HEITEC

ELECTRONICS
ENCLOSURE TECHNOLOGY

YOUR PARTNER FOR END-TO-END SOLUTIONS & INDUSTRY EXPERTISE

CPCI
AC-354
Power
Good

ABOUT HEITEC 4

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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.

ABOUT HEITEC

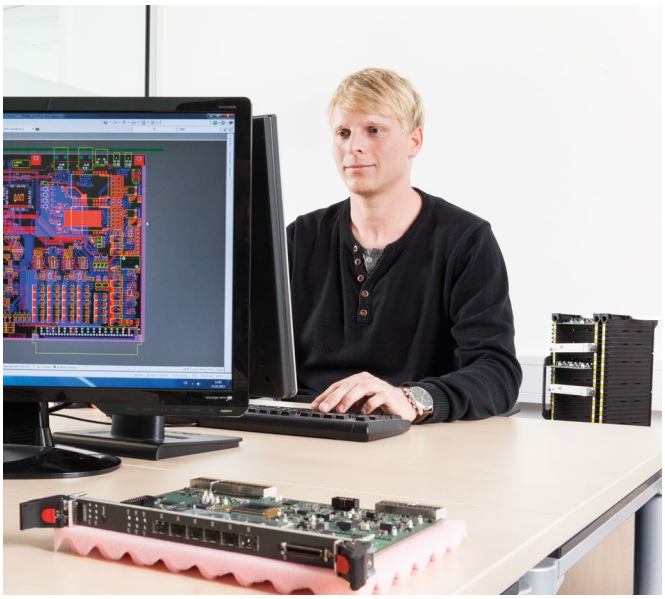
CORE COMPETENCE

HEITEC is known for industrial expertise in automation, digitalization, electronics and special machinery and offers solutions, products and services. Over 2000 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:

- Automotive
- Energy
- Intralogistics
- Medical solutions
- Packaging and pharmaceuticals
- Railway- and maritime solutions
- Special machinery

We continue to find new applications for this accumulated knowledge and experience, providing 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, ensuring the robustness and long service life of our products.



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 boosts productivity, it also creates many options for you to successfully implement new business models like digital services with the aid of innovative solutions.

AUTOMATION

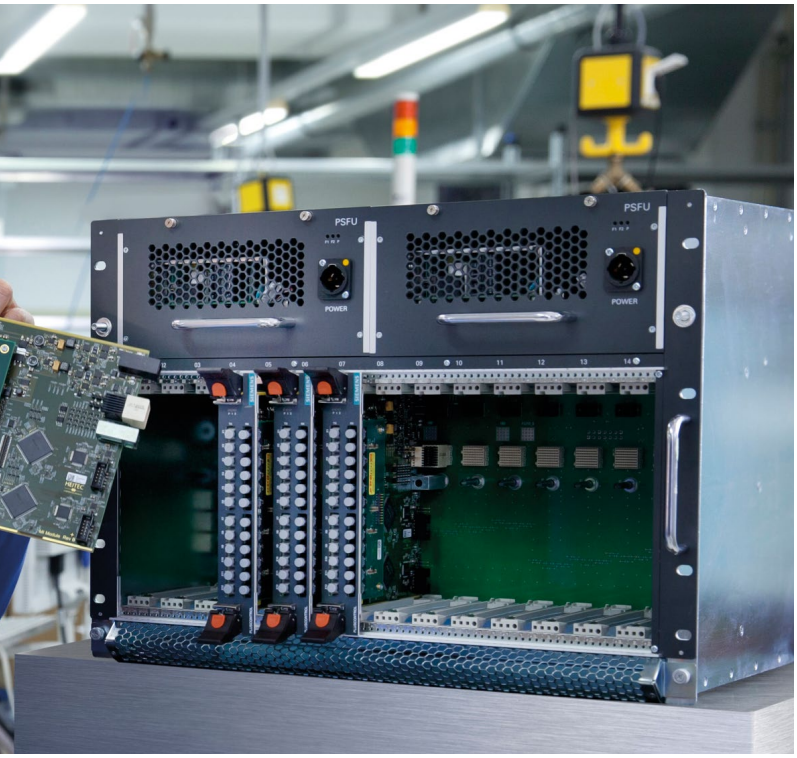
Faster to networked production

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 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, enclosure 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.

Enclosure technology: A stable, modular system of enclosure 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 understand the importance of flexible and cost-effective production, especially for low to medium module quantities, our portfolio includes the right manufacturing capabilities to meet your needs.

ELECTRONICS

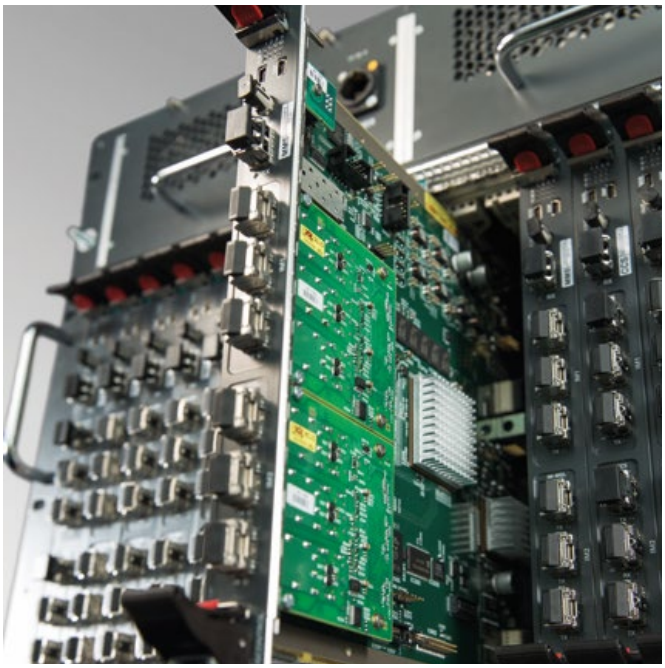
From idea to product

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 enclosure. 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 an extensive library of proven hardware, software and mechanical building blocks to develop tailored solutions for every project.

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



SPECIAL MACHINERY

Experience meets innovation

Based on standardised concepts, HEITEC supplies you with customised machines and systems to solve your tasks. This reduces costs and increases the reliability of your production processes.

Over 40 years of experience in special machinery, mechanical engineering and robotics, guarantee you a high degree of flexibility, availability and productivity for your production systems.

With over 300 turnkey systems installed worldwide, we are your partner in special machine construction.

Our experts support you in:

- Assembly systems
- Handling systems
- Industrial X-ray technology
- Measuring and testing technology
- Systems for key and lock technology

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.

Certifications, Standards, Guidelines	
Quality	ISO 9001 ISO 27001
Medical	EN ISO 13485 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

DESIGNED
ENGINEERED
MANUFACTURED
IN GERMANY

COMPETENCE AND KNOW-HOW

Development of customer-specific systems

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

Professional enclosure technology from standard products to system solutions

We help you build the best system solutions

Our experience ranges from defining the system architecture, through the development and implementation of individual components, to the manufacture and integration of complete systems, throughout their entire lifecycle. Coordinated processes guarantee excellent quality and provide the flexibility to adapt rapidly when new application requirements demand it. With their extensive technical know-how our specialists have a comprehensive understanding of the industry-specific requirements. Our design and manufacturing processes are coordinated with these requirements, and are audited and certified.

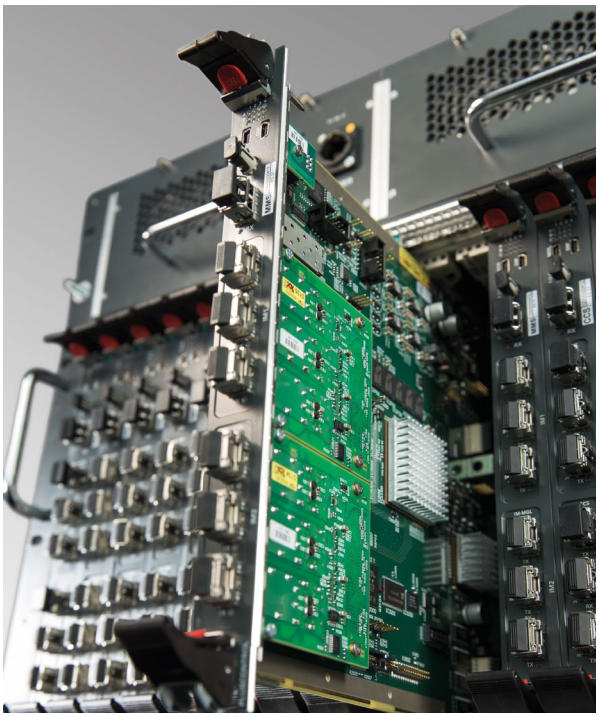
Our solutions minimize your design and production risks and can be applied to your product at lower cost and on time. We look after your products across their whole product lifecycle. We strive to offer you the best system solution every time, one that will give you a lasting competitive edge.

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

BOARD DESIGN

ENCLOSURE AND SYSTEM TECHNOLOGY

EMBEDDED SOFTWARE DESIGN

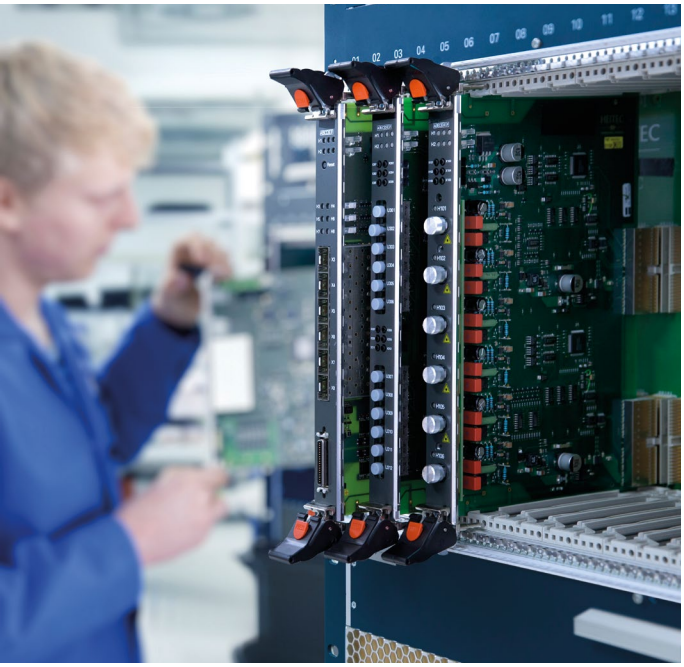


SYSTEM DESIGN

BOARD MANUFACTURING

SYSTEM INTEGRATION

HEITEC ELECTRONICS



From idea to product:
Expertise in tailor-made solutions

To take your electronic product from concept to reality, you need reliable partners. We understand the steps and processes required to move from system design, through prototyping, necessary testing and inspection, 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 certifications. Whether it's electronic modules with the associated firmware, rail-mounted 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 provide 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.

Design services	Manufacturing services	Enclosure technology

- A single contact from design through to quality certification and series production
- Use of existing technology and industry expertise
- Use of proven building blocks and standard components

You get to your product / system solution

- faster and at lower cost
- easier and more flexible

PRODUCT DEFINITION	DESIGN CONSTRUCTION PROTOTYPING	APPROVALS AND VALIDATION	VOLUME MANUFACTURING	POST-MANUFACTURING SERVICES
• Feasibility studies • Architecture concepts • Technology analyses • Requirement analyses • Creation of requirements and other specifications	• System engineering • Chip design • Hardware design • Mechanics and construction • Chassis incl. EMC and heat dissipation • Software engineering	• CE labelling, UL, FCC • EMC testing • Shock/vibration • Climate testing • Electrical safety • Validation	• Component procurement/SCM • Board assembly • Component assembly • System assembly • System integration • Function tests	• Global supply logistics • Repairs • Returns management • Obsolescence management • Long-term supply guarantees • Redesigns

Use of building blocks:

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

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.

RITTAL

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

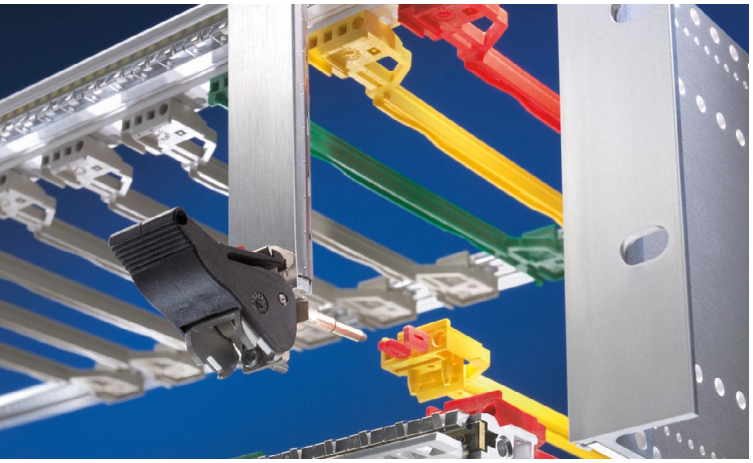
STANDARD CATALOG PRODUCTS AND PRODUCT LINE OWNERSHIP

HEITEC

CUSTOMER-SPECIFIC ELECTRONIC PACKAGING SYSTEMS AND COMPONENTS

HEITEC

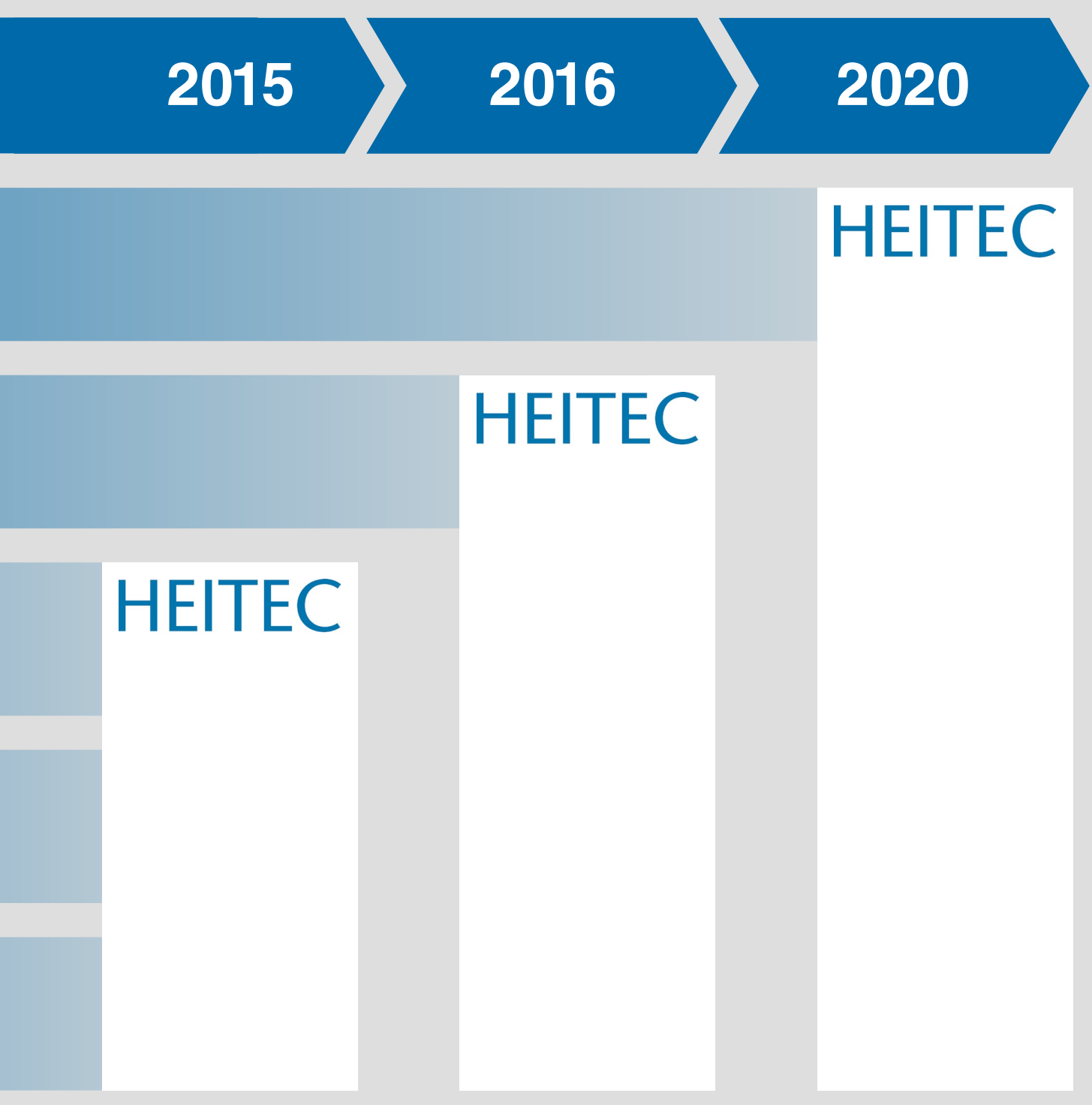
HEITEC ELECTRONIC PACKAGING SYSTEMS



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.



PRODUCTS AND SERVICES

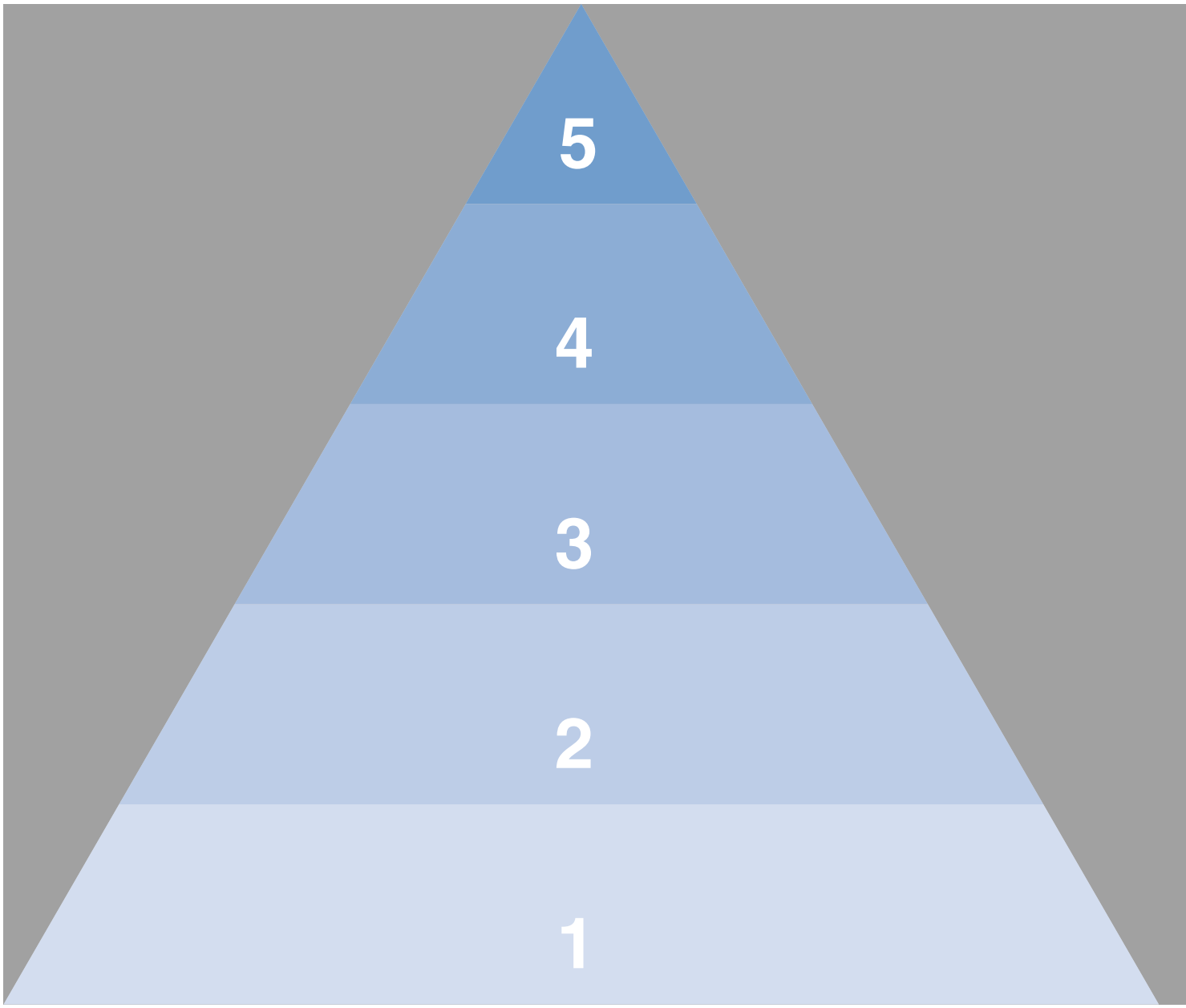
HEITEC's comprehensive portfolio of standard products and customised solutions provides you with professional enclosure technology – we 'package' your electronics to suit your applications, every time.

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.

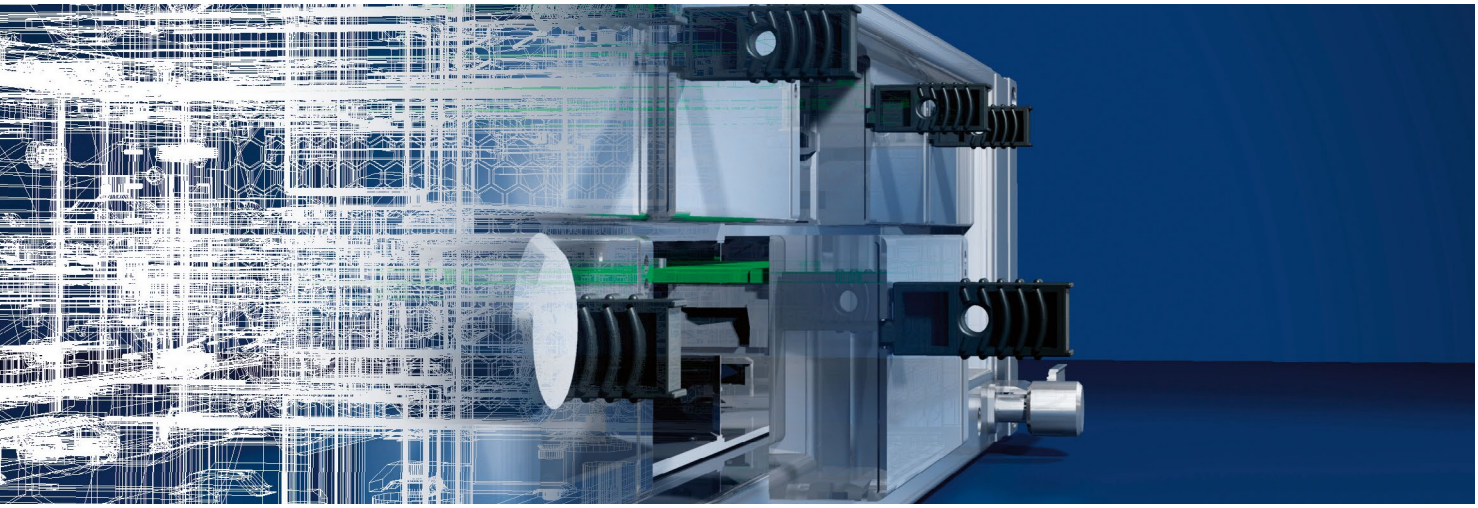
Selecting the right enclosure technology is the basis for an efficient end product. Our skills are based on many years of experience covering everything from mechanical design to ensuring electromagnetic compatibility and effective heat dissipation concepts for highly complex systems. If you prefer to take responsibility for most of the system integration process yourself, we can supply individual components, pre-assembled components or system enclosures to suit your requirements. If you prefer pre-integrated or fully integrated solutions, incorporating your own hardware and software as required, we can provide a complete service through to a customised system solution.

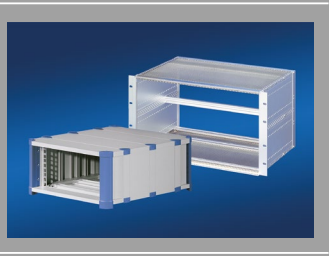
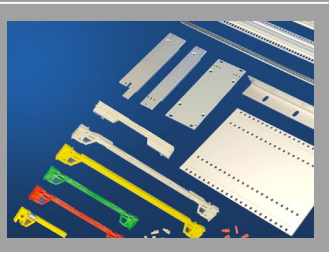
We support you in exactly those areas that match your business model best.

From components through to the complete system



HEITEC ELECTRONIC PACKAGING SYSTEMS



SYSTEM SOLUTION	Customer-specific, ready-to-use, fully integrated with hard- and software	
PRE-INTEGRATED SYSTEMS	Partial or full integration of active modules and/or software	
SYSTEM PLATFORMS	Cases incl. ventilation/cooling, power supply, backplane	
CASES AND ENCLOSURES	Subracks, instrument cases and system enclosures, industrial PC, chassis, box-type plug-in units	
COMPONENTS	Individual components and accessories e.g. handles, front panels, EMC components	

PRODUCTS AND SERVICES

HEITEC is more than just a manufacturer of high-quality chassis solutions.
A range of services maximise customer benefits, even for 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 supply capability and lead 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 colours for chassis and decorative elements

→ Design and manufacturing of individual, ready-to-use system solutions

Individual **19-inch format**

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

HEITEC ELECTRONIC PACKAGING SYSTEMS

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.

+49 (9126) 2934 - 0

elektronik@heitec.de

Image source: iStock-936284004 Image credit nortonsrx

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

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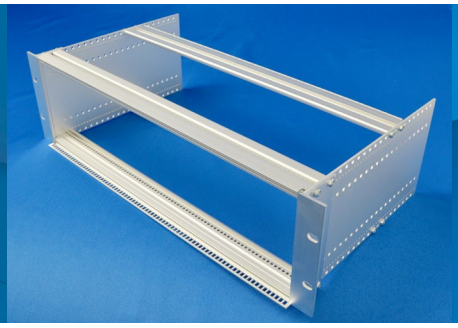
HeiPac Vario HEAVY



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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HeiPac Vario / Vario EMC

For standard applications/EMC applications or complex installations

Applications

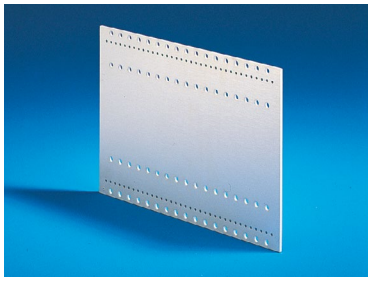
Subrack system for standard applications or complex installations. Suitable for installation of standardised PCBs or plug-in units from 160 mm up to 400 mm depth.

Technical specifications

- 482.6 mm (19″) subrack according to IEC 60297-3
- 2, 3, 4, 6, 7, 9, 10 and 11 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

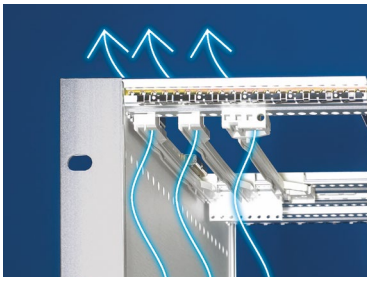
- Side panels with 10 mm mounting grid
- The HeiPac Vario is upgradeable to EMC
- 19″ flanges optionally for front/rear mounting
- Wide range of standard sizes available
- For installation of backplanes or connectors
- Broad range of accessories



10 mm pitch pattern of holes allows many varieties

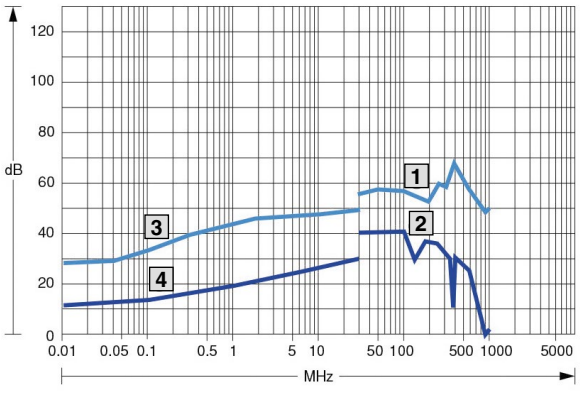
Components made of solid aluminium alloy

Contact springs made of stainless steel provide high EMC protection



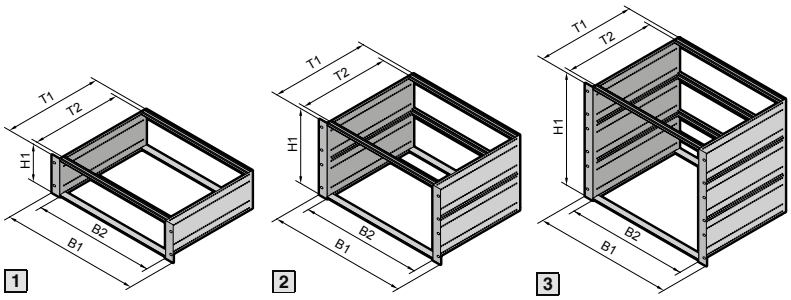
Effective heat dissipation due to open design

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

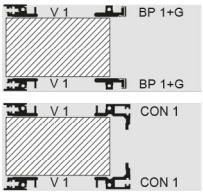
Shock and vibration tested according to:
IEC 60068-2-6
IEC 60068-2-27

Standards

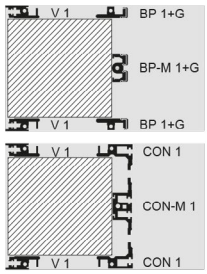
HeiPac subracks are based on the system dimensions of IEC 60297-3

Note

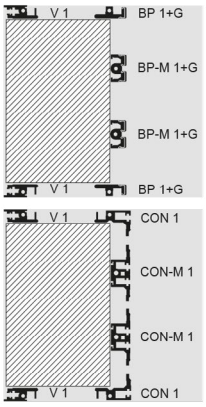
Upgradeable to EMC



1 Top: for backplane
Bottom: for connector



2 Top: for backplane
Bottom: for connector

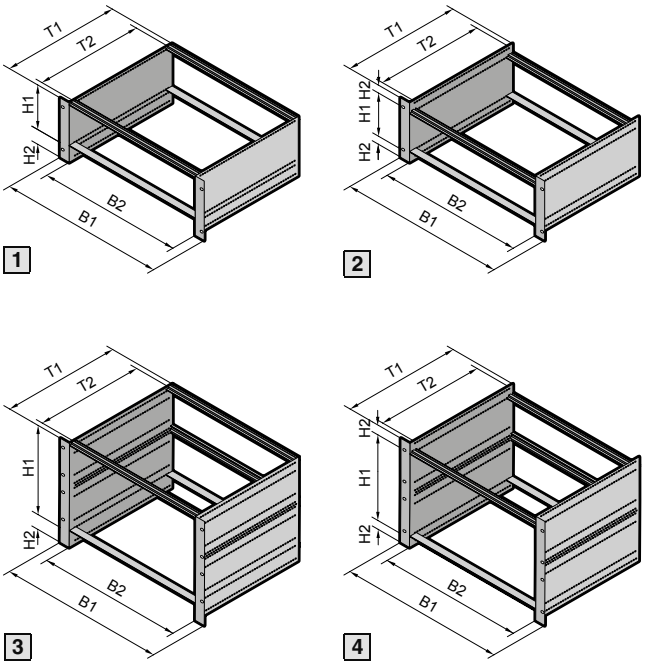


3 Top: for backplane
Bottom: for connector

					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	**3684020**	**3684034**	**3684043**	**3684056**	-	-
		225	200	160	**3684021**	**3684035**	**3684044**	**3684057**	-	-
		245	220	220	**3684022**	**3684036**	**3684045**	**3684058**	-	-
		285	260	220	**3684023**	**3685281**	**3684046**	-	-	-
		305	280	280	**3685231**	**3685233**	**3685238**	**3685240**	-	-
		345	320	280	**3684024**	-	**3684047**	-	**3684051**	**3684059**
		365	340	340	**3685232**	**3685234**	**3685239**	-	-	-
		405	380	340	**3684025**	-	**3684048**	-	**3684052**	**3684060**
		465	440	400	**3684026**	-	**3684049**	-	**3684053**	**3684061**
		525	500	400	**3684027**	-	**3684050**	-	**3684054**	-
		585	560	400	-	-	-	-	**3684055**	-

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.

HeiPac Vario 4 U, 7 U



Material/surface finish

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Horizontal rails:	Extruded aluminium section, clear-chromated
19“ flanges:	Extruded aluminium section, clear-chromated

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Flanges
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Insulating strips or Z rails.

Tests

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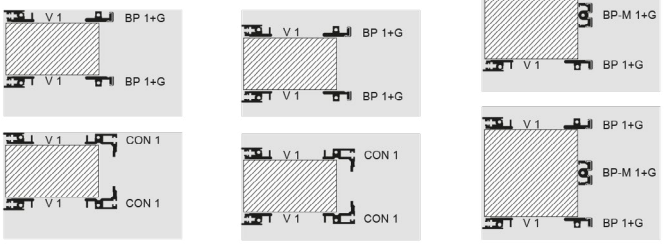
IEC 60068-2-27

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

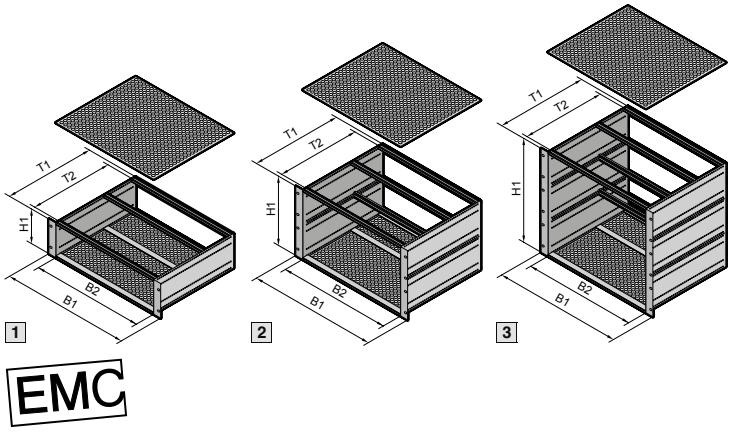
3 Top: for backplane
(6 U + 1 U)

4 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 ½)**	**4 (3 + 2 x ½)**	**7 (6 + 1)**	**7 (6 + 2 x ½)**
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	**3685235**	-	-	-	-	-
		285	260	220	**3684028**	**3684037**	**3684031**	**3684040**	-	-
		305	280	280	**3685236**	-	-	-	-	-
		345	320	280	**3684029**	**3684038**	**3684032**	**3684041**	-	-
		365	340	340	**3685237**	-	-	-	-	-
		405	380	340	**3684030**	**3684039**	**3684033**	**3684042**	**3684064**	**3684062**
		465	440	400	-	-	-	-	**3684065**	**3684063**

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.

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

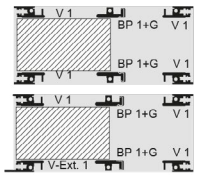
Flanges	Rear trim
Side panels	EMC gaskets
Covers	Mounting blocks
Horizontal rails	Threaded inserts
Insulating strips	

Tests

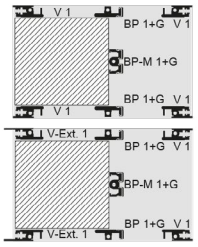
Shock and vibration tested according to:
IEC 60068-2-6
IEC 60068-2-27

Standards

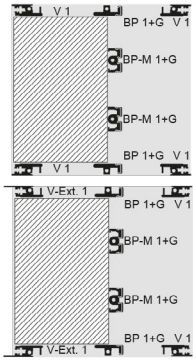
HeiPac subracks are based on the system dimensions of IEC 60297-3



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



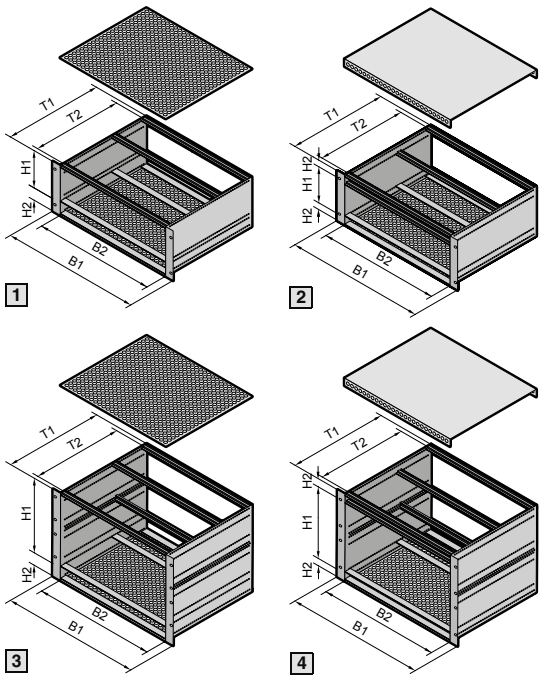
3
Top: for backplane
Bottom: for backplane/ front horizontal rail with 10 mm extension

					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 backplane [1]	For backplane	For backplane [1]	For backplane	For backplane [1]
482.6 (19“)	84	245	220	160	**3684128**	**3684142**	**3684156**	**3684169**	-	-
		285	260	220	**3684129**	**3684143**	**3684157**	**3684170**	-	-
		305	280	220	**3685241**	**3685243**	**3685242**	**3685244**	-	-
		345	320	280	**3684130**	**3684144**	**3684158**	**3684171**	**3684162**	**3684175**
		405	380	340	**3684131**	**3684145**	**3684159**	**3684172**	**3684163**	**3684176**
		465	440	400	**3684132**	**3684146**	**3684160**	**3684173**	**3684164**	**3684177**
		525	500	400	**3684133**	**3684147**	**3684161**	**3684174**	**3684165**	**3684178**
		585	560	400	-	-	-	-	**3684166**	**3684179**

[1] 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 or electronics-quote@heitec.de.

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

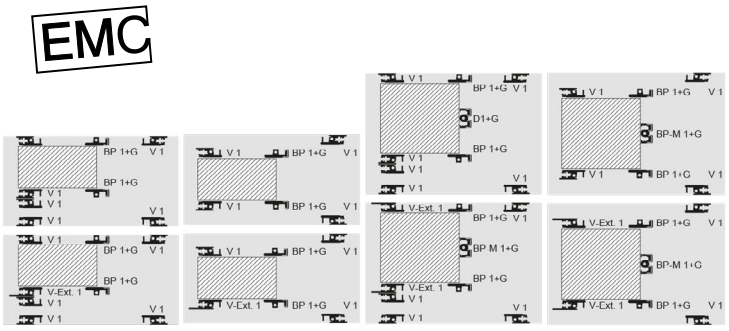
Flanges
Side panels
Covers
Horizontal rails
Insulating strips
Rear trim
EMC gaskets
Mounting blocks
Threaded inserts

Tests

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

Standards

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



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

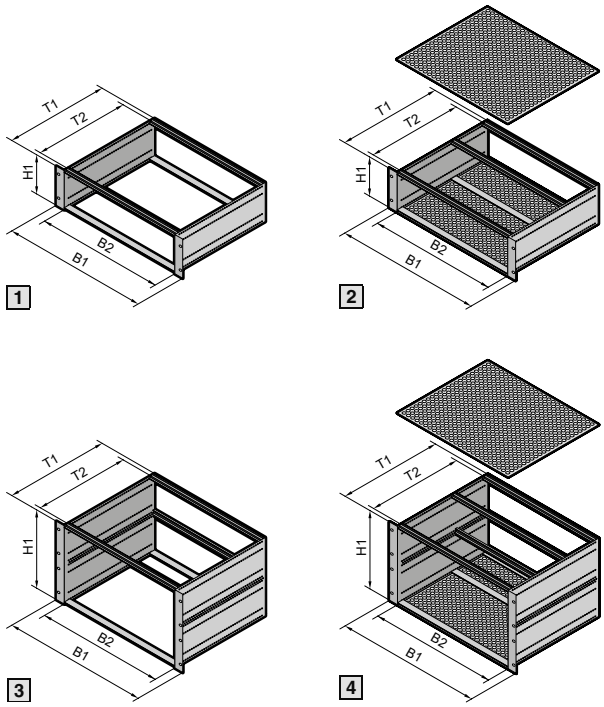
4 Top: for backplane bottom: for backplane/ front horizontal rail with 10 mm extension

					Order No.							
					1		2		3		4	
U (H1+H2)					**4 (3 + 1)**	**4 (3 + 1)**	**4 (3 + 2 x ½)**	**4 (3 + 2 x ½)**	**7 (6 + 1)**	**7 (6 + 1)**	**7 (6 + 2 x ½)**	**7 (6 + 2 x ½)**
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]
482.6 (19“)	84	285	260	220	**3684134**	**3684148**	**3684137**	**3684151**	**3684187**	**3684192**	**-**	**-**
		345	320	280	**3684135**	**3684149**	**3684138**	**3684152**	**3684188**	**3684193**	**3684189**	**3684196**
		405	380	340	**3684136**	**3684150**	**3684139**	**3684153**	**3684180**	**3684194**	**3684190**	**3684197**
		465	440	400	**-**	**-**	**-**	**-**	**3684181**	**3684195**	**3684191**	**3684198**

[1)] 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 or electronics-quote@heitec.de.

HeiPac Vario Mobile 3U, 6U for mobile use



EMC

Material

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

Supply includes

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

Tests

Shock and vibration tested to IEC 600-68-2-6 Test Fc and IEC 600-68-2-27 Test Ea
The subracks have been tested for use in the German national railway.
Testing was conducted in accordance with standard EN 50155.
The configuration of the tested subracks conforms to IEC 48 D.

Standards

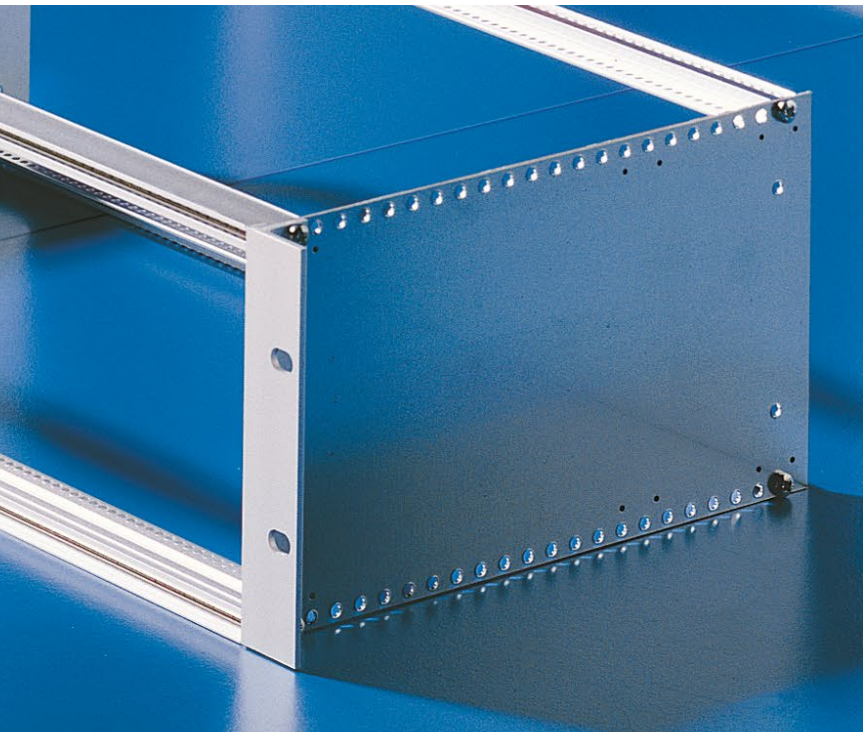
Based on the system dimensions of IEC 60 297-3

Note

The subracks are supplied fully assembled.

					Order No.		Order No. EMC	Order No.		Order No. EMC
					1		2	3		4
U					3	3	3	6	6	6
Height (H1) mm					132			265.35		
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connectors IEC 60 603-2	For backplane	For backplane	For connectors IEC 60 603-2	For backplane
482.6 (19")	84	245	220	220	**3687782**	**3687780**	**3687784**	**3687783**	**3687781**	**3687785**

HeiPac Vario ECO



Economical 19" subrack system for standard applications

Applications

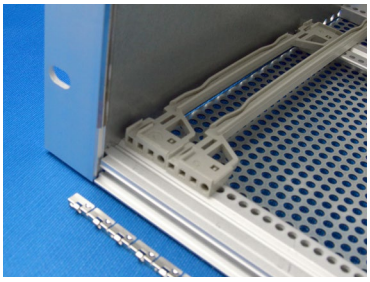
Economical subrack system for standard applications. Suitable for installation of standardised PCBs or plug-in units of 160 and 220 mm depth.

Technical specifications

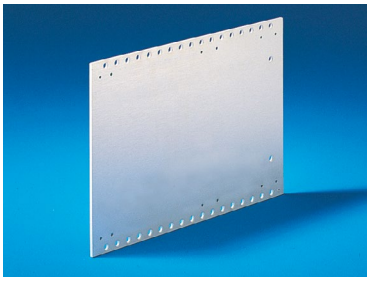
- Based on the HeiPac Vario subrack family, the basic components (horizontal rails) of the HeiPac Vario ECO are partly compatible with the HeiPac Vario.
- 482.6 mm (19˝) subrack according to DIN 41494, part 5/ IEC 60297-3
- 3 and 6 U
- For board depths: 160 mm and 220 mm
- Side panels of sheet steel, 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

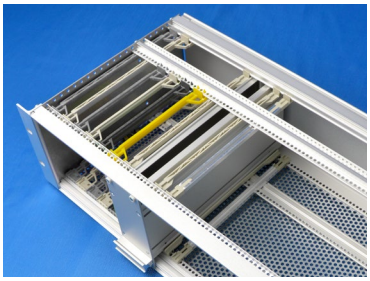
- Fast and easy handling
- Low-cost version
- Upgradable for assembly of backplanes or connectors (see page 87 et seq.)



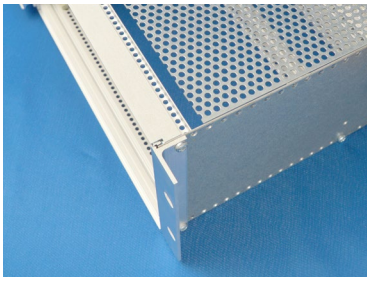
Optional EMC upgrade ensures high EMC protection



Side panels made of zinc-plated sheet steel

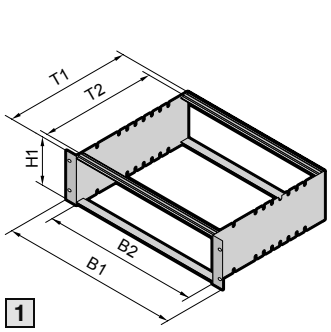


A wide range of accessories allow manifold expansions

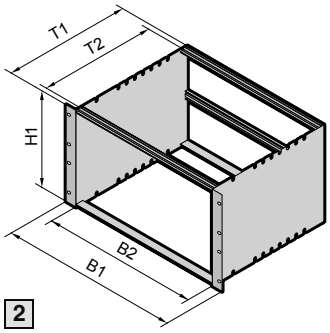


Plug-in top covers facilitate an easy assembly

HeiPac Vario ECO 3 U, 6 U



1



2

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

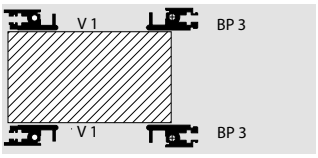
Side panels
Flanges
Horizontal rails
Threaded inserts
Assembly screws

Tests

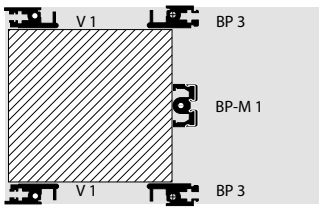
Shock and vibration tested according to:
IEC 60068-2-6
IEC 60068-2-27

Standards

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



1 for backplane



2 for backplane

					Order No.	
					1	2
U (H1)					**3**	**6**
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane
482.6 (19“)	84	175	150	160	**3688114**	**3688116**
		235	210	220	**3688115**	**3688117**

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.

HeiPac Vario COMPACT

For mounting plates or top-hat rails

Applications

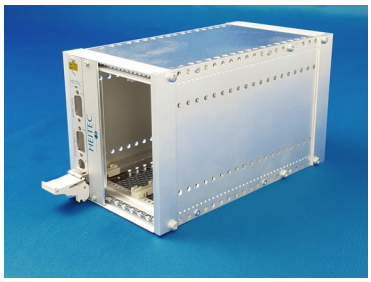
Subrack system for direct mounting in a cabinet. Mounting either on top hat rails or on mounting plate. Suitable for installation of standardised PCBs or plug-in units.

Technical specifications

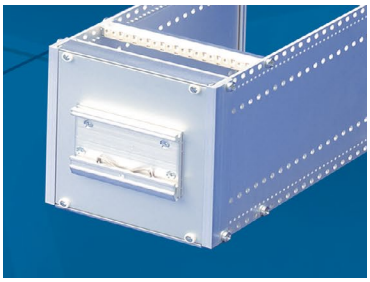
- Based on the HeiPac Vario subrack family, the basic components of the HeiPac Vario COMPACT are compatible with the HeiPac Vario.
- Subrack according to IEC 60297-3
- 3 and 6 U
- Side panels of aluminium, clear-chromated
- For board depths up to 160 mm
- Rear equipment for installation of backplanes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

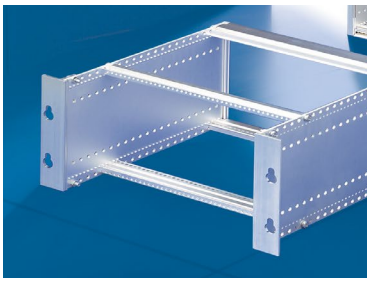


Compact dimensions in 21 HP and 42 HP



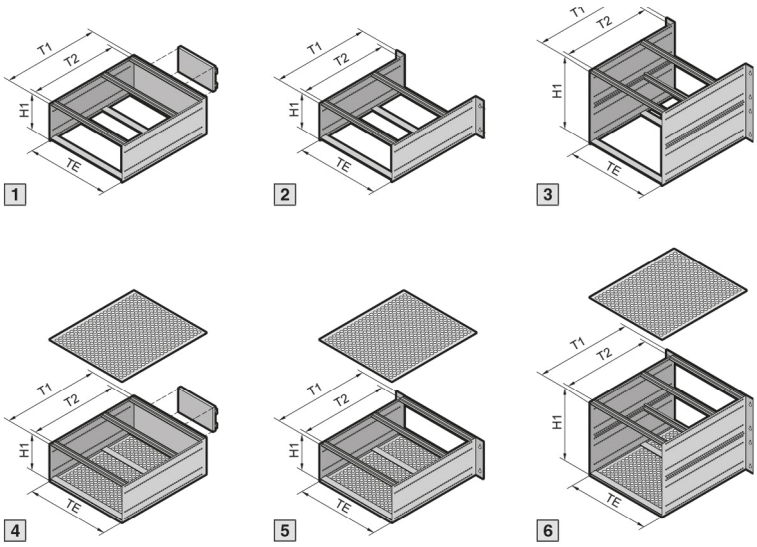
Adapter for rail mounting

Contact springs provide high EMC protection



Flange for wall-mounting

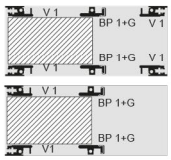
HeiPac Vario Compact 3 U, 6 U



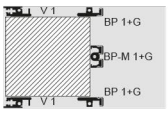
B = Width HE = U
T = Depth TE = HP

1 4
HeiPac Compact 3 U for top-hat rail

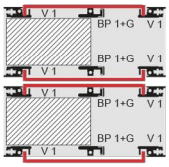
2 3 5 6
HeiPac Compact 3 U for mounting plate



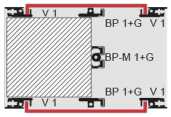
1 Top:
for top-hat rail
2 Bottom:
for mounting plate



3 For mounting plate



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



6 EMC for mounting plate

EMC

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
Threaded inserts
Horizontal rails
Insulating strips
Flanges for mounting plates
Front/rear panels for top-hat rail adaptors

EMC version additional includes:
EMC gaskets
Covers
Font/rear panels
Cable entry

Tests

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

Standards

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

			Order No.					Order No. EMC				
			1	2	1	2	3	4	5	4	5	6
U			**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**
Height (H1) mm			132	132	132	132	265.35	132	132	132	132	265.35
HP			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	**3687667**	**3687669**	**3687671**	**3687673**	**3687680**	**3687682**	**3687684**	**3687686**	**3687688**	**3687690**
285	260	220	**3687668**	**3687670**	**3687672**	**3687674**	**3687681**	**3687683**	**3687685**	**3687687**	**3687689**	**3687691**

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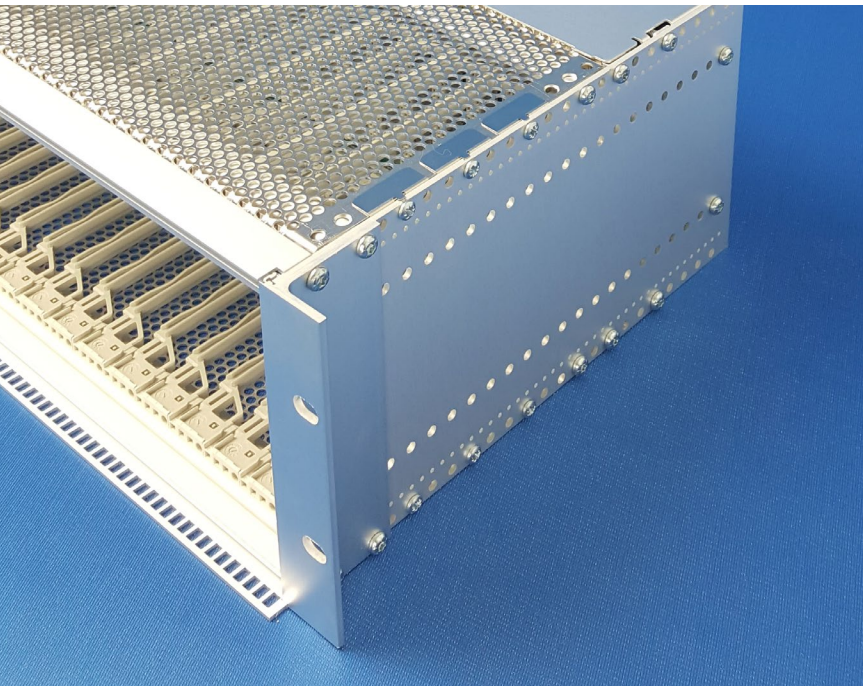
HeiPac Vario HEAVY



For heavy loads in mobile applications and tough ambient conditions

Applications

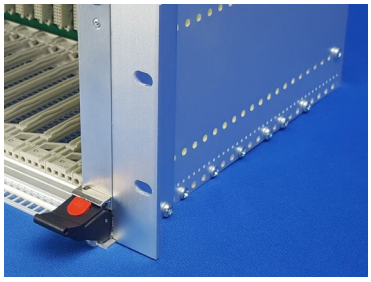
The standard product line HeiPac Vario HEAVY was specifically designed for use under rough environmental conditions and for mobile applications, such as for example railway or naval technologies.
The subrack system is shock and vibration-tested in accordance with EN 50155 and DIN EN 61587-1&2, and is designed to accommodate standardised PCBs.

Technical specifications

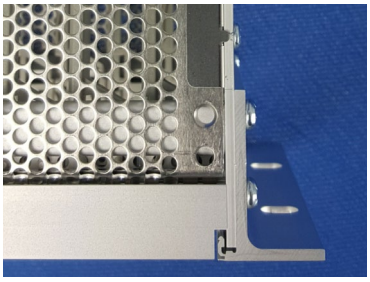
- Rack-mount system in accordance with IEC 60297-3
- 3 and 6 U
- Clear-chromated aluminium side panels
- For card formats up to 220 mm deep
- Front horizontal rails with 10 mm extension for injector/extractor handles
- Horizontal rails with double screw fastening
- Reinforced mounting flange
- Rear equipment for installation of backplanes
- Installation width: 84 HP
- Up to 10 kg maximum total weight of the plug-in units
- Up to 60 kg load capacity due to the flanges

Benefits at a glance

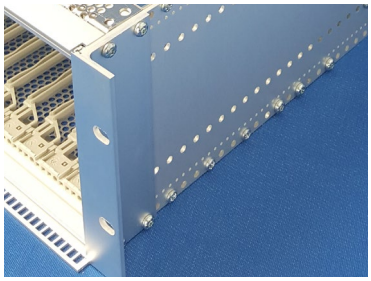
- Side panels with 10 mm mounting grids for variable system assembly
- For mounting backplanes
- Optionally in EMC version



Extensive accessories allow for a wide range of expansion options



Reinforced flange ensures high resistance to shock and vibrations



Horizontal rails with double screw fastening provide high mechanical strength

EMC can be retrofitted

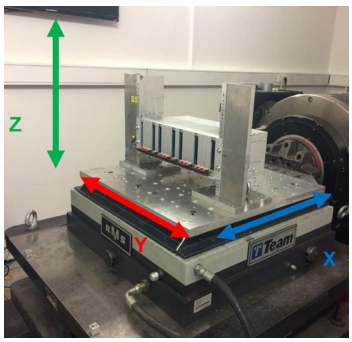
Shock/vibration profile HeiPac Vario HEAVY

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

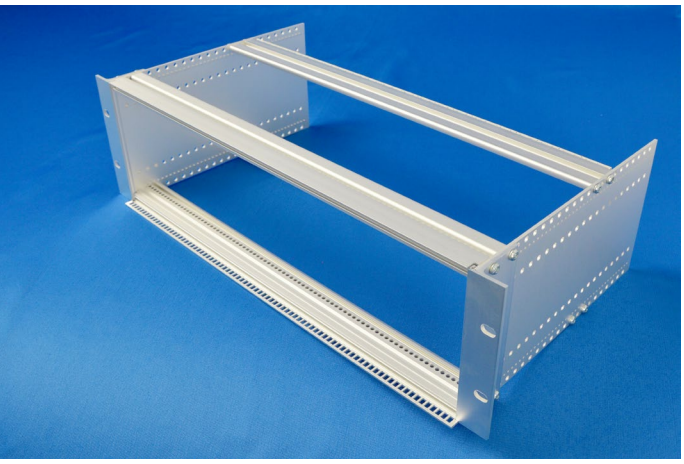
DL2V/DL2S for use in different locations

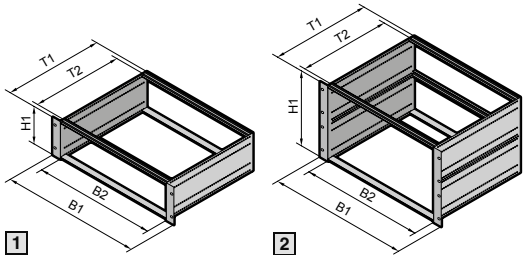
Shock/vibration testing in accordance with: EN 50155

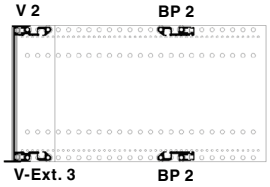
EN 61373, category 1, class B

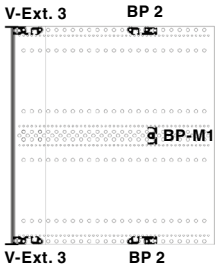


HeiPac Vario HEAVY 3 U, 6 U









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 according to:
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
U			**3**	**6**	**3**	**6**
Height (H1) mm			132	265.35	132	265.35
HP			84	84	84	84
Side panel (T1) mm	T2 mm	Max. PCB depth mm				
245	220	160	**9921860**	**9921862**	**9921864**	**9921866**
305	280	220	**9921861**	**9921863**	**9921865**	**9921867**

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.

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.

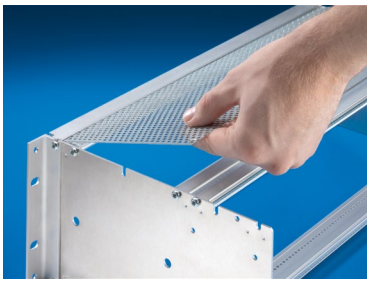
Technical specifications

- 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

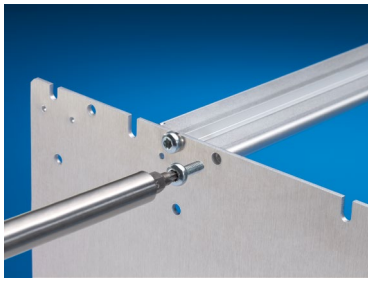
Benefits at a glance

- 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

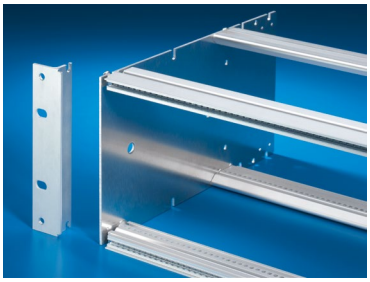
EASY completely assembled in two minutes



Top covers easily to retract



Horizontal rails with double screwed joint ensure a higher mechanical resilience



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

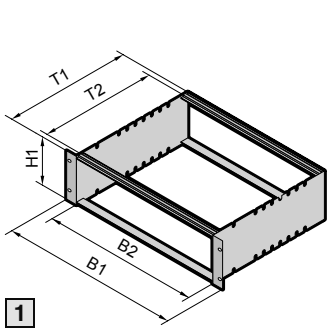
IEC 61587-1; Requirement Category SL1

Mechanical tests: mechanical loads (static)

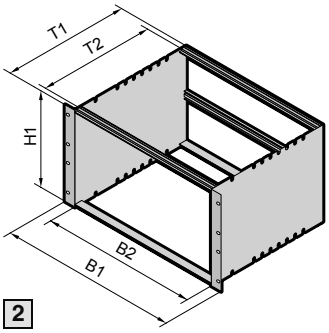
IEC 61587-1; Requirement Category DL1

Mechanical loads, industrial applications (dynamic)

HeiPac EASY 3 U, 6 U



1



2

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

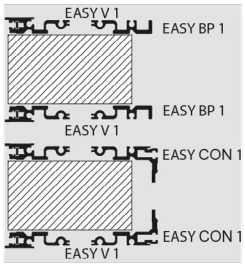
Shock- and vibration tested according to:
IEC 60068-2-6
IEC 60068-2-27

Standards

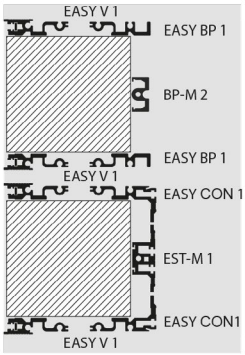
HeiPac subracks are based on the system dimensions of IEC 60297-3

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	**3634100**	**3634150**	**3634180**	**3634230**
		235	220	220	**3634110**	**3634160**	**3634190**	**3634240**
		295	280	280	**3634120**	**3634170**	**3634200**	**3634250**
		355	340	340	**3634130**	**-**	**3634210**	**-**
		415	400	400	**3634140**	**-**	**3634220**	**-**

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.

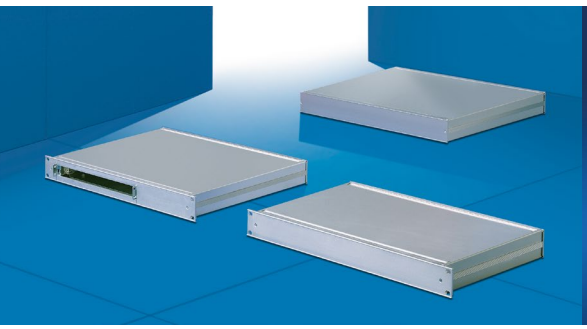
HEITEC Instrument Cases and System Enclosures
High Functionality and Modern Design

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

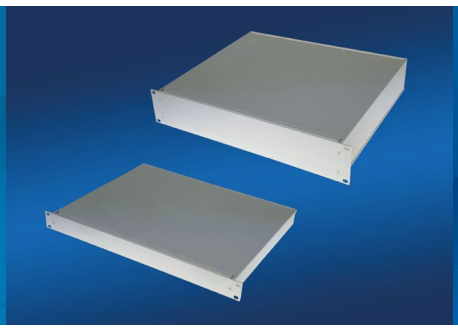


High-quality 1 U 19" system enclosure

- 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

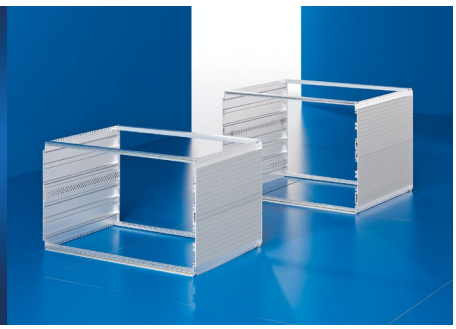


Economical 1 U and 2 U 19" system enclosure

- 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

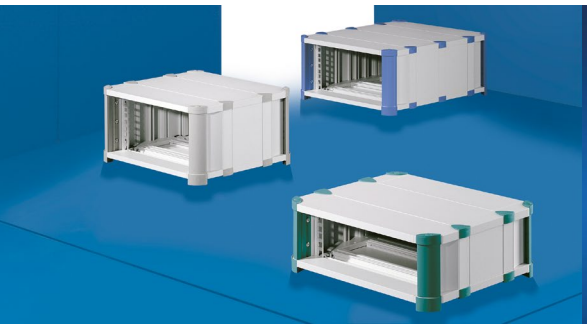


Universal 19" system enclosure

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

→ Page 52

IPC Chassis

Industrial-PC Chassis

- Suitable für 19-inch installations
- Customer-specific configuration
- Modern, rugged design
- Custom painting and labelling available
- Accessories for individual expansion

→ Page 65

System platforms

Ready-to-use system platforms

- System platforms for CompactPCI® SERIAL and VPX/openVPX
- Low-priced systems for the construction of industrial PCs according to specifications
- Individual configurations and cooling concepts on request
- Corresponds to IEC 60 297-3 and IEE 1101.1

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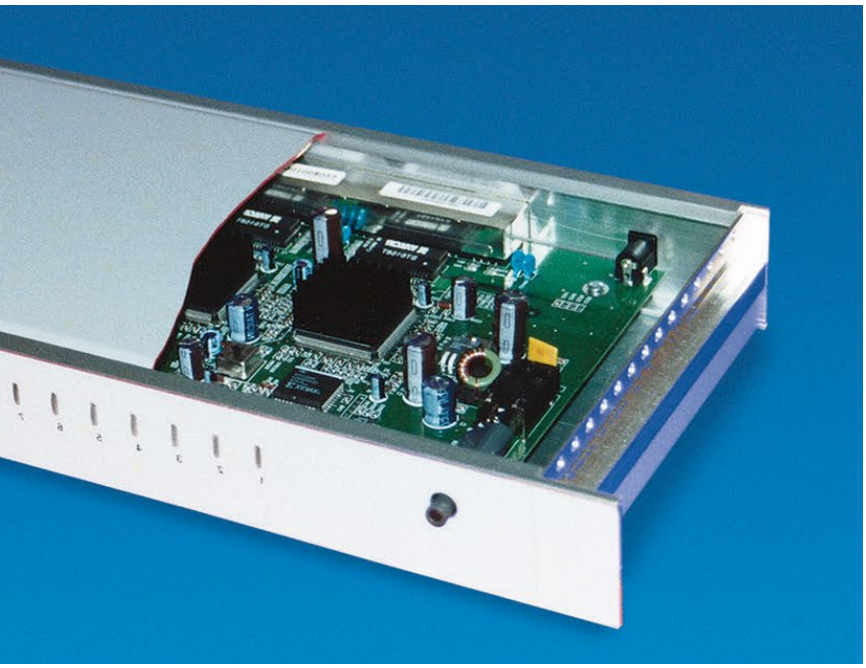
HeiBox ALU



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.

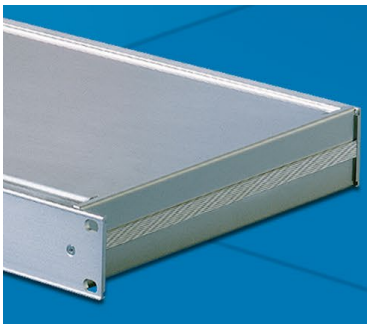
Technical specifications

- 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

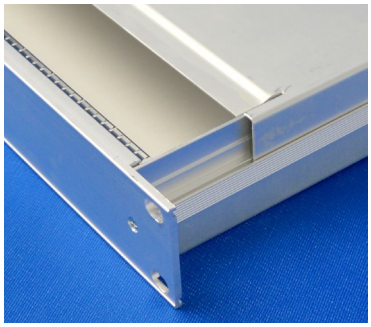
Benefits at a glance

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

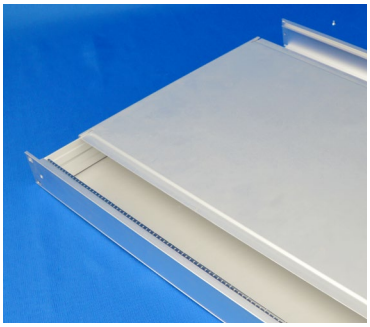
Installation of standardised 6 U boards with mounting kit



Solid, high-quality design of extruded aluminium section



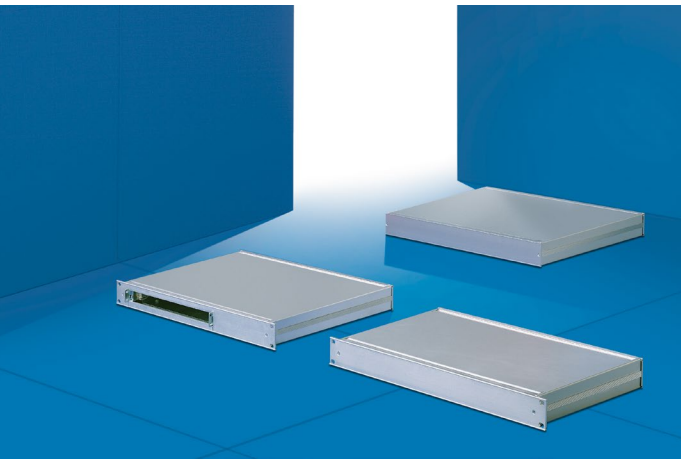
High EMC protection with additional EMC kit



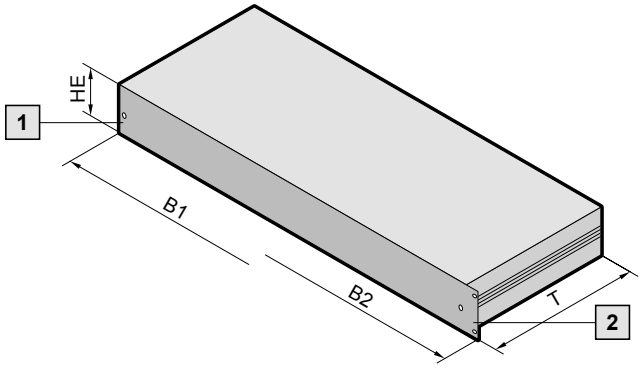
Easy to assemble with just 4 screws

Front/rear panel processing and printing as required

HeiBox system enclosure 1 U



B = Width
T = Depth
HE = U



1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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.

Supply includes

Cover
Front panel
Rear panel
Side panel
Assembly parts

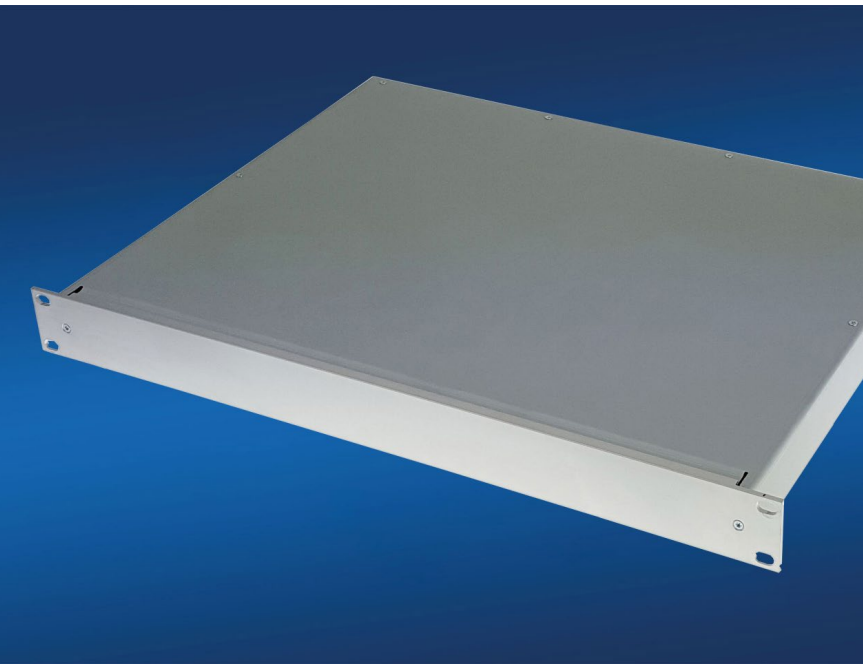
Material/surface finish

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
Width (B1) mm	447	447	447	447	447	447	447
Width (B2) mm	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")
Depth (T) mm	150	200	250	300	350	250	350
Model No. instrument case	**3687819**	**3687820**	**3687821**	**3687822**	**3687823**	**-**	**-**
Model No. rack case	**3687814**	**3687815**	**3687816**	**3687817**	**3687818**	**-**	**-**
Model No. rack-mount including mounting kit for double Euroboards	**-**	**-**	**-**	**-**	**-**	**3684072**	**3684073**
Supply includes							
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
Accessories							
EMC set	**9919999**	**9919999**	**9919999**	**9919999**	**9919999**	**9919999**	**9919999**
Mounting plate	**3684074**	**3684075**	**3684076**	**3684077**	**3684078**	**-**	**-**

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.

HeiBox ECO



Cost-efficient system enclosure for standard applications

Applications

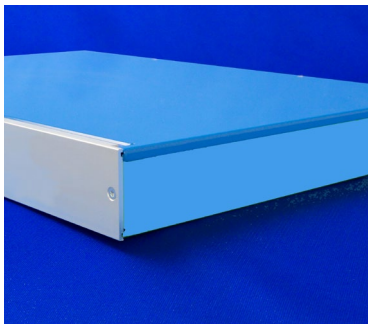
The HeiBox ECO is for use as a rack-mount enclosure. Accommodates Eurocards/Double Eurocards (horizontal), switches, patch panels, routers or modems.

Technical specifications

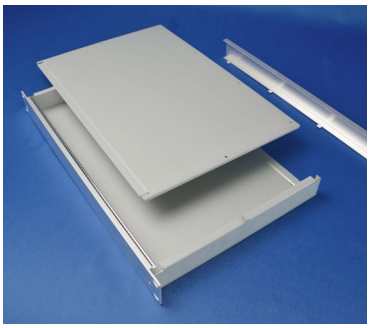
- 19″ system enclosure, complies with IEC 60297-3
- For use as a rack-mount enclosure
- Height: 1 U and 2 U
- Installation width: 84 HP
- Enclosure made of sheet steel, front panel and rear panel made of extruded aluminium section
- Optionally available as an instrument case
- Optional: highly effective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

Benefits at a glance

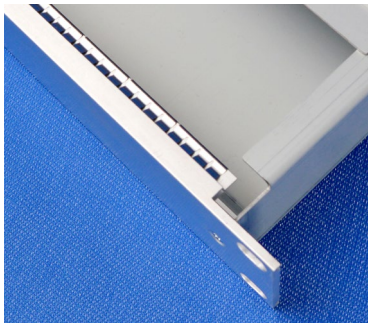
- Minimum space requirement
- Cost-efficient and solid
- Easy and fast mounting
- EMC upgradeable
- Individual assembly according to customer needs



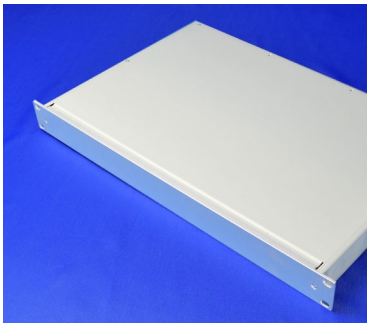
Available as instrument case with individual spray finish upon request



Easy to assemble with just 4 components



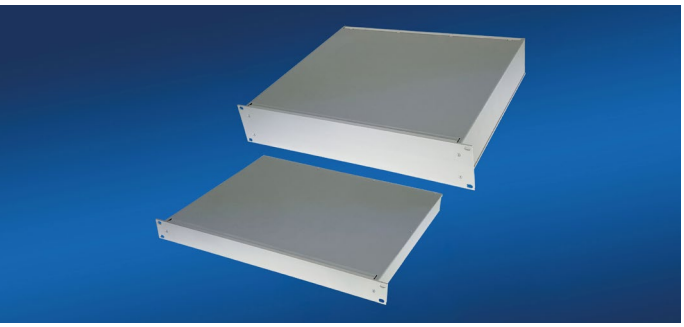
High EMC protection with additional EMC kit

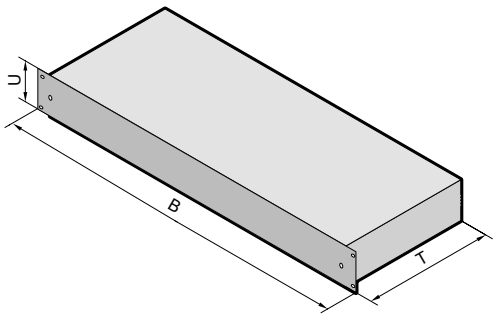


Aluminium rear panel easy to process

Front/rear panel processing and printing as required

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

Supply includes

Front panel
Cover
Base tray
Rear panel
Assembly parts

Material/surface finish

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

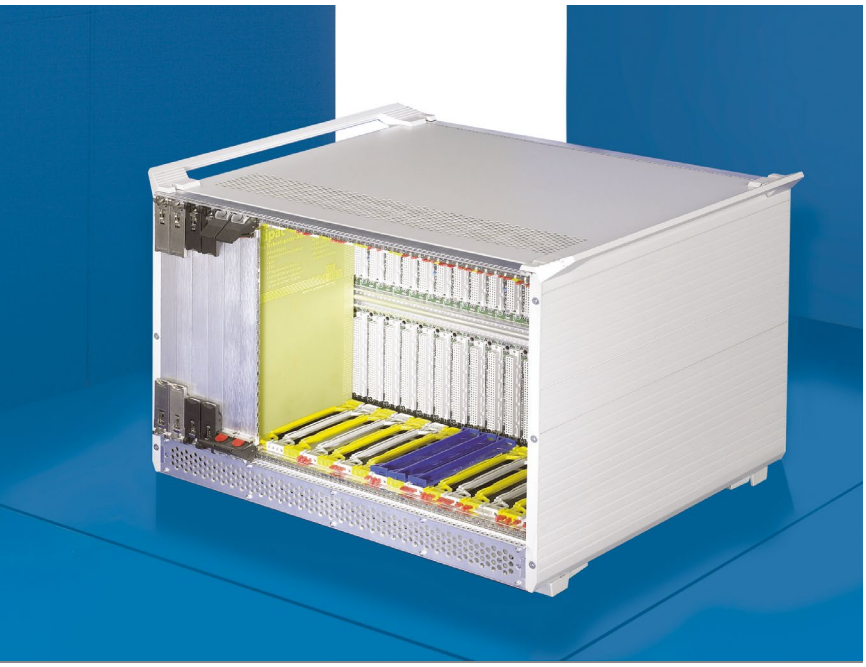
Note

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

Width (B) mm	Depth (T) mm	Order No.	
		1 U	2 U
482.6 (19")	150	**9919795**	**9922394**
	200	**9919796**	**9922395**
	250	**9919797**	**9922235**
	300	**9919798**	**9922396**
	350	**9919799**	**9922397**
	400	-	**9921809**
	450	-	**9920864**
Accessories			
EMC set		**9919800**	**9919800**

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.

HeiPac Vario-Module



Modern system enclosure for mobile and stationary applications

Applications

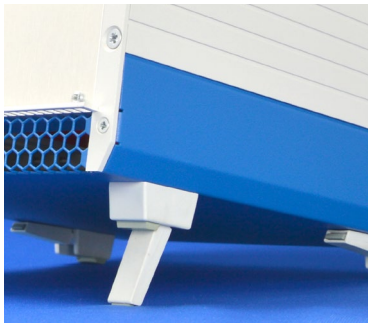
Optionally for use as an instrument case or rack-mount enclosure. Accommodates PCBs or plug-in units.
For mobile and stationary applications.

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

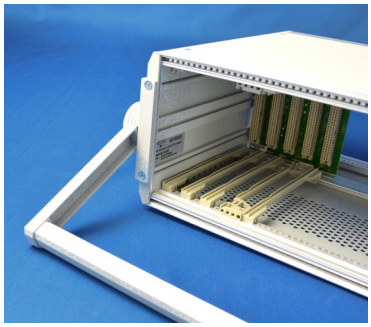
Benefits at a glance

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



Customization and coloration possible

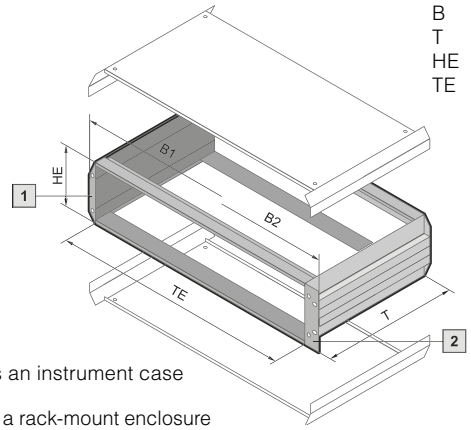
Flange for 19" installation



Interior fittings from the HeiPac Vario range

Front corner trims for assembly as instrument case

HeiPac Vario-Module 2 U



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

1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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
4 rubber feet
Assembly parts

Material/surface finish

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

Note

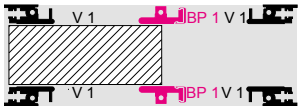
Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Accessories

See page 47-51.

Horizontal rails for additional installations have to be ordered separately,
see page 76

Exemplary horizontal rail configuration

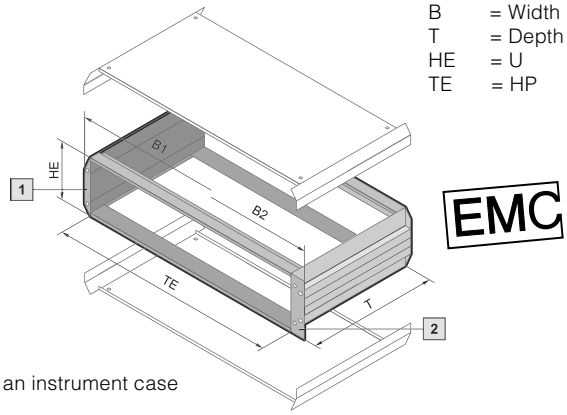


2 U

	Packs of	2 U						Page
Installation width (HP)		**42**	**42**	**63**	**63**	**84**	**84**	
Width (B1) mm		235.6	235.6	342.3	342.3	449.0	449.0	
Width (B2) mm		251.6	251.6	358.3	358.3	465.1	465.1	
Depth (T) mm		250.4	310.4	250.4	310.4	250.4	310.4	
Mod.No. VM basic case	1	**3982000**	**3982020**	**3982290**	**3982300**	**3982010**	**3982030**	
Also required								
Top covers - with vent holes - without vent holes	 1 1	 **3982941** **3982901**	 **3982951** **3982911**	 **3982942** **3982902**	 **3982952** **3982912**	 **3982940** **3982900**	 **3982950** **3982910**	 47 47
Bottom covers - with vent holes - without vent holes	 1 1	 **3982741** **3982701**	 **3982751** **3982711**	 **3982742** **3982702**	 **3982752** **3982712**	 **3982740** **3982700**	 **3982750** **3982710**	 47 47
Front corner trims for assembly as instrument case	2	**3981300**	**3981300**	**3981300**	**3981300**	**3981300**	**3981300**	49
Flanges for configuration as rack-mount enclosure - without handle holes	 2	 **3981200**	 **3981200**	 **3981200**	 **3981200**	 **3981200**	 **3981200**	 48
Accessories								
Front/rear panels	see page 50 - 51							
Rear adjustable feet	4	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	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 or electronics-quote@heitec.de.

HeiPac Vario-Module 2 U, EMC



1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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
4 rubber feet
Assembly parts

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

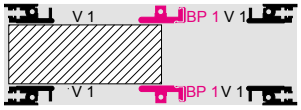
Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Accessories

See page 47-51.

Horizontal rails for additional installations have to be ordered separately, see pages 76

Exemplary horizontal rail configuration



2 U

	Packs of	2 U						Page
Installation width (HP)		**42**	**42**	**63**	**63**	**84**	**84**	
Width (B1) mm		235.6	235.6	342.3	342.3	449.0	449.0	
Width (B2) mm		251.6	251.6	358.3	358.3	465.1	465.1	
Depth (T) mm		250.4	310.4	250.4	310.4	250.4	310.4	
Mod.No. VM basic case EMC	1	**3983000**	**3983020**	**3983290**	**3983300**	**3983010**	**3983030**	
Corner trims for assembly as instrument case	2	**3981300**	**3981300**	**3981300**	**3981300**	**3981300**	**3981300**	49
Flanges for configuration as rack-mount enclosure - without handle holes	2	**3981200**	**3981200**	**3981200**	**3981200**	**3981200**	**3981200**	48
EMC installation								
EMC gaskets, horizontal - for upper/lower horizontal rail	1	**3684808**	**3684808**	**3684808**	**3684808**	**3684808**	**3684808**	93
- between covers and horizontal rails	10	**3684245**	**3684245**	**3684245**	**3684245**	**3684245**	**3684245**	97
EMC gaskets, vertical	1	**3686974**	**3686974**	**3686974**	**3686974**	**3686974**	**3686974**	51
Top cover - with vent holes	1	**3981941**	**3981951**	**3981942**	**3981952**	**3981940**	**3981950**	47
- without vent holes	1	**3981901**	**3981911**	**3981902**	**3981912**	**3981900**	**3981910**	47
Bottom covers - with vent holes	1	**3981741**	**3981751**	**3981742**	**3981752**	**3981740**	**3981750**	47
- without vent holes	1	**3981701**	**3981711**	**3981702**	**3981712**	**3981700**	**3981710**	47
Front/rear panels EMC	see page 50 - 51							
Accessories								
Rear adjustable feet	4	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	49

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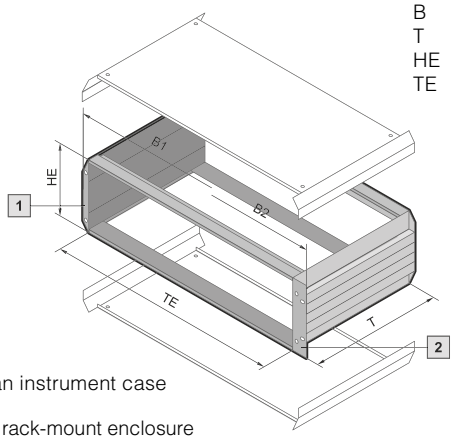
HeiPac Vario-Module 3 U



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

1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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
4 rubber feet
Assembly parts

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

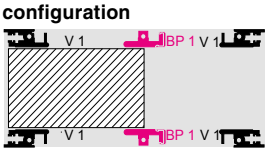
Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Accessories

See page 47-51.

Horizontal rails for additional installations have to be ordered separately, see pages 76

Exemplary horizontal rail configuration



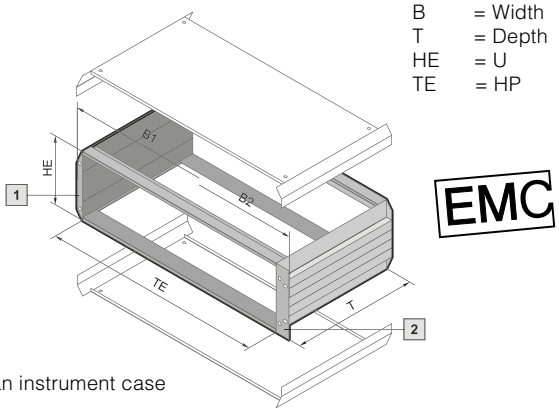
3 U

	Packs of	3 U							Page
Installation width (HP)		**42**	**42**	**63**	**63**	**84**	**84**	**84**	
Width (B1) mm		235.6	235.6	342.3	342.3	449.0	449.0	449.0	
Width (B2) mm		251.6	251.6	358.3	358.3	465.1	465.1	465.1	
Depth (T) mm		250.4	310.4	250.4	310.4	250.4	310.4	370.4	
Mod.No. VM basic case	1	**3982040**	**3982070**	**3982050**	**3982080**	**3982060**	**3982090**	**3982100**	
Also required									
Top covers - with vent holes - without vent holes	 1 1	 **3982941** **3982901**	 **3982951** **3982911**	 **3982942** **3982902**	 **3982952** **3982912**	 **3982940** **3982900**	 **3982950** **3982910**	 **3982960** **3982920**	 47 47
Bottom covers - with vent holes - without vent holes	 1 1	 **3982741** **3982701**	 **3982751** **3982711**	 **3982742** **3982702**	 **3982752** **3982712**	 **3982740** **3982700**	 **3982750** **3982710**	 **3982760** **3982720**	 47 47
Front corner trims for assembly as instrument case	2	**3981310**	**3981310**	**3981310**	**3981310**	**3981310**	**3981310**	**3981310**	49
Flanges for configuration as rack-mount enclosure - without handle holes - with handle holes	 2 2	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 48
Accessories									
Front/rear panels	see page 50 - 51								
Carrying handles	2	**3981350**	**3981360**	**3981350**	**3981360**	**3981350**	**3981360**	**3981370**	49
Front handles [1)]	2	**3636010**	**3636010**	**3636010**	**3636010**	**3636010**	**3636010**	**3636010**	144
Rear adjustable feet	4	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	49

[1)] 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.

HeiPac Vario-Module 3 U, EMC



1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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
4 rubber feet
Assembly parts

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

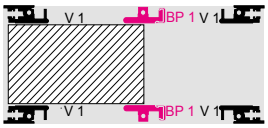
Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Accessories

See page 47-51.

Horizontal rails for additional installations have to be ordered separately, see pages 76

Exemplary horizontal rail configuration



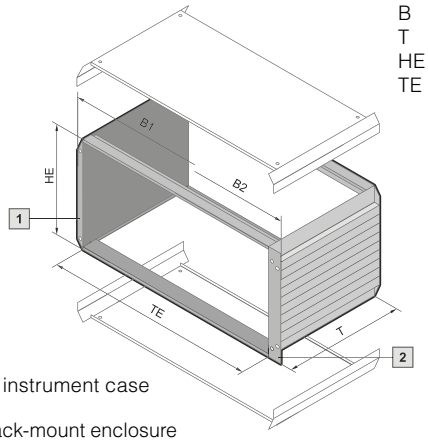
3 U

	Packs of	3 U							Page
Installation width (HP)		**42**	**42**	**63**	**63**	**84**	**84**	**84**	
Width (B1) mm		235.6	235.6	342.3	342.3	449.0	449.0	449.0	
Width (B2) mm		251.6	251.6	358.3	358.3	465.1	465.1	465.1	
Depth (T) mm		250.4	310.4	250.4	310.4	250.4	310.4	370.4	
Mod.No. VM basic case EMC	1	**3983040**	**3983070**	**3983050**	**3983080**	**3983060**	**3983090**	**3983100**	
Front corner trims for assembly as instrument case	2	**3981310**	**3981310**	**3981310**	**3981310**	**3981310**	**3981310**	**3981310**	49
Flanges for configuration as rack-mount enclosure - without handle holes - with handle holes	 2 2	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	 **3981210** **3981260**	48
EMC installation									
EMC gaskets, horizontal - for upper/lower horizontal rail - between covers and horizontal rails	 1 10	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	93 97
EMC gaskets, vertical	1	**3686975**	**3686975**	**3686975**	**3686975**	**3686975**	**3686975**	**3686975**	51
EMC Top covers - with vent holes - without vent holes	 1 1	 **3981941** **3981901**	 **3981951** **3981911**	 **3981942** **3981902**	 **3981952** **3981912**	 **3981940** **3981900**	 **3981950** **3981910**	 **3981960** **3981920**	 47 47
EMC Bottom covers - with vent holes - without vent holes	 1 1	 **3981741** **3981701**	 **3981751** **3981711**	 **3981742** **3981702**	 **3981752** **3981712**	 **3981740** **3981700**	 **3981750** **3981710**	 **3981760** **3981720**	 47 47
Front/rear panels EMC	see page 50 - 51								
Accessories									
Carrying handles	2	**3981350**	**3981360**	**3981350**	**3981360**	**3981350**	**3981360**	**3981370**	49
Front handles [1]	2	**3636010**	**3636010**	**3636010**	**3636010**	**3636010**	**3636010**	**3636010**	144
Rear adjustable feet	4	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	49

[1] 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.

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



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

1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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 centre
4 rubber feet
Assembly parts

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 centre:	Extruded aluminium section, spray-finished in grey (RAL 7035)

Note

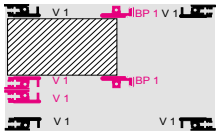
Corner trims, mounting flanges for the front of the enclosure and top/bottom covers have to be ordered separately.

Accessories

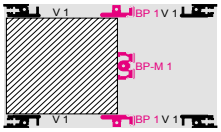
See page 47-51.

Horizontal rails for additional installations have to be ordered separately, see pages 76

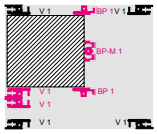
Exemplary horizontal rail configuration



4 U (3 + 1)



6 U



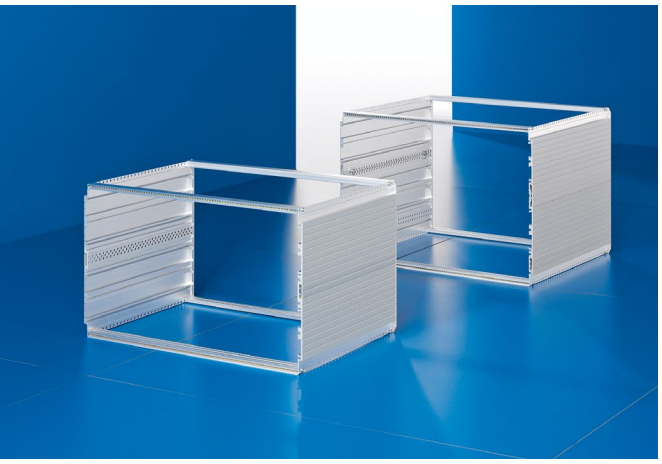
7 U (6 + 1)

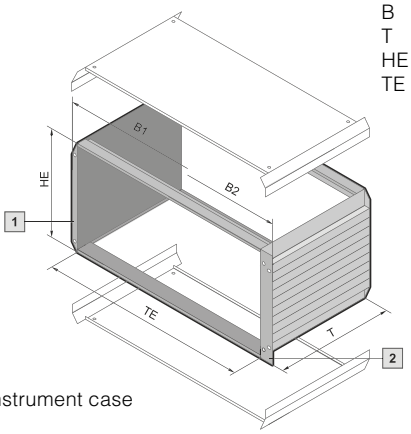
	Packs of	4 U (3 + 1)			6 U			7 U		Page
Installation width (HP)		**84**	**84**	**84**	**84**	**84**	**84**	**84**	**84**	
Width (B1) mm		449.0	449.0	449.0	449.0	449.0	449.0	449.0	449.0	
Width (B2) mm		465.1	465.1	465.1	465.1	465.1	465.1	465.1	465.1	
Depth (T) mm		250.4	310.4	370.4	310.4	370.4	430.4	310.4	430.4	
Mod.No. VM basic case	1	**3982110**	**3982120**	**3982130**	**3982140**	**3982150**	**3982160**	**3982170**	**3982190**	
Also required										
Top covers - with vent holes - without vent holes	 1 1	 **3982940** **3982900**	 **3982950** **3982910**	 **3982960** **3982920**	 **3982950** **3982910**	 **3982960** **3982920**	 **3982970** **3982930**	 **3982950** **3982910**	 **3982970** **3982930**	 47 47
Bottom covers - with vent holes - without vent holes	 1 1	 **3982740** **3982700**	 **3982750** **3982710**	 **3982760** **3982720**	 **3982750** **3982710**	 **3982760** **3982720**	 **3982770** **3982730**	 **3982750** **3982710**	 **3982770** **3982730**	 47 47
Front corner trims for assembly as instrument case	2	**3981320**	**3981320**	**3981320**	**3981330**	**3981330**	**3981330**	**3981340**	**3981340**	49
Flanges for configuration as rack-mount enclosure - without handle holes - with handle holes	 2 2	 **3981220** **3981270**	 **3981220** **3981270**	 **3981220** **3981270**	 **3981230** **3981280**	 **3981230** **3981280**	 **3981230** **3981280**	 **3981240** **3981290**	 **3981240** **3981290**	 48 48
Accessories										
Front/rear panels	see page 50 - 51									
Carrying handles	2	**3981350**	**3981360**	**3981370**	**3981360**	**3981370**	**3981380**	**3981360**	**3981380**	49
Front handles [1]	2	**3636010**	**3636010**	**3636010**	**3666010**	**3666010**	**3666010**	**3666010**	**3666010**	144
Rear adjustable feet	4	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	49

[1] 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.

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





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

EMC

1 Equipped as an instrument case

2 Equipped as a rack-mount enclosure

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 centre
4 rubber feet
Assembly parts

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 centre:	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.

Accessories

See page 47-51.

Horizontal rails for additional installations have to be ordered separately, see page 76
Exemplary horizontal rail configuration see page 45

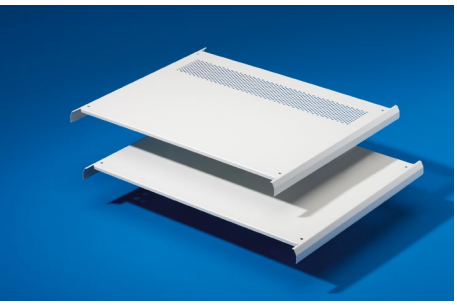
	Packs of	4 U (3 + 1)			6 U			7 U		Page
Installation width (HP)		**84**	**84**	**84**	**84**	**84**	**84**	**84**	**84**	
Width (B1) mm		449.0	449.0	449.0	449.0	449.0	449.0	449.0	449.0	
Width (B2) mm		465.1	465.1	465.1	465.1	465.1	465.1	465.1	465.1	
Depth (T) mm		250.4	310.4	370.4	310.4	370.4	430.4	310.4	430.4	
Mod.No. VM basic case EMC	1	**3983110**	**3983120**	**3983130**	**3983140**	**3983150**	**3983160**	**3983170**	**3983190**	
Front corner trims for assembly as instrument case	2	**3981320**	**3981320**	**3981320**	**3981330**	**3981330**	**3981330**	**3981340**	**3981340**	49
Flanges for configuration as rack-mount enclosure - without handle holes - with handle holes	 2 2	 **3981220** **3981270**	 **3981220** **3981270**	 **3981220** **3981270**	 **3981230** **3981280**	 **3981230** **3981280**	 **3981230** **3981280**	 **3981240** **3981290**	 **3981240** **3981290**	 48 48
EMC installation										
EMC gaskets, horizontal - for upper/lower horizontal rail - between covers and horizontal rails	 1 10	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 **3684808** **3684245**	 93 97
EMC gaskets, vertical	1	**3686976**	**3686976**	**3686976**	**3686977**	**3686977**	**3686977**	**3686978**	**3686978**	51
EMC Top covers - with vent holes - without vent holes	 1 1	 **3981940** **3981900**	 **3981950** **3981910**	 **3981960** **3981920**	 **3981950** **3981910**	 **3981960** **3981920**	 **3981970** **3981930**	 **3981950** **3981910**	 **3981970** **3981930**	 47 47
EMC Bottom covers - with vent holes - without vent holes	 1 1	 **3981740** **3981700**	 **3981750** **3981710**	 **3981760** **3981720**	 **3981750** **3981710**	 **3981760** **3981720**	 **3981770** **3981730**	 **3981750** **3981710**	 **3981770** **3981730**	 47 47
Front/rear panels EMC	see page 50 - 51									
Accessories										
Carrying handles	2	**3981350**	**3981360**	**3981370**	**3981360**	**3981370**	**3981380**	**3981360**	**3981370**	49
Front handles [1]	2	**3636010**	**3636010**	**3636010**	**3666010**	**3666010**	**3666010**	**3666010**	**3666010**	144
Rear adjustable feet	4	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	**3901000**	49

[1] 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.

RECOMMENDED ACCESSORIES HeiPac Vario-Module

Top covers



For HeiPac Vario-Module

Standard version - Material

0.7 mm sheet steel, spray-finished

Colour

Grey (RAL 7035)

EMC version - Material

0.7 mm sheet steel, spray-finished
Contact points: conductive

EMC

VM standard

HP	Enclosure depth mm	Order No.	
		with 4mm vent holes	without vent holes
42	250.4	**3982941**	**3982901**
	310.4	**3982951**	**3982911**
63	250.4	**3982942**	**3982902**
	310.4	**3982952**	**3982912**
84	250.4	**3982940**	**3982900**
	310.4	**3982950**	**3982910**
	370.4	**3982960**	**3982920**
	430.4	**3982970**	**3982930**

VM EMC

HP	Enclosure depth mm	Order No.	
		with 4 mm vent holes	without vent holes
42	250.4	**3981941**	**3981901**
	310.4	**3981951**	**3981911**
63	250.4	**3981942**	**3981902**
	310.4	**3981952**	**3981912**
84	250.4	**3981940**	**3981900**
	310.4	**3981950**	**3981910**
	370.4	**3981960**	**3981920**
	430.4	**3981970**	**3981930**

Bottom covers

For HeiPac Vario-Module

Standard version - Material

0.7 mm sheet steel, spray-finished

Colour

Grey (RAL 7035)

EMC version - Material

0.7 mm sheet steel, spray-finished
Contact points: conductive

EMC

VM standard

HP	Enclosure depth mm	Order No.	
		with 4 mm vent holes	without vent holes
42	250.4	**3982741**	**3982701**
	310.4	**3982751**	**3982711**
63	250.4	**3982742**	**3982702**
	310.4	**3982752**	**3982712**
84	250.4	**3982740**	**3982700**
	310.4	**3982750**	**3982710**
	370.4	**3982760**	**3982720**
	430.4	**3982770**	**3982730**

VM EMC

HP	Enclosure depth mm	Order No.	
		wit4 mm vent holes	without vent holes
42	250.4	**3981741**	**3981701**
	310.4	**3981751**	**3981711**
63	250.4	**3981742**	**3981702**
	310.4	**3981752**	**3981712**
84	250.4	**3981740**	**3981700**
	310.4	**3981750**	**3981710**
	370.4	**3981760**	**3981720**
	430.4	**3981770**	**3981730**

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	Orde No.	
		without support stand	with support stand
Grey	2	**9919775**	**3919000**
Black	2	**9920524**	**9920523**

Mounting plate

For mounting heavy components.

Material
Aluminium

Supply includes
Assembly parts

Note
Also suitable for Vario subracks.

HP	Depth mm	Pack of	Order No.
42	250	1 St.	**3982370**
42	310	1 St.	**9921946**
42	370	1 St.	**9921947**
42	430	1 St.	**9921948**
63	250	1 St.	**3982380**
63	310	1 St.	**9921949**
63	370	1 St.	**9921950**
63	430	1 St.	**9921951**
84	250	1 St.	**9921390**
84	310	1 St.	**9921952**
84	370	1 St.	**9921953**
84	430	1 St.	**9921954**

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	**3981200**	**-**
3	2	**3981210**	**3981260**
4	2	**3981220**	**3981270**
6	2	**3981230**	**3981280**
7	2	**3981240**	**3981290**

+ Accessories
Vertical EMC gasket, see page 96
Front handles for mounting on front flanges, see page 144

Front corner trims

Required when the HeiPac Vario-Module is to be used as an 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	**3981300**
3	2	**3981310**
4	2	**3981320**
6	2	**3981330**
7	2	**3981340**
8	2	**3981590**

+ Accessories
Vertical EMC gasket, see page 96

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)

Supply includes
Assembly parts

Note
Cannot be used with flanges.

For enclosure depth mm	Packs of	**Order No.**
250.4	2	**3981350**
310.4	2	**3981360**
370.4	2	**3981370**
430.4	2	**3981380**

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

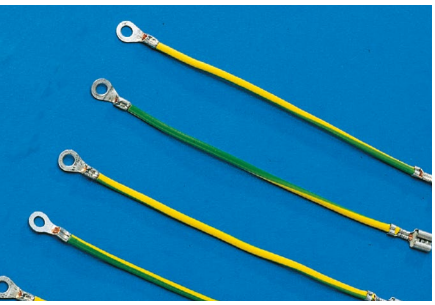
Colour
Grey (RAL 7035)

Supply includes
Base stand
Cover cap
Self-adhesive cable holder
Assembly parts

Packs of	**Order No.**
4	**3901000**

RECOMMENDED ACCESSORIES HeiPac Vario-Module

Protective conductor set for HeiPac Vario-Module



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

Supply includes

Conductor cable green/yellow, 1.5 mm², with washer for screw M4, flat-pin connector
Assembly parts

Note

Protective conductor set for HeiCase see page 58.

Packs of	Length mm	Order No.
5	135	**3900000**

Front panels, hinged

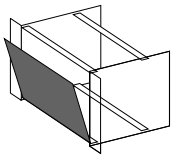
Material

2.5 mm aluminium, anodised

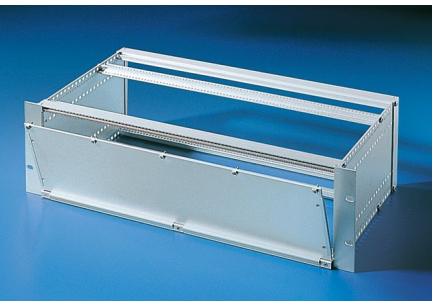
Supply includes

1 front panel
1 set of hinges
Assembly parts

U	HP	Order No.	
		vertically hinged	horizontally hinged
3	42	**3652600**	**3652500**
3	84	**3652610**	**3652510**
6	42	**3652620**	**3652520**
6	84	**3652630**	**3652530**



EMC front/rear panels, hinged



Material

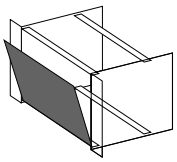
2.5 mm aluminium, clear-chromated

Supply includes

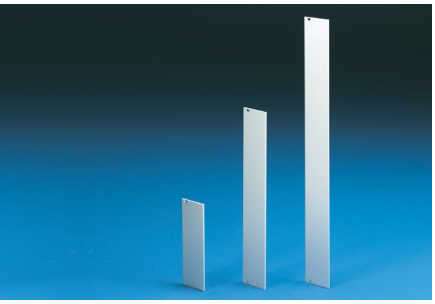
1 front panel
1 set of hinges
1 contact strip
1 gasket strip
1 vertical EMC gasket, version 1
Assembly parts

EMC

U	HP	Order No.
		horizontally hinged
3	84	**3684298**
4	84	**3684299**
6	84	**3684300**
7	84	**3684301**



Front panels as filler panel



Front panels as filler panel, flat

Material

2.5 mm aluminium, natural-anodised

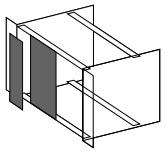
Note

Other sizes see page 128.

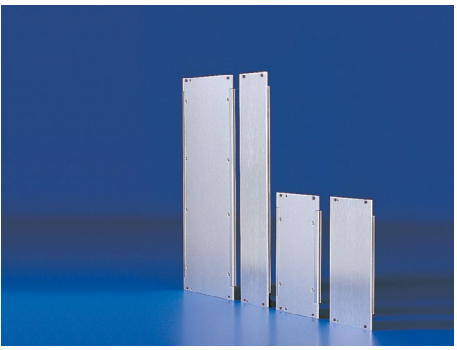
HP	Order No.				
	H 2 U	H 3 U	H 4 U	H 6 U	H 7 U
42	**3684887**	**3684904**	**3684908**	**3684925**	**3684928**
63	**-**	**3684906**	**3684909**	**3684926**	**3684929**
84	**3684888**	**3684907**	**3684910**	**3684927**	**3684930**

+ Also required

Collar screws and plastic collars, packs of 100 sets, order No. 3658160
see page 148



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

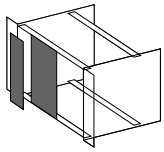
Other sizes see page 129.

HP	Order No.				
	H 2 U	H 3 U	H 4 U	H 6 U	H 7 U
42	-	**3684252**	**3684255**	**3684261**	**3684264**
63	-	**3684253**	**3684256**	**3684262**	**3684265**
84	**3684248**	**3684254**	**3684257**	**3684263**	**3684266**

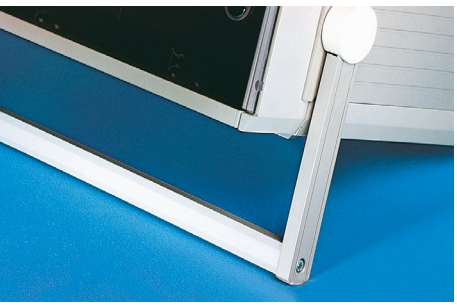
+ Also required

Slotted centring screws, packs of 100, order no. 3687050
see page 149
Cross-head centring screws, packs of 100, order no. 3687051
see page 149

EMC



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

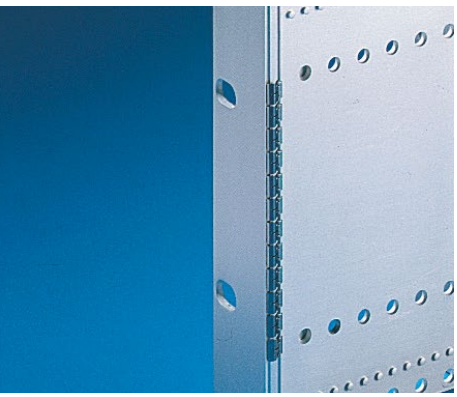
Note

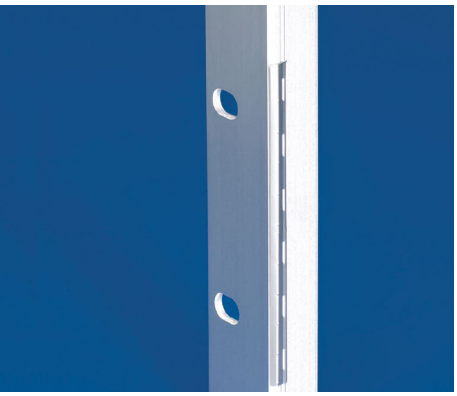
Corner trim for support stands/carrying handles should be ordered separately.
Not compatible with profile rail with 10 mm extension.

For HeiPac Vario-Module HP	Packs of	Order No.
42	1	**3981390**
63	1	**3981400**
84	1	**3981410**

Corner trim for support stand U	Packs of	Order No.
3	2	**3981310**
4	2	**3981500**
6	2	**3981510**

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

EMC

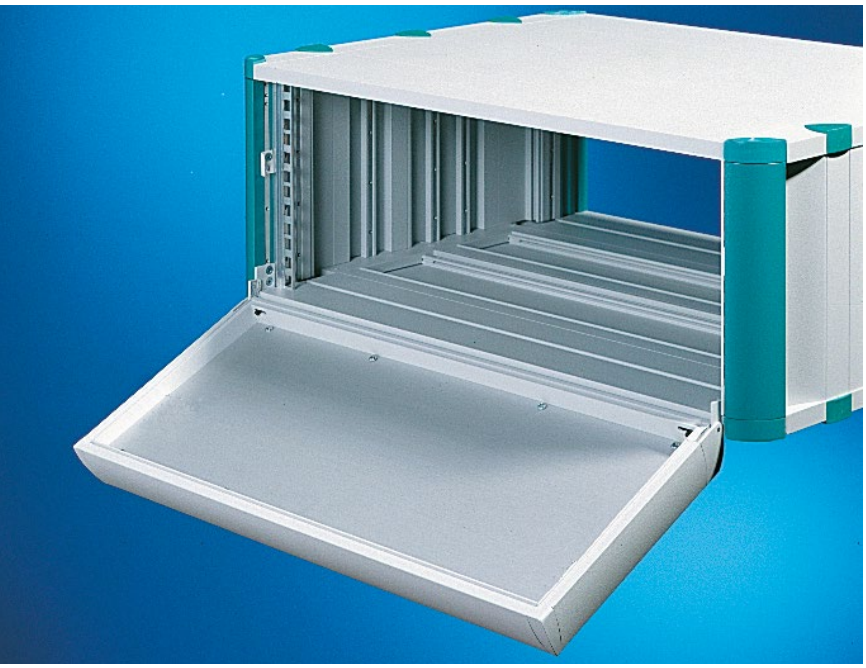
Version 1: Segmented

U	Order No. Packs of 1	Order No. Packs of 10
1	**3686973**	**3684236**
2	**3686974**	**3684237**
3	**3686975**	**3684238**
4	**3686976**	**3684239**
6	**3686977**	**3684240**
7	**3686978**	**3684241**
9	**3686979**	**3684242**
10	**3686980**	**3684243**
11	**3686981**	**3684244**

Version 2: One-piece

U	Order No. Packs of 1	Order No. Packs of 10
2	**3688610**	-
3	**3688611**	**9921942**
4	**3688612**	-
5	**3688613**	-
6	**3688614**	**9921943**
7	**3688615**	-
8	**3688634**	-
9	**3688616**	**9921944**
10	**3688609**	-
11	**3688633**	-
12	**3688606**	-

HeiCase



Universal instrument case in a timeless design

Applications

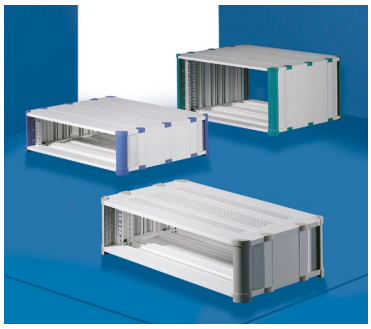
The HeiCase is the HEITEC instrument case of sophisticated design that is suitable for 19" rack-mount enclosure as well as individual configuration. In combination with castors and carrying handles the instrument case is particularly easy to transport.

Technical specifications

- Instrument case, complies with IEC 60297-3
- Height: 1 – 30 U
- Installation with: ½ 19˝ and 19˝
- Depth: 300 – 900 mm
- Protection category IP 42
- Extruded aluminium section
- Variable depth/height interior installation

Benefits at a glance

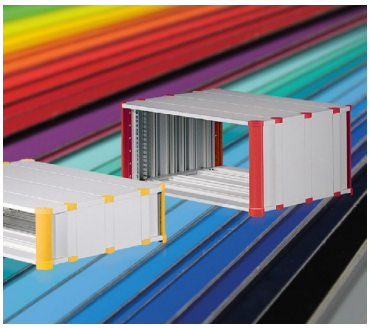
- Outstanding mechanical stability
- Upgradeable to a tower version
- Standard in 3 colours
- Ergonomic handles, bottom- and door types
- Appropriate for mobile and stationary applications



Flexible sizing through modular design

Wide range of accessories

Stable set up from aluminium profiles



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.

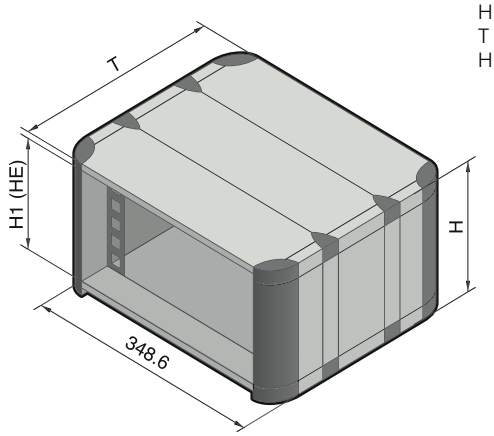
Those maxi-versions are suitable for applications of high packing density as well as a mobile alternative to cabinets. Thanks to their set up of individual, interconnected extruded aluminium sections even the large versions provide a high degree of stability and are scalable not only in height, but also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

If needed, they can be mounted on rollers for mobile applications and equipped with specific handles, providing enhanced mobility. This ensures that the enclosure remains flexible in its application, even with its large dimensions.

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-colour 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 ½ 19"



Technical specifications
Depth: 300 mm, 420 mm, 540 mm
Installation options: 269.2 mm (½ 19″)-slide-in equipment to IEC60297-3

Protection category
IP 42 for unvented version

Supply includes
2 side panels
2 covers
8 corner caps
16 cover caps
4 feet
4 19" mounting brackets
4 threaded inserts
2 plain inserts
1 rear panel

Note
Cases are supplied preassembled.

Colour
Grey (RAL 7035)

Decorative colours and corner caps
Green (RAL 5018)
Blue (RAL 5012)
Grey (RAL 7030)

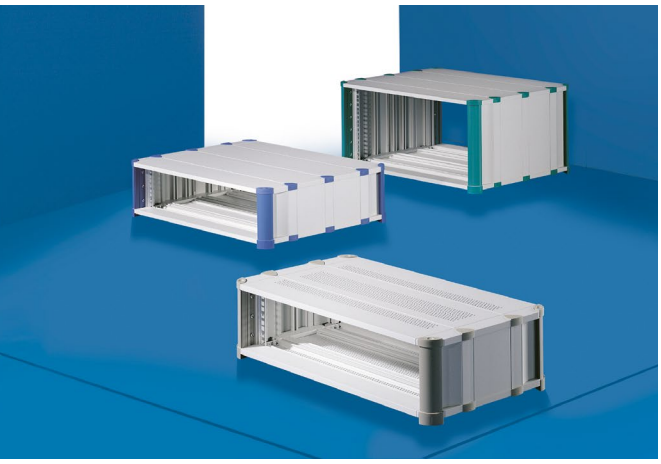
Material/surface finish
Covers:	Extruded aluminium section/die-cast, spray-finished
Side panels:	Extruded aluminium section, spray-finished
Corner caps:	Plastic
(19″) mounting bracket:	Extruded aluminium section, clear-chromated

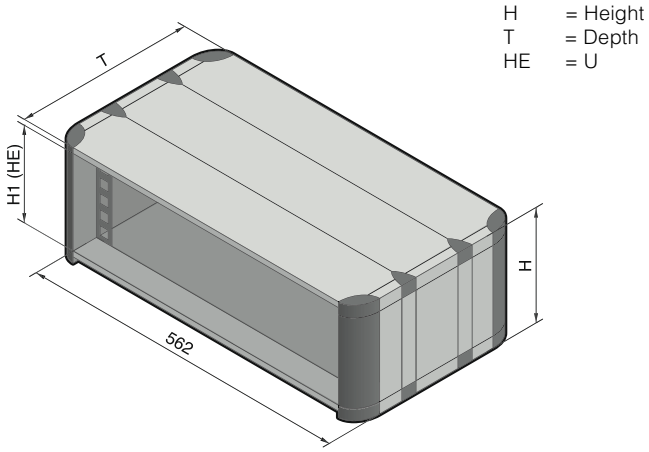
Property rights
German registered design no. 96 09 457
UK reg. design no. 2064682
US design patents, Des. 402,640 and Des. 423,464
Japan. reg. designs no. 1045507 and 1045508

Enclosures for subrack width 269.2 mm (1/2 19")	Packs of	1 U		2 U		3 U			4 U		Page
Height (H) mm		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	
Depth (T) mm		300.0	420.0	300.0	540.0	300.0	420.0	540.0	420.0	540.0	
Unvented											
Order No. RAL 5018	1	**3750100**	**-**	**3750200**	**-**	**3750210**	**3750300**	**-**	**3750400**	**-**	
Order No. RAL 5012	1	**3750102**	**-**	**3750202**	**-**	**3750212**	**3750302**	**-**	**3750402**	**-**	
Order No. RAL 7030	1	**3750104**	**-**	**3750204**	**-**	**3750214**	**3750304**	**-**	**3750404**	**-**	
Vented											
Order No. RAL 5018	1	**-**	**3750110**	**-**	**3750220**	**-**	**3750350**	**3750360**	**-**	**3750450**	
Order No. RAL 5012	1	**-**	**3750112**	**-**	**3750222**	**-**	**3750352**	**3750362**	**-**	**3750452**	
Order No. RAL 7030	1	**-**	**3750114**	**-**	**3750224**	**-**	**3750354**	**3750364**	**-**	**3750454**	
Weight (kg) vented/unvented		3.3 3.4	4.2 4.4	3.7 3.8	5.4 6.1	4.1 4.2	5.2 5.4	6.1 6.8	5.8 6.0	6.8 7.5	
Accessories											
Support stand/carrying handle	1	see page 60									
Carrying handles, horizontal	2	**3751250**	**3751260**	**3751250**	**3751270**	**3751250**	**3751260**	**3751270**	**3751260**	**3751270**	58
Back panel screw-fastened	1	**9918117**	**9918117**	**9918118**	**9918118**	**9918119**	**9918119**	**9918119**	**9918120**	**9918120**	59
Front door, vertically hinged	1	**-**	**-**	**-**	**-**	**3751300**	**3751300**	**3751300**	**3751310**	**3751310**	57
Slide rails	2	**3751500**	**3751510**	**3751500**	**3751520**	**3751500**	**3751510**	**3751520**	**3751510**	**3751520**	56
Mounting angles 19″	2	**3751650**	**3751650**	**3751660**	**3751660**	**3751670**	**3751670**	**3751670**	**3751680**	**3751680**	56
Threaded inserts with M4 thread	8	**3751700**	**3751700**	**3751710**	**3751710**	**3751720**	**3751720**	**3751720**	**3751730**	**3751730**	56
End section	4	**-**	**-**	**-**	**-**	**3751900**	**3751900**	**3751900**	**3751910**	**3751910**	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 or electronics-quote@heitec.de.

HeiCase 19''





Technical specifications
Depth: 300 mm, 420 mm, 540 mm
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
4 19" mounting brackets
4 threaded inserts
2 plain inserts

Note
For rear installation, order back panel/door separately.
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 19"	Packs of	3 U		4 U		6 U			7 U		9 U		12 U	Page
Height (H) mm		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	
Depth (T) mm		300.0	420.0	300.0	420.0	300.0	420.0	540.0	420.0	540.0	420.0	540.0	540.0	
Unvented														
Order No. RAL 5018	1	**3750310**	**3750320**	**3750410**	**3750420**	**3750600**	**3750610**	**3750620**	**3750700**	**3750710**	**3750900**	**3750910**	**3750000**	
Order No. RAL 5012	1	**3750312**	**3750322**	**3750412**	**3750422**	**3750602**	**3750612**	**3750622**	**3750702**	**3750712**	**3750902**	**3750912**	**3750002**	
Order No. RAL 7030	1	**3750314**	**3750324**	**3750414**	**3750424**	**3750604**	**3750614**	**3750624**	**3750704**	**3750714**	**3750904**	**3750914**	**3750004**	
Vented														
Order No. RAL 5018	1	**3750330**	**3750340**	**3750430**	**3750440**	**3750630**	**3750640**	**3750650**	**3750720**	**3750730**	**3750920**	**3750930**	**3750030**	
Order No. RAL 5012	1	**3750332**	**3750342**	**3750432**	**3750442**	**3750632**	**3750642**	**3750652**	**3750722**	**3750732**	**3750922**	**3750932**	**3750032**	
Order No. RAL 7030	1	**3750334**	**3750344**	**3750434**	**3750444**	**3750634**	**3750644**	**3750654**	**3750724**	**3750734**	**3750924**	**3750934**	**3750034**	
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	
Accessories														
Support stand/carrying handle	1	see page 60												
Carrying handles, horizontal	2	**3751250**	**3751260**	**3751250**	**3751260**	**3751250**	**3751260**	**3751270**	**3751260**	**3751270**	**3751260**	**3751270**	**3751270**	58
Back panel screw-fastened	1	**3751600**	**3751600**	**3751610**	**3751610**	**3751620**	**3751620**	**3751620**	**3751630**	**3751630**	**3751530**	**3751530**	**3751540**	59
Rear door, vertically hinged	1	**3751100**	**3751100**	**3751110**	**3751110**	**3751120**	**3751120**	**3751120**	**3751130**	**3751130**	**9917584**	**9917584**	**9917447**	59
Rear door for fan installation	1	**3751150**	**3751150**	**3751160**	**3751160**	**3751170**	**3751170**	**3751170**	**3751180**	**3751180**	**-**	**-**	**-**	59
Front door, acrylic glass	1	**3751320**	**3751320**	**3751330**	**3751330**	**3751340**	**3751340**	**3751340**	**3751350**	**3751350**	**9917586**	**9917586**	**9917446**	57
Front door, aluminium	1	**3751360**	**3751360**	**3751370**	**3751370**	**3751380**	**3751380**	**3751380**	**9918353**	**9918353**	**9917583**	**9918583**	**9919449**	60
Slide rails	2	**3751500**	**3751510**	**3751500**	**3751510**	**3751500**	**3751510**	**3751520**	**3751510**	**3751520**	**3751510**	**3751510**	**3751520**	56
Mounting angles 19″	2	**3751670**	**3751670**	**3751680**	**3751680**	**3751690**	**3751690**	**3751690**	**3751640**	**3751640**	**3751780**	**3751780**	**3751790**	56
Threaded inserts with M4 thread	8	**3751720**	**3751720**	**3751730**	**3751730**	**3751740**	**3751740**	**3751740**	**3751750**	**3751750**	**3751760**	**3751760**	**3751770**	56
End section	2	**3751900**	**3751900**	**3751910**	**3751910**	**3751920**	**3751920**	**3751920**	**3751930**	**3751930**	**3751820**	**3751820**	**3751830**	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 or electronics-quote@heitec.de.

Mounting rails

For depth-variable installation of 19-inch mounting brackets.

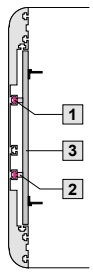
Material
Aluminium, clear-chromated

Supply includes
Assembly parts

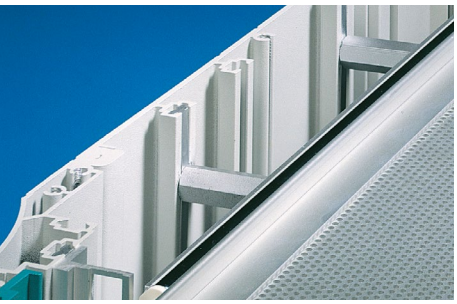
For enclosure depth mm	Packs of	Order No.
300	2	**3751400**
420	2	**3751410**
540	2	**3751420**

+ Also required
Threaded inserts, see page 56
Spacers, see page 55

1 Threaded inserts
2 Short spacers
3 Mounting rails



Spacers

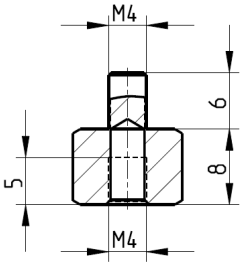


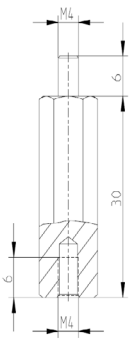
For the attachment of mounting rails.

Material
Steel, galvanized

Design	Packs of	Order No.
Short for depth-variable mounting bracket	4	**3751450**
Long for mounting plate installation (width 409 mm)	4	**3751460**

+ Also required
Mounting rails, see page 55





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	**3751650**
2	2	**3751660**
3	2	**3751670**
4	2	**3751680**
6	2	**3751690**
7	2	**3751640**
9	2	**3751780**
12	2	**3751790**

+ Also required

Threaded inserts, see page 56
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	**3751700**
2	8	**3751710**
3	8	**3751720**
4	8	**3751730**
6	8	**3751740**
7	8	**3751750**
9	8	**3751760**
12	8	**3751770**

Slide rails

To support heavy installed equipment.

Material

1.5 mm sheet steel, clear-chromated

Supply includes

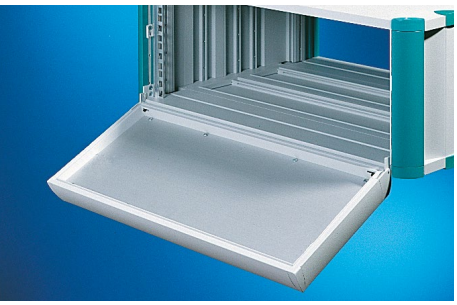
Assembly parts

For enclosure depth mm	Length mm	Packs of	Order No.
300	130	2	**3751500**
420	250	2	**3751510**
540	370	2	**3751520**
660	490	2	**9919472**
780	610	2	**9923350**

+ Also required

Threaded inserts, see page 56

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)

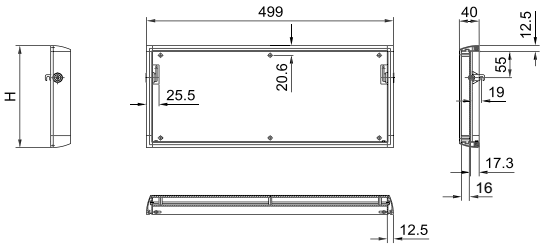
Supply includes

Assembly parts

Note

Other sizes on request.

For enclosure width	Height (H) U	Packs of	Order No.
19''	4	1	**3751800**
19''	6	1	**3751810**



Front door with acrylic glass, 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: acrylic glass

Colour

Grey (RAL 7035)

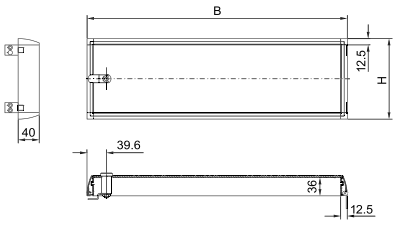
Supply includes

Assembly parts

Note

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

For enclosure width	W mm	Height (H) U	Order No.
½ 19''	289	3	**3751300**
½ 19''	289	4	**3751310**
19''	503	3	**3751320**
19''	503	4	**3751330**
19''	503	5	**9918370**
19''	503	6	**3751340**
19''	503	7	**3751350**
19''	503	9	**9917586**
19''	503	12	**9917446**



Protective conductor set for HeiCase

Fits all HeiCase enclosures
To meet electrical protective measures.

Supply includes

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

Note

Protective conductor set for HeiPac Vario Module see page 50.

Packs of	Order No.
4	**3798000**

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

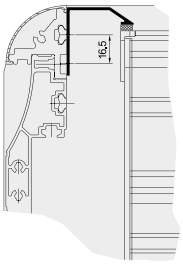
Colour

Grey (RAL 7035)

Supply includes

Assembly parts

For enclosure height U	Packs of	Order No.
3	2	**3751900**
4	2	**3751910**
6	2	**3751920**
7	2	**3751930**
9	2	**3751820**
12	2	**3751830**



Carrying handles

Horizontal carrying handles for easy, secure transportation.

- May be retrofitted
- Load capacity up to 100 kg each pair

Material

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

Colour

Grey (RAL 7035)

Supply includes

Assembly parts

For enclosure depth mm	Packs of	Order No.
300	2	**3751250**
420	2	**3751260**
540	2	**3751270**

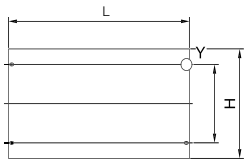
Back panel, screw-fastened

To close off the rear.

Material
Aluminium, 2 mm, natural-anodised

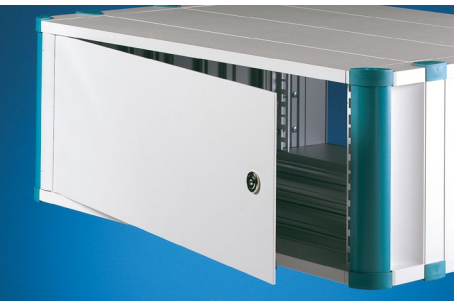
Supply includes
2 19˝mounting brackets
2 threaded inserts
Assembly parts

Note
Other sizes on request.



Height (H) U	Packs of	Order No.	
		enclosure width L = ½19"	enclosure width L = 19"
1	1	**9918117**	**9927606**
2	1	**9918118**	**9921176**
3	1	**9918119**	**3751600**
4	1	**9918120**	**3751610**
6	1	**9918121**	**3751620**
7	1	**9918122**	**3751630**
9	1	**9918123**	**3751530**
12	1	**9918125**	**3751540**

Rear door, vertically hinged



To close off the rear.
- Hinged, with security lock
- Optionally hinged on the left or right

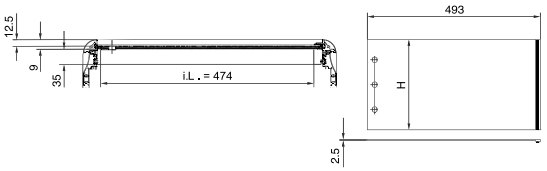
Material
Aluminium, 2.5 mm, spray-finished

Colour
Grey (RAL 7035)

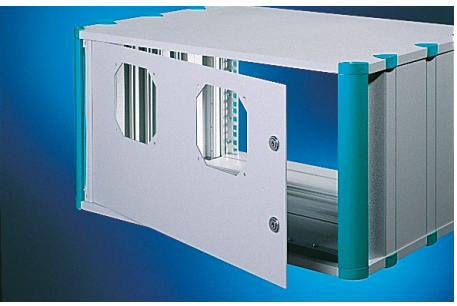
Supply includes
Assembly parts

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	**3751100**
19''	4	1	**3751110**
19''	6	1	**3751120**
19''	7	1	**3751130**
19''	9	1	**9917584**
19''	12	1	**9917447**



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

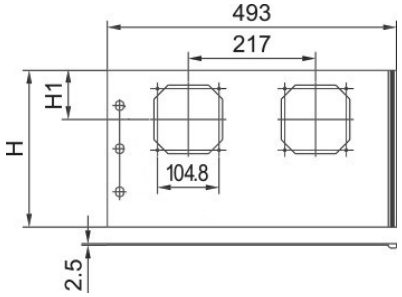
Material
Aluminium, 2.5 mm, spray-finished

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	**3751150**
19''	4	88.90	**3751160**
19''	6	83.50	**3751170**
19''	7	83.50	**3751180**



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
Aluminium plate

Colour

Grey (RAL 7035)

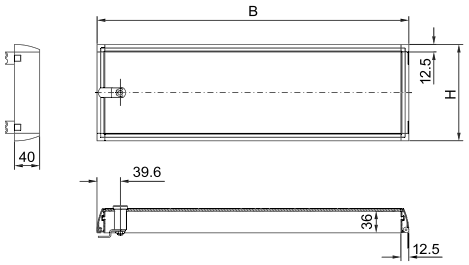
Supply includes

Assembly parts

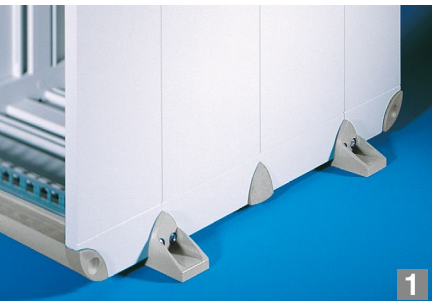
Note

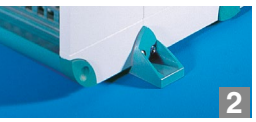
The picture shows the 6 U version.
Solutions smaller than 6 U feature a front door with only one security lock.
Other sizes on request.

For enclosure width	W mm	Height (H) U	Order No.
19''	503	3	**3751360**
19''	503	4	**3751370**
19''	503	6	**3751380**
19''	503	7	**9918353**
19''	503	9	**9917583**
19''	503	12	**9919449**



Tower feet





For vertical siting of enclosures.
May be retrofitted.

Material

Plastic self-extinguishing to UL 94-V0

Decorative colours

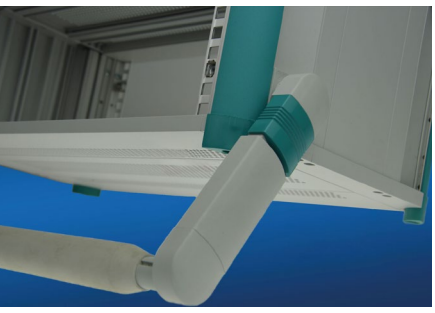
1 Grey (RAL 7030)
2 Green (RAL 5018)
3 Blue (RAL 5012)

Supply includes

4 tower feet
Assembly parts

Colour	Packs of	Order No.
Green	4	**3751850**
Blue	4	**3751852**
Grey	4	**3751854**

Support stand/carrying handles



- Support stand/carrying handle adjustable in 30° increments
- Suitable for retrofitting 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),
Centre part: Extruded aluminium section, spray finished in grey (RAL 7035) with plastic coating.

Decorative colour

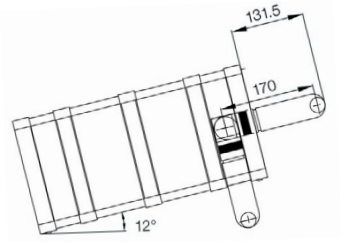
1 Grey (RAL 7030)
2 Green (RAL 5018)
3 Blue (RAL 5012)

Supply includes

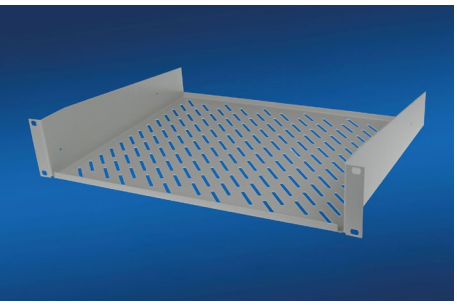
Assembly parts

For enclosure width	W mm	Colour RAL	Order No.
½ 19''	392	Green	**3751200**
½ 19''	392	Blue	**3751202**
½ 19''	392	Grey	**3751204**
19''	605	Green	**3751210**
19''	605	Blue	**3751212**
19''	605	Grey	**3751214**

W = total width handle
PU = 1 set



19-inch Component shelf



Component shelf for carrying e.g. components, individual parts, devices, or for storing documents, to insert into HeiCase and further 19-inch Cabinets.

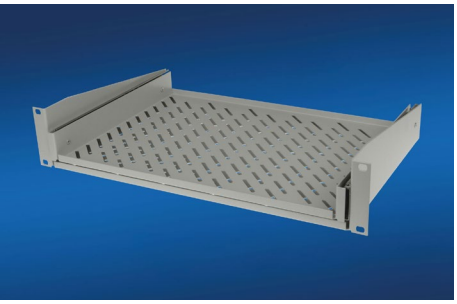
Material
1.5 mm sheet steel

Colour
Powder-coated, grey (RAL7035)

Supply includes
Component shelf
Assembly parts

Height (H) U	W mm	Version	Side Panel Depth (mm)	Order No.
2	482.6	closed	250	**9923171**
2	482.6	closed	355	**9923172**
2	482.6	perforated	250	**9923173**
2	482.6	perforated	355	**9923174**

19-inch Component shelf on telescopic rails



Component shelf for carrying e.g. components, individual parts, devices, or for storing documents, to insert into HeiCase and further 19-inch Cabinets.

Material
1.5 mm sheet steel

Colour
Powder-coated, grey (RAL7035)

Supply includes
Component shelf
Assembly parts

Height (H) U	W mm	Version	Side Panel Depth (mm)	Order No.
2	482.6	closed	300	**9923175**
2	482.6	closed	350	**9923176**
2	482.6	perforated	300	**9923177**
2	482.6	perforated	350	**9923178**

19-inch Component shelf, 26 mm

Component shelf for carrying e.g. components, individual parts, devices, or for storing documents, to insert into HeiCase and further 19-inch Cabinets.

Material
1.5 mm sheet steel

Colour
Powder-coated, grey (RAL7035)

Supply includes
Component shelf
Assembly parts

Height (H) mm	W mm	Version	Side Panel Depth (mm)	Order No.
26	482.6	closed	350	**9923180**
26	482.6	perforated	350	**9923182**

19-inch Document drawer

Lockable shelf for safe storage of important documents and devices to insert into HeiCase and further 19-inch Cabinets.

Material
1.5 mm sheet steel

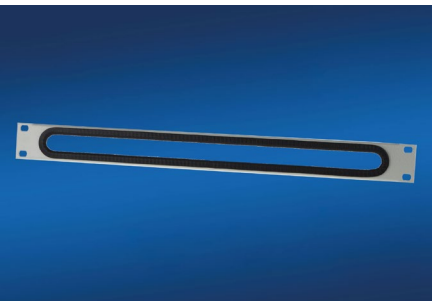
Colour
Powder-coated, grey (RAL7035)

Supply includes
Component shelf
Assembly parts

Note
Lockable
With telescopic rails

Height (H) U	W mm	Side Panel Depth (mm)	Order No.
2	482.6	400	**9923183**

19-inch Cable entry panel with edge protection



Front or back panel for routing cables.

Material
1.5 mm sheet steel

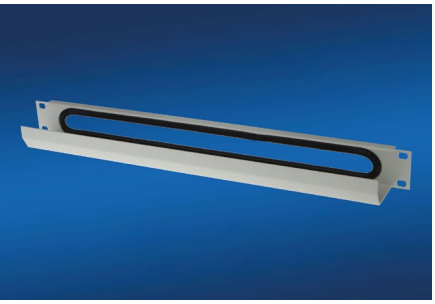
Colour
Powder-coated, grey (RAL7035)

Supply includes
Cable panel
Assembly parts

Note
Also available in black.

Height (H) U	W mm	Order No.
1	482.6	**9923184**

19-inch Cable entry panel with tray and edge protection



Front or back panel for routing and storing cables and power supplies.

Material
1.5 mm sheet steel

Colour
Powder-coated, grey (RAL7035)

Supply includes
Cable panel
Assembly parts

Note
Also available in black.

Height (H) U	W mm	Order No.
1	482.6	**9923185**

19-inch Cable tray

Front or back panel for storing cables, power supplies and other.

Material
1.5 mm sheet steel

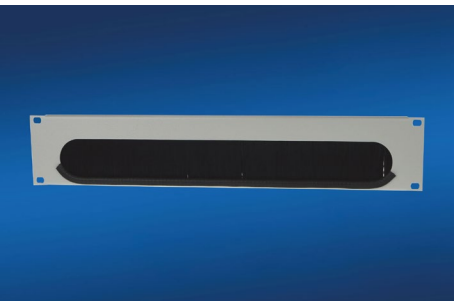
Colour
Powder-coated, grey (RAL7035)

Supply includes
Tray
Assembly parts

Note
Also available in black.

Height (H) U	W mm	Order No.
2	482.6	**9923186**

19-inch Cable entry panel with brush strip and edge protection



Front or back panel for routing and stabilizing cables while providing protection from foreign bodies.

Material
1.5 mm sheet steel

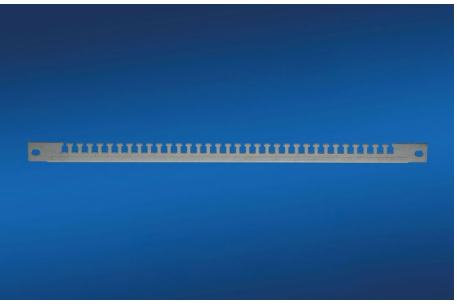
Colour
Powder-coated, grey (RAL7035)

Supply includes
Cable panel
Assembly parts

Note
Also available in black.

Height (H) U	W mm	Order No.
2	482.6	**9923187**

19-inch Cable tie strip panel



Front or rear plate for strain relief of cables, 25 mm.

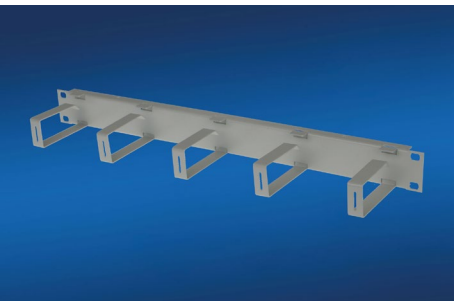
Material
1.5 mm sheet steel

Surface finish
Galvanized

Supply includes
Cable panel
Assembly parts

Height (H) U	W mm	Order No.
1/2	482.6	**9923188**

19-inch Cable management panel



Front or back panel for fixation of cables. Panel is available in two different versions.

Material
1.5 mm sheet steel

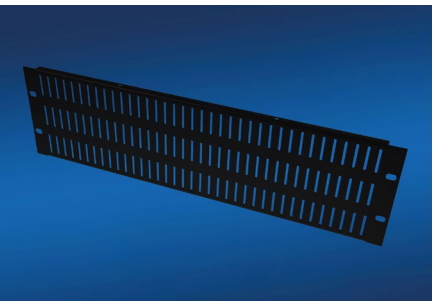
Colour
Powder-coated, grey (RAL7035)

Supply includes
Cable panel
Assembly parts

Note
Also available in black.

Height (H) U	W mm	Version	Order No.
1	482.6	detachable	**9923189**
1	482.6	one-piece	**9923190**

19-inch Front panel with slotted holes



Front panel with elongated holes for airflow to cool the systems inside the case. The curved edges version offers increased stability.

Material
1.5 mm sheet steel

Colour
Powder-coated, grey (RAL7035) or black

Supply includes
Front panel
Assembly parts

Note
Also usable as back panel

Colour	Height (H) U	**Flat**	**Curved edges**
Grey	1	**9923191**	**9923194**
	2	**9923192**	**9923195**
	3	**9923193**	**9923196**
Black	1	**-**	**9926851**
	2	**-**	**9926852**
	3	**-**	**9926853**

Swivel castors for HeiCase

Technical specifications
- Castor with thermoplastic rubber bandage
- Plastic rim with thread protection and ball bearings
- Screwed wheel axle
- Fork head with double-sided ball ring
- Smooth and solid wheel lock

Material
Housing made of galvanized sheet steel

Supply includes
4 Swivel castors
Assembly parts

Note
The ESD version is electrically conductive

Packs of	Weight (kg)	W mm	Version	**Order No.**
4	60	45	no ESD	**9927331**
4	60	45	ESD	**9927332**

Heavy duty swivel castors for HeiCase

Technical specifications
- Castor with polyurethane bandage
- Plastic rim with plain bearings
- Screwed wheel axle
- Fork head with double-sided ball ring
- Smooth and solid wheel lock

Material
Housing made of galvanized sheet steel

Supply includes
4 heavy duty swivel castors
2 threaded strips
Assembly parts

Packs of	Weight (kg)	W mm	Version	**Order No.**
4	100	65	heavy duty	**9927333**

IPC CHASSIS 4 U

Industrial-PC Chassis

Applications

The 4U IPC enclosure line in 19-inch was developed to meet the requirements for stability, security and flexibility in demanding industrial environments. The ATX enclosures offer the necessary protection for your valuable technology and impress with their design and functionality.

Technical Specifications

- 4U IPC chassis with 408 mm / 451 mm depth made of sheet steel
- Perfect fit for installation in 19-inch cabinets
- Card holder for fastening the expansion cards
- All variants are supplied fully assembled, pre-wired and tested
- Chassis comply with the EIA RS-310C 19-inch rackmount standard

Benefits at a glance

- Easy replacement of fans and filter mats during operation of IPC 402 & 404
- Efficient 'front-to-rear' cooling system
- Customised design according to customer requirements
- Wide range of accessories available
- Low and high quantities available at short notice

Removable fan cage of the IPC 404

Easily replaceable fans inside the IPC 402

IPC Chassis ATX 402

Robust, modern IPC-Chassis for 19-inch installations.

Technical specifications

- Two 90 x 90 mm integrated, replaceable fans
- Expansion slots integrated into the rear panel
- Card retainer for attaching expansion cards
- Alternatively available in RAL 7035 (grey) or a custom paint finish
- Front panel with integrated fan and filter mat
- On/off switch, HDD/POWER-LED's, 5 1/4-inch and 3.5-inch slots for drives
- Further I/O connection options
- Packs of one piece

Material

Heavy duty cold rolled and electroplated steel

Colour

Spray-finished, black

Note

EIA RS-310C 19-inch-Rackmount Standard
Fully assembled, wired and tested

Height (H) U	W HP	Depth mm	Order No.
4	84	451	**9926687**

+ Also required

Power supply, see page 67 and 146

+ Accessories

Rear plates for IPC Chassis, see page 67
USB-Ports, see page 67

IPC CHASSIS 4 U

IPC Chassis ATX 404

Robust, modern IPC-Chassis for 19-inch installations.

Technical specifications

- Two 90 x 90 mm integrated, replaceable fans
- Expansion slots integrated into the rear panel
- Card retainer for attaching expansion cards
- With integrated Front-USB 2.0
- Alternatively available in RAL 7035 (grey) or a custom paint finish
- Front panel with integrated fan and filter mat
- On/off switch, HDD/POWER-LED's, 5 1/4-inch and 3.5-inch slots for drives
- Further I/O connection options
- Packs of one piece

Material

Heavy duty cold rolled and electroplated steel

Colour

Spray-finished, black

Note

EIA RS-310C 19-inch-Rackmount Standard
Fully assembled, wired and tested

Height (H) U	W HP	Depth mm	**Order No.**
4	84	408	**9926689**

+ Also required

Power supply, see page 67 and 146

+ Accessories

Rear plates for IPC Chassis, see page 67
USB-Ports, see page 67

IPC Chassis ATX 4F4

IPC-Chassis with front connections for 19-inch installations.

Technical specifications

- Two rear 90 x 90 mm fans
- Expansion slots integrated into the rear panel
- Card retainer for attaching expansion cards
- With integrated Front-USB 2.0
- Alternatively available in RAL 7035 (grey) or a custom paint finish
- On/off switch, HDD/POWER-LED's, 5 1/4-inch and 3.5-inch slots for drives
- Further I/O connection options
- Packs of one piece

Material

Heavy duty cold rolled and electroplated steel

Colour

Spray-finished, black

Note

EIA RS-310C 19-inch-Rackmount Standard
Fully assembled, wired and tested

Height (H) U	W HP	Depth mm	**Order No.**
4	84	482.6	**9925299**

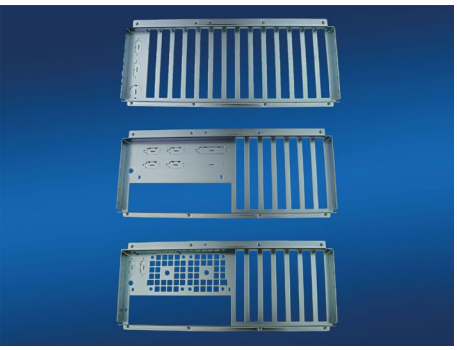
+ Also required

Power supply, see page 67 and 146

+ Accessories

USB-Ports, see page 67

Rear Panels for IPC-Chassis



Different rear panel designs for individual layout of the IPC-Chassis.

Amount of Slots	Number of Fans	Additional I/O connec-tions	Standard	**Order No.**
14	0	no	Nein	**9926800**
7	2	no	IPC 402/404	**9926801**
7	0	yes	Nein	**9926802**

USB-Ports

Various USB ports for installation into the IPC-Chassis 402, 404 and 4F4.
With connection cable for connecting to the mainboard.

Number of USB Ports	Name	**Order No.**
2	USB KIT 2.0	**9926803**
2	USB KIT 3.0	**9926688**

AT/ATX Power supply for IPC

AT/ATX Power Supply
Different output ranges available as standard.

Supply includes

Power supply
Connection cable

Note

Other output ranges on request.
Additional technical details see website.
Also suitable for IPC Chassis.

Version	PFC	Power W	**Order No.**
AT-power supply	passive	300	**3688118**
ATX-power supply	active	300	**9925775**
ATX-power supply	active	400	**9926805**
ATX-power supply	active	500	**9926806**
ATX-power supply	active	600	**9926807**
ATX-power supply	active	700	**9926808**

HeiPac Vario-Module VPX

19-inch VPX-system platform for 3 U plug-in units

Technical specifications

- 4 U case with 3 U card cage
- Codable VPX guide rails
- 6 slot VPX Backplane
- Powerful heat dissipation through radial fans
- Compliant with ANSI/VITA 46.0, 46.10, 48.0, 48.1, 65-2010 and 62.0
- Horizontal rails for maximum load
- Conforms to IEC 60297 and IEEE 1101.1

Material

Side Panels and horizontal rails: Extruded aluminium section
Top- and bottom covers: Painted sheet steel

Colour

Painted grey (RAL 7035)

Note

This product is customisable due to its modular components:
Can be used with various backplanes (number of slots, system slot, etc.)
EMC version possible
Enclosure can be individually painted

Height (H) U	W HP	Side Panel Depth (mm)	Version	**Order No.**
4 (3+2x1/2)	42	250	Table top	**9919933**

Supply includes

Includes ATX Power supply 100 – 240 VAC with 204 W at 12 V
Two radial fans integrated into the top cover
Completely assembled, prewired and tested

HeiPac Vario VPX

19-inch VPX-system platform for 3 or 6 U plug-in units

Technical specifications

- Monolithic VPX backplane
- Up to 6/12 boards with 3U / 6U and 1.0 inch pitch
- 9U version prepared for 80 mm rear I/O cards
- Compliant with ANSI/VITA 46.0, 46.10, 48.0, 48.1, 65-2010 and 62.0

Material

Aluminium

Surface finish

Colourless, passivated

Note

This product is customisable due to its modular components:
Different backplanes can be used (amount of slots, system slot, …)
EMC version possible
Picture shows 9U version

Height (H) U	W HP	Side Panel Depth (mm)	Version	**Order No.**
4 (3+1)	42	250	rack-mount	**9919932**
9 (6+1+2)	84	250.4	rack-mount	**9924733**

Supply includes

Includes power supply with 250 Watt at 100 – 240 VAC (4 U) or 600 Watt at 85 – 264 VAC (9 U)
1 axial fan (4 U) or 3 axial fans (9 U) integrated into the bottom cover
Completely assembled, prewired and tested

HeiPac Vario-A CPCI-S

5 Slot CompactPCI® SERIAL platform for 3 U plug-in units

Technical specifications

- 4 U subrack with 3 U card cage
- Codable card guides
- 5-slot CompactPCI® serial backplane as per PICMG CPCI-S.0 R2.0
- Ethernet in Single Star topology
- 2 Fat Pipes PCI Express
- CompactPCI® serial system slot on the right
- Scalable: project-related up to 8 slot CompactPCI® serial or hybrid backplane can be integrated
- Scalable: project-specific power supply, solutions with up to 2 plug-in redundant CompactPCI® serial power supplies possible
- Corresponds to IEC 60297 and IEEE 1101.1

Material

Aluminium

Surface finish

Chromated

Note

This product is customisable due to its modular components:
Different backplanes can be used (amount of slots, system slot, …)
EMC version possible

Height (H) U	W HP	Side Panel Depth (mm)	Version	Order No.
4 (3+1)	42	250	Rack-mount	**9919911**

Supply includes

Includes ATX Power supply 100 – 240 VAC with 204 W at 12 V
2 axial fans integrated into the bottom cover
Completely assembled, prewired and tested

HeiPac VM-R CPCI-S

5 Slot CompactPCI® SERIAL platform for 3 U plug-in units

Technical specifications

- 4 U subrack with 3 U card cage
- Codable card guides
- 5-slot CompactPCI® serial backplane as per PICMG CPCI-S.0 R2.0
- Ethernet in Single Star topology
- 2 Fat Pipes PCI Express
- CompactPCI® serial system slot on the right
- Scalable: project-related up to 8 slot CompactPCI® serial or hybrid backplane can be integrated
- Scalable: project-specific power supply, solutions with up to 2 plug-in redundant CompactPCI® serial power supplies possible
- Corresponds to IEC 60297 and IEEE 1101.1

Material

Side Panels and horizontal rails: Extruded aluminium section
Top- and bottom covers: Painted sheet steel

Colour

Painted grey (RAL 7035)

Note

This product is customisable due to its modular components:
Different backplanes can be used (amount of slots, systemslot, …)
EMC version possible
Case in different colours

Height (H) U	W HP	Side Panel Depth (mm)	Version	Order No.
4 (3+2x1/2)	42	250	Table top	**9919912**

Supply includes

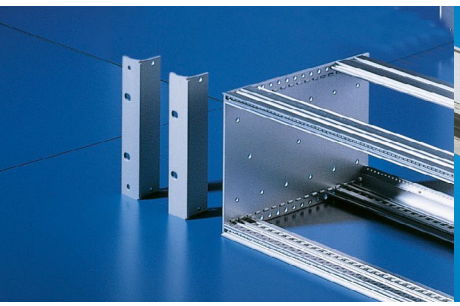
Includes ATX Power supply 100 – 240 VAC with 204 W at 12 V
2 radial fans integrated into the top cover
Completely assembled, prewired and tested

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 fulfil your individual preferences and requirements.

Side panels and flanges



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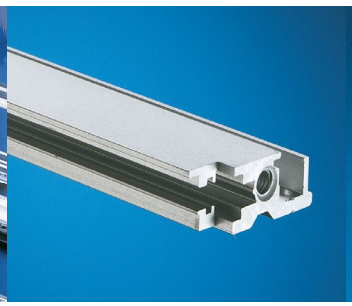
Horizontal rails



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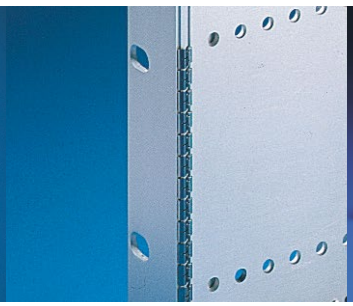
Components for EMC installation



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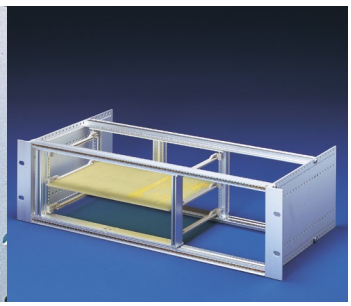
Extension kits and top-hat rails



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Guide rails

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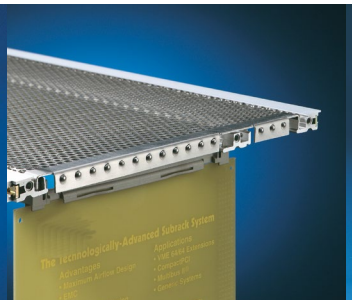
Covers



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Front panels, handles

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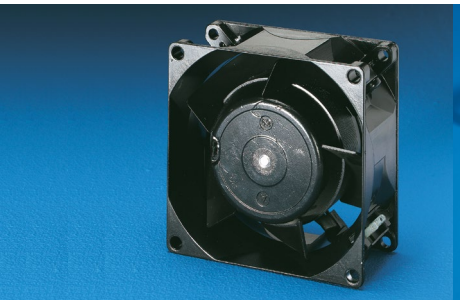
Cassettes

→ Page 132

Ventilation



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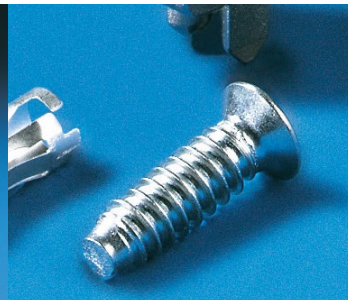
Front handles

→ Page 144

Power supplies

→ Page 146

Assembly parts



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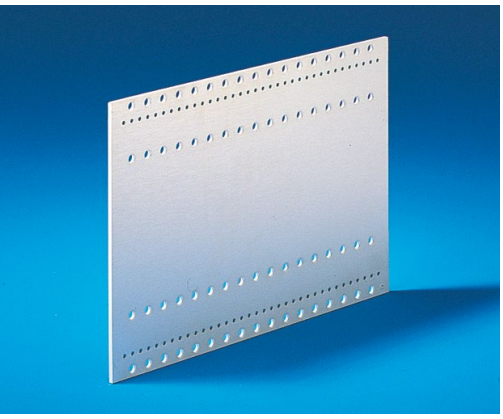
Side panels for HeiPac Vario



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

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

Material

2.5 mm aluminium

Surface finish

Clear-chromated

Note

Also available in many intermediate sizes from D= 115 mm to D= 745 mm and 1 U to 11 U on request.

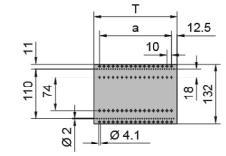
+ Accessories

Flanges for HeiPac Vario, see page 74

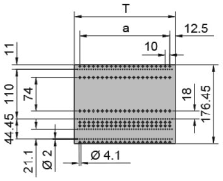
			Order No.								
U			**3**	**4 (3 + 1)**	**4 (3 + 2 x ½)**	**6**	**7 (6 + 1)**	**7 (6 + 2 x ½)**	**9**	**10 (9 + 1)**	**11 (9 + 2 x 1)**
D (T) mm	a [1] mm	Packs of									
175	150	1	**9901021**	on request	on request	**9901023**	on request	on request	-	-	-
185	160	1	**3684511**	on request	on request	**3684529**	on request	on request	-	-	-
225	200	1	**3684512**	**3685793**	**3685890**	**3684530**	**3685896**	**3685893**	**3685797**	-	-
245	220	1	**3684513**	**3685850**	**3685891**	**3684531**	**3685897**	**3685894**	on request	-	-
285	260	1	**3684514**	**3684523**	**3684526**	**3684532**	**3685743**	**3685895**	on request	-	-
305	280	1	**3684515**	**3685794**	on request	**3684533**	on request	on request	**3685798**	on request	on request
345	320	1	**3684516**	**3684524**	**3684527**	**3684534**	**3685744**	**3685745**	**3684547**	on request	on request
365	340	1	**3684517**	**3685795**	on request	**3684535**	on request	on request	**3685799**	on request	on request
405	380	1	**3684518**	**3684525**	**3684528**	**3684536**	**3684541**	**3684543**	**3684548**	**3684545**	on request
425	400	1	**3684519**	on request	on request	**3684537**	on request	on request	on request	on request	on request
465	440	1	**3684520**	**3685796**	**3685892**	**3684538**	**3684542**	**3684544**	**3684549**	**3684546**	**3684552**
525	500	1	**3684521**	**9906727**	on request	**3684539**	**3685898**	**3685959**	**3684550**	**3685899**	**3684553**
585	560	1	**3684522**	**9906914**	on request	**3684540**	on request	on request	**3684551**	on request	**3684554**

[1] a = Distance between the first and last mounting hole.

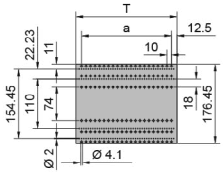
3 U



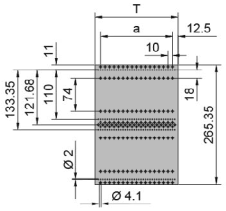
4 U (3 U + 1 U)



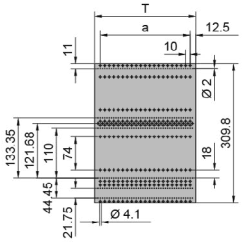
4 U (3 U + 2 x ½ U)



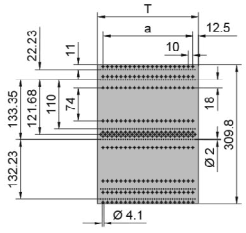
6 U



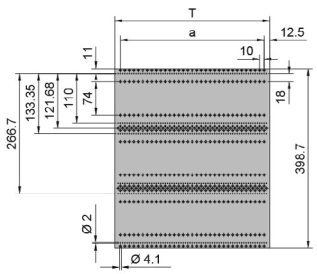
7 U (6 U + 1 U)



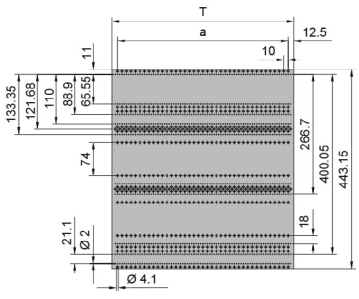
7 U (6 U + 2 x ½ U)



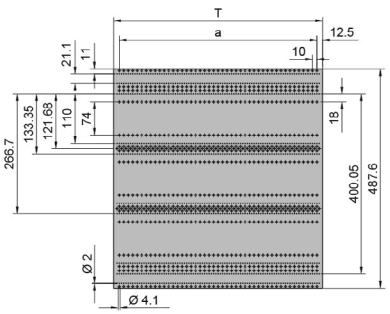
9 U



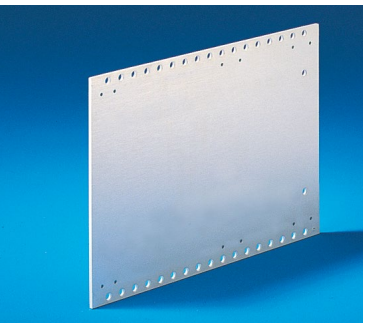
10 U (9 U + 1 U)



11 U (9 U + 2 x 1 U)



Side panels for HeiPac Vario ECO



Mounting holes on a 10 mm pitch pattern.

Material

1.5 mm sheet steel

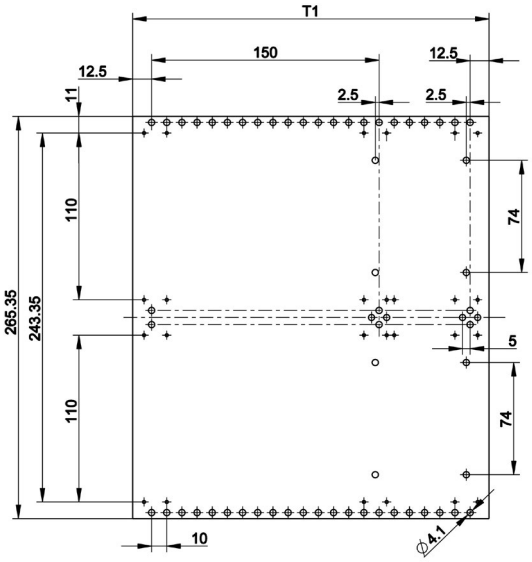
Surface finish

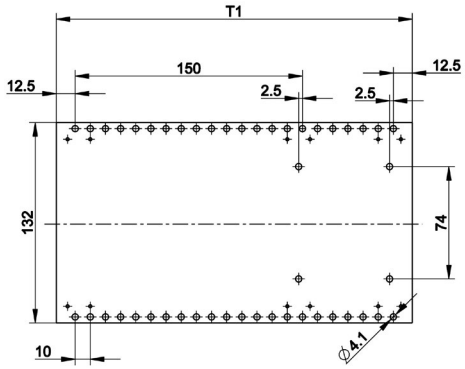
Zinc-plated

D (T) mm	Packs of	Max. board depth mm	Order No.	
			3 U	6 U
175	1	160	**3688100**	**3688102**
235	1	220	**3688101**	**3688103**

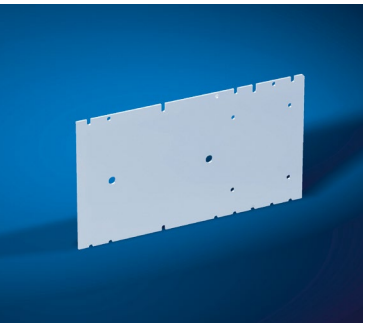
+ Accessories

Flanges for HeiPac ECO, see page 75





Side panels for HeiPac EASY



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

Material

2 mm aluminium

Surface finish

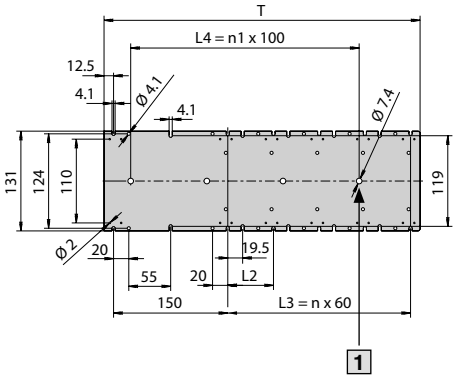
Non-corrosive

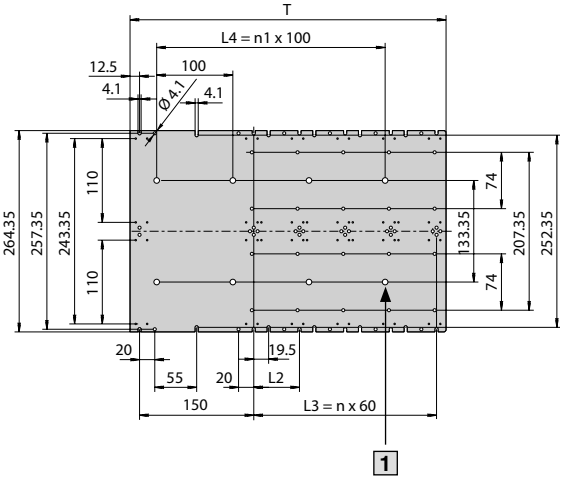
1 Mounting holes suitable for threaded insert PEM-FM4-1

D (T1) mm	L2	n	n1	Packs of	Max. board depth mm	Order No.	
						3 U	6 U
175	-	-	-	2	160	**3634695**	**3634720**
235	60	-	-	2	220	**3634700**	**3634725**
295	60	2	2	2	280	**3634705**	**3634730**
355	60	3	3	2	340	**3634710**	**3634735**
415	60	4	3	2	400	**3634715**	**3634740**

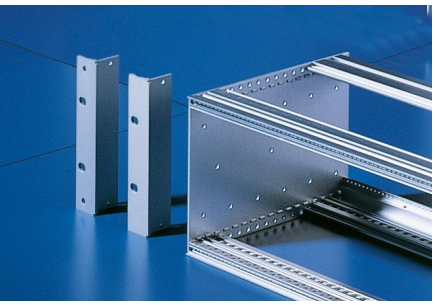
+ Accessories

Flanges for HeiPac EASY, see page 75





Flanges 19“ for HeiPac Vario



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

With integral channel to accommodate EMC gaskets.

Material

Extruded aluminium section 2.5 mm material thickness

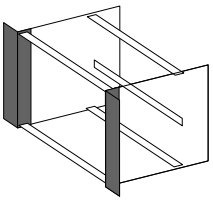
Surface finish

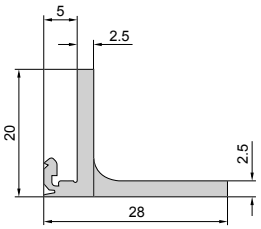
Clear-chromated

U	Packs of	Order No.	
		with handle holes	without handle holes
2	1	**-**	**3684614**
3	1	**3684622**	**3684615**
4	1	**3684623**	**3684616**
6	1	**3684624**	**3684617**
7	1	**3684625**	**3684618**
9	1	**9907896**	**3684619**
10	1	on request	**3684620**
11	1	on request	**3684621**

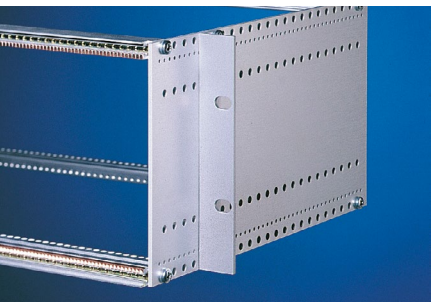
+ Accessories

EMC gaskets, vertical, see page 96
Handles for subrack, see page 144





Flanges 19“ for HeiPac Vario, depth-adjustable installation



Suitable for HeiPac Vario, EMC and Compact

Material

Extruded aluminium section 2.5 mm material thickness

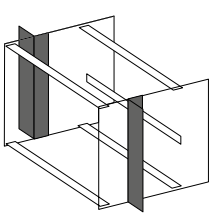
Surface finish

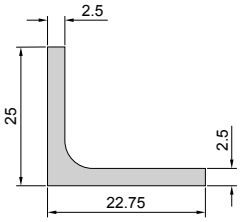
Clear-chromated

U	Packs of	Order No.
3	1	**3684626**
4	1	**3684627**
6	1	**3684628**
7	1	**3684629**
9	1	**3684630**
10	1	**3684631**
11	1	**3684632**

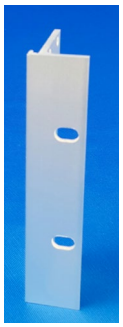
+ Also required

Assembly screws, nuts and washers, packs of 4 sets, Order No. 3687015, see page 149





Flanges 19“ for HeiPac Vario line, reinforced



Suitable for HeiPac Vario, EMC, Compact and Heavy

Reinforced flange ensures a high level of stability even under extreme loads.

Material

Extruded aluminium section
3 mm material thickness

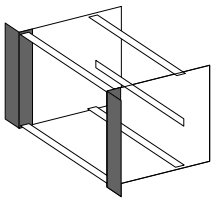
Surface finish

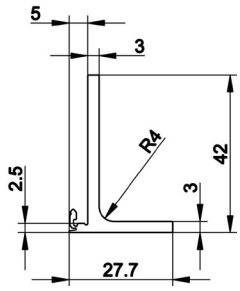
Clear-chromated

U	Packs of	Order No.	
		with handle holes	without handle holes
3	1	**9921725**	**9914268**
6	1	**9921726**	**9921721**

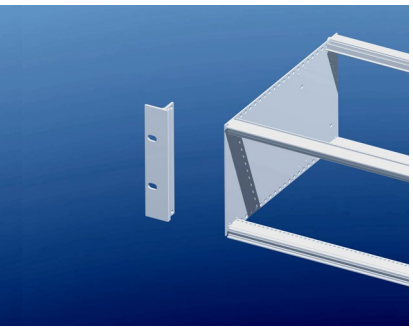
+ Accessories

Handles for subrack, see page 144
EMC gaskets, vertical, see page 96





Flanges 19“ for HeiPac Vario ECO



Material

Extruded aluminium section
2.5 mm material thickness

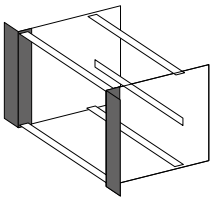
Surface finish

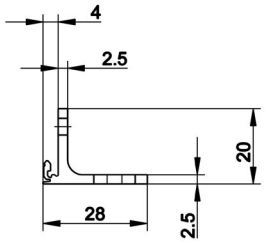
Clear-chromated

U	Packs of	Order No.
3	1	**3688110**
6	1	**3688111**

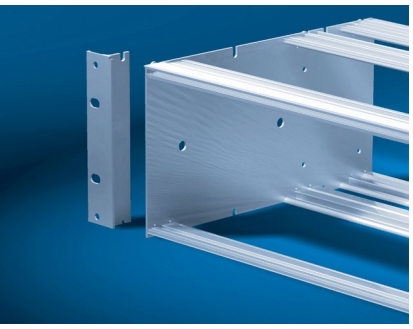
+ Accessories

EMC gaskets, vertical, see page 96





Flanges 19“ for HeiPac EASY



Material

Extruded aluminium section
2.5 material thickness

Surface finish

Pre-anodised

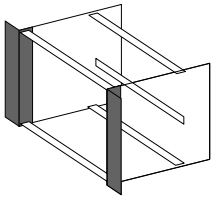
Note

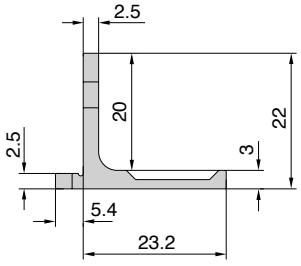
Depending on the version, with integrated holes for mounting handles.

U	Packs of	Order No.	
		with handle holes	without handle holes
3	2	**3634745**	**3634746**
6	2	**3634750**	**3634751**

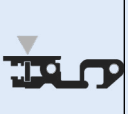
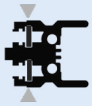
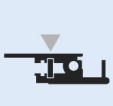
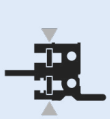
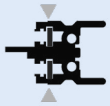
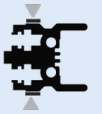
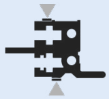
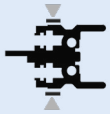
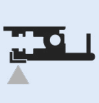
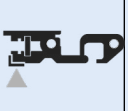
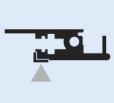
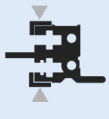
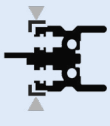
+ Accessories

Handles for subrack, see page 144



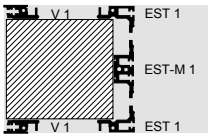


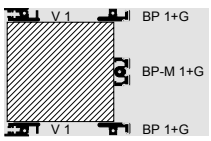
Overview horizontal rails HeiPac Vario

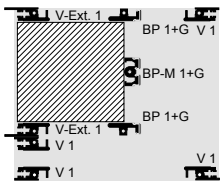
Main sections / Additional sections	**V 1** Front horizontal rail	**V 2** Front horizontal rail, with double screw fastening	**V 3** Double front horizontal rail	**V-Ext. 1** Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	**V-Ext. 2** Double front horizontal rail, with 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 78	Page 78	Page 79	Page 79	Page 80	Page 80	Page 81	Page 81	Page 82
Adaptor rail, rear centre, to accommodate guide rails Page 86	-	-	-	-	-	-	-	-	-
Z rail for connector Page 94	-	-	-	-	-	-	-		
Insulating strip [1] Page 93	-	-	-	-	-	-	-		
Conductive strip [2] Page 95	-	-	-	-	-	-	-		
Threaded insert Page 94								-	
Identification strip Page 95									
EMC gaskets, horizontal Page 93								-	-

For [1]insulated or [2]conductive attachment of backplanes.

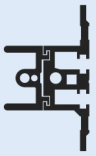
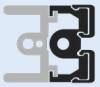
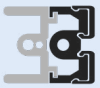
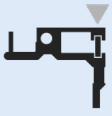
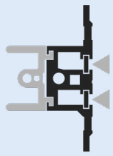
All system requirements may be covered with just a few basic types of horizontal rail. A cost-effective, easy-to-manage range.







Overview horizontal rails HeiPac Vario

Main sections / Additional sections	**BP 3** Rear horizontal rail	**BP 4** Rear horizontal rail	**BP 5** Rear horizontal rail	**BP-M 1** Rear horizontal rail, centre	**BP-M 2** Rear horizontal rail, centre (also for Hei-Pac EASY)	**CON 1** Rear horizontal rail, with integral Z rail	**CON 2** Rear horizontal rail, with integral Z rail	**CON-M 1** Rear horizontal rail, with integral Z rail (also for HeiPac EASY)
	Page 82	Page 83	Page 83	Page 84	Page 84	Page 85	Page 85	Page 86
Adaptor rail, rear centre, to accommodate guide rails Page 86	-	-	-			-	-	
Z rail for connector Page 94		-	-		-	-	-	-
Insulating strip [1] Page 93		-	-		-	-	-	-
Conductive strip [2] Page 95		-	-		-	-	-	-
Threaded insert Page 94		-	-	-	-			
Identification strip Page 95				-	-		-	-
EMC gaskets, horizontal Page 93	-	-	-	-	-	-	-	-

For [1]insulated or [2]conductive attachment of backplanes.

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.
Also available in many intermediate sizes from 4 HP to 192 HP available on request.

Usable width (HP)	Packs of	**Order No.** unprinted	**Order No.** printed
4 (left)	1	**3684592**	-
4 (right)	1	**3684955**	-
8 (left)	1	**3684593**	-
8 (right)	1	**3684956**	-
12	1	**3684594**	-
16	1	**3684595**	-
20	1	**3684596**	-
21	1	**3685985**	-
40	1	**3684960**	-
42	1	**3684560**	**9921788**[3]
63	1	**3684561**	-
84	1	**3684562**	**9921789**[3]
84	2	**3685267**[1]	-
192	1	**3688000**[2]	-

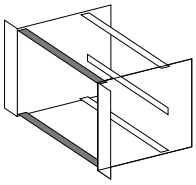
[1] Including 4 assembly screws
[2] Anodised
[3] with HP pattern printing

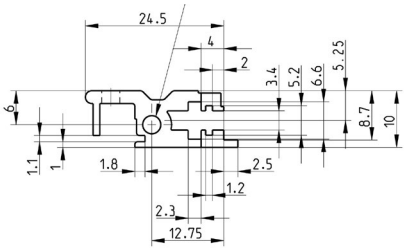
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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

Note

Also available in many intermediate sizes from 4 HP to 192 HP available on request.

Usable width (HP)	Packs of	**Order No.** unprinted	**Order No.** printed
42	1	**9917695**	**9921792**
84	1	**9908721**	**9921793**[1]

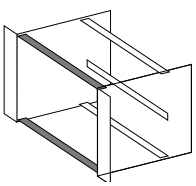
[1] with HP pattern printing

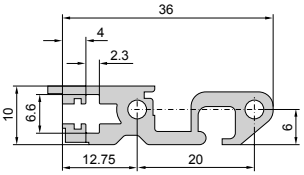
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

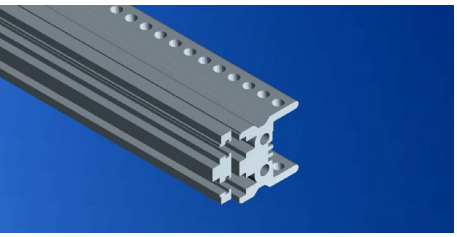
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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

Note

Other sizes available on request.

Usable width (HP)	Packs of	**Order No.** unprinted	**Order No.** printed
84	1	**9904745**	**9921799**[1)]

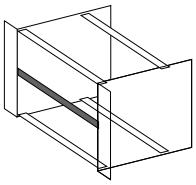
[1)] with HP pattern printing

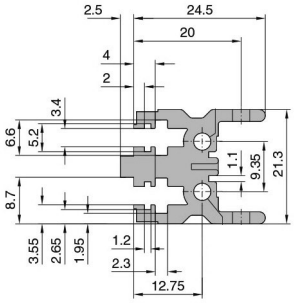
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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.
Also available in many intermediate sizes from 4 HP to 192 HP available on request.

Usable width (HP)	Packs of	**Order No.** unprinted	**Order No.** printed
40	1	**3684961**	**-**
42	1	**3684565**	**9921790**[3)]
63	1	**3684566**	**-**
84	1	**3684567**	**9921791**[3)]
84	2	**3685269**[1)]	-
192	1	**3688001**[2)]	-

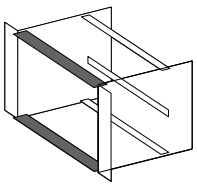
[1)] Including 4 assembly screws
[2)] Anodised
[3)] with HP pattern printing

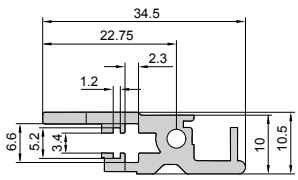
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

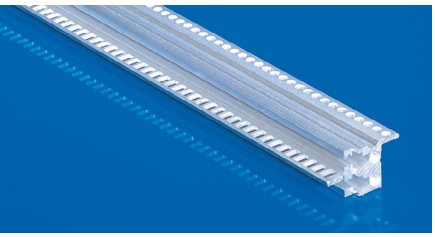
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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

Note

Other sizes available on request.

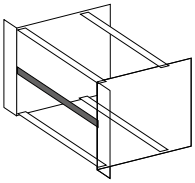
Usable width (HP)	Packs of	Order No.
84	1	**3687724**

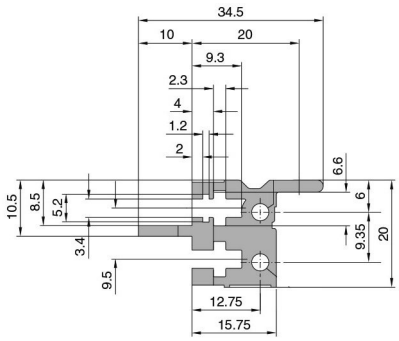
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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.
Other sizes available on request.

Usable width (HP)	Packs of	Order No. unprinted	Order No. printed
84	1	**9908722**	**9921795**[1)]

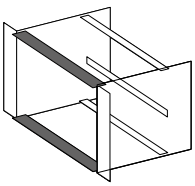
[1)] with HP pattern printing

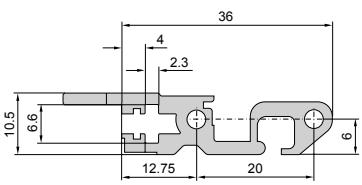
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

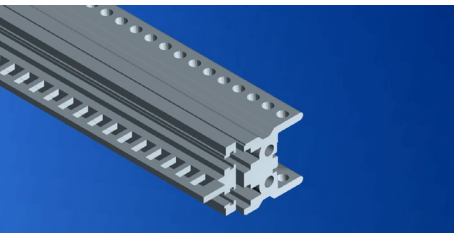
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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

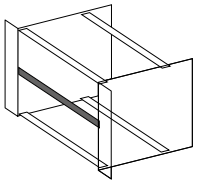
Surface finish
Clear-chromated

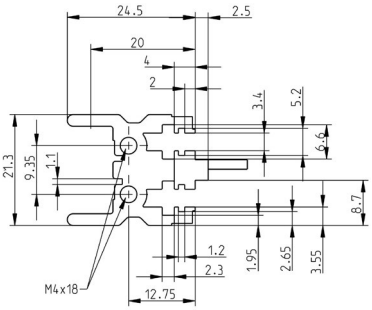
Note
Other sizes available on request.

Usable width (HP)	Packs of	Order No.
84	1	**3688704**

+ Also required
Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories
Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





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

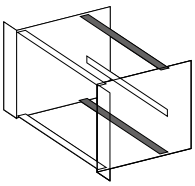
Note
Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.
Also available in many intermediate sizes from 4 HP to 192 HP available on request.

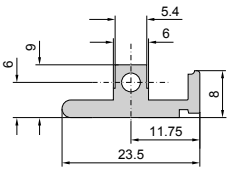
Usable width (HP)	Packs of	Order No.
21	1	**3685991**
40	1	**3684962**
42	1	**3684570**
63	1	**3684571**
84	1	**3684572**
84	2	**3685268**[1)]
192	1	**3688002**[2)]

[1)] Including 4 assembly screws
[2)] Anodised

+ Also required
Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories
Conductive strips, see page 95
Insulating strips, see page 93
Identification strips, see page 95
Z rail, see page 94





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 (9901816) are required
- Straight-through core hole

Material

Extruded aluminium section

Surface finish

Clear-chromated

Note

Also available in many intermediate sizes from 4 HP to 192 HP available on request.

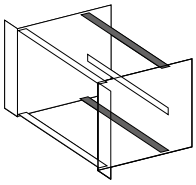
Usable width (HP)	Packs of	Order No.
84	1	**9908723**

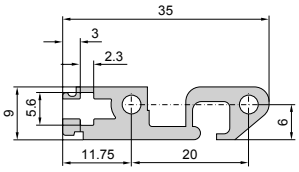
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

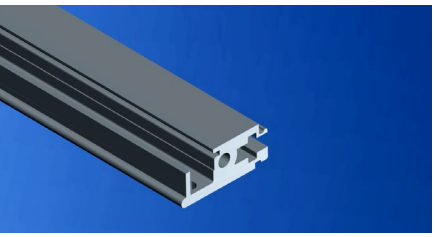
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Insulating strips, see page 93
Conductive strips, see page 95
Z rail, see page 94





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 (3684610) 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.
Other sizes available on request.

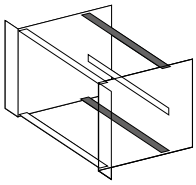
Usable width (HP)	Packs of	Order No.
84	1	**3688104**

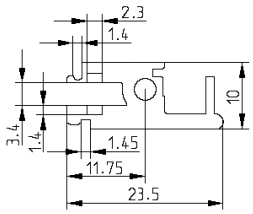
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

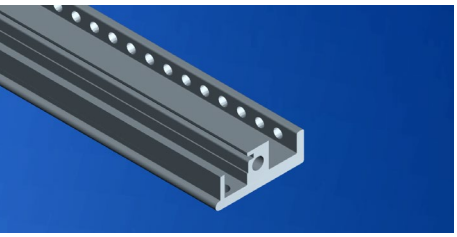
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Insulating strips, see page 93
Conductive strips, see page 95
Z rail, see page 94





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.

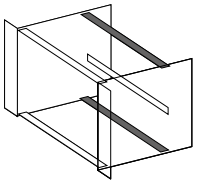
Usable width (HP)	Packs of	Order No.
84	1	**9920069**

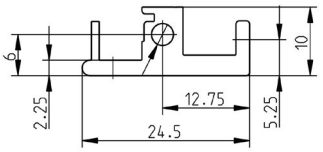
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

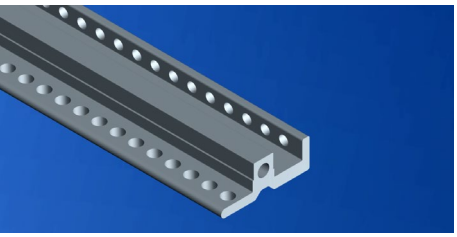
+ Accessories

Identification strips, see page 95





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.

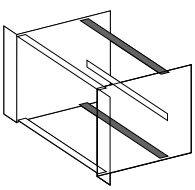
Usable width (HP)	Packs of	Order No.
84	1	**9912522**

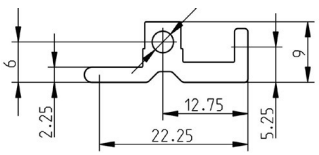
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

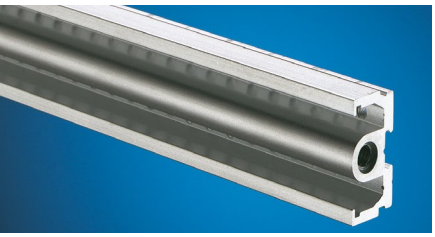
+ Accessories

Identification strips, see page 95





Horizontal rail Vario BP-M 1, for backplane, centre



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.
Also available in many intermediate sizes from 4 HP to 192 HP available on request.

Usable width (HP)	Packs of	Order No.
21	1	**3686169**
40	1	**3684963**
42	1	**3684580**
63	1	**3684581**
84	1	**3684582**
84	1	**3685270**[1)]
168	1	**3684579**
192	1	**3688003**[2)]

[1)] Including 2 assembly screws

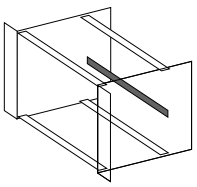
[2)] Anodised

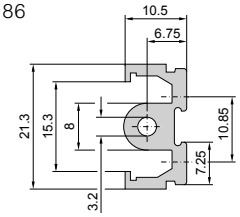
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

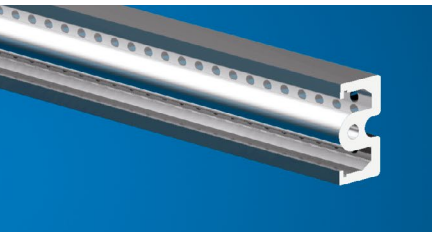
+ Accessories

Insulating strips, see page 93
Conductive strips, see page 95
Z rails, see page 94
Adaptor rail, see page 86





Horizontal rail Vario BP-M 2, for backplane, centre



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

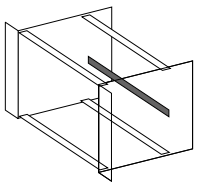
Note

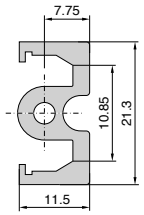
Other sizes available on request.

Usable width (HP)	Packs of	Order No.
84	1	**9912523**

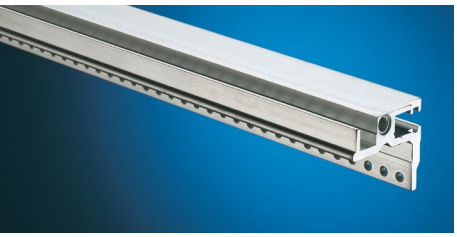
+ Accessories

Adaptor rail, see page 86





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

Note

Also available in many intermediate sizes from 4 HP to 192 HP available on request.

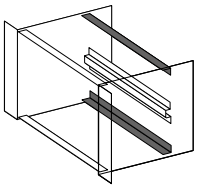
Usable width (HP)	Packs of	Order No.
42	1	**3686191**
63	1	**3686919**
84	1	**3686159**

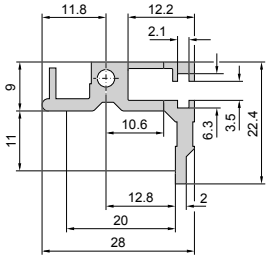
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

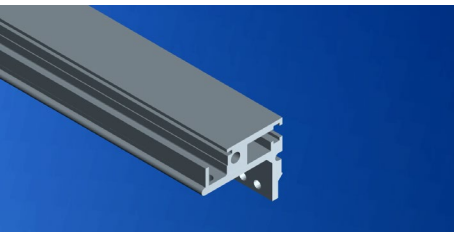
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95





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.
Other sizes available on request.

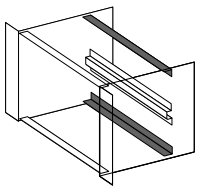
Usable width (HP)	Packs of	Order No.
84	1	**9901991**

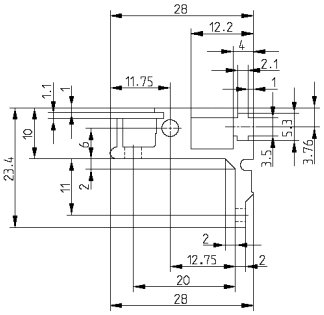
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories

Threaded inserts, see page 94





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

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.
Other sizes available on request.

Usable width (HP)	Packs of	Order No.
42	1	**3687600**[1]
63	1	**3687601**[1]
84	1	**3687602**[1]
84	1.	**3634085**[2]
168	1	**3687603**

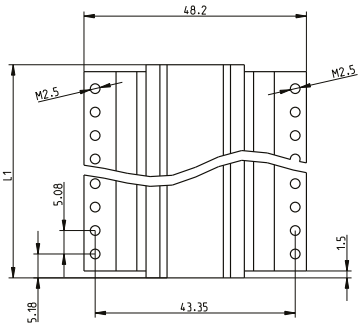
[1] With front machining see drawing
[2] Including 4 assembly screws

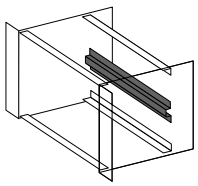
+ Also required

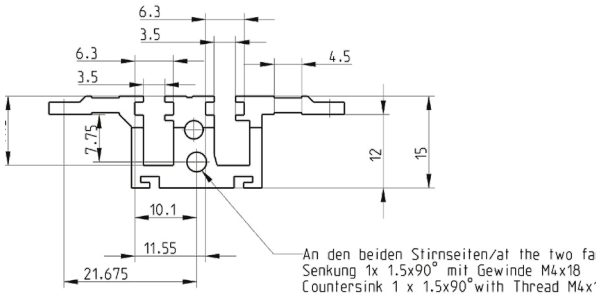
Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories

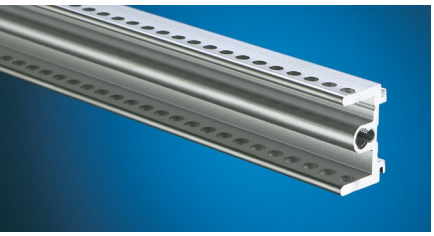
Adaptor rail, see page 78
Threaded insert, see page 94







Adaptor rail, rear centre



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 centre 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

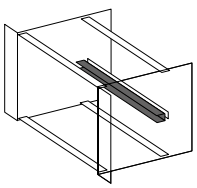
Horizontal rail 192 HP, anodised without end face machining. Suitable for individual cutting to length.
Other sizes available on request.

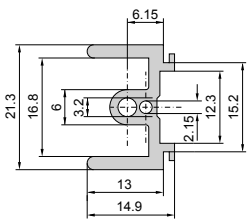
Usable width (HP)	Packs of	Order No.
12	1	**3684587**
16	1	**3684588**
20	1	**3684589**
40	1	**3684964**
42	1	**3684590**
63	1	**3686005**
84	1	**3684591**
84	1	**3685272**[1]
168	1	**3684584**
192	1	**3688004**[2]

[1] Including 4 assembly screws
[2] Anodised

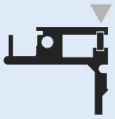
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148





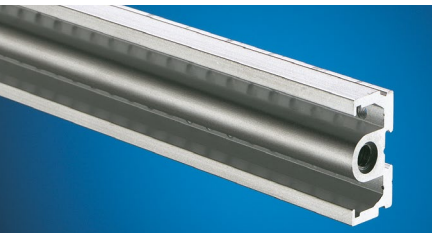
Overview horizontal rails HeiPac Vario ECO

Main sections / Additional sections	**V 1** Front horizontal rail	**BP 3** Rear horizontal rail	**CON 2** Rear horizontal rail, with integral Z rail	**BP-M 1** Rear horizontal rail, centre
	Page 89	Page 89	Page 88	Page 88
Adaptor rail, rear centre, to accommodate guide rails Page 86	-	-	-	
Z rail for connector Page 94	-		-	
Insulating strip [1] Page 93	-		-	
Conductive strip [2] Page 95	-		-	
Threaded insert Page 94				-
Identification strip Page 95			-	-
EMC gaskets, horizontal Page 93		-	-	-

For [1]insulated or [2]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.

Horizontal rail Vario BP-M 1, for backplane, centre



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	**3684582**
84	1	**3685270** [1]

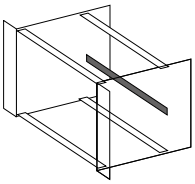
[1] Including 2 assembly screws

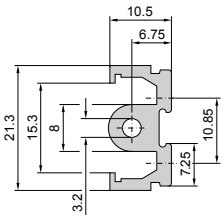
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

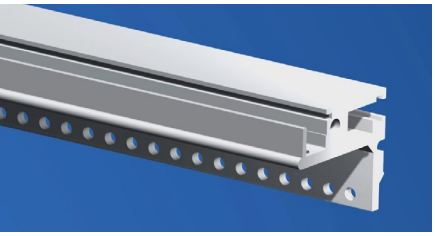
+ Accessories

Conductive strips, see page 95
Insulating strips, see page 93
Z rails, see page 94
Adaptor rail, see page 86





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.

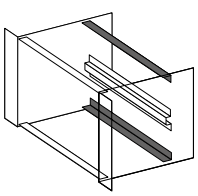
Usable width (HP)	Packs of	Order No.
84	1	**9901991**

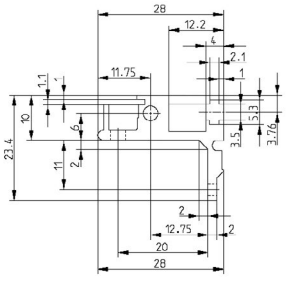
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

+ Accessories

Threaded inserts, see page 94





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

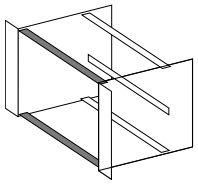
Usable width (HP)	Packs of	Order No.
84	1	**3684562**

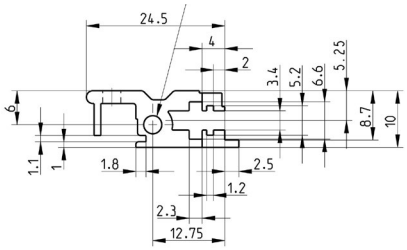
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

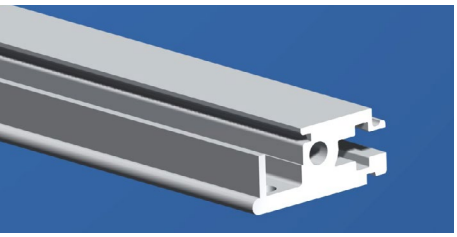
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Gaskets, see page 93





Horizontal rail Vario BP 3, for backplane, with notch



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
- Notch 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.

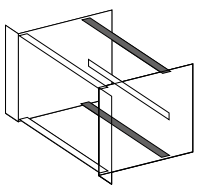
Usable width (HP)	Packs of	Order No.
84	1	**3688104**

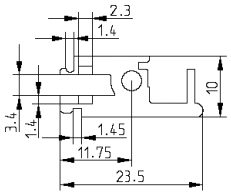
+ Also required

Assembly screws M4 x 12, packs of 100, order no. 3654300, see page 148

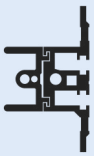
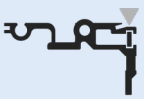
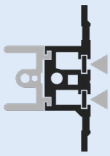
+ Accessories

Threaded inserts, see page 94
Identification strips, see page 95
Conductive strips, see page 95
Insulating strips, see page 93
Z rails, see page 94
Gaskets, see page 93





Overview horizontal rails HeiPac EASY

Main sections / Additional sections	**EASY V 1** Front horizontal rail, with double screw fastening	**EASY BP 1** Rear horizontal rail, with double screw fastening, for mounting backplanes	**BP 2** Rear horizontal rail, with double screw fastening	**EASY CON 1** Rear horizontal rail, with double screw fastening, with integral Z rail	**Vario CON-M 1** Rear horizontal rail, with integral Z rail	**Vario BP-M 2** Rear horizontal rail, centre	**EASY H 1** Rear horizontal rail, with double screw fastening, for mounting rear panels
	Page 91	Page 91	Page 85	Page 92	Page 86	Page 84	Page 92
Adaptor rail, rear centre, to accommodate guide rails Page 86	-	-	-	-			-
Z rail for connector Page 94	-	-		-	-	-	-
Insulating strip [1] Page 93	-	-		-	-	-	-
Conductive strip [2] Page 95	-	-		-	-	-	-
Threaded insert Page 94		-				-	
Identification strips Page 95	-	-		-	-	-	-
EMC gaskets, horizontal Page 93	-	-	-	-	-	-	-

For [1]insulated or [2]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
- 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	**3634600**	**9921803**[1)]

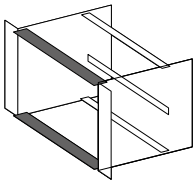
[1)] with HP pattern printing

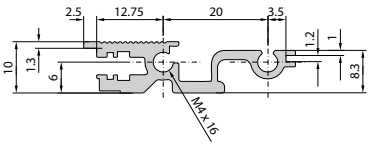
+ Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634430 (packs of 100)

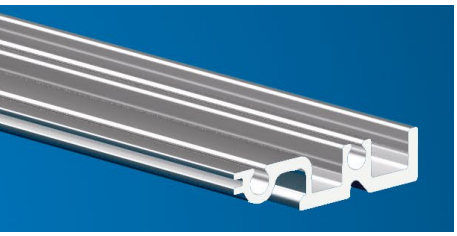
+ Accessories

Threaded inserts, see page 94





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
- 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

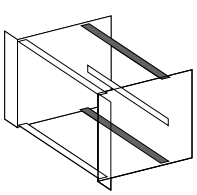
Note

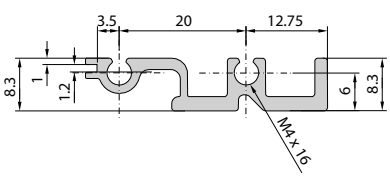
Due to integrated contact area, insulating strips cannot be used.

Usable width (HP)	Packs of	**Order No.**
84	2	**3634615**

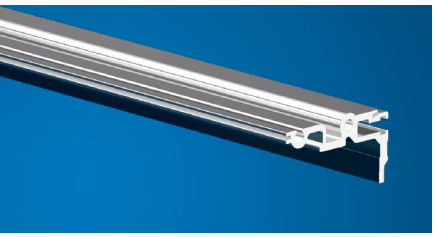
+ Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634430 (packs of 100)





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



To accommodate guide rails, with integral Z rail for the attachment of 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
- 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

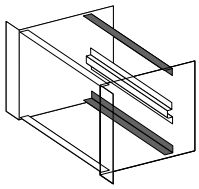
Usable width (HP)	Packs of	Order No.
84	2	**3634620**

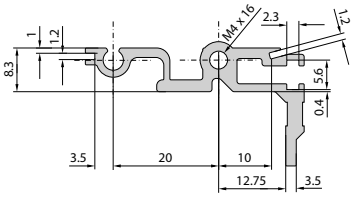
+ Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634430 (packs of 100)

+ Accessories

Threaded inserts, see page 94





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 114 Covers EASY version 2
- On request with double screw fastening to ensure a high stability
- Straight-through core hole for optional double screw fastening
- 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

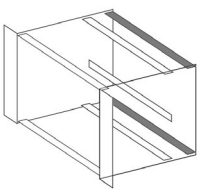
Usable width (HP)	Packs of	Order No.
84	2	**3634515**

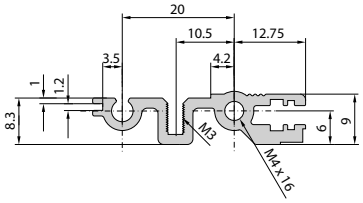
+ Also required

Assembly screws M4 x 16 for double screw fastening, order no. 3634430 (packs of 100)

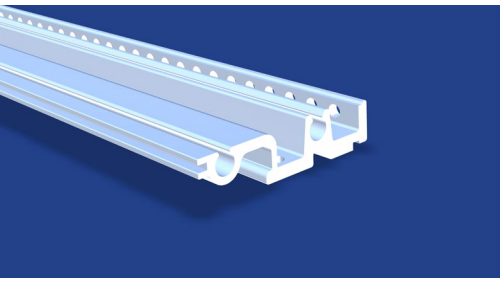
+ Accessories

Threaded inserts, see page 94





Horizontal rail EASY BP 2, for backplane



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

- 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
- Height of the profile allows cover extension
- Straight-through core hole for optional double screw fastening

Material
Extruded aluminium section

Surface finish
Non-corrosive

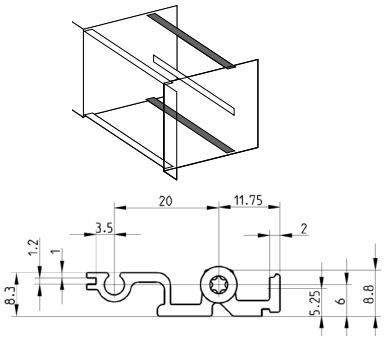
Supply includes
Horizontal rail with pre-assembled threaded insert and screws M4 x 16

Usable width (HP)	Packs of	Order No.
84	1	**3634765** [1]
84	2	**3634775** [1]

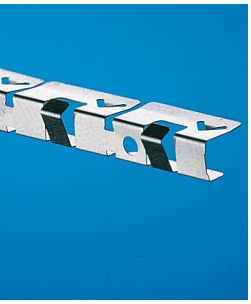
[1] Including 2 assembly screws M4 x 16

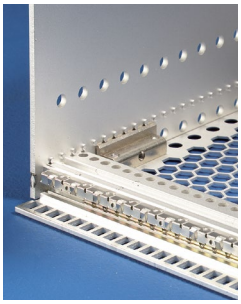
+ Also required
Assembly screws M4 x 16 for double screw fastening, order no. 3634430 (packs of 100)

+ Accessories
Insulating strips, see page 93
Conductive strips, see page 95



EMC gaskets for front horizontal rails





EMC

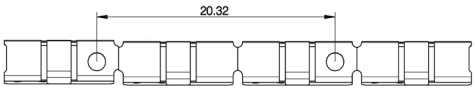
Suitable for horizontal rails
Vario V 1, 2, 3, V-Ext. 1, 2, 3, 4

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

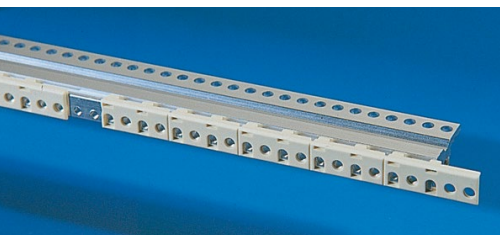
Material
Stainless steel

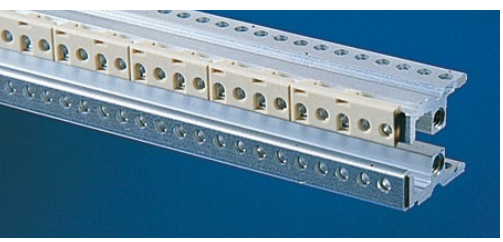
European patent
no. 0 937 375 with validity for DE
US patent no. 6,137,052
Chinese patent
no. ZL 97 1 98582.0

Usable width (HP)	Packs of	Order No.
For top/bottom horizontal rail		
40	1	**3684974**
40	10	**9921945**
84	1	**3684808**
84	10	**3684246**
For sub-division of 6 U into 2 x 3 U, between 2 horizontal rails		
84	1	**3685789**
84	10	**3685229**



Insulating strip





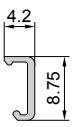
Suitable for horizontal rails
Vario BP 1, 2, 3, BP-M 1

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	**3684611**
21	8	**3685274**



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

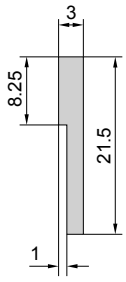
Surface finish

Clear-chromated

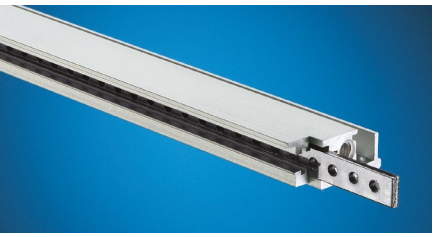
Usable width (HP)	Packs of	Order No.
4	1	**3684597**
8	1	**3684598**
20	1	**3684599**
40	1	**3684965**
42	1	**3684600**
63	1	**3684601**
84	1	**3684602**
84	2	**3685271**

+ Also required

Assembly screws M2.5 x 6, packs of 100, order no. 3654340, see page 148



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

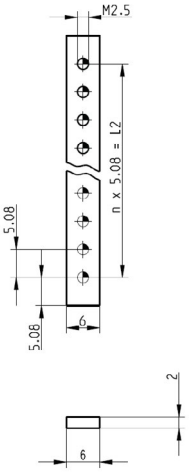
Sheet steel, zinc-plated

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	**3684603**	-
7	1	**3684604**	-
12	1	**3684605**	-
16	1	**3684606**	-
20	1	**3684607**	-
21	1	**3686149**	-
40	1	**3684966**	-
42	1	**3684608**	-
63	1	**3684609**	-
84	1	**3684610**	**9901816**

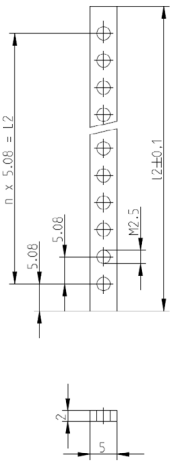
1 6x2 mm for HeiPac Vario

2 5x2 mm for HeiPac EASY

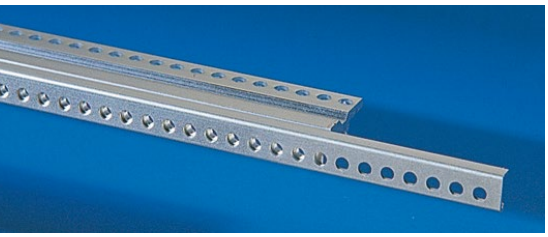
1



2



Conductive strip



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

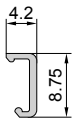
For conductive mounting of backplanes.

- 84 HP
- Slides onto the rear horizontal rail

Material

Aluminium

Usable width (HP)	Packs of	**Order No.**
84	1	**3684612**
84	2	**3685273**



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

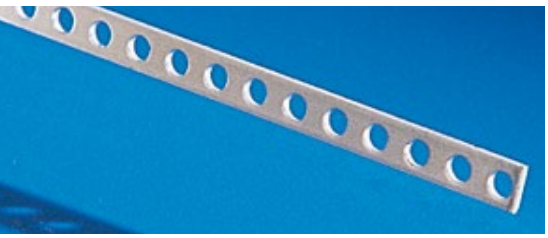
2 mm wide:
- for front horizontal rails (channel on front face)

Material

Scotchcal™ adhesive foil, colour aluminium

For horizontal rail	Width mm	Label	Packs of	**Order No.**
Front	4	1 ... 83	1	**3687575**
Rear	4	1 ... 167	1	**3687577**
Front	4	83 ... 1	1	**3687574**
Front	2	1 ... 84	1	**3687576**

Perforated strip

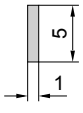


Perforated strips with 2.9 mm diameter holes in HP pitch pattern.
Holes for centring shielded plug-in units.

Material

Aluminium

Usable width (HP)	Packs of	**Order No.**
84	2	**3685275**



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

EMC

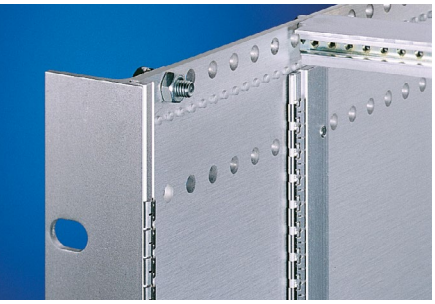
Version 1: Segmented

U	**Order No.** Packs of 1	**Order No.** Packs of 10
1	**3686973**	**3684236**
2	**3686974**	**3684237**
3	**3686975**	**3684238**
4	**3686976**	**3684239**
6	**3686977**	**3684240**
7	**3686978**	**3684241**
9	**3686979**	**3684242**
10	**3686980**	**3684243**
11	**3686981**	**3684244**

Version 2: One-piece

U	**Order No.** Packs of 1	**Order No.** Packs of 10
2	**3688610**	**-**
3	**3688611**	**9921942**
4	**3688612**	**-**
5	**3688613**	**-**
6	**3688614**	**9921943**
7	**3688615**	**-**
8	**3688634**	**-**
9	**3688616**	**9921944**
10	**3688609**	**-**
11	**3688633**	**-**
12	**3688606**	**-**

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

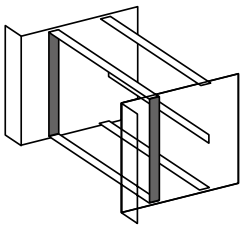
Surface finish
Clear-chromated

Note
2 sections are required for each subrack.

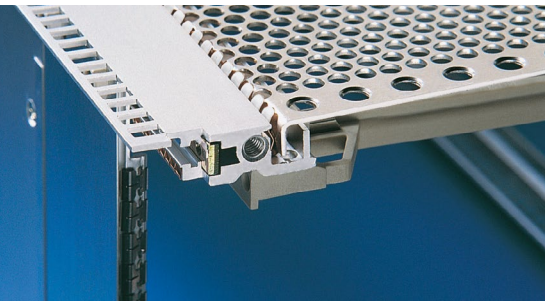
U	Packs of	**Order No.**
3	1	**3684643**
6	1	**3684644**
9	1	**3684645**

+ Also required
EMC gaskets, vertical, see above
Assembly screws M3 x 6, packs of 100, order no. 3684233, see page 148

EMC



EMC gaskets for covers

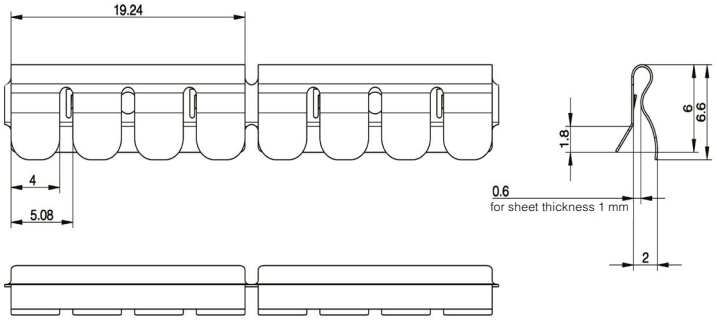


Suitable for horizontal rails
Vario V 1, 2, 3, V-Ext. 1, 2, 3, 4
For EMC shielding between the horizontal rails and covers.

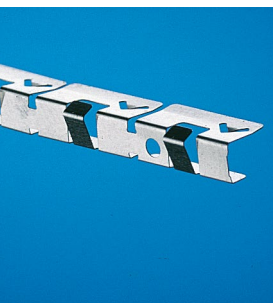
Material
Stainless steel

HP	Packs of	Order No.
40	1	**3684975**
84	1	**3684807**
84	10	**3684245**

EMC



EMC gaskets for front horizontal rails



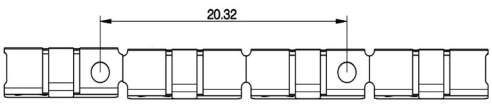
Suitable for horizontal rails
Vario V 1, 2, 3, V-Ext. 1, 2, 3, 4
For horizontal EMC protection.
For snapping onto the front horizontal rails.

Material
Stainless steel

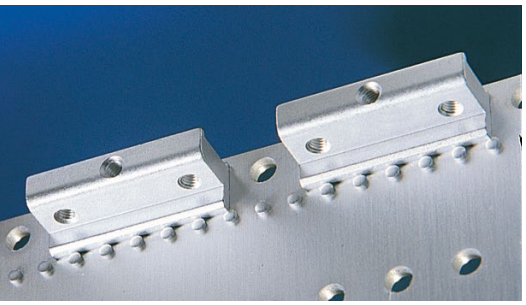
European patent
no. 0 937 375 with validity for DE
US patent no. 6,137,052
Chinese patent
no. ZL 97 1 98582.0

Usable width (HP)	Packs of	Order No.
For top/bottom horizontal rail		
40	1	**3684974**
40	10	**9921945**
84	1	**3684808**
84	10	**3684246**
For sub-division of 6 U into 2 x 3 U, between 2 horizontal rails		
84	1	**3685789**
84	10	**3685229**

EMC



Mounting blocks for cover plates



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

Material
Die-cast zinc

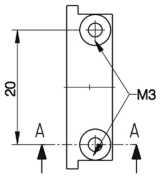
Surface finish
Nickel-plated

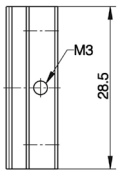
Note
For EMC applications, mounting blocks must be fitted across the entire subrack depth.

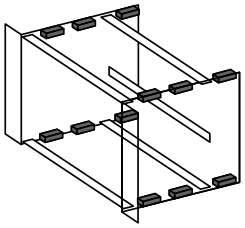
	Packs of	Order No.
Mounting blocks 28.5 mm long	10	**3684234**

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

EMC

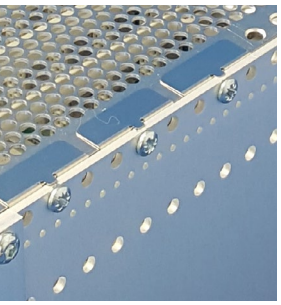






+ Also required
Assembly screws M3 x 6, packs of 100, order no. 3684233, see page 148

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

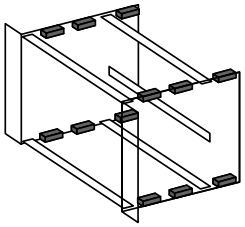
Note
For EMC applications, mounting clips must be fitted across the full depth of the subrack.

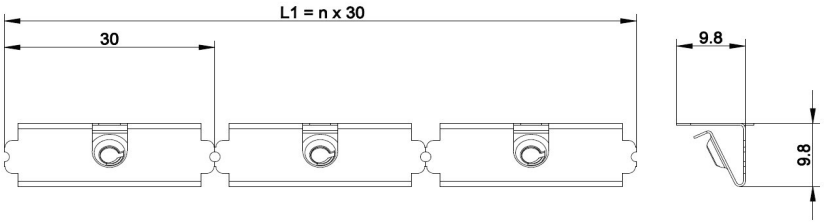
Length mm	n[1)]	Packs of	Order No.
30	1	1	**3688109**
30	1	50	**3634450**
90	3	1	**9921722**
120	4	1	**9921883**
150	5	1	**9921723**
180	6	1	**9921884**
210	7	1	**9921724**
240	8	1	**9921885**

[1)] n = 1 mounting clip as single piece from n = 3 interconnected mounting clips

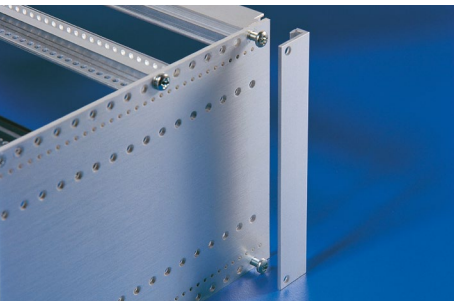
+ Also required
Assembly screws, order no. 9921879, see page 148

EMC





Trim section, rear, ECO



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

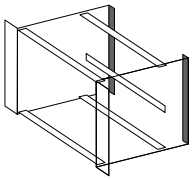
Surface finish

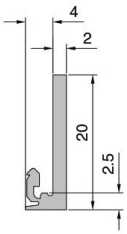
Clear-chromated

U	Packs of	Order No.
3	1	**3688112**
6	1	**3688113**

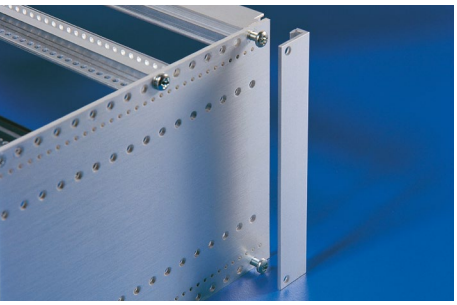
+ Accessories

EMC gaskets, vertical, see page 96





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

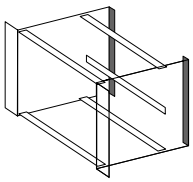
Surface finish

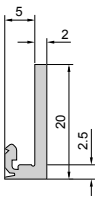
Clear-chromated

U	Order No.	
	Packs of 1	Packs of 2
2	**3684633**	**-**
3	**3684634**	**3685276**
4	**3684635**	**-**
6	**3684636**	**3685277**
7	**3684637**	**-**
9	**3684638**	**-**
10	**3684639**	**-**
11	**3684640**	**-**

+ Accessories

EMC gaskets, vertical, see page 96





Fixing for HeiPac top-hat rail version 1

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

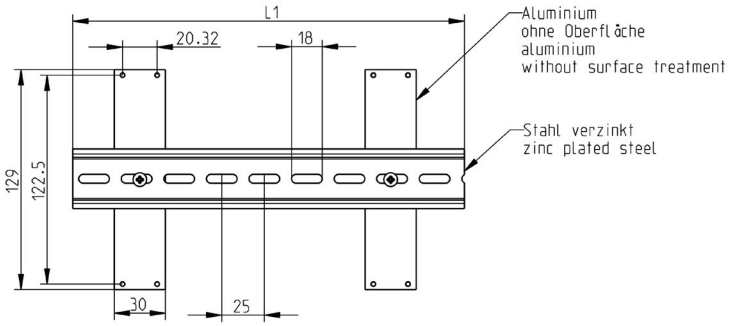
Material

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

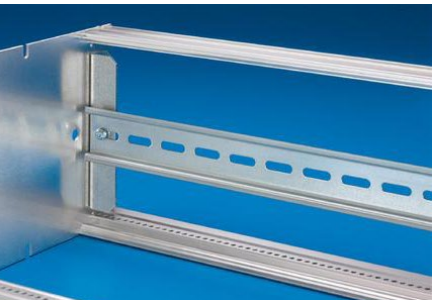
Supply includes

2 rail holders (3 from 300mm top-hat rail length)
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	**9918814**
3 U	35	200	7.5	1	**9918815**
3 U	35	300	7.5	1	**9918816**
3 U	35	400	7.5	1	**9918817**
3 U	35	100	15	1	**9918818**
3 U	35	200	15	1	**9918819**
3 U	35	300	15	1	**9918820**
3 U	35	400	15	1	**9918821**



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

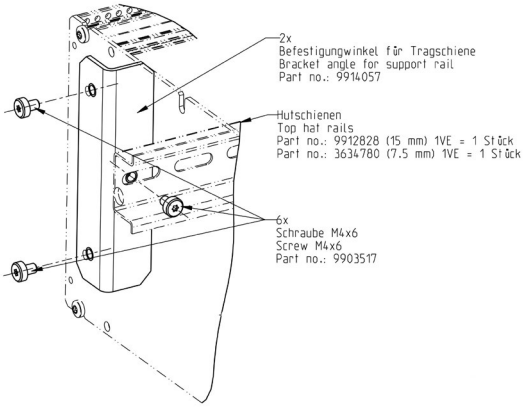
Supply includes

2 fixing brackets
Assembly parts

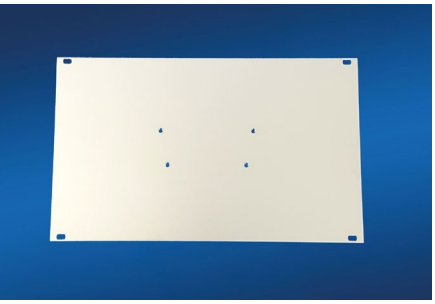
Packs of	Order No.
1 kit	**3634770**

+ Also required

Top-hat rail, packs of 1, see page 101



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	**3687742**	**3687750**
42	1	**3687744**	**3687751**

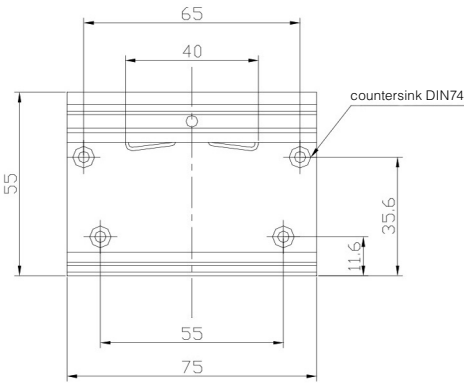
+ Also required

Top-hat rail adapter, packs of 1, Order no. 3687739, see page 101

Top-hat rail adapter

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

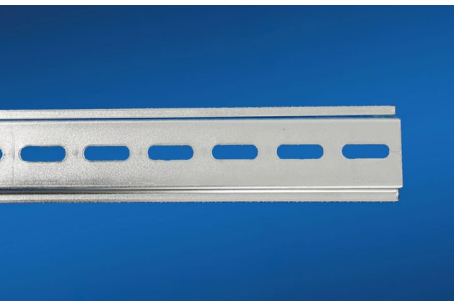
Material
Extruded aluminium section



Packs of	Order No.
1	**3687739**

+ Also required
Assembly screws, packs of 100,
Order no. 3606550, see page 148
Back panel for top-hat rail mounting, see page 100

Top-hat rail



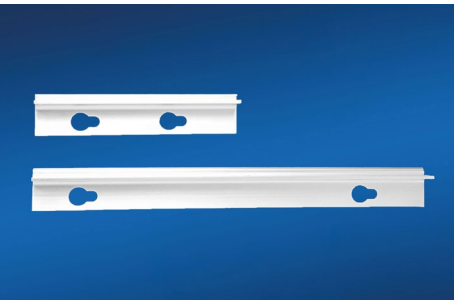
Top-hat rail according to DIN EN 60715 with long hole 5.2x18 mm. Suitable for HeiPac top-hat rail application version 2.

Material
Steel

Surface finish
Zinc-plated

For Width	Dimensions mm	Packs of	Order No.
84 HP	35 x 7.5 x 425	1	**3634780**
84 HP	35 x 15 x 425	1	**9912828**

Flange 19" for HeiPac Vario COMPACT, mounting plate



For HeiPac Vario Compact

Material
Extruded aluminium section

Surface finish
Clear-chromated

Note
For wall mounting.

Version	Packs of	Order No.	
		3 U	6 U
left	1	**3687776**	**3687800**
right	1	**3687743**	**3687777**

HeiPac DIN Rail ECO

Flexible subrack for mounting top-hat rail applications with an enclosure depth of 150 mm.
Suitable for 19-inch control cabinets.

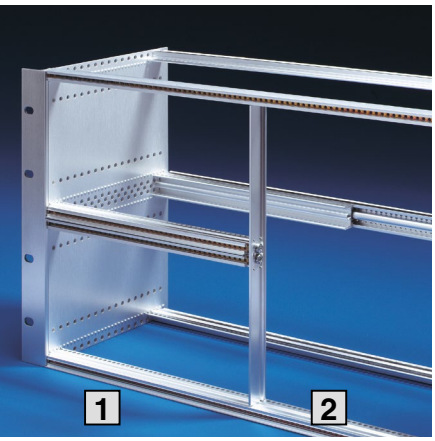
Material
Aluminium

Supply includes
Subrack
DIN rail TS35/7.5, width 400 mm
Earthing lead left and right

Note
Fully assembled

Height (H) U	W HP	Side Panel Depth (mm)	Surface	Order No.
3	84	150	powder coated	**9923132**
3	84	150	pre-galvanized	**9923133**

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 1 (2 x 3 U)	HP 2 (6 U)	Order No.
14	68	**3684220**
21	61	**3684221**
28	54	**3684222**
40	42	**3684223**
42	40	**3684224**

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

HP (1 x 6 + 1 x 3 U)	HP (9 U)	Order No.
4	80	**3684225**
8	76	**3684226**
12	70	**3684227**
16	66	**3684228**
20	62	**3684229**

+ Accessories
Front panel, see page 94
EMC gaskets, horizontal, see page 97

Vertical support

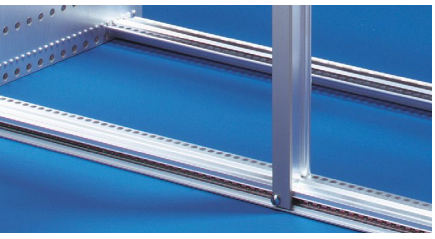
Required for the combined installation of single, double and triple Eurocards in one subrack.

Material
Aluminium, extruded

Surface finish
Clear-chromated

U	Packs of	Order No.
6	1	**3684678**
9	1	**3684679**

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



To conceal the vertical support of the vertical divider kit.

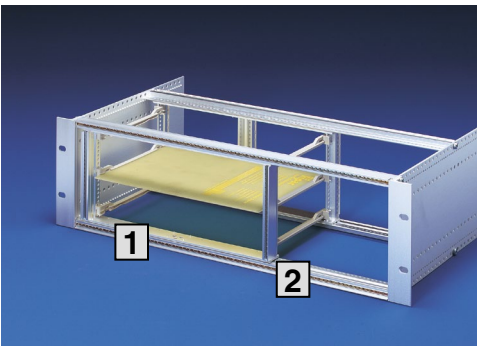
Material
Aluminium, extruded

Supply includes
Assembly parts

Note
EMC version, see page 129.

U	HP	Packs of	Order No.
6	2	1	**3685176**
9	2	1	**3685286**

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, centre
2 threaded inserts
4 or 6 insulating strips
4 connecting parts
Assembly parts

For backplane assembly
with standard horizontal rail, front

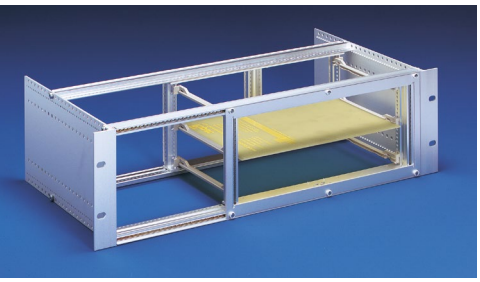
U horizontal	Order No.	
	for 3 U subrack	for 4 U subrack
6	**3684206**	**3684208**
9	**3684207**	**3684209**

For backplane assembly
Horizontal rail front, with 10 mm extension

U horizontal	Order No.	
	for 3 U subrack	for 4 U subrack
6	**3684210**	**3684212**
9	**3684211**	**3684213**

+ Accessories
Trim frame, see page 95

Trim frame for horizontal mounting kit



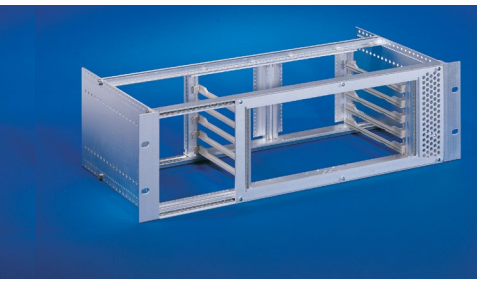
To conceal the front sections of the horizontal mounting kit.

Material
Aluminium, anodised

U horizontal	HP	Order No.	
		for 3 U subrack	for 4 U subrack
6	56	**3685783**	**3685785**
9	84	**3685784**	**3685786**

+ Also required
Collar screws and plastic collars, packs of 100 sets, order no. 3658160, see page 148

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	**3685787**	**3685788**

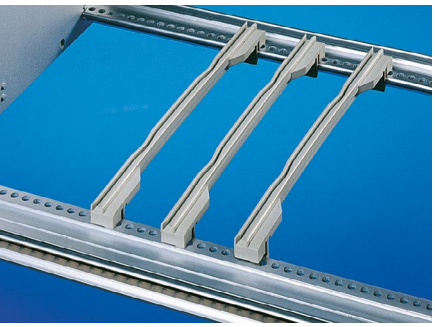
+ Also required
Collar screws and plastic collars, packs of 100 sets, order no. 3658160, see page 148

EMC version

U horizontal	HP	Order No.	
		for 3 U subrack	for 4 U subrack
6	63	**3685291**	**3685292**

+ Also required
Centring screws, packs of 100, order no. 3687050, see page 149

Guide rails 2 HP, 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

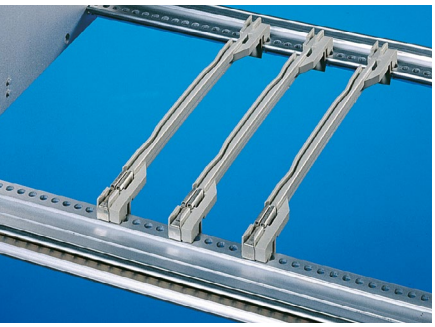
Polycarbonate
Base material to UL 94-V0

For PCB depth mm	Packs of	Order No.	
		Snap-in fastening/ screw-fastening[1)]	Snap-in fastening
100	1	-	**3688005**
160	10	**3688048**	**3688045**
220	10	**3688049**	**3688046**
280	10	**3688052**	**3688047**

+ Also required

[1)] Assembly screws, packs of 100, order no. 3654360, see page 148

Guide rails 2HP for EMC spring installation, 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	**3688053**
220	10	**3688054**
280	10	**3688056**

+ Also required

Contact springs, order no. 3687726, see page 104

ESD contacts for 2 HP guide rails

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

Material

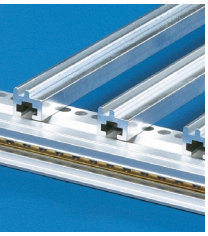
Copper-tin alloy

Note

Suitable for 2 HP guide rails, see page 96

Packs of	Order No.
10	**3687726**
100	**9901424**

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 screwed directly into the horizontal rail.

Material

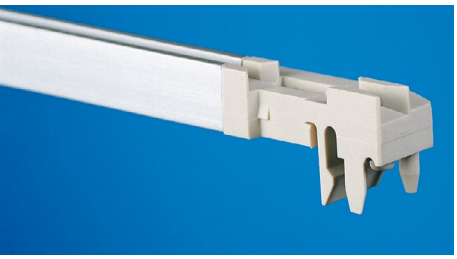
Aluminium

For PCB depth mm	Packs of	Order No.	
		1 Without end piece[1)]	2 For end pieces
160	10	**3688064**	**3688057**
220	10	**3688065**	**3688058**
280	10	**3688066**	**3688059**
1000	1	**3684666**	-

+ Also required

[1)] Screw M2.5 x 6, packs of 100, order no. 3654340, see page 148
[1)] Nut M2.5, packs of 100, order no. 3654370, see page 148
[1)] Retaining cage M2.5, packs of 100, order no. 9901417, see page 148

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

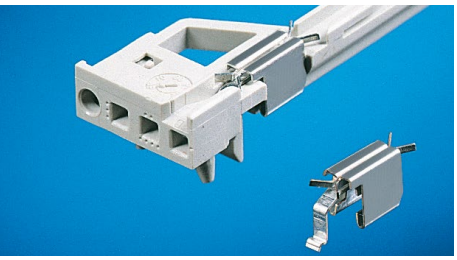
End piece, front
End piece, rear

Version	Packs of	Order No.
End piece, front + rear	10	**3688028**

+ Also required

Contact springs, order no. 3687726, see page 104

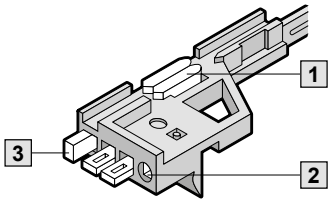
Keyable guide rails 4 HP, plastic



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	**3685257**	-	-	-
220	10	**3685258**	-	-	-
280	10	**3685259**	-	-	-
160	1	-	**3686063**	**3688055**	**3689089**
220	1	-	**9902240**	-	**3689091**

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 or electronics-quote@heitec.de.

+ Accessories

Keys, see page 109
ESD contact, see page 109
Extractor handles type IV, IVs, VII, see page 118 et seq.

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

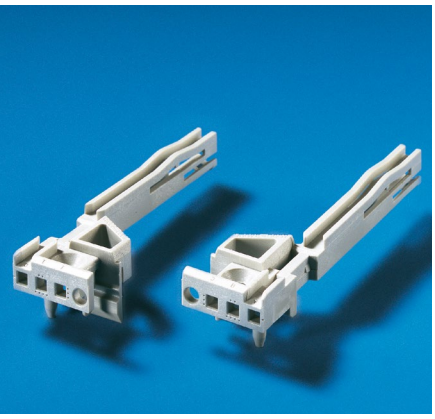
Only suitable for use in conjunction with extractor handles type IV, IVs, VII with ½ HP offset.

For PCB depth mm	Packs of	Colour	Order No.
160	10	Grey	**3688062**
	1	Yellow	**3689090**
	1	Green	**3687832**
220	10	Grey	**3688060**
	1	Yellow	**3689092**

+ Accessories

Keys, see page 109
ESD contact, see page 109
Extractor handles Type IVs, VII with ½ HP offset, see page 119

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

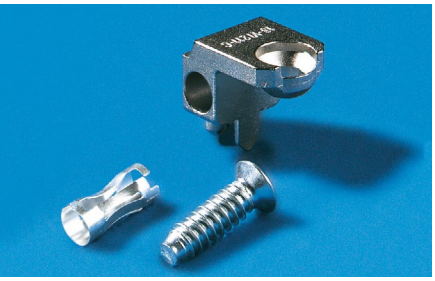
Only for use in conjunction with type IV, IVs, VII injector/extractor handles.
Not suitable for horizontal rails with double screw-fastening.

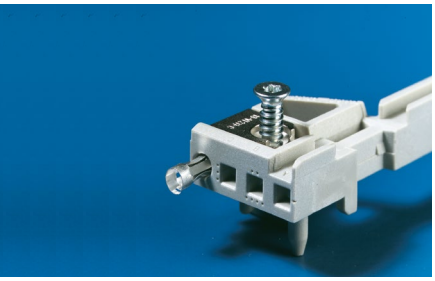
Colour	For PCB depth mm	Packs of	Order No.	
			Guide rails	
			Top	Bottom
Grey	80	1	**3687936**	**3687937**
Yellow	80	1	**3689097**	**3689098**

+ Accessories

Keys, see page 109
ESD contact, see page 109
Extractor handles type IV, IVs, VII, see page 118 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	**3689036**	**3687951**

+ Also required

Assembly screws 3.5 x 12 mm, packs of 50, order no. 3684109, see page 148

Keyable guide rails, aluminium, three-part

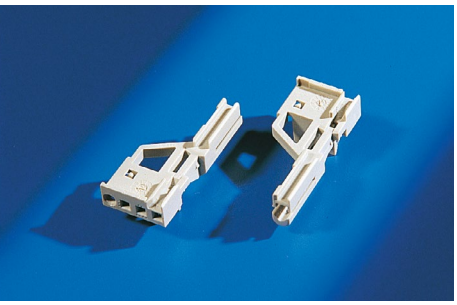
Keyable guide rails with aluminium centre part, for high mechanical loads.
Suitable for 1.6 – 2.0 mm PCB thickness.

The guide rails are compiled from the following individual components:

1 2 end pieces

2 1 aluminium centre part

3 Insulating centre part(s)



1 *End pieces*

For three-part guide rails
For 1.6 – 2.0 mm PCB thickness

Material
Polycarbonate
Base material to UL 94-V0

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	**3685265**

2 *Aluminium centre 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	-	**3685260**
280	-	**3685261**
340	-	**3685262**
400	-	**3685263**
1000	**3684672**	-

3 *Insulated centre part*

For three-part guide rails
The insulating centre part is pushed onto the aluminium centre piece.
Length: 60 mm

Material
Plastic, self-extinguishing to UL 94-V0

Packs of	Order No.
10	**3685264**

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

Guide rails for 4.4″ drive modules

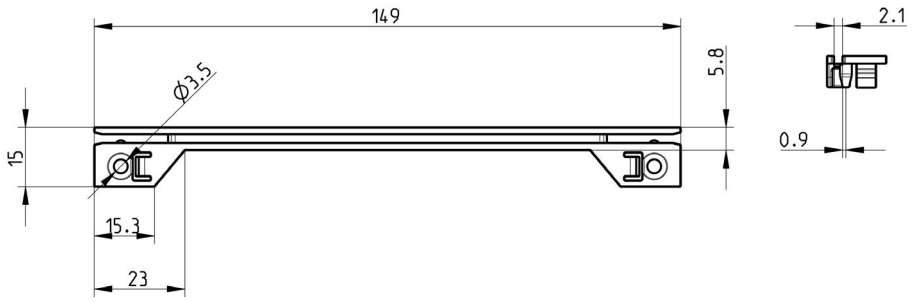
Snap-fastening guide rails to accommodate PCBs and assemblies with a height of 4.4″ (111.76 mm).
The guide rails can be screwed and also be used in combination with heavy load rails.

Material
Polycarbonate
Base material to UL 94-V0

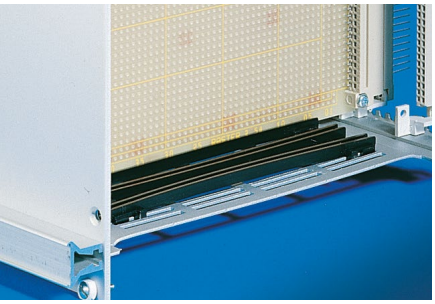
Colour
Grey (RAL 7032)

For PCB depth mm	Packs of	Order No.
160	1	**9919834**

+ Accessories
Countersunk screw Torx® 3.5 x 8 mm, order no. 9920080



Guide rails for box type plug-in units



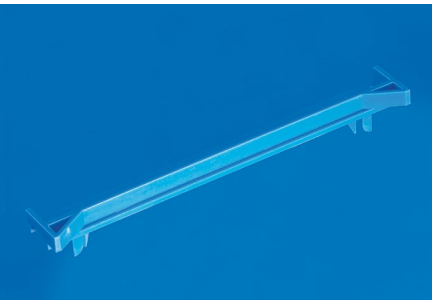
For PCB thickness 1.6 mm.
For insertion into covers with vent slots (from 12 HP), see page 134.

Material
Noryl™

Note
PCB holder for box-type plug-in units see page 125.

For PCB depth mm	Packs of	Order No.
160	10	**3606140**
220	10	**3606200**

Air block panel for slots



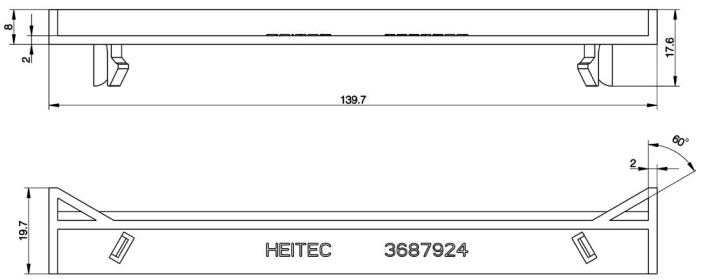
To conceal unused slots and prevent unwanted airflow. The air block panel simply snaps into position on the guide rails.

Material
Polycarbonate, self-extinguishing to UL 94-V0

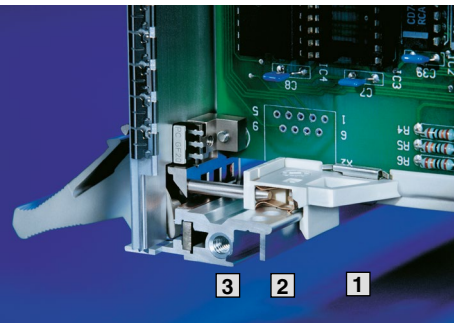
Colour
Blue

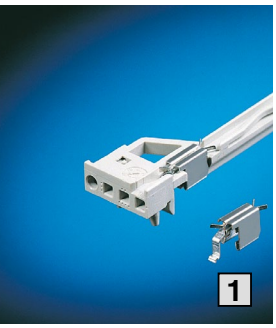
Note
Can only be used in conjunction with keyable guide rails 4 HP/160 mm.
Not suitable for use in conjunction with guide rails with ½ HP offset.

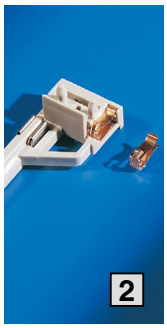
For keyable guide rail mm	Packs of	Order No.
160	1	**3687924**



ESD contacts for 4 HP guide rails







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

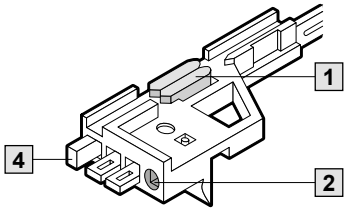
1 Stainless steel

2 Tin bronze, tin-plated

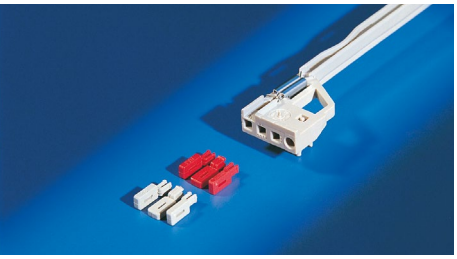
Note

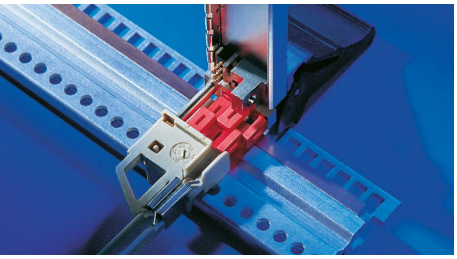
Only for use in conjunction with extractor handle with ESD pin (type IV, IVs, VII), see page 118 et seq.

ESD clip for	Packs of	Order No.
Guide rail	50	**3684204**
Front panel	50	**3684205**



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

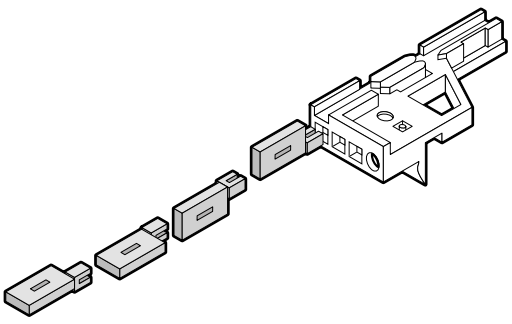
Material

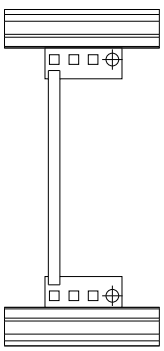
Plastic, PBTP
Base material to UL 94-V0

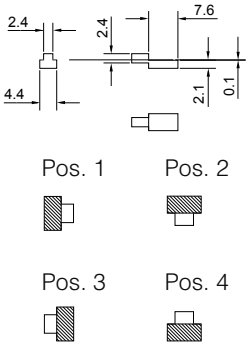
Colour	Packs of	Order No.
Grey	100	**3684325**
Red	100	**3684326**

+ Accessories

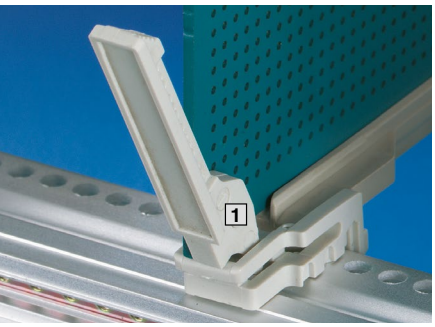
Keying tool, see page 110

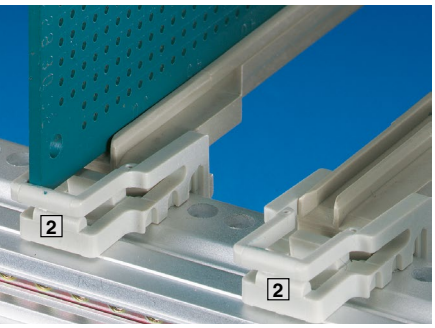






PCB ejector/retainer





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

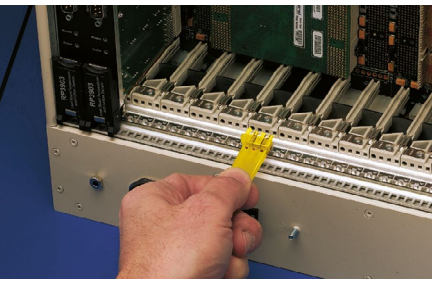
Polycarbonate
Base material to UL 94-V0

Note

Only suitable for guide rails 2 HP.

Version	Packs of	Order No.
1 PCB ejector/ retainer	10	**3687014**
2 PCB retainer	10	**3687052**

Keying tool



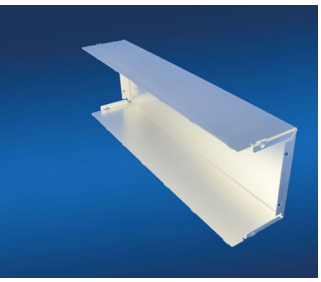
For simple assembly of keys. Up to 3 coding keys may be fitted simultaneously. An integral alignment pin makes positioning easier.

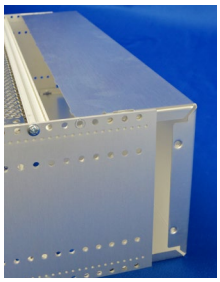
Material

Polycarbonate
Base material to UL 94-V0

Packs of	Order No.
1	**3687956**

Back cover





For HeiPac Vario, EMC and Heavy

Ensures cover for back of subrack.

Material
Aluminium

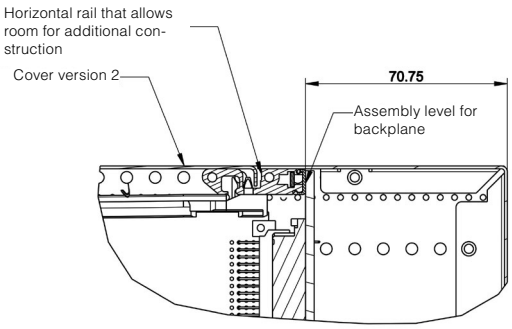
Surface finish
Clear-chromated

Supply includes
Assembly Parts

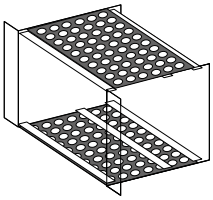
Note
The side panel depth required is obtained by taking the length of the plug-in units used and adding 85 mm (refer to table).
A precondition is the use of a horizontal rail that allows room for additional construction.

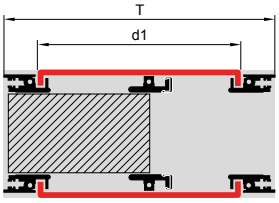
U	Packs of	Order No.
3	1	**9921685**
6	1	**9921710**

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



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 degreased, hole diameter 4 mm in perforated version.
1.0 mm aluminium, matt, pickled, chromated, for closed version.

Each set includes
2 cover plates
8 mounting blocks 28.5 mm
25 assembly screws

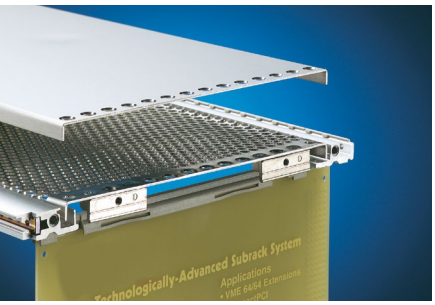
Individual unit includes
1 cover plate

Note
For EMC applications, additional mounting blocks must be fitted across the entire subrack depth.
Not suitable for HeiPac EASY and ECO, see page 114.

			Order No.			
			Single piece [1]		Set	
HP	For side panel depth (T) mm	Cover depth (d1) mm	Perforated	Solid	Perforated	Solid
21	225	192	**3687618**	**3687620**	on request	on request
21	285	252	**3687619**	**3687621**	on request	on request
42	175	142	**3684957**	**3687626**	on request	on request
42	225	192	**3687623**	**3687627**	on request	on request
42	245	212	**3684958**	**3687628**	on request	on request
42	285	252	**3685642**	**3687629**	on request	on request
84	175	142	**3684681**	**3684680**	**3685245**	**3685250**
84	225	192	**3684694**	**3684683**	on request	on request
84	235	202	**3685851**	**3685813**	on request	on request
84	245	212	**3684695**	**3684684**	**3685246**	**3685251**
84	285	252	**3684696**	**3684685**	on request	on request
84	295	262	**3685855**	**3685814**	on request	on request
84	305	272	**3685852**	**3684686**	**3685247**	**3685252**
84	345	312	**3684698**	**3684687**	on request	on request
84	355	322	**3685856**	on request	on request	on request
84	365	332	**3685853**	**3684688**	**3685248**	**3685253**
84	405	372	**3684700**	**3684689**	**3685249**	**3685254**
84	465	432	**3684701**	**3684691**	on request	on request
84	525	492	**3684702**	**3684692**	on request	on request
84	585	552	**3684703**	**3684693**	on request	on request

+ Also required
[1] Mounting blocks, see page 98
[1] EMC gaskets for cover plates, see page 97
[1] Assembly screws, packs of 100, order no. 3684233, see page 148

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 degreased, with perforated version (hole diameter 4 mm).
1.0 mm aluminium, matt, pickled, chromated, for closed version.

Each set includes

2 cover plates
8 mounting blocks 28.5 mm
25 assembly screws

Individual unit includes

1 cover plate

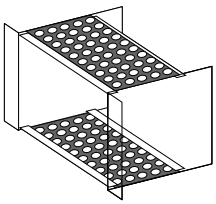
Note

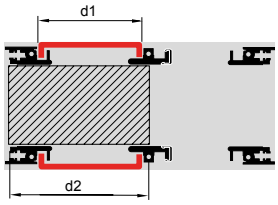
Not suitable for HeiPac EASY and ECO, see page 114.

			Order No.			
			Single piece [1]		Set	
HP	For PCB depth (d2) mm	Cover depth (d1) mm	Perforated	Solid	Perforated	Solid
21	160	142	**3687630**	**3687634**	on request	on request
21	220	202	**3687631**	**3687635**	on request	on request
42	160	142	**3684957**	**3687626**	on request	on request
42	220	202	**3687633**	**3687637**	on request	on request
42	280	262	**3687638**	**3687639**	on request	on request
84	160	142	**3684681**	**3684680**	**3685245**	**3685250**
84	220	202	**3685851**	**3685813**	on request	on request
84	280	262	**3685855**	**3685814**	on request	on request
84	340	322	**3685856**	on request	on request	on request
84	400	382	**3685857**	on request	on request	on request

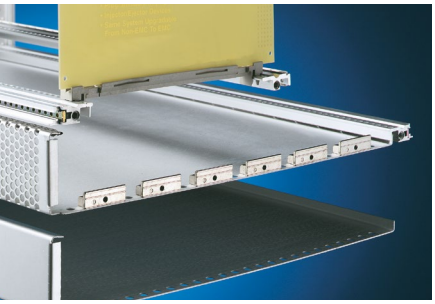
+ Also required

[1] Mounting blocks, see page 98
[1] Assembly screws, packs of 100, order no. 3684233, see page 148





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 flat cover (item 2) is additionally required

- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 1), 7 U (6 + 1)
- For mounting on the subrack side panel with the aid of mounting blocks

Material

1.0 mm aluminium degreased, with perforated version (hole diameter 4 mm).
1.0 mm aluminium, matt, pickled, chromated, for closed version.

Note

For EMC applications, mounting blocks must be fitted across the entire subrack depth.
Not suitable for HeiPac EASY and ECO, see page 114.

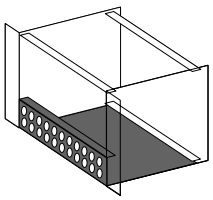
Individual unit includes

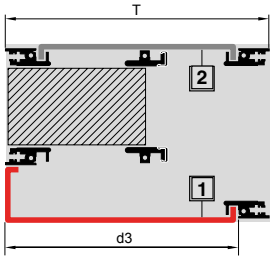
1 cover plate

			Order No.	
HP	For side panel depth (T) mm	Cover depth (d3) mm	Perforated	Solid
84	285	270	**3684720**	**3684714**
84	345	330	**3684721**	**3684715**
84	405	390	**3684722**	**3684716**
84	465	450	**3684723**	**3684717**
84	525	510	**3684724**	**3684718**
84	585	570	**3684725**	**3684719**

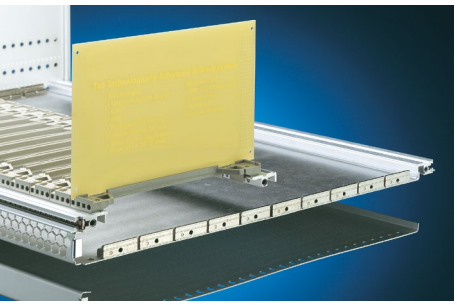
+ Also required

Mounting blocks, see page 98
EMC gaskets for covers, see page 97
Assembly screws, packs of 100, order no. 3684233, see page 148
Cover, version 1, see page 111





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 degreased, 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 114.

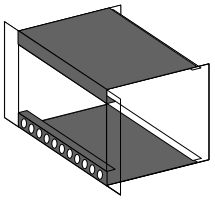
Individual unit includes

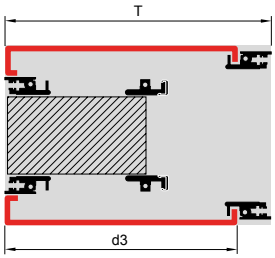
1 cover plate

			Order No.	
HP	For side panel depth (T) mm	Cover depth (d3) mm	Perforated	Solid
84	285	270	**3684732**	**3684726**
84	345	330	**3684733**	**3684727**
84	405	390	**3684734**	**3684728**
84	465	450	**3684735**	**3684729**
84	525	510	**3684736**	**3684730**
84	585	570	**3684737**	**3684731**

+ Also required

Mounting blocks, see page 98
EMC gaskets for covers, see page 97
Assembly screws, packs of 100, order no. 3684233, see page 148





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 enables 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 degreased, hole diameter 4 mm in perforated version.
1.0 mm aluminium, matt, pickled, chromated, for closed version.

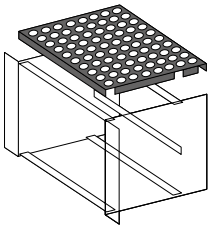
Supply includes

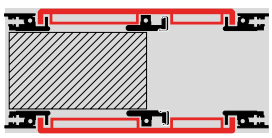
2 gaskets

Note

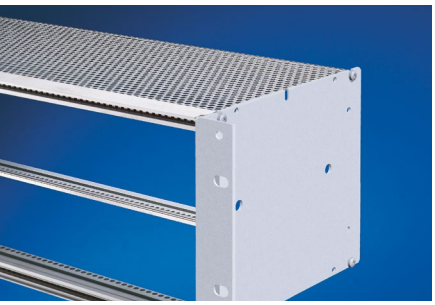
Not suitable for HeiPac EASY, see page 114.

			Order No.	
HP	Position of side notches for horizontal rails mm	For side panel depth mm	Perforated	Solid
21	160	175/185	**3687624**	**-**
21	160/220	235	**3687692**	**-**
42	160	175/185	**3687625**	**-**
42	160/220	235	**3687677**	**-**
42	160	245	**3687640**	**-**
84	160	175/185	**3687641**	**3687647**
84	160	245	**3687642**	**3687648**
84	160/220	235	**3687643**	**3687649**
84	160/220	285	**3687644**	**3687650**
84	160/220	305	**3687645**	**3687651**
84	160/220/280	345	**3687646**	**3687652**





Covers for HeiPac EASY



For subracks HeiPac EASY

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

Material

0.8 mm aluminium

Supply includes

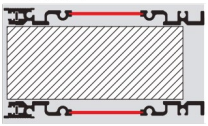
2 cover plates

Cover plates

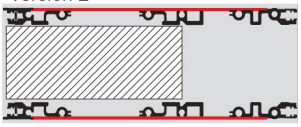
Version 1 (slide- in)
The covers are simply slid into the front and rear horizontal rails for mounting backplanes/ connectors.

Version 2 (slide-in/screw-in)
For mounting additional rear horizontal rails on the rear panels. The horizontal rails for back-plane/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



version 2



Version 1

HP	For side panel depth mm	Order No.	
		Perforated	Solid
84	175	**3634685**	**3634675**
84	235	**3634690**	**3634680**

Version 2

HP	For side panel depth mm	Order No.	
		Perforated [1]	Solid [1]
84	175	**3634650**	**3634625**
84	235	**3634655**	**3634630**
84	295	**3634660**	**3634635**
84	355	**3634665**	**3634640**
84	415	**3634670**	**3634645**

+ Also required

[1] Assembly screws, packs of 100
order no. 3684233, see page 148

+ Accessories

Fastening clips, see page 98

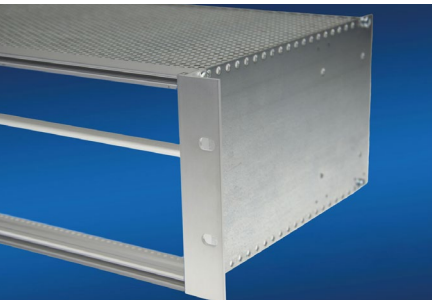
Fastening clips

Packs of	Order No.
50	**3634450**

Assembly screws for fastening clips

Packs of	Order No.
100	**9921879**

Covers for HeiPac Vario ECO



For subracks 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 on the side panels 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	**3688105**	**3688107**
84	235	**3688106**	**3688108**

+ Accessories

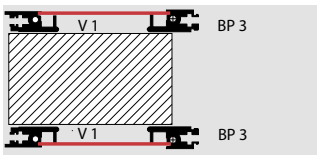
Fastening clips, see page 98

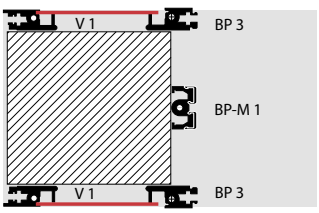
Fastening clips

Packs of	Order No.
50	**3634450**

Assembly screws for fastening clips

Packs of	Order No.
100	**9921879**





Flat front panels with extractor handle

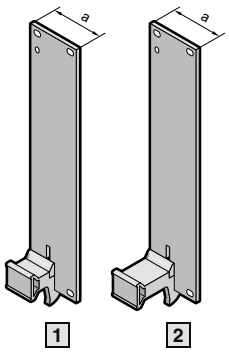
Flat partial front panels with type I or II extractor handle
Complete modular systems

Material

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

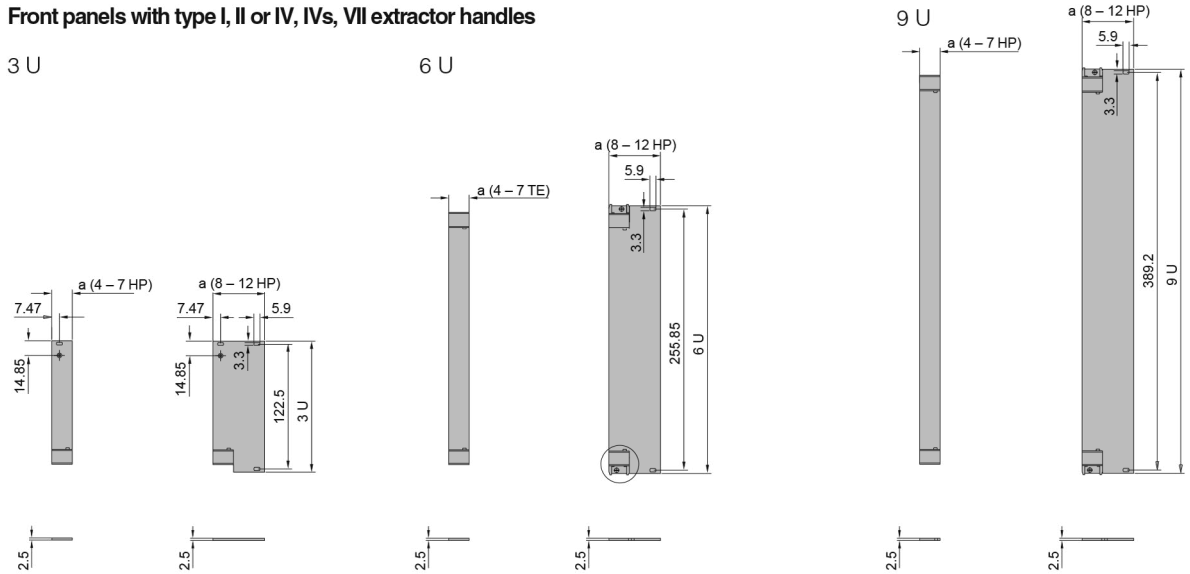
Supply includes

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

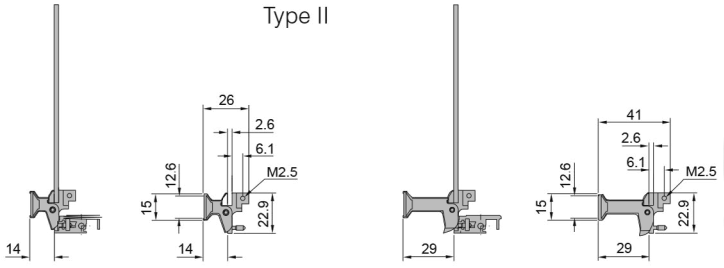


U	HP	a mm	Order No. 1 Type I	Order No. 2 Type II
3	4	20.0	**3684330**	**3684358**
3	5	25.1	**3684331**	**3684359**
3	6	30.2	**3684332**	**3684360**
3	7	35.3	**3684333**	**3684361**
3	8	40.3	**3684334**	**3684362**
3	10	50.5	**3684335**	**3684363**
3	12	60.7	**3684336**	**3684364**
6	4	20.0	**3684337**	**3684365**
6	5	25.1	**3684338**	**3684366**
6	6	30.2	**3684339**	**3684367**
6	7	35.2	**3684340**	**3684368**
6	8	40.3	**3684341**	**3684369**
6	10	50.5	**3684342**	**3684370**
6	12	60.7	**3684343**	**3684371**
9	4	20.0	on request	**3684372**
9	8	40.3	on request	**3684373**

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



Extractor handles



EMC U-channel front panels with injector/extractor handle

Complete kit for self-assembly with EMC parts with type I, II extractor handle or type IV injector/extractor handle

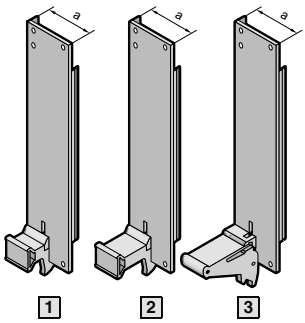
Material

Partial 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 118 et seq.



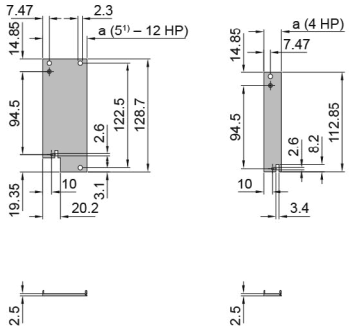
EMC

U	HP	a mm	Order No. 1 Type I	2 Type II	3 Type IV[1)]
3	4	20.0	**3684344**	**3684374**	**3684413**
3	5	25.1	**3684345**	**3684375**	**3684414**
3	6	30.2	**3684346**	**3684376**	**3684415**
3	7	35.3	**3684347**	**3684377**	**3684416**
3	8	40.3	**3684348**	**3684378**	**3684417**
3	10	50.5	**3684349**	**3684379**	**3684418**
3	12	60.7	**3684350**	**3684380**	**3684419**
6	4	20.0	**3684351**	**3684381**	**3684420**
6	5	25.1	**3684352**	**3684382**	**3684421**
6	6	30.2	**3684353**	**3684383**	**3684422**
6	7	35.2	**3684354**	**3684384**	**3684423**
6	8	40.3	**3684355**	**3684385**	**3684424**
6	10	50.5	**3684356**	**3684386**	**3684425**
6	12	60.7	**3684357**	**3684387**	**3684426**
9	4	20.0	on request	**3684388**	**3684427**
9	5	25.1	on request	on request	**3684428**
9	6	30.2	on request	on request	**3684429**
9	7	35.3	on request	on request	**3684430**
9	8	40.3	on request	**3684389**	**3684431**
9	10	50.5	on request	on request	**3684432**
9	12	60.7	on request	on request	**3684433**

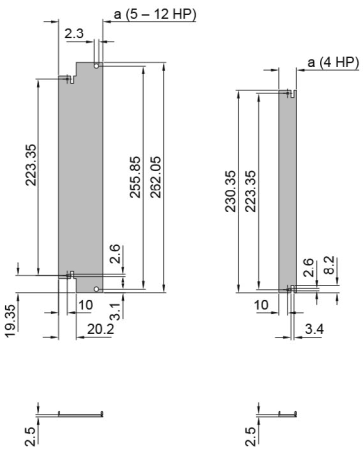
[1)] Can only be inserted in conjunction with front horizontal rails, with 10 mm extension (Vario V-Ext. 1), see page 79

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

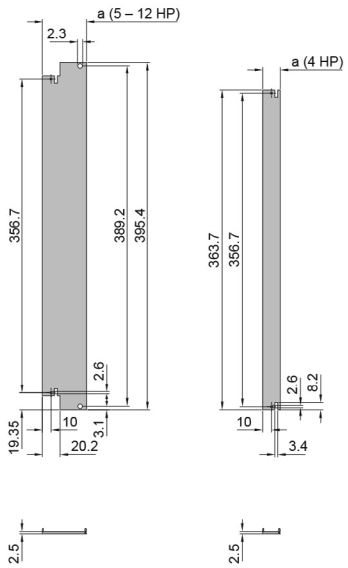
3 U



6 U

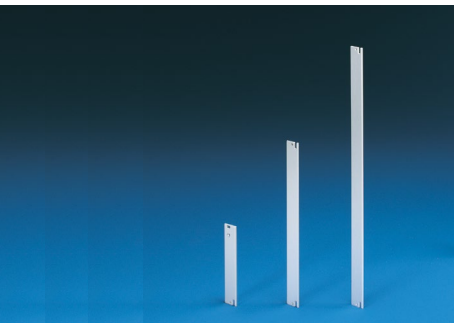


9 U



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

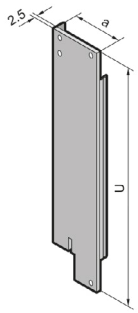
Flat front panels for handles



Flat partial front panels for type I, II extractor handle or type IV, IVs or VII injector/extractor handle

Material
2.5 mm aluminium, anodised

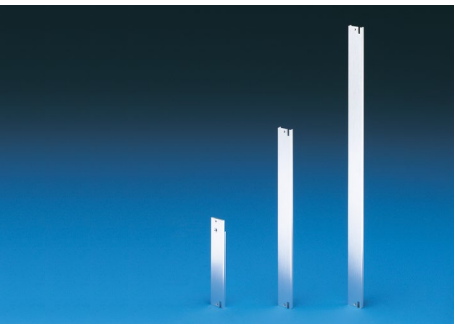
Detailed drawing front panel
see page 115



+ 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. 3658160, see page 148
For 3 U front panels:
PCB holder set, see page 127

HP	a mm	Order No.		
		3 U	6 U	9 U
4	20.0	**3685500**	**3685508**	**3685516**
5	25.1	**3685501**	**3685509**	**3685517**
6	30.2	**3685502**	**3685510**	**3685518**
7	35.3	**3685503**	**3685511**	**3685519**
8	40.3	**3685504**	**3685512**	**3685520**
10	50.5	**3685505**	**3685513**	**3685521**
12	60.7	**3685506**	**3685514**	**3685522**

U-channel front panels for handles

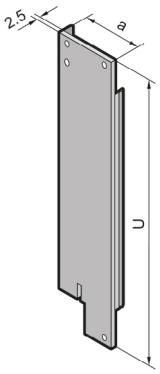


U-shaped EMC partial front panels for handle attachment for type I, II extractor handle or type IV, IVs or VII injector/extractor handle

Material
2.5 mm extruded aluminium section, clear-chromated

Detailed drawing front panel
see page 116

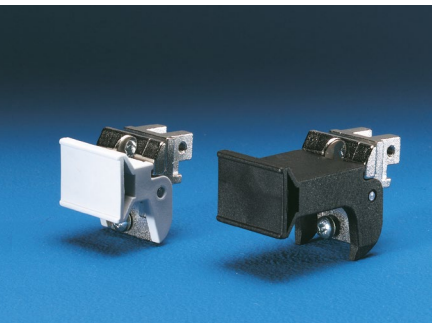
EMC



+ Also required
From front panel width 4 HP (for 3 U) and 8 HP (for 6 U):
Slotted centring screws, packs of 100, order no. 3687050, see page 149
Pozidriv centring screws, packs of 100, order no. 3687051, see page 149
EMC gaskets, see page 96
For 3 U front panels:
PCB holder set, see page 127

HP	a mm	Order No.		
		3 U	6 U	9 U
4	20.0	**3685524**	**3685532**	**3685540**
5	25.1	**3685525**	**3685533**	**3685541**
6	30.2	**3685526**	**3685534**	**3685542**
7	35.3	**3685527**	**3685535**	**3685543**
8	40.3	**3685528**	**3685536**	**3685544**
10	50.5	**3685529**	**3685537**	**3685545**
12	60.7	**3685530**	**3685538**	**3685546**

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

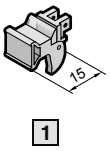
With 3 U, only one extractor handle is required.

1 Type I extractor handle, 15 mm

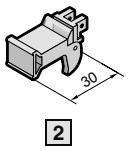
Colour	Packs of	Order No.
Grey	1	**3685587**
Black	1	**3685589**

2 Type II extractor handle, 30 mm

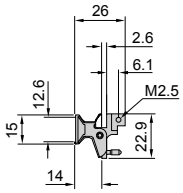
Colour	Packs of	Order No.
Grey	1	**3685588**
Black	1	**3685590**



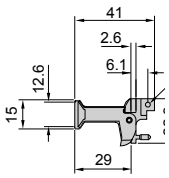
1



2

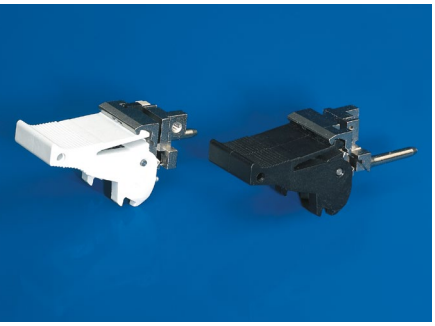


1



2

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 79 et seq.
With 3 U front panels, only one extractor handle is required.

Handles with micro-switch

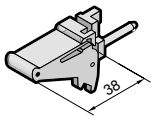
Colour	Installation	Packs of	Order No.
Grey	Top	1	**3686905**
Grey	Bottom	1	**3686904**
Black	Top	1	**3686907**
Black	Bottom	1	**3686906**

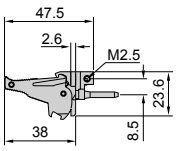
Handle without micro-switch

Colour	Installation	Packs of	Order No.
Grey	Top	1	**3686901**
Grey	Bottom	1	**3686900**
Black	Top	1	**3686903**
Black	Bottom	1	**3686902**

+ Accessories

Keys, see page 109
Keyable guide rails, see page 106
Micro-switches, see page 121
Connector pin for baying, see page 120





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	**3686908**
Black	Top	1	**3686909**

+ Accessories
Connector pin for baying, see page 120

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 ½ 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 79 et seq.
With 3 U front panels, only one extractor handle is required.

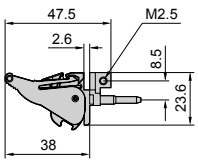
Handles without offset

Installation	Packs of	Order No.
Top	1	**3688770**
Bottom	1	**3688771**

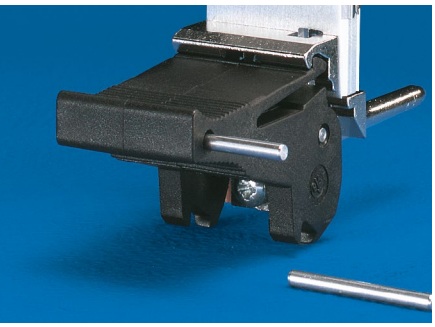
Handles with ½ HP offset

Installation	Packs of	Order No.
Top	1	**3688772**
Bottom	1	**3688773**

+ Accessories
Keys, see page 109
Keyable guide rails with 1/2 HP offset, see page 106
Micro-switches, see page 121
Connector pin for baying, see page 120



Connection pin for injector/extractor handles



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

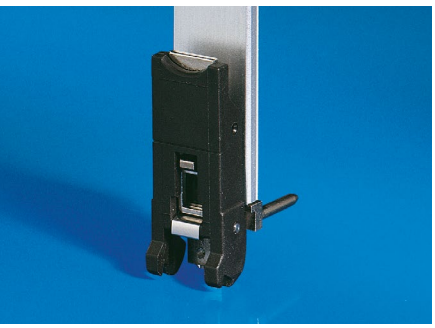
The connection pin can be used to connect injector/extractor handles, types IV, IVs and VII.

Material

Steel

Packs of	Order No.
20	**3685319**

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 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 dissipates static charges before the connectors make contact and ensures 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 79 et seq.

Handles without offset

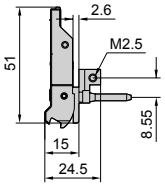
Installation	Packs of	Order No.
Top	1	**3688784**
Bottom	1	**3688785**

Handles with ½ HP offset

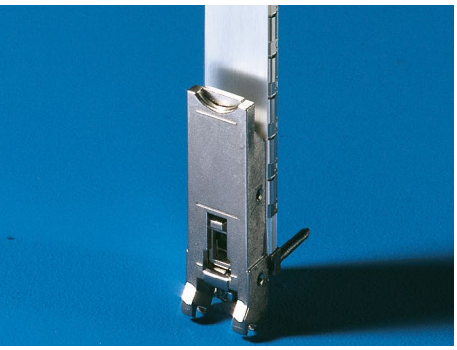
Installation	Packs of	Order No.
Top	1	**3688780**
Bottom	1	**3688781**

+ Accessories

Keys, see page 109
Keyable guide rails with 1/2 HP offset, see page 106
Micro-switches, see page 121
Connector pin for baying, see page 120



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 dissipates static charges before the connectors make contact and ensures 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 79 et seq.

Handles without off set

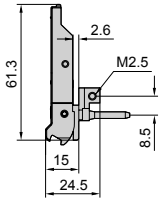
Installation	Packs of	Order No.
Top	1	**3688790**
Bottom	1	**3688791**

Handles with ½ HP offs et

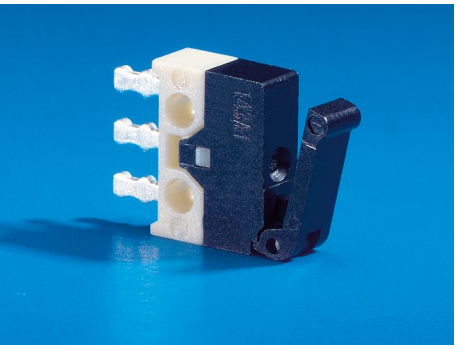
Installation	Packs of	Order No.
Top	1	**3688786**
Bottom	1	**3688787**

+ Accessories

Keys, see page 109
Keyable guide rails with 1/2 HP offset, see page 106
Micro-switches, see page 121
Connector pin for baying, see page 120



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

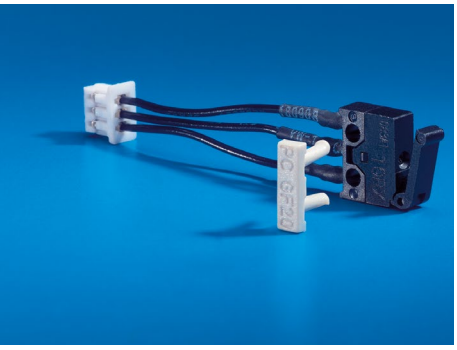
Service life:
At nominal load: 30,000
Mechanical: 50,000

Packs of	Order No.
10	**3684410**

+ Accessories

Micro-switch mounting clip, see page 122

Micro-switch, with cable



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

With cable and connector

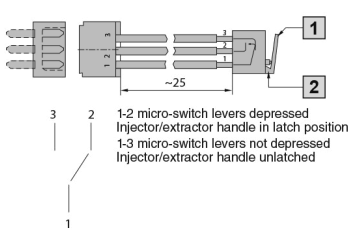
For “live insertion” applications.

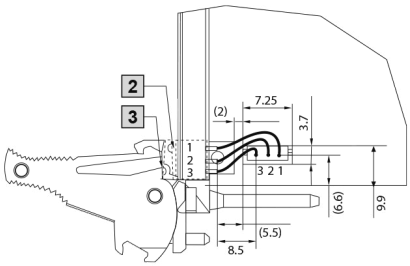
Supply includes

Micro-switch, connector type Molex 51021-0300,
Mounting clips,
3 cables 25 mm x AWG32,
Fully assembled

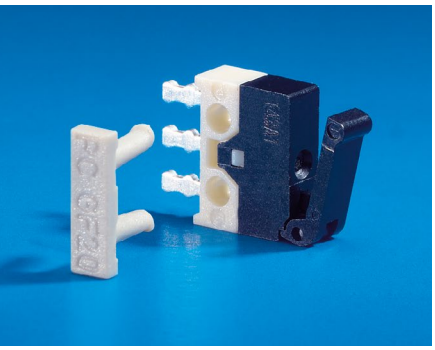
Packs of	Order No.
1 set	**3686536**

1 Lever not depressed
2 Lever hinge
3 Lever contact point





Micro-switch mounting clip



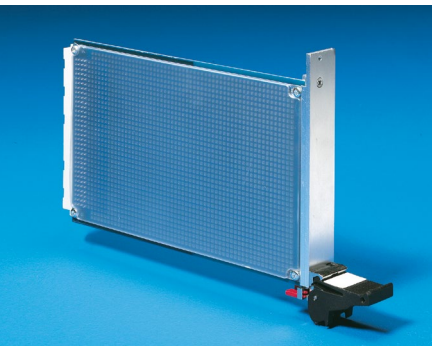
For mounting micro-switches in handles.

Material
Plastic, UL94-V0

Packs of	Order No.
10	**3684411**

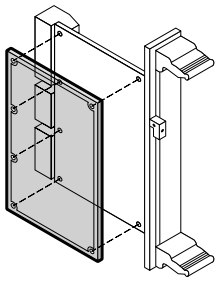
+ Also required
Micro-switch see page 121

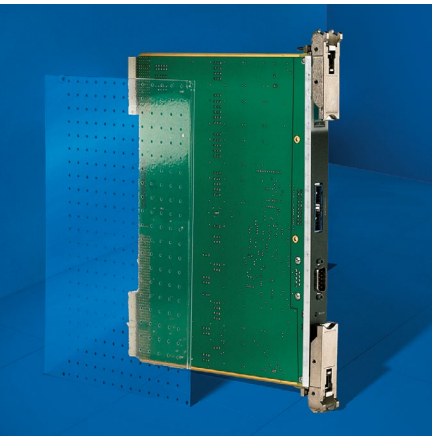
Plastic covers for PCBs



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.

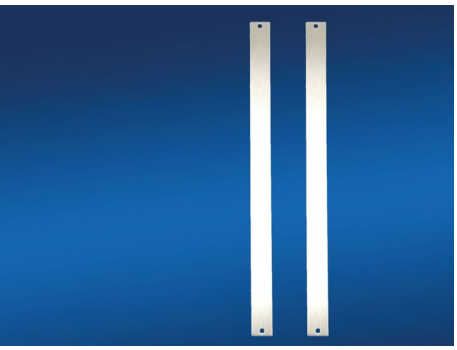
Material
0.5 mm plastic, transparent, anti-static UL 94-V0, maximum temperature up to 65°C





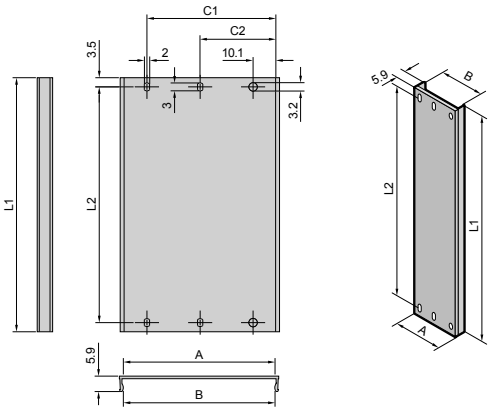
For PCBs	Packs of	Order No.			
		for CPCI			for VME
		Perforated	Solid	Solid	Solid
3 U x 160 mm	1	**3687932**	**3686572**	**3685966**	**3685626**
	5	**-**	**-**	**-**	**3685279**
3 U x 220 mm	1	**-**	**-**	**-**	**3685805**
	5	**-**	**-**	**-**	**3685266**
6 U x 80 mm	1	**3687933**	**3686573**	**3686037**	**3686146**
6 U x 160 mm	1	**3687934**	**3686574**	**3685967**	**3685627**
	5	**-**	**-**	**-**	**3685280**
6 U x 220 mm	1	**-**	**-**	**-**	**3685824**
	5	**-**	**-**	**-**	**3685000**

Front panels for type III extractor handle



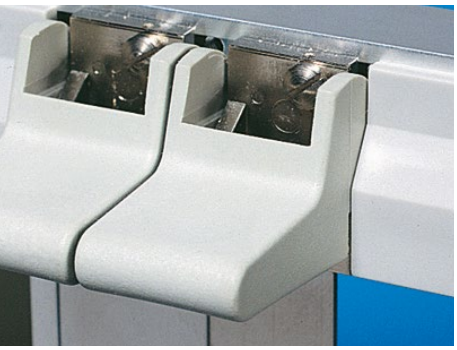
Material
1.0 mm extruded aluminium section

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	-	-	**3685548**	**3685555**	on request
4	20.22	17.20	-	-	**3685549**	**3685556**	**3685562**
5	25.28	22.28	-	22.68	**3685550**	**3685557**	**3685563**
6	30.36	27.36	-	25.22	**3685551**	**3685558**	**3685564**
8	40.52	37.52	-	30.30	**3685552**	**3685559**	**3685566**
10	50.68	47.68	40.46	25.22	**3685553**	**3685560**	**3685567**
12	60.84	57.84	50.62	30.30	**3685554**	**3685561**	**3685568**
L1 mm					97.00	230.35	363.70
L2 mm					90.00	223.35	356.70

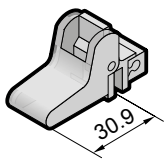
Type III extractor handle

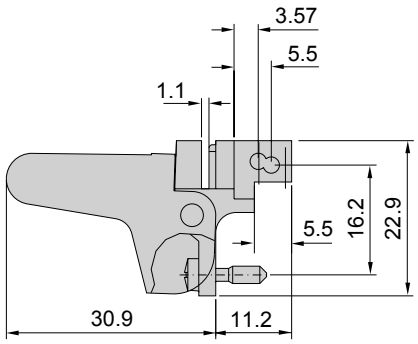


Material
Fibreglass-reinforced polycarbonate
Base section: nickel-plated ABS

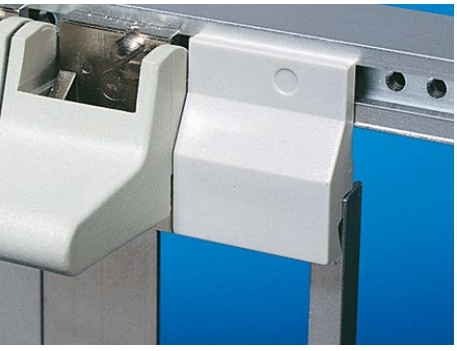
Colour
Grey

HP	Packs of	Order No.
3	1	**3685591**
4	1	**3685592**





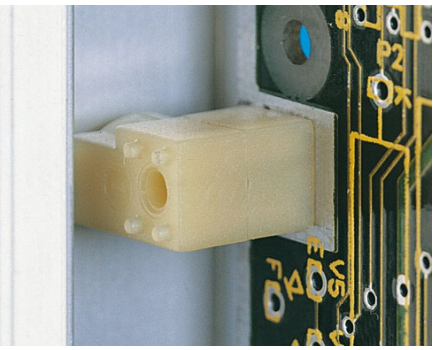
Covers for panel end spaces for type III extractor handle



Material
Fibreglass-reinforced polycarbonate

HP	Width mm	Packs of	Order No.
1	5	1	**3687529**
2	10.08	1	**3687530**
4	20.24	1	**3687531**

Universal holder for front panel support



To support the front panel

Material
Plastic

HP	Packs of	Order No.
4	1	**3687545**

Flat front panels with type V handle and PCB holder

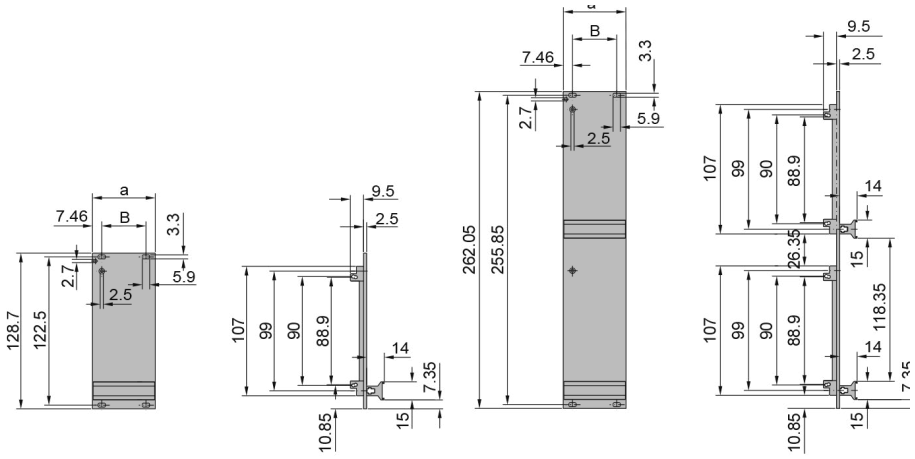
Complete kit for self-assembly

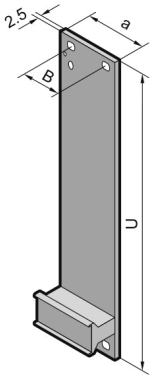
Material
Flat front panel: 2.5 mm aluminium, natural-anodised
Handle: Aluminium, natural-anodised
PCB holder: Polycarbonate

Supply includes
1 partial front penal
1 handle (2 with 6 U)
1 PCB holder (2 with 6 U)
Assembly parts

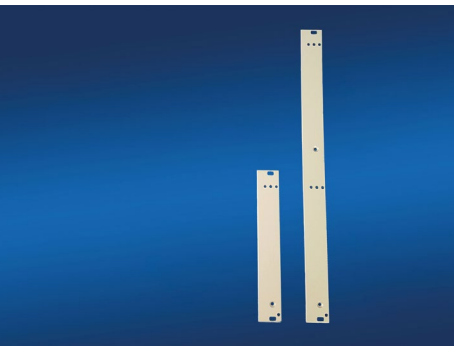
HP	a mm	B mm	Order No. 3 U H = 128.7 mm	Order No. 6 U H = 262.05 mm
3	14.9	-	**3652000**	**3652200**
4	20.0	-	**3652010**	**3652210**
5	25.1	-	**3652020**	**3652220**
6	30.1	-	**3652030**	**3652230**
7	35.2	-	**3652040**	**3652240**
8	40.3	-	**3652050**	**3652250**
10	50.5	35.6	**3652060**	**3652260**
12	60.6	45.7	**3652070**	**3652270**
14	70.8	55.9	**3652080**	on request

+ Accessories
Identification strips for handles, see page 127





Flat front panels for type V and VI handle



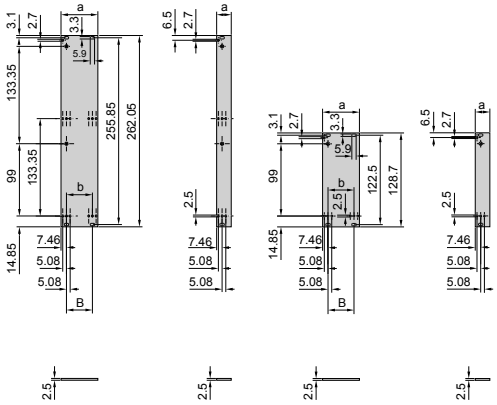
Flat partial front panel with pre-drilled holes for mounting of handles type V an VI.

Material

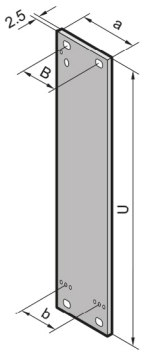
2.5 mm aluminium, anodised

Note

Detailed drawing without EMC



HP	a mm	B mm	b mm	Packs of	Order No.	
					3 U	6 U
3	14.9	-	-	1	**3685569**	**3685578**
4	20.0	-	-	1	**3685570**	**3685579**
5	25.1	-	-	1	**3685571**	**3685580**
6	30.2	-	15.2	1	**3685572**	**3685581**
7	35.2	-	20.3	1	**3685573**	**3685582**
8	40.3	-	25.4	1	**3685574**	**3685583**
10	50.5	35.6	35.6	1	**3685575**	**3685584**
12	60.6	45.7	45.7	1	**3685576**	**3685585**
14	70.8	55.9	55.9	1	**3685577**	**3685586**



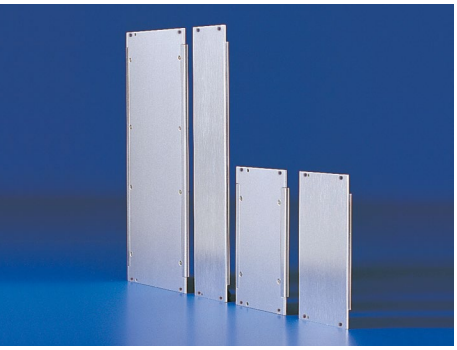
+ Also required

Collar screws and plastic collars, packs of 100 sets, order no. 3658160, see page 148

+ Accessories

Handles type V, see page 126
Handles type VI, see page 127

EMC-Front panel, anodised/chromated



EMC partial front panel for covering unused slots or front/ rear panels. Conductive on the inside, anodized on the outside.

Material

Aluminium

Surface finish

Front anodized
Back chromated

Supply includes

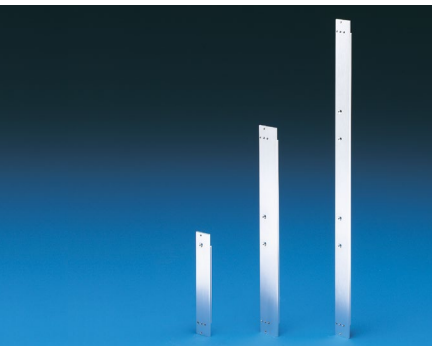
Front panel

Height (H) U	W HP	EMC-Version	Order No.
3	2	ja	**9906623**
3	3	ja	**9907812**
3	4	ja	**9912763**
3	5	ja	**9913177**
3	6	ja	**9913277**
3	8	ja	**9912764**
3	12	ja	**9907818**
3	14	ja	**9912765**
3	16	ja	**9906824**

+ Also required

Assembly parts, see page 149
Vertical EMC gasket, see page 96

U-channel front panels for type V and VI handle



U-shaped EMC partial front panels with pre-drilled holes for mounting of handles type V and VI.

Material

2.5 mm aluminium, clear-chromated

Supply includes

1 vertical EMC gasket, version 1

EMC

HP	a mm	B mm	Packs of	Order No.	
				3 U	6 U
4	20.0	-	1	**3687655**	**3687660**
6	30.2	-	1	**3687656**	**3687661**
8	40.3	-	1	**3687657**	**3687662**
10	50.5	35.6	1	**3687658**	**3687663**
12	60.6	45.7	1	**3687659**	**3687664**

+ Also required

Slotted centring screws, packs of 100, order no. 3687050, see page 149
Cross-head centring screws, packs of 100, order no. 3687051, see page 149

+ Accessories

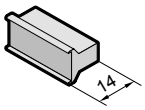
Handles type V, see page 126
Handles type VI, see page 127

Detailed drawing, see page 125

Type V handle, plastic

Material

Plastic

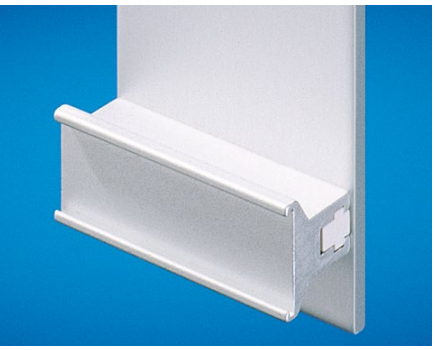


HP	Colour	Packs of	Order No.
3	Grey	1	**3685490**
4	Grey	1	**3685491**
8	Grey	1	**3685492**
12	Grey	1	**3685493**
20	Grey	1	**3685494**
3	Black	1	**3685495**
4	Black	1	**3685496**
8	Black	1	**3685497**
12	Black	1	**3685498**
20	Black	1	**3685499**

+ Also required

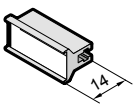
Mounting kit, packs of 1 set, order no. 3687519, see page 148

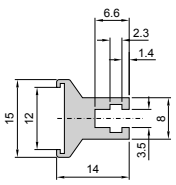
Type V handle, aluminium



Material

Aluminium, anodised





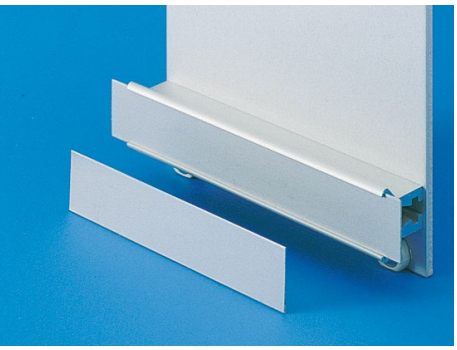
HP	Packs of	Order No.	HP	Packs of	Order No.
3	1	**3685595**	10	1	**3685601**
4	1	**3685596**	12	1	**3685602**
5	1	**3685597**	14	1	**3685603**
6	1	**3685598**	21	1	**3685761**
7	1	**3685599**	28	1	**3685762**
8	1	**3685600**	42	1	**3685763**

Length m	Packs of	Order No.
1	1	**3685604**

+ Also required

Mounting kit, packs of 1 set, order no. 3687146, (from 6 HP 2 packs required), see page 149

Identification strips for type V handle, aluminium



For individual labelling of the handles.

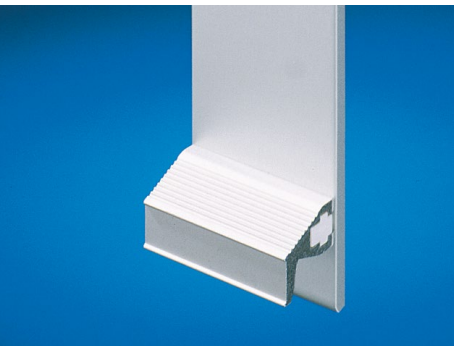
Material

1.4 mm aluminium, anodised

HP	Packs of	Order No.
3	1	**3685746**
4	1	**3685747**
5	1	**3685748**
6	1	**3685749**
7	1	**3685750**
8	1	**3685751**
10	1	**3685752**
12	1	**3685753**
14	1	**3685754**
21	1	**3685755**
28	1	**3685756**
42	1	**3685757**

Length m	Packs of	Order No.
1	1	**3685758**
0.5	5	**3606300**

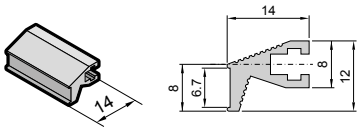
Type VI handle



Material

Aluminium, anodised.

HP	Packs of	Order No.	HP	Packs of	Order No.
3	1	**3685605**	12	1	**3685612**
4	1	**3685606**	14	1	**3685613**
5	1	**3685607**	21	1	**3685614**
6	1	**3685608**	28	1	**3685615**
7	1	**3685609**	42	1	**3685616**
8	1	**3685610**	84	1	**3685617**
10	1	**3685611**			

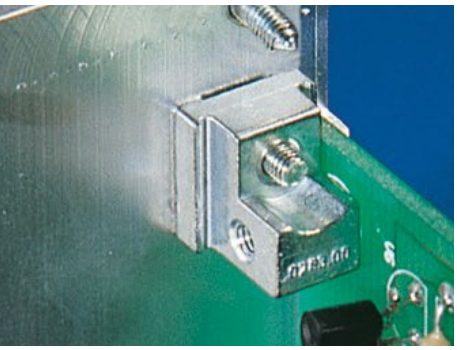


Length m	Packs of	Order No.
1	1	**3685618**

+ Also required

Mounting kit, packs of 1 set, order no. 3687146 (from 6 HP 2 packs required), see page 149

PCB holder, metal



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

Material

Die-cast

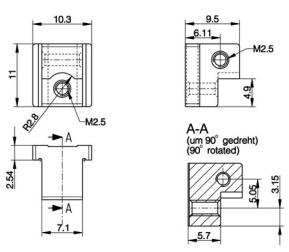
Note

Only required at the top with 3 U front panels.

Packs of	Order No.
1	**3685619**
10	**3685198**

+ Also required

For attaching the PCB to the PCB holder:
Pan-head screws, packs of 100, order no. 3654320, see page 148
For attaching the front panel to the PCB holder:
Oval countersunk screws, packs of 100,
order no. 3685282, see page 149



PCB holder, plastic

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

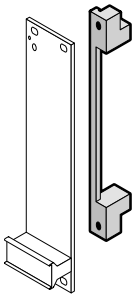
Material

Noryl™

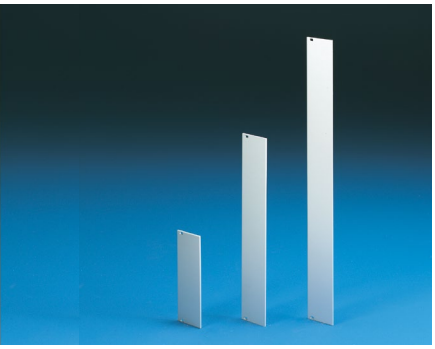
Supply includes

Assembly parts

Packs of	Order No.
10	**3606330**



Front panels as filler panel



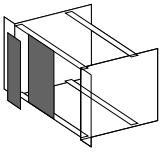
Flat partial front panels to cover unused slots in cases. Not suitable for EMC applications.

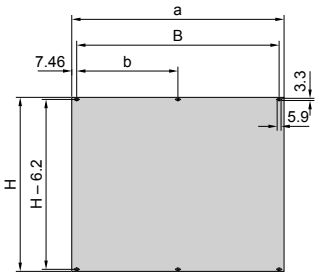
Material

2.5 mm aluminium, natural-anodised

Note

Also available in many intermediate sizes from 1 - 9 U and 2 - 84 HP on request.



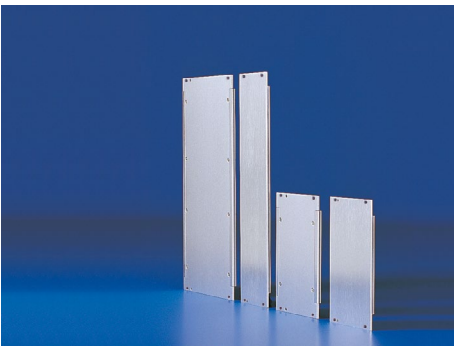


+ Also required

Collar screws and plastic collars, packs of 100 sets, order no. 3658160, see page 148

HP	a mm	B mm	b mm	Order No.						
				1 U H = 39.8 mm	2 U H = 84.25 mm	3 U H = 128.7 mm	4 U H = 173.15 mm	6 U H = 262.05 mm	7 U H = 306.5 mm	9 U H = 395.4 mm
2	9.8	-	-	on request	on request	**3684889**	on request	**3684911**	on request	**3684738**
3	14.9	-	-	on request	on request	**3684890**	on request	**3684912**	on request	on request
4	20.0	-	-	on request	on request	**3684891**	**9921405**	**3684913**	on request	**3684739**
5	25.1	-	-	on request	on request	**3684892**	on request	**3684914**	on request	on request
6	30.2	-	-	on request	on request	**3684893**	on request	**3684915**	on request	on request
7	35.2	-	-	on request	on request	**3684894**	on request	**3684916**	on request	on request
8	40.3	-	-	on request	on request	**3684895**	on request	**3684917**	on request	**3684740**
10	50.5	35.6	-	on request	on request	**3684896**	on request	**3684918**	on request	on request
12	60.6	45.7	-	on request	on request	**3684897**	**9921405**	**3684919**	on request	**3684741**
14	70.8	55.9	-	on request	on request	**3684898**	on request	**3684920**	on request	on request
20	101.3	86.4	-	on request	on request	**3684899**	on request	**3684921**	on request	on request
21	106.4	91.4	-	on request	**3685350**	**3684900**	on request	**3684922**	on request	on request
24	121.7	106.7	-	on request	**3685429**	**9904994**	on request	on request	on request	on request
27	136.8	121.9	-	on request	on request	**3684901**	on request	**3684923**	on request	on request
28	141.9	127.0	-	on request	on request	**3684902**	**9909388**	**3684924**	on request	on request
40	202.9	188.0	-	on request	on request	**3684903**	on request	**3684976**	on request	**3684977**
42	213.0	198.1	-	**3684885**	**3684887**	**3684904**	**3684908**	**3684925**	**3684928**	**3684742**
60	304.5	289.6	-	on request	on request	**3684905**	on request	on request	on request	on request
63	319.7	304.8	152.4	on request	on request	**3684906**	**3684909**	**3684926**	**3684929**	on request
84	426.4	411.5	203.2	**3684886**	**3684888**	**3684907**	**3684910**	**3684927**	**3684930**	**3684743**
85	431.5	416.5	208.3	on request	-	**3684744**	**3684745**	**3684746**	**3684747**	**3684748**

U-channel front panels as filler panels



U-Shaped partial front panels to cover unused slots in cases.
EMC material is included.

Material

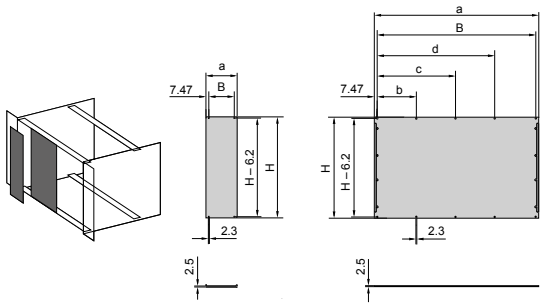
2.5 mm extruded aluminium section, clear-chromated

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)
Assembly parts

Note

Also available in many intermediate sizes from 1 - 9 U and 2 - 84 HP on request.



+ Accessories

Slotted centring screws, packs of 100, order no. 3687050 see page 149
Cross-head centring screws, packs of 100, order no. 3687051, see page 149

HP	a mm	B mm	b mm	c mm	d mm	Order No. 1 U H = 39.8 mm	2 U H = 84.25 mm	3 U H = 128.7 mm	4 U H = 173.15 mm	6 U H = 262.05 mm	7 U H = 306.5 mm	9 U H = 395.4 mm
2	9.8	-	-	-	-	on request	on request	**3685177**	on request	**3685185**	on request	**3685193**
3	14.9	-	-	-	-	on request	on request	**3686138**	on request	**3686139**	on request	**3686140**
4	20.0	-	-	-	-	on request	on request	**3685178**	on request	**3685186**	on request	**3685194**
5	25.1	-	-	-	-	on request	on request	**3685179**	on request	**3685187**	on request	on request
6	30.1	-	-	-	-	on request	on request	**3685180**	on request	**3685188**	on request	on request
7	35.2	-	-	-	-	on request	on request	**3685181**	on request	**3685189**	on request	on request
8	40.3	25.4	-	-	-	on request	on request	**3685182**	on request	**3685190**	on request	**3685195**
10	50.5	35.6	-	-	-	on request	on request	**3685183**	on request	**3685191**	on request	on request
12	60.6	45.7	-	-	-	on request	on request	**3685184**	on request	**3685192**	on request	**3685196**
14	70.8	55.9	-	-	-	on request	on request	**3684249**	on request	**3684258**	on request	**3684278**
16	80.9	66.0	-	-	-	on request	on request	**3685348**	on request	**3685349**	on request	on request
20	101.3	86.4	-	-	-	on request	on request	**3684250**	on request	**3684259**	on request	**3684279**
21	106.4	91.4	-	-	-	on request	on request	**3684272**	on request	**3684275**	on request	on request
28	141.9	127.0	61.0	-	-	on request	on request	**3684251**	on request	**3684260**	on request	on request
40	202.9	188.0	91.5	-	-	on request	on request	**3684273**	on request	**3684276**	on request	**3684280**
42	213.0	198.1	96.5	-	-	on request	on request	**3684252**	**3684255**	**3684261**	**3684264**	**3684267**
60	304.5	289.6	96.5	193.0	-	on request	on request	**3684274**	on request	**3684277**	on request	on request
63	319.7	304.8	101.6	203.2	-	on request	on request	**3684253**	**3684256**	**3684262**	**3684265**	**3684268**
84	426.4	411.5	101.6	203.2	304.8	**3684247**	**3684248**	**3684254**	**3684257**	**3684263**	**3684266**	**3684269**

Front panels, hinged

Overall front panel for complete coverage of the front or back of a case.

Material

2.5 mm aluminium, anodised

Supply includes

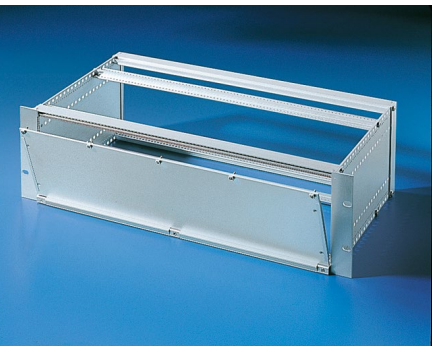
1 set of hinges
Assembly parts

U	HP	Order No.	
		vertically hinged	horizontally hinged
3	42[1)]	**3652600**	**3652500**
3	84[1)]	**3652610**	**3652510**
3	85	**-**	**3684291**
4	85	**-**	**3684292**
6	42[1)]	**3652620**	**3652520**
6	84[1)]	**3652630**	**3652530**
6	85	**-**	**3684293**
7	85	**-**	**3684294**
9	85	**-**	**3684295**

+ Also required

[1)] 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 99

EMC front panels, hinged



EMC overall front panel for complete coverage of the front or back of a case.

Material

2.5 mm aluminium, clear-chromated

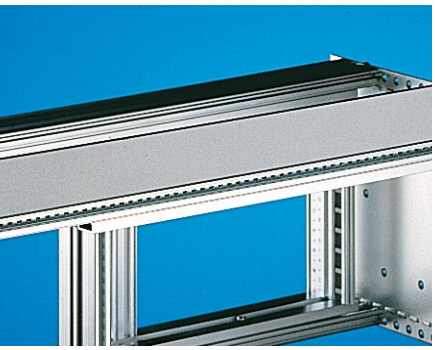
Supply includes

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

EMC

U	HP	Order No.
		horizontally hinged
3	84	**3684298**
4	84	**3684299**
6	84	**3684300**
7	84	**3684301**
9	84	**3684302**

Door cut-out trim for subracks installed indoors



Material

Aluminium

Width	Packs of	Order No.
½ 19"	2	**3634060**
19"	2	**3634070**

Mezzanine front panels

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

Material/surface finish

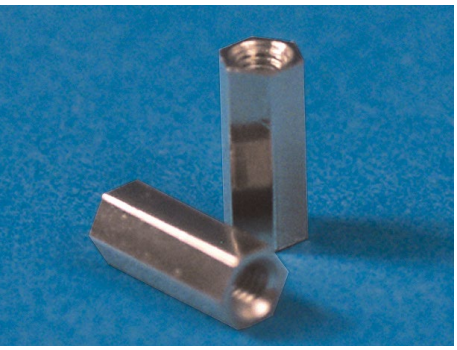
Extruded aluminium section, clear-chromated

Packs of	Order No.
1	**3688658**

+ Accessories

EMC seals, see page 131
Assembly screws M2.5 x 6, packs of 100, order no. 3654340, see page 148

Support spacers for mezzanine cards



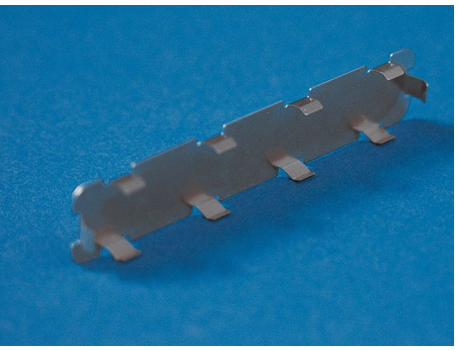
Support spacer 10 mm, for mounting mezzanine cards.

Material

Steel, nickel plated

Packs of	Order No.
1	**3688663**

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	**3688660**

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	**3688661**
Sealing gasket	1	**3688662**

EMC

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

Available on request

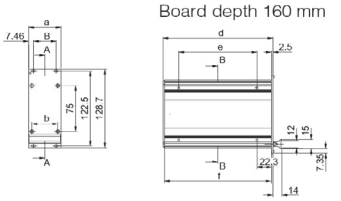
- Box-type plug-in units in special sizes or printed
- EMC box-type plug-in units with EMC front panels

+ Accessories

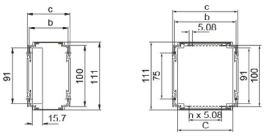
Covers, see page 134
Guide rails, see page 108
Individual components, see page 134

HP	a mm	B mm	b mm	c mm	C mm	d mm	e mm	f mm	Order No. 3 U	Order No. 3 U	Order No. 6 U
Board depth 160 mm											
6	32.2	-	20.3	27.5	-	171.5	122	167	**3653000**	**-**	**-**
8	40.3	-	30.5	36.0	-	171.5	122	167	**-**	**3653010**	**-**
10	50.5	35.6	40.6	46.2	-	171.5	122	167	**-**	**3653020**	**3653100**
12	60.6	45.7	50.8	56.4	-	171.5	122	167	**-**	**3653030**	**3653110**
14	70.8	55.9	60.9	66.5	-	171.5	122	167	**-**	**3653040**	**3653120**
21	106.3	91.4	96.4	102.0	86.3	171.5	122	167	**-**	**3653050**	**3653130**
28	141.9	127.0	132.0	137.6	121.8	171.5	122	167	**-**	**3653060**	**3653140**
42	213.1	198.1	203.2	208.8	193.0	171.5	122	167	**-**	**3653070**	**3653150**
Board depth 220 mm											
10	50.5	35.6	40.6	46.2	-	231.5	182	227	**-**	**3653200**	**3653300**
12	60.6	45.7	50.8	56.4	-	231.5	182	227	**-**	**3653210**	**3653310**
14	70.8	55.9	60.9	66.5	-	231.5	182	227	**-**	**3653220**	**3653320**
21	106.3	91.4	96.4	102.0	86.3	231.5	182	227	**-**	**3653230**	**3653330**
28	141.9	127.0	132.0	137.6	121.8	231.5	182	227	**-**	**3653240**	**3653340**
42	213.1	198.1	203.2	208.8	193.0	231.5	182	227	**-**	**3653250**	**3653350**
Supply includes											
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

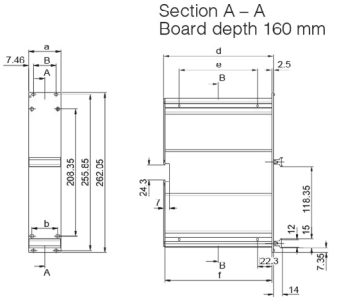
Section A – A
Board depth 160 mm



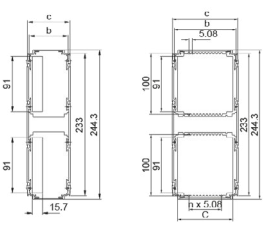
Section B – B
Type I, 3 U



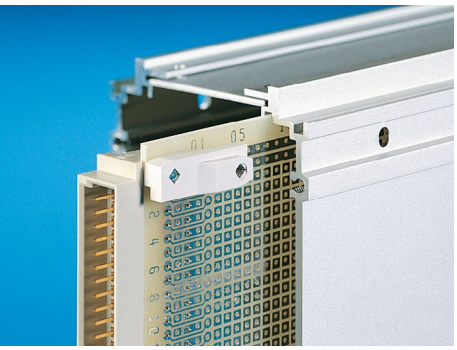
Section A – A
Board depth 160 mm



Section B – B
Type I, 6 U



PCB holder for box-type plug-in units



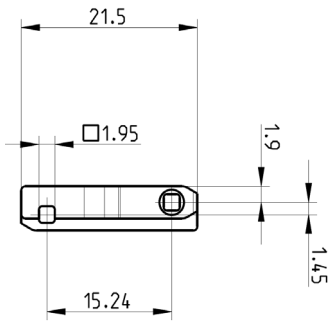
For fastening PCBs in box-type plug-in units.

Material
Plastic PBTP, basic material to UL 94-V0

Supply includes
Assembly parts

Note
PCB holder for box-type plug-in units see page 100.

Packs of	Order No.
2	**3606321**



Guide rails for drive chassis

For guiding drive chassis in the subrack.

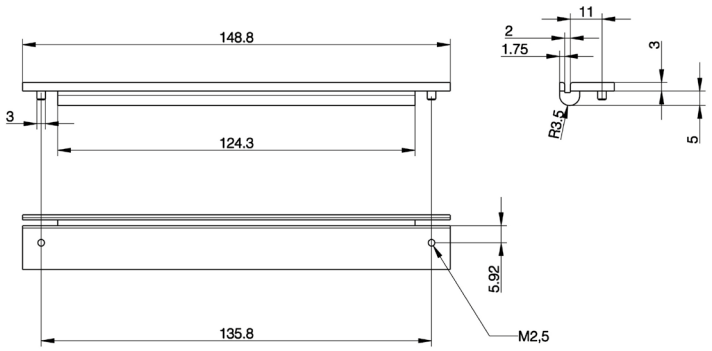
Material
Aluminium

Supply includes
Press-fit pin

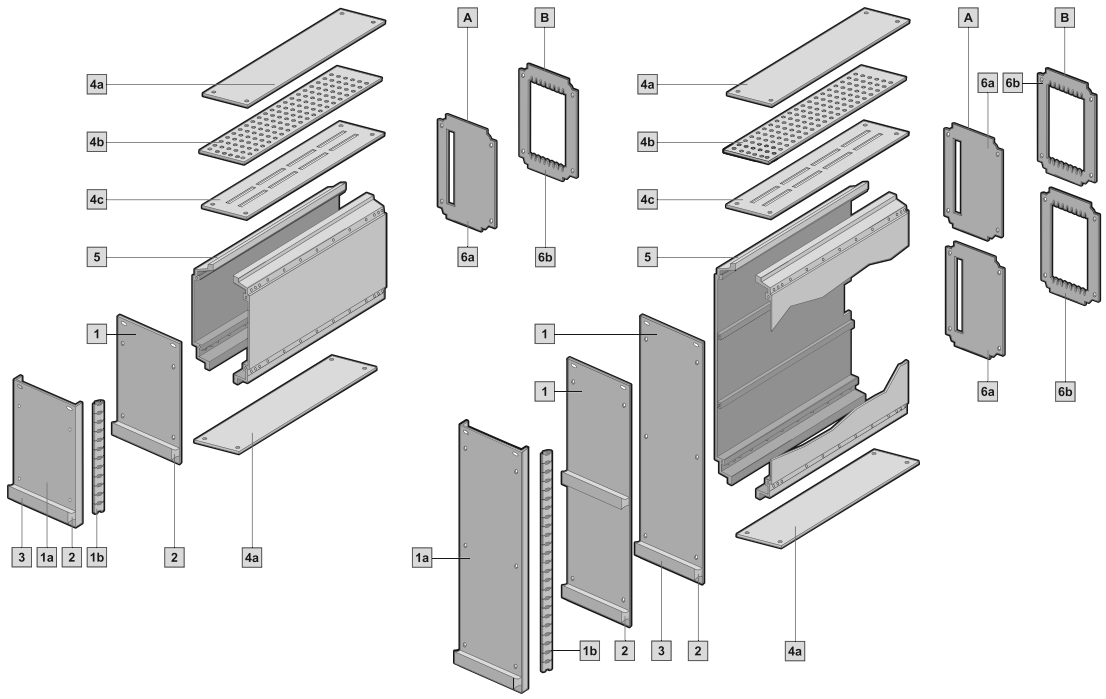
Note
Two guide rails are required for each drive chassis.
Guide rails 4.4″ for plastic drives, see page 108.

For installation depth mm	Packs of	Order No.
160	1	**3686989**

+ Also required
Assembly screws
packs of 100, order no. 3654340, see page 148



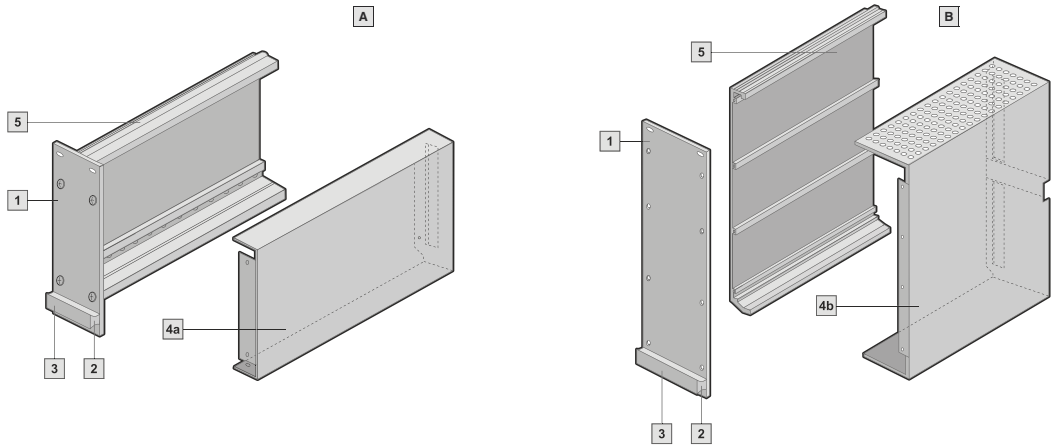
HeiPac box-type plug-in units – individual components type I and type II



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

Box-type plug-in units, individual components		A Type I	B Type II	Packs of	8 HP	10 HP	12 HP	14 HP	21 HP	28 HP	42 HP	Page
Type I for one connector/type II for several connectors												
Front panels of 2.5 mm aluminium, anodised surface finish												
1	for 3 U	•	•	1	**3685769**	**3685629**	**3685630**	**3685631**	**3685636**	**3685637**	**3685638**	-
	for 6 U (for 1 handle)	•	•	1	**3685767**	**3685633**	**3685634**	**3685635**	**3685639**	**3685640**	**3685641**	-
	for 6 U (for 2 handles)	•	•	1	**-**	**3687520**	**3687521**	**3687522**	**3687523**	**3687524**	**3687525**	-
EMC front panels of 2.5 mm aluminium, surface finish clear-chromated (only for use in conjunction with 10 HP box-type plug-in unit)												
1a	for 3 U/10 HP box-type plug-in units	•	•	1	on request	on request	**3687587**	**-**	**-**	**-**	**-**	-
	for 6 U/10 HP box-type plug-in units	•	•	1	on request	on request	**3687588**	**-**	**-**	**-**	**-**	-
EMC gaskets, vertical, for front panels												
1b	for 3 U	•	•	1	on request	on request	**3686975**	**-**	**-**	**-**	**-**	96
	for 6 U	•	•	1	on request	on request	**3686977**	**-**	**-**	**-**	**-**	96
Handle type V												
2	of aluminium, anodised surface finish	•	•	1	**3685600**	**3685601**	**3685602**	**3685603**	**3685761**	**3685762**	**3685763**	126
	of plastic	•	•	1	**3685492**	**-**	**3685493**	**-**	**3685494**	**-**	**-**	126
Identification strips												
3	of 0.5 mm aluminium, anodised surface finish	•	•	1	**3685751**	**3685752**	**3685753**	**3685754**	**3685755**	**3685756**	**3685757**	127
Covers 4a 4b of 1 mm aluminium, untreated 4c of 1.2 mm sheet steel, painted, RAL 9006 (with vent slots)												
4a	unvented, for board depth 160 mm	•	•	1	**3687555**	**3685689**	**3685690**	**3685691**	**3685692**	**3685693**	**3685694**	-
	unvented, for board depth 220 mm	•	•	1	**3687562**	**3685701**	**3685702**	**3685703**	**3685704**	**3685705**	**3685706**	-
4b	vented, for board depth 160 mm, slide-in	•	•	1	**3687585**	**3685683**	**3685684**	**3685685**	**3685686**	**3685687**	**3685688**	-
	vented, for board depth 220 mm, slide-in	•	•	1	**-**	**3685695**	**3685696**	**3685697**	**3685698**	**3685699**	**3685700**	-
4c	vent slots for guide rails, for board depth 160 mm	•	•	1	**-**	**3687556**	**3687557**	**3687558**	**3687559**	**3687560**	**3687561**	-
	vent slots for guide rails, for board depth 220 mm	•	•	1	**-**	**3687563**	**3687564**	**3687565**	**3687566**	**3687567**	**3687568**	-
Side panel of extruded aluminium section, anodised surface finish												
5	3 U, for board depth 160 mm	•	•	1				**3685645**				-
	6 U, for board depth 160 mm	•	•	1				**3685648**				-
	3 U, for board depth 220 mm	•	•	1				**3685646**				-
	6 U, for board depth 220 mm	•	•	1				**3685649**				-
Rear panel 6a of 2.0 mm aluminium, untreated 6b of 1.2 mm sheet steel, spray-finished												
6a	for 1 connector	•	-	1	**3687536**	**3685707**	**3685708**	**3685709**	**3685710**	**3685711**	**3685712**	-
6b	for several connectors	-	•	1	**-**	**-**	**-**	**-**	**3687537**	**3687538**	**3687539**	-
Assembly parts for box-type plug-in units, see page 148 f												

HeiPac box-type plug-in units – individual components type V and type VI



HeiPac box-type plug-in units, types V and VI in 3 U and 6 U, in dividual components

Type V with cover (unvented)/type VI with cover (vented)

Box-type plug-in units, individual components		A Type V	B Type VI	Packs of	6 HP	7 HP	8 HP	10 HP	12 HP	14 HP	Page
Front panels of 2.5 mm aluminium, anodised surface finish											
1	for 3 U	•	•	1	**3685768**	**3685628**	**3685769**	**3685629**	**3685630**	**3685631**	-
	for 6 U	•	•	1	**3685766**	**3685632**	**3685767**	**3685633**	**3685634**	**3685635**	-
Handle type V											
2	of aluminium, anodised surface finish	•	•	1	**3685598**	**3685599**	**3685600**	**3685601**	**3685602**	**3685603**	126
	of plastic	•	•	1	**-**	**-**	**3685492**	**-**	**3685493**	**-**	126
Identification strips for 3 U											
3	of 0.5 mm aluminium, anodised surface finish	•	•	1	**3685749**	**3685750**	**3685751**	**3685752**	**3685753**	**3685754**	127
Cover 4a 4b of 1 mm aluminium, clear-chromated surface finish											
4a	unvented, 3 U, for board depth 160 mm	•	-	1	**3685774**	**3685658**	**3685776**	**3685659**	**3685660**	**3685661**	-
	unvented, 3 U, for board depth 220 mm	•	-	1	**3685775**	**3685674**	**3685777**	**3685675**	**3685676**	**3685677**	-
	unvented, 6 U, for board depth 160 mm	•	-	1	**3685717**	**3685662**	**3685764**	**3685663**	**3685664**	**3685665**	-
	unvented, 6 U, for board depth 220 mm	•	-	1	**3685718**	**3685678**	**3685765**	**3685679**	**3685680**	**3685681**	-
4b	vented, 3 U, for board depth 160 mm	-	•	1	**3685770**	**3685650**	**3685772**	**3685651**	**3685652**	**3685653**	-
	vented, 3 U, for board depth 220 mm	-	•	1	**3685771**	**3685666**	**3685773**	**3685667**	**3685668**	**3685669**	-
	vented, 6 U, for board depth 160 mm	-	•	1	**3685713**	**3685654**	**3685715**	**3685655**	**3685656**	**3685657**	-
	vented, 6 U, for board depth 220 mm	-	•	1	**3685714**	**3685670**	**3685716**	**3685671**	**3685672**	**3685673**	-
Side panel of extruded aluminium section, anodised surface finish											
5	3 U, for board depth 160 mm	•	•	1	**3685645**						-
	6 U, for board depth 160 mm	•	•	1	**3685648**						-
	3 U, for board depth 220 mm	•	•	1	**3685646**						-
	6 U, for board depth 220 mm	•	•	1	**3685649**						-

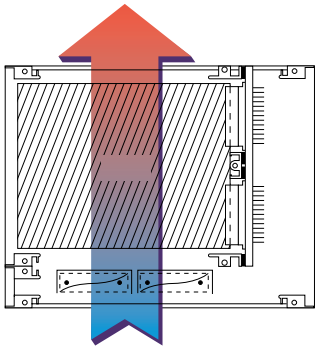
Assembly parts for box-type plug-in unit types I, II, V, VI

Description	for installation of:	Packs of	Order. No.	
Assembly kit for box-type plug-in unit I/II, 3 U	Box-type plug-in units, type I/II, 3 U	1 set	**3687589**	-
Assembly kit for box-type plug-in unit I/II, 6 U	Box-type plug-in units, type I/II, 6 U	1 set	**3687590**	-
Assembly kit for box-type plug-in unit type V/VI	Box-type plug-in units, type V/VI	1 set	**3685294**	-
Assembly kit for box-type plug-in unit with EMC front panel	Box-type plug-in unit with EMC front panel	1 set	**3687591**	-
Assembly kit for plastic handles	Plastic handles on box-type plug-in units	1 set	**3687519**	148

Guide rails for box-type plug-in units, see page 108

For more screws, see page 148 f

Vertical cooling from bottom to top



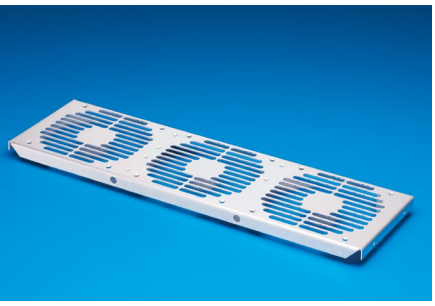
Air flow via normal convection or forced cooling devices in the enclosure or housing outside of the subrack.

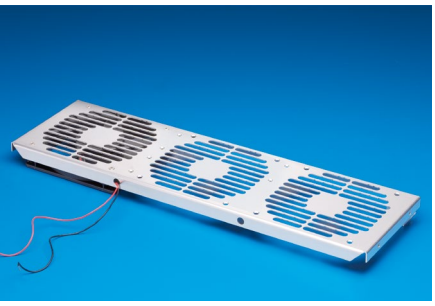
Vertical forced air flow, supported by fans installed at the bottom of the subrack (1 U).

+ Accessories

AC/DC fan see page 140 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

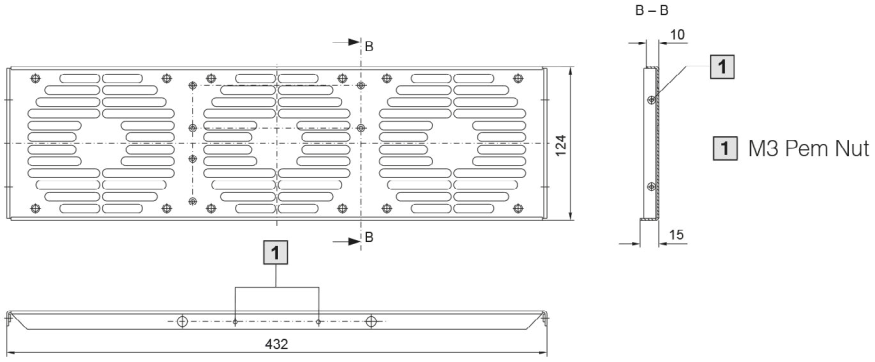
1.5 mm aluminium, anodised

U	For PCB depth mm	No. of fan mounting plates required	HP	Order No.
1	160	1	84	**3684317**
	220	1		
	280	2		
	340	2		
	400	3		

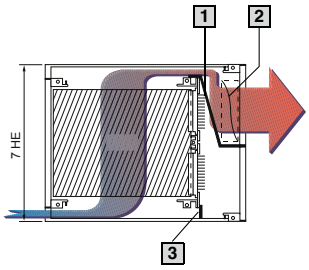
+ Also required

1 terminal block is required for each subrack.

Packs of	Order No.
1	**3686805**



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 137

2 Fan (mounted on the rear panel), see page 140

3 Air partition, see page 137

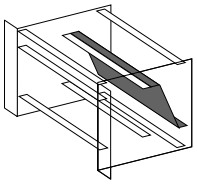
Air baffle

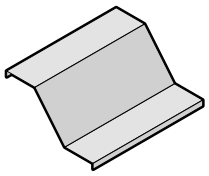
For controlled air flow in 7 U subracks. For mounting on sub-rack side panels with the aid of mounting blocks.

Material
1 mm aluminium

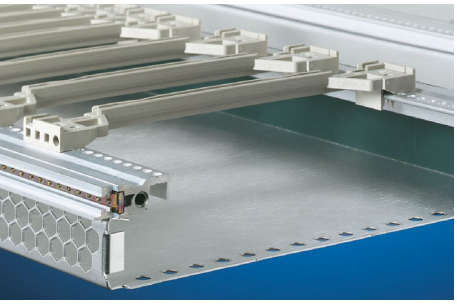
Supply includes
Assembly parts

Subrack depth mm	Order No.
285	**3685302**
345	**3685303**
405	**3684320**
465	**3684321**
525	**3684322**





Air partition

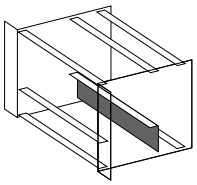


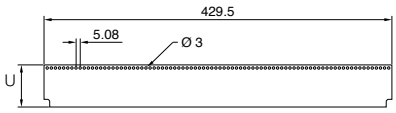
For controlled air flow in the subrack.
The partitions are mounted on the horizontal rails together with the backplanes.

Material
Epoxy

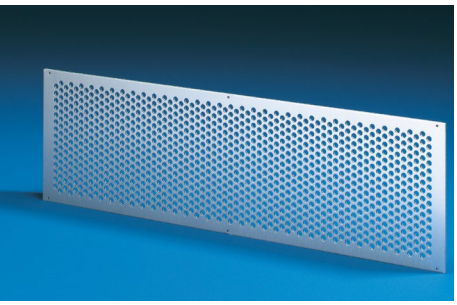
Height U	Order No.
½	**3684870**
1	**3684871**
3	**3684872**

+ Also required
Fastening screws and washers
packs of 100, order no. 3684019, see page 148

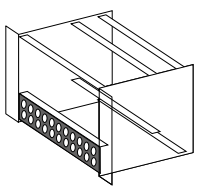




Front/rear panels for ventilation



EMC



Non-EMC version

Material
2.5 mm aluminium

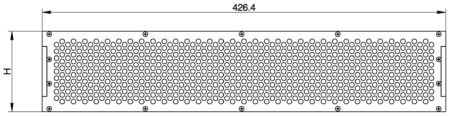
Surface finish
Anodised

EMC version

Material
2.5 mm aluminium

Surface finish
Clear-chromated

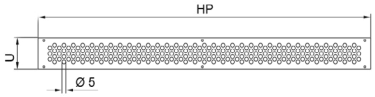
Supply includes
1 front panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
Assembly parts



Non-EMC version

U	HP	Packs of	Order No.
1	84	1	**3684812**
2	84	1	**3684813**
3	84	1	**3684814**

+ Also required
Screws and collars, packs of 100, Order no. 3685097 and additional see page 149

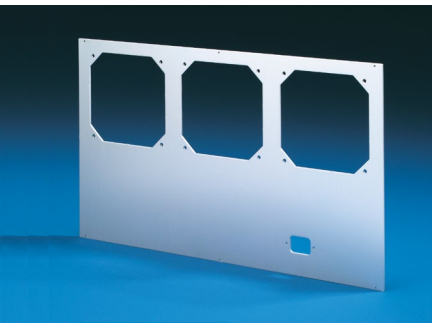


EMC version

U	HP	Packs of	Order No.
1	84	1	**3684281**
2	84	1	**3684282**
3	84	1	**3684283**

+ Also required
Centring screws, packs of 100, Order no. 3687051 and additional see page 149

Rear panels for fan installation



Non-EMC version

Material
2.5 mm aluminium

Surface finish
Anodised

Non-EMC version

U	HP	For fans mm	Packs of	Order No.
3	85	80	1	**3684839**
4	85	80	1	**3684840**
6	85	120	1	**3684841**
7	85	120	1	**3684842**

+ Also required
Screws and collars, packs of 100, Order no. 3685097 and additional see page 149

EMC version

Material
2.5 mm aluminium

Surface finish
Clear-chromated

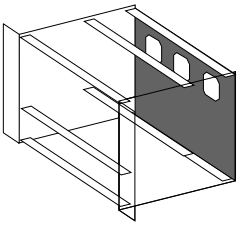
Supply includes
1 rear panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
Assembly parts

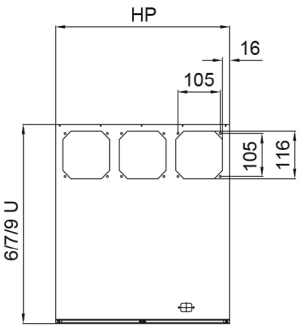
EMC version

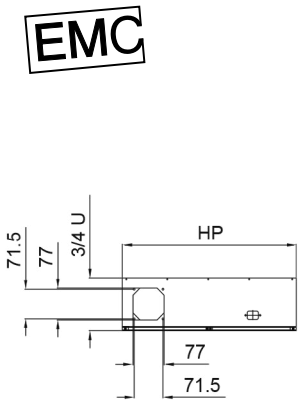
U	HP	For fans mm	Packs of	Order No.
3	84	80	1	**3684284**
4	84	80	1	**3684285**
6	84	120	1	**3684286**
7	84	120	1	**3684287**

+ Also required
Centring screws, packs of 100, Order no. 3687051 and additional see page 149

+ Accessories
Fans, see page 140 f.







Rear panels, horizontally hinged for fan installation

Non-EMC version

Material
2.5 mm aluminium

Surface finish
Anodised

Supply includes
1 rear panel
1 set of hinges
Assembly parts

Non-EMC version

U	HP	For fans mm	Packs of	Order No.
3	85	80	1	**3684304**
4	85	80	1	**3684305**
6	85	120	1	**3684306**
7	85	120	1	**3684307**

+ Also required
Screws and collars, packs of 100, Order no. 3685097 and additional
see page 149

EMC version

Material
2.5 mm aluminium

Surface finish
Clear-chromated

Supply includes
1 rear panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
1 set of hinges
Assembly parts

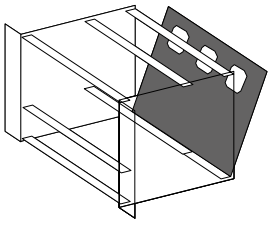
EMC version

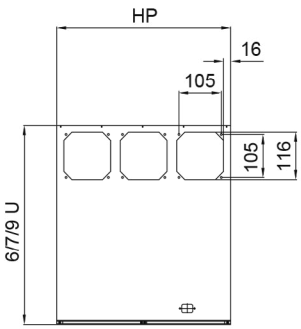
U	HP	For fans mm	Packs of	Order No.
3	84	80	1	**3684311**
4	84	80	1	**3684312**
6	84	120	1	**3684313**
7	84	120	1	**3684314**

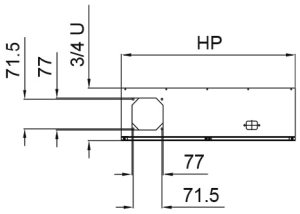
+ Also required
Centring screws, packs of 100, Order no. 3687051 and additional
see page 149

+ Accessories
Fans, see page 140 f.

EMC







HeiCool ECO with guide frame

HeiCool ECO – flexible und robust energy-saving cooling solution with mounting frame for easy insertion and removal within 19-inch cabinets.

Technical specifications

- 50 Hz/60 Hz
- Dimensions in accordance with IEC 60297-3, IEEE 1101.1
- Equipped with LED lamp for displaying the operating status
- Shock and vibration test according IEC 61587-1 (DL2V / DL2S) and EN 50155 (EN 61373 cat. 1, class B)
- Operating temperature: -20°C to 55°C
- Good EMC protection
- Certified according to EN 60950 (CE)

Fans

Flow rate 3 x 175 m^3/h
Energy consumption 5 W per fan
Noise level 42 dB(A)

Material

Housing made of high-strength aluminium alloy

Note

Various installation options

Height (H) U	W HP	Side Panel Depth (mm)	Power	**Order No.**
1	84	305	115 VAC	**9923861**
1	84	305	230 VAC	**9922882**

HeiCool ECO for insertion

HeiCool ECO – flexible und robust energy-saving cooling solution. For classical installation into 19-inch cabinets. With reinforced front panel and double screw fastening for extra high stability.

Technical specifications

- 50 Hz/60 Hz
- Dimensions in accordance with IEC 60297-3, IEEE 1101.1
- Equipped with LED lamp for displaying the operating status
- Shock and vibration test according to IEC 61587-1 (DL2V / DL2S) and EN 50155 (EN 61373 cat. 1, class B)
- Operating temperature: -20°C to 55°C
- Very good EMC protection
- Certified according to EN 60950 (CE)

Fans

Flow rate 3 x 175 m^3/h
Energy consumption 5 W per fan
Noise level 42 dB(A)

Material

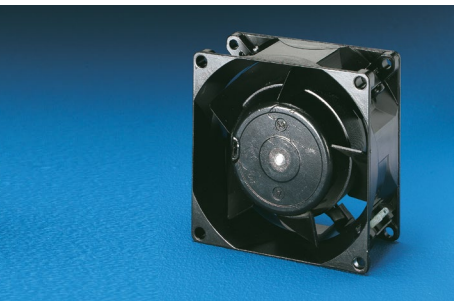
Housing made of high-strength aluminium alloy

Note

Various installation options

Height (H) U	W HP	Side Panel Depth (mm)	Power	**Order No.**
1	84	245	115 VAC	**9923860**
1	84	245	230 VAC	**9922881**

AC fans



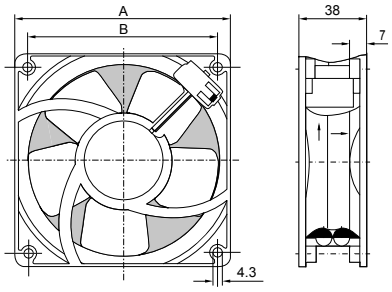
For subracks and microcomputer systems.

Supply includes
1 fan without connection cable

+ Also required
Assembly screws packs of 1 set, order no. 3685197, see page 149

AC fans

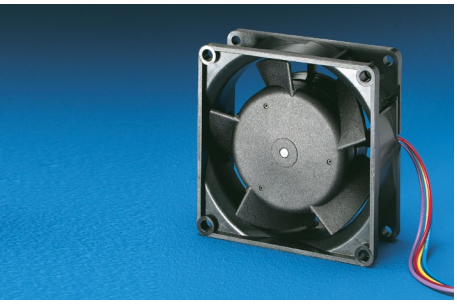
Dimensions			Bearing	Rated voltage V/Hz	Power Watts	Noise level dB(A)	Temperature range °C	Volume flow m^3/h	Order No.
Fan mm	A mm	B mm							
80	79.5	71.5	Ball bearing	115/60	11.0	42	-40 bis +95	57	**3686645**
80	79.5	71.5	Ball bearing	230/50	12.0	37	-40 bis +90	48	**3686646**
120	119.0	104.8	Ball bearing	115/60	18.0	51	-40 bis +90	180	**3686643**
120	119.0	104.8	Ball bearing	230/50	19.0	47	-40 bis +85	160	**3686644**



Connection cable

Cable length mm	Packs of	Order No.
610	1	**3686658**
1000	1	**3686659**

DC fans



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

Supply includes
1 fan with connection cable (310 mm)

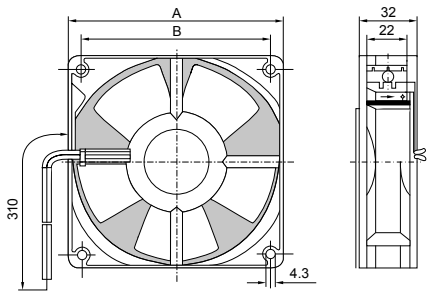
+ Also required
Assembly screws packs of 1 set, order no. 3685197, see page 149
Temperature sensor for DC fans with speed control, see page 142

DC fan with speed control and alarm signal

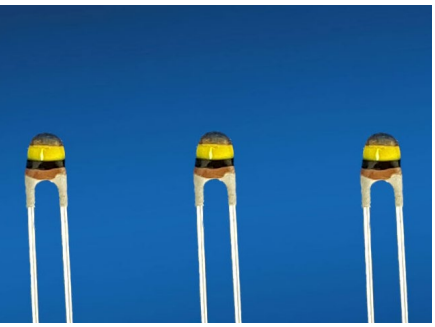
Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power Watt	Noise level dB(A)	Tempera-ture range °C	Volume flow m^3/h	Order No.
Fan mm	A mm	B mm								
80	79.5	71.5	Ball bearing	12	8.0 - 14.0	2.2	34	-20 bis +65	48	**3686649**
80	79.5	71.5	Ball bearing	24	21.6 - 26.4	2.4	36	-20 bis +65	54	**3686650**
120	119.0	104.8	Ball bearing	12	8.0 - 13.2	5.5	45	-20 bis +65	170	**3686647**
120	119.0	104.8	Ball bearing	24	21.0 - 27.0	5.4	45	-20 bis +65	170	**3686648**

DC fan without speed control and without alarm signal

Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power Watt	Noise level dB(A)	Tempera-ture range °C	Volume flow m^3/h	Order No.
Fan mm	A mm	B mm								
80	80.0	71.5	Ball bearing	12	6.0 - 15.0	1.8	34	-20 bis +75	48	**3687612**
80	80.0	71.5	Ball bearing	24	12.0 - 28.0	2.1	34	-20 bis +75	48	**3687613**
120	119.0	104.8	Ball bearing	12	6.0 - 15.0	2.6	39	-20 bis +75	140	**3687614**
120	119.0	104.8	Ball bearing	24	12.0 - 28.0	2.6	39	-20 bis +75	140	**3687615**



Temperature sensor

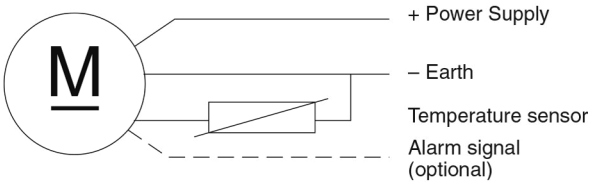


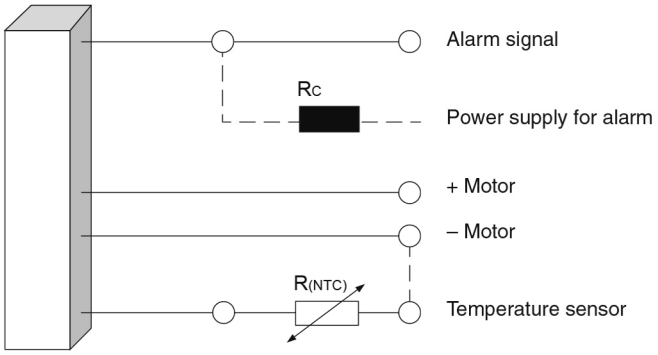
For DC fans 12/24 V with speed control.

Voltage	Packs of	Order No.
12 V/24 V (DC)	1	**3686657**

Technical specifications

Resistor type: NTC
Resistor body: Surface enamelled
Power loss P = 0.1 W





Finger guard

Suitable for AC fans and DC fans.

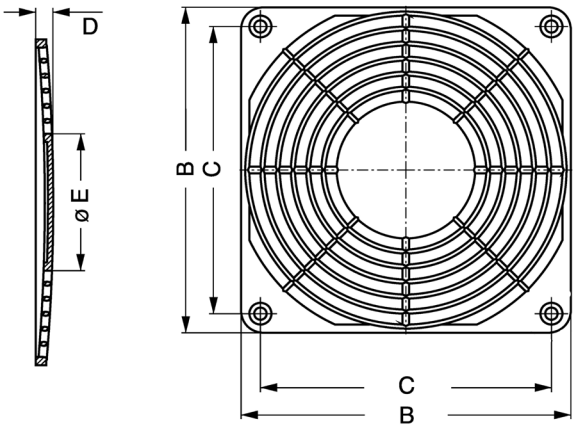
Material

Polyamide
Self-extinguishing to UL 94-V0

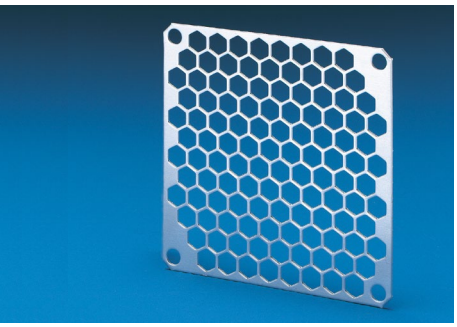
Colour

Black

For fans mm	Packs of	B	C	D	E	Measuring unit	Order No.
80	1	3.15 (80)	2.82 (71.5)	.28 (7)	1.34 (34)	Inch (mm)	**3686656**
120	1	4.69 (119)	4.14 (105)	.26 (6.5)	1.97 (50)	Inch (mm)	**3686655**



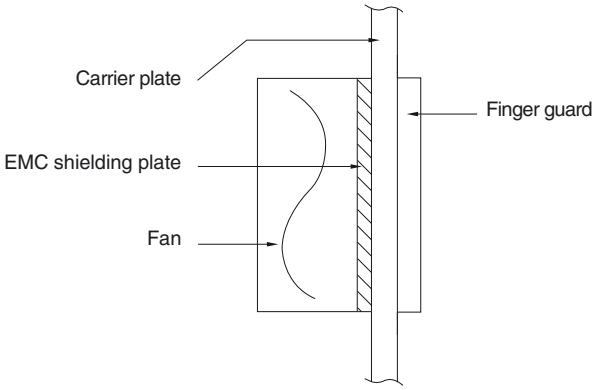
EMC shielding plate



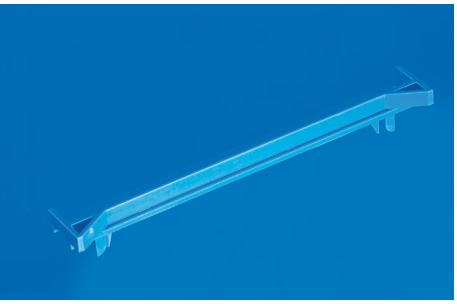
Suitable for AC fans and DC fans.

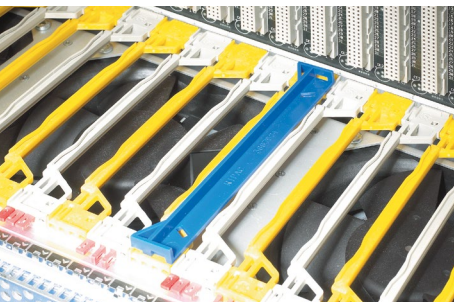
Material
1 mm aluminium, clear-chromated

For fans mm	Packs of	Order No.
80	1	**3686359**
120	1	**3686329**



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.

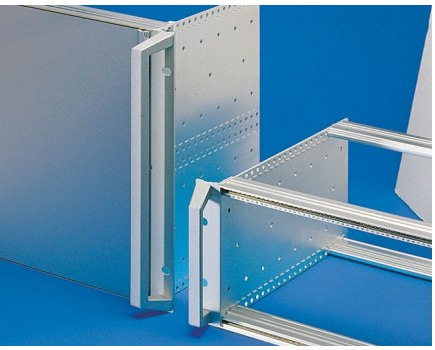
Material
Polycarbonate
Self-extinguishing to UL 94-V0

Colour
Blue

Note
Not suitable for use in conjunction with guide rails with ½ HP offset.

For keyable guide rail mm	Packs of	Order No.
160	1	**3687924**

Front handles, die-cast zinc



Suitable for all subracks

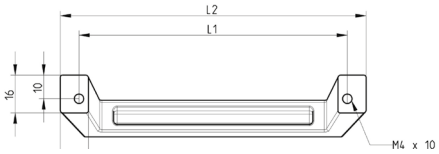
For attaching to the subrack flange with handle holes and on all component shelves.

Material
Die-cast zinc

Supply includes
Assembly parts

Surface finish
Spray-finished, silver-grey

For Subracks	L1	L2	Packs of	Order No.
3 U and 4 U	114.5	130.5	2	**3636010**
6 U 7 U and 9 U	248	264	2	**3666010**



Front handles, steel

The handles are fitted onto the 482.6 mm (19″) flanges.
They allow easy withdrawal of the cases from the enclosure.

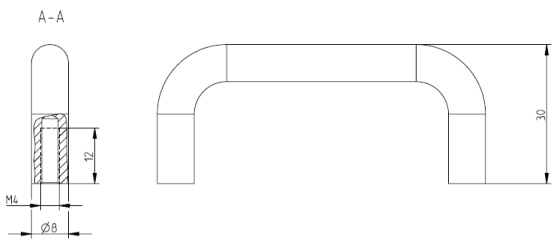
Material
Sheet steel, plated

Supply includes
Assembly parts

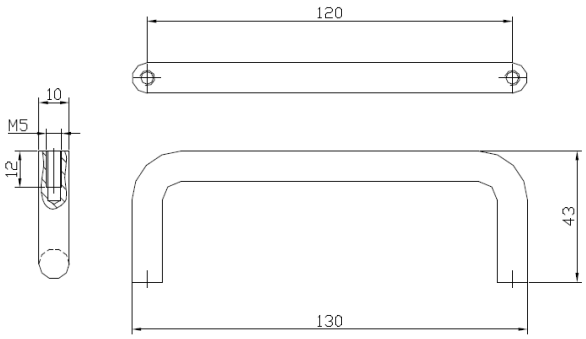
Note
Not suitable for IPC.

For enclosure height (U)		Packs of	Order No.
1	1	2	**3659540**
2	1	2	**3659020**
4	2	2	**3659240**

1



2



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

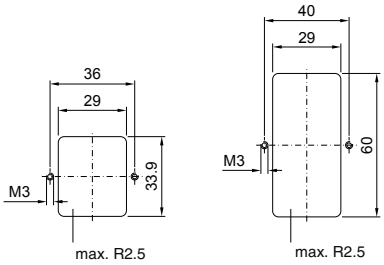
Max. current	Packs of	**Order No.**
6 A	1 St.	**3687711**

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.

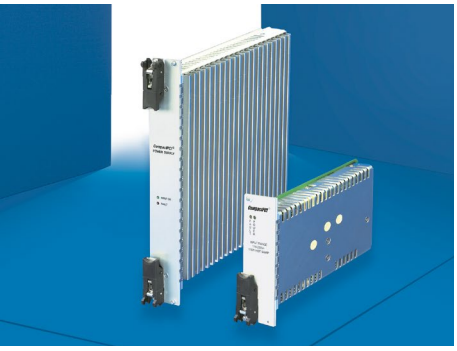
Technical specifications

- 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
	3687709	**3687710**
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

HeiPac power supplies for CPCI, plug-in



Plug-in AC/DC power supply for CompactPCI systems in 3 U and 6 U.
DC/DC Converter and additional output levels on request.

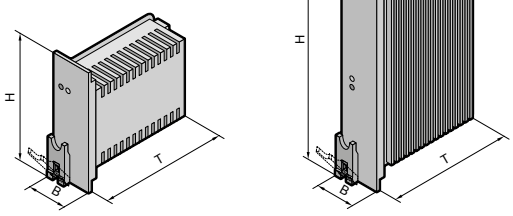
Technical specifications

- Input voltage 90-264 V AC
- 47-63 Hz
- 3.6 A max (250 W) or 7 A max (350 W)

Note

Further technical information can be found on our website.

Height (H) U	W HP	Depth mm	Power	**Order No.**
3 U	8 HP	170	250	**3688695**
6 U	8 HP	170	350	**3688528**



AT/ATX Power supply for IPC

AT/ATX Power Supply
Different output ranges available as standard.

Supply includes

Power supply
Connection cable

Note

Other output ranges on request.
Additional technical details see website.
Also suitable for IPC Chassis.

Version	PFC	Power W	Order No.
AT-power supply	passive	300	**3688118**
ATX-power supply	active	300	**9925775**
ATX-power supply	active	400	**9926805**
ATX-power supply	active	500	**9926806**
ATX-power supply	active	600	**9926807**
ATX-power supply	active	700	**9926808**

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

Technical specifications

- 250 W max. / 100 - 240 V AC
- 60 - 50 Hz
- 3.3 V / 16.0 A (OR)
- 5.0 V / 18.0 A (RD)
- - 5.0 V / 0.3 A (WH)
- 12 V / 18 A + 12 V1 / 16.0 A (YE/BK)
- + 12 V2 / 16.0 A (YE)
- - 12 V / 0.8 A (BU)
- + 5 VSB / 2.5 A (VT)
- + 3.3 V u. 5 V total max. 120 W

Supply includes

Connection cable

Design	Packs of	Order No.
ATX	1	**3688130**

Front panel for ATX power supply

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

Material

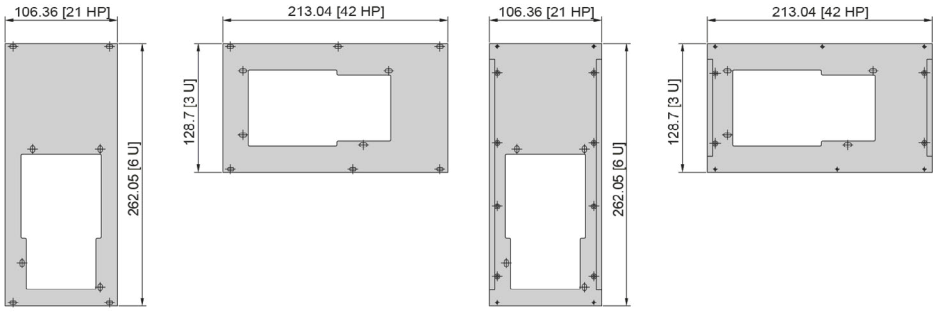
Aluminium, clear-chromated

Supply includes

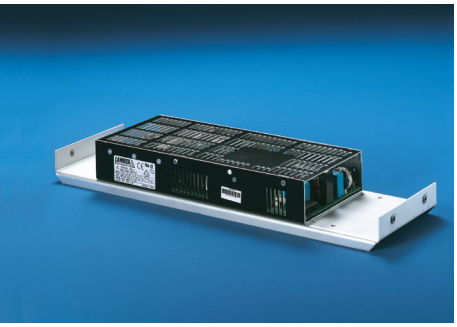
EMC gaskets (with EMC version)
Assembly parts

U	HP	Order No.	
		EMC	Non-EMC
3	42	**3685331**	**3685328**
6	21	**3685332**	**3685329**

EMC



Mounting base for power supplies



To attach ATX-power supplies to the subrack side panel.

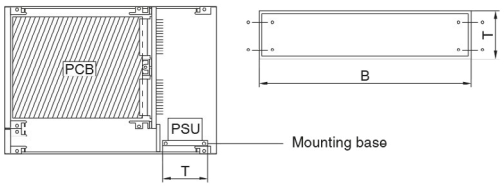
Material

2 mm aluminium, clear-chromated

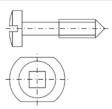
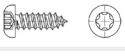
Supply includes

Assembly parts

Width (B) mm	Depth (T) mm	Order No.
431.8	100	**3684323**
431.8	130	**3684324**



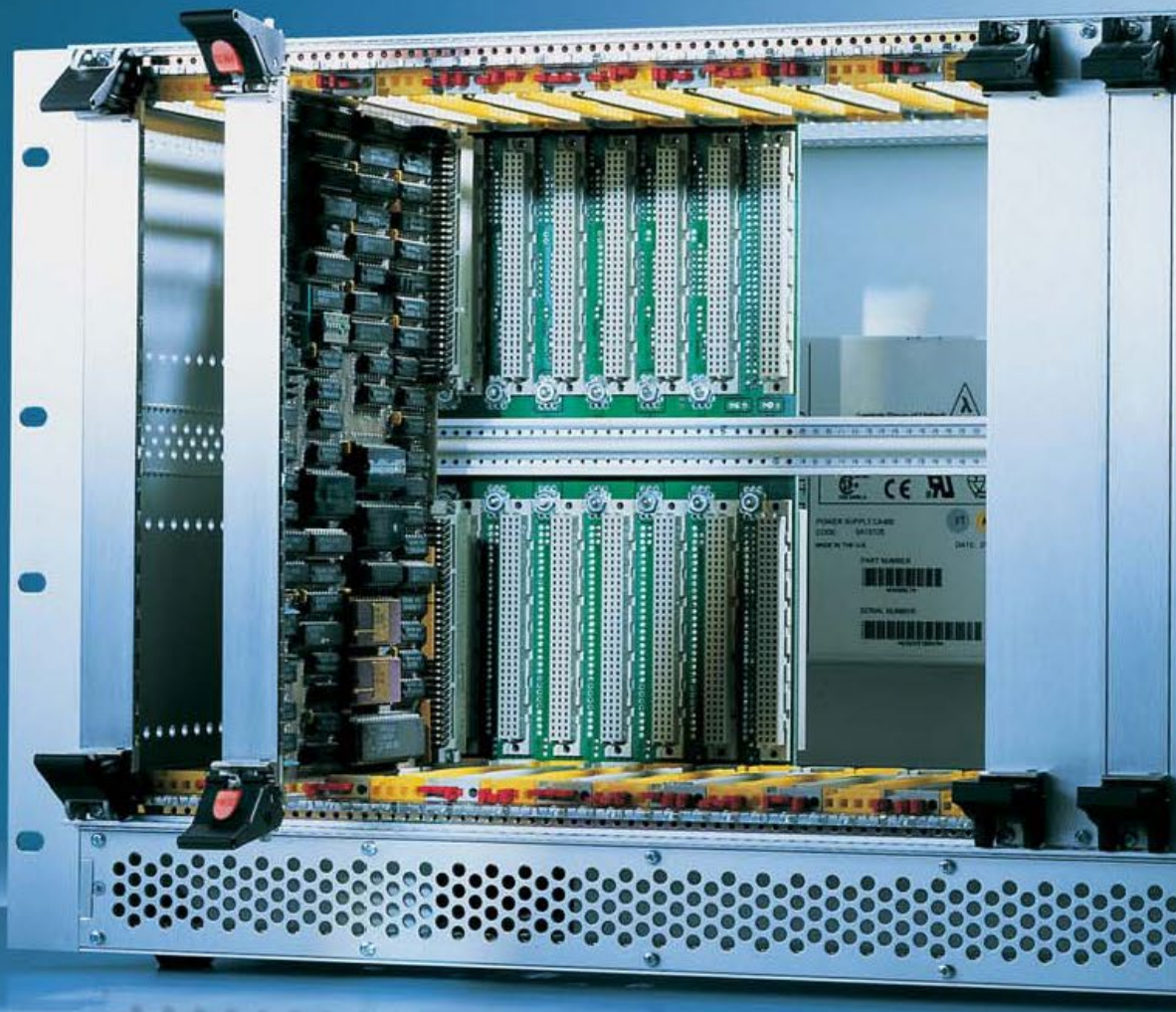
Assembly parts

For the attachment of	Description	Dimensions	**Order No.**	Packs of
Front panels to unit side panels	Oval countersunk-screw ISO 7047-4.8-Z-A2K	M3 x 8	**3606550**	100
Rear panels to box-type plug-in units	Panhead screw ISO 7045-4.8-Z-A2K	M3 x 8	**3606560**	100
PCB holders (plastic) to front panels, top	Oval countersunk-screw ISO 7047-4.8-Z-A2K	M2.5 x 10	**3606610**	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	**3654300**	100
Front/rear horizontal rails for side panels (HeiPac EASY)	Drill screw, T20, self-locking	M4 x 16	**3634430**	100
Centre horizontal rails for side panels (HeiPac EASY)	Fastening screw, T20, self-locking	M4 x 12	**3634435**	100
- PCBs to PCB holders (die-cast for 3 U), top - PCBs to extractor handles with 6 U	Panhead pozidriv screw ISO 7045-4.8-Z-A2K	M2.5 x 8	**3654320**	100
- PCB holder (plastic) to type V/VI handles, bottom - PCBs to PCB holders (plastic) - Backplanes to threaded inserts	Panhead pozidriv screw ISO 7045-4.8-Z-A2K	M2.5 x 10	**3654330**	100
- Connectors to Z rails - Z rails to horizontal rails - Type V/VI handles to partial front panels, bottom right for 5 HP - Aluminium guide rails to horizontal rails - Mezzanine front panels	Panhead pozidriv screw ISO 7045-4.8-Z-A2K	M2.5 x 6	**3654340**	100
Aluminium guide rails to horizontal rails (fastening of square nuts)	Retaining cage	M2.5	**9901417**	100
Handle type V (plastic) to front panels and box-type plug-in units	Mounting kit for type V handle (plastic): Cover black Cover grey Hex nut Screw Screw Square nut DIN 562-04-A2K	 M2.5 M2.5 x 16 M2.5 x 12 M2.5	**3687519**	1 set
Connectors to PCBs	Panhead pozidriv screw ISO 7045-4.8-Z-A2K	M2.5 x 12	**3654350**	100
Guide rails (plastic) to horizontal rails	Screw for plastic WN 1413	M2.2 x 6	**3654360**	100
- Flat front panels to handles type V, VI - Aluminium guide rails to horizontal rails	Square nut DIN 562-A2K	M2.5	**3654370**	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 	**3658160**	100 sets
Flat front panels	Plastic collars		**3687021**	100
PCB to type III handle	Screw for plastic WN 1412	3.0 x 8	**3658190**	100
- PCBs to PCB holders (plastic) - PCB holders to front panels, top	Hex nut ISO 4032-8	M2.5	**3685834**	100
- Backplanes to threaded inserts - Air partitions to horizontal rails	Mounting kit for backplanes: Panhead pozidriv screw ISO 7045-4.8-Z-A2K Washer PE, natural DIN 125	 M2.5 x 6 2.7	**3684019**	100
- Covers to mounting blocks - EMC contact strips	Flat countersunk-screw ISO 7046-1-4.8-Z-A2K	M3 x 6	**3684233**	100
Covers with mounting clips	Flat head tapping screw ISO14585-TX15-A2K	M3.5 x 13 	**9921879**	100
Covers to side panels (HeiPac Vario)	Mounting block		**3684234**	10
Type V/VI handle to front panels	Bracket		**3684435**	100
Ground contact to keyable guide rails	Fastening screw for ground contact	3.5 x 12	**3684109**	50
Female connector to PCB attachment	Pop rivet DIN 7340-B-CuZn	2.5 x 0.3 x 10	**3684482**	100

Assembly parts

For the attachment of	Description	Dimensions	Order No.	Packs of
Fans to fan mounting plate	Mounting kit for fans: Flat countersunk-screw ISO 7046-1-4.8-Z-A2K Hex nut ISO 4032-8 Serrated washer DIN 6798-A-Fst-A2K	 M4 x 12 M4 4.3	**3685197**	1 set
Covers to side panels	Mounting kit for covers: Mounting block Flat countersunk-screw ISO 7046-1-4.8-Z-A2K	 M3 x 6	**3685256**	24 sets
PCB holders (die-cast) to front panels, top	Oval countersunk-screw DIN ISO 7047-4.8-Z-A2K	M2.5 x 8	**3685282**	100
- Covers box-type plug-in units type I/II - Contact/spring sections for 3-part front panels	Flat countersunk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 5	**3685289**	100
- Handles on front panels for box type plug-in units - Front panels to hinge strip	Flat countersunk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 6	**3685290**	100
Holder (horizontal assembly kit) to horizontal rail	Flat countersunk-screw similar to DIN ISO 7046-1-4.8-Z-A2K	M2.5 x 5	**3686916**	100
Holder (horizontal assembly kit) to horizontal rail	Flat countersunk-screw similar to DIN ISO 7046-1-4.8-Z-A2K	M2.5 x 8	**3686917**	100
Contact and spring sections on 3-part front panels without countersink	Panhead pozidriv screw DIN ISO 7046-4.8-Z-A2K	M2.5 x 5	**3686924**	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 Hex nut ISO 4032-8 Washer	 M4 x 8 M4 4.3	**3687015**	4 sets
Fastening the threaded inserts in horizontal rails	Grub screw ISO 7434-14H	M2.5 x 8	**3687020**	100
- EMC front panels to horizontal rails - EMC trim frame to conceal the front sections of the horizontal mounting kit	Centring screw, slotted	M2.5 x 11	**3687050**	100
EMC front panels to horizontal rails	Centring screw, pozidriv	M2.5 x 11	**3687051**	100
EMC front panels to horizontal rails	Centring screw, Torx® T8	M2.5 x 11	**3688709**	100
Subracks into racks	Panhead screw, pozidriv ISO ISO7045-M6x16-4.8-Z-A2K Washer plastic M6	M6 x 16	**2089000**	100
Subracks into racks	Panhead screw, Torx® drive ISO 14583 M6x16-4.8-A2K Washer plastic M6	M6 x 16	**7094140**	50
Subracks at the profiles of racks	Cage nut M6 0.8-2.0 with electrical contact	M6	**2094200**	50
Subracks at the profiles of racks	Cage nut M6 0.8-2.0 without electrical contact	M6	**2092200**	50
Front panels and rear panels to horizontal rails	Collar screw, cheese-head, slotted	M2.5 x 11	**3685097**	100
Type V/VI handles (aluminium) to front panels	Mounting kit for type V/VI handles: Panhead pozidriv screw ISO 7045-4.8-Z-A2K Bracket Square nut DIN 562-11H-A2K	 M2.5 x 6 M2.5	**3687146**	1 set

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 chassis, racks and cabinets
IEC 60297-3-101	Subracks and associated plug-in units
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 alignment pin
IEC 60297-3-104	Connector dependent interface dimensions of subracks and plug-in units
IEC 60297-3-105	Dimensions and layout of 1 U high rack-mount chassis
IEC 60297-3-106	Adaptation dimensions for subracks and rack-mount chassis 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
Rail	
EN 50155	Electronic equipment used on rail vehicles
Fire protection	
EN 45545	Railroad applications - fire protection in rail vehicles

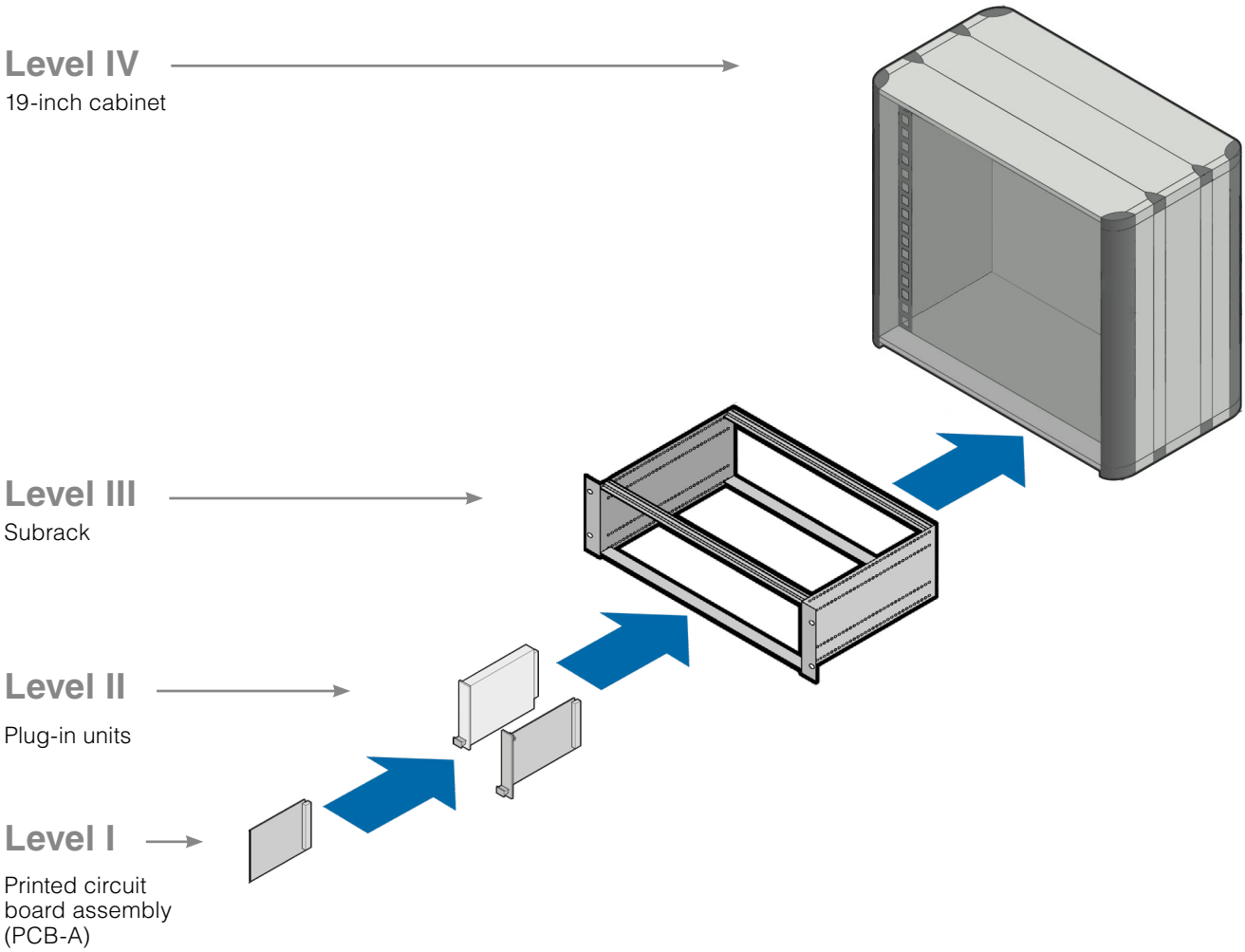
19-inch technology: dimensional coherence

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.

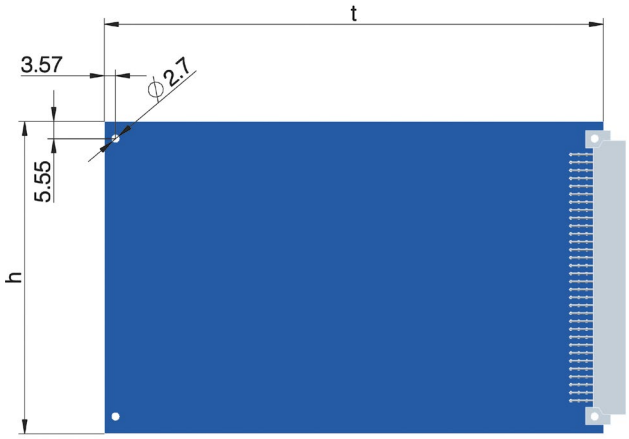
The objective of these provisions is to ensure that different devices and modules from all potential manufacturers can be combined and replaced without difficulty.

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:



Level 1: Printed circuit board



Subrack height	PCB-A height h + 0mm - 0.3 mm	PCB-A depth (mm) t +0 mm - 0.3 mm			
		100 mm	160 mm	220 mm	280 mm
3 U	100 mm	-	x	x	-
6 U	233.35 mm	-	x	x	-
9 U	366.70 mm	-	x	x	-

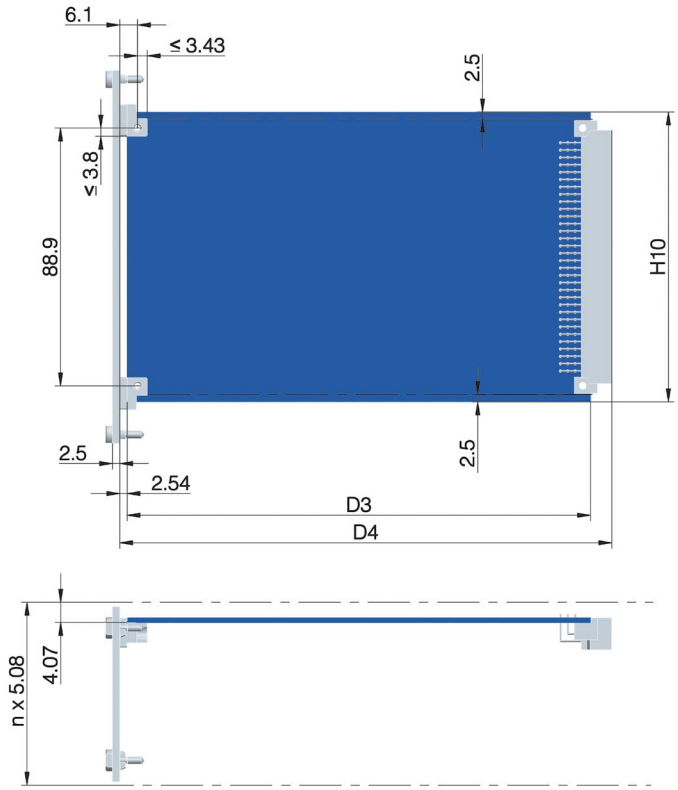
x most common dimensions

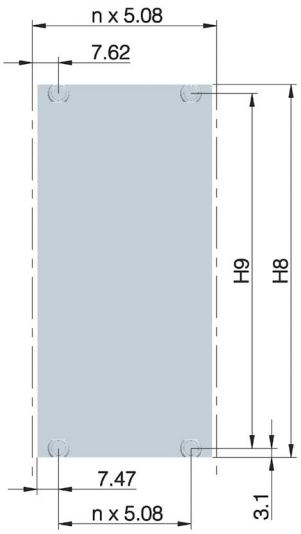
The PCB dimensions are defined on the basis of the eurocard format and are set forth in standard IEC 60297-3-101. Starting from a height of 100 mm and a depth of 160 mm as the basic dimensions, the height increases by multiples of one height unit (1 U = 44.45 mm) and the depth by multiples of 60 mm.

The table above shows the PCB formats most commonly used.

PCBs are generally 1.6 mm thick. Different, higher values must be coordinated between the user and the manufacturer to arrange suitable guide rails. Standard subrack depths are arranged in accordance with PCB depths of 160 mm, 220 mm and 280 mm.

Level 2: Module

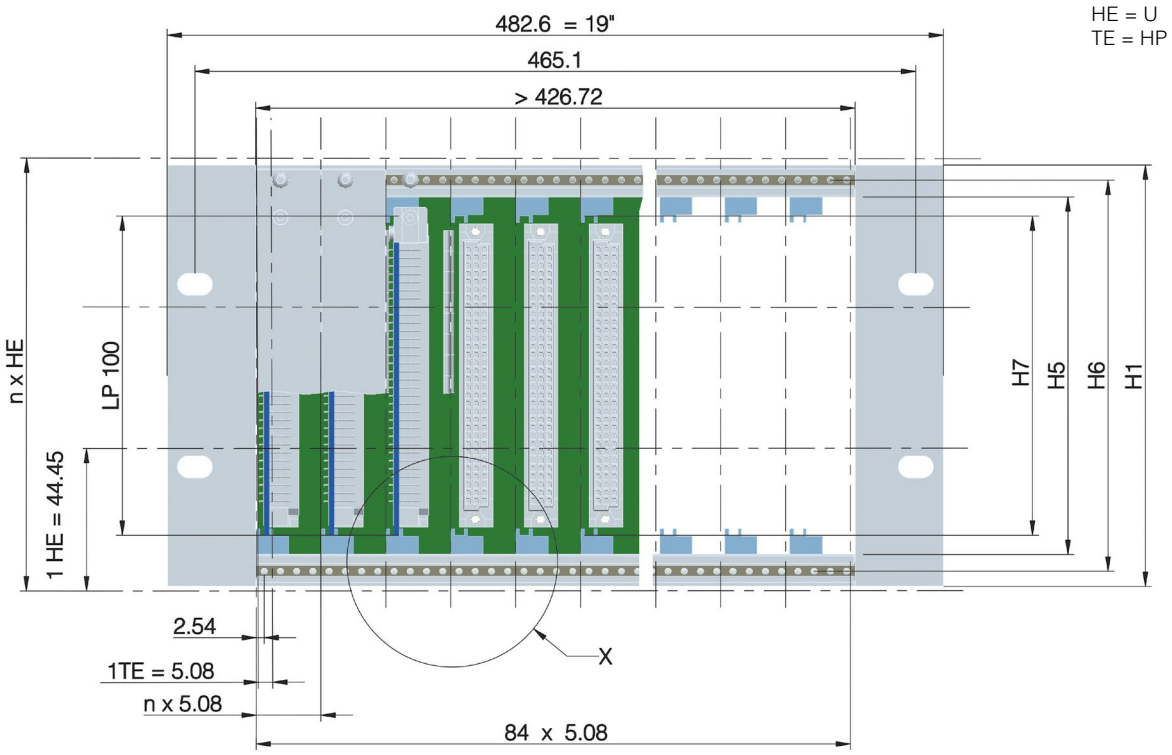




The IEC 60297-3-101 standard also describes the dimensions of the entire plug-in unit and associated front panel, together with the screw fixing points. The following table shows the most common dimensions.

Height H (in mm)				Depth D (in mm)			
Height units	3 U	6 U	9 U	Depth units			
H8 ± 0.15	128.55	261.90	395.25	D3 – 0.3	160.00	220.00	280.00
H9 ± 0.2	122.50	255.85	389.20	D4 ± 0.4	169.93	229.93	289.93
H10 +0 -0.3	100.00	233.35	366.70				

Level 3: Subrack



Height units	3 U	4 U	5 U	6 U	7 U	9 U	11 U
H1 ± 0.4	132.55	177.00	221.45	265.90	310.35	399.25	488.15
H5 ≥	112.00	156.45	200.90	245.35	289.80	378.70	467.60
H6 ± 0.2	122.50	166.95	211.40	255.85	300.30	389.20	478.10
H7 + 0.5 -0	100.20	144.65	189.10	233.55	278.00	366.90	455.80

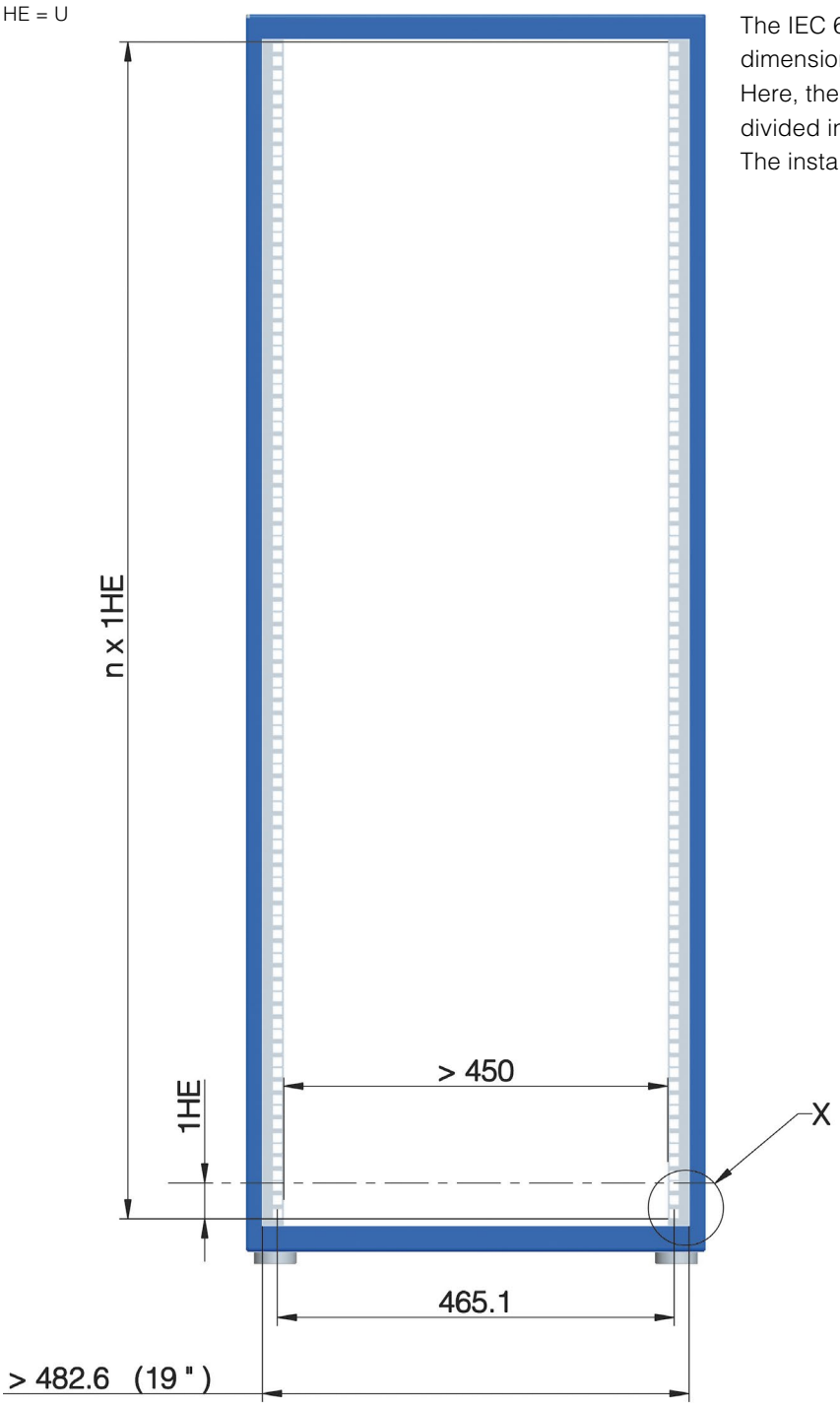
Width	84 HP (19-inch)	42 HP (1/2 19-inch)	21 HP (1/4 19-inch)
Card cage	426.72 mm	213.36 mm	106.68 mm
Flange	465.10 mm	251.70 mm	145.00 mm
Enclosure	482.60 mm	269.10 mm	162.40 mm

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).

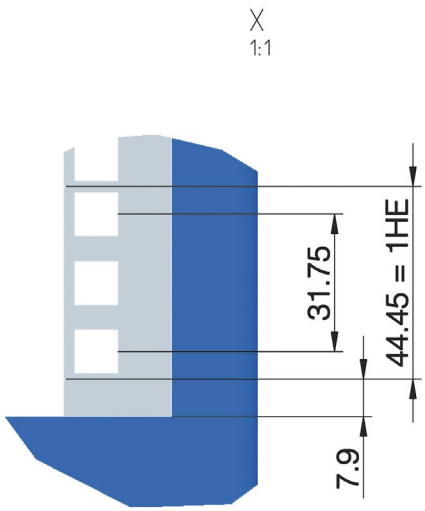
The maximum subrack height is given as a multiple of one height unit (1 U), or 44.45 mm. This ensures that the subrack height is coordinated with the height of the plug-in units used. Typical sizes are 3 U, 6 U and 9 U (refer to table).

The installation space for the plug-in units 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



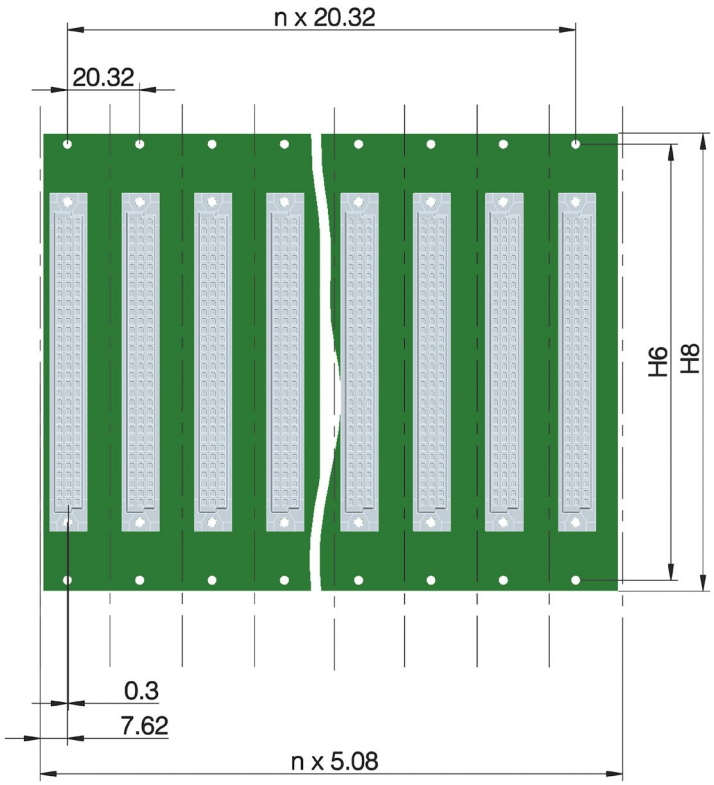
The IEC 60297-3-100 standard describes the basic dimensions of the 19-inch cabinet.
Here, the available space to fit the subracks is also divided into multiples of 1 U.
The installation space must be at least 450 mm wide.



Backplane

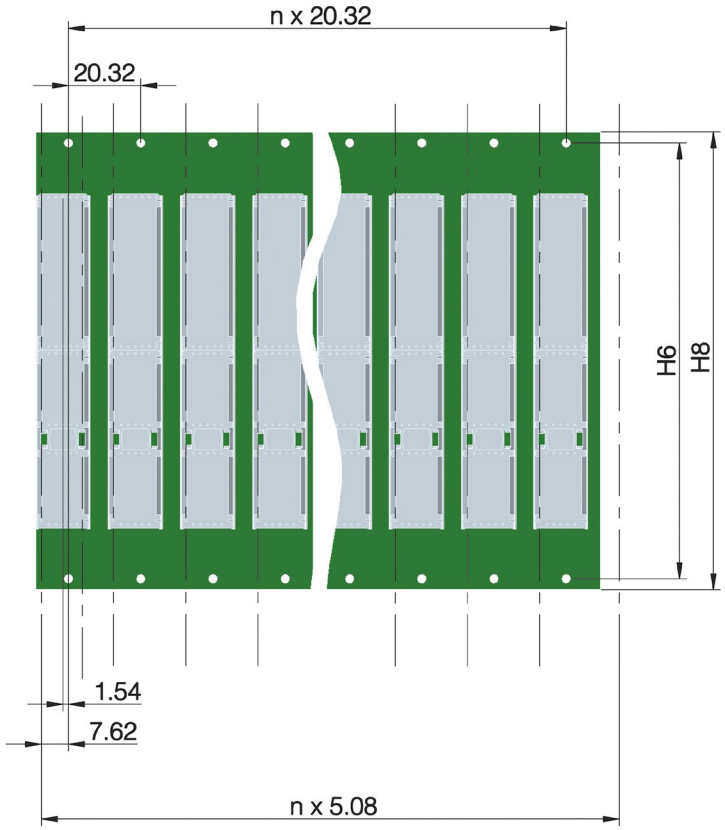
The IEC 60297-3-104 standard describes the dimensions of the backplanes for the most common height variations (refer to table).

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



Backplane with plug connector as per DIN 41612/IEC 60603-2 and IEC 61076-4-113

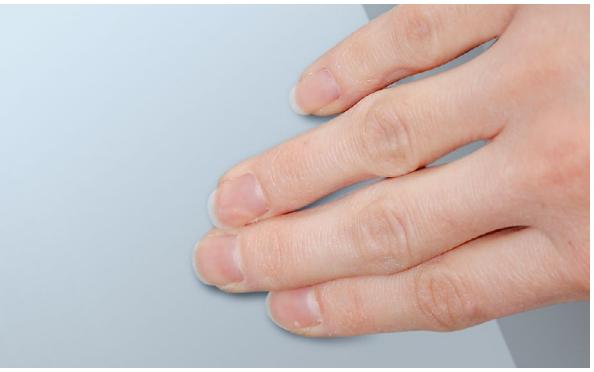
Typical application: VME/VME64 systems



Backplane with plug connector as per IEC 61076-4-101

Typical application: CPCI systems

IP protection levels – chassis protection classes (IP code)



1st IP number

	Protection against solid objects
0	No protection
1	Protected against solid objects over 50 mm in diameter
2	Protected against solid objects over 12.5 mm in diameter
3	Protected against solid objects over 2.5 mm in diameter
4	Protected against solid objects over 1.0 mm in diameter
5	Protected against dust (limited ingress, no harmful deposit)
6	Totally protected against dust

	Protection against contact
0	No protection
1	Protected against contact with back of hand
2	Protected against contact with fingers
3	Protected against tools
4	Protected against wires
5	Complete protection against contact
6	Complete protection against contact

2nd IP number

	Protection against liquid
0	No protection
1	Protected against vertically falling drops of water, e.g. condensation
2	Protected against direct sprays of water up to 15 degrees from vertical
3	Protected against sprays up to 60 degrees from vertical
4	Protected against water sprayed from all directions
5	Protected against low-pressure jets of water from all directions
6	Protected against strong jets of water
7	Protected against the effects of short-term submersion
8	Protected against long periods of submersion

Examples of typical protection classes used in industry:

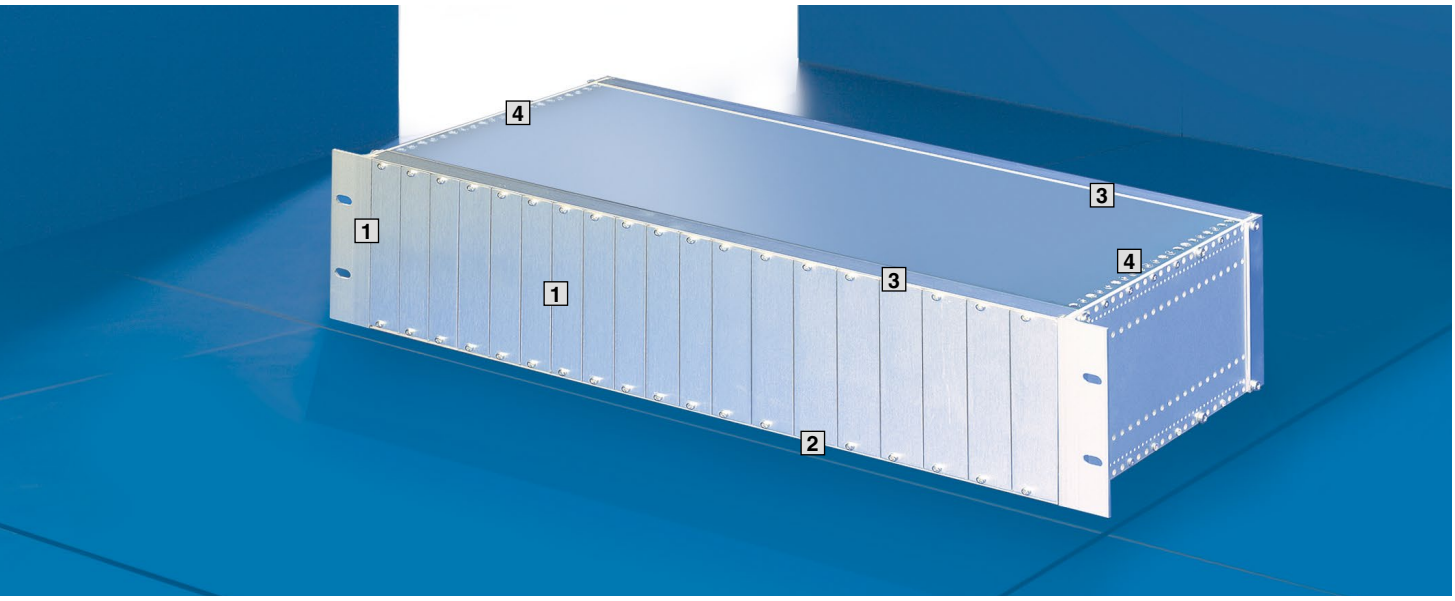
IP20 - For a touch-proof device that is mounted, for example, on a DIN rail or mounting plate in a control cabinet.

IP54 - For a splash-proof device, which is placed outside the control cabinet, e.g. a table-top device.

IP67 - For a waterproof device which can be used for permanent outdoor use, e.g. a control cabinet.

IP68 - For a waterproof device which can be used under water e.g. a watch or a current smartphone.

Electromagnetic compatibility (EMC)



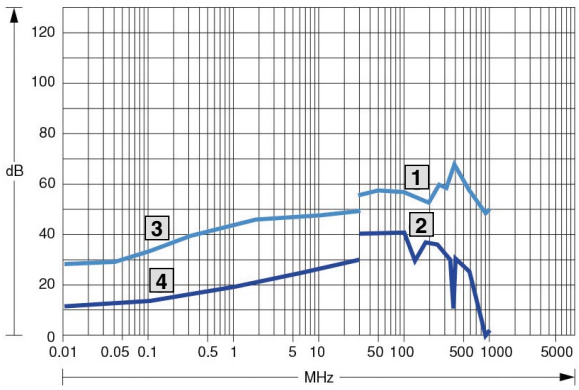
1 EMC gaskets, vertical
2 EMC gaskets, horizontal
3 EMC gaskets for cover plates
4 Mounting blocks

EMC (electromagnetic compatibility) refers to the ability of an electrical device to function properly in its electromagnetic environment without influencing this environment more than is admissible. These requirements were taken into account when developing the HEITEC subracks.
They are made entirely from metal and coated with a conductive surface finish.
Stainless steel EMC gaskets ensure a conductive connection between the separate parts.

Testing of measurements of the shielding effectiveness of empty chassis is based on DIN EN 61587-3 or military standards, e.g. MIL STD 285 (US) or VG 95373 Part 15 (GER).

International EMC standards are published mainly by IEC (International Electrotechnical Commission) and CISPR (International Special Committee on Radio Interference).

Key series of EMC standards with global importance: IEC 61000.



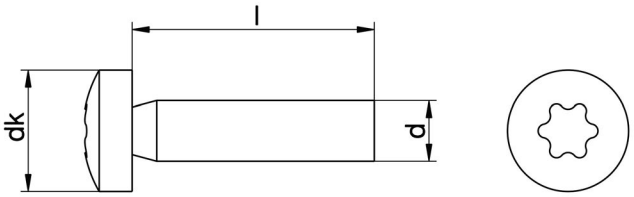
MHz = Frequency
dB = HF attenuation
1 E-Field = electric field (V/m) EMC chassis
2 E-Field standard chassis
3 H-Field = magnetic field (A/m) EMC chassis
4 H-Field standard chassis

The diagram above shows the extent to which EMC shielding influences the attenuation of the electromagnetic field. The attenuation of a standard chassis with no suitable EMC components is thus much lower than that of a HeiPac Vario EMC subrack.

Of particular interest is the shielding factor provided by the attenuation.

HF attenuation (dB)	Shielding (%)
6	50
20	90
40	99
60	99.9

Screws



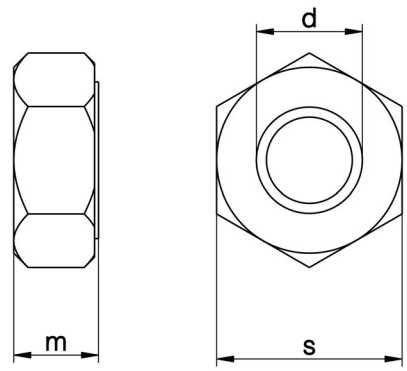
Screws are used to achieve a tight connection between two or more components. They form part of a screw gear consisting of two standardised, paired components.
Friction on the wedge-shaped thread under load prevents the screws from coming loose.

Examples

Hexagonal head screw	ISO 4017 - M12 x 100 - A4 - 50 - H
Screw plug	DIN 910 - M24 x 2.5 - St
Panhead screw	ISO 4762 - M10 x 65 - 9.8

- Designation
- Reference standard, e.g. ISO, DIN, EN
- Dimensions and other ratings, e.g.
  - M → Metric thread
  - 24 → Nominal diameter d
  - 100 → Shank length l
- Strength class, e.g. 9.8, 12.9, A2 - 50
  Material, e.g. St steel
- Drive, e.g.
  - H → Phillips
  - Z → Pozidriv
  - T → Torx®

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

Hexagonal nut	ISO 4032 - M10 - St
Castellated nut	DIN 935 - M4 x 1 - St
Hexagonal nut	EN 1661 - M12 - 8

- Designation
- Reference standard, e.g. ISO, DIN, EN
- Dimensions and other ratings, e.g.
  - M → Metric thread
  - 10 → Nominal diameter d
  - 1 → Thread pitch for fine threads
- Strength class, e.g 8, 12
  Material, e.g. St steel

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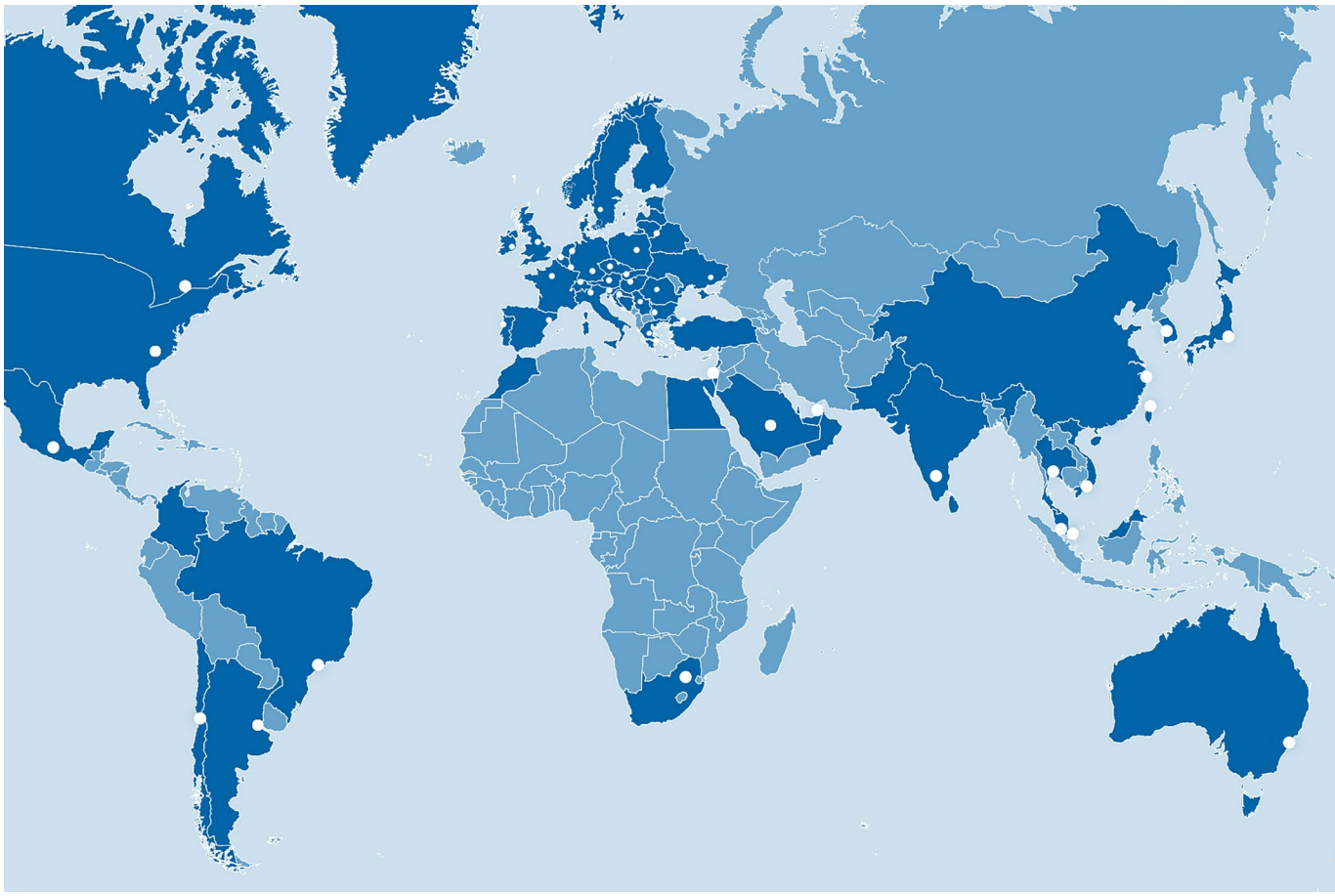

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