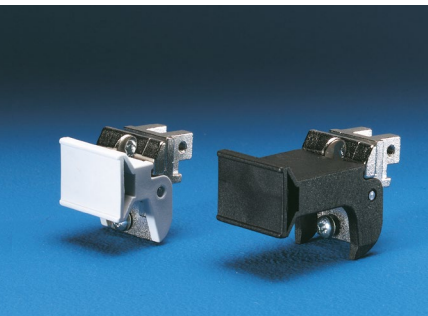
PCB holder set, see page 119

HP	a mm	Order No.		
		3 U	6 U	9 U
4	20.0	<b>3685.524</b>	<b>3685.532</b>	<b>3685.540</b>
5	25.1	<b>3685.525</b>	<b>3685.533</b>	<b>3685.541</b>
6	30.2	<b>3685.526</b>	<b>3685.534</b>	<b>3685.542</b>
7	35.3	<b>3685.527</b>	<b>3685.535</b>	<b>3685.543</b>
8	40.3	<b>3685.528</b>	<b>3685.536</b>	<b>3685.544</b>
10	50.5	<b>3685.529</b>	<b>3685.537</b>	<b>3685.545</b>
12	60.7	<b>3685.530</b>	<b>3685.538</b>	<b>3685.546</b>

# COMPONENTS AND ACCESSORIES

## FRONT PANELS AND 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

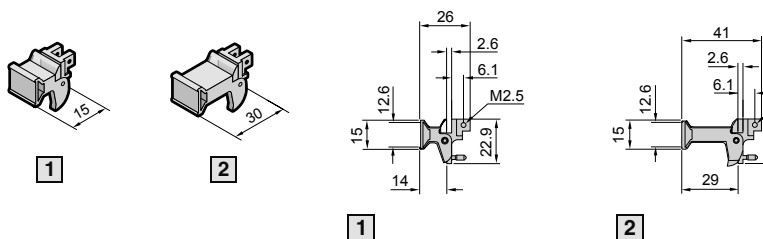
Colour	Packs of	Order No.
Grey	1	<b>3685.587</b>
Black	1	<b>3685.589</b>

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

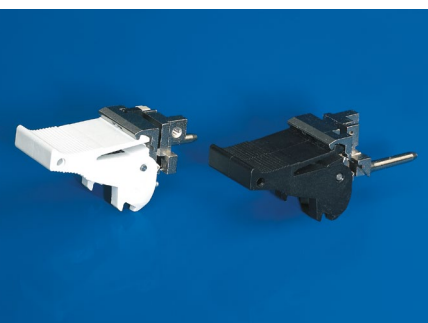
Colour	Packs of	Order No.
Grey	1	<b>3685.588</b>
Black	1	<b>3685.590</b>

#### + Accessories

Identification strips for extractor handles, see page 111



### Injector/extractor handle type IV



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

#### Handles with micro-switch

- 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 with or without micro-switch, assembly parts

#### Note

Insertion only when used with front horizontal rails, with 10 mm extension see page 71 et seq.  
With 3 U front panels, only one extractor handle is required.

#### Handles with micro-switch

Colour	Installation	Packs of	Order No.
Grey	Top	1	<b>3686.905</b>
Grey	Bottom	1	<b>3686.904</b>
Black	Top	1	<b>3686.907</b>
Black	Bottom	1	<b>3686.906</b>

#### Handle without micro-switch

Colour	Installation	Packs of	Order No.
Grey	Top	1	<b>3686.901</b>
Grey	Bottom	1	<b>3686.900</b>
Black	Top	1	<b>3686.903</b>
Black	Bottom	1	<b>3686.902</b>

#### + Accessories

Keys, see page 101  
Keyable guide rails, see page 98  
Micro-switches, see page 113  
Connector pin for baying, see page 112



### Injector/extractor handle type IV, 8 HP bayed



For two front panels 4 HP.  
Connects two front panels mechanically.

#### Supply includes

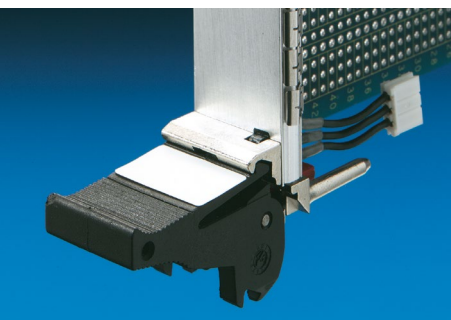
2 bayed handles  
fully assembled

Colour	Installation	Packs of	Order No.
Black	Bottom	1	<b>3686.908</b>
Black	Top	1	<b>3686.909</b>

#### + Accessories

Connector pin for baying, see page 112

### Identification strips for extractor handles



For type I, II or IV extractor handle.  
For labeling of Injector/extractor handles  
width 4 HP.

#### Material

Polyester film, self-adhesive

#### Colour

Aluminum metallic, matt

Packs of	Order No.
100	<b>3684.328</b>

### Injector/extractor handle type IVs



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.

#### With push-button

- 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
- according to IEEE 1101.1
- 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 see page 71 et seq.  
With 3 U front panels, only one extractor handle is required.

#### Handles without offset

Installation	Packs of	Order No.
Top	1	<b>3688.770</b>
Bottom	1	<b>3688.771</b>

#### Handles with 1/2 HP offset

Installation	Packs of	Order No.
Top	1	<b>3688.772</b>
Bottom	1	<b>3688.773</b>

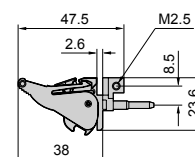
#### + Accessories

Keys, see page 101

Keyable guide rails with 1/2 HP offset, see page 98

Micro-switches, see page 113

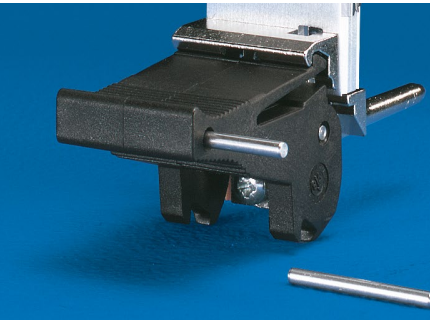
Connector pin for baying, see page 112



# COMPONENTS AND ACCESSORIES

## FRONT PANELS AND HANDLES

### Connection pin for injector/extractor handles



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	Order No.
20	3685.319

### Injector/extractor handle type VII



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

#### Plastic

- 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 foldup handle
- 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
- Keyable
- Large labelling area on the front

#### Material

Plastic/metal

#### Supply includes

Assembly parts

#### Note

Insertion only when used with front horizontal rails, with 10 mm extension see page 71 et seq.

#### Handles without off set

Installation	Packs of	Order No.
Top	1	3688.784
Bottom	1	3688.785

#### Handles with 1/2 HP offs et

Installation	Packs of	Order No.
Top	1	3688.780
Bottom	1	3688.781

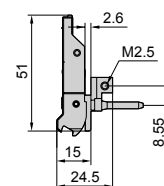
#### + Accessories

Keys, see page 101

Keyable guide rails with 1/2 HP offset, see page 98

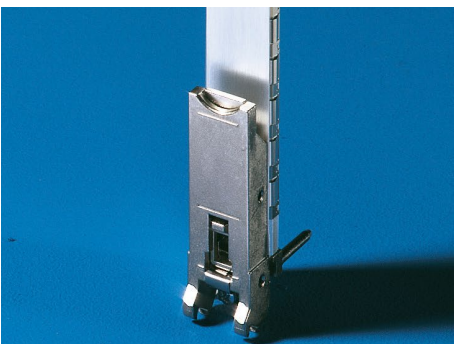
Micro-switches, see page 113

Connector pin for baying, see page 112





Injector/extractor handle type VII



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.

**Metal**

- Insertion/removal function
- Optionally with ½ HP offset PCB attachment, e. g. for component mounting on both sides
- Minimum front space requirements due to foldup handle
- 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
- Keyable
- 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 see page 71 et seq.

**Handles without off set**

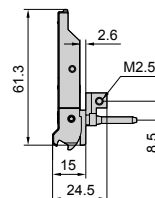
Installation	Packs of	Order No.
Top	1	<b>3688.790</b>
Bottom	1	<b>3688.791</b>

**Handles with ½ HP offs et**

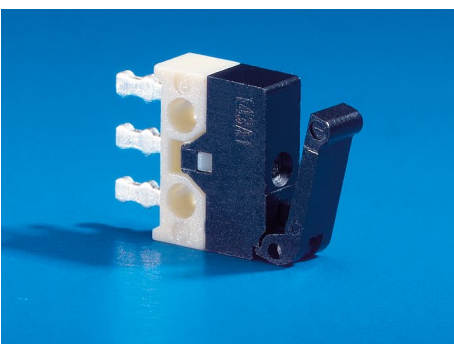
Installation	Packs of	Order No.
Top	1	<b>3688.786</b>
Bottom	1	<b>3688.787</b>

**+ Accessories**

Keys, see page 101  
Keyable guide rails with 1/2 HP offset, see page 98  
Micro-switches, see page 113  
Connector pin for buying, see page 112



Micro-switch



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

**Technical specifications**

Switching load: 50 mA 30 V DC

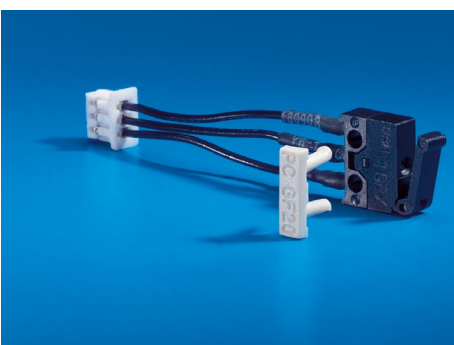
Service life:  
At nominal load: 30.000  
mechanical: 50.000

Packs of	Order No.
10	<b>3684.410</b>

**+ Accessories**

Micro-switch mounting clip, see page 114

Micro-switch, with cable



Installation in injector/extractor handles, types IV, IVs and VII.

**With cable and connector**

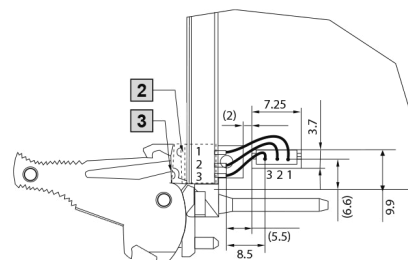
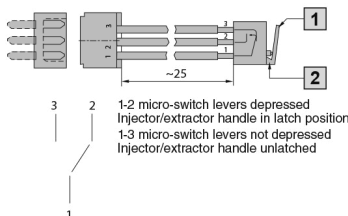
For "live insertion" applications.

**Supply includes**

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

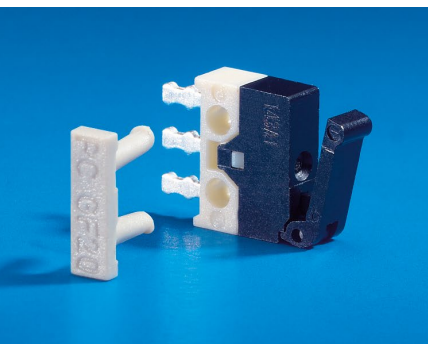
Packs of	Order No.
1 set	<b>3684.536</b>

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



# COMPONENTS AND ACCESSORIES FRONT PANELS AND HANDLES

## Micro-switch mounting clip



For mounting micro-switches in handles.

**Material**  
Plastic, UL94-V0

Packs of

10

**Order No.**

**3684.411**

**+ Also required**

Micro-switch see page 113

## Plastic covers for PCBs

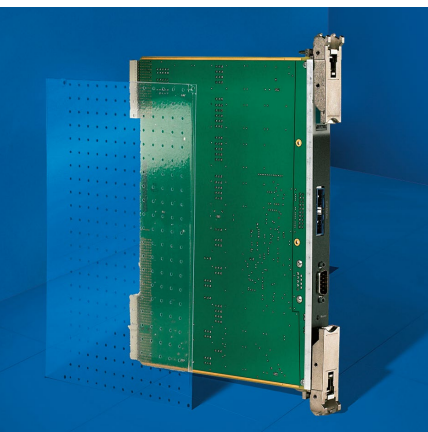
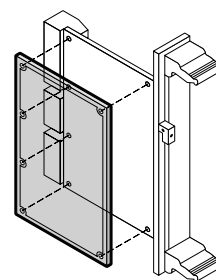


For mechanical protection of the component side and of the EMC gaskets. Attachment holes as per CPCI or VME-specifications. Optionally available as perforated or solid version.

**Material**

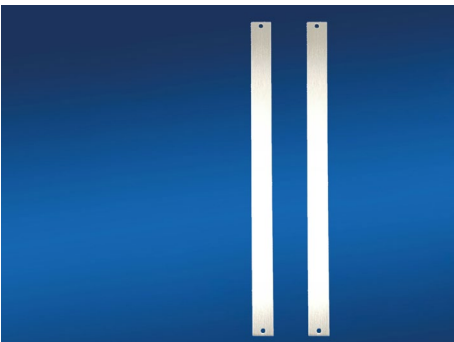
0.5 mm plastic, transparent, anti-static  
UL 94-V0, maximum temperature  
up to 65°C

<sup>1)</sup> 0.5 mm plastic, black, anti-static  
UL 94-V0, maximum temperature  
up to 120°C



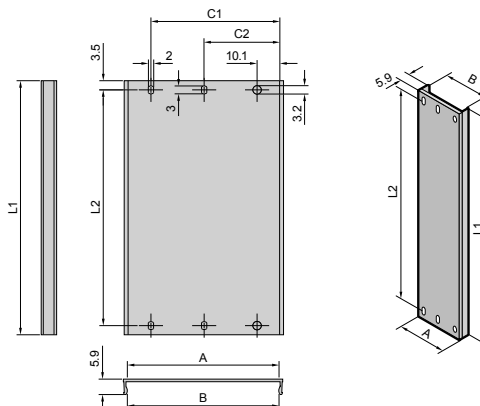
For PCBs	Packs of	Order No.			
		for CPCI		for VME	
		Perforated	Solid	Solid	Solid
3 U x 160 mm	1	<b>3687.932</b>	<b>3686.572</b>	<b>3685.966</b>	<b>3685.626</b>
	5	-	-	-	<b>3685.279</b>
3 U x 220 mm	1	-	-	-	<b>3685.805</b>
	5	-	-	-	<b>3685.266</b>
6 U x 80 mm	1	<b>3687.933</b>	<b>3686.573</b>	<b>3686.037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

### 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	Order No.		
					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

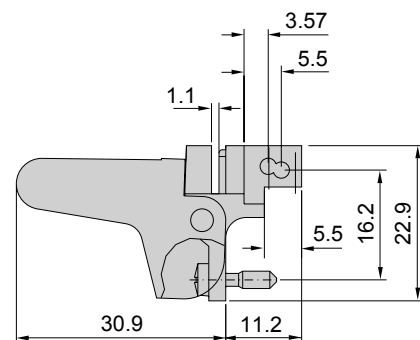
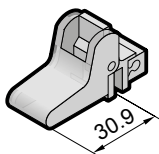
### Type III extractor handle



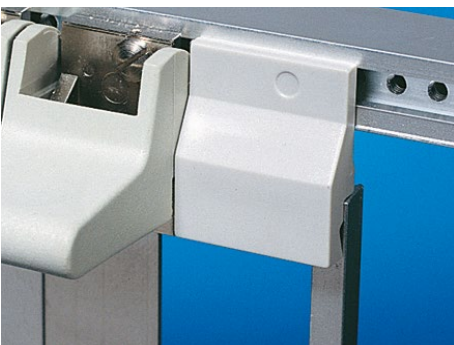
**Material**  
Fibreglass-reinforced polycarbonate  
Base section: nickel-plated ABS

**Colour**  
Grey

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



### Covers for panel end spaces for type III extractor handle



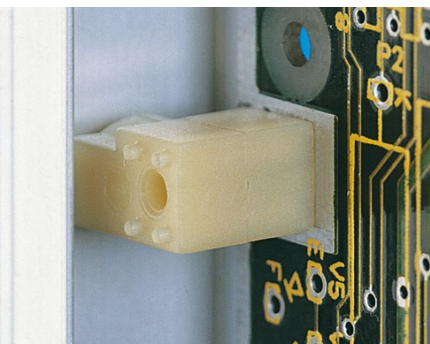
**Material**  
Fibreglass-reinforced polycarbonate

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

# COMPONENTS AND ACCESSORIES

## FRONT PANELS AND HANDLES

### Universal holder for front panel support



To support the front panel

**Material**  
Plastic

HP	Packs of	Order No.
4	1	<b>3687.545</b>

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



Complete modular systems

**Material**

Flat front panel: 2.5 mm aluminium, natural-anodised  
Handle: Aluminium, natural-anodised  
PCB holder: Polycarbonate

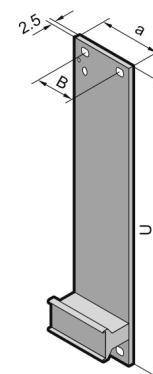
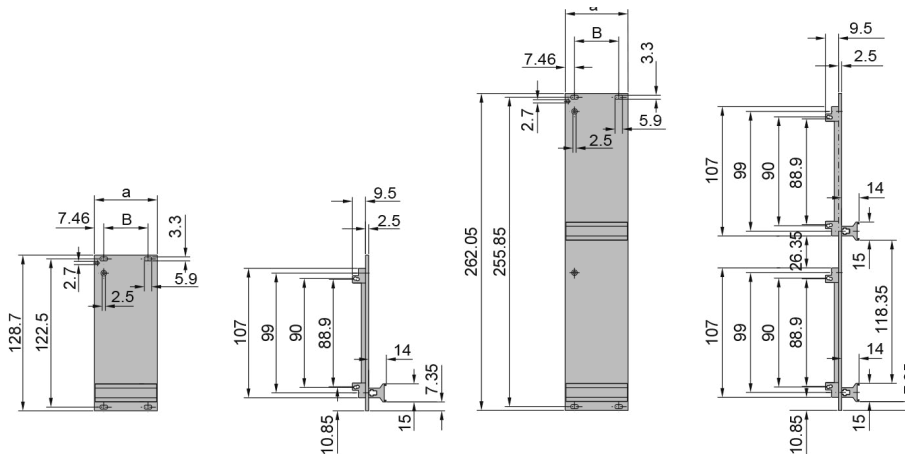
**Supply includes**

1 front panel  
1 handle (2 with 6 U)  
1 PCB holder (2 with 6 U)  
Assembly parts

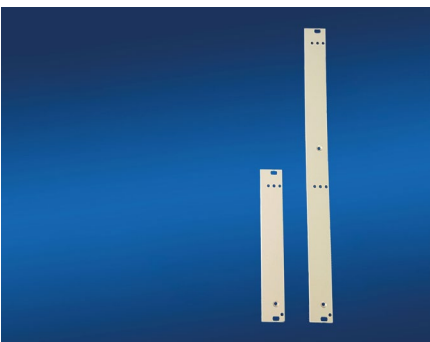
HP	a mm	B mm	Order No.	
			3 U H = 128.7	6 U H = 262.05
3	14.9	-	<b>3652.000</b>	<b>3652.200</b>
4	20.0	-	<b>3652.010</b>	<b>3652.210</b>
5	25.1	-	<b>3652.020</b>	<b>3652.220</b>
6	30.1	-	<b>3652.030</b>	<b>3652.230</b>
7	35.2	-	<b>3652.040</b>	<b>3652.240</b>
8	40.3	-	<b>3652.050</b>	<b>3652.250</b>
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>	-

**+ Accessories**

Identification strips for handles, see page 119



Flat front panels for type V and VI handle



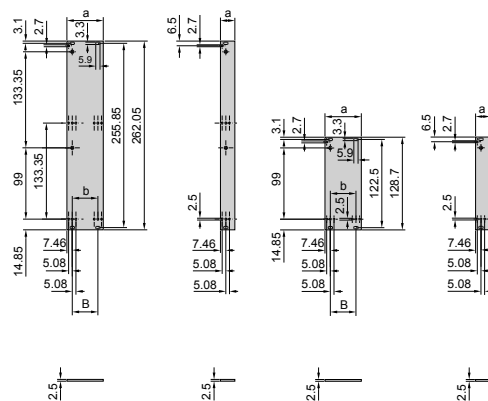
Flat front panel with pre-drilled holes for mounting handles type V and VI.

**Material**

2.5 mm aluminium, anodised

**Note**

Detailed drawing without EMC



HP	a mm	B mm	b mm	Packs of	Order No.	
					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>

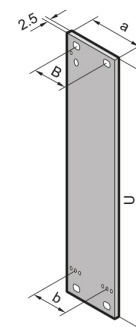
**+ Also required**

Collar screws and plastic collars, packs of 100 sets, order no. 3658.160, see page 140

**+ Accessories**

Handles type V, see page 118

Handles type VI, see page 119







# COMPONENTS AND ACCESSORIES

## FRONT PANELS AND HANDLES

### PCB holder for front panels



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

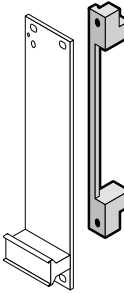
#### Material

Noryl

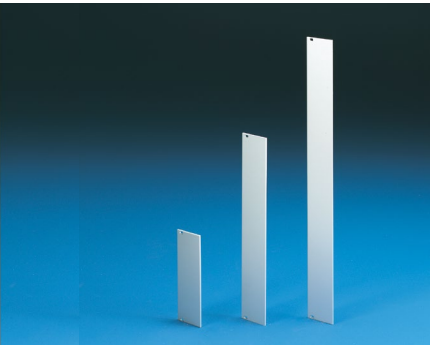
#### Supply includes

Assembly parts

Packs of	Order No.
10	3606.330



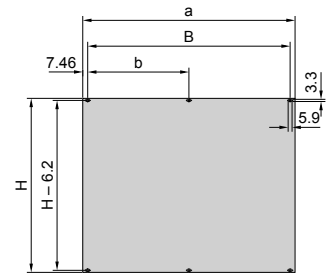
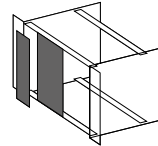
### Front panels as filler panel



Flat front panels for covering unused slots or front/rear panels. Not suitable for EMC.

#### Material

2.5 mm aluminium, natural-anodised



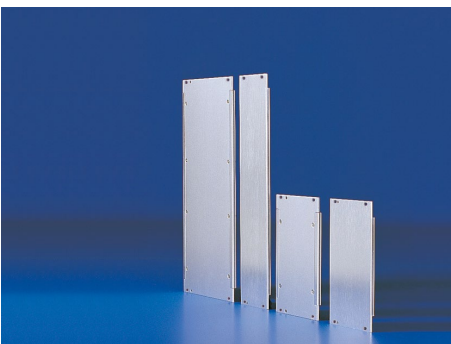
#### + Also required

Collar screws and plastic collars, packs of 100 sets, order no. 3658.160, see page 140

HP	a mm	B mm	b mm	Order No.						
				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	9921.405-	3684.913	-	3684.739
5	25.1	-	-	-	-	3684.892	-	3684.914	-	-
6	30.2	-	-	-	-	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	9921.405	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	9912.139	-	-	-	-
27	136.8	121.9	-	-	-	3684.901	-	3684.923	-	-
28	141.9	127.0	-	-	-	3684.902	9909.388	3684.924	-	-
40	202.9	188.0	-	-	-	3684.903	-	3684.976	-	3684.977
42	213.0	198.1	-	3684.885	3684.887	3684.904	3684.908	3684.925	3684.928	3684.742
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



## U-channel front panels as filler panels



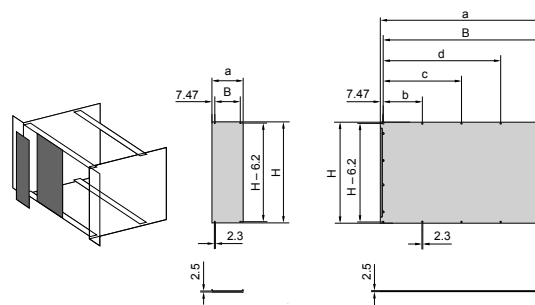
Flat front panels U-shaped to cover unused slots or front/rear panels. EMC material is included in the scope of delivery.

### Material

2.5 mm extruded aluminium section, clear-chromated

### 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)



### + Also required

Slotted centering screws, packs of 100, order no. 3687.050 see page 141

Cross-head centering screws, packs of 100, order no. 3687.051, see page 141

HP	a mm	B mm	b mm	c mm	d mm	Order No.						
						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	-	-	-	-	-	-	<b>3685.177</b>	-	<b>3685.185</b>	-	<b>3685.193</b>
3	14.9	-	-	-	-	-	-	<b>3686.138</b>	-	<b>3686.139</b>	-	<b>3686.140</b>
4	20.0	-	-	-	-	-	-	<b>3685.178</b>	-	<b>3685.186</b>	-	<b>3685.194</b>
5	25.1	-	-	-	-	-	-	<b>3685.179</b>	-	<b>3685.187</b>	-	-
6	30.1	-	-	-	-	-	-	<b>3685.180</b>	-	<b>3685.188</b>	-	-
7	35.2	-	-	-	-	-	-	<b>3685.181</b>	-	<b>3685.189</b>	-	-
8	40.3	25.4	-	-	-	-	-	<b>3685.182</b>	-	<b>3685.190</b>	-	<b>3685.195</b>
10	50.5	35.6	-	-	-	-	-	<b>3685.183</b>	-	<b>3685.191</b>	-	-
12	60.6	45.7	-	-	-	-	-	<b>3685.184</b>	-	<b>3685.192</b>	-	<b>3685.196</b>
14	70.8	55.9	-	-	-	-	-	<b>3684.249</b>	-	<b>3684.258</b>	-	<b>3684.278</b>
16	80.9	66.0	-	-	-	-	-	<b>3685.348</b>	-	<b>3685.349</b>	-	-
20	101.3	86.4	-	-	-	-	-	<b>3684.250</b>	-	<b>3684.259</b>	-	<b>3684.279</b>
21	106.4	91.4	-	-	-	-	-	<b>3684.272</b>	-	<b>3684.275</b>	-	-
28	141.9	127.0	61.0	-	-	-	-	<b>3684.251</b>	-	<b>3684.260</b>	-	-
40	202.9	188.0	91.5	-	-	-	-	<b>3684.273</b>	-	<b>3684.276</b>	-	<b>3684.280</b>
42	213.0	198.1	96.5	-	-	-	-	<b>3684.252</b>	<b>3684.255</b>	<b>3684.261</b>	<b>3684.264</b>	<b>3684.267</b>
60	304.5	289.6	96.5	193.0	-	-	-	<b>3684.274</b>	-	<b>3684.277</b>	-	-
63	319.7	304.8	101.6	203.2	-	-	-	<b>3684.253</b>	<b>3684.256</b>	<b>3684.262</b>	<b>3684.265</b>	<b>3684.268</b>
84	426.4	411.5	101.6	203.2	304.8	<b>3684.247</b>	<b>3684.248</b>	<b>3684.254</b>	<b>3684.257</b>	<b>3684.263</b>	<b>3684.266</b>	<b>3684.269</b>

# COMPONENTS AND ACCESSORIES

## FRONT PANELS AND HANDLES

### Front panels, hinged



**Material**

2.5 mm aluminium, anodised

**Supply includes**

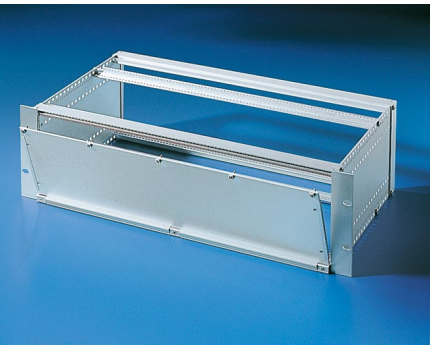
1 set of hinges  
Assembly parts

U	HP	Order No.	
		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 91

### 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	Order No.
		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>



### Door cut-out trim for subracks installed indoors



**Material**

Aluminium

Width	Packs of	Order No.
½ 19"	2	<b>3634.060</b>
19"	2	<b>3634.070</b>

### Mezzanine front panels



For PCI mezzanine cards (PMC), conforms to IEEE 1386.

**Material/surface finish**

Extruded aluminium section, clear-chromated

Packs of	Order No.
1	<b>3688.658</b>

**+ Accessories**

EMC seals, see page 123  
Assembly screws M2.5 x 6, packs of 100, order no. 3654.340, see page 140

### Mezzanine front panels



For PCI mezzanine cards (PMC), conforms to IEEE 1386.

**Material**

Die-cast zinc

Packs of	Order No.
1	<b>3688.659</b>

**+ Accessories**

EMC seals, see page 123

Assembly screws M2.5 x 6, packs of 100, order no. 3654.340, see page 140

### Support spacers for mezzanine cards



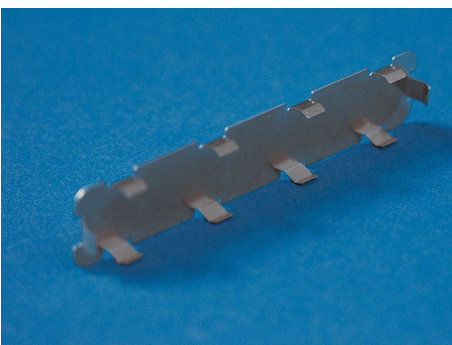
Support spacer 10 mm, for mounting mezzanine cards.

**Material**

Steel, nickel plated

Packs of	Order No.
1	<b>3688.663</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	Order No.
1	<b>3688.660</b>

### EMC seals for mezzanine front panels



For inserting 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	Order No.
Sealing ring	1	<b>3688.661</b>
Sealing gasket	1	<b>3688.662</b>

# COMPONENTS AND ACCESSORIES

## BOX-TYPE PLUG-IN UNITS

### HeiPac box-type plug-in units – type I



#### Technical specifications

Installation depth: 160 and 220 mm  
 Height: 3 U and 6 U to IEC 60297-3  
 Rear panel to accommodate single connectors

#### Material

Front panel: 2.5 mm aluminium, pure anodised  
 Rear panel: 2 mm aluminium, untreated  
 Side panel profile: extruded aluminium profile, pure anodised  
 Handle: aluminium, pure anodised  
 PCB holder: plastic

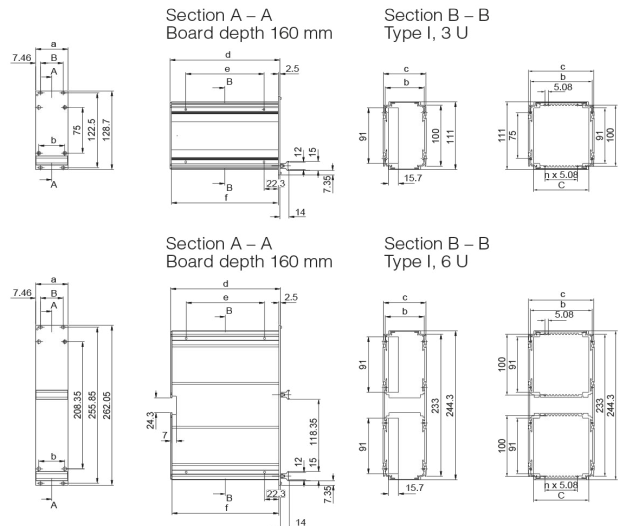
#### Available on request

- Box-type plug-in units in special sizes or printed
- EMC box-type plug-in units with EMC front panels

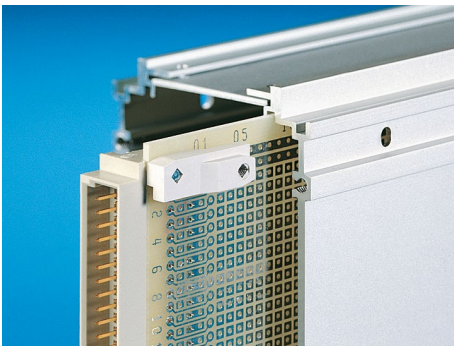
#### + Accessories

Covers, see page 126  
 Guide rails, see page 100  
 Individual components, see page 126

HP	a mm	B mm	b mm	c mm	C mm	d mm	e mm	f mm	Order No.		
									3 U	3 U	6 U
<b>Board depth 160 mm</b>											
6	32.2	-	20.3	27.5	-	171.5	122	167	<b>3653.000</b>	-	-
8	40.3	-	30.5	36.0	-	171.5	122	167	-	<b>3653.010</b>	-
10	50.5	35.6	40.6	46.2	-	171.5	122	167	-	<b>3653.020</b>	<b>3653.100</b>
12	60.6	45.7	50.8	56.4	-	171.5	122	167	-	<b>3653.030</b>	<b>3653.110</b>
14	70.8	55.9	60.9	66.5	-	171.5	122	167	-	<b>3653.040</b>	<b>3653.120</b>
21	106.3	91.4	96.4	102.0	86.3	171.5	122	167	-	<b>3653.050</b>	<b>3653.130</b>
28	141.9	127.0	132.0	137.6	121.8	171.5	122	167	-	<b>3653.060</b>	<b>3653.140</b>
42	213.1	198.1	203.2	208.8	193.0	171.5	122	167	-	<b>3653.070</b>	<b>3653.150</b>
<b>Board depth 220 mm</b>											
10	50.5	35.6	40.6	46.2	-	231.5	182	227	-	<b>3653.200</b>	<b>3653.300</b>
12	60.6	45.7	50.8	56.4	-	231.5	182	227	-	<b>3653.210</b>	<b>3653.310</b>
14	70.8	55.9	60.9	66.5	-	231.5	182	227	-	<b>3653.220</b>	<b>3653.320</b>
21	106.3	91.4	96.4	102.0	86.3	231.5	182	227	-	<b>3653.230</b>	<b>3653.330</b>
28	141.9	127.0	132.0	137.6	121.8	231.5	182	227	-	<b>3653.240</b>	<b>3653.340</b>
42	213.1	198.1	203.2	208.8	193.0	231.5	182	227	-	<b>3653.250</b>	<b>3653.350</b>
<b>Supply includes</b>											
Front panel									1	1	1
Handle									1	1	2
Side panel									1	2	2
Cover plate incl. rear panel									1	-	-
Rear panel									-	1	2
PCB holder									2	2	2
Assembly parts (set)									1	1	1



### PCB holder for box-type plug-in units



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

#### Material

Plastic PBTP, basic material to UL 94-V0

#### Supply includes

Assembly parts

Packs of	Order No.
2	3606.321

### Guide rails for drive chassis



For guiding drive chassis in the subrack.

#### Material

Aluminium

#### Supply includes

Press-fit pin

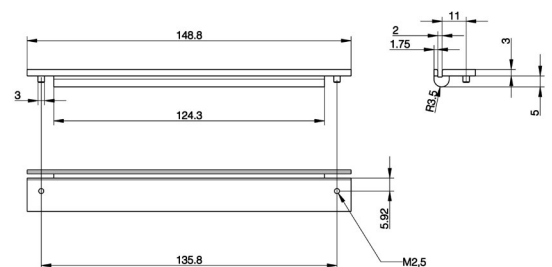
#### Note

Two guide rails are required for each drive chassis.  
Guide rails 4.4" for plastic drives, see page 100.

For installation depth mm	Packs of	Order No.
160	1	3686.989

#### + Also required

Assembly screws  
packs of 100, order no. 3654.340, see page 140



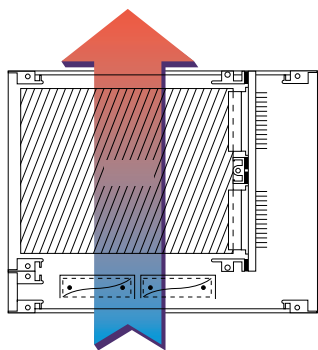




# COMPONENTS AND ACCESSORIES

## CLIMATE CONTROL

### Vertical cooling from bottom to top



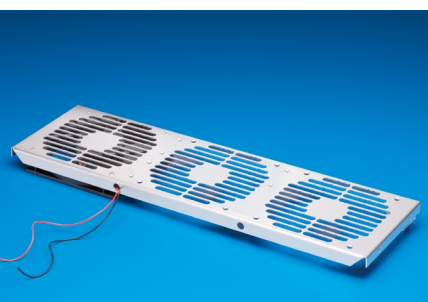
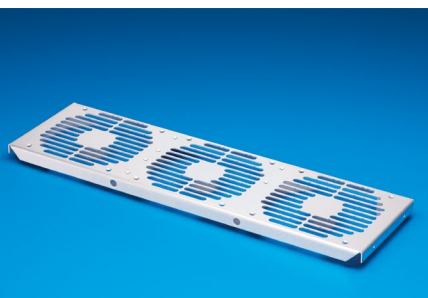
Air flow via normal convection or forced cooling devices in the enclosure or housing outside of the subrack.

Vertical forced air flow, supported by fans installed at the bottom of the subrack (1 U).

#### + Accessories

AC/DC fan see page 132 f.  
Fan mounting plate see below

### 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

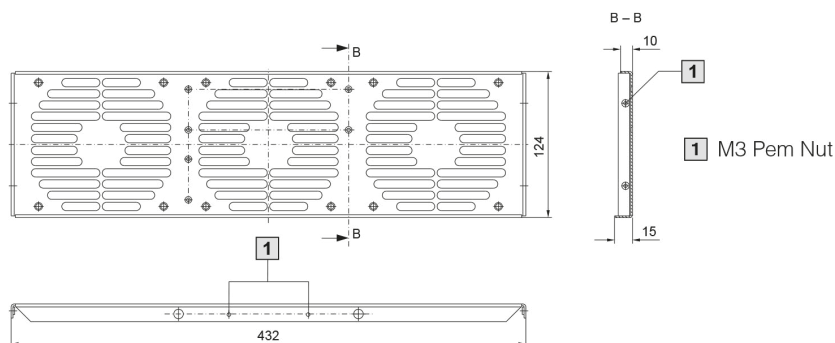
1.5 mm aluminium, anodised

U	For PCB depth mm	No. of fan mounting plates required	HP	Order No.
1	160	1	84	<b>3684.317</b>
	220	1		
	280	2		
	340	2		
	400	3		

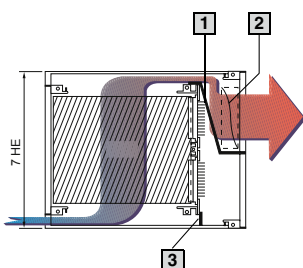
#### + Also required

1 terminal block is required for each subrack.

Packs of	Order No.
1	<b>3686.805</b>



### 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 129
- 2** Fan (mounted on the rear panel), see page 132
- 3** Air partition, see page 129









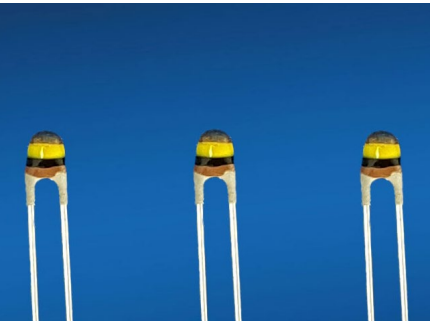




# COMPONENTS AND ACCESSORIES

## CLIMATE CONTROL

### Temperature sensor

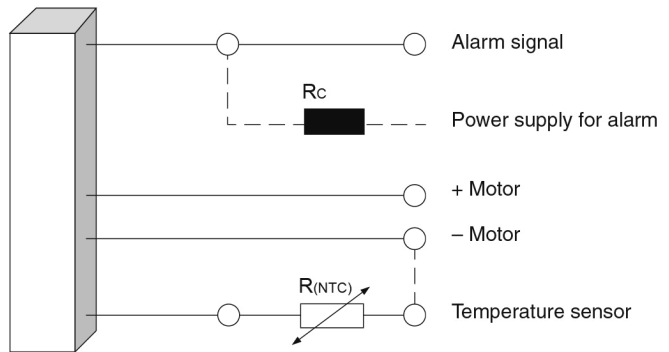
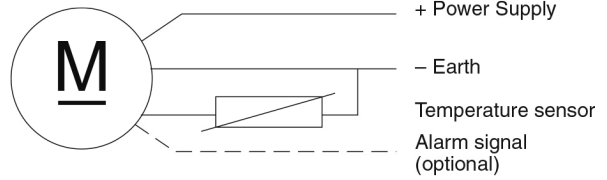


For DC fans 12/24 V with speed control.

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

#### Technical specifications

Resistor type: NTC  
 Resistor body: Surface enameled  
 Power loss  $P = 0.1 \text{ W}$



### Finger guard



Suitable for AC fans and DC fans.

#### Material

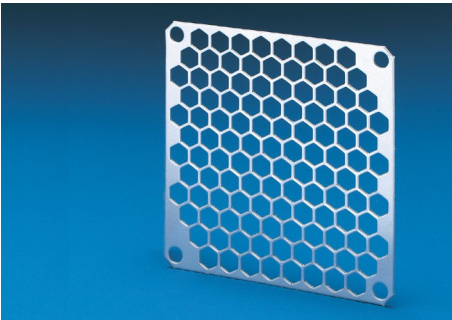
Polyamide  
 Self-extinguishing to UL 94-V0

#### Colour

Black

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

### EMC shielding plate

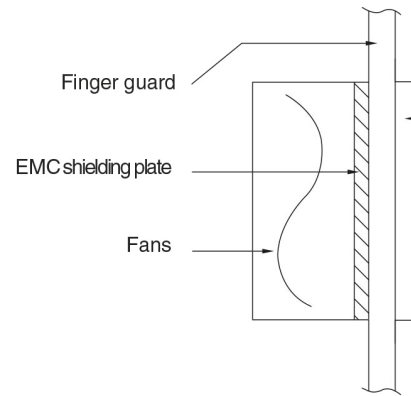


Suitable for AC fans and DC fans.

**Material**

1 mm aluminium, clear-chromated

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



### Air block panel for unused slots



To seal 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 keyable guide rail mm	Packs of	Order No.
160	1	<b>3687.924</b>







### Main switch



Main switch with LED Display-module.

#### Technical specifications

Rocker switch 6 A/250 V, 2-pole, FASTON connections, (4.7 x 0.8 mm)  
 VDE, UL, CSA, TÜV, SEMKO, DEMCO, SEV,  
 NEMKO, SETI, BEAB approvals  
 Insulation resistance: > 10 MΩ  
 Test voltage: 1 kV  
 Front panel: 21 x 15 mm  
 Cut-out: 19.2 x 12.9 mm  
 Installation depth: 17 mm

Max. current	Packs of	Order No.
6 A	1 St.	<b>3687.711</b>

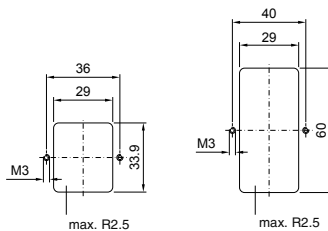
### Filtered IEC mains inlet



Combination module for mains input consisting of an IEC socket to IEC 60320 and IEC 60950 with line filter and 5 x 20 mm G fuse holder.

#### Technical specifications

Metal enclosure for screw mounting  
 Mains input: via IEC socket  
 Mains output: via 3 FASTON contacts (L, N, PE, 6.3 x 0.8)  
 Variants available with or without switch  
 Temperature range: -25°C to +85°C



	Order No.	
	with switch	without switch
	<b>3687.709</b>	<b>3687.710</b>
Mains voltage max.	250 V AC	250 V AC
Leakage current	2 x 0.32 mA	500 µA
Max. current	6 A	6 A
Mounting holes	40 mm	36 mm
Installation depth	90 mm	56 mm
Cut-out	60 x 29 mm	33.9 x 29 mm
Approvals	VDE, SEMKO, SEV, UL, CSA	VDE

# COMPONENTS AND ACCESSORIES

## POWER SUPPLIES

### AT/ATX power supply



#### AT/ATX power supply

- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- On/off switch
- PFC active/passive
- W x H x D = 86 x 150 x 140 mm
- 47 - 63 Hz

#### Supply includes

Connection cable

Design	Power	Packs of	Order No.
AT	300 W	1	<b>3688.118</b>
ATX	400 W	1	<b>9916.222</b>

#### Technical specifications

<b>3688.118</b>	<b>9916.222</b>
300 W max. / 230 V AC	400 W max. / 90 - 240 V AC
5.0 V / 30.0 A	3.3 V / 20.0 A
- 5.0 V / 0.5 A	5.0 V / 20.0 A
12.0 V / 12.0 A	- 5.0 V / 0.3 A
- 12.0 V / 0.5 A	12.0 V / 32 A
PFC passive	- 12.0 V / 32 A
	+ 5 VSB / 2.5 A
	3.3 V u. 5 V plus max. 150 W
	3.3 V, 5 V & 12 V plus max. 385 W
	PFC active

### ATX power supply 1 U



#### ATX power supply

- 2 built-in fans
- Short circuit-protected
- On/off switch
- PFC active
- W x H x D = 85 x 40 x 230 mm

#### Supply includes

Connection cable

Design	Packs of	Order No.
ATX	1	<b>3688.130</b>

#### Technical specifications

<b>3688.130</b>
250 W max. / 90 - 264 V AC
47 - 63 Hz
3.3 V / 16.0 A
5.0 V / 18.0 A
- 5.0 V / 0.3 A
12 V / 18 A
- 12 V / 0,8 A
+ 5 VSB / 2.5 A
+ 3.3 V u. 5 V plus max. 120 W

### Front panel



Front panel with cut-outs for mounting the ATX power supply units in the subrack.

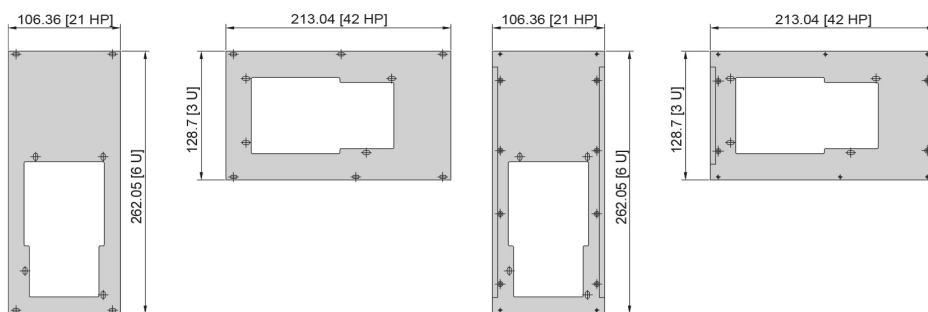
**Material**

Aluminium, clear-chromated

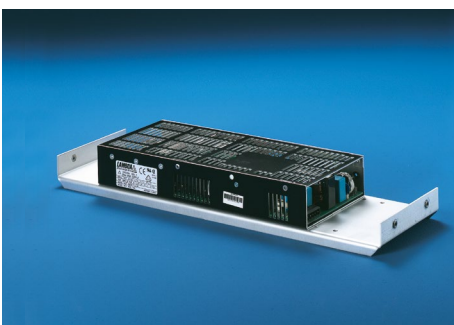
**Supply includes**

EMC gaskets (with EMC version)  
Assembly parts

U	HP	Order No.	
		EMC	Non-EMC
3	42	<b>3685.331</b>	<b>3685.328</b>
6	21	<b>3685.332</b>	<b>3685.329</b>



### Mounting base for power supplies



To attach ATX-power supplies to the subrack side panel.

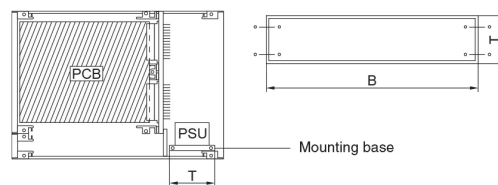
**Material**

2 mm aluminium, clear-chromated

**Supply includes**

Assembly parts

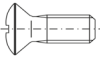
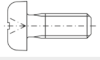
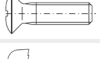


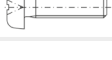
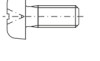

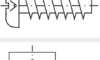





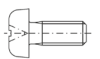



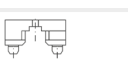

Width (B) mm	Depth (T) mm	Order No.
431.8	100	<b>3684.323</b>
431.8	130	<b>3684.324</b>





















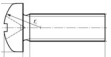



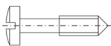



# COMPONENTS AND ACCESSORIES

## ASSEMBLY PARTS

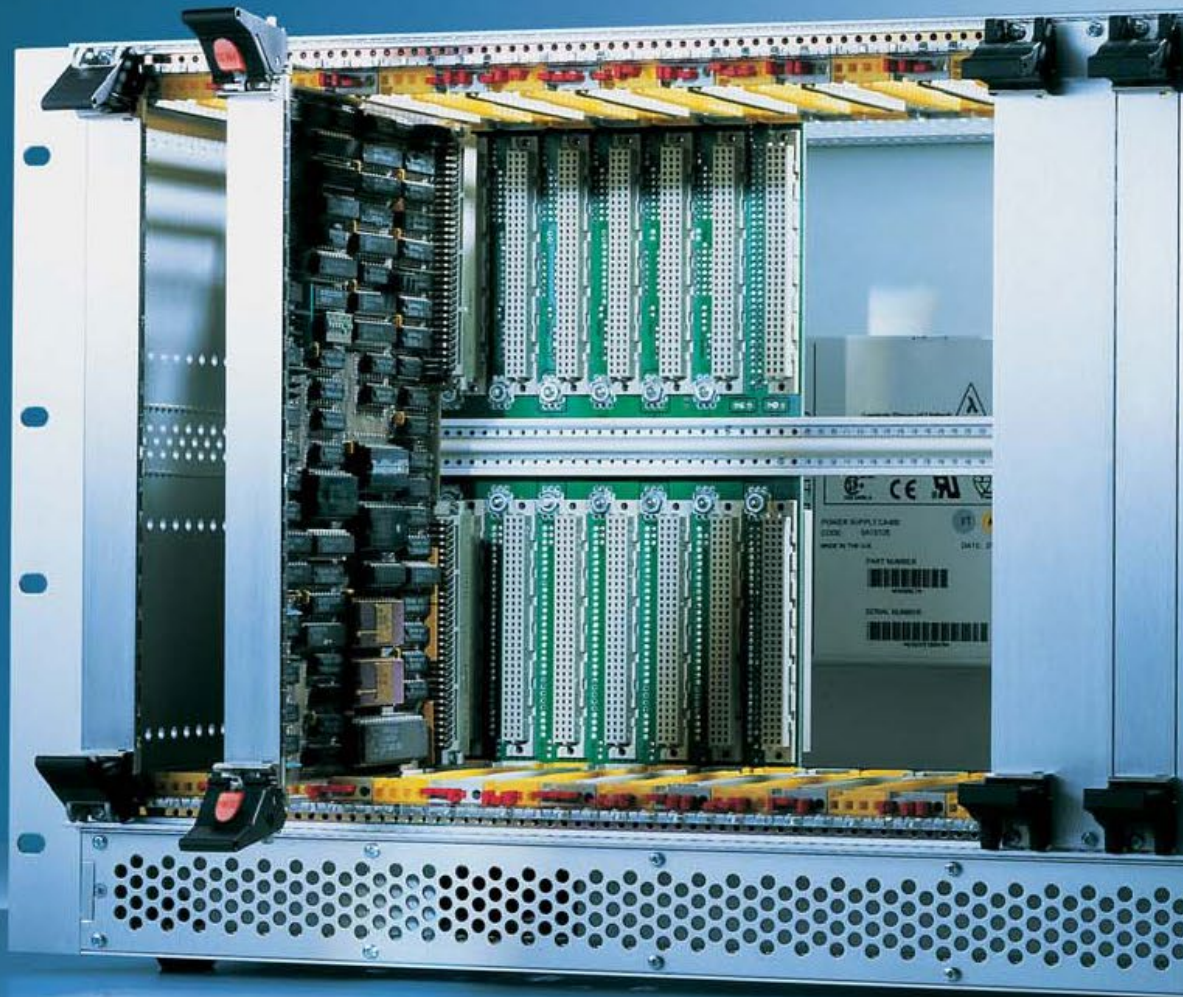
### Assembly parts

For the attachment of	Description	Dimensions	Order 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
Front/rear horizontal rails for side panels (HeiPac EASY)	Drill screw, T20, self-locking	M4 x 16	<b>3634.430</b>	100
Center horizontal rails for side panels (HeiPac EASY)	Fastening screw, T20, self-locking	M4 x 12	<b>3634.435</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 - Connectors to Z rails - Z rails to horizontal rails	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 10 	<b>3654.330</b>	100
- 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):		<b>3687.519</b>	1 set
	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		
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:		<b>3684.019</b>	100
	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 6 		
	Washer PE, natural DIN 125	2.7 		
- 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 with mounting clips	Flat head tapping screw ISO14585-TX15-A2K	M3,5x13 	<b>9921.879</b>	100
Covers to side panels (Heipac Vario)	Mounting block		<b>3684.234</b>	10
Type V/VI handle to front panels	Bracket		<b>3684.435</b>	100
Ground contact to keyable guide rails	Fastening screw for ground contact	3.5 x 12	<b>3684.109</b>	50
Female connector to PCB attachment	Pop rivet DIN 7340-B-CuZn	2.5 x 0,3 x 10	<b>3684.482</b>	100

## Assembly parts

For the attachment of	Description	Dimensions	Order No.	Packs of
Fans to fan mounting plate	Mounting kit for fans:			
	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M4 x 12 	<b>3685.197</b>	1 set
	Hex nut ISO 4032-8	M4 		
Serrated washer DIN 6798-A-Fst-A2K	4.3 			
Covers to side panels	Mounting kit for covers:			
	Mounting block  Flat csk-screw ISO 7046-1-4.8-Z-A2K	  M3 x 6 	<b>3685.256</b>	24 sets
PCB holders (die-cast) to front panels, top	Oval csk-screw DIN ISO 7047-4.8-Z-A2K	M2.5 x 8 	<b>3685.282</b>	100
- Covers box-type plug-in units type I/II - Contact/spring sections for 3-part front panels	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 5 	<b>3685.289</b>	100
- Handles on front panels for box type plug-in units - Front panels to hinge strip	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 6 	<b>3685.290</b>	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to DIN ISO 7046-1-4.8-Z-A2K	M2.5 x 5 	<b>3686.916</b>	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to DIN ISO 7046-1-4.8-Z-A2K	M2.5 x 8 	<b>3686.917</b>	100
Contact and spring sections on 3-part front panels without countersink	Panhead posidrive screw DIN ISO 7046-4.8-Z-A2K	M2.5 x 5 	<b>3686.924</b>	100
Set back flanges to side panels	Mounting kit for set back flanges:			
	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2K	M4 x 8 	<b>3687.015</b>	4 sets
	Hex nut ISO 4032-8	M4 		
Washer	4.3 			
Fastening the threaded inserts in horizontal rails	Grub screw ISO 7434-14H	M2.5 x 8 	<b>3687.020</b>	100
- EMC front panels to horizontal rails - EMC trim frame to conceal the front sections of the horizontal mounting kit	Centering screw, slotted	M2.5 x 11 	<b>3687.050</b>	100
EMC front panels to horizontal rails	Centering screw, posidrive	M2.5 x 11 	<b>3687.051</b>	100
EMC front panels to horizontal rails	Centering screw, hex screws	M2.5 x 11 	<b>3688.709</b>	100
Subracks into racks	Panhead screw, posidrive ISO ISO7045-M6x16-4.8-Z-A2K Washer plastic M6	M6 x 16 	<b>2089.000</b>	100
Subracks into racks	Panhead screw, Torx drive ISO 14583 M6x16-4.8-A2K Washer plastic M6	M6 x 16 	<b>7094.600</b>	100
Subracks at the profiles of racks	Cage nut M6 0,8-2,0 with electrical contact	M6 	<b>2094.200</b>	50
Subracks at the profiles of racks	Cage nut M6 0,8-2,0 without electrical contact	M6 	<b>2092.200</b>	50
Front panels and rear panels to horizontal rails	Collar screw, cheese-head, slotted	M2.5 x 11 	<b>3685.097</b>	100
Type V/VI handles (aluminium) to front panels	Mounting kit for type V/VI handles:			
	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 6 	<b>3687.146</b>	1 set
	Bracket			
Square nut DIN 562-11H-A2K	M2.5 			

# TECHNOLOGY EXPERTISE



Overview of standards

**Designs for electronic systems (dimensions for 19-inch design)**

IEC 60297-3-100	Basic dimensions of front panels, subracks, rack-mount systems, racks and cabinets
IEC 60297-3-101	Subracks and assembly modules
IEC 60603-2	Connectors for printed circuits operating at frequencies below 3 MHz - Part 2: Component specification for quality-rated indirect connectors for printed circuits, 2.54 mm (0,1 in) pitch, with common mounting features (IEC 60603-2:1995 + A1:2000)
IEC 60297-3-102	Injector/extractor handle
IEC 60297-3-103	Keying and guide pin
IEC 60297-3-104	Connector dependent interface dimensions of subracks and assembly modules
IEC 60297-3-105	Dimensions and layout of 1 U high rack-mount systems
IEC 60297-3-106	Adaptation dimensions for subracks and rack-mount systems applicable with metric cabinets or racks in accordance with IEC 60917-2-1
IEC 60917	Modular order for the development of mechanical structures for electrical and electronic equipment practices - Part 1: Generic standard

**Environmental conditions for designs as per IEC 60917, IEC 60297**

DIN EN 61587-1	Environmental requirements, test set-up, as well as safety aspects for empty enclosures, i.e. cabinets, racks, subracks and chassis under indoor and transport conditions
DIN EN 61587-2	Seismic tests for cabinets and racks
DIN EN 61587-3	Electromagnetic shielding performance tests for cabinets and subracks
VG 95373, part 15	Electromagnetic compatibility of equipment Part 15: Measuring method for coupling and shielding

**Safety**

EN 62368-1	Equipment for audio/video, information and communication technology - Part 1: Safety requirements
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**Rail**

EN 50155	Electronic equipment used on rail vehicles
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**Fire protection**

EN 45545	Railroad applications - fire protection in rail vehicles
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# TECHNOLOGY EXPERTISE

## 19-INCH PACKAGING SYSTEM

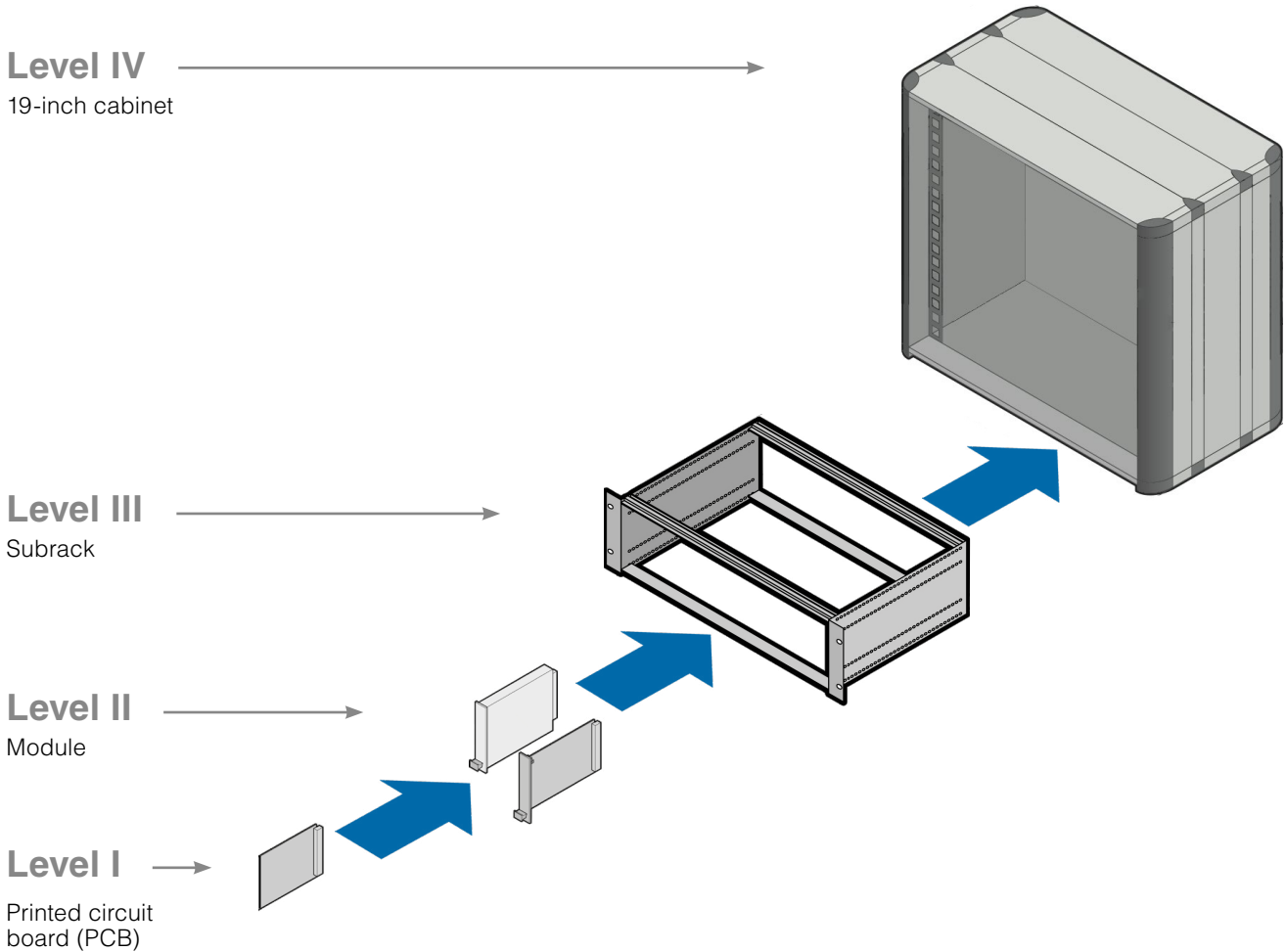
### 19-inch technology: dimensional coherence

The 19-inch packaging system is based on internationally applicable dimensional standards that describe the coordinated, modular system structure. The mechanical structure of the system is described in various parts of the series of standards IEC 60297.

The objective of these provisions is to ensure that different devices and modules from all potential manufacturers can be combined and replaced without difficulty.

The 19-inch packaging system is now used in almost every area of industrial electronics: Systems and machine construction, energy technology, transportation, aerospace technology, medical technology, Information and communication technology and measurement and testing technology

More specifically, the 19-inch packaging system can be divided into the following four levels:



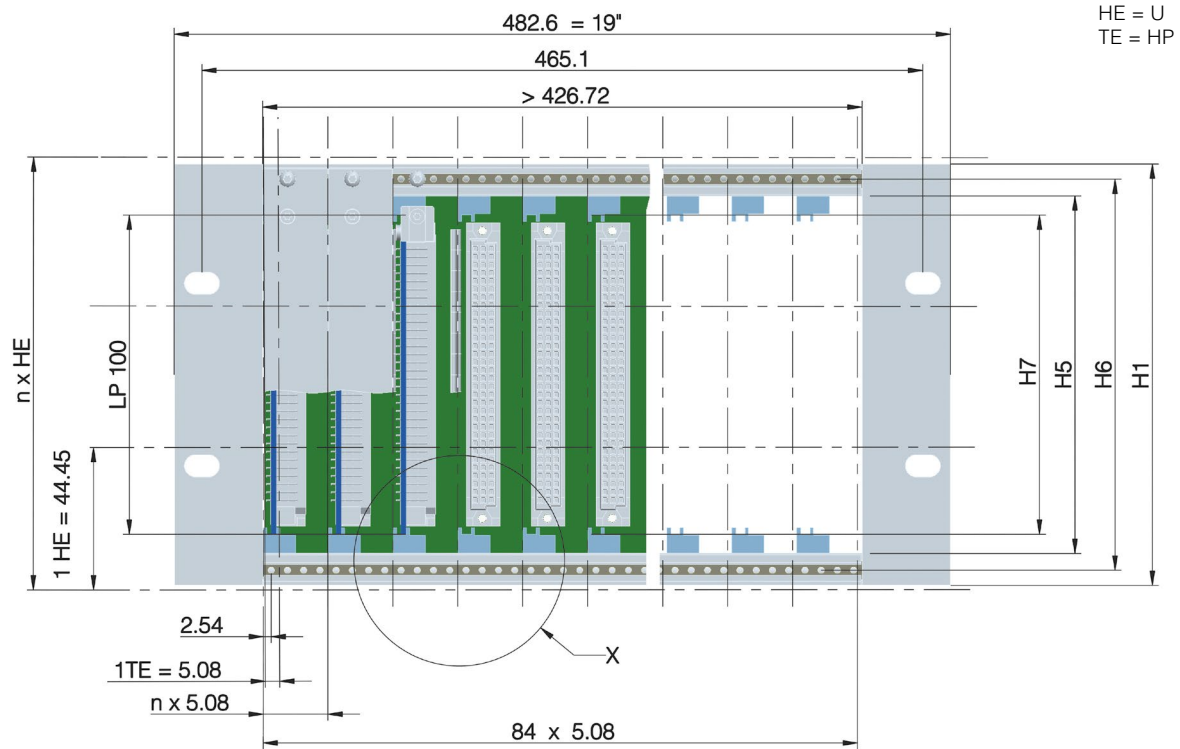




# TECHNOLOGY EXPERTISE

## 19-INCH PACKAGING SYSTEM

### Level 3: Subrack



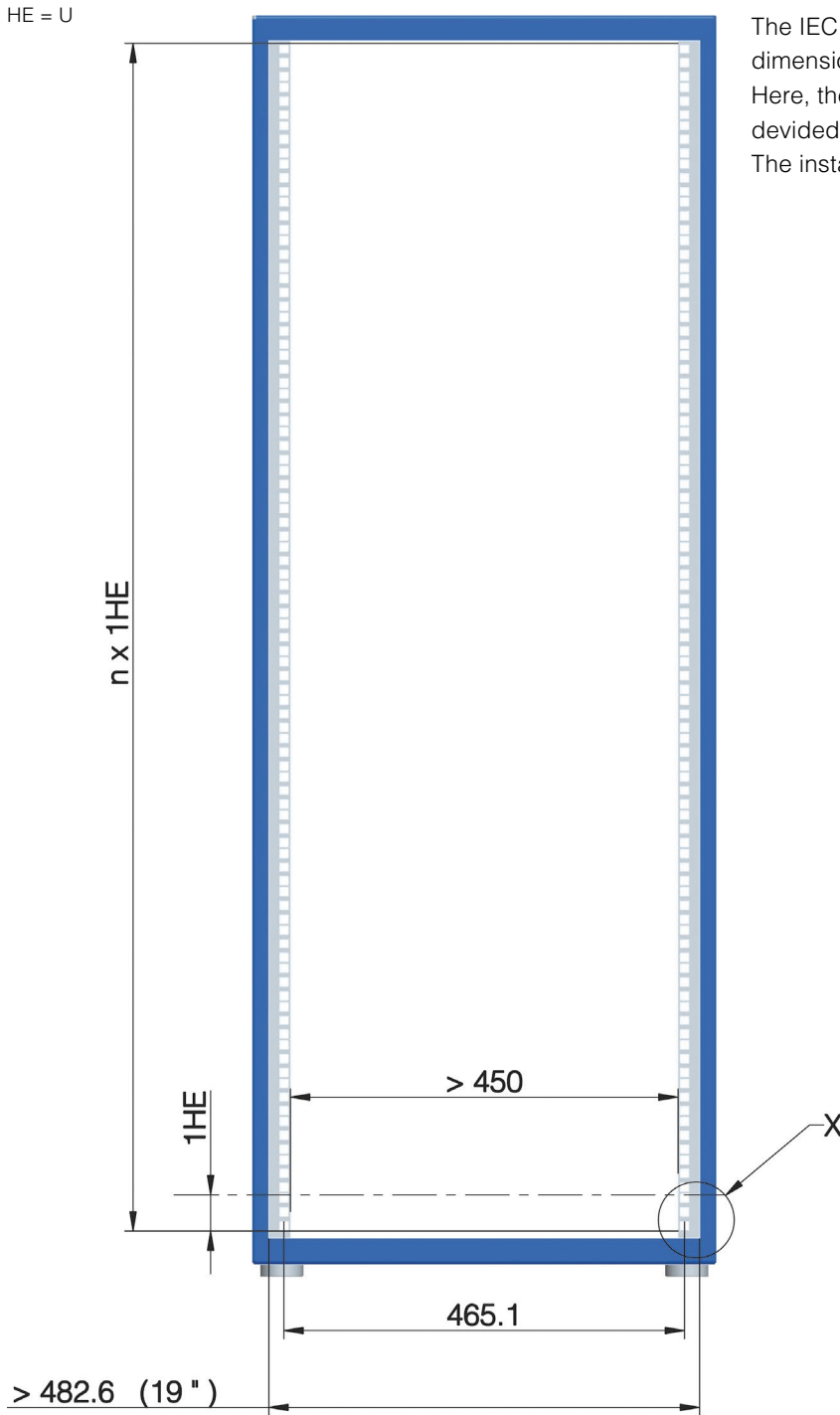
Width	84 HP (19-inch)	42 HP (1/2 19-inch)	21 HP (1/4 19-inch)
Card cage	426.72 mm	213.36 mm	106.68 mm
Flange	465.10 mm	251.70 mm	145.00 mm
Enclosure	482.60 mm	269.10 mm	162.40 mm

DIN EN 60297-3-101 provides a figure of 482.6 mm (19 inches) for the width of the subrack front. In practice, widths derived from this, such as 1/2 19-inch or 1/4 19-inch, are also common (see chart).

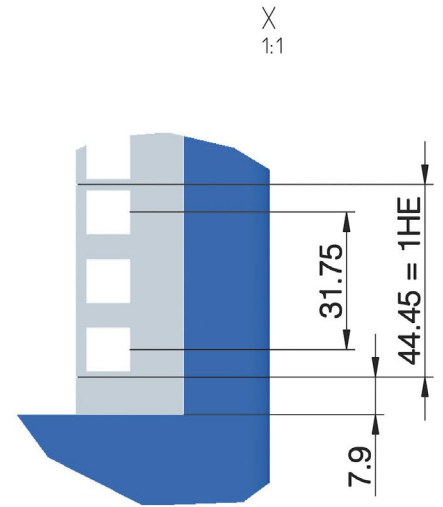
The maximum subrack height is given as a multiple of one height unit (1 U), or 44.45 mm. This ensures that the subrack height is coordinated with the height of the plug-in units used. Typical sizes are 3 U, 6 U and 9 U (refer to table).

The installation space for the modules is divided into horizontal pitch units (HP) of 5.08 mm (0.2 inch), or 84 HP for a subrack width of 19 inches.

## Level 4: 19-inch cabinet



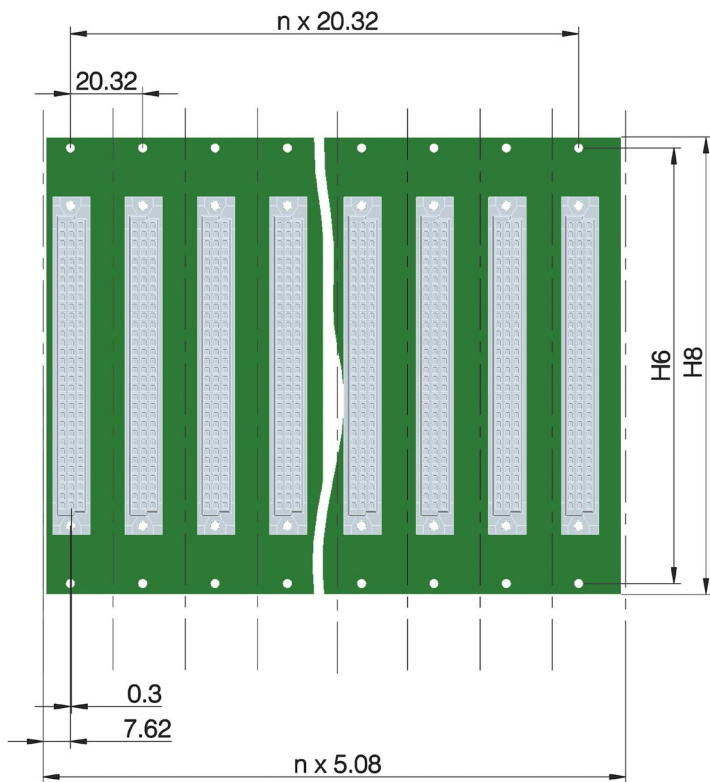
The IEC 60297-3-100 standard describes the basic dimensions of the 19-inch cabinet. Here, the available space to fit the sub racks is also divided into multiples of 1 U. The installation space must be at least 450 mm wide.



# TECHNOLOGY EXPERTISE

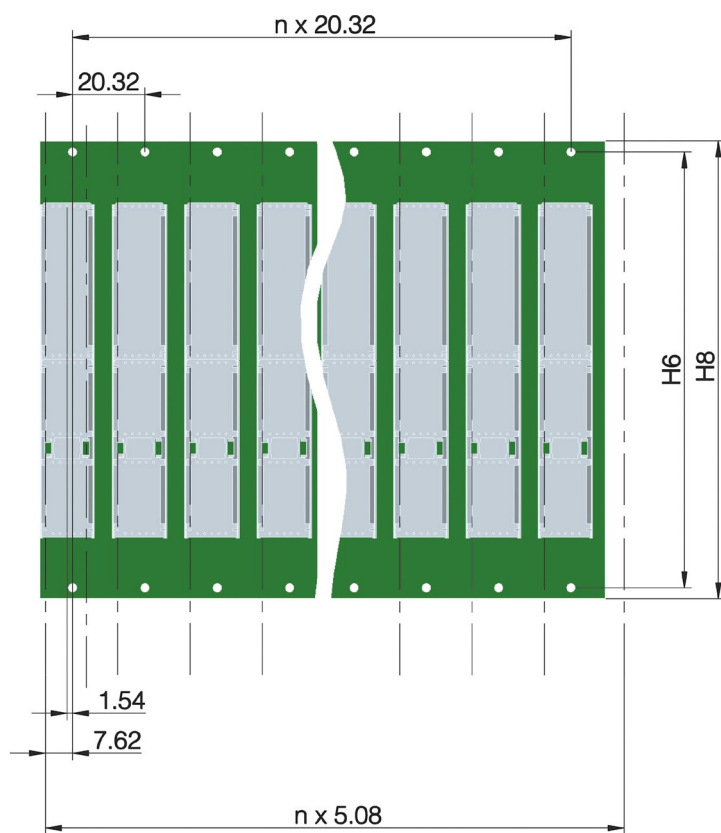
## 19-INCH PACKAGING SYSTEM

### Backplane



Backplane with plug connector as per  
DIN 41612/IEC 60603-2 and IEC 61076-4-113

Typical application: VME/VME64 systems



Backplane with plug connector as per  
IEC 61076-4-101

Typical application: CPCI systems

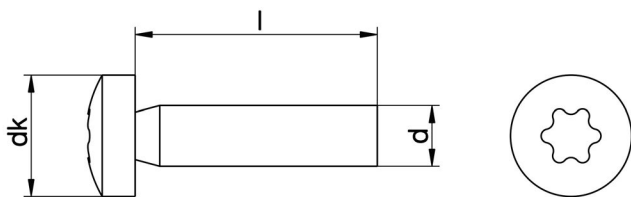
The IEC 60297-3-104 standard describes the dimensions of the backplanes for the most common height variations (refer to table).

Height units	3 U	6 U	9 U
H6 ± 0.2	122.50 mm	255.85 mm	389.20 mm
H8 ± 0.15	128.55 mm	261.90 mm	395.25 mm



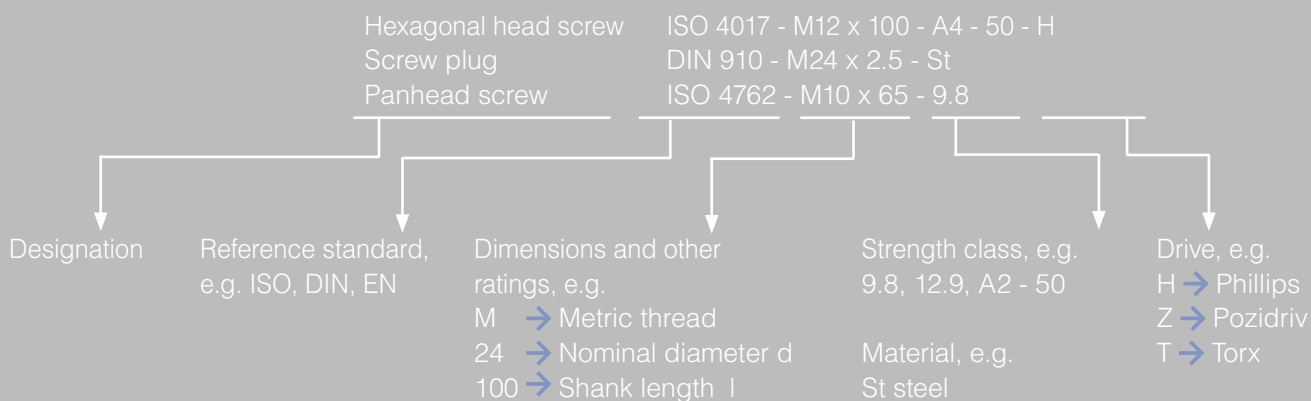


## Screws

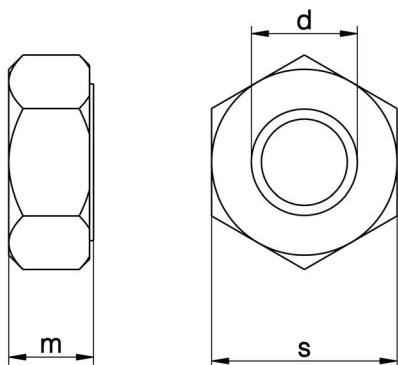


Screws are used to achieve a tight connection between two or more components. They form part of a screw gear consisting of two standardised, paired components. Friction on the wedge-shaped thread under load prevents the screws from coming loose.

### Examples

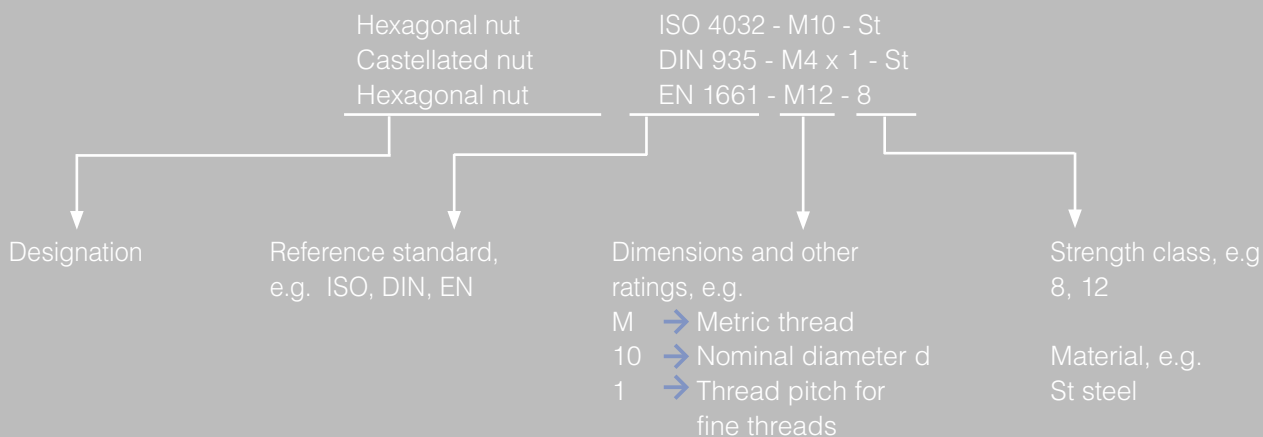


## Nuts



Nuts are the counterpart to the screws. They have a standardised inside thread that matches the thread of the screw. The prismatic outside contour is shaped to accommodate a wrench, which is used to tighten the nut. In terms of dimensions, the height of a nut is approximately half the width across the flats.

### Examples































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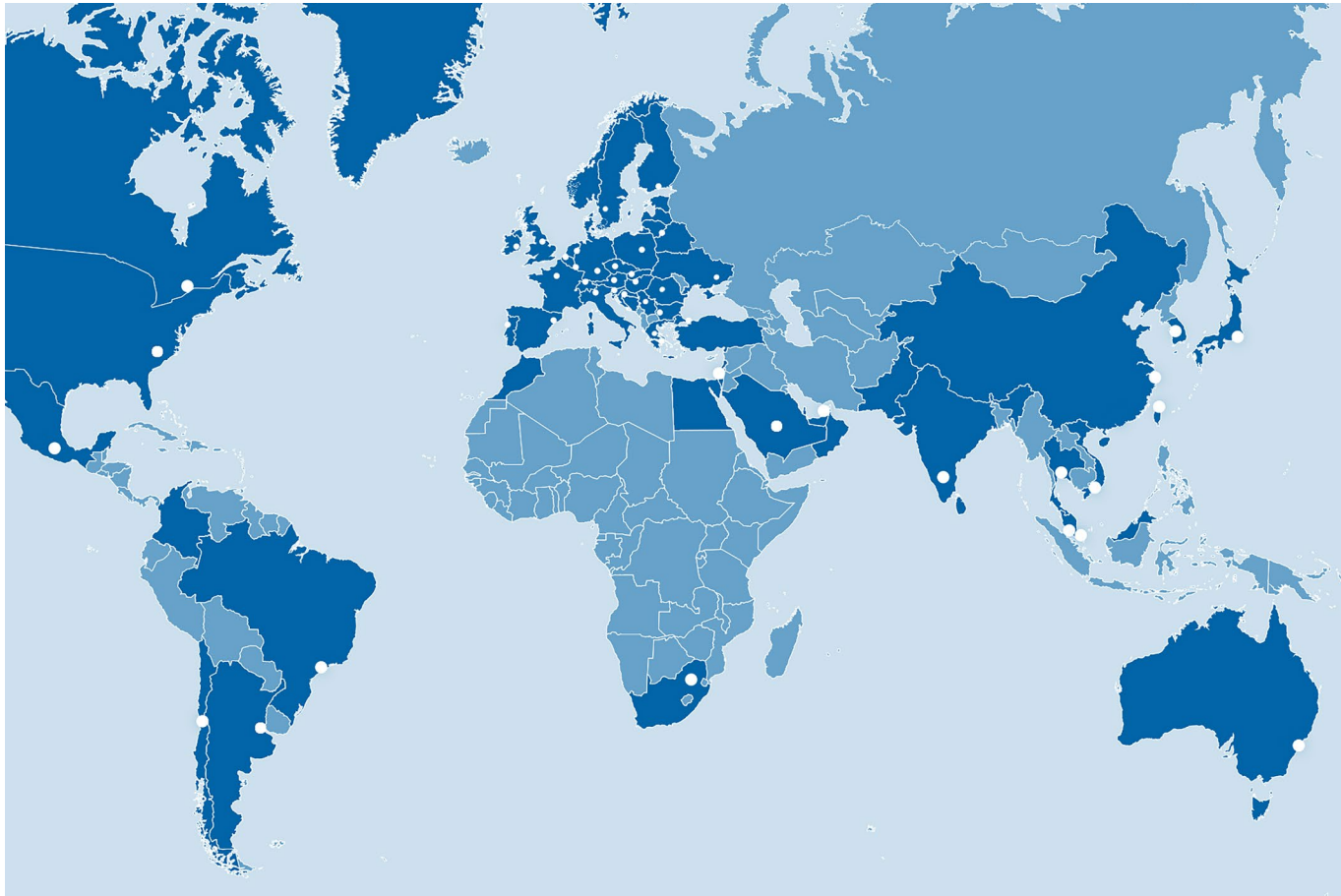
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