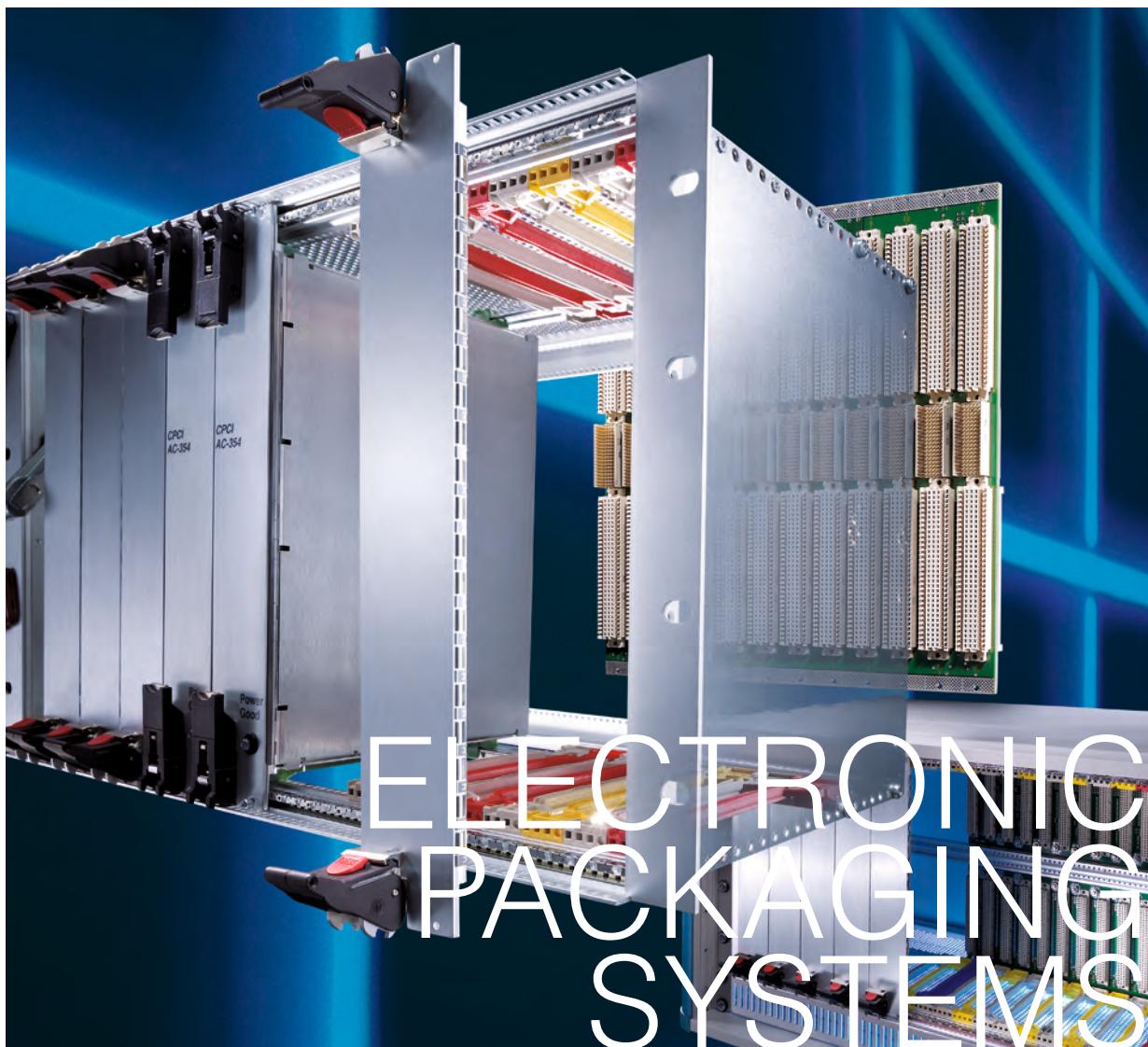




## PROFESSIONAL SYSTEM CHASSIS TECHNOLOGY



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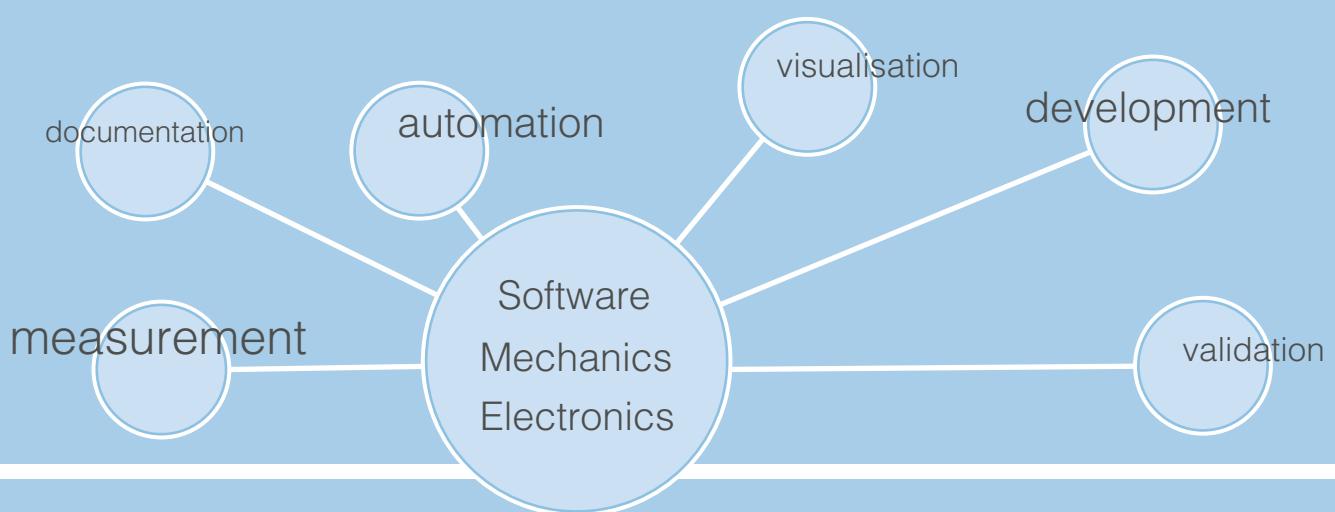
# INTEGRATED INDUSTRIAL SOLUTIONS



For more than 25 years now HEITEC AG has been a synonym for solution, engineering and industry competence in the fields of software, mechanics and electronics. Being a single-source provider, we offer both high-quality standard applications and customer-specific solutions. It is our objective to provide sustainable, cost-reducing and innovative "engineering solutions" for our customers.

In cooperation with renowned universities and research institutes we are establishing the basis for future key technology.

## Engineering Competence



Consulting & Planning

Design & Development

Manufacturing & Test

Commissioning & Training

Service & Maintenance

## Solution Competence

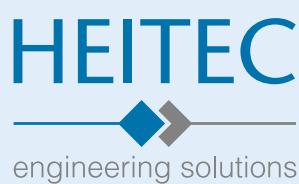


With more than 950 employees in 18 German branch offices and numerous locations abroad, we are close to our customers and provide highly comprehensive expertise.

Our success results from a long-term, trustworthy and partnership-based cooperation with our customers.

More than 1000 customers from medium to large sized companies benefit from our services and products.

## Integrated Industrial Solutions



### Industry Competence

- Plant Engineering and Machine Tool Industry
- Automotive Industry
- Electrical Industry
- Power Generation and Distribution
- Information and Communication Engineering
- Logistics Industry
- Aerospace Industry
- Food and Beverage Industry
- Medical Device Engineering
- Pharmaceutical Industry
- Traffic Engineering

# INTEGRATED INDUSTRIAL SOLUTIONS



## INDUSTRY EXPERTISE: THE APPLICATION IS IN FOCUS

Our employees do not only have profound, technical knowledge, but also are familiar with many key industries, such as industrial engineering, medical systems, energy, computing, telecommunications or aerospace.

This results in a thorough understanding of your requirements, even if they have not been explicitly spelled out.

## HEITEC CORE BUSINESS SECTORS

### AUTOMATION



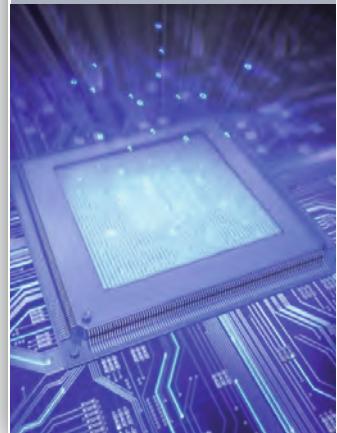
### PRODUCTION SYSTEMS



### MEASUREMENT AND TEST ENGINEERING



### ELECTRONICS



# INTEGRATED INDUSTRIAL SOLUTIONS



## QUALITY IS AT THE CORE OF OUR ACTIVITIES.

Our products and services are based on established and certified processes and methods. Additionally, we have industry-sector-specific process know-how, for example:

- Quality Management (DIN EN ISO 9001)
- Aerospace (DO 178B, DO254)
- Nuclear energy (KTA 1401, KTA 3507)
- Medical (DIN EN ISO 13485, IEC 62304)

## SOFTWARE SOLUTIONS

## DOCUMENTATION AND INFORMATION MANAGEMENT



## WE FOCUS ON OUR CUSTOMERS

All our business sectors pay special attention to one point: the needs of our customers and how we can contribute to best meet their respective requirements. Be it during the planning phase and realisation of automation plants or manufacturing systems, be it with the design and assembly of test and measurement systems, the design of software solutions or documentation. Or the design and manufacturing of components and integrated system solutions for industrial electronics - the business sector we are going to focus on in the following pages.

www.heitec.de

# INTEGRATED INDUSTRIAL SOLUTIONS



## CONSULTANCY – IMPLEMENTATION – MANUFACTURING

The greatest strength of HEITEC AG is our know-how regarding the design, development and manufacturing of electronic systems.

Our experience ranges from the definition of the system architecture to the development and implementation of individual components as well as manufacturing including product life cycle management. With more than 150 experts just in electronics design/manufacturing, we can react flexibly to customer requirements.

## CUSTOMER

### REQUIREMENT ANALYSIS SYSTEM ARCHITECTURE

### DEVELOPMENT & PRODUCTION

## CONSULTANCY

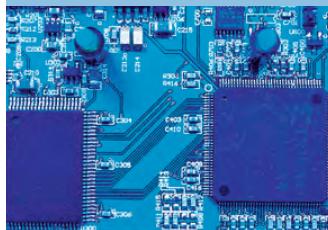
#### CHIP-DESIGN

ASIC (Digital,  
Mixed Signal),  
SoC, FPGA



#### HARDWARE DEVELOPMENT

Board Design,  
Layout,  
EMV/SI



#### FIRMWARE-/ SOFTWARE- DEVELOPMENT

RTOS,  
Driver, BSP,  
API



#### ELECTRONIC PACKAGING

Housing Technology  
Modular Systems



### INTEGRATION & VERIFICATION

### APPROVALS

*Product Lifecycle Management: From the initial concept to product discontinuation. HEITEC AG is at your side during*

# COMPETENCE IN ELECTRONICS DESIGN AND MANUFACTURING



## UNIQUE COMPETENCE

Our business unit Electronics offers electronics system design, electronics manufacturing and electronic packaging solutions. We do not only know how to design complex electronic systems but we also know how to manufacture and “package” it into industrial enclosures. It is this combination of wide-ranging know-how and profound expertise that defines our unique position in the market.

## PRODUCTION

Prototypes,  
Mass Production



## PROJECT & QUALITY MANAGEMENT

We support you in hardware development from chip and board design or layout up to totally integrated system solutions. We develop software – on firmware or driver level . We design electronic packaging components and even complete enclosures, optionally with backplane, cooling/ventilation and power supply. You decide to which level we may serve you. We contribute our long term experience in creating solutions.

Our electronic manufacturing team assembles your products using state-of-the-art manufacturing and soldering technologies. Be it prototype or volume manufacturing – from low volume/high mix to medium volume/medium mix. In either case we constantly guarantee high quality by extensive test and measurement procedures. Our processes meet complex requirements even for sophisticated fields of applications, which – for example – demand component traceability or product longevity.

Our Electronic Packaging team is specialised in industrial enclosure technology. We package your electronics properly – based on standard components or individually tailored solutions. You will learn more about it on the following pages.

*all project phases.*

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# PARTNERSHIP RITTAL – HEITEC



## YOUR PARTNER FOR ELECTRONICS ENCLOSURES AND SYSTEMS

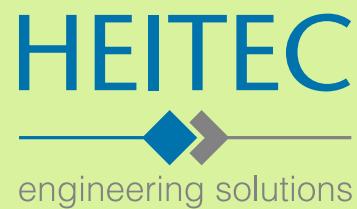
Since the beginning of 2010 HEITEC has been "Exclusive Rittal Partner" for customer specific and project business in the field of Electronic Packaging Systems.

In December 2012 HEITEC acquired the complete product line "Electronic Packaging Systems" from Rittal. This enables HEITEC now to offer the complete range of Electronic System Design, Electronic Manufacturing and Electronic Packaging Systems – from one single source.

2009

2010

Customer  
specific  
Electronic-  
Packaging  
Systems and  
Components



Standard  
Catalogue  
Products



Product Line  
Ownership



# HEITEC ELECTRONIC PACKAGING SYSTEMS



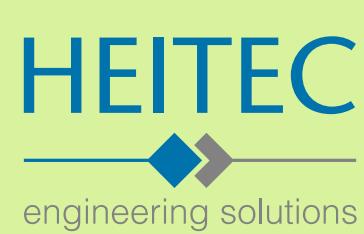
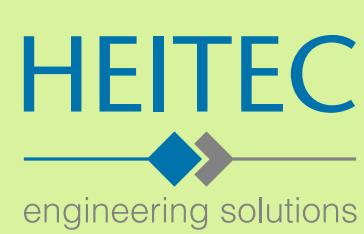
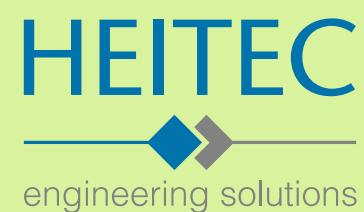
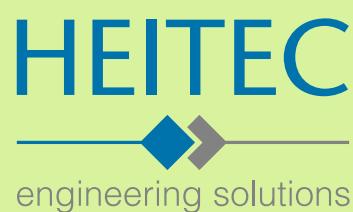
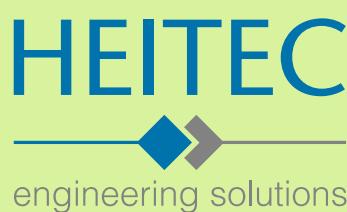
## CONSISTENCY AND CONTINUITY

HEITEC does not only maintain the original Rittal part numbers but guarantees consistency, product longevity, supply chain security and continuous enhancement of the wide product range. Due to a continued strong partnership with Rittal subsidiaries and channel partners abroad, HEITEC provides global customer support.

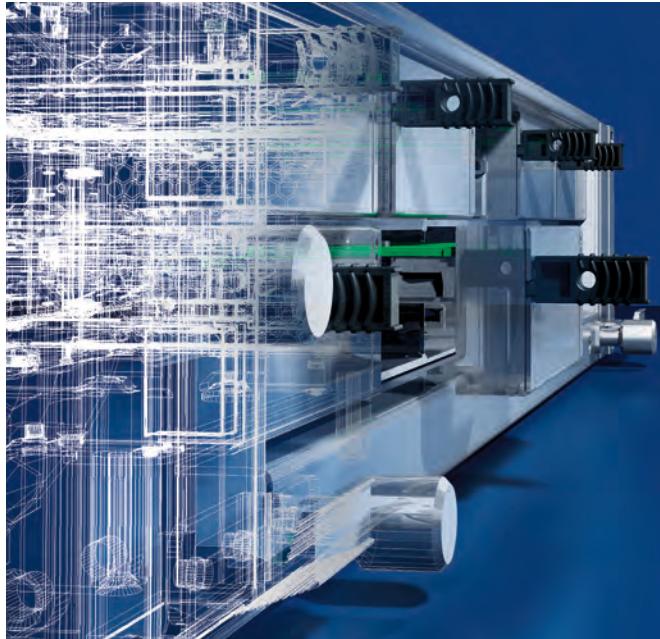
2011

2012

2013



# PRODUCTS AND SERVICES



The product portfolio of the business unit Electronic Packaging Systems (EPS) ranges from individual components through the assembly of electronics enclosures to completely integrated system solutions. Should you prefer to perform most of the system integration by yourself, we just deliver individual components, pre-assembled elements or system enclosures. If you prefer partly or completely integrated solutions - even using your own hard- and software - HEITEC EPS offers full service up to level 5. We support you whichever way fits best to your business model.

Consulting &  
Planning

Design &  
Development

Prototyping

## Solution competence

Precise analysis of the respective requirements comprising relevant factors such as operational environment, functionality and state-of-the-art technology, are the basis for sound consultancy.

Our design engineers create a concept that incorporates the results of the analysis on the one hand and the extensive experience of our engineers in 19" technology, industrial enclosures, cooling systems, backplane technologies and embedded systems on the other hand.

After having decided on the Electronic Packaging System we build a prototype. In close cooperation with you the prototype will be optimised to perfectly meet your specific requirements.

# HEITEC ELECTRONIC PACKAGING SYSTEMS



Test & Measurement

Volume Manufacturing

After Sales Service

The test laboratory performs extensive test and measurement programs verifying mechanical stability, dust and moisture protection or even behavior under extreme climate conditions. In case there is a need for optimisation, it is defined, implemented and again tested.

Volume manufacturing starts with functional reliability. All systems pass through function and safety tests before being delivered. The seal of approval guarantees HEITEC quality.

We continuously support you providing advice, service and our complete know-how so that no concerns remain unsolved.

## PRODUCTS AND SERVICES



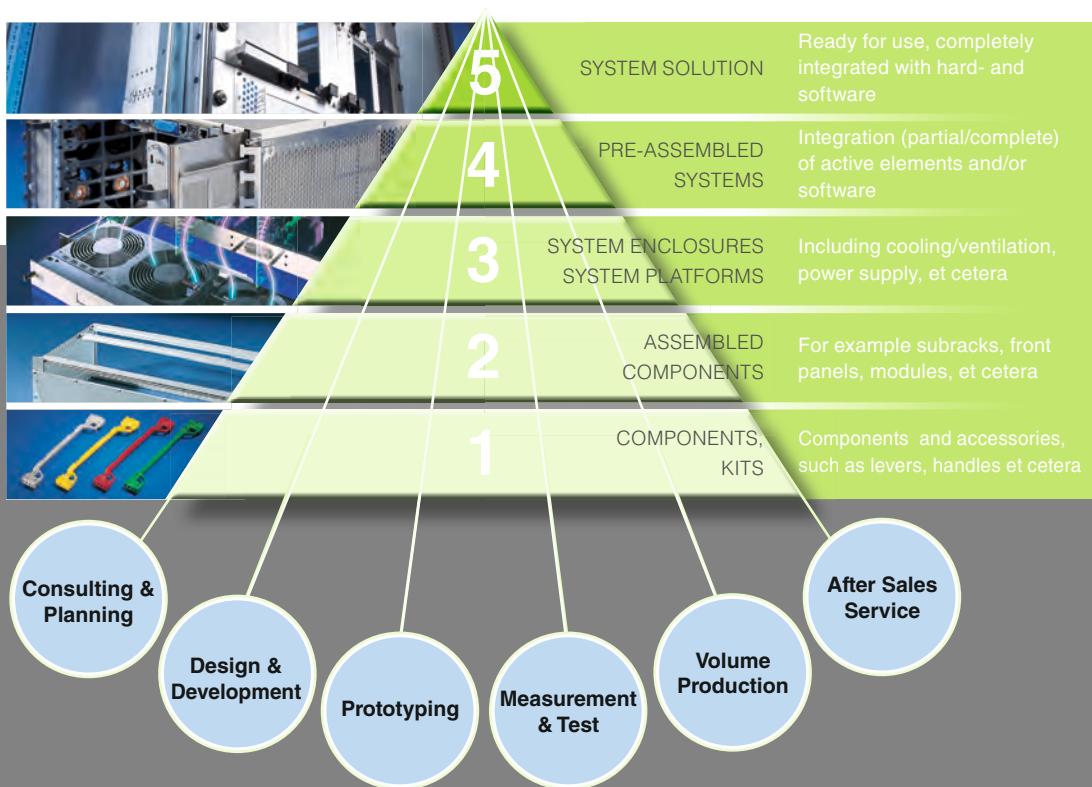
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# HEITEC ELECTRONIC PACKAGING SYSTEMS



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

Be it customer specific front panels - drilled, milled or printed according to your requirements, be it subracks, system enclosures or system configurations adapted to your application: we create the appropriate product for you. Please do not hesitate to contact our specialists.



# MicroTCA/AdvancedMC



## MicroTCA – compact package, wide range of applications

As an amendment to the AdvancedTCA standard, the MicroTCA specification mTCA.x was created as a compact version for a variety of applications. MicroTCA offers standardised modularity, compact design and a high scalability and bandwidth.

Additionally, the consistent platform strategy reduces the time to market. Whenever ultra fast data transmission or data storage is required, MicroTCA systems are the first choice. This is true not only for telecom applications but also for industrial control systems or medical engineering.

HEITEC ELECTRONIC PACKAGING SYSTEMS offers the “complete know-how” for professional Electronic Packaging – for MicroTCA-, CPCI-, VME- and customer specific applications.

Our range of services comprises complete “plug & play”- systems including backplanes, power supply and effective cooling units.



MicroTCA- systems 2, 3, 4, 5 U



AdvancedMC Face Plate Kits

**xTCA™**

**AdvancedMC™**

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# HEITEC MicroTCA / TCA OVERVIEW

**MicroTCA development system  
VP1 single/double**



**3/5 U, 12 slots**  
Order no. see page 20

**Applications:**

MicroTCA specification is designed as an amendment to the ATCA standard as a lower-cost compact version for the low-end sector. The main features are a compact design, high scalability, modularity and considerably reduced system costs. MicroTCA development systems are suited for design of hardware and software or for testing AMC modules.

**Technical specifications:**

- 19" rack-mount system 3 or 5 U, 200 mm deep
- For installing single (3 U) or double (5 U) AMC modules
- 12 x AMC slots (8 x full, 4 x compact)
- 2 x MCH slots
- 2 x Power slots
- Integrated power adapter
- Fan unit for cooling up to 40W/slot
- Backplane 14 slots
- Support brackets

**Benefits at a glance:**

- Conforms to PICMG MicroTCA.0 R1.0 and AMC.0 R2.0
- Integrated fan unit
- Integrated power adapter
- Fully wired and tested

**MicroTCA rack-mount system  
VP1 single/double**



**2/4 U, 12 slots**  
Order no. see page 20

**Applications:**

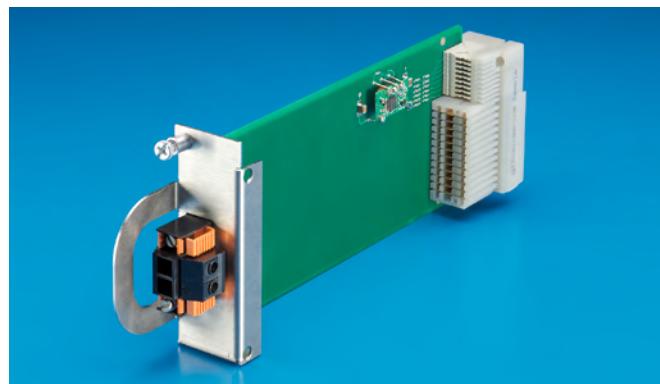
MicroTCA specification is designed as an amendment to the ATCA standard as a lower-cost compact version for the low-end sector. The main features are a compact design, high scalability, modularity and considerably reduced system costs. The rack-mount systems are suited for applications in the low-end telecommunication or industrial sectors.

**Technical specifications:**

- 19" rack-mount system 2 (+10 mm) or 4 U, 200 mm deep
- For installing single (2 U) or double (4 U) AMC modules
- 12 x AMC slots (8 x full, 4 x compact)
- 2 x MCH slots
- 2 x Power slots
- Backplane 14 slots

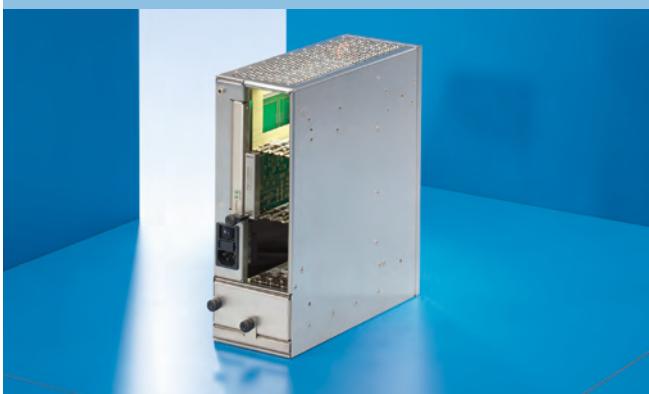
**Benefits at a glance:**

- Conforms to PICMG MicroTCA.0 R1.0 and AMC.0 R2.0
- Fully wired and tested



# HEITEC MicroTCA / TCA OVERVIEW

## CubeTCA



### 7 slots

109 x 307 x 286 mm (width/height/depth)

Available on request

#### Applications:

Based on the MTCA specification the compact CubeTCA offers a wide range of application fields in the industrial sector. The CubeTCA can either be assembled directly on the mounting plate or integrated within the target system.

#### Technical specifications:

- Frame 109 x 307 x 286 mm
- 7 slots – 6 x AMC, 1 x MCH
- Removable cooling unit with two axial-flow fans and filter
- AC/DC power supply, 350 W
- Optional brackets for assembly on mounting plates
- Optional adapter for cap rail installation

#### Benefits at a glance:

- Conforms to MicroTCA.0 R1.0
- Compact design
- Assembly on mounting plate or in the target system
- Plug-in fan unit
- 7 slots
- Fully assembled, wired and tested

## PicoTCA



### 2 U, 13 slots

Order no. see page 21

#### Applications:

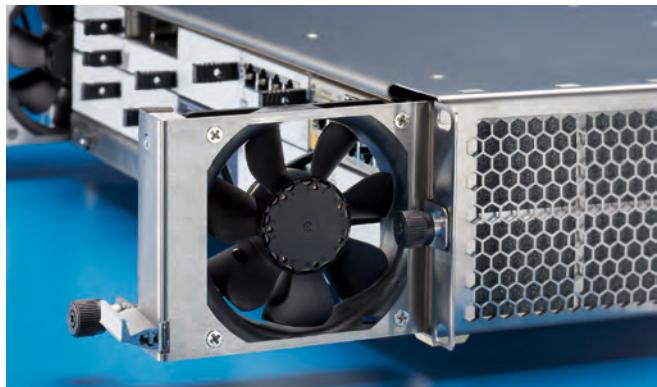
Based on the MTCA specification, PicoTCA is a modular ready-to-run system, which carries up to 12 AMCs and 1 MCH. Due to the robust construction, the 19" rack can be used both in the telecommunication and in the industrial sector.

#### Technical specifications:

- 19" rack-mount system, 2 U, 250 mm deep
- Supports 12 AMCs (full-size, compact) and 1 MCH
- Cooling via 2 stand-alone cooling units with removable air filter
- EMC version
- AC/DC power supply: 450 W
- Backplane and AMC-connector in con:card+ quality from HARTING
- Integrated JTAG-connector for debug and test
- Support up to 12.5 Gb/s

#### Benefits at a glance:

- Conforms to PIGMG MicroTCA.0 R1.0
- Ready-to-run system of minimum space
- For installation in 300 mm deep enclosures
- Support up to 12.5 Gb/s
- Removable air filter
- Robust industrial model guarantees shock and vibration protection
- Compliant to NEBS
- Fully assembled, wired and tested



# MicroTCA

## DEVELOPMENT SYSTEMS/RACK-MOUNT SYSTEMS



### Development systems/rack-mount systems

MicroTCA development systems for hardware and software development or testing of AMC modules

#### Technical specifications:

- Complies with PICMG Micro-TCA.0 R1.0 and AMC.0 R1.0
- 482.6 mm (19") development systems in 3 and 5 U, 200 mm deep for installing Single or Double AdvancedMC modules
- Integral fan unit for cooling up to 40 W/slot
- Including backplane, 14 slots
- Fully wired and tested

MicroTCA rack-mounted system for applications in the low-end telecommunications and industry sectors.

#### Technical specifications:

- Complies with PICMG Micro-TCA.0 R1.0 and AMC.0 R1.0
- 482.6 mm (19") rack-mount systems in 2 and 4 U, 200 mm deep for installing Single or Double AdvancedMC modules
- Including backplane, 14 slots (complies with MTCA.0 R1.0)
- Fully wired and tested
- Order climate control units separately

#### Material:

Rack-mount systems of sheet steel, zinc-plated, spray-finished

#### Supply includes:

1 482.6 mm (19") system,  
200 mm deep,  
1 backplane

For additional development system:  
1 fan unit,  
2 support brackets.

#### Notice:

Power Module has to be ordered separately, see page 23.  
For 4 or 5 U systems you may optionally order a 6 HP divider rail in order to cover the free space above the power module.

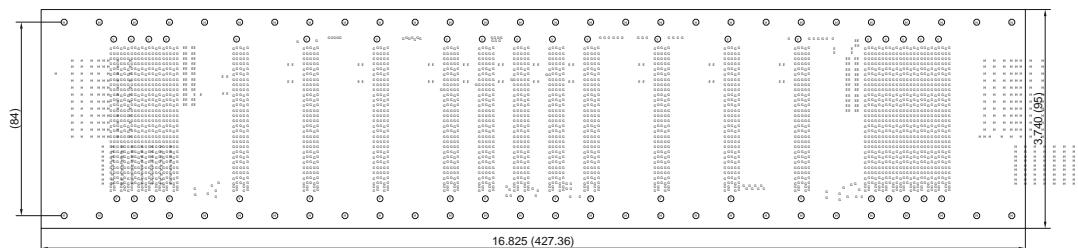
### MicroTCA development systems

<b>µTCA system</b>	<b>U</b>	<b>AMC-Slots</b>	<b>MCH-Slots</b>	<b>Power-Slots</b>	<b>Order No.</b>
VP 1 single	3	12 (8 x full, 4 x compact)	2	2	<b>3666.006</b>
VP 1 double	5	12 (8 x full, 4 x compact)	2	2	<b>3666.007</b>

Power modules available on request.

### MicroTCA rack-mount systems

<b>µTCA system</b>	<b>U</b>	<b>AMC-Slots</b>	<b>MCH-Slots</b>	<b>Power-Slots</b>	<b>Order No.</b>
VP 1 single	2 (10 mm)	12 (8 x full, 4 x compact)	2	2	<b>9911.758</b>
VP 1 double	4	12 (8 x full, 4 x compact)	2	2	<b>9911.760</b>



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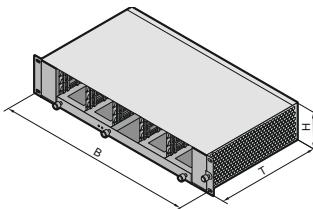
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# MicroTCA PicoTCA, 482.6 mm (19"), 2 U



B = Width  
T = Depth  
H = Height

## PicoTCA, 19", 2 U

The PicoTCA is a modular 19" chassis in 2 U design supporting up to 12 AMCs (fullsize, compact) and an MCH (fullsize). The chassis is designed such that communication protocols compliant with AMC.1 type 4 (PCIe and Advanced Switching), AMC.2 type 4, AMC.2 E2 (GbE) and AMC.3 (SAS/SATA) can all be handled. For SAS and SATA/AMC boards, a point-to-point connection is realised via the backplane, so that each slot is able to communicate directly with its neighbouring slots via ports 2 and 3. In the initial version, an MCH (Micro-TCA Carrier Hub) is supported via the backplane. Customer-specific designs and backplanes can be supplied upon request.

### Benefits at a glance:

- Conforms to PICMG MicroTCA.0 R1.0
- Extremely compact ready-to-run system
- Chassis depth of 250 mm for installation in 300 mm deep enclosures
- Includes AC/DC power supply
- Support for up to 12.5 Gb/s
- Support for different AMC form factors
- Exchangeable air filters
- High EMC shielding
- Robust industrial design
- Fully assembled, wired and tested. Ready to run

### Technical specifications:

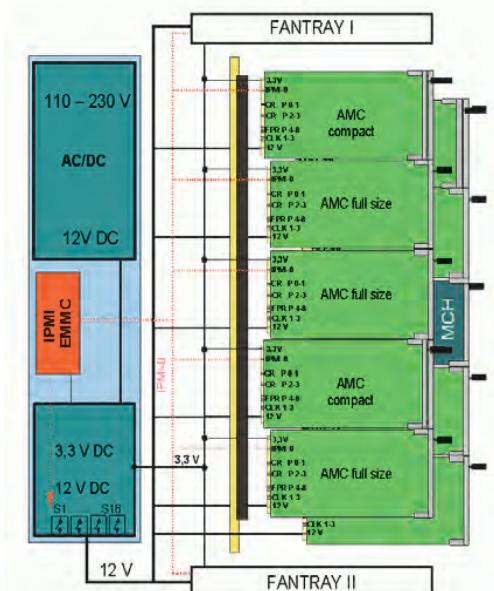
- 19", 2 U, 250 mm deep
- AC/DC power supply, max. 450 W:
  - Input voltage: min. 90 V AC – max. 264 V AC with PFC
  - Input frequency: min. 47 Hz – max. 63 Hz
  - Output: 3.3 V DC/max. 3 A, 12 V DC/max. 38 A

- Cooling via 2 independent fan trays
- Backplane and AMC connectors in con:card+ quality from HARTING
- Integrated JTAG connector for debug and test
- Supports 12 AMCs (full-size, compact) compliant with AMC.1 type 4 E2S and AMC.2 type 4 E2S, as well as 1 MCH
- Weight: 5.9 kg
- Operating temperature: 0°C to +45°C
- Storage temperature: -40°C to +85°C

### Supply includes:

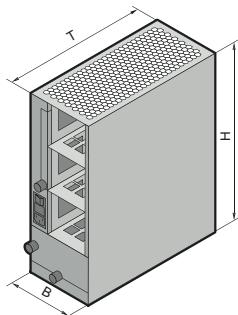
- 1 rack-mount system 482.6 mm (19"), 2 U, 250 mm deep,
- 2 fan tray modules with air filters,
- 1 power supply,
- 1 backplane,
- 1 power management board

	Packs of	2 U
<b>Width (W)</b>		19"
<b>Height (H) mm</b>		87
<b>Depth (D) mm</b>		250
<b>Order No.</b>	1	<b>9911.803</b>



+ Accessories MicroTCA Page 23

# MicroTCA CubeTCA



B = Width  
T = Depth  
H = Height

## CubeTCA

Due to the compact dimensions the cubeTCA platform offers a huge variety of applications in the industrial sector. Assembly on mounting plate or in the target system by using integrated key holes or adapters for assembly directly on support rails.

### Benefits at a glance:

- Conforms to MicroTCA.0 R1.0
- Compact design
- Assembly on mounting plate or in the target system
- 7 slots for 6 x AMC, 1 x MCH
- Plug-in fan unit with 2 axial flow fans and filter
- Integrated AC/DC power supply
- Fully assembled, wired and tested

### Technical specifications:

- 6 front slots
- Backplane 6 slots inclusive
- Removable cooling unit
- AC/DC power supply: 350 W

### Material:

Stainless steel

### Supply includes:

1 system

### Note:

Available on request

## + Accessories:

Brackets for assembly on mounting plates  
Top hat rails for installation on support rails

## Technical details



**Installation space**  
for 6 AMC, 1 x MCH



**Removable cooling unit  
and filter**

## Accessories on request



**Top hat rails**  
for installation on  
support rails.



**Brackets**  
for rear or lateral assembly on  
mounting plates.

# MicroTCA ACCESSORIES

## Power Module PM



The PM is a 355 W MicroTCA PowerModule in Advanced Mezzanine Card (AMC) form factor, single/full-size compliant to MTCA.0 specification. The Power Module comprises an Enhanced Module Management Controller (EMMC) that communicates with the Carrier Manager via Intelligent Platform Management Bus (IPMB).

- Power supply for MicroTCA Carrier Hub (MCH) AdvancedMCs and Cooling Units (CU)
- Operates via IPMI with a MicroTCA Carrier Hub (MCH)
- Power monitoring of each channel
- 16 x 12 volt channels for Payload Power

Description	Order No.
PM 355W/- 48 V	<b>3666.008</b>

- 16 x 3.3 Volt channels for Management Power
- EMC- filter, transient protection, input current lock-out

### Technical Details:

- 355 W
- - 48 VDC Input
- 12 VDC Output
- 3.3 VDC Output

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# AdvancedMC FACE PLATES



## AMC Face Plate Kits

These are used as face plates for AMC cards and ATCA carriers, or as filler panels in MicroTCA systems.

- Installation in µTCA systems or AMC carriers
- Conforms to AMC.0 R2.0
- Height: Single & Double
- Widths: Compact, Mid-Size, Full-Size
- Simple handling when locking and unlocking (no screws)
- Hot swap-compatible injector/extractor handles
- Customer-specific face plates available with a short lead time
- Upgradable with filler sheets and air baffle plates
- Double to Single conversion module (accessory)

### Material:

Face plate made from aluminium, (stainless steel available on request)  
Holder for light pipe and PCB, die-cast zinc  
Light pipe, polycarbonate  
Handle, die-cast zinc, spray-finished  
EMC seal, foam with metal fabric  
(UL 94 - V0)

### Supply includes:

- 1 U-channel face plate,
- 1 holder to accommodate a light pipe and PCB,
- 1 handle for microswitch,
- 1 light pipe (for 2 LEDs),
- 1 EMC gasket, left side and bottom.

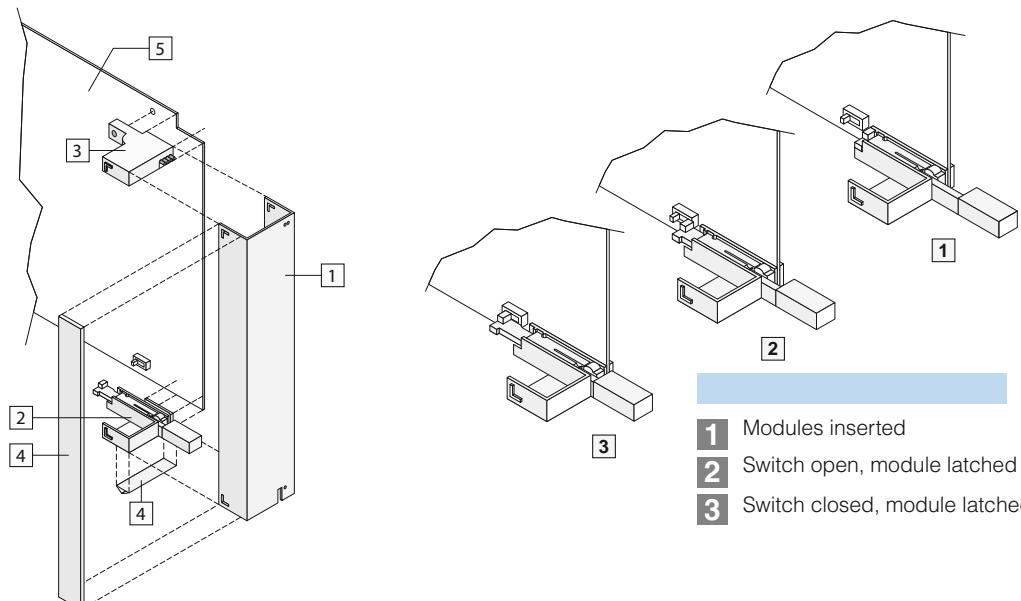
Design (H x W)	Packs of	Order No.
Single x Compact	1	<b>9911.885</b>
Single x Mid-Size	1	<b>9911.889</b>
Single x Full-Size	1	<b>9911.886</b>
Double x Compact	1	<b>9911.887</b>
Double x Mid-Size	1	<b>9911.890</b>
Double x Full-Size	1	<b>9911.888</b>

Face plates with 4 LEDs in aluminium and stainless steel available on request (to AMC.0 Spec. R1.0).

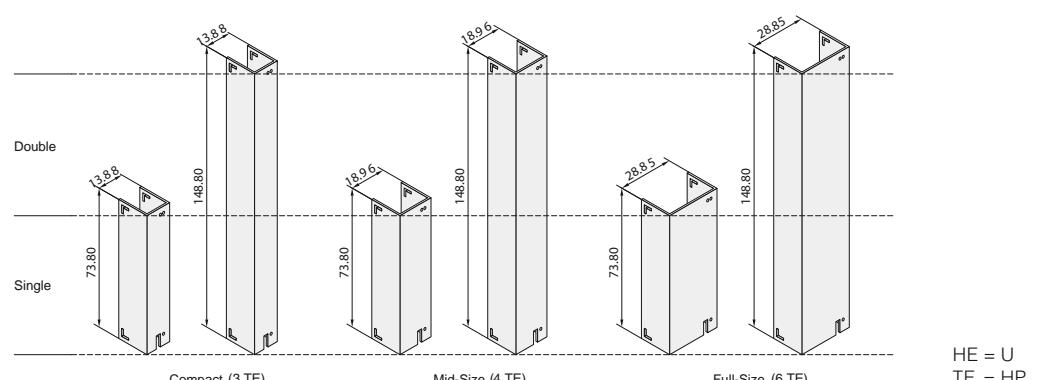
## + Accessories:

AMC filler sheets, air baffle plates, conversion module, see page 25

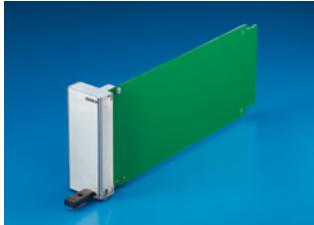
- 1** Face plate
- 2** Handle and locator for PCB
- 3** Holder with LED light pipe and locator for PCB
- 4** EMC gaskets
- 5** Filler sheet



- 1** Modules inserted
- 2** Switch open, module latched
- 3** Switch closed, module latched



# AdvancedMC FILLER SHEETS

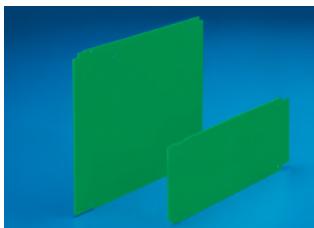


## AMC filler sheets

Filler sheets are mounted on the AMC face plates and are used to route the airflow in ATCA carriers and MicroTCA systems. They may additionally be equipped with air baffle plates to create suitable air resistance in an empty slot.

**Material:**  
Epoxy

Design	Packs of	Order No.
Single	1	<b>9911.570</b>
Double	1	<b>9911.571</b>



## Air baffle plates

AMC slots must be populated with an empty card in order to ensure adequate air resistance. The air resistance should be adapted to the requirements of the overall system by the user. In all cases, it should be sufficiently high to ensure that the air is forced to flow over active cards into adjacent slots and does not flow unhindered through empty slots. The air baffle plate is used to adjust the air resistance. Up to 2 air baffle plates may be mounted on one filler sheet. Adjustable air resistance from 80 – 50 % thanks to removable membranes.

**Material:**  
Stainless steel

**Supply includes:**  
1 baffle plate, assembly parts

Design	Packs of	Order No.
Compact	1	<b>9911.891</b>
Mid-Size	1	<b>9911.892</b>
Full-Size	1	<b>9911.893</b>



## Conversion module

The conversion module allows 1 x Double to be converted into 1 x Single slot. Option of installing Compact or Full-Size modules.

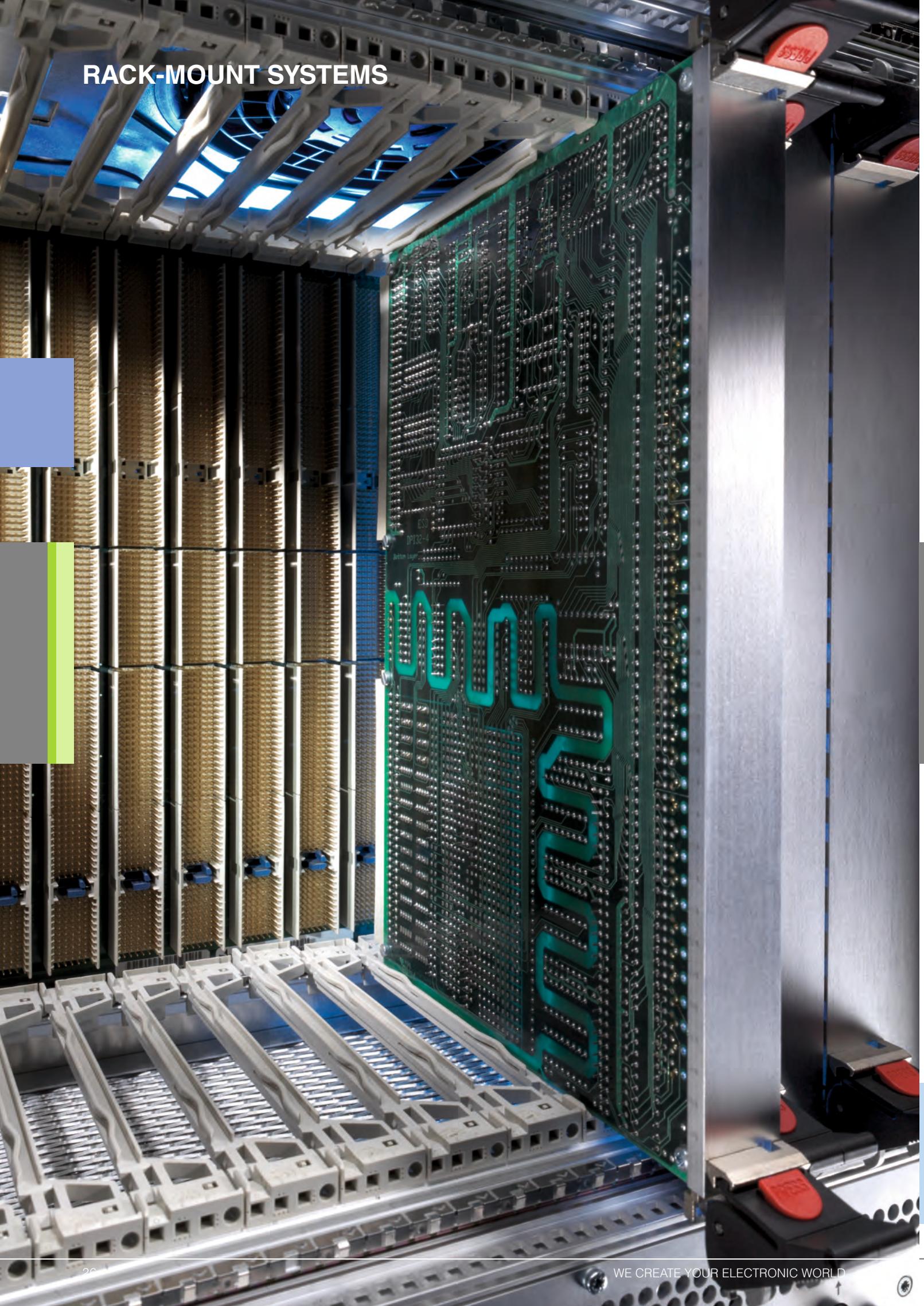
**Material:**  
Stainless steel, partially spray-finished

**Supply includes:**  
1 conversion module

Design	Packs of	Order No.
Compact	1	<b>9907.699</b>
Full-Size	1	<b>9911.220</b>



## RACK-MOUNT SYSTEMS



## Standardised components - individually combined

HEITEC supplies complete plug & play solutions for VME and CompactPCI applications at a high level – up to Level 5. The systems are based on standardised components which may be individually combined, depending on requirements. They are supplied completely with power supply, backplane, measures for EMC and ESD protection, as well as climate control; fully assembled, pre-wired and tested.

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### EMC Features

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

### ESD Protection

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

### Ventilation

Small card guides and horizontal rails ensure maximum air flow. Individual ventilation concepts provide well-directed air ducting and ideal heat dissipation - optionally from bottom to top or from front to rear. Powerful HeiCool fan ensures optimum climate control. 1 U, hot swap compatible, 204 m<sup>3</sup> /h including speed control and fault alarm signal.



## CompactPCI®

### BENEFITS AT A GLANCE



Systems for Compact PCI

Systems for VME/VME64x

- Systems for setup of industrial computer systems according to Compact PCI specification and VME bus
- Robust mechanics
- Individual configuration on request
- Completely assembled, pre-wired and tested including backplane and power supply
- Individual cooling concepts
- Conforms to IEC 60 297-3 and IEEE 1101.1/10/11 and Compact PCI spec. rev.1.0 (PICMG)

# HEITEC RACK-MOUNT SYSTEMS for Compact PCI

## OVERVIEW



**1, 2, 3, 4 U/2, 4, 6, 8 slots**  
Order no. on request

**Applications:**

Configuration of 19" industrial computer systems according to CompactPCI specification for

- Telecommunication
- Industrial Automation

**Technical specifications:**

- 482.6 mm (19") rack-mount system for horizontal mounting of front boards or rear I/O boards
- 1 U, 2 U, 3 U, 4 U, 300 mm deep
- Standard cooling from left to right side
- Sheet steel, spray-finished (black)
- Preconfigured system including backplane and fan unit
- Completely assembled, pre-wired and tested
- Installation of CPCI-boards according to CompactPCI spec. 2.0 Rev. 3.0

**Benefits at a glance:**

- Horizontal installation of Eurocards/ Double Eurocards
- Maximum installation with minimum space requirement
- 2/4/6/8 front slots for 160 mm and back slots for 80 mm boards
- Hot-swap compatible power supplies , optionally AC or DC
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Integrated cooling from left to right
- Modular assembly for individual configuration
- Corresponds to CompactPCI spec. 2.0 rev. 3.0, IEC 60 297-3-101, - 102, - 103



**3 U, 5 slots/4U, 7 slots horizontal**  
Order no. see page 30

**Applications:**

Configuration of 19" industrial computer systems according to CompactPCI specification for

- Telecommunication
- Industrial Automation

**Technical specifications:**

- 482.6 mm (19") rack-mount system for horizontal mounting of double Eurocards
- 3 U, 4 U, 405 mm deep
- Aluminium coated
- Including backplane, power supply and fan unit on the rear panel
- Completely assembled, pre-wired and tested
- Horizontal installation space for double Eurocards: 5 and 7 slots
- Installation of CPCI boards according to CompactPCI spec. 2.0 rev. 3.0

**Benefits at a glance:**

- Horizontal installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Well-directed air ducting from front to rear by fans in the rear panel
- Keyable guide rails
- Corresponds to CompactPCI spec. 2.0 rev. 3.0, IEC 60 297-3-101, - 102, - 103



**4 U/7 U, 8 slots**  
Order no. see page 31

**Applications:**

Configuration of 19" industrial computer systems according to CompactPCI specification for

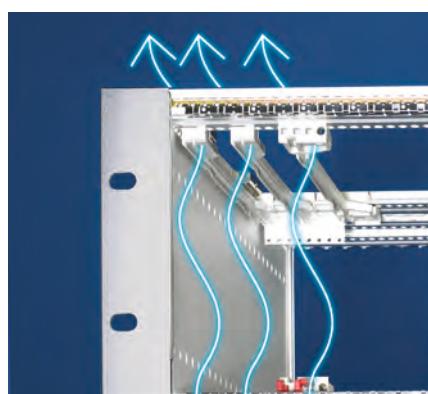
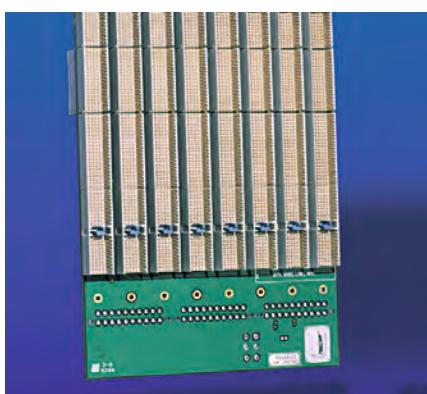
- Telecommunication
- Industrial Automation

**Technical specifications:**

- 482.6 mm (19") rack-mount system for vertical mounting of Eurocards/double Eurocards
- 4 U and 7 U, 405 mm deep
- Aluminium coated
- Including backplane and power supply
- Fan unit with 3 DC fans
- Completely assembled, pre-wired and tested
- Installation space for Eurocards/double Eurocards: 8 slots
- Installation of CPCI boards according to CompactPCI spec. 2.0 rev. 3.0

**Benefits at a glance:**

- Vertical installation of Eurocards/ double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Fan unit provides directed air flow from bottom to top
- Keyable guide rails
- Conforms to CompactPCI spec. 2.0 rev. 3.0, IEC 60 297-3-101, - 102, - 103



# HEITEC RACK-MOUNT SYSTEMS for Compact PCI OVERVIEW

## HeiPac CPCI-Systems



### 7 U, 8 slots

Order no. see page 32

#### Applications:

Configuration of 19" industrial computer systems according to CompactPCI specification for

- Telecommunication
- Industrial Automation

#### Technical specifications:

- 482.6 mm (19") rack-mount system for vertical mounting of double Eurocards
- 7 U, 405 mm deep
- Aluminium coated
- Including backplane, power supply and fan unit on the rear panel
- Completely assembled, pre-wired and tested
- Installation space for boards: 8 slots
- Installation of CPCI boards according to CompactPCI spec. 2.0 rev. 3.0

#### Benefits at a glance:

- Vertical installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Well-directed air flow from front to rear by DC fans on the rear panel
- Keyable guide rails
- Conforms to CompactPCI spec. 2.0 rev. 3.0, IEC 60 297-3-101, - 102, - 103

## HeiPac CPCI-Systems



### 9 U, 8 slots with HeiCool and Rear I/O

Order no. see page 33

#### Applications:

Configuration of 19" industrial computer systems according to CompactPCI specification for

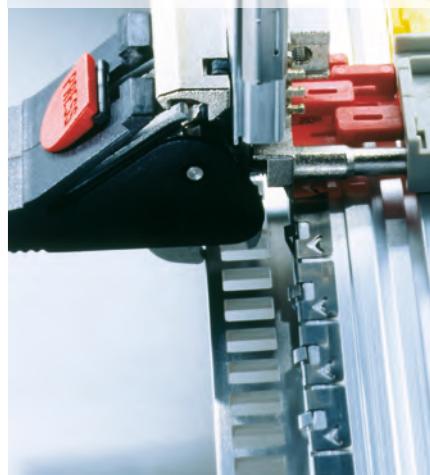
- Telecommunication
- Industrial Automation

#### Technical specifications:

- 482.6 mm (19") rack-mount system for vertical mounting of double Eurocards
- 9 U, 290.5 mm deep, on the rear side for I/O modules
- Aluminium coated
- Including backplane, power supply and 2 radial fans HeiCool (204 m<sup>3</sup>/h)
- Completely assembled, pre-wired and tested
- Installation space for boards: 8 slots
- Installation of CPCI boards according to CompactPCI spec. 2.0 rev. 3.0

#### Benefits at a glance:

- Vertical installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Well-directed air flow from front to rear
- Rear I/O
- Keyable guide rails
- Effective ventilation by 2 radial fans HeiCool (204 m<sup>3</sup>/h)
- Conforms to CompactPCI spec. 2.0 rev. 3.0, IEC 60 297-3-101, - 102, - 103



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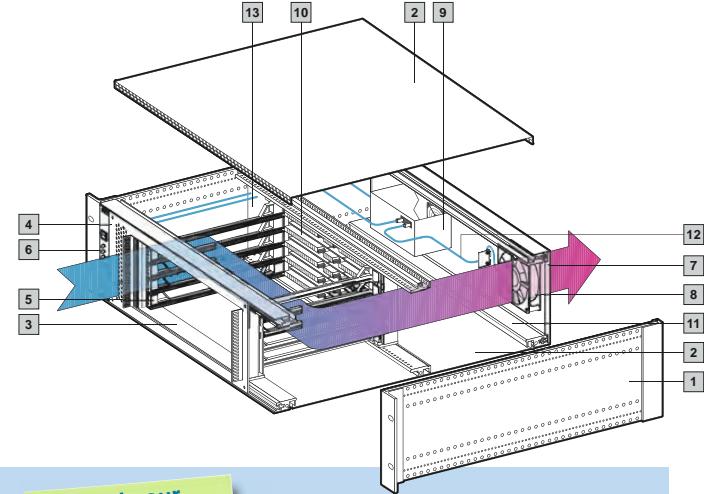
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# CPCI RACK-MOUNT SYSTEMS

## HeiPac 3 U, 5 slots/4 U, 7 slots horizontal



### Technical specifications:

Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate CPCI boards and drives. Includes MPS Monitoring (see pages 51-53).

Complies with IEC 60 297-3-101, -102, -103. Fully assembled, pre-wired and tested.

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see page 14

**Illustration:**  
MPS system 3 U for CPCI

U		3	4	Page
Side panel depth mm		405	405	
Wiring space (depth in mm)		210	210	
For PCB		6 U x 160 mm	6 U x 160 mm	
<b>MPS system Model No. RP for CPCI</b>		<b>9910.944</b>	<b>9910.945</b>	

### Mechanical supply includes

Description	Material	Qty.	
[1] HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1
[2] Top and bottom covers, solid	Aluminium	2	2
[13] Air partition	Aluminium	1	1
EMC shielding plate for fan	Aluminium, clear-chromated	1	1
[3] Horizontal mounting kit	Aluminium, clear-chromated	1	1
[4] Trim frame for horizontal mounting kit	2,5 mm aluminium, clear-chromated	1	1
[5] Plastic guide rails, keyable	Polycarbonate UL 94-V0	8	12
Plastic guide rails, keyable, red	Polycarbonate	2	2
[6] EMC front panel 3 U/5 HP for MPS monitoring	2,5 mm aluminium, clear-chromated	1	—
EMC front panel 4 U/5 HP for MPS monitoring	2,5 mm aluminium, clear-chromated	—	1
[7] EMC rear panel 3 U/84 HP with fan and connector cut-out	2,5 mm aluminium, clear-chromated	1	—
EMC rear panel 4 U/84 HP with fan and connector cut-out	2,5 mm aluminium, clear-chromated	—	1

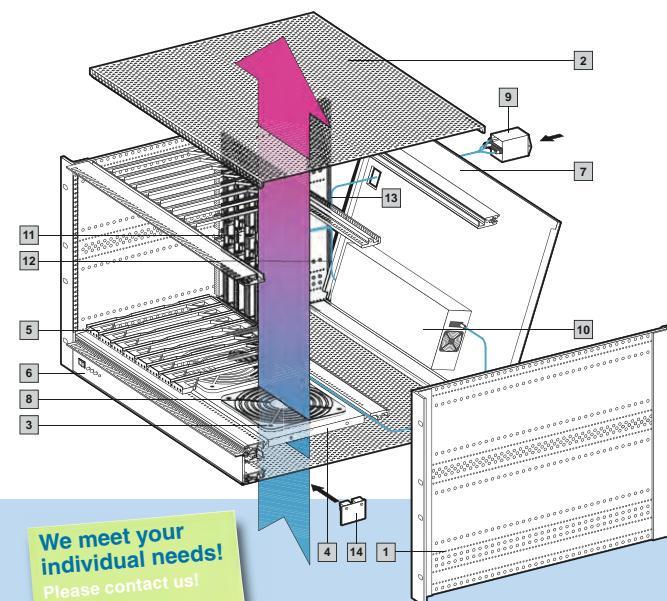
### Electrical/electronic supply includes

Description	Technical specifications			
[8] DC fan	12 V DC, 48 m³/h, per fan (UL, CSA, VDE) optionally speed-controlled	1	1	133
[9] Power supply unit ATX, PS/2 (RP 3687.793)	300 W	1	1	—
[10] CPCI backplane	6,5 U, 5 Slot	1	—	36
CPCI backplane	6,5 U, 7 Slot	—	1	36
LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	1	—
[11] Fan module	—	1	1	—
[12] Fan module for DC fan	—	■	■	—
Controller module	with interface for RS-232 and CMC-TC	1	1	—
Fan module for AC fan	—	■	■	—

■ Included with the supply.

# CPCI RACK-MOUNT SYSTEMS

## HeiPac 4 U/7 U, 8 slots


**Technical specifications:**

Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases.  
Prepared to accommodate CPCI boards and drives.  
Includes MPS Monitoring (see pages 51-53).  
Complies with IEC 60 297-3-101, -102, -103.

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**Illustration:**  
MPS system 7 U for CPCI

U		4 (3 + 1)	7 (6 + 1)	Page
Side panel depth mm		405	405	
Wiring space (depth in mm)		210	210	
For PCB		3 U x 160 mm	6 U x 160 mm	
<b>MPS system Model No. RP for CPCI</b>		<b>9910.946</b>	<b>9910.948</b>	

**Mechanical supply includes**

Description	Material	Qty.		
[1] HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	-
[2] Top and bottom covers, vented	Aluminium	2	2	126
[3] Finger guard	Polyamide	3	3	134
[4] Fan mounting plate	1 mm aluminium, anodised	1	1	130
[5] Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	14	120
[6] Plastic guide rails, keyable, red	Polycarbonate	2	2	120
[6] EMC front panel 1 U/84 HP for MPS monitoring	2.5 mm aluminium, clear-chromated	1	1	-
[6] EMC rear panel 4 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	1	-	-
[7] EMC rear panel 7 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	-	1	-

**Electrical/electronic supply includes**

Description	Technical specifications			
[8] DC fan	24 V DC, 140 m³/h, per fan (VDE, UL, CSA) optionally speed-controlled	3	3	133
[9] IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	53
[10] Open frame power supply	400 W	-	1	-
Power supply unit ATX PS/2	300 W	1	-	-
CPCI backplane	3,5 U, 8 Slot	1	-	36
[11] CPCI backplane	6,5 U, 8 Slot	-	1	36
LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	1	-
[12] DC cable harness	-	■	■	-
[13] AC cable harness	-	-	■	-
[14] Fan module for DC fan	-	1	1	-
Controller module	with interface for RS-232 and CMC-TC	1	1	-

■ Included with the supply.

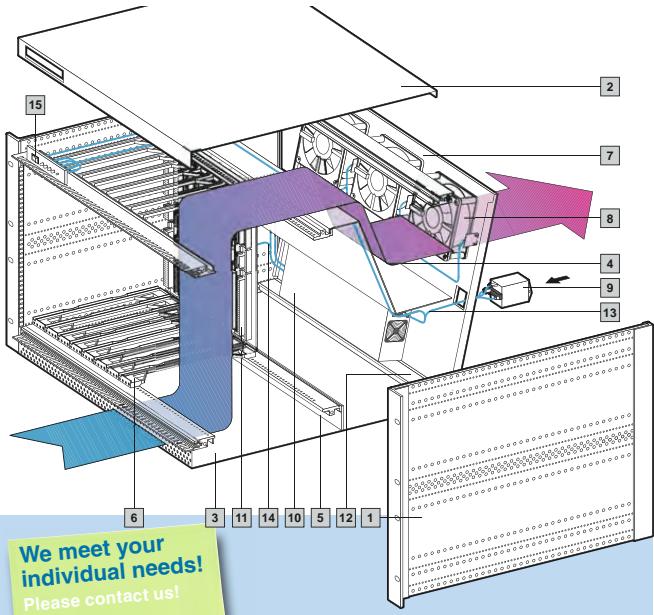
# CPCI RACK-MOUNT SYSTEMS

## HeiPac 7 U, 8 slots



**Technical specifications:**  
Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases.  
Prepared to accommodate CPCI boards and drives.

Includes MPS Monitoring (see pages 51-53). Complies with IEC 60 297-3-101, -102, -103. Fully assembled, pre-wired and tested.



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**Illustration:**  
MPS system 7 U for CPCI

U		7 (6 + 2 x 1/2)	Page
Side panel depth mm		405	
Wiring space (depth in mm)		210	
For PCB		6 U x 160 mm	
<b>MPS system Model No. RP for CPCI</b>		<b>9910.947</b>	

### Mechanical supply includes

Description	Material	Qty.	
1 HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated, stainless steel	1	-
2 Cover with ½ U edge fold and cut-outs for LED/switches	Aluminium	1	129
3 Bottom cover with ½ U edge fold, ventilated at the front	Aluminium	1	129
EMC shielding plate for fan	Aluminium, clear-chromated	3	134
4 Air baffle	Aluminium	1	131
5 Air block panel ½ U	Epoxy	1	131
6 Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	120
Plastic guide rails, keyable, red	Polycarbonate	2	120
7 EMC rear panel, horizontally hinged, 7 U, with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	

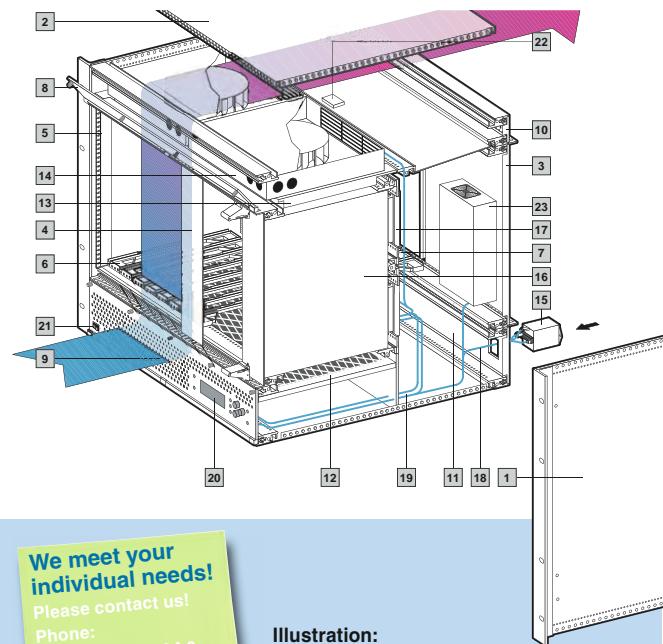
### Electrical/electronic supply includes

Description	Technical specifications		
8 DC fan	12 V DC, 140 m3/h, per fan (UL, CSA, VDE) optionally speed-controlled	3	133
9 IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	53
10 Open frame power supply	400 W	1	-
11 CPCI backplane	6.5 U, 8 Slot	1	36
12 Fan module for DC fan	-	1	-
13 AC cable harness	-	■	-
14 DC cable harness	-	■	-
15 LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	-
Controller module	with interface for RS-232 and CMC-TC	1	-

■ Included with the supply.

# CPCI RACK-MOUNT SYSTEMS

## HeiPac 9 U, 8 slots, with HeiCool radial fan



**Technical specifications:**  
Subrack, 290.5 mm deep, for installation in 482.6 mm (19") enclosures or cases.  
Prepared to accommodate CPCI boards and drives.

Includes MPS monitoring (see pages 51-53).  
Complies with IEC 60 297-3-101, -102, -103.  
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**Illustration:**  
MPS system 9 U for CPCI

U		9 (6 + 2 x 1½)	Page
Side panel depth mm		290,5	
Wiring space (depth in mm)		85,5	
For PCB		6 U x 160 mm	
<b>MPS system Model No. RP for CPCI</b>		<b>9909.483</b>	

### Mechanical supply includes

Description	Material	Qty.	
1 HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	-
2 Top and bottom covers	Aluminium	2	127
3 EMC rear panel 6 U/28 HP + 8 HP	2.5 mm aluminium, clear-chromated	1	-
4 EMC front panel	2.5 mm aluminium, clear-chromated	1	149
5 EMC contact strip	Aluminium, clear-chromated	1	117
6 Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	120
Plastic guide rails, keyable, red	Polycarbonate	2	120
7 Guide rails for I/O transition modules	Polycarbonate UL 94-V0	16	121
Guide rails, keyable, green, for power supply	Polycarbonate	2	120
8 Front panel 1½ U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	-
9 Front panel 1½ U/84 HP, vented, horizontally hinged, for MPS monitoring	2.5 mm aluminium, clear-chromated	1	-
10 EMC rear panel 1½ U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	-
11 EMC rear panel 1½ U/84 HP with connector cut-out	2.5 mm aluminium, clear-chromated	-	-
12 Filter mat 84 HP, 160 mm, for slide-in attachment	-	1	-
13 Mounting plate for HeiCool	1 mm sheet steel, zinc-plated, passivated	1	-

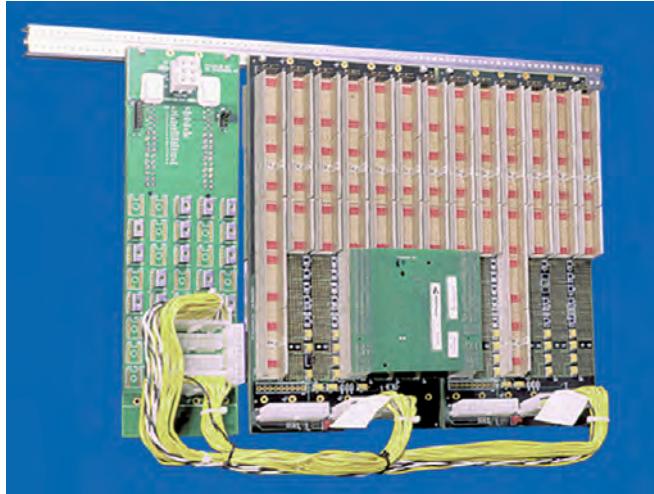
### Electrical/electronic supply includes

Description	Technical specifications		
14 HeiCool DC fan, individually removable including fault alarm signal, speed control	24 V DC, 204 m³/h, 48 W	2	-
15 IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	53
16 Power supply, plug-in, 6 U/8 HP	350 W	1	160
CPCI backplane	6,5 U, 8 Slot	1	36
17 CPCI backplane for power supply	-	1	-
18 AC cable harness	-	■	-
19 DC cable harness	-	■	-
20 Display module	for 3.3 V, +5 V, ±12 V, fan failure	1	-
21 Mains switch	-	1	-
22 Monitoring module for HeiCool	-	1	-
23 Power supply for HeiCool	-	1	-
Controller module	with interface for RS-232 and CMC-TC	1	-

**Accessories CPCI/VME** Page 53   **Backplanes CPCI** Page 34   **Slide-in systems VME** Page 45   **Backplanes VME** Page 46   **Power supplies** Page 155

# CPCI BACKPLANES, TECHNICAL SPECIFICATIONS

## Backplanes, technical specifications



HEITEC offers an extensive range of powerful backplanes for CompactPCI..

- Modular construction facilitates expansion up to a maximum of 21 slots
- Connection between segments via CPCI or H.110 bridge modules
- Power input via ATX-compatible connectors or screw terminal
- Additional 2 x 3 Mate-N-Lock connector for 48 V with H.110 backplane
- Optional development of customer-specific Monolithic backplanes
- 8 layer multi-layer
- System slot on right (left upon request), spray-finished

## Modular assembly

The backplanes in 32 or 64-bit versions allow the configuration of CPCI systems from 2 to 21 slots. This is possible due to the modular design of the backplanes and connection of the individual segments via CPCI or H.110 bridge modules. Each backplane segment contains between 2 and 8 slots and operates in stand-alone mode in conjunction with a CPU board and a power supply unit.

For assembling larger systems, several segments may be joined together via PCI bridge modules fitted at the rear. In such cases, only one of the segments will run in the system slot with a CPU board. The remaining segments will have a subordinate status without CPU boards. However, the first slot on the right of the backplane is available for a standard 32 or 64 bit CompactPCI host CPU.

## Technical specifications

### CPU slot

A single 3 U or 6 U CPU board with 32 or 64 bits is required for each system. The system slot on the right-hand side ensures that 2-slot or wider system boards do not conceal other slots, thus rendering them unusable.

### Available slots

Each backplane contains two to eight 3 U or 6 U slots (32 or 64 bit).

### Data transfer rate

132/264 MBytes for 32/64 bit version

+5 V, 33 MHz PCI bus interface

264/512 MBytes for 32/64 bit version

+3.3 V, 66 MHz (max. 5 slots) PCI bus interface

### PCI bridges

Single backplanes do not require bridges. For each additional backplane, however, a bridge fitted at the rear is required.

### Power supply

Voltage supply via one or more ATX connectors.

### Control connector

Each backplane has a control connector where +3.3, +5, ±12 V voltages may be picked off, e.g. for the connection of power LEDs.

### I/O modules for J3 – J5

I/O modules can be connected at the rear of each slot.

### Standards

- PCI 2.1 (PCI specification)
- PICMG 2.0 (CompactPCI spec.)
- PICMG 2.1 (hot swap spec.)
- IEEE 1101.1, mechanics
- IEEE 1101.10, mechanics
- IEEE 1101.11, mechanics

# CPCI BACKPLANES, TECHNICAL SPECIFICATIONS

## 32-bit pin assignment

P2 connector<sup>9)</sup>

PIN	Z <sup>6)</sup>	A	B	C	D	E	F
22	GND	GA4 <sup>5)</sup>	GA3 <sup>5)</sup>	GA2 <sup>5)</sup>	GA1 <sup>5)</sup>	GA0 <sup>5)</sup>	GND
21	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	BP(I/O)	GND
20	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
19	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	BP(I/O)	GND
18	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	GND
17	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	GND
16	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	GND
15	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	GND
14	GND	BP(I/O)	BP(I/O)	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
13	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	GND
12	GND	BP(I/O)	BP(I/O)	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
11	GND	BP(I/O)	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	GND
10	GND	BP(I/O)	BP(I/O)	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
9	GND	BP(I/O)	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	GND
8	GND	BP(I/O)	BP(I/O)	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
7	GND	BP(I/O)	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	GND
6	GND	BP(I/O)	BP(I/O)	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
5	GND	BP(I/O)	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	BP(I/O)	GND
4	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	<b>BP(I/O)</b>	BP(I/O)	GND
3	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	<b>BP(I/O)</b>	GND
2	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	<b>BP(I/O)</b>	GND
1	GND	<b>BP(I/O)</b>	<b>BP(I/O)</b>	<b>BP(I/O)</b>	BP(I/O)	<b>BP(I/O)</b>	GND

P1 connector<sup>9)</sup>

PIN	Z <sup>6)</sup>	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O) <sup>3)</sup>	AD(O)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN <sup>3)</sup>	C/BE(0)#	GND
20	GND	AD(12)	GND	V(I/O) <sup>3)</sup>	AD(11)	AD(10)	GND
19	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
18	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
17	GND	3.3 V	SDONE	SBQ#	GND	PERR#	GND
16	GND	DEVSEL	GND	V(I/O) <sup>13)</sup>	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY	GND <sup>2)</sup>	TRDY#	GND
12 – 14							
KEY AREA							
11	GND	AD(18)	AD(17)	AD(16)	GND	C/BE(2)#	GND
10	GND	AD(21)	GND	3.3 V	AD(20)	AD(19)	GND
9	GND	C/BE(3)#	IDSEL	AD(23)	GND	AD(22)	GND
8	GND	AD(26)	GND	V(I/O) <sup>3)</sup>	AD(25)	AD(24)	GND
7	GND	AD(30)	AD(29)	AD(28)	GND	AD(27)	GND
6	GND	REQ#	GND	3.3 V	CLK	AD(31)	GND
5	GND	BRSPV1A5	BRSPV1B5	RST#	GND	GNT#	GND
4	GND	BRSPV1A4	GND	V(I/O) <sup>3)</sup>	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5 V	INTD#	GND
2	GND	TCK	5 V	TMS	TDO	TDI	GND
1	GND	5 V	-12 V	TRST#	+12 V	5 V	GND

### 32-bit and 64-bit backplane – Technical specifications:

The CPCI specifications define both 32-bit and 64-bit versions. Both versions may be implemented on a 3 U daughterboard. However, the 32-bit version allows the complete P2/J2 connector to be used for user-defined I/O signals (slots 2 – 8). Slot 1 (system slot) uses separate P2/J2 pins for functions such as clock, arbitration, (grant/requests) and other system functions. These pins are printed in bold in the table. In 32-bit systems the P2/J2 connection may optionally be populated at the rear with 16 mm long pins and a transfer frame. Signals can be picked off or I/O boards connected at the rear.

### 64-bit CompactPCI pin assignments – Technical specifications:

With the 64-bit CompactPCI, both P1 and P2 connectors are fully assigned with signals. User-defined I/O signal pins are not available. I/O signals are only available with 6 U boards on connectors P3, P4 and P5.

## 64-bit pin assignment

P2 connector<sup>9)</sup>

PIN	Z <sup>7)</sup>	A	B	C	D	E	F
22	GND	GA4 <sup>6)</sup>	GA3 <sup>6)</sup>	GA2 <sup>6)</sup>	GA1 <sup>6)</sup>	GA0 <sup>6)</sup>	GND
21	GND	<b>CLK6</b>	GND	RSV	RSV	RSV	GND
20	GND	<b>CLK5</b>	<b>GND</b>	RSV	GND <sup>8)</sup>	RSV	GND
19	GND	<b>GND</b>	GND <sup>8)</sup>	RSV	RSV	RSV	GND
18	GND	BRSPV2A18	BRSPV2B18	BRSPV2C18	GND <sup>8)</sup>	BRSPV2E18	GND
17	GND	BRSPV2A17	GND <sup>8)</sup>	PRST#	<b>REQ6#</b>	<b>GNT6#</b>	GND
16	GND	BRSPV2A16	BRSPV2B16	DEG#	GND <sup>8)</sup>	BRSPV2E16	GND
15	GND	BRSPV2A15	GND	FAL#	<b>REQ5#</b>	<b>GNT5#</b>	GND
14	GND	AD(35)	AD(34)	AD(33)	GND	AD(32)	GND
13	GND	AD(38)	GND	V(I/O) <sup>3)</sup>	AD(37)	AD(36)	GND
12	GND	AD(42)	AD(41)	AD(40)	GND	AD(39)	GND
11	GND	AD(45)	GND	V(I/O) <sup>3)</sup>	AD(44)	AD(43)	GND
10	GND	AD(49)	AD(48)	AD(47)	GND	AD(46)	GND
9	GND	AD(52)	GND	V(I/O) <sup>3)</sup>	AD(51)	AD(50)	GND
8	GND	AD(56)	AD(55)	AD(54)	GND	AD(53)	GND
7	GND	AD(59)	GND	V(I/O) <sup>3)</sup>	AD(58)	AD(57)	GND
6	GND	AD(63)	AD(62)	AD(61)	GND	AD(60)	GND
5	GND	C/BE(5)#	GND	V(I/O) <sup>3)</sup>	C/BE(4)#	PAR64	GND
4	GND	V(I/O) <sup>3)</sup>	BRSPV2B4	C/BE(7)#	–	C/BE(6)#	GND
3 <sup>3)</sup>	GND	<b>CLK4</b>	GND	<b>GNT3#</b>	–	<b>GNT4#</b>	GND
2 <sup>3)</sup>	GND	<b>CLK2</b>	<b>CLK3</b>	<b>SYSEN#<sup>4)</sup></b>	–	<b>REQ3#</b>	GND
1 <sup>3)</sup>	GND	<b>CLK1</b>	GND	<b>REQ1#</b>	–	<b>REQ2#</b>	GND

P1 connector<sup>9)</sup>

PIN	Z <sup>7)</sup>	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O) <sup>3)</sup>	AD(O)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN <sup>4)</sup>	C/BE(0)	GND
20	GND	AD(12)	GND	V(I/O) <sup>3)</sup>	AD(11)	AD(10)	GND
19	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
18	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
17	GND	3.3 V	SDONE	SBO#	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O) <sup>13)</sup>	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY#	GND <sup>2)</sup>	TRDY#	GND
12 – 14							
KEY AREA							
11	–	AD(18)	AD(17)	AD(16)	GND	C/BE(2)#	GND
10	GND	AD(21)	GND	3.3 V	AD(20)	AD(19)	GND
9	GND	C/BE(3)#	IDSEL	AD(23)	GND	AD(22)	GND
8	GND	AD(26)	GND	V(I/O)	AD(25)	AD(24)	GND
7	GND	AD(30)	AD(29)	AD(28)	GND	AD(27)	GND
6	GND	REQ#	GND	3.3 V	CLK	AD(31)	GND
5	GND	BRSAV5	BRSBV 5	RST#	GND	GNT#	GND
4	GND	BRSAV4	GND	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC	5 V	INTD#	GND
2	GND	TCK	5 V	TMS	TDO	TDI	GND
1	GND	5 V	-12 V	TRST#	+12 V	5 V	GND

The signals printed in bold are only assigned in the system slot

<sup>1)</sup> "Early mate" pin <sup>2)</sup> "Late mate" pin <sup>3)</sup> +3.3 V or 5 V <sup>4)</sup> Earthed with system slot <sup>5)</sup> GND for 33 MHz backplane, bussed in 66 MHz systems

<sup>6)</sup> Each slot may have its own address code (see CPCI specifications) <sup>7)</sup> Not for daughtercards <sup>8)</sup> Not for CPCI cards after version 1.0

<sup>9)</sup> All HEITEC standard CPCI backplanes are designed for 64-bit applications on the layout side. With 32-bit versions, the P2/J2 connectors are populated on request.

# CPCI BACKPLANES



Front view, 3 U

## Backplanes 3 U

Number of layers	8, 10 (for 3 U)
Layer structure	2 GND Layer
PCB thickness	3,2 mm
Data transfer rate	132/264 MBytes/32, 64 Bit
Power inlets	3 U: Via screws and busbars
Control connector	+3,3 V, +5 V, +12 V, -12 V
VI/O (3 U)	Adjustable to +5 V or +3.3 V
CPU slot	on right (left upon request)
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) IEEE 1101.1/10/11
Installation height	3 U
Distance between slots	4 HP
Connectors	J1, J2 32 or 64 bit No rear I/O
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	64-bit versions

### Backplanes 3 U for low profile bridge

Slot	Design	Model No. RP	
		32-bit	64-bit
2	S	<b>3689.300</b>	<b>3689.307</b>
3	SE	<b>3689.301</b>	<b>3689.308</b>
4	SBME	<b>3689.302</b>	<b>3689.309</b>
5	SBME	<b>3689.303</b>	<b>3689.310</b>
6	SBME	<b>3689.304</b>	<b>3689.311</b>
7	SBE	<b>3689.305</b>	<b>3689.312</b>
8	S	<b>3689.306</b>	<b>3689.313</b>

S = Stand alone  
B = Beginning segment

M = Middle segment  
E = Ending segment

#### Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

#### Supply includes:

Backplane, fully populated.

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Front view, 6 U

### Backplanes 6 U

Number of layers	8, 10 (for 6 U)
Layer structure	2 GND Layer
PCB thickness	3,2 mm
Data transfer rate	132/264 MBytes/32, 64-bit
Power inlets	6 U: Via screws and busbars
Control connector	+3,3 V, +5 V, +12 V, -12 V
VI/O (6 U)	Adjustable to +5 V or +3,3 V
CPU-slot	on right (left upon request)
Standards	PCI 2.1 (PCI Spec) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) IEEE 1101.1/10/11
Installation height	6 U
Distance between slots	4 HP
Connectors	J1, J2 32 or 64 bit J3, J4, J5 for rear I/O (64 bit only)
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	64-bit versions

#### Backplanes 6 U for low profile bridge

Slot	Design	Model No. RP	
		32-bit	64-bit
2	S	<b>3689.314</b>	<b>3689.321</b>
3	SE	<b>3689.315</b>	<b>3689.322</b>
4	SBME	<b>3689.316</b>	<b>3689.323</b>
5	SBME	<b>3689.317</b>	<b>3689.324</b>
6	SBME	<b>3689.318</b>	<b>3689.325</b>
7	SBE	<b>3689.319</b>	<b>3689.326</b>
8	S	<b>3689.320</b>	<b>3689.327</b>

S = Stand alone

B = Beginning segment

M = Middle segment

E = Ending segment

**Material:**

Fibreglass epoxy to IEC 60 249 (type FR4)

**Supply includes:**

Backplane, fully populated.

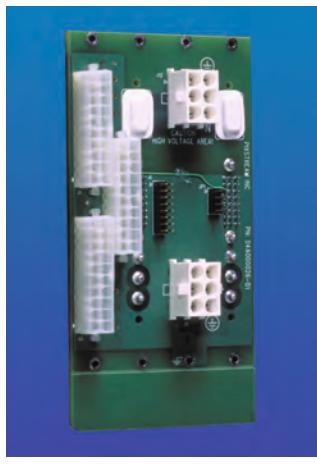
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# CPCI BACKPLANES



## Power supply board 3 U/3.5 U

- Board 3U/3.5 U, 8 HP, 16 HP, 24 HP
- For use in conjunction with HEITEC CPCI backplanes
- Accommodation of 1/2/3 power supplies up to 250 W each
- AC/DC connection is made via two 2 x 3-pole connectors
- Outgoing voltages to supply one or more CPCI backplanes are available at ATX-compatible connectors
- Complies with PICMG 2.0, PICMG 2.11

### Technical specifications:

Accommodation of 1/2/3 CPCI power supplies of up to 250 W.

The second power supply unit may be used for redundancy (with power distribution) or, via parallel connection, to increase the current.

#### Input voltages:

- AC input via 2 x 3-pole AMP Mate-N-Lock (AMP # 350732-1), connector J12
- Connected via pin 45, 46, 47, type Positronic
- Maximum current load per pin is 25 A, matching counter-connector for cable harness AMP # 350715
- DC input via 2 x 3-pole AMP Mate-N-Lock (AMP # 350732-1), connector J5 connected via pin 46, 47, type Positronic
- Maximum current load per pin is 25 A, matching counter-connector for cable harness AMP # 350715

#### Output voltage:

- Three 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane)

### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

### Supply includes:

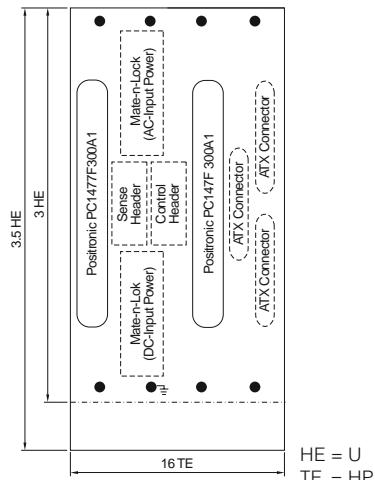
Board, fully populated.

Description	HP	Model No. RP
3 U for 1 x plug-in power supply with Positronic connector, 47-pin	8	<b>9905.105</b>
3 U Board for 3 x plug-in power supply with Positronic connector, 47-pin	24	<b>9904.131</b>
3.5 U Board for 2 x plug-in power supply with Positronic connector, 47-pin	16	<b>3688.603</b>
ATX (12") cable harness		<b>9810.337</b>
ATX (16") cable harness		<b>3686.570</b>
ATX (20") cable harness		<b>9810.338</b>

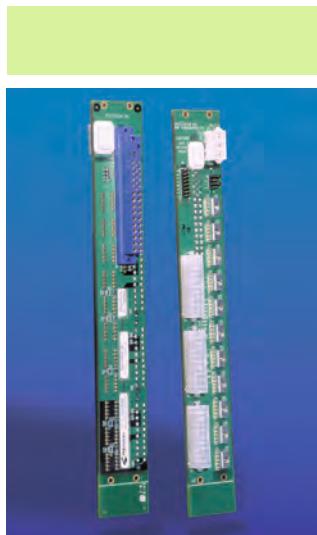
### Note:

Plug-type power supplies, see page 160

### RP 3688.603



HE = U  
TE = HP



## Power supply board 6 U/6.5 U, 8 HP

- Board 6 U/6.5 U, (0.5 U removable) 8 HP
- For use in conjunction with HEITEC CPCI backplanes 3.5 U, 6.5 U, H.110
- Accommodation of a power supply with up to 500 W
- AC/DC connection is made via 3-pole connectors
- Outgoing voltages to supply one or more CPCI backplanes are available at 3 ATX-compatible connectors or at special power terminals
- Complies with PICMG 2.0, PICMG 2.11

### Technical specifications:

Accommodation of a 6 U CPCI power supply of up to 500 W.

#### Input voltages:

- AC input via 3-pole AMP Mate-N-Lock connector max. current capacity per pin 25 A
- DC input via 3-pole AMP Mate-N-Lock connector Max. current capacity per pin 25 A

#### Output voltage:

- Three 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane) and/or special power terminals

### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

### Supply includes:

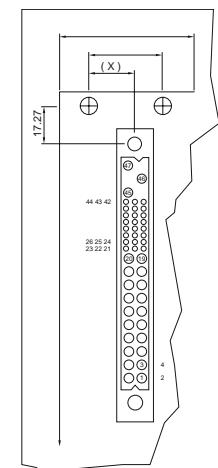
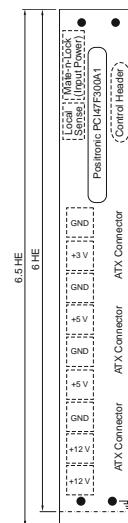
Board, fully populated.

### Note:

Plug-type power supplies, see page 160

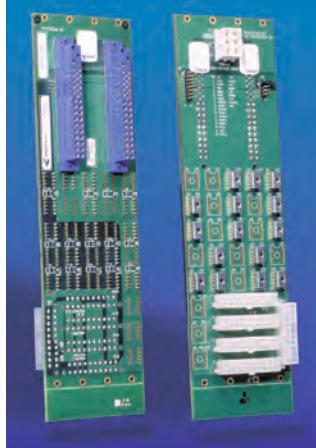
Description	Model No. RP
Board for 1 x plug-in power supply with Positronic connector, 47-pin	<b>3688.607</b>
ATX (12") cable harness	<b>9810.337</b>
ATX (16") cable harness	<b>3686.570</b>
ATX (20") cable harness	<b>9810.338</b>

### RP 3688.607



HE = U

# CPCI BACKPLANES



## Power supply board 6 U/6.5 U, 16 HP

- Board 6 U/6.5 U, (0.5 U removable) 16 HP
- For use in conjunction with HEITEC CPCI backplanes 3.5 U and 6.5 U
- Accommodation of two power supplies with up to 500 W
- AC/DC connection is made via two 2 x 3-pole connectors
- Outgoing voltages to supply one or more CPCI backplanes are available at 5 ATX-compatible connectors or at special power terminals
- Complies with PICMG 2.0, PICMG 2.11

### Technical specifications:

Accommodation of 2 x 6 U CPCI power supplies of up to 500 W

#### Input voltages:

- AC input via 2 x 3-pole AMP Mate-N-Lock connector  
Max. current capacity per pin 25 A
- DC input via 2 x 3-pole AMP Mate-N-Lock connector  
Max. current capacity per pin 25 A

#### Output voltage:

- Five 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane) and/or special power terminals

#### Material:

Fibreglass epoxy to IEC 60 249 (FR4)

#### Supply includes:

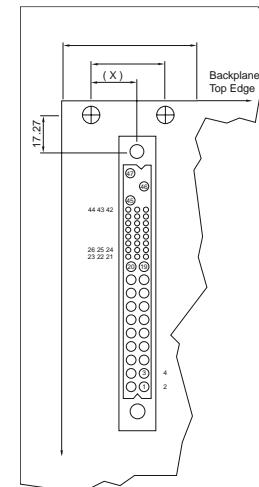
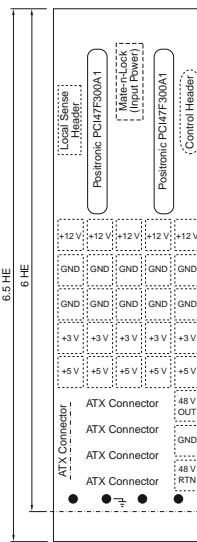
Board, fully populated.

#### Note:

Plug-in power supplies, see page 160

Description	Model No. RP
Board for 2 x plug-in power supplies with Positronic connector, 47-pin	<b>3688.608</b>
ATX (12") cable harness	<b>9810.337</b>
ATX (16") cable harness	<b>3686.570</b>
ATX (20") cable harness	<b>9810.338</b>

RP 3688.608



HE = U

## Power supply board 9U Monolithic with power supply connector



#### Material:

Fiberglass epoxy to IEC 60 249 (FR4)

#### Supply includes:

Board, fully populated

S = Stand alone  
B = Beginning segment  
M = Middle segment  
E = Ending segment

Slot	Positronic connector, 47 Pin	ATX	Model No. RP
2 <sup>1)</sup>	1	0	<b>3689.329</b>
4	2	1	<b>3689.330</b>
6	3	1	<b>3689.331</b>
8	4	1	<b>3689.332</b>

Systems slot on right 64 Bit with Rear I/O, V I/O: +5,0 V.  
H. 110 not connected with systems slot.

<sup>1)</sup> without H.110

# HEITEC RACK-MOUNT SYSTEMS FOR VMEbus

## OVERVIEW



**2 U, 4 U**  
Order no. on request

**Applications:**

Configuration of 19" industrial computer systems according to VME specification for

- Process Control
- Traffic Management System
- Image Processing
- Industrial Automation

**Technical specifications:**

- 482.6 mm (19") rack-mount system for horizontal mounting of front boards and rear I/O cards
- 1 U, 2 U, 3 U, 4 U, 300 mm deep
- Standard cooling from left to right side
- Sheet steel, spray-finished (black)
- Preconfigured systems including back plane and fan
- Completely assembled, pre-wired and tested
- Installation of VME64x boards according to VME specification

**Benefits at a glance:**

- Horizontal installation of Eurocards/ double Eurocards
- Maximum installation with minimum space requirement
- 2/4/6/8 slots for 160 mm front and 80 mm rear boards
- Hot swap compatible power supply, AC or DC optionally
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Integrated cooling from left to right side
- Modular assembly ensures individual configuration
- Conforms to IEC 60 297-3-101,-102,-103



**3 U, 5 slots/ 4 U, 7 slots horizontal**  
Order no. see page 42

**Applications:**

Configuration of 19" industrial computer systems according to VME specification for

- Process Control
- Traffic Management System
- Image Processing
- Industrial Automation

**Technical specifications:**

- 482.6 mm (19") rack-mount system for horizontal mounting of double Eurocards
- 3 U, 4 U, 405 mm deep
- Aluminium, clear-chromated
- Including backplane, power supply and rear fan
- Completely assembled, pre-wired and tested
- Horizontal installation space for double Eurocards: 5 and 7 slots
- Installation of VME- or VME64x boards according to VME specification

**Benefits at a glance:**

- Horizontal installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Well-directed air ducting from front to rear via fans in the rear panel
- Keyable guide rails
- Conforms to IEC 60 297-3-101,-102,-103



**4 U/ 7 U, 12 slots**  
Order no. see page 43

**Applications:**

Configuration of 19" industrial computer systems according to VME specification for

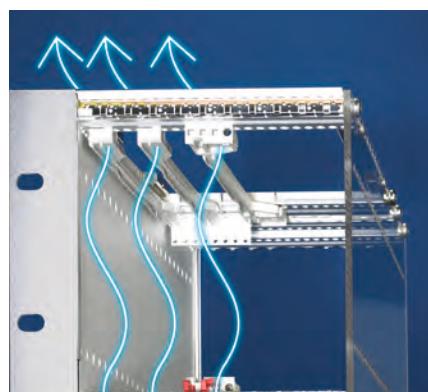
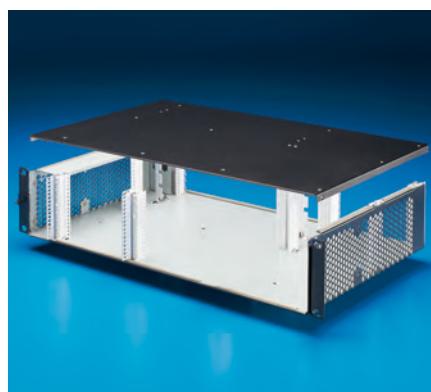
- Process Control
- Traffic Management System
- Image Processing
- Industrial Automation

**Technical specifications:**

- 482.6 mm (19") rack-mount system for vertical mounting of Eurocards/double Eurocards
- 4 U and 7 U, 405 mm deep
- Aluminium, clear-chromated
- Including backplane and power supply
- Fan unit with 3 DC fans
- Completely assembled, pre-wired and tested
- Installation space for double Eurocards: 12 slots
- Installation of VME- or VME64x boards according to VME specification

**Benefits at a glance:**

- Vertical installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Fan module ensures well-directed air flow from bottom to top
- Keyable guide rails
- Conforms to IEC 60 297-3-101,-102,-103



# HEITEC RACK-MOUNT SYSTEMS FOR VMEbus OVERVIEW

## HeiPac VME/VME64x Systems



### 7 U, 12 slots

Order no. see page 44

#### Applications:

Configuration of 19" industrial computer systems according to VME specification for

- Process Control
- Traffic Management System
- Image Processing
- Industrial Automation

#### Technical specifications:

- 482.6 mm (19") rack-mount system for vertical mounting of double Eurocards
- 7 U, 405 mm deep
- Aluminium, clear-chromated
- Including backplane, power supply and rear fan
- Completely assembled, pre-wired and tested
- Installation space for Eurocards/double Eurocards: 12 slots
- Installation of VME- or VME64x boards according to VME specification

#### Benefits at a glance:

- Vertical installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Well-directed air flow from front to rear
- Keyable guide rails
- Corresponds to IEC 60 297-3-101,-102, -103

## HeiPac VME/VME64x Systems



### 9 U, 12 slots with RiCool and Rear I/O

Order no. see page 45

#### Applications:

Configuration of 19" industrial computer systems according to VME specification for

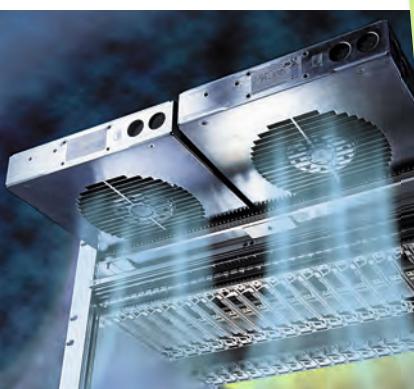
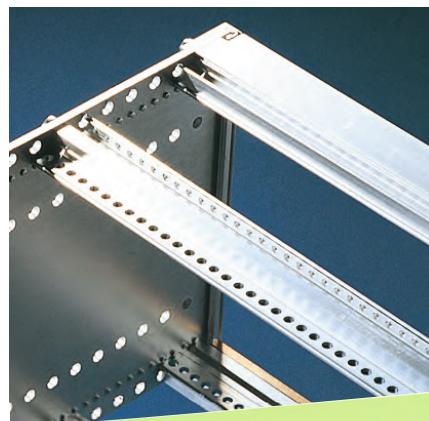
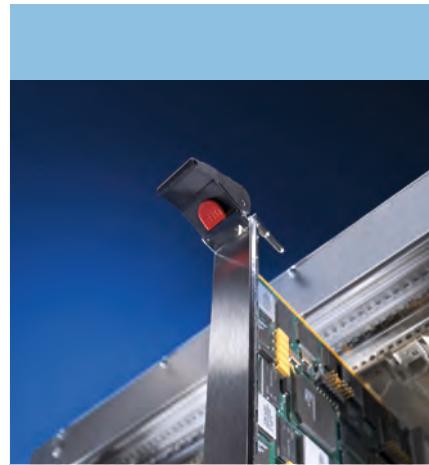
- Process Control
- Traffic Management System
- Image Processing
- Industrial Automation

#### Technical specifications:

- 482.6 mm (19") rack-mount system for vertical mounting of double Eurocards
- 9 U, 290.5 mm deep, on the rear side for I/O modules
- Aluminium, clear-chromated
- Including backplane, power supply and 2 radial fans HeiCool (204 m<sup>3</sup>/h)
- Completely assembled, pre-wired and tested
- Installation space for Eurocards/double Eurocards: 12 slots
- Installation of VME- or VME64x boards according to VME specification

#### Benefits at a glance:

- Vertical installation of double Eurocards
- EMC and ESD protection
- Completely assembled, pre-wired and tested
- Well-directed air flow from front to rear
- Rear I/O transition modules
- Keyable guide rails
- Effective ventilation by 2 radial fans HeiCool (204 m<sup>3</sup>/h)
- Conforms to IEC 60 297-3-101,-102,-103



## WE MEET YOUR INDIVIDUAL NEEDS!

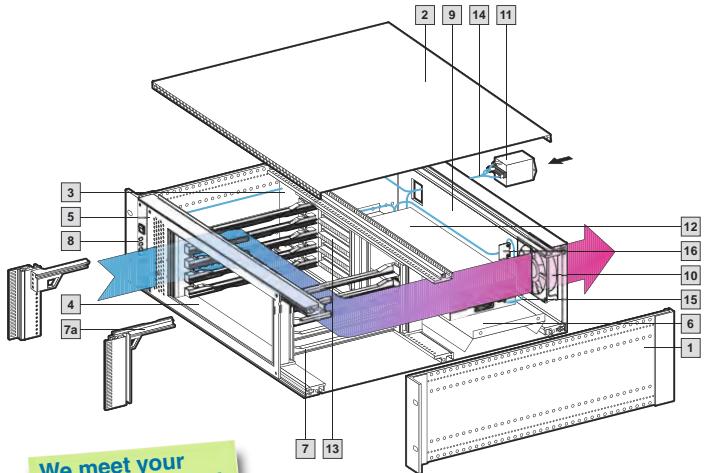
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# VME/VME64x RACK-MOUNT SYSTEMS

**HeiPac 3 U, 5 slots/4 U, 7 slots horizontal**



## Technical specifications:

Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS monitoring.

(see pages 51 – 53)  
Complies with IEC 60 297-3-101, -102, -103.  
Fully assembled, pre-wired and tested.

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see page 14

**Illustration:**  
MPS system 3 U

U	3	3	4	4	Page
Side panel depth mm	405	405	405	405	
Wiring space (depth in mm)	210	210	210	210	
For PCB	6 U x 160 mm				
<b>MPS system Model No. RP for VME</b>	<b>9910.949</b>	–	<b>9910.954</b>	–	
<b>MPS system Model No. RP for VME64x</b>	–	<b>9910.950</b>	–	<b>9910.955</b>	

## Mechanical supply includes

Description	Material	Qty.				
[1] HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	1	1	–
[2] Top and bottom covers, solid	Aluminium	2	2	2	2	126
[3] Air partition	Aluminium	1	1	1	1	131
[4] Horizontal mounting kit	Aluminium, clear-chromated	1	1	1	1	118
[5] Trim frame for horizontal mounting kit	2,5 mm aluminium, clear-chromated	1	1	1	1	119
[6] Mounting base for power supply unit	2 mm aluminium, anodised	1	1	1	1	163
EMC shielding plate for fan	Aluminium, clear-chromated	1	1	1	1	134
[7] Guide rails	Polycarbonat UL 94-V0	10	–	14	–	121
[7a] Plastic guide rails, keyable	Polycarbonat UL 94-V0	–	10	–	14	120
[8] EMC front panel 3 U or 4 U/5 HP, with MPS monitoring	2,5 mm aluminium, clear-chromated	1	1	1	1	–
[9] EMC rear panel 3 U/84 HP with fan and connector cut-out	2,5 mm aluminium, clear-chromated	1	1	–	–	–
EMC rear panel 4 U/84 HP with fan and connector cut-out	2,5 mm aluminium, clear-chromated	–	–	1	1	–

## Electrical/electronic supply includes

Description	Technical specifications	1	1	1	1	133
[10] DC fan	12 V DC, 48 m³/h per fan (UL, CSA, VDE) optionally speed-controlled	1	1	1	1	133
[11] IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	1	53
[12] Switch mode power supply unit	250 W	1	1	1	1	–
[13] VME backplane	J1, 5 slots, IN-board, passive, ADC	1	–	–	–	50
VME64x backplane	J1/J2, 5 slots (without P0)	–	1	–	–	48
VME backplane	J1, 7 slots, IN-board, passive, ADC	–	–	1	–	50
VME64x backplane	J1/J2, 7 slots	–	–	–	1	48
LED display module for MPS monitoring	for +5 V, ±12 V, fan failure	1	1	1	1	–
[14] AC cable harness	–	■	■	■	■	–
[15] DC cable harness	–	■	■	■	■	–
[16] Fan module for DC fan	–	1	1	1	1	–
Controller module	with interface for RS-232 and CMC-TC	1	1	1	1	–

# VME/VME64x RACK-MOUNT SYSTEMS

## HeiPac 4 U/7 U, 12 slots


**Technical specifications:**

Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS Monitoring

(see pages 51 – 53)  
Complies with IEC 60 297-3-101, -102, -103.  
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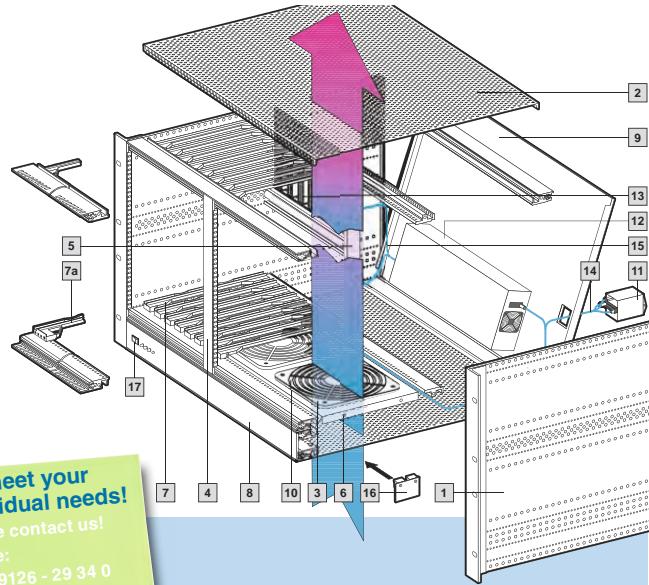
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see page 14



**Illustration:**  
MPS system 7 U

U	4 (3 + 1)	7 (6 + 1)	7 (6 + 1)	Page
Side panel depth mm	405	405	405	
Wiring space (depth in mm)	210	210	210	
For PCB	3 U x 160 mm	3 U/6 U x 160 mm		
<b>MPS system Model No. RP for VME</b>	<b>9909.484</b>	<b>9910.956</b>	–	
<b>MPS system Model No. RP for VME64x</b>	–	–	<b>9910.957</b>	

**Mechanical supply includes**

Description	Material	Qty.			
<b>[1]</b> HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	1	–
<b>[2]</b> Top and bottom covers, vented	Aluminium	2	2	2	126
<b>[3]</b> Finger guard	Polyamid	3	3	3	134
<b>[4]</b> EMC front panel, 6 U/4 HP (with 7 U)	Aluminium, clear-chromated	–	1	–	–
<b>[5]</b> Support, vertical (with 7 U)	Aluminium, clear-chromated	–	1	–	118
<b>[6]</b> Fan mounting plate	1 mm aluminium, anodised	1	1	1	130
<b>[7]</b> Guide rails	Polycarbonate UL 94-V0	24	24	–	119
<b>[7a]</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	–	24	120
<b>[8]</b> EMC front panel 1 U/84 HP for switches/LED	2,5 mm aluminium, clear-chromated	1	1	1	–
Rear panel 4 U/84 HP, horizontally hinged with connector cut-out	2,5 mm aluminium, clear-chromated	1	–	–	–
<b>[9]</b> EMC rear panel 7 U/84 HP, horizontally hinged with connector cut-out	2,5 mm aluminium, clear-chromated	–	1	1	–

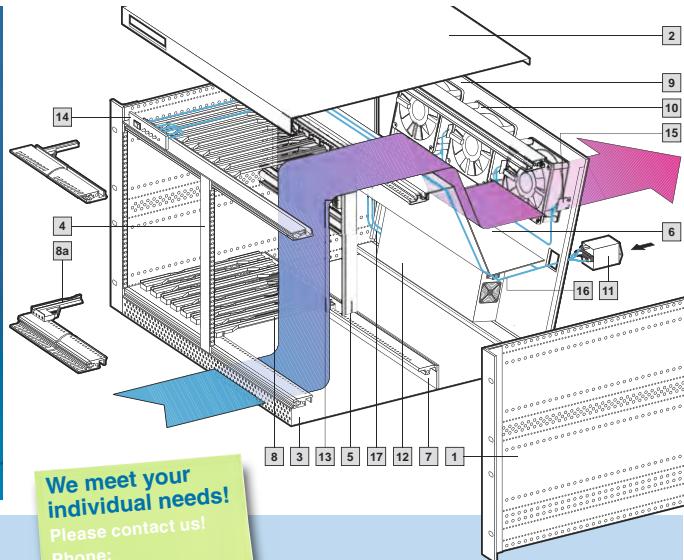
**Electrical/electronic supply includes**

Description	Technical specifications	3	3	3	133
<b>[10]</b> DC fan	12 V DC, 140 m³/h per fan (VDE, UL, CSA) optionally speed-controlled	3	3	3	133
<b>[11]</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	53
<b>[12]</b> Switch mode power supply unit	400 W	1	1	1	158
<b>[13]</b> VME backplane	J1, 12 slots, IN-board, passive, ADC	1	1	–	50
VME64x backplane	J1/J2, 12 slots	–	–	1	48
<b>[17]</b> LED display module for MPS monitoring	for (3.3 V), +5 V, ±12 V, fan failure	1	1	1	–
<b>[14]</b> AC cable harness	–	■	■	■	–
<b>[15]</b> DC cable harness	–	■	■	■	–
<b>[16]</b> Fan module for DC fan	–	1	1	1	–
Controller module	with interface for RS-232 and CMC-TC	1	1	1	–

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# VME/VME64x RACK-MOUNT SYSTEMS

## HeiPac 7 U, 12 slots



**Technical specifications:**  
Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS Monitoring

(see pages 51 – 53)  
Complies with IEC 60 297-3-101, -102, -103.  
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U		7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)	Page
Side panel depth mm		405	405	
Wiring space (depth in mm)		210	210	
For PCB		6 U x 160 mm	6 U x 160 mm	
<b>MPS system Model No. RP for VME</b>		<b>9910.958</b>	–	
<b>MPS system Model No. RP for VME64x</b>		–	<b>9910.959</b>	

### Mechanical supply includes

Description	Material	Qty.		
<b>[1]</b> HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	–
<b>[2]</b> Cover with ½ U edge fold and cut-outs for switches/LEDs	Aluminium	1	1	129
<b>[3]</b> Bottom cover with ½ U edge fold, ventilated at the front	Aluminium	1	1	129
<b>[4]</b> EMC front panel 6 U/4 HP	2,5 mm aluminium, clear-chromated	1	–	–
EMC shielding plate for fan	Aluminium, clear-chromated	3	3	134
<b>[5]</b> Vertical support	Aluminium, clear-chromated	1	–	118
<b>[6]</b> Air baffle	1 mm aluminium, anodised	1	1	131
<b>[7]</b> Air block panel, ½ U	Epoxyd	1	1	131
<b>[8]</b> Guide rails	Polycarbonate UL 94-V0	24	–	119
<b>[8a]</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	24	120
<b>[9]</b> EMC rear panel, horizontally hinged, 7 U, with fan and connector cut-out	2,5 mm aluminium, clear-chromated	1	1	–

### Electrical/electronic supply includes

Description	Technical specifications			
<b>[10]</b> DC fan	12 V DC, 140 m³/h per fan, (UL, CSA, VDE) optional speed control	3	3	133
<b>[11]</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	53
<b>[12]</b> Switch mode power supply unit	400 W	1	1	158
<b>[13]</b> VME backplane	J1, 12 slots, IN-board passive, ADC	1	–	50
VME64x backplane	J1/J2, 12 slots (without P0)	–	1	48
<b>[14]</b> LED display module for MPS monitoring	for (3.3 V), +5 V, ±12 V, fan failure	1	1	–
<b>[15]</b> Fan module for DC fan	–	1	1	–
<b>[16]</b> AC cable harness	–	■	■	–
<b>[17]</b> DC cable harness	–	■	■	–
Controller module	with interface for RS-232 and CMC-TC	1	1	–

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# VME/VME64x RACK-MOUNT SYSTEMS

## HeiPac 9 U, 12 slots, with HeiCool radial fan



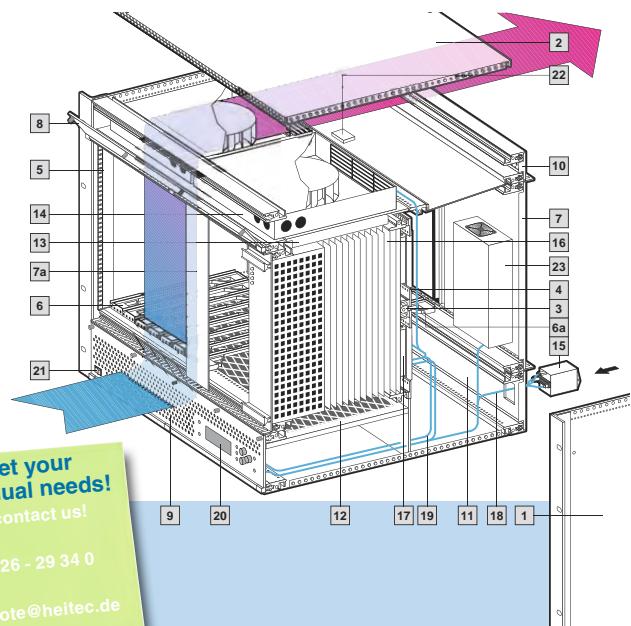
### Technical specifications:

Subrack, 290.5 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS Monitoring

(see pages 51 – 53)  
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<b>U</b>	<b>9 (6 + 2 x 1½)</b>	<b>Page</b>
Side panel depth mm	290,5	
Wiring space (depth in mm)	85,5	
For PCB	6 U x 160 mm	
<b>MPS system Model No. RP for VME64x</b>	<b>9910.960</b>	

### Mechanical supply includes

Description	Material	Qty.	
<b>[1]</b> HeiPac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
<b>[2]</b> Top and bottom covers, solid	1 mm Aluminium	2	126
<b>[3]</b> Centre horizontal rail 12 HP	1 mm aluminium, clear-chromated	1	–
<b>[4]</b> Z rail 12 HP	Aluminium, clear-chromated	4	–
<b>[5]</b> EMC contact strip	Aluminium, clear-chromated	2	117
<b>[6]</b> Plastic guide rails, keyable	Polycarbonate UL 94-V0	24	120
Guide rails, keyable, green, for power supply	Polycarbonate UL 94-V0	2	120
<b>[6a]</b> Guide rails for I/O transition modules	Polycarbonate UL 94-V0	24	–
<b>[7]</b> EMC rear panel 6 U/36 HP	2.5 mm aluminium, clear-chromated	1	–
<b>[7a]</b> EMC front panel	2.5 mm aluminium, clear-chromated	1	–
<b>[8]</b> Front panel 1½ U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	–
<b>[9]</b> Front panel 1½ U/84 HP, vented, horizontally hinged, for MPS monitoring	2.5 mm aluminium, clear-chromated	1	–
<b>[10]</b> EMC rear panel 1½ U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	–
<b>[11]</b> EMC rear panel, 1½ U/84 HP, with connector cut-out	2.5 mm aluminium, clear-chromated	1	–
<b>[12]</b> Filter mat 160 mm, 84 HP, for slide-in attachment	–	1	–
<b>[13]</b> Mounting plate for HeiCool	1 mm sheet steel, zinc-plated, passivated	1	–

### Electrical/electronic supply includes

Description	Technical specifications		
<b>[14]</b> HeiCool DC fan, individually removable. Including fault alarm signal, speed control	24 V DC, 204 m³/h, 48 W	2	–
<b>[15]</b> IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	53
<b>[16]</b> Power supply, plug-in, 6 U/12 HP	270 W	1	159
Backplane VME64x, without P0	J1/J2, 12 slots	1	48
<b>[17]</b> Female connector for power supply unit	H15	2	–
<b>[18]</b> AC cable harness	–	■	–
<b>[19]</b> DC cable harness	–	■	–
<b>[20]</b> Display module	for +5 V, ±12 V, fan failure	1	–
<b>[21]</b> Mains switch	–	1	–
<b>[22]</b> Monitoring module for HeiCool and backplane	–	2	–
<b>[23]</b> Power supply for HeiCool	–	1	–
Controller module	–	1	–
Temperature module	–	1	–

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# VMEbus BACKPLANES

## Technical specifications

### General technical specifications VMEbus

The VMEbus, based on standard IEEE 1014 and IEC 821, has become established worldwide as an industry standard. The VME64 is a new addition to the VME family to ANSI/VITA 1-1994 and supports 64-bit data traffic. The VME64x extends the VME family to ANSI/VITA 1.1-1997 and is available with the optional 133-pole 2 mm connector J0. 160-pole connectors are used with VME64x. This system remains backward compatible, so that assemblies with 96-pole connectors to IEC 60 603-2 may still be used. All HEITEC VMEbus boards are of a **HIGH SPEED DESIGN**. Minimal reflections are achieved, due to even surge impedance of the signal track. The consistent shielding of every signal track ensures minimum coupling and hence guarantees interference-free operation even when extended to 64 bit mode with the **2e protocol** (160 Mbit/s).

### Daisy-chain circuit

With the daisy-chain circuit, a distinction is made between manual daisy-chaining and automatic daisy-chaining. Automatic daisy-chaining renders the connection of jumpers superfluous, and users are saved the time-consuming task of insertion and extraction. What is more, possible misconnections are avoided. Automatic daisy-chaining can be achieved in two ways. HEITEC VME backplanes are generally supplied with automatic daisy-chaining.

### Termination

In order to avoid malfunctions on signal tracks that may arise as a result of reflections on the exposed track end, these must be terminated with the VMEbus. Termination may be either ON-/IN-board (on the backplane) or OFF-board (external). With regard to the type of termination, a distinction is made between passive and active termination. The benefit of active termination lies in the lower closed-circuit current consumption. Passive termination is distinguished by superior frequency response and a broader temperature range.

## Pin assignment J1 and J2

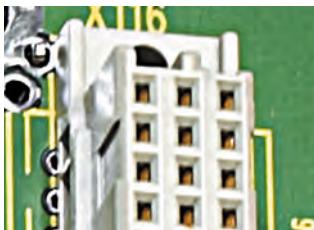
### Pin assignment J1

Pin assignment for J1 connector VME64x					
	Row z	Pin assignment for J1 connector VME			
Pin no.	Row z	Row a	Row b	Row c	Row d
1	MPR	D00	BBSY	D08	VPC
2	GND	D01	BCLR	D09	GND
3	MCLK	D02	ACFAIL	D10	+ V1
4	GND	D03	BG0IN	D11	+ V2
5	MSD	D04	BG0OUT	D12	RsvU
6	GND	D05	BG1IN	D13	- V1
7	MMD	D06	BG1OUT	D14	- V2
8	GND	D07	BG2IN	D15	RsvU
9	MCTL	GND	BG2OUT	GND	GAP
10	GND	SYSCLK	BG3IN	SYSFAIL	GAO
11	RTRY1	GND	BG3OUT	BERR	GA1
12	GND	DS1	BR0	SYSRESET	+3,3 V
13	RsvBus	DS0	BR1	LWORD	GA2
14	GND	WRITE	BR2	AM5	+3,3 V
15	RsvBus	GND	BR3	A23	GA3
16	GND	DTACK	AM0	A22	+3,3 V
17	RsvBus	GND	AM1	A21	GA4
18	GND	AS	AM2	A20	+3,3 V
19	RsvBus	GND	AM3	A19	RsvBus
20	GND	IACK	GND	A18	+3,3 V
21	RsvBus	IACKIN	SERCLK (1)	A17	RsvBus
22	GND	IACKOUT	SERDAT (1)	A16	+3,3 V
23	RsvBus	AM4	GND	A15	RsvBus
24	GND	A07	IRQ7	A14	+3,3 V
25	RsvBus	A06	IRQ6	A13	RsvBus
26	GND	A05	IRQ5	A12	+3,3 V
27	RsvBus	A04	IRQ4	A11	LI/I
28	GND	A03	IRQ3	A10	+3,3 V
29	SBB	A02	IRQ2	A09	LI/O
30	GND	A01	IRQ1	A08	+3,3 V
31	SBA	-12 V	+5 V STDBT	+12 V	GND
32	GND	+5 V	+5 V	+5 V	VPC

### Pin assignment J2

Pin assignment for J2 connector VME64x					
	Row z	Pin assignment for J2 connector VME			
Pin no.	Row z	Row a	Row b	Row c	Row d
1	UD	User def.	+5 V	User def.	UD
2	GND	User def.	GND	User def.	UD
3	UD	User def.	Retry	User def.	UD
4	GND	User def.	A24	User def.	UD
5	UD	User def.	A25	User def.	UD
6	GND	User def.	A26	User def.	UD
7	UD	User def.	A27	User def.	UD
8	GND	User def.	A28	User def.	UD
9	UD	User def.	A29	User def.	UD
10	GND	User def.	A30	User def.	UD
11	UD	User def.	A31	User def.	UD
12	GND	User def.	GND	User def.	UD
13	UD	User def.	+5 V	User def.	UD
14	GND	User def.	D16	User def.	UD
15	UD	User def.	D17	User def.	UD
16	GND	User def.	D18	User def.	UD
17	UD	User def.	D19	User def.	UD
18	GND	User def.	D20	User def.	UD
19	UD	User def.	D21	User def.	UD
20	GND	User def.	D22	User def.	UD
21	UD	User def.	D23	User def.	UD
22	GND	User def.	GND	User def.	UD
23	UD	User def.	D24	User def.	UD
24	GND	User def.	D25	User def.	UD
25	UD	User def.	D26	User def.	UD
26	GND	User def.	D27	User def.	UD
27	UD	User def.	D28	User def.	UD
28	GND	User def.	D29	User def.	UD
29	UD	User def.	D30	User def.	UD
30	GND	User def.	D31	User def.	UD
31	UD	User def.	GND	User def.	UD
32	GND	User def.	+5 V	User def.	UD

## Technical specifications



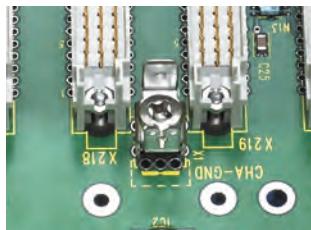
### Automatic daisy-chaining J1 and J1/J2

Via the use of connectors with integral mechanical switches, the contact is automatically opened when the daughterboard is inserted, and closed again when it is extracted.



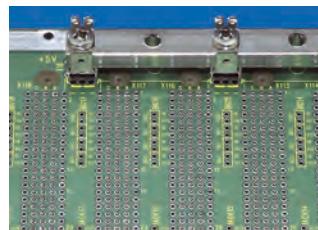
### Automatic daisy-chaining VME64x

The second option for automatic daisy-chaining is achieved here by an "or" logic integrated onto the backplane. If the daughterboard is extracted, the logic closes the daisy-chain.



### Chassis GND connection

An electrically conductive chassis GND surface is attached to the subracks in the mounting section of the backplane. This facilitates EMC-sealed mounting of the backplane on the subracks. With VME64x, RF linking of the subracks and system earth is achieved via capacitors (10nF, 200 V at each slot). Static charges are discharged via a resistor ( $\geq 1 \text{ M}\Omega$ ). A combined connection component (screw M4 and Faston 2.8 or 6.3 x 0.8 mm) is provided for connection of the enclosure earth.



### Power connections

Infeed of the main operating voltage +5 V/+3.3 V and GND is provided via busbars with M6 screw terminal. The auxiliary operating voltages are supplied via double Fastons with additional M4 screw thread. Optimum supply of the daughterboards and hence problem-free operation is ensured, thanks to the arrangement of the infeed modules on the backplane.

### Utility connector

The special signals to the power pack and to external LEDs are routed on a separate connector on the backplanes. A 7-pole, a 10-pole or a 14-pole connector with 2.54 mm spacing is provided, depending on the backplane type.

### Pin assignment, 10/14 Pins

GND	1	2	GND Sense (5 V)
+5 V	3	4	+5 V Sense
ACFAIL-	5	6	ACFAIL-
SYSFAIL-	7	8	SYSFAIL-
SYSRESET-	9	10	SYSRESET-
+3,3 V	11	12	+3,3 V Sense
GND	13	14	GND Sense (3,3 V)

J1, J1/J2: 10 pins, VME64x: 14 pins

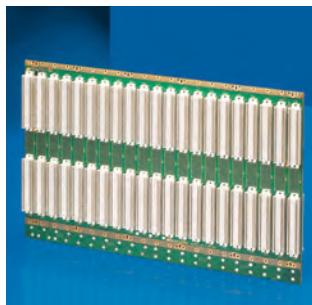
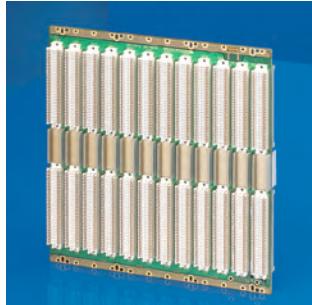
### Geographical address pin assignments (VME64x)

Slot no.	GAP Pin J1-D9	GA4 Pin J1-D17	GA3 Pin J1-D15	GA2 Pin J1-D13	GA1 Pin J1-D11	GA0 Pin J1-D10
1	Open	Open	Open	Open	Open	GND
2	Open	Open	Open	Open	GND	Open
3	GND	Open	Open	Open	GND	GND
4	Open	Open	Open	GND	Open	Open
5	GND	Open	Open	GND	Open	GND
6	GND	Open	Open	GND	GND	Open
7	Open	Open	Open	GND	GND	GND
8	Open	Open	GND	Open	Open	Open
9	GND	Open	GND	Open	Open	GND
10	GND	Open	GND	Open	GND	Open
11	Open	Open	GND	Open	GND	GND
12	GND	Open	GND	GND	Open	Open
13	Open	Open	GND	GND	Open	GND
14	Open	Open	GND	GND	GND	Open
15	GND	Open	GND	GND	GND	GND
16	Open	GND	Open	Open	Open	Open
17	GND	GND	Open	Open	Open	GND
18	GND	GND	Open	Open	GND	Open
19	Open	GND	Open	Open	GND	GND
20	GND	GND	Open	GND	Open	Open
21	Open	GND	Open	GND	Open	GND

### Pin assignments J0

Pin no.	ROW Z	ROW A	ROW B	ROW C	ROW D	ROW E	ROW F
1 – 19	GND	User Defined	GND				

# VME64x BACKPLANES



## Backplanes VME64x

### Technical specifications:

Number of layers	10
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.
PCB thickness	4,5 mm ±10 %
Ohmic resistance of the signal tracks	< 1 Ohm
Surge impedance Z of the signal tracks	55 Ohm
Basic power consumption, terminated at both ends	Active: < 200 mA Passive: < 2 A
Power supply: – Busbar with M6 screw terminal – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	+5 V, +3.3 V and 0 V ±12 V, +5 V STBY, ±V1, ±V2 and case FASTON 6.3 x 0.8 mm
Current carrying capacity of busbar	max. 200 A
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A
Current carrying capacity of a FASTON flat connector	10 A
	+3,3 V                    12,5 A +5 V                    9,0 A +12 V                    1,5 A -12 V                    1,5 A +5 V STDBY            1,5 A +48 V (38 – 75 V)    3,0 A
Termination ON-/IN-board	6 U: active, 6.5 U: active (passive/changeover)
Installation height	6 U/6,5 U
Distance between slots	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles 160 pins compatible with C96 P0 spacing 2 mm, 95/133 pins
Operating temperature range	Active termination 0° . . . +70°C Passive termination -40° . . . +85°C
Relative humidity	90 %, non-condensing

### VME64x 6 HE

Slot	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
2	261,7	39,5	<b>9912.423</b>	<b>9912.410</b>
3	261,7	59,5	<b>9912.424</b>	<b>9912.411</b>
4	261,7	80	<b>9912.425</b>	<b>9912.362</b>
5	261,7	100	<b>3687.608</b>	<b>3687.609</b>
6	261,7	120,5	<b>9912.426</b>	<b>9912.412</b>
7	261,7	141	<b>3687.610</b>	<b>3687.611</b>
8	261,7	161,5	<b>9912.427</b>	<b>9912.413</b>
9	261,7	181,5	<b>9904.930</b>	<b>9904.932</b>
10	261,7	202	<b>9904.931</b>	<b>9904.933</b>
11	261,7	222,5	<b>9912.428</b>	<b>9912.414</b>

Slot	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
12	261,7	242,5	<b>3686.634</b>	<b>3686.473</b>
13	261,7	263	<b>9912.429</b>	<b>9912.415</b>
14	261,7	283	<b>9912.430</b>	<b>9912.416</b>
15	261,7	303,5	<b>9912.431</b>	<b>9912.417</b>
16	261,7	324	<b>9912.432</b>	<b>9912.418</b>
17	261,7	344	<b>9912.433</b>	<b>9912.419</b>
18	261,7	364,5	<b>9912.434</b>	<b>9912.420</b>
19	261,7	385	<b>9912.435</b>	<b>9912.421</b>
20	261,7	405	<b>9912.436</b>	<b>9912.422</b>
21	261,7	425,5	<b>3686.635</b>	<b>3686.474</b>

### VME64x 6,5 HE

Slot	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
5	283,7	100	<b>9910.012</b>	<b>9910.007</b>
7	283,7	141	<b>9910.013</b>	<b>9910.008</b>
9	283,7	181,5	<b>9910.014</b>	<b>9910.009</b>
10	283,7	202	<b>9904.928</b>	<b>9904.929</b>
12	283,7	242,5	<b>9910.015</b>	<b>9910.010</b>
21	283,7	425,5	<b>9910.016</b>	<b>9910.011</b>

#### Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

#### Supply includes:

Backplane, fully populated.

#### + Accessories:

For backplane mounting:

Conductive strips, see page 115

Insulating strips, see page 115



## Backplanes VME J1/J2 Monolithic

### Technical specifications:

Number of layers	6
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.
PCB thickness	3,2 mm ±10 %
Ohmic resistance of the signal tracks	< 1 Ohm
Surge impedance Z of the signal tracks	60 Ohm
Basic power consumption, terminated at both ends	Active: < 200 mA Passive: < 1,5 A
Power supply: – Busbar with screw terminal M6 – Screw terminal M4 and FASTON 6.3 x 0.8 mm – < 5 slots	+5 V and 0 V ±12 V, +5 V STBY and case FASTON 6.3 x 0.8 mm
Current carrying capacity of busbar	max. 200 A
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A
Current carrying capacity of a FASTON flat connector	10 A
Current carrying capacity of the assembly, per slot	+5 V 9,0 A +12 V 1,5 A -12 V 1,5 A +5 V STDBY 1,5 A
Termination ON-/IN-board	active (may be switched to passive)
Installation height	6 U
Distance between slots	4 U
Connectors	Press-fit technique quality class 2, 400 connection cycles C96
Operating temperature range	Active termination 0° . . . +70°C Passive termination -40° . . . +85°C
Relative humidity	90 %, non-condensing

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
2	261,7	39,5	<b>3686.495</b>
3	261,7	59,5	<b>3686.496</b>
4	261,7	80	<b>3686.497</b>
5	261,7	100	<b>3686.498</b>
6	261,7	120,5	<b>3686.499</b>
7	261,7	141	<b>3686.500</b>
8	261,7	161,5	<b>3686.501</b>
9	261,7	181,5	<b>3686.502</b>
10	261,7	202	<b>3686.503</b>
11	261,7	222,5	<b>3686.504</b>
12	261,7	242,5	<b>3686.505</b>
13	261,7	263	<b>3686.506</b>
14	261,7	283	<b>3686.507</b>
15	261,7	303,5	<b>3686.508</b>
16	261,7	324	<b>3686.509</b>
17	261,7	344	<b>3686.510</b>
18	261,7	364,5	<b>3686.511</b>
19	261,7	385	<b>3686.512</b>
20	261,7	405	<b>3686.513</b>
21	261,7	425,5	<b>3686.514</b>

### Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

### Supply includes:

Backplane, fully populated.

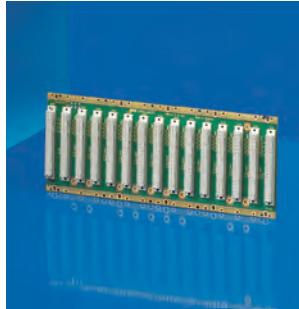
### + Accessories:

For backplane mounting:

Conductive strips, see page 115

Insulating strips, see page 115

# VME BACKPLANES



## VME J1 system bus

### Technical specifications:

	VME J1	VME J2
Number of layers	6	2
Layer structure	Optimised for opt. RF performance, outer layers designed as shielding surface	
PCB thickness	3,2 mm ±10 %	3,2 mm ±10 %
Ohmic resistance of the signal tracks	< 1 Ohm	< 1 Ohm
Surge impedance Z of the signal tracks	60 Ohm	60 Ohm
Basic power consumption, terminated at both ends	Active: < 150 mA Passive: < 1,2 A	Passive: < 0,6 A
Power supply: – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	+5 V, 0 V, ±12 V, ±5 V STBY and case FASTON 6.3 x 0.8 mm	x FASTON 6.3 x 0.8 mm
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A	25 A
Current carrying capacity of a FASTON flat connector	10 A	10 A
Current carrying capacity of the assembly, per slot	+5 V 4,5 A +12 V 1,5 A -12 V 1,5 A +5 V STDBY 1,5 A	+5 V 4,5 A
Termination ON-/IN-board	active/passive (changeover)	active/passive (changeover)
Installation height	3 U	3 U
Distance between slots	4 HP	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles C96	Press-fit technique quality class 2, 400 connection cycles C96
Operating temperature range	Active termination 0° ... +70°C Passive termination -40° ... +85°C	Passive termination -40° ... +85°C
Relative humidity	90 %, non-condensing	90 %, non-condensing

Slot	Dimensions		Model No. RP
	Height m	Width mm	
3	128,4	59,5	<b>3686.555</b>
4	128,4	80	<b>3686.556</b>
5	128,4	100	<b>3686.557</b>
6	128,4	120,5	<b>3686.558</b>
7	128,4	141	<b>3686.559</b>
8	128,4	161,5	<b>3686.560</b>
9	128,4	181,5	<b>3686.561</b>
10	128,4	202	<b>3686.562</b>

### + Accessories:

For backplane mounting:  
Conductive strips, see page 115  
Insulating strips, see page 115

## VME J2 expansion bus

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
3	128,4	59,5	<b>3686.585</b>
4	128,4	80	<b>3686.586</b>
5	128,4	100	<b>3686.587</b>
6	128,4	120,5	<b>3686.588</b>
7	128,4	141	<b>3686.589</b>
8	128,4	161,5	<b>3686.590</b>
9	128,4	181,5	<b>3686.591</b>
10	128,4	202	<b>3686.592</b>

### + Accessories:

For backplane mounting:  
Conductive strips, see page 115  
Insulating strips, see page 115



### Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

### Supply includes:

Backplane, fully populated.

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
12	128,4	242,5	<b>3686.593</b>
13	128,4	263	<b>3686.594</b>
14	128,4	283	<b>3686.595</b>
15	128,4	303,5	<b>3686.596</b>
18	128,4	364,5	<b>3686.597</b>
20	128,4	405	<b>3686.598</b>
21	128,4	425,5	<b>3686.599</b>

### + Accessories:

For backplane mounting:  
Conductive strips, see page 115  
Insulating strips, see page 115

# CPCI/VMEbus MPS MONITORING



## MPS Monitoring electronics

In order to ensure maximum system availability and performance in industrial computers, all hardware components must offer functional reliability. The monitoring electronics for microcomputer packaging systems (MPS) offers a highly flexible, scalable security concept for key parameters such as temperature, voltage and fan speed. At the heart of this concept are intelligent function modules such as controller, temperature, fan and LCD display or LED display modules. The system may be polled, or parameters set via the Internet using remote control functions, thanks to compatibility with the HEITEC CMC-TC monitoring system. Alternatively, this may be executed directly on the MPS system, via a PC, or with the aid of CMC-TC, directly from a control point.

### Benefits at a glance

- Monitoring of temperature, voltage, fan speed and fan alarm
- Flexible, scalable system concept
- Intelligent function modules
- Adjustable temperature limits
- Remote control via the Internet in conjunction with the HEITEC CMC-TC enclosure monitoring system
- Choice of parameter levels
- Internal communications via I<sup>2</sup>C bus

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[eps-quote@heitec.de](mailto:eps-quote@heitec.de)  
see page 14

## Controller-Module (CMC & RS232)



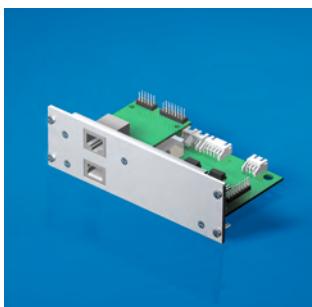
Monitoring of system voltage, PSU-status, HeiCool alarm and data transfer of the temperature- and/or fan module via the RS 232 (to PC) or RS422-interface (to CMC-TC).

Packs of	Order No.
1	<b>9909.193</b>

### Supply includes:

Unit consisting of:  
controller-module, front plate 3 U, 4 HP

## Controller-Module (CMC & LAN)



Monitoring of system voltage, PSU-status, HeiCool alarm and data transfer of the temperature- and/or fan module via LAN- (to PC) or RS422- interface (to CMC-TC).

Packs of	Order No.
1	<b>9913.260</b>

### Supply includes:

Unit consisting of:  
controller-module, front plate 3 U, 4 HP

# CPCI/VMbus MPS MONITORING



## Display- and Controller-Module (CMC & RS232)

**Controller-Module:**  
Monitoring of system voltage, PSU-status, HeiCool alarm and data transfer of the temperature- and/or fan module via RS232- (to PC) or RS422- interface (to CMC-TC).

**Display- Module:**

- Handling via 3 keys: forward, escape, return
- 3 LEDs: Fan, Temperature, Volt for optical display as sum alarm
- For displaying temperature, power supply, fan speed
- Brightness and lightning optionally adjustable with turn on/off function
- Temperature display in °F/°C
- LCD (2 x 20 digits) for displaying data details

Packs of	Order No.
1	<b>9912.483</b>

### Supply includes:

Unit consisting of:  
controller-module, display-module,  
front panel 6 U, 8 HP



## LED Display- and Controller Module (CMC & RS232)

**Controller-Module:**  
Monitoring of system voltage, PSU-status, HeiCool alarm and data transfer of the temperature- and/or fan module via RS232- (to PC) or RS422- interface (to CMC-TC).

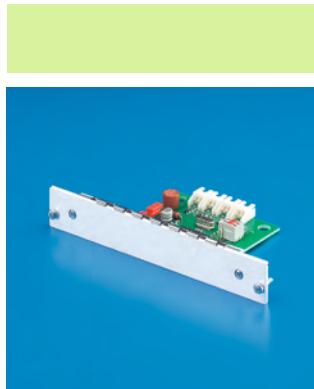
**LED Display-Module:**

- + 3.3 V
- + 5.0 V
- + 12 V
- - 12 V
- 2 x alarm (fan, temperature)
- Display of system voltage as to critical values
  - Red: voltage deficiency
  - Yellow (1 flash): below limit
  - Yellow (2 flashes): over limit
  - Green: voltage ok

Packs of	Order No.
1	<b>9913.748</b>

### Supply includes:

Unit consisting of:  
controller-module, LED-module,  
front panel 6 U, 4 HP



## Temperature-Module

- Up to 2 modules cascadable
- Data transfer of each temperature sensor to the controller-module
- Up to 4 temperature sensors
- Internal communication via I<sup>2</sup>C

### Note:

Only applicable in connection with Controller-/LCD- or LED-modules

Packs of	Order No.
1	<b>9909.230</b>

### Supply includes:

Unit consisting of:  
temperature-module, front panel 3 U, 4 HP

# CPCI/VMEbus MPS MONITORING

## LED Display-Module



LED Display-module:

- + 3.3 V
- + 5.0 V
- + 12 V
- – 12 V
- 2 x alarm (fan, temperature)
- Display of system voltage as to critical values
  - Red: voltage deficiency
  - Yellow (1 flash): below limit
  - Yellow (2 flashes): over limit
  - Green: voltage ok

Packs of

1

**Order No.**

**9912.294**

### Note:

Only applicable in connection with Controller-/Display- or LED-modules

### Supply includes:

Unit consisting of:  
LED-module, front panel 3 U, 4 HP

## Fan-Module



Monitoring fan functions

**(attention: requires fan with alarm signal)**

### Note:

Only applicable in connection with Controller-/Display- or LED-modules

Packs of

1

**Order No.**

**9912.293**

### Supply includes:

Unit consisting of:  
fan-module, front panel 3 U, 4 HP

## Mains switch



LED Display-module:

- 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

## ACCESSORIES

Max. current

6 A

Packs of

1

**Order No.**

**3687.711**

## Filtered IEC mains inlet



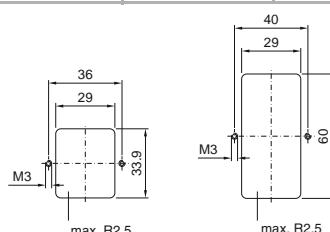
### For mains input

Combination module consisting of an IEC socket to IEC 60 320 and IEC 60 950 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

	<b>Model No. RP</b>	
	with switch	without switch
	<b>3687.709</b>	<b>3687.710</b>
Mains voltage max.	250 V AC	250 V AC
Leakage current	2 x 0,32 mA	Ø 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



## INDUSTRIAL PCs



### ATX HeiPac, aluminium

- Aluminium case, clear-chromated
- EMC prepared
- Integrated fan, air filter and PSU
- Electronics for automatic restart following a mains failure
- Removable inner housing

## Standard solutions and individual assembly - from plain enclosure to fully integrated industrial PC

We offer a multitude of Industrial PCs – be it a 19" rack-mount system or solutions for direct installation on mounting plates. The cases for Industrial PCs shown in this chapter only represent a small sample of HEITEC's wide range of services in this sector. HEITEC offers the solution for Industrial PCs, tailored to your needs, whether it is a non-standard enclosure format or fully integrated Industrial PC system including motherboard, hard disk and input-/output boards.

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#### ATX HeiPac, aluminium

The top-of-the-range model with outstanding maintenance-friendliness: The inner housing can be pulled out like a drawer.



#### ATX 4 U, stainless steel

Lockable front plate to prevent unauthorised access.

#### AT/ATX (Vario) Economy with front door

Easy de-mounting of disk drive module for external assembly.

#### BENEFITS AT A GLANCE:

##### ATX 4 U, stainless steel

- Sheet steel, spray-finished
- Preassembled for mounting on telescopic slides
- EMC prepared
- Fully assembled, including fan, air filter and PSU
- Slide rail mounting

##### AT/ATX (Vario) Economy with front door

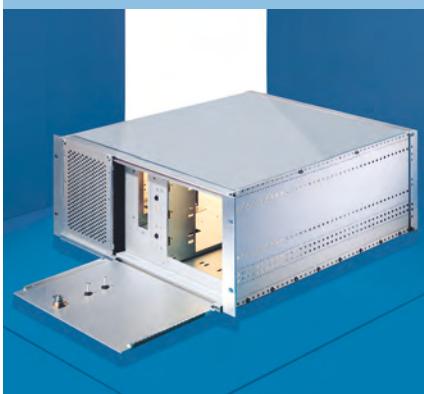
- Sheet steel, spray-finished, zinc-plated, in RAL 7035
- Suitable for mounting on telescopic slides
- EMC prepared
- ATX Economy fully assembled, including fan and PSU
- AT/ATX Vario Economy individually upgradable

##### ATX with front adaptors

- Sheet steel, spray-finished, zinc-plated, in RAL 7035
- Suitable for installation in 19" cabinets or on mounting plates
- Adapted for mounting on telescopic slides or slide rails
- EMC prepared
- Fully assembled, including PSU

# HEITEC INDUSTRIAL PCS OVERVIEW

**ATX HeiPac**



**4 U, aluminium**

Order no. see page 58

**Applications:**

- 19" cabinets and enclosures
- Industrial PCs for ATX-, Mini-ATX or Micro ATX boards
- Office- and industrial sector

**Technical Specifications:**

- Enclosure of aluminium, clear-chromated
- Removable inner housing
- Fully assembled and pre-wired
- Including fan and PSU
- EMC prepared
- Electronics for automatic restart following a mains failure

**Benefits at a glance:**

Top-of-the-range aluminium model for installation of an Industrial PC in ATX format. Advantage: outstanding maintenance friendliness. The inner housing can be pulled out like a drawer and thus enables optimum access to all components.

**ATX**



**4 U, stainless steel**

Order no. see page 59

**Applications:**

- 19" cabinets and enclosures
- Server enclosures
- Industrial PCs for ATX-, Mini-ATX or Micro ATX boards
- Office- and industrial sector

**Technical Specifications:**

- Enclosure of stainless steel, zinc-plated
- Suitable for mounting on slide rails
- Fully assembled and pre-wired
- Including fan and PSU
- EMC prepared
- Lockable front plate

**Benefits at a glance:**

The neutral design of this system offers a multitude of application areas in the office- or industrial sector. The lockable front plate prevents unauthorised access.

**ATX Economy  
with front door**



**4 U, stainless steel**

Order no. see page 60

**Applications:**

- 19" cabinets and enclosures
- Industrial PCs for ATX-, Mini-ATX or Micro ATX boards
- Industrial sector

**Technical Specifications:**

- Enclosure of stainless steel, zinc-plated
- Hinged, lockable front door
- Suitable for mounting on telescopic slides
- EMC prepared
- Fully assembled and pre-wired
- Including fan and PSU

**Benefits at a glance:**

This solid construction of stainless steel is suitable for extreme industrial environments with high requirements concerning ruggedness and safety.

Two versions: ATX Economy, fully assembled and pre-wired or AT/ATX Vario Economy as basic case for individual assembly – for example AT- or ATX applications.



# HEITEC INDUSTRIAL PCs

## OVERVIEW

### Modular System AT/ATX (Vario) Economy



**4 U, stainless steel**  
Order no. see page 61

#### Applications:

- 19" cabinets and enclosures
- Industrial PCs for ATX-, Mini-ATX or Micro ATX boards or AT-/Baby-AT boards
- Industrial sector

#### Technical Specifications:

- Enclosure of stainless steel, zinc-plated
- Hinged, lockable front door
- Suitable for mounting on telescopic slides
- EMC prepared
- Fully assembled and pre-wired including fan and PSU
- Individually upgradeable

#### Benefits at a glance:

The modular principle of AT/ATX Vario Economy allows various installations for individual requirements. The basic case may be fitted for both AT- and ATX applications with the appropriate selection of rear panels, power supply units and front panels. For self-assembly or on request fully assembled and pre-wired.

### ATX with front adaptors



**4 U**  
Order no. see page 62

#### Applications:

- 19" cabinets and enclosures
- Industrial PCs for ATX-, Mini-ATX or Micro ATX boards
- Industrial sector

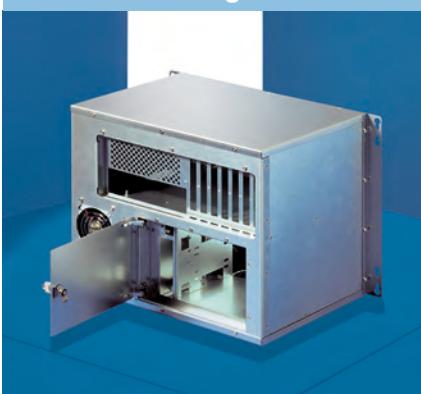
#### Technical Specifications:

- Enclosure of stainless steel, zinc-plated
- For installation in 19" cabinets
- Suitable for mounting on telescopic slides or on slide rails
- EMC prepared
- Fully assembled and pre-wired
- Including fan and PSU

#### Benefits at a glance:

Flexibility in all application sectors: for example little space, a required connection to other systems or for front access of I/O connections. The 19" version is suitable for installation in cabinets.

### ATX with front adaptors for wall-mounting



**Width x Height: 380 x 330 mm**  
Order no. see page 63

#### Applications:

- 19" cabinets and enclosures
- Installation on mounting plates
- Industrial PCs for ATX-, Mini-ATX or Micro ATX boards
- Industrial sector

#### Technical Specifications:

- Enclosure of stainless steel, zinc-plated
- For installation on mounting plates
- Suitable for mounting on telescopic slides or on slide rails
- Fully assembled and pre-wired
- Including fan and PSU

#### Benefits at a glance:

Flexibility in all application sectors: for example little space, a required connection to other systems or for front access of I/O connections. Flanges on the rear panel for installation on mounting plates.

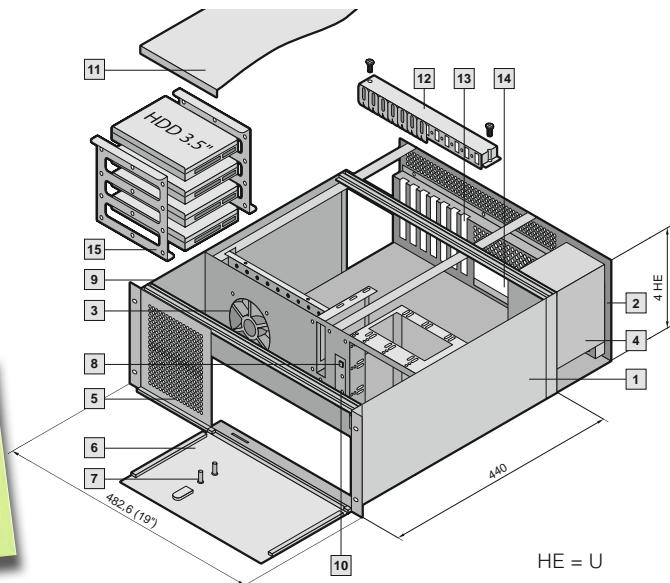


# INDUSTRIAL PCs

## ATX HeiPac 4 U, Aluminium



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see page 14



**Technical specifications:**  
482.6 mm (19") rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 51/4" and 1 x 31/2" drives.  
Width: 482.6 mm (19")  
Height: 4 U (177.0 mm)  
Total depth: 440 mm  
EMC prepared.

**Material/surface finish:**  
Side panels, front panels: Aluminium, clear-chromated  
Covers: 1.0 mm aluminium, clear-chromated  
PC internal cassette: Sheet steel, zinc-plated, passivated  
**Standards:**  
Complies with IEC 60 297-3 and ATX specification 2.01

**Special designs available on request.**

### Supply includes:

- [1] Rack-mount system 4 U, including drive holder
- [2] PC cassette
- [3] 1 fan 120 mm with filter
- [4] ATX power pack 300 W
- [5] Front door, horizontally hinged

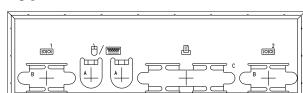
- [6] Front door, horizontally hinged, lockable
- [7] LED displays
- [8] Reset button
- [9] EMC gaskets, all round
- [10] ON/OFF switch with electronics for automatic restart following a mains failure (activation/deactivation of the electronics via jumper)
- [11] Cover

	Packs of		Page
<b>U</b>		<b>4</b>	
<b>Width mm</b>		482,6 (19")	
<b>Height mm</b>		177,0	
<b>Depth mm</b>		440,0	
<b>Model No. RP basic system fully assembled</b>	1	<b>3659.000</b>	
<b>Accessories</b>			
[12] Card retainer	7	<b>3659.010</b>	65
Mounting bar for card retainer	1	<b>3659.090</b>	65
[13] Unused slot cover	5	<b>3659.030</b>	64
Cover for 5 1/4" drive space	1	<b>3659.050</b>	64
[15] Drive support	1 set	<b>3659.060</b>	64
Spare filter mat	1	<b>3659.070</b>	—
Uninterruptible power supply Output: 300 VA/180 W	1	<b>3659.080</b>	161
<b>[14] ATX I/O covers, sheet steel<sup>1)</sup></b>			
Type „Aurora Marl“	1	<b>3659.040</b>	—
Type „Tucson“/„Venus“	1	<b>3659.130</b>	—
Type „Providence“	1	<b>3659.140</b>	—

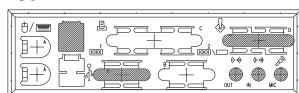
<sup>1)</sup> Other versions available on request; please specify the type of mainboard.

### ATX I/O covers:

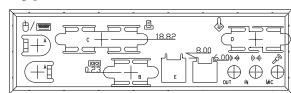
#### Type „Aurora Marl“



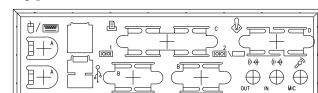
#### Type „Venus“



#### Type „Providence“



#### Type „Tucson“

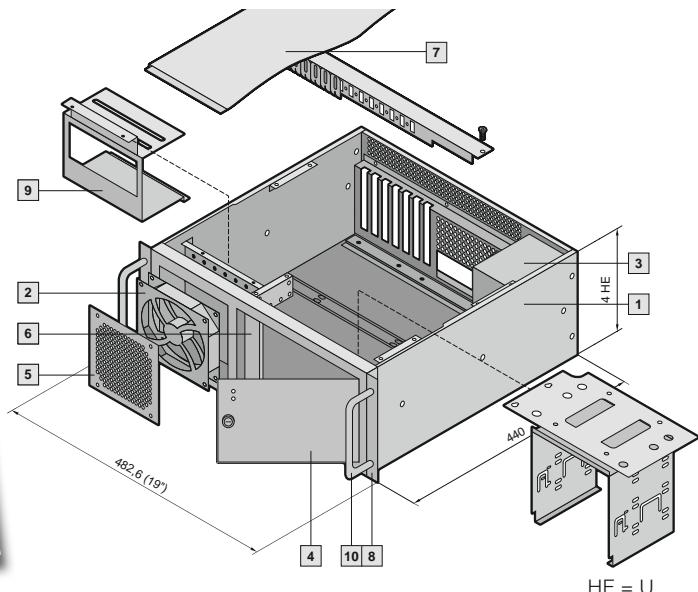


**Accessories** Page 64

## ATX 4 U, sheet steel



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HE = U

**Technical specifications:**  
482.6 mm (19") rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5 1/4" and 1 x 3 1/2" drives.  
Width: 482.6 mm (19")  
Height: 4 U (177.0 mm)  
Side panels: 174.0 mm  
Total depth: 442.5 mm  
Suitable for mounting on slide rails.

**Material/surface finish:**  
Case, covers, front panels: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

**Standards:**  
Complies with IEC 60 297-3 and ATX specification 2.01

**Special designs available on request.**

**Supply includes:**

- [1] Rack-mount system 4 U, including drive holder
- [2] 1 x 120 mm fan and filter mat, exchangeable from the front
- [3] ATX power pack 300 W
- [4] Front door, vertically hinged, lockable

[5] Front panel with ventilation holes and filter mat

[6] LED displays, speakers, Reset switch, on/off switch

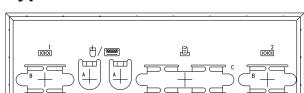
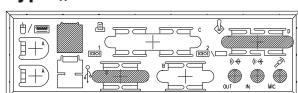
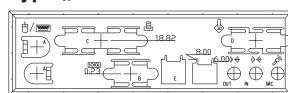
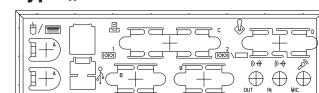
[7] Cover

[8] Two 482.6 mm (19") flanges

[9] Drive holder for 4 x 3 1/2" hard drives

	Packs of		Page
<b>U</b>		<b>4</b>	
<b>Width mm</b>		482,6 (19")	
<b>Height of flanges/side panels, mm</b>		177,0/174,0	
<b>Depth mm</b>		442,5/440,0	
<b>Model No. RP basic system fully assembled</b>	1	<b>3659.900</b>	
<b>Accessories</b>			
Card retainer	7	<b>3659.010</b>	65
Mounting bar for card retainer	1	<b>3659.090</b>	65
Unused slot cover	5	<b>3659.030</b>	64
Cover for 5 1/4" drive space	1	<b>3659.110</b>	64
Cover for 3 1/2" drive space	1	<b>3659.410</b>	64
Uninterruptible power supply	1	<b>3659.080</b>	161
Telescopic slides for 600 mm enclosure depth	1 set	<b>3659.180</b>	64
Telescopic slides for 800 mm enclosure depth	1 set	<b>3659.190</b>	64
[10] Front handles for ATX 4 U	2	<b>3659.240</b>	64
<b>ATX I/O covers, sheet steel<sup>1)</sup></b>			
Type „Aurora Marl“	1	<b>3659.040</b>	—
Type „Tucson“/„Venus“	1	<b>3659.130</b>	—
Type „Providence“	1	<b>3659.140</b>	—

<sup>1)</sup> Other versions available on request; please specify the type of mainboard.

**ATX I/O covers:****Type „Aurora Marl“****Type „Venus“****Type „Providence“****Type „Tucson“**

**Accessories** Page 64

# INDUSTRIAL PCs

## ATX Economy with front door, 4 U, sheet steel



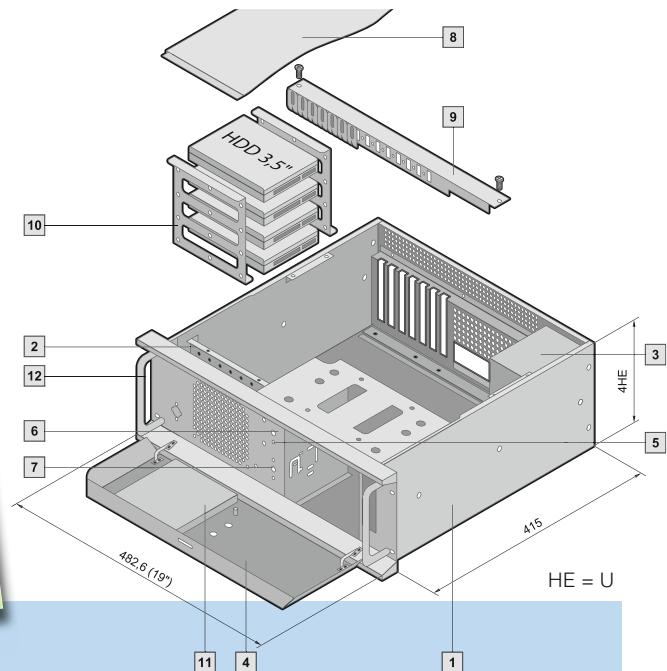
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**Technical specifications:**  
482,6 mm (19") rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5 1/4" and 1 x 3 1/2" drives.  
Width: 482,6 mm (19")  
Height 4 U (177,0 mm)  
Total s. depth: 430 mm  
EMC prepared

**Material/surface:**  
Case, cover:  
1,2 mm sheet steel, zinc plated, passivated front door 1,2 mm, sheet steel spray finished in, RAL 9035 unpainted contact points

**Standards:**  
Complies with IEC 60 297-3 and ATX-specification 2.01

**Special designs available on request**



### Supply includes:

- 1 Rack-mount system 4 U, including drive holder
- 2 1 x 120 mm fans and filter mat
- 3 ATX power pack 300 W

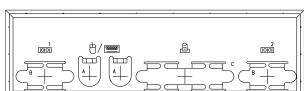
- 4 Front door, horizontally hinged, lockable
- 5 LED displays, speakers
- 6 Reset button
- 7 On/off switch
- 8 Cover

	Packs of		Page
<b>U</b>		<b>4</b>	
<b>Width mm</b>	482,6 (19")		
<b>Height of flanges/side panels, mm</b>	177,0/174,0		
<b>Depth mm</b>	430,0/415,0		
<b>Model No. RP basic system fully assembled</b>	1	<b>3659.100</b>	
<b>Accessories</b>			
[9] Card retainer	7	<b>3659.010</b>	65
Mounting bar for card retainer	1	<b>3659.090</b>	65
Unused slot cover	5	<b>3659.030</b>	64
Cover for 5 1/4" drive space	1	<b>3659.110</b>	64
Cover for 3 1/2" drive space	1	<b>3659.410</b>	64
[10] Drive holder	1	<b>3659.230</b>	64
[11] Spare filter mat	1	<b>3659.120</b>	—
Uninterruptible power supply	1	<b>3659.080</b>	145
Telescopic slides for 600 mm enclosure depth	1 set	<b>3659.180</b>	64
Telescopic slides for 800 mm enclosure depth	1 set	<b>3659.190</b>	64
[12] Front handles for ATX 4 U	2	<b>3659.240</b>	64
<b>ATX I/O covers, sheet steel<sup>1)</sup></b>			
Type „Aurora Marl“	1	<b>3659.040</b>	—
Type „Tucson“, „Venus“	1	<b>3659.130</b>	—
Type „Providence“	1	<b>3659.140</b>	—

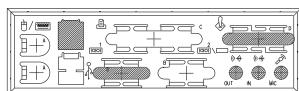
<sup>1)</sup> Other Versions available on request; please specify the type of mainboard.

### ATX I/O covers:

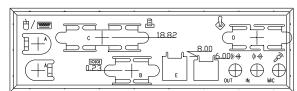
#### Type „Aurora Marl“



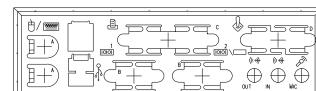
#### Type „Venus“



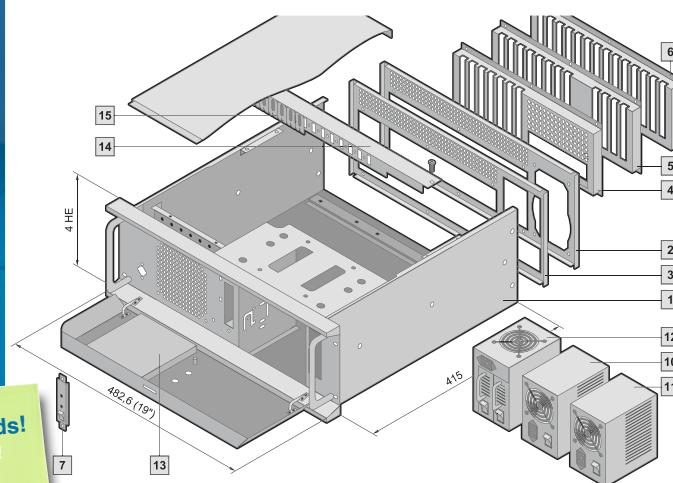
#### Type „Providence“



#### Type „Tucson“



## Modular system AT/ATX Vario Economy with front door, 4 U, sheet steel



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The modular principle of AT/ATX Vario Economy allows installation to accommodate individual requirements. The basic case may be fitted for both AT and ATX applications with the appropriate selection of rear panels, power packs and front trim panels. For self-assembly, or on request fully assembled and wired.

**Technical specifications:**  
482.6 mm (19") rack-mount system for the installation of ATX/ Mini-ATX. Micro-ATX or Baby AT boards and 3 x 5 $\frac{1}{4}$ " and 1 x 3 $\frac{1}{2}$ " drives.  
Width: 482.6 mm (19")  
Height: 4 U (177.0/174.0 mm)  
Total depth: 430 mm

**Material/surface finish:**  
Case, cover:  
1.2 mm sheet steel, zinc-plated, passivated  
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

**Standards:**  
Complies with IEC 60 297-3 and ATX specification 2.01

**Special designs available on request.**

**Basic enclosure supply includes:**

- [1] Case 4 U, 430 mm deep including assembly parts, covers, drive holder, fan, horizontally hinged front door, and air filter.

**Note:**  
Rear panel, front trim panel and power pack should be ordered separately (for self-assembly).

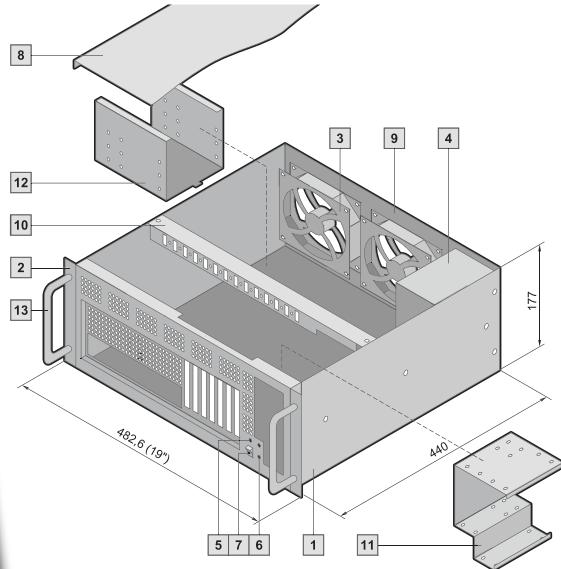
	Packs of							Page
U		4						
		Installation for AT/ATX power pack (PS/2)			Installation for redundant power pack (PS/2)			
		ATX	AT 8 + 4 slot	AT 14 slot	ATX	AT 8 + 4 slot	AT 14 slot	
<b>Model No. RP basic enclosure fitted</b>	1				3659.400			
<b>Installation, rear</b>								
[2] Rear panel for AT/ATX power pack	1	3659.290	3659.290	3659.290	—	—	—	65
[3] Rear panel for redundant power pack	1	—	—	—	3659.310	3659.310	3659.310	65
[4] Slotted rear panel for ATX 7 slots	1	3659.320	—	—	3659.320	—	—	65
[5] Slotted rear panel 8 + 4 slots for AT	1	—	3659.330	—	—	3659.330	—	65
[6] Slotted rear panel 14 slots for AT	1	—	—	3659.340	—	—	3659.340	65
<b>Installation, front</b>								
[7] Front trim panel ATX with 2 x LED, reset switch	1	3659.350	—	—	3659.350	—	—	65
<b>Power packs</b>								
[10] ATX power pack 300 W, PFC passive	1	3688.121	—	—	—	—	—	
ATX power pack 400 W, PFC active	1	9916.222	—	—	—	—	—	162
[11] AT power pack 300 W, PFC passive	1	—	3688.118	3688.118	—	—	—	162
[12] Redundant power pack (PS/2), 2 x 300 W	1	—	—	—	3688.123	—	—	
Fan 12 V DC, 60 mm, for the rear panel	2	3659.250	3659.250	3659.250	3659.250	3659.250	3659.250	65
[13] Spare filter mat	1	3659.120	3659.120	3659.120	3659.120	3659.120	3659.120	—
<b>Accessories</b>								
[14] Mounting bar for card retainer	1	3659.090	3659.090	3659.090	3659.090	3659.090	3659.090	65
[15] Card retainer	7	3659.010	3659.010	3659.010	3659.010	3659.010	3659.010	65

# INDUSTRIAL PCs

## ATX with front connections for 482.6 mm (19") installation, 4 U



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**Technical specifications:**  
482.6 mm (19") rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 1 x 5 1/4" and 1 x 3 1/2" drives.  
Width: 482.6 mm (19")  
Height: 4 U  
Flanges: 177.0 mm  
Side panels: 174.0 mm  
Total depth: 442.5 mm  
Connections for I/Os, front EMC prepared. Suitable for mounting on slide rails.

**Material/surface finish:**  
Case, covers:  
1.2 mm sheet steel,  
spray-finished in RAL 7035,  
unpainted contact points  
**Standards:**  
Complies with IEC 60 297-3 and ATX specification 2.01  
**Special designs available on request.**

**Supply includes:**

- 1 Rack-mount system 4 U, including drive holder
- 2 19" flanges
- 3 2 x 120 mm fans
- 4 ATX power pack 300 W
- 5 LED displays
- 6 Reset button
- 7 On/off switch

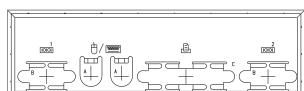
- 8 Cover
- 9 Rear panel with cutout and connection for power pack
- 10 Mounting bar for card retainer
- 11 Drive holder for 1 x 5 1/4" and 1 x 3 1/2"
- 12 Drive holder for 3 x 3 1/2" and hard drives

	Packs of		Page
<b>U</b>		<b>4</b>	
<b>Width mm</b>		482,6 mm (19")	
<b>Height of flanges/side panels, mm</b>		177,0/174,0	
<b>Depth mm</b>		442,5/440,0	
<b>Model No. RP basic system fully assembled</b>	1	<b>3659.700</b>	
<b>Accessories</b>			
Card retainer	7	<b>3659.010</b>	65
Unused slot cover	5	<b>3659.030</b>	64
Cover for 5 1/4" drive space	1	<b>3659.110</b>	64
Cover for 3 1/2" drive space	1	<b>3659.410</b>	64
Telescopic slides for 600 mm enclosure depth	1 set	<b>3659.180</b>	64
Telescopic slides for 800 mm enclosure depth	1 set	<b>3659.190</b>	64
<b>13</b> Front handles for ATX 4 U	2	<b>3659.240</b>	64
<b>ATX I/O covers, sheet steel<sup>1)</sup></b>			
Type „Aurora Marl“	1	<b>3659.040</b>	—
Type „Tucson“/„Venus“	1	<b>3659.130</b>	—
Type „Providence“	1	<b>3659.140</b>	—

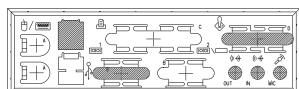
<sup>1)</sup> Other versions available on request; please specify the type of mainboard.

### ATX I/O covers:

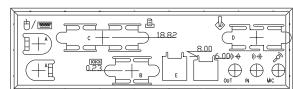
#### Type „Aurora Marl“



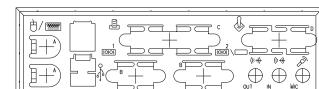
#### Type „Venus“



#### Type „Providence“



#### Type „Tucson“

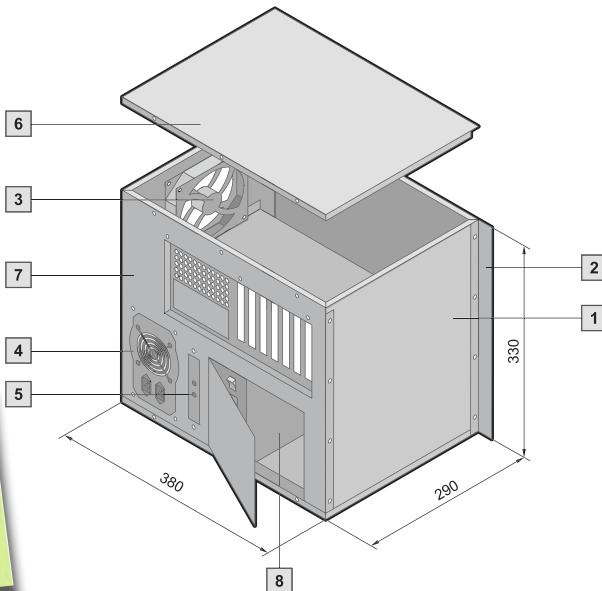


**Accessories** Page 64

## ATX with front connections for wall mounting



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see page 14



**Technical specifications:**  
System for the installation of ATX/Mini-ATX or Micro-ATX boards and 3 x 5 1/4" and 1 x 3 1/2" drives, vertical.  
Width: 380 mm  
Height: 330 mm  
Total depth: 292.5 mm  
Connections for I/Os, front  
EMC prepared.  
Suitable for mounting on mounting plates.

**Material/surface finish:**  
Case, covers:  
1.2 mm sheet steel, zinc-plated, passivated, unpainted, unpainted contact points

**Standards:**  
Complies with IEC 60 297-3 and ATX specification 2.01

**Special designs available on request.**

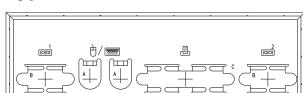
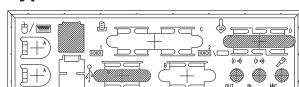
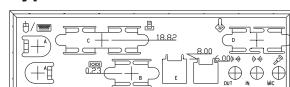
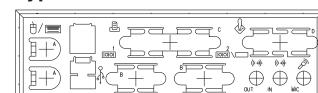
**Supply includes:**

- 1 Rack-mount system, including drive holder
- 2 Flanges for wall mounting
- 3 1 x 120 mm fan
- 4 ATX power pack 300 W
- 5 LED displays

- 6 Cover
- 7 Front panel
- 8 Drive holder for 3 x 5 1/4" and 1 x 3 1/2"

	Packs of		Page
Width mm		380,0	
Height mm		330,0	
Depth mm		292,5/290,0	
<b>Model No. RP basic system fully assembled</b>	1	<b>3659.710</b>	
<b>Accessories</b>			
Unused slot cover	5	3659.030	64
Cover for 5 1/4" drive space	1	3659.110	64
Cover for 3 1/2" drive space	1	3659.410	64
Uninterruptible power supply	1	3659.080	161
<b>ATX I/O covers, sheet steel<sup>1)</sup></b>			
Type „Aurora Marl“	1	3659.040	—
Type „Tucson“, „Venus“	1	3659.130	—
Type „Providence“	1	3659.140	—

<sup>1)</sup> Other versions available on request; please specify the type of mainboard.

**ATX I/O-Covers:****Type „Aurora Marl“****Type „Venus“****Type „Providence“****Type „Tucson“**

# INDUSTRIAL PCs

## ACCESSORIES



### Unused slot cover

Screw-on cover to conceal slot cut-outs which are not required.

**Material:**

Sheet steel, clear-chromated

**Supply includes:**

Assembly parts.

Packs of  
5

**Order No.**  
**3659.030**



### Cover for drives

To conceal the 3½" or 5¼" drive slots.

**Material:**

sheet steel, zinc-plated, spray-finished in RAL 7035

**Supply includes:**

Assembly parts.

Design	Packs of	<b>Order No.</b>
3½"	1	<b>3659.410</b>
5¼"	1	<b>3659.110</b>

**For ATX HeiPac**

Design	Packs of	<b>Order No.</b>
5¼"	1	<b>3659.050</b>



### Telescopic slides

Facilitate optimum accessibility to the units, even when built-in.  
For up to a maximum enclosure width of 426 mm.

**Load capacity:**

30 kg

**Material:**

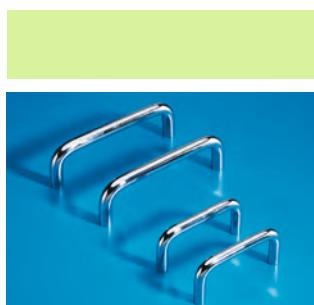
Sheet steel

**Supply includes:**  
1 set = 2 telescopic slides,  
installation kit,  
assembly parts.

For enclosure depth mm	Maximum extension mm	<b>Order No.</b>
600	511.2	<b>3659.180</b>
800	596.4	<b>3659.190</b>

**Note:**

Only applicable in connection with L-shaped 19" profiles



### Front handles

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.

For enclosure height (U)	Packs of	<b>Order No.</b>
1	2	<b>3659.540</b>
2	2	<b>3659.020</b>
4	2	<b>3659.240</b>



### Drive holder

The drive holder will accommodate a maximum of 4 additional 3½" hard disks. They are mounted inside the enclosure behind the fan.

**Material:**

Sheet steel, zinc-plated

**Supply includes:**  
Assembly parts.

For system	Packs of	<b>Order No.</b>
ATX Economy	1 set	<b>3659.230</b>
ATX HeiPac	1 set	<b>3659.060</b>

# INDUSTRIAL PCs ACCESSORIES



## Card retainer

For secure attachment and stabilisation of slot cards up to 327 mm depth. The card retainers are height-adjustable so that even cards of different heights may be securely attached.

**A mounting bar is needed to fit the card retainer** (already included with ATX HeiPac).

**Material:**

Card retainer: Plastic

Mounting bar: Sheet steel, zinc-plated

### Card retainer

Packs of	Order No.
7	<b>3659.010</b>

### Mounting bar

Packs of	Order No.
1	<b>3659.090</b>

## Adaptor



For the installation of 3½" hard disks or floppies in 5¼" installation slots.

**Material:**

Sheet steel, zinc-plated

Front panel: Spray-finished in RAL 7035

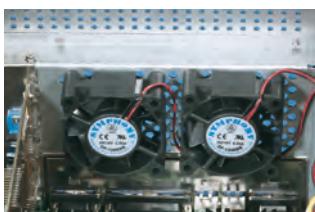
**Supply includes:**

Assembly parts.

### Design

Design	Packs of	Order No.
for 3½" hard disk	1	<b>3659.270</b>
for 3½" floppy	1	<b>3659.280</b>

## DC fan for rear panel



Fan 12 V DC, 60 mm, for mounting on the rear panel. Including two 4-pole connectors with terminal.

**Supply includes:**

2 fans with connection cable, including assembly parts.

### Packs of

Packs of	Order No.
2	<b>3659.250</b>

## Rear panels



For the installation of AT/ATX Economy. Optionally with cut-out for AT/ATX power pack or redundant power pack.

**Material:**

Sheet steel, zinc-plated

**Supply includes:**

Assembly parts.

### Design

Design	Packs of	Order No.
for AT/ATX PS/2 and redundant power supply	1	<b>3659.290</b>

## Slotted rear panels



For the installation of AT/ATX Economy. Mounted on the rear panels. Optionally for AT (8 + 4 or 14 slots) or ATX (7 slots).

**Material:**

Sheet steel, zinc-plated

**Supply includes:**

Assembly parts.

### Design

Design	Packs of	Order No.
1 AT 4 + 8 slot	1	<b>3659.330</b>
2 AT 14 slot	1	<b>3659.340</b>
3 ATX 7 slot	1	<b>3659.320</b>

## Front trim panels



For the installation of AT/ATX Economy. Mounted in the front of the enclosure.

Optionally for:

- AT (2 x LED, reset button)
- ATX (2 x LED, reset button)
- ATX (2 x LED, reset button), electronics for automatic restart following mains failure

### Design

Design	Packs of	Order No.
ATX	1	<b>3659.350</b>

## INSTRUMENT CASES/SYSTEM ENCLOSURES



# INSTRUMENT CASES/SYSTEM ENCLOSURES

## High functionality and modern design

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 (desktop or rack-mount enclosure) is fully compatible with the latest HeiPac subrack range, making it ideal for individual configuration and assembly as a micro-computer system. At just 1 U, the HeiBox system enclosure offers a high packaging density in the smallest space.

### WE MEET YOUR INDIVIDUAL NEEDS!

You are looking for a product in the field of electronic packaging that is not in our catalogue?

Please contact us! We will gladly submit a tailored quotation.

Phone: + 49 – 9126 – 29 34 0

Email: [eps-quote@heitec.de](mailto:eps-quote@heitec.de)



### HeiBox

**System enclosure** for horizontal installation of individual boards, hubs, routers and modems.

**Mounting plate** of sheet steel for individual population.

**Mounting kit** for horizontal installation of boards.

### HeiPac Vario-Module

**System enclosure** for direct installation of PCBs or boardtype plug-in units.

**Basic enclosure** optionally for EMC or non-EMC applications and suitable for individual configuration, e. g. with cover plates.

Optionally with corner trims for configuration as an instrument case or with 482.6 mm (19") flanges for configuration as a rack-mount enclosure.

### HeiCase

**All-metal instrument case for 482.6 mm (19") slide-in equipment**

The perfect "safe" for valuable electronics. Extruded aluminium sections and die-cast elements form an extremely robust yet lightweight enclosure.

**Stability and non-slip properties** are guaranteed by 10 mm high corner caps. The distance from the desktop or from the lower enclosure offers excellent ventilation conditions.

**Slide-in strips** simply slide into the required profile channel, for the support of any required attachment.

### BENEFITS AT A GLANCE

#### HeiBox

- Horizontal installation of single system elements
- Standard mounting plate
- Small construction with only 1 U

#### HeiPac Vario-Module

- Optionally for use as an instrument case or rack-mount enclosure

- Portable
- Optionally as EMC version

#### HeiCase

- Instrument case for the installation of 19" - slide-in assemblies and- elements
- All-metal construction ensures outstanding mechanical protection
- Ergonomic handles, bottom- and door types

- For mobile and stationary applications

- Standard in 3 colour shades

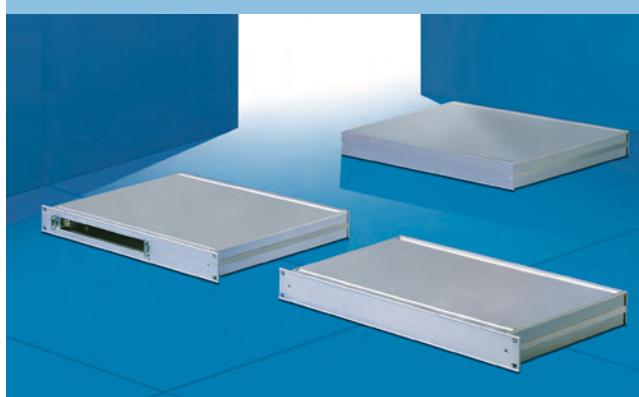
- Optionally as tower version

- Front doors of aluminium or acrylic glass

- Stackable

# HEITEC INSTRUMENT CASES/SYSTEM ENCLOSURES OVERVIEW

HeiBox



## System enclosure

Order No. see page 70

### Applications:

Optionally for use as an instrument case or rack-mount enclosure. Accommodates Eurocards/Double Eurocards (horizontal), bridges, hubs, routers or modems.

### Technical specifications:

- 19" system enclosure, complies with IEC 60 297-1
- 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 of just 1 U
- Easy and fast mounting
- Easy modification from instrument case to rack-mount system
- EMC upgradeable
- Individual assembly according to customer needs

HeiPac Vario-Module / EMC



## System enclosure

Order No. see page 71-76

### 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 60 297-1/3
- 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 – 370 mm
- Protection category IP 40
- Extruded aluminium section
- Variable depth interior installation

### Benefits at a glance:

- Easy modification from instrument case to rack-mount system
- Variable depth interior installation
- Broad range of accessories
- Neutral design
- Basic case with variable expansions
- Optional EMC version



# HEITEC INSTRUMENT CASES/SYSTEM ENCLOSURES OVERVIEW

## HeiCase



### Instrument case

Order No. see page 80-81

#### Applications:

Instrument case for installation of 19" slide-in assemblies and elements. For mobile and stationary applications.

#### Technical specifications:

- Instrument case, complies with IEC 60 297-3
- Height: 1 -12 U
- Installation with: ½ 19" and 19"
- Depth: 300 – 540 mm
- Protection category IP 40
- Extruded aluminum section
- Symmetrical construction
- Variable depth/height interior installation

#### Benefits at a glance:

- Outstanding stability
- Upgradeable to a tower version
- Standard in 3 colors
- Ergonomic handles, bottom- and door types
- For mobile and stationary applications



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INDIVIDUAL NEEDS!**

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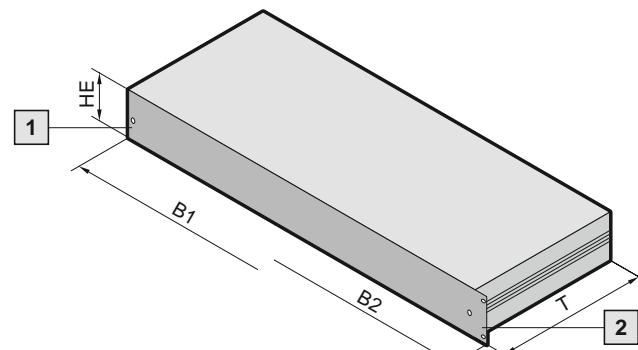
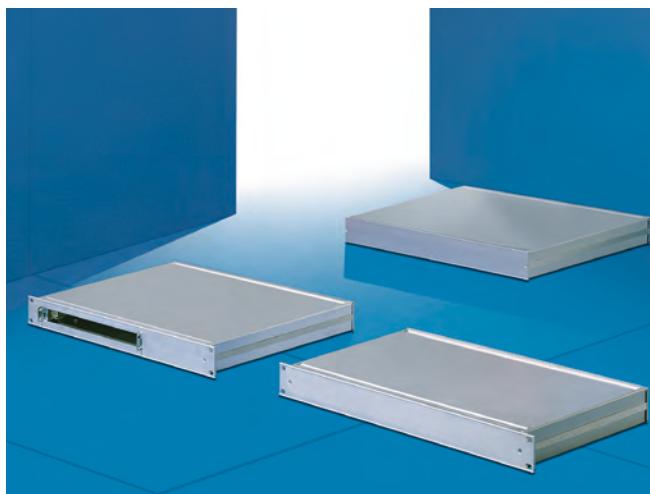
Phone: + 49 – 9126 – 29 34 0  
Email: [eps-quote@heitec.de](mailto:eps-quote@heitec.de)



# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiBox

### HeiBox system enclosure 1 U



B = Width  
T = Depth  
HE = U

#### Technical specifications:

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

Option of installing 1 VME or CPC board horizontally.

#### Design:

System enclosure 1 U, to IEC 60 297-1. Optionally available for 19" rackmounting in the enclosure or as an instrument case version.

**1** Equipped as an instrument case

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

#### Material/surface finish:

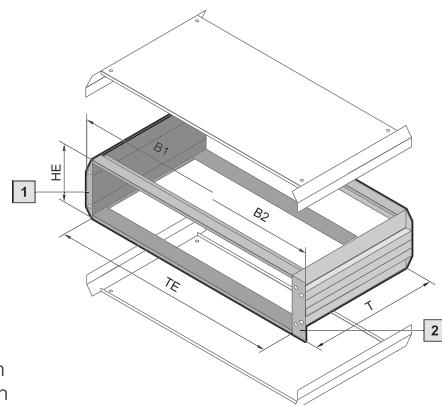
Side panels:  
Extruded aluminium section, untreated  
Base/cover trays:  
Aluminium, clear-chromated  
Front/rear panel:  
Extruded aluminium section, clear-chromated  
Mounting plate:  
Sheet steel

U	1	1	1	1	1	-	-
<b>Width (B1) mm</b>	447	447	447	447	447	-	-
<b>Width (B2) mm</b>	19"(482,6)	19"(482,6)	19"(482,6)	19"(482,6)	19"(482,6)	19"(482,6)	19"(482,6)
<b>Depth (T) mm</b>	150	200	250	300	350	250	350
<b>Model No. RP instrument case</b>	<b>3687.819</b>	<b>3687.820</b>	<b>3687.821</b>	<b>3687.822</b>	<b>3687.823</b>	-	-
<b>Model No. RP rack case</b>	<b>3687.814</b>	<b>3687.815</b>	<b>3687.816</b>	<b>3687.817</b>	<b>3687.818</b>	-	-
<b>Model No. RP rack-mount including mounting kit for double Euroboards</b>	-	-	-	-	-	<b>3684.072</b>	<b>3684.073</b>
<b>Supply includes</b>							
Side panel	2	2	2	2	2	2	2
Front panel	1	1	1	1	1	1	1
Rear panel	1	1	1	1	1	1	1
Base/cover tray	2	2	2	2	2	2	2
Mounting kit	-	-	-	-	-	1	1
<b>Accessories</b>							
EMC set	<b>3684.080</b>						
Mounting plate	<b>3684.074</b>	<b>3684.075</b>	<b>3684.076</b>	<b>3684.077</b>	<b>3684.078</b>	-	-

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE

### HeiPac Vario-Module 2 U



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

#### Technical specifications:

Optionally for use as an instrument case or rack-mount enclosure. External dimensions to IEC 60 297-1 for installation in enclosures, 482,6 mm (19"). Installation dimensions for plug-in units according to IEC 60 297-3-101.

**Protection category:**  
IP 40 for non-vented version

#### Supply includes:

2 side panels  
4 horizontal rails  
4 threaded inserts  
2 corner trims  
Assembly parts

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

#### Material/surface finish:

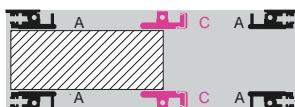
Side panels:  
Extruded aluminium section, spray-finished in RAL 7035  
Cross profiles:  
Extruded aluminium section, clear-chromated  
Corner trims:  
zinc-plated, spray-finished in RAL 7035  
Side trim panels:  
Extruded aluminium section, spray-finished in RAL 7035

#### Note:

Corner trims, mounting flanges and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see pages 100 – 101.

#### Horizontal rail configuration



2 U

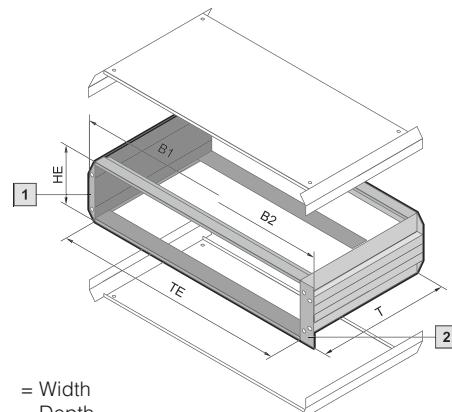
HeiPac Vario-Module	PU	2 U						page
<b>Installation width (TE)</b>		42	42	63	63	84	84	
<b>Width (B1) mm</b>		235,6	235,6	342,3	342,3	449,0	449,0	
<b>Width (B2) mm</b>		251,6	251,6	358,3	358,3	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	250,4	310,4	250,4	310,4	
<b>Mod.No. VM Basic enclosure</b>	1 pc.	<b>3982.000</b>	<b>3982.020</b>	<b>3982.290</b>	<b>3982.300</b>	<b>3982.010</b>	<b>3982.030</b>	
<b>Also required</b>								
Top covers – with vent holes – without vent holes	1 pc. 1 pc.	<b>3982.941</b> <b>3982.901</b>	<b>3982.951</b> <b>3982.911</b>	<b>3982.942</b> <b>3982.902</b>	<b>3982.952</b> <b>3982.912</b>	<b>3982.940</b> <b>3982.900</b>	<b>3982.950</b> <b>3982.910</b>	77 77
Bottom covers – with vent holes – without vent holes	1 pc. 1 pc.	<b>3982.741</b> <b>3982.701</b>	<b>3982.751</b> <b>3982.711</b>	<b>3982.742</b> <b>3982.702</b>	<b>3982.752</b> <b>3982.712</b>	<b>3982.740</b> <b>3982.700</b>	<b>3982.750</b> <b>3982.710</b>	77 77
Front corner trims for assembly as instrument case	2 pc.	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.30</b>	78
Flanges for configuration as rack-mount – without handle holes	2 pc.	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.20</b>	78
<b>Accessories</b>								
Front/rear panels		see page 135 – 150						
Rear adjustable feet	4 pc.	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.00</b>	79

Accessories HeiPac Vario-Module Page 71 HeiBox Page 70 HeiCase Page 80

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE

### HeiPac Vario-Module 2 U, EMC



**EMC**

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

#### Technical specifications:

Optionally for use as an instrument case or rack-mount enclosure. External dimensions according to IEC 60 297-1 for installation in enclosures, 482,6 mm (19"). Installation dimensions for plug-in units according to IEC 60 297-3-101.

#### Material/surface finish:

Side panels:

Extruded aluminium section, spray-finished in RAL 7035  
Cross profiles:  
Extruded aluminium section, clear-chromated  
Corner trims:  
zinc-plated, spray-finished in RAL 7035  
Side trim panels:  
Extruded aluminium section, spray-finished in RAL 7035

Contact points: conductive

**Protection category:**  
IP 40 for non-vented version

#### Supply includes:

2 side panels  
4 horizontal rails  
4 threaded inserts  
2 rear corner trims  
Assembly parts

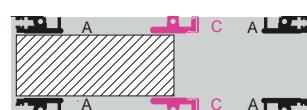
- 1** Equipped as an instrument case
- 2** Equipped as a rack-mount enclosure

#### Note:

Corner trims, mounting flanges and top/bottom covers have to be ordered separately.

Horizontal rails for additional installations have to be ordered separately, see pages 100 – 101.

#### Horizontal rail configuration



2 U

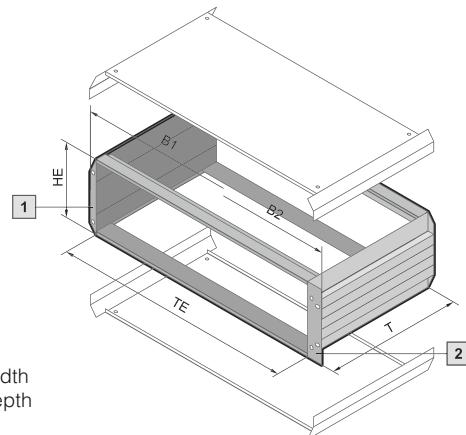
HeiPac Vario-Module	Packs of	2 U						page
<b>Installation width (HP)</b>		42	42	63	63	84	84	
<b>Width (B1) mm</b>		235,6	235,6	342,3	342,3	449,0	449,0	
<b>Width (B2) mm</b>		251,6	251,6	358,3	358,3	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	250,4	310,4	250,4	310,4	
<b>Order No. VM basic case EMC</b>	1	<b>3983.000</b>	<b>3983.020</b>	<b>3983.290</b>	<b>3983.300</b>	<b>3983.010</b>	<b>3983.030</b>	
<b>Also required</b>								
EMC top cover – with vent holes – without vent holes	1 1	<b>3981.941</b> <b>3981.901</b>	<b>3981.951</b> <b>3981.911</b>	<b>3981.942</b> <b>3981.902</b>	<b>3981.952</b> <b>3981.912</b>	<b>3981.940</b> <b>3981.900</b>	<b>3981.950</b> <b>3981.910</b>	77 77
EMC bottom cover – with vent holes – without vent holes	1 1	<b>3981.741</b> <b>3981.701</b>	<b>3981.751</b> <b>3981.711</b>	<b>3981.742</b> <b>3981.702</b>	<b>3981.752</b> <b>3981.712</b>	<b>3981.740</b> <b>3981.700</b>	<b>3981.750</b> <b>3981.710</b>	77 77
Corner trims for assembly as instrument case	2	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	<b>3981.300</b>	78
Flanges for configuration as rack-mount enclosure – without handle holes	2	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	<b>3981.200</b>	78
<b>EMC installation</b>								
EMC gaskets, horizontal – for upper/lower horizontal rail – between covers and horizontal rails	1 1	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	<b>3684.808</b>	117 117
EMC gaskets, vertical	1	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	<b>3684.245</b>	116
Front/rear panels EMC		see page 135 – 150						
<b>Accessories</b>								
Front/rear panels		see page 135 – 150						
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	79

**Accessories HeiPac Vario-Module** page 78 **HeiBox** page 70 **HeiCase** page 80

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE

### HeiPac Vario-Module 3 U



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

**Technical specifications:**  
May be used as a rack-mount enclosure or instrument case.  
External dimensions to IEC 60 297-1 for installation in 482.6 mm (19") racks.  
Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

**Material/Surface finish:**  
Side panels:  
Extruded aluminium section, spray finished in RAL 7035  
Horizontal rails:  
Extruded aluminium section, clear-chromated  
Corner trims:  
Die-cast zinc, spray-finished in RAL 7035  
Side trims:

Extruded aluminium section, spray-finished in RAL 7035

**Protection category:**  
IP 40 for non-vented version.

**Supply includes:**

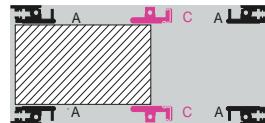
2 side panels,  
4 horizontal rails,  
4 threaded inserts,  
2 corner trims,  
assembly parts.

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

**Note:**  
Corner trims, mounting flanges and top and bottom covers must be ordered separately.

#### Horizontal rail configuration

Horizontal rails for further configuration must be ordered separately, see page 100 – 101.



3 U

HeiPac Vario-Module	Packs of	3 U							Page
<b>Installation width (HP)</b>		42	42	63	63	84	84	84	
<b>Width (B1) mm</b>		235,6	235,6	342,3	342,3	449,0	449,0	449,0	
<b>Width (B2) mm</b>		251,6	251,6	358,3	358,3	465,1	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	250,4	310,4	250,4	310,4	370,4	
<b>Model No. VM Basic enclosure</b>	1	<b>3982.040</b>	<b>3982.070</b>	<b>3982.050</b>	<b>3982.080</b>	<b>3982.060</b>	<b>3982.090</b>	<b>3982.100</b>	

**Also required**

Top covers									
– with vent holes	1	<b>3982.941</b>	<b>3982.951</b>	<b>3982.942</b>	<b>3982.952</b>	<b>3982.940</b>	<b>3982.950</b>	<b>3982.960</b>	77
– without vent holes	1	<b>3982.901</b>	<b>3982.911</b>	<b>3982.902</b>	<b>3982.912</b>	<b>3982.900</b>	<b>3982.910</b>	<b>3982.920</b>	77
Bottom covers									
– with vent holes	1	<b>3982.741</b>	<b>3982.751</b>	<b>3982.742</b>	<b>3982.752</b>	<b>3982.740</b>	<b>3982.750</b>	<b>3982.760</b>	77
– without vent holes	1	<b>3982.701</b>	<b>3982.711</b>	<b>3982.702</b>	<b>3982.712</b>	<b>3982.700</b>	<b>3982.710</b>	<b>3982.720</b>	77
Front corner trims for assembly as instrument case	2	<b>3981.310</b>	78						
Flanges for configuration as rack-mount									
– without handle holes	2	<b>3981.210</b>	78						
– with handle holes	2	<b>3981.260</b>	78						

**Accessories**

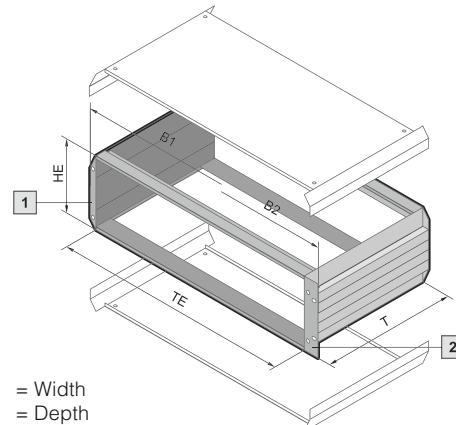
Front/rear panels		see page 135 – 150							
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	78
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	104
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	79

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

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE

### HeiPac Vario-Module 3 U, EMC



**EMC**

#### Technical specifications:

May be used as a rack-mount enclosure or instrument case. External dimensions to IEC 60 297-1 for installation in 482.6 mm (19") racks. Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

#### Material/Surface finish:

Side panels: Extruded aluminium section, spray-finished in RAL 7035  
Horizontal rails: Extruded aluminium section, clear-chromated  
Corner trims: Die-cast zinc, spray-finished in RAL 7035

#### Side trims:

Extruded aluminium section, spray-finished in RAL 7035  
Contact points: Conductive

#### Protection category:

IP 40 for non-vented version.

#### Supply includes:

2 side panels,  
4 horizontal rails,  
4 threaded inserts,

2 rear corner trims,  
assembly parts.

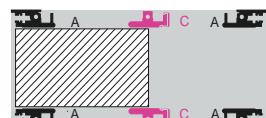
**1** Equipped as an instrument case

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

#### Note:

Corner trims, mounting flanges and top and bottom covers must be ordered separately.

#### Horizontal rail configuration



3 U

HeiPac Vario-Modul	Packs of	3 U							Page
<b>Installation width (TE)</b>		42	42	63	63	84	84	84	
<b>Width (B1) mm</b>		235,6	235,6	342,3	342,3	449,0	449,0	449,0	
<b>Width (B2) mm</b>		251,6	251,6	358,3	358,3	465,1	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	250,4	310,4	250,4	310,4	370,4	
<b>Model No. VM Basic enclosure EMC</b>	1	<b>3983.040</b>	<b>3983.070</b>	<b>3983.050</b>	<b>3983.080</b>	<b>3983.060</b>	<b>3983.090</b>	<b>3983.100</b>	

#### Also required

EMC top covers – with vent holes – without vent holes	1 1	<b>3981.941</b> <b>3981.901</b>	<b>3981.951</b> <b>3981.911</b>	<b>3981.942</b> <b>3981.902</b>	<b>3981.952</b> <b>3981.912</b>	<b>3981.940</b> <b>3981.900</b>	<b>3981.950</b> <b>3981.910</b>	<b>3981.960</b> <b>3981.920</b>	77 77
EMC bottom covers – with vent holes – without vent holes	1 1	<b>3981.741</b> <b>3981.701</b>	<b>3981.751</b> <b>3981.711</b>	<b>3981.742</b> <b>3981.702</b>	<b>3981.752</b> <b>3981.712</b>	<b>3981.740</b> <b>3981.700</b>	<b>3981.750</b> <b>3981.710</b>	<b>3981.760</b> <b>3981.720</b>	77 77
Front corner trims for assembly as instrument case	2	<b>3981.310</b>	78						
Flanges for configuration as rack-mount – without handle holes – with handle holes	2 2	<b>3981.210</b> <b>3981.260</b>	78 78						

#### EMC installation

EMC gaskets, horizontal – for upper/lower horizontal rail – between covers and horizontal rails	1 10	<b>3684.808</b> <b>3684.245</b>	117 117						
EMC gaskets, vertical	1	<b>3686.975</b>	116						
Front/rear panels EMC								see page 135 – 150	

#### Accessories

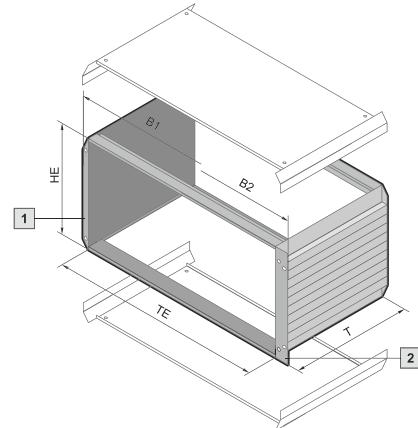
Front/rear panels		see page 135 – 150							
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	78
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	104
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	79

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

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE

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



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

#### Technical specifications:

May be used as a rack-mount enclosure or instrument case. External dimensions to IEC 60 297-1 for installation in 482.6 mm (19") racks. Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

#### Material/surface finish:

Side panels:  
Extruded aluminium section, spray-finished in RAL 7035

Horizontal rails:  
Extruded aluminium section, clear-chromated  
Corner trims:  
Die-cast zinc, spray-finished in RAL 7035

**Protection category:**  
IP 40 for non-vented version.

#### Supply includes:

2 side panels,  
4 horizontal rails,  
4 threaded inserts,  
2 rear corner trims,  
2 side trims centre,  
assembly parts.

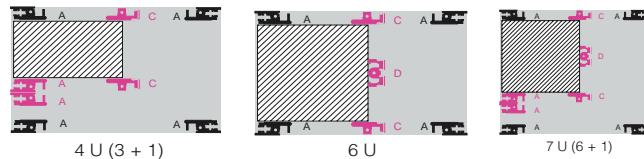
#### Note:

Corner trims, mounting flanges and top and bottom covers must be ordered separately.

**[1]** Equipped as an instrument case

**[2]** Equipped as a rack-mount unit

#### Horizontal rail configuration



Horizontal rails for further configuration must be ordered separately, see page 100 – 101.

HeiPac Vario-Module	Packs of	4 U (3 + 1)			6 U			7 U (6 + 1)		Page
<b>Installation width (TE)</b>		84	84	84	84	84	84	84	84	
<b>Width (B1) mm</b>		449,0	449,0	449,0	449,0	449,0	449,0	449,0	449,0	
<b>Width (B2) mm</b>		465,1	465,1	465,1	465,1	465,1	465,1	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	370,4	310,4	370,4	430,4	310,4	430,4	
<b>Model No. VM Basic enclosure</b>	1	<b>3982.110</b>	<b>3982.120</b>	<b>3982.130</b>	<b>3982.140</b>	<b>3982.150</b>	<b>3982.160</b>	<b>3982.170</b>	<b>3982.190</b>	

#### Also required

Top covers										
– with vent holes	1	<b>3982.940</b>	<b>3982.950</b>	<b>3982.960</b>	<b>3982.950</b>	<b>3982.960</b>	<b>3982.970</b>	<b>3982.950</b>	<b>3982.970</b>	77
– without vent holes	1	<b>3982.900</b>	<b>3982.910</b>	<b>3982.920</b>	<b>3982.910</b>	<b>3982.920</b>	<b>3982.930</b>	<b>3982.910</b>	<b>3982.930</b>	77
Bottom covers										
– with vent holes	1	<b>3982.740</b>	<b>3982.750</b>	<b>3982.760</b>	<b>3982.750</b>	<b>3982.760</b>	<b>3982.770</b>	<b>3982.750</b>	<b>3982.770</b>	77
– without vent holes	1	<b>3982.700</b>	<b>3982.710</b>	<b>3982.720</b>	<b>3982.710</b>	<b>3982.720</b>	<b>3982.730</b>	<b>3982.710</b>	<b>3982.730</b>	77
Front corner trims for assembly as instrument case	2	<b>3981.320</b>	<b>3981.320</b>	<b>3981.320</b>	<b>3981.330</b>	<b>3981.330</b>	<b>3981.330</b>	<b>3981.340</b>	<b>3981.340</b>	78
Flanges for configuration as rack-mount										
– without handle holes	2	<b>3981.220</b>	<b>3981.220</b>	<b>3981.220</b>	<b>3981.230</b>	<b>3981.230</b>	<b>3981.230</b>	<b>3981.240</b>	<b>3981.240</b>	78
– with handle holes	2	<b>3981.270</b>	<b>3981.270</b>	<b>3981.270</b>	<b>3981.280</b>	<b>3981.280</b>	<b>3981.280</b>	<b>3981.290</b>	<b>3981.290</b>	78

#### Accessories

Front/rear panel		see page 135 – 150								
Carrying handles	2	<b>3981.350</b>	<b>3981.360</b>	<b>3981.370</b>	<b>3981.360</b>	<b>3981.370</b>	<b>3981.380</b>	<b>3981.360</b>	<b>3981.380</b>	78
Front handles <sup>1)</sup>	2	<b>3636.010</b>	<b>3636.010</b>	<b>3636.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	<b>3666.010</b>	104
Rear adjustable feet	4	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	<b>3901.000</b>	79

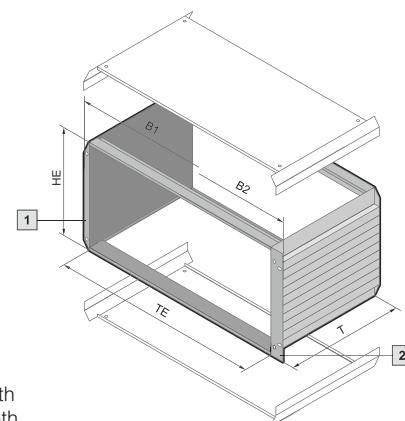
<sup>1)</sup> Only in conjunction with mounting flanges with handle holes.

Accessories HeiPac Vario-Module Page 78 HeiBox Page 70 HeiCase Page 80

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE

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



**EMC**

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

#### Technical specifications:

May be used as a rack-mount enclosure or instrument case. External dimensions to IEC 60 297-1 for installation in 482.6 mm (19") racks. Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

#### Material/surface finish:

Side panels:  
Extruded aluminium section,

spray-finished in RAL 7035  
Horizontal rails:  
Extruded aluminium section,  
clear-chromated  
Corner trims:  
Die-cast zinc,  
spray-finished in RAL 7035  
Contact points: Conductive

**Protection category:**  
IP 40 for non-vented version.

#### Supply includes:

2 side panels,  
4 horizontal rails,  
4 threaded inserts,  
2 rear corner trims,  
2 side trims centre,  
assembly parts.

#### Note:

Corner trims, mounting flanges and top and bottom covers must be ordered separately.

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

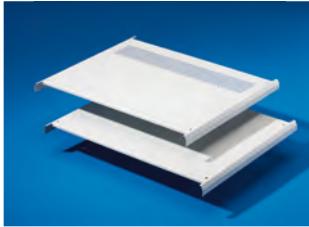
Horizontal rails for further configuration must be ordered separately, see page 100 – 101.

**Horizontal rail configuration**  
see page 75

HeiPac Vario-Module	Packs of	4 U (3 + 1)			6 U			7 U (6 + 1)			Page
<b>Installation width (TE)</b>		84	84	84	84	84	84	84	84	84	
<b>Width (B1) mm</b>		449,0	449,0	449,0	449,0	449,0	449,0	449,0	449,0	449,0	
<b>Width (B2) mm</b>		465,1	465,1	465,1	465,1	465,1	465,1	465,1	465,1	465,1	
<b>Depth (T) mm</b>		250,4	310,4	370,4	310,4	370,4	430,4	310,4	430,4	310,4	
<b>Model No. VM Basic enclosure EMC</b>	1	3983.110	3983.120	3983.130	3983.140	3983.150	3983.160	3983.170	3983.190		
<b>Also required</b>											
EMC top covers – with vent holes – without vent holes	1	3981.940 3981.900	3981.950 3981.910	3981.960 3981.920	3981.950 3981.910	3981.960 3981.920	3981.970 3981.930	3981.950 3981.910	3981.970 3981.930	3981.950 3981.910	77 77
EMC bottom covers – with vent holes – without vent holes	1	3981.740 3981.700	3981.750 3981.710	3981.760 3981.720	3981.750 3981.710	3981.760 3981.720	3981.770 3981.730	3981.750 3981.710	3981.770 3981.730	3981.750 3981.730	77 77
Front corner trims for assembly as instrument case	2	3981.320	3981.320	3981.320	3981.330	3981.330	3981.330	3981.340	3981.340		78
Flanges for configuration as rack-mount – without handle holes – with handle holes	2	3981.220 3981.270	3981.220 3981.270	3981.220 3981.270	3981.230 3981.280	3981.230 3981.280	3981.230 3981.280	3981.240 3981.290	3981.240 3981.290		78 78
<b>EMC installation</b>											
EMC gaskets, horizontal – for upper/lower horizontal rail – between covers and horizontal rails	1	3684.808 3684.245	117 117								
EMC gaskets, vertical	1	3686.976	3686.976	3686.976	3686.977	3686.977	3686.977	3686.978	3686.978	3686.978	116
Front/rear panels EMC											
							see page 135 – 150				
<b>Accessories</b>											
Front/rear panel							see page 135 – 150				
Carrying handles	2	3981.350	3981.360	3981.370	3981.360	3981.370	3981.380	3981.360	3981.370		78
Front handles <sup>1)</sup>	2	3636.010	3636.010	3636.010	3666.010	3666.010	3666.010	3666.010	3666.010		104
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000		79

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

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eps-quote@heitec.de  
see page 14



# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE ACCESSORIES

### Top covers

**For HeiPac Vario-Module**

**Standard version**

**Material:**

Sheet steel, spray-finished

**Colour:**

RAL 7035

**EMC version**

**Material:**

Sheet steel, spray-finished

Contact points: Conductive

HP	Depth mm	<b>Model No. VM standard</b>		<b>Model No. VM EMC</b>	
		with vent holes	without vent holes	with vent holes	without vent holes
42	250,4	<b>3982.941</b>	<b>3982.901</b>	<b>3981.941</b>	<b>3981.901</b>
	310,4	<b>3982.951</b>	<b>3982.911</b>	<b>3981.951</b>	<b>3981.911</b>
63	250,4	<b>3982.942</b>	<b>3982.902</b>	<b>3981.942</b>	<b>3981.902</b>
	310,4	<b>3982.952</b>	<b>3982.912</b>	<b>3981.952</b>	<b>3981.912</b>
84	250,4	<b>3982.940</b>	<b>3982.900</b>	<b>3981.940</b>	<b>3981.900</b>
	310,4	<b>3982.950</b>	<b>3982.910</b>	<b>3981.950</b>	<b>3981.910</b>
	370,4	<b>3982.960</b>	<b>3982.920</b>	<b>3981.960</b>	<b>3981.920</b>
	430,4	<b>3982.970</b>	<b>3982.930</b>	<b>3981.970</b>	<b>3981.930</b>

### Bottom covers

**For HeiPac Vario-Module**

**Standard version**

**Material:**

Sheet steel, spray-finished

**Colour:**

RAL 7035

**EMC version**

**Material:**

Sheet steel, spray-finished

Contact points: Conductive

HP	Depth mm	<b>Model No. VM standard</b>		<b>Model No. VM EMC</b>	
		with vent holes	without vent holes	with vent holes	without vent holes
42	250,4	<b>3982.741</b>	<b>3982.701</b>	<b>3981.741</b>	<b>3981.701</b>
	310,4	<b>3982.751</b>	<b>3982.711</b>	<b>3981.751</b>	<b>3981.711</b>
63	250,4	<b>3982.742</b>	<b>3982.702</b>	<b>3981.742</b>	<b>3981.702</b>
	310,4	<b>3982.752</b>	<b>3982.712</b>	<b>3981.752</b>	<b>3981.712</b>
84	250,4	<b>3982.740</b>	<b>3982.700</b>	<b>3981.740</b>	<b>3981.700</b>
	310,4	<b>3982.750</b>	<b>3982.710</b>	<b>3981.750</b>	<b>3981.710</b>
	370,4	<b>3982.760</b>	<b>3982.720</b>	<b>3981.760</b>	<b>3981.720</b>
	430,4	<b>3982.770</b>	<b>3982.730</b>	<b>3981.770</b>	<b>3981.730</b>

### Feet



With fold-out support stand.  
Load capacity up to 20 kg.

**Material:**

Plastic

**Colour:**  
RAL 7035

Packs of	<b>Model No. VM</b>
2	<b>3919.000</b>

### Mounting plate



For mounting heavy components.

**Material:**

Aluminium

**Supply includes:**  
Assembly parts.

HP	Depth mm	Packs of	<b>Model No. VM</b>
42	250	1	<b>3982.370</b>
63	250	1	<b>3982.380</b>
84	250	1	<b>3982.390</b>

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE ACCESSORIES



### 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

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

### + Accessories:

Vertical EMC gasket,  
see page 116.

Front handles for mounting on front flanges,  
see page 104.



### Front corner trims

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

**Material:**  
Aluminium, spray-finished

**Colour:**  
RAL 7035

U	Packs of	Model No. VM
2	2	<b>3981.300</b>
2	2	<b>3981.310</b>
2	2	<b>3981.320</b>
2	2	<b>3981.330</b>
2	2	<b>3981.340</b>

1, 2 and 8 U available on request.

### + Accessories:

Vertical EMC gasket,  
see page 116



### Carrying handles

For ergonomic transportation, even with stacked enclosures.  
May also be used as a support stand.  
Max. load capacity: 350 N.

**Material:**  
Die-cast zinc and extruded aluminium section  
**Colour:**  
RAL 7035

**Note:**  
Cannot be used with flanges

For enclosure depth mm	Packs of	Model No. VM
250,4	2	<b>3981.350</b>
310,4	2	<b>3981.360</b>
370,4	2	<b>3981.370</b>
430,4	2	<b>3981.380</b>

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiPac VARIO-MODULE ACCESSORIES



### Rear feet

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

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

**Material:**

PA, self-extinguishing to UL 94-V0

**Colour:**

RAL 7035

Packs of  
4

**Model No. VM**  
**3901.000**



### Earthing set

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

**Supply includes:**

Conductor cable green/yellow, 1.5 mm<sup>2</sup>, with washer, flat-pin connector and assembly parts.

Packs of  
5

**Model No. VM**  
**3900.000**



### 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:**

RAL 7035

**Supply includes:**

Assembly parts

**Note:**

Corner trim for support stands/carrying handles should be ordered separately.

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

Corner trim for support stand	Packs of	<b>Model No. VM</b>
3 U	2	<b>3981.310</b>
4 U	2	<b>3981.500</b>
6 U	2	<b>3981.510</b>



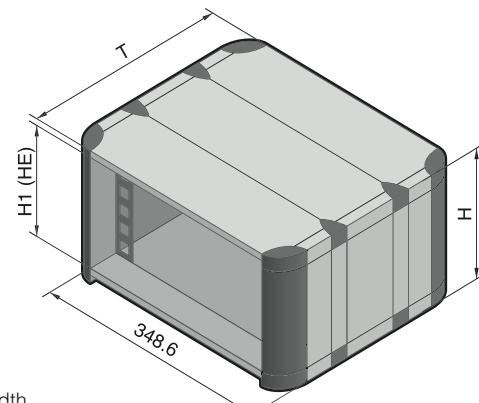
### Front panels/rear panels

To cover the enclosures front and rear.  
Also available as a hinged or EMC version.  
Order No. see page 149.

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiCase

### HeiCase 269.2 mm (½ 19")



B = Width  
T = Depth  
HE = U

#### Technical specifications:

Depth:  
300 mm, 420mm, 540 mm  
Installation width:  
269.2 mm (½ 19")  
Installation options:  
269.2 mm (½ 19")-slide-in equipment to IEC 60 297-3

#### Material/surface finish:

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

bracket:  
Extruded aluminium section, clear-chromated

**Colour:**  
RAL 7035 (pale grey)

**Decorative colours and corner caps:**  
RAL 5018 (turquoise)  
RAL 5012 (pale blue)  
RAL 7030 (stone grey)

**Protection category:**  
IP 42 for unvented version.

#### Supply includes:

2 side panels,  
2 covers,  
8 corner caps,  
8/12/16 cover caps (300/420/540 mm depth),  
4 482.6 mm (19") mounting brackets,  
4 threaded inserts,  
2 plain inserts,  
1 rear panel,  
Cases are supplied pre-assembled

#### Special sizes and colours available on request.

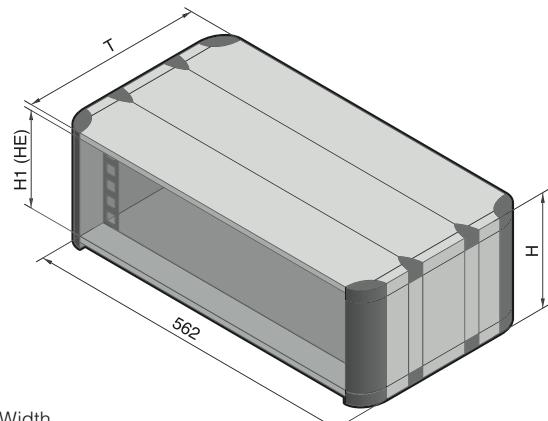
**Property rights:**  
German registered design no. 96 09 457  
UK reg. design no. 2064682  
US design patents Des. 402,640 and Des. 423,464  
Japan. reg. designs no. 1045507 and 1045508

Enclosures for subrack width 269,2 mm (½ 19")	Packs of	1 U		2 U		3 U			4 U		Page
<b>Height (H) mm</b>		77,5	77,5	121,9	121,9	166,4	166,4	166,4	210,8	210,8	
<b>H1 (HE) mm</b>		45,0	45,0	89,4	89,4	133,8	133,8	133,8	178,3	178,3	
<b>Depth (T) mm</b>		300,0	420,0	300,0	540,0	300,0	420,0	540,0	420,0	540,0	
<b>Unvented</b>											
<b>Model No. RC, RAL 5018</b>	1	3750.100	—	3750.200	—	3750.210	3750.300	—	3750.400	—	
<b>Model No. RC, RAL 5012</b>	1	3750.102	—	3750.202	—	3750.212	3750.302	—	3750.402	—	
<b>Model No. RC, RAL 7030</b>	1	3750.104	—	3750.204	—	3750.214	3750.304	—	3750.404	—	
<b>Vented</b>											
<b>Model No. RC, RAL 5018</b>	1	—	3750.110	—	3750.220	—	3750.350	3750.360	—	3750.450	
<b>Model No. RC, RAL 5012</b>	1	—	3750.112	—	3750.222	—	3750.352	3750.362	—	3750.452	
<b>Model No. RC, RAL 7030</b>	1	—	3750.114	—	3750.224	—	3750.354	3750.364	—	3750.454	
<b>Weight (kg)</b>	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
<b>Accessories</b>											
Carrying handles, horizontal	2	3751.250	3751.260	3751.250	3751.270	3751.250	3751.260	3751.270	3751.260	3751.270	83
Front door, vertically hinged	1	—	—	—	—	3751.300	3751.300	3751.300	3751.310	3751.310	84
Slide rails	2	3751.500	3751.510	3751.500	3751.520	3751.500	3751.510	3751.520	3751.510	3751.520	83
Mounting angles 482.6 mm (19")	2	3751.650	3751.650	3751.660	3751.660	3751.670	3751.670	3751.670	3751.680	3751.680	82
Threaded inserts with M4 thread	8	3751.700	3751.700	3751.710	3751.710	3751.720	3751.720	3751.720	3751.730	3751.730	82
End section	2	—	—	—	—	3751.900	3751.900	3751.900	3751.910	3751.910	83

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiCase

### HeiCase 482.6 mm (19")



B = Width  
T = Depth  
HE = U

#### Technical specifications:

Depth:  
300 mm, 420 mm, 540 mm  
Installation width:  
482.6 mm (19")  
Installation options:  
482.6 mm (19") slide-in equipment to IEC 60 297-3

#### Material/surface finish:

Covers:  
Extruded aluminium section/die-cast, spray-finished  
Side panels:  
Extruded aluminium section,

spray-finished  
Corner caps: Plastic  
482.6 mm (19") mounting bracket: extruded aluminium section, clear-chromated

**Colour:**  
RAL 7035 (pale grey)

#### Decorative colours and corner caps:

RAL 5018 (turquoise)  
RAL 5012 (pale blue)  
RAL 7030 (stone grey)

**Protection category:**  
IP 42 for unvented version.

**Supply includes:**  
2 side panels,  
2 covers,  
8 corner caps,  
8/12/16 cover caps (300/420/540 mm depth),  
4 482.6 mm (19") mounting brackets,  
4 threaded inserts,  
2 plain inserts  
Cases are supplied pre-assembled

**Special sizes and colours available on request.**

**Note:**  
For rear installation, order back panel/door separately.

Enclosure for subrack width 482,6 mm (19")	Packs of	3 U		4 U		6 U			7 U		9 U		12 U	Page
<b>Height (H) mm</b>		166,4	166,4	210,8	210,8	299,7	299,7	299,7	344,2	344,2	433,1	433,1	566,5	
<b>H1 (HE) mm</b>		133,8	133,8	178,3	178,3	267,2	267,2	267,2	311,7	311,7	400,6	400,6	534,0	
<b>Depth (T) mm</b>		300,0	420,0	300,0	420,0	300,0	420,0	540,0	420,0	540,0	420,0	540,0	540,0	
<b>Not vented</b>														
<b>Model No. RC, RAL 5018</b>	1	3750.310	3750.320	3750.410	3750.420	3750.600	3750.610	3750.620	3750.700	3750.710	3750.900	3750.910	3750.000	
<b>Model No. RC, RAL 5012</b>	1	3750.312	3750.322	3750.412	3750.422	3750.602	3750.612	3750.622	3750.702	3750.712	3750.902	3750.912	3750.002	
<b>Model No. RC, RAL 7030</b>	1	3750.314	3750.324	3750.414	3750.424	3750.604	3750.614	3750.624	3750.704	3750.714	3750.904	3750.914	3750.004	
<b>Vented</b>														
<b>Model No. RC, RAL 5018</b>	1	3750.330	3750.340	3750.430	3750.440	3750.630	3750.640	3750.650	3750.720	3750.730	3750.920	3750.930	3750.030	
<b>Model No. RC, RAL 5012</b>	1	3750.332	3750.342	3750.432	3750.442	3750.632	3750.642	3750.652	3750.722	3750.732	3750.922	3750.932	3750.032	
<b>Model No. RC, RAL 7030</b>	1	3750.334	3750.344	3750.434	3750.444	3750.634	3750.644	3750.654	3750.724	3750.734	3750.924	3750.934	3750.034	
Weight (kg)	Vented/unvented	5,3 5,4	6,9 7,1	5,7 7,2	7,5 7,7	6,5 6,6	8,5 8,7	10,8 12,2	9,1 9,3	11,5 12,9	10,1 10,3	12,9 14,3	15,0 16,4	
<b>Accessories</b>														
Carrying handles, horizontal	2	3751.250	3751.260	3751.250	3751.260	3751.250	3751.260	3751.270	3751.260	3751.270	3751.260	3751.270	3751.270	83
Back panel, screw-fastened	1	3751.600	3751.600	3751.610	3751.610	3751.620	3751.620	3751.620	3751.630	3751.630	3751.530	3751.530	3751.540	85
Rear door, vertically hinged	1	3751.100	3751.100	3751.110	3751.110	3751.120	3751.120	3751.120	3751.130	3751.130	—	—	—	85
Rear door for fan installation	1	3751.150	3751.150	3751.160	3751.160	3751.170	3751.170	3751.170	3751.180	3751.180	—	—	—	85
Front door, vertically hinged	1	3751.320	3751.320	3751.330	3751.330	3751.340	3751.340	3751.340	3751.350	3751.350	—	—	—	84
Slide rails	2	3751.500	3751.510	3751.500	3751.510	3751.500	3751.510	3751.520	3751.510	3751.520	3751.510	3751.510	3751.520	83
Mounting angles 482,6 mm (19")	2	3751.670	3751.670	3751.680	3751.680	3751.690	3751.690	3751.690	3751.640	3751.640	3751.780	3751.780	3751.790	82
Threaded inserts with M4 thread	8	3751.720	3751.720	3751.730	3751.730	3751.740	3751.740	3751.740	3751.750	3751.750	3751.760	3751.760	3751.770	82
End section	2	3751.900	3751.900	3751.910	3751.910	3751.920	3751.920	3751.920	3751.930	3751.930	3751.820	3751.820	3751.830	83

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiCase ACCESSORIES



### 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	Packs of	Model No. RC
1 U	2	3751.650
2 U	2	3751.660
3 U	2	3751.670
4 U	2	3751.680
6 U	2	3751.690
7 U	2	3751.640
9 U	2	3751.780
12 U	2	3751.790

### ! Also required:

Threaded inserts, see page 82.

Mounting rails, see page 82.

Spacers, see page 82.



### 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	Packs of	Model No. RC
1 U	8	3751.700
2 U	8	3751.710
3 U	8	3751.720
4 U	8	3751.730
6 U	8	3751.740
7 U	8	3751.750
9 U	8	3751.760
12 U	8	3751.770

### ! Also required:

Threaded inserts, see page 82

Spacers, see page 82



### Mounting rails

- For depth-variable installation of mounting angles
- For the installation of component shelves, static or pull-out

**Material:**

Aluminium, clear-chromated

**Supply includes:**  
Assembly parts.

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

**B** Component shelf installation for 482.6 mm (19") (width 409 mm, also with telescopic slides)

**C** Direct component shelf installation (width 471 mm)

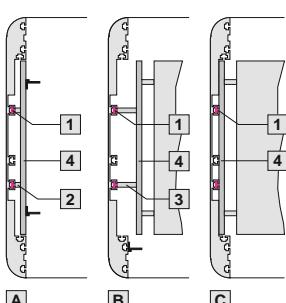
**1** Threaded inserts

**2** Short spacers

**3** Long spacers

**4** Mounting rails

For enclosure depth mm	Packs of	Model No. RC
300	2	3751.400
420	2	3751.410
540	2	3751.420



### Spacers



For the attachment of mounting rails.

Design	Packs of	Model No. RC
Short for depth-variable mounting bracket	4	3751.450
Long for component shelf installation (width 409 mm)	4	3751.460

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiCase ACCESSORIES



### Slide rails

To support heavy installed equipment.

**Material:**

1.5 mm sheet steel, clear-chromated

**Supply includes:**

Assembly parts.

For enclosure depth mm	Packs of	Model No. RC
30	2	3751.500
420	2	3751.510
540	2	3751.520

**! Also required:**

Threaded inserts, see page 82.



### Earthing set

**For HeiCase**

To meet electrical protective measures;  
fits all HeiCase enclosures.

**Supply includes:**

Threaded insert, screw, green/yellow connection  
cable, serrated washer, nut.

Packs of	Model No. VC
4	3798.000



### Rear trim

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

**Material:**

Extruded aluminium section, spray-finished

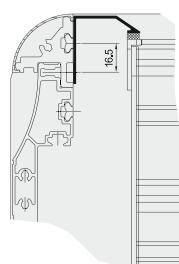
**Colour:**

RAL 7035

**Supply includes:**

Assembly parts.

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



### Carrying handles

**Horizontal**

For easy, secure transportation.

- May be retrofitted
- Load capacity 30 kg/pair

**Material:**

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

**Colour:**

RAL 7035

**Supply includes:**

Assembly parts.

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

# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiCase ACCESSORIES



### Keyboard lid

Suitable for the installation of 482.6 mm (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

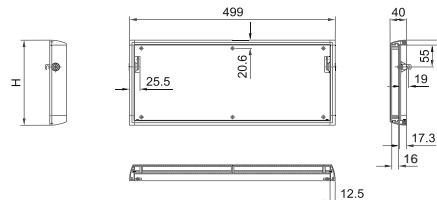
#### Colour:

RAL 7035

#### Supply includes:

Assembly parts.

For enclosure width mm	H (U)	Packs of	Model No. RC
482,6 (19")	4	1	<b>3751.800</b>
482,6 (19")	6	1	<b>3751.810</b>



### 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  
Glazed pane: Smoked acrylic

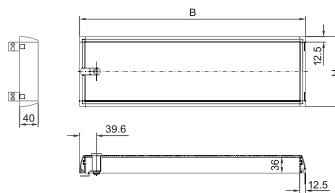
#### Colour:

RAL 7035

#### Supply includes:

Assembly parts.

For enclosure width mm	W (B) mm	H (U)	Model No. RC
269,2 (1/2 19")	289	3	<b>3751.300</b>
269,2 (1/2 19")	289	4	<b>3751.310</b>
482,6 (19")	503	3	<b>3751.320</b>
482,6 (19")	503	4	<b>3751.330</b>
482,6 (19")	503	6	<b>3751.340</b>
482,6 (19")	503	7	<b>3751.350</b>



### Aluminium front door

#### Vertically hinged

For mechanical protection of built-in control components.

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

#### Material:

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

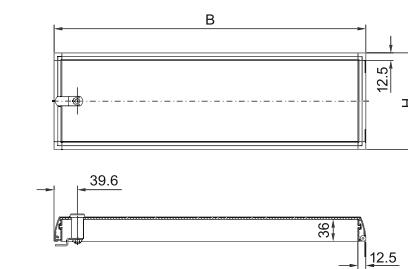
#### Colour:

RAL 7035

#### Supply includes:

Assembly parts.

For enclosure width mm	W (B) mm	H (U)	Model No. RC
482,6 (19")	503	3	<b>3751.360</b>
482,6 (19")	503	4	<b>3751.370</b>
482,6 (19")	503	6	<b>3751.380</b>



# INSTRUMENT CASES/SYSTEM ENCLOSURES

## HeiCase ACCESSORIES



### Tower feet

For vertical siting of enclosures.  
May be retrofitted.

#### Material:

Plastic to UL 94-V0,  
self-extinguishing

#### Decorative colorus:

**1** RAL 7030 (stone grey)

**2** RAL 5018 (turquoise)

**3** RAL 5012 (pale blue)

#### Supply includes:

4 tower feet, assembly parts.

Decorative colour RAL	Packs of	Model No. RC
5018	1 set	<b>3751.850</b>
5012	1 set	<b>3751.852</b>
7030	1 set	<b>3751.854</b>



### Back panel

#### Screw-fastened

To close off the rear.

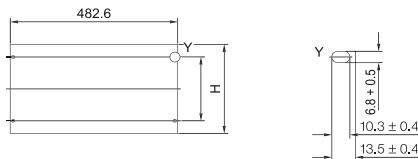
#### Material:

2/3 mm aluminium, natural-anodized

#### Supply includes:

Two 482.6 mm (19") mounting brackets,  
assembly parts.

For enclosure width mm	H (U)	Packs of	Model No. RC
482,6 (19")	3	1	<b>3751.600</b>
482,6 (19")	4	1	<b>3751.610</b>
482,6 (19")	6	1	<b>3751.620</b>
482,6 (19")	7	1	<b>3751.630</b>
482,6 (19")	9	1	<b>3751.530</b>
482,6 (19")	12	1	<b>3751.540</b>



### Rear door

#### Vertically hinged

To close off the rear.

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

#### Material:

Aluminium, spray-finished

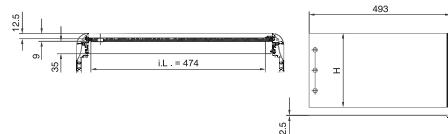
#### Colour:

RAL 7035

#### Supply includes:

Assembly parts.

For enclosure width mm	H (U)	Packs of	Model No. RC
482,6 (19")	3	1	<b>3751.100</b>
482,6 (19")	4	1	<b>3751.110</b>
482,6 (19")	6	1	<b>3751.120</b>
482,6 (19")	7	1	<b>3751.130</b>



### Rear door

#### For fan installation

To close off the rear.

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

#### Material:

Aluminium, spray-finished

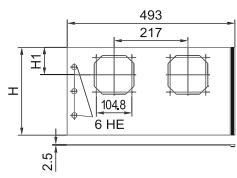
#### Colour:

RAL 7035

#### Supply includes:

Assembly parts.

For enclosure width mm	H (U)	H1 mm	Model No. RC
482,6 (19")	3	66,65	<b>3751.150</b>
482,6 (19")	4	88,90	<b>3751.160</b>
482,6 (19")	6	83,50	<b>3751.170</b>
482,6 (19")	7	83,50	<b>3751.180</b>



HE = U

# SUBRACKS



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## A minimum of components – a multitude of applications

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



**HeiPac EASY**

Easy handling due to pre-assembled screws. All rails are double screw fastened and ensure ruggedness even under high mechanical stress.



**HeiPac Vario/Vario EMC**

A wide range of sizes and accessories facilitate complex applications.

Variable depth system installation due to 10 mm- pitch pattern of holes.

EMC-shielding by horizontal and vertical EMC gaskets. Also upgradable (for HeiPac Vario).



**HeiPac Vario Mobile**

- The subracks are certified for operation in German Railways. The test had been carried out according to Standard EN 50 155, 1996 (electronic devices in rail vehicles).The setup of the certified subracks corresponds to IEC 48D.
- Shock- and vibration tests according to IEC 600-68-2-6, test Fc  
IEC 600-68-2-27, test Ea
- The subracks are fully assembled



**HeiPac Compact**

Subracks for mounting on mounting plates or top hat rails.



**HeiPac ECO**

- Fast and easy assembly
- Low-cost-version
- Upgradable for backplane or connector installation

### BENEFITS AT A GLANCE

#### Subracks

- Modular subrack system for individual assembly
- 5 basic versions for different applications
- Horizontal rails and accessories for all models
- EMC prepared or EMC upgradeable

- Fully assembled and wired on request
- Shock- and vibration tested

# HEITEC SUBRACKS OVERVIEW

**HeiPac EASY**



**For standard applications or high mechanical requirements**

Order No. see page 90

**Applications:**

Subrack system for standard applications or high mechanical loads. In cases that require easy handling and fast assembly. Suitable for installation of standardised PCBs or plug-in units up to 400 mm depth.

**Technical specifications:**

- 482.6 mm (19") subrack according to IEC 60 297-3
- 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
- Top covers easily retractable
- 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
- Top covers retractable
- Horizontal rails with integrated contact surface (no need for insulating strips)
- Double screw joints of horizontal rails ensure stability even for high loads

**HeiPac ECO**



**For standard applications**  
Order No. see page 91

**Applications:**

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

**Technical specifications:**

- 482.6 mm (19") subrack according to DIN 41 494, part 5/ IEC 60 297-3
- 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, optionally for connectors
- Separate 19" flanges

**Benefits at a glance**

- Fast and easy handling
- Low-cost version
- Upgradable for assembly of backplanes or connectors

**HeiPac Vario**



**For standard applications or complex installations.**  
Order No. see pages 92 - 93

**Applications:**

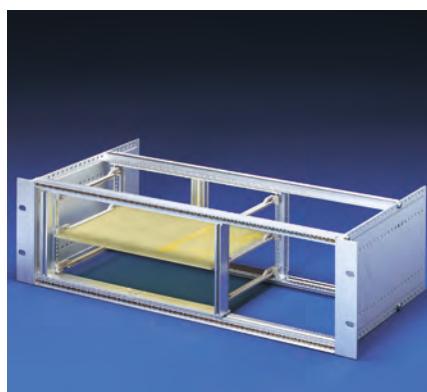
Subrack system for standard applications or complex installations. Suitable for installation of standardised PCBs or plug-in units up to 400 mm depth.

**Technical specifications:**

- 482.6 mm (19") subrack according to IEC 60 297-3
- 3, 4, 6, 7 and 9 U
- For board depths up to 400 mm
- Side panels of aluminium, clear-chromated
- 10 mm mounting grids for horizontal rails
- Rear equipment for installation of backplanes or connectors
- Separate 19" flanges

**Benefits at a glance**

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



# HEITEC SUBRACKS OVERVIEW

**HeiPac Vario EMC**



**For EMC applications and complex installations**

Order No. see pages 94 - 95

**Applications:**

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

**Technical specifications:**

- 482.6 mm (19") EMC subrack according to IEC 60 297-3
- 3, 4, 6, 7 and 9 U
- For board depths up to 400 mm
- Side panels of aluminium, clear-chromated
- 10 mm mounting grids for horizontal rails
- Rear equipment for installation of backplanes or connectors
- Separate 19" flanges
- Including EMC gaskets

**Benefits at a glance:**

- EMC version
- Side panels with 10 mm mounting grids for variable system assembly
- 19" flanges optionally for front/rear mounting
- Many standard sizes
- For mounting backplanes or connectors
- Broad range of accessories

**HeiPac Compact**



**For mounting plates or top hat rails**

Order No. see page 96

**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:**

- Subrack according to IEC 60 297-3
- Pre-installed for mounting on top hat rails or directly on the mounting plate
- 3 and 6 U
- For board depths up to 160 mm
- Installation width: 21 and 42 HP
- Side panels of aluminium, clear-chromated
- Rear equipment for installation of backplanes

**Benefits at a glance:**

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

**HeiPac Vario Mobile**



**For mobile applications**

Order No. see page 97

**Applications:**

Subrack system for applications in rail vehicles. Suitable for installation of standardised PCBs or plug-in units.

**Technical specifications:**

- 482.6 mm (19") subrack according to IEC 60 297-3
- Testing conducted in accordance with standard EN 50 155, 1996 (electronic equipment in rail vehicles)
- 3 and 6 U
- For board depths up to 220 mm
- Side panels of aluminium, clear-chromated
- Rear equipment for installation of backplanes or connectors
- Fully assembled

**Benefits at a glance:**

- Suitable for installation in rail vehicles
- Optionally as EMC version
- Side panels with 10 mm mounting grids for variable system assembly
- Fully assembled
- For mounting backplanes or connectors



# SUBRACKS

## HeiPac EASY

### HeiPac EASY 3 U, 6 U, Aluminium


**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, threaded inserts,  
assembly screws

**Tests:**

Shock- and vibration tested to:

IEC 600-68-2-6 test Fc

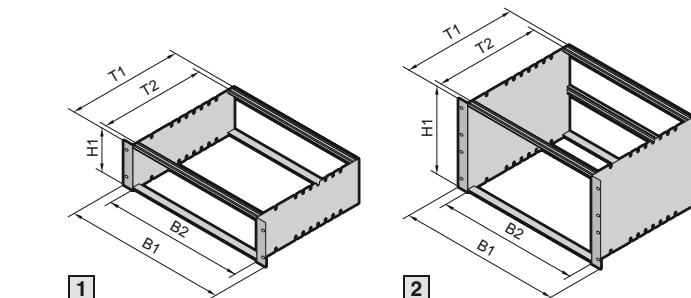
IEC 600-68-2-7 test Ea

**Standards:**

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

**Note:**

Backplanes can be mounted directly on the rear  
horizontal rails. Isolating strips are not necessary.



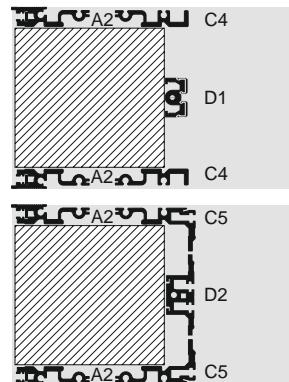
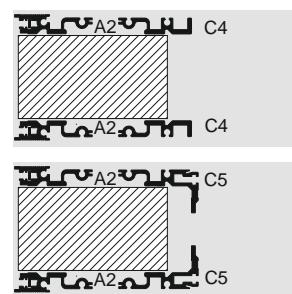
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T = Depth

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**1** Top: for backplane  
Bottom: for connector

**2** Top: for backplane  
Bottom: for connector

					Order No.			
					<b>1</b>	<b>2</b>	Page	
<b>U</b> (H1)					<b>3</b>	<b>6</b>		
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60 603-2	For backplane	
482.6 (19")	84	175	160	160	<b>3634.100</b>	<b>3634.150</b>	<b>3634.180</b>	
		235	220	220	<b>3634.110</b>	<b>3634.160</b>	<b>3634.190</b>	
		295	280	280	<b>3634.120</b>	<b>3634.170</b>	<b>3634.200</b>	
		355	340	340	<b>3634.130</b>	—	<b>3634.210</b>	
		415	400	400	<b>3634.140</b>	—	<b>3634.220</b>	
<b>Accessories</b>								
Covers								
Horizontal rails								
Guide rails								

# SUBRACKS HeiPac ECO

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



### Material/surface finish:

Side panels:  
1.5 mm sheet steel, zinc-plated

Flanges/horizontal rails:  
Extruded aluminium section,  
clear-chromated

### Supply includes:

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

### Tests:

Shock and vibration tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

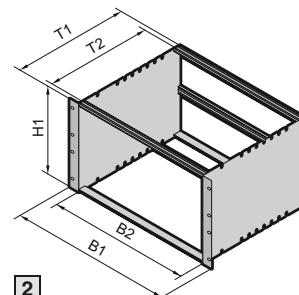
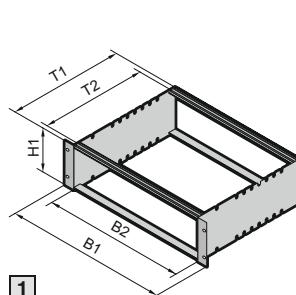
### Standards:

HeiPac subracks are based on  
the system dimensions of  
DIN 41 494 part 5 and  
IEC 60 297-3.

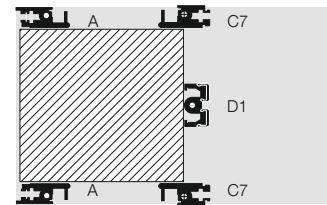
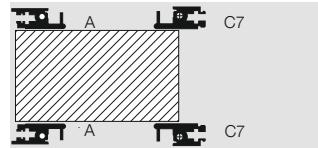
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B = Width  
T = Depth



1 For backplane

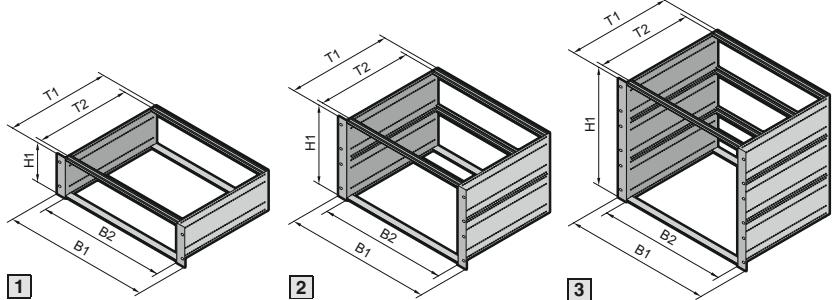
2 For backplane

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

# SUBRACKS

## HeiPac VARIO

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


**Material/surface finish:**

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

**Supply includes:**

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

**Tests:**

Shock and vibration tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

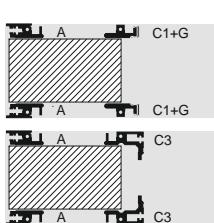
HeiPac subracks are based on  
the system dimensions of  
IEC 60 297-3.

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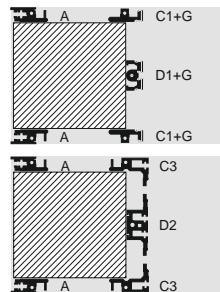
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see page 14

**EMC** upgradeable

B = Width  
T = Depth



[1] Top: for backplane  
Bottom: for connector



[2] Top: for backplane  
Bottom: for connector



[3] Top: for backplane  
Bottom: for connector

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

# SUBRACKS

## HeiPac VARIO

### HeiPac Vario 4 U, 7 U


**Material/surface finish:**

Side panels:

2.5 mm aluminium, clear-chromated

Flanges and horizontal rails:

Extruded aluminium section, clear-chromated

**Supply includes:**

Flanges, side panels,

horizontal rails, threaded

inserts, insulating strips

or Z rails.

**Tests:**

Shock and vibration tested to:

IEC 600-68-2-6 test Fc

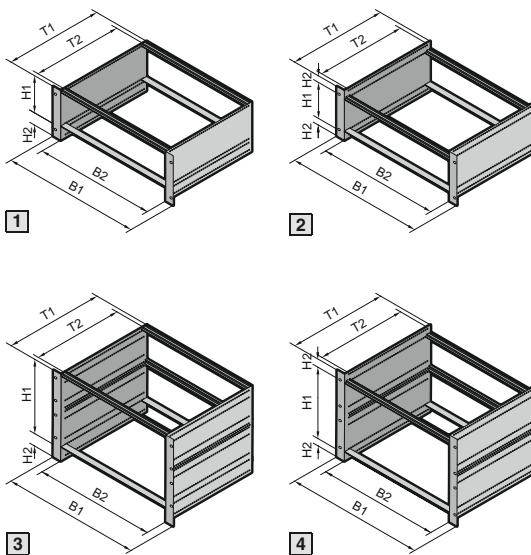
IEC 600-68-2-27 test Ea

**Standards:**

HeiPac subracks are based on

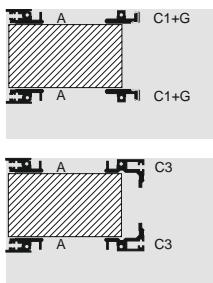
the system dimensions of

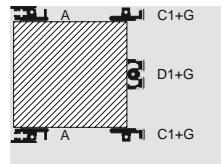
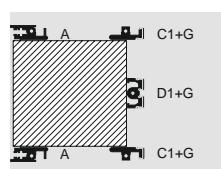
IEC 60 297-3.



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B = Width  
T = Depth

**EMC**
**upgradeable**

**1** Top: for backplane  
Bottom: for connector

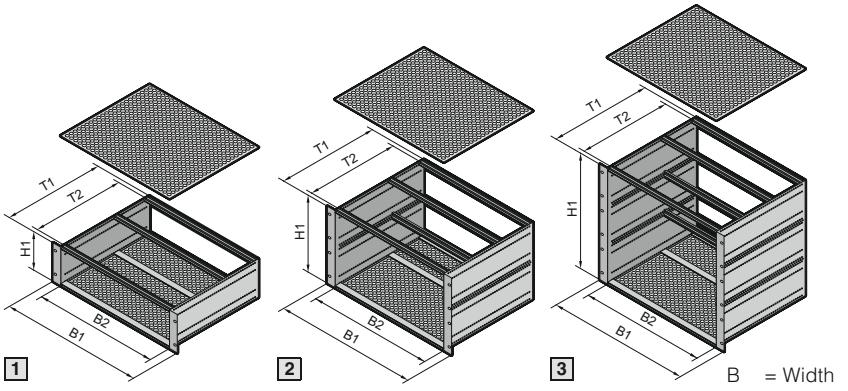
**2** Top: for backplane  
Bottom: for connector

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

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

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

# SUBRACKS

## HeiPac VARIO EMC

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


**Material/surface finish:**

Side panels:  
2.5 mm aluminium, clear-chromated

Flanges and horizontal rails:

Extruded aluminium section,  
clear-chromated

Covers: Aluminium, unplated

**Supply includes:**

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

**Tests:**

Shock and vibration tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

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

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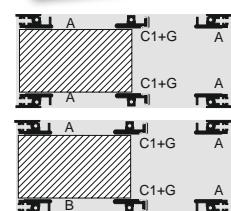
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see page 14

EMC



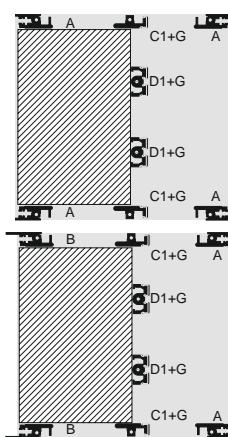
1

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



2

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



3

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

					Order No.							
					1		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 <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>		
482.6 (19")	84	245	220	160	3684.128	3684.142	3684.156	3684.169	-	-		
		285	260	220	3684.129	3684.143	3684.157	3684.170	-	-		
		305	280	220	3685.241	3685.243	3685.242	3685.244	-	-		
		345	320	280	3684.130	3684.144	3684.158	3684.171	3684.162	3684.175		
		405	380	340	3684.131	3684.145	3684.159	3684.172	3684.163	3684.176		
		465	440	400	3684.132	3684.146	3684.160	3684.173	3684.164	3684.177		
		525	500	400	3684.133	3684.147	3684.161	3684.174	3684.165	3684.178		
		585	560	400	-	-	-	-	3684.166	3684.179		

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

# SUBRACKS

## HeiPac VARIO EMC

### HeiPac Vario EMC 4 U, 7 U



#### Material/surface finish:

Side panels:  
2.5 mm aluminium, clear-chromated

Flanges and horizontal rails:  
Extruded aluminium section,  
clear-chromated

Covers: Aluminium, unplated

#### Supply includes:

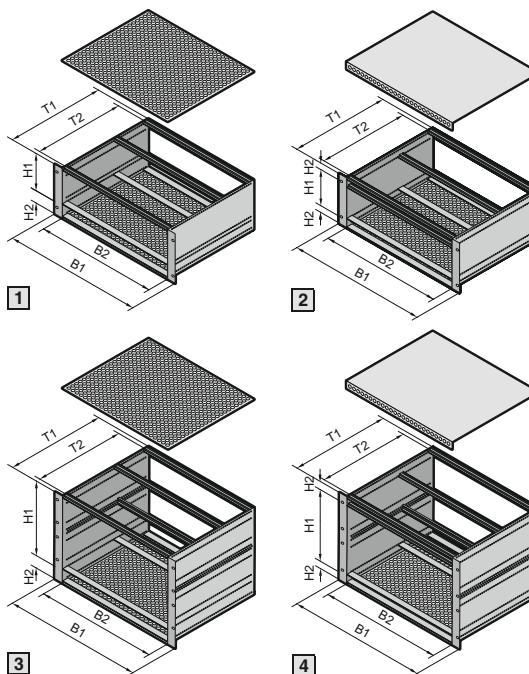
Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips.

#### Tests:

Shock and vibration tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

#### Standards:

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



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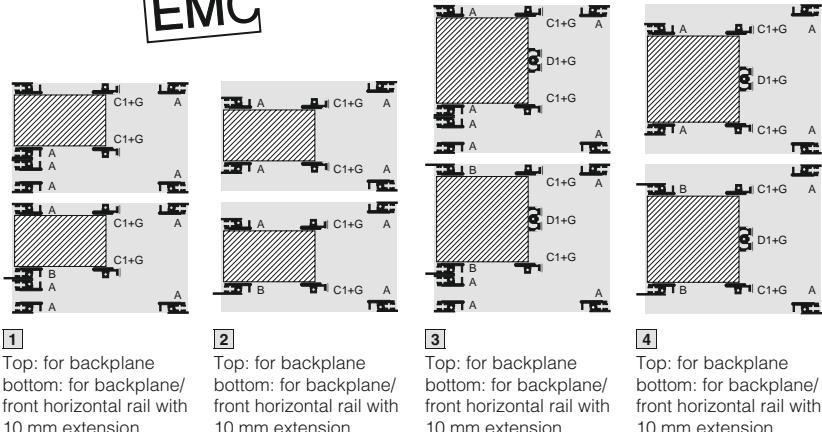
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see page 14

B = Width  
T = Depth

**EMC**



					Order No.							
					1		2		3		4	
U (H1 + H2)					4 (3 + 1)	4 (3 + 1)	4 (3 + 2 x 1/2)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>	For backplane	For backplane <sup>1)</sup>
482.6 (19')	84	285	260	220	3684.134	3684.148	3684.137	3684.151	3684.187	3684.192	—	—
		345	320	280	3684.135	3684.149	3684.138	3684.152	3684.188	3684.193	3684.189	3684.196
		405	380	340	3684.136	3684.150	3684.139	3684.153	3684.180	3684.194	3684.190	3684.197
		465	440	400	—	—	—	—	3684.181	3684.195	3684.191	3684.198

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

# SUBRACKS

## HeiPac COMPACT

### HeiPac Compact 3 U, 6 U


**Material/surface finish:**

Side panels:  
2.5 mm aluminium, clear-chromated

Flanges and horizontal rails:  
Extruded aluminium section,  
clear-chromated

**Supply includes:**

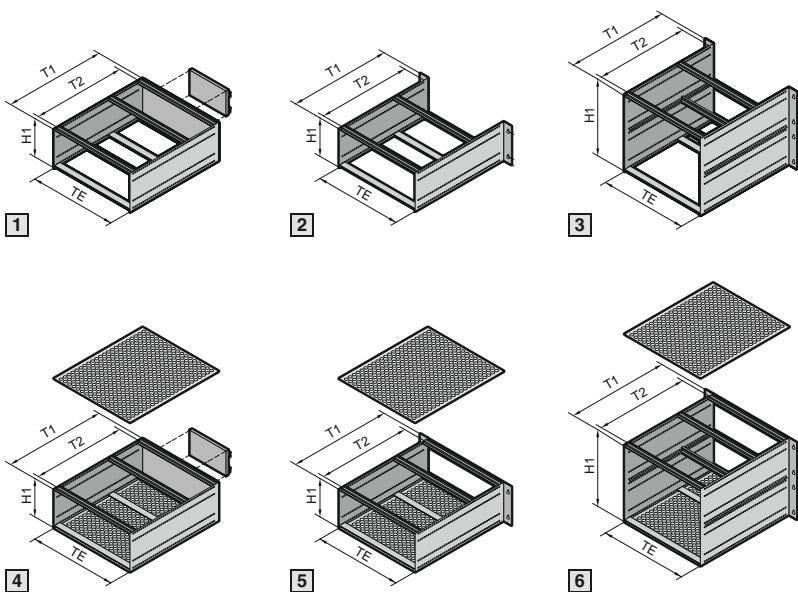
Side panels, rear trims, flanges for mounting plates or top-hat rail adaptors, EMC front/rear panels, EMC gaskets, covers, horizontal rails, threaded inserts, insulating strips.

**Tests:**

Shock and vibration tested to:  
IEC 600-68-2-6 test Fc  
IEC 600-68-2-27 test Ea

**Standards:**

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


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see page 14

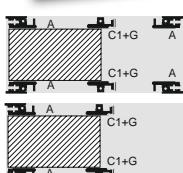
**[1] [4]**

HeiPac Compact 3 U for top-hat rail

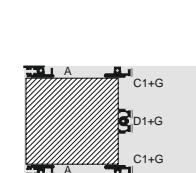
**[2] [3] [5] [6]**

HeiPac Compact 3 U for mounting plate

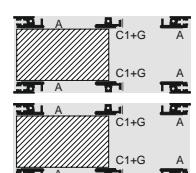
B = Width      HE = U  
T = Depth      TE = HP



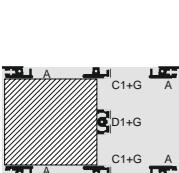
**[1]** Top:  
for top-hat rail



**[3]** For mounting plate



**[4]** Top:  
EMC for top-hat rail



**[5]** Bottom:  
EMC for mounting plate

			Order No.						Order No. EMC						
			<b>[1]</b>	<b>[2]</b>	<b>[1]</b>	<b>[2]</b>	<b>[3]</b>	<b>[4]</b>	<b>[5]</b>	<b>[4]</b>	<b>[5]</b>	<b>[6]</b>			
<b>U</b>			3	3	3	3	6	3	3	3	3	6			
<b>Height (H1) mm</b>			132						265.35	132					
<b>HP</b>			21	21	42	42	42	21	21	42	42	42		265.35	
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	3687.667	3687.669	3687.671	3687.673	3687.680	3687.682	3687.684	3687.686	3687.688	3687.690			
285	260	220	3687.668	3687.670	3687.672	3687.674	3687.681	3687.683	3687.685	3687.687	3687.689	3687.691			

# SUBRACKS

## HeiPac VARIO MOBILE

### HeiPac Vario Mobile 3 U, 6 U, for mobile use



#### Material/surface finish:

Side panels: 2.5 mm aluminium, clear-chromated

Flanges and horizontal rails: Extruded aluminium section, clear-chromated

Covers: Aluminium, unplated

#### Supply includes:

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

#### Tests:

Shock and vibration tested to:

IEC 600-68-2-6 test Fc

IEC 600-68-2-27 test Ea

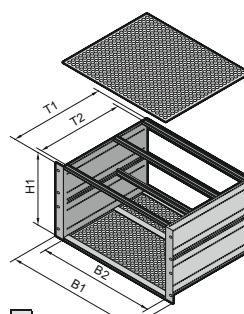
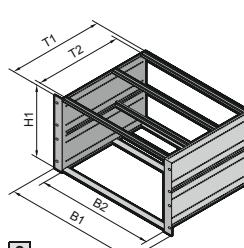
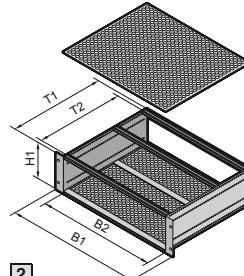
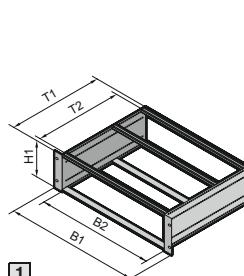
The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155, 1996 (Electronic Equipment in Rail Vehicles). The configuration of the tested subracks conforms to IEC 48 D.

#### Standards:

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

#### Note:

The subracks are supplied fully assembled.



We meet your individual needs!

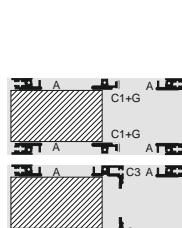
Please contact us!

Phone: +49 - 9126 - 29 34 0

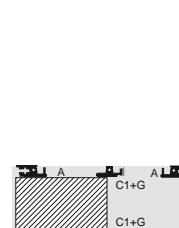
Email: [eps-quote@heitec.de](mailto:eps-quote@heitec.de)

see page 14

B = Width  
T = Depth



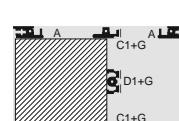
[1] Top:  
for backplane  
Bottom:  
for connector



[2] EMC for backplane



[3] Top:  
for backplane  
Bottom:  
for connector



[4] EMC for backplane

U	Order No.					Order No. EMC	Order No.					Order No. EMC
	1	2	3	4	5		6	7	8	9	10	
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	3687.782	3687.780	3687.784	3687.783	3687.781	3687.785		

# COMPONENTS/ACCESSORIES OVERVIEW



**High performance  
in every detail**

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



**Side panels and  
flanges**

See page 102 onwards



**Guide rails**

See page 119 onwards



**Cassettes**

See page 151 onwards

# COMPONENTS / ACCESSORIES OVERVIEW



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



**Horizontal rails**  
See page 105 onwards



**Components for EMC installation**  
See page 116 onwards



**Extension kits**  
See page 118 onwards



**Covers**  
See page 125 onwards



**Ventilation**  
See page 130 onwards



**Front panels,  
handles**  
See page 135 onwards



**Power supplies**  
See page 155 onwards

**WE MEET YOUR INDIVIDUAL NEEDS!**

You are looking for a product in the field of electronic packaging that is not in our catalogue?

Please contact us! We will gladly submit a tailored quotation.

Phone: + 49 – 9126 – 29 34 0  
Email: [eps-quote@heitec.de](mailto:eps-quote@heitec.de)

# COMPONENTS / ACCESSORIES

## TABLE OF HORIZONTAL RAILS

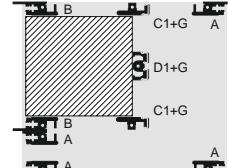
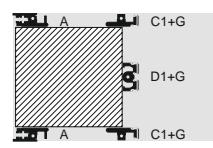
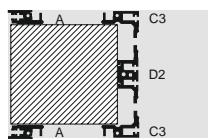
**HeiPac extrusion system: Complete, simple and easy to manage**

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

Main sections	A	A1	A2	B	B1	B2	C1	C3	C4
	Front horizontal rail	Front horizontal rail, with double screw fastening	Front horizontal rail, with double screw fastening (HeiPac EASY)	Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	Double front horizontal rail, with 10 mm extension	Front horizontal rail, with 10 mm extension, with double screw fastening	Rear horizontal rail	Rear horizontal rail, with integral Z rail	Rear horizontal rail, double screw fastening, for backplane mounting (HeiPac EASY)
	Page 108	Page 108	Page 105	Page 109	Page 109	Page 110	Page 110	Page 111	Page 105
Additional sections									
E Rear adaptor rail, centre, to accommodate guide rails	-	-	-	-	-	-	-	-	-
 Page 113									
F Z rail for connector	-	-	-	-	-	-		-	-
 Page 114									
G Insulating strips <sup>1)</sup>	-	-	-	-	-	-		-	-
 Page 115									
H Conductive strips <sup>1)</sup>	-	-	-	-	-	-		-	-
 Page 114									
I Threaded insert							-		-
 Page 114									
J Identification strips	-			-					
 Page 114									
K EMC gaskets, horizontal			-				-	-	-
 Page 117			-				-	-	-

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

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

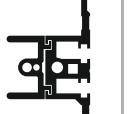
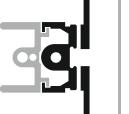
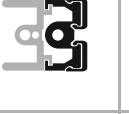
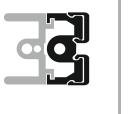
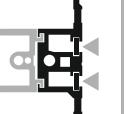


# COMPONENTS / ACCESSORIES

## TABLE OF HORIZONTAL RAILS

**HeiPac extrusion system: Complete, simple and easy to manage**

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

Main sections	C5 Rear horizontal rail, with integral Z rail, double screw fastening (HeiPac EASY)	C6 Rear horizontal rail, with double screw fastening	C7 Rear horizontal rail, (HeiPac ECO)	C8 Rear horizontal rail, with integral Z rail (HeiPac ECO)	D1 Rear horizontal rail, centre	D2 Rear horizontal rail, centre with integral Z rail	D3 Rear horizontal rail, centre with integrated contact area (HeiPac EASY)	D4 Rear horizontal rail, for assembling rear panels, double screw fastening (HeiPac EASY)
	Page 106	Page 111	Page 113	Page 113	Page 112	Page 112	Page 107	Page 107
Additional sections								
E Rear adaptor rail, centre, to accommodate guide rails		—	—	—				—
Page 113								
F Z rail for connector	—			—		—	—	—
Page 114								
G Insulating strips <sup>1)</sup>	—			—		—	—	—
Page 115								
H Conductive strips <sup>1)</sup>	—			—		—	—	—
Page 114								
I Threaded insert					—		—	
Page 114								
J Identification strips	—			—	—	—	—	—
Page 114								
K EMC gaskets, horizontal	—	—		—	—	—	—	—
Page 117								

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

# COMPONENTS / ACCESSORIES

## SIDE PANELS AND FLANGES



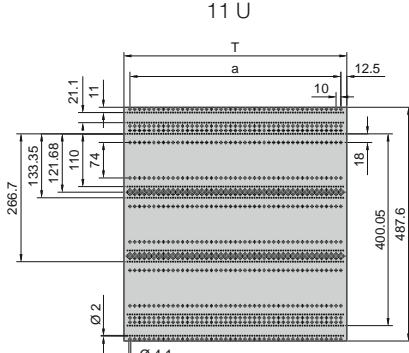
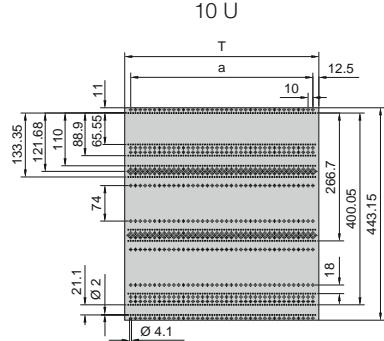
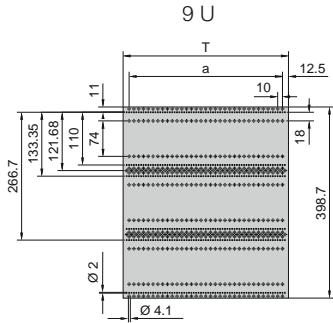
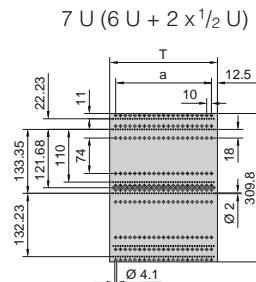
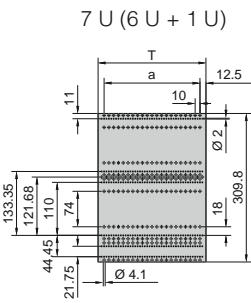
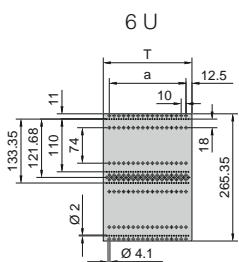
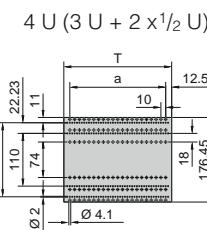
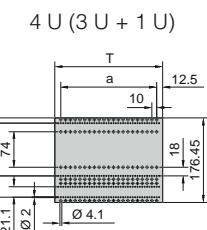
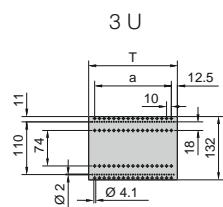
## Side panels

**For HeiPac Vario, HeiPac Vario EMC,  
HeiPac Compact, HeiPac Vario Mobile**  
Mounting holes and anti-twist half-shears on a  
10 mm pitch pattern.

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

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

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



T = Depth

# COMPONENTS / ACCESSORIES

## SIDE PANELS AND FLANGES



### Flange, 482.6 mm (19°)

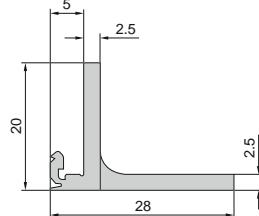
To fit all HeiPac Vario, HeiPac Vario EMC, HeiPac Compact and HeiPac Vario Mobile subracks. With integral channel to accommodate EMC gaskets.

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated



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

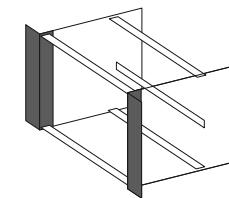
**+ Accessories:**

Handles for subrack,

see page 104

EMC gaskets, vertical,

see page 116



### Flange, 482.6 mm (19°)

**Set-back**

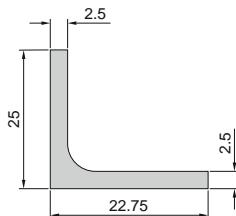
To fit all HeiPac Vario, HeiPac Vario EMC and HeiPac Vario Mobile subracks.

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated



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

**! Also required:**

Assembly screws, nuts and washers,  
packs of 4 sets, order no. 3687.015,  
see page 165



### Side panels

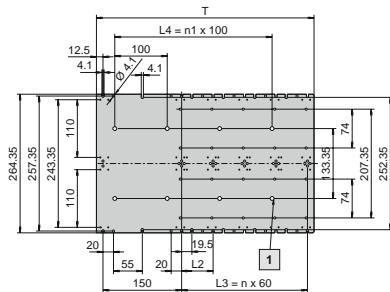
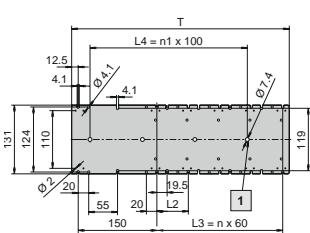

**For HeiPac EASY**

- Mounting holes on a 60 mm pitch pattern as long holes
- Drill holes for mounting telescopic slides

**Material:**

1.5 mm aluminium, noncorrosive

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



T = Depth

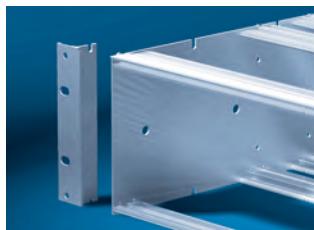
**+ Accessories:**

Flanges for HeiPac EASY  
see page 104

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

# COMPONENTS / ACCESSORIES

## SIDE PANELS AND FLANGES



### Flange, 482.6 mm (19")

#### For HeiPac EASY

Integrated mounting holes for installation of handles

#### Material:

Extruded aluminium profiles

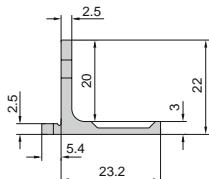
#### Surface finish:

Anodised

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

#### + Accessories:

Handles for subracks,  
see page 104



### Handles

#### For subracks and component shelves

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

#### Material:

Die-cast zinc

#### Surface finish:

Spray-finished, silver-grey

#### Supply includes:

Assembly parts.

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



### Trim section, rear

To fit all HeiPac Vario, HeiPac Vario EMC, HeiPac Compact and HeiPac Vario Mobile. Ensures 84 HP fit at the rear of the subrack. With integral channel to accommodate EMC gaskets.

#### Material:

Extruded aluminium section

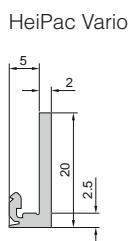
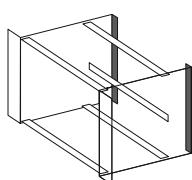
#### Surface finish:

Clear-chromated

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

#### + Accessories:

EMC gaskets, vertical,  
see page 116



# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### Front horizontal rail, double screw fastening (A2)

- To accommodate guide rails and for the attachment of front panels
- Pre-assembled screws M 4x12 for fast mounting on the subrack side panel
  - Front excess length 2.5 mm corresponding to IEC 60 297-3
  - On request with double screw fastening to ensure a high stability
  - HP pitch pattern of holes for the precise installation of guide rails
  - M4 thread on end face
  - Straight-through core hole for optional double screw fastening

Usable width (HP)	Packs of	Model No. RP
84	2	<b>3634.600</b>

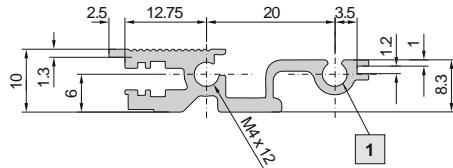
**Material:**  
Extruded aluminium section

**Surface finish:**  
noncorrosive

**Supply includes:**  
2 horizontal rails with pre-assembled threaded inserts and screws M4 x 12

#### ! Also required:

Assembly screws M4 x 12 for double screw fastening, order no. 3634.430 (packs of 100)



1 Core hole M4



### Rear horizontal rail, double screw fastening (C4) for mounting backplanes

- To accommodate guide rails and for the attachment of backplanes
- Pre-assembled screws M 4x12 for fast mounting on the subrack side panel
  - Due to integrated contact area, no need for insulating strips
  - Tapped holes M2.5 in 1 HP pitch pattern for mounting backplanes
  - HP pitch pattern of holes for the precise installation of guide rails
  - On request with double screw fastening to ensure a high stability
  - M4 thread on end face
  - Straight-through core hole for optional double screw fastening
  - Height of the profile allows cover extension

Usable width (HP)	Packs of	Model No. RP
84	2	<b>3634.615</b>

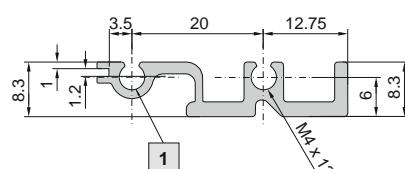
**Material:**  
Extruded aluminium section

**Surface finish:**  
noncorrosive

**Supply includes:**  
1 horizontal rail with pre-assembled screws M4 x 12

#### ! Also required:

Assembly screws M4 x 12 for double screw fastening, order no. 3634.430 (packs of 100)



1 Core hole M4

# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### Rear horizontal rail with integral Z rail Double screw fastening (C5)

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

- Pre-assembled screws M 4x12 for fast mounting on the subrack side panel
- HP pitch pattern of holes for precise mounting of guide rails
- On request with double screw fastening to ensure a high stability
- M4 thread on end face
- Straight-through core hole for optional double screw fastening
- Height of the profile allows cover extension

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

**Material:**  
Extruded aluminium section

**Surface finish:**  
noncorrosive

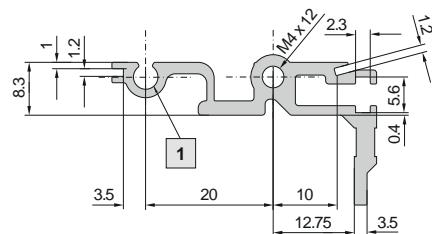
**Supply includes:**  
2 horizontal rails with pre-assembled screws M4 x 12

### + Accessories:

Threaded inserts, order no. 9901.816 (pack of 1), see page 114

### ! Also required:

Assembly screws M4 x 12 for double screw fastening, order no. 3634.430 (packs of 100)



1 Core hole M4



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

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

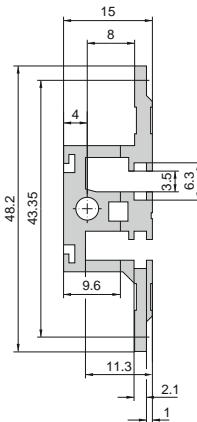
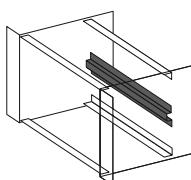
- 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole

Usable width (HP)	Packs of	Model No. RP
84	1	<b>3634.085</b>

**Material:**  
Extruded aluminium section

**Surface finish:**  
Clear-chromated

**Supply includes:**  
1 Horizontal rail,  
2 Assembly screws



# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### Rear horizontal rail, centre (D3) for mounting backplanes

When using 6 U PCBs or cassettes.  
For mounting backplanes.

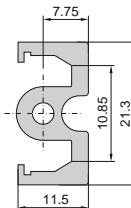
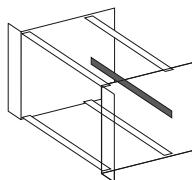
- 84 tapped holes M2,5
- M4 thread on end face
- Straight-through core hole
- Due to integrated contact area no need for insulating strips

Usable width (HP)	Packs of	Model No. RP
84	1	<b>3634.045</b>

**Material:**  
Extruded aluminium section

**Surface finish:**  
noncorrosive

**Supply includes:**  
1 horizontal rail, 2 screws



### Rear horizontal rail for mounting rear panels, double screw fastening (D4)



To accommodate rear front panels.  
 • On request with double screw fastening to ensure a high stability  
 • With channel for mounting top covers  
 • M4 thread on end face  
 • Straight-through core hole for optional double screw fastening  
 • Pre-assembled screws M 4x12 for fast mounting on the subrack side panel

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

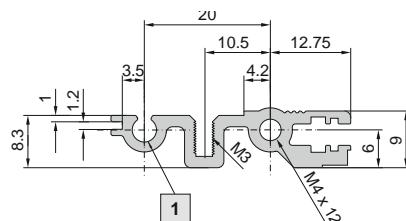
**Material:**  
Extruded aluminium section

**Surface finish:**  
noncorrosive

**Supply includes:**  
2 horizontal rails with threaded inserts and screws

### ! Also required:

Assembly screws M4 x 12 for double screw fastening, order no. 3634.430 (packs of 100)



**1** Core hole M4

### Threaded insert for HeiPac EASY



With M2.5 threaded holes on an HP pitch pattern.  
 • To slide in front (A2) or rear (D4, C5) horizontal rails  
 • Dimensions: 5 x 2 mm

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

Usable width (HP)	Packs of	Model No. RP
84	1	<b>9901.816</b>

# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### Front horizontal rail (A)

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

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

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated or anodised

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

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

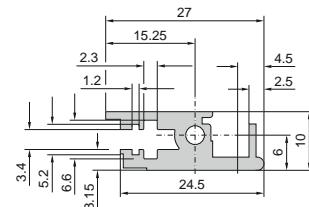
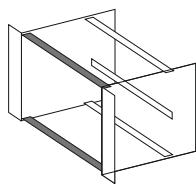
<sup>2)</sup> Anodised

#### ! Also required:

Assembly screws M4 x 12,  
packs of 100, order no. 3654.300,  
see page 164

#### + Accessories:

Threaded inserts (packs of 1),  
see page 114



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

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

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

Usable width (HP)	Packs of	Model No. RP
84	1	9908.721

**Material:**  
Extruded aluminium section

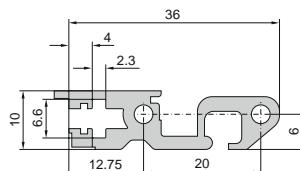
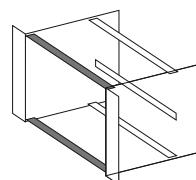
**Surface finish:**  
Clear-chromated

#### ! Also required:

Assembly screws M4 x 12,  
packs of 100, order no. 3654.300,  
see page 164

#### + Accessories:

Threaded inserts, order no. 3684.610  
(packs of 1), see page 114





# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



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

#### For type IV, IVs and VII injector/extractor handle

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

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

#### Material:

Extruded aluminium section

#### Surface finish:

Clear-chromated

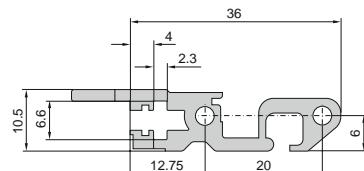
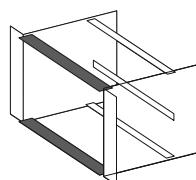
Usable width (HP)	Packs of	Model No. RP
84	1	<b>9908.722</b>

### ! Also required:

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 164

### + Accessories:

Threaded inserts, order no. 3684.610 (packs of 1), see page 114



### Rear horizontal rail (C1)



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

#### Material:

Extruded aluminium section

#### Surface finish:

Clear-chromated or anodised

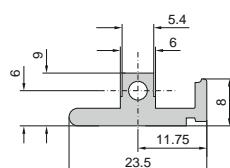
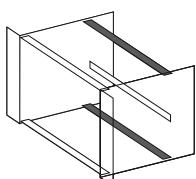
Usable width (HP)	Packs of	Model No. RP
21	1	<b>3685.991</b>
40	1	<b>3684.962</b>
42	1	<b>3684.570</b>
63	1	<b>3684.571</b>
84	1	<b>3684.572</b>
84	2	<b>3685.268<sup>1)</sup></b>
192	1	<b>3688.002<sup>2)</sup></b>

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

<sup>2)</sup> Anodised

### ! Also required:

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 164



# COMPONENTS / ACCESSORIES

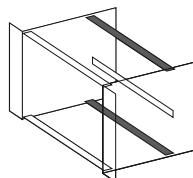
## HORIZONTAL RAILS



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

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.

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



Usable width (HP)	Packs of	Model No. RP
84	1	<b>9908.723</b>

**Material:**  
Extruded aluminium section

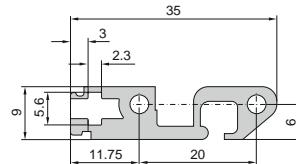
**Surface finish:**  
Clear-chromated or anodised

### ! Also required:

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 164

### + Accessories:

Threaded inserts, order no. 9901.816 (packs of 1), see page 114



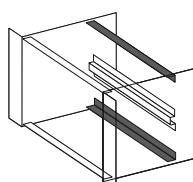
### Rear horizontal rail, with integral Z rail (C3)

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

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

**Material:**  
Extruded aluminium section

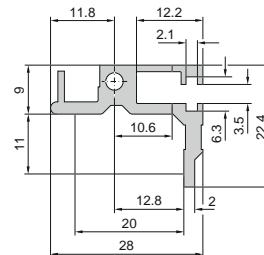
**Surface finish:**  
Clear-chromated



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

### ! Also required:

Assembly screws M4 x 12, packs of 100, order no. 3654.300, see page 164



# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### Rear horizontal rail, centre (D1)

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

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

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated or anodised

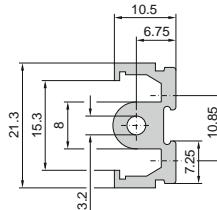
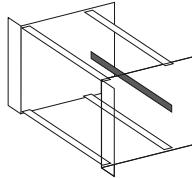
Usable width (HP)	Packs of	Model No. RP
40	1	3684.963
42	1	3684.580
63	1	3684.581
84	1	3684.582
84	1	3685.270 <sup>1)</sup>
858,5 mm	1	3684.579
192	1	3688.003 <sup>2)</sup>

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

<sup>2)</sup> Anodised

**! Also required:**

Assembly screws M4 x 12,  
packs of 100, order no. 3654.300,  
see page 164



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

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

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

**Material:**

Extruded aluminium section

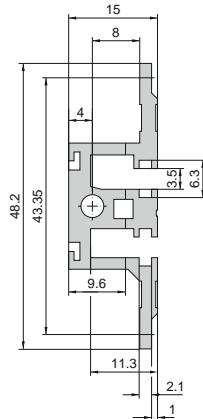
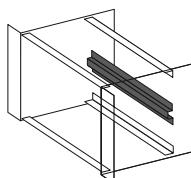
**Surface finish:**

Clear-chromated

Usable width (HP)	Packs of	Model No. RP
42	1	3687.600
63	1	3687.601
84	1	3687.602
858,5 mm	1	3687.603

**! Also required:**

Assembly screws M4 x 12,  
packs of 100, order no. 3654.300,  
see page 164



# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### Rear horizontal rail, centre (E)

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

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

**Material:**

Extruded aluminium section

**Surface finish:**

Clear-chromated or anodised

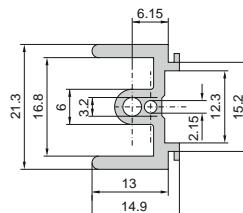
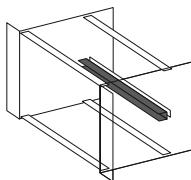
Usable width (HP)	Packs of	Model No. RP
12	1	3684.587
16	1	3684.588
20	1	3684.589
40	1	3684.964
42	1	3684.590
63	1	3686.005
84	1	3684.591
84	1	3685.272 <sup>1)</sup>
858,5 mm	1	3684.584
192	1	3688.004 <sup>2)</sup>

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

<sup>2)</sup> Anodised

**! Also required:**

Assembly screws M4 x 12,  
packs of 100, order no. 3654.300,  
see page 164



### Rear horizontal rail, with channel for HeiPac ECO (C7)

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
- For mounting backplanes/Z rails, threaded inserts (3684.610) are additionally required
- M4 thread on end face
- Straight-through core hole
- Not suitable for mounting under covers

**Material:**

Extruded aluminium section

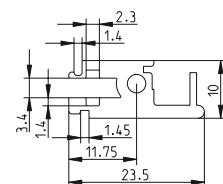
**Surface finish:**

Clear-chromated

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

**! Also required:**

Assembly screw M4 x 12



### Rear horizontal rail, with integral Z rail for HeiPac ECO (C8)

To accommodate guide rails. Integral Z rail for mounting connectors 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:**

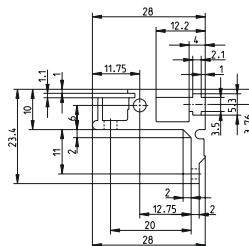
Clear-chromated

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

**! Also required:**

Assembly screws

	Packs of	Model No. RP
M4 x 12	100	3654.300



# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



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

With 84 x M2.5 threaded holes.

**Material:**

Extruded aluminium section

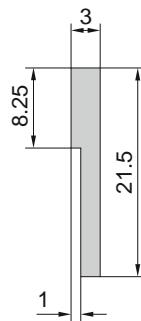
**Surface finish:**

Clear-chromated

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

### ! Also required:

Assembly screws M2.5 x 6,  
packs of 100, order no. 3654.340,  
see page 164



### Threaded insert (I)

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

**Material:**

Sheet steel, zinc-plated

Usable width (HP)	Packs of	Model No. RP	
		6 x 2 mm	5 x 2 mm
		for horizontal rails	
4	1	3684.603	-
8	1	3684.604	-
12	1	3684.605	-
16	1	3684.606	-
20	1	3684.607	-
21	1	3686.149	-
40	1	3684.966	-
42	1	3684.608	-
63	1	3684.609	-
84	1	3684.610	9901.816



### Identification strip (J)

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

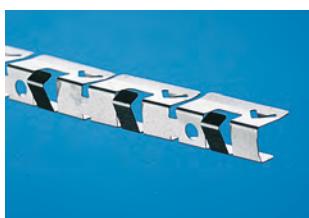
4 mm wide:

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

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

# COMPONENTS / ACCESSORIES

## HORIZONTAL RAILS



### EMC gaskets, horizontal (K)

see page 117



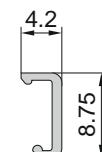
### Conductive strip (H)

For conductive mounting of backplanes.

- 84 HP
- Slides onto the rear horizontal rail

**Material:**  
Aluminium

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



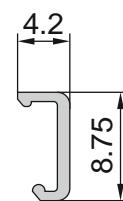
### Insulating strip (G)

For insulated mounting of backplanes.

- 21 HP
- Slides onto the rear horizontal rail

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

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



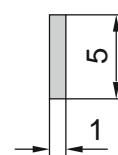
Rear horizontal rail, centre fitted with insulating strips (top) and conductive strips (bottom).



### Punched strip

**Material:**  
Aluminium

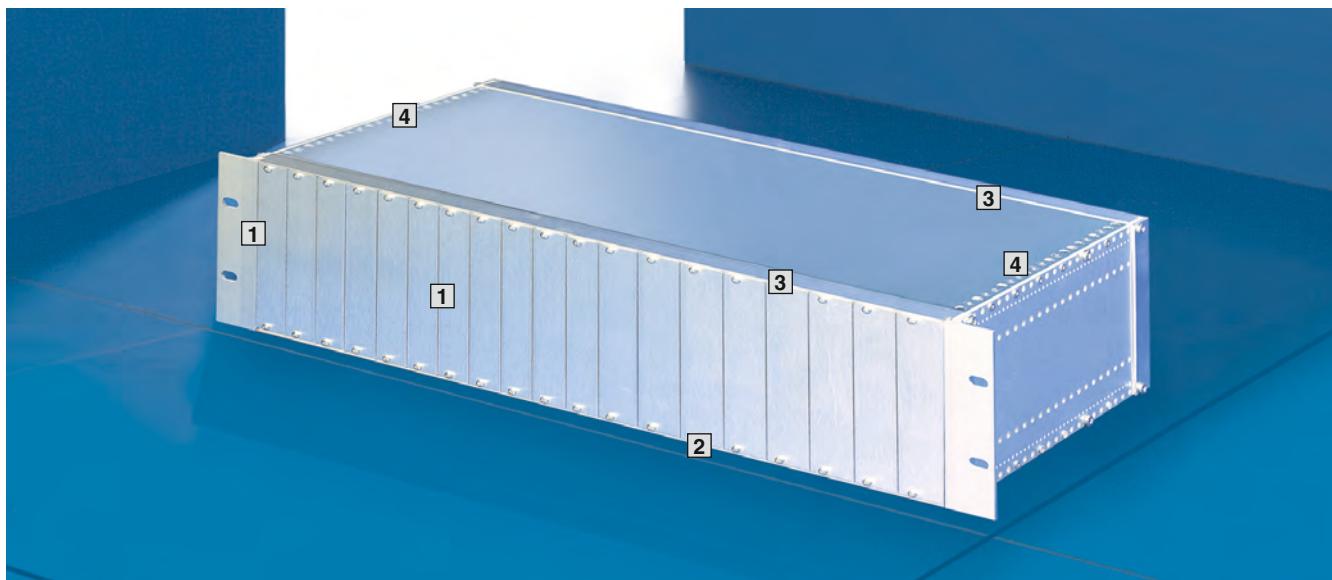
Usable width (HP)	Packs of	Model No. RP
84	2	3685.275



# COMPONENTS / ACCESSORIES

## COMPONENTS FOR EMC INSTALLATION

### Components for EMC installation



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

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

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

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



#### 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**

#### A Version 1: Segmented

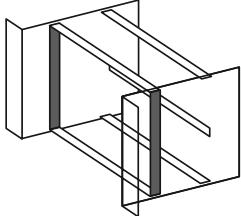
U	Model No. RP Packs of 1	Model No. RP Packs of 10
1	<b>3686.973</b>	<b>3684.236</b>
2	<b>3686.974</b>	<b>3684.237</b>
3	<b>3686.975</b>	<b>3684.238</b>
4	<b>3686.976</b>	<b>3684.239</b>
6	<b>3686.977</b>	<b>3684.240</b>
7	<b>3686.978</b>	<b>3684.241</b>
9	<b>3686.979</b>	<b>3684.242</b>
10	<b>3686.980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

#### B Version 2: One-piece

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

# COMPONENTS / ACCESSORIES

## COMPONENTS FOR EMC INSTALLATION



### EMC contact strip

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

**Material:**

Extruded aluminium section, clear-chromated

**Note:**

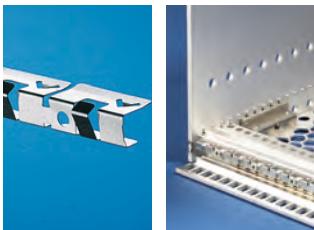
2 sections are required for each subrack.



U	Packs of	Model No. RP
3	1	3684.643
6	1	3684.644
9	1	3684.645

**! Also required:**

EMC gaskets, vertical, see page 116.  
Assembly screws M3 x 6, packs of 100,  
order no. 3684.233,  
see page 164



### EMC gaskets, horizontal (K)

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

**Material:**

Stainless steel

**European patent no. 0 937 375  
with validity for DE**

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

**Chinese patent  
no. ZL 97 1 98582.0**



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



### EMC gaskets

**For covers**

For EMC shielding between the horizontal rails and covers.

**Material:**

Stainless steel



HP	Packs of	Model No. RP
84	10	3684.245



### Mounting blocks

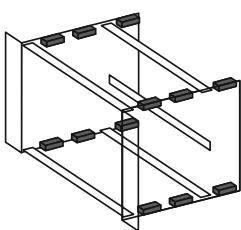
For mounting covers, versions 1 – 4, on the subrack side panel.

**Material:**

Die-cast zinc, nickel-plated


**Note:**

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



	Packs of	Model No. RP
Mounting blocks 28.5 mm long	10	3684.234

**! Also required:**

Assembly screws M3 x 6, packs of 100,  
order no. 3684.233,  
see page 164

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

# COMPONENTS / ACCESSORIES MOUNTING KITS



## Vertical divider kit

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

**Material:**

Aluminium, clear-chromated

**Supply includes:**

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

6 U (2 x 3 U)

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

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

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

### + Accessories:

Front panel, see page 118.  
EMC gaskets, horizontal, see page 117

## Vertical support



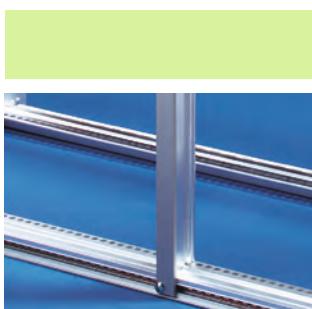
Required for the combined installation of single, double and triple Eurocards in one subrack.

**Material:**

Aluminium, extruded

**Surface finish:**  
clear-chromated .

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



## Front panel

To conceal the vertical support of the vertical divider kit.

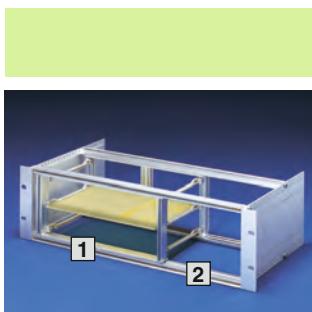
**Material:**

Aluminium, anodised

**Supply includes:**  
Assembly parts.

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

**EMC version,**  
see page 148



## Horizontal mounting kit

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

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

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

**Material:**  
Aluminium, clear-chromated

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

For backplane assembly  
with standard horizontal rail, front

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

For backplane assembly,  
front horizontal rail with 10 mm extension

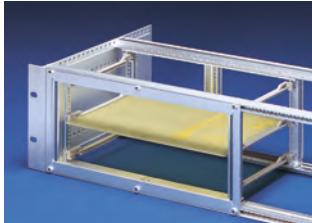
U horizontal	Model No. RP	
	For 3 U subrack	For 4 U subrack
6	3684.210	3684.212
9	3684.211	3684.213

### + Accessories:

Trim frame,  
see page 119

# COMPONENTS / ACCESSORIES

## MOUNTING KITS/GUIDE RAILS



### Trim frame

#### For horizontal mounting kit

To conceal the front sections of the horizontal mounting kit.

#### Material:

Aluminium, anodised

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

#### ! Also required:

Collar screws and plastic collars,  
packs of 100 sets, order no. 3658.160,  
see page 164



### Trim frame, vented

#### For horizontal mounting kit

To conceal the front sections of the horizontal mounting kit.

#### Material:

Aluminium

#### Surface finish:

Anodised,  
clear-chromated (EMC version)

#### Supply includes:

EMC accessories  
(with EMC version).



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

#### ! Also required:

Collar screws and plastic collars,  
packs of 100 sets, order no. 3658.160,  
see page 164

#### EMC version

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

#### ! Also required:

Centering screws,  
packs of 100, order no. 3687.050,  
see page 165



### Plastic guide rails

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

2 versions are available:

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

#### Material:

Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP	
		Snap-in fastening/ screw-fastening1)	Snap-in fastening
100	1	—	<b>3688.005</b>
160	1	<b>3684.657</b>	<b>3684.654</b>
220	1	<b>3684.658</b>	<b>3684.655</b>
280	1	<b>3684.659</b>	<b>3684.656</b>

#### ! Also required:

1) Assembly screws, packs of 100,  
order no. 3654.360, see page 164



### Plastic guide rails

#### For contact spring fitting

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

#### Material:

Polycarbonate, base material to UL 94-V0

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

#### + Accessories:

Contact springs,  
see page 120

# COMPONENTS / ACCESSORIES

## GUIDE RAILS

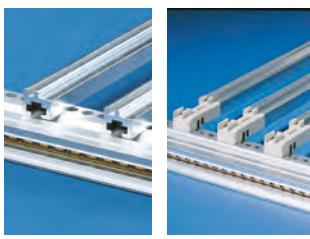


### Contact springs

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

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

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



### Guide rails, aluminium

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 screw-fastened directly into the horizontal rail.

**Material:**  
Aluminium

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

#### ! Also required:

- 1) Screw M2.5 x 6, packs of 100, order no. 3654.340, see page 164
- 1) Nut M2.5, packs of 100,

- order no. 3654.370, see page 164
- 1) Retaining cage M2.5, packs of 100, order no. 9901.417, see page 164



### End pieces

For guide rails, aluminium  
To discharge static charges, contact springs 3687.726 may be used.

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

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

#### + Accessories:

Contact springs,  
see page 120



### Keyable guide rails, plastic

- Guide rails 4 HP, keyable, to IEEE 1101.10.
- For 1.6 – 2.0 mm nominal thickness
  - Chambers for the installation of keys
  - Option of installing ESD contacts to discharge static charges
  - Narrow design for maximum air flow
  - Various colour variants to identify the slots:
    - Red for system slot
    - Green for power supply
    - Yellow and grey for board-type plug-in units

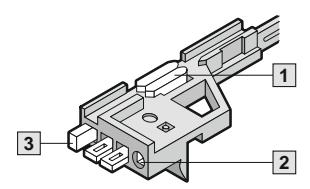
- 1** ESD contact for guide rails  
**2** ESD contact for front panel  
**3** Keys

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

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

#### + Accessories:

Keys,  
see page 124  
ESD contact,  
see page 123  
Extractor handles type IV, IVs, VII,  
see page 138 – 140



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

# COMPONENTS / ACCESSORIES

## GUIDE RAILS



### Keyable guide rails

#### With 1/2 HP offset

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

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

#### Material:

Polycarbonate, base material to UL 94-V0

#### Note:

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

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

#### + Accessories:

Keys, see page 124

ESD contact, see page 123

Extractor handles Type IVs, VII with 1/2 HP offset,  
see page 138 – 140



### Keyable guide rails

#### For rear I/O assemblies

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

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

#### Material:

Polycarbonate, base material to UL 94-V0

#### Note:

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

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

#### + Accessories:

Keys, see page 124

ESD contact, see page 123

Ground contact, see page 121  
Extractor handles type IV, IVs, VII,  
see pages 138 – 140



### 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.



	Model No. RP	
	1 set	50 sets
Grounding bush and contact spring	3689.036	3687.951

#### ! Also required:

Assembly screws 3.5 x 12 mm,  
packs of 50, order no. 3684.109,  
see page 165

# COMPONENTS / ACCESSORIES

## GUIDE RAILS



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

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

The guide rails are compiled from the following individual components:

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



#### 1 End pieces

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

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

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

**Note:**

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



#### 2 Aluminium centre part

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

**Material:**  
Aluminium, unplated

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



#### 3 Insulated centre part

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

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

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

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



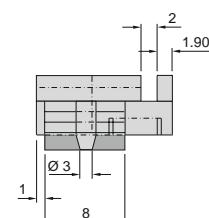
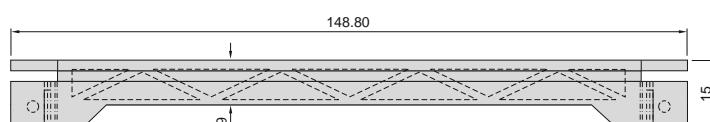
### Guide rails for 4.4"

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

**Material:**  
Macrolon

**Colour:**  
Dark grey

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



# COMPONENTS / ACCESSORIES

## GUIDE RAILS



### Guide rails

#### For box type plug-in units

For PCB thickness 1.6 mm.  
For insertion into covers with vent slots  
(from 11 HP), see page 152.

**Material:**  
Noryl

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



### Air block panel

#### For unused slots

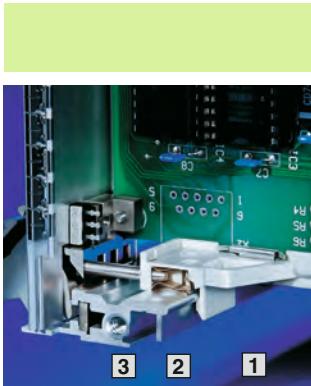
To conceal unused slots and prevent unwanted airflow. The air block panel simply snaps into position on the guide rails.

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

**Colour:**  
Blue

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

For guide rail	Packs of	Model No. RP
160 mm	1	3687.924



### ESD contacts

#### For installation in keyable guide rails

To discharge static charges.

**1 ESD contact in the guide rail**  
For permanent direct discharge from the PCB.

**2 ESD contact for front panel**  
To discharge static charges in conjunction with the ESD pin. For insertion into the end piece of the guide rail.

**3 ESD pin**

**4 Keys**

**Material:**

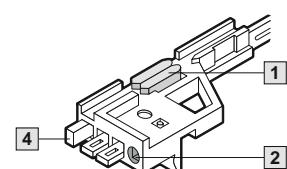
**1** Stainless steel

**2** Tin bronze, tin-plated

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

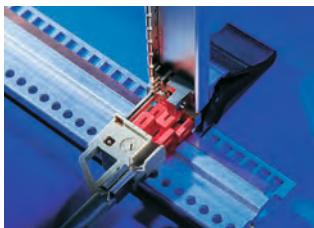
#### Note:

Only for use in conjunction with extractor handle with ESD pin (type IV, IVs, VII), see page 138 – 140



# COMPONENTS / ACCESSORIES

## KEYING/PCB EJECTORS



### Keys

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

#### Standards:

IEEE 1101.10, IEC 60 297-5-104

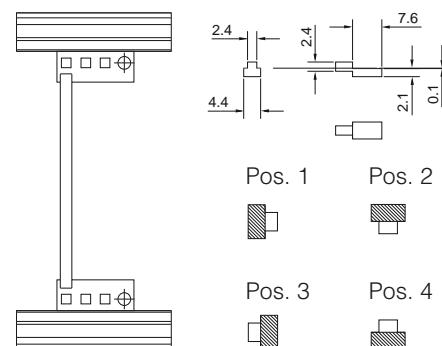
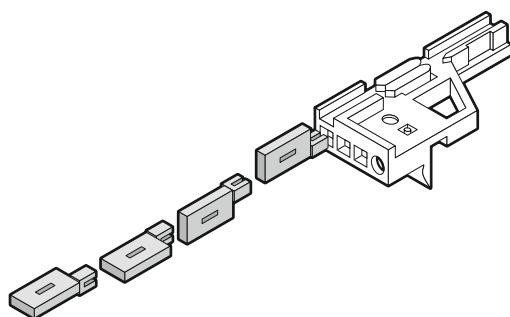
#### Material:

Plastic, PBTP, base material to UL 94-V0

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

### + Accessories:

Keying tool,  
see below.



### Keying tool



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

#### Material:

Polycarbonate, base material to UL 94-V0

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



### PCB ejector/retainer

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

#### Material:

Polycarbonate, base material to UL 94-V0

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



# COMPONENTS / ACCESSORIES

## COVERS



### Covers HeiPac EASY

#### For subracks HeiPac EASY

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

#### Covers version 1, slide- in:

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

#### Covers version 2, slide-in/screw-in:

For mounting additional rear horizontal rails on the rear panels. The horizontal rails for backplane/connector assembly are top-mounted.

The covers are slid in the front horizontal rails and screwed in the rear horizontal rails for rear panel mounting.

#### Material:

Aluminium

#### Supply includes:

2 covers

#### version 1

HP	for side panel depth mm	Order No.	
		perforated	solid
84	175	<b>3634.685</b>	<b>3634.675</b>
84	235	<b>3634.690</b>	<b>3634.680</b>

#### version 2

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

#### ! Also required:

<sup>1)</sup> assembly screws, packs of 100, order no. 3684.233, see page 164

#### + Accessories:

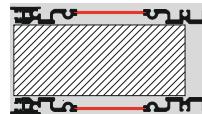
fastening clips

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

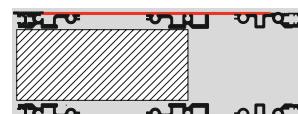
assembly screws for fastening clips

Packs of	Order No.
100	<b>3634.420</b>

#### version 1



#### version 2



### Cover HeiPac ECO

#### For subracks HeiPac ECO

To cover the overall subrack depth.

- Perforated or solid
- The covers are slid into the horizontal rails
- Optionally with screwed fastening clips for additional support

#### Material:

sheet steel

#### Surface finish:

zinc-plated

#### Supply includes:

1 cover

HP	for side panel depth mm	Order No.	
		perforated <sup>1)</sup>	solid <sup>1)</sup>
84	175	<b>3688.105</b>	<b>3688.107</b>
84	235	<b>3688.106</b>	<b>3688.108</b>

#### + Accessories:

fastening clips

Packs of	Order No.
1	<b>3688.109</b>

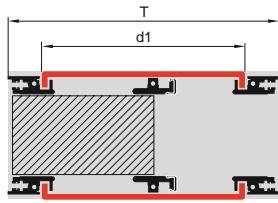
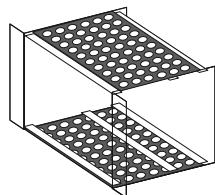
assembly screws

Packs of	Order No.
1	<b>9902.188</b>



# COMPONENTS / ACCESSORIES

## COVERS



### Covers version 1

For all HeiPac Vario, HeiPac Vario EMC, HeiPac Compact and HeiPac Vario Mobile subracks.

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

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

**Material:**

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

**Each set includes:**

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

**Each individual unit includes:**

1 cover.

**Note:**

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

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

**! Also required:**

<sup>1)</sup>Mounting blocks,  
see page 117

<sup>1)</sup>EMC gaskets for cover plates,  
see page 117

<sup>1)</sup>Assembly screws,  
packs of 100, order no. 3684.233,  
see page 164

# COMPONENTS / ACCESSORIES

## COVERS



### Covers version 2

For all HeiPac Vario, HeiPac Vario EMC, HeiPac Compact and HeiPac Vario Mobile subracks

#### To cover the PCB depth.

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

#### Material:

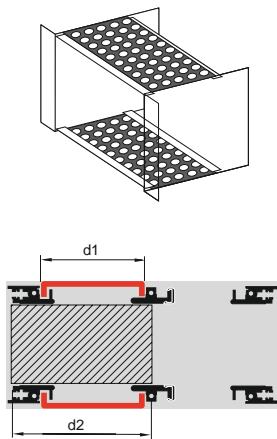
1.0 mm aluminium, unplated, hole diameter  
4 mm in perforated version.

#### Each set includes:

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

#### Each individual unit includes:

1 cover.



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

#### ! Also required:

<sup>1)</sup>Mounting blocks,  
see page 117

<sup>1)</sup>Assembly screws,  
packs of 100, order no. 3684.233,  
see page 164

**WE MEET YOUR  
INDIVIDUAL NEEDS!**

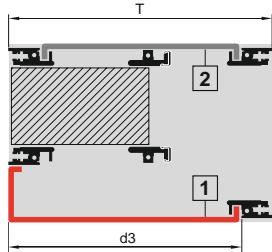
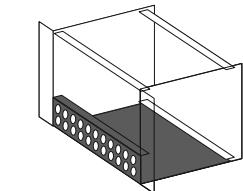
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# COMPONENTS / ACCESSORIES

## COVERS



T = Depth

### Covers version 3

For all HeiPac Vario, HeiPac Vario EMC and HeiPac Vario Mobile subracks.

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

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

#### Material:

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

#### Note:

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

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

### ! Also required:

Mounting blocks, see page 117  
EMC gaskets for covers, see page 117  
Assembly screws,  
packs of 100, order no. 3684.233,  
see page 164  
Cover, version 1, see page 125

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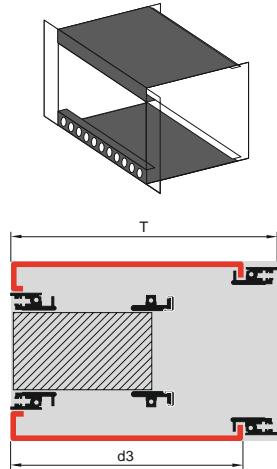
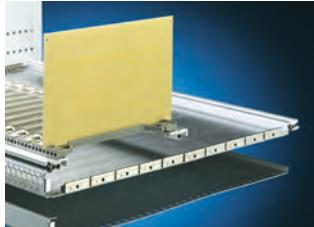
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Phone: + 49 – 9126 – 29 34 0

Email: [eps-quote@heitec.de](mailto:eps-quote@heitec.de)

# COMPONENTS / ACCESSORIES

## COVERS



T = Depth

### Covers version 4

For all HeiPac Vario, HeiPac Vario EMC and HeiPac Vario Mobile subracks.

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

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

#### Material:

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

#### Note:

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

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

#### ! Also required:

Mounting blocks,  
see page 117

EMC gaskets for covers,  
see page 117

Assembly screws,  
packs of 100, order no. 3684.233,  
see page 164

### Covers version 5

#### (snap-fastening)

For all HeiPac Vario, HeiPac Vario EMC and HeiPac Vario Mobile subracks.

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

Simple assembly:

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

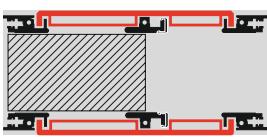
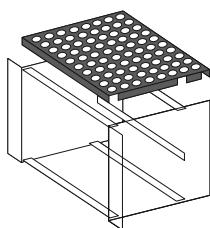
#### Material:

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

#### Supply includes:

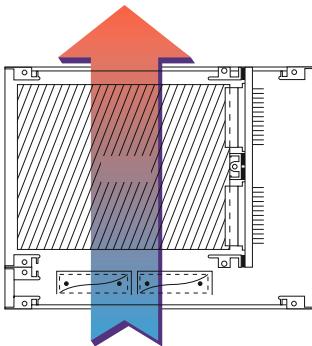
2 gaskets

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



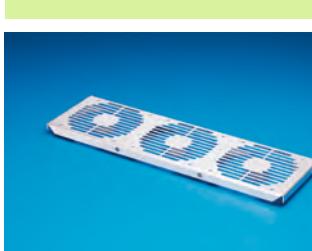
# COMPONENTS / ACCESSORIES

## CLIMATE CONTROL



### Vertical cooling from bottom to top

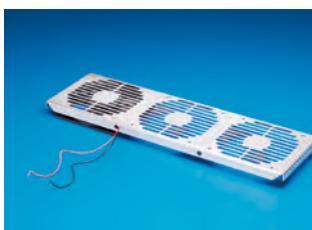
- Air flow via normal convection or forced cooling devices in the enclosure or housing outside of the subrack.
- Vertical forced air flow, supported by fans installed at the bottom of the subrack (1 U).



### Fan mounting plate

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

**Material:**  
1.5 mm aluminium, anodised

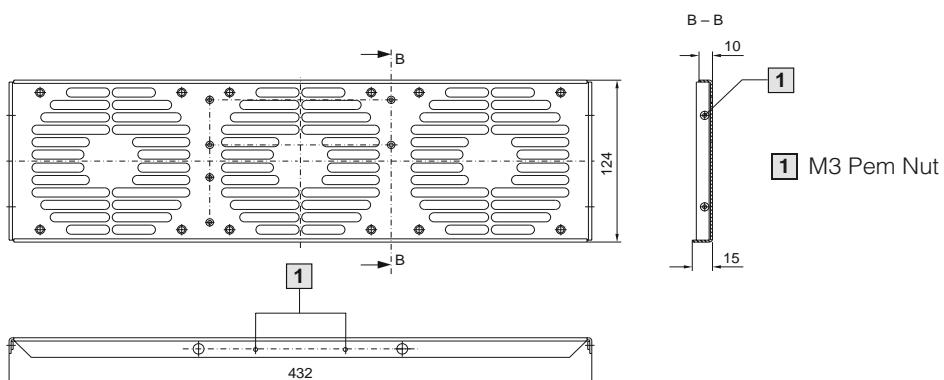


U	For PCB depth mm	No. of fan mounting plates required	HP	Model No. RP
1	160	1	84	<b>3684.317</b>
	220	1		
	280	2		
	340	2		
	400	3		

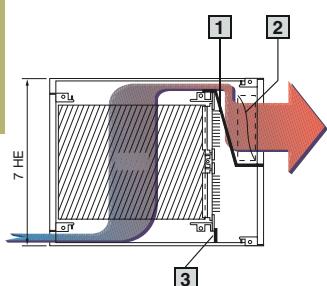
### ! Also required:

1 terminal block is required for each subrack.

Packs of	Model No. RP
1	<b>3686.805</b>



### Diagonal cooling from front to back



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

- 1 Air baffle,  
see page 131
- 2 Fan (mounted on the rear panel),  
see page 133
- 3 Air partition,  
see page 131

# COMPONENTS / ACCESSORIES

## CLIMATE CONTROL



### Air baffle

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

**Material:**

1 mm aluminium

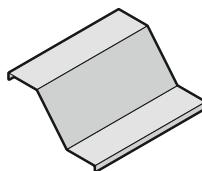
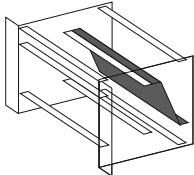
**Supply includes:**

Assembly parts.

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

**! Also required:**

Mounting blocks,  
see page 117



### Air partition

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

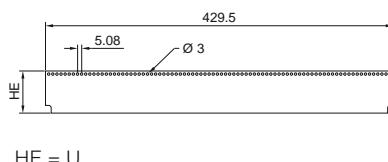
**Material:**

Epoxy

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

**! Also required:**

Fastening screws and washers, packs of 100, order no. 3684.019, see page 164



HE = U



### Front/rear panels for ventilation

**Material:**

2.5 mm aluminium

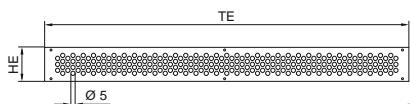
**Surface finish:**

Anodised, clear-chromated (EMC version)

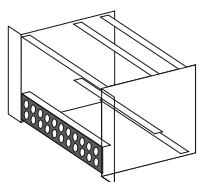
U	HP	Packs of	Model No. RP
1	84	1	3684.812
2	84	1	3684.813
3	84	1	3684.814

**! Also required:**

Screws and collars, packs of 100 sets, order no. 3658.160, see page 164

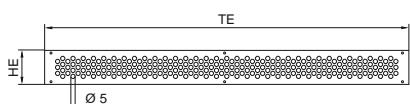


**EMC**



**Scope of supply of the EMC version:**

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



HE = U  
TE = HP

**EMC version:**

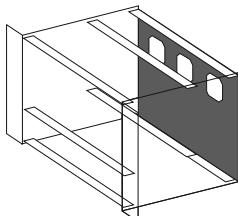
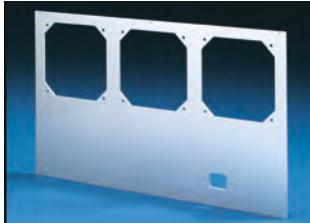
U	HP	Packs of	Model No. RP
1	84	1	3684.281
2	84	1	3684.282
3	84	1	3684.283

**! Also required:**

For EMC centering screws, see page 165

# COMPONENTS / ACCESSORIES

## CLIMATE CONTROL



### Rear panels for fan installation

**Material:**  
2.5 mm aluminium

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

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

**EMC**

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

#### ! Also required:

Screws and collars,  
packs of 100 sets, order no. 3658.160,  
see page 164

**EMC version:**

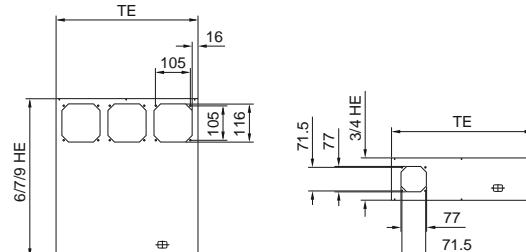
U	HP	For fans mm	Packs of	Model No. RP
3	84	80	1	3684.284
4	84	80	1	3684.285
6	84	120	1	3684.286
7	84	120	1	3684.287

#### ! Also required:

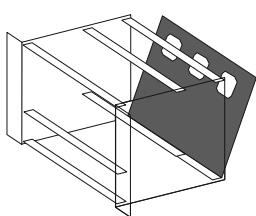
For EMC centering screws,  
see page 165

#### + Accessories:

Fans,  
see page 133



HE = U  
TE = HP



### Rear panels, horizontally hinged for fan installation

**Material:**  
2.5 mm aluminium

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

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

**EMC version supply includes:**

1 rear panel,  
1 contact strip,  
1 gasket strip,  
1 vertical EMC gasket,  
1 set of hinges,  
assembly parts.

**EMC**

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

#### ! Also required:

Screws and collars,  
packs of 100 sets, order no. 3658.160,  
see page 164

**EMC version:**

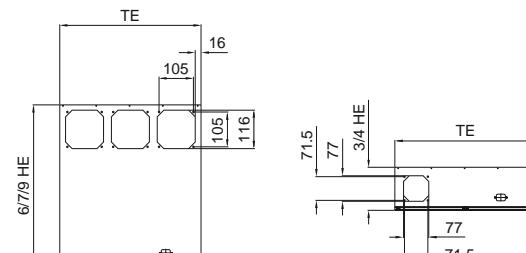
U	HP	For fans mm	Packs of	Model No. RP
3	84	80	1	3684.311
4	84	80	1	3684.312
6	84	120	1	3684.313
7	84	120	1	3684.314

#### ! Also required:

For EMC centering screws,  
see page 165

#### + Accessories:

Fans,  
see page 133



HE = U  
TE = HP

# COMPONENTS / ACCESSORIES

## CLIMATE CONTROL

### AC fans



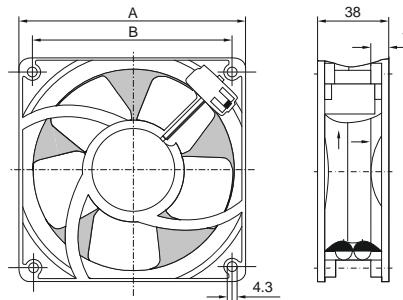
For subracks and microcomputer systems.

**Supply includes:**

1 fan without connection cable.

**! Also required:**

Assembly screws,  
packs of 1 set, order no. 3685.197,  
see page 165



### AC fans

Dimensions			Bearing	Rated voltage V/Hz	Power watts	Noise level dB (A)	Temperature range °C	Volume flow m³/h	<b>Model No. RP</b>
Fan mm	A mm	B mm							
80	79,5	71,5	Ball bearing	115/60	11,0	42	-40 to +95	57	<b>3686.645</b>
80	79,5	71,5	Ball bearing	230/50	12,0	37	-40 to +90	48	<b>3686.646</b>
120	119,0	104,8	Ball bearing	115/60	18,0	51	-40 to +90	180	<b>3686.643</b>
120	119,0	104,8	Ball bearing	230/50	19,0	47	-40 to +85	160	<b>3686.644</b>

### Connection cable

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

### DC fans



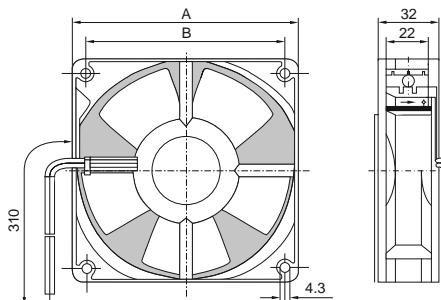
Optionally available with temperature-dependent speed control via additional temperature sensor.

**Supply includes:**

1 fan with connection cable (310 mm)

**! Also required:**

Assembly screws,  
packs of 1 set, order no. 3685.197,  
see page 165  
Temperature sensor for DC fans with speed  
control, see page 134



### DC fan with speed control and alarm signal

Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m³/h	<b>Model No. RP</b>
Fan mm	A mm	B mm									
80	79,5	71,5	Ball bearing	12	8,0 – 14,0	2,2	34	-20 to +65	65	48	<b>3686.649</b>
80	79,5	71,5	Ball bearing	24	21,6 – 26,4	2,4	36	-20 to +65	65	54	<b>3686.650</b>
120	119,0	104,8	Ball bearing	12	8,0 – 13,2	5,5	45	-20 to +65	65	170	<b>3686.647</b>
120	119,0	104,8	Ball bearing	24	21,0 – 27,0	5,4	45	-20 to +65	65	170	<b>3686.648</b>

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

Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m³/h	<b>Model No. RP</b>
Fan mm	A mm	B mm									
80	80,0	71,5	Ball bearing	12	6,0 – 15,0	1,8	34	-20 to +75	75	48	<b>3687.612</b>
80	80,0	71,5	Ball bearing	24	12,0 – 28,0	2,1	34	-20 to +75	75	48	<b>3687.613</b>
120	119,0	104,8	Ball bearing	12	6,0 – 15,0	2,6	39	-20 to +75	75	140	<b>3687.614</b>
120	119,0	104,8	Ball bearing	24	12,0 – 28,0	2,6	39	-20 to +75	75	140	<b>3687.615</b>

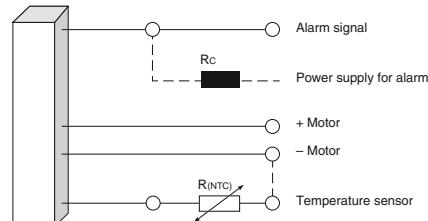
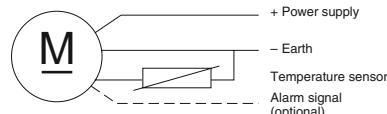
# COMPONENTS / ACCESSORIES

## CLIMATE CONTROL

### Temperature sensor

For DC fans 12/24 V with speed control.

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



### Finger guard



For AC fans and DC fans.

**Material:**

Polyamide, self-extinguishing to UL 94-V0

**Colour:**

Black

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

### EMC shielding plate

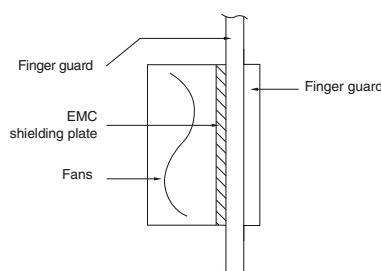


For AC fans and DC fans.

**Material:**

1 mm aluminium, clear-chromated

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



### Air block panel



**For unused slots**  
see page 123

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Flat front panels

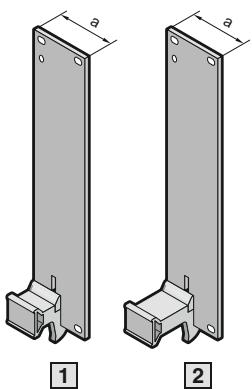
**With type I or II extractor handle**  
Complete modular systems

**Material:**

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

**Supply includes:**

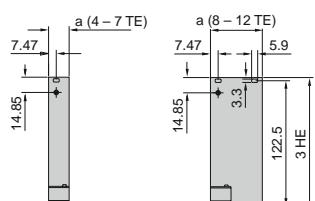
1 front panel,  
2 handles (1 with 3 U),  
1 set of assembly parts,  
1 PCB holder (for 3 U).



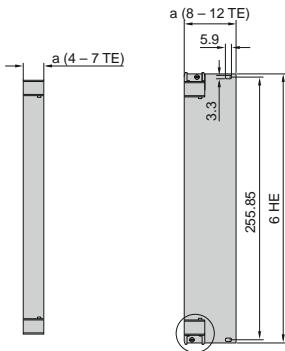
U	HP	a mm	Model No. RP	
			[1] Type I	[2] Type II
3	4	20,0	<b>3684.330</b>	<b>3684.358</b>
3	5	25,1	<b>3684.331</b>	<b>3684.359</b>
3	6	30,2	<b>3684.332</b>	<b>3684.360</b>
3	7	35,3	<b>3684.333</b>	<b>3684.361</b>
3	8	40,3	<b>3684.334</b>	<b>3684.362</b>
3	10	50,5	<b>3684.335</b>	<b>3684.363</b>
3	12	60,7	<b>3684.336</b>	<b>3684.364</b>
6	4	20,0	<b>3684.337</b>	<b>3684.365</b>
6	5	25,1	<b>3684.338</b>	<b>3684.366</b>
6	6	30,2	<b>3684.339</b>	<b>3684.367</b>
6	7	35,3	<b>3684.340</b>	<b>3684.368</b>
6	8	40,3	<b>3684.341</b>	<b>3684.369</b>
6	10	50,5	<b>3684.342</b>	<b>3684.370</b>
6	12	60,7	<b>3684.343</b>	<b>3684.371</b>
9	4	20,0	—	<b>3684.372</b>
9	8	40,3	—	<b>3684.373</b>

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

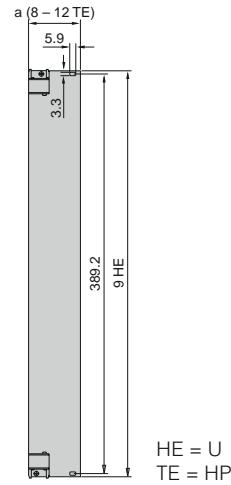
3 U



6 U

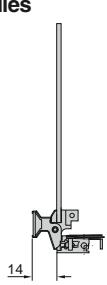


9 U

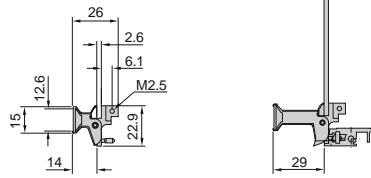


### Extractor handles

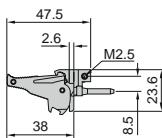
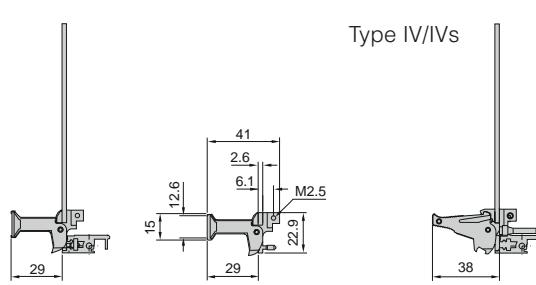
Type I



Type II

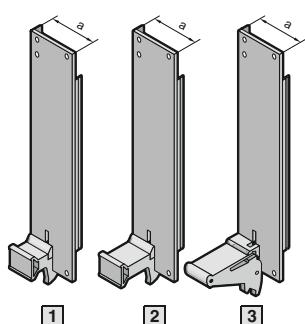


Type IV/IVs



# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



**Detailed drawing,**  
see page 135

### U-channel front panels

#### With type I, II extractor handle or type IV injector/extractor handle

Complete modular systems

#### Material:

front panel: extruded aluminium section,  
clear-chromated

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).



U	HP	a mm	Model No. RP		
			1 Type I	2 Type II	3 Type IV <sup>1)</sup>
3	4	20,0	<b>3684.344</b>	<b>3684.374</b>	<b>3684.413</b>
3	5	25,1	<b>3684.345</b>	<b>3684.375</b>	<b>3684.414</b>
3	6	30,2	<b>3684.346</b>	<b>3684.376</b>	<b>3684.415</b>
3	7	35,3	<b>3684.347</b>	<b>3684.377</b>	<b>3684.416</b>
3	8	40,3	<b>3684.348</b>	<b>3684.378</b>	<b>3684.417</b>
3	10	50,5	<b>3684.349</b>	<b>3684.379</b>	<b>3684.418</b>
3	12	60,7	<b>3684.350</b>	<b>3684.380</b>	<b>3684.419</b>
6	4	20,0	<b>3684.351</b>	<b>3684.381</b>	<b>3684.420</b>
6	5	25,1	<b>3684.352</b>	<b>3684.382</b>	<b>3684.421</b>
6	6	30,2	<b>3684.353</b>	<b>3684.383</b>	<b>3684.422</b>
6	7	35,3	<b>3684.354</b>	<b>3684.384</b>	<b>3684.423</b>
6	8	40,3	<b>3684.355</b>	<b>3684.385</b>	<b>3684.424</b>
6	10	50,5	<b>3684.356</b>	<b>3684.386</b>	<b>3684.425</b>
6	12	60,7	<b>3684.357</b>	<b>3684.387</b>	<b>3684.426</b>
9	4	20,0	—	<b>3684.388</b>	<b>3684.427</b>
9	5	25,1	—	—	<b>3684.428</b>
9	6	30,2	—	—	<b>3684.429</b>
9	7	35,3	—	—	<b>3684.430</b>
9	8	40,3	—	<b>3684.389</b>	<b>3684.431</b>
9	10	50,5	—	—	<b>3684.432</b>
9	12	60,7	—	—	<b>3684.433</b>

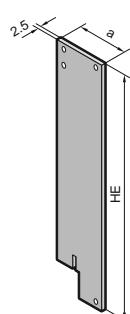
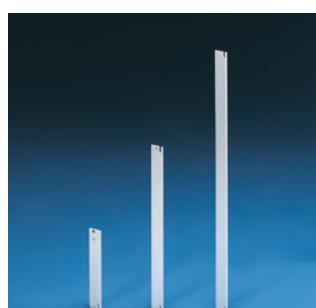
<sup>1)</sup> Can only be inserted in conjunction with front horizontal rails, with 10 mm roof (B), see page 109.

### Flat front panels

#### For type I, II, IV, IVs or VII handles

#### Material:

2.5 mm aluminium, anodised



HE = U

**Detailed drawing,**  
see page 135

#### ! Also required:

From front panel widths of 4 HP (at 3 U) and 7 HP (at 6 U):

Collar screws and plastic collars,  
packs of 100 sets, order no. 3658.160,  
see page 164

For 3 U front panels:  
PCB holder set, see page 146

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### U-channel front panels

For type I, II, IV, IVs or VII handles

**Material:**

front panel: extruded aluminium section, clear-chromated.



### ! Also required:

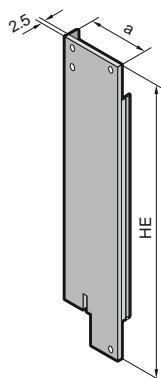
From front panel width 4 HP (for 3 U) and 8 HP (for 6 U):

Slotted centering screws,  
packs of 100, order no. 3687.050,  
see page 165

Posidrive centering screws,  
packs of 100, order no. 3687.051,  
see page 165

EMC gaskets,  
see page 116.

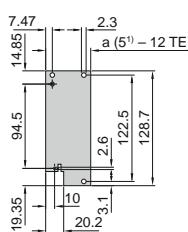
For 3 U front panels:  
PCB holder set,  
see page 146



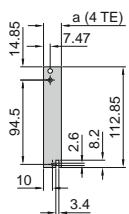
HP	a mm	Model No. RP		
		3 U	6 U	9 U
4	20,0	<b>3685.524</b>	<b>3685.532</b>	<b>3685.540</b>
5	25,1	<b>3685.525</b>	<b>3685.533</b>	<b>3685.541</b>
6	30,2	<b>3685.526</b>	<b>3685.534</b>	<b>3685.542</b>
7	35,3	<b>3685.527</b>	<b>3685.535</b>	<b>3685.543</b>
8	40,3	<b>3685.528</b>	<b>3685.536</b>	<b>3685.544</b>
10	50,5	<b>3685.529</b>	<b>3685.537</b>	<b>3685.545</b>
12	60,7	<b>3685.530</b>	<b>3685.538</b>	<b>3685.546</b>

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

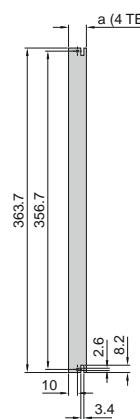
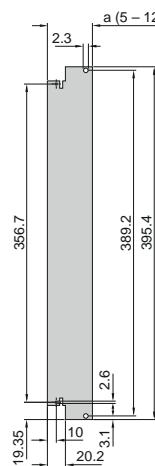
3 U



6 U



9 U



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

HE = U  
TE = HP

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



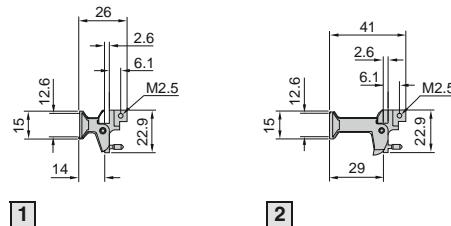
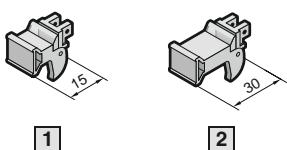
### Extractor handle type I and type II

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

**Supply includes:**  
Assembly parts

**Note:**

With 3 U, only one extractor handle is required.



#### ① Type I extractor handle, 15 mm

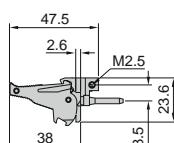
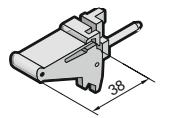
Colour	Packs of	Model No. RP
Grey	1	3685.587
Black	1	3685.589

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

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

### + Accessories:

Identification strips for extractor handles,  
see page 139



### Injector/extractor handle type IV

#### Handles with micro-switch

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

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

#### Handle without micro-switch

Description see above. Micro-switch may be retrofitted.

**Supply includes:**

1 handle without or with micro-switch, assembly parts.

**Note:**

- Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 109-110
- With 3 U front panels, only one extractor handle is required.

#### Handles with micro-switch

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

#### Handle without micro-switch

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

### + Accessories:

Keys,  
see page 124  
Keyable guide rails,  
see page 120  
Micro-switches,  
see page 141  
Connector pin for bayeing,  
see page 139



### Injector/extractor handle type IV

#### 8 HP, bayed

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

**Supply includes:**

2 bayed handles,  
fully assembled.

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

### + Accessories:

Connector pin for bayeing,  
see page 139

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Identification strips

**For type I, II extractor handle and type IV injector/extractor handle**  
Width 4 HP

Packs of	Model No. RP
100	3684.328



### Injector/extractor handle type IVs

#### With push-button

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

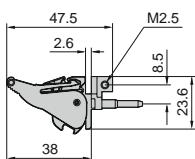
- Insertion/removal function
- Push-button for locking and unlocking the board type plug-in unit (cannot be extracted in the locked position)
- Optionally with ½ HP offset PCB attachment, e. g. for component mounting on both sides
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges before contacting the connectors and for precise positioning of the board type plug-in unit
- Keyable
- Integral PCB attachment
- Bayable

**Material:**  
Plastic/metal

**Supply includes:**  
Assembly parts.

#### Note:

- Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 109-110
- With 3 U front panels, only one extractor handle is required.



#### Handles without offset

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

#### Handles with ½ HP offset

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

### + Accessories:

Keys,  
see page 124  
Keyable guide rails,  
see page 120  
Keyable guide rails with 1/2 HP offset,  
see page 121  
Micro-switches,  
see page 141  
Connector pin for baying,  
see page 139



### Connection pin

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

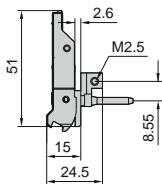
The connection pin can be used to connect injector/extractor handles, types IV, IVs and VII.

**Material:**  
Steel

Packs of	Model No. RP
20	3685.319

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Injector/extractor handle type VII

#### Plastic (telecom)

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

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

#### Material:

Plastic

#### Supply includes:

Assembly parts.

#### Note:

Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 109-110

#### Handles without offset

Installation	Packs of	Model No. RP
Top	1	<b>3688.784</b>
Bottom	1	<b>3688.785</b>

#### Handles with $\frac{1}{2}$ HP offset

Installation	Packs of	Model No. RP
Top	1	<b>3688.780</b>
Bottom	1	<b>3688.781</b>

### + Accessories:

Keys,

see page 124

Keyable guide rails,

see page 120

Keyable guide rails with  $\frac{1}{2}$  HP offset,

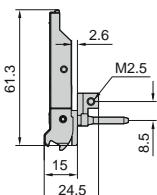
see page 121

Micro-switches,

see page 141

Connector pin for baying,

see page 139



### Injector/extractor handle type VII

#### Metal (telecom)

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

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

#### Material:

Die-cast zinc

#### Supply includes:

Assembly parts.

#### Note:

Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 109-110

#### Handles without offset

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

#### Handles with $\frac{1}{2}$ HP offset

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

### + Accessories:

Keys,

see page 124

Keyable guide rails,

see page 120

Keyable guide rails with  $\frac{1}{2}$  HP offset,

see page 121

Micro-switches,

see page 141

Connector pin for baying,

see page 139

### Micro-switch

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

#### Technical specifications:

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



Packs of	Model No. RP
10	<b>3684.410</b>

### + Also required:

Micro-switch mounting clip,  
see page 141

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



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

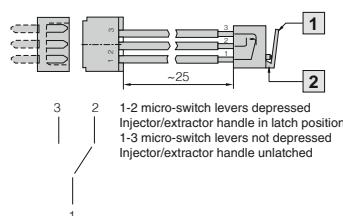
### Micro-switch

#### With cable and connector

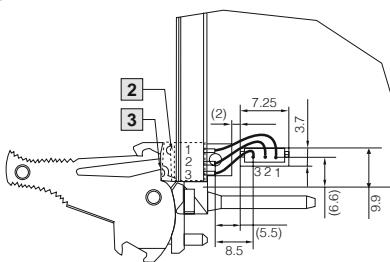
For "live insertion" applications.  
Installation in injector/extractor handles, types IV, IVs and VII.

#### Supply includes:

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



Packs of	Model No. RP
1 set	3686.536



### Micro-switch mounting clip

For mounting micro-switches in handles.

Packs of	Model No. RP
10	3684.411



### Plastic covers

#### For PCBs

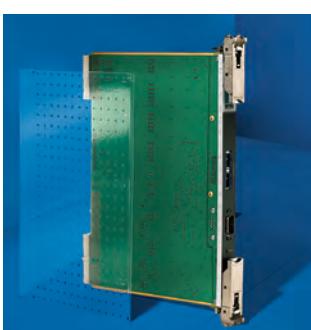
For mechanical protection of the component side and of the EMC gaskets.  
Attachment holes as per CPC1 or VME-specifications. Optionally available as perforated or solid version.

#### Material:

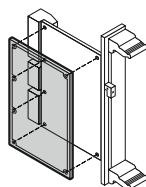
0.3 mm plastic, anti-static  
Maximum temperature up to 65°C

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

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



For PCBs	Packs of	Model No. RP			
		for CPC1			for VME
		Perforated <sup>1)</sup>	Solid <sup>1)</sup>	Solid	Solid
3 U x 160 mm	1	<b>3687.932</b>	<b>3686.572</b>	<b>3685.966</b>	<b>3685.626</b>
	5	—	—	—	<b>3685.279</b>
3 U x 220 mm	1	—	—	—	<b>3685.805</b>
	5	—	—	—	<b>3685.266</b>
6 U x 80 mm	1	<b>3687.933</b>	<b>3686.573</b>	<b>3686.037</b>	<b>3686.146</b>
	1	<b>3687.934</b>	<b>3686.574</b>	<b>3685.967</b>	<b>3685.627</b>
6 U x 160 mm	1	<b>9905.574<sup>2)</sup></b>	<b>9905.990<sup>2)</sup></b>	—	—
	5	—	—	—	<b>3685.280</b>
	1	—	—	—	<b>3685.824</b>
	5	—	—	—	<b>3685.000</b>

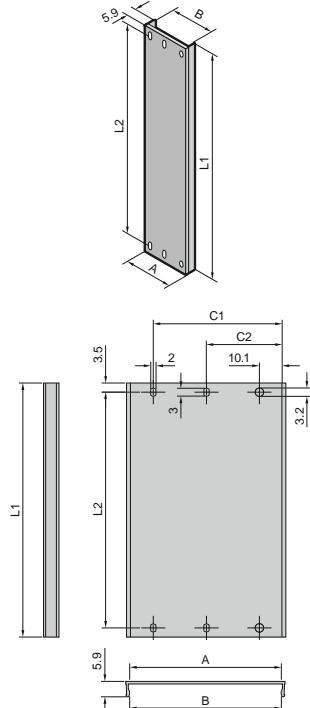


#### ! Also required:

Required for mounting the perforated CPC1 covers:  
Mounting clips, Packs of = 100  
order no. 3687.955

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Front panels

#### For type III extractor handle

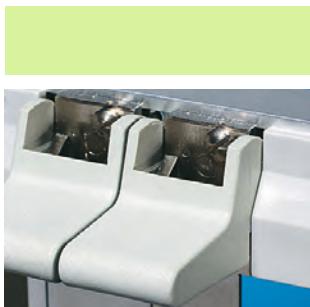
##### Material:

1.0 mm extruded aluminium section

##### Surface finish:

Untreated

HP	A mm	B mm	C1 mm	C2 mm	Model No. RP		
					3 U	6 U	9 U
3	15,20	12,20	—	—	<b>3685.548</b>	<b>3685.555</b>	—
4	20,22	17,20	—	—	<b>3685.549</b>	<b>3685.556</b>	<b>3685.562</b>
5	25,28	22,28	—	22,68	<b>3685.550</b>	<b>3685.557</b>	<b>3685.563</b>
6	30,36	27,36	—	25,22	<b>3685.551</b>	<b>3685.558</b>	<b>3685.564</b>
8	40,52	37,52	—	30,30	<b>3685.552</b>	<b>3685.559</b>	<b>3685.566</b>
10	50,68	47,68	40,46	25,22	<b>3685.553</b>	<b>3685.560</b>	<b>3685.567</b>
12	60,84	57,84	50,62	30,30	<b>3685.554</b>	<b>3685.561</b>	<b>3685.568</b>
L1 mm					97,00	230,35	363,70
L2 mm					90,00	223,35	356,70



### Type III extractor handle

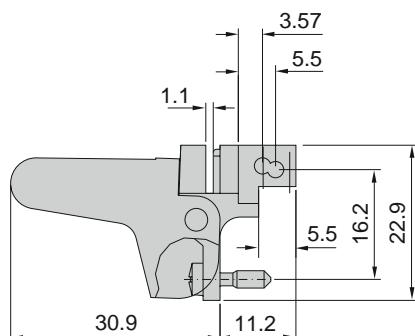
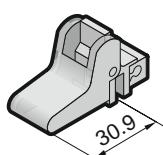
##### Material:

Fibreglass-reinforced polycarbonate  
Base section nickel-plated ABS

##### Colour:

Grey

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



### Covers

#### For panel end spaces

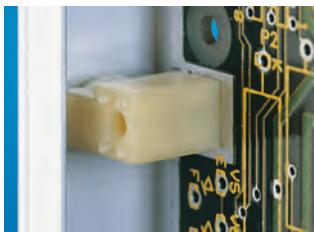
##### Material:

Fibreglass-reinforced polycarbonate

HP	Width mm	Packs of	Model No. RP
1	5	1	<b>3687.529</b>
2	10,08	1	<b>3687.530</b>
4	20,24	1	<b>3687.531</b>

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Universal holder

**For front panel support**

**Material:**

Nickel-plated plastic

HP	Packs of	Model No. RP
4	1	3687.545



### Flat front panels

**With type V handle and PCB holder**  
Complete modular systems

**Material:**

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

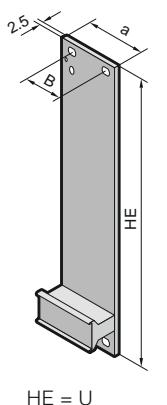
**Supply includes:**

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

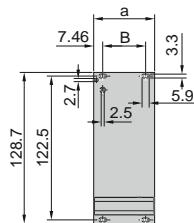
HP	a mm	W (B) mm	Model No. RP.	
			3 U H = 128,7	6 U H = 262,05
3	14,9	—	3652.000	3652.200
4	20,0	—	3652.010	3652.210
5	25,1	—	3652.020	3652.220
6	30,1	—	3652.030	3652.230
7	35,2	—	3652.040	3652.240
8	40,3	—	3652.050	3652.250
10	50,5	35,6	3652.060	3652.260
12	60,6	45,7	3652.070	3652.270
14	70,8	55,9	3652.080	—

### + Accessories:

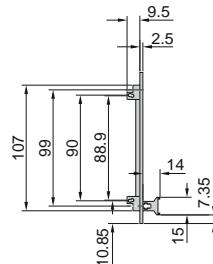
Identification strips for handles,  
see page 145



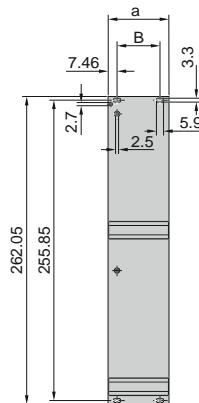
HE = U



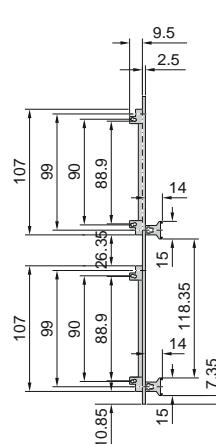
122.5  
7.46  
2.7  
2.5  
3.3



107  
99  
90  
88.9  
9.5  
2.5  
14  
15  
7.35



255.85  
262.05  
7.46  
2.7  
2.5  
5.9  
3.3

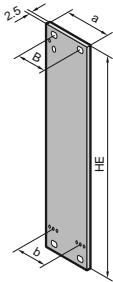


107  
99  
90  
88.9  
26.35  
14  
15  
10.85  
1118.35  
9.5  
2.5

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES

### Flat front panels

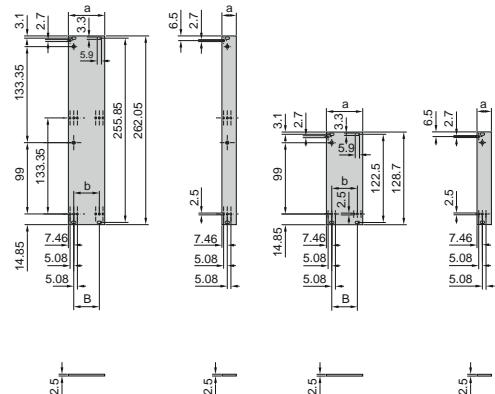


HE = U

#### For type V and VI handle

##### Material:

2.5 mm aluminium, anodised



HP	a mm	W (B) mm	b mm	Packs of	Model No. RP	
					3 U	6 U
3	14,9	—	—	1	<b>3685.569</b>	<b>3685.578</b>
4	20,0	—	—	1	<b>3685.570</b>	<b>3685.579</b>
5	25,1	—	—	1	<b>3685.571</b>	<b>3685.580</b>
6	30,2	—	15,2	1	<b>3685.572</b>	<b>3685.581</b>
7	35,2	—	20,3	1	<b>3685.573</b>	<b>3685.582</b>
8	40,3	—	25,4	1	<b>3685.574</b>	<b>3685.583</b>
10	50,5	35,6	35,6	1	<b>3685.575</b>	<b>3685.584</b>
12	60,6	45,7	45,7	1	<b>3685.576</b>	<b>3685.585</b>
14	70,8	55,9	55,9	1	<b>3685.577</b>	<b>3685.586</b>

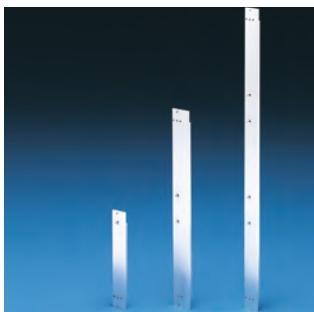
#### + Also required:

Collar screws and plastic collars,  
packs of 100 sets, order no. 3658.160,  
see page 164

#### ! Accessories:

Handles type V,  
see page 145  
Handles type VI,  
see page 146

### U-channel front panels



#### For type V and VI handle

##### Material:

2.5 mm aluminium, clear-chromated

##### Supply includes:

1 vertical EMC gasket, version 1.



HP	a mm	W (B) mm	Packs of	Model No. RP	
				3 U	6 U
4	20,0	—	1	<b>3687.655</b>	<b>3687.660</b>
6	30,2	—	1	<b>3687.656</b>	<b>3687.661</b>
8	40,3	—	1	<b>3687.657</b>	<b>3687.662</b>
10	50,5	35,6	1	<b>3687.658</b>	<b>3687.663</b>
12	60,6	45,7	1	<b>3687.659</b>	<b>3687.664</b>

#### ! Also required:

Slotted centering screws,  
packs of 100, order no. 3687.050,  
see page 165  
Cross-head centering screws,  
packs of 100, order no. 3687.051  
see page 165

#### + Accessories:

Handles type V,  
see page 145  
Handles type VI,  
see page 146

**Detailed drawing,**  
see page 144

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Type V handle

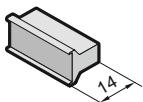
#### Plastic

**Material:**  
Plastic

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

### ! Also required:

Mounting kit,  
packs of 1 set, order no. 3687.519,  
see page 164



### Type V handle

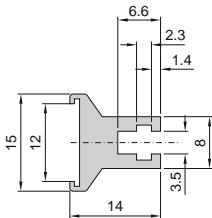
#### Aluminium

**Material:**  
Aluminium, anodised.

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

### ! Also required:

Mounting kit,  
packs of 1 set, order no. 3687.146,  
(from 6 HP 2 packs required),  
see page 165



### Identification strips

#### For type V handle, aluminium

For individual labelling of the handles.

**Material:**  
0.5 mm aluminium, anodised

HP	Packs of	Model No. RP
3	1	3685.746
4	1	3685.747
5	1	3685.748
6	1	3685.749
7	1	3685.750
8	1	3685.751
10	1	3685.752
12	1	3685.753
14	1	3685.754
21	1	3685.755
28	1	3685.756
42	1	3685.757
1 m	1	3685.758
0,5 m	5	3606.300

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



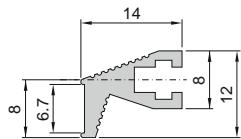
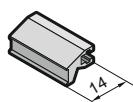
### Type VI handle

#### Aluminium

#### Material:

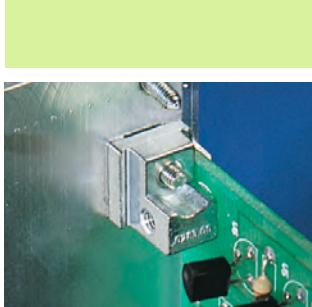
Aluminium, anodised.

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



### ! Also required:

Mounting kit,  
packs of 1 set, order no. 3687.146,  
(from 6 HP 2 packs required),  
see page 165



### PCB holder kit

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

#### Material:

Die-cast

#### Note:

Only required at the top with 3 U front panels.

Packs of	Model No. RP
10	3685.198

### ! Also required:

For attaching the PCB to the PCB holder:  
Pan-head screws,  
packs of 100, order no. 3654.320,  
see page 164

For attaching the front panel to the PCB holder:  
Oval csk-screws,  
packs of 100, order no. 3685.282,  
see page 165



### PCB holder

#### For front panels

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

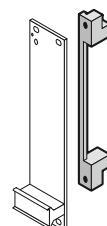
#### Material:

Noryl

#### Supply includes:

Assembly parts.

Packs of	Model No. RP
10	3606.330



# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES

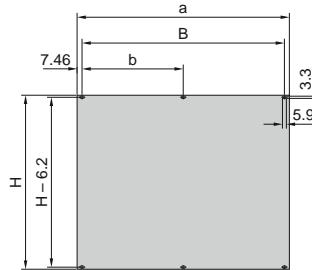


### Front panels

#### As filler panel, flat

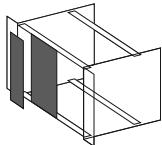
##### Material:

2.5 mm aluminium, natural-anodised.



#### ! Also required:

Collar screws and plastic collars,  
packs of 100 sets, order no. 3658.160,  
see page 164



HP	a mm	W (B) mm	b mm	Model No. RP						
				1 U H = 39,8	2 U H = 84,25	3 U H = 128,7	4 U H = 173,15	6 U H = 262,05	7 U H = 306,5	9 U H = 395,4
2	9,8	—	—	—	—	<b>3684.889</b>	—	<b>3684.911</b>	—	<b>3684.738</b>
3	14,9	—	—	—	—	<b>3684.890</b>	—	<b>3684.912</b>	—	—
4	20,0	—	—	—	—	<b>3684.891</b>	—	<b>3684.913</b>	—	<b>3684.739</b>
5	25,1	—	—	—	—	<b>3684.892</b>	—	<b>3684.914</b>	—	—
6	30,1	—	—	—	—	<b>3684.893</b>	—	<b>3684.915</b>	—	—
7	35,2	—	—	—	—	<b>3684.894</b>	—	<b>3684.916</b>	—	—
8	40,3	—	—	—	—	<b>3684.895</b>	—	<b>3684.917</b>	—	<b>3684.740</b>
10	50,5	35,6	—	—	—	<b>3684.896</b>	—	<b>3684.918</b>	—	—
12	60,6	45,7	—	—	—	<b>3684.897</b>	—	<b>3684.919</b>	—	<b>3684.741</b>
14	70,8	55,9	—	—	—	<b>3684.898</b>	—	<b>3684.920</b>	—	—
20	101,3	86,4	—	—	—	<b>3684.899</b>	—	<b>3684.921</b>	—	—
21	106,4	91,4	—	—	<b>3685.350</b>	<b>3684.900</b>	—	<b>3684.922</b>	—	—
24	121,7	106,7	—	—	<b>3685.429</b>	—	—	—	—	—
27	136,8	121,9	—	—	—	<b>3684.901</b>	—	<b>3684.923</b>	—	—
28	141,9	127,0	—	—	—	<b>3684.902</b>	—	<b>3684.924</b>	—	—
40	202,9	188,0	—	—	—	<b>3684.903</b>	—	<b>3684.976</b>	—	<b>3684.977</b>
42	213,0	198,1	—	<b>3684.885</b>	<b>3684.887</b>	<b>3684.904</b>	<b>3684.908</b>	<b>3684.925</b>	<b>3684.928</b>	<b>3684.742</b>
60	304,5	289,6	—	—	—	<b>3684.905</b>	—	—	—	—
63	319,7	304,8	152,4	—	—	<b>3684.906</b>	<b>3684.909</b>	<b>3684.926</b>	<b>3684.929</b>	—
84	426,4	411,5	203,2	<b>3684.886</b>	<b>3684.888</b>	<b>3684.907</b>	<b>3684.910</b>	<b>3684.927</b>	<b>3684.930</b>	<b>3684.743</b>
85	431,5	431,5	203,2	—	—	<b>3684.744</b>	<b>3684.745</b>	<b>3684.746</b>	<b>3684.747</b>	<b>3684.748</b>

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES

### Front panels



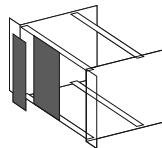
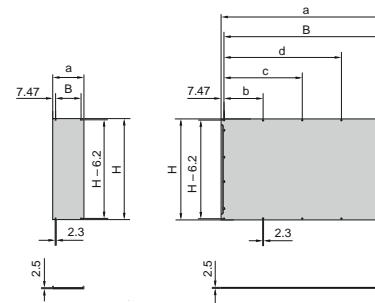
#### As filler panels, U-shaped

##### 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).



#### ! Also required:

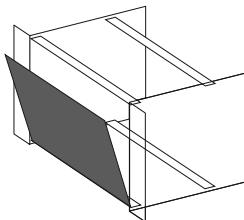
Slotted centering screws,  
packs of 100, order no. 3687.050,  
see page 165

Cross-head centering screws,  
packs of 100, order no. 3687.051  
see page 165

HP	a mm	W (B) mm	b mm	c mm	d mm	Model No. RP						
						1 U H = 39,8	2 U H = 84,25	3 U H = 128,7	4 U H = 173,15	6 U H = 262,05	7 U H = 306,5	9 U H = 395,4
2	9,8	–	–	–	–	–	–	<b>3685.177</b>	–	<b>3685.185</b>	–	<b>3685.193</b>
3	14,9	–	–	–	–	–	–	<b>3686.138</b>	–	<b>3686.139</b>	–	<b>3686.140</b>
4	20,0	–	–	–	–	–	–	<b>3685.178</b>	–	<b>3685.186</b>	–	<b>3685.194</b>
5	25,1	–	–	–	–	–	–	<b>3685.179</b>	–	<b>3685.187</b>	–	–
6	30,1	–	–	–	–	–	–	<b>3685.180</b>	–	<b>3685.188</b>	–	–
7	35,2	–	–	–	–	–	–	<b>3685.181</b>	–	<b>3685.189</b>	–	–
8	40,3	25,4	–	–	–	–	–	<b>3685.182</b>	–	<b>3685.190</b>	–	<b>3685.195</b>
10	50,5	35,6	–	–	–	–	–	<b>3685.183</b>	–	<b>3685.191</b>	–	–
12	60,6	45,7	–	–	–	–	–	<b>3685.184</b>	–	<b>3685.192</b>	–	<b>3685.196</b>
14	70,8	55,9	–	–	–	–	–	<b>3684.249</b>	–	<b>3684.258</b>	–	<b>3684.278</b>
16	80,9	66,0	–	–	–	–	–	<b>3685.348</b>	–	<b>3685.349</b>	–	–
20	101,3	86,4	–	–	–	–	–	<b>3684.250</b>	–	<b>3684.259</b>	–	<b>3684.279</b>
21	106,4	91,4	–	–	–	–	–	<b>3684.272</b>	–	<b>3684.275</b>	–	–
28	141,9	127,0	61,0	–	–	–	–	<b>3684.251</b>	–	<b>3684.260</b>	–	–
40	202,9	188,0	91,5	–	–	–	–	<b>3684.273</b>	–	<b>3684.276</b>	–	<b>3684.280</b>
42	213,0	198,1	96,5	–	–	–	–	<b>3684.252</b>	<b>3684.255</b>	<b>3684.261</b>	<b>3684.264</b>	<b>3684.267</b>
60	304,5	289,6	96,5	193,0	–	–	–	<b>3684.274</b>	–	<b>3684.277</b>	–	–
63	319,7	304,8	101,6	203,2	–	–	–	<b>3684.253</b>	<b>3684.256</b>	<b>3684.262</b>	<b>3684.265</b>	<b>3684.268</b>
84	426,4	411,5	101,6	203,2	304,8	<b>3684.247</b>	<b>3684.248</b>	<b>3684.254</b>	<b>3684.257</b>	<b>3684.263</b>	<b>3684.266</b>	<b>3684.269</b>

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Front panels

#### Hinged

##### Material:

2.5 mm aluminium, anodised

##### Supply includes:

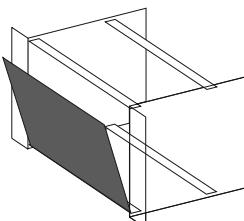
1 set of hinges,  
assembly parts.

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

### ! Also required:

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

Rear trim sections, see page 104



### EMC front panels

#### Hinged

##### Material:

2.5 mm aluminium, clear-chromated



##### Supply includes:

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

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



### Door cut-out trim

#### For subracks installed indoors

##### Material:

Aluminium

Width	Packs of	Model No. UN
269,2 mm (1/2 19")	2	<b>3634.060</b>
482,6 mm (19")	2	<b>3634.070</b>

# COMPONENTS / ACCESSORIES

## FRONT PANELS, HANDLES



### Mezzanine front panels

#### Extruded aluminium section

For PCI mezzanine cards (PMC). Conforms to IEEE 1386

#### Material/surface finish:

Extruded aluminium section, clear-chromated

Packs of

1

Model No. RP

3688.658

#### + Accessories:

EMC seals,

see page 150

Assembly screws M2.5 x 6,  
packs of 100, order no. 3654.340,  
see page 164



### Mezzanine front panels

#### Die-cast zinc

For PCI mezzanine cards (PMC). Conforms to IEEE 1386

#### Material:

Die-cast zinc

Packs of

1

Model No. RP

3688.659

#### + Accessories:

EMC seals,

see page 150

Assembly screws M2.5 x 6,  
packs of 100, order no. 3654.340,  
see page 164



### Support spacers

#### For mezzanine cards

10 mm, for mounting mezzanine cards.

Packs of

1

Model No. RP

3688.663



### 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

1

Model No. RP

3688.660



### 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	Model No. RP
Sealing ring	1	3688.661
Sealing gasket	1	3688.662

# COMPONENTS / ACCESSORIES

## BOX-TYPE PLUG-IN UNITS



### HeiPac BOX-TYPE PLUG-IN UNITS - type 1

#### Technical specifications:

Installation depth: 160 and 220 mm  
Height: 3 U and 6 U to IEC 60 297-3  
Rear panel to accommodate single connectors

#### Material:

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

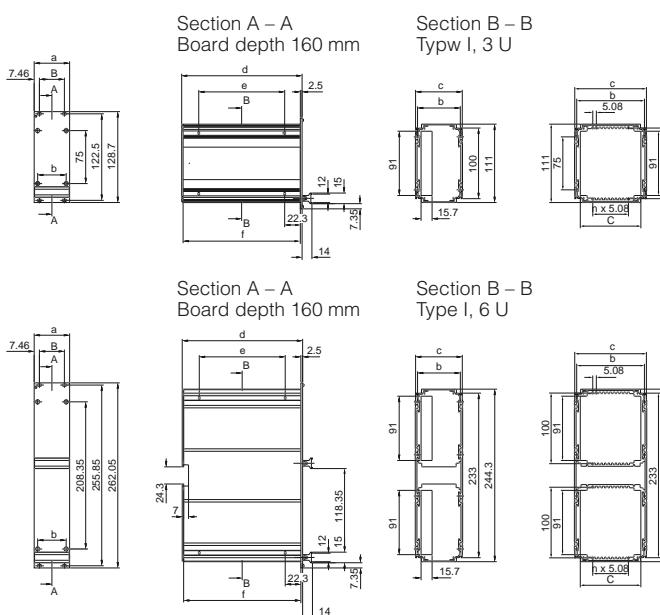
#### Available on request:

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

#### + Accessories:

Covers, see page 152  
Guide rails, see page 119  
Individual components, see page 152

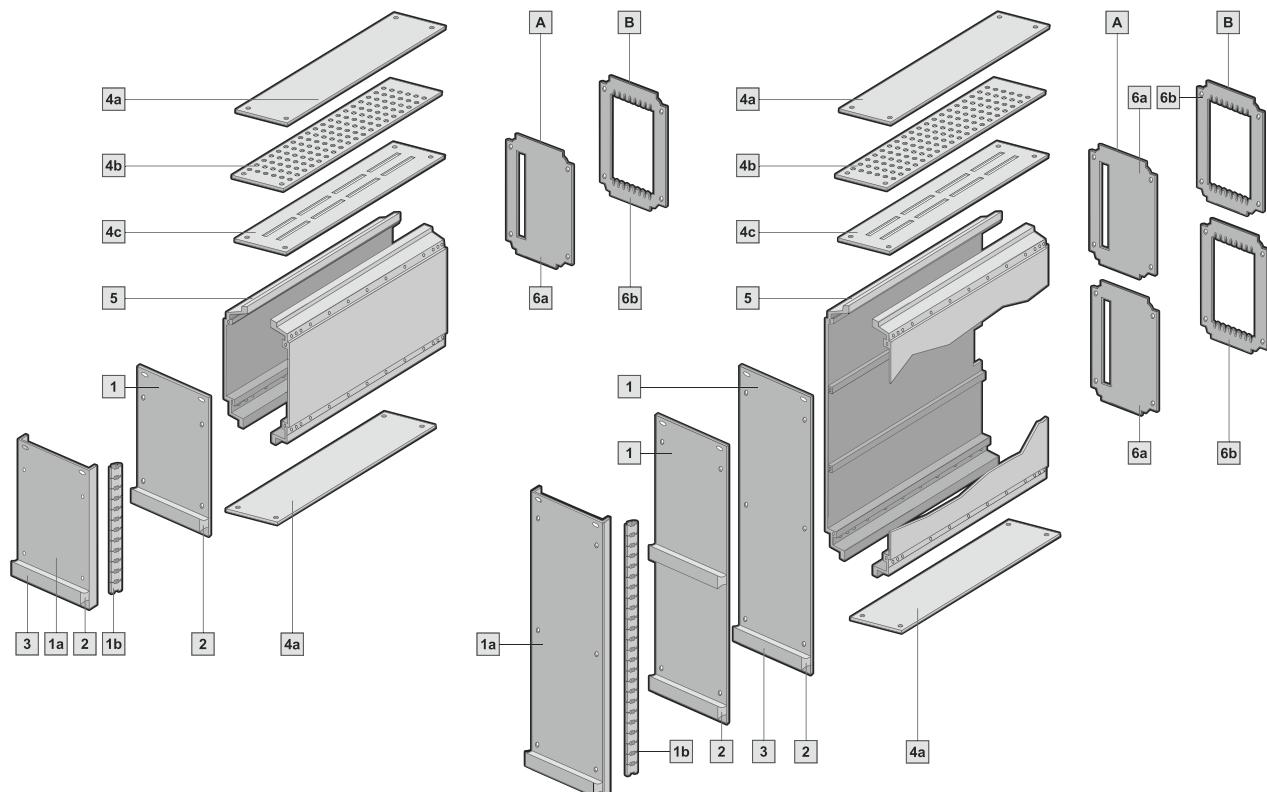
HP	a mm	B mm	b mm	c mm	C mm	d mm	e mm	f mm	Order No.		
									3 U	3 U	6 U
<b>Board depth 160 mm</b>											
6	32,2	—	20,3	27,5	—	171,5	122	167	<b>3653.000</b>	—	—
8	40,3	—	30,5	36,0	—	171,5	122	167	—	<b>3653.010</b>	—
10	50,5	35,6	40,6	46,2	—	171,5	122	167	—	<b>3653.020</b>	<b>3653.100</b>
12	60,6	45,7	50,8	56,4	—	171,5	122	167	—	<b>3653.030</b>	<b>3653.110</b>
14	70,8	55,9	60,9	66,5	—	171,5	122	167	—	<b>3653.040</b>	<b>3653.120</b>
21	106,3	91,4	96,4	102,0	86,3	171,5	122	167	—	<b>3653.050</b>	<b>3653.130</b>
28	141,9	127,0	132,0	137,6	121,8	171,5	122	167	—	<b>3653.060</b>	<b>3653.140</b>
42	213,1	198,1	203,2	208,8	193,0	171,5	122	167	—	<b>3653.070</b>	<b>3653.150</b>
<b>Board depth 220 mm</b>											
10	50,5	35,6	40,6	46,2	—	231,5	182	227	—	<b>3653.200</b>	<b>3653.300</b>
12	60,6	45,7	50,8	56,4	—	231,5	182	227	—	<b>3653.210</b>	<b>3653.310</b>
14	70,8	55,9	60,9	66,5	—	231,5	182	227	—	<b>3653.220</b>	<b>3653.320</b>
21	106,3	91,4	96,4	102,0	86,3	231,5	182	227	—	<b>3653.230</b>	<b>3653.330</b>
28	141,9	127,0	132,0	137,6	121,8	231,5	182	227	—	<b>3653.240</b>	<b>3653.340</b>
42	213,1	198,1	203,2	208,8	193,0	231,5	182	227	—	<b>3653.250</b>	<b>3653.350</b>
<b>Supply includes</b>											
Front panel									1	1	1
Handle									1	1	2
Side panel									1	2	2
Cover plate incl. rear panel									1	—	—
Rear panel									—	1	2
PCB holder									2	2	2
Assembly parts (set)									1	1	1



# COMPONENTS / ACCESSORIES

## BOX-TYPE PLUG-IN UNITS

### HeiPac BOX-TYPE PLUG-IN UNITS – individual components



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

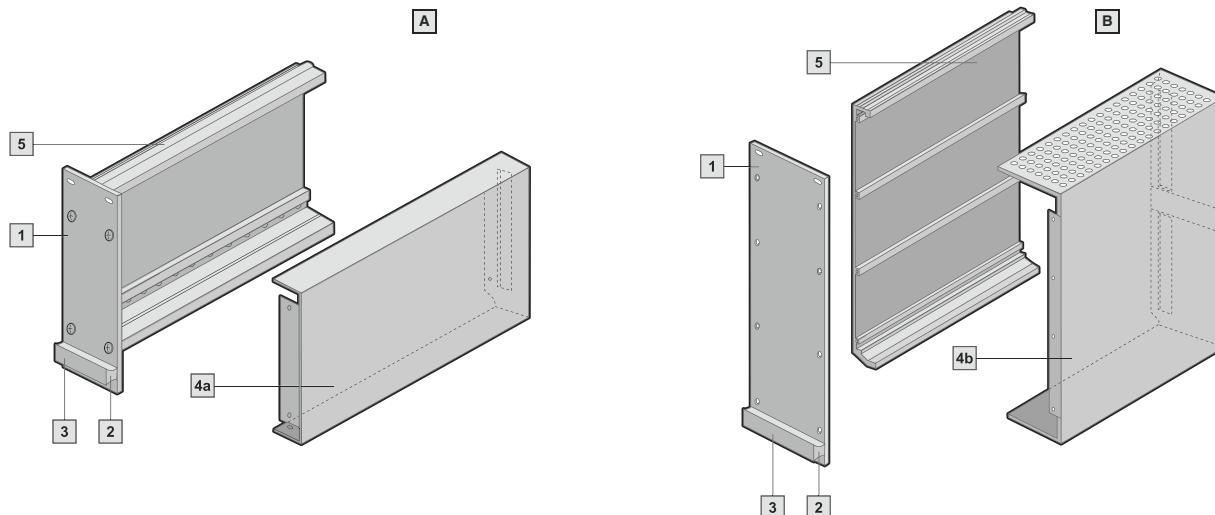
Box-type plug-in units, individual components	A Type I	B Type II	Packs of	8 HP	10 HP	12 HP	14 HP	21 HP	8 HP	42HP	Page
<b>Front panels</b> of 2.5 mm aluminium, anodised surface finish											
for 3 U	■	■	1	3685.769	3685.629	3685.630	3685.631	3685.636	3685.637	3685.638	–
1 for 6 U (for 1 handle)	■	■	1	3685.767	3685.633	3685.634	3685.635	3685.639	3685.640	3685.641	–
for 6 U (for 2 handles)	■	■	1	–	3687.520	3687.521	3687.522	3687.523	3687.524	3687.525	–
<b>EMC front panels</b> of 2.5 mm aluminium, surface finish clear-chromated (only for use in conjunction with 10 HP box-type plug-in unit)											
1a for 3 U/10 HP box-type plug-in units	■	■	1	–	–	3687.587	–	–	–	–	–
1a for 6 U/10 HP box-type plug-in units	■	■	1	–	–	3687.588	–	–	–	–	–
<b>EMC gaskets, vertical, for front panels</b>											
1b for 3 U	■	■	1	–	–	3686.975	–	–	–	–	116
1b for 6 U	■	■	1	–	–	3686.977	–	–	–	–	116
<b>Handle type V</b>											
2 of aluminium, anodised surface finish	■	■	1	3685.600	3685.601	3685.602	3685.603	3685.761	3685.762	3685.763	145
2 of plastic	■	■	1	3685.492	–	3685.493	–	3685.494	–	–	145
<b>Identification strips</b>											
3 of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.751	3685.752	3685.753	3685.754	3685.755	3685.756	3685.757	145
<b>Covers</b> 4a 4b of 1 mm aluminium, untreated 4c of 1.2 mm sheet steel, painted, RAL 9006 (with vent slots)											
4a unvented, for board depth 160 mm	■	■	1	3687.555	3685.689	3685.690	3685.691	3685.692	3685.693	3685.694	–
4a unvented, for board depth 220 mm	■	■	1	3687.562	3685.701	3685.702	3685.703	3685.704	3685.705	3685.706	–
4b vented, for board depth 160 mm	■	■	1	3687.585	3685.683	3685.684	3685.685	3685.686	3685.687	3685.688	–
4b vented, for board depth 220 mm	■	■	1	–	3685.695	3685.696	3685.697	3685.698	3685.699	3685.700	–
4c vent slots for guide rails, for board depth 160 mm	■	■	1	–	3687.556	3687.557	3687.558	3687.559	3687.560	3687.561	–
4c vent slots for guide rails, for board depth 220 mm	■	■	1	–	3687.563	3687.564	3687.565	3687.566	3687.567	3687.568	–
<b>Side panel</b> of extruded aluminium section, anodised surface finish											
5 3 U, for board depth 160 mm	■	■	1	–	–	3685.645	–	–	–	–	–
5 6 U, for board depth 160 mm	■	■	1	–	–	3685.648	–	–	–	–	–
5 3 U, for board depth 220 mm	■	■	1	–	–	3685.646	–	–	–	–	–
5 6 U, for board depth 220 mm	■	■	1	–	–	3685.649	–	–	–	–	–
<b>Rear panel</b> 6a of 2.0 mm aluminium, untreated 6b of 1.2 mm sheet steel, spray-finished											
6a for 1 connector	■	–	1	3687.536	3685.707	3685.708	3685.709	3685.710	3685.711	3685.712	–
6b for several connectors	–	■	1	–	–	–	–	3687.537	3687.538	3687.539	–

Assembly parts for box-type plug-in units, see page 164

# COMPONENTS / ACCESSORIES

## BOX-TYPE PLUG-IN UNITS

### HeiPac BOX-TYPE PLUG-IN UNITS – individual components



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

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

Box-type plug-in units, individual components	A Type V	B Type VI	Packs of	6 HP	7 HP	8 HP	10 HP	12 HP	14 HP	Page
<b>Front panels</b> of 2.5 mm aluminium, anodised surface finish										
[1] for 3 U	■	■	1	3685.768	3685.628	3685.769	3685.629	3685.630	3685.631	–
[1] for 6 U	■	■	1	3685.766	3685.632	3685.767	3685.633	3685.634	3685.635	–
<b>Handle type V</b>										
[2] of aluminium, anodised surface finish	■	■	1	3685.598	3685.599	3685.600	3685.601	3685.602	3685.603	145
[2] of plastic	■	■	1	–	–	3685.492	–	3685.493	–	145
<b>Identification strips</b> for 3 U										
[3] of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.749	3685.750	3685.751	3685.752	3685.753	3685.754	145
<b>Cover</b> of 1 mm aluminium, clear-chromated surface finish										
[4a] unvented, 3 U, for board depth 160 mm	■	–	1	3685.774	3685.658	3685.776	3685.659	3685.660	3685.661	–
[4a] unvented, 3 U, for board depth 220 mm	■	–	1	3685.775	3685.674	3685.777	3685.675	3685.676	3685.677	–
[4a] unvented, 6 U, for board depth 160 mm	■	–	1	3685.717	3685.662	3685.764	3685.663	3685.664	3685.665	–
[4a] unvented, 6 U, for board depth 220 mm	■	–	1	3685.718	3685.678	3685.765	3685.679	3685.680	3685.681	–
[4b] vented, 3 U, for board depth 160 mm	–	■	1	3685.770	3685.650	3685.772	3685.651	3685.652	3685.653	–
[4b] vented, 3 U, for board depth 220 mm	–	■	1	3685.771	3685.666	3685.773	3685.667	3685.668	3685.669	–
[4b] vented, 6 U, for board depth 160 mm	–	■	1	3685.713	3685.654	3685.715	3685.655	3685.656	3685.657	–
[4b] vented, 6 U, for board depth 220 mm	–	■	1	3685.714	3685.670	3685.716	3685.671	3685.672	3685.673	–
<b>Side panel</b> of extruded aluminium section, anodised surface finish										
[5] 3 U, for board depth 160 mm	■	■	1			3685.645				–
[5] 6 U, for board depth 160 mm	■	■	1			3685.648				–
[5] 3 U, for board depth 220 mm	■	■	1			3685.646				–
[5] 6 U, for board depth 220 mm	■	■	1			3685.649				–

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

Description	for installation of:	Packs of	Model No. RP	
Assembly kit for box-type plug-in unit I/II, 3 U	Box-type plug-in units, type I/II, 3 U	1 set	3687.589	–
Assembly kit for box-type plug-in unit I/II, 6 U	Box-type plug-in units, type I/II, 6 U	1 set	3687.590	–
Assembly kit for box-type plug-in unit type V/VI	Box-type plug-in units, type V/VI	1 set	3685.294	–
Assembly kit for box-type plug-in unit with EMC front panel	Box-type plug-in unit with EMC front panel	1 set	3687.591	–
Assembly kit for plastic handles	Plastic handles on box-type plug-in units	1 set	3687.519	164

**Guide rails for box-type plug-in units**, see page 119

For more screws, see page 164

# COMPONENTS / ACCESSORIES

## BOX-TYPE PLUG-IN UNITS



### Vertical drive module

For the installation of drives or CD-ROMs. May be installed in all HeiPac subracks.

- Optionally prepared for EMC or non-EMC
- Accommodation for 3½" or 5¼" drives or CD-ROM, vertical
- Front panel and support plate integrated

**Material:**

Front panel: 2.5 mm aluminium  
Support plate: Aluminium

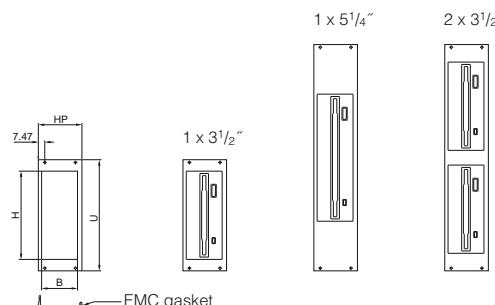
**Surface finish:**

Clear-chromated


**Supply includes:**

1 front panel with support plate,  
1 EMC gasket (with EMC version),  
assembly parts.

Installation drives	Front panel		Depth drive approx. mm	Front panel cut-out		Model No. RP	
	U	HP		Height (H) mm	Width (B) mm	EMC	Non-EMC
1 x 3½"	3	8	160	102	26	<b>3684.469</b>	<b>3685.078</b>
1 x 5¼"	6	10	220	147	41,5	<b>3684.481</b>	<b>3685.090</b>
1 x 3½"	3	8	160	—	—	—	<b>3685.091</b>
	3	10	160	—	—	—	<b>3685.092</b>
2 x 3½"	6	8	160	—	—	—	<b>3685.095</b>
	6	10	160	—	—	—	<b>3685.096</b>



### Guide rails


**For drive chassis**

For routing drive chassis in the subrack.

**Material:**

Aluminium

**Supply includes:**

Press-fit pin.

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

**Note:**

Two guide rails are required for each drive chassis.

Guide rails 4.4" for plastic drives, see page 122.

**! Also required:**

Assembly screws,  
packs of 100, order no. 3654.340,  
see page 164

### PCB holder


**For box-type plug-in units**

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

**Material:**

PBTP, basic material to UL 94-V0

**Supply includes:**

Assembly parts.

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

# COMPONENTS / ACCESSORIES

## POWER SUPPLIES

### Maximum Performance and Efficient Power Supply

HEITEC offers an extensive range of power supply units in various designs. The range includes 482.6 mm (19") compatible, Open Frame and PS/2 variants to supply DC voltage to controllers, systems and plant in many different areas.

**WE MEET YOUR INDIVIDUAL NEEDS!**

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Email: [eps-quote@heitec.de](mailto:eps-quote@heitec.de)



- **Open Frame (VME)**
- **3 U, 6 U (VME), plug-in**
- **3 U, 6 U (CPCI), plug-in**
- **PS/2 (AT/ATX)**
- **UPS**

# HEITEC POWER SUPPLIES OVERVIEW

## Open Frame (VME)



### E.g. 400 Watt

Order no. see page 158

#### Applications:

Power supplies for VMEbus systems

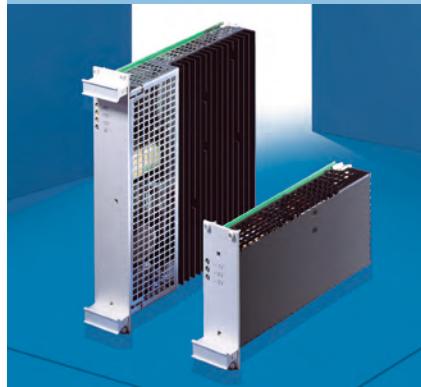
#### Technical specifications:

- 400 Watt
- Open frame version
- For installing on mounting base or rear panel
- Built-in fans
- Wide-range input
- Aluminium case
- 3 outputs

#### Benefits at a glance:

- Small size with high power output
- All-purpose model
- Approvals: EN 60 950, UL 1950, IEC 950 and CSA 22.2 No. 234
- Compact design

## 3 U, 6 U, plug-in (VME)



### E.g. 130, 160, 270 Watt

Order no. see page 159

#### Applications:

Plug-in power supply for VMEbus systems with integrated VMEbus signalling

#### Technical specifications:

- 130, 160, 270 Watt
- 482.6 mm (19") rack-mount unit to IEC 60 297-3
- Installation depth 160 mm
- Mounted by guide rails
- Connection via connectors H15, IEC 60 603-2
- 3 outputs

#### Benefits at a glance:

- 482.6 mm (19") compatible
- Easily exchangeable
- Approvals: EN 60 950, VDE 0805 and IEC 950

## 3 U, 6 U, plug-in (PCI)



### E.g. 250, 350 Watt

Order no. see page 160

#### Applications:

Plug-in power supply for CompactPCI systems

#### Technical specifications:

- 250, 350 Watt
- 482.6 mm (19") rack-mount unit to IEC 60 297-3
- Installation depth 160 mm
- Mounted by guide rails
- Connection via connectors type Positronic, 47-pole PICMG 2.9
- 4 outputs

#### Benefits at a glance:

- 482.6 mm (19") compatible
- Easily exchangeable
- Approvals: EN 60 950 A1-A4, CSA 22.2, UL 1950, CE
- Conforms to PICMG specification



# HEITEC POWER SUPPLIES OVERVIEW

UPS



PS/2 (AT/ATX)



Redundant



**E.g. 180 Watt**

Order no. see page 161

**Applications:**

Uninterruptible power system for installation in a 5 1/4 drive slot. Guarantees a continuous power supply even in the event of a mains failure (6 min.).

**Technical specifications:**

- 300 VA/180 Watt
- Installation in 5 1/4 drive slots
- Integral, maintenance-free batteries

**Benefits at a glance:**

- Small size
- Approvals: CE, EN 60 950

**E.g. 250, 300, 400 Watt**

Order no. see pages 162

**Applications:**

Power supply unit for ATX- and CPCI systems

**Technical specifications:**

- 250, 300, 400 Watt
- Open frame version
- For installing on mounting base or rear panel
- Built-in fan
- Sheet steel case
- PFC active/passive

**Benefits at a glance:**

- All-purpose model
- Approvals: CSA

**E.g. 2 x 300 Watt**

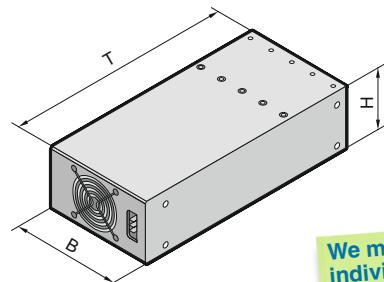
Redundant power supply units on request



# COMPONENTS / ACCESSORIES

## POWER SUPPLIES

### HeiPac power supplies – Open Frame



B = Width  
T = Depth

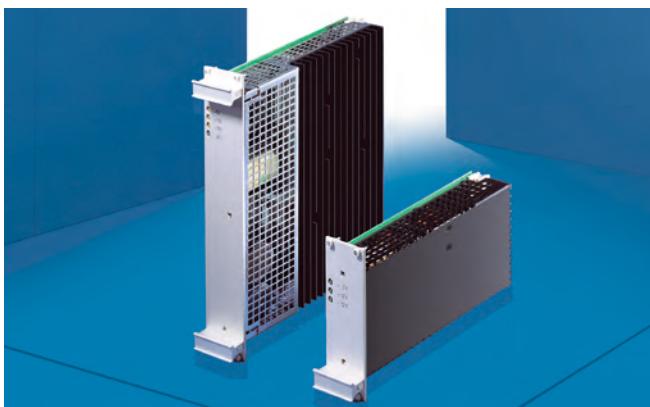
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see page 14

	400 W				
<b>Height (H) mm</b>	63,0				
<b>Width (B) mm</b>	126,5				
<b>Depth (T) mm</b>	279,0				
<b>Model No. RP</b>	<b>3686.629</b>				
<b>Output sizes</b>					
Output	1	2	3		
Output voltage	5 V	+12 V	-12 V		
Output current	60 A				
	85 A	8 A			
Maximum power output	400 W				
Setting range of output voltage	4,5 – 5,5 V (60 A) 2,5 – 5,7 V (85 A)	5 – 16 V			
Load compensation (load variation 0 – 100 %)	< 0,5 %				
Line regulation (U <sub>e</sub> min. – U <sub>e</sub> max.)	< 25 mV	< 60 mV			
Base load	–				
Infeed compensation (Sense)	0,5 V	–			
Residual ripple (max.)	1 %	2 %			
Temperature coefficient	0,03 %/°C				
Overvoltage protection	yes				
Overload protection <sup>1)</sup>	Thermal current limiting				
Overload protection, thermal	–				
Overload protection, electronic	–				
<b>Input variables</b>					
Mains voltage U <sub>e</sub>	90 – 264 V AC				
Mains frequency	47 – 63 Hz				
Power factor	> 0,95				
Startup current limitation	< 50 A				
Efficiency (typ.)	75 %				

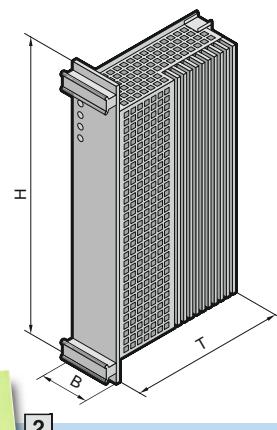
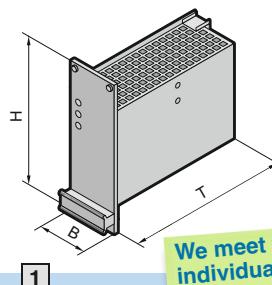
# COMPONENTS / ACCESSORIES

## POWER SUPPLIES

### HeiPac power supplies for VME, plug-in



B = Width  
T = Depth



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see page 14

	[1]	[2]	
<b>Height (H)</b>	3 U	6 U	
<b>Width (B)</b>	10 HP	8 HP	12 HP
<b>Depth (T) mm</b>	170,0	170,0	170,0
<b>Model No. RP power supply</b>	<b>3686.469</b>	<b>3686.471</b>	<b>3685.306</b>
<b>Model No. RP front panel</b>	<b>3685.304</b>	<b>3686.472</b>	<b>3685.307</b>

#### Output sizes

Output	1	2	3	1	2	3
Output voltage	5 V	+12 V	-12 V	5 V	+12 V	-12 V
Output current 3 U, 10 HP/6 U, 8 HP	14 A	5 A	2 A	20 A	5 A	2 A
Output current 3 U, 12 HP/6 U, 12 HP	20 A	5 A	2 A	35 A	6 A	2 A
Maximum power output	130 W			160 W (8 HP), 270 W (12 HP)		
Setting range of output voltage	± 5 %	–		± 5 %	–	
Load compensation (load variation 0 – 100 %)	< 0,1 %	< 1 %		< 0,1 %	< 1 %	
Line regulation ( $U_e \text{ min.} - U_e \text{ max.}$ )	< 0,2 %			< 0,2 %		
Base load	–					
Compensation time	< 1 ms at $I_a$ 20 – 80 %					
Infeed compensation (Sense)	± 0,25 V	–		± 0,25 V	–	
Residual ripple (max.)	< 35 mV	< 20 mV		< 45 mVss	< 30 mVss	< 15 mVss
Interference voltage	50 mVss typ. (bandwidth 20 MHz)					
Temperature coefficient	0,025 %/K					
Oversupply protection (automatically recovery)	125 % + 5 %	125 % + 10 %		125 % ± 5 %	120 % ± 10 %	
Overload protection	typ. 110 % $I_a$ rated, U/I characteristic curve acting on all outputs, outputs short circuit-resistant					
Overtemperature protection	Cuts out if the internal temperature is too high, cuts in again with hysteresis					
AC-FAIL, SYSRESET	TTL signals with 48 mA drive current, active low					
ON delay	< 0,5 s		< 0,5 s			
Ramp-up time	$\leq$ 50 ms		$\leq$ 50 ms			

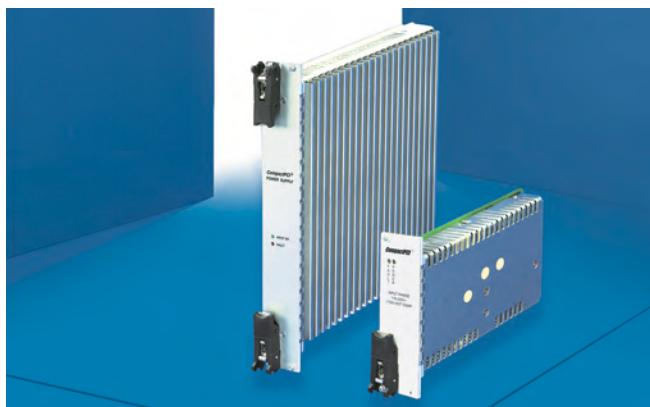
#### Input variables

Mains voltage $U_e$	AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 90 – 138 V	AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 90 – 138 V
Mains frequency	50 – 60 Hz	
Efficiency (typ.)	80 %	
Startup current limitation	< 10 As typ. – in cold state < 15 As typ. – in warm state	< 25 As typ. – in cold state < 35 As typ. – in warm state
Fuse	4 AT	8 AT

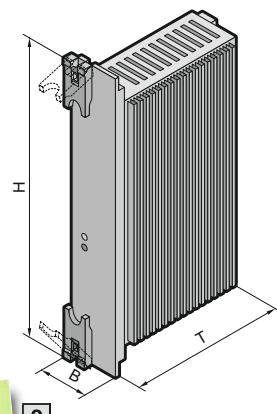
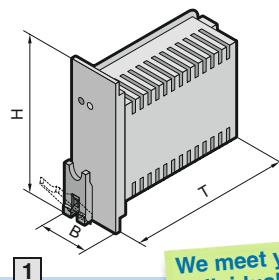
# COMPONENTS / ACCESSORIES

## POWER SUPPLIES

### HeiPac power supplies for CPCI, plug-in



B = Width  
T = Depth



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	[1]	[2]
<b>Height (H)</b>	3 U	6 U
<b>Width (B)</b>	8 HP	8 HP
<b>Depth (T) mm</b>	170,0	170,0
<b>Model No. RP AC power supply</b>		<b>3688.695</b>
<b>Model No. RP DC power supply</b>		<b>3688.528</b>
<b>Output sizes</b>		
Output		U <sub>1</sub> U <sub>2</sub> U <sub>3</sub> U <sub>4</sub> U <sub>1</sub> U <sub>2</sub> U <sub>3</sub> U <sub>4</sub>
Output voltage		5 V    3,3 V    12 V    -12 V    5 V    3,3 V    12 V    -12 V
Output current		33 A    33 A    6 A    1 A    40 A    40 A    9 A    1 A
Output current U <sub>1</sub> and U <sub>2</sub>		55 A max.
Maximum power output		250 W
Base load (nur U <sub>1</sub> )	5 %	-
Load compensation (dyn.)	< 3 % at 25 % load variation (1 A/μs) 1 % after 300 μs	
Line regulation	< ± 1 % (90 – 264 V AC)	< ± 1 % (90 – 264 V AC) U <sub>1</sub> , U <sub>2</sub> , U <sub>3</sub>
Infeed compensation (Sense)		0,25 V    0,25 V    0,25 V    -    0,25 V    0,25 V    0,25 V    -
Residual ripple (PARD)	50 mVss or 1 % (bandwidth 20 MHz)	
Temperature coefficient	< ± 0,02 %/K (0° – 50°C) after 20 min. start-up time	
Oversupply protection	125 % ± 10 %, reset by switching on again	
Overload protection	Current limiting of all outputs, automatic return at normal load	
Overtemperature protection	At overtemperature switches off all outputs, automatic return at normal temperature	
<b>Input variables</b>		
Mains voltage or DC input	90 – 264 V AC, 47 – 63 Hz, 3,6 A max.	90 – 264 V AC, 47 – 63 Hz, 7 A
Power Factor	0,99 at AC 115 V, full load	
Starting current	15 As (115 V AC) cold start, 30 As (230 V AC) cold start	
Fuse	4 A, 250 V AC	10 A, 250 V AC
<b>Signals and control cables</b>		
Power Fail (Pin 42)	In the event of a mains failure > 4 ms before output voltages exit control range. Power fail also triggered by failure or under-voltage of V1 or V2 (3 U) or any output (6 U)	
DEG (Pin 38)	In case of overtemperature	-
Remote enable	Use logic „0“ (TTL level)	
Remote inhibit	Use logic „1“ (TTL level)	
LED displays, two-colour	Green: "Power ON" and output voltages present Red: Error	

# COMPONENTS / ACCESSORIES

## POWER SUPPLIES



### Uninterruptible power supply

- Ensures power continuity in the event of a mains failure
- Suitable for installation in a 5 1/4" drive holder
- Floating contacts (DB-9) for UPS communication: Indicates the operating states: mains ok/ mains failure/end of battery capacity/input for UPS deactivation signal
- Integral maintenance-free batteries
- CE certified, IEC 60 950 tested (LVD/EMC)

**Note:**

The UPS does not have an RS232 interface. Upon request you can obtain an adaptor cable including CD-ROM with shutdown drivers for automatic termination of program routines and shutdown of the system for Windows, Netware and Linux. Additional battery (5 1/4") to extend to 500 VA available on request.

**Technical specifications:**

Output 300 VA/180 W  
Input/output voltage:  
220, 230, 240 V AC ± 15 %  
Input frequency: 50 Hz ± 5 %  
Output frequency: 50 Hz ± 1 %

Packs of	Order No.
1	3659.080

**Technical specifications:**

Switch-over time: < 4 ms  
Charging time: 6 – 8 hours (to 90 % capacity)  
Operating environment:  
Temperature 0°C – 40°C  
Humidity 0 – 90 %  
Status displays:  
LED for mains operation, back-up, low battery, over-temperature  
Acoustic alarms:  
Mains interruption (sounds every 5 sec.), Low battery (sounds every sec.)  
Test function:  
Test switch on the front panel to check the UPS function  
Approvals:  
CE, EN 60 950 tested (LVD/EMC)  
Hold-up time: 6 min.



### Front panel

**For ATX power supply**

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

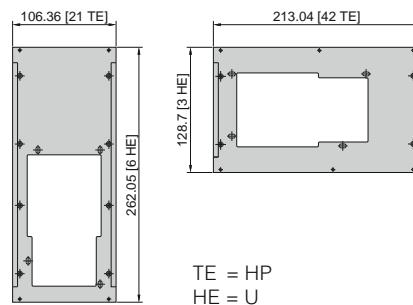
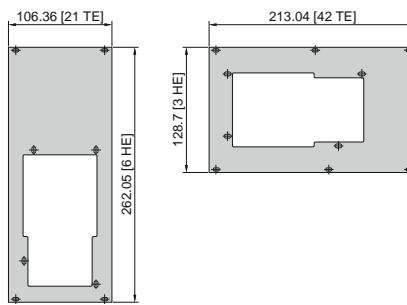
**Material:**

Aluminium, clear-chromated

**Supply includes:**

Assembly parts,  
EMC gaskets (with EMC version).

U	HP	Model No. RP	
		EMC	Non-EMC
3	42	3685.331	3685.328
6	21	3685.332	3685.329



TE = HP  
HE = U

# COMPONENTS / ACCESSORIES

## POWER SUPPLIES

### AT/ATX power supply



#### For ATX

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

#### Supply includes:

Connection cable.

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

#### Technical specifications:

3688.118	9916.222
300 W max./ 230 V AC	400 W max./ 90 – 240 V AC
5,0 V/30,0 A	3,3 V/20,0 A
-5,0 V/0,5 A	5,0 V/20,0 A
12,0 V/12,0 A	-5,0 V/0,3 A
-12,0 V/0,5 A	12,0 V/32 A
PFC passive	-12,0 V/32 A
	+5 VSB/2,5 A
	3,3 V u. 5 V plus max. 150 W
	3,3 V, 5 V u. 12 V plus max. 385 W
	PFC aktive

### ATX power supply 1 U



#### For ATX

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

#### Supply includes:

Connection cable.

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

Technical specifications:	
250 W max./ 90 – 264 V AC	12,0 V/18 A -12,0 V/0,8 A
47 – 63 Hz	+5 VSB/2,5 A
3,3 V/16,0 A	+3,3 V plus 5 V total max. 120 W
5,0 V/18,0 A	
-5,0 V/0,3 A	

# COMPONENTS / ACCESSORIES

## POWER SUPPLIES



### Mounting base for power supplies

#### For ATX

- Attaches to the subrack side panel

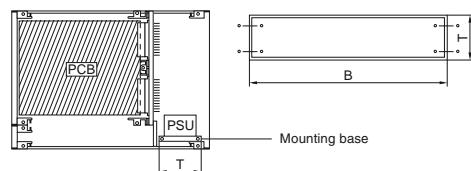
#### Material:

2 mm aluminium, clear-chromated

#### Supply includes:

Assembly parts.

Width (B) mm	Depth (T) mm	Order No.
431.8	100	3684.323
431.8	130	3684.324



### Female connector type M24/8

#### IEC 60 603-2

- Female connector for plug-in CPCI power supplies
- Quality level 2 to IEC 60 603-2 (DIN 41 612)
- Optional 20 A high current contacts for straight conductor connection either crimp or solder
- Volume resistance max. 1.5 mΩ
- Max. rated current: 40 A

#### Supply includes:

5 connection sockets (crimping or soldering method)

Type of connection	Packs of	Order No.
Soldering	1 set	3687.665
Crimping	1 set	3687.666

#### ! Also required:

For mounting in the subrack, a Z rail is required, see page 114.

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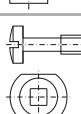
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# COMPONENTS / ACCESSORIES

## ASSEMBLY PARTS

### Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Front panels to unit side panels	Oval csk-screw ISO 7047-4.8-Z-A2K	M3 x 8		<b>3606.550</b> 100
Rear panels to box-type plug-in units	Panhead screw ISO 7045-4.8-Z-A2K	M3 x 8		<b>3606.560</b> 100
PCB holders (plastic) to front panels, top	Oval csk-screw ISO 7047-4.8-Z-A2K	M2.5 x 10		<b>3606.610</b> 100
- Horizontal rails to side panels - Divider panels to horizontal rails - Horizontal rails to vertical supports	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2K	M4 x 12		<b>3654.300</b> 100
Front/rear horizontal rails for side panels (HeiPac EASY)	Drill screw, T20, self-locking	M4 x 16		<b>3634.430</b> 100
Centre horizontal rails for side panels (HeiPac EASY)	Fastening screw, T20, self-locking	M4 x 12		<b>3634.435</b> 100
- PCBs to PCB holders (die-cast for 3 U), top - PCBs to extractor handles with 6 U	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 8		<b>3654.320</b> 100
- PCB holder (plastic) to type V/VI handles, bottom - PCBs to PCB holders (plastic) - Backplanes to threaded inserts	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 10		<b>3654.330</b> 100
- Connectors to Z rails - Z rails to horizontal rails - Type V/VI handles to partial front panels, bottom right for ≥ 5 HP - Aluminium guide rails to horizontal rails - Mezzanine front panels	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 6		<b>3654.340</b> 100
Aluminium guide rails to horizontal rails (fastening of square nuts)	Retaining cage	M2.5		<b>9901.417</b> 100
Handle type V (plastic) to front panels and box-type plug-in units	Mounting kit for type V handle (plastic):  Cover black Cover grey Hex nut Screw Screw Square nut DIN 562-04-A2K	M2.5 M2.5 x 16 M2.5 x 12 M2.5		<b>3687.519</b> 1 set
Connectors to PCBs	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 12		<b>3654.350</b> 100
Guide rails (plastic) to horizontal rails	Screw for plastic WN 141	M2.2 x 6		<b>3654.360</b> 100
- Flat front panels to handles type V, VI - Aluminium guide rails to horizontal rails	Square nut DIN 562-A2K	M2.5		<b>3654.370</b> 100
- Flat front panels to horizontal rails - Trim frame to conceal the front sections of the horizontal mounting kit	Captive screws (cheese-head) and plastic collars	M2.5 x 11		<b>3658.160</b> 100 sets
Flat front panels	Plastic collars			<b>3687.021</b> 100
PCB to type III handle	Screw for plastic WN 141	3,0 x 8		<b>3658.190</b> 100
- PCBs to PCB holders (plastic) - PCB holders to front panels, top	Hex nut ISO 4032-8	M2.5		<b>3658.210</b> 100
- Backplanes to threaded inserts - Air partitions to horizontal rails	Mounting kit for backplanes:  Panhead posidrive screw ISO 7045-4.8-Z-A2K  Washer PE, natural DIN 125	M2.5 x 6 2,7	 	<b>3684.019</b> 100
- Covers to mounting blocks - EMC contact strips	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M3 x 6		<b>3684.233</b> 100
Covers to side panels	Mounting block			<b>3684.234</b> 10
Type V/VI handle to front panels	Bracket			<b>3684.435</b> 100
Female connector to PCB attachment	Pop rivet DIN 7340-B-CuZn	2,5 x 0,3 x 10		<b>3684.482</b> 100

# COMPONENTS / ACCESSORIES

## ASSEMBLY PARTS

### Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Ground contact to keyable guide rails	Fastening screw for ground contact	3,5 x 12	<b>3684.109</b>	50
Fans to fan mounting plate	Mounting kit for fans:  Flat csk-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	<b>3685.197</b>	1 set
Covers to side panels	Mounting kit for covers:  Mounting block  Flat csk-screw ISO 7046-1-4.8-Z-A2K		<b>3685.256</b>	24 sets
PCB holders (die-cast) to front panels, top	Oval csk-screw DIN ISO 7047-4.8-Z-A2K	M2.5 x 8	<b>3685.282</b>	100
– Covers box-type plug-in units type I/II – Contact/spring sections for 3-part front panels	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 5	<b>3685.289</b>	100
– Handles on front panels for box type plug-in units – Front panels to hinge strip	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 6	<b>3685.290</b>	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to DIN ISO 7046-1-4.8-Z-A2K	M2.5 x 5	<b>3686.916</b>	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to DIN ISO 7046-1-4.8-Z-A2K	M2.5 x 8	<b>3686.917</b>	100
Contact and spring sections on 3-part front panels without countersink	Panhead posidrive screw DIN ISO 7046-4.8-Z-A2K	M2.5 x 5	<b>3686.924</b>	100
Set back flanges to side panels	Mounting kit for set back flanges:  Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2K  Hex nut ISO 4032-8  Washer	M4 x 8  M4  4,3	<b>3687.015</b>	4 sets
Fastening the threaded inserts in horizontal rails	Grub screw ISO 7434-14H	M2.5 x 8	<b>3687.020</b>	100
– EMC front panels to horizontal rails – EMC trim frame to conceal the front sections of the horizontal mounting kit	Centering screw, slotted	M2.5 x 11	<b>3687.050</b>	100
EMC front panels to horizontal rails	Centering screw, posidrive	M2.5 x 11	<b>3687.051</b>	100
EMC front panels to horizontal rails	Centering screw, hex screws	M2.5 x 11	<b>3688.709</b>	100
Front panels and rear panels to horizontal rails	Collar screw, cheese-head, slotted	M2.5 x 11	<b>3685.097</b>	100
Type V/VI handles (aluminium) to front panels	Mounting kit for type V/VI handles:  Panhead posidrive screw ISO 7045-4.8-Z-A2K  Bracket  Square nut DIN 562-11H-A2K	M2.5 x 6  M2.5	<b>3687.146</b>	1 set

# ORDER NUMBERS

## 3606.140 to 3684.240

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<b>3606.200</b>	123	<b>3636.010</b>	104	<b>3658.210</b>	164	<b>3684.041</b>	93	<b>3684.159</b>	94
<b>3606.300</b>	145	<b>3652.000</b>	143	<b>3659.000</b>	58	<b>3684.042</b>	92	<b>3684.160</b>	94
<b>3606.321</b>	154	<b>3652.010</b>	143	<b>3659.010</b>	65	<b>3684.043</b>	92	<b>3684.161</b>	94
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<b>3606.610</b>	164	<b>3652.050</b>	143	<b>3659.050</b>	64	<b>3684.047</b>	92	<b>3684.165</b>	94
<b>3634.045</b>	107	<b>3652.060</b>	143	<b>3659.060</b>	64	<b>3684.048</b>	92	<b>3684.166</b>	94
<b>3634.060</b>	149	<b>3652.070</b>	143	<b>3659.070</b>	58	<b>3684.049</b>	92	<b>3684.169</b>	94
<b>3634.070</b>	149	<b>3652.080</b>	143	<b>3659.080</b>	161	<b>3684.050</b>	92	<b>3684.170</b>	94
<b>3634.085</b>	106	<b>3652.200</b>	143	<b>3659.090</b>	65	<b>3684.051</b>	92	<b>3684.171</b>	94
<b>3634.100</b>	90	<b>3652.210</b>	143	<b>3659.100</b>	60	<b>3684.052</b>	92	<b>3684.172</b>	94
<b>3634.110</b>	90	<b>3652.220</b>	143	<b>3659.110</b>	64	<b>3684.053</b>	92	<b>3684.173</b>	94
<b>3634.120</b>	90	<b>3652.230</b>	143	<b>3659.120</b>	60, 61	<b>3684.054</b>	92	<b>3684.174</b>	94
<b>3634.130</b>	90	<b>3652.240</b>	143	<b>3659.130</b>	58-63	<b>3684.055</b>	92	<b>3684.175</b>	94
<b>3634.140</b>	90	<b>3652.250</b>	143	<b>3659.140</b>	58-63	<b>3684.056</b>	92	<b>3684.176</b>	94
<b>3634.150</b>	90	<b>3652.260</b>	143	<b>3659.180</b>	64	<b>3684.057</b>	92	<b>3684.177</b>	94
<b>3634.160</b>	90	<b>3652.270</b>	143	<b>3659.190</b>	64	<b>3684.058</b>	92	<b>3684.178</b>	94
<b>3634.170</b>	90	<b>3652.500</b>	149	<b>3659.230</b>	64	<b>3684.059</b>	92	<b>3684.179</b>	94
<b>3634.180</b>	90	<b>3652.510</b>	149	<b>3659.240</b>	64	<b>3684.060</b>	92	<b>3684.180</b>	95
<b>3634.190</b>	90	<b>3652.520</b>	149	<b>3659.250</b>	65	<b>3684.061</b>	92	<b>3684.181</b>	95
<b>3634.200</b>	90	<b>3652.530</b>	149	<b>3659.270</b>	65	<b>3684.062</b>	93	<b>3684.187</b>	95
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<b>3634.420</b>	125	<b>3653.010</b>	151	<b>3659.340</b>	65	<b>3684.074</b>	70	<b>3684.193</b>	95
<b>3634.430</b>	164	<b>3653.020</b>	151	<b>3659.350</b>	65	<b>3684.075</b>	70	<b>3684.194</b>	95
<b>3634.435</b>	164	<b>3653.030</b>	151	<b>3659.400</b>	61	<b>3684.076</b>	70	<b>3684.195</b>	95
<b>3634.450</b>	125	<b>3653.040</b>	151	<b>3659.410</b>	64	<b>3684.077</b>	70	<b>3684.196</b>	95
<b>3634.510</b>	107	<b>3653.050</b>	151	<b>3659.540</b>	64	<b>3684.078</b>	70	<b>3684.197</b>	95
<b>3634.600</b>	105	<b>3653.060</b>	151	<b>3659.700</b>	62	<b>3684.080</b>	70	<b>3684.198</b>	95
<b>3634.615</b>	105	<b>3653.070</b>	151	<b>3659.710</b>	63	<b>3684.109</b>	165	<b>3684.204</b>	123
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<b>3684.723</b>	128	<b>3684.909</b>	147	<b>3685.191</b>	148	<b>3685.290</b>	165	<b>3685.537</b>	137
<b>3684.724</b>	128	<b>3684.910</b>	147	<b>3685.192</b>	148	<b>3685.291</b>	119	<b>3685.538</b>	137
<b>3684.725</b>	128	<b>3684.911</b>	147	<b>3685.193</b>	148	<b>3685.292</b>	119	<b>3685.540</b>	137
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<b>3684.733</b>	129	<b>3684.919</b>	147	<b>3685.232</b>	92	<b>3685.328</b>	161	<b>3685.549</b>	142
<b>3684.734</b>	129	<b>3684.920</b>	147	<b>3685.233</b>	92	<b>3685.329</b>	161	<b>3685.550</b>	142
<b>3684.735</b>	129	<b>3684.921</b>	147	<b>3685.234</b>	92	<b>3685.331</b>	161	<b>3685.551</b>	142
<b>3684.736</b>	129	<b>3684.922</b>	147	<b>3685.235</b>	93	<b>3685.332</b>	161	<b>3685.552</b>	142
<b>3684.737</b>	129	<b>3684.923</b>	147	<b>3685.236</b>	93	<b>3685.348</b>	148	<b>3685.553</b>	142
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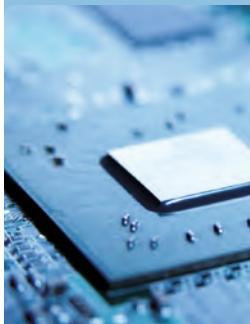
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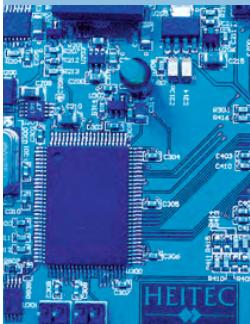
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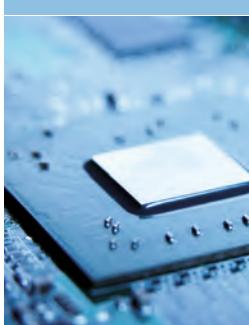
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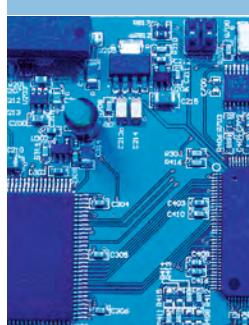
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